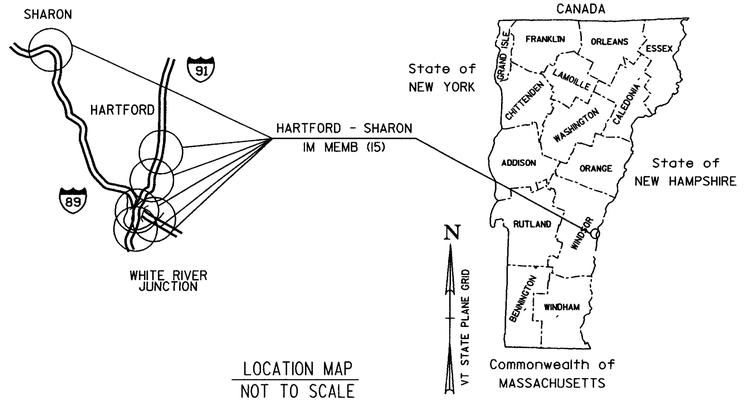
INDEX OF SHEETS

SEE SHEET 2

STATE OF VERMONT
AGENCY OF TRANSPORTATION



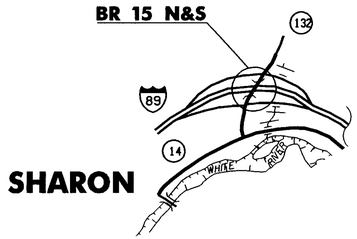
LOCATION MAP
NOT TO SCALE

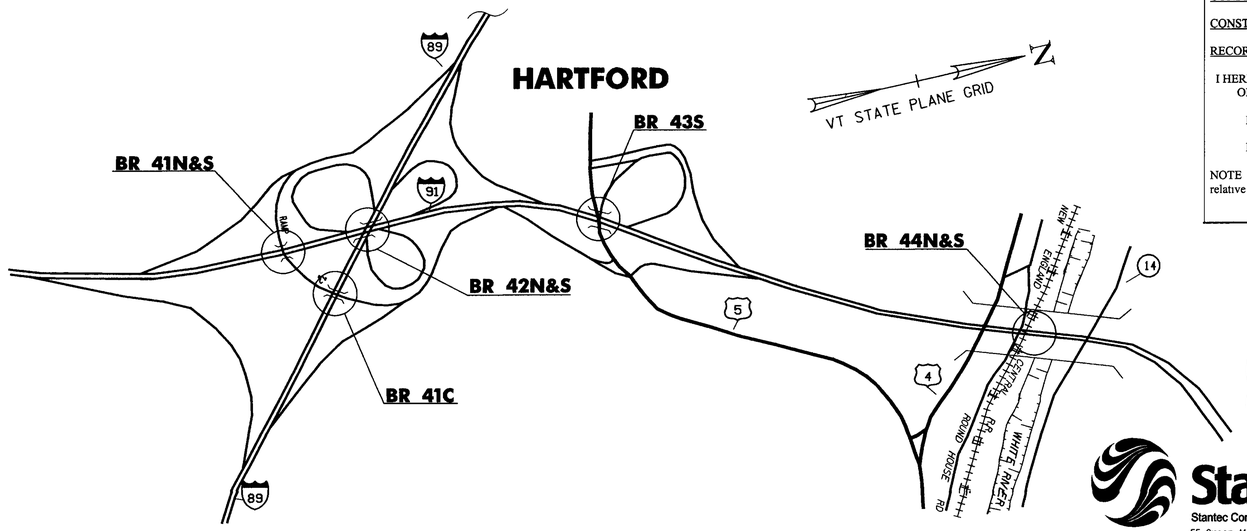
PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWNS OF HARTFORD & SHARON
COUNTY OF WINDSOR
BRIDGES NO. 41N&S ON I-91 (HARTFORD), NO. 41C ON I-91 (HARTFORD), NO. 42N&S ON I-91 (HARTFORD), NO. 43S ON I-91 (HARTFORD), NO. 44N&S ON I-91 (HARTFORD) & NO. 15N&S ON I-89 (SHARON)

PROJECT LOCATION:

BRIDGE NO. 41N&S ARE LOCATED ON I-91 (I-91 MM 69.7) OVER RAMP C IN THE TOWN OF HARTFORD
BRIDGE NO. 41C IS LOCATED ON I-91 RAMP C (I-91 MM 69.5) OVER I-89 IN THE TOWN OF HARTFORD
BRIDGE NO. 42N&S ARE LOCATED ON I-91 (I-91 MM 69.8) OVER I-89 IN THE TOWN OF HARTFORD
BRIDGE NO. 43S IS LOCATED ON I-91 (I-91 MM 70.2) OVER US 5 IN THE TOWN OF HARTFORD
BRIDGE NO. 44N&S ARE LOCATED ON I-91 (I-91 MM 70.9) OVER US 4, NECR, THE WHITE RIVER & VT 14 IN THE TOWN OF HARTFORD
BRIDGE NO. 15N&S ARE LOCATED ON I-89 (I-89 MM 13.4) OVER VT 132 IN THE TOWN OF SHARON





PROJECT DESCRIPTION: THIS PROJECT INVOLVES REMOVING AND REPLACING THE BITUMINOUS CONCRETE WEARING SURFACE ON THE BRIDGE AND ITS APPROACHES, REMOVING AND REPLACING THE MEMBRANE ON THE BRIDGE DECK AND MINOR ASSOCIATED WORK.

LENGTH OF BRIDGES: 41N 112 FEET, 41S 99 FEET, 41C 228 FEET, 42N 346 FEET, 42S 326 FEET, 43S 202 FEET, 44N 1198 FEET, 44S 1178 FEET, 15N 168 FEET, 15S 176 FEET

TOTAL LENGTH OF BRIDGES: 4033'

RECORD PLANS

CONTRACTOR: COLD RIVER BRIDGES, LLC- KEENE, NH
RESIDENT ENGINEER: TOM CHASE
CONSTRUCTION BEGAN: APRIL 19, 2010
CONSTRUCTION COMPLETE: DECEMBER 13, 2010
RECORD PLANS BY: TOM CHASE

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

BY Thomas A. Chase RESIDENT ENGINEER

DATE 05/16/11

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

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

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

CONVENTIONAL SYMBOLS

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

SURVEYED BY : N/A
SURVEYED DATE : !

DATUM
VERTICAL N/A
HORIZONTAL N/A

Stantec
Stantec Consulting Services Inc
55 Green Mountain Drive
South Burlington VT U.S.A. 05403
Tel. 802.864.0223
Fax. 802.864.0165
www.stantec.com

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE 6/6/09

PROJECT MANAGER : SHERWARD G. FARNSWORTH

PROJECT NAME : **HARTFORD - SHARON**
PROJECT NUMBER : IM MEMB (15)

SHEET 1 OF 47 SHEETS

INDEX OF SHEETS

1.	TITLE SHEET
2.	INDEX OF SHEETS AND PROJECT NOTES
3.-4.	QUANTITY SHEETS
5.-6.	BRIDGE QUANTITY SHEETS
7.	TRAFFIC CONTROL SHEET 1
8.	TRAFFIC CONTROL SHEET 2
9.	BITUMINOUS CONCRETE REMOVAL PLAN
10.	BITUMINOUS CONCRETE DETAILS
11.	PAVEMENT JOINT DETAILS
12.-17.	REFERENCE PLANS - BRIDGE 41N&S
18.-22.	REFERENCE PLANS - BRIDGE 41C
23.-28.	REFERENCE PLANS - BRIDGE 42N&S
29.-34.	REFERENCE PLANS - BRIDGE 43S
35.-42.	REFERENCE PLANS - BRIDGE 44N&S
43.-47.	REFERENCE PLANS - BRIDGE 15N&S

VAOT STANDARD SHEETS

E-100	01/02/04
E-100A	01/02/04
E-101	05/30/03
E-102	06/30/03
E-102A	05/01/04
E-106	03/01/04
E-107	06/30/03
E-107A	06/08/09
E-110	08/08/95
E-120	08/08/95
E-191	02/01/99
E-192	10/12/00

PROJECT NOTES

GENERAL

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 2006 STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 2002, AND ITS LATEST REVISIONS.

2. ALL WORK AND ANY ASSOCIATED ACTIVITY ON THIS PROJECT SHALL BE PERFORMED WITHIN THE EXISTING RIGHT-OF-WAY LIMITS.

3. ALL COSTS ASSOCIATED WITH PROTECTION OF TRAFFIC DURING REMOVAL OF THE BRIDGE PAVEMENT WILL BE INCIDENTAL TO ITEM 529.10.

4. WATER REPELLENT, SILANE SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE PIERS AND THE UNDERSIDE OF THE DECK. THIS WORK WILL BE PAID FOR UNDER ITEM 514.10, "WATER REPELLENT, SILANE".

5. FOLLOWING THE COMPLETION OF ALL OTHER CONSTRUCTION ACTIVITIES, ALL FABRIC DRAIN TROUGHS, DOWNSPOUTS AND SCUPPERS WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON THE BITUMINOUS CONCRETE REMOVAL PLAN, SHALL BE THOROUGHLY FLUSHED BY THE CONTRACTOR. COST FOR FLUSHING THE FABRIC DRAIN TROUGHS, DOWNSPOUTS AND SCUPPERS WILL BE INCIDENTAL TO ALL OTHER ITEMS IN THE CONTRACT.

TRAFFIC CONTROL

6. UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON SHEETS 5 & 6 AND FOR TEMPORARY TRAFFIC CONTROL DEVICES INCLUDING TRAFFIC BARRIERS, RETROREFLECTIVE DRUMS, SIGNS, AND SIGN POSTS WILL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR TRAFFIC CONTROL, ITEM 641.10.

7. TRAFFIC SHALL BE ALLOWED TO DRIVE ON THE BARE CONCRETE BRIDGE DECK AFTER THE REMOVAL OF THE BARRIER MEMBRANE, BUT PRIOR TO THE DECK BEING CLEANED AND PREPARED FOR THE NEW SHEET MEMBRANE. ONCE THE CONCRETE BRIDGE DECK IS PREPARED FOR THE NEW SHEET MEMBRANE, NO TRAFFIC SHALL BE ALLOWED ON THE DECK UNTIL THE FIRST LIFT OF BITUMINOUS CONCRETE PAVEMENT IS IN PLACE OVER THE ENTIRE LENGTH OF THE BRIDGE.

PAVEMENT REMOVAL NOTES

8. THE FINAL ONE HALF INCH OF PAVEMENT ON THE CONCRETE BRIDGE DECK AND APPROACH SLABS SHALL BE REMOVED BY LOADER, GRADER OR EQUIPMENT APPROVED BY THE ENGINEER. COLD PLANING TO REMOVE BRIDGE PAVEMENT WILL BE INCIDENTAL TO ITEM 529.10, "REMOVAL OF BRIDGE PAVEMENT".

9. DURING BRIDGE AND APPROACH SLAB PAVEMENT REMOVAL, THE CONTRACTOR SHALL EXERCISE CARE TO INSURE THAT NO DAMAGE OCCURS TO THE EXISTING CONCRETE BRIDGE DECK AND THE EXISTING APPROACH SLABS. ANY DAMAGE TO THE CONCRETE BRIDGE DECK OR APPROACH SLABS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. REPAIRS SHALL BE MADE IN ACCORDANCE WITH SECTION 580.

10. CARE SHALL BE TAKEN TO PROTECT ANY SCUPPERS OR DROP INLETS AT ALL STAGES OF CONSTRUCTION. ANY DAMAGE TO THESE STRUCTURES SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

11. AFTER THE REMOVAL OF THE BRIDGE PAVEMENT, THE BARRIER MEMBRANE SHALL BE REMOVED AND THE CONCRETE BRIDGE DECK SHALL BE CLEANED AND PREPARED IN ACCORDANCE WITH SUBSECTION 580.04 AND TO THE SATISFACTION OF THE ENGINEER. REMOVAL OF THE BARRIER MEMBRANE AND THE CLEANING AND PREPARATION OF THE CONCRETE BRIDGE DECK WILL BE PAID FOR UNDER ITEM 580.16, "SURFACE PREPARATION FOR MEMBRANE".

12. ONCE THE BARRIER MEMBRANE IS REMOVED, ANY AREAS ON THE CONCRETE BRIDGE DECK THAT ARE FOUND TO BE UNSOUND SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE ENGINEER SHALL MAKE A DETERMINATION AS TO HOW TO REPAIR THE DETERIORATED PORTION OF THE CONCRETE BRIDGE DECK AND THE LIMITS OF THE REPAIR.

13. UPON THE ENGINEER'S APPROVAL OF THE CONCRETE BRIDGE DECK'S CONDITION, ITEM 519.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 519. SHEET MEMBRANE WATERPROOFING SHALL NOT BE APPLIED WHEN THE DECK CONCRETE AND/OR DECK PATCH AREAS MOISTURE CONTENT IS ABOVE THE SECTION 519 SPECIFICATIONS OR THE MANUFACTURER'S SPECIFICATIONS, WHICHEVER IS LESS.

PAVEMENT NOTES

14. FOLLOWING THE INSTALLATION OF THE NEW SHEET MEMBRANE WATERPROOFING ON THE CONCRETE BRIDGE DECK, THE CONCRETE BRIDGE DECK AND THE AT-GRADE APPROACH SLABS SHALL BE PAVED WITH ITEM 406.27, MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT IN TWO 1¼" LIFTS (SEE TYPICAL APPROACH SECTION ON SHEET 10). THE PAVEMENT SHALL BE TYPE IV FOR BOTH LIFTS, NO EXCEPTIONS. EMULSIFIED ASPHALT SHALL BE APPLIED TO ALL COLD PLANNED SURFACES AND BETWEEN PAVEMENT LIFTS.

15. ON BRIDGES NO. 15 NORTH AND 15 SOUTH, THE PAVEMENT THICKNESS AT THE PIER JOINTS SHALL BE ⅛" HIGHER THAN THE DECK CONCRETE AT THE PIER JOINTS. THE PAVEMENT SHALL TAPER FROM THE REQUIRED THICKNESS AS DESCRIBED ABOVE AT THE PIER JOINTS TO 2½" OVER 15 FEET. SEE SHEET 10 FOR THE PAVEMENT TAPER DETAIL ON THE REMAINING BRIDGES.

16. CARE SHALL BE EXERCISED TO SMOOTHLY TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING PAVEMENT. ANY COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES SHALL BE PAID FOR UNDER ITEM 210.10, "COLD PLANING, BITUMINOUS PAVEMENT".

17. TESTING FOR PAVEMENT DENSITY WILL REQUIRE CORES OF THE PAVEMENT ON THE BRIDGE. THE COST FOR THIS WORK WILL BE INCIDENTAL TO ITEM 406.27, MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT. ANY DAMAGE TO THE NEW SHEET MEMBRANE CAUSED BY CORING THE PAVEMENT SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AND AT THE CONTRACTOR'S EXPENSE.

18. FOR PG BINDER GRADE SEE SECTION 406 OF THE GENERAL SPECIAL PROVISIONS.

19. IF COLD PLANING OF THE RIGHT ROADWAY SHOULDERS ALONG BRIDGE APPROACHES EXPOSES GRAVEL SUBBASE, 2" BASE PAVEMENT SHALL BE PLACED ALONG THE SHOULDERS IN ADDITION TO THE 2 ½" PAVEMENT TO BE PLACED IN ALL OTHER LOCATIONS.

PAVEMENT MARKING NOTE

20. ITEM 646.24, "12" WHITE LINE" SHALL BE USED AS REQUIRED TO REPLACE ANY GORE PAVEMENT MARKINGS THAT ARE REMOVED AT AN ENTRANCE OR EXIT RAMP. SEE STANDARDS E-191 AND E-192 FOR ADDITIONAL INFORMATION.

WORK AROUND RAILROAD TRACKS

21. THE CONTRACTOR MUST KEEP ALL EQUIPMENT OVER 25 FEET HORIZONTALLY AWAY FROM THE CENTERLINE OF THE RAILROAD TRACKS, EXCEPT EQUIPMENT THAT IS TRAVELING ON THE BRIDGE DECK.

22. THE CONTRACTOR SHALL NOT APPLY SILANE TO THE FASCIA AREAS OF SPAN NO. 4 (SPAN OVER THE RAILROAD) ON BRIDGES NO. 44 NORTH AND 44 SOUTH.

Stantec

PROJECT NAME: HARTFORD - SHARON
PROJECT NUMBER: IM MEMB (15)

FILE NAME: ...\02 project notes.dgn PLOT DATE: 7/29/2009
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE CHECKED BY: M. CHENETTE

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
1			1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22				
	4748		4748		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
	80		80		CWT	EMULSIFIED ASPHALT	404.65				
	2756		2756		TON	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT	406.27				
	10		10		LU	MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	406.29				
1			1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
	420		420		GAL	WATER REPELLENT, SILANE	514.10				
	724		724		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
	14921		14921		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
	722		722		LF	JOINT SEALER, HOT POURED	524.11				
	17250		17250		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
	548		548		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	580.10				
	168		168		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11				
	215		215		CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12				
	134292		134292		SF	SURFACE PREPARATION FOR MEMBRANE	580.16				
	200		200		CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20				
	50		50		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25				
	50		50		HR	TRUCK RENTAL	608.37				
	1080		1080		HR	TRUCK-MOUNTED ATTENUATOR	608.45				
	20		20		EACH	ENERGY ABSORPTION ATTENUATOR	621.56				
	6250		6250		LF	TEMPORARY TRAFFIC BARRIER	621.90				
	6250		6250		LF	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95				
	7200		7200		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
		1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
1			1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
	1		1		LS	TRAFFIC CONTROL (I-89 - BRIDGE NO. 15N)	641.10				
	1		1		LS	TRAFFIC CONTROL (I-89 - BRIDGE NO. 15S)	641.10				
	1		1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 41C)	641.10				
	1		1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 41N)	641.10				
	1		1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 41S)	641.10				
	1		1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 42N)	641.10				
	1		1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 42S)	641.10				
	1		1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 43S)	641.10				
	1		1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 44N)	641.10				
	1		1		LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 44S)	641.10				
	10		10		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
	10		10		EACH	PORTABLE ARROW BOARD	641.16				
	7294		7294		LF	6 INCH WHITE LINE	646.214				
	5833		5833		LF	6 INCH YELLOW LINE	646.215				
	75		75		LF	12 INCH WHITE LINE	646.24				

Stantec

PROJECT NAME: HARTFORD - SHARON
PROJECT NUMBER: IM MEMB (15)

FILE NAME: ...\03-05 quantity sheets.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: M. CHENETTE
QUANTITY SHEET 1

PLOT DATE: 8/13/2009
DRAWN BY: E. ALLING
CHECKED BY: G. BOGUE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES			TOTALS		DESCRIPTIONS			
ROADWAY	BRIDGE	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND
	7294		7294		LF	TEMPORARY 6 INCH WHITE LINE	646.620	
	19750		19750		LF	TEMPORARY 6 INCH WHITE LINE, TYPE II TAPE	646.621	
	5833		5833		LF	TEMPORARY 6 INCH YELLOW LINE	646.630	
	15350		15350		LF	TEMPORARY 6 INCH YELLOW LINE, TYPE II TAPE	646.631	
	6600		6600		LF	TEMPORARY 12 INCH WHITE LINE, TYPE II TAPE	646.661	
	443		443		EACH	LINE STRIPING TARGETS	646.76	
	825		825		SF	PAVEMENT MARKING MASK	646.86	
1			1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50	

DETAILED SUMMARY OF QUANTITIES		
QUANTITIES	UNIT	ITEMS

Stantec

PROJECT NAME: HARTFORD - SHARON
PROJECT NUMBER: IM MEMB (15)

FILE NAME: ...\drawing\Quantity sheet.dgn PLOT DATE: 7/29/2009
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE CHECKED BY: G. BOGUE
QUANTITY SHEET 2 SHEET 4 OF 47

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE QUANTITY SHEET 1

SUMMARY OF BRIDGE QUANTITIES										TOTALS	DESCRIPTIONS			DETAILED SUMMARY OF QUANTITIES		
I91 - BRIDGE NO. 41N	I91 - BRIDGE NO. 41S	I91 - BRIDGE NO. 41C	I91 BRIDGE NO. 42N	I91 - BRIDGE NO. 42S	I91 - BRIDGE NO. 43S	I91 - BRIDGE NO. 44N	I91 - BRIDGE NO. 44S	I91 - BRIDGE NO. 15N	I91 - BRIDGE NO. 15S	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER	QUANTITIES	UNIT	ITEMS
286	287	195	409	595	639	650	657	496	534	4748	SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10			
3	3	3	8	9	6	19	19	5	5	80	CWT	EMULSIFIED ASPHALT	404.65			
115	107	118	310	304	213	621	612	178	178	2756	TON	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT	406.27			
1	1	1	1	1	1	1	1	1	1	10	LU	MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	406.29			
31	35	28	33	36	22	97	96	21	21	420	GAL	WATER REPELLENT, SILANE	514.10			
40	78	48	54	54	138	60	60	96	96	724	LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10			
473	418	608	1615	1521	943	3993	3927	695	728	14921	SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20			
76	76	48	84	84	84	60	60	75	75	722	LF	JOINT SEALER, HOT POURED	524.11			
672	615	733	1948	1855	1206	4143	4070	1007	1001	17250	SY	REMOVAL OF BRIDGE PAVEMENT	529.10			
5	5	5	9	9	5	250	250	5	5	548	SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	580.10			
5	5	5	9	9	5	60	60	5	5	168	SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11			
10	10	10	18	17	10	60	60	10	10	215	CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12			
4256	3762	5472	14532	13692	8484	35940	35340	6258	6556	134292	SF	SURFACE PREPARATION FOR MEMBRANE	580.16			
10	10	10	10	10	10	60	60	10	10	200	CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20			
5	5	5	5	5	5	5	5	5	5	50	HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25			
5	5	5	5	5	5	5	5	5	5	50	HR	TRUCK RENTAL	608.37			
60	60	60	120	120	100	180	180	100	100	1080	HR	TRUCK-MOUNTED ATTENUATOR	608.45			
2	2	2	2	2	2	2	2	2	2	20	EACH	ENERGY ABSORPTION ATTENUATOR	621.56			
325	320	450	570	550	425	1420	1400	390	400	6250	LF	TEMPORARY TRAFFIC BARRIER	621.90			
325	320	450	570	550	425	1420	1400	390	400	6250	LF	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95			
230	200	300	780	730	450	1920	1900	330	360	7200	HR	UNIFORMED TRAFFIC OFFICERS	630.10			
								1		1	LS	TRAFFIC CONTROL (I-89 - BRIDGE NO. 15N)	641.10			
									1	1	LS	TRAFFIC CONTROL (I-89 - BRIDGE NO. 15S)	641.10			
		1								1	LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 41C)	641.10			
1										1	LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 41N)	641.10			
	1									1	LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 41S)	641.10			
			1							1	LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 42N)	641.10			
				1						1	LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 42S)	641.10			
					1					1	LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 43S)	641.10			
						1				1	LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 44N)	641.10			
							1			1	LS	TRAFFIC CONTROL (I-91 - BRIDGE NO. 44S)	641.10			
1	1	1	1	1	1	1	1	1	1	10	EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15			
1	1	1	1	1	1	1	1	1	1	10	EACH	PORTABLE ARROW BOARD	641.16			
290	274	435	633	658	503	1798	1773	460	470	7294	LF	6 INCH WHITE LINE	646.214			
232	219	348	506	526	402	1438	1418	368	376	5833	LF	6 INCH YELLOW LINE	646.215			
			75							75	LF	12 INCH WHITE LINE	646.24			
290	274	435	633	658	503	1798	1773	460	470	7294	LF	TEMPORARY 6 INCH WHITE LINE	646.620			
1240	2240	1360	1800	2060	1930	2330	2310	1300	3180	19750	LF	TEMPORARY 6 INCH WHITE LINE, TYPE II TAPE	646.621			
232	219	348	506	526	402	1438	1418	368	376	5833	LF	TEMPORARY 6 INCH YELLOW LINE	646.630			
1240	1230	1360	1480	1460	1330	2330	2310	1300	1310	15350	LF	TEMPORARY 6 INCH YELLOW LINE, TYPE II TAPE	646.631			

Stantec

PROJECT NAME: HARTFORD - SHARON
PROJECT NUMBER: IM MEMB (15)

FILE NAME: ...\03-05 quantity sheets.dgn PLOT DATE: 8/13/2009
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE CHECKED BY: G. BOGUE
BRIDGE QUANTITY SHEET 1 SHEET 5 OF 47

STATE OF VERMONT
AGENCY OF TRANSPORTATION

BRIDGE QUANTITY SHEET 2

SUMMARY OF BRIDGE QUANTITIES

I91 - BRIDGE NO. 41N	I91 - BRIDGE NO. 41S	I91 - BRIDGE NO. 41C	I91 BRIDGE NO. 42N	I91 - BRIDGE NO. 42S	I91 - BRIDGE NO. 43S	I91 - BRIDGE NO. 44N	I91 - BRIDGE NO. 44S	I91 - BRIDGE NO. 15N	I91 - BRIDGE NO. 15S	BRIDGE TOTAL	UNIT	ITEMS	ITEM NUMBER
	1200		1200	1500	1500				1200	6600	LF	TEMPORARY 12 INCH WHITE LINE, TYPE II TAPE	646.661
18	17	27	38	40	31	108	107	28	29	443	EACH	LINE STRIPING TARGETS	646.76
75	90	75	90	90	90	75	75	75	90	825	SF	PAVEMENT MARKING MASK	646.86

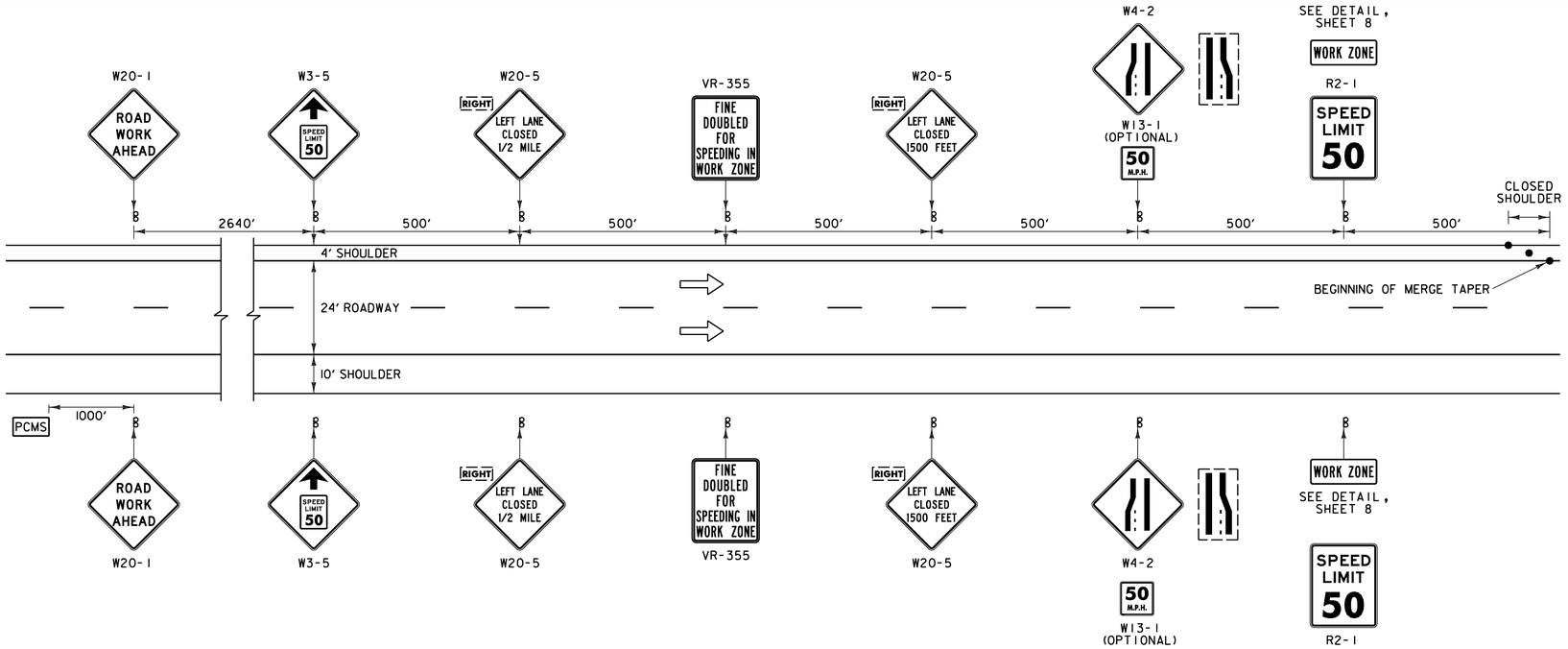
DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

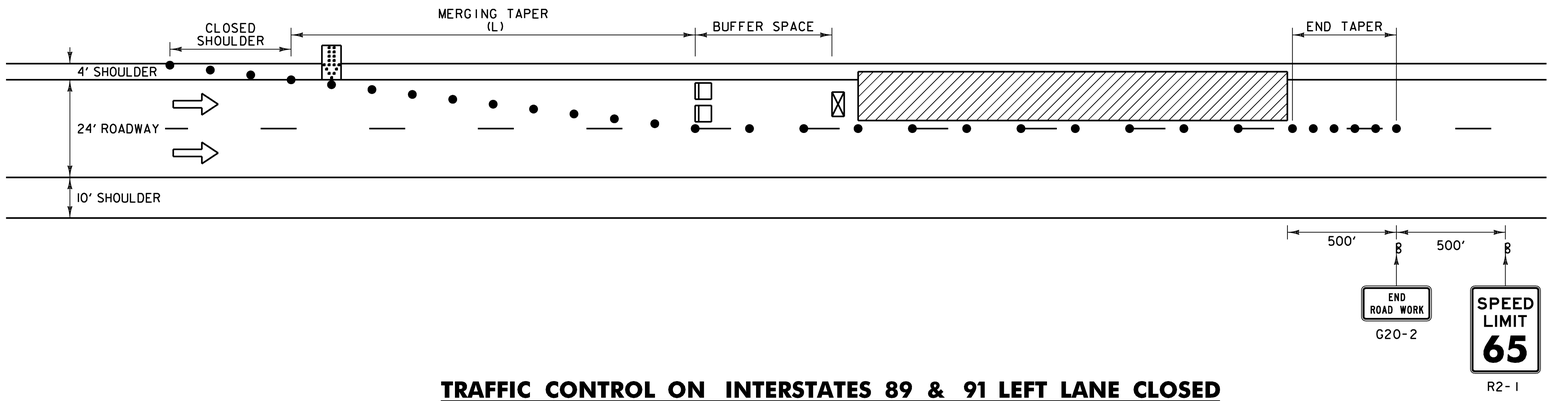
Stantec

PROJECT NAME: HARTFORD - SHARON
PROJECT NUMBER: IM MEMB (15)

FILE NAME: ...\drawing\Quantity sheet.dgn PLOT DATE: 7/29/2009
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE CHECKED BY: G. BOGUE
BRIDGE QUANTITY SHEET 2 SHEET 6 OF 47



CONSTRUCTION APPROACH SIGNING ON INTERSTATES 89 & 91 LEFT LANE CLOSED (RIGHT LANE CLOSURE SIMILAR – SEE NOTE 1)



TRAFFIC CONTROL ON INTERSTATES 89 & 91 LEFT LANE CLOSED (RIGHT LANE CLOSURE SIMILAR – SEE NOTE 1)

LEGEND

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

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

TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:
L = WS FOR POSTED SPEEDS OF 45 MPH OR GREATER
L = WS²/60 FOR POSTED SPEEDS OF 40 MPH OR LESS

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

TRAFFIC CONTROL NOTES:

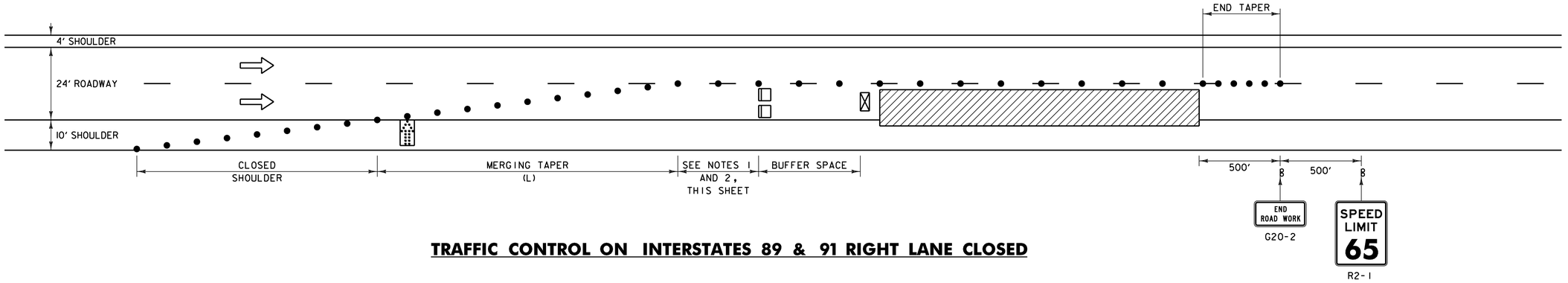
1. THE LEFT LANE CLOSURE IS SHOWN. THE RIGHT LANE APPROACH SIGNING IS SIMILAR. THE RIGHT LANE CLOSURE IS SHOWN ON TRAFFIC CONTROL SHEET 2.
2. THE EXISTING SPEED LIMIT IS 65 MPH. THE SPEED LIMIT WILL BE REDUCED TO 50 MPH IN THE WORK ZONE FOR THIS PROJECT. ANY EXISTING SPEED LIMIT SIGNS WITHIN THE SPEED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

Stantec

PROJECT NAME: HARTFORD - SHARON
PROJECT NUMBER: IM MEMB (15)

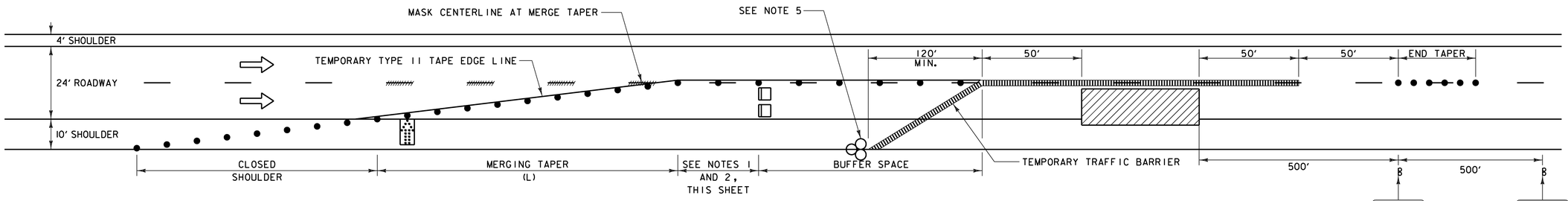
FILE NAME: ...\Plot Files\06 tcs 1.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: M. CHENETTE
TRAFFIC CONTROL SHEET 1

PLOT DATE: 7/29/2009
DRAWN BY: E. ALLING
CHECKED BY: M. CHENETTE
SHEET 7 OF 47

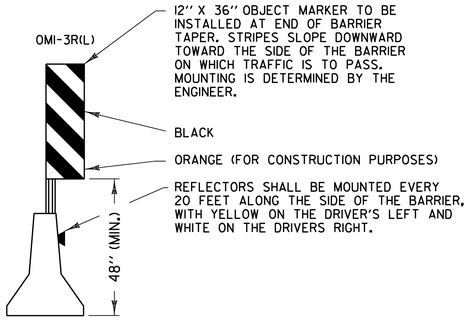


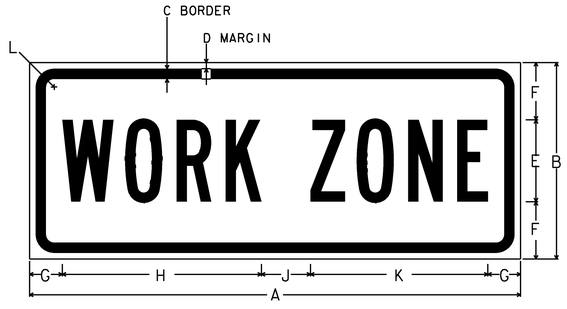
TRAFFIC CONTROL ON INTERSTATES 89 & 91 RIGHT LANE CLOSED

NOTE: TRAFFIC CONTROL NOTES ON SHEET 5 (TRAFFIC CONTROL SHEET 1) APPLY TO THIS DETAIL.



TRAFFIC CONTROL ON INTERSTATES 89 & 91 RIGHT LANE CLOSED WITH TEMPORARY BARRIER PROTECTION (SEE NOTE 4) (LEFT LANE CLOSED SIMILAR)





DIMENSIONS (INCHES)											
	A	B	C	D	E	F	G	H	J	K	L
MIN.	24	8	0.375	0.375	4B	2	2	9.5	2	8.5	1.5
SPEC.	30	12	0.375	0.625	5B	3.5	2	12.2	3	8.5	1.5
EXPWY.	36	12	0.50	0.75	6B	3	2.5	14.8	3	8.5	1.875
FWY.	48	18	0.625	0.875	8B	4	3.5	19.1	4	8.5	2.25

WORK ZONE SIGN DETAIL

NOT TO SCALE

LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- PORTABLE ARROW BOARD
- TYPE III BARRICADE
- WORK AREA
- ENERGY ABSORPTION ATTENUATOR
- TRUCK-MOUNTED ATTENUATOR
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (SEE NOTE 15 ON TRAFFIC CONTROL SHEET 1)

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

TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:
L = WS FOR POSTED SPEEDS OF 45 MPH OR GREATER
L = WS²/60 FOR POSTED SPEEDS OF 40 MPH OR LESS

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

TRAFFIC CONTROL NOTES:

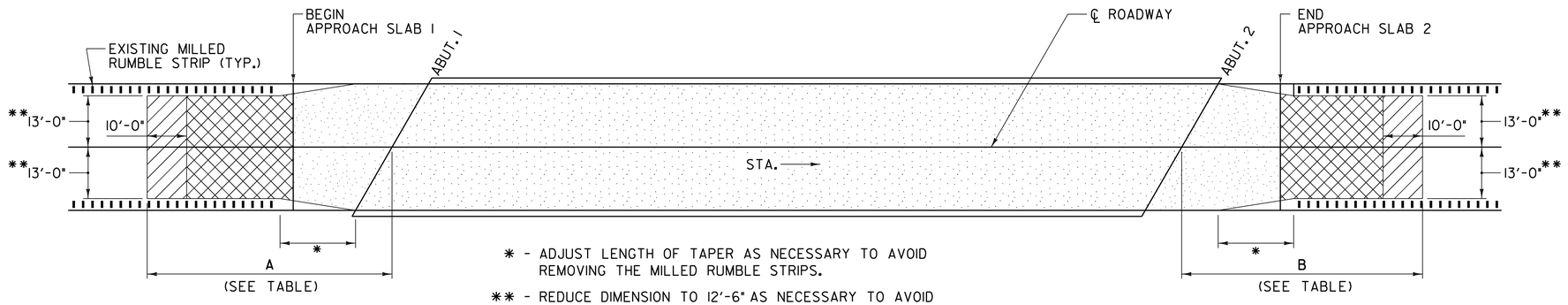
1. FOR BRIDGES 41S, 42N & 15N&S, TRAFFIC CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD E-106, "MAINLINE LANE CLOSURE AT AN EXIT RAMP". FOR BRIDGES 42S & 43S, TRAFFIC CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD E-106, "MAINLINE LANE CLOSURE AT AN ENTRANCE RAMP".
2. FOR ALL REMAINING BRIDGES THE RIGHT LANE CLOSURE SHALL BE AS SHOWN ABOVE WITH ZERO FEET BETWEEN THE MERGING TAPER (L) AND THE BUFFER SPACE.
3. SEE SHEET 7 (TRAFFIC CONTROL SHEET 1) FOR ADDITIONAL NOTES AND APPROACH SIGNING NOT SHOWN.
4. IF THE LANE CLOSURE IS TO LAST LONGER THAN 3 DAYS, THE CONTRACTOR SHALL USE TEMPORARY TRAFFIC BARRIER AS SHOWN ON THIS SHEET.
5. LOCATE THE END OF THE TEMPORARY TRAFFIC BARRIER SO THAT THE EXISTING STEEL BEAM GUARDRAIL CAN BE BOLTED TO THE END OF THE BARRIER. IF IT IS NOT POSSIBLE TO FASTEN THE BARRIER TO THE EXISTING ROADWAY GUARDRAIL, AN ENERGY ABSORPTION ATTENUATOR SHALL BE LOCATED AT THE END OF THE BARRIER. COST OF ATTACHING TEMPORARY TRAFFIC BARRIER TO THE STEEL BEAM GUARDRAIL AND COSTS FOR DISMANTLING BARRIER CONNECTION AND RESTORING EXISTING BARRIER TO ORIGINAL CONFIGURATION WILL BE INCIDENTAL TO ITEM 621.90. ANY DAMAGED EXISTING STEEL BEAM GUARDRAIL CAUSED BY CONNECTING IT TO THE BARRIER SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

Stantec

PROJECT NAME: HARTFORD - SHARON
PROJECT NUMBER: IM MEMB (15)

FILE NAME: ...\Plot Files\07 tcs 2.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: M. CHENETTE
TRAFFIC CONTROL SHEET 2

PLOT DATE: 7/29/2009
DRAWN BY: E. ALLING
CHECKED BY: M. CHENETTE
SHEET 8 OF 47



* - ADJUST LENGTH OF TAPER AS NECESSARY TO AVOID REMOVING THE MILLED RUMBLE STRIPS.

