INDEX OF SHEETS

SEE SHEET 2

RECORD PLANS	
CONTRACTOR:	MILLER CONSTRUCTION, INC. – WINDSOR, VT
RESIDENT ENGINEER:	BUTCH COLBY
CONSTRUCTION BEGAN:	APRIL 2, 2010
CONSTRUCTION COMPLETE:	OCTOBER 15, 2010
RECORD PLANS BY:	BUTCH COLBY & AMOS KEMPTON

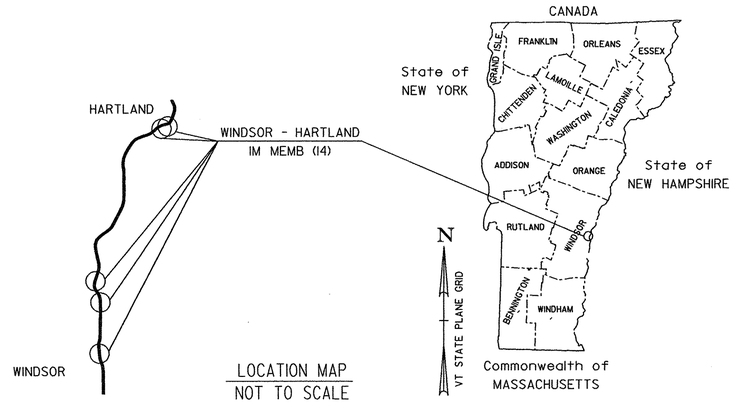
I HEREBY CERTIFY THAT ALL THE CONSTUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY _____ RESIDENT ENGINEER

DATE 7/22/11

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.

STATE OF VERMONT
AGENCY OF TRANSPORTATION



LOCATION MAP
NOT TO SCALE

PROPOSED IMPROVEMENT
BRIDGE PROJECT
TOWNS OF WINDSOR AND HARTLAND
COUNTY OF WINDSOR
BRIDGES NO. 33S ON I-91 (WINDSOR), NO. 34S ON I-91 (WINDSOR), NO. 35N&S ON I-91 (WINDSOR), NO. 39N&S ON I-91 (HARTLAND) & NO. 40S ON I-91 (HARTLAND)

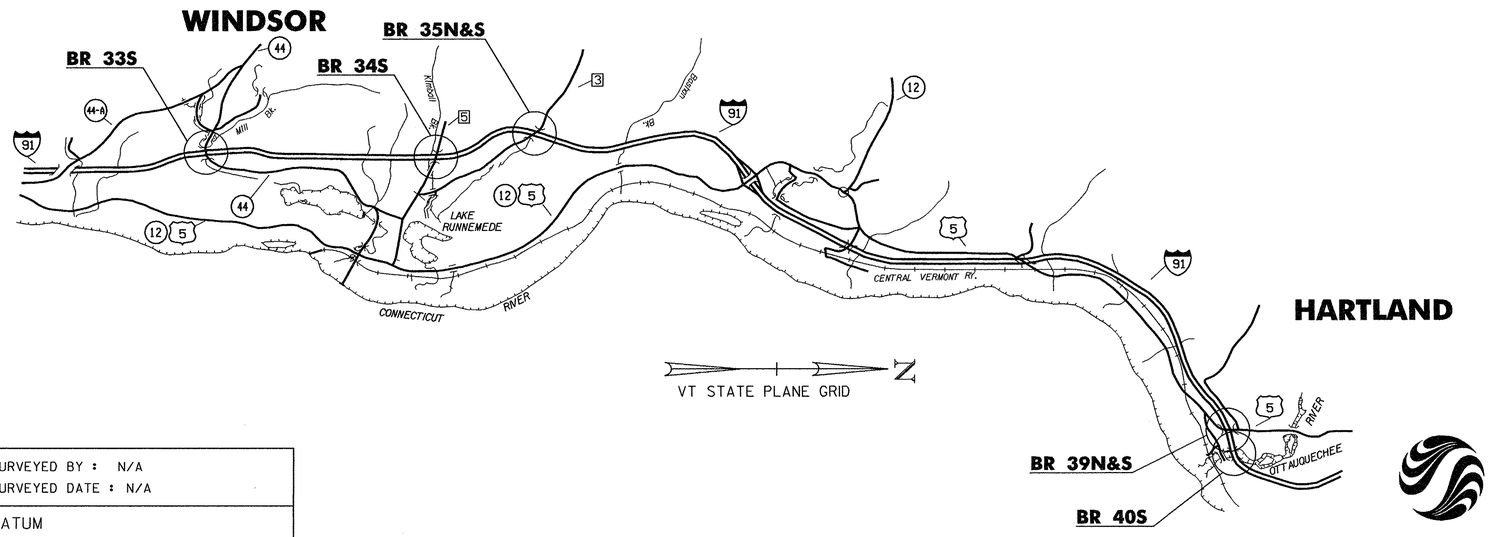
PROJECT LOCATIONS:

BRIDGE NO. 33S IS LOCATED ON I-91 (MM 55.1) OVER VT 44 AND MILL BROOK IN THE TOWN OF WINDSOR
BRIDGE NO. 34S IS LOCATED ON I-91 (MM 57.4) OVER TH NO. 5 (HUNT ROAD) IN THE TOWN OF WINDSOR
BRIDGE NO. 35N&S ARE LOCATED ON I-91 (MM 58.4) OVER TH NO. 3 (COUNTY ROAD) IN THE TOWN OF WINDSOR
BRIDGE NO. 39N&S ARE LOCATED ON I-91 (MM 66.2) OVER US 5 IN THE TOWN OF HARTLAND
BRIDGE NO. 40S IS LOCATED ON I-91 (MM 66.3) OVER THE OTTAUQUECHEE RIVER IN THE TOWN OF HARTLAND

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: 33S 657 FEET, 34S 168 FEET, 35N 119 FEET, 35S 119 FEET, 39N 173 FEET, 39S 173 FEET, 40S 316 FEET

TOTAL LENGTH OF BRIDGES: 1725'



CONVENTIONAL SYMBOLS

- COUNTY LINE
- TOWN LINE
- LIMITS OF ACCESS
- POINT OF ACCESS
- 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 : N/A

DATUM
VERTICAL N/A
HORIZONTAL N/A

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.

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 5/10/07

PROJECT MANAGER : SHERWARD G. FARNSWORTH

PROJECT NAME : **WINDSOR - HARTLAND**
PROJECT NUMBER : IM MEMB (14)

SHEET 1 OF 39 SHEETS

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6.	TRAFFIC CONTROL SHEET 2
7.	BITUMINOUS CONCRETE REMOVAL PLAN
8.	BITUMINOUS CONCRETE DETAILS
9.	PAVEMENT JOINT DETAILS
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24.-28.	REFERENCE PLANS - BRIDGE 35N&S
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VAOT STANDARD SHEETS

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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

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. 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".

4. 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

5. DUE TO THE PROXIMITY OF BRIDGES 39S AND 40S, THE TRAFFIC CONTROL FOR THESE BRIDGES WILL BE PAID FOR UNDER ONE TRAFFIC CONTROL ITEM.

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

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

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

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

Stantec

PROJECT NAME: WINDSOR - HARTLAND
PROJECT NUMBER: IM MEMB (14)

FILE NAME: $FILEABBREV$ PLOT DATE: $$$$DATE$$$
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE CHECKED BY: M. CHENETTE
INDEX OF SHEETS AND PROJECT NOTES SHEET 2 OF 39

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
	ROADWAY	I91 - BRIDGE NO. 33S	I91 - BRIDGE NO. 34S	I91 - BRIDGE NO. 35N	I91 - BRIDGE NO. 35S	I91 - BRIDGE NO. 39N	I91 - BRIDGE NO. 39S	I91 - BRIDGE NO. 40S	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				
		437	309	163	173	662	1119	1235		4098		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
		5	2	2	2	3	4	5		23		CWT	EMULSIFIED ASPHALT	404.65				
		383	141	123	123	192	258	336		1556		TON	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT	406.27				
		1	1	1	1	1	1	1		7		LU	MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	406.29				
	1									1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50				
		62	20	22	22	18	18	32		194		GAL	WATER REPELLENT, SILANE	514.10				
			33	42	42	34	34	30		215		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
		2188	561	503	503	578	578	1054		5965		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
		60	60	76	76	60	60	60		452		LF	JOINT SEALER, HOT POURED	524.11				
		2344	731	747	737	758	758	1197		7272		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
		16	5	5	5	5	5	8		49		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	580.10				
		16	5	5	5	5	5	16		57		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11				
		33	10	10	10	10	10	16		99		CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12				
		19695	5047	4530	4530	5199	5199	9490		53690		SF	SURFACE PREPARATION FOR MEMBRANE	580.16				
		10	10	10	10	10	10	10		70		CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20				
		5	5	5	5	5	5	5		35		HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25				
		5	5	5	5	5	5	5		35		HR	TRUCK RENTAL	608.37				
		200	100	60	60	100	100	160		780		HR	TRUCK-MOUNTED ATTENUATOR	608.45				
		2	2	2	2	2	2	2		14		EACH	ENERGY ABSORPTION ATTENUATOR	621.56				
		150	150	150	150	150	150	150		1050		LF	TEMPORARY TRAFFIC BARRIER	621.90				
		150	150	150	150	150	150	150		1050		LF	REMOVE AND RESET TEMPORARY TRAFFIC BARRIER	621.95				
		2640	680	600	600	700	700	1280		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 (I91 - BRIDGE NO. 33S)	641.10				
			1							1		LS	TRAFFIC CONTROL (I91 - BRIDGE NO. 34S)	641.10				
				1						1		LS	TRAFFIC CONTROL (I91 - BRIDGE NO. 35N)	641.10				
					1					1		LS	TRAFFIC CONTROL (I91 - BRIDGE NO. 35S)	641.10				
						1				1		LS	TRAFFIC CONTROL (I91 - BRIDGE NO. 39N)	641.10				
							0.5	0.5		1		LS	TRAFFIC CONTROL (I91 - BRIDGES NO. 39S & 40S)	641.10				
		1	1	1	1	1	1	1		7		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
		1	1	1	1	1	1	1		7		EACH	PORTABLE ARROW BOARD	641.16				
		1075	410	299	299	573	759	981		4396		LF	6 INCH WHITE LINE	646.214				
		860	328	239	239	458	607	785		3516		LF	6 INCH YELLOW LINE	646.215				
		1075	410	299	299	573	759	981		4396		LF	TEMPORARY 6 INCH WHITE LINE	646.620				
		1175	1175	1175	1175	1175	1175	1175		8225		LF	TEMPORARY 6 INCH WHITE LINE, TYPE II TAPE	646.621				
		860	328	239	239	458	607	785		3516		LF	TEMPORARY 6 INCH YELLOW LINE	646.630				
		1175	1175	1175	1175	1175	1175	1175		8225		LF	TEMPORARY 6 INCH YELLOW LINE, TYPE II TAPE	646.631				
		65	25	18	18	34	45	59		264		EACH	LINE STRIPING TARGETS	646.76				

Stantec

PROJECT NAME: WINDSOR - HARTLAND
PROJECT NUMBER: IM MEMB (14)

FILE NAME: ...\03-04-quantity sheet.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: M. CHENETTE
QUANTITY SHEET 1

PLOT DATE: 8/5/2009
DRAWN BY: E. ALLING
CHECKED BY: M. CHENETTE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

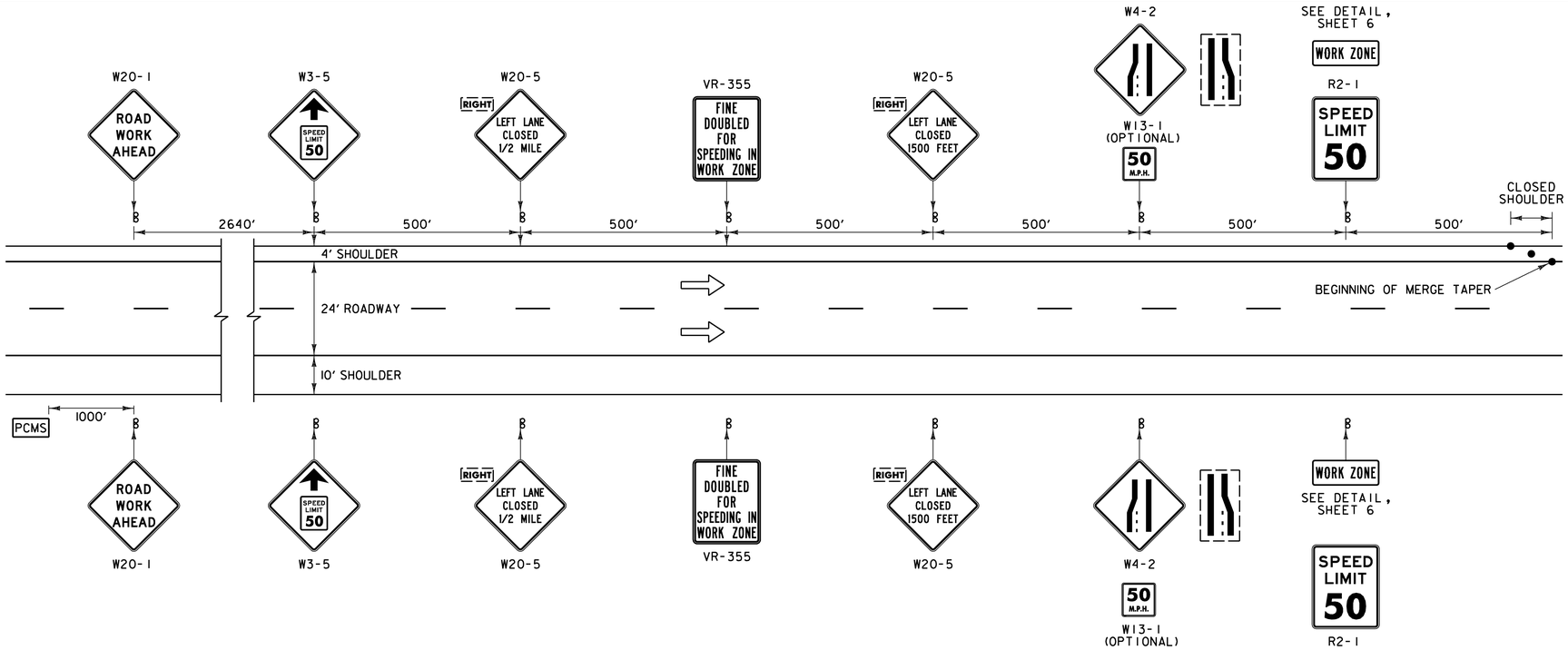
SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
	ROADWAY	I91 - BRIDGE NO. 33S	I91 - BRIDGE NO. 34S	I91 - BRIDGE NO. 35N	I91 - BRIDGE NO. 35S	I91 - BRIDGE NO. 39N	I91 - BRIDGE NO. 39S	I91 - BRIDGE NO. 40S	FULL C.E. ITEMS	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
		75	75	75	75	75	75	75		525		SF	PAVEMENT MARKING MASK	646.86				
	1									1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50				
								30		30		LF	SPECIAL PROVISION (PARTIAL REMOVAL & MODIFICATION OF METAL PLATE JOINT)	900.640				

Stantec

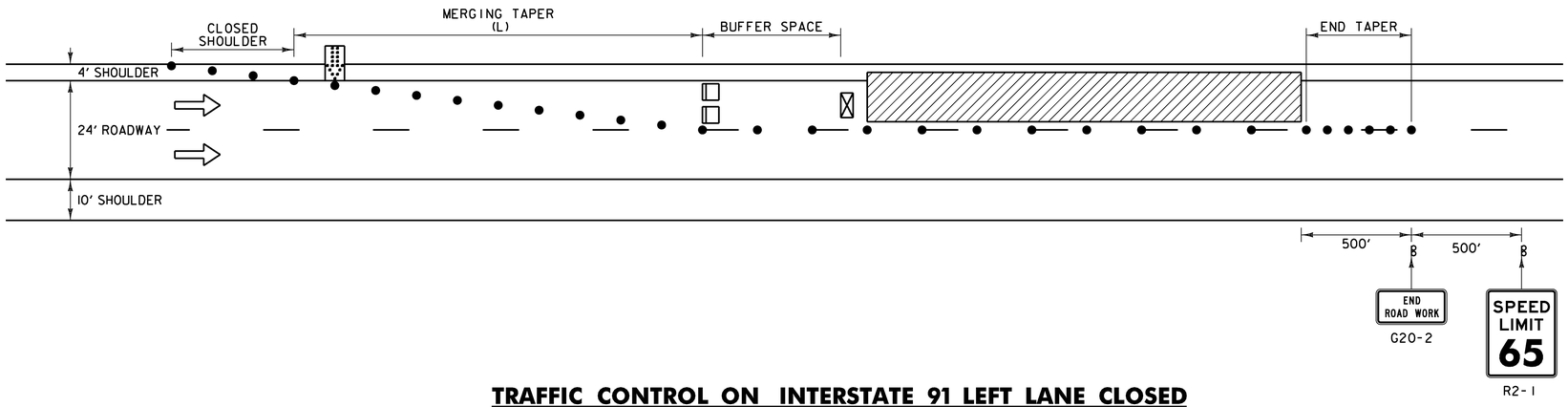
PROJECT NAME: WINDSOR - HARTLAND
PROJECT NUMBER: IM MEMB (14)

FILE NAME: ...\03-04-quantity sheet.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: M. CHENETTE
QUANTITY SHEET 2

PLOT DATE: 8/5/2009
DRAWN BY: E. ALLING
CHECKED BY: M. CHENETTE
SHEET 4 OF 39



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



TRAFFIC CONTROL ON INTERSTATE 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

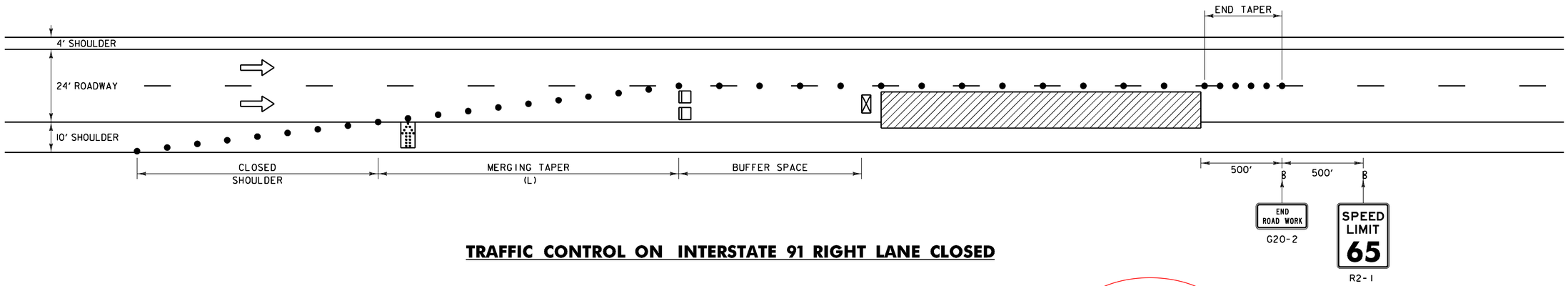
L = MINIMUM LENGTH OF TAPER
W = WIDTH OF OFFSET IN FEET. (TYPICAL)
S = POSTED SPEED IN MPH

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.

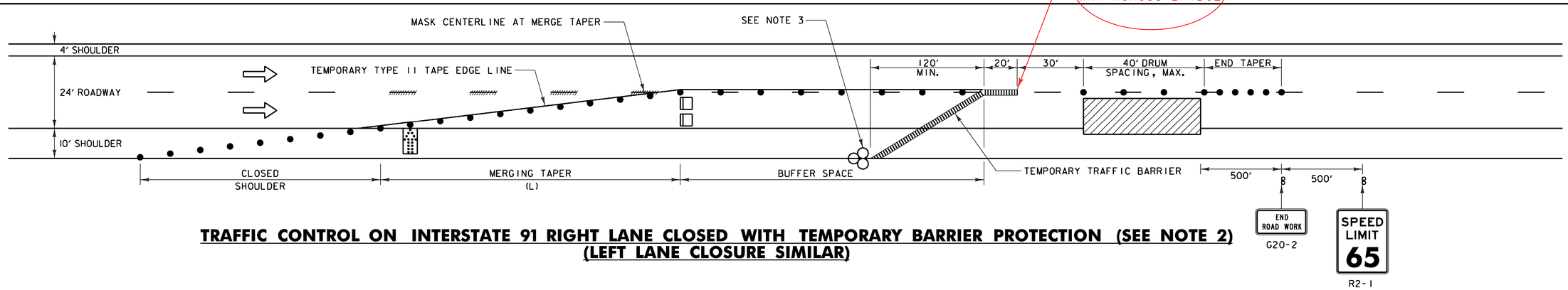
Stantec

PROJECT NAME:	WINDSOR - HARTLAND
PROJECT NUMBER:	IM MEMB (14)
FILE NAME: $FILEABBREV$	PLOT DATE: $$$$DATE$$$
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE	CHECKED BY: M. CHENETTE
TRAFFIC CONTROL SHEET 1	SHEET 5 OF 39

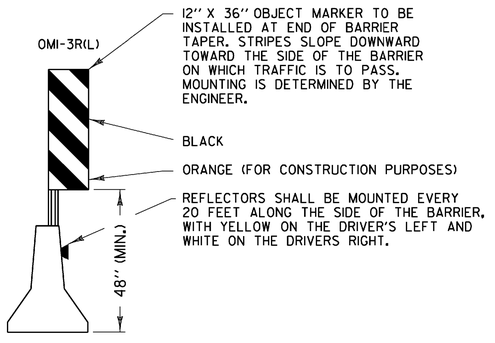


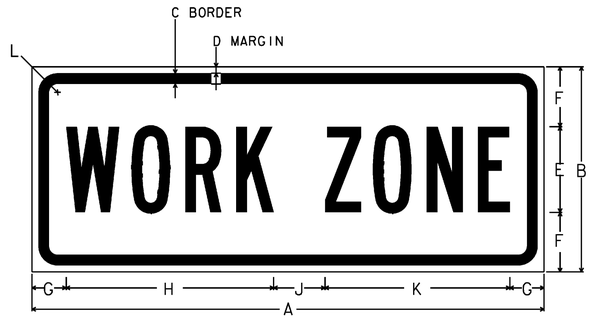
TRAFFIC CONTROL ON INTERSTATE 91 RIGHT LANE CLOSED

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



TRAFFIC CONTROL ON INTERSTATE 91 RIGHT LANE CLOSED WITH TEMPORARY BARRIER PROTECTION (SEE NOTE 2) (LEFT LANE CLOSURE 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

NOTE: THE SIGN IS TO HAVE A BLACK LEGEND ON AN ORANGE RETROREFLECTIVE BACKGROUND THAT IS ASTM TYPE 7, 8 OR 9. THE TEXT IS TO BE 'B-TYPE'.

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

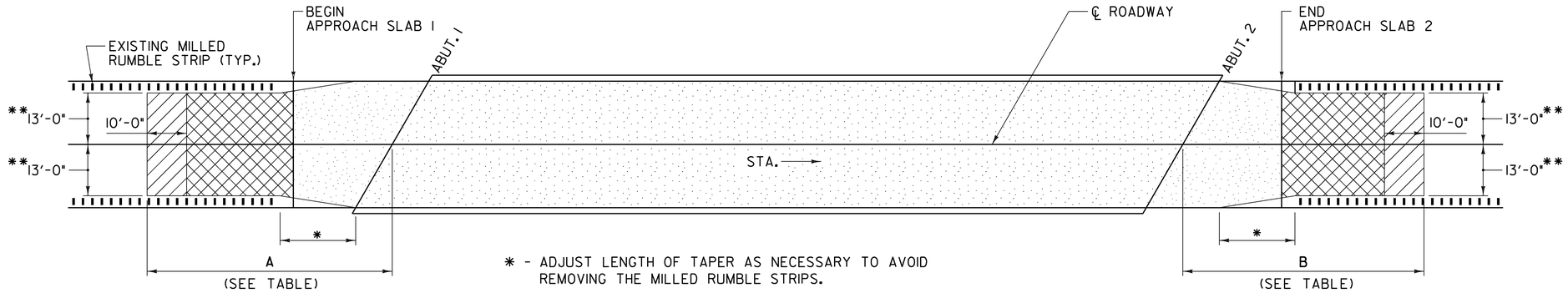
TRAFFIC CONTROL NOTES:

1. SEE TRAFFIC CONTROL SHEET 1 FOR ADDITIONAL NOTES AND APPROACH SIGNING NOT SHOWN.
2. IF THE LANE CLOSURE IS TO LAST LONGER THAN 3 DAYS, THE CONTRACTOR SHALL USE TEMPORARY TRAFFIC BARRIER AS SHOWN ON THIS SHEET.
3. 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: WINDSOR - HARTLAND
PROJECT NUMBER: IM MEMB (14)

FILE NAME: $FILEABBREV$ | PLOT DATE: $$$$DATE$$$
PROJECT LEADER: G. BOGUE | DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE | CHECKED BY: M. CHENETTE
TRAFFIC CONTROL SHEET 2 | SHEET 6 OF 39



* - 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

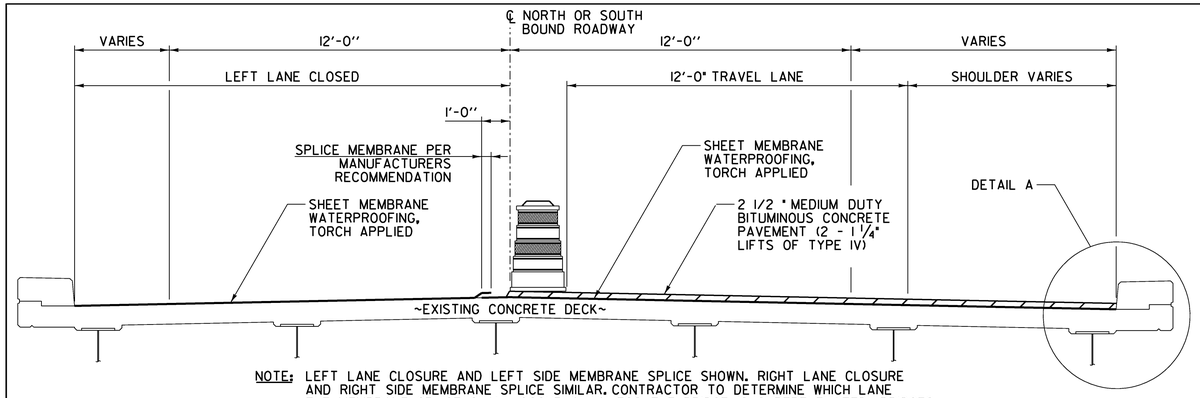
BRIDGE NO.	A (FT)	B (FT)
33S	100.0	100.0
34S	100.0	60.0
35N	60.0	60.0
35S	60.0	60.0
39N	165.0	120.0
39S	165.0	⧺ 268.5
40S	⧺ 268.5	200.0

⧺ - COLD PLANE 2½" BETWEEN THE APPROACH SLAB OF BRIDGE NO. 39S AND THE APPROACH SLAB OF BRIDGE NO. 40S. TOTAL DISTANCE FROM THE END OF BRIDGE NO. 39S TO THE BEGINNING OF BRIDGE NO. 40S IS 537'-0".

Stantec

PROJECT NAME: WINDSOR - HARTLAND
PROJECT NUMBER: IM MEMB (14)

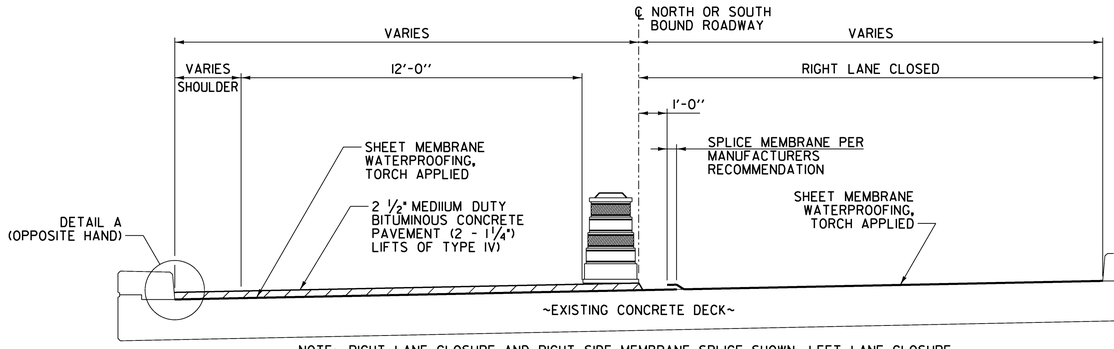
FILE NAME: $FILEABBREV$ | PLOT DATE: $$$$DATE$$$
PROJECT LEADER: G. BOGUE | DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE | CHECKED BY: M. CHENETTE
BITUMINOUS CONCRETE REMOVAL PLAN | SHEET 7 OF 39



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

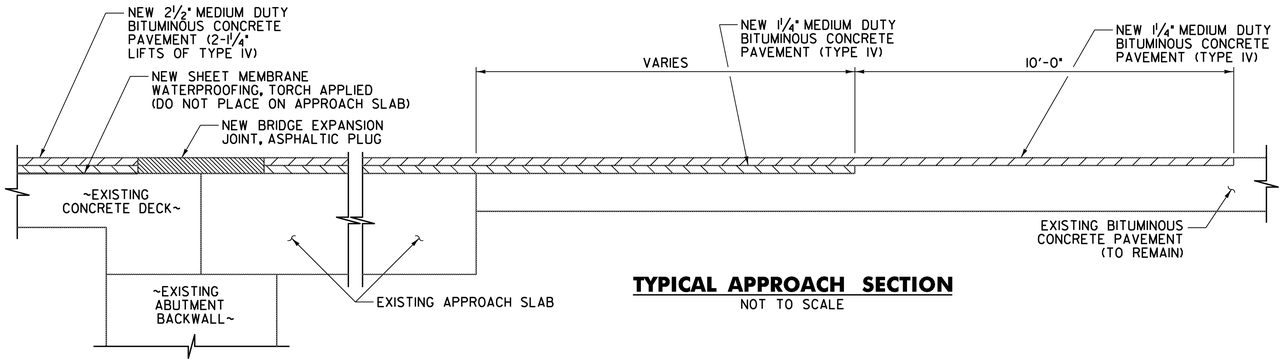
NOT TO SCALE



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.

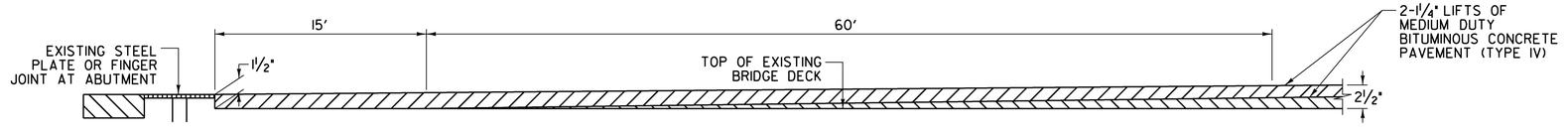
MEMBRANE SPLICE DETAIL - SUPERELEVATED ROADWAY

NOT TO SCALE



TYPICAL APPROACH SECTION

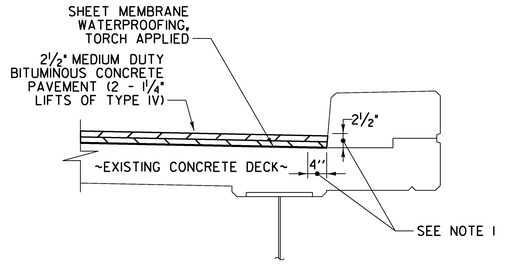
NOT TO SCALE



PAVEMENT TAPER DETAIL

NOT TO SCALE

NOTE: DETAIL TYPICAL FOR ALL BRIDGES



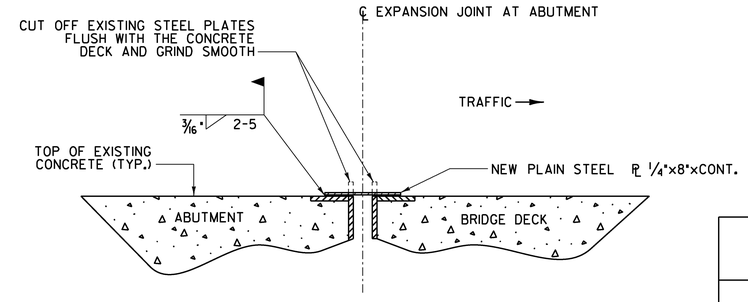
DETAIL A

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 2 1/2" UP THE FACE OF CURB PRIOR TO PLACING THE MEMBRANE.

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



NOTE:

1. DETAIL FOR JOINT AT ABUTMENT NO. 2 FOR BRIDGE NO. 40S.
2. ALL WORK ASSOCIATED WITH CUTTING AND GRINDING THE EXISTING STEEL PLATE AND FURNISHING AND INSTALLING THE NEW STEEL PLATE WILL BE PAID FOR UNDER ITEM 900.640 SPECIAL PROVISION (PARTIAL REMOVAL AND MODIFICATION OF METAL PLATE JOINT).
3. INSTALL NEW EXPANSION JOINT, ASPHALTIC PLUG TYPE, AT THIS JOINT LOCATION.

METAL PLATE JOINT MODIFICATION DETAIL - BR 40S

NOT TO SCALE

BRIDGE LENGTH AND WIDTH (CURB TO CURB)

	WIDTH (CURB TO CURB) (FEET)	LENGTH (FEET)
33 SOUTH	30.0	657
34 SOUTH	30.0	168
35 NORTH	38.0	119
35 SOUTH	38.0	119
39 NORTH	30.0	173
39 SOUTH	30.0	173
40 SOUTH	30.0	316

ASPHALTIC PLUG JOINT REPLACEMENT SCHEDULE

BRIDGE NO.	ABUT. 1	PIER 1	PIER 2	PIER 3	ABUT. 2
33 SOUTH	--	--	--	--	--
34 SOUTH	33.0 LF	--	--		--
35 NORTH	42.0 LF				--
35 SOUTH	42.0 LF				--
39 NORTH	--	--	--		34.0 LF
39 SOUTH	--	--	--		34.0 LF
40 SOUTH	--	--			30.0 LF

PROJECT NAME: WINDSOR - HARTLAND
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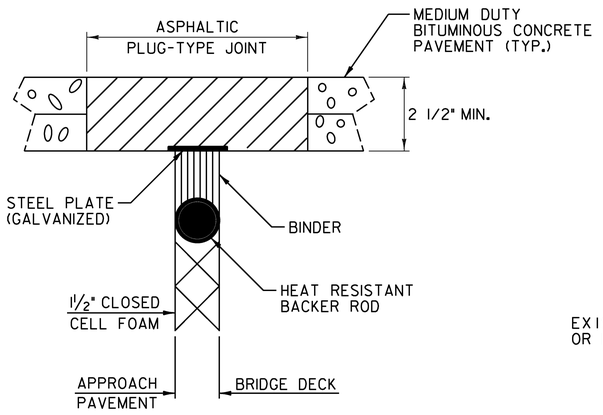
FILE NAME: $FILEABBREV$ PLOT DATE: $$$$DATE$$$
PROJECT LEADER: G. BOGUE DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE CHECKED BY: M. CHENETTE
BITUMINOUS CONCRETE DETAILS SHEET 8 OF 39

Stantec



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 ±.

