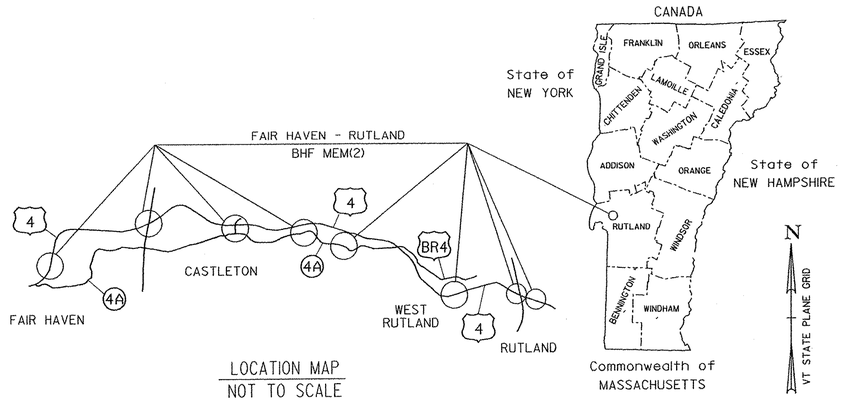
INDEX OF SHEETS

1. TITLE SHEET
2. INDEX OF SHEETS AND GENERAL NOTES

STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWNS OF FAIR HAVEN, CASTLETON, WEST RUTLAND AND RUTLAND
COUNTY OF RUTLAND
PROJECT BHF MEMB(2)

ROUTE NO.: US 4, VT 4A AND VT 915 SPUR (CASTLETON STATE HWY)

BRIDGE NO.: 3 E&W, 10 E&W, 16 E&W, 19 E&W, 20 E&W ON US 4
11 AND 12 ON VT 4A
1 ON VT 915 SPUR

PROJECT LOCATION:
BR 3 E&W OVER CASTLETON RIVER (US 4 - MM 0. 7)
BR 10 E&W OVER VT 30 (US 4 - MM 5. 4)
BR 16 E&W OVER BUS 4 (US 4 - MM 14. 9)
BR 19 E&W OVER DORR DRIVE (US 4 - MM 17. 6)
BR 20 E&W OVER OTTER CREEK (US 4 - MM 17. 8)
BR 11 OVER CASTLETON RIVER (VT 4A - MM 5. 7)
BR 12 OVER CASTLETON RIVER (VT 4A - MM 6. 9)
BR 1 OVER BRITTAIN BROOK (VT 915 SPUR - MM 0. 1)

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

LENGTH OF STRUCTURES:

BR 3E	243. 34'	BR 3W	243. 34'
BR 10E	233. 46'	BR 10W	233. 46'
BR 16E	165. 50'	BR 16W	165. 50'
BR 19E	207. 04'	BR 19W	247. 04'
BR 20E	364. 50'	BR 20W	364. 50'
BR 11	62. 45'	BR 12	46. 19'
BR 1	69. 00'		

TOTAL LENGTH OF STRUCTURES: 2645. 32'

RECORD PLANS

CONTRACTOR: F.W. WHITCOMB CONSTRUCTION CORP. – WALPOLE, NH
RESIDENT ENGINEER: TIM POCKETTE
CONSTRUCTION BEGAN: APRIL 13, 2009
CONSTRUCTION COMPLETE: AUGUST 13, 2009
RECORD PLANS BY: TIM POCKETTE & 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 September 7, 2011

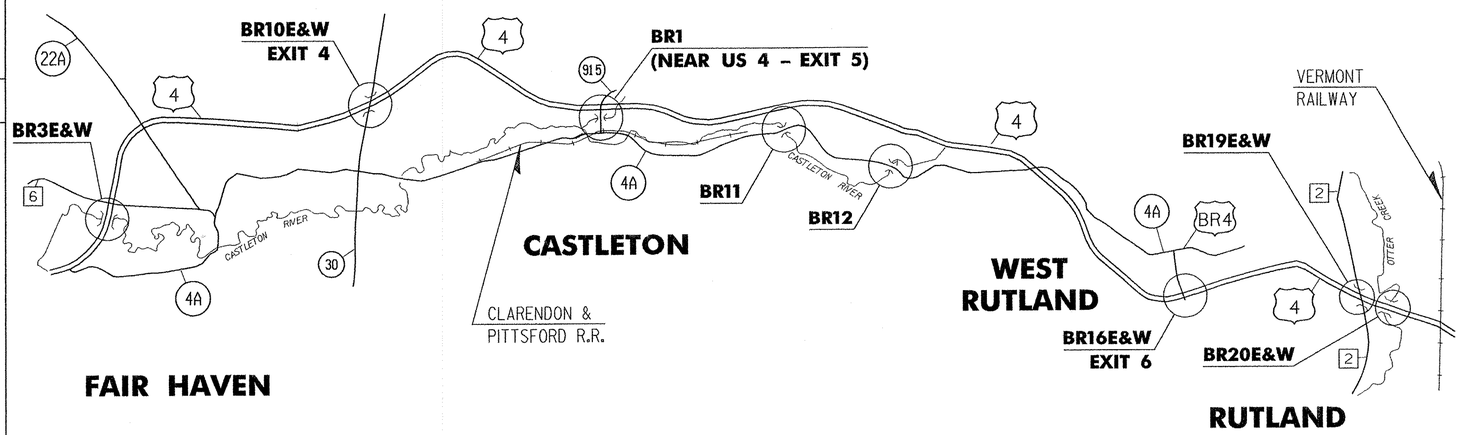
NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

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

DATUM
VERTICAL N/A
HORIZONTAL N/A

CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
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



STATE OF VERMONT
GEORGE A. BOGUE
NO. 8136
REGISTERED
PROFESSIONAL ENGINEER

George A. Bogue
8-6-08

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

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.

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED _____ DATE 8-7-08

PROJECT MANAGER : SHERWARD FARNSWORTH

PROJECT NAME : **FAIR HAVEN – RUTLAND**
PROJECT NUMBER : BHF MEMB(2)

SHEET 1 OF 45 SHEETS

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7. TRAFFIC CONTROL SHEET 3
8. BITUMINOUS CONCRETE REMOVAL PLAN
9. BITUMINOUS CONCRETE DETAILS
10. PAVEMENT JOINT DETAILS
11.-19. REFERENCE PLANS - BRIDGE 3E&W
20.-26. REFERENCE PLANS - BRIDGE 10E&W
27.-29. REFERENCE PLANS - BRIDGE 16E&W
30.-33. REFERENCE PLANS - BRIDGE 19E&W
34.-35. REFERENCE PLANS - BRIDGE 20E&W
36.-39. REFERENCE PLANS - BRIDGE 1
40.-42. REFERENCE PLANS - BRIDGE 11
43.-45. REFERENCE PLANS - BRIDGE 12

VAOT STANDARD SHEETS

E-100	01/02/04
E-100A	01/02/04
E-101	05/30/03
E-102	06/30/03
E-102A	05/01/04
E-106	03/01/04
E-107	06/30/03
E-107A	08/08/95
E-110	08/08/95

PROJECT NOTES

GENERAL

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

TRAFFIC CONTROL

6. UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS, ALL COSTS FOR WORK SHOWN ON SHEETS 5, 6, 7 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.
8. PAINTING WORK IS SCHEDULED FOR BRIDGE D4 ON WEST STREET (T.H. #6) OVER U.S. ROUTE 4 (MM 0.9) IN FAIR HAVEN. IF THIS WORK IS IN PROGRESS WHEN WORK COMMENCES ON BRIDGE 3E OR 3W THEN THE CONTRACTOR SHALL COORDINATE THEIR TRAFFIC CONTROL (LANE CLOSURE) WITH THE PAINTING CONTRACTOR'S TRAFFIC CONTROL (LANE CLOSURE). THE COST OF COORDINATING THE TRAFFIC CONTROL WILL BE INCIDENTAL TO ITEM 641.10.
9. DUE TO THE PROXIMITY OF BRIDGES 19E&W AND 20 E&W THE TRAFFIC CONTROL FOR THESE BRIDGES WILL BE PAID FOR UNDER ONE TRAFFIC CONTROL ITEM FOR BRIDGES 19E AND 20E AND ONE TRAFFIC CONTROL ITEM FOR BRIDGES 19W AND 20W.

PAVEMENT REMOVAL NOTES

10. 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".
11. 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.
12. 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.
13. 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".
14. 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.
15. UPON THE ENGINEER'S APPROVAL OF THE CONCRETE BRIDGE DECK'S CONDITION, ITEM 519.20, "SHEET MEMBRANE WATERPROOFING, TORCH APPLIED" SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 519.

PAVEMENT NOTES

16. FOLLOWING THE INSTALLATION OF THE NEW SHEET MEMBRANE WATERPROOFING ON THE CONCRETE BRIDGE DECK, THE CONCRETE BRIDGE DECK AND THE AT-GRADE APPROACH SLABS SHALL BE PAVED CURB TO CURB WITH ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)" IN TWO 1½" LIFTS (SEE TYPICAL APPROACH SECTION ON SHEET 9). THE PAVEMENT SHALL BE TYPE IVS (7 X) FOR BOTH LIFTS, NO EXCEPTIONS.
17. 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".
18. TESTING FOR PAVEMENT DENSITY WILL REQUIRE CORES OF THE PAVEMENT ON THE BRIDGE. THE COST FOR THIS WORK WILL BE INCIDENTAL TO ITEM 900.680, "SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)". 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.

Stantec

PROJECT NAME: FAIR HAVEN - RUTLAND
PROJECT NUMBER: BHF MEMB(2)

FILE NAME: ...\drawing\02-Br Notes.dgn | PLOT DATE: 8/6/2008
PROJECT LEADER: G. BOGUE | DRAWN BY: J. SOTER
DESIGNED BY: S. BURBANK | CHECKED BY: G. BOGUE
INDEX OF SHEETS AND PROJECT NOTES | SHEET 2 OF 45

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
U.S. 4 - BRIDGE NO. 3E & 3W	U.S. 4 - BRIDGE NO. 10E & 10W	U.S. 4 - BRIDGE NO. 16E & 16W	U.S. 4 - BRIDGE NO. 19E	U.S. 4 - BRIDGE NO. 19W	U.S. 4 - BRIDGE NO. 20E	U.S. 4 - BRIDGE NO. 20W	VT 915 - BRIDGE NO. 1	VT 4A - BRIDGE NO. 11	VT 4A - BRIDGE NO. 12	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
	390	330	245		125	125	155	290	440	2100		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
								1	1	2		CY	AGGREGATE SURFACE COURSE	401.10				
3	2.1	1.6	1.6		2.2	2.2	1	1	1.3	16		CWT	EMULSIFIED ASPHALT	404.65				
54	96	24	14	14	23	23	7	12	13	280		GAL	WATER REPELLENT, SILANE	514.10				
	189	111	43	43			72	80	76	614		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
2308	952	675	844		1486	1486	268	227	168	8414		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
	74									74		LF	JOINT SEALER, HOT POURED	524.11				
	10									10		LF	JOINT SEALER, POLYURETHANE	524.21				
2308	952	675	844		1486	1486	268	227	168	8414		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
20772	8568	6075	7596		13374	13374	2412	2043	1512	75726		SF	SURFACE PREPARATION FOR MEMBRANE	580.16				
100	94	80	50	30	64	64				482		HR	TRUCK-MOUNTED ATTENUATOR	608.45				
100	94	80	50	30	64	64	10	10	10	512		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
							50	50	50	150		HR	FLAGGERS	630.15				
0.2	0.1	0.1	0.1		0.1	0.1	0.1	0.1	0.1	1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
0.24	0.13	0.09	0.09	0.01	0.15	0.15	0.05	0.05	0.04	1		LS	MOBILIZATION/DEMOBILIZATION	635.11				
	1									1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 10E)	641.10				
	1									1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 10W)	641.10				
		1								1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 16E)	641.10				
		1								1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 16W)	641.10				
			0.5		0.5					1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 19E AND U.S. 4 - BRIDGE NO. 20E)	641.10				
				0.5		0.5				1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 19W AND U.S. 4 - BRIDGE NO. 20W)	641.10				
1										1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 3E)	641.10				
1										1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 3W)	641.10				
								1		1		LS	TRAFFIC CONTROL (VT 4A - BRIDGE NO. 11)	641.10				
									1	1		LS	TRAFFIC CONTROL (VT 4A - BRIDGE NO. 12)	641.10				
							1			1		LS	TRAFFIC CONTROL (VT 915 - BRIDGE NO. 1)	641.10				
2	2	2	0.5	0.5	0.5	0.5	2	2	2	14		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
2	2	2	0.5	0.5	0.5	0.5				8		EACH	PORTABLE ARROW BOARD	641.16				
							225	290	335	850		LF	4 INCH WHITE LINE	646.20				
							225	290	335	850		LF	4 INCH YELLOW LINE	646.21				
620	370	320	335	5	500	500				2650		LF	6 INCH WHITE LINE	646.214				
500	333	253	270	4	405	405				2170		LF	6 INCH YELLOW LINE	646.215				
							15			15		LF	DURABLE 24 INCH STOP BAR	646.480				
							1			1		EACH	DURABLE RAILROAD CROSSING SYMBOL	646.510				
							225	290	335	850		LF	TEMPORARY 4 INCH WHITE LINE	646.600				
							225	290	335	850		LF	TEMPORARY 4 INCH YELLOW LINE	646.610				
620	365	315	335		500	500				2635		LF	TEMPORARY 6 INCH WHITE LINE	646.620				
500	330	250	270		405	405				2160		LF	TEMPORARY 6 INCH YELLOW LINE	646.630				
							15			15		LF	TEMPORARY 24 INCH STOP BAR	646.680				
							1			1		EACH	TEMPORARY RAILROAD CROSSING SYMBOL	646.710				

PROJECT NAME: FAIR HAVEN - RUTLAND
PROJECT NUMBER: BHF MEMB(2)

FILE NAME: QtySheet1.xls
PROJECT MANAGER: G. BOGUE
DESIGNED BY: S. BURBANK
QUANTITY SHEET #1

PLOT DATE: 08/11/2008
DRAWN BY: J. SOTER
CHECKED BY: G. BOGUE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES										TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
U.S. 4 - BRIDGE NO. 3E & 3W	U.S. 4 - BRIDGE NO. 10E & 10W	U.S. 4 - BRIDGE NO. 16E & 16W	U.S. 4 - BRIDGE NO. 19E	U.S. 4 - BRIDGE NO. 19W	U.S. 4 - BRIDGE NO. 20E	U.S. 4 - BRIDGE NO. 20W	VT 915 - BRIDGE NO. 1	VT 4A - BRIDGE NO. 11	VT 4A - BRIDGE NO. 12	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
42	27	21	21		30	30	9	12	15	207		EACH	LINE STRIPING TARGETS	646.76				
2	1	1	1		1	1	1	1	1	10		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650				
2	1	1	1		1	1	1	1	1	10		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650				
496	288	217	230		343	343	90	112	131	2250		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

PROJECT NAME: FAIR HAVEN - RUTLAND
PROJECT NUMBER: BHF MEMB(2)

FILE NAME: QtySheet1.xls
PROJECT MANAGER: G. BOGUE
DESIGNED BY: S. BURBANK
QUANTITY SHEET #2

PLOT DATE: 08/11/2008
DRAWN BY: J. SOTER
CHECKED BY: G. BOGUE
SHEET 4 OF 45

STATE OF VERMONT
AGENCY OF TRANSPORTATION

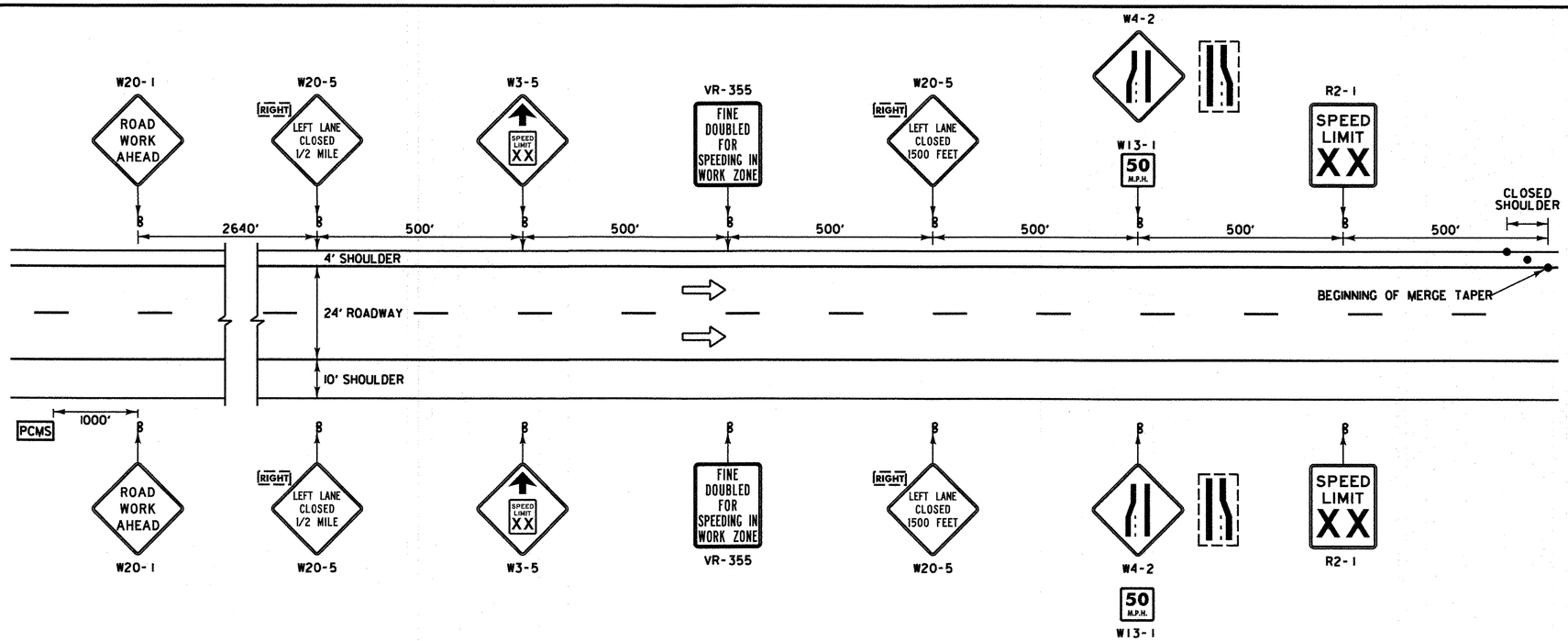
QUANTITY SHEET 3

SUMMARY OF ESTIMATED QUANTITIES							TOTALS		DESCRIPTIONS				DETAILED SUMMARY OF QUANTITIES		
U.S. 4 - BRIDGE NO. 3E	U.S. 4 - BRIDGE NO. 3W	U.S. 4 - BRIDGE NO. 10E	U.S. 4 - BRIDGE NO. 10W	U.S. 4 - BRIDGE NO. 16E	U.S. 4 - BRIDGE NO. 16W	GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND	QUANTITIES	UNIT	ITEMS
			390	330		720		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10				
1.5	1.5		2.1	1.6		6.7		CWT	EMULSIFIED ASPHALT	404.65				
27	27	48	48	12	12	174		GAL	WATER REPELLENT, SILANE	514.10				
		48	141	74	37	300		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10				
1154	1154		952	675		3935		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20				
			74			74		LF	JOINT SEALER, HOT POURED	524.11				
			10			10		LF	JOINT SEALER, POLYURETHANE	524.21				
1154	1154		952	675		3935		SY	REMOVAL OF BRIDGE PAVEMENT	529.10				
10386	10386		8568	6075		35415		SF	SURFACE PREPARATION FOR MEMBRANE	580.16				
50	50	30	64	50	30	274		HR	TRUCK-MOUNTED ATTENUATOR	608.45				
50	50	30	64	50	30	274		HR	UNIFORMED TRAFFIC OFFICERS	630.10				
0.1	0.1		0.1	0.1		0.4		LS	TESTING EQUIPMENT, BITUMINOUS	631.17				
0.12	0.12	0.01	0.12	0.08	0.01	0.46		LS	MOBILIZATION/DEMOBILIZATION	635.11				
		1				1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 10E)	641.10				
			1			1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 10W)	641.10				
				1		1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 16E)	641.10				
					1	1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 16W)	641.10				
1						1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 3E)	641.10				
	1					1		LS	TRAFFIC CONTROL (U.S. 4 - BRIDGE NO. 3W)	641.10				
1	1	1	1	1	1	6		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15				
1	1	1	1	1	1	6		EACH	PORTABLE ARROW BOARD	641.16				
310	310	5	365	315	5	1310		LF	6 INCH WHITE LINE	646.214				
250	250	3	330	250	3	1086		LF	6 INCH YELLOW LINE	646.215				
310	310		365	315		1300		LF	TEMPORARY 6 INCH WHITE LINE	646.620				
250	250		330	250		1080		LF	TEMPORARY 6 INCH YELLOW LINE	646.630				
21	21		27	21		90		EACH	LINE STRIPING TARGETS	646.76				
1	1		1	1		4		LU	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT, SMALL QUANTITY) (N.A.B.I.)	900.650				
1	1		1	1		4		LU	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT) (N.A.B.I.)	900.650				
248	248		288	217		1001		TON	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	900.680				