** - REDUCE DIMENSION TO 12'-6" AS NECESSARY TO AVOID REMOVING THE MILLED RUMBLE STRIP.

COLD PLANE - 1¼"

COLD PLANE - 2½"

PAVEMENT REMOVAL - TO THE TOP OF THE CONCRETE BRIDGE DECK OR APPROACH SLAB AND REMOVE THE BARRIER MEMBRANE. REMOVAL OF THE BIT. CONC. PAV'T. WILL BE PAID FOR UNDER ITEM 529.10. REMOVAL OF THE BARRIER MEMBRANE WILL BE PAID FOR UNDER ITEM 580.16.

BITUMINOUS CONCRETE REMOVAL PLAN

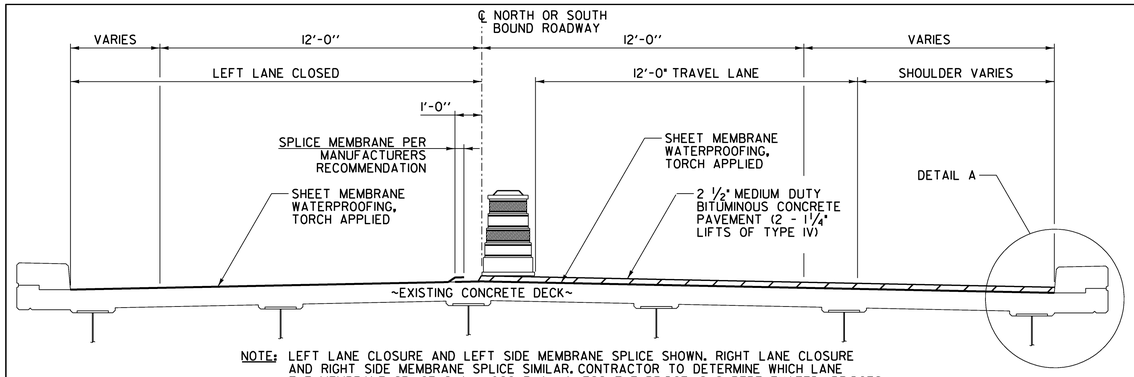
NOT TO SCALE

BRIDGE NO.	A (FT)	B (FT)
41N	60.0	60.0
41S	60.0	60.0
41C	60.0	60.0
42N	100.0	60.0
42S	100.0	100.0
43S	100.0	100.0
44N	120.0	120.0
44S	120.0	120.0
15N	100.0	100.0
15S	100.0	100.0

Stantec

PROJECT NAME: HARTFORD - SHARON
PROJECT NUMBER: IM MEMB (15)

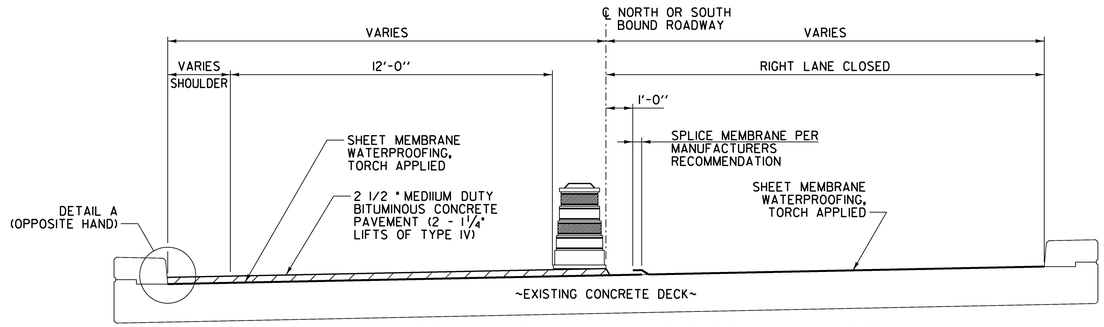
FILE NAME: ...\08 bit conc removal plan.dgn PLOT DATE: 7/29/2009
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE CHECKED BY: M. CHENETTE
BITUMINOUS CONCRETE REMOVAL PLAN SHEET 9 OF 47



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

MEMBRANE SPLICE DETAIL – NORMAL CROWN ROADWAY

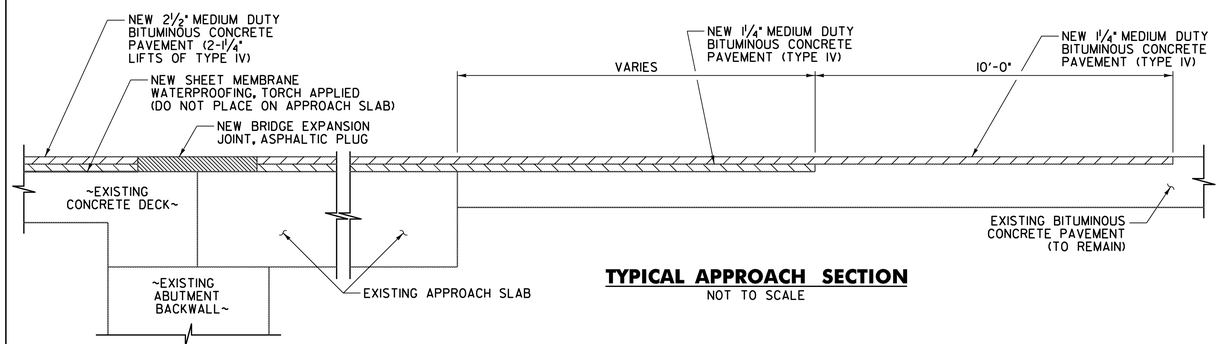
NOT TO SCALE



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

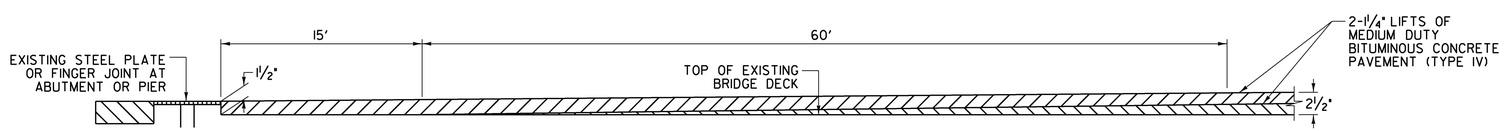
MEMBRANE SPLICE DETAIL – SUPERELEVATED ROADWAY

NOT TO SCALE



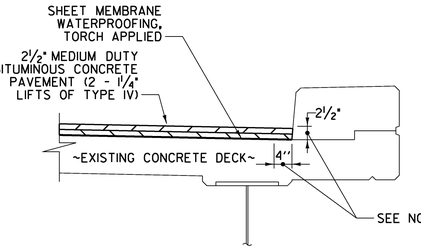
TYPICAL APPROACH SECTION

NOT TO SCALE



PAVEMENT TAPER DETAIL – BR 41N&S, BR 41C, BR 42N&S, 43S & BR 44N&S

NOT TO SCALE



DETAIL A

NOT TO SCALE

DETAIL A NOTES:

1. INDICATES AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF TWO COATS OF POLYURETHANE MEMBRANE.
2. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING, TORCH APPLIED.
3. SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.
4. IN ADDITION TO THE REQUIREMENTS OF SUBSECTION 519.04, BLAST CLEAN 2½" UP THE FACE OF CURB PRIOR TO PLACING THE MEMBRANE.

NOTE: FOR PG BINDER GRADE SEE SECTION 406 OF THE GENERAL SPECIAL PROVISIONS.

BRIDGE LENGTH AND WIDTH (CURB TO CURB)

	WIDTH (CURB TO CURB) (FEET)	LENGTH (FEET)
41 NORTH	38.00	112
41 SOUTH	38.00	99
41 RAMP C	24.00	228
42 NORTH	42.00	346
42 SOUTH	42.00	326
43 SOUTH	42.00	202
44 NORTH	30.00	1198
44 SOUTH	30.00	1178
15 NORTH	37.25	168
15 SOUTH	37.25	176

ASPHALTIC PLUG JOINT REPLACEMENT SCHEDULE

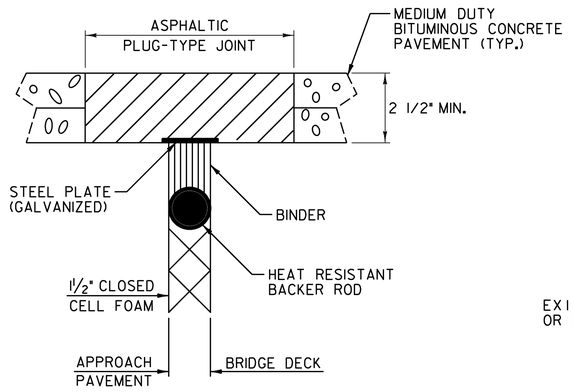
BRIDGE NO.	ABUT. 1	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	ABUT. 2
41 NORTH	--							40.0 LF
41 SOUTH	39.0 LF							39.0 LF
41 RAMP C	24.0 LF	--						24.0 LF
42 NORTH	--	--	--	--				54.0 LF
42 SOUTH	--	--	--	--				54.0 LF
43 SOUTH	46.0 LF	46.0 LF	--					46.0 LF
44 NORTH	30.0 LF	--	--	--	--	--	--	30.0 LF
44 SOUTH	30.0 LF	--	--	--	--	--	--	30.0 LF
15 NORTH	48.0 LF	--	--					48.0 LF
15 SOUTH	48.0 LF	--	--					48.0 LF

Stantec

PROJECT NAME: HARTFORD - SHARON
PROJECT NUMBER: IM MEMB (15)

FILE NAME: ...\09 bit conc details.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: M. CHENETTE
BITUMINOUS CONCRETE DETAILS

PLOT DATE: 7/29/2009
DRAWN BY: E. ALLING
CHECKED BY: M. CHENETTE
SHEET 10 OF 47



ASPHALTIC PLUG-TYPE JOINT DETAIL

NOTES:

1. THE JOINT SHALL BE LOCATED CENTRALLY OVER THE DECK EXPANSION GAP OR FIXED JOINT MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.
2. THE JOINT SHALL BE EXCAVATED AS SHOWN ON THE PLANS BY USE OF SAWS AND PNEUMATIC HAMMER OR A HAMMER AND CHISEL.
3. THE JOINT AREA SHALL BE BLAST CLEANED OF DEBRIS AND ASPHALT. THE JOINT AREA SHALL BE THOROUGHLY DRIED USING HOT COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.
4. SPALLED AND DEFECTIVE CONCRETE SHALL BE REPAIRED WITH AN APPROVED MATERIAL AS AGREED UPON BY THE RESIDENT ENGINEER.
5. PROPERLY SIZED HEAT RESISTANT BACKER ROD SHALL BE PLACED IN THE MOVEMENT GAP ALLOWING FOR 1INCH +/- OF BINDER ABOVE THE ROD.
6. THE BINDER MATERIAL SHALL BE HEATED AND PLACED AS RECOMMENDED BY THE MANUFACTURER.
7. PLACE 1/4 INCH THICK BY 8 INCH WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRESTAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER.
   A. THE STEEL PLATES MAY BE OMITTED WHERE THE APPROACH SLAB IS COVERED WITH A STONE BASE OR BITUMINOUS PAVEMENT AND VERTICAL MOVEMENT OF THE PLATES MIGHT OCCUR.
8. THE BINDER MATERIAL AND AGGREGATE SHALL BE HEATED AND MIXED AS RECOMMENDED BY THE MANUFACTURER.
9. THE INSTALLATION OF MATERIAL, COMPACTION, AND TOPCOATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.
10. IMMEDIATELY AFTER TOPCOATING, AN ANTI-SKID MATERIAL SHALL BE CAST OVER THE JOINT TO REDUCE THE RISK OF TRACKING.
11. JOINT SHALL BE PROTECTED FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 125°F ±.

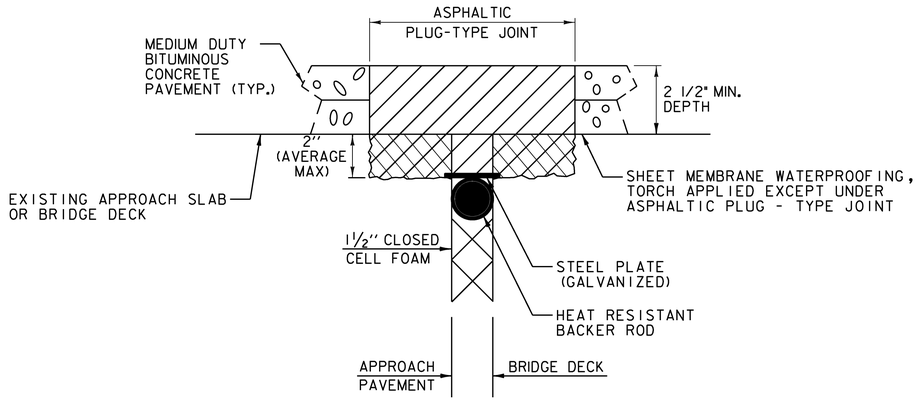
WEATHER LIMITATIONS

BINDER MATERIAL SHALL BE APPLIED ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL:

A. THE AMBIENT AIR TEMPERATURE IS AT LEAST 50° F AND RISING.

B. THE ROAD SURFACE IS SUFFICIENTLY DRY.

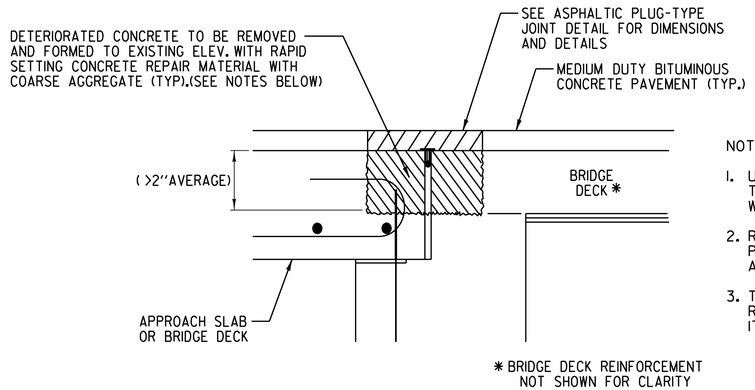
C. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



ASPHALTIC PLUG-TYPE JOINT DETAIL REMOVAL OF UP TO 2" DETERIORATED CONCRETE

NOTES:

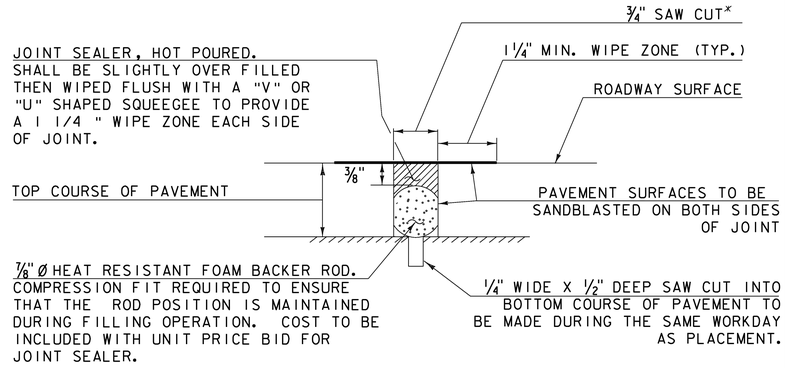
1. UPON ENCOUNTERING UP TO 2" AVERAGE OF DETERIORATED CONCRETE, THE CONTRACTOR SHALL REMOVE THE DETERIORATED MATERIAL AND REPLACE IT WITH THE ASPHALTIC PLUG JOINT MATERIAL AS DIRECTED BY THE RESIDENT ENGINEER.
2. REMOVAL OF THE DETERIORATED CONCRETE WILL NOT BE PAID SEPARATELY BUT WILL BE CONSIDERED INCIDENTAL TO THE UNIT BID PRICE FOR ITEM 516.10. THE ADDITIONAL PLUG JOINT MATERIAL BELOW THE DESIGN DEPTH REQUIRED TO REPLACE THE DETERIORATED CONCRETE WILL BE CONSIDERED INCIDENTAL TO THE UNIT BID PRICE FOR THE ITEM 516.10.
3. THE STEEL PLATE IN THE ASPHALTIC PLUG JOINT MAY BE OMITTED ONLY IF THE REPAIRED SURFACE IS SO IRREGULAR IT WILL CAUSE VERTICAL MOVEMENT AND IT IS DIRECTED BY THE RESIDENT ENGINEER.



NOTES:

1. UPON ENCOUNTERING GREATER THAN 2" AVERAGE OF DETERIORATED CONCRETE, THE CONTRACTOR SHALL REMOVE THE DETERIORATED MATERIAL AND REPLACE IT WITH RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
2. REMOVAL OF THE DETERIORATED CONCRETE WILL BE INCLUDED IN THE UNIT BID PRICE FOR ITEM 580.20 RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE.
3. THE STEEL PLATE IN THE ASPHALTIC PLUG JOINT MAY BE OMITTED ONLY IF THE REPAIRED SURFACE IS SO IRREGULAR IT WILL CAUSE VERTICAL MOVEMENT AND IT IS DIRECTED BY THE RESIDENT ENGINEER.

ASPHALTIC PLUG-TYPE JOINT DETAIL REMOVAL OF >2" DETERIORATED CONCRETE



NOTE: PLACE JOINT SEALER, HOT POURED AT THE BEGINNING OF APPROACH SLABS.

SAWED PAVEMENT JOINT DETAIL

N. T. S.

*JOINT IS TO BE LOCATED ACCURATELY BY STRING LINING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUTS WILL BE MADE DIRECTLY OVER THE END OF CONCRETE DECK. JOINT SHALL BE CUT DRY IN A SINGLE PASS AND BE SEALED WITHIN 24 HOURS OR PRIOR TO EXPOSURE TO TRAFFIC. JOINT SHALL BE CLEANED PRIOR TO APPLYING THE JOINT SEALER.

Stantec

PROJECT NAME:	HARTFORD - SHARON
PROJECT NUMBER:	IM MEMB (15)
FILE NAME: ...\10 pavement joint details.dgn	PLOT DATE: 7/29/2009
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE	CHECKED BY: M. CHENETTE
PAVEMENT JOINT DETAILS	SHEET 11 OF 47

INDEX OF SHEETS

SHEET NO. 1		TITLE PAGE
2		ALIGNMENT SHEET
3-4		TYPICAL CROSS-SECTION OF IMPROVEMENT (3" BIT. CONC. PAVT. ITEM 351-B MOD.)
5		TYPICAL CROSS-SECTION - ONE WAY RAMP
6		TYPICAL CROSS-SECTION - TWO WAY RAMP, SPEED CHANGE LANE
7		QUANTITY SHEET (ITEMS)
8		R.O.W. DETAIL SHEET
9-10		QUANTITY SHEETS (DRAINAGE)
11-16		EARTHWORK SHEET
17		BLANK
18-35		PLAN AND PROFILE SHEETS
36-40		RAMP TERMINAL DETAILS
41		BLANK
42-44		BLANK
45	A-61	SOLID ROCK EXCAVATION
46	B-1	BANKING TABLES
47	B-5	SLOPE ROUNDING
48	B-6	MUCK EXCAVATION
49		BLANK
50	D-2	HEADWALLS AND UNDERDRAIN
51	D-3	TREATED GUTTERS
52	D-4	MISC. METAL PIPE DETAILS
53	D-8	DROP INLETS
54	D-10	DROP INLET TOPS
55	D-11	TYPE A GRATE
56	D-13	CONC. CATCH BASIN
57		BLANK
58	D-16	PRECAST CURB D.I. TYPE B GRATE
59		BLANK
60	E-31	CONSTRUCTION IDENTIFICATION SIGNS
61	F-1	PROPERTY LINE FENCE
62	G-3a	DEAD END ANCHORAGE AT BRIDGE APPROACH
63	J-1	BOUNDARY MARKERS
64	J-4	FIELD OFFICE
65		DETAILS OF 84" CGMPP AT N.B. STA 3717+65
66-67		BLANK
68-90		DETAILS OF I 91 BRIDGE OVER RAMP C AT STA 3702+54.90, BR. 100-122
91		SCB-38-62
92-94		SCWPG-30-62 (SHEET 1, 2, 4)
95-119		DETAILS OF I 91 BRIDGE OVER I 89 AT STA 3709+70.57, BR. 200-224
120		SCB-42-62
121-132		DETAILS RAMP C BRIDGE OVER I 89 AT RAMP C 27+07.15, BR. 300-311
133		BLANK
134-139		SCB-D1, D2, D4, D6, D8, D9, -62
140-141		SB-59-62
142		BLANK
143-146		BLANK
147-179		CROSS SECTIONS, INTERSTATE
180-260		CROSS SECTIONS, RAMPS
261-262		BLANK
263		CROSS SECTIONS - CHANNEL LINE RAMP A 25+17.19
264-265		BLANK

7 Final Earth Work Sheets
Structural Steel
Extended Weights
22 Drainage Sheets

9 Sheets Revised Sections
21 Drainage Sheets
28 Prints of Bridge Steel

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

INTERSTATE PROJECT

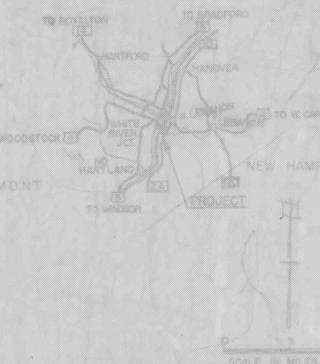
TOWN OF HARTFORD
COUNTY OF WINDSOR
INTERSTATE ROUTE 91

BELLOWS FALLS-WHITE RIVER JCT. ROAD

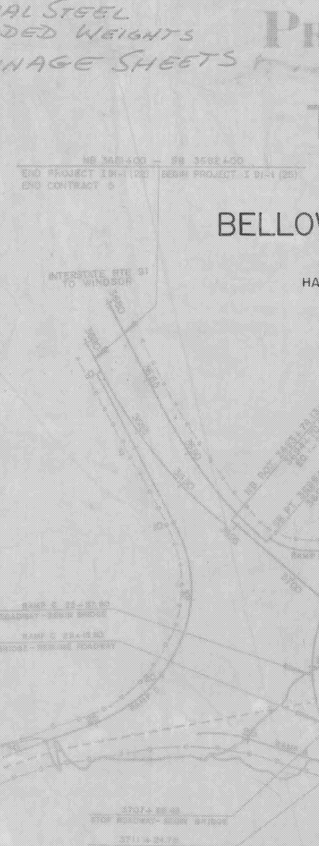
PROJECT I 91-1 (25)

BEGINNING AT A POINT 1.707 MILES NORTHERLY OF THE HARTLAND-HARTFORD TOWN LINE AND EXTENDING NORTHERLY 0.793 MILE

LENGTH OF ROADWAY 3,746.06 FEET = 0.709 MILE
LENGTH OF BRIDGE 441.90 FEET = 0.084 MILE
LENGTH OF PROJECT 4,187.96 FEET = 0.793 MILE



PROJECT NAME & NUMBER	TYPE STAGE I
HARTFORD I 91-1(25)	GRADING & DRAINAGE
RECORD PLANS	
MATERIALS	
SUBBASE OF SAND — LUCE PIT — HARTFORD, VT.	
SUBBASE OF CRUSHED ROCK — TWIN STATE SAND & GRAVEL CO., INC. — WEST LEBANON, N.H.	
CONCRETE CLASS AA & B — MILLER TRANSIT MIX CONC. — W. LEBANON, N.H.	
STRUCTURAL STEEL & STEEL PILING — WEST END IRON WORKS — CAMBRIDGE, MASS.	
REINFORCING STEEL — REPUBLIC STEEL CORP. — BUFFALO, N.Y.	
ASPHALTIC ASBESTOS COATING — CONSTRUCTORS INC. — LEXINGTON, MASS.	
GRANITE BRIDGE CURB — FLETCHER GRANITE CO. — CHELMSFORD, MASS.	
BRIDGE RAILING — WARD WELLER CO. INC. — NEEDHAM HEIGHTS, MASS.	
JOINT SEALER (PREFORMED) — TOCH BROTHERS — PATERSON, N.J.	
BRIDGE PAINT — AMSTERDAM COLOR WORKS — NEW YORK, N.Y.	
REINF. CONC. PIPE, PREC. R.C. CURB, DROP INLETS, BOUNDARY MARKERS & PROPERTY LINE FENCE W/STEEL POSTS — S.T. GRISWOLD & CO., INC. — ESSEX JUNCTION, VT.	
METAL CULVERT PIPE — NEW ENGLAND METAL CULVERT CO. — WHITE RIVER JUNCTION, VT.	
CAST IRON GRATES — E.L. LEBARON FOUNDRY CO. — BROCKTON, MASS.	
CONTRACTOR — LANDERS & GRIFFIN INC., MORRISON KNUDSEN CO., INC. PORTSMOUTH, N.H.	
CHIEF RESIDENT ENGINEER — ROY E. NICHOLSON.	
RESIDENT ENGINEERS — A.B. DELANO, G. ABAIR & A.J. DAVIS.	
INSPECTORS — S. MURRAY, A. NEWTON, D. SARGENT, J. WILMOTT & H. DAVIS.	
RECORD PLANS — GEORGE ABAIR.	
CONTRACT — DATED — SEPTEMBER 9, 1964.	
STARTED — SEPTEMBER 14, 1964.	
COMPLETED & ACCEPTED — FEBRUARY 9, 1966.	



HARTFORD I 91-1(25) STAGE 1
CONTRACTOR-LANDERS & GRIFFIN & MORRISON KNUDSEN CO., INC.
PORTSMOUTH, N.H.
CONSTRUCTION COMPLETED-FEBRUARY 9, 1966.
RECORD PLANS — GEORGE ABAIR.

RD
25) Stage 1. LENGTH 0.793 MI.
GRADING & DRAINAGE
SEE HARTFORD I 91-1(13) FOR STAGE 2.
CONTRACTOR LANDERS & GRIFFIN INC. MORRISON KNUDSEN CO., INC.
PORTSMOUTH, N. H. YEAR 1964-66.
LOCATION Beginning at a point 1.707 miles northerly of the Hartland-Hartford Town Line and extending northerly 0.793 mile.

U.S. 5 AND ALL TOWN ROADS ARE NOT IN THE CONSTRUCTION AREA EXCEPT AS INDICATED ABOVE

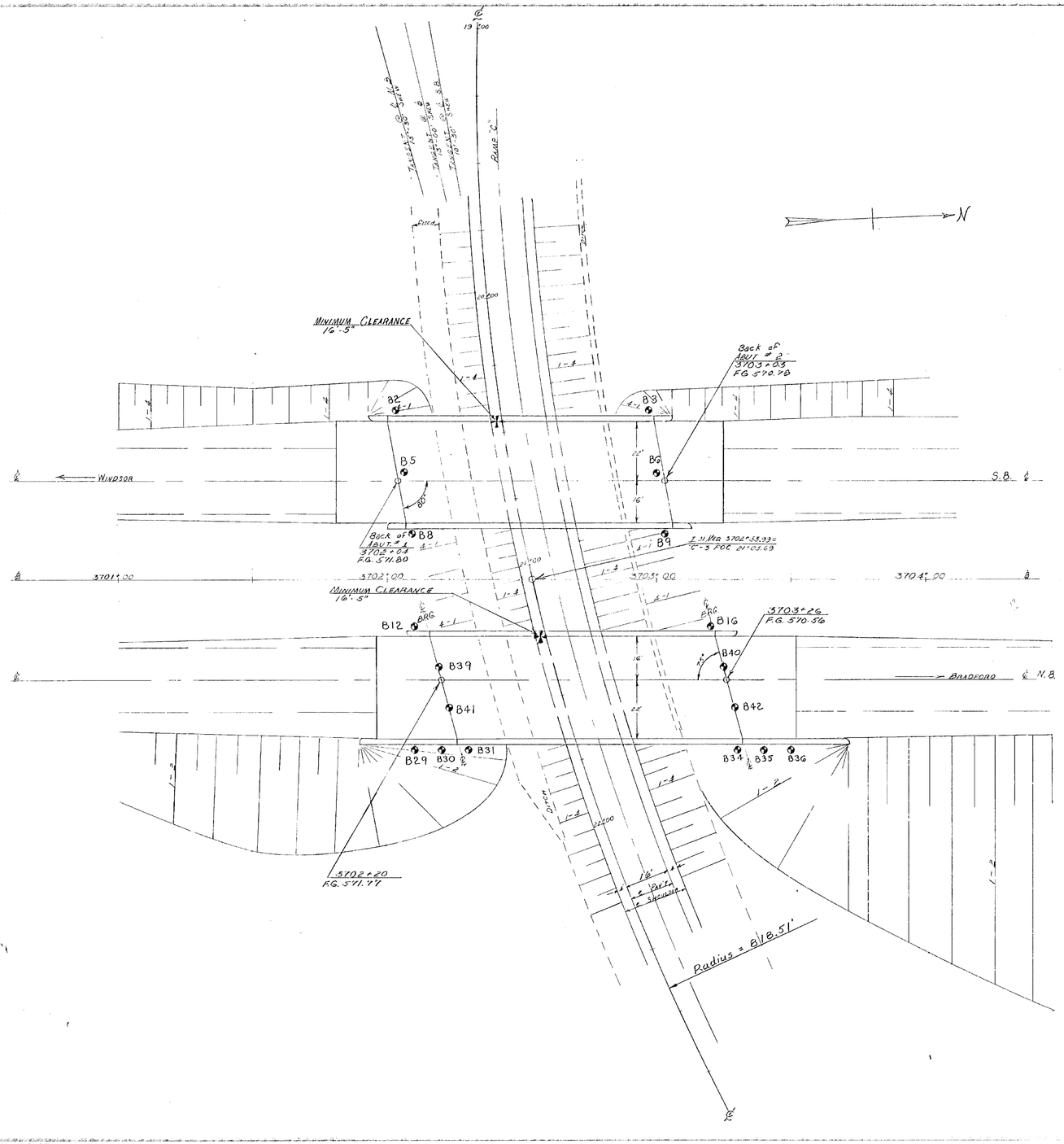
HARTFORD-SHARON
IM MEMB(15)

SHEET 12 OF 47
BRIDGE 41N&S
FOR REFERENCE ONLY

NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES AMOUNTS OR DETAILS RELATIVE TO THIS PROJECT MAY BE FOUND IN EITHER THE FIELD BOOKS OR THE ESTIMATE FILE.

DEPARTMENT OF HIGHWAYS
BUREAU OF PUBLIC RECORDS

75.0



HARTFORD-SHARON
IM MEMB(15)

SHEET 13 OF 47
BRIDGE 41N&S
FOR REFERENCE ONLY

Stage I & II Construction

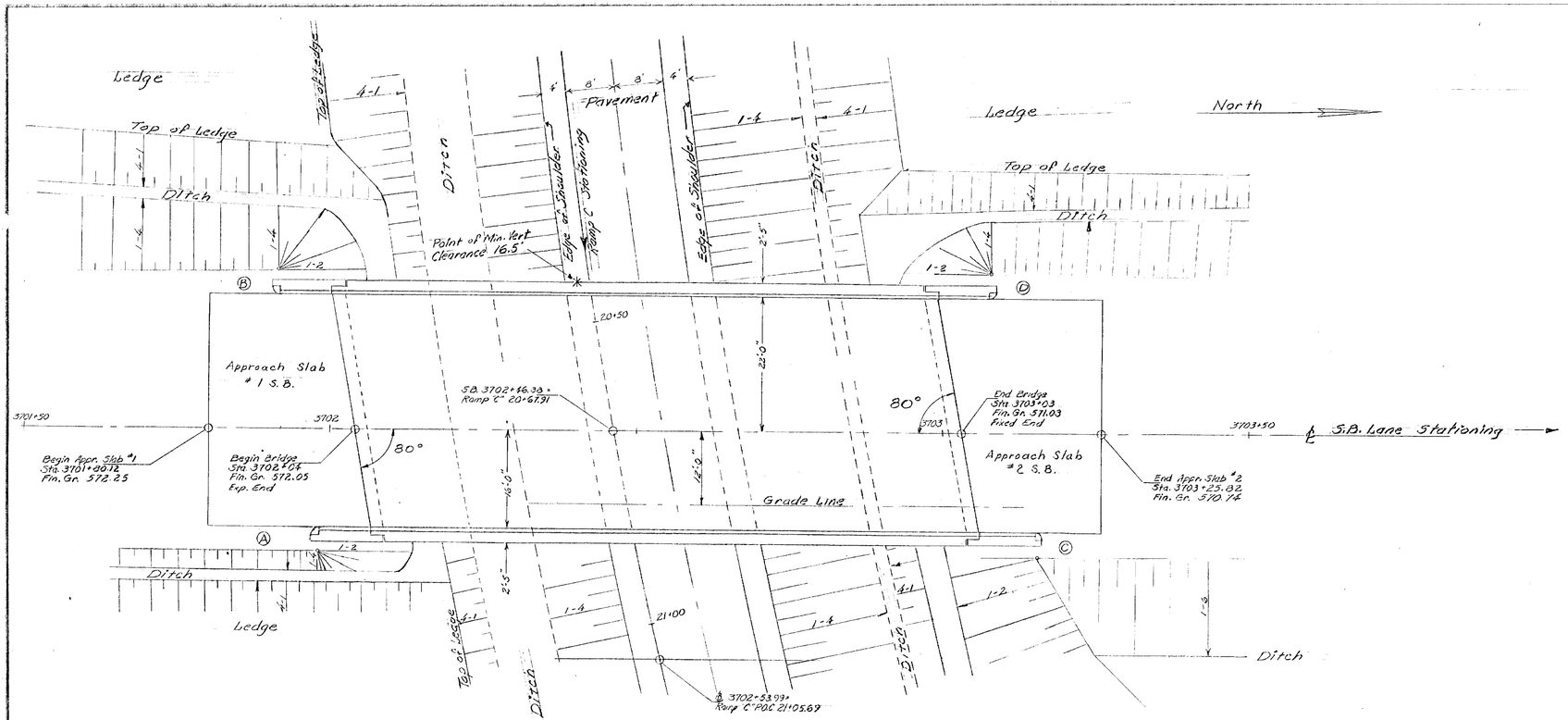
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Hartford
ROUTE NO. I 91 LOG STA.
I 91 over Ramp "C"
Preliminary Information - Plan
SCALE 1" = 20'
SURVEYED BY
DRAWN BY SWEARR CHECKED BY WBT
PROJECT NO. I 91-1(25)[131]
SHEET 62 OF 265 [173-62-11]

BR101

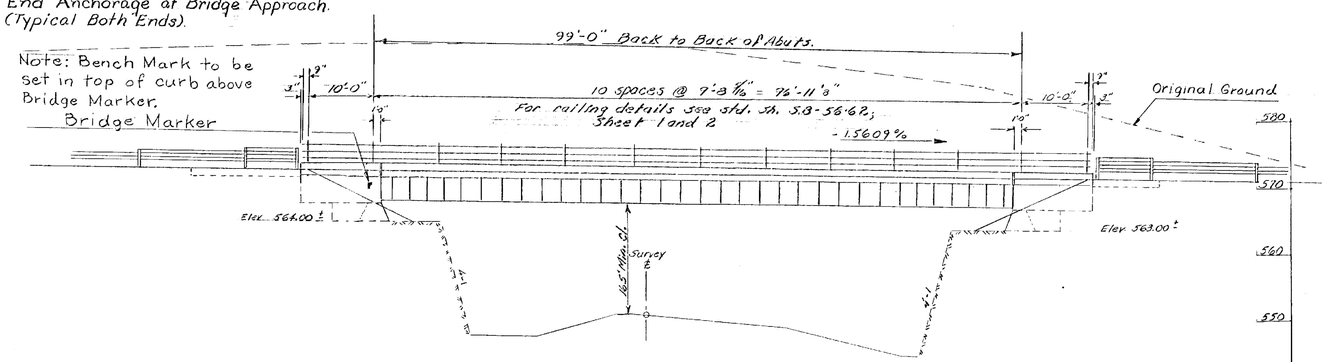
COMPLETED



PLAN

SCALE 1" = 10'

Note:
See Std. Dwg. G-3a For Dead End Anchorage at Bridge Approach. (Typical Both Ends).



ELEVATION

SCALE 1" = 10'

Notes

1. For General Notes see Std. Sh. SCB-D1-62.
2. Bridge railing is detailed for steel railing. Aluminum railing may be substituted with a maximum spacing of 7'-2" as per Std. Sh. SB-5G-62, sh. #1 & #2 Det. B.

List of Bridge Sheets

BR 100 Preliminary Information Sheet
BR 101 Preliminary Information Plan
BR 102&103 Boring Logs
BR 104 Bridge Quantity Sheet
BR 105 Plan and Elevation Southbound
BR 106 Superstructure Details S.B.
BR 107 Bearing Details S.B.
BR 108 Abutment No. 1 S.B.
BR 109 Abutment No. 2 S.B.
BR 110 Approach Slab No. 1 S.B.
BR 111 Approach Slab No. 2 S.B.
BR 112 Reinforcing Schedule S.B.
BR 113 Plan and Elevation Northbound
BR 114 Superstructure Details N.B.
BR 115 Abutment No. 1 N.B.
BR 116 Abutment No. 1 N.B. Details
BR 117 Abutment No. 2 N.B.
BR 118 Abutment No. 2 N.B. Details
BR 119 Approach Slab No. 1 N.B.
BR 120 Approach Slab No. 2 N.B.
BR 121&122 Reinforcing Schedule N.B.

Bridge Standard Sheets

SCB-D1-62; SCB-D2-62, Det. A, B, & C; SCB-D4-62; SCB-DG-62, Det. A, B, C & D; SCB-D9-62, Det. A; SCB-38-62; SCWPG-30-62, sheets 1, 2 & 4; SB-5G-62, sh. #1; SB-5G-62 sh. #2, Det. A and B; G-3a.