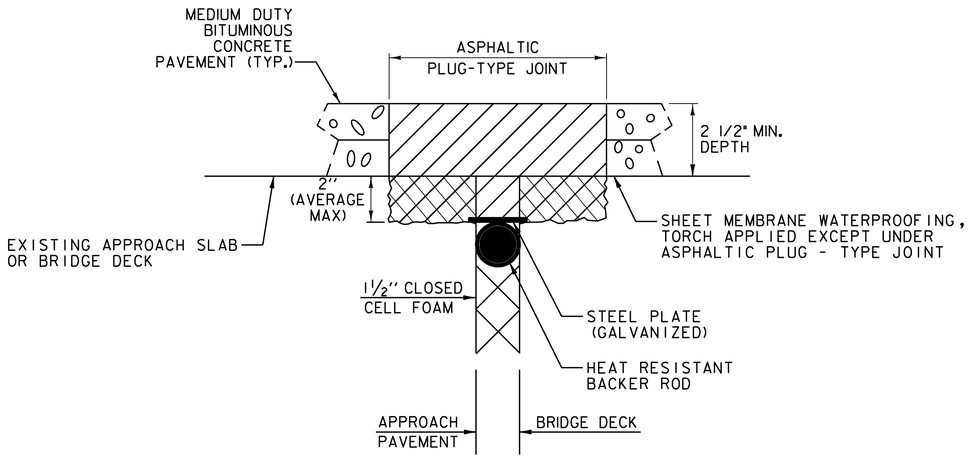
WEATHER LIMITATIONS

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.

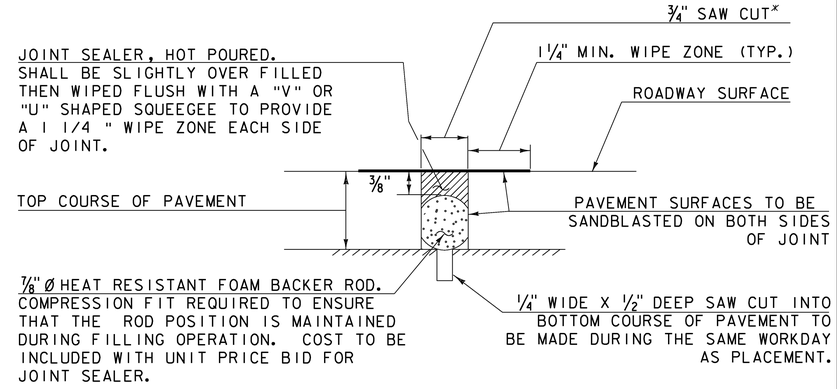
C. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



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.

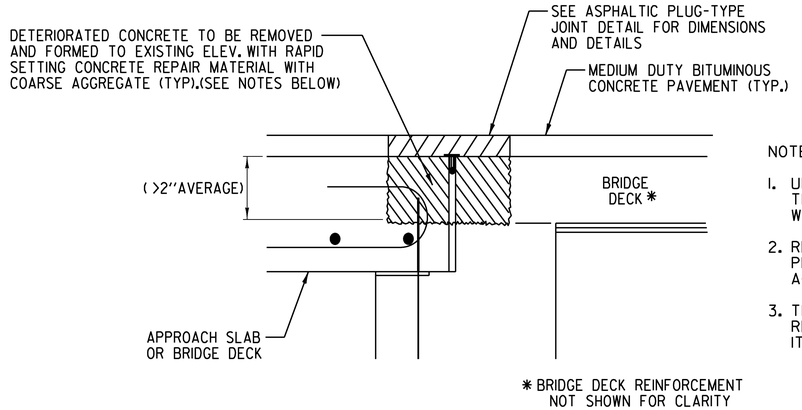


NOTE: PLACE JOINT SEALER, HOT POURED AT THE BEGINNING OF APPROACH SLABS.

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.



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

Stantec

PROJECT NAME: WINDSOR - HARTLAND	
PROJECT NUMBER: IM MEMB (14)	
FILE NAME: $FILEABBREV$	PLOT DATE: $$$$DATE$$$
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: M. CHENETTE	CHECKED BY: M. CHENETTE
PAVEMENT JOINT DETAILS	SHEET 9 OF 39

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2-4. R.O.W. Detail Sheets
5-9. Plan & Profile Sheets
10-35. Bridge (100 Series) Sheets
36. E-C Barricades, Signs & Lights
37. Blank
38. J-9 Field Office
39. SCB-D1-62
40. SCB-D6-62
41. SB-R1-64 Sheet #1
42. SB-R1-64 Sheet #2
43-57. Cross Sections

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

INTERSTATE PROJECT

TOWNS OF WEATHERSFIELD-WINDSOR-HARTLAND

COUNTY OF WINDSOR

INTERSTATE ROUTE 91

BRATTLEBORO-WHITE RIVER JCT. ROAD

CONTRACT # 5

PROJECT NAME & NUMBER	TYPE
WEATHERSFIELD-WINDSOR-HARTLAND I 91-1(21), C-5.	TWO 4 SPAN CONTINUOUS WELDED PLATE GIRDER BRIDGES

RECORD PLANS

MATERIALS

SUBBASE OF CRUSHED ROCK-SMITH LA HERAUX QUARRY-NO. HARTLAND, VT.
GRAVEL BACKFILL —TOWN OF WINDSOR GRAVEL PIT—WINDSOR, VT.
JOINT SEALER PREFORMED —A. H. HARRIS & SONS, INC.—HYDE PARK, MASS.
CONCRETE CLASS AA, B & D—MILLER READY MIX, INC.— W. LEBANON, N. H.
STRUCTURAL STEEL—THE STANDARD STRUCTURAL STEEL CO.—NEWINGTON, CT.
REINFORCING STEEL & STEEL PILING—BETHLEHEM STEEL CO.—BETHLEHEM, PA.
GRANITE BRIDGE CURB—BARRETTO GRANITE CO.— MILFORD, N.H.
BRIDGE RAILING—VERMONT STRUCTURAL STEEL CORP—BURLINGTON, VT.
BRIDGE PAINT —AMSTERDAM COLOR WORKS, INC.— NEW YORK, N. Y.

CONTRACTOR—E.T. O'NEILL & SON CONST. CORP. WESTFIELD, MASS.
RESIDENT ENGINEER—ELBERT H. ISHAM.
INSPECTOR — G. CROTEAU.
RECORD PLANS — A. G. SPIDLE.

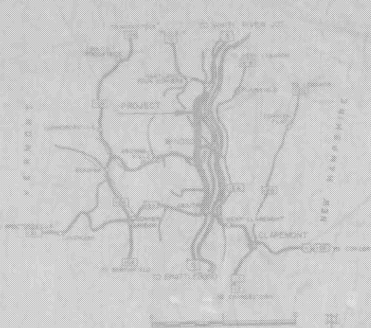
CONTRACT
DATED—DECEMBER 16, 1964.
STARTED—MARCH 16, 1965.
COMPLETED—SEPTEMBER 9, 1966.
ACCEPTED—SEPTEMBER 13, 1966.

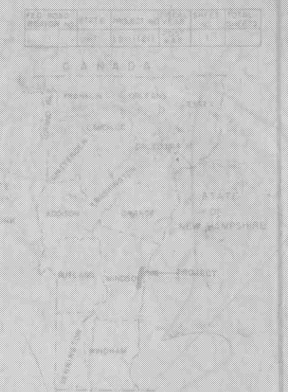
BEGINNING AT A POINT 1.630 MILE NORTHERLY OF THE WEATHERSFIELD-WINDSOR TOWN LINE AND EXTENDING NORTHERLY 0.125 MILE.

LENGTH OF BRIDGE 659.50 FEET = 0.125 MILE

LENGTH OF CONTRACT 659.50 FEET = 0.125 MILE

A.D.T. (1964)	3000
A.D.T. (1984)	7260
D.H.V. (1984)	965
D	53
T	7
V	60 MPH





FA CONSTRUCTION IDENTIFICATION SIGNS.....▲

WEATHERSFIELD-WINDSOR-HARTLAND-I 91-1(21) Cons. 5
CONTRACTOR—E.T. O'NEILL & SON CONST. CORP.
WESTFIELD, MASS.
CONST. COMPLETED—SEPTEMBER 9, 1966.
RECORD PLANS—A. G. SPIDLE.

CONVENTIONAL SIGNS

R.O.W.
COUNTY LINE
TOWN LINE
FENCE LINE
STONE WALL
IMPROVED PROPERTY
BURIED FUEL
TRAVELED WAY
RAILROAD
RETAINING WALL
CENTER LINE
SURVEY LINE
CULVERT
POLE
POLE LINE
TREES
HOUSE
LIMITED ACCESS
SLOPE RIGHTS
GROUND ELEVATION
GRADE ELEVATION
CURVE DATA
DEFLECTION OF ANGLE
DEGREE OF CURVE
RADIUS OF CURVE
TANGENT DISTANCE
LENGTH OF CURVE
EXTERNAL DISTANCE
POINT OF INTERSECTION
POINT OF CURVE
POINT OF TANGENT
POINT ON SUB-TANGENT

SCALE IN FEET

NOTE: ANY FOR THE INFORMATION CONCERNING FINAL QUANTITIES OF MATERIALS TO BE USED RELATIVE TO THE CONSTRUCTION OF THIS PROJECT, EITHER THE FIELD FORCE OR THE ESTIMATE FILES.

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 OUT IN ACCORDANCE WITH THE PLANS AND THE STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION OF JANUARY 1960 AMENDED TO THE DATE OF THE PUBLIC HEARING AS APPROVED JUNE 6, 1958, INCLUDING ALL SUPPLEMENTAL REVISIONS AND SPECIAL PROVISIONS AND SPECIAL NOTES PERTAINING TO THIS PROJECT AS PUBLISHED WITH THE PLANS.

C. H. Arnold
ASST. CHIEF
9/21/64

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 10 OF 39
BRIDGE 33S
FOR REFERENCE ONLY

STAGE I CONSTRUCTION
CONTRACT # 5

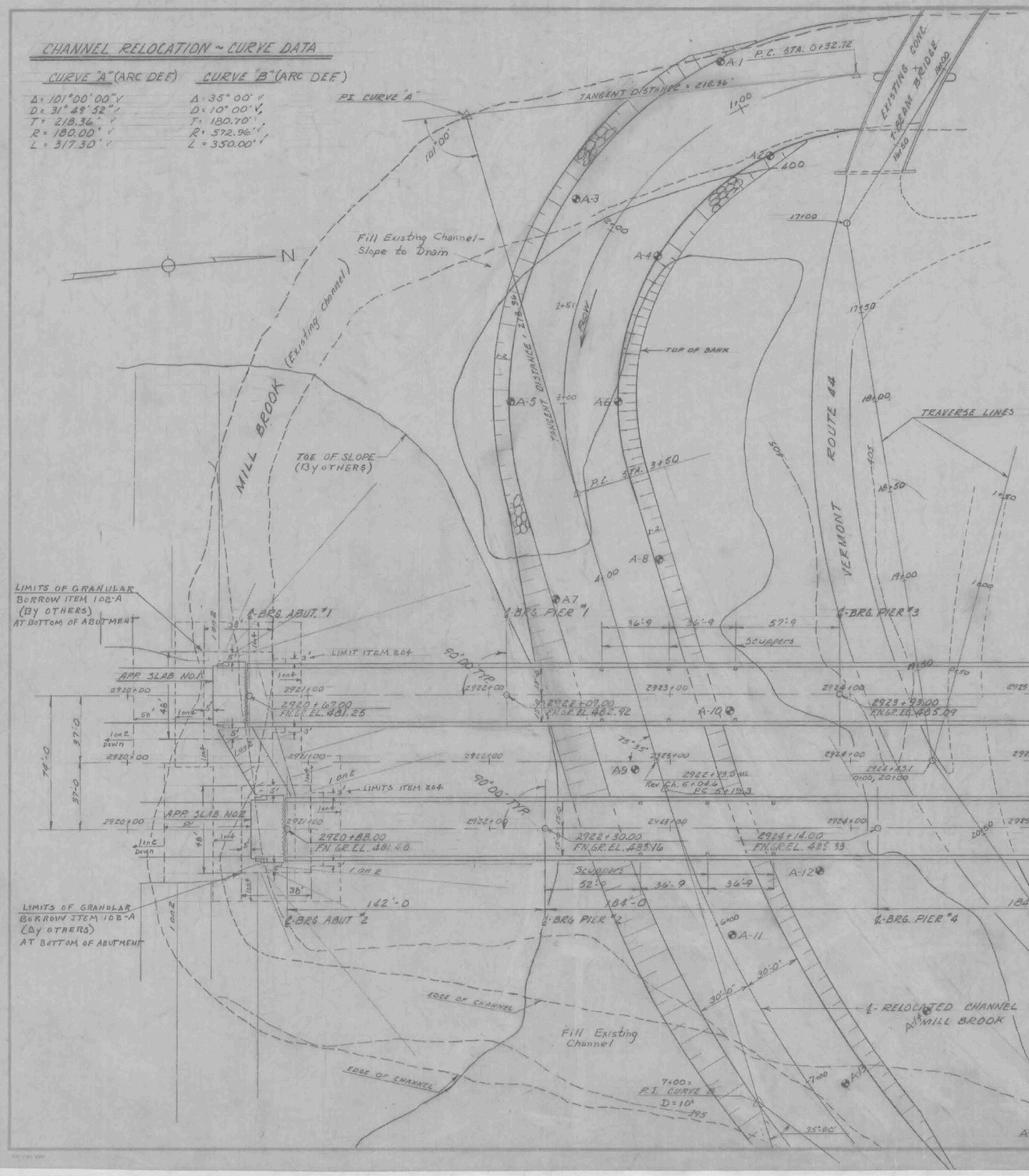
DEPARTMENT OF CONNERCE
BUREAU OF PUBLIC ROADS

WEATHERSFIELD-WINDSOR-HARTLAND

I - 57

CHANNEL RELOCATION ~ CURVE DATA

CURVE "A" (ARC DEF)	CURVE "B" (ARC DEF.)
Δ = 101°00'00" Rt.	Δ = 36°00'00" Lt.
D = 31°49'52"	D = 10°00'00"
T = 218.36'	T = 180.70'
R = 180.00'	R = 572.96'
L = 317.30'	L = 350.00'



~ LIST OF SHEETS ~

BR. 100	Plan
BR. 101	Elevation and Boring Plan
BR. 102	Bridge Quantity Sheet
BR. 103	Preliminary Information
BR. 104-5-6	Boring Logs
BR. 107	Framing Plan
BR. 108	Typical Section and Bracing
BR. 109	Floor Beam and Bracing
BR. 110	Railing Details
BR. 111	Expansion Dam Details
BR. 112	Scupper Details
BR. 113	Bearing Devices
BR. 114	Approach Slabs 1, 2, 3, & 4
BR. 115	Abutments No. 1 & 2
BR. 116	Abutment No. 3
BR. 117	Abutment No. 4
BR. 118	Piers No. 1, 2, 3, & 4
BR. 119	Pier No. 5
BR. 120	Pier No. 6
BR. 121-2-3	Reinforcing Steel Schedules
BR. 124-5	Channel Sections

Maximum Allowed Design Stresses

Concrete $f_c = 1200\ ^{\#}/_{in^2}$

$f_c = 3000\ ^{\#}/_{in^2}$

Structural steel 29000 $^{\#}/_{in^2}$

Reinforcing Steel

Tension 29000 $^{\#}/_{in^2}$

Compression 14,000 $^{\#}/_{in^2}$

Standard Sheets :~

SCB-D1-62

SCB-D6-62 (Details A, B, E, F)

SB-R1-64 Sheets 1 & 2 of 2

~ GENERAL NOTES ~

1- Elevation datum sea level based on nearest U.S. Government Vertical Control.
2- For additional notes see SCB-D1-62
3- Approach slabs shall be constructed as part of Stage I Construction.
4- For Abutments 1 and 2 fill is to be placed to pile cutoff elev. prior to driving piles. Excav. to bottom of footing after piles are driven to be paid under Item 107

*AUGER BORINGS FOR CHANNEL RELOCATION

BORING NO.	STATION	OFFSET	Ground El.	Depth of Hole
A1	2923+30	387' Lt.	398.5	15.0'
A2	2923+57	334' Lt.	399.2	25.0'
A3	2922+45	310' Lt.	398.2	5.0'
A4	2922+94	279' Lt.	401.9	25.0'
A5	2922+13	199' Lt.	400.5	10.0'
A6	2922+72	199' Lt.	400.2	25.0'
A7	2922+37	90' Lt.	399.7	25.0'
A8	2922+94	111' Lt.	397.1	25.0'
A9	2922+80	4' Rt.	399.6	25.0'
A10	2923+33	23' Lt.	398.3	25.0'
A11	2923+33	95' Rt.	397.1	25.0'
A12	2923+82	60' Rt.	398.0	25.0'
A13	2923+96	177' Rt.	396.0	5.0'
A14	2924+12	137' Rt.	396.8	5.0'
A15	2925+10	206' Rt.	390.9	25.0'

* Purpose of Auger Borings is to determine type of Channel Exc., Material found is classified as sand and gravel.

Note: All Channel Excavation, Item 106, and Stone Fill, Item 521, on Contract #5, is to be performed, furnished, and placed by the Contract #2 Contractor

BR. 100 OF 125

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WEATHERSFIELD-WINDSOR-HARTLAND

ROAD NO. I-91 BRIDGE NO.

I-91 OVER VT. #44 AND MILL BROOK

PLAN

SCALE 1 IN. = 30 FT.

SURVEYED BY

DRAWN BY R.L.D. CHECKED BY

PROJECT NO. I-91-1(21) Cont. #5

SHEET 10 OF 57

WINDSOR-HARTLAND
IM MEMB(14)

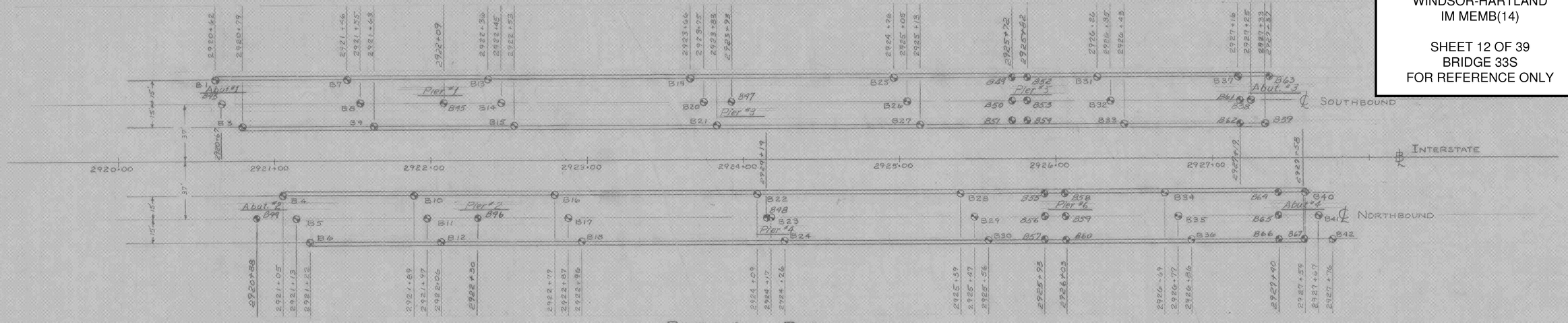
SHEET 11 OF 39
BRIDGE 33S
FOR REFERENCE ONLY

(30)

Sheet 114 of 188

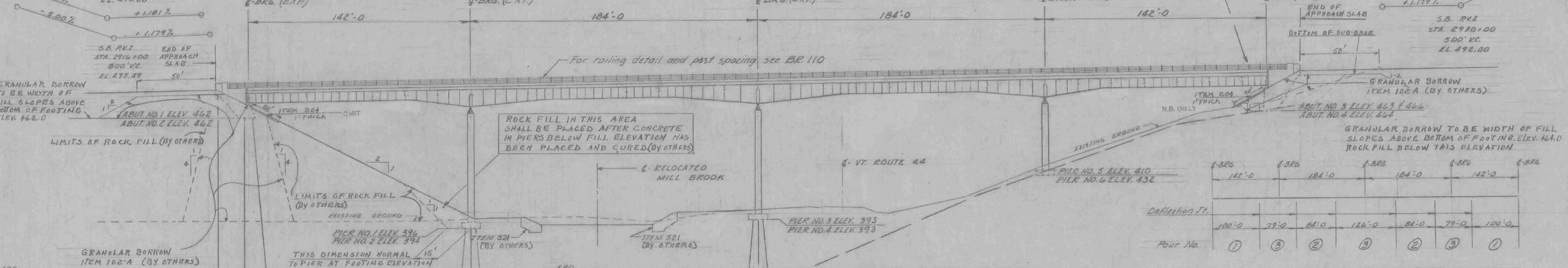
WINDSOR-HARTLAND
IM MEMB(14)

SHEET 12 OF 39
BRIDGE 33S
FOR REFERENCE ONLY



BORING PLAN

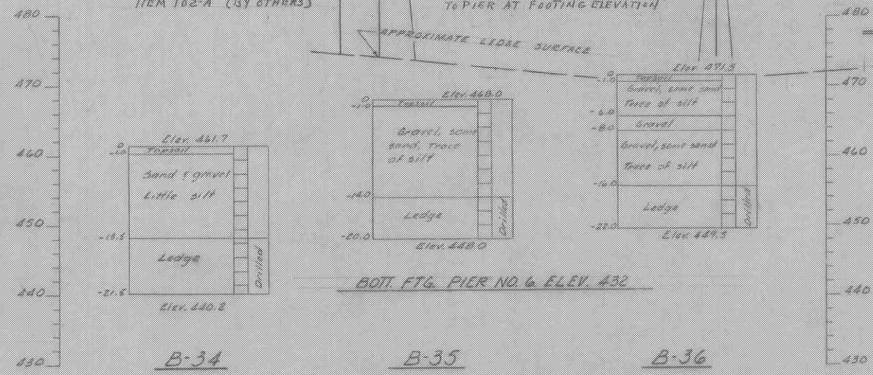
FILL IN AREAS OF ABUT #3 & #4 SHALL BE PLACED AFTER CONCRETE IN ABUTMENTS BELOW FILL ELEVATION HAS BEEN PLACED AND CURED. (BY OTHERS)



PROFILE - RIGHT FASCIA NORTH BOUND LANE

	℄ BRG.	℄ BRG.	℄ BRG.	℄ BRG.	℄ BRG.
	142'-0	184'-0	184'-0	142'-0	
Deflection Ft.	100'-0	79'-0	84'-0	126'-0	84'-0	79'-0	126'-0
Pour No.	1	3	2	3	2	3	1

SLAB POUR SEQUENCE



Note: All Channel Excavation, Item 106, and Stone Fill, Item 521 on Contract #3, is to be performed, furnished and placed by the Contract #2 Contractor

BR. 101 OF 125

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

WEATHERSFIELD-WINDSOR-HARTLAND
TOWN OF

ROAD NO. ____ BRIDGE NO. ____

I-91 OVER VT. #44 AND MILL BROOK

ELEVATION & BORING PLAN

SCALE 1" = 30'

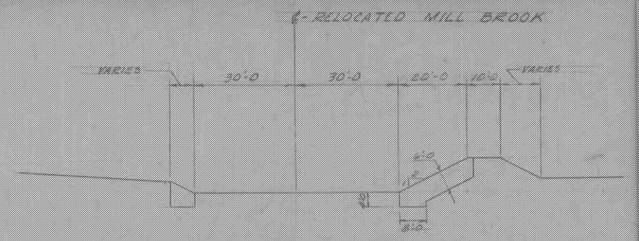
SURVEYED BY ____

DRAWN BY RSH/EJD CHECKED BY AGC & W

PROJECT NO. I 91-1(30)(21) Cont. #5

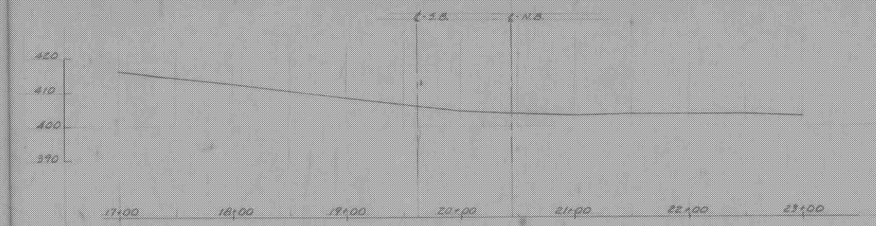
SHEET 11 OF 57

Sheet 115 of



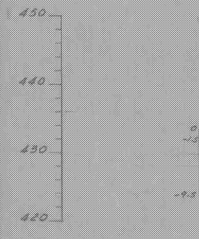
NEW CHANNEL SECT. STA. 0+00 TO STA. 4+00

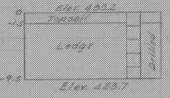
SCALE 1"=20'



PROFILE ALONG TRAVERSE LINE

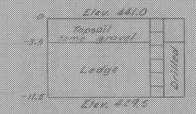
HOR. SCALE 1"=50'
VERT. SCALE 1"=20'





B-31

B-32



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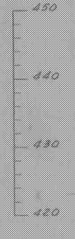
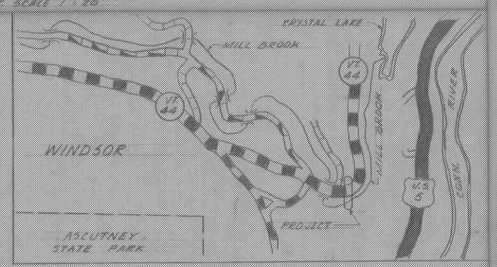
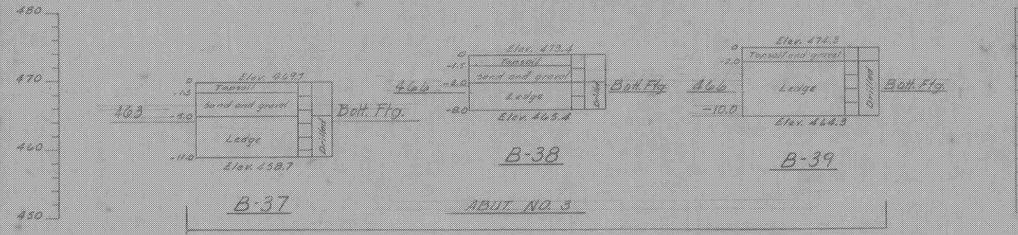




PROJECT LOCATION

SCALE 1"=0.5 MI.

EOTT. FTG. PIER NO. 5 - ELEV. 410

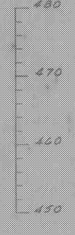


B-37

B-38

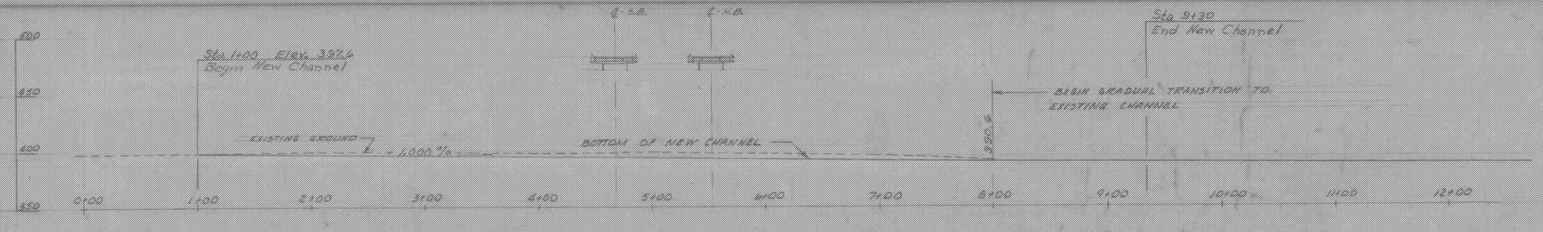
B-39

ABUT. NO. 3



BORING LOG ~ SOUTH BOUND LANE

SCALE 1"=10'



PROFILE OF PROPOSED STREAM CHANNEL

SCALE 1"=50'

HIGHWAY NO I-91 NAME OF HIGHWAY INTERSTATE

STRUCTURE NO. ____ COUNTY WINDSOR TOWN WINDSOR

PROJECT NO I-91-1(21) LOCATION WINDSOR

EXISTING STRUCTURE

1 POSTED 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 BOUNDARY 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 (SCB-30-62 MOD.)

1 RECOMMENDED TYPE OF STRUCTURE CONTINUOUS PLATE GIRDER - FLOOR BEAMS & STRINGERS

2 RECOMMENDED CLEAR SPAN OR SPANS 142' - 184' - 184' - 142'

MEASURED PARALLEL TO ℄ NEW ROADWAY 652'

MEASURED AT RIGHT ANGLES TO ℄ STREAM 542'±

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

4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE ____

5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 401.0 SOURCE OF INFORMATION 1210.35cms. B.P.R. Charts

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

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

8 LOW WATER ELEVATION AT NEW STRUCTURE 374.0 ±

9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 27,500 CHARACTER OF TERRAIN MOUNTAINOUS

10 IS STREAM EVER DRY? NO

11 VELOCITY OF STREAM AT HIGH WATER STAGE 12.0 ft/sec ESTIMATED DISCHARGE 7500 c.f.s.

12 AREA FULL OPENING ____ AREA BELOW ORDINARY H.W. ____

13 CHARACTER OF SOCKET ____ DRIFT ____ ICE ____

14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE ____

15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION 270 Ft. ±

16 ARE SIDEWALKS REQUIRED, IF SO ON WHAT SIDE NONE BOTH SIDES ____

17 RECOMMENDED TYPE OF PAVEMENT REINFORCED CONCRETE WITH BITUMINOUS SURFACE

18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. ____ ONE OR TWO WAYS ____ PROBABLE COST ____

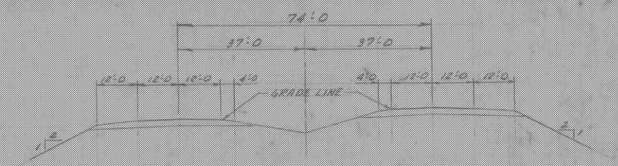
19 PROBABLE COST OF CLEARING AND OPENING STREAM CHANNEL AT STRUCTURE SITE ____

20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? NO

21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS ____ SHOULD PILES BE USED? YES SEE ITEM 45-13

FOUNDATION INFORMATION

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



TYPICAL INTERSTATE SECTION

HIGH FILL

SCALE 1"=20'

Note: All Channel Excavation, Item 106, and Stone Fill, Item 521, on Contract #3 is to be performed, furnished, and placed by the Contract #2 Contractor

BR. 103 OF 125

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 13 OF 39
BRIDGE 33S
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

INTERSTATE IN THE TOWNS OF WEATHERSFIELD-WINDSOR-HARTLAND

ROUTE NO. I-91 LOG STA 2924+19

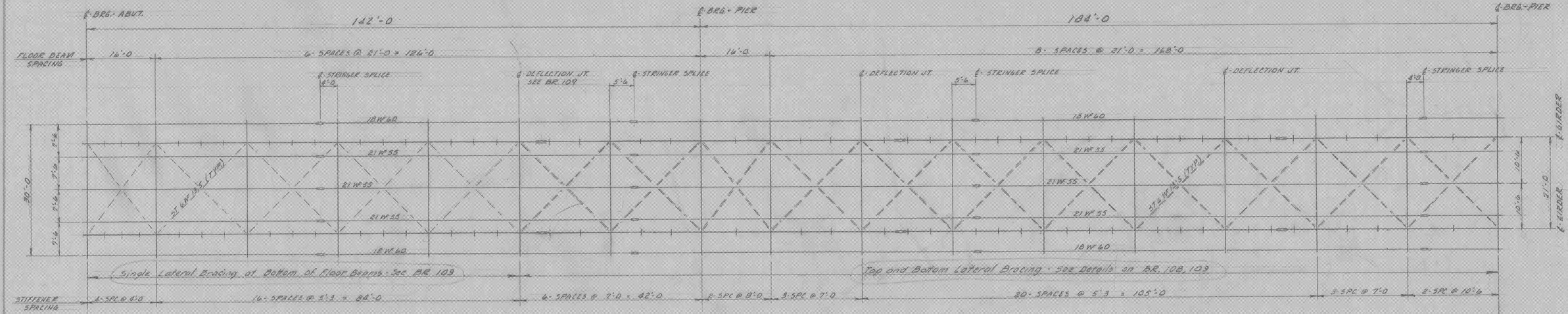
INTERSTATE OVER VT ROUTE 44 AND MILL BROOK

SURFACE R.L.O. | DRAWN BY T.S.S. | SCALE As Shown

PROJECT NO. I-91-1(21) COND. 4 | SHEET 13 OF 57

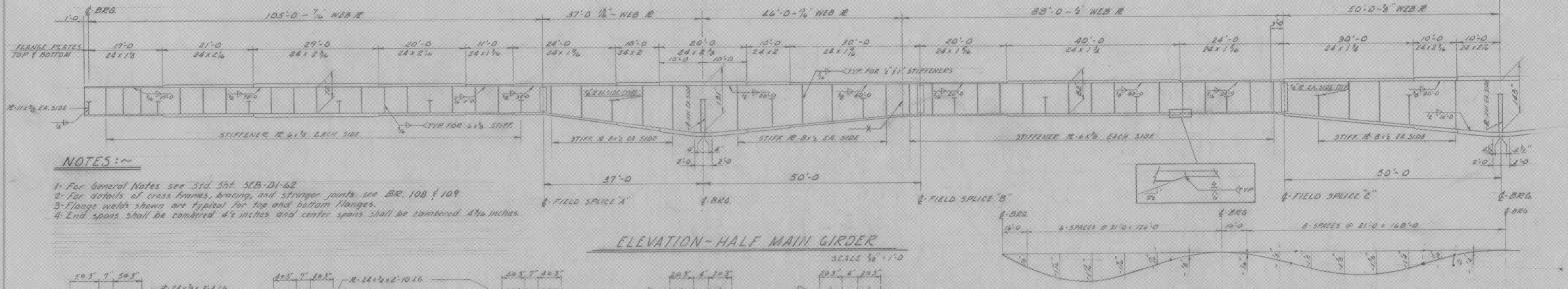
DATE May 24, 1962 | APPROVED 9/11/62

DESIGN SUPERVISOR Simpson | CHIEF ENGINEER



HALF FRAMING PLAN

SCALE 3/32" = 1'-0



NOTES :-

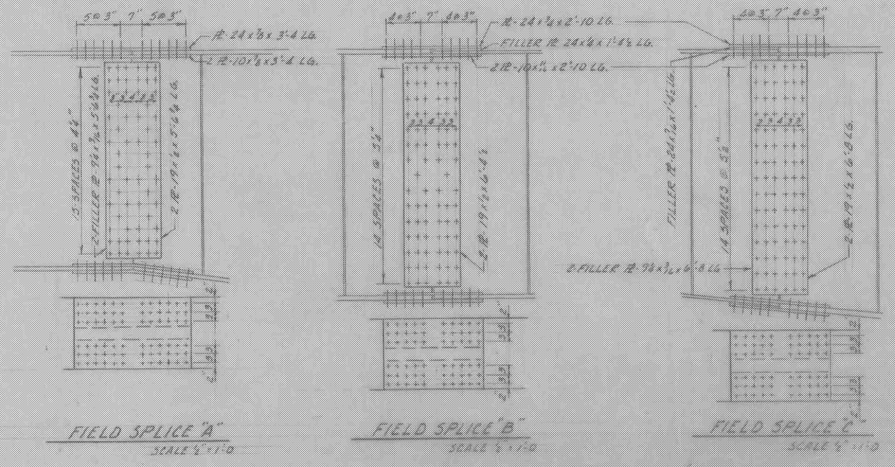
1- For General Notes see Std. Sht. SCB-D1-62
2- For details of cross Frames, bracing, and stringer joints see BR. 108 & 109
3- Flange welds shown are typical for top and bottom flanges.
4- End spans shall be cambered 4½ inches and center spans shall be cambered 4 3/16 inches.