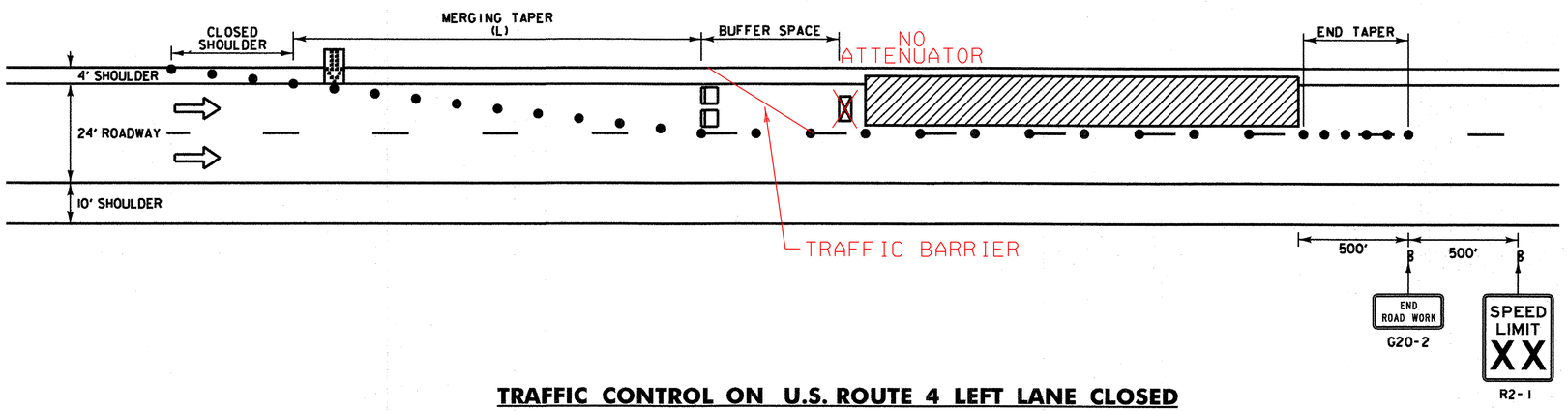
PROJECT NAME: FAIR HAVEN - RUTLAND
PROJECT NUMBER: BHF MEMB(2)

FILE NAME: QtySheet3.xls
PROJECT MANAGER: G. BOGUE
DESIGNED BY: S. BURBANK
QUANTITY SHEET #3

PLOT DATE: 08/11/2008
DRAWN BY: J. SOTER
CHECKED BY: G. BOGUE



CONSTRUCTION APPROACH SIGNING ON U.S. ROUTE 4 LEFT LANE CLOSED



TRAFFIC CONTROL ON U.S. ROUTE 4 LEFT LANE CLOSED

LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- PORTABLE ARROW BOARD
- TYPE III BARRICADE
- WORK AREA
- TRUCK/TRAILOR 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

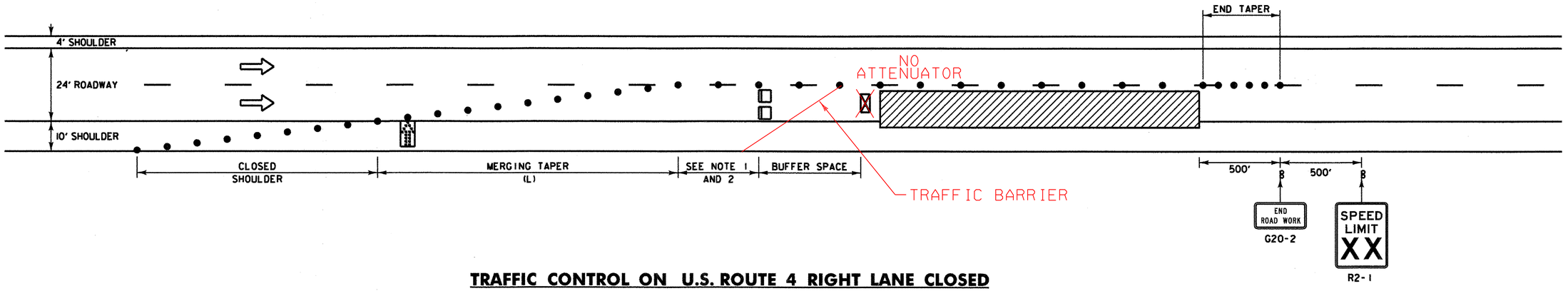
L = MINIMUM LENGTH OF TAPER
W = WIDTH OF OFFSET IN FEET. (TYPICAL)
S = POSTED SPEED IN MPH

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

Stantec

PROJECT NAME: FAIR HAVEN - RUTLAND	
PROJECT NUMBER: BHF MEMB(2)	
FILE NAME: ...\drawing\05-TCS 1.dgn	PLOT DATE: 8/6/2008
PROJECT LEADER: G. BOGUE	DRAWN BY: J. SOTER
DESIGNED BY: S. BURBANK	CHECKED BY: G. BOGUE
TRAFFIC CONTROL SHEET 1	SHEET 5 OF 45



TRAFFIC CONTROL ON U.S. ROUTE 4 RIGHT LANE CLOSED

LEGEND

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

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

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

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

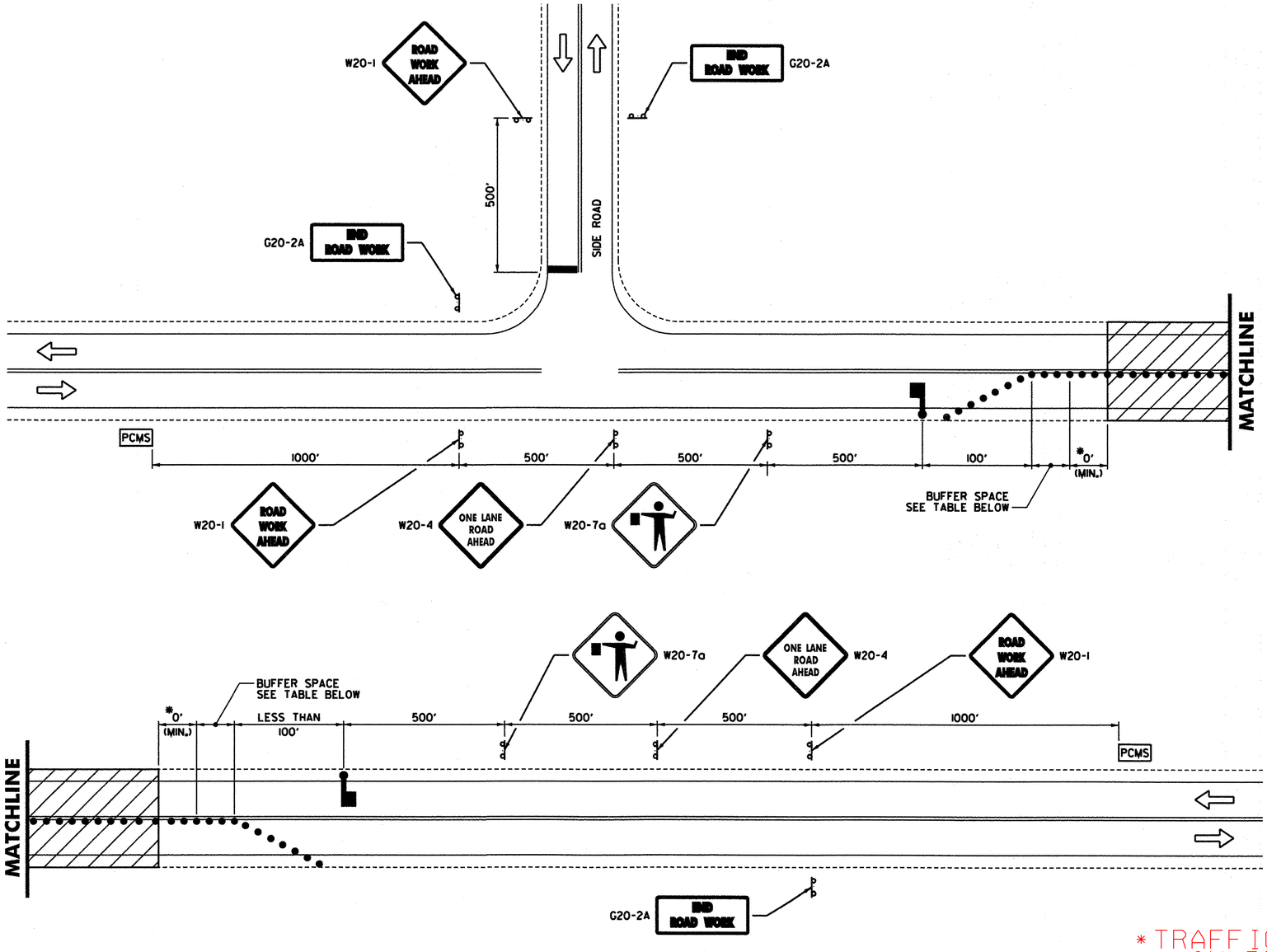
TRAFFIC CONTROL NOTES:

1. FOR BRIDGES 10E&W AND 16E&W TRAFFIC CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD E-106, "MAINLINE LANE CLOSURE AT AN EXIT RAMP".
2. FOR BRIDGES 3E&W, 19E&W AND 20E&W THE RIGHT LANE CLOSURE SHALL BE AS SHOWN ABOVE WITH ZERO FEET BETWEEN THE MERGING TAPER (L) AND THE BUFFER SPACE.
3. SEE THE TRAFFIC CONTROL NOTES ON THE PREVIOUS SHEET (TRAFFIC CONTROL SHEET 1) FOR ADDITIONAL NOTES AND APPROACH SIGNING FOR THE RIGHT LANE CLOSURE.

Stantec

PROJECT NAME: FAIR HAVEN - RUTLAND
PROJECT NUMBER: BHF MEMB(2)

FILE NAME: ...\drawing\06-TCS 2.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: S. BURBANK
PLOT DATE: 8/6/2008
DRAWN BY: J. SOTER
CHECKED BY: G. BOGUE
TRAFFIC CONTROL SHEET 2
SHEET 6 OF 45



* - ACTUAL DIMENSION TO BE DETERMINED BY INDIVIDUAL BRIDGE SITE CONDITIONS AND TO BE SHOWN ON TRAFFIC CONTROL PLANS SUBMITTED BY THE CONTRACTOR.

TRAFFIC CONTROL PLAN ON VT ROUTE 4A AND VT ROUTE 915

NOT TO SCALE

LEGEND

- FLOW OF TRAFFIC
- RETROREFLECTIVE PLASTIC DRUM
- WORK AREA
- FLAGGER
- PCMS — PORTABLE CHANGEABLE MESSAGE SIGN (SEE NOTE 13)

BUFFER SPACE TABLE

POSTED SPEED (MPH)	MINIMUM BUFFER SPACE LENGTH (FT)
35	250
40	305
45	360
50	425

TRAFFIC CONTROL NOTES:

1. THE TRAFFIC CONTROL PLAN SHOWN IS A SCHEMATIC ONLY AND SHOULD BE USED AS A REFERENCE. THE CONTRACTOR SHALL SUBMIT A SITE SPECIFIC TRAFFIC CONTROL PLAN FOR BRIDGES 1, 11 AND 12 TO VTRANS FOR APPROVAL. PAYMENT FOR PREPARING AND SUBMITTING THE TRAFFIC CONTROL PLAN, AND MAKING ANY NECESSARY REVISIONS TO THE PLAN, WILL BE INCLUDED IN THE UNIT PRICE BID FOR CONTRACT ITEM 641.10. THE CONTRACTOR SHALL ALLOW TWO WEEKS FOR APPROVAL OF THE TRAFFIC CONTROL PLAN. NO WORK SHALL COMMENCE UNTIL THE CONTRACTOR HAS AN APPROVED TRAFFIC CONTROL PLAN.
2. ANY PARKING AREAS OR DRIVES WITH AN ENTRANCE/EXIT BETWEEN THE FLAGGER AND THE WORK ZONE SHALL HAVE THAT ENTRANCE/EXIT CLOSED WITH CONES OR DRUMS, PROVIDED ADDITIONAL ENTRANCES/EXITS EXIST IN THE AREA APPROACHING THE FLAGGER.
3. ANY PUBLIC HIGHWAYS BETWEEN THE FLAGGER AND THE WORK ZONE WILL REQUIRE AN ADDITIONAL FLAGGER TO MAINTAIN TRAFFIC CONTROL FOR THE PUBLIC HIGHWAY.
4. SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS OR CORNER SIGHT DISTANCE FROM TOWN HIGHWAYS OR DRIVES.
5. 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).
6. 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.
7. ROLL UP SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM TYPE VI.
8. 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.
9. 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.
10. 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.
11. 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.
12. THE NUMBER OF CHANNELIZING DEVICES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE ACTUAL NUMBER REQUIRED ARE TO BE DETERMINED BY THE CONTRACTOR AND SHOWN ON THE TRAFFIC CONTROL PLAN SUBMITTED BY THE CONTRACTOR. WARNING LIGHTS SHALL NOT BE USED ON CHANNELIZING DEVICES.
13. THE PORTABLE CHANGEABLE MESSAGE SIGN (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 "ONE WAY TRAFFIC AHEAD BE PREPARED TO STOP".
14. THE CONTRACTOR SHALL REDUCE TRAFFIC TO ONE LANE DURING WORKING HOURS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. ALL EQUIPMENT SHALL BE MOVED TO A LOCATION OFF PAVED SHOULDERS DURING NON-WORK PERIODS, AND PROTECTED BY BARRELS OR CONES. NORMAL TRAFFIC LANES SHALL BE RESTORED DURING NON-WORK PERIODS AND TEMPORARY TRAFFIC SIGNS REMOVED OR COVERED.

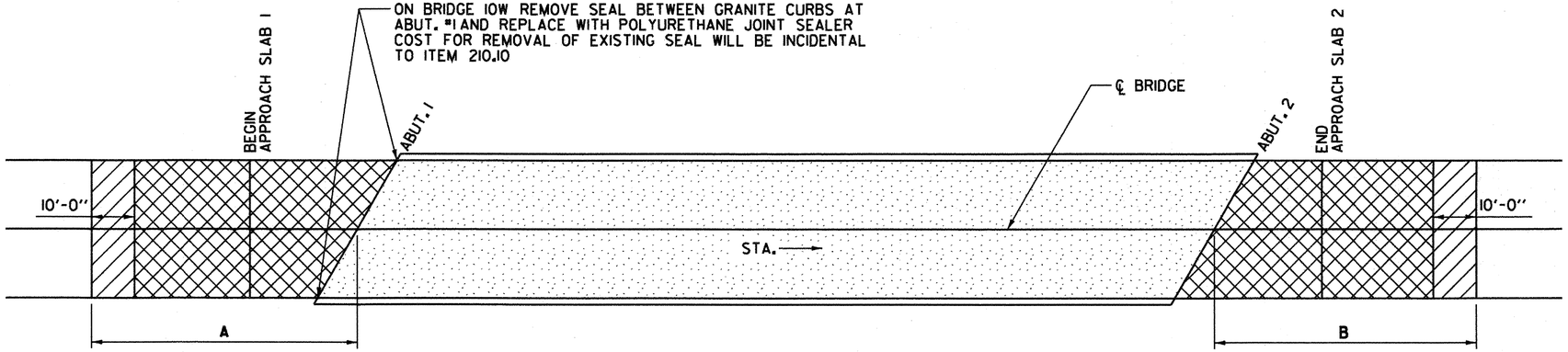
* TRAFFIC SIGNALS USED ON BR #11 & #12

Stantec

PROJECT NAME: FAIR HAVEN - RUTLAND	
PROJECT NUMBER: BHF MEMB(2)	
FILE NAME: ...\drawing\07-TCS 3.dgn	PLOT DATE: 8/6/2008
PROJECT LEADER: G. BOGUE	DRAWN BY: J. SOTER
DESIGNED BY: S. BURBANK	CHECKED BY: G. BOGUE
TRAFFIC CONTROL SHEET 3	SHEET 7 OF 45

* - ON BRIDGE 10W THE DISTANCE "A" SHALL BE FROM ABUT. #1A AND DISTANCE "B" SHALL BE FROM ABUT. #2A. SEE REFERENCE PLANS FOR BRIDGE 10W.

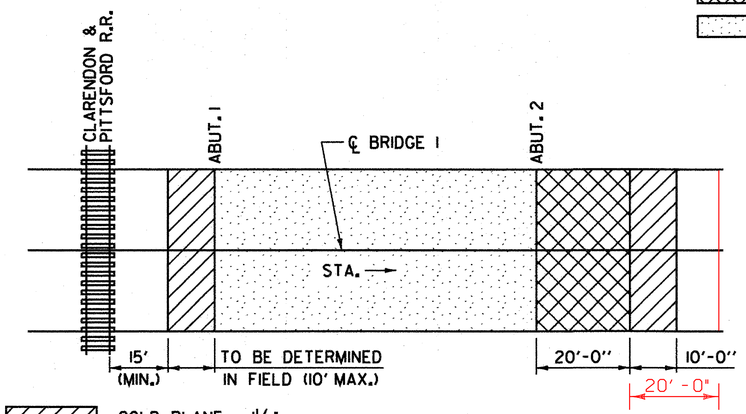
BRIDGE NO.	A(FT)	B(FT)	
*10 WEST	45.0	50.0	
16 EAST	40.0	40.0	
19 EAST 40'	~~30.0~~	~~30.0~~	40'
20 EAST	30.0	0.0	
20 WEST	~~30.0~~	0.0	150'
11	40.0	40.0	
12	60.0	60.0	



COLD PLANE - 1½"

COLD PLANE - TO THE TOP OF THE APPROACH SLABS FOR BRIDGE 10W AND COLD PLANE 3" ON BRIDGES 11, 12, 16E&W, 19E AND 20E&W.

COLD PLANE - TO THE TOP OF THE CONCRETE BRIDGE DECK 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.



COLD PLANE - 1½"

COLD PLANE - 3"

COLD PLANE - TO THE TOP OF THE CONCRETE BRIDGE DECK 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.

BRIDGE 1 BITUMINOUS CONCRETE REMOVAL & REPLACEMENT PLAN

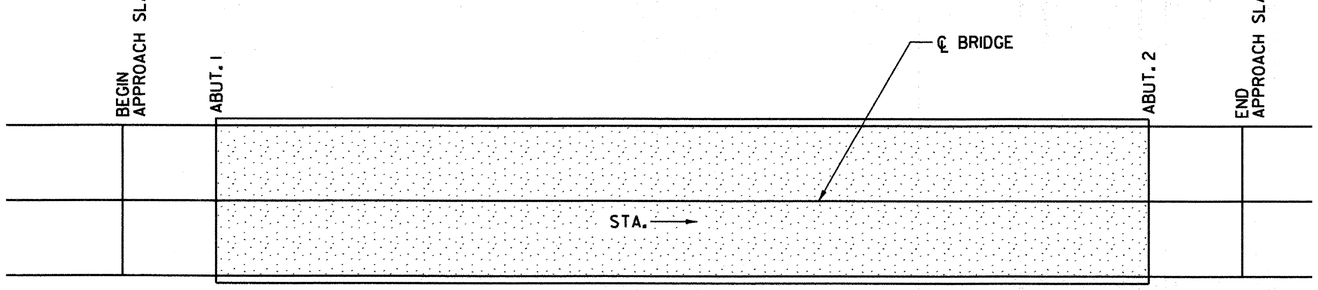
NOT TO SCALE

BRIDGE 1 NOTES:

1. ALL WORK SHALL START 15 FEET (MIN.) FROM THE RAILROAD TRACK.
2. BRIDGE 1 DOES NOT HAVE A CURB. THE EXISTING BITUMINOUS CONCRETE PAVEMENT UNDER AND BEHIND THE GUARDRAIL SHALL BE REMOVED AND NEW PAVEMENT, PLACED, SPREAD, AND COMPACTED BY HAND METHODS. THE CONTRACTOR SHALL EXERCISE EVERY REASONABLE PRECAUTION TO PREVENT BITUMINOUS MATERIALS FROM FALLING INTO THE WATER IN ACCORDANCE WITH SUBSECTION 105.24 DURING REMOVAL AND PLACEMENT OF THE BITUMINOUS CONCRETE PAVEMENT.
3. THE SHEET MEMBRANE WATERPROOFING SHALL BE PLACED TO THE EDGES OF THE CONCRETE BRIDGE DECK AND CUT TO FIT AROUND THE BRIDGE RAIL POST'S BASE PLATES.

BRIDGES 10W, 11, 12, 16E, 19E & 20E&W BITUMINOUS CONCRETE REMOVAL & REPLACEMENT PLAN

NOT TO SCALE



COLD PLANE - TO THE TOP OF THE CONCRETE BRIDGE DECK AND REMOVE THE BARRIER MEMBRANE ON BRIDGE 3E&W.
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.

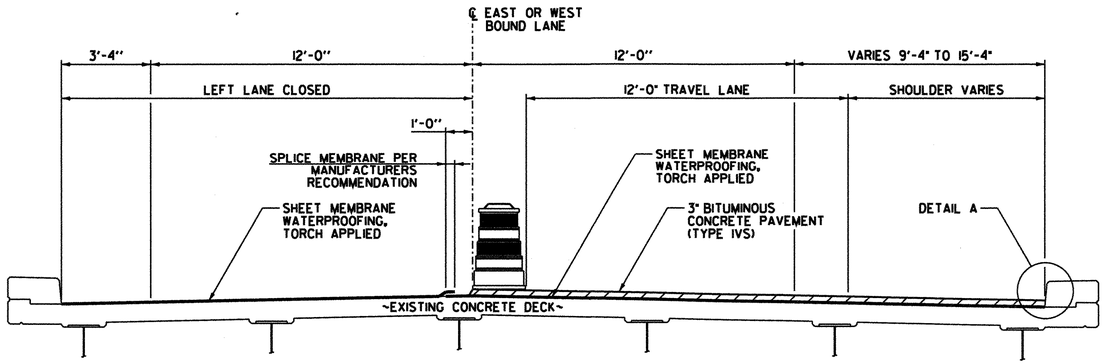
BRIDGE 3E&W BITUMINOUS CONCRETE REMOVAL & REPLACEMENT PLAN

NOT TO SCALE

Stantec

PROJECT NAME: FAIR HAVEN - RUTLAND
PROJECT NUMBER: BHF MEMB(2)

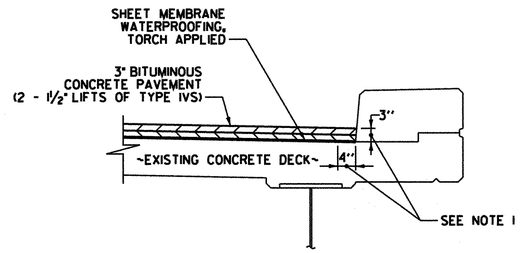
FILE NAME: ...\drawing\08-Conc Remov Plan.dgn PLOT DATE: 8/6/2008
PROJECT LEADER: G. BOGUE DRAWN BY: J. SOTER
DESIGNED BY: S. BURBANK CHECKED BY: G. BOGUE
BITUMINOUS CONCRETE REMOVAL PLAN SHEET 8 OF 45



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 VT ROUTE 4A AND 915 DETAIL.