Reference Sheets

Plan and Profile I 91 Sta. 3702 to 3718
Cross Sections I 91 SB & N.B. Sta. 3701+0 to 3705+50
Profile Ramp C Sta. 1 to 32
Cross Sections Ramp C Sta 20+50 to 21+75

HARTFORD-SHARON
IM MEMB(15)

SHEET 14 OF 47
BRIDGE 41N&S
FOR REFERENCE ONLY

Stage I & II Construction

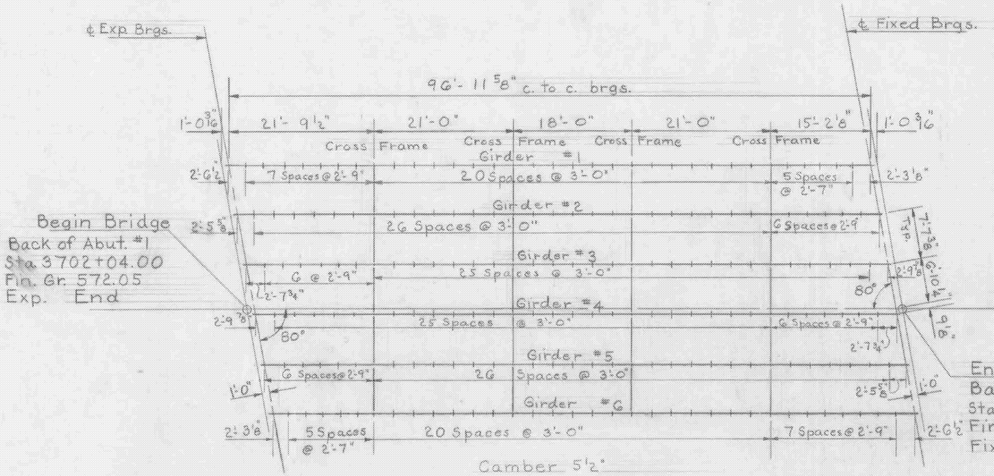
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

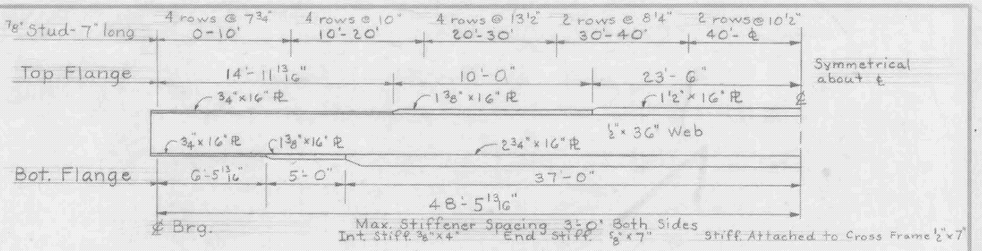
TOWNS OF Hartford
ROUTE NO. I-91 LOG STA.
INTERSTATE OVER RAMP "C" (South-Bound)
Plan and Elevation
SCALE 1" = 10'
SURVEYED BY JEWETT
DRAWN BY Wood CHECKED BY A.J.C.
PROJECT NO. I-91-1(23)1691
SHEET 73 OF 265 Sheet 175 of 2-12

BR-105

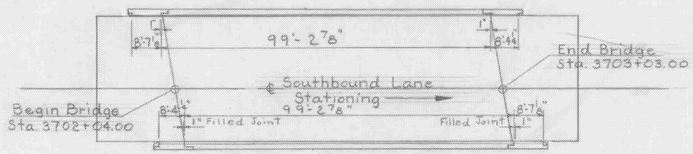
COMPLETE WMS



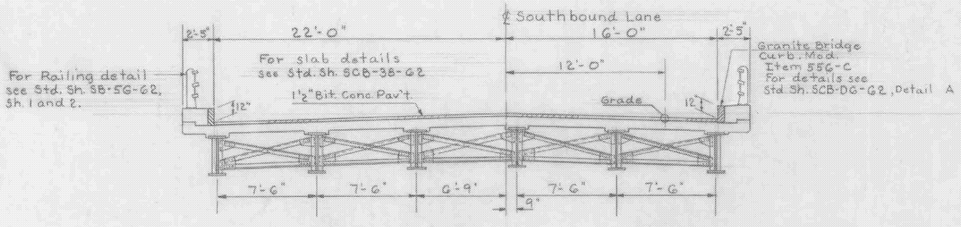
Framing Plan
Scale 1"=10'



Girder Section
Not to Scale

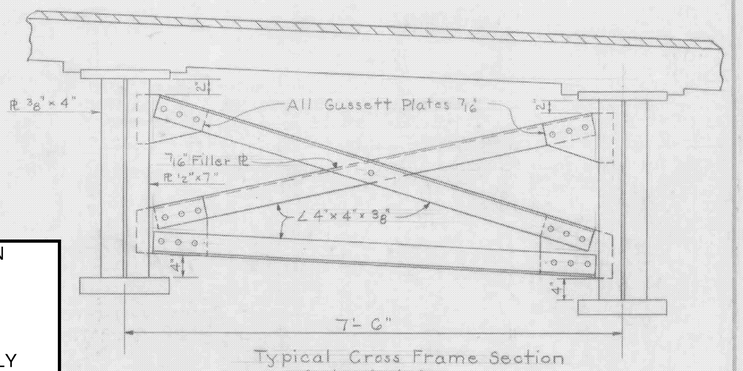


Curb Layout
Scale 1"=20'



Typical Section
Scale 1"=5'

Notes:
1. For General Notes see Std. Sh. SCB-D1-62.
2. Spiral reinforcement may be substituted for studs, on the basis of 1'2 pitches of 5/8"℄ spirals per double row of studs. Estimated weight given in Item 403 is based on spiral reinforcement.
3. * Indicates quantity to be included in roadway quantities.
4. See Std. Sh. SCB-D2-62, Detail C, for detail of beam haunch.
5. For details of joints at the ends of the bridge see Approach Slab Details sheets BR 110 & BR 111.



Typical Cross Frame Section
Scale 1"=1'-0"

HARTFORD-SHARON
IM MEMB(15)

SHEET 15 OF 47
BRIDGE 41N&S
FOR REFERENCE ONLY

Estimated Superstructure Quantities (S.B. Lane)

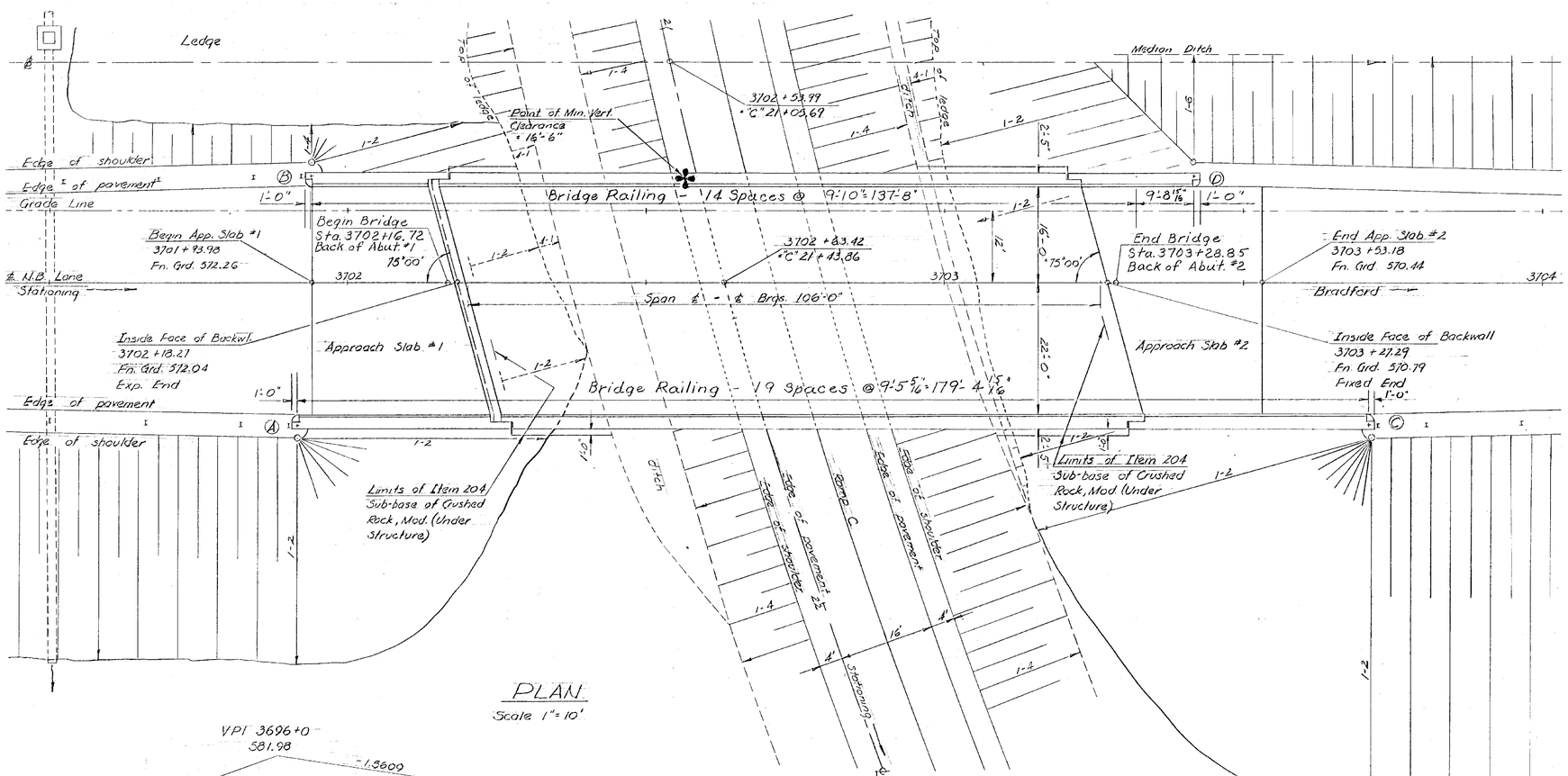
	ITEM NO.	ITEM	UNIT			TOTAL	FINAL
*	318	Tar Emulsion for Bridge Floors	Gal.			167	
*	361-B	Bituminous Conc. Pav't. Mod.					
		(Dense Graded Top Course)	Ton.			36	
*	372-A	Joint Sealer - Hot Poured	L.F.			118	
	372-C	Joint Sealer - Preformed	L.F.			136	
	401-AA	Concrete Class AA, Mod.	C.Y.			~~155~~	140
	402	Reinforcing Steel	Lb.			~~31,688~~	31,589
	403	Spiral Reinforcement (30GG")	L.S.			12 ✓	12
	404	Structural Steel (@ Sta. 3702+50	Lb.			~~165,300~~	170,474
	556-C	Granite Bridge Curb, Mod.	L.F.			~~143~~	198
	572	Bridge Railing	L.F.			~~238~~	343

Stage ℄ II Construction

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

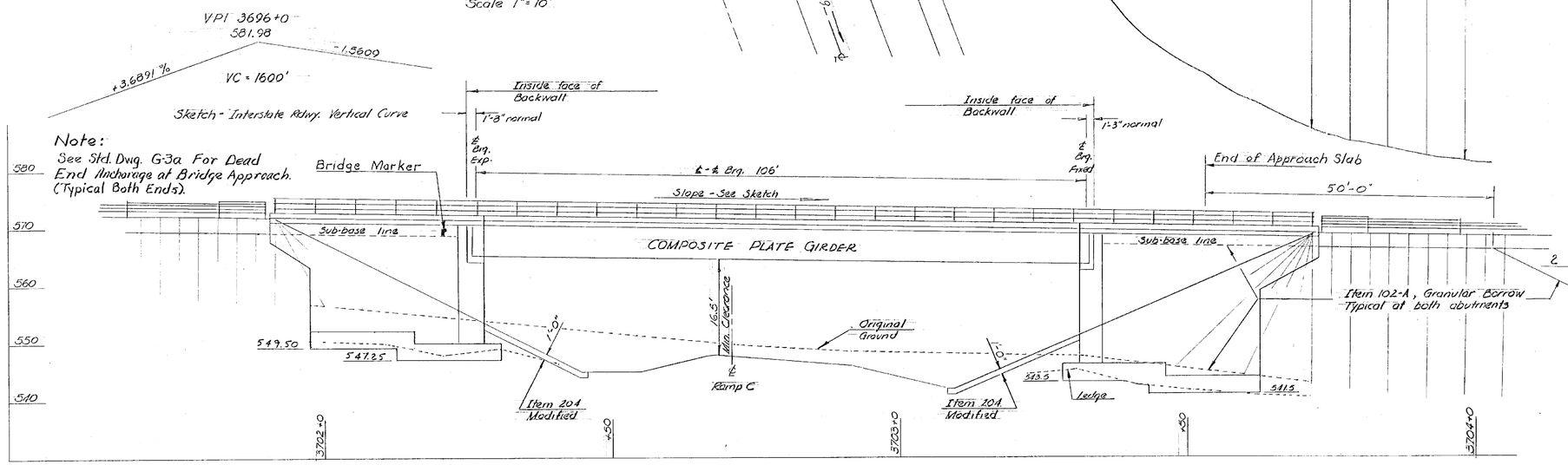
TOWN OF Hartford
ROUTE NO. I 91 LOG STA.
I 91 over Ramp C (Southbound)
Superstructure Details
SCALE As Noted
SURVEYED BY Jewett
DRAWN BY A.J.C. CHECKED BY Wood
PROJECT NO. I 91-1(25)
SHEET 74 OF 263 Sheet 170 of 242

BR-106



PLAN

Scale 1" = 10'



PROFILE

N.B. BRIDGE ALONG RT. FASCIA @ 21+69 "C" Scale 1"=10'

Notes

1. For General Notes see Std. Sh. SCB-D1-62 and SCWPG-30-62, sh. 1 of 4.
2. Bridge railing is detailed for steel railing. Aluminum railing may be substituted with a max. spacing of 7'-2" as per Std. Sh. SB-56-62, sh. #1 and sh. #2, Det. B.

HARTFORD-SHARON
IM MEMB(15)

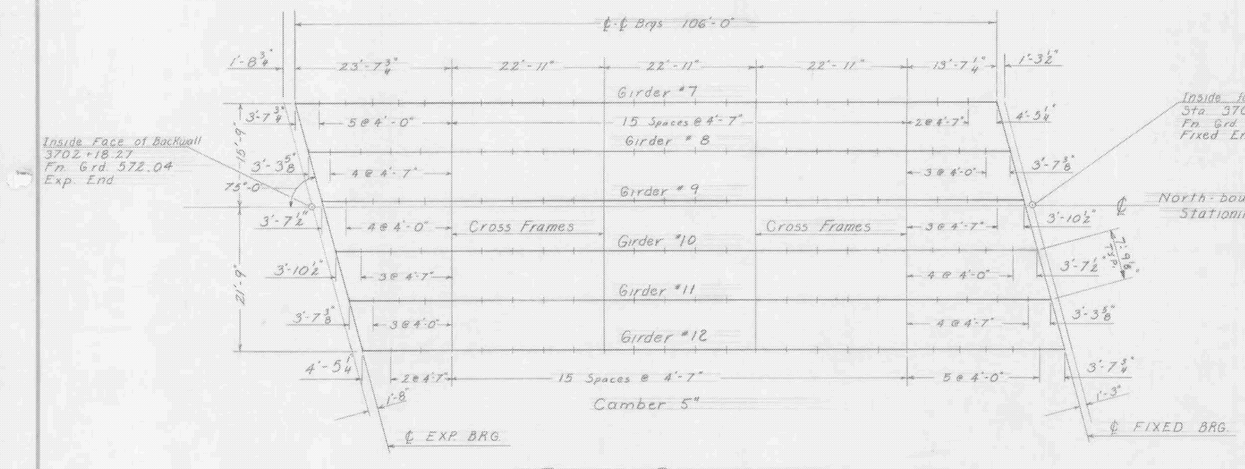
SHEET 16 OF 47
BRIDGE 41N&S
FOR REFERENCE ONLY

Stage I & II Construction

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. I91 LOG STA.
I91 OVER RAMP C NORTHBOUND
PLAN & ELEVATION
SCALE 1"=10'
SURVEYED BY JEWETT
DRAWN BY A.E.B. CHECKED BY A.J.C.
PROJECT NO. I91-1(65)(21)
SHEET 81 OF 265 Sheet 119 of 224

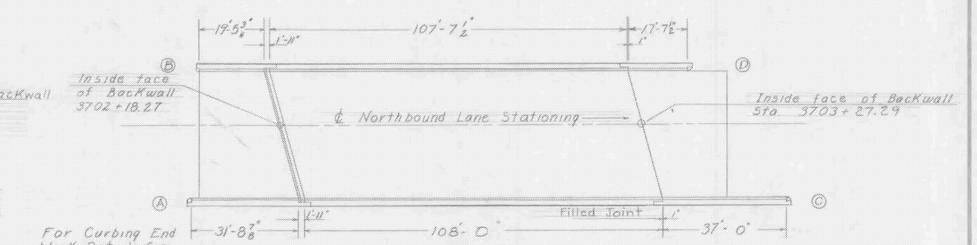
BR 1/3



FRAMING PLAN
Scale 1" = 10'

Max. Stiffener Spacing 4'-8" Both Sides
Int. Stiffeners 3/8" x 4"; End Stiffeners 5/8" x 7"
Brg. Stiffeners 1/2" x 7" where Cross frames attached.

GIRDER SECTION
No Scale



Expansion Joint Detail
Scale 1" = 2'-0"

CURB LAYOUT
Scale 1" = 20'

For Curbing End block Detail See Std. Shs. SCB-D4-62, SCB-D6-62 Det A, and Approach Slab Details sheets BR119 and BR120 (Section B-B)

TYPICAL SECTION
Scale 1" = 5'

For Railing detail See Std. Sh. SB-5G-62 Sh. 1 of 2

For Granite Curb detail See Std. Sh. SCB-D6-62 Detail A.

For details of cross frames, bearing devices, and other details not Shown, see Std. Str. SCWPG-30-62 Sh. 1, 2, & 3

NOTES

1. For General Notes For Welded Plate Girder Bridge See Std. Sh. SCWPG-30-62 Sh. 1.
2. Spiral reinforcement may be substituted for studs, on the basis of 1 1/2 pitches of 5/8"ϕ spiral per double row of studs. Estimated weight given in Item 403 is based on spiral reinforcement.
3. * Indicates item to be included in Roadway Quantities.
4. For details of joints other than shown at the ends of the bridge see Approach Slab Details, sheets BR119 and BR120.

DATA FOR GIRDER 15° SKEW

Span ℄ - ℄ Brg.	106'
Length of Girder	107'-8 3/4"
Size of Weld Ⓐ	5/16
" " " Ⓑ	5/16
" " " Ⓒ	5/16
" " " Ⓓ	3/8
Size End Stiff.	5/8" x 7"
" Int. "	3/8" x 4"
at Cross Frames	1/2" x 7"
Length 7/8" ϕ Studs	7"

Stage I & II Construction

HARTFORD-SHARON
IM MEMB(15)

SHEET 17 OF 47
BRIDGE 41N&S
FOR REFERENCE ONLY

Estimated Superstructure Quantities N.B Lane

	ITEM NO.	ITEM	UNIT			TOTAL	FINAL
*	318	Tar Emulsion for Bridge Floors	Gal.			181	
*	361-B	Bituminous Concrete Pave. Mod.					
		(Dense Graded Top Course)	Ton			40	
*	372-A	Joint Sealer-Hot Poured	L.F.			129	
	372-C	Joint Sealer-Preformed	L.F.			143	
	401-AA	Concrete Class AA, Mod.	C.Y.				137
	402	Reinforcing Steel	Lb.				33,515
	403	Spiral Reinforcement (2440*)	L.S.			1/2	1/2
	404-A	Structural Steel @ Sta. 3702+50	Lb.				170,827
	556-C	Granite Bridge Curb. Mod.	L.F.				215
	572	Bridge Railing	L.F.				331

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Hartford
ROUTE NO. I-91 LOG STA.
I91 over Ramp C (North bound)
Superstructure Details
SCALE AS INDICATED
SURVEYED BY
DRAWN BY A.R.B CHECKED BY A.J.C.
PROJECT NO. I 91-1 (25)
SHEET 82 OF 283 Sheet 180 of 282

BR 117

INDEX OF SHEETS

SHEET NO. 1		TITLE PAGE
2		ALIGNMENT SHEET
3-4		TYPICAL CROSS-SECTION OF IMPROVEMENT (3" BIT. CONC. PAVT. ITEM 351-B MOD.)
5		TYPICAL CROSS-SECTION - ONE WAY RAMP
6		TYPICAL CROSS-SECTION - TWO WAY RAMP, SPEED CHANGE LANE
7		QUANTITY SHEET (ITEMS)
8		R.O.W. DETAIL SHEET
9-10		QUANTITY SHEETS (DRAINAGE)
11-16		EARTHWORK SHEET
17		BLANK
18-35		PLAN AND PROFILE SHEETS
36-40		RAMP TERMINAL DETAILS
41		BLANK
42-44		BLANK
45	A-61	SOLID ROCK EXCAVATION
46	B-1	BANKING TABLES
47	B-5	SLOPE ROUNDING
48	B-6	MUCK EXCAVATION
49		BLANK
50	D-2	HEADWALLS AND UNDERDRAIN
51	D-3	TREATED GUTTERS
52	D-4	MISC. METAL PIPE DETAILS
53	D-8	DROP INLETS
54	D-10	DROP INLET TOPS
55	D-11	TYPE A GRATE
56	D-13	CONC. CATCH BASIN
57		BLANK
58	D-16	PRECAST CURB D.I. TYPE B GRATE
59		BLANK
60	E-31	CONSTRUCTION IDENTIFICATION SIGNS
61	F-1	PROPERTY LINE FENCE
62	G-3a	DEAD END ANCHORAGE AT BRIDGE APPROACH
63	J-1	BOUNDARY MARKERS
64	J-4	FIELD OFFICE
65		DETAILS OF 84" CGMPP AT N.B. STA 3717+65
66-67		BLANK
68-90		DETAILS OF I 91 BRIDGE OVER RAMP C AT STA 3702+54.90, BR. 100-122
91		SCB-38-62
92-94		SCWPG-30-62 (SHEET 1, 2, 4)
95-119		DETAILS OF I 91 BRIDGE OVER I 89 AT STA 3709+70.57, BR. 200-224
120		SCB-42-62
121-132		DETAILS RAMP C BRIDGE OVER I 89 AT RAMP C 27+07.15, BR. 300-311
133		BLANK
134-139		SCB-D1, D2, D4, D6, D8, D9, -62
140-141		SB-59-62
142		BLANK
143-146		BLANK
147-179		CROSS SECTIONS, INTERSTATE
180-260		CROSS SECTIONS, RAMPS
261-262		BLANK
263		CROSS SECTIONS - CHANNEL LINE RAMP A 25+17.19
264-265		BLANK

7 Final Earth Work Sheets
Structural Steel
Extended Weights
22 Drainage Sheets

9 Sheets Revised (Section)
21 Drainage Sheets
28 Prints of Bridge Steel

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

INTERSTATE PROJECT

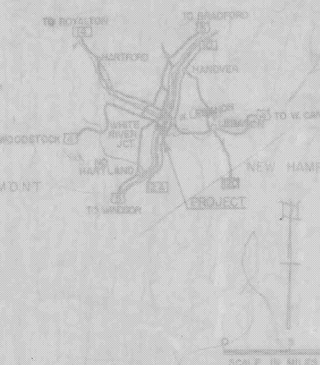
TOWN OF HARTFORD
COUNTY OF WINDSOR
INTERSTATE ROUTE 91

BELLOWS FALLS-WHITE RIVER JCT. ROAD

PROJECT I 91-1 (25)

BEGINNING AT A POINT 1.707 MILES NORTHERLY OF THE HARTLAND-HARTFORD TOWN LINE AND EXTENDING NORTHERLY 0.793 MILE

LENGTH OF ROADWAY 3,746.06 FEET = 0.709 MILE
LENGTH OF BRIDGE 441.90 FEET = 0.084 MILE
LENGTH OF PROJECT 4,187.96 FEET = 0.793 MILE



PROJECT NAME & NUMBER	TYPE STAGE I
HARTFORD I 91-1(25)	GRADING & DRAINAGE
RECORD PLANS	
MATERIALS	
SUBBASE OF SAND — LUCE PIT — HARTFORD, VT.	
SUBBASE OF CRUSHED ROCK — TWIN STATE SAND & GRAVEL CO., INC. — WEST LEBANON, N.H.	
CONCRETE CLASS AA & B — MILLER TRANSIT MIX CONC. — W. LEBANON, N.H.	
STRUCTURAL STEEL & STEEL PILING — WEST END IRON WORKS — CAMBRIDGE, MASS.	
REINFORCING STEEL — REPUBLIC STEEL CORP. — BUFFALO, N.Y.	
ASPHALTIC ASBESTOS COATING — CONSTRUCTORS INC. — LEXINGTON, MASS.	
GRANITE BRIDGE CURB — FLETCHER GRANITE CO. — CHELMSFORD, MASS.	
BRIDGE RAILING — WARD WELLER CO. INC. — NEEDHAM HEIGHTS, MASS.	
JOINT SEALER (PREFORMED) — TOCH BROTHERS — PATERSON, N.J.	
BRIDGE PAINT — AMSTERDAM COLOR WORKS — NEW YORK, N.Y.	
REINF. CONC. PIPE, PREC. R.C. CURB, DROP INLETS, BOUNDARY MARKERS & PROPERTY LINE FENCE W/STEEL POSTS — S.T. GRISWOLD & CO., INC. — ESSEX JUNCTION, VT.	
METAL CULVERT PIPE — NEW ENGLAND METAL CULVERT CO. — WHITE RIVER JUNCTION, VT.	
CAST IRON GRATES — E.L. LEBARON FOUNDRY CO. — BROCKTON, MASS.	
CONTRACTOR — LANDERS & GRIFFIN INC., MORRISON KNUDSEN CO., INC. PORTSMOUTH, N.H.	
CHIEF RESIDENT ENGINEER — ROY F. NICHOLSON.	
RESIDENT ENGINEERS — A.B. DELANO, G. ABAIR & A.J. DAVIS.	
INSPECTORS — S. MURRAY, A. NEWTON, D. SARGENT, J. WILMOTT & H. DAVIS.	
RECORD PLANS — GEORGE ABAIR.	
CONTRACT — DATED — SEPTEMBER 9, 1964.	
STARTED — SEPTEMBER 14, 1964.	
COMPLETED & ACCEPTED — FEBRUARY 9, 1966.	

HARTFORD-SHARON
IM MEMB(15)

SHEET 18 OF 47
BRIDGE 41C
FOR REFERENCE ONLY

HARTFORD I 91-1(25) STAGE I
CONTRACTOR-LANDERS & GRIFFIN & MORRISON KNUDSEN CO., INC.
PORTSMOUTH, N.H.
CONSTRUCTION COMPLETED-FEBRUARY 9, 1966.
RECORD PLANS — GEORGE ABAIR.

RD
25) Stage I. LENGTH 0.793 MI.
ADING & DRAINAGE
SEE HARTFORD I 91-1(13) FOR STAGE 2.
CONTRACTOR LANDERS & GRIFFIN INC. MORRISON KNUDSEN CO., INC.
PORTSMOUTH, N. H. YEAR 1964-66.
LOCATION Beginning at a point 1.707 miles northerly of the Hartland-Hartford Town Line and extending northerly 0.793 mile.

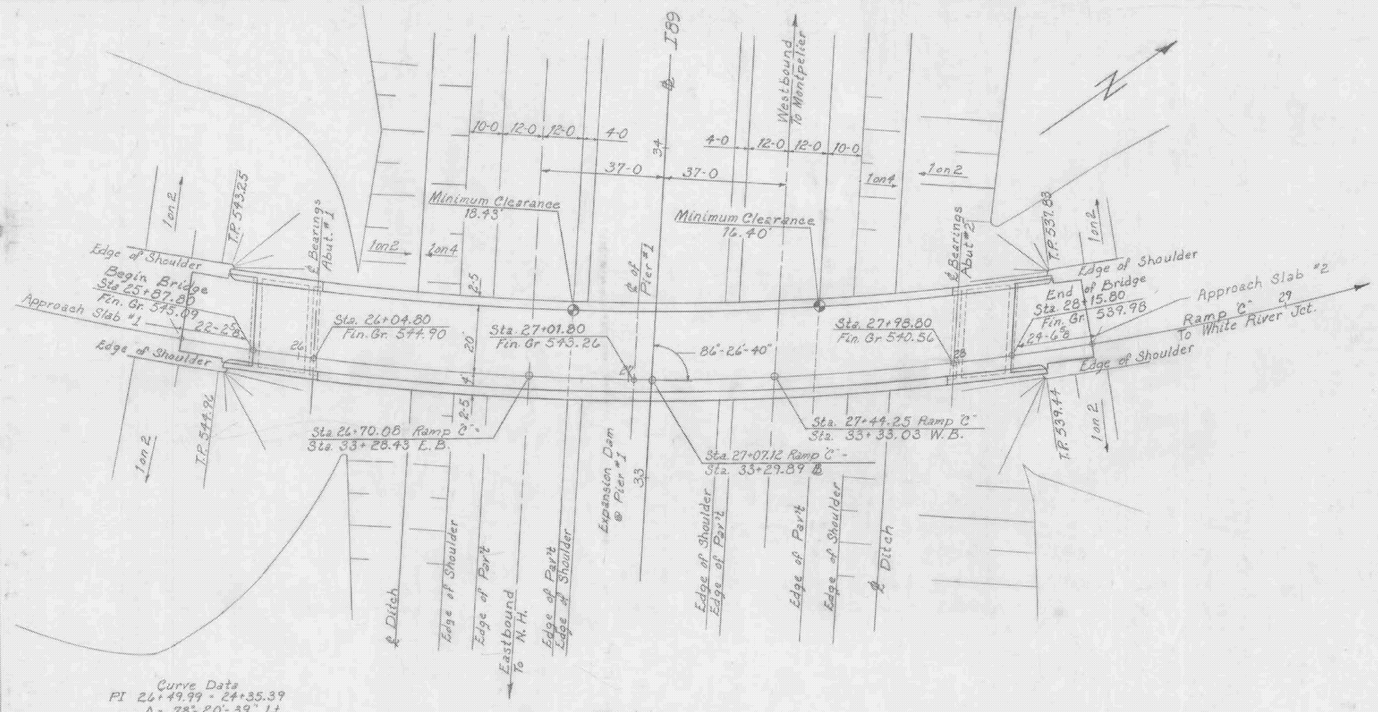
U.S. 5 AND ALL TOWN ROADS ARE NOT IN THE CONSTRUCTION AREA EXCEPT AS INDICATED ABOVE

NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES AMOUNTS OR DETAILS RELATIVE TO THIS PROJECT MAY BE FOUND EITHER THE FIELD BOOKS OR THE FINAL FILE.

DEPARTMENT OF HIGHWAYS
BUREAU OF PUBLIC ROADS

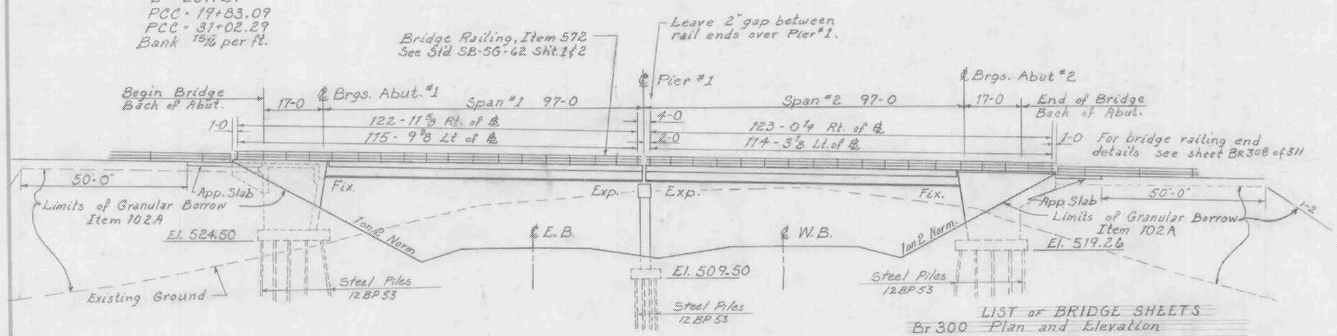
91-1 (25)

265



PLAN

Curve Data
PI 24+49.99 - 24+35.39
Δ = 78°-20'-39" Lt.
D = 7°
R = 818.51
T = 644.90
L = 1119.20
E = 237.29
PCC - 19+83.09
PCC - 31+02.29
Bank 7% per ft.



ELEVATION

LIST OF BRIDGE SHEETS

Br 300	Plan and Elevation
301	Bridge Quantity Sheet
302	Preliminary Information Sheet
303	Boring Log
304	Framing Plan and Typical Section
305	Expansion Dam
306	Abutment Nº 1
307	Abutment Nº 2
308	Abutment Details
309	Pier Nº 1
310	Approach Slabs Nº 1 & 2
311	Reinforcing Schedule
	SCB-D6-62 Details A, B, C, & F
	SB-5G-62 Sheets 1 & 2
	G3a

GENERAL NOTES

SPECIFICATIONS: ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED JANUARY 1956, AND THE A.A.S.H.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 1961 TOGETHER WITH THE LATEST REVISIONS. WELDING SHALL CONFORM TO SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES OF THE AMERICAN WELDING SOCIETY, AWS D2.0-63.

DESIGN IS FOR HS20-44 LOADING MODIFIED FOR THE NATIONAL SYSTEM OF INTERSTATE HIGHWAYS, APPLIED IN ACCORDANCE WITH THE PROVISIONS OF THE A.A.S.H.O. STANDARD SPECIFICATIONS, ARTICLE 1.2.8.

STRUCTURAL STEEL: UNLESS OTHERWISE NOTED ON THE PLANS, ALL STRUCTURAL STEEL SHALL CONFORM WITH A.S.T.M. DESIGNATION A-36-62T.

UNLESS OTHERWISE DETAILED, ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" HIGH STRENGTH BOLTS (A325) USING 15/16" HOLES. WHERE CONNECTIONS ARE NOT DETAILED ON THE PLANS, THEY SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STATE FOR APPROVAL.

DETAILS OF SHEAR CONNECTORS SHALL BE SUBMITTED TO THE STATE FOR APPROVAL. THE CAMBER SHALL APPROXIMATE A SIMPLE CIRCULAR CURVE FROM END TO END OF PLATE GIRDER. AFTER THE STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS ON THE TOP OF THE PLATE GIRDERS SHALL BE TAKEN UNDER THE DIRECTION OF THE ENGINEER TO DETERMINE THE FINAL GRADE.

NO SCUPPERS ARE REQUIRED.

PAINT: THE FINAL COAT OF FIELD PAINT SHALL BE DARK GREEN, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

CONCRETE: ALL CONCRETE IN THE SUPERSTRUCTURE SHALL BE CLASS AA (MOD.) AND ALL CONCRETE IN THE SUBSTRUCTURES AND APPROACH SLABS SHALL BE CLASS B (MOD.).

ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".

CONSTRUCTION JOINTS SHALL BE AS INDICATED ON THE STANDARDS UNLESS OTHERWISE INDICATED ON THE PLANS.

REINFORCING STEEL: THE SLAB REINFORCING (S50I BARS) SHALL BE CUT IN THE FIELD TO FIT THE SKEWED END, THE CUT-OFF BARS SHALL BE USED AT THE OPPOSITE END OF THE SPAN.

MINIMUM COVER FOR REINFORCING STEEL, MEASURED FROM THE SURFACE OF THE REINFORCEMENT, SHALL BE 2" UNLESS OTHERWISE SPECIFIED.

PILES: STEEL PILES SHALL BE DRIVEN TO REFUSAL UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WHERE PILES ARE DRIVEN IN FILL, THE MATERIAL SHOULD BE SUCH AS TO HAVE NO STONES LARGE ENOUGH TO INTERFERE WITH THE DRIVING OF PILES.

GENERAL: ALL DIMENSIONS GIVEN ARE AT 68°F. AND ARE MEASURED HORIZONTALLY OR VERTICALLY UNLESS OTHERWISE NOTED.

BORINGS INDICATED ON THE DRAWINGS HAVE BEEN MADE FOR DESIGN PURPOSES ONLY AND ARE NOT WARRANTED TO SHOW ACTUAL SUB-SURFACE CONDITIONS.

THE ENTIRE EXPOSED TOP SURFACE OF THE ABUTMENT, BRIDGE SEATS AND PIER SHALL BE COATED WITH ITEM 407, ASPHALTIC-ASBESTOS COATING 1/2" THICK. THIS ITEM SHALL BE APPLIED AFTER ALL PAINTING AND INCIDENTAL ITEMS ARE COMPLETED.

UNLESS OTHERWISE DESIGNATED, ALL EXPANSION MATERIAL SHALL NOT CONTAIN ASPHALT OR BITUMINOUS MATERIAL AND IT SHALL CONFORM WITH A.A.S.H.O. DESIGNATION: M153 TYPE II.

WHERE BITUMINOUS CONCRETE PAVEMENT IS CALLED FOR AS A WEARING SURFACE ON BRIDGE DECKS AND APPROACH SLABS IT SHALL BE A DENSE GRADED TOP COURSE MATERIAL, APPLIED IN ONE COURSE, ONE AND ONE-HALF INCHES (1 1/2") THICK.