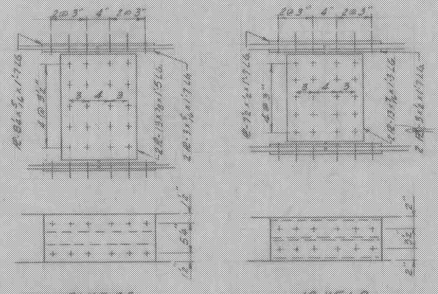
ELEVATION - HALF MAIN GIRDER

SCALE 3/32" = 1'-0

DEAD LOAD DEFLECTION DIAGRAM

(GIRDER, STRINGERS & SLAB) NOT TO SCALE





STRINGER SPLICES

SCALE 1" = 1'-0

ITEM NO	ITEM	UNIT	NORTH BOUND TOTAL	NORTH BOUND FINAL	SOUTH BOUND TOTAL	SOUTH BOUND FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS B	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.				

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 14 OF 39
BRIDGE 33S
FOR REFERENCE ONLY

BR. 107 OF 125

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WEATHERSFIELD - WINDSOR - HARTLAND

ROAD NO. I-91 BRIDGE NO.

I-91 OVER VT. RT. 44 & MILL BROOK

FRAMING PLAN

SCALE As Shown

SURVEYED BY

DRAWN BY RLO CHECKED BY AGC

PROJECT NO. I-91-1(21) CONT. 5S

SHEET 11 OF 39

Floor Slab to be Concrete C1AA(Mod) 7½" thick dapped as shown at beam haunch, surface to be screeded floated and broomed. Partial parabolic crown, as per detail. To be obtained by shimming center stringer as shown

For Railing details see BR 110 and Standard Sheet SB-R1-64, 1 & 2 of 2

Refer to SCB-D6-62 for additional details of curb

1" Plastic Tube

Granite Bridge Curb Item 556-C (MOD)

1½" Bit Conc. Pav't Item 361-B (Mod)

Item 318-Tar Emulsion for Bridge Floors

Finish Grade

S501 @ 6" Top & Bot.

S502 @ 9" Bottom Top as shown

S409 @ 18" c/c

3605 Chair Bars

5605 BARS

¾" Dia Bolt

18WF60

21WF55

W.P. INTERMEDIATE

W.P.

For splice detail See sheet BR 109

2 L-5x3x½"

⅜" Gusset PL for Bottom Lateral Bracing (Weld at angle where girder depth varies)

Intermediate & Abutment Sway Frame
Scale ¾"=1'-0"

* Use Same scheme at abutments but with 2 L-6"x9"x 9/16

STGWF13.5 Bottom Lateral Bracing See BR 107 for Location

SECTION B-B
SCALE 1½"=1'-0

BWF17

BWF28

Web PL ⅜"x1'-4"

Pier Sway Frame
Scale ¾"=1'-0"

STGWF13.5 Bottom Lateral Bracing

Main Girder Web

Section A-A
Scale 1½"=1'-0

Copes 1"x1" Typ for all Stiffeners @ Top & Bot Flg

BR 108 OF 125

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.				
	CONC. CLASS B	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 WEATHERSFIELD-WINDSOR-HARTLAND

ROAD NO. I 91 BRIDGE NO.

I 91 over Route 99 & Mill Brook

Typical Section & Bracing Details

SCALE As shown

SURVEYED BY

DRAWN BY SHS CHECKED BY RLD

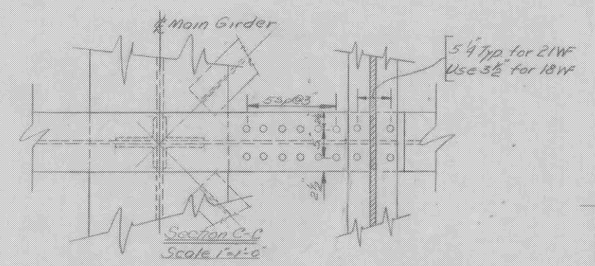
PROJECT NO. I-91-1(21) Cont. #5

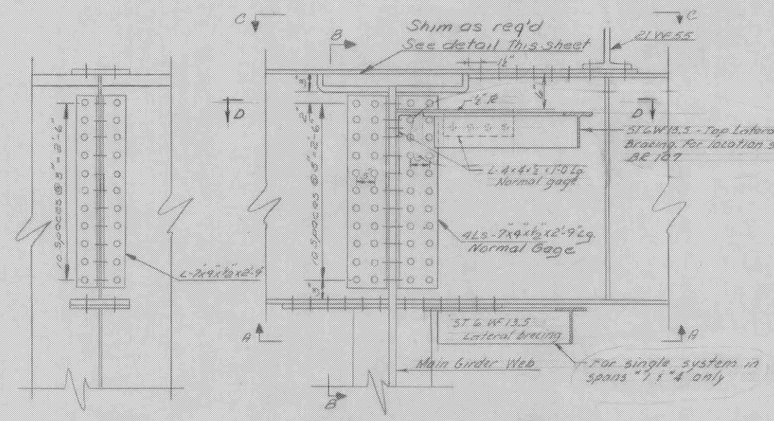
SHEET 13 OF 57

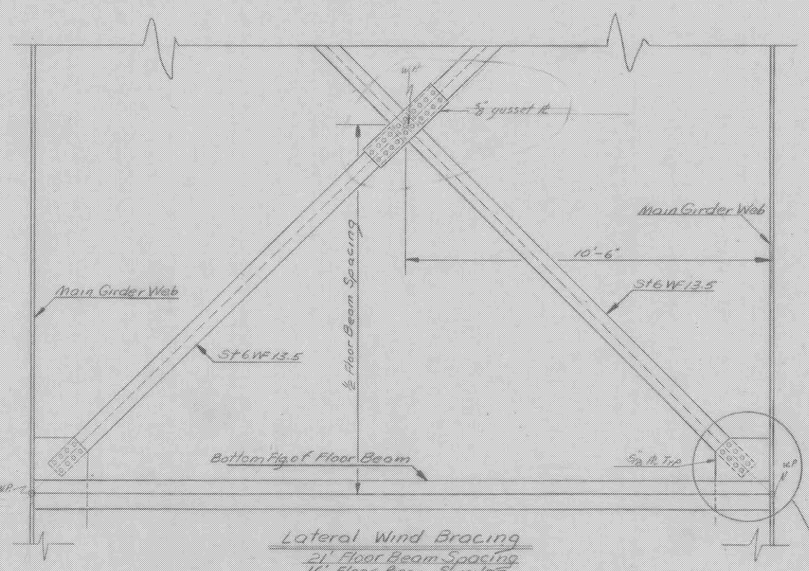
REVISED PLANS - JAN. 1964

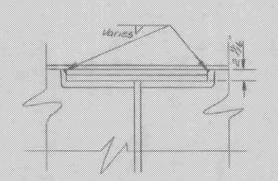
WINDSOR-HARTLAND
IM MEMB(14)

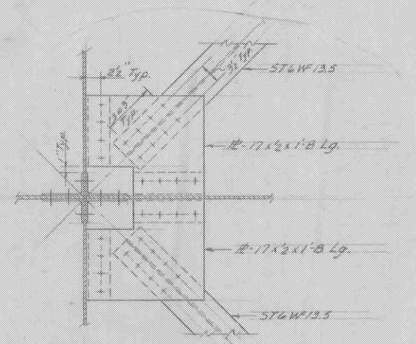
SHEET 15 OF 39
BRIDGE 33S
FOR REFERENCE ONLY

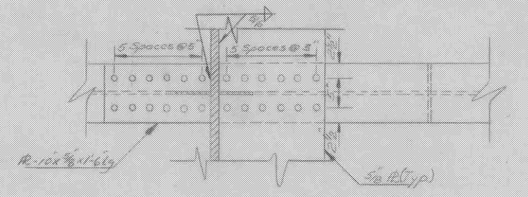


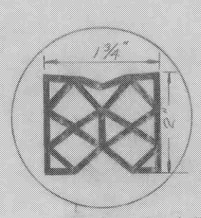




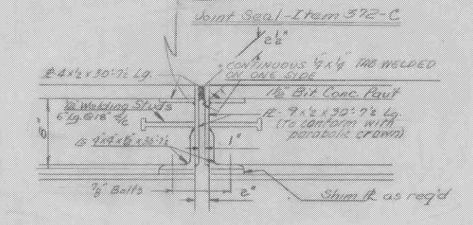


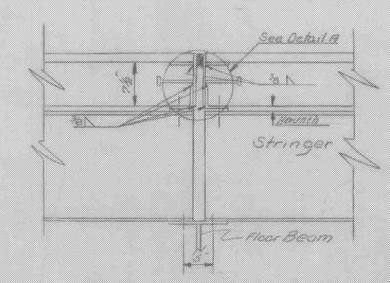


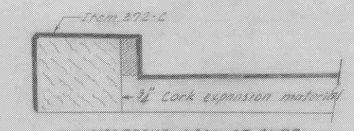


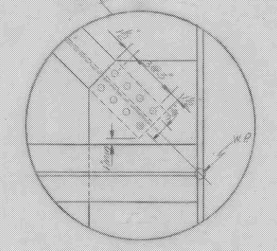


NOTE:~
Preformed sealer shall be Neoprene rubber premolded to the indicated shape.









WINDSOR-HARTLAND
IM MEMB(14)

SHEET 16 OF 39
BRIDGE 33S
FOR REFERENCE ONLY

BR 109 OF 125

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.				
	CONC. CLASS B	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

WEATHERSFIELD - WINDSOR - HARTLAND
TOWN OF

ROAD NO. I-91 BRIDGE NO.

I-91 Over Vt. Rt. 44 & Mill Brook

FLOOR BEAM & BRACING DETAILS

SCALE As Shown

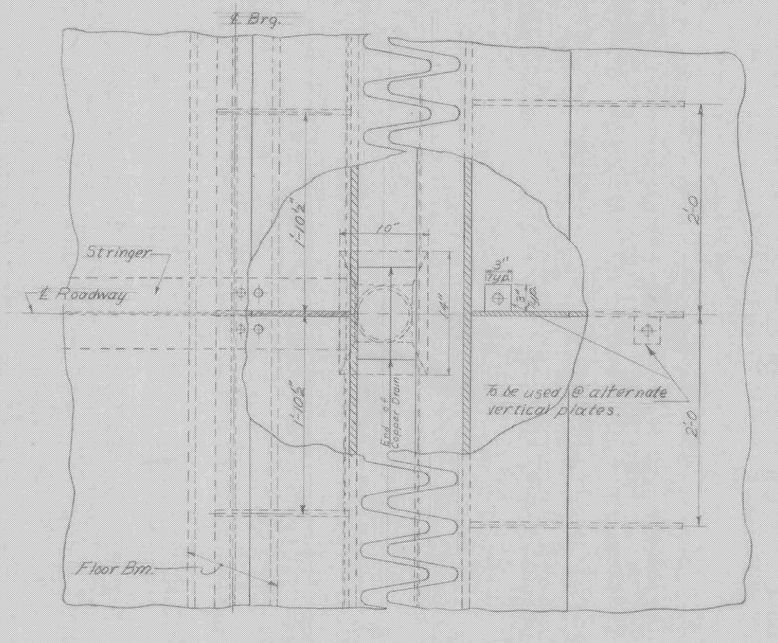
SURVEYED BY

DRAWN BY S.H.S CHECKED BY R.L.D

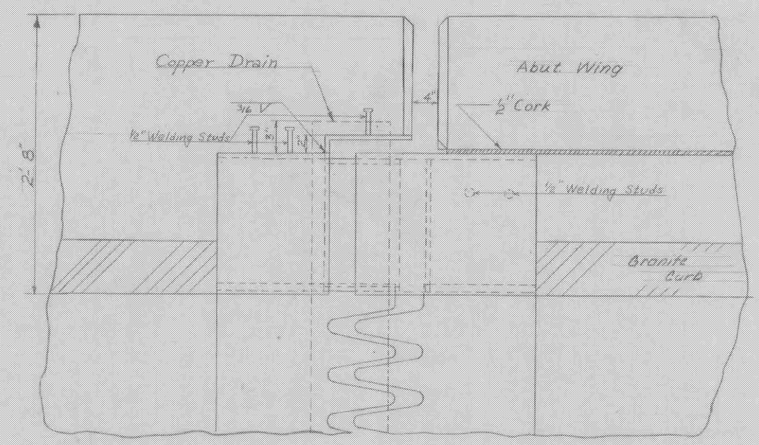
PROJECT NO. I-91-1(21) Cont "3

SHEET 19 OF 37

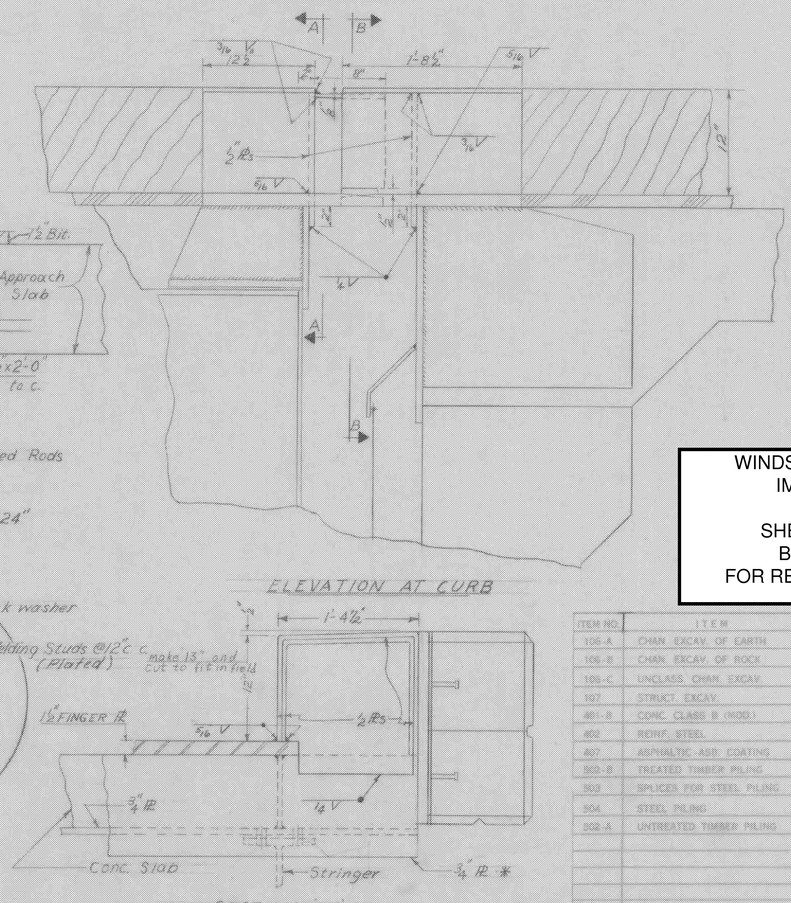
REVISED PLANS - JAN. 1965



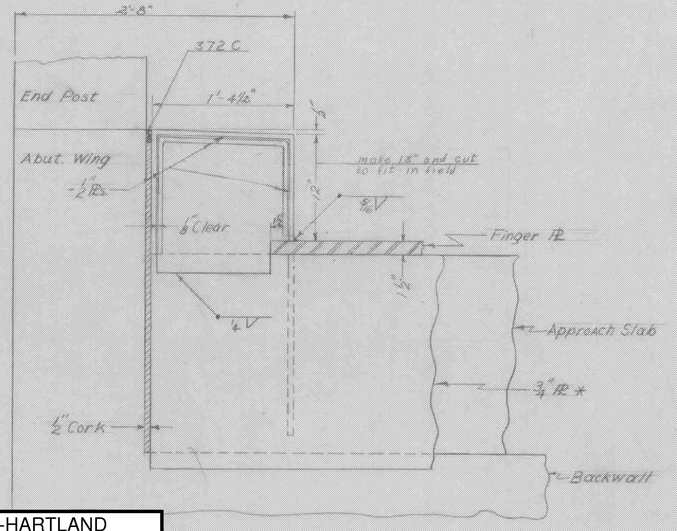
PLAN AT ℄ OF ROADWAY



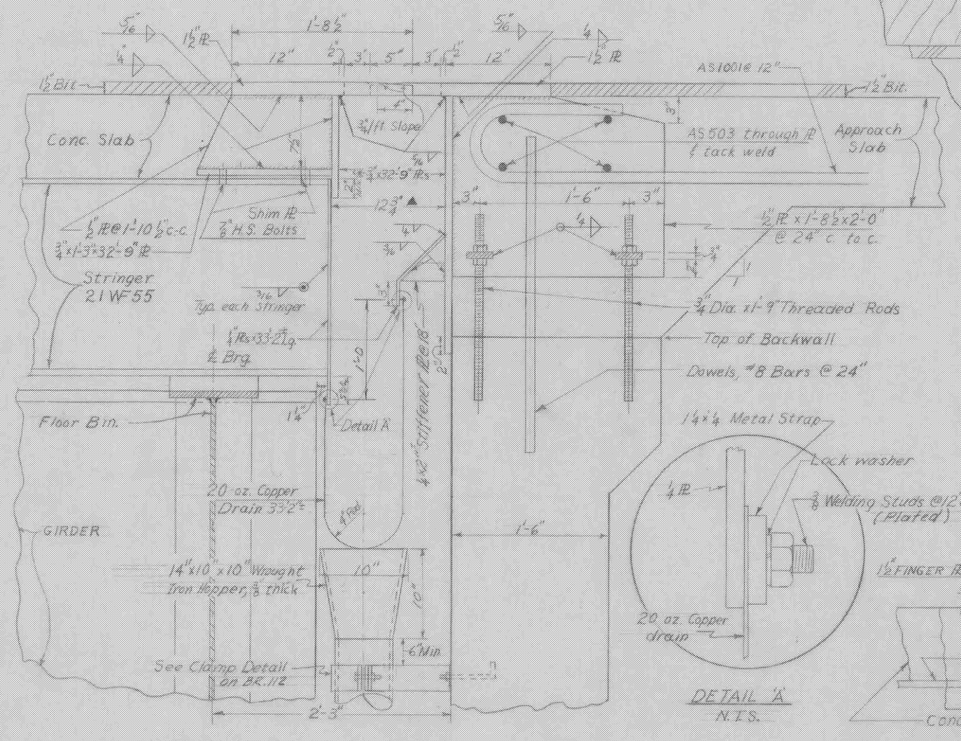
PLAN AT CURB



SECTION A-A



SECTION B-B



ELEVATION AT ℄ OF ROADWAY

DETAIL 'A' N.T.S.

ELEVATION AT CURB

NOTES :~

1. * These Rs. shall conform to the parabolic crown.
2. For details of Finger Rs. & Drainage see Br 112 of 125
3. Copper drain shall have a min. slope of ⅜"/ft.
4. All steel shall be A242 unless otherwise noted.
5. All plates which are embedded completely in concrete may be A36 steel.
6. ▲ Clear dimensions indicated are for 68° F.

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 17 OF 39
BRIDGE 33S
FOR REFERENCE ONLY

ITEM NO.	ITEM	UNIT	NET	OVERRUN	TOTAL	FINAL
106-A	CHAN. EXCAV. OF EARTH	C.Y.				
106-B	CHAN. EXCAV. OF ROCK	C.Y.				
106-C	UNCLASS. CHAN. EXCAV.	C.Y.				
107	STRUCT. EXCAV.	C.Y.				
401-B	CONC. CLASS B (MOD.)	C.Y.				
602	REINF. STEEL	LBS.				
607	ASPHALTIC ASD. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
503	SPLICES FOR STEEL PILING	EA.				
504	STEEL PILING	L.F.				
502-A	UNTREATED TIMBER PILING	L.F.				

BR. 111 OF 125

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

WEATHERSFIELD-WINDSOR-HARTLAND
TOWN OF

ROAD NO. I-91 BRIDGE NO.

I-91 over Rt. #44 & MILL BROOK

EXPANSION DAM DETAILS

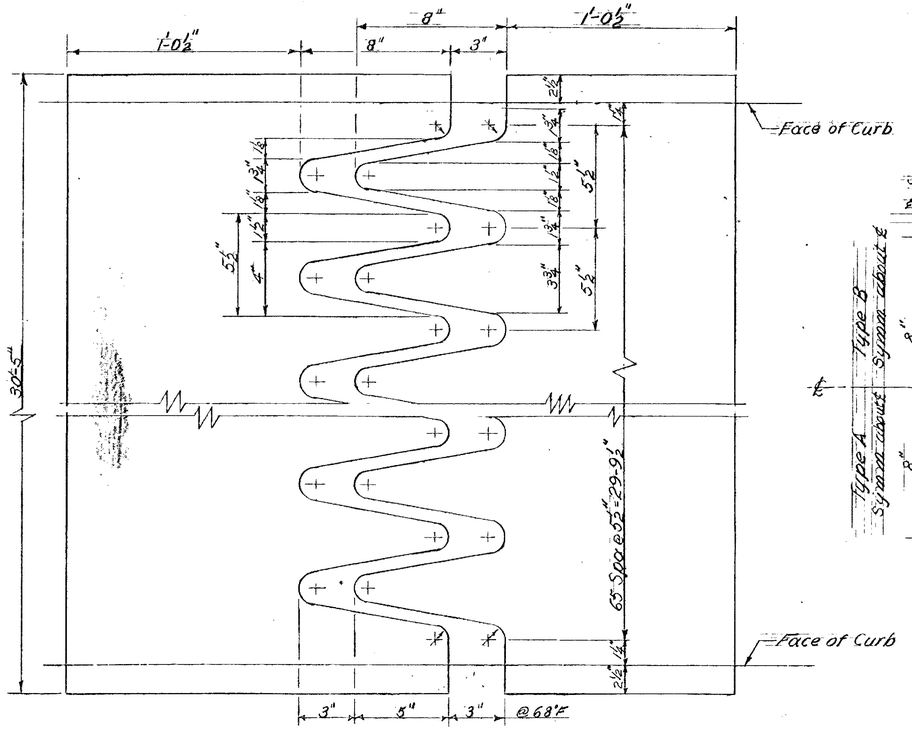
SCALE 1½"=1'-0.

SURVEYED BY

DRAWN BY W CHECKED BY AGC

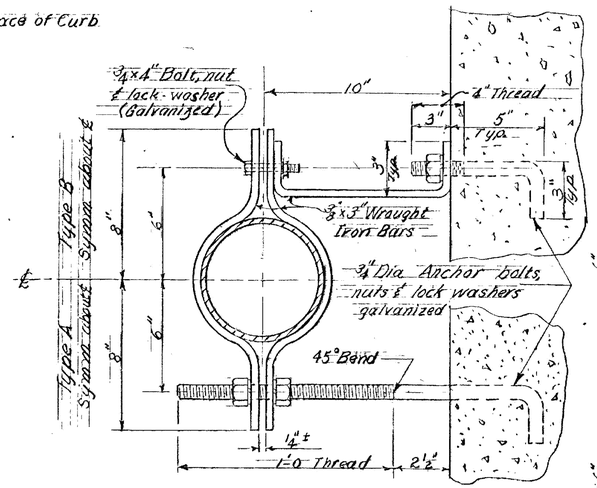
PROJECT NO. I-91-(21) Cont. #5 (30)

SHEET 21 OF 57



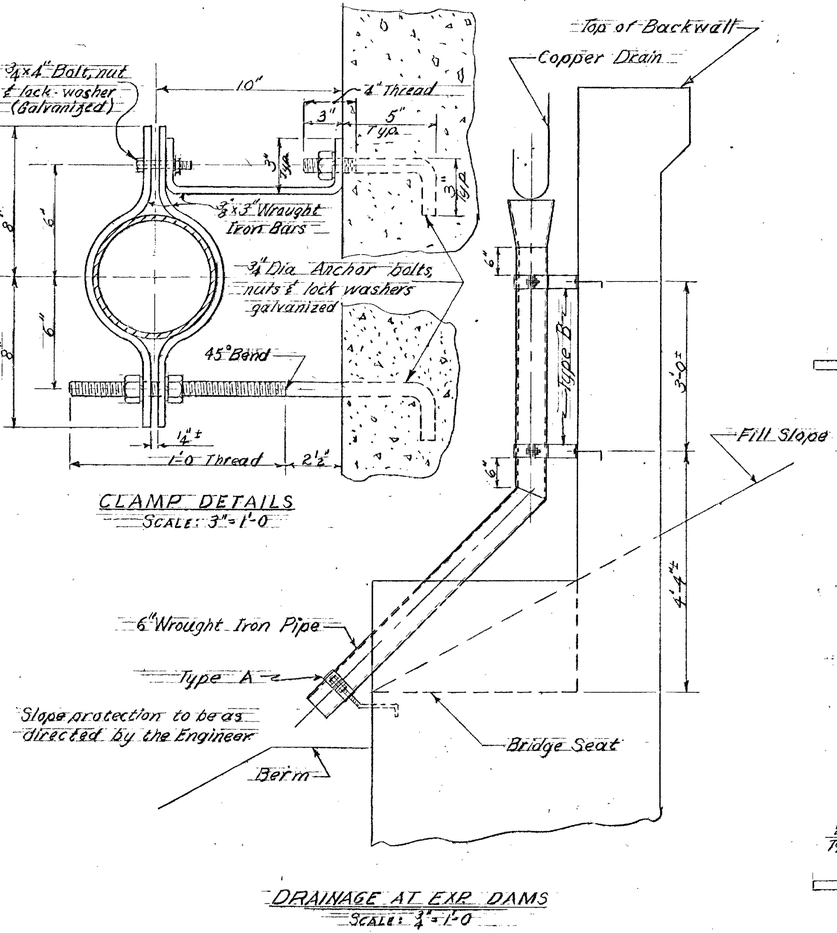
FINGER PLATE DETAIL

Scale: 3" = 1'-0



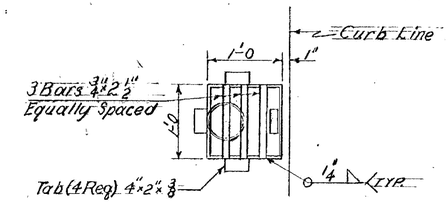
CLAMP DETAILS

SCALE: 3" = 1'-0



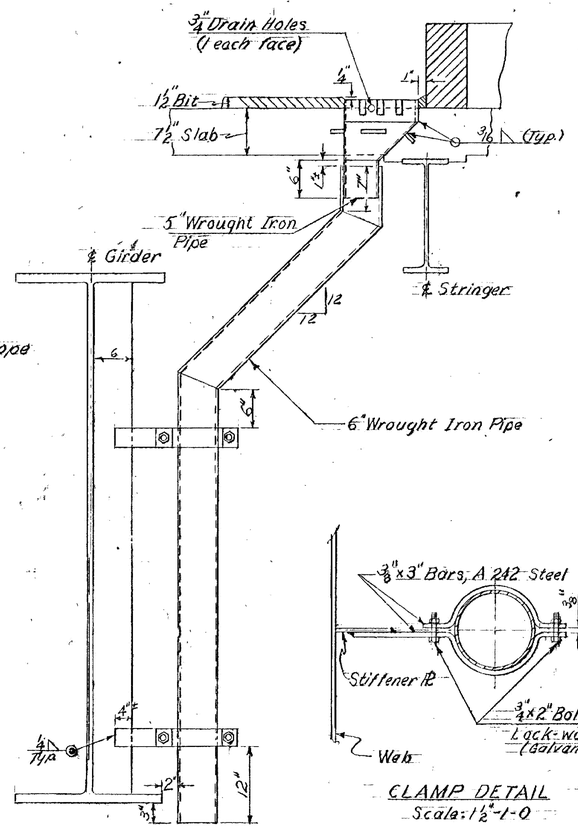
DRAINAGE AT EXP DAMS

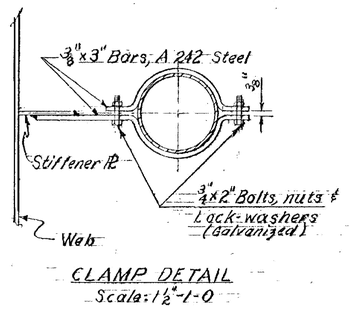
SCALE: ¾" = 1'-0



PLAN OF SCUPPER

Make of ⅜" Wrought Iron Stock





CLAMP DETAIL

Scale: 1½" = 1'-0

SCUPPER DETAIL

Scale: 1" = 1'-0

ITEM NO.	ITEM	UNIT	NET	OVERRUN	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 B	C.Y.				
	REINF. STEEL	LBS.				
	ASPHALTIC-OIL COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
	SPLICES FOR STEEL PILING	EA.				
	STEEL PILING	L.F.				
	UNTREATED TIMBER PICING	L.F.				

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 18 OF 39
BRIDGE 33S
FOR REFERENCE ONLY

BR 112 OF 125

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WEATHERSFIELD-WINDSOR-HARTLAND

ROAD NO. I-91 BRIDGE NO. I-91 OVER Rte 44 & MILL BROOK

SCUPPER DETAILS

SCALE As Noted

SURVEYED BY

DRAWN BY M CHECKED BY A.G.C.

PROJECT NO. I-91-1(21) Conn. 5

SHEET 22 OF 37

SHEET NO. 1. Title Sheet
2. Alignment Sheet
3-4. Interstate Typical Section Sheets (8" Bit.Conc.Pave. w/Item 361-8, Mod.)
5-7. Quantity Sheets, Items
8-10. Item Detail and Drainage Sheets
11-16. Earthwork Sheets
17-19. R.O.W. Detail Sheets
20-38. Plan and Profile Sheets
39-40. Details of 90° Plate Pipe @3041+70
41-55. Bridge (100 Series) Sheets
56. A-61 Slopes in Solid Rock
57. B-1 Banking Tables
58. B-5 Typical Slope Grading
59. B-6 Muck Excavation
60. B-10 Embankment on a Slope
61. B-13 Drives
62. Blank
63. D-2 Culverts
64. D-3 Jute Matting and Gutters
65. D-4 Metal End Sections
66. D-6 Drop Inlets
67. D-11 Drop Inlet Grates
68. D-13 Concrete Catch Basins
69. D-16 Precast Reinforced Concrete Curb Drop Inlet
70. D-17 A.C.C.G.N.P. Vertical Riser
71. E-1 Barricades, Signs and Lights
72. E-2 Barricades, Signs and Lights for Bridges
73. E-31 Construction Identification Signs
74. F-1 Property Line Fence
75. F-2 Chain Link Fence
76. F-3 Chain Link Fence
77. G-4 Marker Posts
78. J-1 Boundary Markers
79. J-4 Field Office
80. SB-AS-62
81. SCB-D1-62
82. SCB-D6-62
83. SCB-D8-62
84. SCB-D9-62
85. SB-SG-62 Sheet #1
86. SB-SG-62 Sheet #2
87-159. Cross Sections - Mainline
160-164. Cross Sections - T.R. #5
165-166. Cross Sections - Channel @3041+70

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

INTERSTATE PROJECT

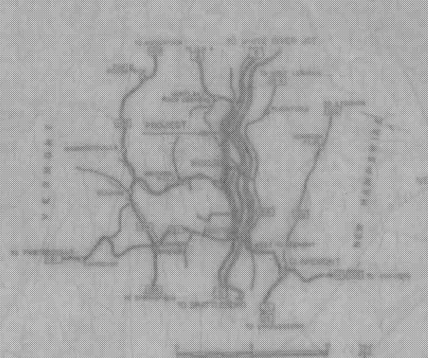
TOWNS OF WEATHERSFIELD-WINDSOR-HARTLAND
COUNTY OF WINDSOR
INTERSTATE ROUTE 91
BRATTLEBORO-WHITE RIVER JCT. ROAD

CONTRACT # 3

BEGINNING AT A POINT 2.914 MILES NORTHERLY OF THE WEATHERSFIELD-WINDSOR TOWN LINE AND EXTENDING NORTHERLY 1.954 MILES.