MEMBRANE SPLICE DETAIL U.S. ROUTE 4

NOT TO SCALE

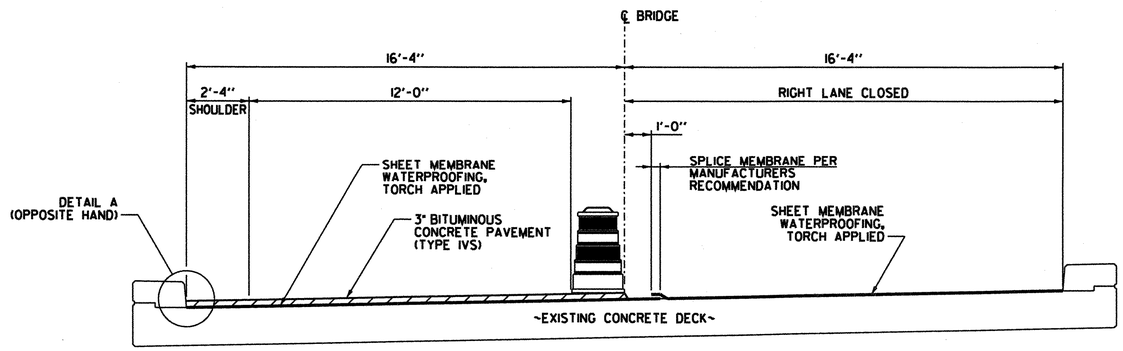


DETAIL A

NOT TO SCALE

DETAIL A NOTES:

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



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 LOWSIDE OF THE BRIDGE. THE SPLICE SHALL BE AS SHOWN ABOVE, WITH THE HIGH SIDE OVERLAPPING THE LOW SIDE.

MEMBRANE SPLICE DETAIL VT ROUTE 4A AND 915

NOT TO SCALE

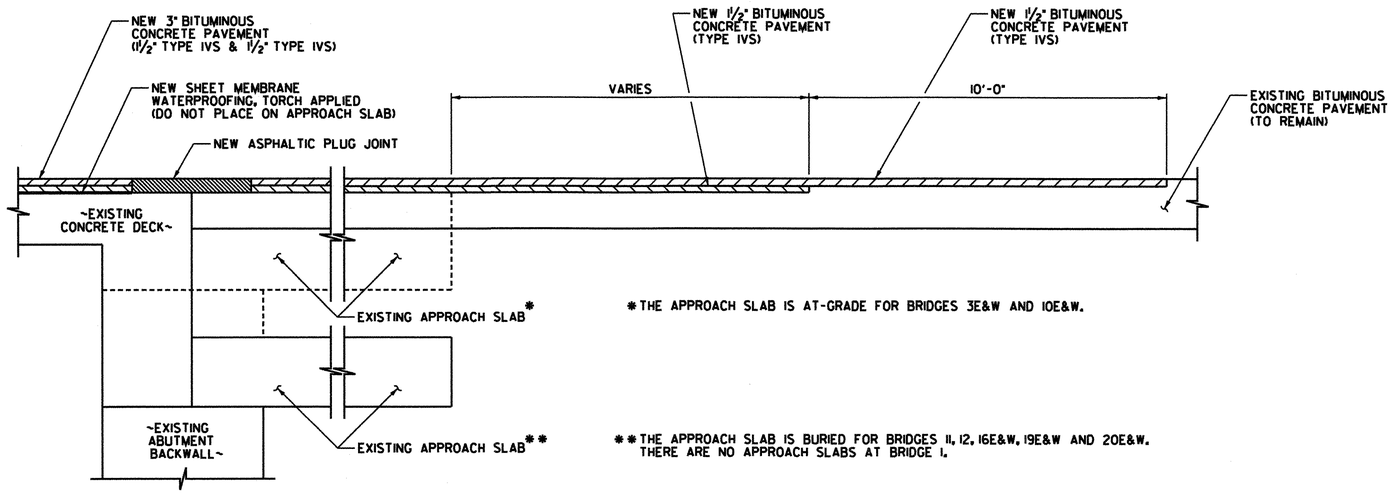
ASPHALTIC PLUG JOINT REPLACEMENT SCHEDULE

BRIDGE NO.	ABUT. 1A	ABUT. 1	ABUT. 2	ABUT. 2A
10 EAST	--	--	--	48 FT
10 WEST	47 FT	47 FT	--	47 FT
*16 EAST	--	37 FT	37 FT	--
*16 WEST	--	37 FT	--	--
*19 EAST	--	--	43 FT	--
*19 WEST	--	--	43 FT	--
** 1	--	36 FT	36 FT	--
* II	--	40 FT	40 FT	--
* 12	--	38 FT	38 FT	--

* - BURIED APPROACH SLAB, GALVANIZED STEEL PLATE NOT REQUIRED.
** - NO APPROACH SLAB, GALVANIZED STEEL PLATE NOT REQUIRED. (SEE ASPHALTIC PLUG-TYPE JOINT DETAIL ON SHEET 10).

BRIDGE LENGTH AND WIDTH (CURB TO CURB)

	WIDTH (CURB TO CURB) (FEET)	LENGTH (FEET)
3 EAST	42.67	243.34
3 WEST	42.67	243.34
10 EAST	36.67	233.46
10 WEST	36.67	233.46
16 EAST	36.67	165.50
16 WEST	36.67	165.50
19 EAST	36.67	207.04
19 WEST	36.67	247.04
20 EAST	36.67	364.50
20 WEST	36.67	364.50
I	34.83	69.00
II	32.67	62.45
12	32.67	46.19



*THE APPROACH SLAB IS AT-GRADE FOR BRIDGES 3E&W AND 10E&W.

**THE APPROACH SLAB IS BURIED FOR BRIDGES 11, 12, 16E&W, 19E&W AND 20E&W. THERE ARE NO APPROACH SLABS AT BRIDGE 1.

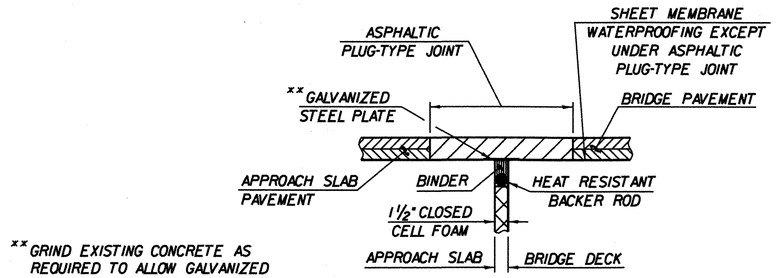
TYPICAL APPROACH SECTION

NOT TO SCALE

Stantec

PROJECT NAME: FAIR HAVEN - RUTLAND
PROJECT NUMBER: BHF MEMB(2)

FILE NAME: ...\drawing\09-Bit Conc Dets.dgr PLOT DATE: 8/8/2008
PROJECT LEADER: G. BOGUE DRAWN BY: J. SOTER
DESIGNED BY: S. BURBANK CHECKED BY: G. BOGUE
BITUMINOUS CONCRETE DETAILS SHEET 9 OF 45



** GRIND EXISTING CONCRETE AS REQUIRED TO ALLOW GALVANIZED PLATE TO BE INSTALLED LEVEL. GALVANIZED PLATE IS REQUIRED ON BRIDGES IOE AND IOW ONLY.

ASPHALTIC PLUG-TYPE JOINT DETAIL

NTS

ASPHALTIC PLUG JOINT NOTES

1. INSTALLATION

A. LOCATE THE JOINT CENTRALLY OVER THE DECK OVERLAY EXPANSION GAP OR FIXED JOINT MARKED OUT TO THE MANUFACTURER'S RECOMMENDED WIDTH.

B. EXCAVATE THE JOINT AS SHOWN ON THE PLANS WITH SAWS AND PNEUMATIC HAMMER OR A HAMMER AND CHISEL.

C. BLAST CLEAN THE JOINT AREA OF DEBRIS AND ASPHALT. THOROUGHLY DRY THE JOINT AREA WITH HOT COMPRESSED AIR PRIOR TO APPLYING BINDER MATERIAL.

D. REPAIR SPALLED AND DEFECTIVE CONCRETE WITH AN APPROVED MATERIAL AS AGREED UPON BY THE ENGINEER.

E. PLACE PROPERLY SIZED HEAT RESISTANT BACKER ROD IN THE MOVEMENT GAP ALLOWING FOR 1" +/- OF BINDER ABOVE THE ROD.

F. HEAT AND PLACE THE BINDER MATERIAL AS RECOMMENDED BY THE MANUFACTURER.

G. PLACE ¼" THICK BY 8" WIDE SECTIONS OF STEEL PLATE OVER THE CENTER OF THE MOVEMENT GAP. SECURE THE PLATES FROM MOVING BY INSERTING LOCATING PINS THROUGH THE PRESTAMPED HOLES INTO BACKER ROD AND COVER WITH HOT BINDER. 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.

H. HEAT AND MIX THE BINDER MATERIAL AND AGGREGATE AS RECOMMENDED BY THE MANUFACTURER.

I. INSTALLATION OF MATERIAL, COMPACTION, AND TOP COATING SHALL BE AS RECOMMENDED BY THE MANUFACTURER.

J. IMMEDIATELY AFTER TOP COATING, CAST AN ANTI-SKID MATERIAL OVER THE JOINT TO REDUCE THE RISK OF TRACKING.

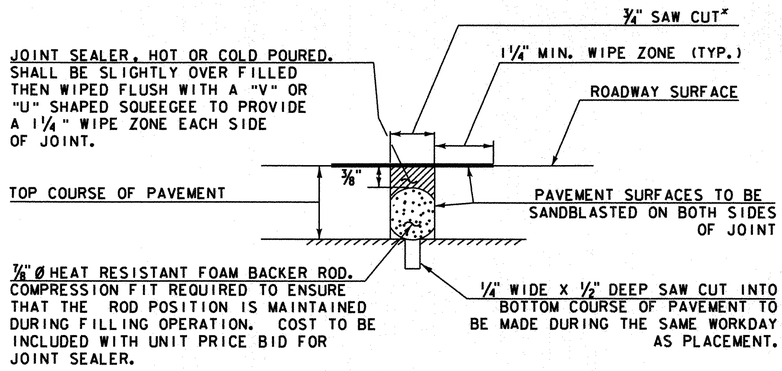
K. PROTECTED JOINT FROM TRAFFIC UNTIL THE MATERIAL HAS COOLED TO 51 DEG C (125 DEG F) +/-.

2. WEATHER LIMITATIONS. (APPLY BINDER MATERIAL ONLY WHEN THE FOLLOWING CONDITIONS PREVAIL):

A. THE AMBIENT AIR TEMPERATURE IS AT LEAST 10 DEG C (50 DEG 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.



NOTE: PLACE JOINT SEALER, HOT POURED AT THE BEGINNING OF APPROACH SLAB NO. 1 AND AT THE END OF APPROACH SLAB NO. 2 ON BRIDGE 10W.

SAWED PAVEMENT JOINT DETAIL

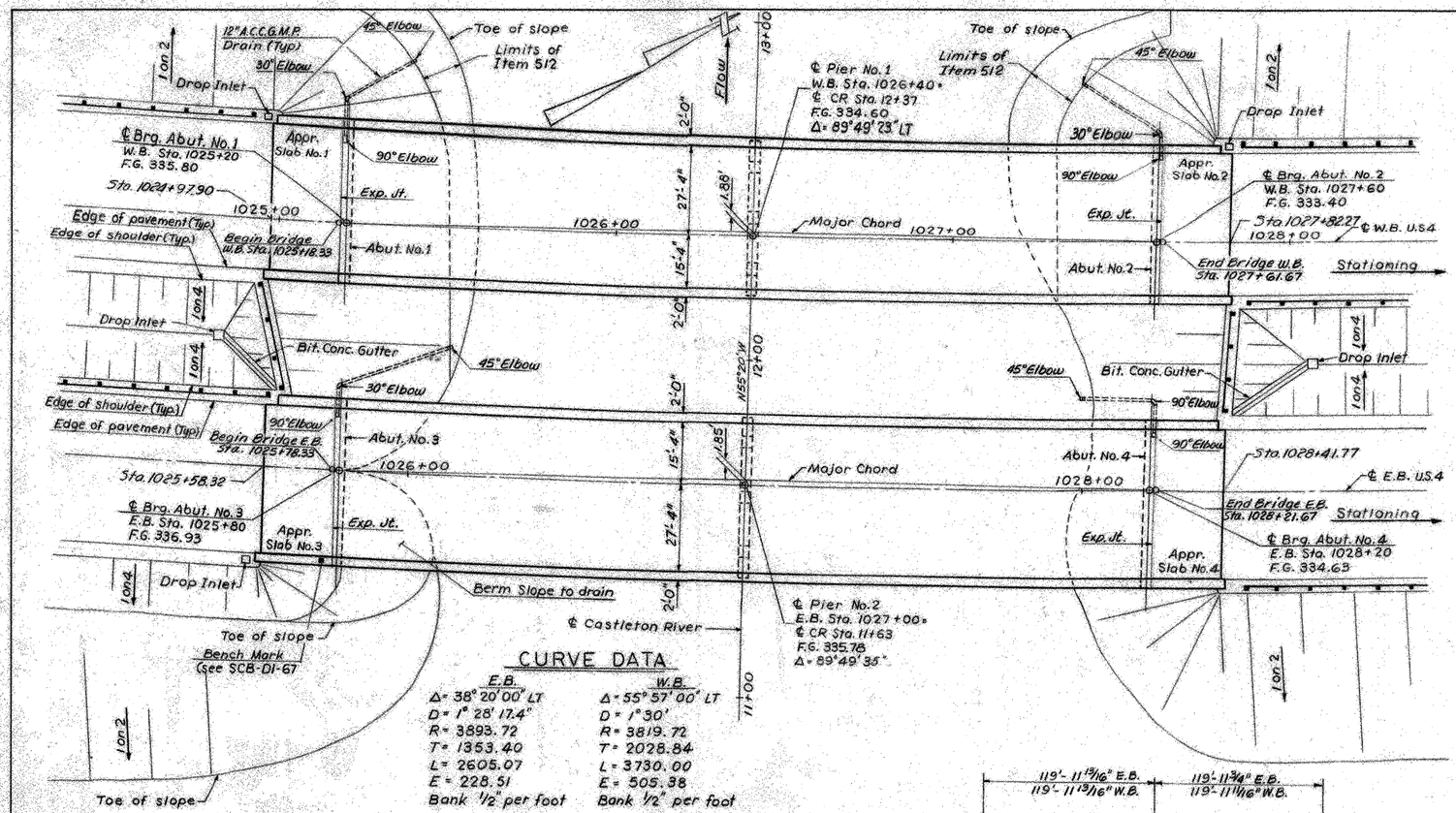
N. T. S.

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

Stantec

PROJECT NAME: FAIR HAVEN - RUTLAND
PROJECT NUMBER: BHF MEMB(2)

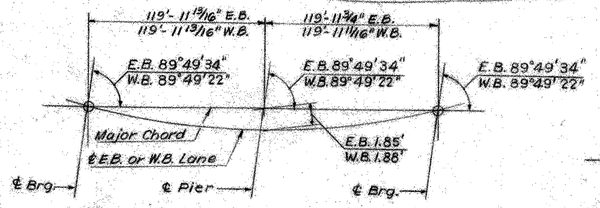
FILE NAME: ...\drawing\10-Pvmt Jt Dets.dgn PLOT DATE: 8/6/2008
PROJECT LEADER: G. BOGUE DRAWN BY: J. SOTER
DESIGNED BY: S. BURBANK CHECKED BY: G. BOGUE
PAVEMENT JOINT DETAILS SHEET 10 OF 45



CURVE DATA

E.B.	W.B.
Δ = 38° 20' 00" LT	Δ = 55° 57' 00" LT
D = 1° 28' 17.4"	D = 1° 30'
R = 3893.72	R = 3819.72
T = 1353.40	T = 2028.84
L = 2605.07	L = 3730.00
E = 228.51	E = 505.38
Bank 1/2" per foot	Bank 1/2" per foot

PLAN
Scale: 1" = 20'



LAYOUT FROM MAJOR CHORD
No Scale:

NOTE:
1. Piers and Abutments are parallel to the ℄ of the channel.
2. Fill material will be Bloated Crushed Slate. The Bloated Crushed Slate will be protected by a 6'-0" thick blanket as follows:
   Below Elev. 311 - 2' of Item 512 & 4' of Item 105 (Limits as shown)
   Above Elev. 311 & between fascia - 1' of Item 204 & 5' of Item 105.
   Elsewhere 6' of Item 105.

ELEVATION
Scale: 1" = 20'

DESIGN STRESSES

Concrete f'_c = 3,000 p.s.i.
f_c = 1,200 p.s.i.
Structural Steel = 20,000 p.s.i.
(A36, other steels as per AASHO specs)
Reinforcing Steel
f_s = 20,000 p.s.i. (tension)
f_s = 16,000 p.s.i. (compression)

GENERAL NOTES:

SPECIFICATIONS:
All materials and construction shall conform to the State of Vermont, Department of Highways, Standard Specifications for Highway and Bridge Construction, dated 1964 and AASHO Standard Specifications dated 1965, as modified by Current Interim Specifications.

LIVE LOAD:
Structure designed for HS 20-44 loading modified for National System of Interstate Highways applied in accordance with the provisions of the AASHO Standard Specifications Article 1.2.8.

CONCRETE:
All exposed edges of concrete shall be chamfered 1"x1" unless otherwise noted. All construction joints to be made as shown on SCB-D6-67, Details B & C unless otherwise noted.

REINFORCEMENT:
All reinforcement to have a clear cover of 2", unless otherwise noted.

DIMENSIONS:
All dimensions given are measured horizontally or vertically unless otherwise noted. Dimensions given are for 68° F, unless otherwise noted. Elevation datum sea level based on nearest U.S. Government vertical control.

STRUCTURAL STEEL:
Item 404-A shall include all structural steel, copper, wrought iron, and any other materials indicated or required in the completed structure which are not otherwise classified.
All structural steel shall be structural carbon steel conforming to the requirements of the specifications for steel bridges and buildings A.S.T.M. Designation A-36-62T, except as otherwise noted.
The contractor shall submit complete details of the structural steel to the State of Vermont, Department of Highways, and receive their written approval prior to the start of fabrication. The steel details shall include provisions for cambering of beams for dead load deflection as well as erection diagrams and falsework details. The final coat of field paint shall be green.

WATER REPELLENT:
The top surface of safety walks, fascia, and back to the fascia beam under the slab, on the sides and ends of all pier caps, and on exposed areas of piers and abutments not otherwise treated shall be covered with Water Repellent (Item 440).

FIELD BOLTING:
Field bolted connections shall be made with 7/8" ϕ A325 High Strength Bolts. A490 bolts are not allowed.

ABUTMENTS & PIERS:
The top surfaces of all abutments and piers shall be sloped 1/4" /ft. from the front edge of abutment curtainwalls or center lines of piers, to drain except for bearing pads, which shall be level. Elevation of bridge seats given are for center line of bearings. The entire exposed top surface of abutments and piers shall be coated with Asphaltic-Asbestos Coating 1/2" thick as per Item 407 of the specifications. The application of this item shall be after all painting and incidental items are completed.

GENERAL:
Cross slopes of approach slabs to conform to the cross slope of the bridge. All expansion material shall be premoulded cork containing no bitumen or asphalt.

BITUMINOUS CONCRETE PAVEMENT:
Bituminous Concrete Pavement Item 361 Modified, Type IV. shall be applied in two courses.

PILES:
Cast-in-Place Concrete Piling or Prestressed Concrete Piling. Type will be chosen by alternate bids. Design Load = 40 Tons/pile (Vertical) ; 0 Tons/pile (horizontal)

PILE LOADING TESTS:
Pile loading tests, Item 505, shall be used and paid for only when directed by the Engineer.

INDEX OF DRAWINGS

BR 301	PLAN & ELEVATION
BR 302	QUANTITY SHEET
BR 303	PRELIMINARY INFORMATION SHEET.
BR 304	BORING LOG
BR 305	BORING LOG
BR 306	BORING LOG
BR 307	SUPERSTRUCTURE DETAILS
BR 308	SUPERSTRUCTURE DETAILS
BR 309	SUPERSTRUCTURE DETAILS
BR 310	JOINT DETAILS
BR 311	ABUTMENT No. 1, WINGWALL No. 1
BR 312	ABUTMENT No. 2, WINGWALL No. 2
BR 313	ABUTMENT No. 3, WINGWALL No. 3
BR 314	ABUTMENT No. 4, WINGWALL No. 4
BR 315	FOOTING DETAILS ABUTMENTS 1 & 2 AND TYPICAL SECTIONS
BR 316	FOOTING DETAILS ABUTMENTS 3 & 4 AND TYPICAL SECTIONS
BR 317	PIER No. 1 & PIER No. 2.
BR 318	APPROACH SLAB No. 1
BR 319	APPROACH SLAB No. 2
BR 320	APPROACH SLAB No. 3
BR 321	APPROACH SLAB No. 4
BR 322	REINFORCING STEEL DETAILS
BR 323	REINFORCING STEEL DETAILS
BR 324	REINFORCING STEEL DETAILS

STANDARD I

SCB-D1-67	BE NO
SCB-D5-67	DE AT
SCB-D6-67	CO
SB-R2-65	STEEL RAILING DETAILS.
SB-R1-64	(SHEETS 1 & 2) ALUMINUM RAILING DETAILS.
SCB-D2-67	HAUNCH DETAILS.
SCB-D4-67	DECK REINFORCING LAYOUT AT ABUT.
SB-A5-65	CURB JOINT DETAILS
	PRESTRESSED CONCRETE PILES - JOINT COMMITTEE, AASHO COMMITTEE ON BRIDGES & STRUCTURES & PRESTRESSED CONCR. INST.
SB-P1-66	CAST-IN-PLACE CONCRETE PILING

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 11 OF 45
BRIDGE 3 & 4 W
FOR REFERENCE ONLY

Addition: Bridge Railing for Bridge Approaches 3-25-69 RPG

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF FAIR HAVEN

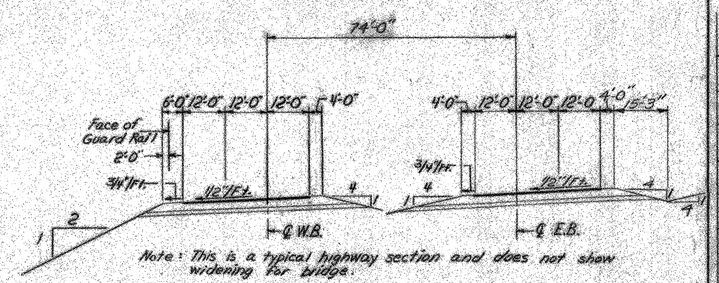
U.S. ROUTE 4 RELOCATED OVER CASTLETON RIVER

PLAN AND ELEVATION

McFARLAND-JOHNSON
CONSULTING ENGINEERS
BINGHAMTON, NEW YORK

DESIGNED BRK CHECKED R.C. DATE 11-2-67
DRAWN R.D. IN CHARGE H.G.C. SCALE AS NOTED
PROJECT NO. F 020-1(4)SH 132/170 OF 538/815
CONTRACT NO.