HARTFORD-SHARON
IM MEMB(15)

SHEET 19 OF 47
BRIDGE 41C
FOR REFERENCE ONLY

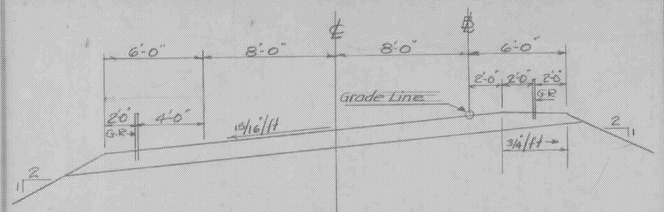
* Indicates Items on Stage II Construction

Superstructure Quantities

ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
407-AA	CONC. CLASS AA (MOD.)	C.Y.	~~182~~			183
	CONC. CLASS B (MOD.)	C.Y.				
~~402~~	REINF. STEEL	LBS.	~~39,750~~			39,142
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
* 318	Tar Emulsion for Bridge Floors	Gal.	208			
* 361-B	Bit. Conc. Pav't. Dense graded top course	Tons	44			
* 372-A	Joint Sealer - Hot Poured	L.F.	51			
* 373	Rubber Joint Material	L.F.	79			
404-A	Structural Steel	LBS.	~~175,740~~			175,741
556-C	Granite Bridge Curb (Mod)	L.F.	452 ✓			452
572	Bridge Railing	L.F.	~~487~~			488
403	Spiral Reinforcement (3710*)	L.S.	1 ✓			1

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

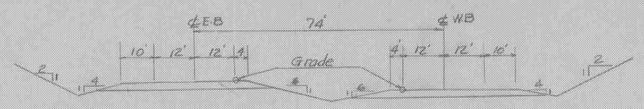
TOWN OF HARTFORD
ROUTE NO. I91 ~~Loop~~ STA. 27+02 Ramp ℄
Plan and Elevation
Ramp "C" over Interstate I89
SCALE 1"=20'
SURVEYED BY
DRAWN BY RPG CHECKED BY DHR
PROJECT NO. I91-1(25)
BR 300 of 311 SHEET 121 OF 245 Sheet 198 of 242



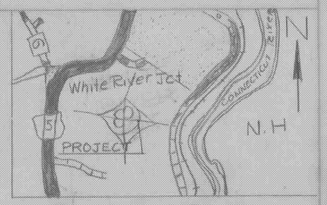
TYP. SECT. RAMP 'C'

NEW HIGHWAY SECT. STA 25+50 TO STA. 28+50

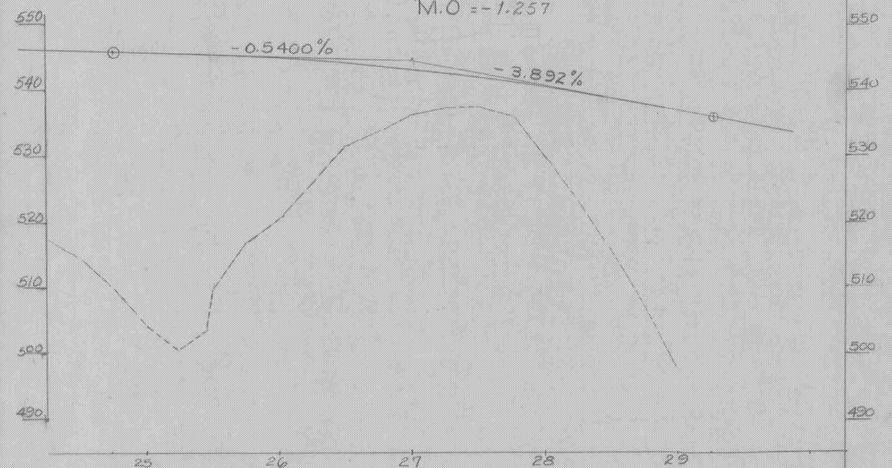
SCALE 1"=4'-0"



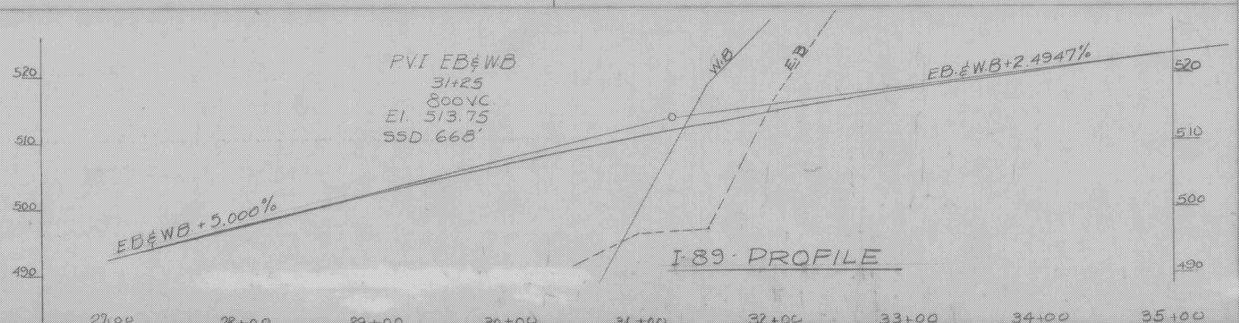
TYPICAL INTERSTATE SECTION



P.V.I STA. 27+00
EL. 544.56
V.C = 300'
M.O = -1.257



RAMP 'C' PROFILE



I-89 PROFILE

HIGHWAY NO I-91 NAME OF HIGHWAY

STRUCTURE NO. COUNTY WINDSOR TOWN HARTFORD

PROJECT NO I-91-1(35) LOCATION Ramp "C" over I-89 STA. 33+50

EXISTING STRUCTURE

1 RATED LOADING OF EXISTING STRUCTURE
2 TYPE OF EXISTING STRUCTURE
3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE
4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE DATE OF REMOVAL
5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE
6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT
7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE WATERWAY TO ORDINARY H.W.
8 EXTREME HIGH WATER AT EXISTING STRUCTURE
9 SPAN OF EXISTING BRIDGE UPSTREAM WATERWAY TO EXTREME H.W.
SPAN OF EXISTING BRIDGE DOWNSTREAM WATERWAY TO EXTREME H.W.
10 TYPE OF FOUNDATIONS UNDER EXISTING ABUTMENTS
11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE
12 IF NOT, AT WHAT ELEVATION IS RELIEF AFFORDED
ADDITIONAL WATERWAY AREA REQUIRED

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE 2-Composite Plate Girder, Simple Spans
2 RECOMMENDED CLEAR SPAN OR SPANS 97 - 97
MEASURED PARALLEL TO ℄ NEW HIGHWAY
MEASURED AT RIGHT ANGLES TO ℄ STREAM
3 ARE THERE OBSTRUCTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO
4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE
5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE SOURCE OF INFORMATION
6 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE?
7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? IS ORDINARY RISE RAPID?
8 LOW WATER ELEVATION AT NEW STRUCTURE
9 DRAINAGE AREA IS AGREE ABOVE STRUCTURE CHARACTER OF TERRAINE
10 IS STREAM EVER DRY?
11 VELOCITY OF STREAM AT HIGH WATER STAGE ESTIMATED DISCHARGE
12 AREA FULL OPENING AREA BELOW ORDINARY H.W.
13 CHARACTER OF BOTTOM DRIFT ICE
14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE
VERTICAL CLEARANCE ABOVE FLOOD ELEVATION
15 ARE SIDEWALKS REQUIRED, IF SO ON WHAT SIDE No WIDTH EITHER
16 RECOMMENDED TYPE OF PAVEMENT 1½" Bit. Conc. Pav't & 7½" Slab
17 ACCOMMODATION TYPE OF PAVEMENT N.A. ONE OR TWO WAYS PROBABLE COST
18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. N.A. ONE OR TWO WAYS PROBABLE COST
19 PROBABLE COST OF CLEARING AND SNAGGING STREAM CHANNEL AT STRUCTURE SITE N/A.
20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? No
21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 45 tons/sq.ft. SHOULD PILES BE USED? Yes SIZE LOAD 85 MAX.

FOUNDATION INFORMATION

OBTAINED FOR DESIGN PURPOSES ONLY, AND THE STATE ASSUMES NO RESPONSIBILITY WHATSOEVER FOR THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN. BOULDERS MAY BE ENCOUNTERED AT ANY PIER OR ABUTMENT LOCATION.

HARTFORD-SHARON
IM MEMB(15)

SHEET 20 OF 47
BRIDGE 41C
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
IN THE TOWNS OF
HARTFORD
ROUTE NO. I-91 LOG STA.
RAMP 'C' OVER I-89

DRAWN BY G.V.K. TRACED BY W.B.T. CHECKED BY R.S.H.
PROJECT NO I91-1(35)(31) SHEET 2230 208

Recommended for Approval 1/2/64 Engineer

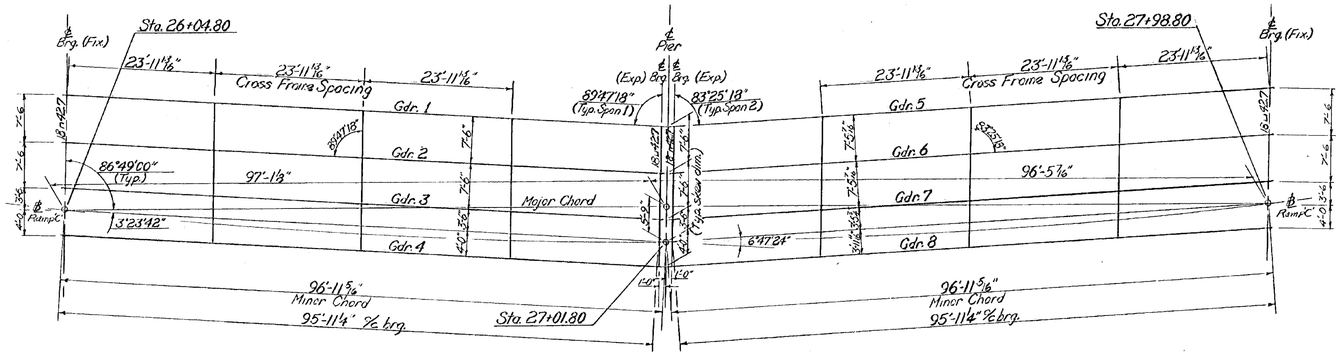
Recommended for 1/2/64 ASST. CHIEF ENGINEER

Approved by Chief Engineer

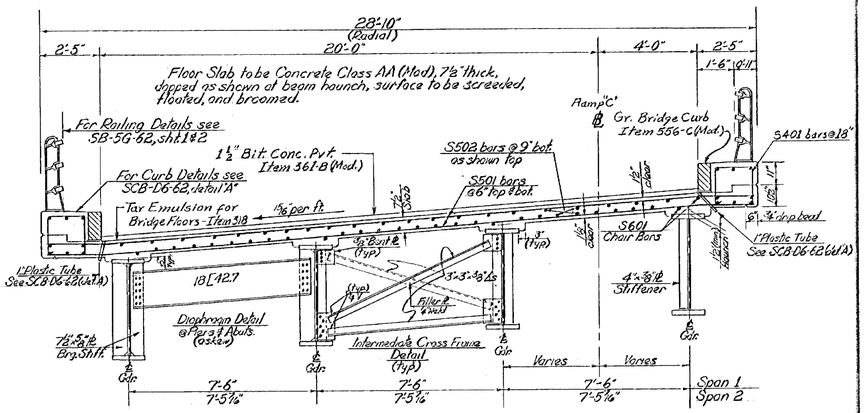
Sheet 195 of 242

Br 302 of 311

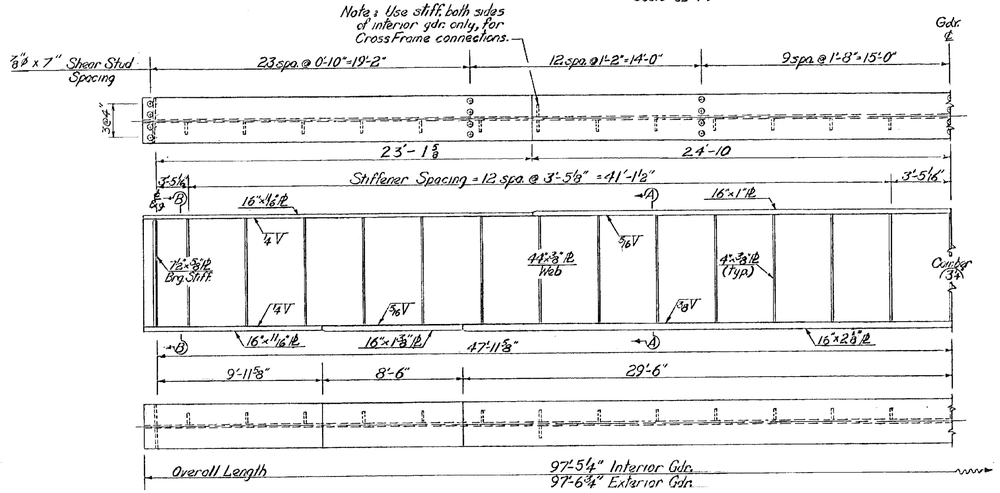
35-B12



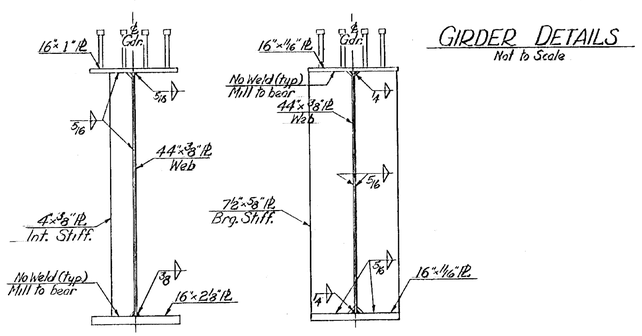
FRAMING PLAN
Scale 3/32"=1'0"



TYPICAL SECTION
Scale 3/8"=1'0"

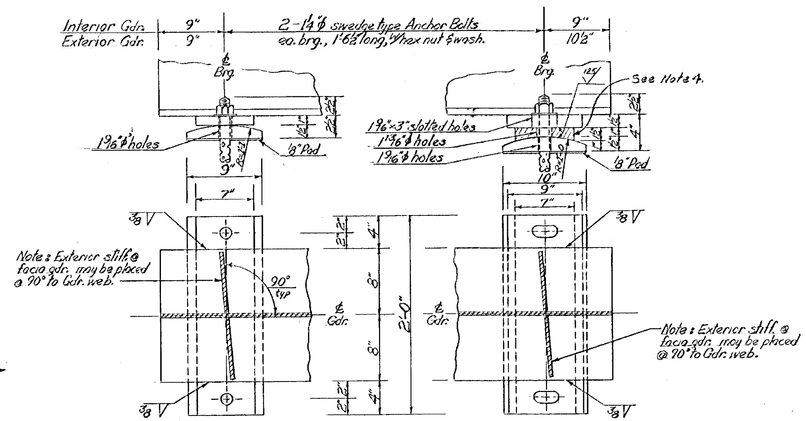


GIRDER DETAILS
Not to Scale

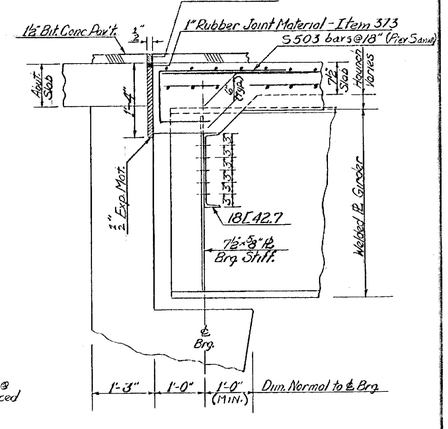


SECTION "A-A"
Scale 1"=1'0"

SECTION "B-B"
Scale 1"=1'0"



FIXED — EXPANSION
BEARING DEVICE DETAILS
Scale 1½"=1'0"



SECTION AT ABUTMENTS
Scale 3/4"=1'0"

NOTES

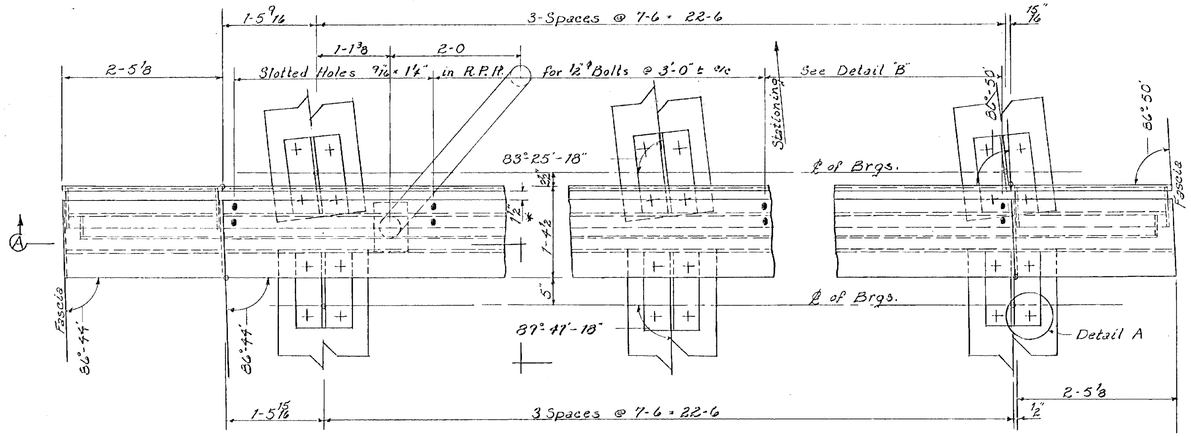
1. Items indicated on this sheet are included in the superstructure quantities.
2. Spiral Reinforcement - Item 403. Channels, spiral reinforcing or other mechanical shear connector devices may be substituted for the indicated welded studs, upon the approval of the Engineer.
3. Camber indicated is the ordinate at midpoint of beam.
4. The 1½" x 7" x 2'-0" PL in the Expansion Bearing shall be cast Bronze conforming to ASTM. B22-40T, class B. This plate shall have trepanned recesses, comprising not less than 25% of the bearing area, filled with a lubricating compound. The coefficient of friction shall be less than 0.10. PL's not specified are A36 steel.
5. Shop splices in the web and flanges shall be A.W.S. prequalified full penetration type and shall be fully detailed on the shop drawings.

HARTFORD-SHARON
IM MEMB(15)

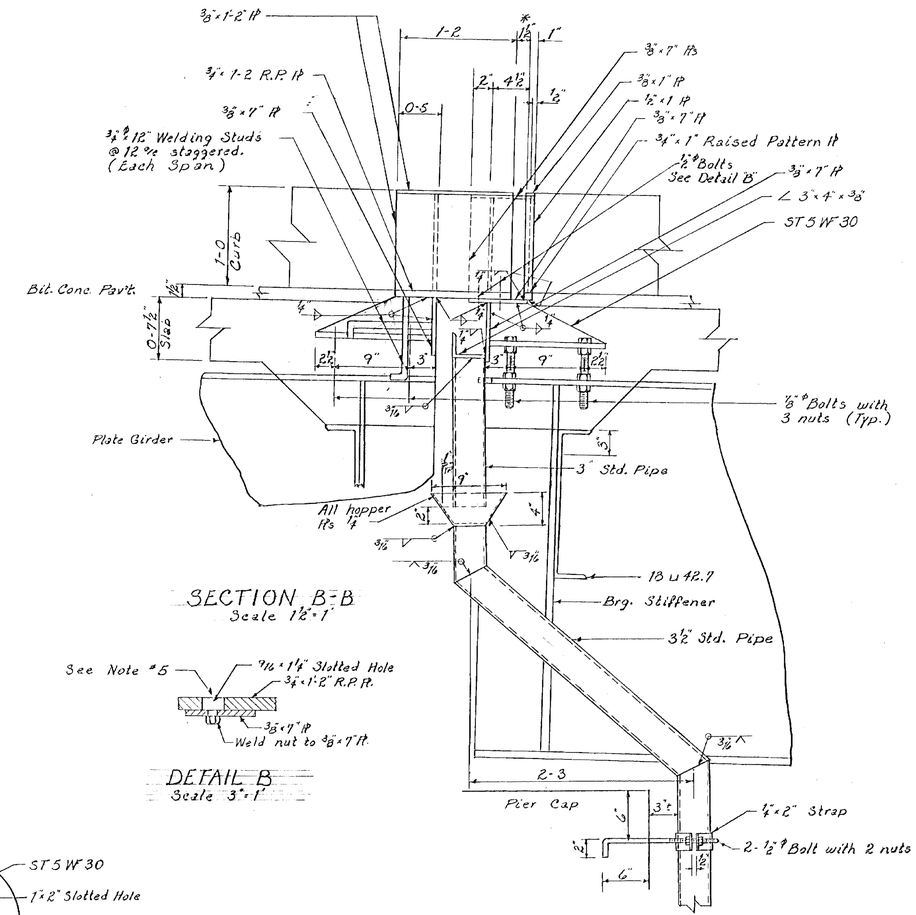
SHEET 21 OF 47
BRIDGE 41C
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. I-91 STA. 27+02.80
FRAMING PLAN - TYPICAL SECTION
Ramp "C" over Interstate I 89
SCALE as noted
SURVEYED BY
DRAWN BY RND CHECKED BY DHR & RJM
PROJECT NO. I-91-1(25) (2)N
BR 301+311 SHEET 125 OF 265 SHEETS

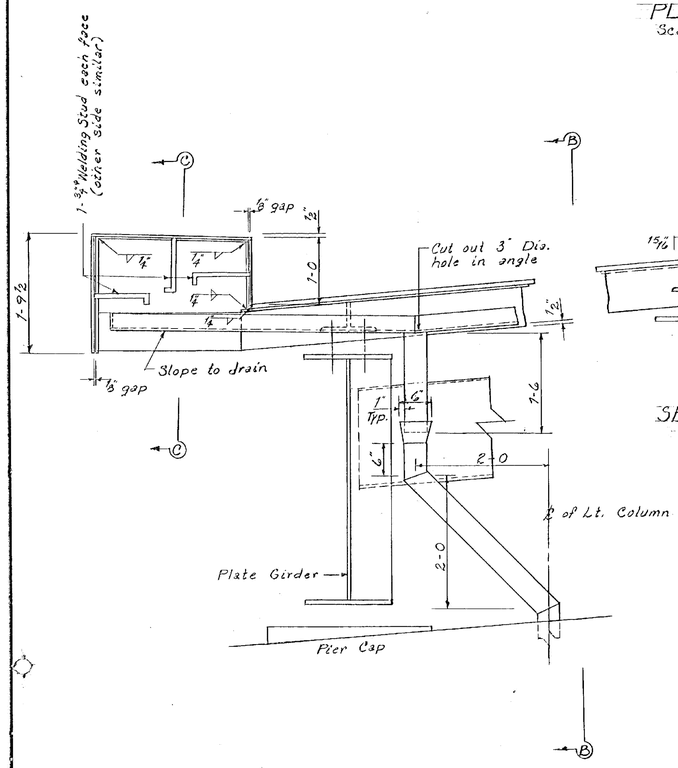


PLAN
Scale 1" = 1'

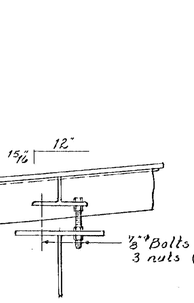


SECTION B-B
Scale 1 1/2" = 1'

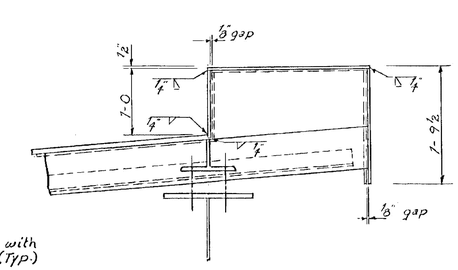
DETAIL B
Scale 3" = 1'

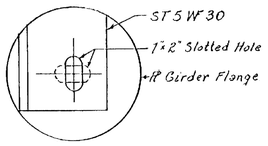


SECTION C-C
Scale 1 1/2" = 1'

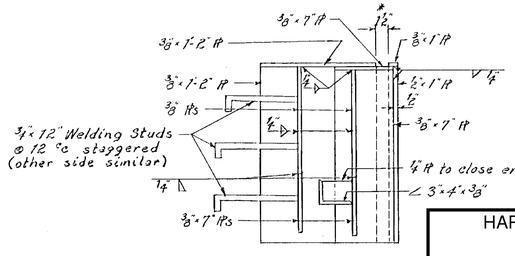


SECTION A-A
Scale 1" = 1'





DETAIL A
Scale 3" = 1'



SECTION C-C
Scale 1 1/2" = 1'

NOTES
1 All parts of this expansion dam that are exposed to water after erection, shall be ASTM A242 steel.
2 * Indicates dimensions to be correct @ 68°F.
3 Adjust expansion dam to conform to grade by means of adjustment bolts.
4 For additional pipe details see Pier #1 sheet.
5 Remove 1/2" ϕ bolts in 3/4" x 1'-2" Raised Pattern Pl after the concrete has set up and fill the holes with Rubber Joint Material, Item 373.

ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

HARTFORD-SHARON
IM MEMB(15)

SHEET 22 OF 47
BRIDGE 41C
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. I-91 ~~I-89~~ STA. 27+02 Pl
EXPANSION DAM
Ramp G over Interstate 89
SCALE As shown
SURVEYED BY
DRAWN BY RPG CHECKED BY NBT
PROJECT NO. I-91-1(25)(31).
SHEET 126 OF 265 Sheet 197 of 212

Pr 305 of 311

INDEX OF SHEETS

SHEET NO. 1		TITLE PAGE
2		ALIGNMENT SHEET
3-4		TYPICAL CROSS-SECTION OF IMPROVEMENT (3" BIT. CONC. PAVT. ITEM 351-B MOD.)
5		TYPICAL CROSS-SECTION - ONE WAY RAMP
6		TYPICAL CROSS-SECTION - TWO WAY RAMP, SPEED CHANGE LANE
7		QUANTITY SHEET (ITEMS)
8		R.O.W. DETAIL SHEET
9-10		QUANTITY SHEETS (DRAINAGE)
11-16		EARTHWORK SHEET
17		BLANK
18-35		PLAN AND PROFILE SHEETS
36-40		RAMP TERMINAL DETAILS
41		BLANK
42-44		BLANK
45	A-61	SOLID ROCK EXCAVATION
46	B-1	BANKING TABLES
47	B-5	SLOPE ROUNDING
48	B-6	MUCK EXCAVATION
49		BLANK
50	D-2	HEADWALLS AND UNDERDRAIN
51	D-3	TREATED GUTTERS
52	D-4	MISC. METAL PIPE DETAILS
53	D-8	DROP INLETS
54	D-10	DROP INLET TOPS
55	D-11	TYPE A GRATE
56	D-13	CONC. CATCH BASIN
57		BLANK
58	D-16	PRECAST CURB D.I. TYPE B GRATE
59		BLANK
60	E-31	CONSTRUCTION IDENTIFICATION SIGNS
61	F-1	PROPERTY LINE FENCE
62	G-3a	DEAD END ANCHORAGE AT BRIDGE APPROACH
63	J-1	BOUNDARY MARKERS
64	J-4	FIELD OFFICE
65		DETAILS OF 84" CGMPP AT N.B. STA 3717+65
66-67		BLANK
68-90		DETAILS OF I 91 BRIDGE OVER RAMP C AT STA 3702+54.90, BR. 100-122
91		SCB-38-62
92-94		SCWPG-30-62 (SHEET 1, 2, 4)
95-119		DETAILS OF I 91 BRIDGE OVER I 89 AT STA 3709+70.57, BR. 200-224
120		SCB-42-62
121-132		DETAILS RAMP C BRIDGE OVER I 89 AT RAMP C 27+07.15, BR. 300-311
133		BLANK
134-139		SCB-D1, D2, D4, D6, D8, D9, -62
140-141		SB-59-62
142		BLANK
143-146		BLANK
147-179		CROSS SECTIONS, INTERSTATE
180-260		CROSS SECTIONS, RAMPS
261-262		BLANK
263		CROSS SECTIONS - CHANNEL LINE RAMP A 25+17.19
264-265		BLANK

7 Final Earth Work Sheets
Structural Steel
Extended Weights
22 Drainage Sheets

9 Sheets Revised (Section)
21 Drainage Sheets
28 Prints of Bridge Steel

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

INTERSTATE PROJECT

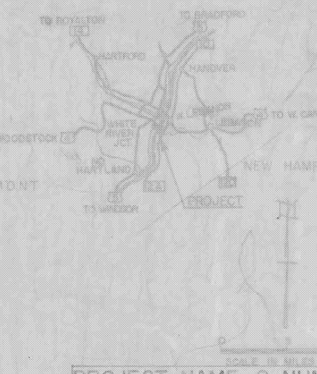
TOWN OF HARTFORD
COUNTY OF WINDSOR
INTERSTATE ROUTE 91

BELLOWS FALLS-WHITE RIVER JCT. ROAD

PROJECT I 91-1 (25)

BEGINNING AT A POINT 1.707 MILES NORTHERLY OF THE HARTLAND-HARTFORD TOWN LINE AND EXTENDING NORTHERLY 0.793 MILE

LENGTH OF ROADWAY 3,746.06 FEET = 0.709 MILE
LENGTH OF BRIDGE 441.90 FEET = 0.084 MILE
LENGTH OF PROJECT 4,187.96 FEET = 0.793 MILE



PROJECT NAME & NUMBER	TYPE	STAGE
HARTFORD I 91-1(25)	GRADING & DRAINAGE	I

RECORD PLANS
MATERIALS
SUBBASE OF SAND — LUCE PIT — HARTFORD, VT.
SUBBASE OF CRUSHED ROCK-TWIN STATE SAND & GRAVEL CO., INC. — WEST LEBANON, N.H.
CONCRETE CLASS AA & B—MILLER TRANSIT MIX CONC.-W.LEBANON, N.H.
STRUCTURAL STEEL & STEEL PILING—WEST END IRON WORKS — - CAMBRIDGE, MASS.
REINFORCING STEEL-REPUBLIC STEEL CORP.— BUFFALO, N.Y.
ASPHALTIC ASBESTOS COATING—CONSTRUCTORS INC.-LEXINGTON, MASS.
GRANITE BRIDGE CURB—FLETCHER GRANITE CO.—CHELMSFORD, MASS.
BRIDGE RAILING—WARD WELLER CO. INC.—NEEDHAM HEIGHTS, MASS.
JOINT SEALER (PREFORMED)—TOCH BROTHERS—PATERSON, N.J.
BRIDGE PAINT—AMSTERDAM COLOR WORKS—NEW YORK, N.Y.
REINF. CONC. PIPE, PREC. R.C. CURB DROP INLETS, BOUNDARY MARKERS & PROPERTY LINE FENCE W/STEEL POSTS — S.T. GRISWOLD & CO., INC. — ESSEX JUNCTION, VT.
METAL CULVERT PIPE—NEW ENGLAND METAL CULVERT CO.—WHITE RIVER JUNCTION, VT.
CAST IRON GRATES-E.L. LEBARON FOUNDRY CO.—BROCKTON, MASS.
CONTRACTOR—LANDERS & GRIFFIN INC., MORRISON KNUDSEN CO., INC. PORTSMOUTH, N.H.
CHIEF RESIDENT ENGINEER—ROY F. NICHOLSON.
RESIDENT ENGINEERS—A.B. DELANO, G. ABAIR & A.J. DAVIS.
INSPECTORS—S. MURRAY, A. NEWTON, D. SARGENT, J. WILMOTT & H. DAVIS.
RECORD PLANS—GEORGE ABAIR.

CONTRACT —DATED—SEPTEMBER 9, 1964.
STARTED—SEPTEMBER 14, 1964.
COMPLETED & ACCEPTED—FEBRUARY 9, 1966.

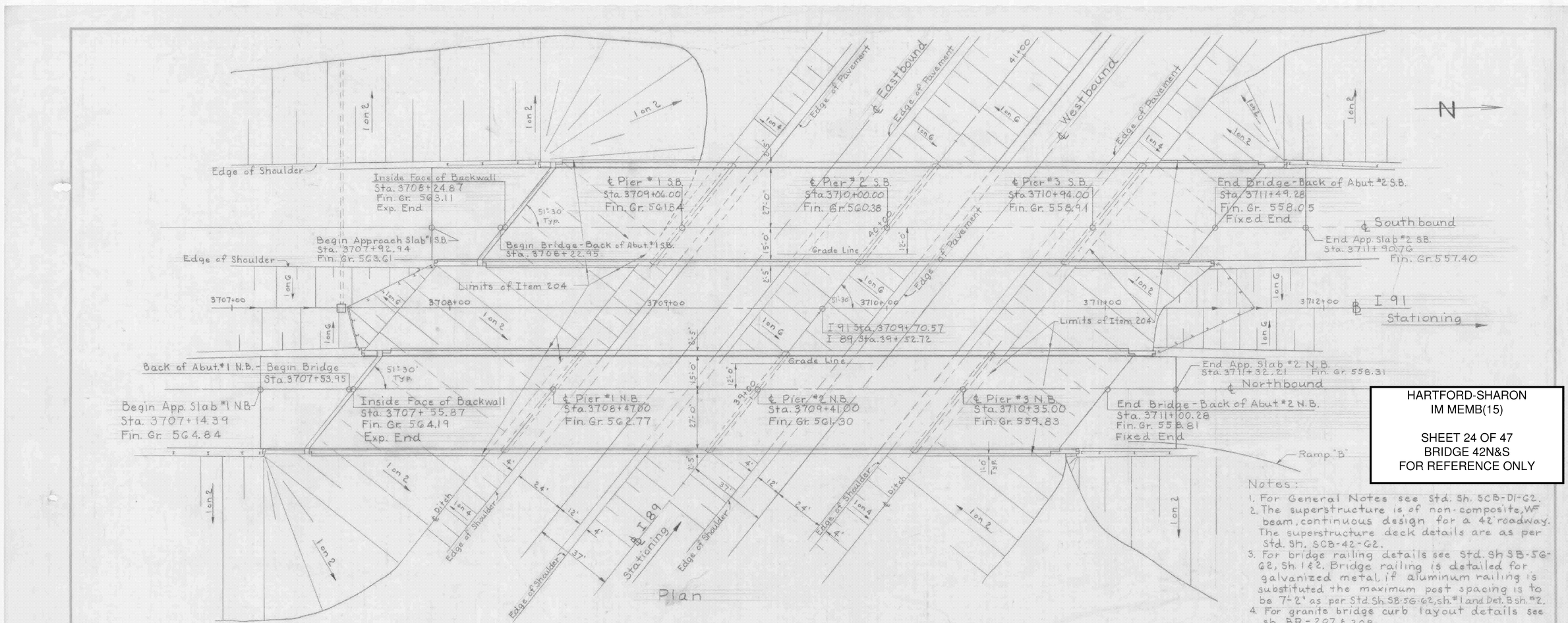
HARTFORD-SHARON
IM MEMB(15)

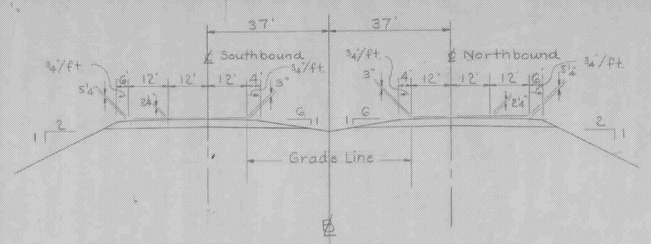
SHEET 23 OF 47
BRIDGE 42N&S
FOR REFERENCE ONLY

NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES AMOUNTS OR DETAILS RELATIVE TO THIS PROJECT MAY BE FOUND EITHER THE FIELD BOOKS OR THE RESIDENT'S FILE.

U.S. 5 AND ALL TOWN ROADS ARE NOT IN THE CONSTRUCTION AREA EXCEPT AS INDICATED ABOVE

91-1 (25)

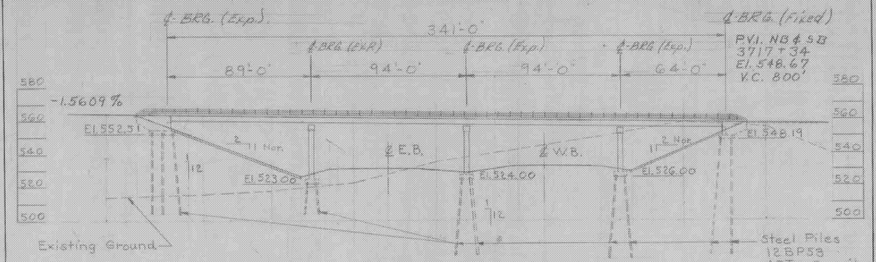

Edge of Shoulder
Inside Face of Backwall
Sta. 3708+24.87
Fin. Gr. 563.11
Exp. End
℄ Pier #1 S.B.
Sta. 3709+06.00
Fin. Gr. 561.84
℄ Pier #2 S.B.
Sta. 3710+00.00
Fin. Gr. 560.38
℄ Pier #3 S.B.
Sta. 3710+94.00
Fin. Gr. 558.91
End Bridge-Back of Abut.#2 S.B.
Sta. 3711+49.28
Fin. Gr. 558.05
Fixed End
℄ Southbound
End App. Slab #2 S.B.
Sta. 3711+90.76
Fin. Gr. 557.40
Begin Approach Slab #1 S.B.
Sta. 3707+92.94
Fin. Gr. 563.61
Begin Bridge-Back of Abut.#1 S.B.
Sta. 3708+22.95
Limits of Item 204
℄ I 91 Stationing
I 91 Sta. 3709+70.57
I 89 Sta. 39+52.72
Back of Abut.#1 N.B.
Begin Bridge
Sta. 3707+53.95
End App. Slab #2 N.B.
Sta. 3711+32.21
Fin. Gr. 558.31
℄ Northbound
Begin App. Slab #1 N.B.
Sta. 3707+14.39
Fin. Gr. 564.84
Inside Face of Backwall
Sta. 3707+55.87
Fin. Gr. 564.19
Exp. End
℄ Pier #1 N.B.
Sta. 3708+47.00
Fin. Gr. 562.77
℄ Pier #2 N.B.
Sta. 3709+41.00
Fin. Gr. 561.30
℄ Pier #3 N.B.
Sta. 3710+35.00
Fin. Gr. 559.83
End Bridge-Back of Abut.#2 N.B.
Sta. 3711+00.28
Fin. Gr. 558.81
Fixed End
Eastbound
Westbound
Edge of Pavement
Grade Line
Ramp "B"
Ditch
Edge of Shoulder
℄ I 89 Stationing
Plan
Span 1 79'-0" 89'-0"
Span 2 94'-0" 94'-0"
Span 3 94'-0" 94'-0"
Span 4 54'-0" 64'-0"
Southbound
Northbound
Bridge Marker (on both NB and SB Bridges)
Left - 1 Space @ 8'-11¾", 34 Spaces @ 9'-8⅞"
Left - 1 Space @ 9'-10½", 35 Spaces @ 9'-9", 1 Space @ 9'-0"
Right - 36 Spaces @ 9'-10⅜" = 355'-1½"
Right - 37 Spaces @ 9'-9½", 1 Space @ 9'-10"
Rail Post Spacing
℄ Brgs.
-1.5609 %
See Std. Sh. G-3a for details of Dead End Anchorage at Bridge Approach. (Typical both ends)
End App. Slab
Bottom of Sub-base
El. 552.51
Granular Borrow Item 102-A (Typ. each Abut.)
Item 204, Sub-base of Crushed Rock Mod. (Under Structure)
El. 523.00
El. 524.00
El. 526.00
El. 548.19
Original Ground
Steel Piles 12 BP 53
Exp.
Fixed
Elevation @ Northbound Fascia
Notes:
1. For General Notes see Std. Sh. SCB-01-62.
2. The superstructure is of non-composite, W beam, continuous design for a 42' roadway. The superstructure deck details are as per Std. Sh. SCB-42-62.
3. For bridge railing details see Std. Sh SB-5G-62, Sh. 1&2. Bridge railing is detailed for galvanized metal, if aluminum railing is substituted the maximum post spacing is to be 7'-2" as per Std. Sh. SB-5G-62, sh. #1 and Det. B sh. #2.
4. For granite bridge curb layout details see sh. BR-207 & 208.
5. See Sh. BR 205 for List of Bridge Sheets.
6. Bench mark to be set in top of curb above Bridge Marker on Northbound Bridge only.
Stage I & II Construction
HARTFORD-SHARON
IM MEMB(15)
SHEET 24 OF 47
BRIDGE 42N&S
FOR REFERENCE ONLY
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
TOWN OF Hartford
ROUTE NO. I 91 LOG STA.
I 91 over I 89
Plan and Elevation
SCALE 1" = 20'
SURVEYED BY Jewett
DRAWN BY A. J. C. CHECKED BY JW-WMS
PROJECT NO. I 91-1(25)
SHEET 25 OF 265
BR 200



I 91

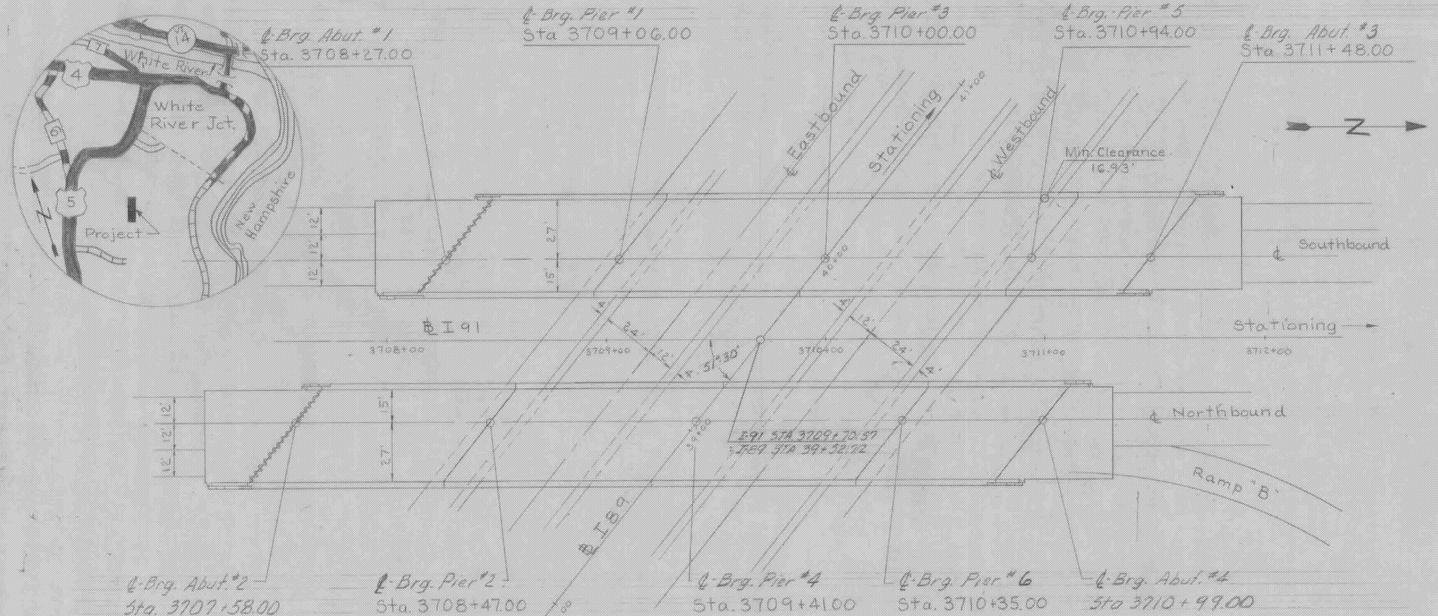
NEW HIGHWAY SECT. STA. 3707 TO STA. 3711

SCALE 1" = 20'



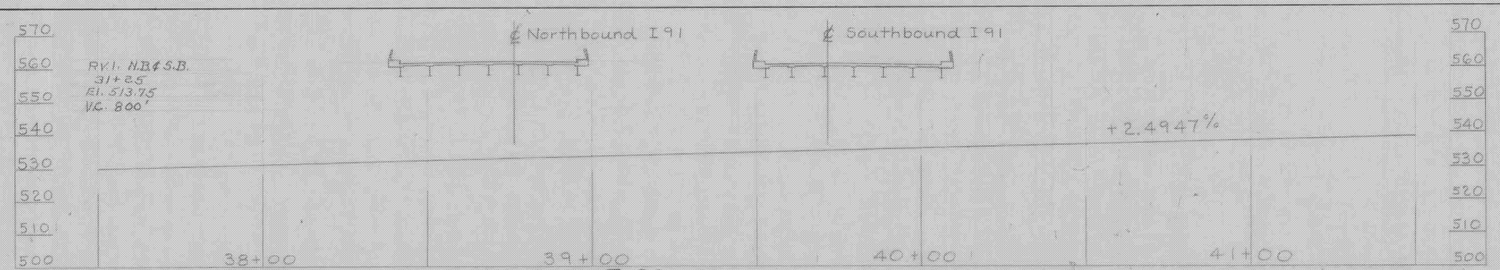
NEW HIGHWAY PROFILE ALONG Northbound Fascia

SCALE 1" = 40'



PLAN

SCALE 1" = 30'



PROFILE OF I 89

SCALE 1" = 20'

HIGHWAY NO I 91 NAME OF HIGHWAY

STRUCTURE NO COUNTY Windsor TOWN Hartford

PROJECT NO I 91-1 (25) LOCATION Hartford

EXISTING STRUCTURE

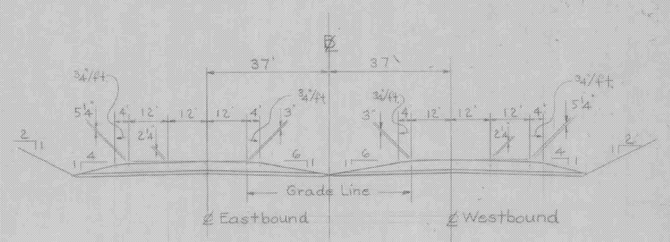
1 RATED LOADING OF EXISTING STRUCTURE
2 TYPE OF EXISTING STRUCTURE
3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE
4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE — COST OF REMOVAL
5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE
6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT
7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE — WATERWAY TO ORDINARY H.W.
8 EXTREME HIGH WATER AT EXISTING STRUCTURE
9 SPAN OF EXISTING BRIDGE UPSTREAM — WATERWAY TO EXTREME H.W.
SPAN OF EXISTING BRIDGE DOWNSTREAM — WATERWAY TO EXTREME H.W.
10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS
11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE
12 IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED
13 ADDITIONAL WATERWAY AREA PROVIDED

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE SCBUTE 82 (MOD)
2 RECOMMENDED CLEAR SPAN OR SPANS Southbound 79', 94', 94', 54' } CONTINUOUS
MEASURED PARALLEL TO ℄ NEW HIGHWAY Northbound 89', 94', 94', 64' }
MEASURED AT RIGHT ANGLES TO ℄ STREAM
3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO
4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE
5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE — SOURCE OF INFORMATION
6 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE?
7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? — IS ORDINARY RISE RAPID?
8 LOW WATER ELEVATION AT NEW STRUCTURE
9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE — CHARACTER OF TERRAINE
10 IS STREAM EVER DRY?
11 VELOCITY OF STREAM AT HIGH WATER STAGE — ESTIMATED DISCHARGE
12 AREA FULL OPENING — AREA BELOW ORDINARY H.W.
13 CHARACTER OF SCOUR — DRIFT — ICE
14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE
15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION 16.93' Min.
16 ARE SIDEWALKS REQUIRED, IF SO ON WHAT SIDE None BOTH SIDES
17 RECOMMENDED TYPE OF PAVEMENT 1½" Bituminous Concrete
18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. ____ ONE OR TWO WAYS ____ PROBABLE COST
19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE
20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES?
21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 45 Ton per Pile SHOULD PILES BE USED? Yes EST. LGTH. 82 Max

FOUNDATION INFORMATION

OBTAINED FOR DESIGN PURPOSES ONLY, AND THE STATE ASSUMES NO RESPONSIBILITY WHATSOEVER FOR THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN. BOULDERS MAY BE ENCOUNTERED AT ANY PIER OR ABUTMENT LOCATION.