LENGTH OF ROADWAY	10,146.27 FEET	= 1.922 MILES
LENGTH OF BRIDGE	168.24 FEET	= 0.032 MILE
LENGTH OF CONTRACT	10,314.51 FEET	= 1.954 MILES

ADT	(1964)	3000
ADT	(1984)	7260
DHV	(1984)	985
D		53%
T		7%
V		60MPH



PROJECT NAME & NUMBER
WEATHERSFIELD-WINDSOR-HARTLAND I 91-1(21),C3 & 4.

STAGE 1
GRADING & DRAINAGE

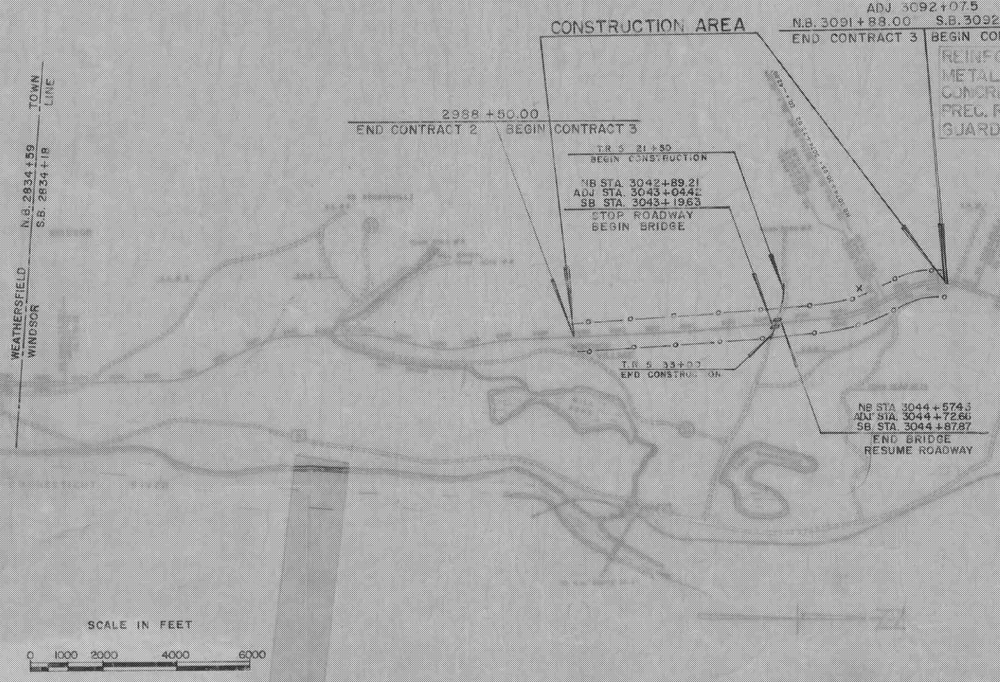
RECORD PLANS

MATERIALS

SUBBASE OF GRAVEL & GRAVEL BACKFILL — SWAZEY PIT — NO. HARTLAND, VT.
SUBBASE OF SAND — HAMMOND PIT NO. 2 — HARTLAND, VT.
SUBBASE OF CRUSHED ROCK — PERINI CRUSHER-PADDOCK QUARRY — SPRINGFIELD, VT.
CRUSHED GRAVEL PLANT MIXED BASE COURSE — L.M.PIKE PLANT — W. LEBANON, N.H.
CUTBACK ASPHALT — HUMBLE OIL CO. — EVERETT, MASS.
TAR EMULSION FOR BRIDGE FLOORS — BORDEN CHEMICAL CO. — BAMBRIDGE, N.Y.
BITUMINOUS CONCRETE — L.M. PIKE PLANTS — SPRINGFIELD, VT. & W. LEBANON, N.H.
CONCRETE CLASS AA & B — MILLERS READY MIX INC. — W. LEBANON, N.H.
REINFORCING STEEL — BETHLEHEM STEEL CORP. — ALBANY, N.Y.
STRUCTURAL STEEL — WEST END IRON WORKS INC. — LEXINGTON, MASS.
STEEL PILING — BETHLEHEM STEEL CORP. — BETHLEHEM, PA.
BRIDGE PAINT — AMSTERDAM COLOR WORKS INC. — NEW YORK, N.Y.
BRIDGE RAILING — WARD WELLER CO., INC. — NEWTON LOWER FALLS, MASS.
REINFORCED CONCRETE PIPE — NEW ENGLAND CONCRETE PIPE CORP. — NEWTON, MASS.
METAL CULVERT PIPES — NORTHEASTERN CULVERT CORP. — WESTMINSTER, VT.
CONCRETE CATCH BASINS & CAST IRON GRATES — E.L. LEBARON FOUNDRY CO. — BROCKTON, MASS.
PREC. REINF. CONC. CURB DROP INLET — HUME PIPE CO. OF NEW ENGLAND — WINDSOR, VT.
GUARD RAIL ITEMS & PROPERTY LINE FENCE & GATES — S.T. GRISWOLD & CO. — WILLISTON, VT.
PREFORMED EXPANSION JOINT FILLER & RUBBER JOINT MATERIAL — A.H. HARRIS & SON — HYDE PARK, MASS.
CONDUIT FOR LIGHTING — JOHNS MANVILLE SALES CORP. — MANVILLE, N.J.

CONTRACTOR — PERINI CORP. FRAMINGHAM, MASS.
RESIDENT ENGINEER — PRENTICE F. KARR
INSPECTORS — D. CRADY, F. NYE, F. REED, R. STANCLIFF, D. LATHROP & H. DAVIS.
RECORD PLANS — A. G. SPIDLE.

CONTRACT
DATED — DECEMBER 28, 1964.
STARTED — DECEMBER 29, 1964.
COMPLETED — MAY 27, 1966.
ACCEPTED — MAY 27, 1966.



NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES, ADJUSTS OR OTHER DETAILS RELATIVE TO THIS CONTRACT MAY BE FOUND IN EITHER THE FIELD BOOKS OR THE CONTRACT FILE.

THESE PLANS ARE SUBJECT TO SUCH REVISIONS AS MAY BE NECESSARY TO THE SATISFACTORY COMPLETION OF THE WORK.

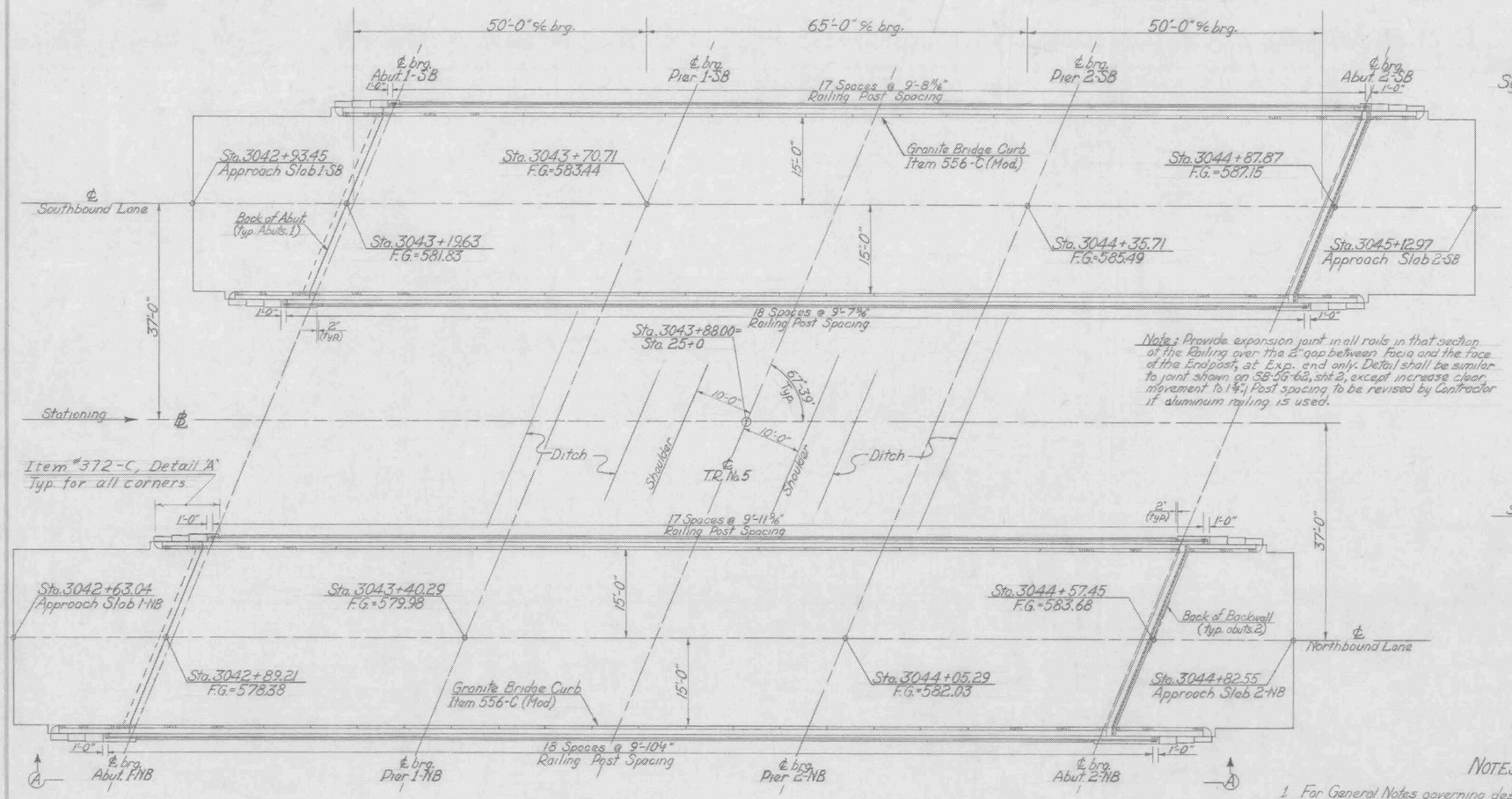
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AS APPROVED BY THE DIVISION ENGINEER AND ANY ADDITIONAL DETAILS REQUIRED BY THE ENGINEER SHALL BE CONSIDERED AS PART OF THE SPECIFICATIONS AND SHALL BE CARRIED OUT TO THE SATISFACTION OF THE ENGINEER.

T.H. Arnold ASST. CHIEF ENGR.	E. H. Tinney	Lee Byam	F. C. Shaw	A W Sad	G D Bishop
2/20/62	2/20/62	DATE 2/20/62	DATE 1/22/62	2/20/62	2-19-62

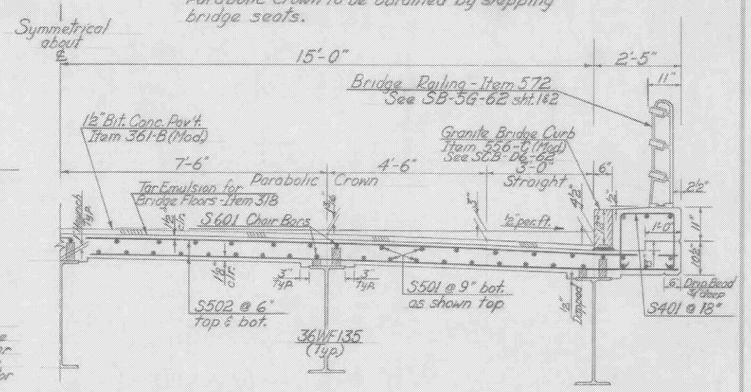
WINDSOR-HARTLAND
IM MEMB(14)

SHEET 19 OF 39
BRIDGE 34S
FOR REFERENCE ONLY

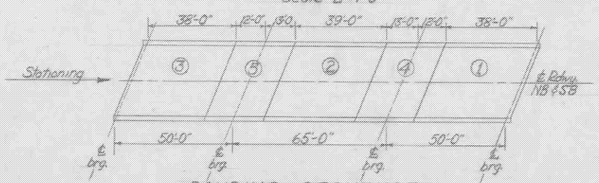
166



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

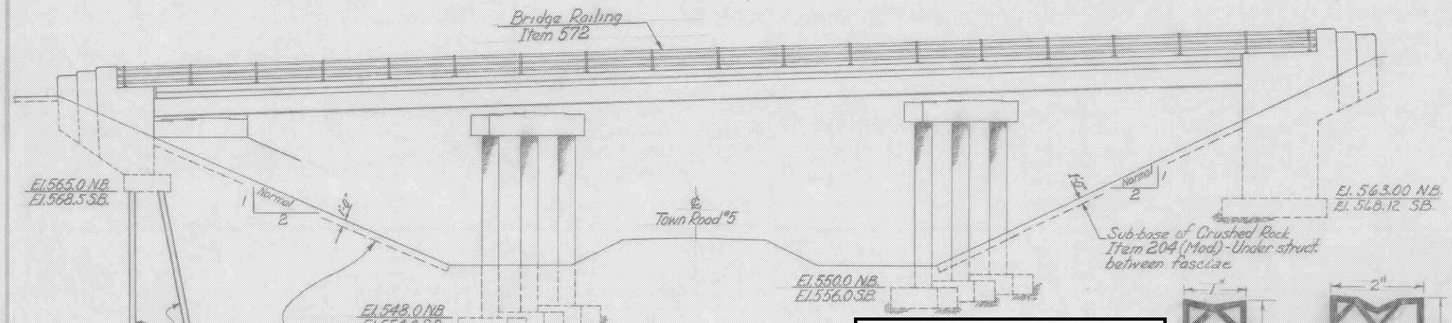


TYPICAL HALF SECTION
Scale 3/32"=1'-0"

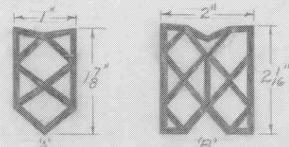


POURING SEQUENCE
N.T.S.

Note: Deck shall be placed in accordance with the sequence indicated when cast in sections. If contractor elects to place entire deck with the use of an approved retarder, pour should begin at expansion end.



ELEVATION AT A-A
Scale 3/32"=1'-0"



ITEM #372-C

NOTES

1. For General Notes governing design and construction of this project refer to SCB-D1-62 with the exception of paragraphs labled, "Structural Steel", "Reinforcing Steel", and "Quantities", in which same portions do not apply or are specified elsewhere.
2. Preformed Neoprene Rubber Joint Material, Item #372-C, shall be used wherever Item #373 is indicated in the Standards, unless otherwise noted on the plans.

SUPERSTRUCTURE QUANTITIES

ITEM NO.	ITEM	UNIT	NORTHB'D	SOUTHB'D	TOTAL	FINAL
		C.Y.				
204	SUBBASE OF CRUSHED ROCK (1"-0") UNDER STR.	C.Y.	132	132	264	2/2
318	TAR EMULSION FOR BRIDGE FLOORS	S.Y.	222	222	444	
361-B	BITUMINOUS CONCRETE PAVEMENT (Mod)	TONS	47	47	94	
401-AA	CONC. CLASS AA (MOD.)	C.Y.	172	172	344	7/12
402	REINF. STEEL	LBS.	See Reinforcing Schedule			
407	ASPHALTIC-ASB. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
503	SPLICES FOR STEEL PILING	EA.				
504	STEEL PILING	L.F.				
502-A	UNTREATED TIMBER PILING	L.F.				
404-A	STRUCTURAL STEEL	lbs.	147,900	147,900	295,800	2/8 [illegible]
556-C	GRANITE BRIDGE CURB (Mod)	L.F.	333	333	666	[illegible]
572	BRIDGE RAILING	L.F.	347	339	686	6/12
373	RUBBER JOINT MATERIAL	L.F.	37	37	74	1/2
372-A	JOINT SEALER - Hot Poured	L.F.	38	38	76	
372-C	JOINT SEALER - PREFORMED	L.F.	99	90	189	2/12

LIST OF BRIDGE SHEETS

Sheet No.	Title
BR100	Plan & Elevation - Typical Section
BR101	Bridge Quantity Sheet
BR102	Preliminary Information Sheet
BR103	Borings
BR104	Framing Plan & Expansion Bearings
BR105	Expansion Dams
BR106	Piers
BR107	Abutment 1-NB & SB
BR108	Abutment 2-NB
BR109	Abutment 2-SB
BR110	SB-AS-62 - Approach Slab 1-NB & SB
BR111	SB-AS-62 - Approach Slab 2-NB
BR112	SB-AS-62 Approach Slab 2-SB
BR113	Reinforcing Schedule
BR114	Reinforcing Schedule
	SCB-D1-62
	SCB-D6-62 Detail B, C, F
	SCB-D8-62 Detail A
	SCB-D9-62 Detail A
	SB-5G-62, sht. 4 Galvanized (Detail A)
	SB-5G-62, sht. 2 or Aluminum (Detail B)

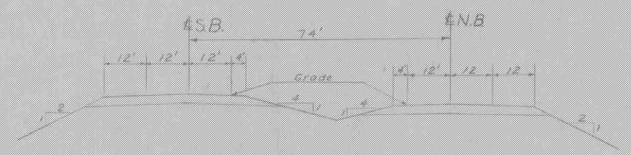
WINDSOR-HARTLAND
IM MEMB(14)

SHEET 20 OF 39
BRIDGE 34S
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

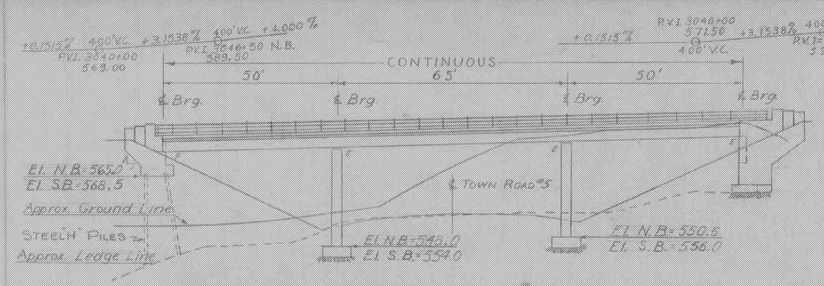
WEATHERSFIELD-WINDSOR-HARTLAND
ROUTE NO. I-91 STA. 3043+80
PLAN-ELEVATION & TYPICAL HALF-SECTION
INTERSTATE OVER WINDSOR T.R. #5
SCALE as noted
SURVEYED BY
DRAWN BY RND CHECKED BY R.P.G.
PROJECT NO. I-91-1(21) Contr. 3 (30)
SHEET 41 OF 166

BR100 of 114 Sheet 118 of 188



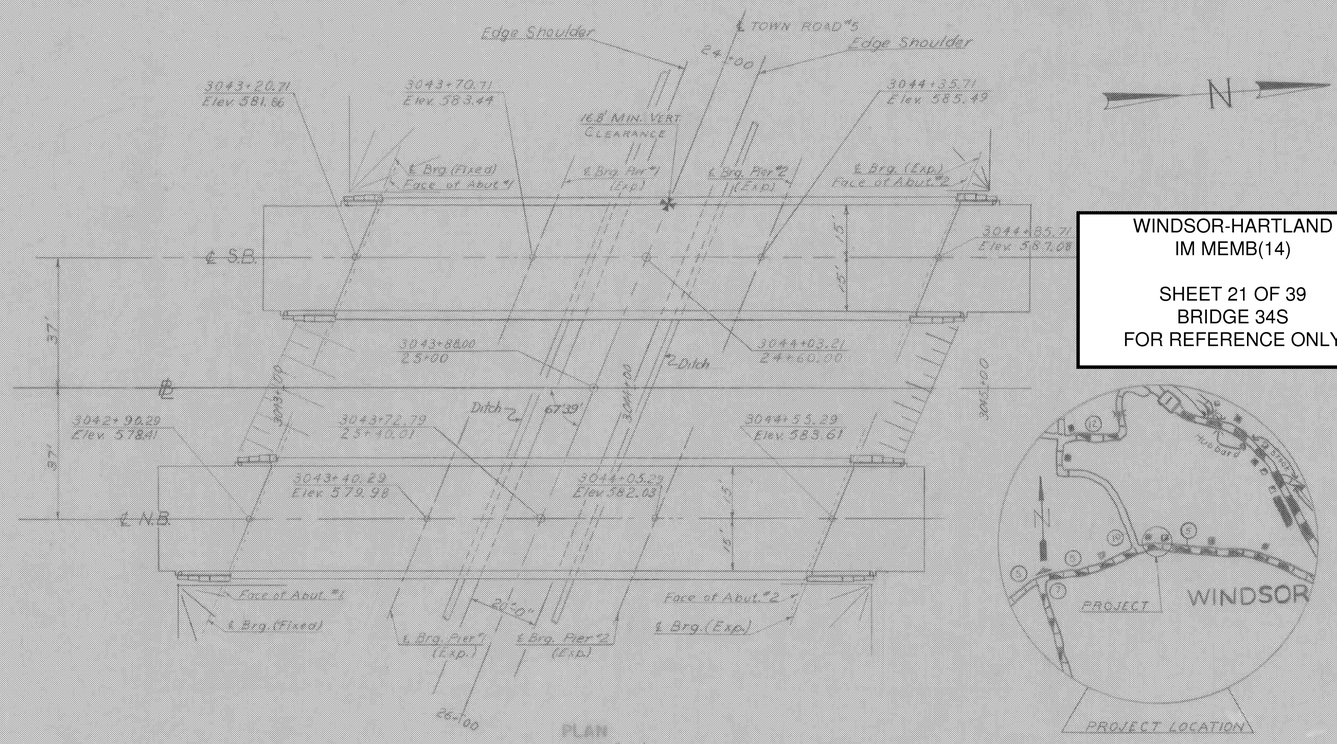
NEW HIGHWAY SECT. STA. 3042 TO STA. 3046

SCALE 1"=20'



NEW HIGHWAY PROFILE ALONG ℄ INTERSTATE S.B.

SCALE 1"=20'

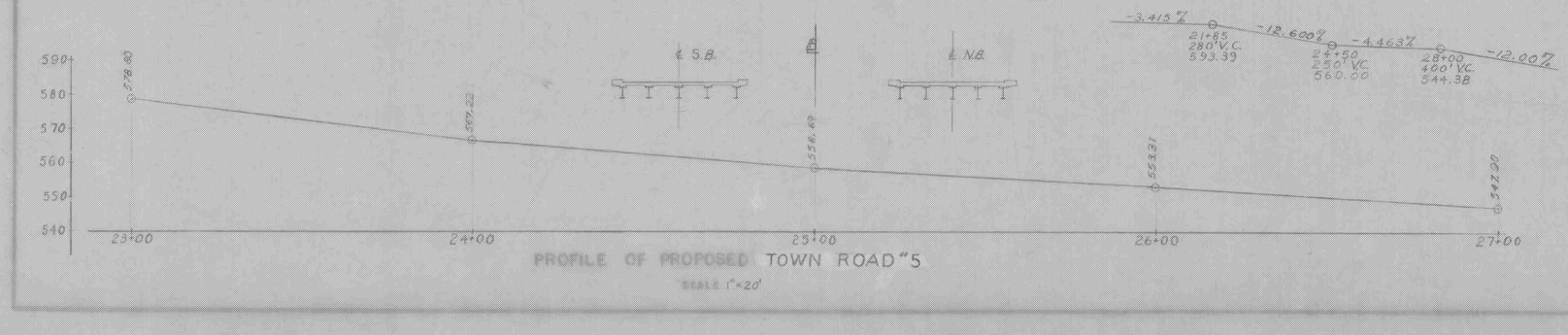


PLAN

SCALE 1"=20'

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 21 OF 39
BRIDGE 34S
FOR REFERENCE ONLY



PROFILE OF PROPOSED TOWN ROAD "5

SCALE 1"=20'

HIGHWAY NO. I-91 NAME OF HIGHWAY INTERSTATE

STRUCTURE NO. COUNTY WINDSOR TOWN WINDSOR

PROJECT NO I-91-1(21) LOCATION WINDSOR - I-91 OVER TOWN ROAD "5

EXISTING STRUCTURE

1 POSTED 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 ERECTED
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 ORDINARY 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, WHAT ELEVATION IS RELIEF AFFORDED
13 ADDITIONAL WATERWAY AREA PROVIDED

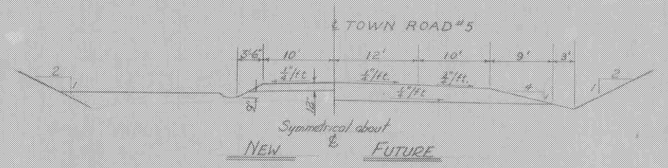
NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE CONTINUOUS W° BM. NON COMPOSITE (S.C.B. 30-62-MOD.)
2 RECOMMENDED CLEAR SPAN OR SPANS 50'-65'-50'
MEASURED PARALLEL TO ℄ NEW HIGHWAY
MEASURED AT RIGHT ANGLES TO ℄ 28°-6" 153'±
3 ARE OBJECTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO
4 ORDINARY 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 SECTION AREA BELOW ORDINARY H.W.
13 CHARACTER OF SOCUM DRIFT ICE
ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE
15 VERTICAL CLEARANCE 16.8'
16 ARE SIDEWALKS REQUIRED, IF NO OR WHAT SIDE N.O. 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? N.O.
21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 35 TONS SHOULD PILES BE USED? YES EST. LENGTH

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.

FOR TYPICAL BRIDGE SECTION SEE SHEET BR100



TYPICAL SECTION OF TOWN ROAD "5

SCALE 1"=10'

ALLOWABLE DESIGN WORKING STRESSES

CONCRETE - ULTIMATE COMP. STRESS, f'_c = 3000 #/□"
COMP. STRESS IN EXT. FIBER, f_c = 1200 #/□"
EARTH - MAX. BEARING - 2 TONS/□'.
ROCK - MAX. BEARING - 5 TONS/□'.
REINFORCING STEEL - INTERMEDIATE GRADE
f_s = 20,000 #/□"
STRUCTURAL STEEL - 18,000 #/□" (A7 & A373)
20,000 #/□" (A36)
SHEAR IN FOOTING - 90 #/□"
FACTOR OF SAFETY AGAINST OVERTURNING
1.5 TO 2.0

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

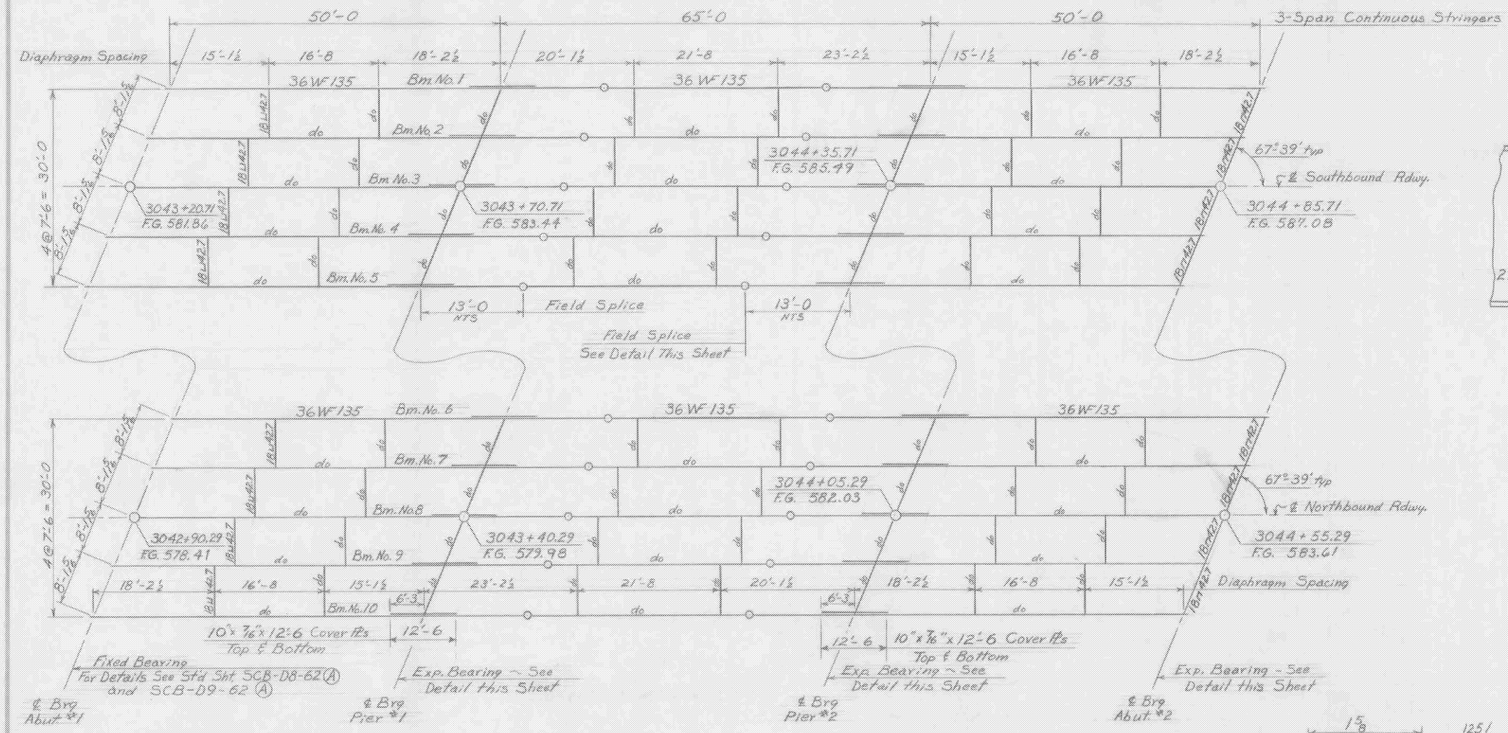
INTERSTATE IN THE TOWNS OF
WEATHERSFIELD - WINDSOR - HARTLAND
ROUTE NO. I-91 LOG STA.
INT. OVER WINDSOR TOWN ROAD No. 5

PRELIMINARY INFORMATION

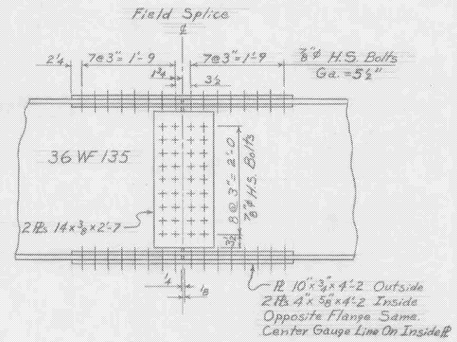
SURVEYED BY S.V.K. SCALE AS NOTED
DRAWN BY R.S.H. DATE NOV. 6, 1961
PROJECT NO. I-91-1(21)(60) SHEET NO. 43 OF 166
Cont. 3

Rev. 6-17-63 R.N.D.	Chkd 6-19-63 R.J.M.
CORRECT 7/10/62 Lindgorn	APPROVED 7/11/62 A.B. Bissonette

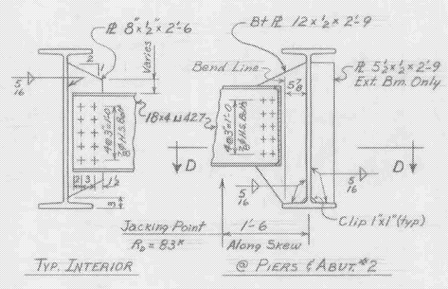
BR102 of 114
Sheet 122 of



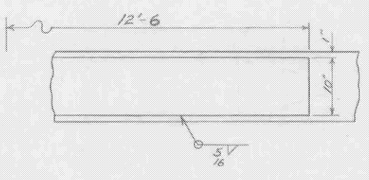
FRAMING PLAN
Scale 3/32"=1'-0
Details Not Shown Are Same As Opposite Bridge



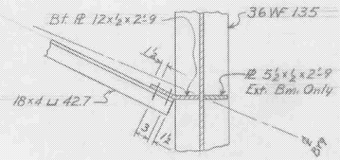
FIELD SPLICE
Scale 3/4"=1'-0"



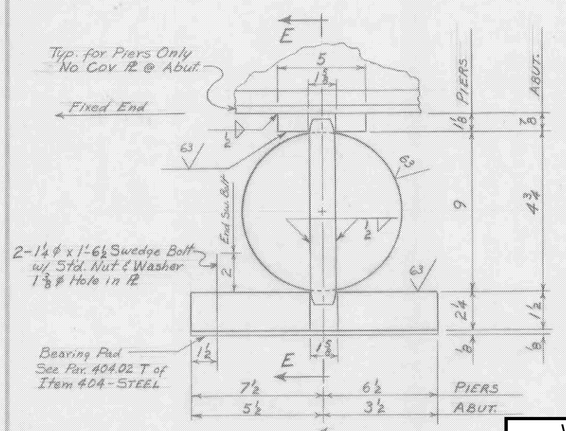
DIAPHRAGM DETAILS
Scale 3/4"=1'-0



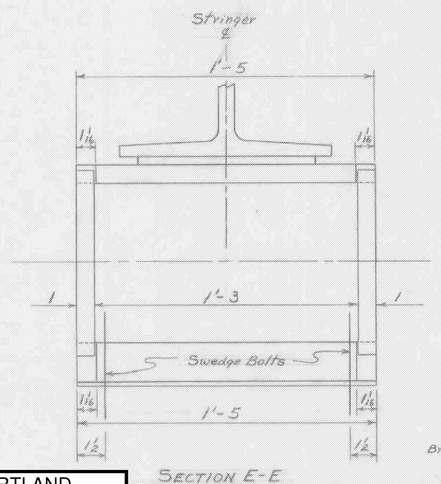
COVER PLATE DETAILS
Scale 1"=1'-0
Top & Bottom Plates are Same



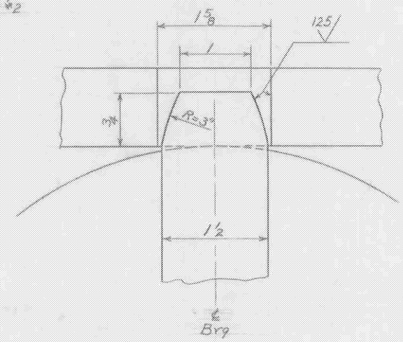
SECTION D-D
Scale 3/4"=1'-0



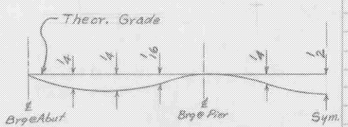
EXPANSION BEARING
Scale 3"=1'-0



SECTION E-E
Scale 3"=1'-0



PINTLE DETAIL
Full Size



DEAD LOAD DEFLECTION
Not to Scale

Dimensions shown are for expected deflection at quarter points due to full dead load.