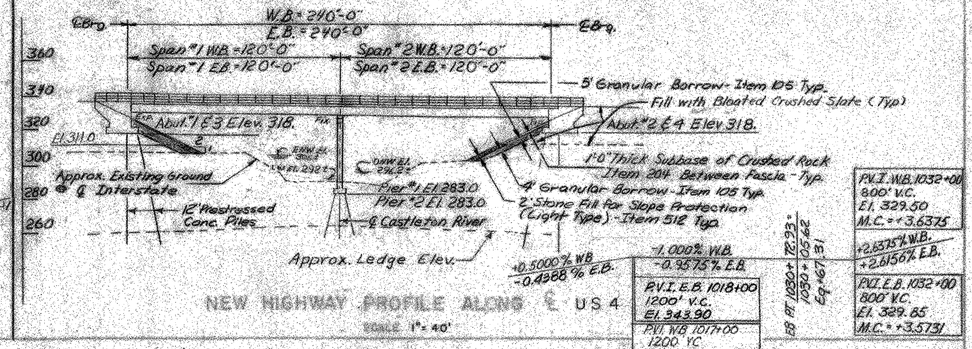
(8) BR 301



Note: This is a typical highway section and does not show widening for bridge.

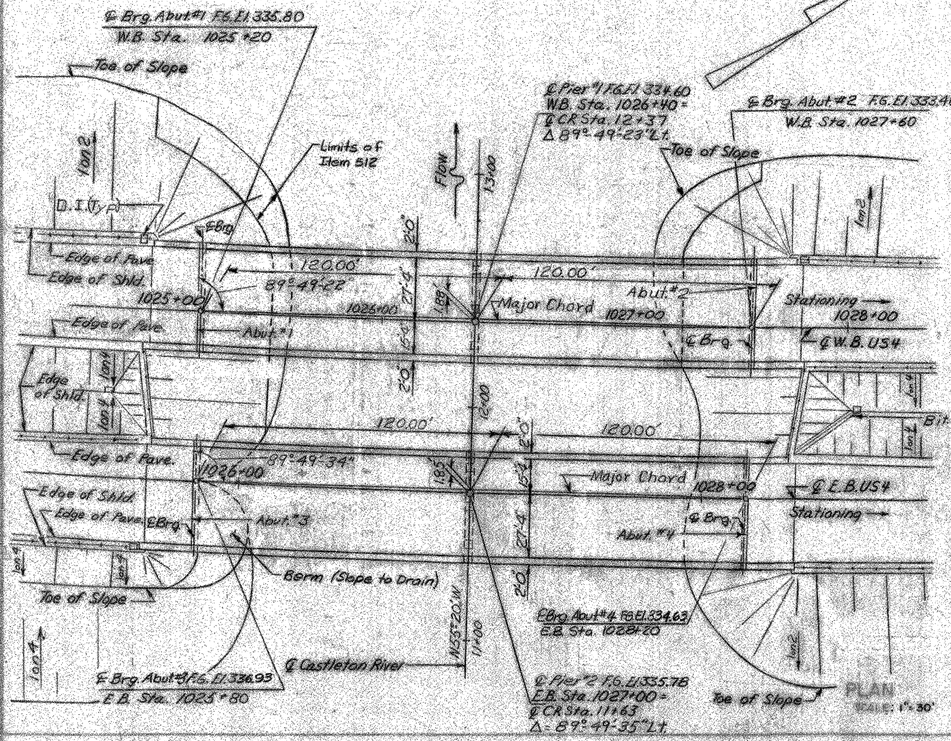
NEW HIGHWAY SECT. STA. 1024+00

SCALE 1"= 20'



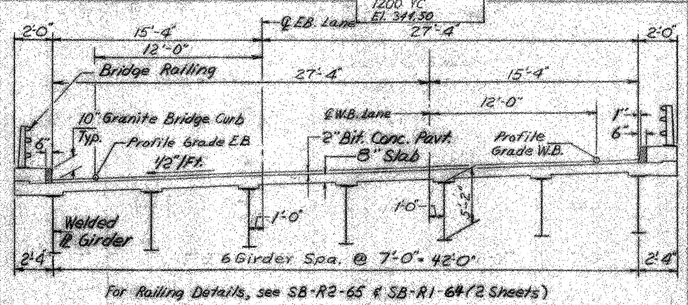
NEW HIGHWAY PROFILE ALONG ℄ US 4

SCALE 1"= 40'



PLAN

SCALE 1"= 30'



For Railing Details, see SB-R2-65 & SB-R1-64 (2 Sheets)

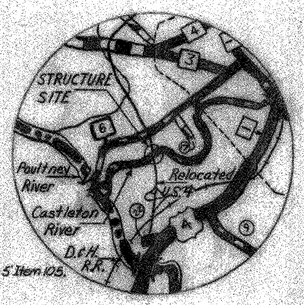
TYPICAL SECTION

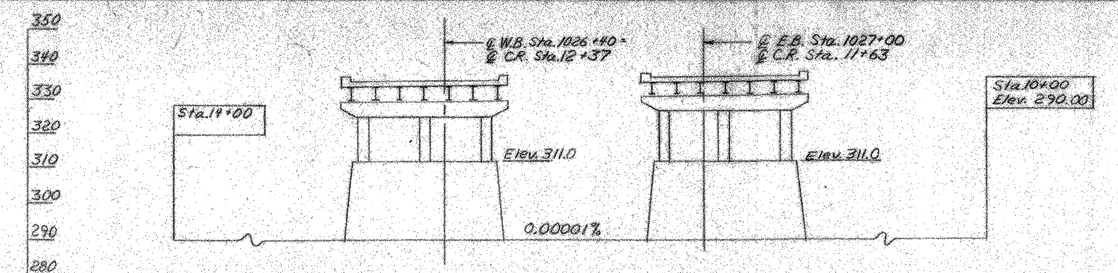
SCALE 1"= 5'

CURVE DATA

E.B.	W.B.
Δ = 38°-20'-00" Lt.	Δ = 55°-57'-00" Lt.
D = 1°-28'-17.4"	D = 1°-30'
R = 3893.72	R = 3819.72
T = 1353.40	T = 2028.84
L = 2605.07	L = 3730.00
E = 228.51	E = 505.38
Bank 1/2" per foot	Bank 1/2" per foot

Note:
1. Piers and Abutments are parallel to the ℄ of the channel.
2. Fill Material will be Bloated Crushed Slate. The Bloated Crushed Slate will be protected by 6' thick blanket as follows:
   Below Elev. 311 - 2' Item 512 & 4' Item 105.
   Above Elev. 311 & between Fascia - 1' Item 204 & 5 Item 105.
   Elsewhere - 6' Item 105.





PROFILE OF PROPOSED STREAM CHANNEL

SCALE 1"= 20'

Note:
All materials and construction shall conform to the State of Vermont, Department of Highways, Standard Specifications for Highway and Bridge Construction, dated April 1964, and AASHO Standard Specification dated 1965, as modified by current Interim Specifications.
Structure designed for HS-20-44 loading modified for National System of Interstate Highways applied in accordance with the provisions of AASHO Standard Specifications Article 1.2.8.

Design Stresses:
Concrete - f'c = 3,000 psi.
fc = 1,200 psi.
Structural Steel - fs = 20,000 psi.
(A36 other steels as per AASHO Specifications)
Reinforcing Steel - fs = 20,000 psi. (tension)
fs = 16,000 psi. (compression)

HIGHWAY NO. US 4 NAME OF HIGHWAY US ROUTE 4

STRUCTURE NO. 3 COUNTY RUTLAND TOWN FAIR HAVEN

PROJECT NO. F020-1(4) LOCATION US ROUTE 4 RELOCATED OVER CASTLETON RIVER 5 MILES UPSTREAM FROM ITS OUTLET INTO THE POULTNEY 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 —

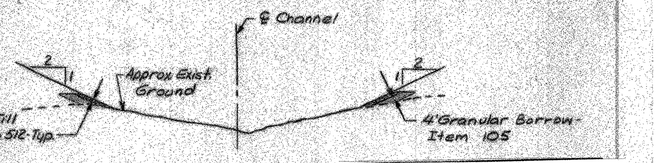
NEW STRUCTURE

1 RECOMMENDED TYPE OF STRUCTURE 2 Span continuous curved welded P.G. Girder - Composite
2 RECOMMENDED CLEAR SPAN OR SPANS 120'-0" - 120'-0"
MEASURED PARALLEL TO ℄ NEW HIGHWAY 120'-0", 120'-0"
MEASURED AT RIGHT ANGLES TO ℄ STREAM 120'-0", 120'-0"
3 ARE THERE OBJECTIONS TO A PIER IN THE STREAM? ANSWER YES OR NO No
4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE 296.2
5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE 306 SOURCE OF INFORMATION 1927 Flood
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 292.0
9 DRAINAGE AREA IN ACRES ABOVE STRUCTURE 23,552 CHARACTER OF TERRAIN Mountainous
10 IS STREAM EVER DRY No
11 VELOCITY OF STREAM AT HIGH WATER STAGE 4.908 fps ESTIMATED DISCHARGE 9731 cfs 1927 Flood
12 AREA FULL OPENING 6201 ft² AREA BELOW ORDINARY H.W. 665 ft²
13 CHARACTER OF SCOUR Moderate DRIFT Some ICE Moderate
14 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE 37.7 sq. miles
15 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION 23.5 ft.
16 ARE SIDEWALKS REQUIRED? IF SO ON WHAT SIDE? No BOTH SIDES —
17 RECOMMENDED TYPE OF PAVEMENT 2" Bituminous Concrete & 8" 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? No
21 ESTIMATED ALLOWABLE LOAD ON FOUNDATIONS 40 Tons/Pile SHOULD PILES BE USED? Yes KIND Prestressed Concrete Piles LENGTH See Below

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.

Estimated Pile Length
Abutment #1 - 80 ft. Abutment #3 - 65 ft.
Pier #1 - 35-55 ft. Pier #2 - 25 ft.
Abutment #2 - 60 ft. Abutment #4 - 70 ft.



TYPICAL CHANNEL SECTION
CASTLETON RIVER

SCALE 1"= 40'

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 12 OF 45
BRIDGE 3 E & W
FOR REFERENCE ONLY

RECOMMENDED FOR APPROVAL — CONSTRUCTION ENGINEER — 9/28/67 DATE

RECOMMENDED FOR APPROVAL — ASST. DIRECTOR OF PLANNING — 9/27/67 DATE

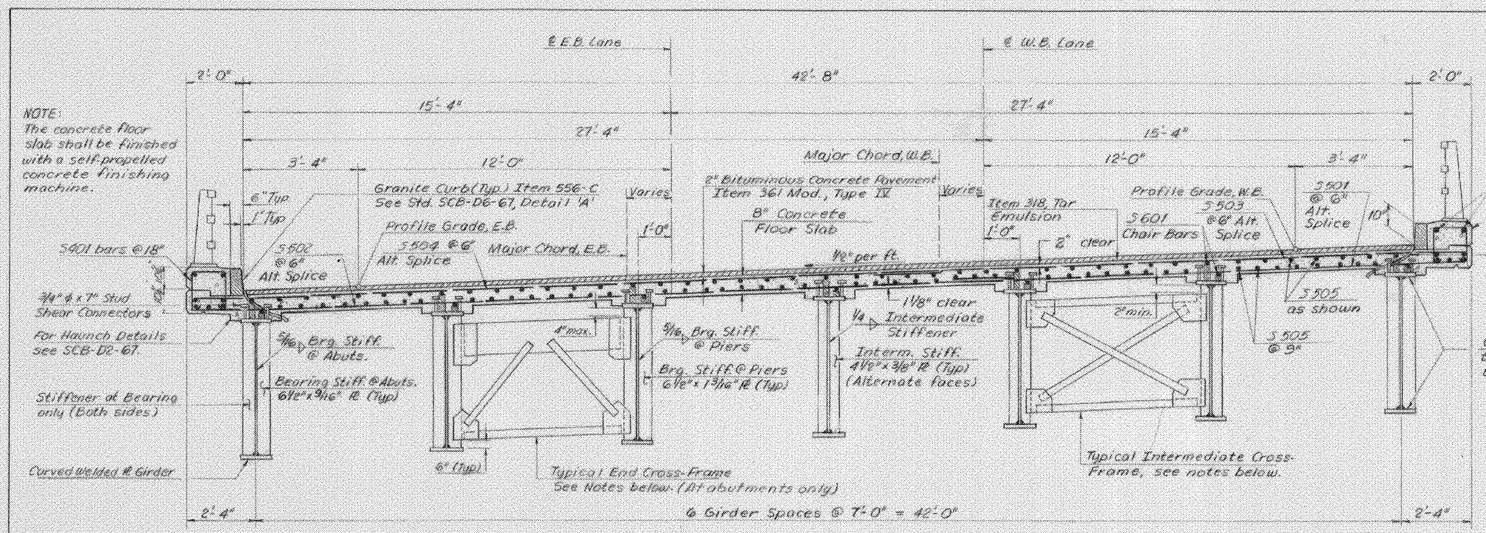
RECOMMENDED FOR APPROVAL — ASST. DIRECTOR OF PUBLIC WORKS — 9/28/67 DATE

APPROVED BY — CHIEF ENGINEER — 9/28/67 DATE

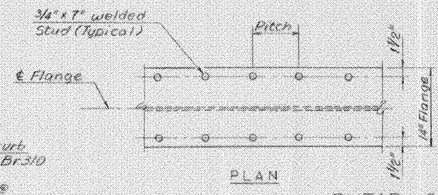
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
U.S. ROUTE 4 IN THE TOWNS OF FAIR HAVEN
ROUTE NO. 4 LOG STA W.B. 1026+40 E.B. 1027+00
U.S. RTE. 4 RELOC. OVER CASTLETON RIVER
McFARLAND-JOHNSON CONSULTING ENGINEERS
DRAWN BY JFM | CHECKED BY N.M. | ENGINEER OF P.S. — | SCALE AS SHOWN
SIGNED BY — | DATE —
PROJECT NO. F020 1(4) | SHEET 134 OF 532
(8) 172 255

Revisions: JHT 11-30-67
Bridge Width
Correction: Estimated Discharge 9731 cfs 1927 Flood, Velocity 4.908 fps.

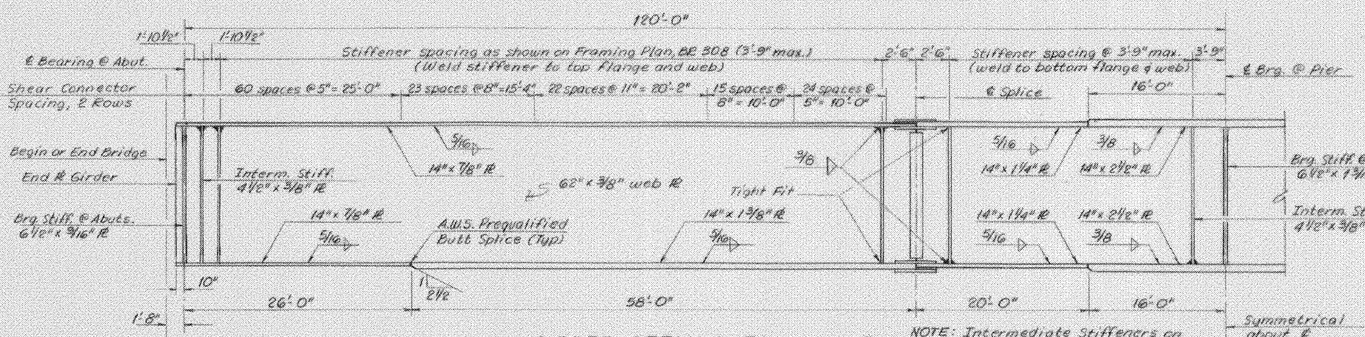
BR 303



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

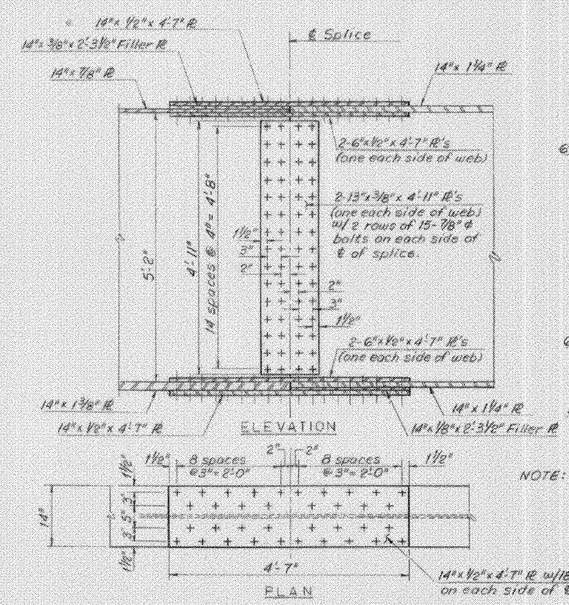


SHEAR CONNECTOR
No Scale



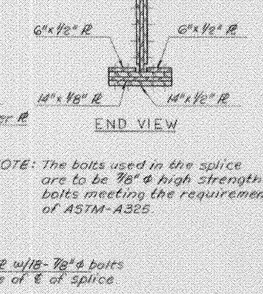
GIRDER DETAILS E.B. AND W.B.
FASCIA and INTERIOR
No Scale

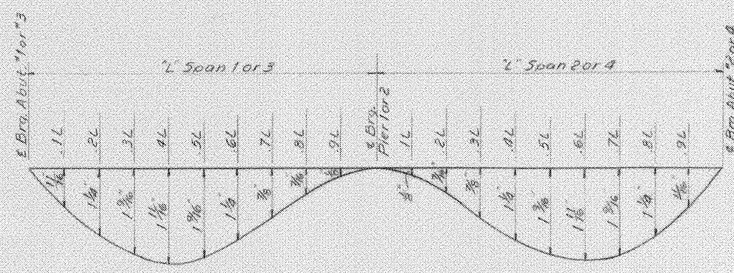
NOTE: Intermediate Stiffeners on inside face only @ fascia and on alternate sides @ interior girders.



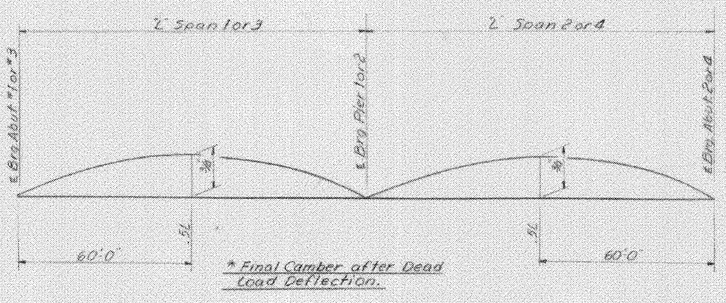
NOTE: The bolts used in the splice are to be 7/8" ϕ high strength bolts meeting the requirements of ASTM-A325.

SPLICE DETAILS
Scale: 3/4" = 1'-0"





DEFLECTION DIAGRAM
No Scale



* Final Camber after Dead Load Deflection.

CAMBER DIAGRAM
No Scale

MAX. LIVE LOAD DEFLECTION = 7/8"

NOTES
1. For General Notes see BR 301.
2. For Joint Details, see BR 310.
3. For Beam Haunch Details, see SCB-D2-67.
4. All studs are to be 3/4" ϕ x 7" welded studs. If 7/8" studs are used, increase the spacing shown for 3/4" ϕ studs by 50%.
5. CROSS-FRAME NOTES: All gusset and connection plates shall be 7/16" plates. Gusset plates shall be welded to stiffeners with a 5/16" fillet weld. All angles shall be L 4x4x3/8 angle.
6. All shop connections for cross-frames shall be 5/16" fillet welds. All field connections shall be 7/8" ϕ high strength bolts.
7. Connection plates shall be bolted to stiffeners.

Revision: Added Note No 7. 3-25-69 R.P.G.