Typical Section I 89

HARTFORD-SHARON
IM MEMB(15)

SHEET 25 OF 47
BRIDGE 42N&S
FOR REFERENCE ONLY

Recommended for Approval Lm Bjorn Bridge Engineer 1/2/64 Date

Recommended for Approval R M Arnold Asst Chief Engineer 1/6/64 Date

Approved by C D Storrs Chief Engineer 1/15/64 Date

Stage I & II Construction

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

IN THE TOWNS OF Hartford

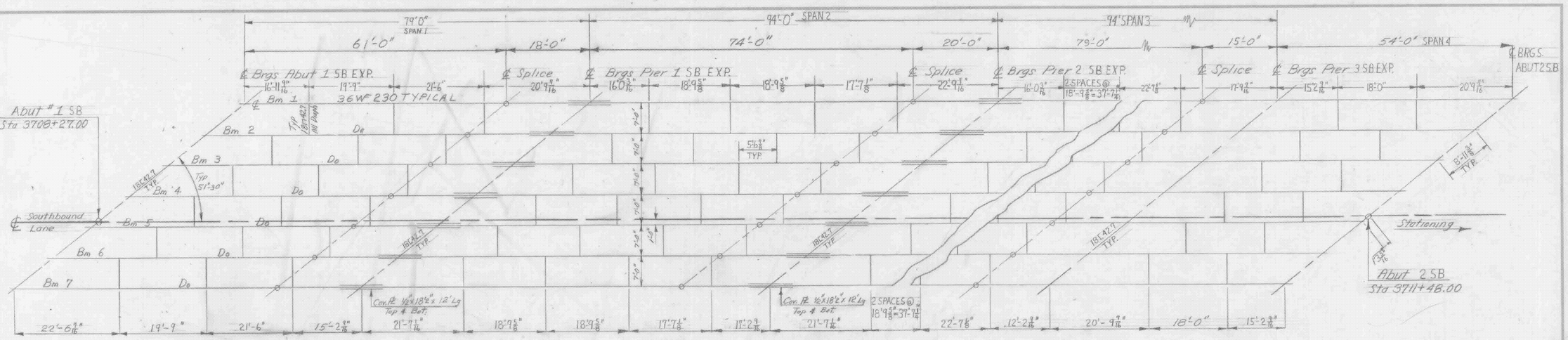
ROUTE NO I 91 LOG STA I 91 over I 89

SURVEYED BY DRAWN BY | CHECKED BY IN CHARGE | SCALE DATE

PROJECT NO I 91-1(25) SHEET 25 OF 285

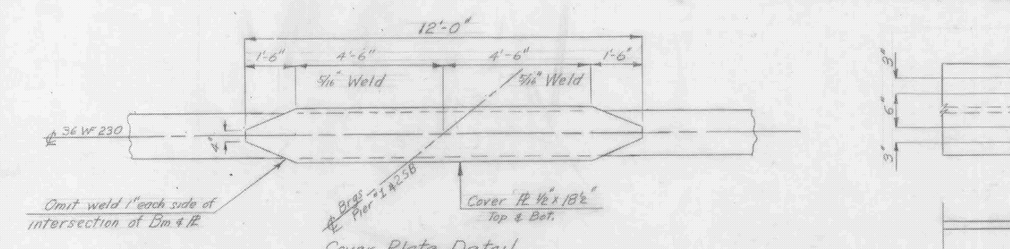
(91) Sheet 185 of 242

BR-202



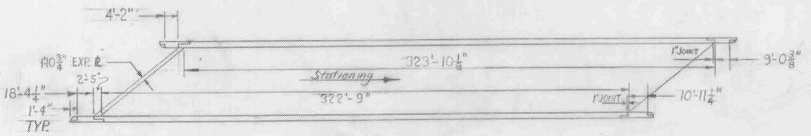
Southbound Framing Plan

Scale 3/32" = 1'-0"



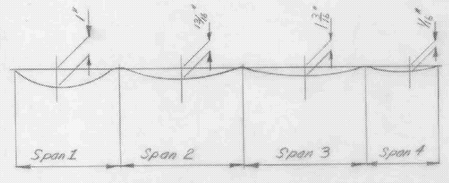
Cover Plate Detail

Scale ½"=1'-0"



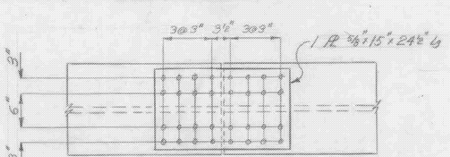
Curb Plan

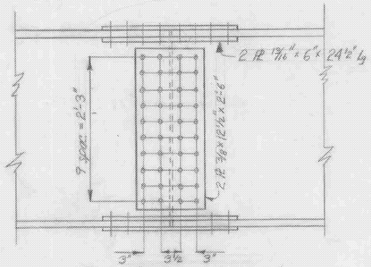
Scale 1"=40'



DL. Deflection Diagram

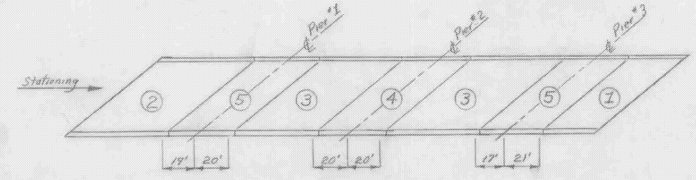
Not to Scale





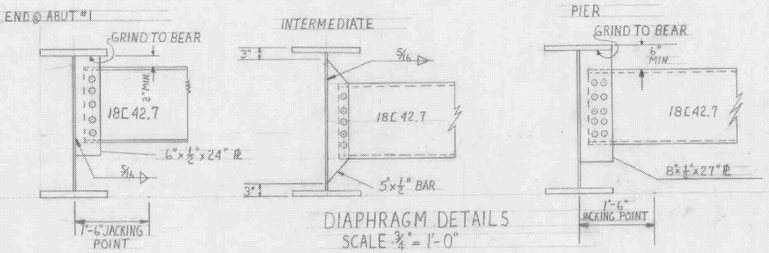
Typ. Splice Detail

Scale 1"=1'-0



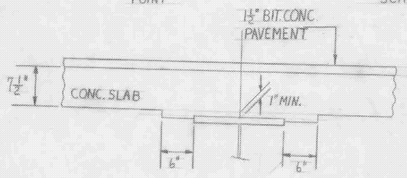
Pouring Schedule

Scale 1"=40'



DIAPHRAGM DETAILS

SCALE ¾" = 1'-0"



DETAIL OF BEAM HAUNCH

SCALE 1"= 1'-0"

Stage ■ & II Construction

NOTES

1. FOR GENERAL NOTES SEE STD. Sh SCB-01-62
2. FOR SUPERSTRUCTURE DETAILS SEE STD. SH. SCB-42-62.
3. * Indicates Roadway Items.
4. For additional notes see sh. BR-208.

EST. SUPERSTRUCTURE QUANTITIES - SOUTHBOUND

ITEM NO.	ITEM	UNIT	TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.		
	CHAN. EXCAV. OF ROCK	C.Y.		
	UNCLASS. CHAN. EXCAV.	C.Y.		
	STRUCT. EXCAV.	C.Y.		
401-AA	CONC. CLASS AA (MOD.)	C.Y.	~~441~~	454
	CONC. CLASS B (MOD.)	C.Y.		
402	REINF. STEEL	LBS.	~~110,965~~	111,109
	ASPHALTIC-ASB. COATING	S.Y.		
	TREATED TIMBER PILING	L.F.		
	SPLICES FOR STEEL PILING	EA.		
* 372-A	Joint Sealer - Hot Poured	L.F.	102	
372-C	Joint Sealer - Preformed	L.F.	119	
404-A	Structural Steel	LB	~~573,022~~	606716
* 318	TAR EMULSION FOR BRIDGE FLOORS	GAL	604	
* 861-B	BIT. CONC. PAVEMENT MOD. DENSE GRADED TOP	TON	129	
556-C	GRANITE BRIDGE CURB (MOD.)	L.F.	647 ✓	647
572	BRIDGE RAILING	L.F.	~~775~~	701

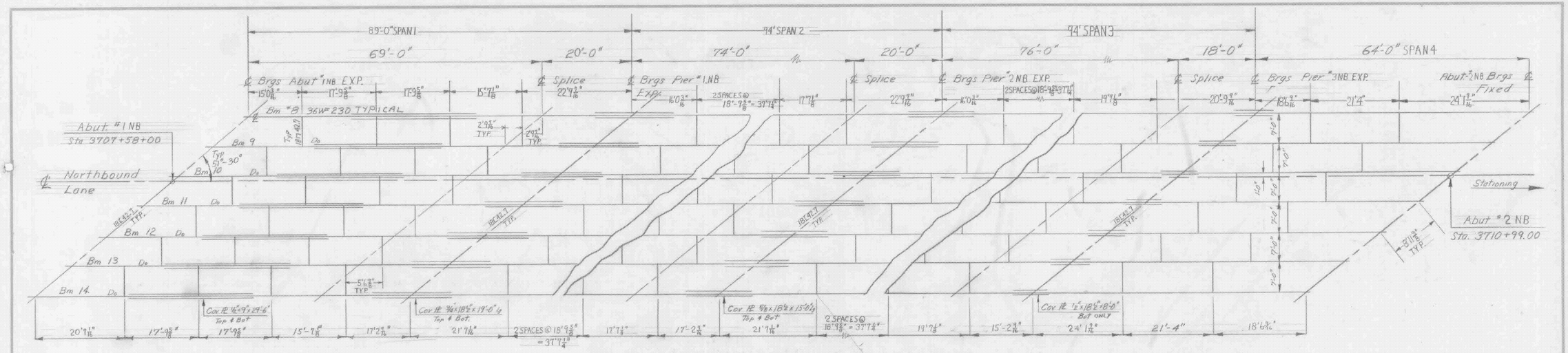
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. I-91 LOG STA.
I-91 over I-89
Southbound - Superstructure
SCALE as noted
SURVEYED BY
DRAWN BY C.F.H. CHECKED BY A.J.C.
PROJECT NO. I-91-1(25)C91
SHEET 102 OF 205

HARTFORD-SHARON
IM MEMB(15)

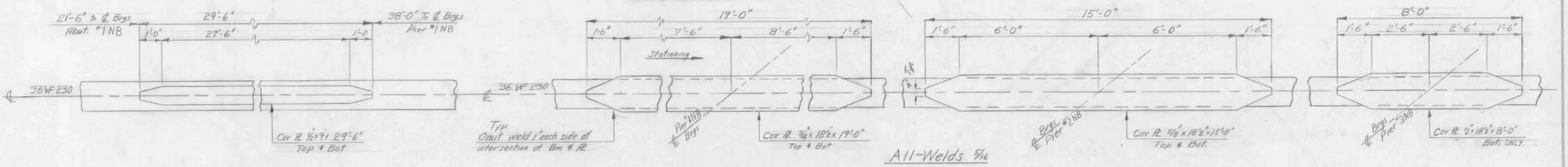
SHEET 26 OF 47
BRIDGE 42N&S
FOR REFERENCE ONLY

BR 207



Northbound Framing Plan

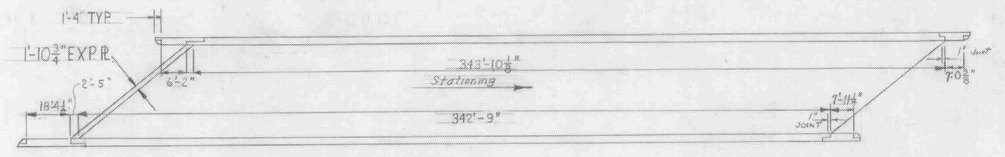
Scale 3/32 = 1'-0"



Cover Plate Details

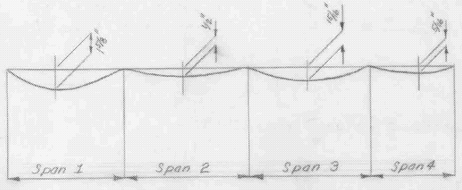
Scale 1/2" = 1'-0"

All-Welds 5/16



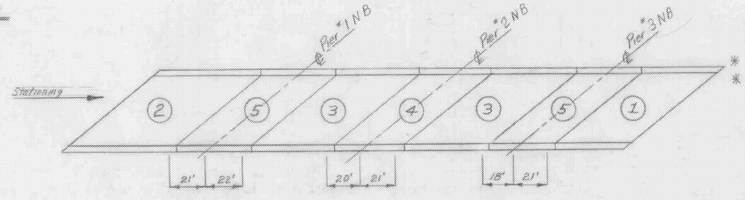
Curb Plan

Scale 1" = 30'



DL Deflection Diagram

N.T.S.



Pouring Schedule

Scale 1" = 40'

*Indicates Roadway Quantities

1. FOR DIAPHRAGM DET. SEE SOUTHBOUND SUPERSTRUCTURE
2. FOR SUPERSTRUCTURE DETAIL SEE Std. Sh. SCB 42-62
3. FOR GENERAL NOTES SEE STD. SCB-D1-62
4. FOR SPLICE DETAILS SEE SB SUPERSTRUCTURE
5. FOR HAUNCH " " "
6. No CAMBER IS REQUIRED. FABRICATE BEAMS WITH MILL CAMBER, IF ANY, UP.
7. FOR DETAILS OF EXP. JOINTS IN CURB NOT SHOWN SEE SHEETS BR 209, BR 219, BR 220, BR 221, AND BR 222.

HARTFORD-SHARON
IM MEMB(15)

SHEET 27 OF 47
BRIDGE 42N&S
FOR REFERENCE ONLY

SUPERSTRUCTURE EST. QUANTITIES NORTHBOUND

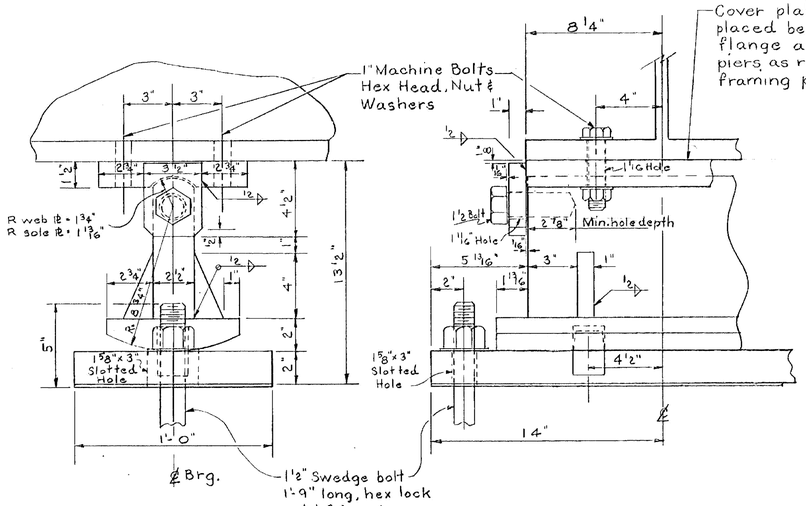
	ITEM NO.	ITEM	UNIT			TOTAL	FINAL
*	318	TAR EMULSION FOR BRIDGE FLOORS	GAL.			640	
*	361-B	BIT. CONC. PAVEMENT MOD. (DENSE GRADED TOP COURSE)	TON			135	
		UNCLASS. CHAN. EXCAV.	C.Y.				
		STRUCT. EXCAV.	C.Y.				
	401-AA	CONC. CLASS AA (MOD.)	C.Y.			~~465~~	481
		CONC. CLASS B (MOD.)	C.Y.				
	402	REINF. STEEL	LBS.			~~117,160~~	119,003
		ASPHALTIC-ASB. COATING	S.Y.				
		TREATED TIMBER PILING	L.F.				
		SPLICES FOR STEEL PILING	EA.				
		STEEL PILING	L.F.				
		UNTREATED TIMBER PILING	L.F.				
	404-A	STRUCTURAL STEEL	LBS.			~~677,000~~	658,600
	556-C	GRANITE BRIDGE CURB MOD	L.F.			~~732~~	686
	572	BRIDGE RAILING	L.F.			796	736
*	572-A	JOINT SEALER-HOT POURED	L.F.			99	
*	572-C	JOINT SEALER-PREFORMED	L.F.			116	

STAGE ■ & II CONSTRUCTION

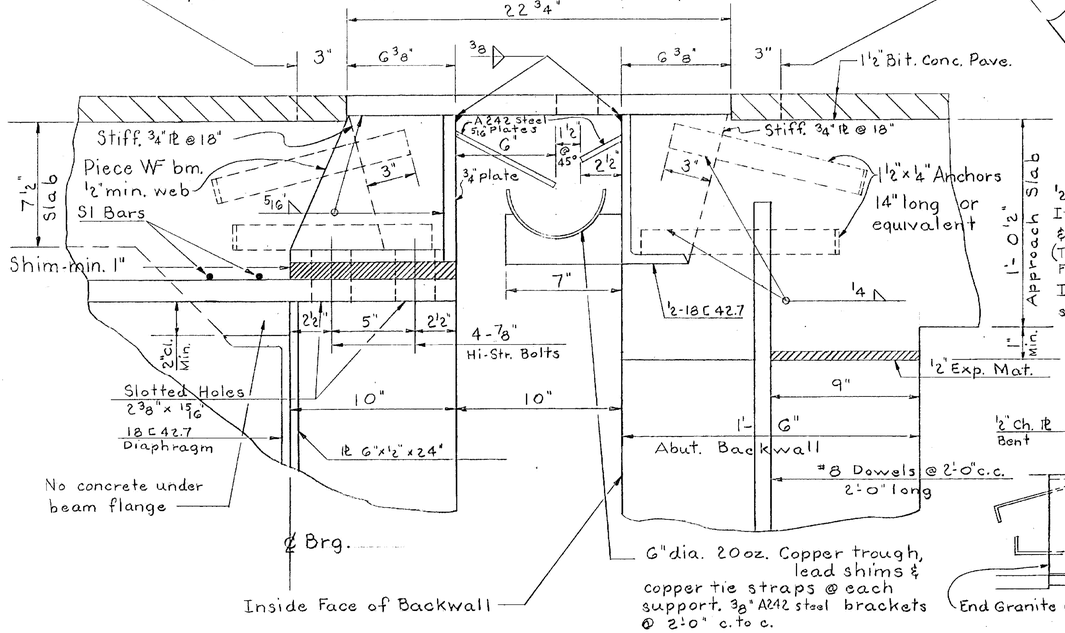
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Hartford
ROUTE NO. I-91 LOG STA.
I-91 over I-89
Northbound – Superstructure
SCALE as noted
SURVEYED BY
DRAWN BY C.F.H. CHECKED BY A.J.C.
PROJECT NO. I-91-1 (25)
SHEET 103 OF 265 Sh. 118, 124

BR 208



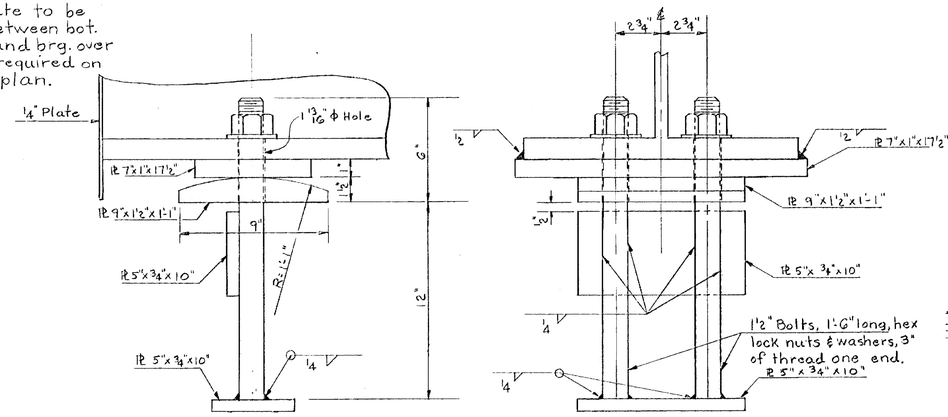
Expansion Bearing Details
Scale 3" = 1'-0"



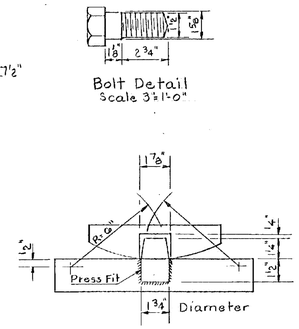
Section A-A
Scale 3" = 1'-0"

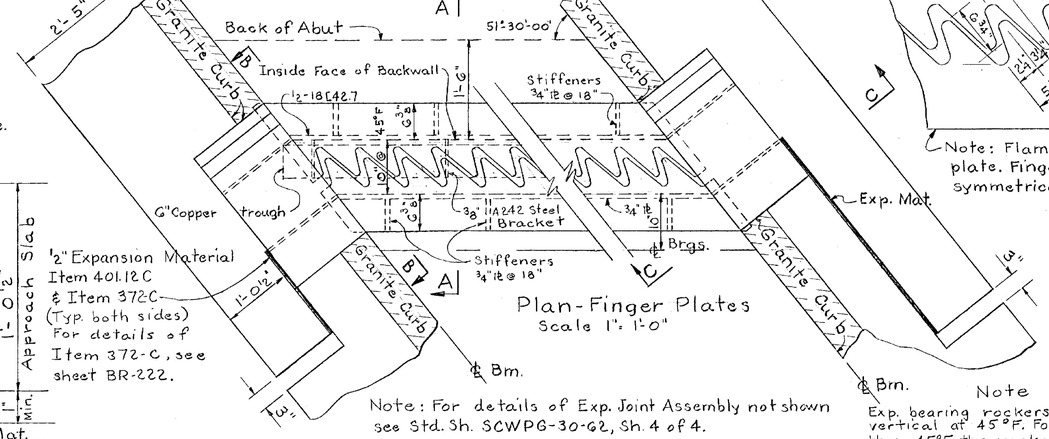
Note: For layout details of 6" Copper Trough and 4" dia. Wought Iron drain pipe see Std. Sh. SCWPG-30-62, Sheet #1.

Fixed Bearing Details
Scale 3" = 1'-0"

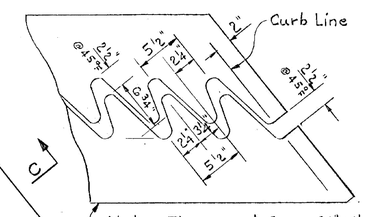


Note: For details of Fixed Bearings not shown see Std. Sh. SCB-D8-62, Det. A; SCB-D9-62, Det. A.



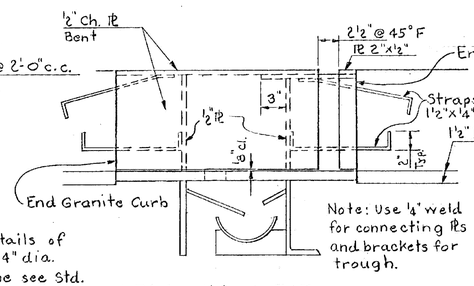


Note: For details of Exp. Joint Assembly not shown see Std. Sh. SCWPG-30-62, Sh. 4 of 4.

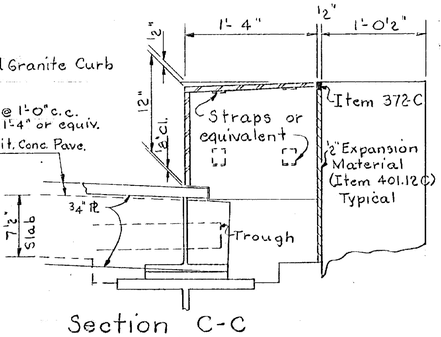


Note: Flame cut from 21"x1'8" plate. Fingers are to be symmetrical about ℄ of plate.

Note
Exp. bearing rockers are to be set vertical at 45°F. For temperatures other than 45°F the rockers are to be set out of plumb position according to whether the girder is expanded or contracted. The amount to be set out of plumb is determined as follows. (Length from fixed bearing) x .0000065 x (Degree of change from 45°F)



Elevation B-B
Scale 1 1/2" = 1'-0"



Section C-C
Scale 1 1/2" = 1'-0"

HARTFORD-SHARON
IM MEMB(15)

SHEET 28 OF 47
BRIDGE 42N&S
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Hartford
ROUTE NO. I 91 LOG STA.
I 91 over I 89
Details of Brgs. & Exp. Jt. Assembly
SCALE As Noted
SURVEYED BY Jewett
DRAWN BY A.J.C. CHECKED BY WMS 9/61
PROJECT NO. I 91-1(25)(31)
SHEET 10th OF 265 Sheets

BR 209

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

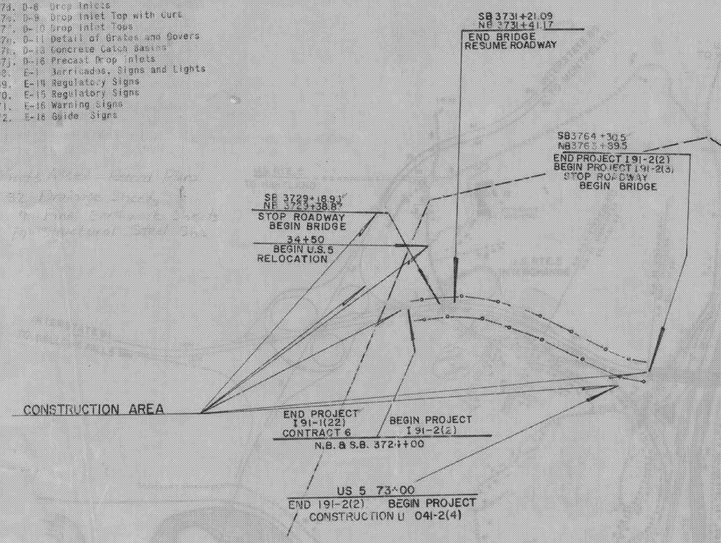
INTERSTATE PROJECT

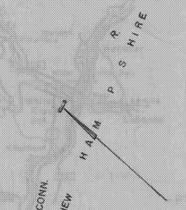
TOWN OF HARTFORD
COUNTY OF WINDSOR
INTERSTATE ROUTE 91
WINDSOR-NORWICH ROAD

BEGINNING AT A POINT 2.500 MILES NORTH OF THE HARTLAND-HARTFORD TOWN LINE AND EXTENDING NORTHERLY 0.761 MILE.
LENGTH OF ROADWAY 3817.99 FEET = 0.723 MILE.
LENGTH OF BRIDGE 202.23 FEET = 0.038 MILE.
LENGTH OF PROJECT 4020.22 FEET = 0.761 MILE.

DESIGN DESIGNATION

ADT	1965	6950	3000
ADT	1985	16760	4860
DHV	995	2465	730
D		51%	51%
T		7%	7%
V		65	





PROJECT NAME & NUMBER	TYPE	STAGE
HARTFORD I 91-2(2)	GRADING & DRAINAGE	I

RECORD PLANS

MATERIALS

SUBBASE OF GRAVEL—SWASEY PIT, DUPUIS PIT & SMITH L'HEUREUX PIT—HARTLAND, VT.
SUBBASE OF SAND—SMITH L'HEUREUX PIT—NO. HARTLAND, VT.
GRAVEL BACKFILL—DUPUIS PIT & SMITH L'HEUREUX PIT—HARTLAND, VT.
CRUSHED STONE SHOULDERS—SMITH L'HEUREUX QUARRY (PERINI CRUSHER)—HARTLAND, VT.
STONE CRITS—WELLS LAMSON QUARRY—BARRE, VT.
ASPHALT CEMENT—HUMBLE OIL CO.—EVERETT, MASS.
CRUSHED STONE PLANT MIXED BASE COURSE & BITUMINOUS CONCRETE PAVEMENT—L.M. PIKE & SON (PLANT)—W. LEBANON, N.H.
CONCRETE CLASS AA & B—MILLER READY MIX INC.—W. LEBANON, N.H.
REINFORCING STEEL & STEEL PILING—BETHLEHEM STEEL CORP.—ALBANY, N.Y.
STRUCTURAL STEEL—VERMONT STRUCTURAL STEEL CORP.—BURLINGTON, VT.
JOINT SEALER PREFORMED—D.S. BROWN CO.—NO. BALTIMORE, OHIO.
REINFORCED CONCRETE PIPE—HUME PIPE CO. OF NEW ENGLAND—WINDSOR, VT.
METAL CULVERT PIPE—NORTHEASTERN CULVERT CORP.—WESTMINSTER, VT.
GUARD RAIL ITEMS, CHAIN LINK & PROPERTY LINE FENCE, EROSION CONTROL ITEMS & TRAFFIC SIGNS—S.T. GRISWOLD & CO., INC.—WILLISTON, VT.
VITRIFIED CLAY PIPE—THE ROBINSON CLAY PRODUCTS CO.—AKRON, OHIO.
BRIDGE PAINT—AMSTERDAM COLOR WORKS—NEW YORK, N.Y.

CONTRACTOR—PERINI CORP.
FRAMINGHAM, MASS.
RESIDENT ENGINEER—ANGEL J. LAVIN.
INSPECTORS—D. WALKER, R. MASON, D. BURBANK, B. B. HOUGHTON.
RECORD PLANS—FRANCIS THORNE.

CONTRACT DATED—OCTOBER 27, 1965.
STARTED—NOVEMBER 9, 1965.
COMPLETED—DECEMBER 7, 1966.
ACCEPTED—DECEMBER 7, 1966.

SHEET NO.	
1.	Title Page
2.	Alignment Sheet
3.	Typical Sheet-Mainline (Grading and Drainage)
4-5.	Typical Sheets-Ramps (Grading and Drainage)
6.	Typical Sheet-U.S. Route 5
7.	Typical Sheet-Windsor Drive and Terminal Construction
8-9.	Quantity Sheets (Items Project I 91-2(2))
10-12.	Quantity Sheets (Items Composite Projs. I 91-2(2), I 89-1(6), U 220-2(10), U 091-2(2)
13-15.	Quantity Sheets (Drainage)
16-21.	Earthwork and Grade Sheets
22-23.	R.O.W. Detail Sheets
24-47.	Plan and Profile Sheets
48-53.	Entrance and Exit Terminals
54.	A-6 Solid Rock Excavation
55.	A-1 Banking Tables
56.	B-5 Typical Slope Grading
57.	B-10 Embankment on a Slope
58.	B-11 Methods of Slope Stabilization
59.	B-13 Drive in Intersections
60.	B-15 Entrance and Exit Terminals
61.	B-16 Divisional Islands, Storage Lanes
62.	B-17 Details of Bridge Approaches
63.	C-1 Curbs
64.	C-1A Curbs
65.	C-2A Drive Entrances with Sidewalk and Concrete Curb
66.	C-2B Drive Entrances with Sidewalk and Granite Curb
67a.	D-2 Headwall and Underdrain
67b.	D-3 Gutters and Jute Matting
67c.	D-4 Elbows and Flushing Basins
67d.	D-8 Drop Inlets
67e.	D-9 Drop Inlet Top with Curb
67f.	D-10 Drop Inlet Tops
67g.	D-11 Detail of Grates and Covers
67h.	D-12 Concrete Catch Basins
67j.	D-16 Precast Drop Inlets
68.	E-1 Guardrails, Signs and Lights
69.	E-14 Regulatory Signs
70.	E-15 Regulatory Signs
71.	E-16 Warning Signs
72.	E-18 Guide Signs
73.	E-19 Standard Sign Placement
74.	E-20 Delineators, Hazard Markers and Mileposts
75.	E-21 Federal Aid Construction Identification Signs
76.	F-1 Property Line Fence
77.	F-2 Galvanized Chain Link Fence
78.	F-3 Aluminum Alloy Chain-Link Fence
79.	G-1 Steel Beam Guard Rail
80.	G-3 Three Cable Guard Rail with Steel Posts
81.	G-3a Guard End Anchorage at Bridge Approaches
82.	G-4 Steel Marker Posts and Plank Guard Rail
83.	J-1 Boundary Markers
84.	J-4 Field Office
85-86.	Sign Summary and Location Sheets
87-88.	Overhead Sign Structure
89-112.	Bridge Series 100
113-121.	828-01 thru 03-65
122.	SB-RI-64 (Sheet 1 of 2)
123.	SB-RI-64 (Sheet 2 of 2)
124.	SB-R2-65
125-153.	Main Line Cross Sections
154-190.	Ramps A, B, C, D, F Cross Sections
191-212.	US 5 Relocation Cross Sections
213.	Windsor Drive Cross Sections
214-216.	Bike Ave., and Ring Drive Cross Sections
216.	Channel Line at US 5 42+00 Cross Sections
219-A-219-D	UTILITIES CONSTRUCTION PLANS

FOR RIGHT-OF-WAY DETAILS SEE RIGHT-OF-WAY PLANS FOR THIS PROJECT.

F.A. URBAN LIMITS

F.A. CONST. IDENTIFICATION SIGNS Δ

APPROVED R.H. Crowell ASST. CHIEF ENGINEER
DATE 8/17/65

HARTFORD I 91-2(2)
CONTRACTOR—PERINI CORP.
FRAMINGHAM, MASS.
RESIDENT ENGINEER—ANGEL J. LAVIN.
RECORD PLANS—FRANCIS THORNE.

184

HARTFORD-SHARON
IM MEMB(15)

SHEET 29 OF 47
BRIDGE 43S
FOR REFERENCE ONLY

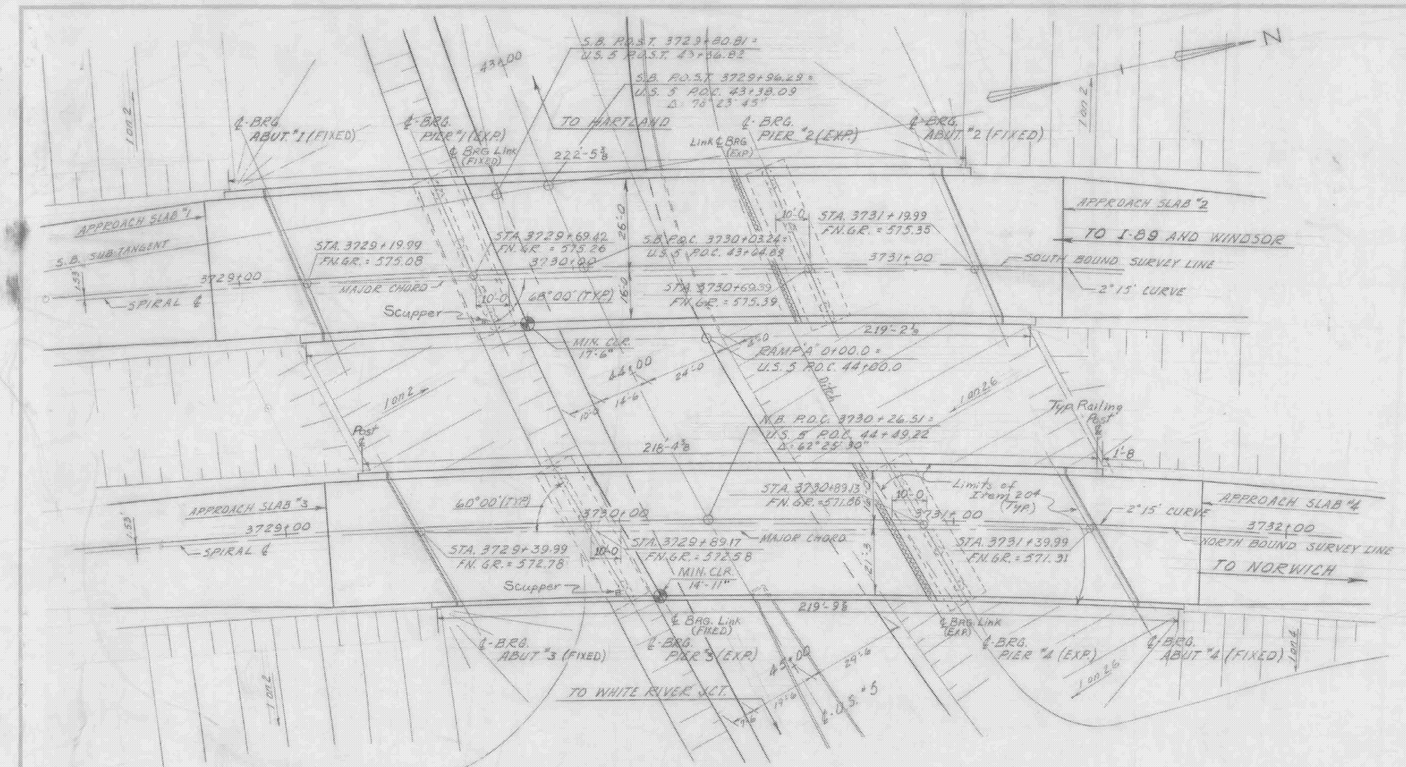
Stage 1 Construction

THESE PLANS AND THE STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE ... DATED APRIL 1964, AS APPROVED BY THE BUREAU OF ... ON OCTOBER 12, 1964, INCLUDING ALL SUBSEQUENT ... INCORPORATED IN THESE PLANS.