NOTES

1. Materials:
   All structural steel not otherwise specified shall conform to the specification for Structural Steel A.S.T.M. Designation A36-62T.
   Rollers for expansion bearings shall be cold finished carbon steel conforming to A.S.T.M. Designation A108 (A.I.S.I. Grade 1045). Roller shall be turned and finished as indicated. Roller shall be preheated in furnace to a temperature appropriate to the type of electrode before welding, held at this temperature until welding is completed, and allowed to cool slowly. Finish machining shall be done subsequent to welding. Min. allow. Y.P. 50,000 psi. Exp. Base plates and Sole plates shall be Structural Nickel Steel, A.S.T.M. Designation A8. Finished surfaces shall be plane so as to afford full contact with the roller.
2. Dimensions shown are measured horizontally or vertically and are for 68°F.
3. No camber is specified. Fabricate end spans with mill camber down and center section with mill camber up. Final roadway grade and haunch depth is to be determined by the Engineer following erection of the structural steel and the determination of the stringer profiles.
4. For additional notes see Standard Structures Sheet SCB-D1-62.

ITEM NO.	ITEM	UNIT	N.B.	S.B.	TOTAL	FINAL
106-A	CHAN. EXCAV. OF EARTH	C.Y.				
106-B	CHAN. EXCAV. OF ROCK	C.Y.				
106-C	UNCLASS. CHAN. EXCAV.	C.Y.				
107	STRUCT. EXCAV.	C.Y.				
401-B	CONC. CLASS B (MOD.)	C.Y.				
402	REINF. STEEL	LBS.				
407	ASPHALTIC-ASB. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
503	SPLICES FOR STEEL PILING	EA.				
504	STEEL PILING	L.F.				
502-A	UNTREATED TIMBER PILING	L.F.				
404-A	Structural Steel	LBS.	~~141,900~~	~~142,900~~ 295,800	295,800	296,011

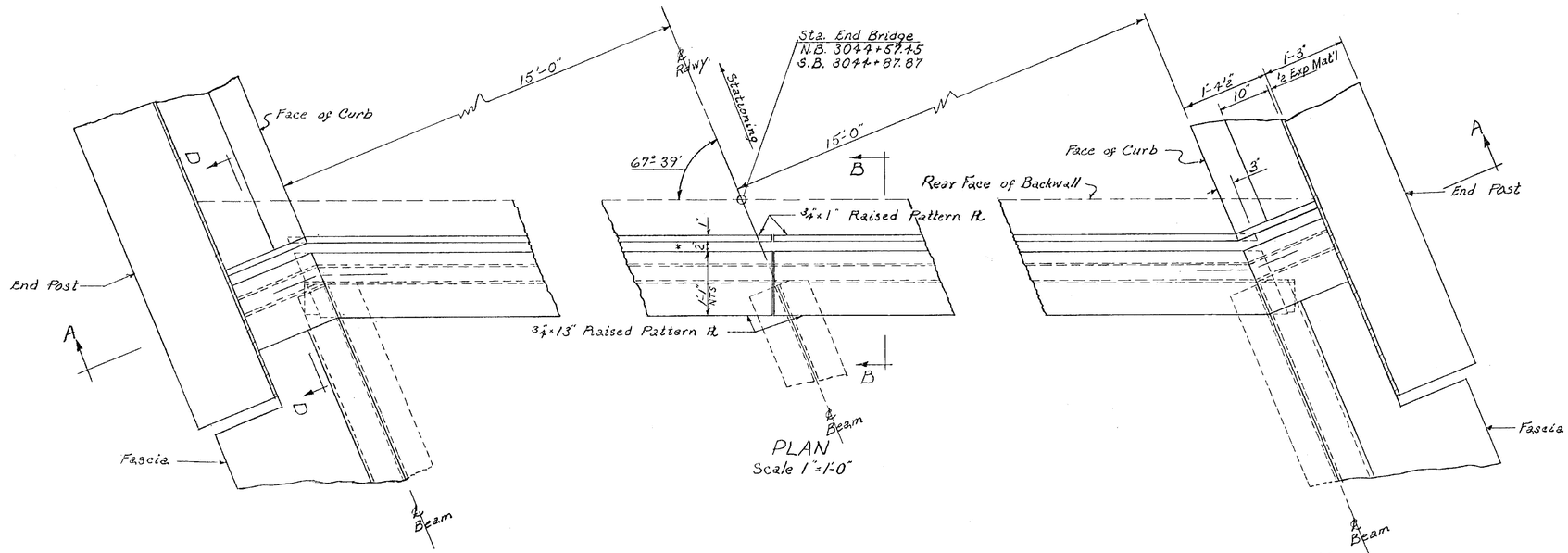
Revision 1 Date 2-25-65 by R.P.G. and R.N.D.
Increased finish grade elevations by 0.25 ft. on this sht only.

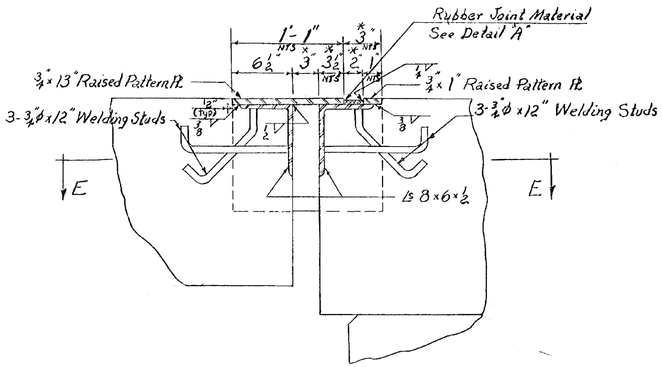
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

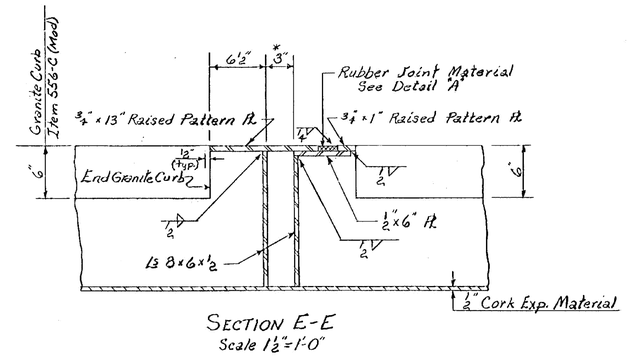
WEATHERSFIELD - WINDSOR - HARTLAND
ROUTE NO. I91 ~~I-SDC~~ STA. 3043+80
FRAMING PLAN & EXP. BRG. DETAILS
INTERSTATE OVER WINDSOR T.R. #5
SCALE As Noted
SURVEYED BY
DRAWN BY RLM 5-20-63 CHECKED BY R.P.G.
PROJECT NO. I91-1(21) Cont. 3
SHEET 45 OF 166

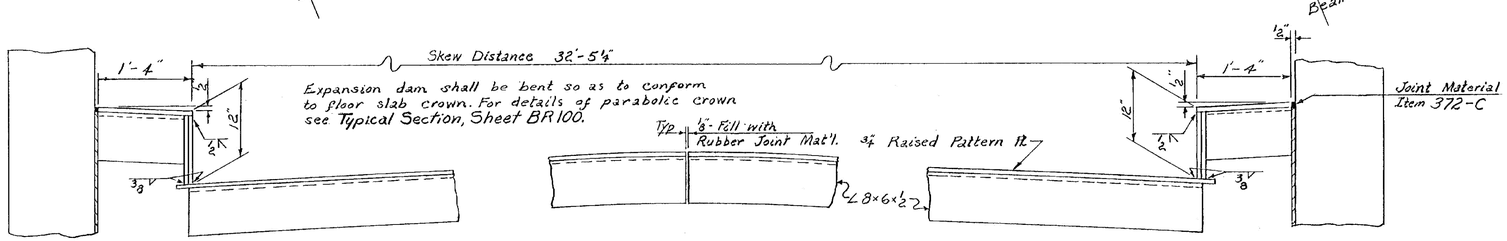
WINDSOR-HARTLAND
IM MEMB(14)

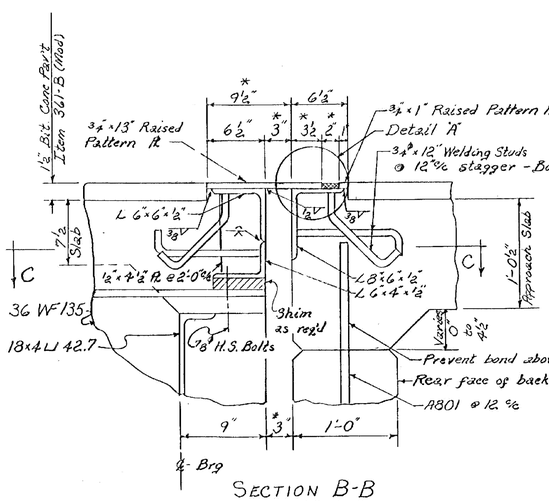
SHEET 22 OF 39
BRIDGE 34S
FOR REFERENCE ONLY

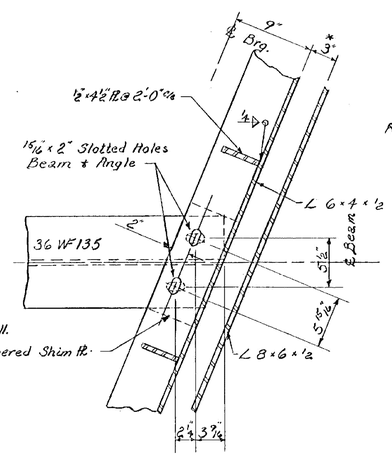


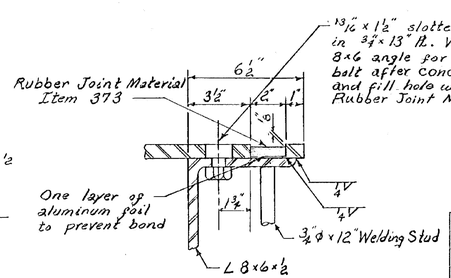












NOTES

1. Structural steel shall be A36 conforming to ASTM-A36-62T All erection bolts shall conform to ASTM-A307.
2. Furnish shims to adjust assembly to finish grade elevation. Allow for tapered shims arising through the use of parabolic crown.
3. Make field welds after final alignment is determined.
4. * Indicates variable dimension shown is for 68°F.
5. Bulkhead bridge slab 2'± from Expansion Dam. Make final adjustments on Dam after remainder of bridge slab has been placed.

All Items noted on this sheet are included in Superstructure Quantities.

ITEM NO.	I T E M	UNIT	NET	OVERRUN	TOTAL	FINAL
106-A	CHAN. EXCAV. OF EARTH	C.Y.				
106-B	CHAN. EXCAV. OF ROCK	C.Y.				
106-C	UNCLASS. CHAN. EXCAV.	C.Y.				
107	STRUCT. EXCAV.	C.Y.				
401-B	CONC. CLASS B (MOD.)	C.Y.				
402	REINF. STEEL	LBS.				
507	ASPHALTIC-ASB. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
503	SPLICES FOR STEEL PILING	EA.				
504	STEEL PILING	L.F.				
502-A	UNTREATED TIMBER PILING	L.F.				

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 23 OF 39
BRIDGE 34S
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WEATHERSFIELD WINDSOR HARTLAND
ROUTE No. I 91 LOG STA. 3043+80
Expansion Dams
I 91 over Windsor Town Road *5
SCALE As Noted
SURVEYED BY
DRAWN BY RPG CHECKED BY RND
PROJECT No. I 91-1(21) Contr. #3
SHEET 46 OF 166

201

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

INTERSTATE PROJECT

TOWNS OF WEATHERSFIELD-WINDSOR-HARTLAND
COUNTY OF WINDSOR
INTERSTATE ROUTE 91
BRATTLEBORO-WHITE RIVER JCT. ROAD

CONTRACT # 4

BEGINNING AT A POINT 4.571 MILES SOUTHERLY OF THE WINDSOR-HARTLAND TOWN LINE AND EXTENDING NORTHERLY 2.434 MILES

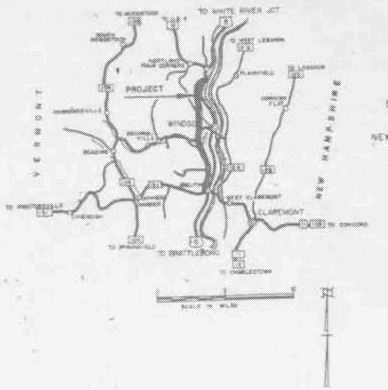
LENGTH OF ROADWAY 12,734.13 FEET = 2.412 MILES
LENGTH OF BRIDGE 119.21 FEET = 0.022 MILE
LENGTH OF CONTRACT 12,853.34 FEET = 2.434 MILES

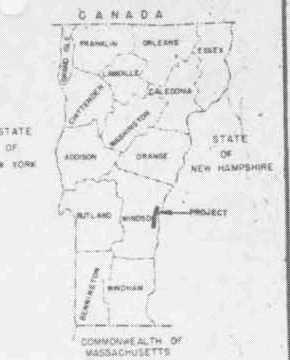
FED. ROAD DIVISION NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	VT.	SIL-1(21)	1	28

INDEX OF SHEETS

SHEET NO. 1. Title Sheet
2. Alignment Sheet
3. Interstate Typical Cross Sections, Standard Median
4. Interstate Typical Cross Sections, Variable Median
5. Ramp Typical Cross Sections
6. Route 5 Typical Cross Sections
7-9. Quantity Sheets
10-12A. Item Detail and Drainage Sheets
13-19. Earthwork Sheets
20,20A&21. Right of Way Detail Sheets
22-45. Plan and Profile Sheets
46-67. 20 Scale Grading Plans
46. Standard Drawing S-41
49. Standard Drawing S-1
50. Standard Drawing S-5
51. Standard Drawing S-4
52. Standard Drawing S-15
53. Standard Drawing S-17
54. Standard Drawing S-2
55. Standard Drawing S-3
56. Standard Drawing S-4
57. Standard Drawing S-6
58. Standard Drawing S-10
59. Standard Drawing S-11
60. Standard Drawing S-14
61. Standard Drawing S-16
62. Standard Drawing S-17
63. Standard Drawing S-18
64-65. 88.100 Series, Structures #U.S. #1 [See Sheet 45 for Details]
66-89. Bridge Standard Sheet, SDWRD-3C-62-Sheets 1 thru 9
90. Bridge Standard Sheet-SCB-21-62
91. Bridge Standard Sheet-SCB-22-62
92. Bridge Standard Sheet-SCB-24-62
93-94. Bridge Standard Sheet-3B-56-62-Sheets 1 and 2
95. Plan and Elevation of CMP at Bashan Brook
96-102. Channel Cross Sections at Bashan Brook
103-116. 88.200 Series, Structures #U.S. #5 [See Sheet 103 for Details]
117-120. Bridge Standard Drawings [See Sheet 103 for Details]
125-257. Roadway Cross Sections
258-267. U.S. #5 Cross Sections
268-273. Ramp "A" Cross Sections
274-276. Ramp "B" Cross Sections
277-279. Ramp "C" Cross Sections
280-282. Ramp "D" Cross Sections
283-287. State Aid #1 Cross Sections

HIGHWAYS VERMONT DEPARTMENT OF CONTRACT PLANS DEC 31 1964 SIGNED





WINDSOR-HARTLAND
IM MEMB(14)

SHEET 24 OF 39
BRIDGE 35N&S
FOR REFERENCE ONLY

THESE PLANS HAVE BEEN REDUCED PHOTOGRAPHICALLY TO APPROXIMATELY 1/2 SCALE

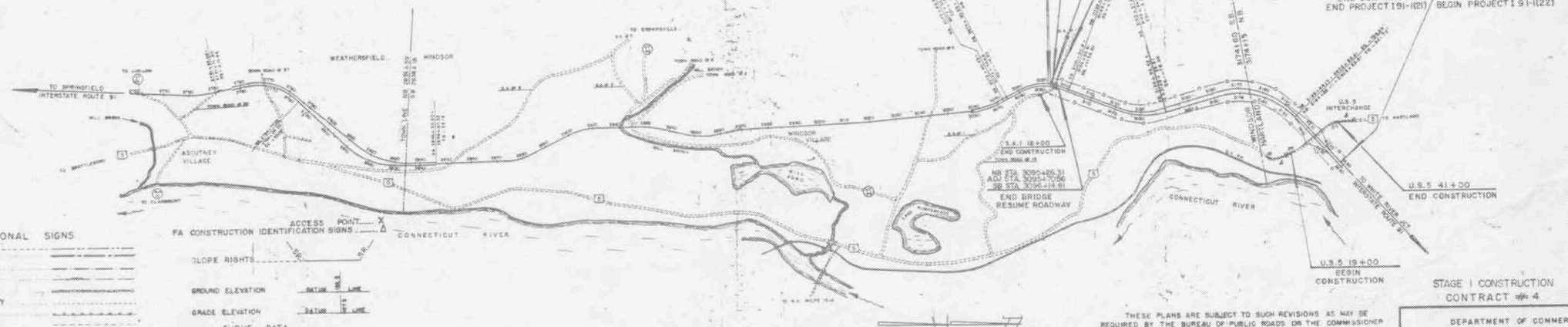
ADT. (1964)	3000
ADT. (1984)	7260
DHV. (1984)	985
D	33 %
T	9 %
V	60 MPH

ADJ. 3092+07.50
N.B. 3091+88.00 END CONTRACT 3
S.B. 3092+27.00 BEGIN CONTRACT 4

CONSTRUCTION AREA

NB STA. 3094+07.10
ADJ STA 3094+51.35
SB STA 3094+95.60
STOP ROADWAY BEGIN BRIDGE

3226+50.0
END CONTRACT 4 END PROJECT I 91-1(21)
BEGIN CONTRACT 1 BEGIN PROJECT I 91-1(22)



CONVENTIONAL SIGNS

R.O.W.
COUNTY LINE
TOWN LINE
FENCE LINE
STONE WALL
UNFENCED PROPERTY
GUARD RAIL
TRAVELED WAY
RAILROAD
RETAINING WALL
CENTER LINE
SURVEY LINE
CULVERT
DROP INLET
TROLLEY POLE
POWER POLE
TELEPHONE POLE
TREES
HEDGE
LIMITED ACCESS

ACCESS POINT
FA CONSTRUCTION IDENTIFICATION SIGNS
SLOPE RIGHTS
GROUND ELEVATION
GRADE ELEVATION

CURVE DATA

DEFLECTION OF ANGLE	Δ
DEGREE OF CURVE	D
RADIUS OF CURVE	R
TANGENT DISTANCE	T
LENGTH OF CURVE	L
EXTERNAL DISTANCE	E
POINT OF INTERSECTION	PI
POINT OF CURVE	PC
POINT OF TANGENT	PT
POINT ON TANGENT	POT
POINT ON SUB-TANGENT	POST

SCALE IN FEET
0 1,000 2,000 4,000 6,000

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 THE PLANS AND THE STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION OF JANUARY 1956 SUBMITTED TO THE BUREAU OF PUBLIC ROADS AS APPROVED JULY 5, 1956, INCLUDING ALL SUBSEQUENT APPROVED REVISIONS AND SUCH REVISED SPECIFICATIONS, AND SPECIAL PROVISIONS AS ARE SUBMITTED WITH THE PLANS.

STAGE I CONSTRUCTION
CONTRACT # 4

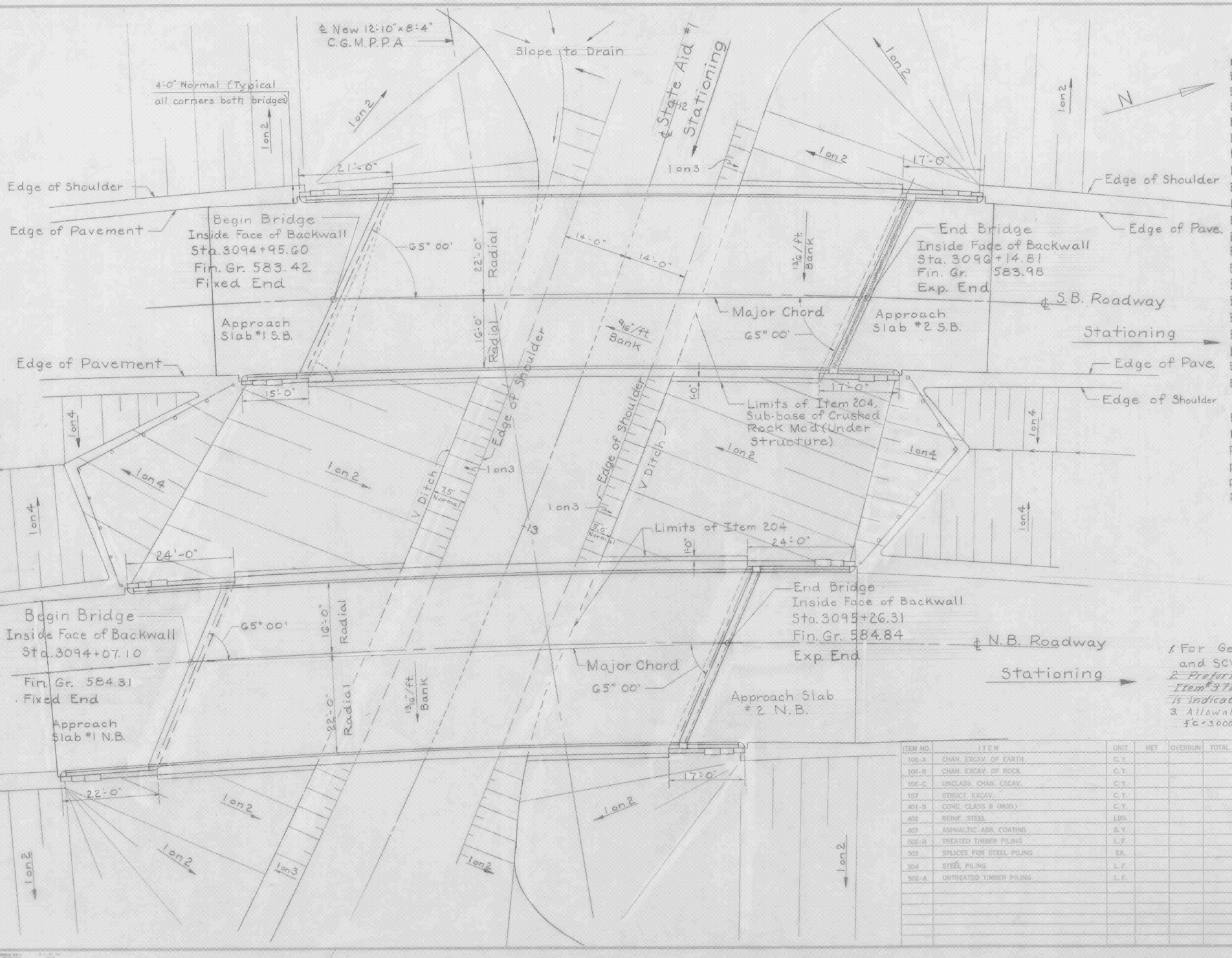
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED
DIVISION ENGINEER DATE

APPROVED ASST. DIST. ENGINEER	APPROVED CONSTRUCTION ENGINEER	APPROVED BRIDGE ENGINEER	APPROVED DISTRICT ENGINEER	APPROVED HIGHWAY ENGINEER	APPROVED CHIEF ENGINEER
DATE 12/31/62	DATE 12/18/62	DATE 12/20/62	DATE 12/20/62	DATE 12/20/62	DATE 12/19/62

SUBMITTED BY ORDER OF THE STATE HIGHWAY BOARD

PROJECT I NO. 91-1(21)
SHEET 1 OF 28 SHEETS

201



List of Bridge Sheets

BR100 General Plan (Scale 1"=20')
BR101 General Plan (Scale 1"=10')
BR102 Bridge Quantity Sheet
BR103 Preliminary Information Sheet
BR104 Boring Logs
BR105 Elev. & Curb and Railing Plan
BR106 Framing Plan
BR107 Typical Section
BR108 Details of Abut. #1 S.B.
BR109 Details of Abut. # 2 S.B.
BR110 Details of Abut. #1 N.B.
BR111 Details of Abut. #2 N.B.
BR112 SB-AS-G2 Approach Slab #1 S.B.
BR113 SB-AS-G2 Approach Slab #2 S.B.
BR114 SB-AS-G2 Approach Slab #1 N.B.
BR115 SB-AS-G2 Approach Slab #2 N.B.
BR116 C.G.M.P.P.A. 12'-10"x8'-4"x26.0'
BR117-118 Reinforcing Steel Schedule
BR119-121 Channel Cross Sections
B.S. Std. Sh. SCWPG-30-G2, Sheets 1 thru 4
B.S. Std. Sh. SCB-D1-G2, SCB-D2-G2, SCB-DG-G2
B.S. Std. Sh. SB-5G-G2, sheets 1 and 2
Ref. Plan (Scale 1"=50')
Ref. Profile of Interstate NB & SB Sta. 3091+00 Sta. 3110+00
Ref. Profile of State Aid #1
Ref. Roadway Cross Sections, State Aid #1 Sta. 4+00 - 14+25
Ref. Roadway Cross Sections, Interstate Sta. 3093+00 - 3096+50

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 25 OF 39
BRIDGE 35N&S
FOR REFERENCE ONLY

Notes

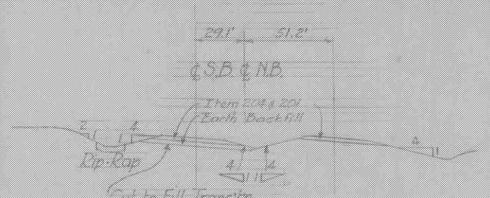
1. For General Notes see Std. Sh. SCB-D1-G2 and SCWPG-30-G2, sh. 1 of 4.
2. Preformed Neoprene Rubber Joint Material Item #372-C shall be used wherever Item #373 is indicated in the Standards.
3. Allowable Unit Stresses
   f'c = 3000 #/in² fc = 1200 #/in² fs = 20,000 #/in²

ITEM NO.	ITEM	UNIT	NET	OVERRUN	TOTAL	FINAL
106-A	CHAN. EXCAV. OF EARTH	C.Y.				
106-B	CHAN. EXCAV. OF ROCK	C.Y.				
106-C	UNCLASS. CHAN. EXCAV.	C.Y.				
107	STRUCT. EXCAV.	C.Y.				
401-B	CONC. CLASS B (MOD.)	C.Y.				
402	REINF. STEEL	LBS.				
407	ASPHALTIC-ASR. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
503	SPLICES FOR STEEL PILING	EA.				
504	STEEL PILING	L.F.				
502-A	UNTREATED TIMBER PILING	L.F.				

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Weathersfield-Windsor-Hartland
ROUTE NO. I 91 LOG STA.
General Plan 1"=10'
Interstate over S.A. #1 & Brk.
SCALE 1"=10'-0"
SURVEYED BY Jewett
DRAWN BY A.J.C. CHECKED BY J.J.C.
PROJECT NO. I 91-1(8[illegible])(30)
SHEET 65 OF 287

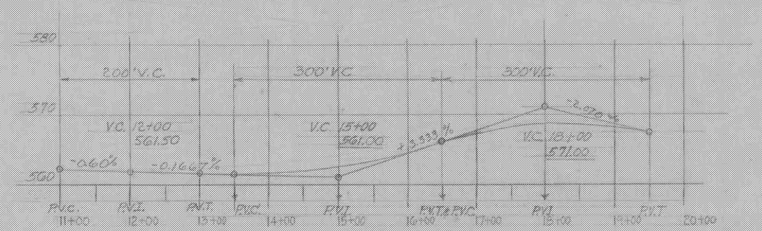
BR-101 Sheet 124 of 188



INTERSTATE SECTION

NEW HIGHWAY SECT. STA. 3092+50 TO ~~STA.~~ Bridge

INT. Sec. SCALE 1" = 10'-0"



NEW HIGHWAY PROFILE ALONG ℄ STATE AID N°1

SCALE: HORIZ. 1" = 100', VERT. 1" = 10'

HIGHWAY NO I 91 NAME OF HIGHWAY INTERSTATE OVER S.A.#1 & HUBBARD BROOK

STRUCTURE NO. COUNTY WINDSOR TOWN WINDSOR

PROJECT NO. I-91-1(27)(30) LOCATION WEATHERSFIELD - WINDSOR - HARTLAND Cont. # 4

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 FOR EXISTING ABUTMENTS
11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE
12 IF NOT, TO WHAT ELEVATION IS RELIEF AFFORDED
ADDITIONAL WATERWAY AREA PROVIDED

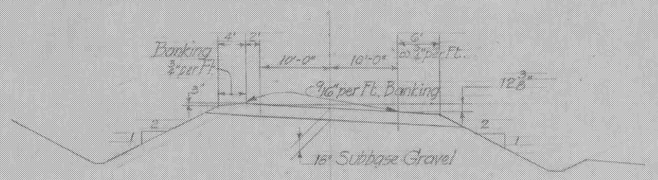
NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE R.C. SLAB OR SLAB SECTION
2 RECOMMENDED CLEAR SPAN OR SPANS 116'
MEASURED PARALLEL TO ℄ NEW HIGHWAY
MEASURED AT RIGHT ANGLES TO ℄ STREAM
3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM, EITHER 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 TERRAIN
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 USE
14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE
15 VERTICAL CLEARANCE ROUTE UNDER STRUCTURE 14.30' Min.
16 ARE SIDEWALKS REQUIRED, IF SO ON WHAT SIDE NO WIDTH EACH
17 RECOMMENDED TYPE OF PAVEMENT 1½" BITUMINOUS CONCRETE & 7½" CONCRETE SLAB
18 TRAFFIC TO BE MAINTAINED UNDER THIS 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 NO
21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 95 TONS SHOULD PILES BE USED YES EST. LGTH.

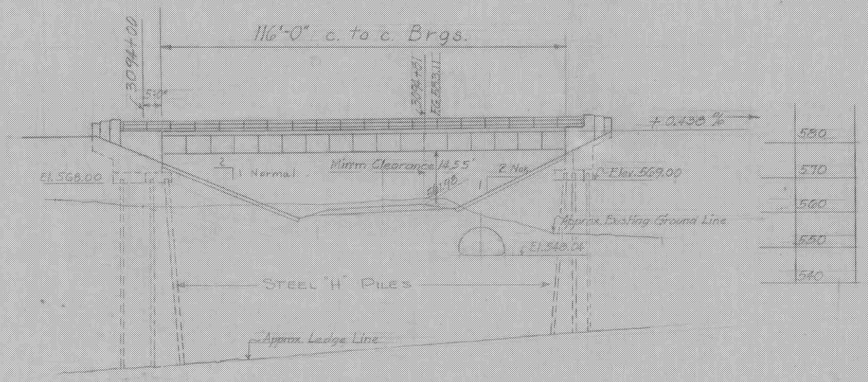
FOUNDATION INFORMATION

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.