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 13 OF 45
BRIDGE 3 E & W
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF FAIR HAVEN
U.S. ROUTE 4

U.S. ROUTE 4 RELOCATED OVER CASTLETON RIVER

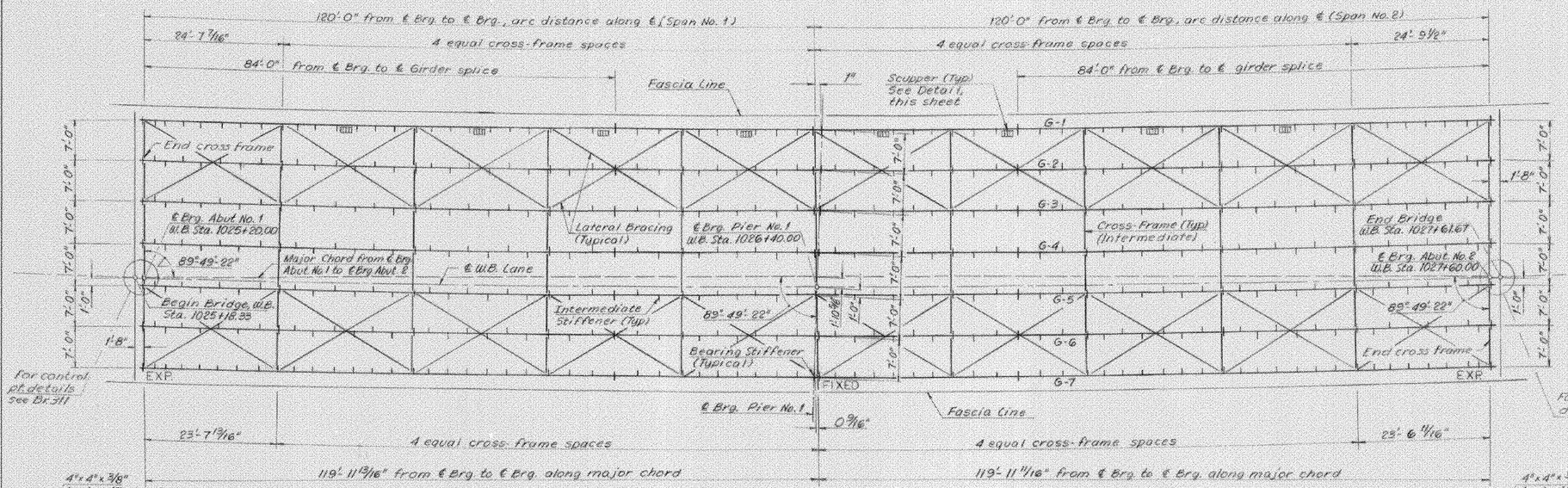
SUPERSTRUCTURE DETAILS

McFARLAND-JOHNSON
CONSULTING ENGINEERS
BINGHAMTON, NEW YORK

DESIGNED RFC	CHECKED REC	DATE 11-2-67
DRAWN EMG	IN CHARGE HGC	SCALE As Noted

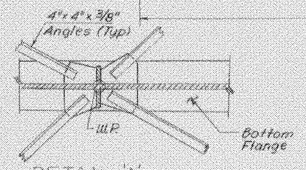
PROJECT NO. F020-1(4) SH 138 OF 532

CONTRACT NO. (8) BR 307 173 235

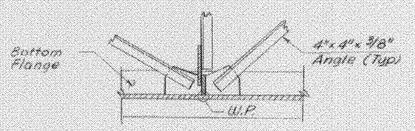


FRAMING PLAN - W.B.
Scale: 3/32" = 1'-0"

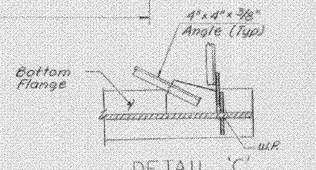
NOTE: Distance from ℄ Bearing to ℄ Bearing along ℄ girder is 120'-0" (Typical for all girders). Cross-frames to be radial from ℄ W.B. Lane.



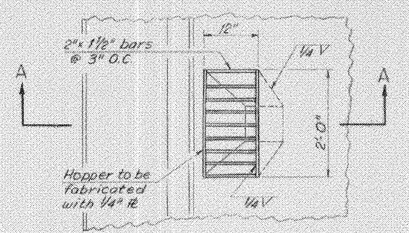
DETAIL 'A'
No Scale



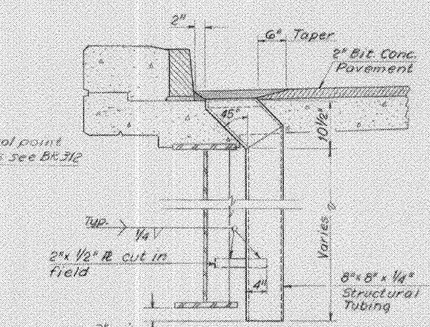
DETAIL 'B'
No Scale



DETAIL 'C'
No Scale



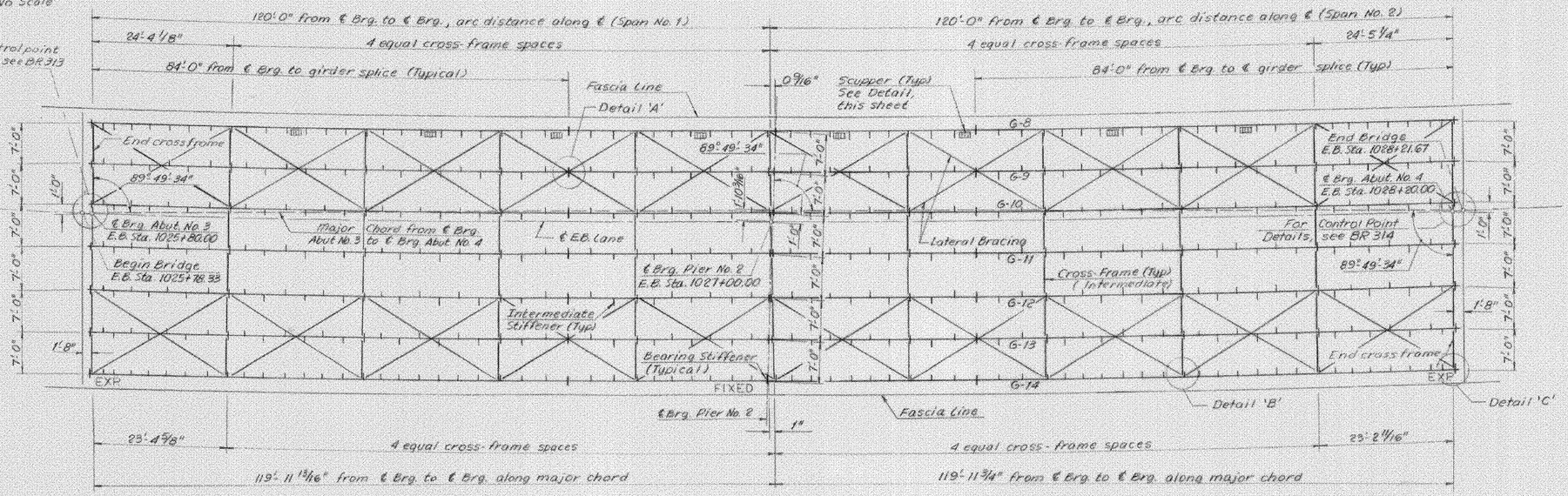
PLAN



SECTION A-A

SCUPPER DETAIL
Scale: 3/4" = 1'-0"

For control point details see BR 313



FRAMING PLAN - E.B.
Scale: 3/32" = 1'-0"

NOTE: Distance from ℄ Bearing to ℄ Bearing along ℄ girder is 120'-0" (Typical for all girders). Cross-frames to be radial from ℄ E.B. Lane

NOTES

1. For General Notes, see BR 301.
2. For Joint Details, see BR 310.
3. For Cross-Frame Notes & Girder Details, see BR 307.
4. All girders are concentric with ℄ W.B. Lane and E.B. Lane.
5. The application of heat, by the so-called "Heat Curving Method", may be used to produce curvature for the plate girders on this project with the following procedures:
   a. The edges of both top and bottom flanges shall be heated simultaneously to a heat not exceeding 1000°F.
   b. Members curved by heat shrinking after they are assembled shall not have the intermediate stiffeners and connection plates welded to the compression flange until the curving process has been completed and the desired curvature attained.
   c. For members positioned horizontally, the application of heat for cur… length of the … For members po… heat for curvin… length of the m… centers along …

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 14 OF 45
BRIDGE 3 E & W
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF FAIR HAVEN
U.S. ROUTE 4

U.S. ROUTE 4 RELOCATED OVER CASTLETON RIVER

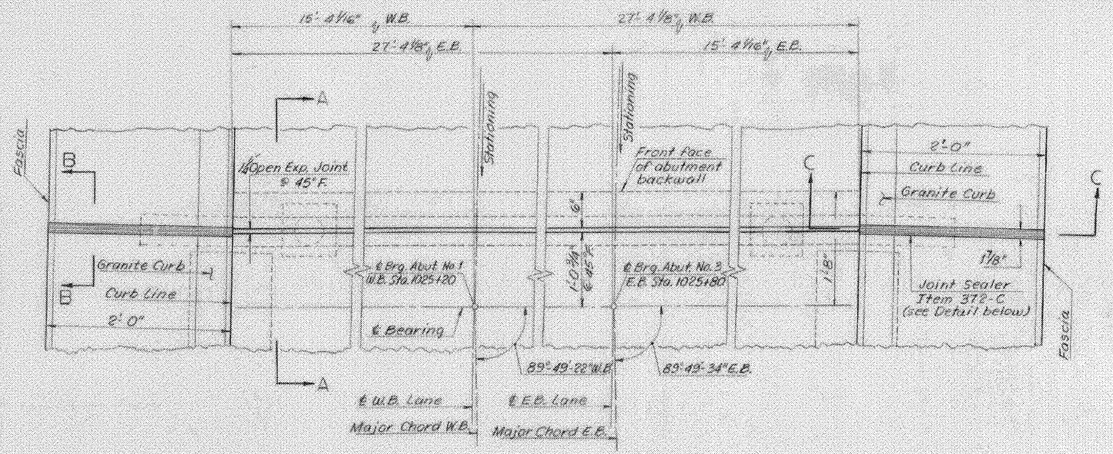
SUPERSTRUCTURE DETAILS

McFARLAND-JOHNSON
CONSULTING ENGINEERS
BINGHAMTON, NEW YORK

DESIGNED RFC	CHECKED REC	DATE 11-2-67	
DRAWN RMG	IN CHARGE HGC	SCALE As Shown	

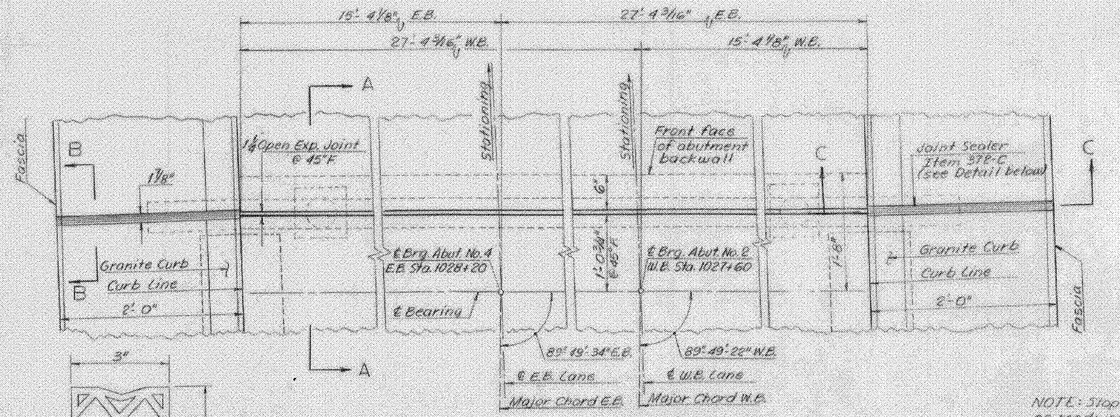
PROJECT NO. F020-1(4) SH 139 OF 532 174 235

CONTRACT NO. (8) BR 308



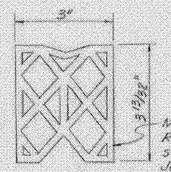
EXPANSION JOINT - ABUTS 1 AND 3

No Scale



EXPANSION JOINT - ABUTS 2 AND 4

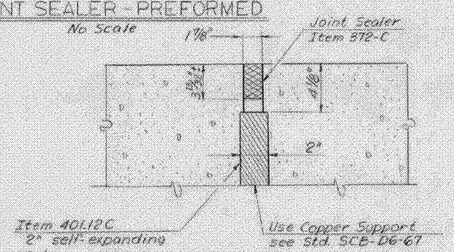
No Scale



Material to be Premolded Neoprene Rubber. Other configurations that satisfy specifications may be used. Joint Sealer used shall be paid at the same unit price as Item 372-C, Type A.

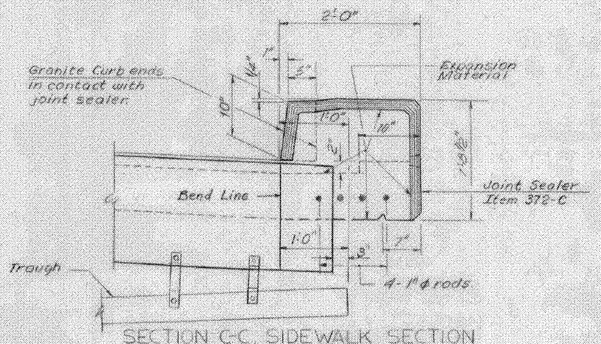
DETAIL - ITEM 372-C JOINT SEALER - PREFORMED

No Scale



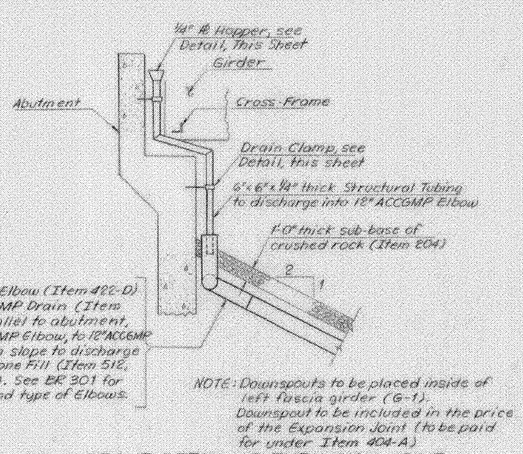
SECTION B-B

No Scale



SECTION C-C, SIDEWALK SECTION

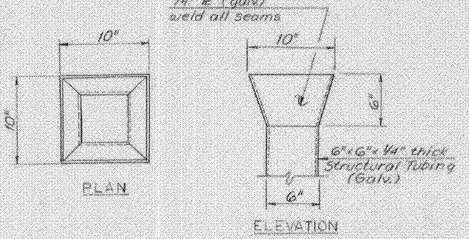
Scale: 1" = 1'-0"



NOTE: Downspouts to be placed inside of left fascia girder (G-1). Downspout to be included in the price of the Expansion Joint (to be paid for under Item 404-A)

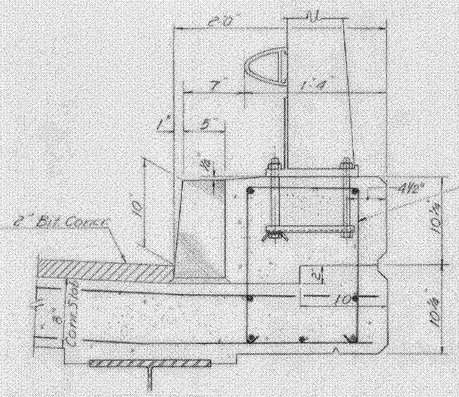
DOWNSPOUT DETAIL AT EXPANSION JOINT

No Scale



HOPPER DETAIL

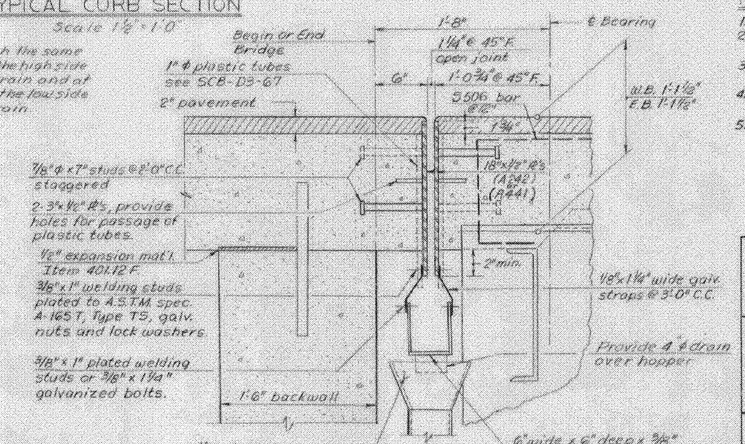
Scale: 1 1/2" = 1'-0"



TYPICAL CURB SECTION

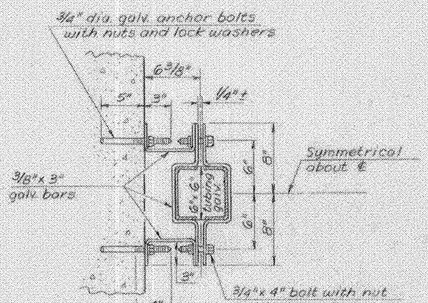
Scale 1 1/2" = 1'-0"

NOTE: Slope trough the same as roadway from the high side of the bridge to drain and at 1/8" per foot from the low side of the bridge to drain.



SECTION A-A

Scale: 1 1/8" = 1'-0"



CLAMP DETAIL

Scale: 1 1/2" = 1'-0"

NOTES

1. For General Notes, see BR 301.
2. Dimensions may vary as haunch is adjusted. Shim as required.
3. Expansion dam shall conform to slope of roadway.
4. Slope trough the same as roadway from high side of bridge.
5. Three (3) coats of paint shall be applied [illegible] 404.03 [illegible] of the [illegible] constr[illegible]

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 15 OF 45
BRIDGE 3 E & W
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF FAIR HAVEN
U.S. ROUTE 4

U.S. ROUTE 4 RELOCATED OVER CASTLETON RIVER

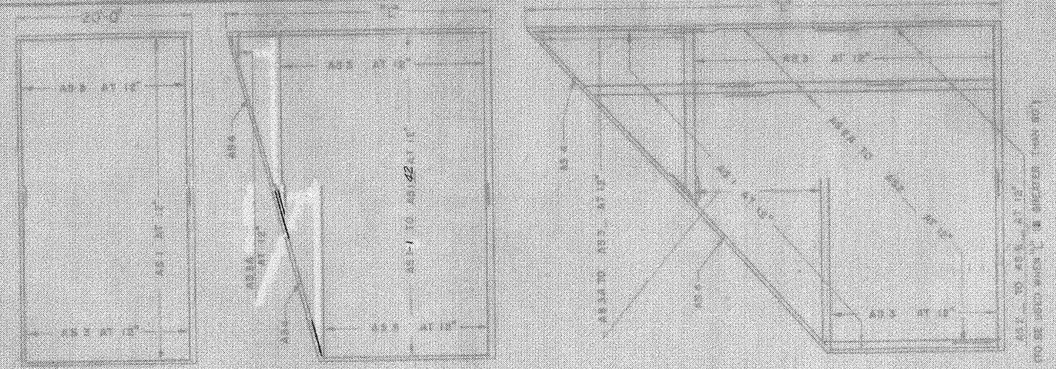
JOINT DETAILS

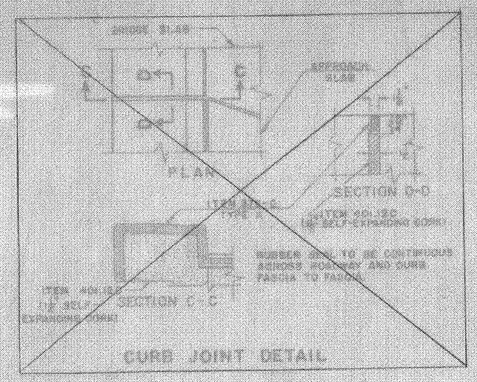
McFARLAND-JOHNSON
CONSULTING ENGINEERS
BINGHAMTON, NEW YORK

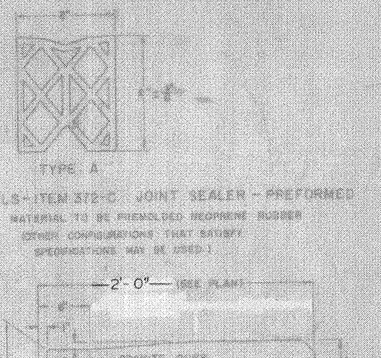
DESIGNED R.F.C.	CHECKED R.C.	DATE 11-2-67	
DRAWN R.M.G.	IN CHARGE H.G.C.	SCALE AS NOTED	

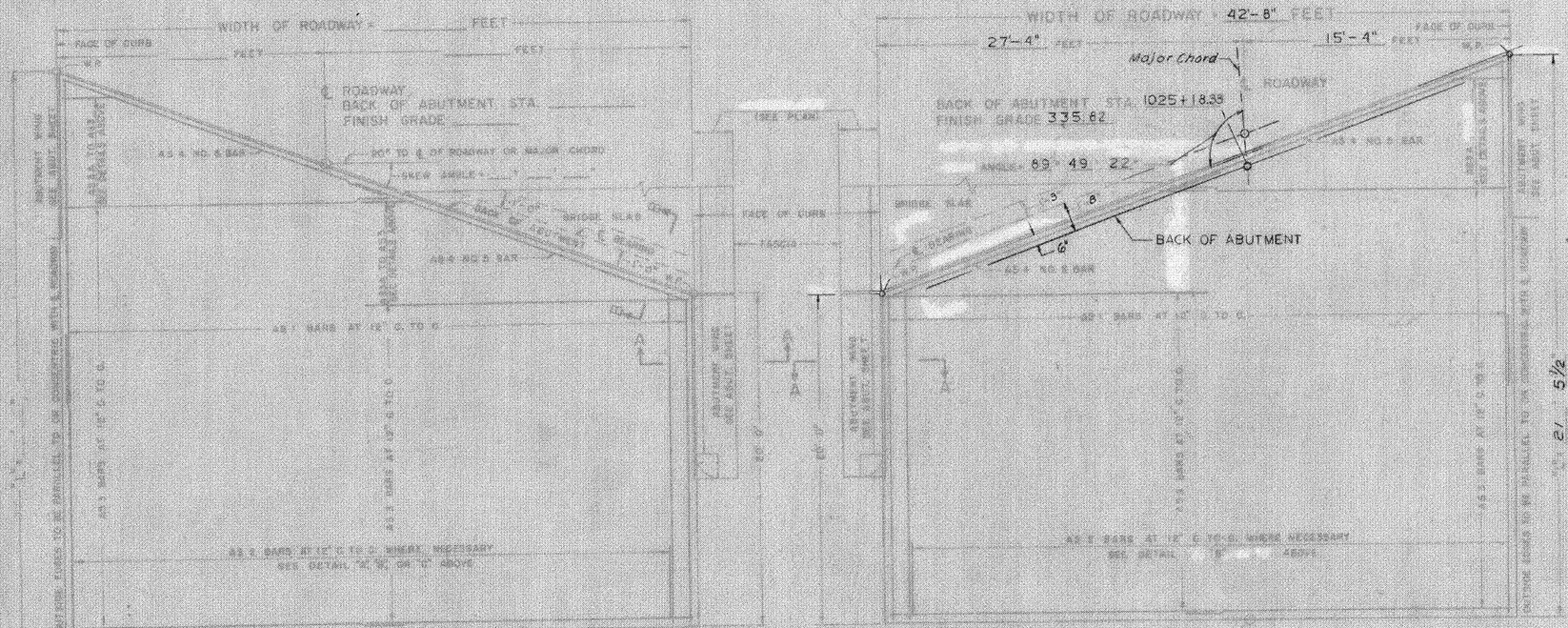
PROJECT NO F 020-1(4) SH 14A OF 53

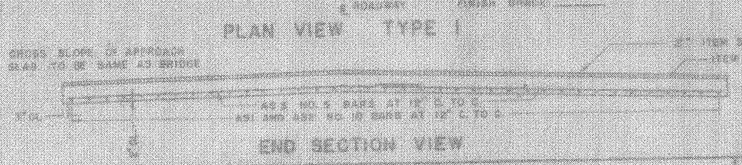
CONTRACT NO. (8) BR 310











GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1968, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1961. DESIGNED FOR HS20-44 LOADING.
2. ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.
3. BITUMINOUS CONCRETE PAVEMENT DEPTH SHALL BE 2" AT BRIDGE END AND VARY TO 3" AT THE ROADWAY END.