T. Wilkey 12/26/62 — Lm Perini 12/6/62 — T.S. Chase 8/4/... — 12/26/... — 2-22-62

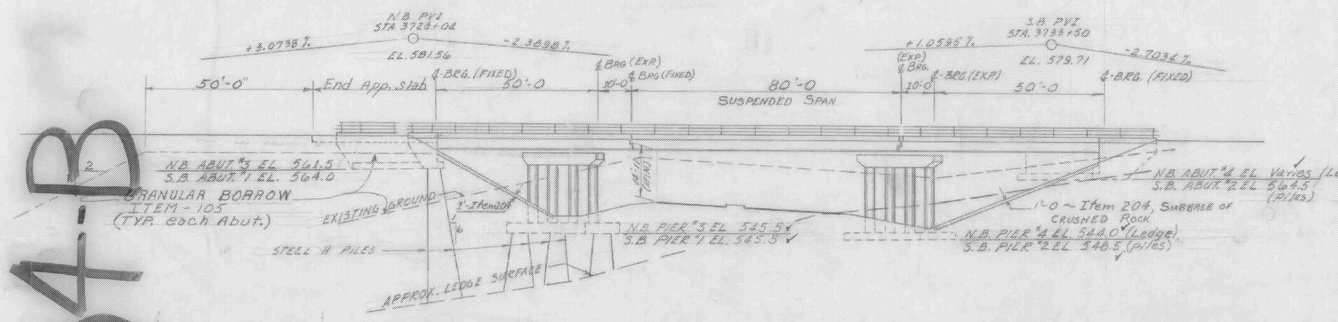
I 91-2(2)

219



PLAN

SCALE 1 IN = 20 FT.



ELEVATION ~ N.B. FASCIA

SCALE 1 IN = 20 FT.

184-B

GENERAL NOTES

1. General Notes as shown on SCB-D1-65 apply unless noted below or on the detail sheets.
2. Structural Steel: Camber stringers for dead load deflection plus effect of vertical curve.
3. Bridge Railing: Space railing posts so as to clear all joints and expansion plates by 1'-6" minimum. Provide 2" expansion clearance in Bridge Railing joints at the Finger Plate Expansion Device.
4. Reinforcing Steel: Minimum cover from face of concrete to reinforcing steel shall be 3" in footings; 2" elsewhere except as otherwise noted. Minimum splice length is 40 bar diameters.
5. Shear Connectors, Item 403: Spacing indicated is for ¾"ø x 7" studs. Other types of connectors may be substituted as noted on SCB-D1-65.
6. Steel Piling, Item 503-C, shall be driven to point bearing on ledge.
7. Placement of Deck Concrete: Use sequence indicated if use of retarding admixture is not directed. If the use of retarding admixture is directed, the sequence must provide that both end spans be loaded prior to placing the suspended span, to prevent uplift at abutments.
8. Bridge Railing: Either aluminum or galvanized steel rail, as detailed on SB-R1-64 and SB-R2-65 respectively, may be furnished at the option of the contractor.

LIST OF BRIDGE SHEETS

BR101	PLAN & ELEVATION
BR102	BRIDGE QUANTITY SHEET
BR103	PRELIMINARY INFORMATION SHEET
BR104	BORING LOG
BR105	BORING LOG
BR106	SOUTHBOUND FRAMING PLAN & TYPICAL SECTION
BR107	NORTHBOUND FRAMING PLAN & TYPICAL SECTION
BR108	CURB, SCUPPER AND TROUGH DETAILS
BR109	JOINT DIAPHRAGMS AND PIER BEARING DETAILS
BR110	ABUTMENT NO. 1
BR111	ABUTMENT NO. 2
BR112	PIER NO. 1 & PIER NO. 2
BR113	ABUTMENT NO. 3
BR114	ABUTMENT NO. 4
BR115	ABUTMENT NO. 4 DETAILS
BR116	PIER NO. 3
BR117	PIER NO. 4
BR118	APPROACH SLAB NO. 1
BR119	APPROACH SLAB NO. 2
BR120	APPROACH SLAB NO. 3
BR121	APPROACH SLAB NO. 4
BR122	REINFORCING SCHEDULE
BR123	REINFORCING SCHEDULE
BR124	REINFORCING SCHEDULE
	SCB-D1-65
	SCB-D2-65 (A) (C)
	SCB-D3-65 (A)
	SCB-D4-65
	SCB-D5-65
	SCB-D6-65 (A) (B) (F)
	SCB-D8-65 (A) (E)
	SCB-D9-65 (A)
	SB-R1-64 SHEET 1 OF 2
	SB-R1-64 SHEET 2 OF 2
	SB-R2-65
	G-3a.

* Stage II Quantities

SUPERSTRUCTURE QUANTITIES

ALL AB

ITEM NO.	ITEM	UNIT	SB NET	NB NET	FINAL S.B. Tot.	FINAL S.B. Tot.
	CHAN. EXCAV. OF EARTH	C.Y.				
318	TAR EMULSION FOR BRIDGE FLOORS	GAL.	375	333	*	*
361-B	BITUMINOUS CONCRETE PAVEMENT	TON	80	70	*	*
	STRUCT. EXCAV.	C.Y.				
401-AA	CONC. CLASS AA (MOD.)	C.Y.	~~276~~	~~246~~	290	254
	CONC. CLASS B (MOD.)	C.Y.				
402	REINF. STEEL	LBS.	~~69,690~~	~~61,919~~	69,696	61,909
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
403	SHEAR CONNECTORS (6968#)	LS	~~7/13~~ ✓	~~6/13~~ ✓	7/13	6/13
404-A	STRUCTURAL STEEL	LBS.	~~257,280~~	~~255,241~~	296,899	257,067
408	RETARDING ADMIXTURE FOR CONC.	UNIT/CY.	~~276~~	~~246~~	192	0
440	WATER REPELLENT	GAL.	~~23~~	~~21~~ ✓	22	21
556-C	GRANITE BRIDGE CURB	L.F.	~~455~~	~~455~~	407	406
572	BRIDGE RAILING	L.F.	~~449~~	~~445~~	448	444

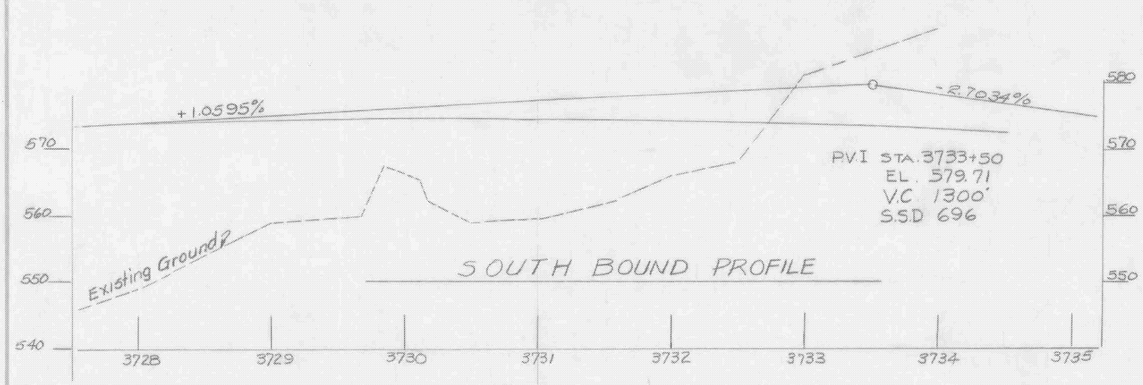
HARTFORD-SHARON
IM MEMB(15)

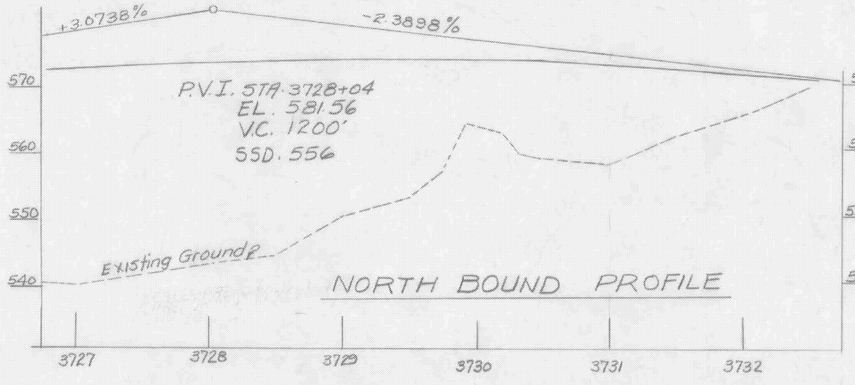
SHEET 30 OF 47
BRIDGE 43S
FOR REFERENCE ONLY

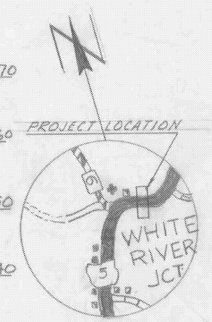
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

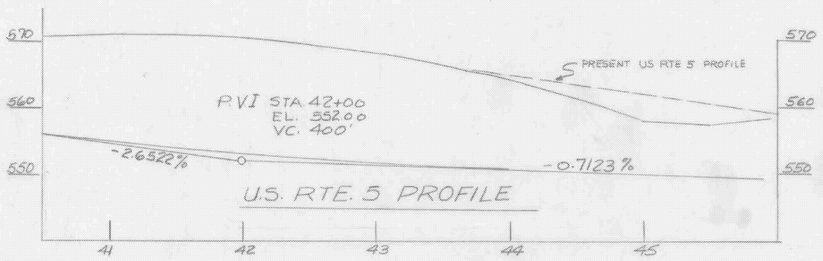
TOWN OF HARTFORD
ROAD NO. I-91 BRIDGE NO. 43 N+S
INTERSTATE OVER U.S. 5
PLAN AND ELEVATION
SCALE As Shown
SURVEYED BY
DRAWN BY RLO CHECKED BY WBT
Rev. by RLO 1-68
PROJECT NO. I-91-2(2) (22)
SHEET 89/116 OF 219/175

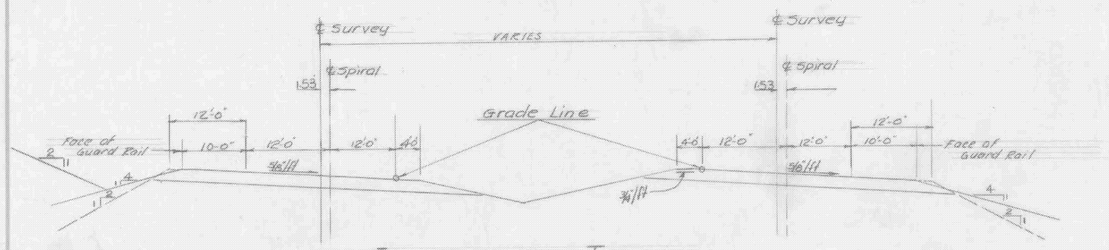
BR 101 of 124

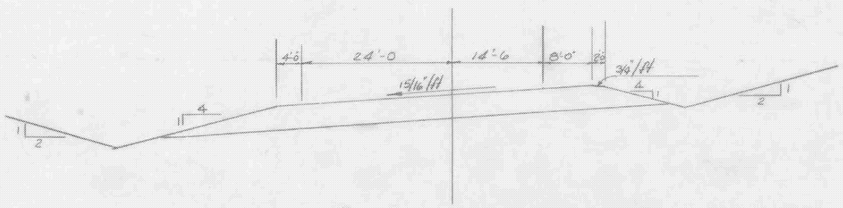












TYPICAL SECT @ STA 44+00 US#5

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE Three Span Cantilever W.F. beam
2 RECOMMENDED CLEAR SPAN OR SPANS 50'-110'-80'-110'-50'
3 ARE SIDEWALKS REQUIRED NO
4 RECOMMENDED TYPE OF PAVEMENT 1½" Bit Conc Pav't & 7½" Conc Slab

TABLE OF ESTIMATED PILE LENGTHS

LOCATION	FOOTING ELEV.	PILE LENGTH
Abutment No. 1	564.0	40'
Abutment No. 2	564.5	32'
Abutment No. 3	561.5	36'
Abutment No. 4	VARIES (on ledge)	—
Pier No. 1	545.5	21'
Pier No. 2	548.5	22'
Pier No. 3	545.5	22'
Pier No. 4	544.0 (on ledge)	—

Design Loading: HS 20-44

Design Stresses: A36 Steel f_s = 20,000 psi
Concrete f_c = 3,000 psi
Reinf Steel f_s = 20,000 psi (Tension)

Recommended for Approval	Recommended for Approval	Approved By 6/9/64
6/3/64 Lewis M Pyrros	6/9/64 R. H. Conwell	A. D. Sinkler
Bridge Engineer	Asst Chief Engineer	Chief Engineer

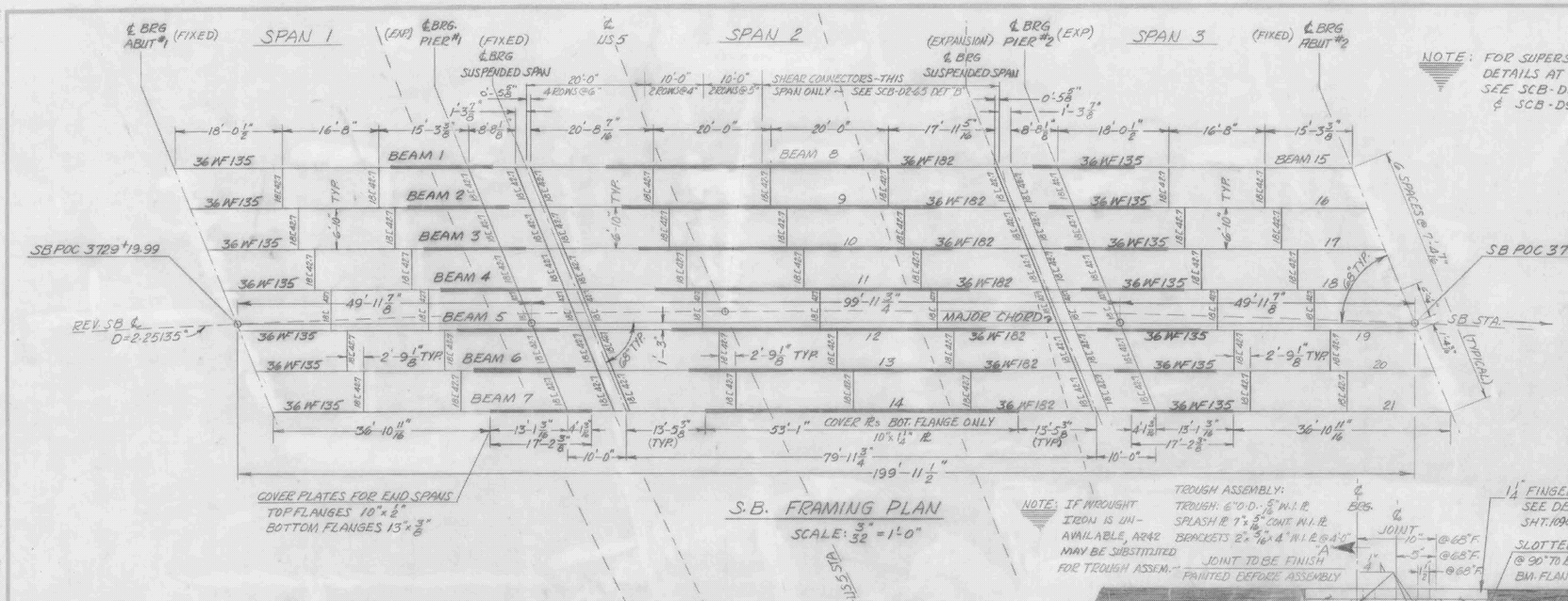
ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. I91 LOG STA.
INTERSTATE I-91 OVER US#5
PRELIMINARY INFORMATION
SCALE
SURVEYED BY
DRAWN BY G.V.K. CHECKED BY R.L.O.
PROJECT NO. F-91-2(2)
SHEET 91 OF 219

HARTFORD-SHARON
IM MEMB(15)

SHEET 31 OF 47
BRIDGE 43S
FOR REFERENCE ONLY



ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

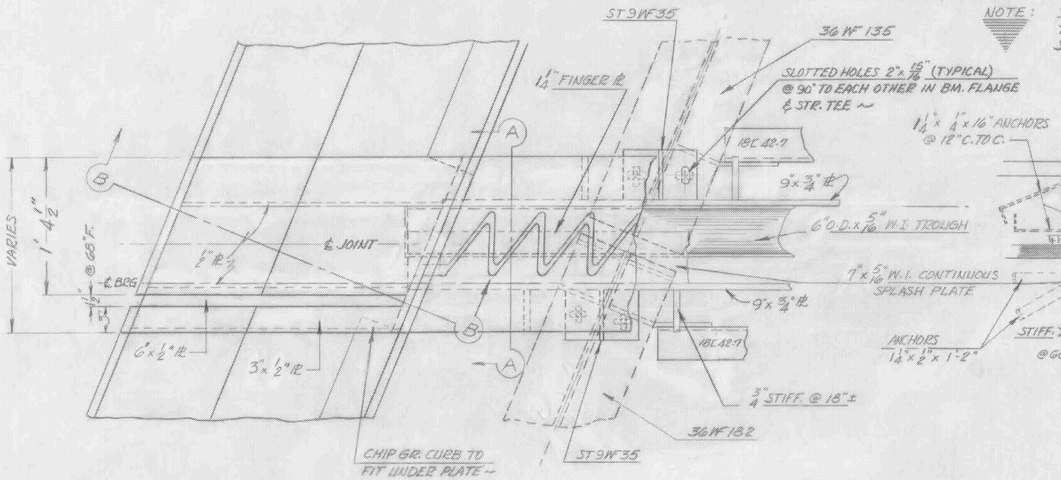
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD URBAN - SOUTH
ROAD NO. I 91 BRIDGE NO.
S.B. FRAMING PLAN - TYPICAL SECTION
SOUTHBOUND I 91 OVER US 5
SCALE AS SHOWN
SURVEYED BY
DRAWN BY RHN CHECKED BY R.N.D. S.N.A.
PROJECT NO. I 91-2(2) (22)
SHEET 94 OF 219 118 of 175

HARTFORD-SHARON
IM MEMB(15)

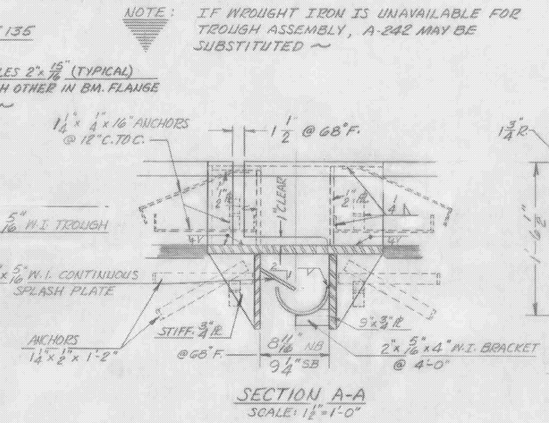
SHEET 32 OF 47
BRIDGE 43S
FOR REFERENCE ONLY

BR 106 OF 124

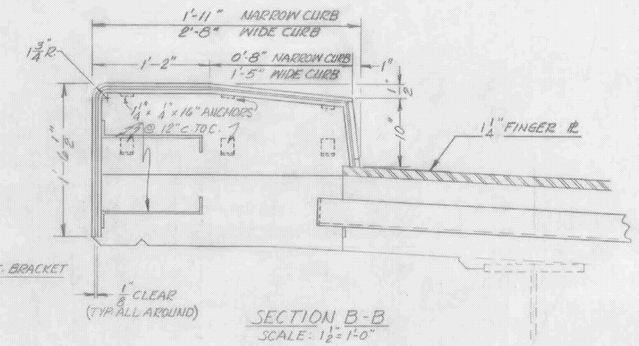


PARTIAL PLAN OF CURB & FINGER ℔s AT EXPANSION JOINT
SCALE: 1½" = 1'-0"

NOTE: IF WROUGHT IRON IS UNAVAILABLE FOR TROUGH ASSEMBLY, A-242 MAY BE SUBSTITUTED ~



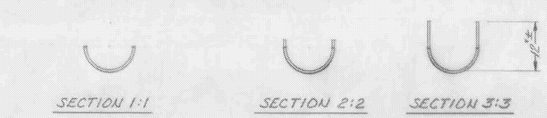
SECTION A-A
SCALE: 1½" = 1'-0"

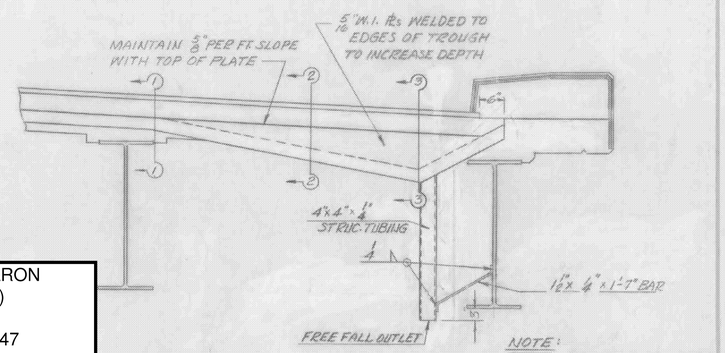


SECTION B-B
SCALE: 1½" = 1'-0"

SOUTHBOUND	DEPTH	WIDTH	THICKNESS	TAPER	WELD "A"	WELD "B"	L1
CANTILEVER SPAN							
TOP FLANGE	17"-2⅜"	10"	½"	1'-0"	5/16"	5/16"	1'-9½"
BOT "	17"-2⅜"	13"	⅜"	1'-6"	5/16"	5/16"	1'-9½"
SUSPENDED SPAN							
BOT FLANGE	53"-1"	10"	1¼"	1'-0"	5/16"	⅛"	2'-0"
NORTHBOUND							
CANTILEVER SPAN							
TOP FLANGE	17"-2⅜"	10"	½"	1'-0"	5/16"	5/16"	1'-9½"
BOT FLANGE	17"-2⅜"	13"	⅜"	1'-6"	5/16"	5/16"	1'-9½"
SUSPENDED SPAN							
BOT FLANGE	53"-1"	10"	1¼"	1'-0"	5/16"	⅛"	2'-0"

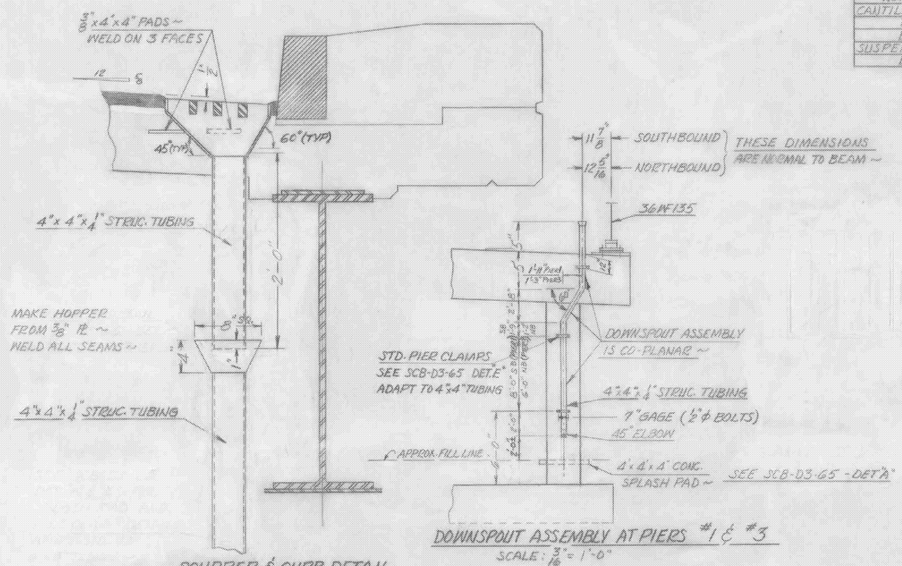
COVER PLATE DETAILS





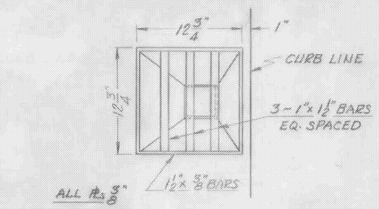
NOTE: PAVE RUN-OFF FROM BACKSLOPE TO DITCH ~

TROUGH DETAIL AT DISCHARGE END
SCALE: ¾" = 1'-0"



SCUPPER & CURB DETAIL
SCALE: 1½" = 1'-0"

DOWNSPOUT ASSEMBLY AT PIERS #1 & #3
SCALE: 3/16" = 1'-0"



PLAN OF SCUPPER
SCALE: 1½" = 1'-0"

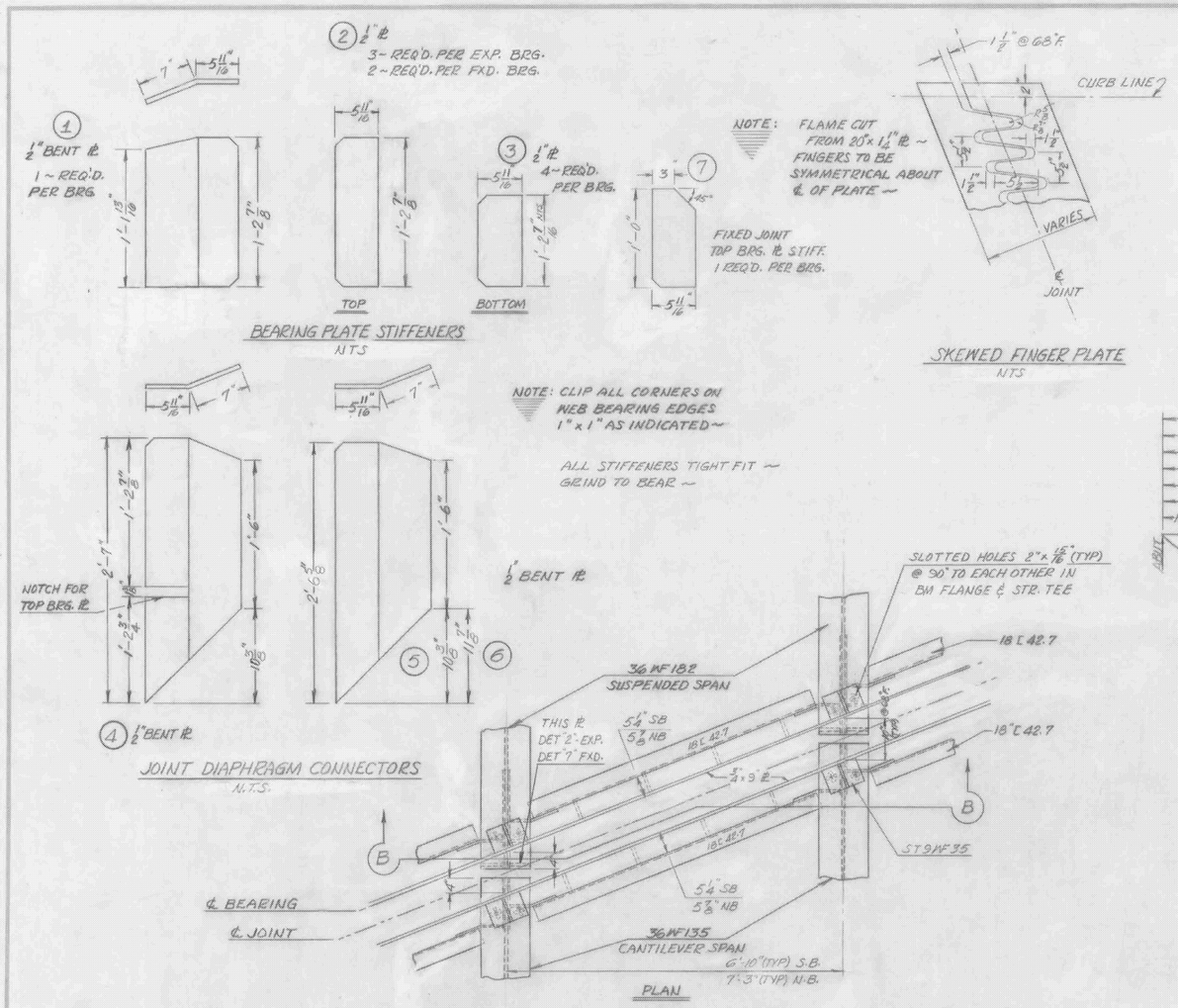
HARTFORD-SHARON
IM MEMB(15)

SHEET 33 OF 47
BRIDGE 43S
FOR REFERENCE ONLY

ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD URBAN - SOUTH
ROUTE NO. I 91 LOG STA.
CURB, SCUPPER & TROUGH DETAILS
I 91 OVER US 5
SCALE AS SHOWN
SURVEYED BY
DRAWN BY RHW CHECKED BY EFP
PROJECT NO. I 91-2(8)
SHEET 96 OF 219



ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

HARTFORD-SHARON
IM MEMB(15)

SHEET 34 OF 47
BRIDGE 43S
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD URBAN-SOUTH
ROAD NO. I 91 BRIDGE NO.
JOINT DIAPHRAGM & PIER ROCKER ASSEMBLY
SOUTHBOUND I 91 OVER US #5
SCALE AS SHOWN
SURVEYED BY
DRAWN BY RHN CHECKED BY RND - SNA
PROJECT NO. I 91-2(12)
SHEET 97 OF 219

INDEX OF SHEETS

SHEET NO. 1	TITLE PAGE
2	BRIDGE QUANTITY SHEET
3-5	PLAN AND PROFILE SHEETS
6	E-2 BARRICADES, SIGNS AND LIGHTS (BRIDGE)
7	E-31 CONSTRUCTION IDENTIFICATION SIGNS
8	J-1 MARKERS
9	J-4 FIELD OFFICE
10	PLAN AND ELEVATION-(1" = 50' SCALE)
11-12	PLAN AND ELEVATION-(1" = 20' SCALE)
13	GENERAL NOTES
14	PRELIMINARY INFORMATION SHEET
15-16	BORINGS SHEETS
17	FRAMING PLAN, DETAILS, TYPICAL CROSS-SECTION
18	FRAMING PLAN, DETAILS
19-22	GIRDER DETAILS
23	MOMENT, DEAD LOAD DEFLECTION, SHEARS, REACTIONS
24	ROADWAY EXPANSION DEVICE
25	BLANK
26	BEARING DEVICES
27	ABUTMENT NO. 1 NB
28	ABUTMENT NO. 1 SB
29	ABUTMENT NO. 2 NB AND SB
30	PIER NO. 1 NB AND SB
31	PIER NO. 2 NB AND SB
32	PIER NO. 3 NB AND SB
33	PIER NO. 4 NB AND SB
34	PIER NO. 5 NB AND SB
35	PIER NO. 6 NB AND SB
36	APPROACH SLABS NO. 1 AND NO. 2 NB AND SB
37-40	REINFORCING STEEL DETAIL SHEETS
41-42	CHANNEL SECTIONS
43-60	ROADWAY CROSS SECTIONS
	SCB-D6-62, DETAILS "B" AND "F"
	SCB-D7-62, DETAIL "D"
	SB-R1-64, SHEETS 1 AND 2
	SB-R2-65
	2A-B R.O.W. DETAILS

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

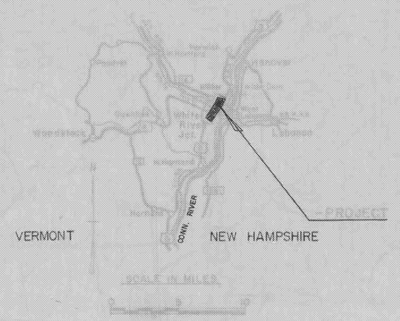
PROPOSED IMPROVEMENT

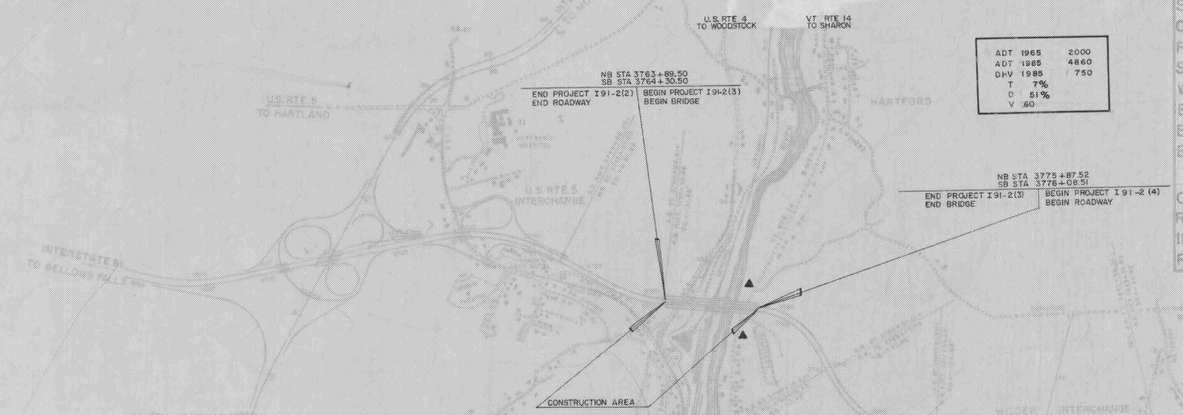
INTERSTATE PROJECT

TOWN OF HARTFORD
COUNTY OF WINDSOR
INTERSTATE ROUTE 91
BELLOWS FALLS — BRADFORD ROAD
STAGE I

TOWN LINE AT: BEGINNING AT A POINT 3.262 MILES NORTH OF THE HARTLAND-HARTFORD
NB STA 3763+89.50, SB STA 3764+30.50 AND EXTENDING NORTHERLY 0.225 MILE TO NB STA 3775+87.52, SB STA 3776+08.51

LENGTH OF BRIDGE: NB 1196.02 FEET = 0.225 MILE; SB 1176.01 FEET





ADT	1965	2000
ADT	1985	4860
DHV	1985	750
T	7%	
D	51%	
V	60	

PROJECT NAME & NUMBER	TYPE BRIDGE
HARTFORD I 91-2(3)	CONT. WELDED PLATE GIRDER

RECORD PLANS

MATERIALS

SUBBASE OF CRUSHED ROCK —— SMITH L'HEUREUX QUARRY (PERINI CRUSHER) —— HARTFORD, VT.
CONCRETE CLASS AA & B —— MILLER'S READY MIX PLANT —— —— W. LEBANON, N.H.
REINFORCING STEEL & STEEL PILING-- BETHLEHEM STEEL CORP. —— BETHLEHEM, PA.
STRUCTURAL STEEL —— AMERICAN BRIDGE DIV. OF U.S. STEEL CORP. —— NEW YORK, N.Y.
WATER REPELLENT —— RUTLAND FIRE CLAY CO. —— —— RUTLAND, VT.
BRIDGE RAILING —— —— WARD WELLER CO., INC. —— —— NATICK, MASS.
BITUMINOUS CONCRETE PAVEMENT —— L.M. PIKE PIKE (PLANT) —— —— W. LEBANON, N.H.
BRIDGE PAINT —— THE VOLTAX CO., INC. —— BRIDGEPORT, CT.
AMSTERDAM COLOR WORKS —— —— NEW YORK, N.Y.

CONTRACTOR—E.T. O'NEILL & SON CONST. CORP.—HOLYOKE, MASS.	CONTRACT: DATED—SEPTEMBER 27, 1965.
RESIDENT ENGINEER — THOMAS P. PINELLO.	STARTED—OCTOBER 1, 1965.
INSPECTOR — P. PLUMB.	COMPLETED—NOVEMBER 9, 1967.
RECORD PLANS—A.A. PICHE & R. WEICHERT.	ACCEPTED—NOVEMBER 9, 1967.

HARTFORD-SHARON
IM MEMB(15)

SHEET 35 OF 47
BRIDGE 44N&S
FOR REFERENCE ONLY

163

HARTFORD I 91-2(3)
CONTRACTOR—E.T. O'NEILL & SON CONST. CORP.
HOLYOKE, MASS.
CONST. COMP.—NOVEMBER 9, 1967.
RECORD PLANS—A.A. PICHE & R. WEICHERT.

CONST.
PROJECT HARTFORD
NUMBER I 91-2(3) LENGTH 0.225 MI.
TYPE 2-7 SPAN CONTINUOUS WELDED PLATE GIRDER BRIDGES
CONTRACTOR E.T. O'NEILL & SON CONST. CORP. YEAR 1965-67
HOLYOKE, MASS.
LOCATION BEGINNING AT A POINT 3.262 MILES NORTH OF THE HARTLAND-HARTFORD TOWN LINE AT N.B. 3763+89.50 & S.B. 3764+30.50 AND EXTENDING NORTHERLY 0.225 MILE TO N.B. 3775+87.52 & S.B. 3776+08.51.

, DATED APRIL, 1964, AS APPROVED BY THE BUREAU OF PUBLIC ROADS OCT. 12, 1964

R.H. Arnold ASST. CHIEF 7/27/64	E.H. Stickney 8/12/1964	Lue Byorn 7/24/64	F.E. Shaw 7/31/64	G.M. Lane 8/10/64	G.D. Bishop July 27/64

I 91-2(3)
STAGE I CONSTRUCTION
60

Abut. #1 S.B.
Sta. 3764+34.00 - ℄ Brgs.
F.G. 464.23 - Fixed

BEGIN BRIDGE Sta. 3764+30.50
F.G. 464.27

Pier #1 S.B.
Sta. 3765+01.00 - ℄ Brgs.
F.G. 463.34 - Exp.

Pier #2 S.B.
Sta. 3766+25.00 - ℄ Brgs.
F.G. 461.70 - Exp.

Pier #3 S.B.
Sta. 3768+25.00 - ℄ Brgs.
F.G. 459.05 - Fixed

Railroad Spur - to be removed by Central Vermont R.R.

Pier #4 S.B.
Sta. 3770+65.00 - ℄ Brgs.
F.G. 455.87 - Fixed

Pier #5 S.B.
Sta. 3773+05.00 - ℄ Brgs.
F.G. 458.69 Fixed

Vt. Rte. 14
P.I. 30+00.30 =
(29+99.60)
Δ = 9°33' Lt.

Pier #6 S.B.
Sta. 3775+05.00 - ℄ Brgs.
F.G. 450.04 - Exp.

Abut. #2 S.B.
Sta. 3776+05.01 - ℄ Brgs.
F.G. 448.71 - Fixed

END BRIDGE Sta. 3776+08.51 S.B.
F.G. 448.67

SOUTHBOUND LANE

NORTHBOUND LANE

N.B. P.O.T. 3772+92.30 =
Ch. P.O.T. 109.00.00

80°-00'-00"

Rte. 14
P.O.C. 30+85.20 =
N.B. P.O.T. 3773+95.17

N.B. T.S. 3774+54.89

Pier #6 N.B.
Sta. 3774+94.00 - ℄ Brg.
F.G. 449.91 - Exp.