FOR TYPICAL BRIDGE SECTION SEE Sheet BR 107

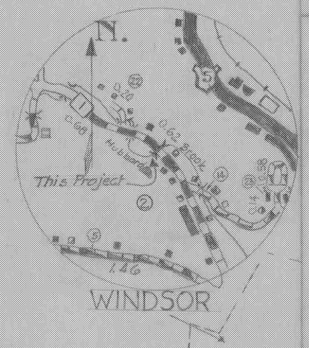


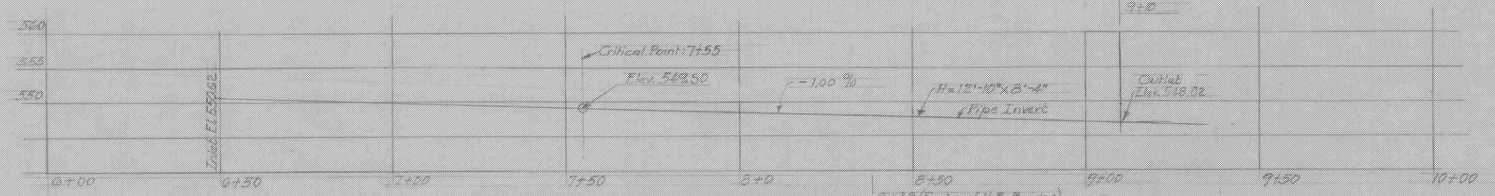
TYPICAL SECTION
STATE AID ROAD N°1
SCALE: 1" = 10'-0"



ELEVATION - RIGHT FASCIA NORTH BOUND LANE

SCALE 1" = 20'





PROFILE OF PROPOSED STREAM CHANNEL

SCALE: HORIZ. 1" = 20', VERT. 1" = 10'-0"

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 26 OF 39
BRIDGE 35N&S
FOR REFERENCE ONLY

WINDSOR

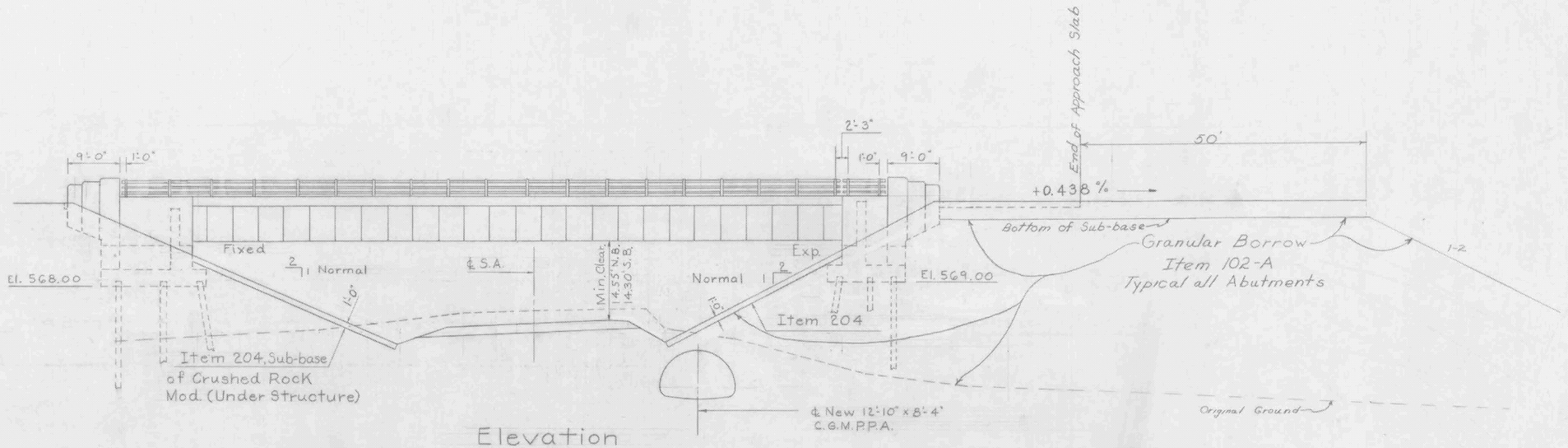
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

INTERSTATE IN THE TOWNS OF
WEATHERSFIELD - WINDSOR - HARTLAND
ROUTE NO. I 91 LOG STA.
INTERSTATE OVER S.A. #1 & HUBBARD BROOK

DRAWN BY J.E.B. TRACED BY R.S.H. SCALE
PROJECT NO. I 91-1(27)(30) SHEET 67 OF 287

DESIGNED 9/10/62 APPROVED 9/11/62
STAGE 21 CONSTRUCTION
CONTRACT 4

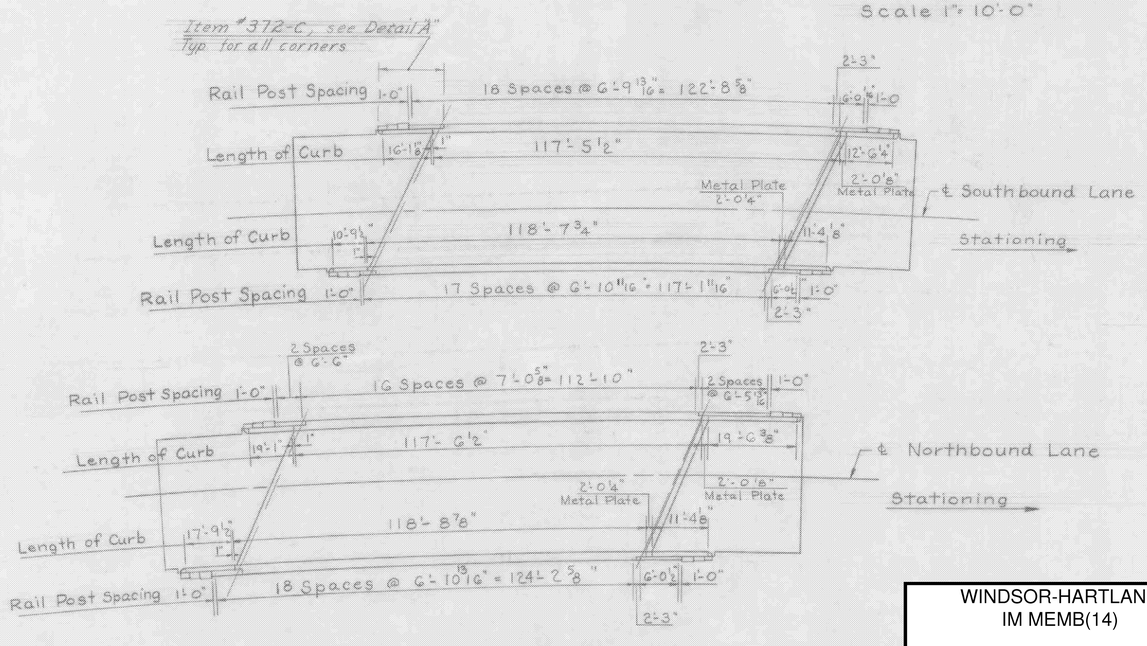
BR-103 Sheet 128 of



Elevation

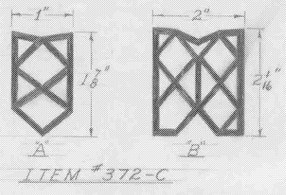
Northbound Lane

Scale 1" = 10'-0"



Curb and Railing Plan

Scale 1" = 20'-0"



ITEM #372-C

Notes

1. Curb and Railing dimensions are arc lengths.
2. Railing is spaced for aluminum rail. If steel rail is used spacing may be revised to a maximum of 10' as per Std. Sh. SB-5G-G2, sh. 1 of 2. For Railing details see Std. Sh. SB-5G-G2, sh. 1 & 2.
3. For Granite Curb details see Std. Sh. SCB-DG-G2, Det. A.
4. For General Notes see Std. Sh. SCB-D1-G2 and SCWPG-30-G2, sh. 1 of 4.

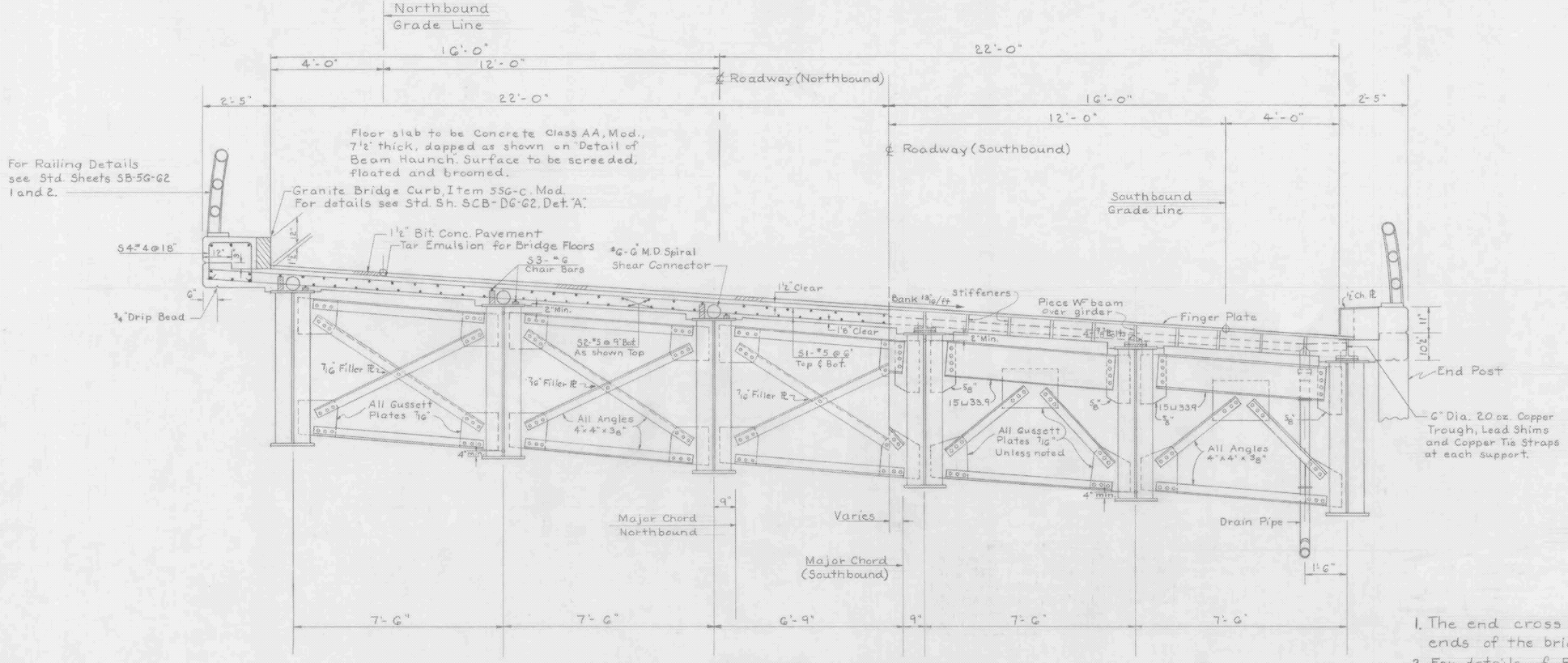
ITEM NO.	ITEM	UNIT	NET	OVERRUN	TOTAL	FINAL
106-A	CHAN. EXCAV. OF EARTH	C.Y.				
106-B	CHAN. EXCAV. OF ROCK	C.Y.				
106-C	UNCLASS. CHAN. EXCAV.	C.Y.				
107	STRUCT. EXCAV.	C.Y.				
401-B	CONC. CLASS B (MOD.)	C.Y.				
402	REINF. STEEL	LBS.				
407	ASPHALTIC ASB. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
503	SPLICES FOR STEEL PILING	EA.				
504	STEEL PILING	L.F.				
502-A	UNTREATED TIMBER PILING	L.F.				

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 27 OF 39
BRIDGE 35N&S
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Weathersfield - Windsor - Hartland
ROUTE NO. I 91 LOG STA.
Elev. & Curb and Railing Plan
Interstate over SA #1 & BrK.
SCALE As Noted
SURVEYED BY Jewett
DRAWN BY A.J.C. CHECKED BY J.J.C.
PROJECT NO. I 91-1(21) Cont. #4 (30)
SHEET 69 OF 287 Sheet 129 of 2
Stage 1 Construction BR-105



Section @ Intermediate Cross Frames

Section @ Expansion End

Typical Section

Scale 1/2" = 1'-0"

Notes

1. The end cross frames are typical for both ends of the bridge.
2. For details of Beam Haunch, Shear Connector, and Joint Detail see Std. Sh. SCB-D2-G2.
3. For details of bearings see Std. Sh. SCWPG-30-G2, sh. 2 of 4.
4. For Expansion Dam details see Std. Sh. SCWPG-30-G2, sh. 2 & 4.
5. For Longitudinal Section of plate girder see Std. Sh. SCWPG-30-G2, sh. 1 of 4.
6. For General Notes see Std. Sh. SCB-D1-G2 and SCWPG-30-G2, sh. 1 of 4.

ITEM NO.	ITEM	UNIT	NET	OVERRUN	TOTAL	FINAL
106-A	CHAN. EXCAV. OF EARTH	C.Y.				
106-B	CHAN. EXCAV. OF ROCK	C.Y.				
106-C	UNCLASS. CHAN. EXCAV.	C.Y.				
107	STRUCT. EXCAV.	C.Y.				
401-B	CONC. CLASS B (MOD.)	C.Y.				
402	REINF. STEEL	LBS.				
407	ASPHALTIC-ASB. COATING	S.Y.				
502-B	TREATED TIMBER PILING	L.F.				
503	SPLICES FOR STEEL PILING	EA.				
504	STEEL PILING	L.F.				
502-A	UNTREATED TIMBER PILING	L.F.				

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Weathersfield-Windsor-Hartland
ROUTE NO. I 91 LOG STA.
Typical Section
Interstate over S.A.#1 & BrK.
SCALE 1/2" = 1'-0"
SURVEYED BY Jewett
DRAWN BY A.J.C. CHECKED BY J.J.C.
PROJECT NO. I 91-1(30)
SHEET 126 71 OF 287

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 28 OF 39
BRIDGE 35N&S
FOR REFERENCE ONLY

Stage 1 Construction BR-107

INDEX OF SHEETS

SHEET NO. 1	TITLE PAGE
2	ALIGNMENT SHEET
3	TYPICAL CROSS SECTION OF IMPROVEMENT (BIT. CONC. PAV'T. ITEM 361-B MOD.)
4	R.O.W. DETAIL SHEET
5	QUANTITY SHEET (ITEMS)
6	QUANTITY SHEET (DRAINAGE)
7-8	EARTHWORK AND GRADE SHEETS
9-12	PLAN AND PROFILE SHEETS
13	BLANK
14-15	BLANK
16	A-61 SOLID ROCK EXCAVATION
17	B-1 BANKING TABLES
18	B-5 TYPICAL SLOPE GRADING
19	B-6 MUCK EXCAVATION
20	B-10 EMBANKMENT ON SLOPE
21	D-2 HEADWALLS AND UNDERDRAIN
22	D-3 JUTE MATTING
23	D-4 SPECIAL ELBOWS
24	D-8 R.C. DROP INLETS
25	D-10 DROP INLET TOPS
26	D-11 D.I. GRATE, TYPE A
27	D-13 R.C. CATCH BASIN
28	D-16 PRECAST CURB D.I., D.I. GRATE TYPE B
29	E-31 CONSTRUCTION IDENTIFICATION SIGNS
30	F-1 PROPERTY LINE FENCE
31	G-1 STANDARD STEEL BEAM GUARD RAIL
32	G-3a THREE CABLE GUARD RAIL DEAD END ANCHORAGE
33	G-4 PLANK GUARD RAIL, WOOD MARKER POSTS
34	J-1 BOUNDARY MARKERS
35	J-4 FIELD OFFICE
36	BLANK
37	SCB-30-62
38-50	DETAILS BRIDGE I 91 OVER U.S. 5 AT 35184-11.0 (BR. 100-112)
51-73	DETAILS BRIDGE I 91 OVER OTTAUQUECHEE RIVER AT 3525+95.0 (BR. 200-222)
74	SB-R3-64
75-76	SB RI-64 (SHEETS 1 AND 2)
77-80	SCB-D1, D2, D4, D6-62
81	
82-99	CROSS SECTIONS (INTERSTATE)
100-103	EXTENDED CROSS SECTIONS 3520+00 TO 3527+80

Added in Final
Struct. Steel Details with Extd Weights
1. Earthwork Sheet

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

INTERSTATE PROJECT

TOWNS OF HARTLAND-HARTFORD

COUNTY OF WINDSOR

INTERSTATE ROUTE 91
BELLOWS FALLS-WHITE RIVER JCT. ROAD

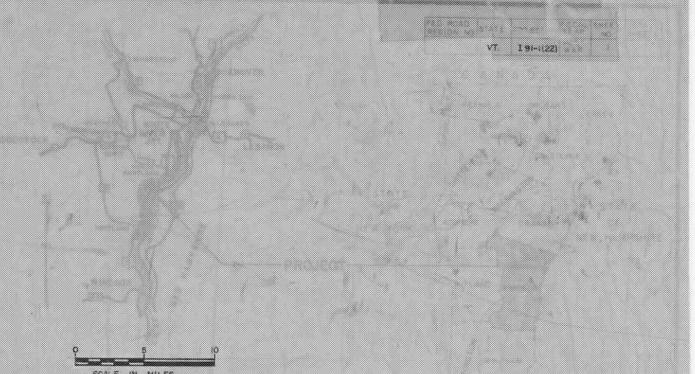
CONTRACT NO. 4

BEGINNING AT A POINT 1.363 MILES SOUTHERLY OF THE HARTLAND-HARTFORD TOWN LINE AND EXTENDING NORTHERLY 0.473 MILES

LENGTH OF ROADWAY 2010.37 FEET = 0.380 MILES.
LENGTH OF BRIDGES 489.63 FEET = 0.093 MILE
LENGTH OF CONTRACT 2500.00 FEET = 0.473 MILES

STAGE I CONSTRUCTION

ADT	1965	3500
ADT	1985	8060
DHV	1985	1150
D		51%
T		7%
V		60 MPH



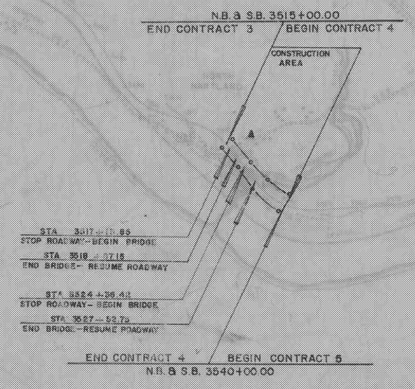
PROJECT NAME & NUMBER STAGE 1 & 2-2 SPAN WELDED PLATE
HARTLAND-HARTFORD I 91-1(22) GRADING & DRAINAGE GIRDER BRIDGES
RECORD PLANS

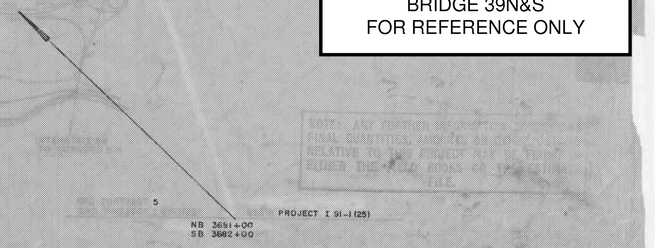
MATERIALS

SUBBASE OF GRAVEL — SMITH LEHEUREUX GRAVEL PIT — HARTLAND, VT.
SUBBASE OF CRUSHED ROCK — SMITH LEHEUREUX QUARRY (PERINI CRUSHER) — HARTLAND, VT.
CONCRETE CLASS AA & B — MILLER READY MIX INC. — WHITE RIVER JCT., VT. & W. LEBANON, N.H.
REINFORCING STEEL & STEEL PILING — BETHLEHEM STEEL CORP. — ALBANY, N.Y.
METAL CULVERT PIPE — NEW ENGLAND METAL CULVERT CORP. — WHITE RIVER JUNCTION, VT.
REINFORCED CONCRETE PIPE, GUARD RAIL ITEMS, PROPERTY LINE FENCE & EROSION CONTROL ITEMS — S. T. GRISWOLD & CO., INC. — WILLISTON, VT.
STRUCTURAL STEEL — A. LEO NASH STEEL CO. — PITTSFIELD, MASS.
GRANITE BRIDGE CURB — E.L. SMITH, WHETMORE & MORSE QUARRIES — BARRE, VT.
BRIDGE RAILING — WARD WELLER CO., INC. — NATICK, MASS.
BRIDGE PAINT — AMSTERDAM COLOR WORKS INC. — NEW YORK, N.Y.

CONTRACTOR — MILLER CONSTRUCTION INC.
WINDSOR, VT.
CHIEF RESIDENT ENGINEER — ROY E. NICHOLSON.
RES. ENG. — JAMES A. McCREA & GLEASON W. AYERS.
INSPECTORS — ALLEN J. NEWTON, JOSHUA DAVIS & ALLAN COUCH.
RECORD PLANS — GLEASON W. AYERS.

CONTRACT
DATED — MARCH 1, 1965.
STARTED — MARCH 11, 1965.
COMPLETED — AUGUST 26, 1966
ACCEPTED — AUGUST 3, 1966.



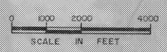


WINDSOR-HARTLAND
IM MEMB(14)

SHEET 29 OF 39
BRIDGE 39N&S
FOR REFERENCE ONLY

NOTE: ANY FUTURE REQUIREMENTS FOR FINAL QUANTITIES, AMOUNTS OR DIMENSIONS RELATIVE TO THIS PROJECT MAY BE FOUND EITHER IN THE FILE ROOMS OR THE FIELD FILE.

CONSTRUCTION IDENTIFICATION SIGNS ▲



APPROVED C.H. Gove
ASST. CHIEF ENGINEER
DATE 3/24/64

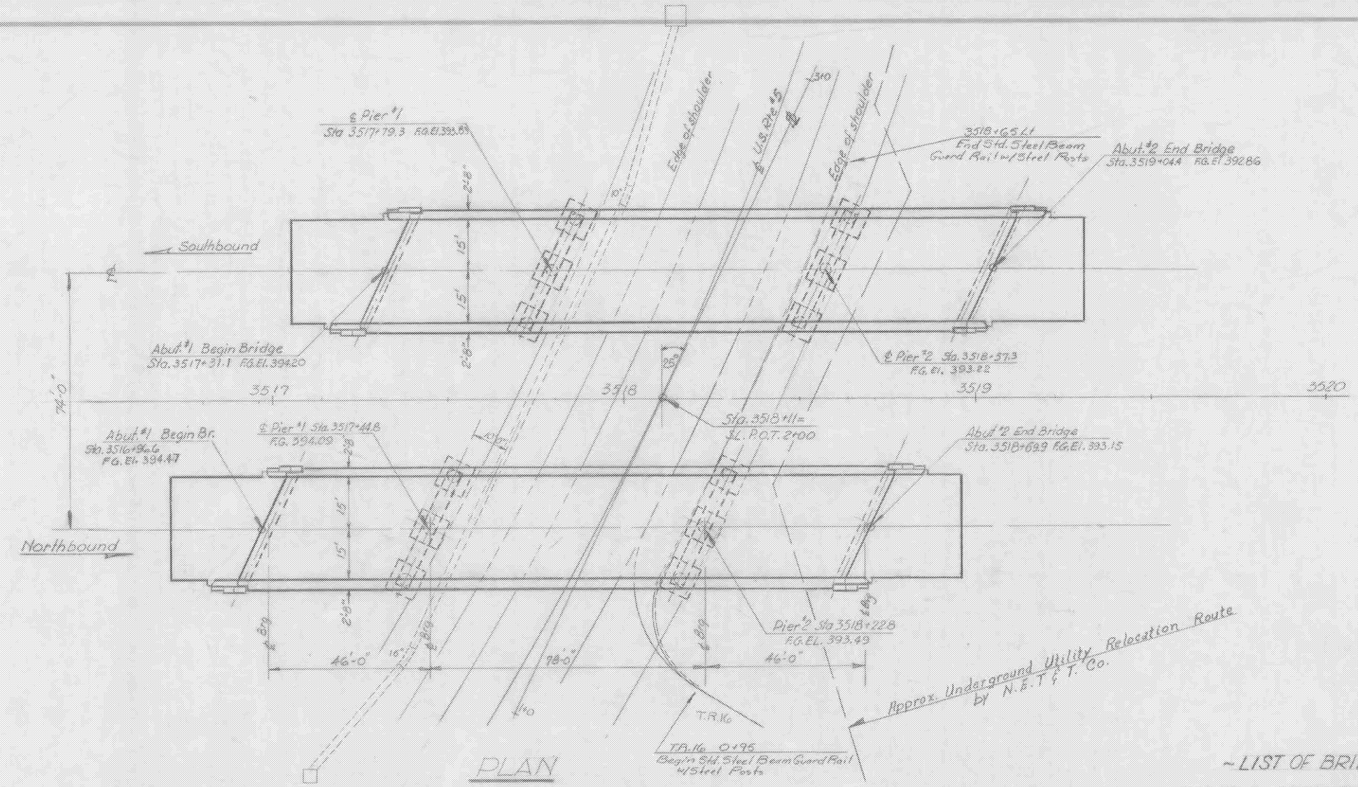
G.F. Aikens, DISTRICT 1/21/63
E.W. Tuckey 1/10/63
Lyn Brown 1/14/63
F.S. Chase 1/7/63
G.W. Lowe 1/9/63
N.P. Bishop 1/11/63

CONTRACT 4

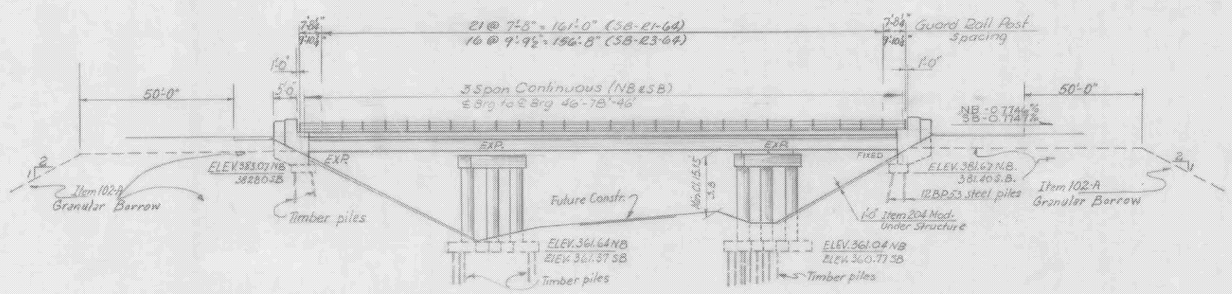
STAGE I CONSTRUCTION
103

57

PROJECT HARTLAND-HARTFORD
NUMBER I 91-1(22), C-4, S-1
LENGTH 0.473 MI.
TYPE GRADING & DRAINAGE
FOR STAGE 2 SEE I 91-1(31)
CONTRACTOR MILLER CONSTRUCTION INC.
WINDSOR, VT.
STARTED 3-65 COMPLETED 8-66
LOCATION Beginning at a point 1.363 miles southerly of the Hartland-Hartford Town Line and extending northerly 0.473 miles.
BAR 251 3883
CONSTRUCTED — MILLER CONSTRUCTION, INC.
RECORD PLANS — GLEASON W. AYERS



PLAN



ELEVATION (N.B. shown)
scale 1"=20ft

~GENERAL NOTES~

1. All mats & construction shall conform to the State of Vermont, Dept. of Highways, Standard Specifications for Road & Bridge Construction, dated Jan. 1956 and the AASHO Standard Specs. dated 1961 designed for H20-S16-44 Loading Modified for National System of Interstate Highways applied in accordance with the provision of the AASHO Standard Specifications, Article 1.2.8
2. All structural steel shall conform to the requirements of the Specs. for Steel Bridges and Buildings, A.S.T.M. Designation A36, unless noted otherwise.
   The contractor shall submit complete details of the Structural Steel to the State of Vermont, Dept. of Highways, and receive their written approval prior to start of fabrication. H.S. Bolts shall meet requirments of A.S.T.M. A325. Final coat of field paint shall be green. Spray painting of shop coat will be permitted.
3. All exposed edges of concrete shall be chamfered 1"x1" unless otherwise indicated.
4. The minimum covering, measured from the face of the concrete to the face of the reinft. shall be 1½" for tops of slabs, 1" for bottom of slabs, 3" in footings and 2" in other locations.
5. All Rock Excavation within 100 feet of the structure shall be completed before the placing of any concrete.
6. All dimensions given are measured horizontally or vertically unless otherwise noted; and given at 68°F.
7. Borings indicated on the drawings have been made for design purposes only & are not warranted to show actual subsurface conditions.
8. Elevation datum sea levels based on nearest U.S. Government Vertical Control.
9. Cross slope of approach slab to conform to cross slope of bridge.
10. All expansion material shall be Premoulded Cork containing no bitumen or asphalt unless otherwise noted.
11. The top surfaces of piers & abutments shall be sloped ¼" per foot from the front edge of abutment cuttoff wall, or centerlines of piers, except for brg. pad areas which shall be level. Elevation of bridge seats are given for centerline bearings. The entire exposed top surface of abutments and piers shall be coated with Asphaltic-Asbestos Coating ½" thick as per item 407. The application of this item shall be after all painting and incidental items are completed.
12. Where Granular Material is indicated around bridge abutments, Rock Fill, if available, shall be substituted except in area where piles are to be driven. Wherever materials from excavation are used in embankments requiring granular material they shall be paid for as indicated under Item 101, Excavation.
13. Water Repellent, Item 440, shall be applied to exterior concrete surfaces on top of safety walks, on the fascia, and back to the strip head under the slab.
14. Use Item 372-C, Type A or B, in all cases where Std. Dwg. SCB-D2-62 calls for Item 373.

~STANDARD DRAWINGS~

SB-21-64, Sheets #1 & #2
SB-23-64
SCB-D2-62, Det. A
SCB-D4-62
SCB-D6-62, Det. B E F
SCB-30-62

~LIST OF BRIDGE SHEETS~

BR 100	PLAN & ELEVATION
BR 101	BRIDGE QUANTITIES
BR 102	PRELIMINARY INFORMATION
BR 103	BORING LOG
BR 104	—"— —"—
BR 105	—"— —"—
BR 106	FRAMING PLAN & BEARINGS
BR 107	TYPICAL SECTION & DETAILS
BR 108	ABUTMENT #1 N.B. & S.B.
BR 109	ABUTMENT #2 N.B. & S.B.
BR. 110	PIER #1 & 2 N.B. & S.B.
BR. 111	APPROACH SLAB 1 & 2 NB & S.B.
BR 112	REINFORCING STEEL DETAILS

SUPERSTRUCTURE QUANTITIES

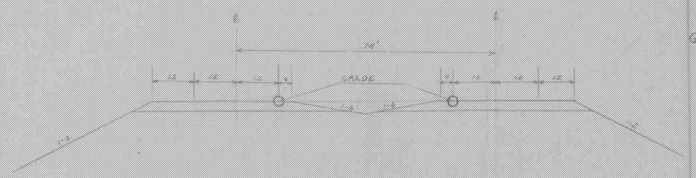
ITEM NO.	ITEM	UNIT	N.B. NET	N.B.	S.B. NET (corr.)	S.B. FINAL
	CHAN. EXCAV. OF EARTH	C.Y.				
	CHAN. EXCAV. OF ROCK	C.Y.				
	UNCLASS. CHAN. EXCAV.	C.Y.				
	STRUCT. EXCAV.	C.Y.				
	CONC. CLASS AA (MOD.)	C.Y.	~~183~~	186	~~185~~	187
	CONC. CLASS B (MOD.)	C.Y.				
	REINF. STEEL	LBS.	~~43,058~~	43,758	~~43,058~~	43,758
	ASPHALTIC-ASB. COATING	S.Y.				
	TREATED TIMBER PILING	L.F.				
440	WATER REPELLENT	GAL.	~~20.5~~	18.5	~~20.5~~	16.
556-C	GRANITE BRIDGE CURB (MOD)	L.F.	~~344~~	343	~~344~~	343
612	BRIDGE RAILING	L.F.	~~356~~	356	~~356~~	350
518	TAR EMULSION FOR BRIDGE FLOORS	GAL.	226	Rdwy. Quant.	226	Rdwy. Quant.
361-B	BITUMINOUS CONCRETE PAVEMENT (MOD)	TON	48	" "	48	" "
372-A	JOINT SEALER-HOT POURED	L.F.	33	" "	33	" "
404-A	STRUCTURAL STEEL	LBS.	~~136,457~~	136,949	~~136,457~~	136,949
501	FURNISHING EQUIPMENT FOR DRIVING PILES	L.S.	¼	¼	¼	¼

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 30 OF 39
BRIDGE 39N&S
FOR REFERENCE ONLY

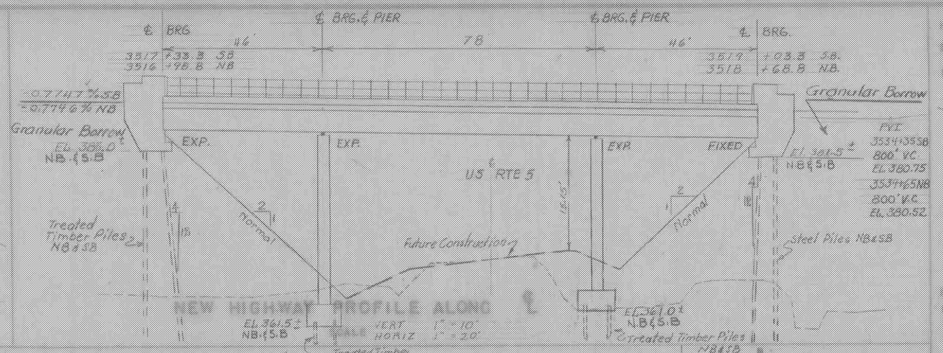
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTLAND-HARTFORD
ROUTE NO. ~~I 91~~ ~~US~~ STA. 3518+0
INTERSTATE OVER U.S. Rt. 5
PLAN & ELEVATION
SCALE 1"=20ft
SURVEYED BY
DRAWN BY R.H. Kowalski CHECKED BY D.H.R.
PROJECT NO. I91-1(22) contr. 4 (31)
BR-100 SHEET 38 OF 103 Sheet 163 of 242



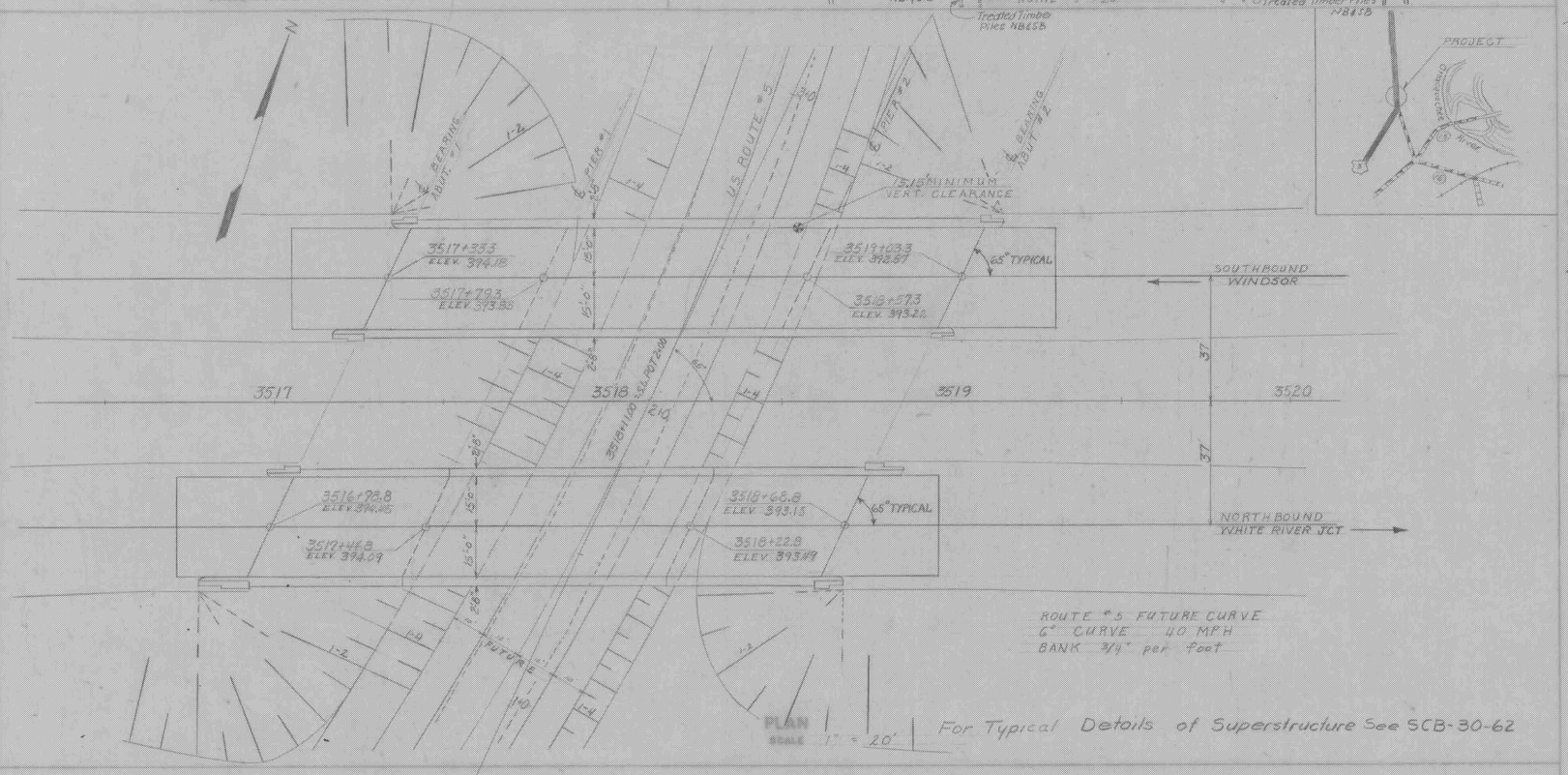
NEW HIGHWAY SECT. STA. 3515+00 TO STA. 3520+00