REINFORCING REMOVAL DETAILS

LIST OF QUANTITIES

ITEM NO.	ITEM	UNIT
518	TAR EMULSION FOR BRIDGE FLOORS	GAL.
501	BITUMINOUS CONCRETE PAVEMENT Mod. Type IV	TONS
519-A	JOINT SEALER - HOT POURED	L.F.
519-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
520-B	CONCRETE SLAB II	YD.
602	REINFORCING STEEL	LB.

DIMENSIONS AND CORRECTIONS

1. DIMENSIONS OF JOINT FOR SEALER TYPE A REVISED 4/18/68 WAT
2. DIMENSIONS OF JOINT SEALER TYPE B REVISED 8/22/68 WAT
3. JOINT BETWEEN CURB AND SLAB REVISED, REMOVED CONCRETE REVISED TO 21 QUANTITY DETAILS REVISED 12/17/68 WAT

DESIGN BY: [illegible]
TRACED BY: [illegible]
CHECKED BY: [illegible]
RECOMMENDED FOR APPROVAL: [illegible] DATE
RECOMMENDED FOR APPROVAL: ASSISTANT CHIEF ENGINEER DATE
APPROVED BY: [illegible] CHIEF ENGINEER DATE

DETAILS OF APPROACH SLAB FOR 42'-8" (WIDTH) FOOT BRIDGE

TO BE USED FOR BRIDGE AT STATION 1025+20

LOCATION U.S. ROUTE 4 RELOCATED OVER CASTLETON RIVER (APPROACH SLAB NO. 1)

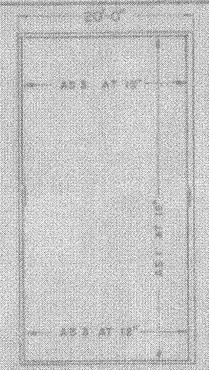
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURE

SB-AS-65

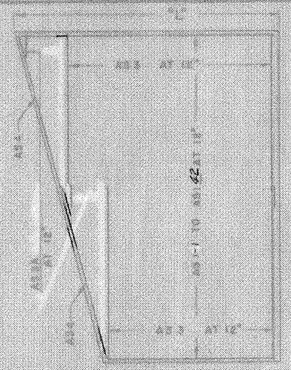
FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 16 OF 45
BRIDGE 3 E & W
FOR REFERENCE ONLY

PROJECT FAIR HAVEN-CASTLETON
TOWN OF FAIR HAVEN W.B. 1026+40
ROUTE NO. U.S. 4 STA. E.B. 1027+00
U.S. RTE. 4 REL. OVER CASTLETON RIVER APPROACH SLAB NO. 1

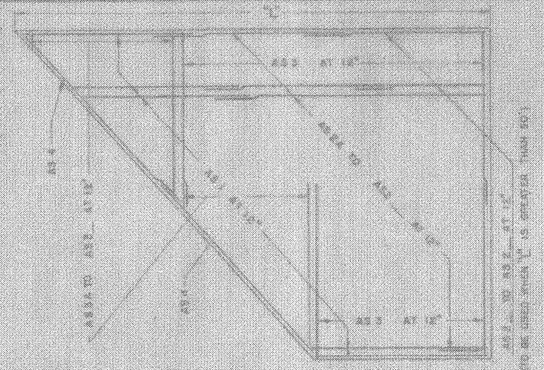
DESIGNED IN CHARGE H.G.C
DESIGNED BY AM'D CHECKED BY R.C.
PROJECT NO. F020-1 (8)
SHEET NO. 140 OF 176 SHEETS
CONTRACT NO. 255 BY 318



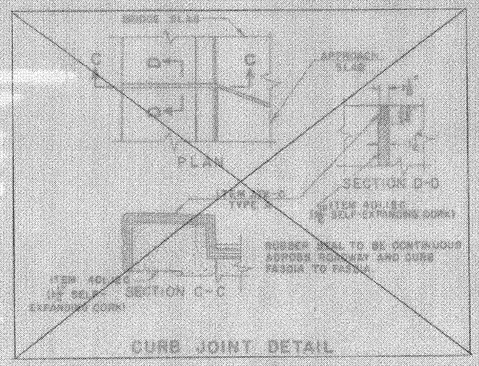
DETAIL "A" - SQUARE



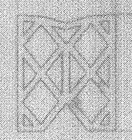
DETAIL "B" - "L" LESS THAN 35'



DETAIL "C" - "L" GREATER THAN 35'



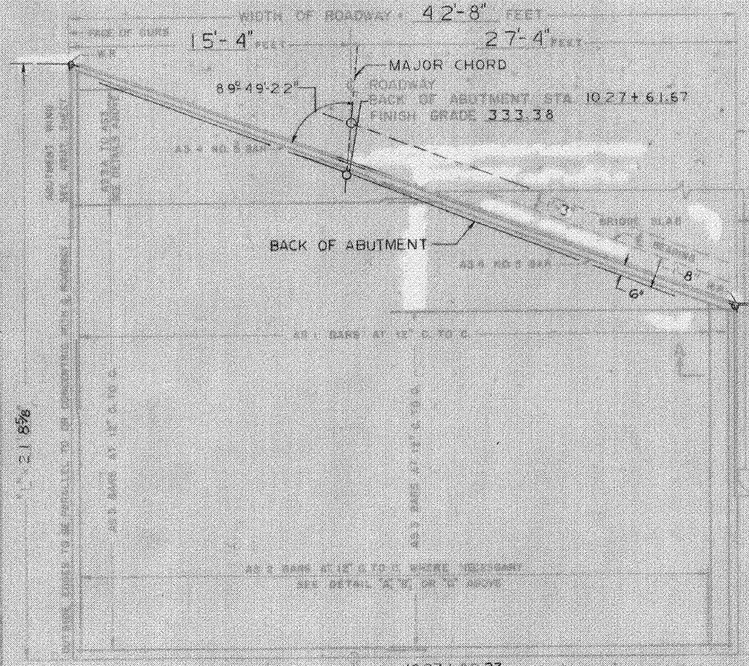
CURB JOINT DETAIL



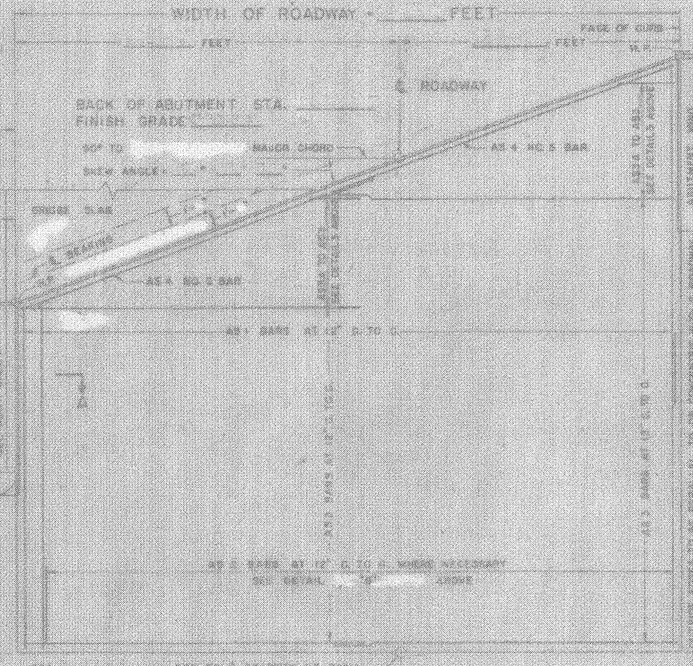
TYPE A

DETAILS - ITEM 572-C JOINT SEALER - PREFORMED

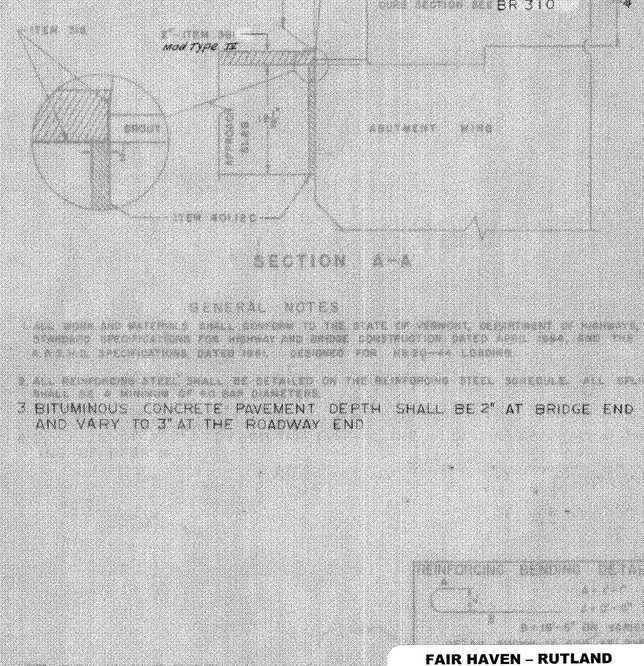
MATERIAL TO BE PREMOLDED NEOPRENE RUBBER
(OTHER CONFIGURATIONS THAT SATISFY SPECIFICATIONS MAY BE USED.)



PLAN VIEW - TYPE 1



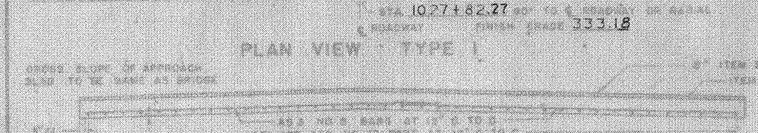
PLAN VIEW - TYPE 2



SECTION A-A

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, DATED APRIL 1960, AND THE A.R.E.A. SPECIFICATIONS DATED 1961. DESIGNED FOR H 20-44 LOADING.
2. ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.
3. BITUMINOUS CONCRETE PAVEMENT DEPTH SHALL BE 2" AT BRIDGE END AND VARY TO 3" AT THE ROADWAY END



END SECTION VIEW

REINFORCING BENDING DETAILS

LIST OF QUANTITIES

ITEM NO.		UNIT
110	TAR EMULSION FOR BRIDGE FLOORS	GAL.
501	BITUMINOUS CONCRETE PAVEMENT Mod TYPE IV	TONS
572-A	JOINT SEALER - HOT POURED	L.F.
572-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
601.5	CONCRETE CLASS B	CY.
602	REINFORCING STEEL	LB.

REVISIONS AND CORRECTIONS
1 UNREINFORCED JOINT FOR SEALER TYPE A ROUTED 9/15/65 A.S.
2 DIMENSIONS OF JOINT SEALER TYPE A ROUTED 12/2/65 W.R.C.
3 JOINT BETWEEN CURB AND SLAB REVISED, BITUMINOUS CONCRETE REVISED TO ½" QUANTITY TOTALS REVISED 12/17/65 W.R.C.

DRAWN BY: G.E.T. and C.R.M.
TRACED BY: G.E.T. and C.R.M.
CHECKED BY: R.W.S. 12/21/65

RECOMMENDED FOR APPROVAL: _____ BRIDGE ENGINEER 12/21/65 DATE

RECOMMENDED FOR APPROVAL: _____ ASSISTANT CHIEF ENGINEER 12/21/65 DATE

APPROVED BY: _____ CHIEF ENGINEER 12/21/65 DATE

DETAILS OF APPROACH SLAB FOR 42'-8" (WIDTH) FOOT BRIDGE

TO BE USED FOR BRIDGE AT STATION 1027+60

LOCATION U.S. ROUTE 4 RELOCATED OVER CASTLETON RIVER (APPROACH SLAB NO. 2)

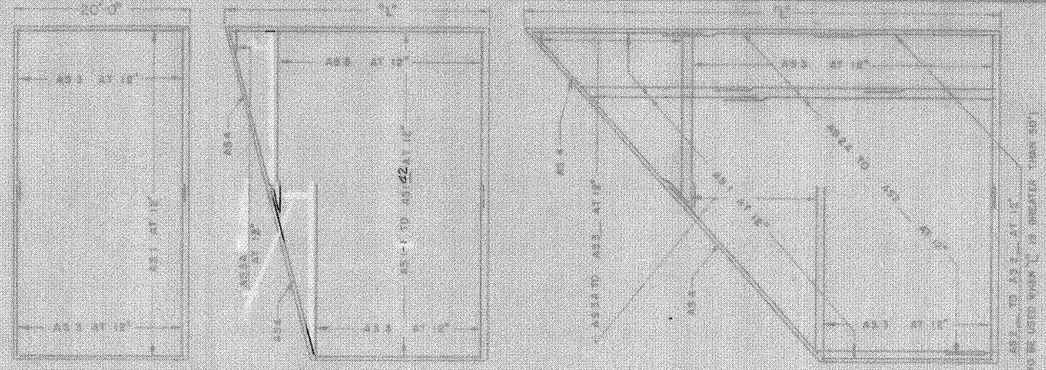
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURE

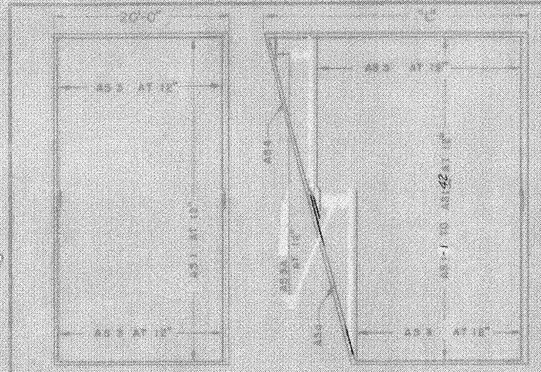
SB-AS-65

PROJECT FAIR HAVEN - CASTLETON
TOWN OF FAIR HAVEN
ROUTE NO. U.S. 4 WB 1026+40 STA. EB 1027+00
U.S. RTE. 4 REL. OVER CASTLETON RIVER APPROACH SLAB NO. 2

NOT TO SCALE
IN CHARGE H.G.C.
DESIGNED BY A.M.D CHECKED BY R.C.
PROJECT NO. F020-1 (8)
SHEET 150 OF 177 SHEETS NO. 319
CONTRACT NO.

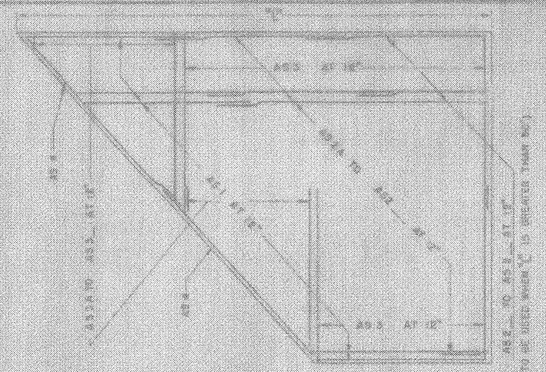
FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 17 OF 45
BRIDGE 3 E & W
FOR REFERENCE ONLY


20'-0"
"L"
AS 5 AT 12"
AS 6
AS 4 AT 12"
AS 3 AT 12"
AS 5 TO AS 22 AT 12"
AS 3 AT 12"
AS 4 TO AS 22 AT 12"
AS 3 AT 12"
AS 4 TO AS 22 AT 12"
AS 3

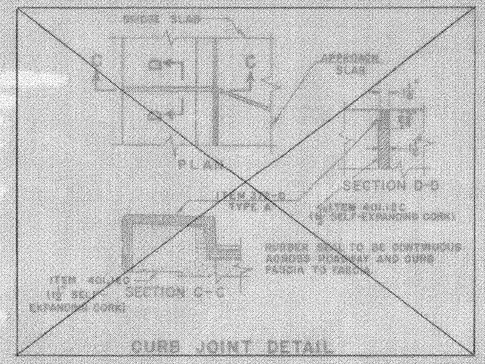


DETAIL "A" - SQUARE

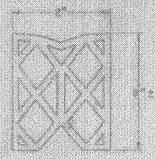
DETAIL "B" - "L" LESS THAN 35°



DETAIL "C" - "L" GREATER THAN 35°



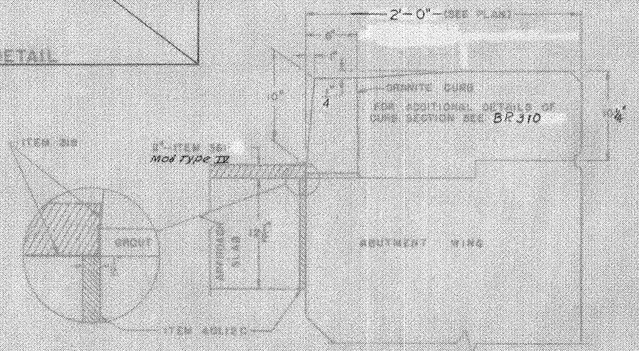
CURB JOINT DETAIL



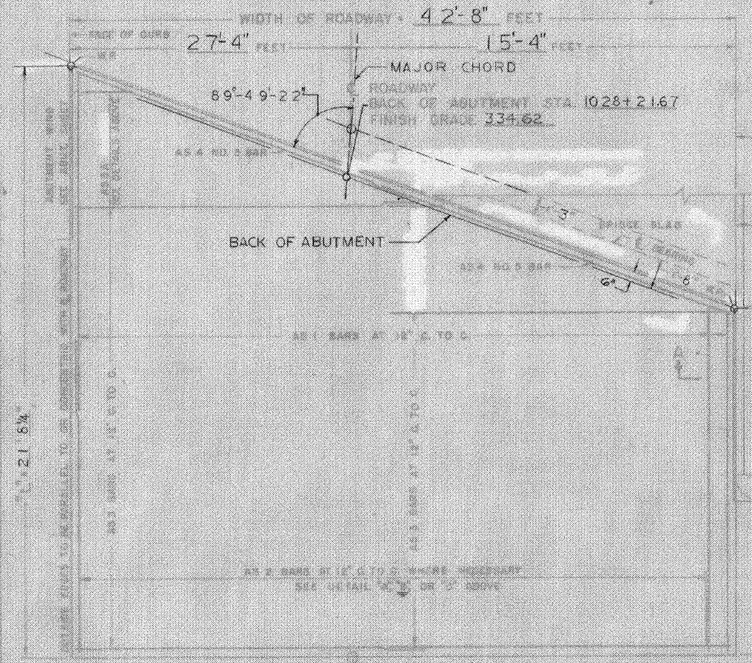
TYPE A

DETAILS - ITEM 372-C JOINT SEALER - PREFORMED

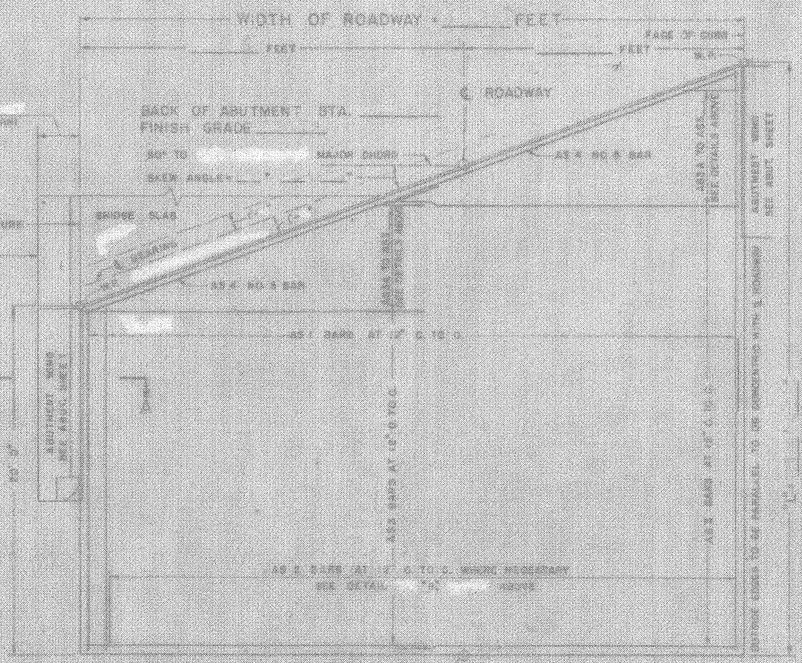
MATERIAL TO BE PREMOLDED NEOPRENE RUBBER (OTHER COMPOSITIONS THAT SATISFY SPECIFICATIONS MAY BE USED.)



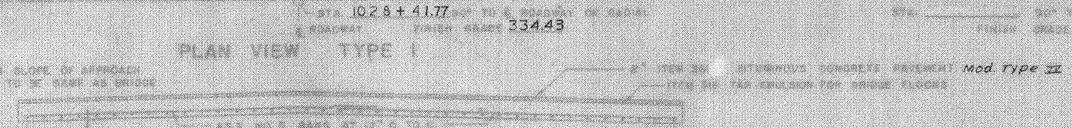
SECTION A-A



PLAN VIEW TYPE 1



PLAN VIEW TYPE 2



END SECTION VIEW

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1964, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1961. DESIGNED FOR H 20-44 LOADING.

2. ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL BENDS SHALL BE A MINIMUM OF 10 BAR DIAMETERS.