END BRIDGE Sta. 3775+67.52 NB
F.G. 448.55

Abut. #2 N.B.
Sta. 3775+84.02 - ℄ Brgs.
F.G. 448.59 - Fixed

Pier #5 N.B.
Sta. 3772+84.00 - ℄ Brgs.
F.G. 452.56 - Fixed

Pier #4 N.B.
Sta. 3770+44.00 - ℄ Brgs.
F.G. 455.74 - Fixed

Pier #3 N.B.
Sta 3768+04.00 - ℄ Brgs.
F.G. 458.92 - Fixed

Pier #2 N.B.
Sta. 3766+04.00 - ℄ Brg.
F.G. 461.57 - Exp.

Pier #1 N.B.
Sta. 3764+60.00 - ℄ Brgs.
F.G. 463.48 - Exp.

Abut. #1 N.B.
Sta. 3763+93.00 - ℄ Brgs.
F.G. 464.37 - Fixed

BEGIN BRIDGE Sta. 3763+89.50 NB
F.G. 464.41

Rte. 4 67+20.86 =
N.B. P.O.T. 3765+02.94
Δ 60°-30'-00"

N.B. P.O.T. 3771+79 NB

See Note on Sheet 41 of 60 Relative to Additional Stone Fill

Cemetery Road

Woods & Brush

Old P.R. bank house

shed

Sub-Station

Stone Fill

White River

New 60"ø SP. ACCGMP Not Part of Project I 91-2(3)

New 54"x 38" PACCGMP Not Part of Project I 91-2(3)

Vt. Rte. 14

Susp. Span
70.00' S.B.
90.00' N.B.

Span 1 — Span 2 — Span 3 — Span 4 — Span 5 — Span 6 — Span 7

S.B. LANE

N.B. LANE

-1.325% N.B. & S.B.

Cvd. H.W. El. 340

WL-SB

WL-NB

Avg. El. = 313.50

Avg. El. 324.60

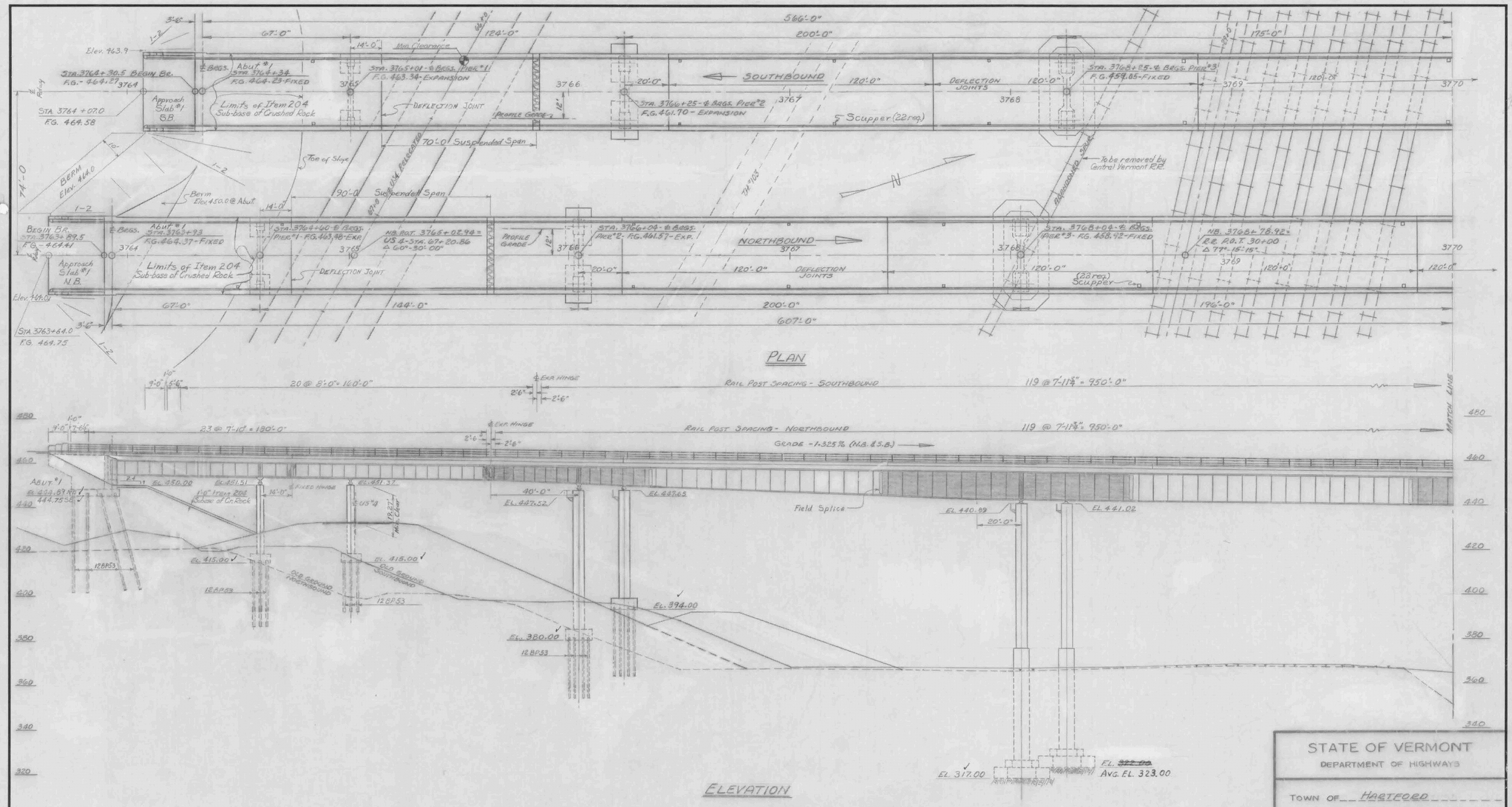
NB PROFILE

END POSTS ELIMINATED (C.O. #5)
BRIDGE RAILING EXTENDED

HARTFORD-SHARON
IM MEMB(15)

SHEET 36 OF 47
BRIDGE 44N&S
FOR REFERENCE ONLY

HARTFORD
I 91-2(3)
Sht 10 of 60



HARTFORD-SHARON
IM MEMB(15)

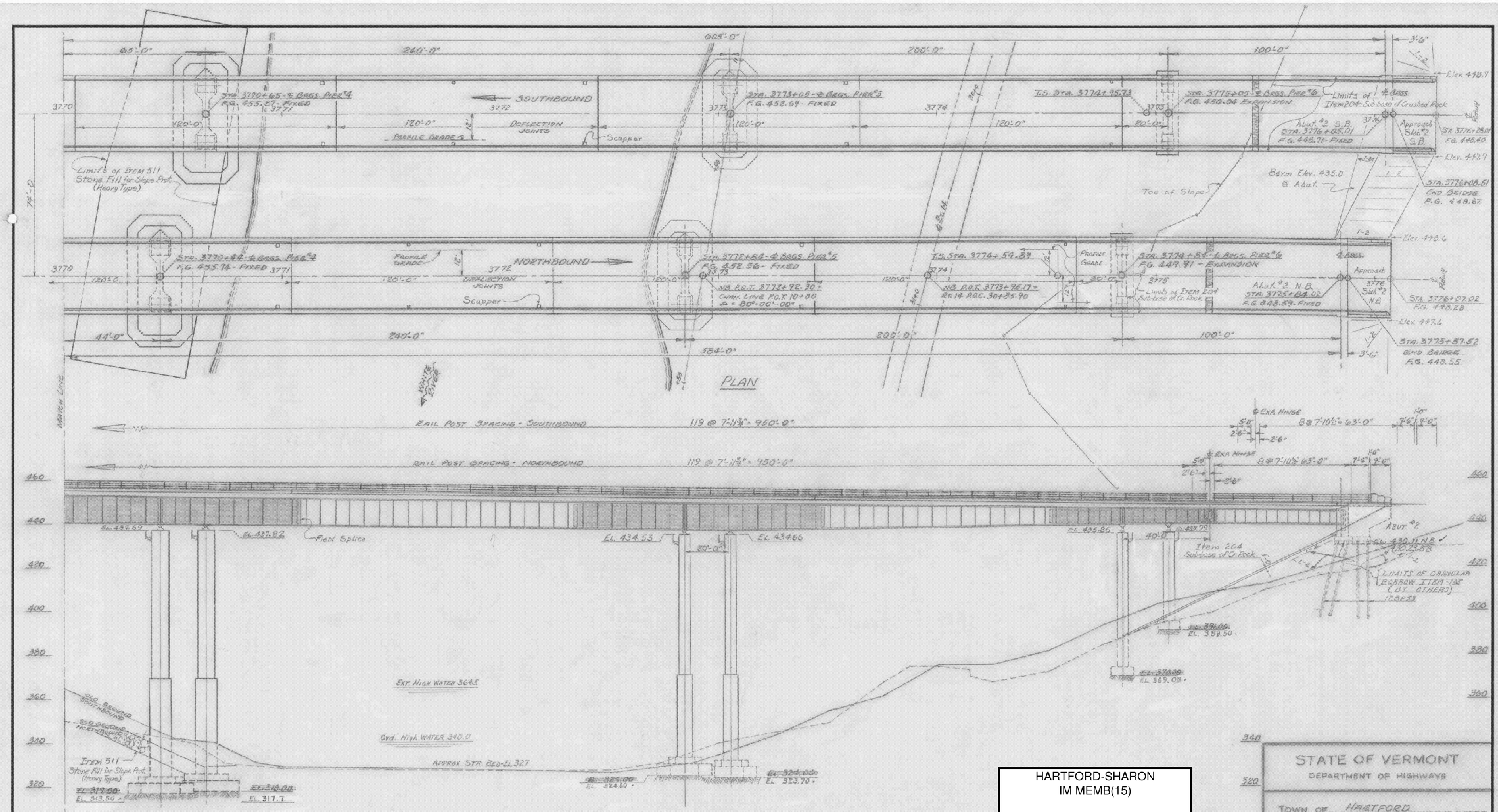
SHEET 37 OF 47
BRIDGE 44N&S
FOR REFERENCE ONLY

NOTE- Shaded areas of Girder in the elevation view indicate that Girder material is A.S.T.M. A-441 low-alloy, high strength steel. Remainder of Girder is A.S.T.M. A-36 carbon steel.

BP #02 of 400

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Hartford
ROUTE NO. I-91 LOG STA.
I-91 over White River
Plan and Elevation
SCALE 1" = 20'-0"
SURVEYED BY Jewett & Watson
DRAWN BY E.T.B. & T.W.S. CHECKED BY NBT
PROJECT NO. I-91-2 (3) (22)
SHEET 11 OF 60 32 of 175



HARTFORD-SHARON
IM MEMB(15)

SHEET 38 OF 47
BRIDGE 44N&S
FOR REFERENCE ONLY

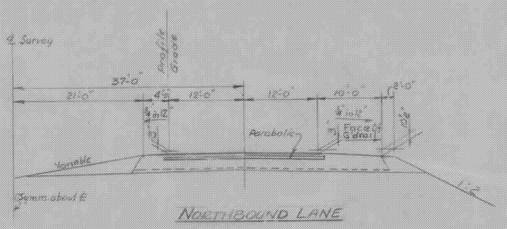
NOTE - Shaded areas of Girder in the elevation view indicate that Girder material is A.S.T.M. A-441 low-alloy, high strength steel. Remainder of Girder is A.S.T.M. A36 carbon steel.

BR 403 of 405

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. I-91 LOG STA.
I-91 OVER WHITE RIVER
PLAN AND ELEVATION
SCALE 1" = 20'-0"
SURVEYED BY LOCKETT & WATSON
DRAWN BY R.I.B. & R.L.M. CHECKED BY NBT
PROJECT NO. I-91-2(3) (22)
SHEET 12 OF 60 03 of 175

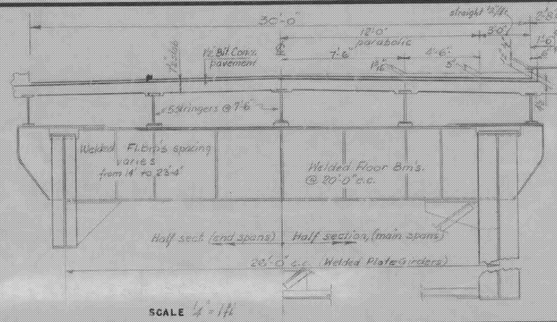
PHOENIX MEM. B. L. M. INC. MASS.



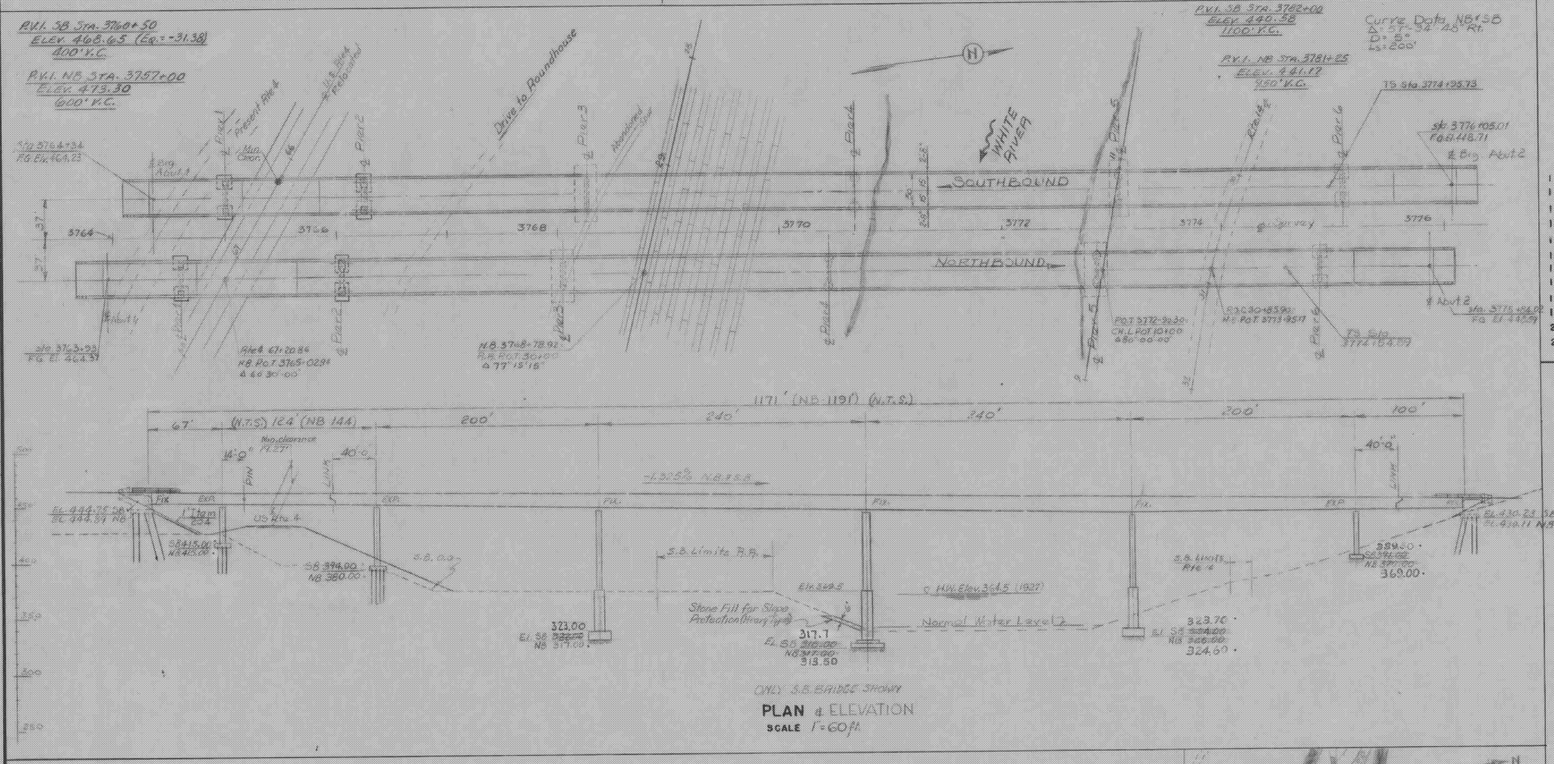
NORTHBOUND LANE

NEW HIGHWAY SECT. STA. TO STA.

SCALE 3/32" = 1ft

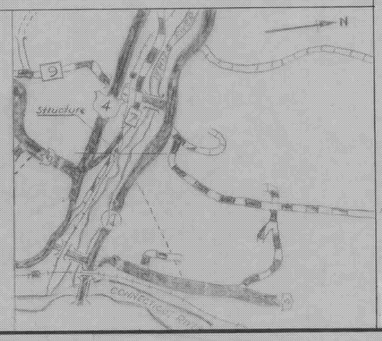


SCALE ¼" = 1ft



PLAN & ELEVATION

SCALE 1"=60ft.



PROFILE OF PROPOSED STREAM CHANNEL

SCALE

HIGHWAY NO I-91 NAME OF HIGHWAY INTERSTATE

STRUCTURE NO ____ COUNTY WINDSOR TOWN HARTFORD

PROJECT NO I91-2(3) LOCATION WHITE RIVER JCT. @ ± 1.5 mile from Connecticut River

EXISTING STRUCTURE

1 RATED LOADING OF EXISTING STRUCTURE ____

2 TYPE OF EXISTING STRUCTURE ____

3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE ____

4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE ____ COST OF REMOVAL ____

5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE ____

6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT ____

7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE ____ WATERWAY TO ORDINARY H.W. ____

8 EXTREME HIGH WATER AT EXISTING STRUCTURE ____

9 SPAN OF EXISTING BRIDGE UPSTREAM ____ WATERWAY TO EXTREME H.W. ____
SPAN OF EXISTING BRIDGE DOWNSTREAM ____ WATERWAY TO EXTREME H.W. ____

10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS ____

11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE ____

12 IF NOT AT WHAT ELEVATION IS RELIEF AFFORDED ____

13 ADDITIONAL WATERWAY AREA PROVIDED ____

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE WELDED PLATE GIRDER CONTINUOUS WITH 3 HINGES

2 RECOMMENDED CLEAR SPAN OR SPANS 67'-124-200-240'-240'-200'-100' = 144 For N.B.
MEASURED PARALLEL TO ℄ NEW HIGHWAY ____
MEASURED AT RIGHT ANGLES TO ℄ STREAM ____

3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO YES

4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE 340

5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 364.5 SOURCE OF INFORMATION 1927 FLOOD RECORDS

6 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE? YES

7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? NO IS ORDINARY RISE RAPID? YES

8 LOW WATER ELEVATION AT NEW STRUCTURE 330.0

9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 415,800 CHARACTER OF TERRAINE Hilly

10 IS STREAM EVER DRY? NO

11 VELOCITY OF STREAM AT HIGH WATER STAGE 12.6 Ft/Sec ESTIMATED DISCHARGE 124,000 ft³/sec.

12 AREA FULL OPENING 10,620 Ft² AREA BELOW ORDINARY H.W. ____

13 CHARACTER OF SCOUR ____ DRIFT ____ ICE Medium To Heavy

14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE ____

15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION 75' ±

16 ARE SIDEWALKS REQUIRED, IF SO ON WHAT SIDE NO BOTH SIDES NO

17 RECOMMENDED TYPE OF PAVEMENT Conc. Slab, bituminous wearing surface

18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. NONE ONE OR TWO WAYS ____ PROBABLE COST ____

19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE $ 2700.00

20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? NO

21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 10 T/ft² SHOULD PILES BE USED? YES EST. LGTH. VARIES

FOUNDATION INFORMATION

OBTAINED FOR DESIGN PURPOSES ONLY, AND THE STATE ASSUMES NO RESPONSIBILITY WHATSOEVER FOR THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN. BOULDERS MAY BE ENCOUNTERED AT ANY PIER OR ABUTMENT LOCATION.

See: N.B. LANE BORINGS SHEET 16
S.B. LANE BORINGS SHEET 15

HARTFORD-SHARON
IM MEMB(15)

SHEET 39 OF 47
BRIDGE 44N&S
FOR REFERENCE ONLY

Recommended for Approval ____ Bridge Engineer 1/7/63 Date

Recommended for Approval ____ Asst. Chief Engineer 1/21/63 Date

Approved by ____ Chief Engineer 1/18/63 Date

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

INTERSTATE IN THE TOWNS OF HARTFORD

ROUTE NO. I 91 STA 370+

WHITE RIVER BRIDGE

PRELIMINARY INFORMATION

SURVEYED BY	CHECKED BY	SCALE
DRAWN BY	IN CHARGE	DATE

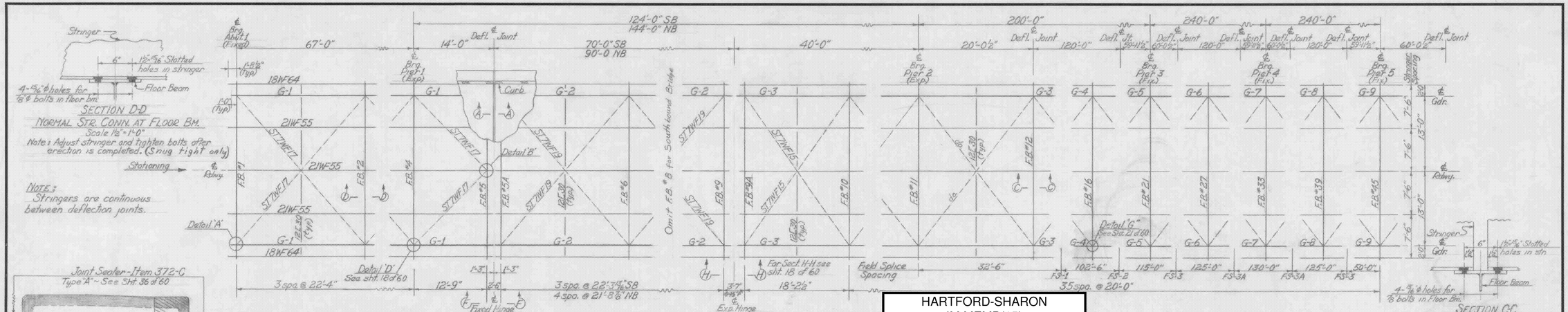
PROJECT NO I-91-2(3) | SHEET 14 OF 60

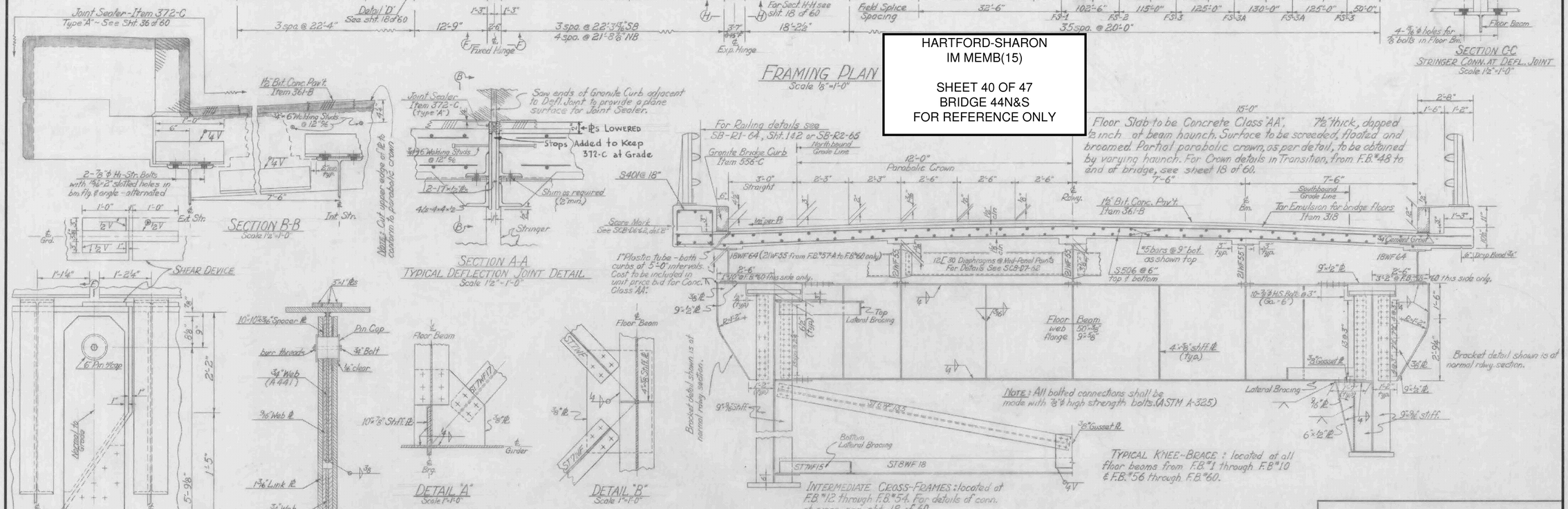
HARTFORD-SHARON
IM MEMB(15)

SHEET 40 OF 47
BRIDGE 44N&S
FOR REFERENCE ONLY

FRAMING PLAN

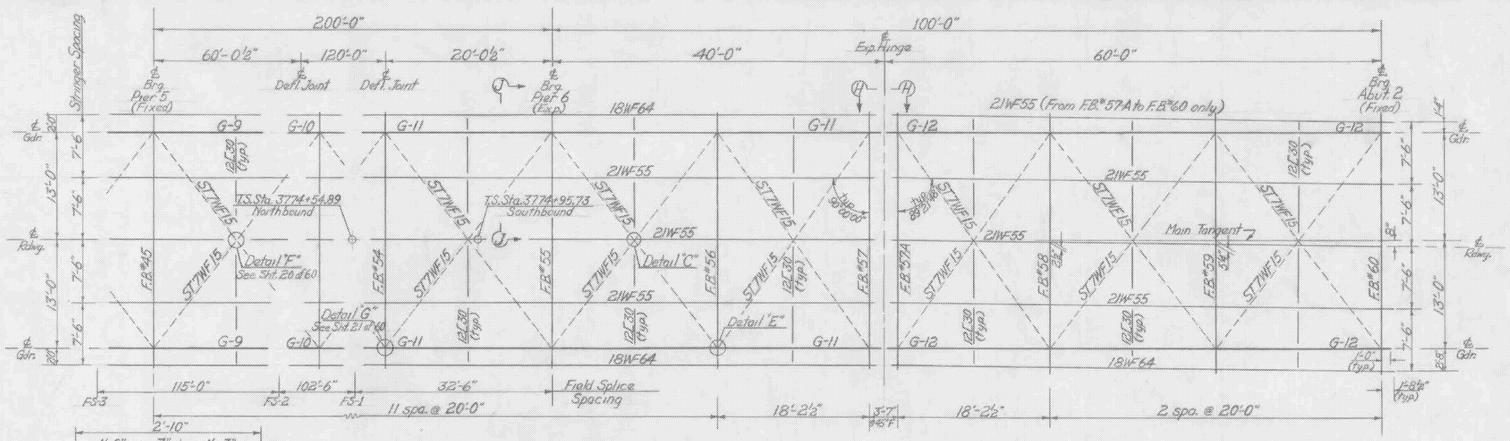
Scale 1/8"=1'-0"



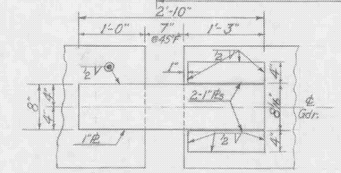


STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

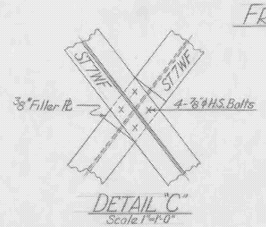
TOWN OF HARTFORD
ROUTE NO. I-91 OVER WHITE RIVER
FRAMING PLAN - DETAILS & TYPICAL SECTION
SCALE as noted
SURVEYED BY
DRAWN BY RND CHECKED BY RLM 11-14-63
PROJECT NO. I-91-2(3) (22)
SHEET 17 OF 60 54 of 175



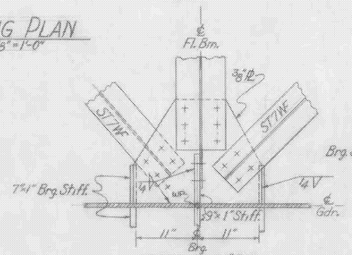
FRAMING PLAN
Scale 1/8"=1'-0"



SHEAR DEVICE
Scale 1"=1'-0"

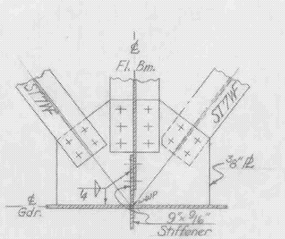


DETAIL "C"
Scale 1"=1'-0"



DETAIL "D"
Scale 1"=1'-0"

This detail typical for connection at Pier #1. Discontinue inside 7"x1" brg. stiff. at 3/8 gusset Pl. Notch gusset around 9"x1" stiff.

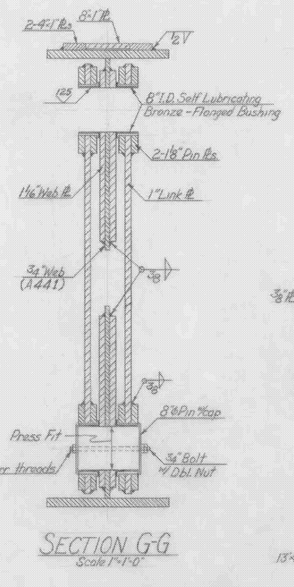


DETAIL "E"
Scale 1"=1'-0"

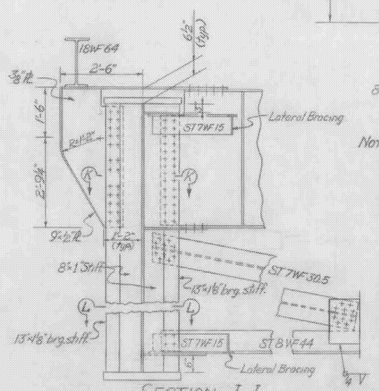
This detail typical for intermediate conn. of F.B.#1-#10 & F.B.#51-#60. Interrupt Stiff. to accept 3/8" Pl.

SECTION H-H
Scale 1"=1'-0"

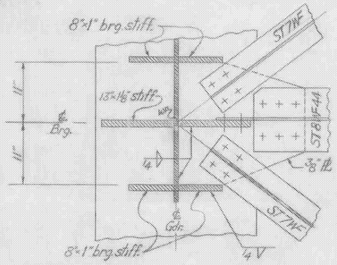
EXPANSION HINGE



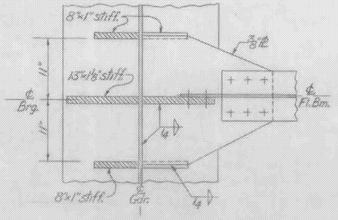
SECTION G-G
Scale 1"=1'-0"



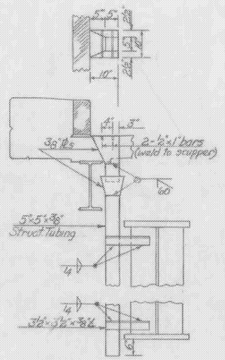
SECTION J-J
Floor Beam and Cross Frame connection at Piers 3 thru 5. (Piers 2 & 6 similar)
Scale ½"=1'-0"



SECTION L-L
NOTE: Discontinue inside brg. stiffeners at 3/8" gusset Pl. Notch gusset around 13"x1⅛" stiff.
Scale 1"=1'-0"

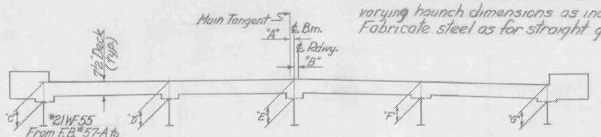


SECTION K-K
Scale 1"=1'-0"



SCUPPER DETAILS
Scale 12"=1'-0"

NOTE:
Transition from parabolic crown to straight slope 12'-0" either side of ℄ to be made between F.B.#48 & F.B.#54 both NB. & SB. by varying haunch dimensions as indicated. Fabricate steel as for straight grade.



* Indicates a change in Stringer size.

Section at Floor Beam No.		A	B	C	D	E	F	G
NORTHBOUND	48 (Normal Portal) (Parabolic Crown)			8½	9⅞	10⅝	9⅞	8½
	53			8½	8¾		8¾	8½
	54 (Str. Slope) Section)		0	8½	8¾		8¾	8½
	55		4	8 13/16	8¾		8¾	8½
	56		1⅛	10¼	9⅞		8¾	8 5/16
	57		2⅝	11½	9⅞		8⅞	8⅝
	57-A	0	3⅛	* 8⅜	10⅛		8⅞	8½
	58	2½	3⅝	* 10⅜	10⅝		8⅞	8½
	59	5¼	6⅛	* 11¼	11¼	10⅝	8⅝	8½
	60	8	10¾	* 12⅝	11 5/16	10¾	9	8 1/16
SOUTHBOUND	48 (Normal Portal) (Parabolic Crown)			8½	9⅞	10⅝	9⅞	8½
	54 (Str. Slope) Section)			8½	8¾		8¾	
	55		0	8 13/16	8¾			
	56		4	9¼	9⅜			
	57		1	10⅜	9⅝			8½
	57-A	0	1¼	* 7⅜	9¾			8⅝
	58	2½	⅜	* 8⅜	10⅛			8⅝
	59	5¼	1	* 9¾	10⅝		8¾	8⅝
	60	8	3⅜	* 11	11	10⅝	8 1/16	8½

All dimensions in inches

DECK SECTIONS AT FLOOR BEAMS ON SPIRAL
Dimensions C, D, E, F, & G to be verified after beam profiles have been taken.

NOTES
1. All structural steel not otherwise detailed shall conform to A.S.T.M. Specification A-36-62T.
2. Structural Steel detailed as A-441 shall conform to A.S.T.M. Specification A-441-60T, High-Str. low alloy Structural Manganese Vanadium Steel.
3. Expansion Hinge shall have self-lubricating type bronze bushings meeting requirements as set forth in A.S.T.M.-B.22 (A.A.S.H.O. M107, Alloy "E") Pin material for Fixed & Expansion Hinges shall be A.S.T.M. A.235-63T, Class "E".

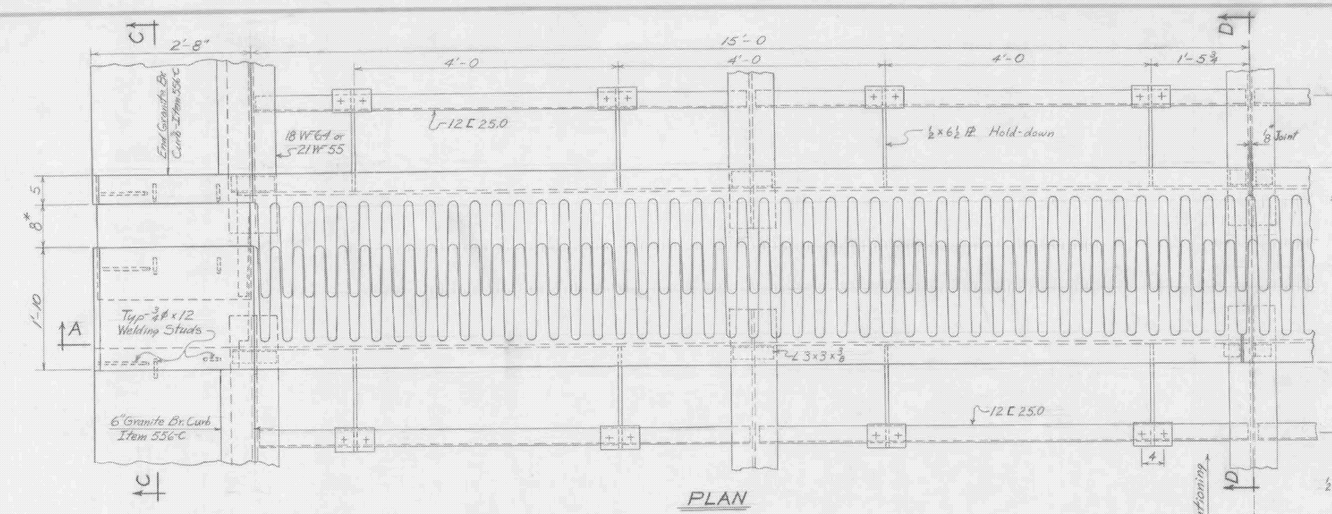
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

HARTFORD
ROUTE NO. I-91 STA.
FRAMING PLAN & DETAILS
I-91 OVER WHITE RIVER
SCALE as noted
SURVEYED BY
DRAWN BY R.N.D. CHECKED BY R.L.M. 11-14-63
PROJECT NO. I-91-2(3)
SHEET 18 OF 60

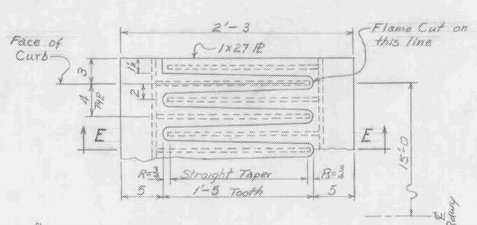
HARTFORD-SHARON
IM MEMB(15)

SHEET 41 OF 47
BRIDGE 44N&S
FOR REFERENCE ONLY

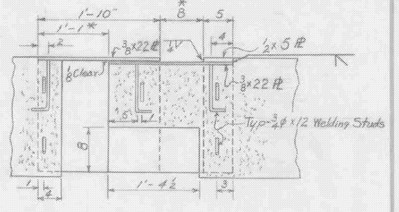
K&E 10 X 10 TO THE INCH 46 1320 KEUFFEL & ESSER CO. MADE IN U.S.A.
R. L. M. INC. 65269



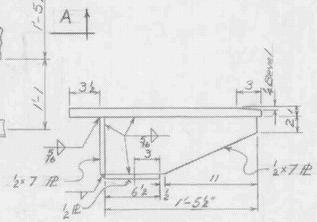
PLAN



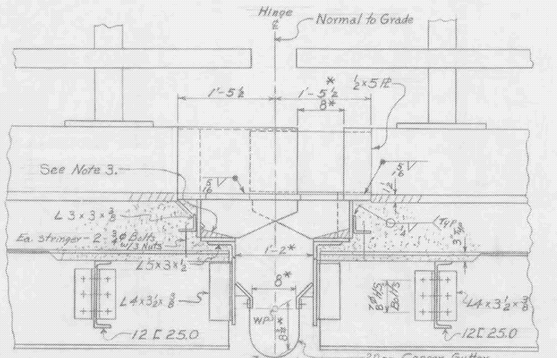
FINGER LAYOUT
Scale 1½" = 1'-0

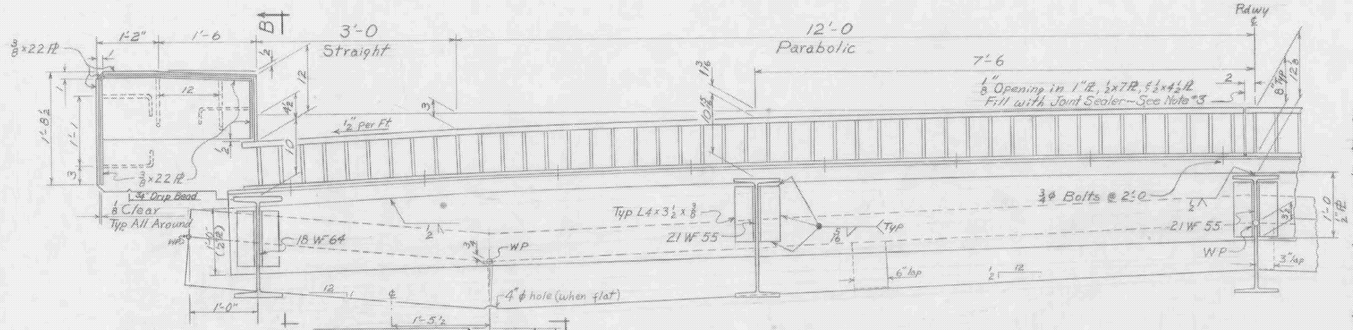


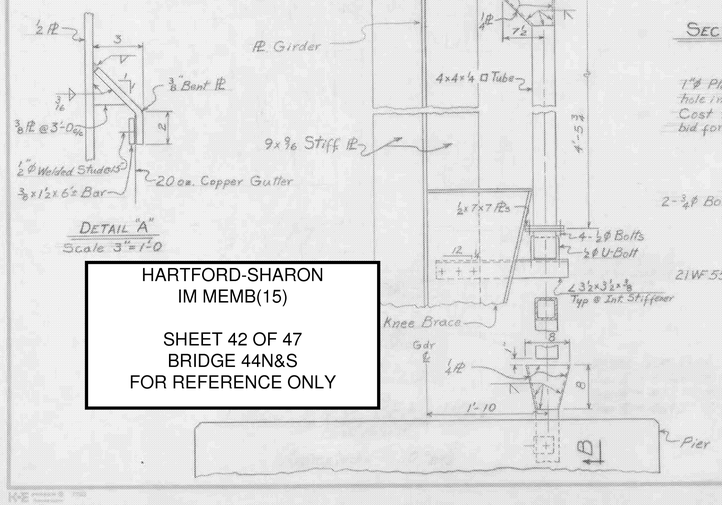
SECTION C-C

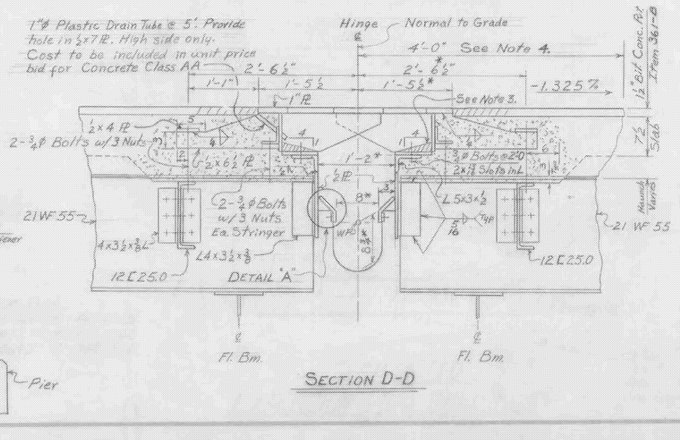


SECTION E-E
Scale 1½" = 1'-0





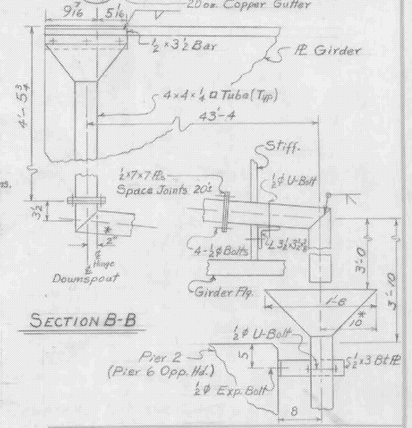




SECTION A-A

1" ø Plastic Drain Tube @ 5'. Provide hole in ½ x 7 Ft. High side only. Cost to be included in unit price bid for Concrete Class AA

SECTION D-D



SECTION B-B

NOTES

1. Symbol * indicates variable dimension. Dimension shown is for 45°F.
2. Make field welds after final alignment is determined.
3. Material shall conform to the specification for Item 372-A, Joint Sealer - Hot Poured. Smooth top surface. Cost of furnishing and placing this material to be included in unit price bid for Concrete Class AA Item 401-AA.
4. Bulkhead slab placement both sides of joint at this point. Slab shall be placed in all spans and final adjustments made at fixed bearings prior to concrete placement at Expansion Device. Extend slab reinforcement to Expansion Device and weld transverse steel to Hold-downs.
5. Finger assemblies for Span 2 NB & SB shall conform to crown indicated. Assemblies in Span 7 shall conform to crown indicated for Floor Beam 57 NB & SB on Sheet 18 of 60. Details shown are for Span 2; Span 7 Opposite Hand.
6. Totals for all items indicated on this sheet are included in superstructure quantities. Item 404-A, Structural Steel, includes quantity for drainage facilities (Trough, downspout, scuppers, etc.)
7. Entire assembly, to be fabricated of A36-62T steel, shall be paid for as Structural Steel, Item 404-A.
8. Flame cutting shall be accomplished in accordance with AASHO Bridge Specification, Art. 2.10.24 modified by 1963 Interim Specification.
9. Fabricate Copper Gutter from material conforming to ASTM B 152-58 (AASHO M 138-60) with tight cold rolled temper, deep-drawing anneal, and 20 oz per square foot weight.