SCALE 1" = 20'



NEW HIGHWAY PROFILE ALONG ℄

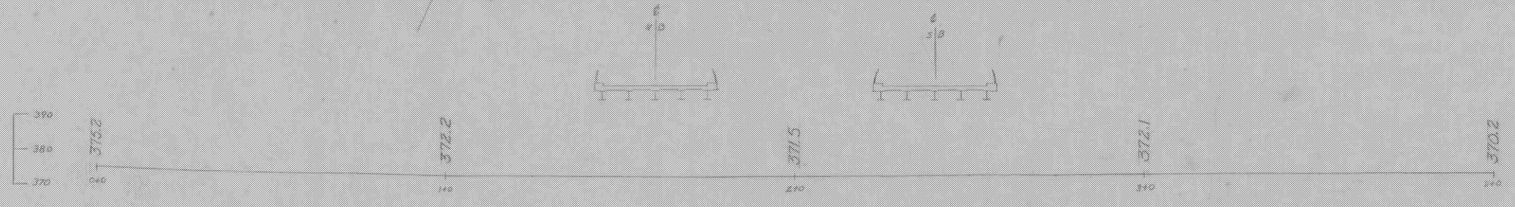
VERT. 1" = 10'
SCALE HORIZ. 1" = 20'



PLAN

SCALE 1" = 20'

For Typical Details of Superstructure See SCB-30-62



PROFILE OF EXISTING U.S. ROUTE 5

SCALE 1" = 20'

HIGHWAY NO. I 91 NAME OF HIGHWAY INTERSTATE

STRUCTURE NO. ____ COUNTY WINDSOR TOWN HARTFORD

PROJECT NO. I 91-1(22) C°4 LOCATION INTERSTATE OVER ROUTE # 5

EXISTING STRUCTURE

1. RATED CAPACITY 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 ____ WATERWAY TO EXTREME H.W.
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 3 SPAN CONTINUOUS
2. RECOMMENDED CLEAR SPAN OR SPANS 46 - 78 - 46
3. MEASURED (PARALLEL TO ℄ NEW HIGHWAY ____ ; ____)
   (MEASURED AT RIGHT ANGLES TO ℄ STREAM ____)
4. ARE THESE DIRECTIONS TO A PIER IN THE STREAM, ANSWER YES OR NO
5. ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE
6. EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE ____ SOURCE OF INFORMATION
7. IS ALL WATER INTENDED TO PASS THROUGH NEW STRUCTURE
8. DOES STREAM REACH ITS MAXIMUM FLOOD WATER ELEVATION QUICKLY ____ OR IS ORDINARY RISE RAPID?
9. LOW WATER ELEVATION AT NEW STRUCTURE
10. DRAINAGE AREA IN ACRES ABOVE STRUCTURE ____ CHARACTER OF TERRAINE
11. IS STREAM EVER DRY?
12. VELOCITY OF STREAM AT HIGH WATER STAGE ____ ESTIMATED DISCHARGE
13. AREA FULL OPENING ____ AREA BELOW ORDINARY H.W.
14. CHARACTER OF BOTTOM ____ DRIFT ____ ICE
15. EXTENT OF DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE
16. VERTICAL CLEARANCE ABOVE FLOOD ELEVATION
17. ARE SIDEWALKS REQUIRED, IF SO ON WHAT SIDE? NO ____ OTHER SIDE? NO
18. RECOMMENDED TYPE OF PAVEMENT 1½" BIT. CONC. PAVEMENT ON 7½" REINF. CONC. DECK
19. TRAFFIC TO BE MAINTAINED UNDER ITEM NO. N.A. ____ OR TWO WAYS N.A. PROBABLE COST N.A.
20. PROBABLE COST OF CLEARING AND STRAIGHTENING STREAM CHANNEL AT STRUCTURE SITE $ ____
21. SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES?
22. ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 27 TON TIMBER, SHOULD PILES BE USED? YES ____ ESTIMATED LOAD ON PILES 35 TON STEEL

FOUNDATION INFORMATION

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

* ESTIMATED LENGTH OF PILES

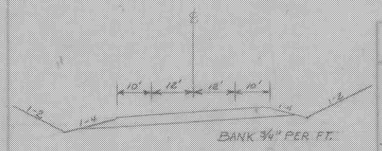
North Bound
- Abutment # 1 - Treated Timber Piles 65'
- Pier # 1 " " " 35' } Computed
- Pier # 2 " " " 35' }
- Abutment # 2 Steel H Piles 40' Estimated

South Bound
- Abutment # 1 Treated Timber Piles 60'
- Pier # 1 " " " 35' Computed
- Pier # 2 " " " 35'
- Abutment # 2 Steel H Piles 40' Estimated

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 31 OF 39
BRIDGE 39N&S
FOR REFERENCE ONLY

SCALE 1" = 5'



FUTURE TYPICAL U.S. RTE 5

SCALE 1" = 20'

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

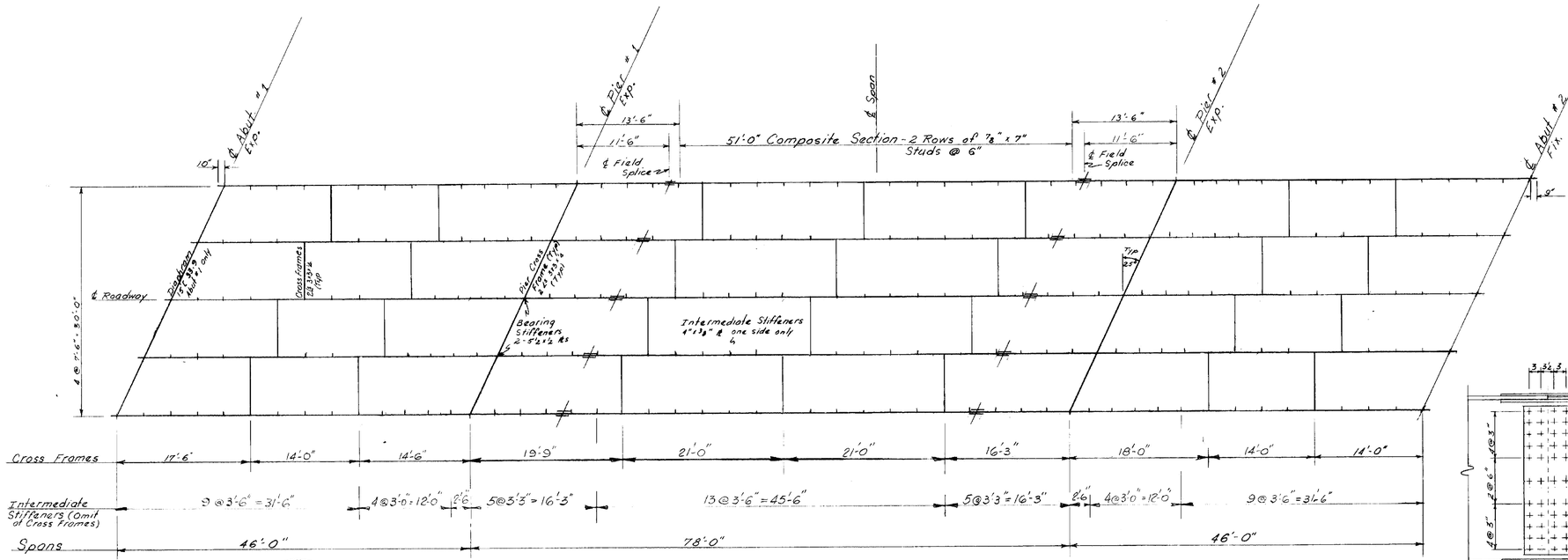
INTERSTATE IN THE TOWNS OF
HARTLAND HARTFORD
ROUTE NO. I 91 LOG STA.
INTERSTATE OVER U.S. # 5 AT STA 3518 ±

SURVEYED BY Tessier DESIGNED BY Hoffman DRAWN BY Tessier CHECKED BY Hoffman DATE 5-25-63
PROJECT NO. I-91(22)4 SHEET NO. 40 OF 103

RECOMMENDED FOR APPROVAL 8/5/63 APPROVED BY 8/7/63 RECOMMENDED FOR APPROVAL 8/9/63
ASSISTANT CHIEF ENGINEER

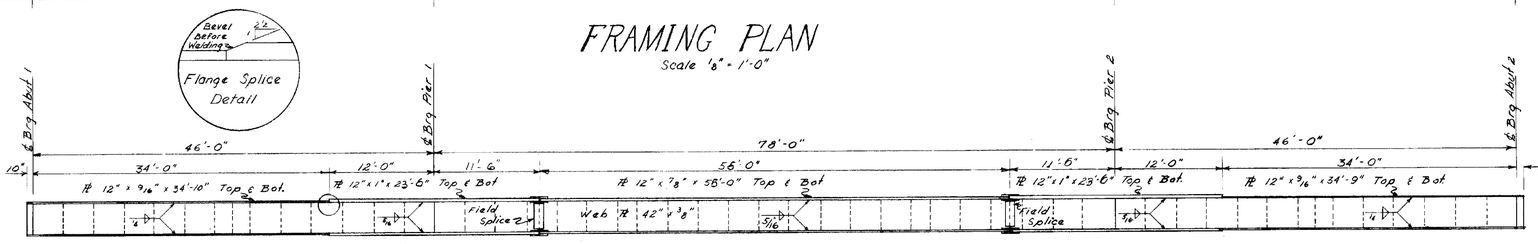
BR-102

17



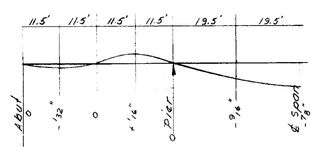
FRAMING PLAN

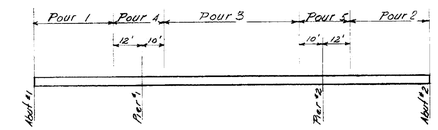
Scale 1/8" = 1'-0"

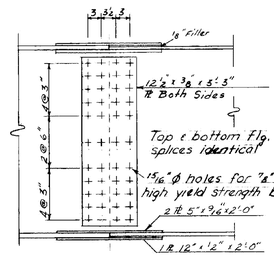


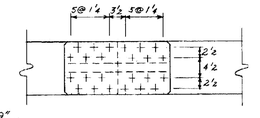
GIRDER ELEVATION

Scale 1/8" = 1'-0"



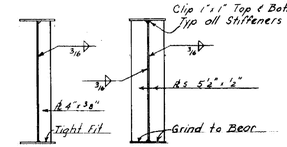






SPLICE DETAILS

Scale 3/4" = 1'-0"

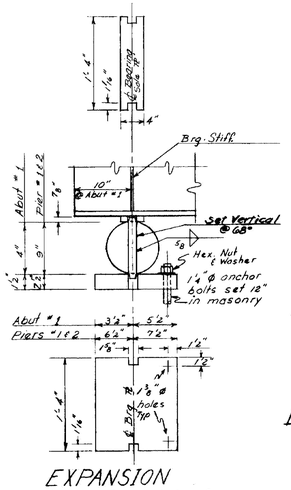


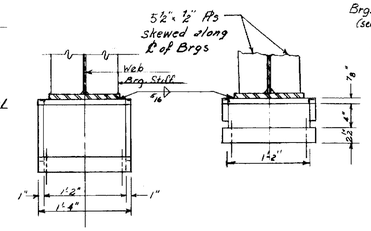
INTERMEDIATE BEARING STIFFENER DETAILS

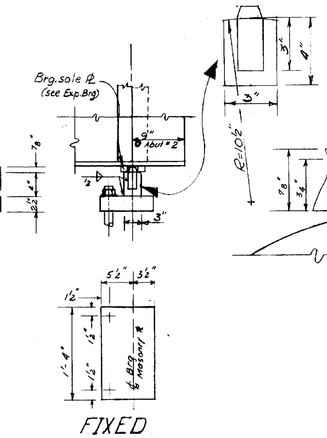
Scale 1/2" = 1'-0"

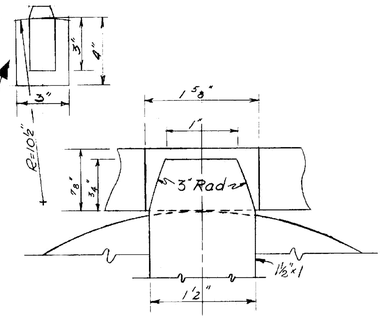
NOTES

1. Plates for expansion bearings shall be high yield strength structural alloy steel (AASHTO M 244). Steel for rollers shall be cold finished carbon steel ASTM-A 108 (Grade 1045) turned and polished. Rollers shall be preheated in furnace to 400° F. held at this temp. until welding is completed, and then allowed to cool slowly. Side bars shall be ASTM-A 36. Plates shall be straightened to plane surfaces.
2. All steel for fixed bearings shall be ASTM A-36
3. All bolts shall be 7/8" diameter high yield strength bolts, and shall conform to ASTM-A 325
4. In lieu of the above pouring sequence the slab may be placed in one continuous pour, under the direction of the Engineer, using a retarding admixture for concrete meeting the requirements of the General Special Provisions as specified under Concrete Item 401, section 401.02-H, General.









WINDSOR-HARTLAND
IM MEMB(14)

SHEET 32 OF 39
BRIDGE 39N&S
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 HARTLAND-HARTFORD
ROUTE NO. I 91 STA. 351.8
INTERSTATE OVER U.S. #5
FRAMING PLAN & BEARING DETAILS
SCALE As Noted
SURVEYED BY
DRAWN BY DHR CHECKED BY RWK
PROJECT NO. I 91-1 (27) Contr. 4
SHEET 44 OF 103

BR. 106

FOR RAILING & CURB DETAILS SEE SCB-D1-G4 SHEETS 1 & 2, AND SCB-R3-G4. REFER TO SCB-D6-G2 DETAIL A FOR ADDITIONAL DETAILS OF CURB.

℄ symmetrical

30'-0"

2'-8" | 2'-8"

12" 1'-6" | 15'-0" | 15'-0"

Parabolic crown 12'0"

3'-0" Straight 12 per ft. | 2'-3" | 2'-3" | 2'-6" | 2'-6" | 2'-6"

4½" | 3" | 2" | 1⅜" | 12" | 6"

S401@18"

10½"

1½ cl.

1½ Bit. Conc. Pav't. Item 361-B (Mod)

Tar Emulsion for Bridge Floors - Item 318

Granite Bridge Curb Item 556.C (Mod)

S601 chair bars

S502@8"-½ Typ as shown

S501@6" T & B

3" Typ.

1½ cl.

S402@12"

S504

9"

See Plan

Normal | 7'-6" | 7'-6" | 7'-6" | 7'-6"

cross frames & end diaph. see framing plan | Intermediate | Piers | Fixed End Abut "2 | Exp. End Abut "1

SECTION (NON-COMPOSITE - shown) see framing plan for studs in composite section

Scale ⅜"=1'ft

⅝"gusset PL (Typ)

3x3x¼ L's

5½"x½" stiff. PL

4 typ

3'-2"

1 interior girds
3 exterior girds

8'-3¼"

3/4 driller

4

⅝"gusset PL typ

3x3x¼ L's

5½"x½" stiff. PL @ cross frames only

⅞"ϕ H.S. Bolts typ

3x3x¼ L's

3'-2" typ.

7'-6"

1 interior girders
3 exterior girders

¼" PLATES

3"

9"

5½"x½" PL's

2'-0" min. width

5½"x½" PL

FIXED BRG. DEVICE

℄ BRG.

GIRDER

PLAN OF CURTAIN WALL AT BEARING DEVICE (ABUT. "2)

SCALE- ¾"=1'-0"

PIERS

INTERMEDIATE

CROSS FRAME DETAILS

scale 1"=1'ft

For Joint Detail see SCB-D2-G2

S501@6" Top & bott

S603 bars

Approach Slab

Slope ½"

12½"

12"

½ 360

S502

S602@18"

18-S801@24" (Smooth bars 2'lg)

S402@12"

½"x12" PL Brg. Stiffners

S504

2" Expansion Roll

1'-0" | 1'-0"

BACKWALL AT ABUTMENT "2

Scale 1"=1'ft

3" interiors
⅜" exterior

15 WF 33.9

1 STIFF. PL

END DIAPHRAGM ABUT. "1

scale 1"=1'ft

⅜"gusset PL

10"

10"

⅜" ϕ x 1⅛" slots in PL, ⅜" ϕ holes in L for ⅞" ϕ bolts @ 6'-0". Tack weld nut to bott. of L. Remove bolts after conc. has taken initial set, and fill holes with hot poured rubber or polymer

PL ½x12

PL ½x12

L 7x4x½

1½x¼ strap typ

L 3½x3½

typ

¼

2½" 4" 3" 2'-11¾"

¼

PL ½x7¾

typ

STEEL GRID 20'-0"

1½ Bit. conc.

L 7x4x½

1½x¼ straps @ 6"

9"

12"

5"

shim as req'd

LABOR Dowels @ 2'-0" (smooth bars 2'lg)

℄ 2-1¾" ϕ holes in ST & shims for ⅞" ϕ bolts. Field drill 2-⅞" ϕ holes in girder flange after positioning exp. dam

SECTION B-B

scale 1½"=1'ft

SECTION A-A

12'-8"

12"

℄ Brg.

Dowels coat with asphaltic paint above backwall to prevent bond to approach slab

Paint face of backwall & end of approach slab with 2 final coats of Emulsified Asphalt RS-1. To be included in unit price bid for Item 401-B.

1'-0" | 1'-0" | 1'-0"

LONGITUDINAL SECTION AT ABUTMENT "1

scale 1/2"=1'ft

℄ girder & face of curb

E

C

C

B

A

A

℄ girder

rear face of backwall

front face of backwall

℄ Brg.

PLAN AT ABUT. "1 & EXPANSION DAM

scale ¾"=1'ft

1'-4"

Curb Line

Bend ½" R

Cut & weld L

2"

12"

6"

3½" R

5" | 6"

6"

SECTION C-C

scale 1"=1'ft

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 Hartland - Hartford

ROUTE NO. I-91 SGC STA. 3518+0

INTERSTATE OVER U.S. RT. 5

TYP. SUPERSTRUCTURE DETAILS

SCALE as noted

SURVEYED BY

DRAWN BY E.W.Kowalski CHECKED BY D.H.R.

PROJECT NO. I-91-1 [redacted] (31)

BR107 SHEET 45 OF 103 Sheet #65 of 212

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 33 OF 39
BRIDGE 39N&S
FOR REFERENCE ONLY

INDEX OF SHEETS

SHEET NO. 1	TITLE PAGE
2	ALIGNMENT SHEET
3	TYPICAL CROSS SECTION OF IMPROVEMENT (BIT. CONC. PAV'T. ITEM 361-B MOD.)
4	R.O.W. DETAIL SHEET
5	QUANTITY SHEET (ITEMS)
6	QUANTITY SHEET (DRAINAGE)
7-8	EARTHWORK AND GRADE SHEETS
9-12	PLAN AND PROFILE SHEETS
13	BLANK
14-15	BLANK
16	A-61 SOLID ROCK EXCAVATION
17	B-1 BANKING TABLES
18	B-5 TYPICAL SLOPE GRADING
19	B-6 MUCK EXCAVATION
20	B-10 EMBANKMENT ON SLOPE
21	D-2 HEADWALLS AND UNDERDRAIN
22	D-3 JUTE MATTING
23	D-4 SPECIAL ELBOWS
24	D-8 R.C. DROP INLETS
25	D-10 DROP INLET TOPS
26	D-11 D.I. GRATE, TYPE A
27	D-13 R.C. CATCH BASIN
28	D-16 PRECAST CURB D.I., D.I. GRATE TYPE B
29	E-31 CONSTRUCTION IDENTIFICATION SIGNS
30	F-1 PROPERTY LINE FENCE
31	G-1 STANDARD STEEL BEAM GUARD RAIL
32	G-3a THREE CABLE GUARD RAIL DEAD END ANCHORAGE
33	G-4 PLANK GUARD RAIL, WOOD MARKER POSTS
34	J-1 BOUNDARY MARKERS
35	J-4 FIELD OFFICE
36	BLANK
37	SCB-30-62
38-50	DETAILS BRIDGE I 91 OVER U.S. 5 AT 3518+11.0 (BR. 100-112)
51-73	DETAILS BRIDGE I 91 OVER OTTAUQUECHEE RIVER AT 3525+95.0 (BR. 200-222)
74	SB-R3-64
75-76	SB RI-64 (SHEETS 1 AND 2)
77-80	SCB-D1, D2, D4, D6-62
81	
82-99	CROSS SECTIONS (INTERSTATE)
100-103	EXTENDED CROSS SECTIONS 3520+00 TO 3527+80

Added in Final
Struct. Steel Details with Extd Weights
1. Earthwork Sheet

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

INTERSTATE PROJECT

TOWNS OF HARTLAND-HARTFORD

COUNTY OF WINDSOR

INTERSTATE ROUTE 91
BELLOWS FALLS-WHITE RIVER JCT. ROAD

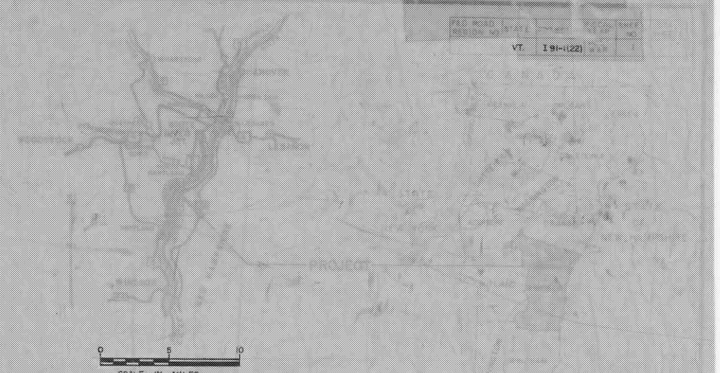
CONTRACT NO. 4

BEGINNING AT A POINT 1.363 MILES SOUTHERLY OF THE HARTLAND-HARTFORD TOWN LINE AND EXTENDING NORTHERLY 0.473 MILES

LENGTH OF ROADWAY 2010.37 FEET = 0.380 MILES.
LENGTH OF BRIDGES 489.63 FEET = 0.093 MILE
LENGTH OF CONTRACT 2500.00 FEET = 0.473 MILES

STAGE I CONSTRUCTION

ADT	1965	3500
ADT	1985	8060
DHV	1985	1150
D		51%
T		7%
V		60 MPH



PROJECT NAME & NUMBER STAGE 1 & 2-2 SPAN WELDED PLATE
HARTLAND-HARTFORD I 91-1(22) GRADING & DRAINAGE GIRDER BRIDGES
RECORD PLANS

MATERIALS

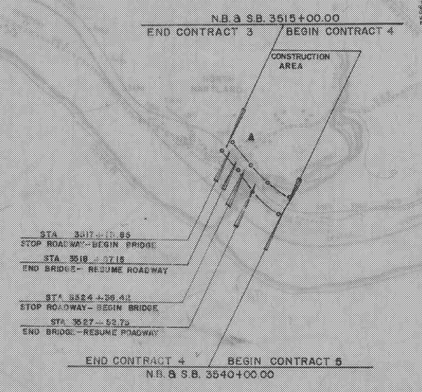
SUBBASE OF GRAVEL — SMITH LEHEUREUX GRAVEL PIT — HARTLAND, VT.
SUBBASE OF CRUSHED ROCK — SMITH LEHEUREUX QUARRY (PERINI CRUSHER) — HARTLAND, VT.
CONCRETE CLASS AA & B — MILLER READY MIX INC. — WHITE RIVER JCT., VT. & W. LEBANON, N.H.
REINFORCING STEEL & STEEL PILING — BETHLEHEM STEEL CORP. — ALBANY, N.Y.
METAL CULVERT PIPE — NEW ENGLAND METAL CULVERT CORP. — WHITE RIVER JUNCTION, VT.
REINFORCED CONCRETE PIPE, GUARD RAIL ITEMS, PROPERTY LINE FENCE & EROSION CONTROL ITEMS — S. T. GRISWOLD & CO., INC. — WILLISTON, VT.
STRUCTURAL STEEL — A. LEO NASH STEEL CO. — PITTSFIELD, MASS.
GRANITE BRIDGE CURB — E.L. SMITH, WHETMORE & MORSE QUARRIES — BARRE, VT.
BRIDGE RAILING — WARD WELLER CO., INC. — NATICK, MASS.
BRIDGE PAINT — AMSTERDAM COLOR WORKS INC. — NEW YORK, N.Y.

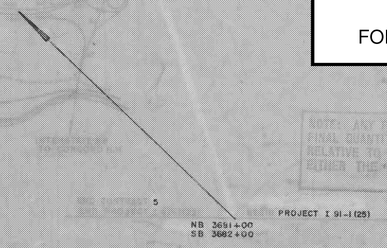
CONTRACTOR — MILLER CONSTRUCTION INC.
WINDSOR, VT.
CHIEF RESIDENT ENGINEER — ROY E. NICHOLSON.
RES. ENG. — JAMES A. McCREA & GLEASON W. AYERS.
INSPECTORS — ALLEN J. NEWTON, JOSHUA DAVIS & ALLAN COUCH.
RECORD PLANS — GLEASON W. AYERS.

CONTRACT
DATED — MARCH 1, 1965.
STARTED — MARCH 11, 1965.
COMPLETED — AUGUST 26, 1966
ACCEPTED — AUGUST 3, 1966.

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 34 OF 39
BRIDGE 40S
FOR REFERENCE ONLY





CONSTRUCTION IDENTIFICATION SIGNS ▲

NOTE: ANY FUNCTION OR QUANTITY SHOWN ON THE FINAL QUANTITIES AND/OR PLANS IS APPROXIMATE RELATIVE TO THIS PROJECT AND SHALL NOT BE CONSIDERED EITHER THE BASIS FOR OR THE LIMIT OF PAYMENT.

CONTRACT 4

0 1000 2000 4000
SCALE IN FEET

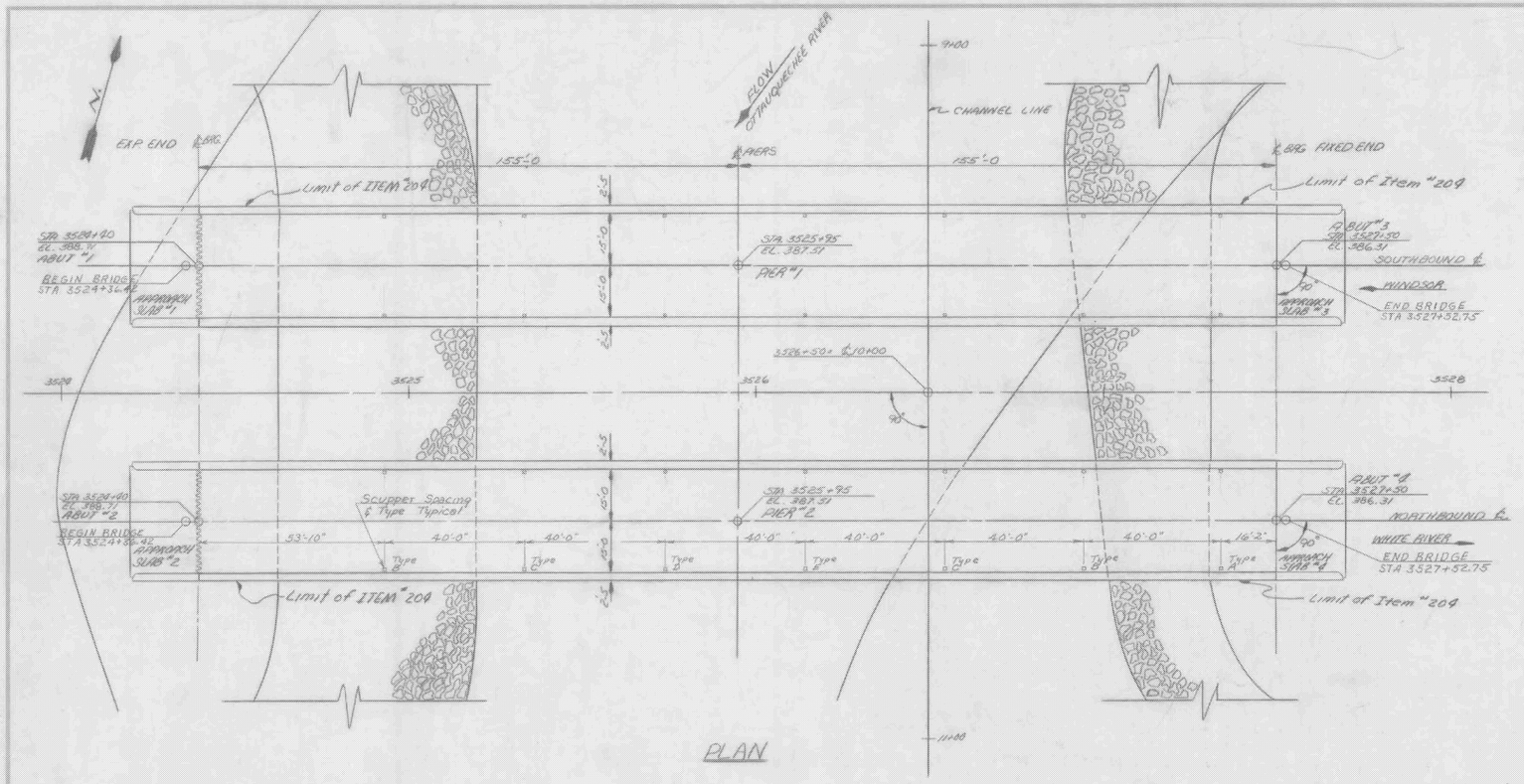
57

PROJECT HARTLAND - HARTFORD
NUMBER I 91-1(22), C-4, S-1
LENGTH 0.473 MI.
TYPE GRADING & DRAINAGE
FOR STAGE 2 SEE I 91-1(31)
CONTRACTOR MILLER CONSTRUCTION INC.
WINDSOR, VT.
YEAR 1965-66
LOCATION Beginning at a point 1.363 miles southerly of the Hartland-Hartford Town Line and extending northerly 0.473 miles.
BAR 251 3883

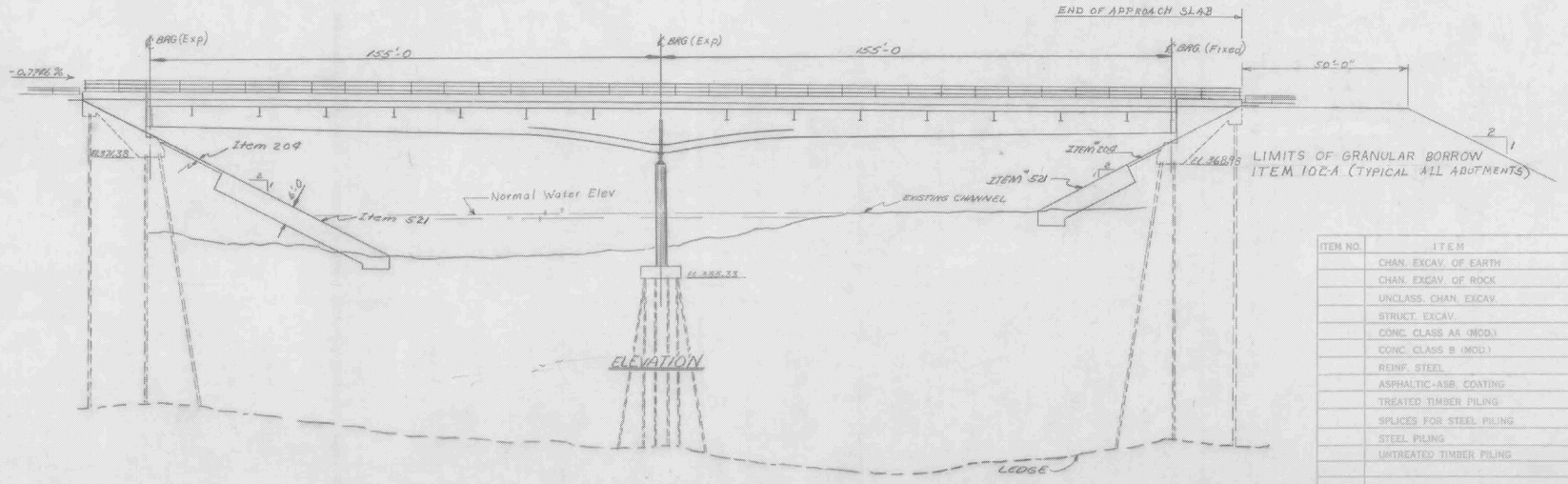
APPROVED [illegible] ASST. CHIEF ENGINEER
DATE 3/24/64

DISTRICT
G.F. Aikens 1/21/63
E.W. Tuckey 1/10/63
Lyn Brown 1/14/63
F.S. Chase 1/7/63
Wm. Lowe 1/9/63
N.P. Bishop 1/11/63

STAGE I CONSTRUCTION
103



PLAN



ELEVATION

NOTES

1. ELEVATION DATUM SEA LEVEL BASED ON NEAREST U.S. GOVERNMENT VERTICAL CONTROL.
2. FOR ADDITIONAL NOTES SEE SCB-D1-62
3. APPROACH SLABS SHALL BE CONSTRUCTED AS PART OF STAGE I CONSTRUCTION.