3 BITUMINOUS CONCRETE PAVEMENT DEPTH SHALL BE 2" AT BRIDGE END AND VARY TO 3" AT THE ROADWAY END.

REINFORCING BENDING DETAILS

LIST OF QUANTITIES

ITEM SEC.	ITEM	UNIT
410	TAR EMULSION FOR BRIDGE FLOORS	GAL.
561	BITUMINOUS CONCRETE PAVEMENT Mod Type III	TONS
372-B	JOINT SEALER - HOT POURED	L.F.
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
402-3	CONCRETE CL. AAA	CU. YD.
602	REINFORCING STEEL	LB.

REVISIONS AND CORRECTIONS
1. DIMENSION OF JOINT FOR SEALER TYPE A REVISED 4/1/69 MST
2. DIMENSIONS OF JOINT SEALER TYPE A REVISED 5/13/69 MST
3. JOINT BETWEEN CURB AND SLAB REVISED, BITUMINOUS CONCRETE ADDED TO E. QUANTITY TOTALS RECEIVED: 10/27/69 MST

DRAWN BY: W.S.T. JAN. 1969
TRACED BY: W.S.T. JAN. 1969
CHECKED BY: W.M.S. FEB. 1969
RECOMMENDED FOR APPROVAL: ASSISTANT CHIEF ENGINEER DATE
RECOMMENDED FOR APPROVAL: ASSISTANT CHIEF ENGINEER DATE
APPROVED BY: CHIEF ENGINEER DATE

DETAILS OF APPROACH SLAB FOR 42'-8" FOOT BRIDGE

TO BE USED FOR BRIDGE AT STATION 1028+20

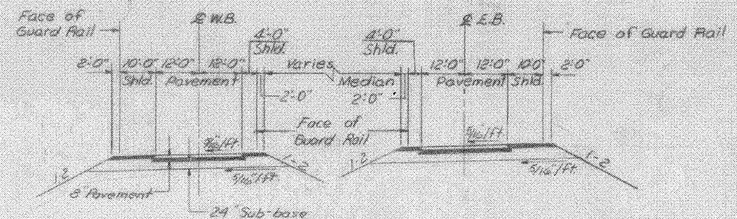
LOCATION U.S. ROUTE 4 RELOCATED OVER CASTLETON RIVER (APPROACH SLAB NO. 4)

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURE

SB-AS-65

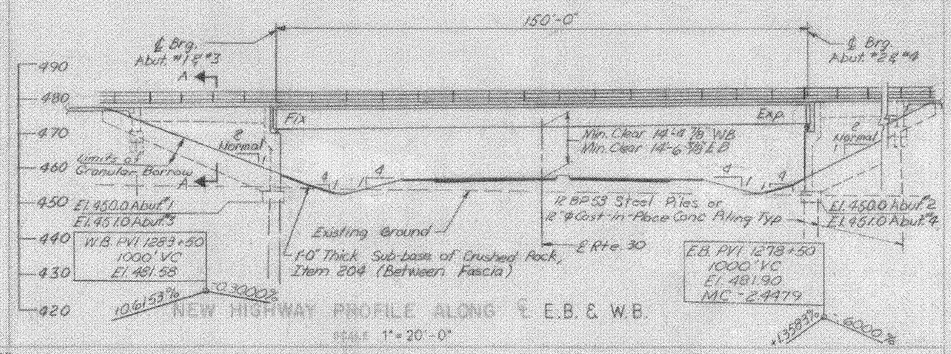
PROJECT FAIR HAVEN - CASTLETON
TOWN OF FAIR HAVEN
ROUTE NO. U.S. 4 W.B. 1026+40 STA. E.B. 1027+00
U.S. RTE. 4 REL. OVER CASTLETON RIVER APPROACH SLAB NO. 4
NOT TO SCALE
IN CHARGE H.G.C.
DESIGNED BY A.M.S.D. CHECKED BY R.C.
PROJECT NO. F020-1(6)(8)
SHEET 152 OF 129 255 SN 521
CONTRACT NO.

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 19 OF 45
BRIDGE 3 E & W
FOR REFERENCE ONLY



NEW HIGHWAY SECT. STA 1274+00 TO STA 1279+00

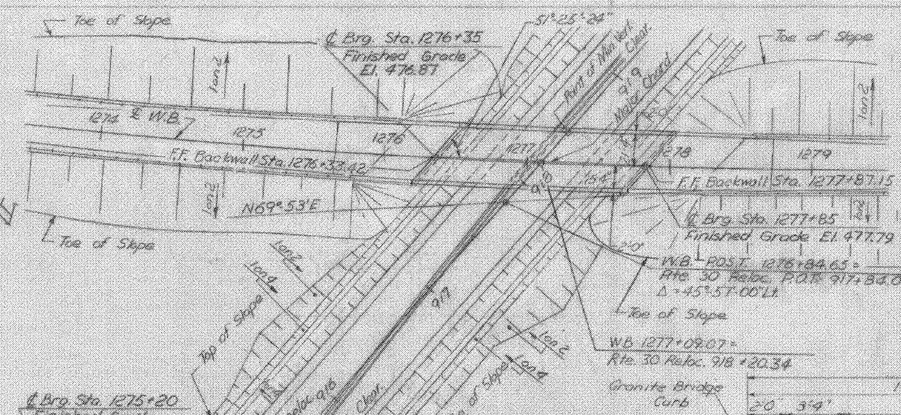
SCALE 1"=20'-0"



NEW HIGHWAY PROFILE ALONG ℄ E.B. & W.B.

SCALE 1"=20'-0"

W.B. Curve No. 5
Δ 19°-22'-40" Lt.
D 1°-00'
R 5729.58'
T 978.23'
L 1937.78'
E 82.91'
Bank 5/16"/Ft.



PLAN

SCALE 1"=50'-0"

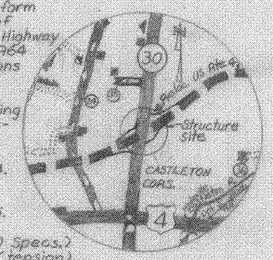
NOTES

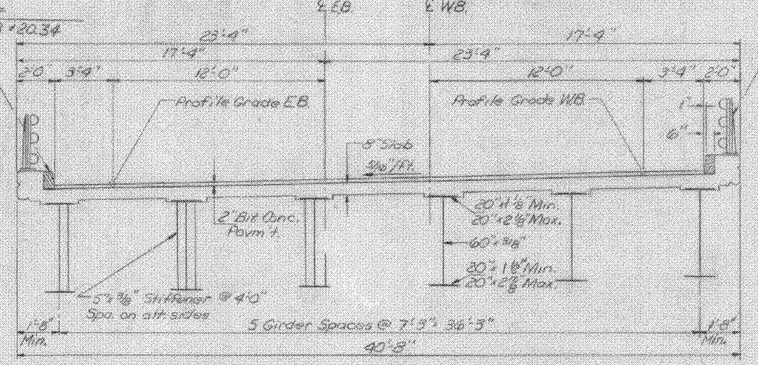
All materials and construction shall conform to the State of Vermont, Department of Highways, Standard Specifications for Highway and Bridge Construction date April 1964 and the AASHO Standard Specifications dated 1965, as modified by current Interim Specifications.

Structure designed for HS-20-44 loading modified for National System of Interstate Highways applied in accordance with the provisions of the AASHO Standard Specifications Article 1.2.8.

DESIGN STRESSES

Concrete - f'c = 3000 psi; fc = 1200 psi.
Structural Steel - fs = 20,000 psi. (A 36, other steels as per AASHO Specs.)
Reinforcing Steel - fs = 20,000 psi (tension)
(Intermediate Grade) fs = 18,000 psi. (compression)

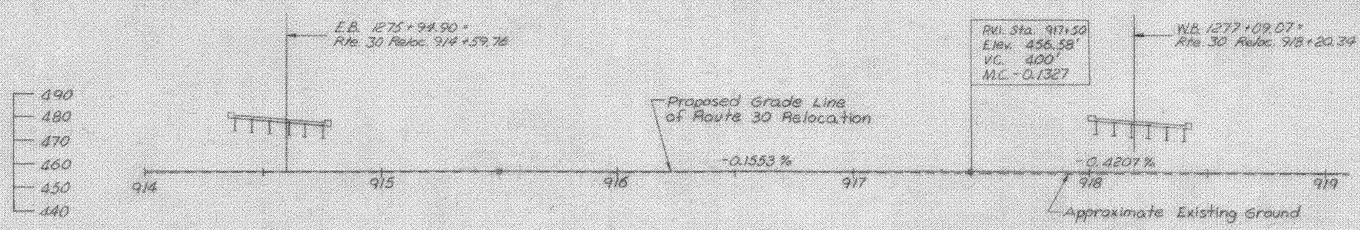




Note:
1. For Railing Details, see SB-R1-64 & SB-R2-65

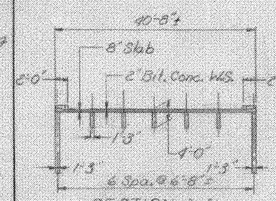
TYPICAL SECTION

SCALE 1"=4'-0"



PROFILE OF PROPOSED RTE 30 RELOCATION

SCALE 1"=50'-0"



SECTION A-A

SCALE 1"=15'-0"

U.S. 4 — NAME OF HIGHWAY
STRUCTURE NO. 10 — COUNTY: RUTLAND — TOWN: CASTLETON
PROJECT NO. A.P. 020-1(5)I — LOCATION: U.S. ROUTE 4 RELOCATION OVER ROUTE 30 RELOCATION
0.6 MILE NORTH ALONG EXISTING ROUTE 30 FROM ITS INTERSECTION WITH EXISTING U.S. ROUTE 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 UNDER EXISTING ABUTMENTS ——
11 DOES ALL WATER AT FLOOD ELEVATION PASS THROUGH EXISTING STRUCTURE? ——
IF NOT AT WHAT ELEVATION IS RELIEF REQUIRED? ——
12 ADDITIONAL WATERWAY AREA PROVIDED ——

NEW STRUCTURE

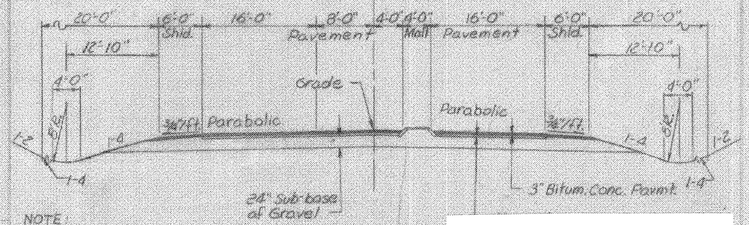
1 RECOMMENDED TYPE OF STRUCTURE 2-SINGLE SPAN BRIDGES, WELDED PLATE GIRDER - COMPOSITE
2 RECOMMENDED CLEAR SPAN OR SPANS W.B. 150'-0", E.B. 150'-0"
MEASURED PARALLEL TO ℄ NEW HIGHWAY W.B. 150'-0", E.B. 150'-0"
MEASURED AT RIGHT ANGLES TO ℄ STREAM ——
3 WAS THERE OBJECTION TO A PIER IN THE STREAM SHOWN HERE OR ON —— SOURCE OF INFORMATION ——
4 ORDINARY HIGH WATER ELEVATION AT NEW STRUCTURE ——
5 EXTREME HIGH WATER ELEVATION AT NEW STRUCTURE —— SOURCE OF INFORMATION ——
6 IS FILL WATER INTENDED TO PASS THROUGH NEW STRUCTURE? ——
DOES STREAM REVERSE ITS NATURAL FLOW WHEN WATER ELEVATION REACHES? —— IS ORDINARY HIGH WATER ——
7 LOW WATER ELEVATION AT NEW STRUCTURE —— CHARACTER OF BOTTOM ——
8 WATERWAY AREA IN ACRES ABOVE STRUCTURE —— ESTIMATED DISCHARGE ——
9 VELOCITY OF STREAM AT HIGH WATER STAGE —— AREA BELOW ORDINARY H.W. ——
10 AREA FULLY DEVELOPED —— AREA BELOW ORDINARY H.W. ——
11 CHARACTER OF BANKS —— DRIFT —— FT. ——
12 ESTIMATED DRAINAGE AREA ABOVE NATURAL OR ARTIFICIAL STORAGE ——
13 VERTICAL CLEARANCE ABOVE FLOOD ELEVATION ——
14 ARE SIDEWALKS REQUIRED? IF SO ON WHICH SIDE? NO —— BOTH SIDES ——
15 RECOMMENDED TYPE OF PAVEMENT 2" BITUMINOUS CONCRETE 8" CONCRETE
16 TRAFFIC TO BE MAINTAINED UNDER THIS CONTRACT? —— ONE OR TWO WAYS? —— INCIDENTAL COST ——
17 PROBABLE COST OF CLEARING AND SNAGGING STREAM CHANNEL AT STRUCTURE ——
18 SHOULD PROVISIONS BE MADE FOR PUBLIC UTILITIES? NO
19 ESTIMATED RAILROAD LOAD ON STRUCTURE —— SHOULD PILES BE DRIVEN? YES SEE BELOW NO SEE BELOW

FOUNDATION INFORMATION

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

Estimated length of Piles:
Abutment #1 = 80 to 100 Ft.
#2 = 115 to 165 Ft.
#3 = 75 Ft.
Abutment #4 = 110 Ft.

12"ϕ Cast in Place 90T/Ft.
12 BP53 Steel Piles 58.7/Ft.



NOTE:
For location of 4'-0" mall see Relocated Route 30 Alignment Data Sheet.

TYPICAL RELOC. RTE. 30
STATION 914+00 TO 92
SCALE 1"=10'-0"

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 20 OF 45
BRIDGE 10 E & W
FOR REFERENCE ONLY

RECOMMENDED FOR APPROVAL — CONSTRUCTION ENGINEER — DATE
3/10/68
5/13/68
5/13/68

RELOCATED U.S. ROUTE 4
FAIR HAVEN – CASTLETON
U.S. 4 W.B. 1277+10 E.B. 1278+10
U.S. ROUTE 4 RELOC. OVER ROUTE 30 RELOC.
McFARLAND – JOHNSON CONSULTING ENGINEERS
J.T.B. IN CHARGE — W.M.F. DRAWN — B.R.K. TRACED — CHECKED — SHEET 20 OF 45 SHEETS
F 020-1(8)

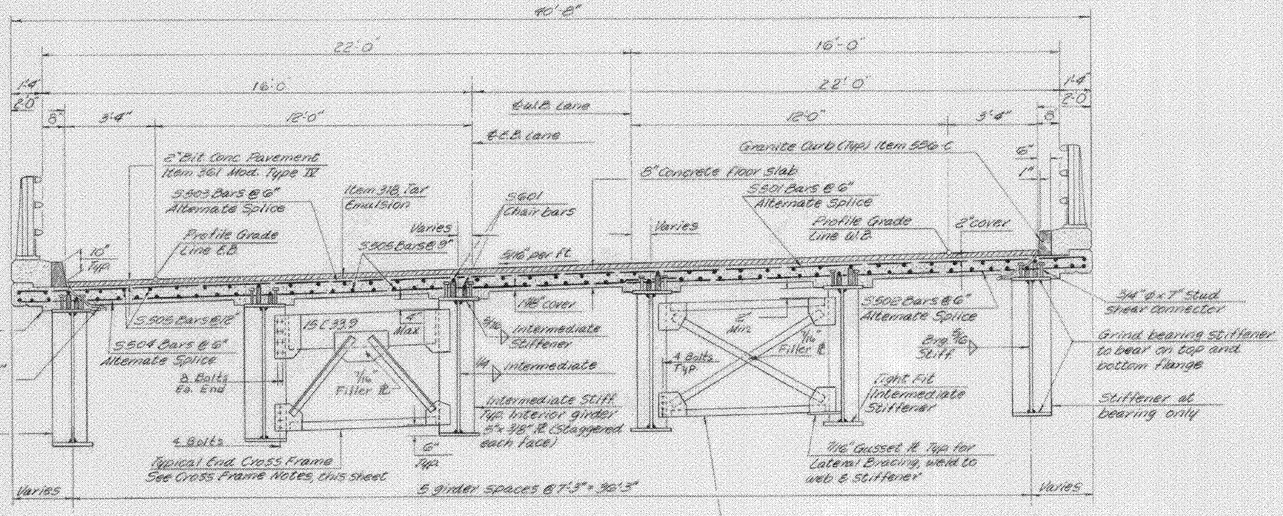
REVISIONS:
1. Route 4 slope lines EEC 9.16.68
2. Route 30 ditch lines EEC 9.16.68
3. Made Joints 1 to curb EEC 9.16.68
4. Pile Type BRK 7-1-68
5. Ext. Conc. Girder Width BRK 7-1-68
6. Steel Girder Flange Width BRK 7-1-68
7. Removed Cheekwalls BRK 7-1-68

9.77g Grade Beam XEC 12-13-68

BR 1003

NOTE:

The concrete floor slab surface shall be finished with a self-propelled concrete finishing machine.

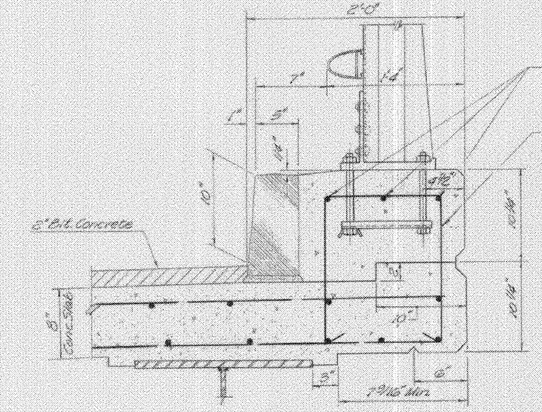


TYPICAL SECTION

Scale: 3/8"=1'-0"

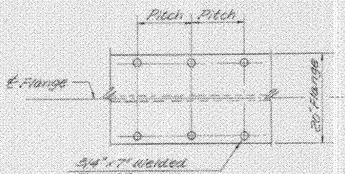
NOTE:

S501, S502, S503 and S504 bars shall be cut in the field to fit the skewed end. The cut-off bars shall be used at the opposite end.

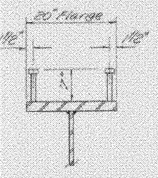


TYPICAL CURB SECTION

Scale: 1 1/8"=1'-0"



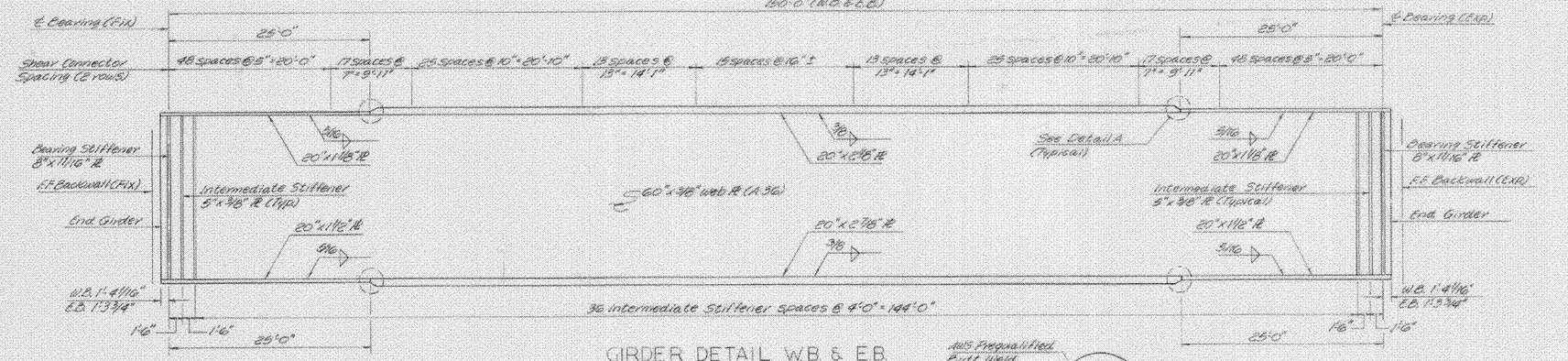
PLAN



SIDE VIEW

SHEAR CONNECTOR

Scale: 3/4"=1'-0"



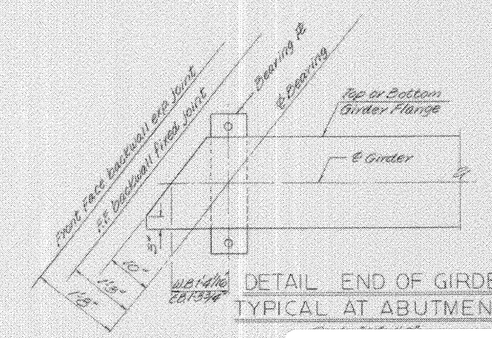
GIRDER DETAIL W.B. & E.B.

INTERIOR & FASCIA

Scale: Horiz. 48"=1'-0", Vert. 1/2"=1'-0"

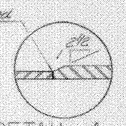
NOTE:

Intermediate stiffeners to be placed on inside face of fascia girders and on alternate faces of interior girders. Intermediate stiffeners to be welded to top flange and web. Bearing stiffeners to be welded to web only.



DETAIL END OF GIRDER TYPICAL AT ABUTMENTS

AWS Prequalified Butt Weld.

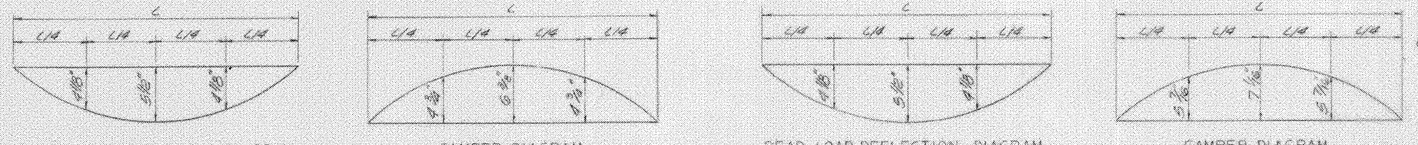


DETAIL A

No Scale

NOTES:

1. For General Notes, see BR 1001.
2. For Bearing Device Details, see BR 1003.
3. For Beam Haunch Details, see SCB-D2-67.
4. The shear connectors are designed to be 3/4" Ø x 7" studs. If 7/8" Ø studs are used, increase the spacing shown for 3/4" Ø studs by 50%.
5. CROSS FRAME NOTES: All gusset and connection plates shall be 7/16" plates. Gusset and connection plates shall be welded to stiffeners with a 5/16" fillet weld. All angles shall be 4" x 4" x 3/8" ∠'s.
6. All shop connections for cross-frames shall be 5/16" fillet welds. All field connections shall be 7/8" high strength bolts meeting the requirements of ASTM A-325.