ITEM NO.	ITEM	UNIT	NET		TOTAL	FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.				
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PILING	L.F.				

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTFORD
ROUTE NO. I 91 LOG STA.
I 91 OVER WHITE RIVER
ROADWAY EXPANSION DEVICE
SCALE 1"=1'-0 & AS NOTED
SURVEYED BY
DRAWN BY RLM 9-16-63 CHECKED BY RND
Rev. 2-27-64 RLM Corr. by NBT
PROJECT NO. I-91-2(3)
SHEET 24 OF 60

HARTFORD-SHARON
IM MEMB(15)

SHEET 42 OF 47
BRIDGE 44N&S
FOR REFERENCE ONLY

168

NO. 1 TITLE PAGE
2-4 QUANTITY SHEETS (ITEMS)

Dated 20 October 1966

Caledonia Sand & Gravel Co Inc A Douglas Cabot Pres.
Miller Construction Inc. O K Miller Pres.

Contractor

Simon D A Sheridan

By Order of Commissioner of Highways
Commissioner of Highways

INTERSTATE PROJECT

TOWNS OF HARTFORD-SHARON

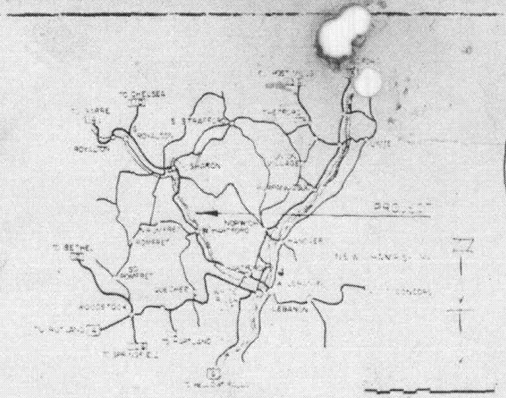
COUNTY OF WINDSOR
INTERSTATE ROUTE 89
HARTFORD-ROYALTON ROAD

BEGINNING AT A POINT 3.483 MILES NORTHWEST OF THE HARTFORD-SHARON TOWN LINE AND EXTENDING NORTHERLY 1.577 MILES

LENGTH OF ROADWAY 8,121.06 FEET = 1.538 MILES
LENGTH OF BRIDGES 207.49 FEET = 0.039 MILE
LENGTH OF CONTRACT 8,328.55 FEET = 1.577 MILES

CONTRACT # 4

1962	ADT	2540
1986	ADT	5300
1985	DHV	775
1985	D	56
1985	T	8.5%
	V	60 M.P.H.

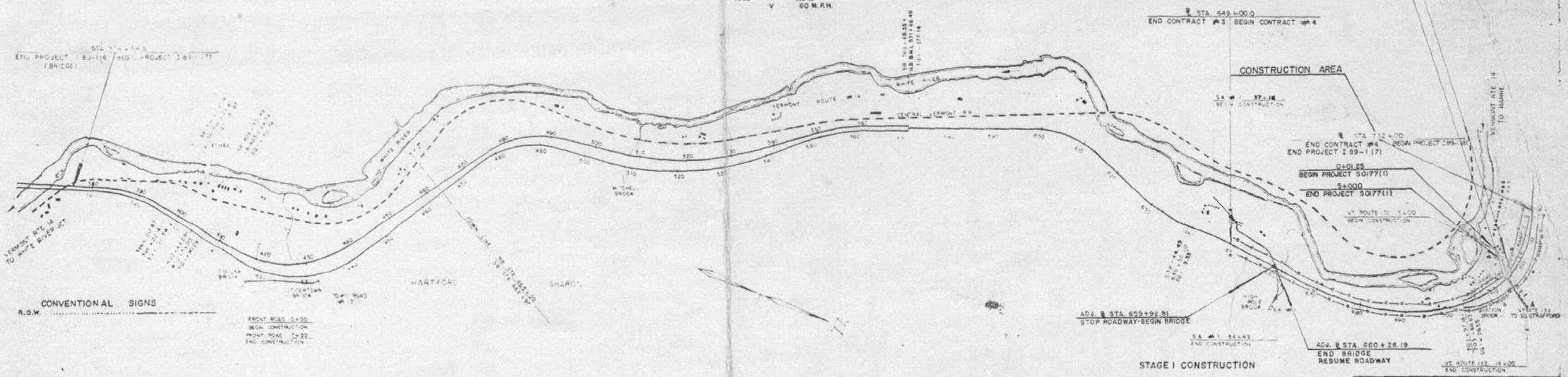


SHARON
S 0177(1)

BEGINNING AT THE INTERSECTION OF VERMONT ROUTES 14 & 132, AND EXTENDING NORTHERLY 0.094 MILE.

LENGTH OF PROJECT 498.75 FT = 0.094 MI.

ADT	1962	865
ADT	1986	2000
DHV	1986	295
D	1986	56
T	1986	8.5%
V		30 M.P.H.



HARTFORD-SHARON
IM MEMB(15)

SHEET 43 OF 47
BRIDGE 15N&S
FOR REFERENCE ONLY

FOR RIGHT-OF-WAY DETAILS, SEE RIGHT-OF-WAY PLANS FOR THIS PROJECT.

THESE PLANS HAVE BEEN REDUCED PHOTOGRAPHICALLY TO APPROXIMATELY ½ SCALE

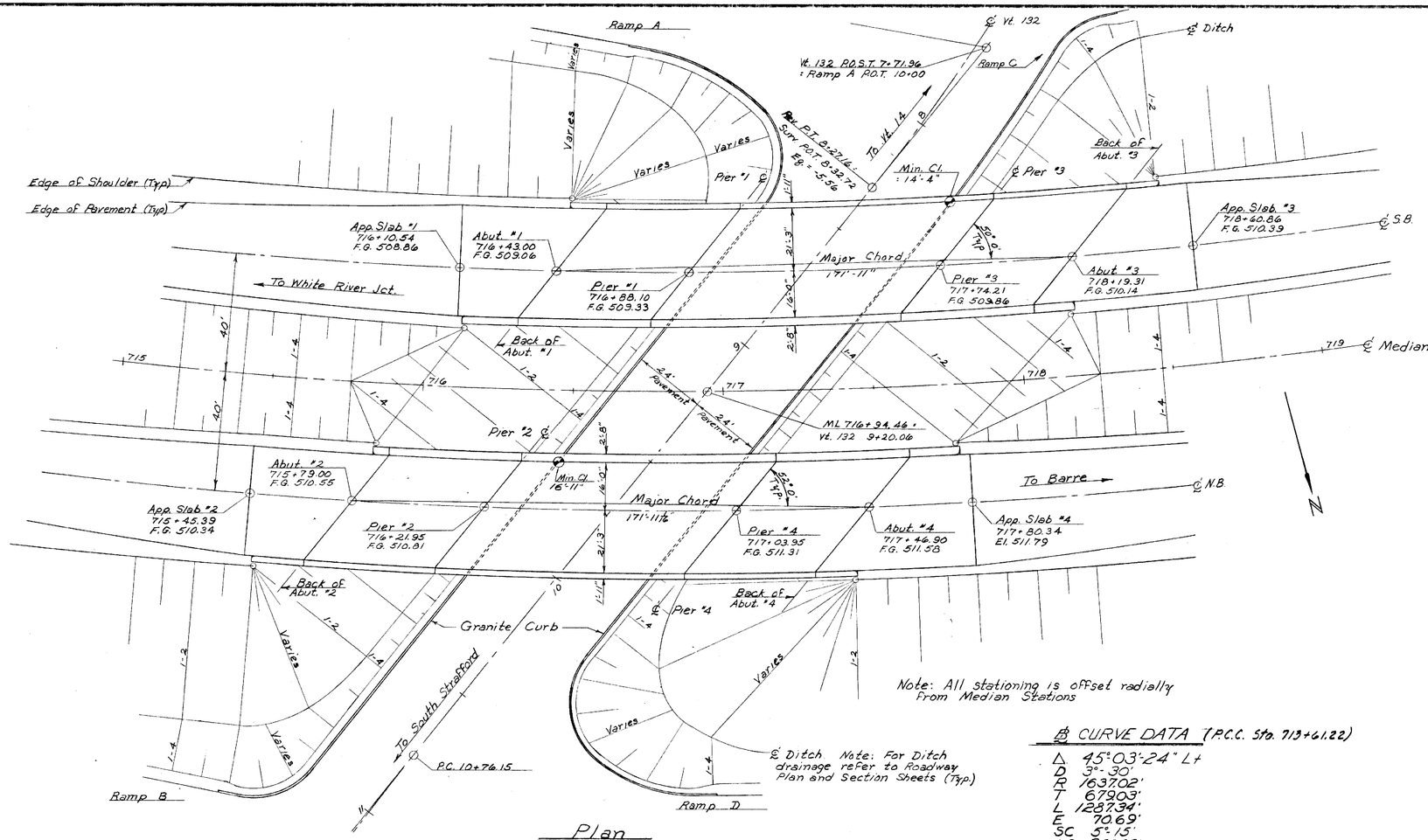
STAGE I CONSTRUCTION

THESE PLANS ARE SUBJECT TO SUCH REVISIONS AS MAY BE REQUIRED BY THE BUREAU OF PUBLIC ROADS OR THE COMMISSIONER OF HIGHWAYS.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, DATED APRIL, 1964, AS APPROVED BY THE BUREAU OF PUBLIC ROADS ON OCT 12, 1964, INCLUDING ALL SUBSEQUENT APPROVED REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

APPROVED R H Crumb ASST. CHIEF ENGINEER DATE 6/24/64	APPROVED C H Hickey CONSTRUCTION ENGINEER DATE 6/24/64	APPROVED Lee Born BRIDGE ENGINEER DATE 4/24/64	APPROVED F S Chase DISTRICT ENGINEER DATE 6/24/64	APPROVED G M Lane HIGHWAY ENGINEER DATE 6/24/64	APPROVED A D Bishop CHIEF ENGINEER DATE 6/24/64	S 0177 (1) 89-1(7) COMPOSITE SHT 1 OF 4 SHEETS

168

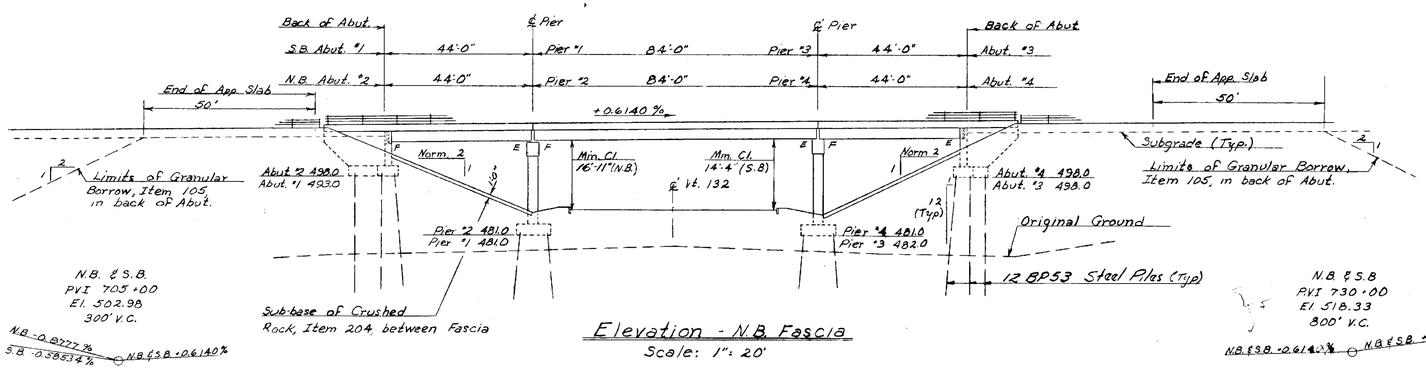


Note: All stationing is offset radially From Median Stations

Plan
Scale: 1" = 20'

℄ CURVE DATA (P.C.C. Sta. 713+61.22)

Δ	45°03'-24" Lt
D	3°-30'
R	1637.02'
T	679.03'
L	1287.34'
E	70.69'
SC	5°-15'
LS	300.00'
P	2.29
X	149.96
Y	299.75
Xc	9.16
LT	200.00
ST	100.08



Elevation - N.B Fascia
Scale: 1" = 20'

General Notes

1. Elevation datum is sea level based on nearest U.S. Government Vertical control.
2. For additional General Notes see Standard SCB-D1-65
3. Where Bottom of Footing Elevations are above old ground Fill is to be placed 0.5 feet above Bottom of Footing before Piles are driven. Excavation of this material to Bottom of Footing Elevation after Piles are driven shall be paid for as Structure Excavation, Item 109.
4. Approach Slabs shall be constructed as part of Stage I construction.
5. Shop Drawings for Item 556-C, Granite Bridge Curb, shall be submitted in triplicate to the State of Vermont, Department of Highways, for approval before Fabrication.

List of Bridge Sheets

Br. 300	Plan and Elevation, General Notes
301	Quantity Sheet
302	Preliminary Information Sheet
303-305	Borings
306	S.B. Superstructure
307	N.B. Superstructure
308-311	Abutments #1 - #4
312-315	Piers #1 - #4
316-319	Approach Slabs #1 - #4
Br. 320-322	Reinforcing Steel Schedules

STANDARD SHEETS

SCB-37.25-65 ✓
SCB-D1-65 ✓
SCB-D2-65 (All details) ✓
SCB-D3-65 (All details)
SCB-D4-65 ✓
SCB-D5-65
SCB-D6-65 (Details A, B, D, F)
SCB-D7-65 (All details)
SCB-D8-65 (All details)
SCB-D9-65 (Detail A.)
SB-R1-64, Sh 1 & 2 of 2
SB-R2-65

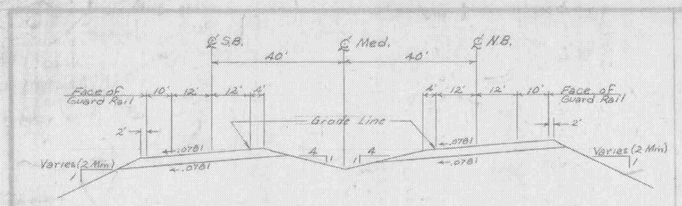
5729-SD

HARTFORD-SHARON
IM MEMB(15)

SHEET 44 OF 47
BRIDGE 15N&S
FOR REFERENCE ONLY

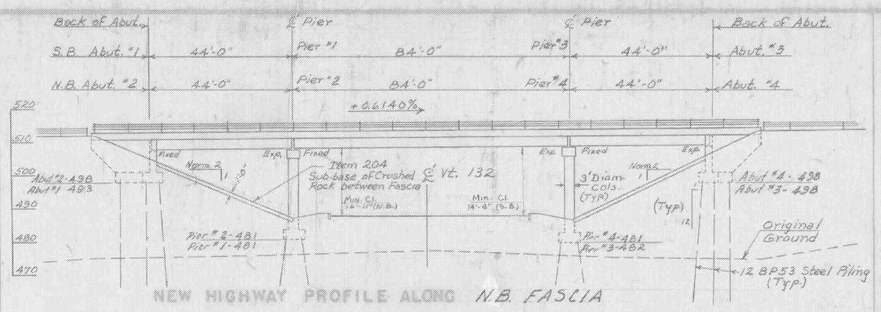
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROJECT HARTFORD - SHARON
TOWN OF SHARON
ROUTE NO. I 89 STA. 717+0
I 89 OVER VT. 132
PLAN & ELEVATION, GENERAL NOTES
SCALE AS NOTED
IN CHARGE E. Oatley
DRAWN BY W. Tripp CHECKED BY A. Remick 12-65
PROJECT NO. I 89-1 (CONT.)
SHEET 43 OF 80 BR 300



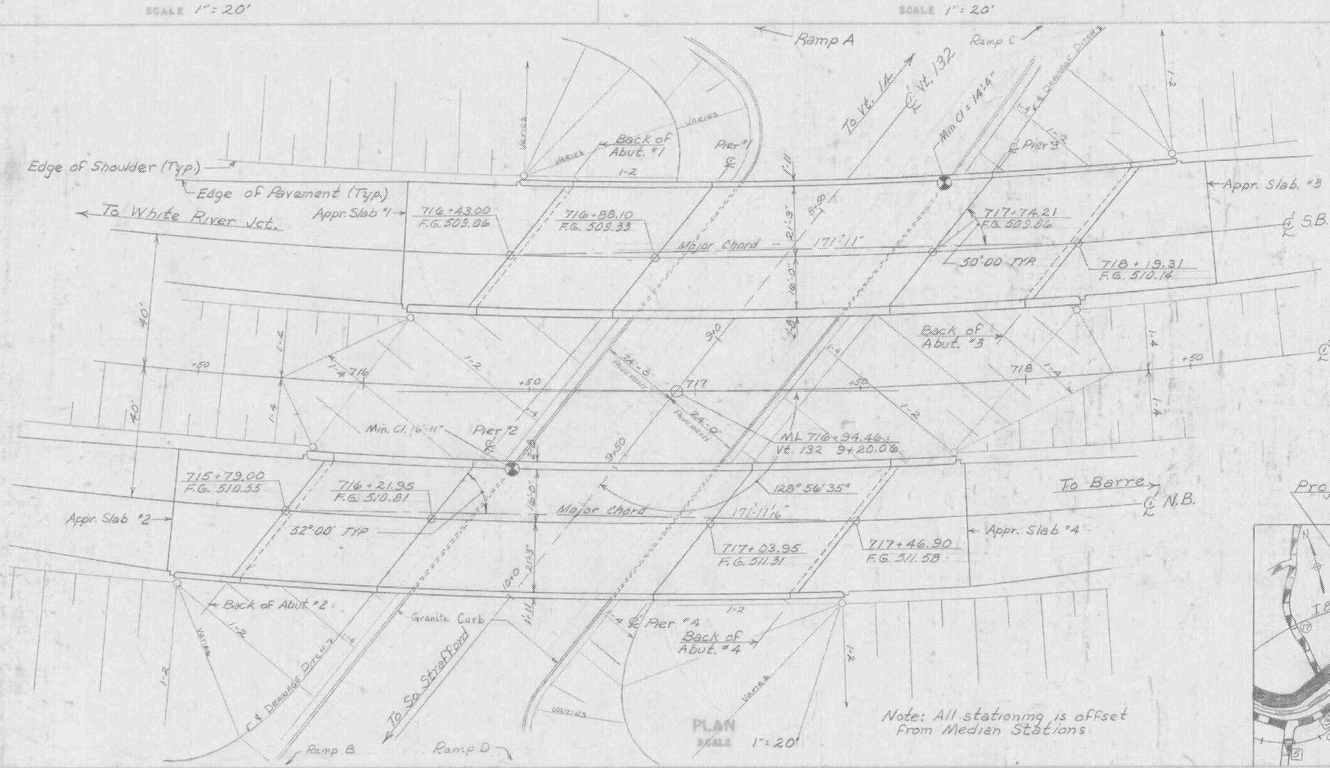
NEW HIGHWAY SECT. STA. 715+00 TO STA. 720+00

SCALE 1" = 20'

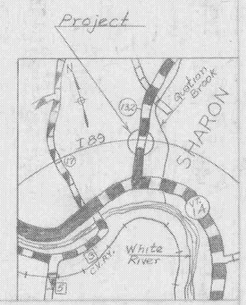


NEW HIGHWAY PROFILE ALONG N.B. FASCIA

SCALE 1" = 20'



Note: All stationing is offset From Median Stations



HIGHWAY NO. I 89 NAME OF HIGHWAY

STRUCTURE NO. S-5 B-12 COUNTY Windsor TOWN Sharon

PROJECT NO. I 89-1(7) Cont. 4 LOCATION Interstate 89 over Vt. 132

EXISTING STRUCTURE

1 RATED LOADING OF EXISTING STRUCTURE
2 TYPE OF EXISTING STRUCTURE
3 UNDERCLEARANCE ELEVATION OF EXISTING STRUCTURE
4 WHAT DISPOSITION SHOULD BE MADE OF EXISTING STRUCTURE COST OF REMOVAL
5 SHOULD EXISTING STRUCTURE BE USED TO MAINTAIN TRAFFIC DURING CONSTRUCTION OF NEW STRUCTURE
6 SHOULD NEW TEMPORARY STRUCTURE BE BUILT
7 ORDINARY HIGH WATER SURFACE ELEV. AT EXISTING STRUCTURE WATERWAY TO ORDINARY H.W.
8 EXTREME HIGH WATER AT EXISTING STRUCTURE
9 SPAN OF EXISTING BRIDGE UPSTREAM WATERWAY TO EXTREME H.W.
SPAN OF EXISTING BRIDGE DOWNSTREAM WATERWAY TO EXTREME H.W.
10 TYPE OF FOUNDATION UNDER EXISTING ABUTMENTS
11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE
12 IF NOT, AT WHAT ELEVATION IS RELIEF AFFORDED
13 ADDITIONAL WATERWAY AREA PROVIDED

NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE Simple Spans-W Beams w/ Concrete Deck
2 RECOMMENDED CLEAR SPAN OR SPANS 44' (Non composite) - 84' (Composite) - 44' (Non composite)
MEASURED PARALLEL TO ℄ NEW HIGHWAY 44'-84'-44'
MEASURED AT RIGHT ANGLES TO ℄ STREAM N.A.
3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO N.A.
4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE N.A.
5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE N.A. SOURCE OF INFORMATION N.A.
6 IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE? N.A.
7 DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? N.A. IS ORDINARY RISE NOTED N.A.
8 LOW WATER ELEVATION AT NEW STRUCTURE N.A.
9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE N.A. CHARACTER OF TERRAIN N.A.
10 IS STREAM EVER DRY? N.A.
11 VELOCITY OF STREAM AT HIGH WATER STAGE N.A. ESTIMATED DISCHARGE N.A.
12 AREA FULL OPENING N.A. AREA BELOW ORDINARY H.W. N.A.
13 CHARACTER OF SCOUR N.A. DRIFT N.A. ICE N.A.
14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE N.A.
15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION N.A.
16 ARE SIDEWALKS REQUIRED, IF SO, ON WHAT SIDE No
17 RECOMMENDED TYPE OF PAVEMENT 7½" Concrete & 2" Bitumnous
18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. N.A. ONE OR TWO WAYS PROBABLE COST
19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE N.A.
20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? No
21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 45 tons/pile SHOULD PILES BE USED Yes *

FOUNDATION INFORMATION

OBTAINED FOR DESIGN PURPOSES ONLY, AND THE STATE ASSUMES NO RESPONSIBILITY WHATSOEVER FOR THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN. BOULDERS MAY BE ENCOUNTERED AT ANY PIER OR ABUTMENT LOCATION.

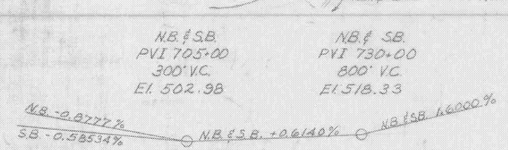
Note: For details of Superstructure see Std. SCB-3.725-66
For notes regarding design criteria see Std SCB-01-65

* TABLE OF PILE LENGTHS

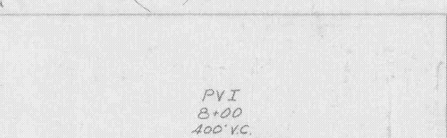
LOCATION	BOTTOM OF FOOTING	ESTIMATED LENGTH
Abut "1	493.0	60'
Abut "2	498.0	80'
Pier "1	481.0	30
Pier "2	481.0	45
Pier "3	482.0	50
Pier "4	481.0	30'
Abut "3	498.0	55'
Abut "4	498.0	55'

HARTFORD-SHARON
IM MEMB(15)

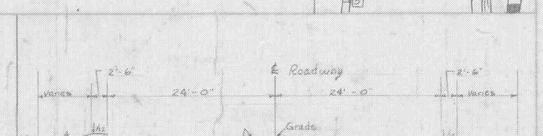
SHEET 45 OF 47
BRIDGE 15N&S
FOR REFERENCE ONLY



Profile of Proposed I 89
Not to Scale



Profile of New Vt. 132



New Vt. 132 Section

Sta. 8+58 to 10+14 Shown
Max Bank = 8" per foot Lt & Rt
Scale: 1" = 10'

Recommended for Approval: Lin Byers, Bridge Engineer, Date 3/23/65

Recommended for Approval: R H Arnold, Asst. Chief Engineer, Date 3/23/65

Approved by: A D Bishop, Chief Engineer, Date 3/23/65

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

I89 over Vt. 132 IN THE TOWNS OF HARTFORD - SHARON

ROUTE NO. I89 STA. 717+0

Sharon Interchange

SURVEY BY WBT DRAWN BY WMS TRACED BY R&O CHECKED BY As noted

PROJECT NO. I89-1(7) SHEET NO. 72 OF 302

Br 302

198'-2 3/4" End to End of Granite Curb

194'-10 1/16" ℄ to ℄ of Post along face of Rail

1'-8" ℄ Post

Post ℄ 1'-8"

13'-6 | 44'-4 5/16 | 84'-9 1/2 | 44'-6 1/16 | 11'-0 | 20'-0

Approach Slab No. 1

Sta. 716+10.54
F.G. El. 508.86

Sta. 716+43
F.G. El. 509.06

Sta. 716+88.10
F.G. El. 509.33

50° Typ.

Major Chord

Sta. 717+74.21
F.G. El. 509.86

Sta. 718+19.31
F.G. El. 510.14

Sta. 718+60.86
F.G. El. 510.39

℄ S.B.

Back Abut #1

℄ Pier #1

℄ Pier #3

Back Abut #3

Approach Slab No. 3

18'-6 | 20'-0 | 43'-8 3/8 | 83'-5 1/16 | 43'-7 3/4 | 14'-0

203'-3 1/16" End to End of Granite Curb

21'-3 | 16'-0 | 2'-3

1'-8" ℄ Post

℄ Post 1'-8"

199'-11 5/8" ℄ to ℄ of Post along face of Rail

S.B. Superstructure Plan

1/8" = 1'-0"

1'-0" ℄ Brg. (Fixed) | 18'-0 1/16" | 23'-8 3/4" | ℄ Brg. (Exp.) ℄ Brg. (Fixed) | 17'-5 1/4" | 20'-6 1/16" | 20'-6 1/16" | 23'-7" | ℄ Brg. (Exp.) ℄ Brg. (Fixed) | 17'-5 13/16" | 24'-1 3/4" | 1'-0" ℄ Brg. (Exp.)

Fascia (Typ.)

Curb Line (Typ.)

Bm. #1 | Bm. #2 | Bm. #3 | Bm. #4 | Bm. #5 | Bm. #6 | Bm. #7 | Bm. #8 | Bm. #9 | Bm. #10 | Bm. #11 | Bm. #12 | Bm. #13 | Bm. #14 | Bm. #15 | Bm. #16 | Bm. #17 | Bm. #18

≮ 52°17'46" (Typ.)

≮ 50°00'00" (Typ.)

≮ 47°42'14" (Typ.)

7'-4" | 6'-0" | 1'-4"

5'-8" Typ. | 11 3/8" Typ. | 1'-3 3/16" Typ. | 6'-1 15/16" Typ. | 1'-0 5/16" Typ. | 1'-4 1/4"

Pier diaphragm (Typ.)

Intermediate diaphragm (Typ.)

Sta. 716+43
F.G. El. 509.06
Back Abut #1

Minor Chord

Sta. 716+88.10
F.G. El. 509.33
℄ Pier No. 1

Major Chord

Minor Chord

Sta. 717+74.21
F.G. El. 509.86
℄ Pier No. 3

Minor Chord

Sta. 718+19.31
F.G. El. 510.14
Back Abut #3

41'-9 7/16" c/c Bearing | 82'-0 3/8" c/c Bearing | 41'-7 9/16" c/c Bearing

SECTION AA

Typical both ends of all Piers

Expan. Plate Cap End of Trough

Half Section of 7"x7"x 1/4" Hollow Struct. Tubing

6"

S.B. FRAMING PLAN

SCALE 1/8" = 1'-0"

171'-11

Back of Abut #1

Sta. 716+43.00

45'-5 5/16 | ℄ Pier #1 | 83'-11 3/8 | ℄ Pier #3 | 42'-5 13/16 | Back of Abut #3

50°00'(Typ.)

2'-3 5/8

Major Chord

Minor Chord Typ.

℄ S.B. 3°35'15.61" Curve

Sta. 718+19.31

44'-0 | 83'-11 3/8 | 44'-0

Sta. 716+88.10 | Sta. 717+74.21

40' Radial Typ.

℄ Median 3°30' Curve

S.B. CURVE LAYOUT

Not To Scale

(Note:- Stationing is offset from Median)

CAMBER

44' Span : 1"

84' Span : 3 1/2"

NOTES:-

1- For General Notes see BR 300
2- For Beam sizes and Cover Plate sizes and lengths see Standard Sheets SCB-37.25-65 and SCB-D7-65 Detail "C"
3- For additional details of diaphragms see Standard Sheet SCB-D7-65, Details A, D & E.
4- Typical Sections of Superstructure as per Standard Sheet SCB-37.25-65 except modified as necessary for bank of 5/16" ft. left.
5- No Scuppers are to be used on this Bridge
6- For details of W cutoffs at the Piers see B.R. 307
7- For Additional Superstructure Details See Standard Sheets SCB-D1-65 Thru SCB-D9-65.
8- For Details of Shear Connectors on 84 foot Spans See Standard Sheets SCB 37.25-65 and SCB D2-65 Detail B
9- For Details of Bridge Railing, see Standard SB RJ-64 Sh 1 & 2 and SB R2-65. Post spacing not to exceed maximum shown on Standards with ℄ Posts 1'-0 min from curb Joints.

HARTFORD-SHARON
IM MEMB(15)

SHEET 46 OF 47
BRIDGE 15N&S
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROJECT HARTFORD-SHARON
TOWN OF SHARON
ROUTE NO. I-89 STA. 717+0

I-89 OVER VT. 132

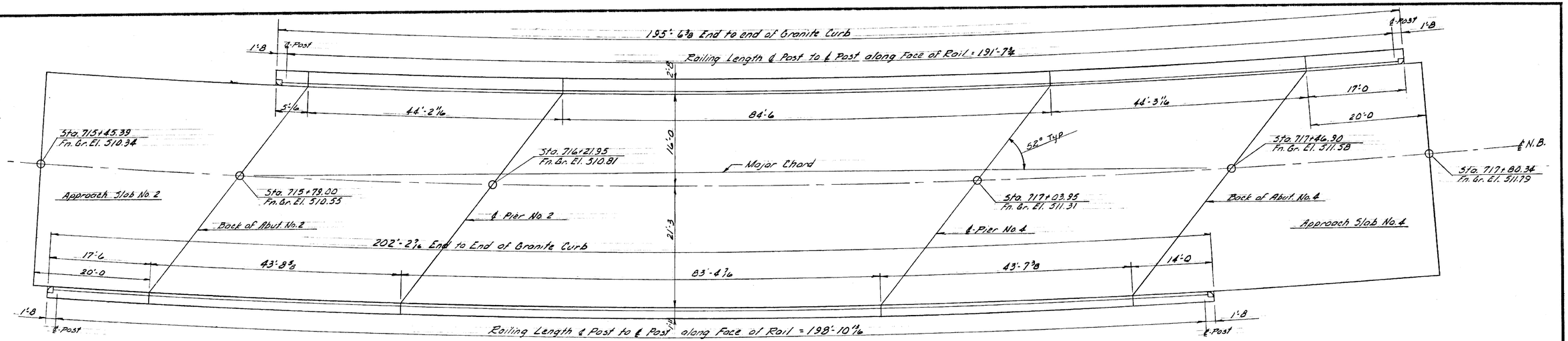
S.B. SUPERSTRUCTURE

SCALE As Shown

IN CHARGE R. Oatley
DRAWN BY H. Stoffer CHECKED BY W. Tripp 1965

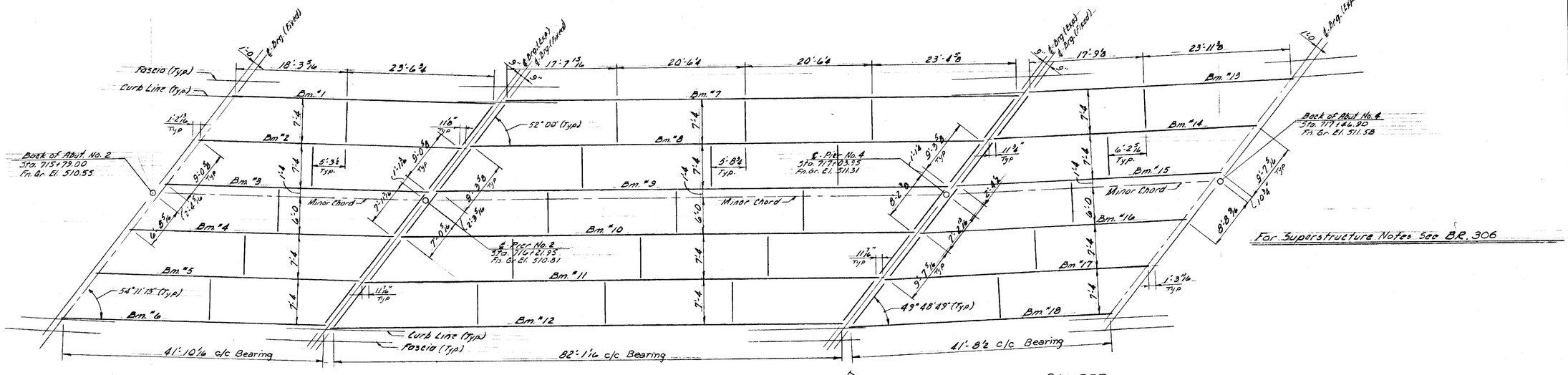
PROJECT NO. I-89-1(17)

SHEET 46 OF 320 BR 306



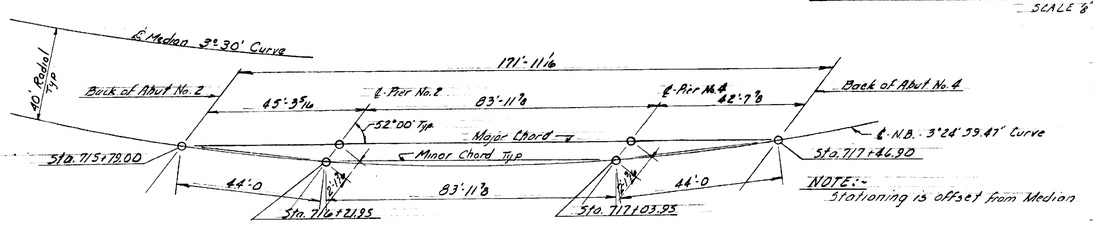
N.B. SUPERSTRUCTURE PLAN

SCALE ⅛"=1'-0



N.B. FRAMING PLAN

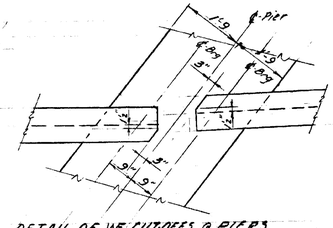
SCALE ⅛"=1'-0



NOTE:- Stationing is offset from Median

N.B. CURVE LAYOUT

Not To Scale



DETAIL OF WF CUTOFFS @ PIERS

SCALE ½"=1'-0

(Note:- Cut top flange only)

CAMBER

44' Span: 1"
84' Span: 3½"

HARTFORD-SHARON
IM MEMB(15)

SHEET 47 OF 47
BRIDGE 15N&S
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROJECT HARTFORD-SHARON
TOWN OF SHARON
ROUTE No. I-89 STA. 717+0
I-89 OVER VT "132
N.B. SUPERSTRUCTURE
SCALE As shown
IN CHARGE R. Oatley
DRAWN BY R. Oatley CHECKED BY W. Tripp 11-65
PROJECT No. I-89-1(15)
SHEET 47 OF 50 BR 307