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 35 OF 39
BRIDGE 40S
FOR REFERENCE ONLY

LIST OF SHEETS

BR. 200 ~ PLAN AND ELEVATION
201 ~ BRIDGE QUANTITY SHEET
202 ~ PRELIMINARY INFORMATION SHEET
203, 204, 205 ~ BORINGS
206 ~ SLAB DETAILS
207 ~ FRAMING PLAN
208 ~ FLOOR BEAM & BRACING DETAILS
209 ~ BRACING DETAILS
210 ~ BRIDGE RAILING DETAILS
211, 212 ~ EXPANSION DAM DETAILS
213 ~ BEARING DEVICE DETAILS
214 ~ ABUTMENTS NO. 1, 2, 3, & 4
215 ~ PIERS 1 & 2 DETAILS
216 ~ REINFORCING STEEL SCHEDULES
BR. 217-222 ~ CHANNEL SECTIONS

STANDARD SHEETS
~ G3A ~
~ SCB-D6-62, DETAILS A, B & F
~ SCB-D1-62, GENERAL NOTES
~ SB-R1-64, Sheets 1 & 2 of 2

Allowable Unit Stresses

f'_c = 3000 psi
f_c = 1200 psi
f_s = 20,000 psi

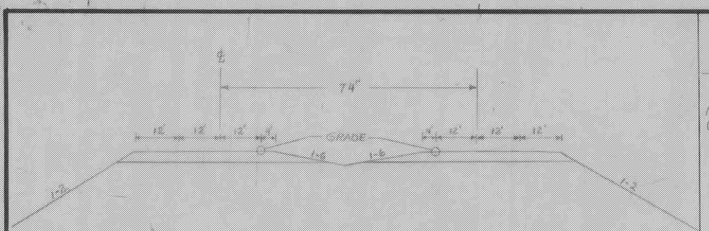
Revisions
#1 Scuppers added to Plan
4-11-66 W. Tripp

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.				

BR. 200 OF 222

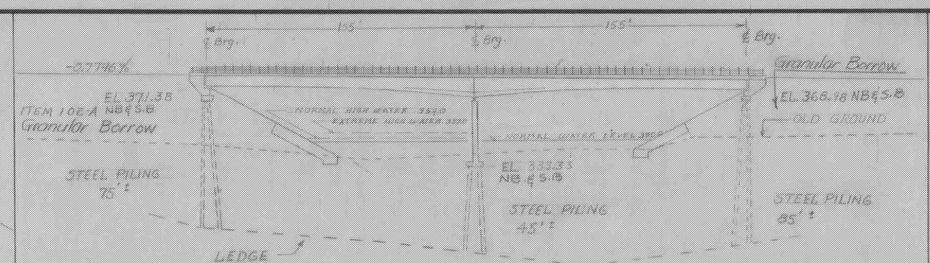
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTLAND - HARTFORD
ROAD NO. _____ BRIDGE NO. _____
PLAN & ELEVATION
I-91 OVER THE OTTAUQUECHEE RIVER
SCALE 1" = 20'-0"
SURVEYED BY JEWETT
DRAWN BY SHS CHECKED BY AGC
PROJECT NO. I-91-1(22)CONT. 9 (31)
SHEET 51 OF 103 Sheet 167 of 242



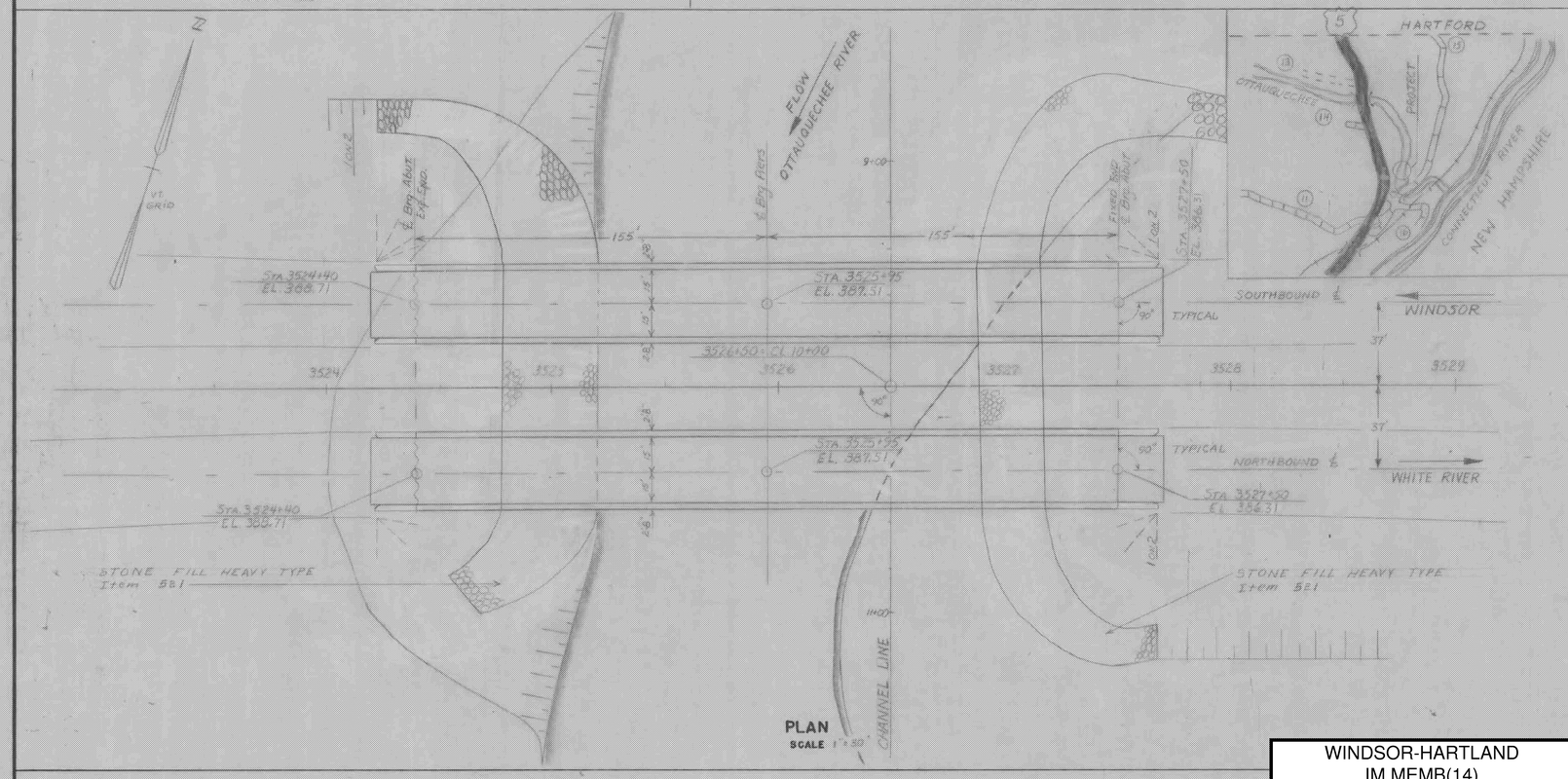
NEW HIGHWAY SECT. STA. 3523+00 TO STA. 3529+00

SCALE 1"=20'



NEW HIGHWAY PROFILE ALONG ℄ INTERSTATE

SCALE 1"=40'



PLAN

SCALE 1"=50'

PROFILE OF PROPOSED STREAM CHANNEL

SCALE 1"=20'

HIGHWAY NO I-91 NAME OF HIGHWAY INTERSTATE

STRUCTURE NO ____ COUNTY WINDSOR TOWN HARTLAND

PROJECT NO I-91-1(22)'64 LOCATION INTERSTATE OVER THE OTTAUQUECHEE 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 CONTINUOUS WELDED PLATE GIRDER

2 RECOMMENDED CLEAR SPAN OR SPANS 155 - 155

MEASURED PARALLEL TO ℄ NEW HIGHWAY N.A.

MEASURED AT RIGHT ANGLES TO ℄ STREAM 155

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

4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE 334 (FLOW FROM FLOOD CONTROL DAM OF 6,000 CFS)

5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 337 SOURCE OF INFORMATION FLOW FROM DAM OF 12,000 CFS

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? NO

8 LOW WATER ELEVATION AT NEW STRUCTURE 350± (GOVERNED BY TWO DAMS JUST BELOW SITE)

9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 222.3 SQ. MI. CHARACTER OF TERRAINE HILLY

10 IS STREAM EVER DRY? NO

11 VELOCITY OF STREAM AT HIGH WATER STAGE 2.9 FT/SEC ESTIMATED DISCHARGE 6,000 C.F.S.

12 AREA FULL OPENING 7,100 S.F. AREA BELOW ORDINARY H.W. 2060 S.F.

13 CHARACTER OF SCOUR NONE DRIFT SLIGHT ICE YES

14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE 221 SQ. MILES

15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION 17 FEET

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

17 RECOMMENDED TYPE OF PAVEMENT 2" BITUMINOUS CONC. ON 7½" REINF. CONCRETE SLAB

18 TRAFFIC TO BE MAINTAINED UNDER ITEM NO. N.A. ONE OR TWO WAYS NA PROBABLE COST NA

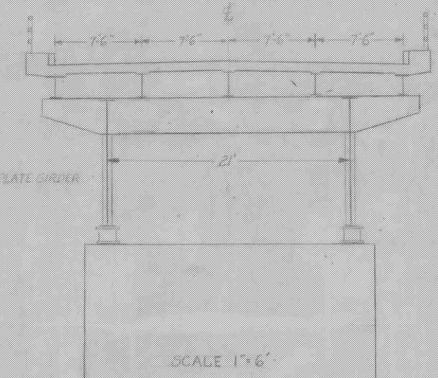
19 PROBABLE COST OF CLEARING AND GRUBBING STREAM CHANNEL AT STRUCTURE SITE NONE

20 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? NO

21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 45 TONS PER PILE SHOULD PILES BE USED? YES EST. LGTH. 35'-50'

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.



FOR BORINGS SEE SHEET NO. ____

Recommended for Approval Bridge Engineer 8/5/63 Date

Recommended for Approval Asst. Chief Engineer 8/6/63 Date

Approved by Chief Engineer 8/7/63 Date

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

IN THE TOWNS OF HARTLAND

ROUTE NO I-91 LOG STA 3525 ± 95

SURVEYED BY	CHECKED BY	SCALE
DRAWN BY	IN CHARGE	DATE

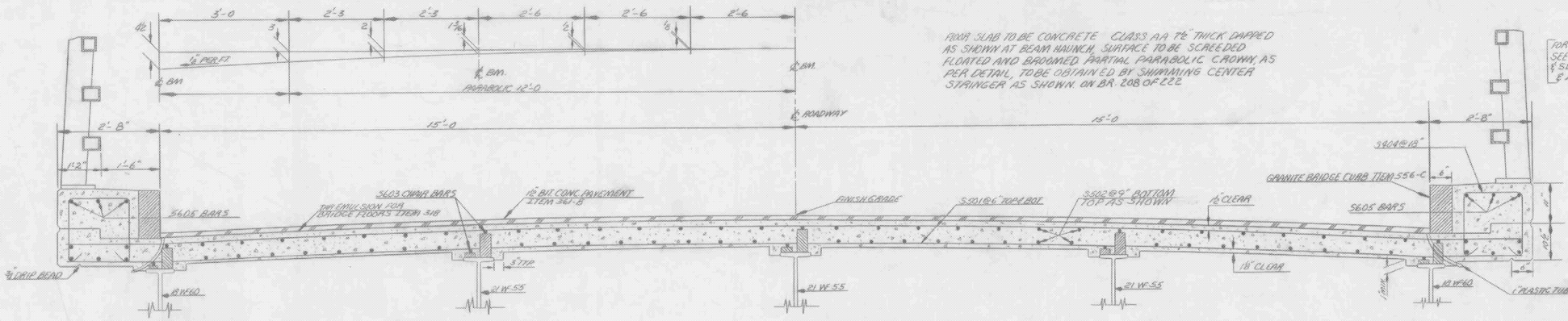
PROJECT NO I-91-1(22)'64 SHEET 53 OF 103

CONT #4

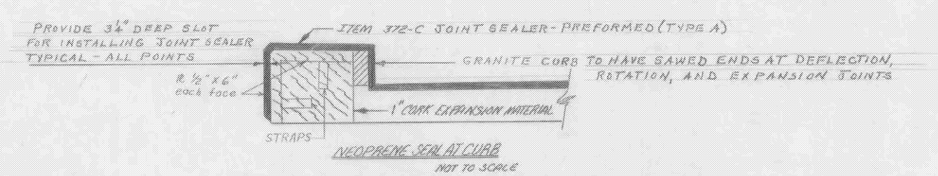
Br 202 of 222

WINDSOR-HARTLAND
IM MEMB(14)

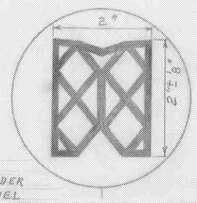
SHEET 36 OF 39
BRIDGE 40S
FOR REFERENCE ONLY



FLOOR SLAB TO BE CONCRETE CLASS AA 7½" THICK DAPPED AS SHOWN AT BEAM HAUNCH, SURFACE TO BE SCREEDED FLOATED AND BROOMED PARTIAL PARABOLIC CROWN, AS PER DETAIL, TO BE OBTAINED BY SHIMMING CENTER STRINGER AS SHOWN ON BR. 208 OF 222

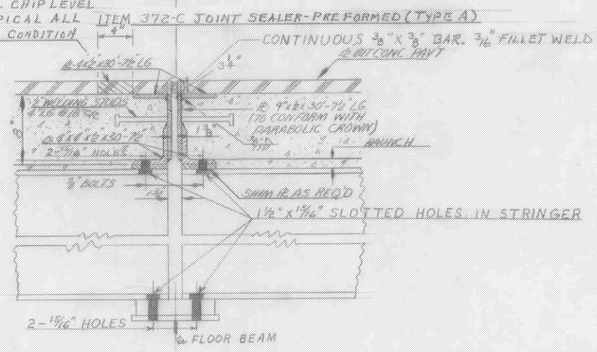


NEOPRENE SEAL AT CURB
NOT TO SCALE

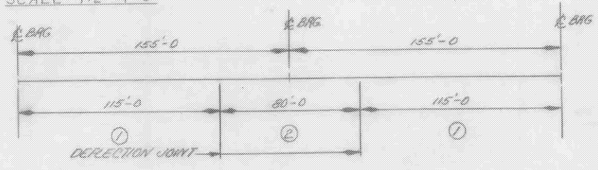


NOTE:
PREFORMED SEALER SHALL BE NEOPRENE RUBBER PREMOLDED TO THE INDICATED SHAPE (TYPE A)

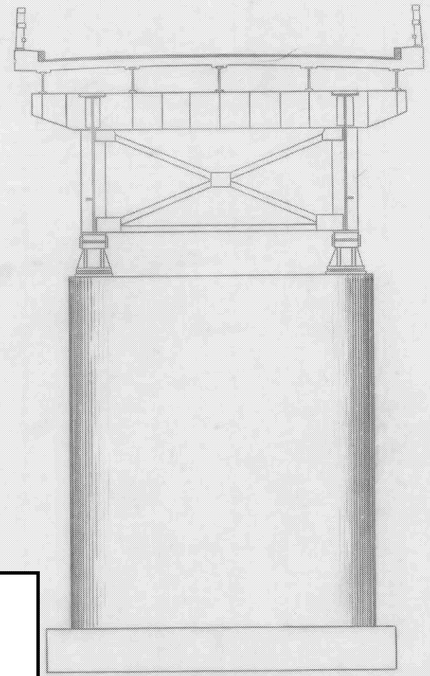
OVERFILL DURING SLAB POUR TO PREVENT VOIDS UNDER ADJACENT PLATE. CHIP LEVEL IN 24 HOURS. TYPICAL ALL POINTS WITH THIS CONDITION



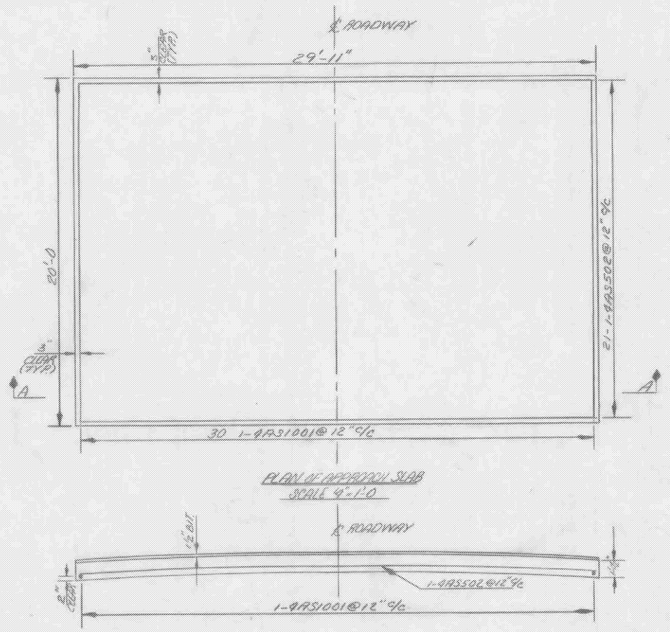
DETAIL OF DEFLECTION JOINT
SCALE 1½" = 1'-0"



SLAB POUR SEQUENCE



SECTION AT PIER
SCALE 1"=6'-0



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.				

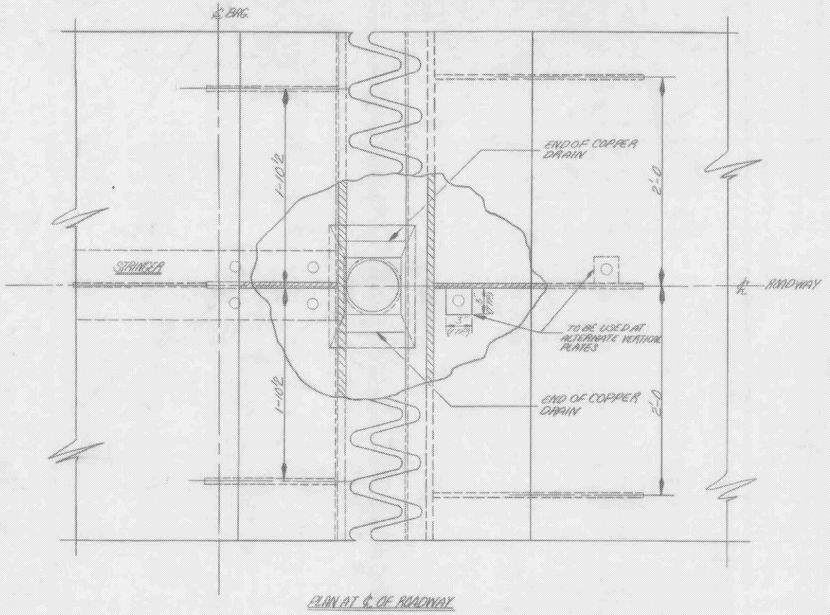
BR 206 OF 222

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

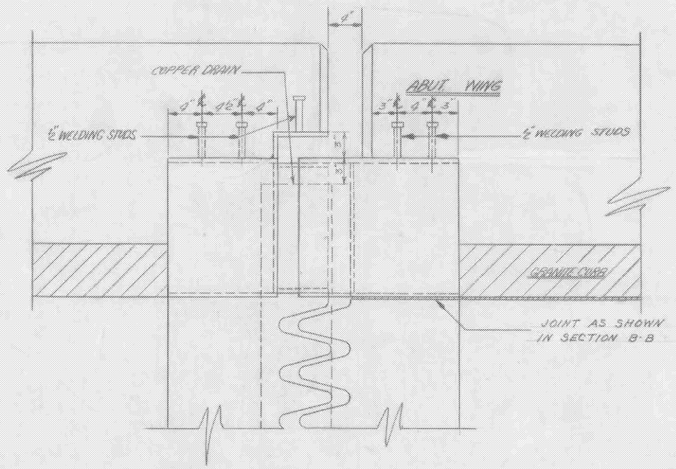
TOWN OF HARTLAND-HARTFORD
ROAD No. I-91 BRIDGE No.
I-91 OVER THE OTTAUQUECHEE RIVER SLAB DETAILS
SCALE AS SHOWN
SURVEYED BY
DRAWN BY SHS CHECKED BY (1) AGC (2) (3)
PROJECT No. I-91-1(22)103M
SHEET 57 OF 103 Sheet 169 of 242

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 37 OF 39
BRIDGE 40S
FOR REFERENCE ONLY



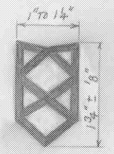
PLAN AT ℄ OF ROADWAY



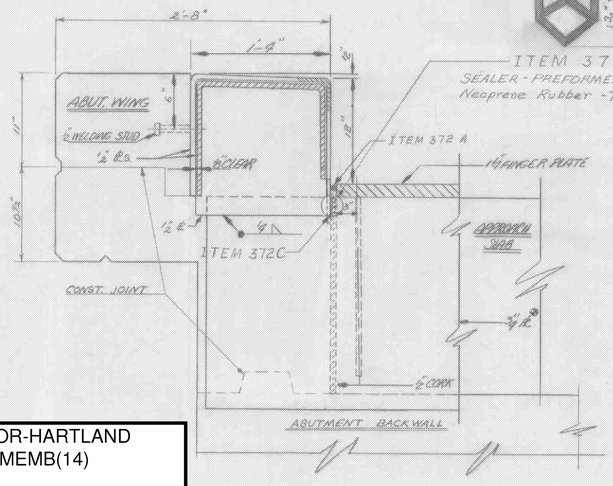
PLAN AT CURB

NOTES:

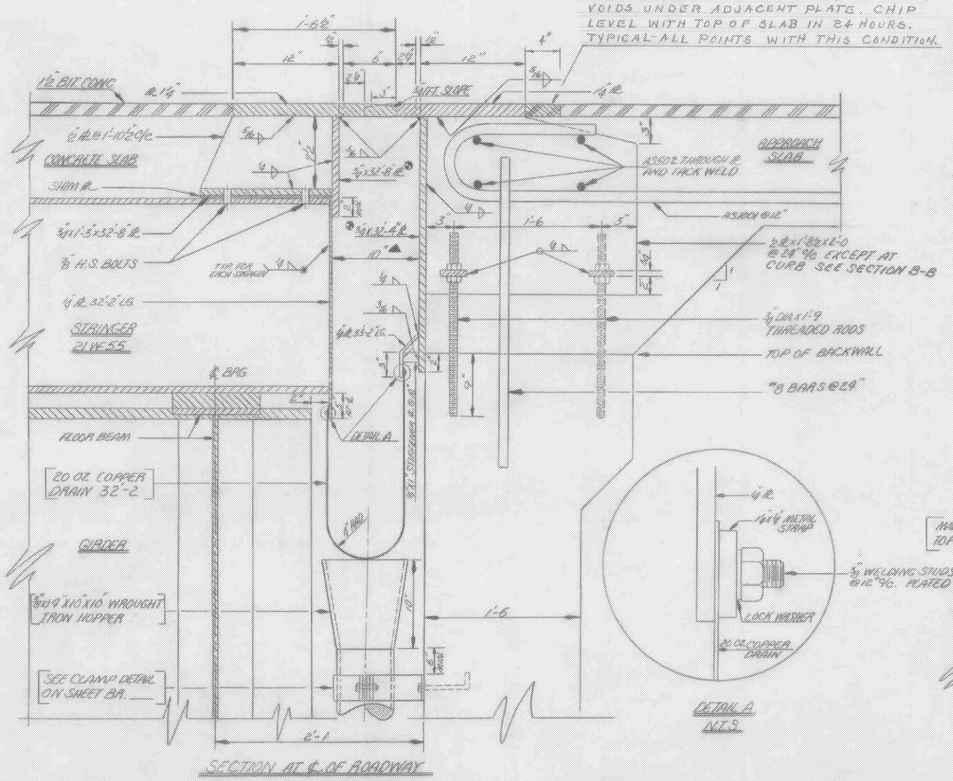
1. ③ THESE R.'S. SHALL CONFORM TO THE PARABOLIC CROWN.
2. FOR DETAILS OF FINGER R.s & DRAINAGE SEE BR. 212
3. COPPER DRAIN SHALL HAVE A MINIMUM SLOPE OF ¾"/FT.
4. ALL STEEL FOR THE EXPANSION DAM, SHALL BE ASTM A242 UNLESS OTHERWISE NOTED.
5. ALL PLATES WHICH ARE EMBEDDED COMPLETELY IN CONCRETE MAY BE A-36 STEEL.
6. ▲ CLEAR DIMENSIONS INDICATED ARE FOR 68°F.
7. ALL WELDS NOT NOTED ARE TO BE ¼"



ITEM 372 C - JOINT SEALER - PREFORMED (Preformed Neoprene Rubber - Type B)

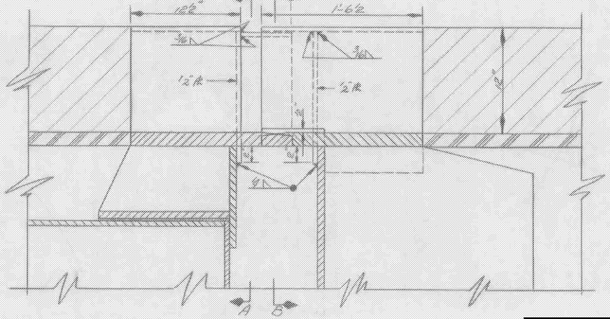


SECTION B-B

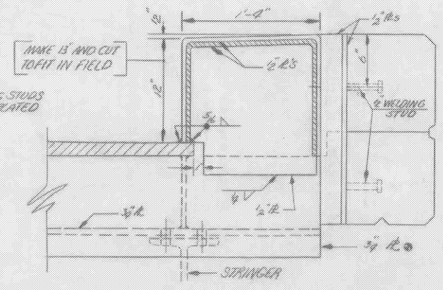


SECTION AT ℄ OF ROADWAY

DETAIL A
ALT. 3



SECTION AT CURB



SECTION A-A

WINDSOR-HARTLAND
IM MEMB(14)

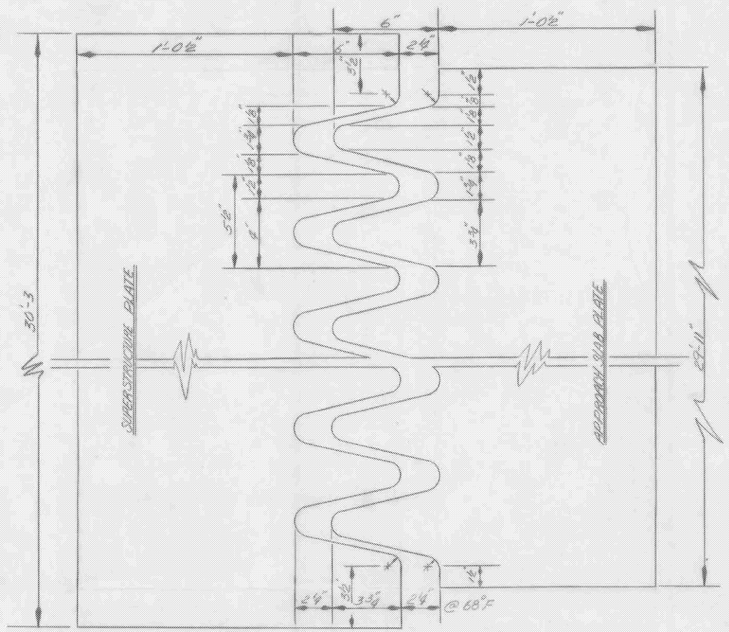
SHEET 38 OF 39
BRIDGE 40S
FOR REFERENCE ONLY

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.				

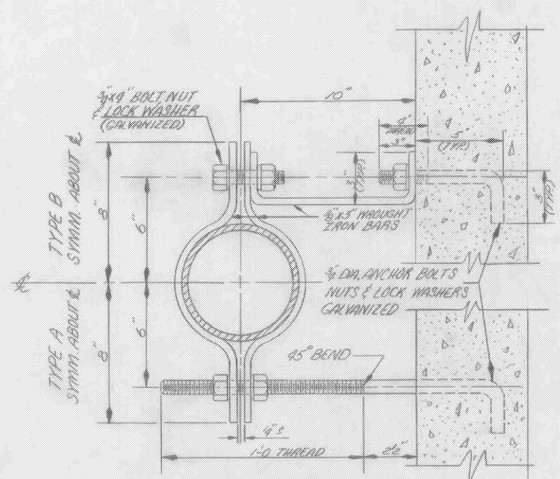
BR. 211 OF 222

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

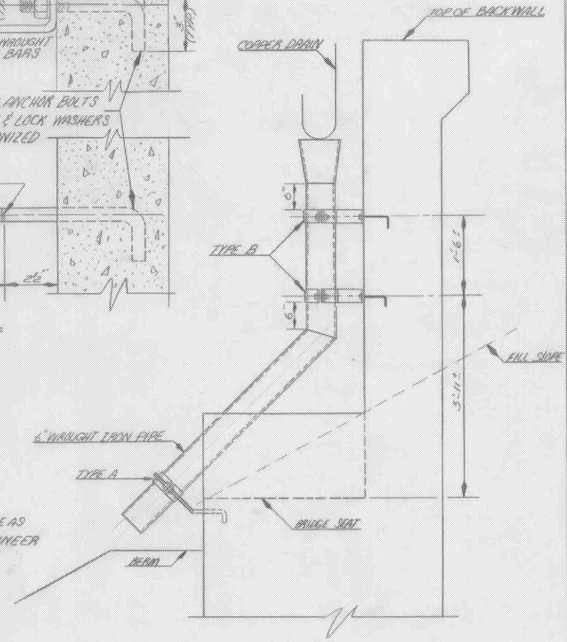
TOWN OF HARTLAND - HARTFORD
ROAD NO. _____ BRIDGE NO. _____
I-91 OVER THE OTTAUQUECHEE RIVER
EXPANSION DAM DETAILS
SCALE 12" = 1'-0"
SURVEYED BY _____
DRAWN BY SHS CHECKED BY RLO
PROJECT NO. I-91-1(33)0(31)
[redacted] Sheet 170 of 242



FINGER PLATE DETAIL
SCALE 3"=1'-0

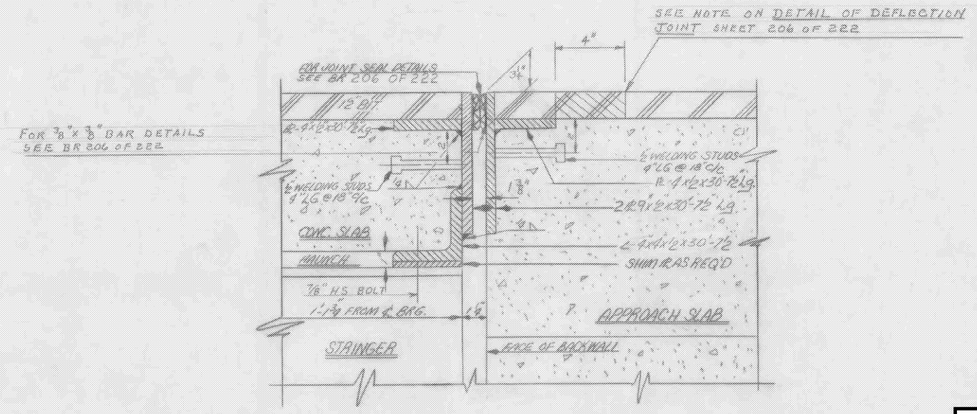


CLAMP DETAILS
SCALE 3"=1'-0



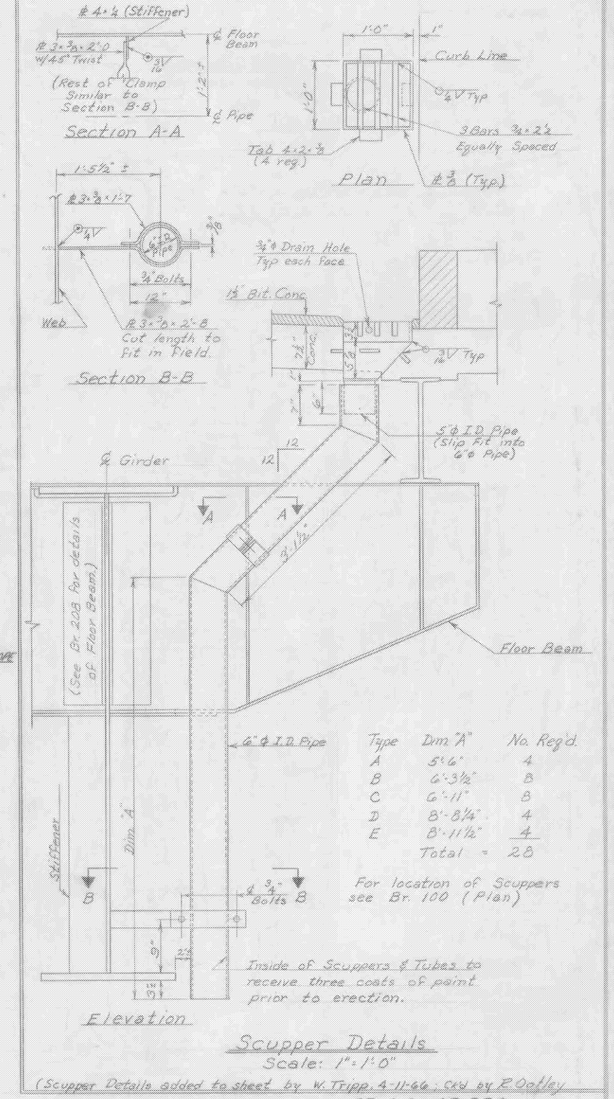
SLOPE PROTECTION TO BE AS DIRECTED BY THE ENGINEER

DRAINAGE AT EXP. DAMS
SCALE ¾"=1'-0



ROTATION JOINT AT ABUTMENT NOS 3&4
SCALE 3"=1'-0

FOR JOINT AT CURB SEE DEFLECTION JOINT DRAWING 222



Type	Dim. "A"	No. Req'd.
A	5'-6"	4
B	6'-3½"	8
C	6'-11"	8
D	8'-8¼"	4
E	8'-11½"	4
Total		28

For location of Scuppers see Br. 100 (Plan)

Inside of Scuppers & Tubes to receive three coats of paint prior to erection.

Scupper Details
Scale: 1"=1'-0"

(Scupper Details added to sheet by W. Tripp 4-11-66 ; ckd by R Oatley

BR 212 OF 222

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.				

WINDSOR-HARTLAND
IM MEMB(14)

SHEET 39 OF 39
BRIDGE 40S
FOR REFERENCE ONLY

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF HARTLAND
ROAD NO. _____ BRIDGE NO. _____
I-91 OVER THE OTTAUQUECHEE RIVER
FINGER PLATE, DRAIN TROUGH, CLAMP AND ROTATION JOINT DETAILS
SCALE AS SHOWN
SURVEYED BY _____
DRAWN BY SHS CHECKED BY RLO
PROJECT NO. I-91-1(22) CONT. 9(31)
SHEET 63 OF 103 Sheet 171 of 242