DEAD LOAD DEFLECTION DIAGRAM — CAMBER DIAGRAM — DEAD LOAD DEFLECTION DIAGRAM — CAMBER DIAGRAM

WESTBOUND BRIDGE

No Scale

Max. Live Load Deflection = 1 7/16"

EASTBOUND BRIDGE

No Scale

REVISION

DELETED OPTIONAL GIRDER SPLICE
ADDED FILLER PLATES
RSH 5-21-69
CURB STIRRUPS CHANGED FROM #4@18" TO #5@12"
DFM 9 JULY 69

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 21 OF 45
BRIDGE 10 E & W
FOR REFERENCE ONLY

STA
TO

U.S. RTE. 4 RELOCATION OVER RTE. 30 RELOC.

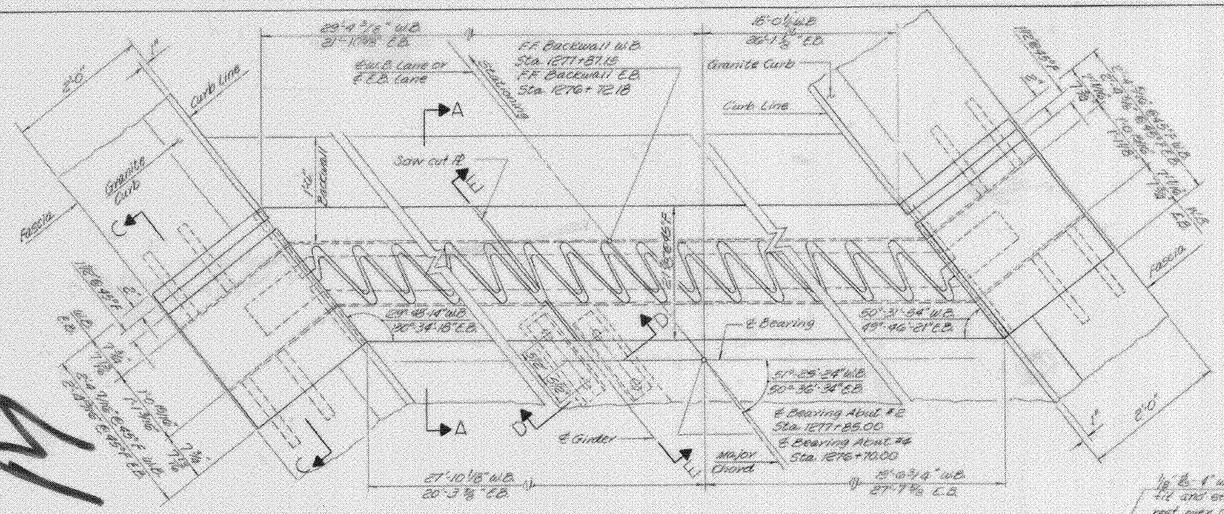
SUPERSTRUCTURE DETAILS

McFARLAND-JOHNSON
CONSULTING ENGINEERS
BINGHAMTON, NEW YORK

DESIGNED WDS	CHECKED REC	DATE 9-16-68
DRAWN LRS	IN CHARGE HGC	SCALE AS SHOWN

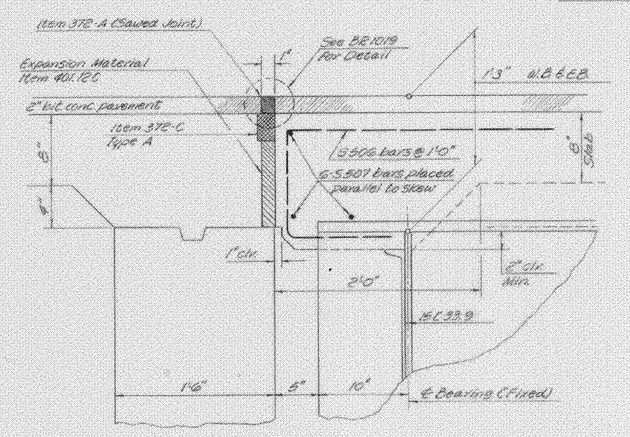
PROJECT NO. F020(50) SH 158 OF 212

CONTRACT NO. F (8) BR 1007



EXPANSION HINGE JOINT

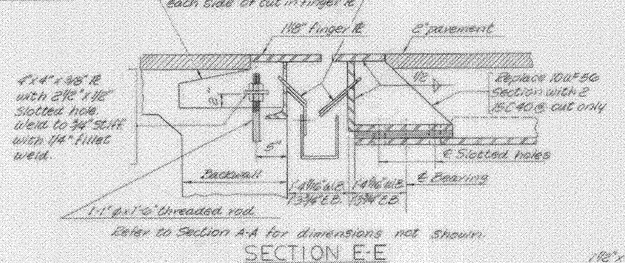
No Scale



For fixed joint through curb, see Curb Joint Detail (B.E.1011)

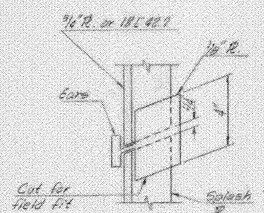
FIXED END JOINT DETAIL

Scale: 1 1/2" = 1'-0"



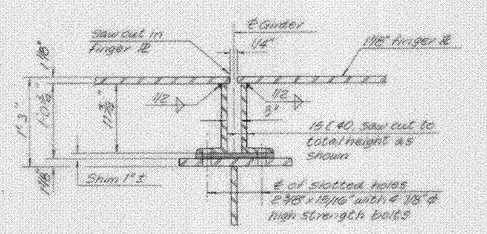
SECTION E-E

No Scale



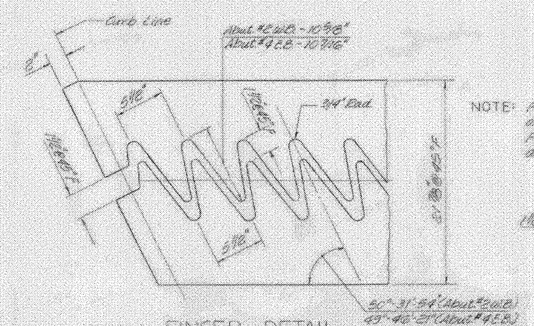
DETAIL 'A'

No Scale



SECTION D-D

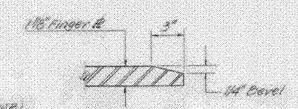
No Scale



FINGER DETAIL

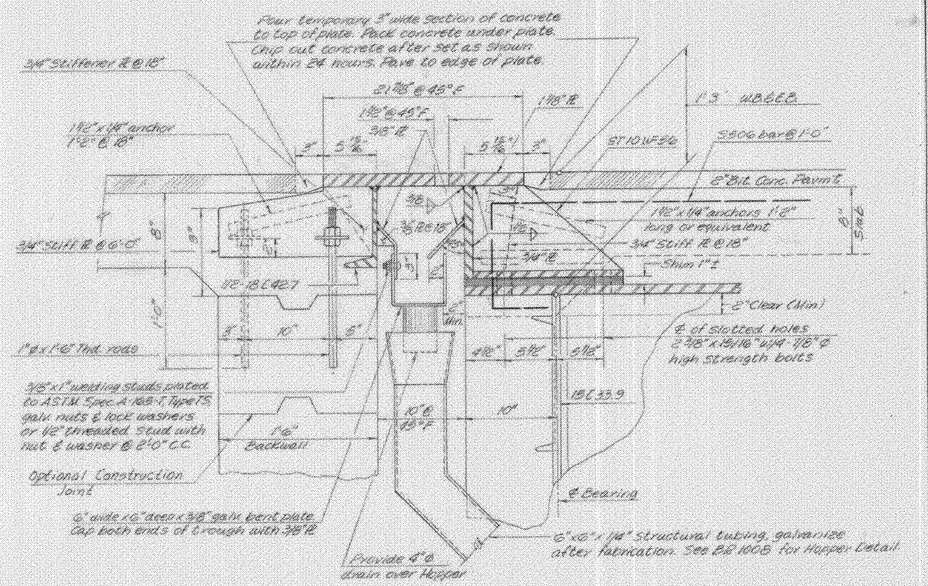
No Scale

NOTE: Fingers to be symmetrical about ℄ of Plate. Flame cut Finger ℞ from a 21" x 1 1/8" ℞.



TOOTH DETAIL

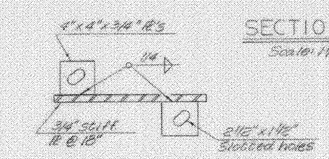
No Scale



SECTION A-A

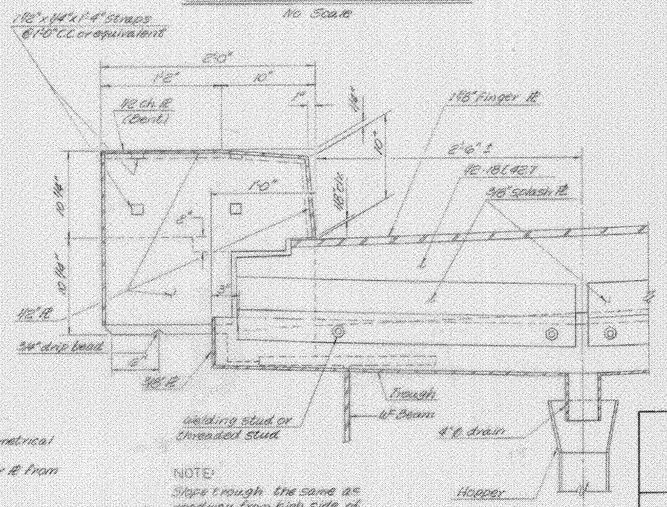
Scale: 1 1/2" = 1'-0"

NOTE:
Use 1/4" weld for connecting Splash plates as shown. There must be a 1" minimum left from the edge of the bolt hole to the edge of the plate where the trough is connected to the drip plate.
All inaccessible areas exposed to the weather after installation shall be given 3 coats of paint prior to installation.
Adjustment bolts to be used @ 6'-0" intervals.



ADJUSTMENT STIFFENER

No Scale



NOTE:
Slope trough the same as roadway from high side of bridge. Slope trough 1" per foot from low side of bridge to drain.

SECTION B-B

Scale: 1 1/2" = 1'-0"

NOTES

1. For General Notes, see B.E.1001
2. Dimensions may vary as haunch is adjusted. Shim as required.
3. Expansion dam shall conform to roadway crown.
4. Three coats of paint shall be applied in accordance with Item 404.03 D to the interior surfaces of the expansion dam prior to construction.

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 22 OF 45
BRIDGE 10 E & W
FOR REFERENCE ONLY

VERMONT
STATE HIGHWAY DEPARTMENT
TOWN OF CASTLETON
U.S. ROUTE 4

U.S. RTE. 4 RELOCATION
OVER RTE. 30 RELOC.

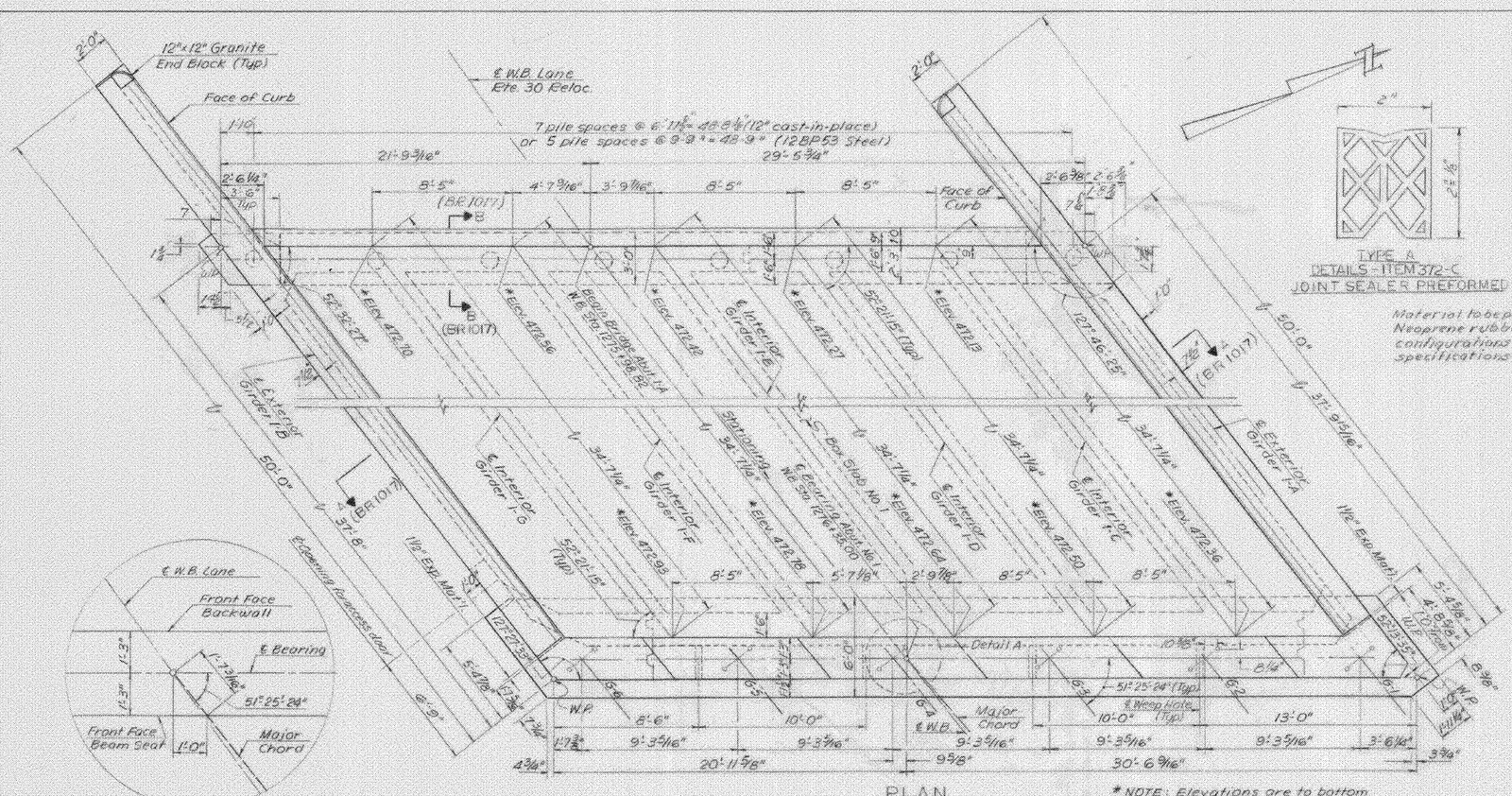
JOINT DETAILS

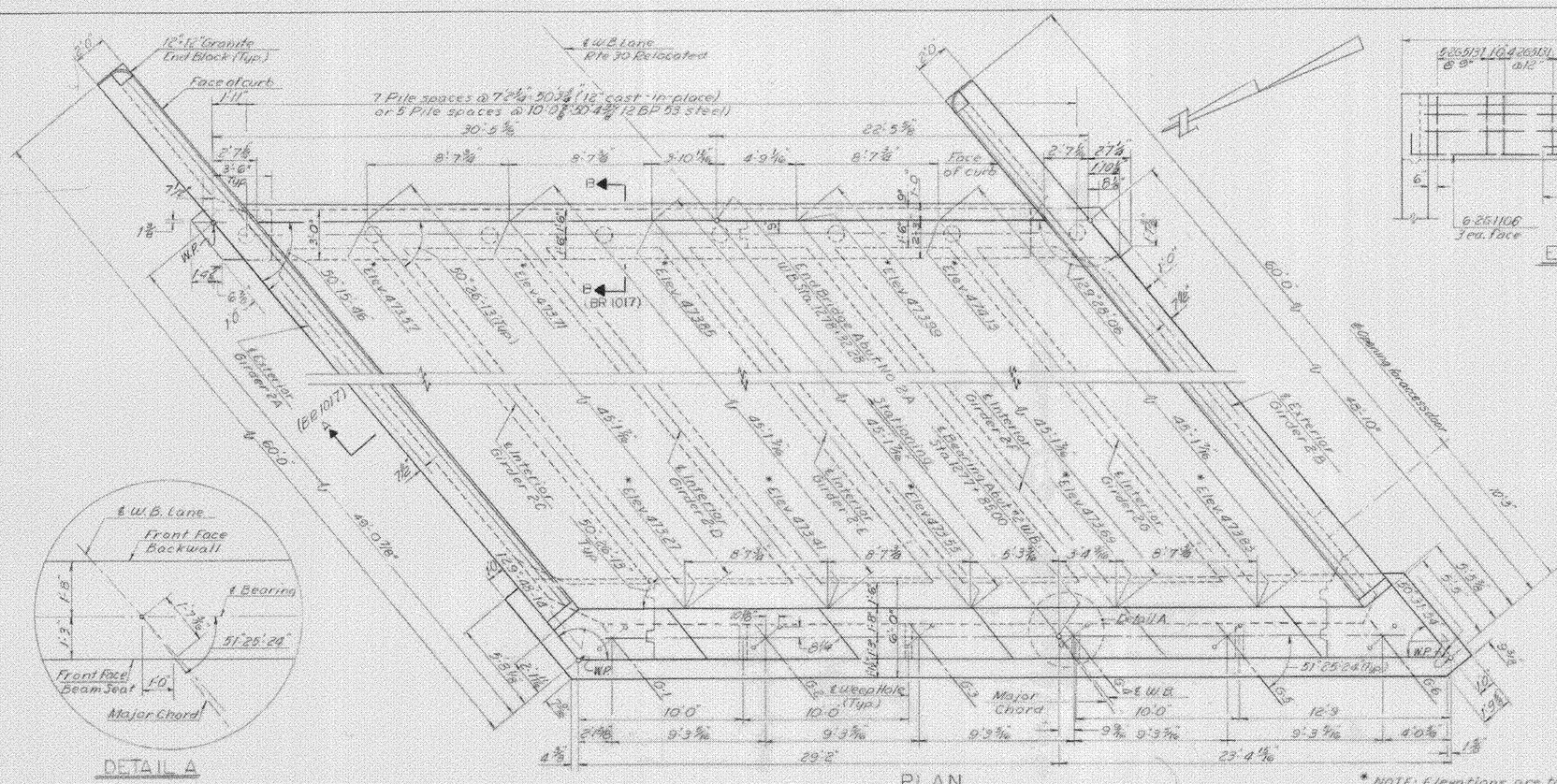
McFARLAND-JOHNSON
CONSULTING ENGINEERS
BINGHAMTON, NEW YORK

DESIGNED WDS	CHECKED REC	DATE 9-16-68
DRAWN LRS	IN CHARGE HGC	SCALE AS SHOWN

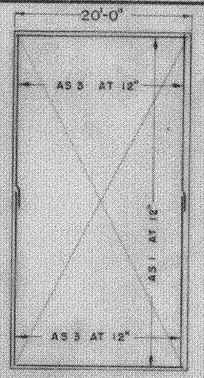
PROJECT NO. APO20(50) SH (6) OF (21)

CONTRACT NO. F (8) BR. 1010

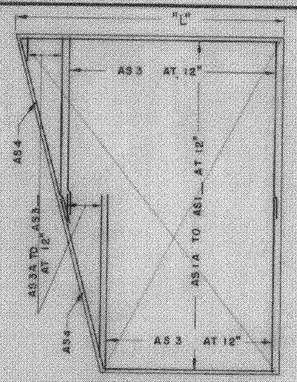

12"x12" Granite End Block (Typ)
Face of Curb
℄ W.B. Lane Rte. 30 Reloc.
7 pile spaces @ 6'-11½" = 48'-8½" (12" cast-in-place)
or 5 pile spaces @ 9'-3" = 48'-9" (12BP53 Steel)
29'-5¾"
21'-9¾16"
8'-5"
4'-7 9/16"
3'-9 11/16"
(BR 1017)
Elev. 472.10
Elev. 472.36
Elev. 472.42
Elev. 472.27
Elev. 472.13
Elev. 472.98
Elev. 472.78
Elev. 472.64
Elev. 472.50
Elev. 472.36
Begin Bridge Abut 1-A W.B. Sta 12+75 + 98.82
℄ Interior Girder 1-E
℄ Interior Girder 1-F
℄ Interior Girder 1-G
℄ Interior Girder 1-D
℄ Interior Girder 1-C
℄ Exterior Girder 1-B
℄ Exterior Girder 1-A
Stp 21-15 (Typ)
Stp 21-11 (Typ)
Stp 21-15 (Typ)
Stp 21-15 (Typ)
Stp 21-15



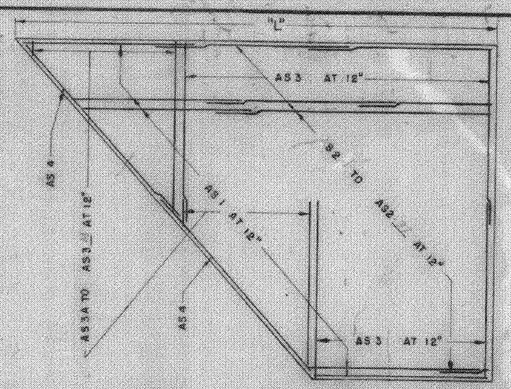
FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 24 OF 45
BRIDGE 10 E & W
FOR REFERENCE ONLY



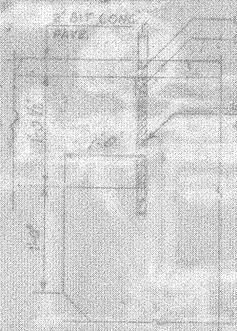
DETAIL "A" - SQUARE



DETAIL "B" - "L" LESS THAN 35'

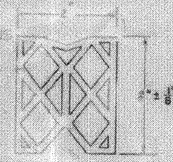


DETAIL "C" - "L" GREATER THAN 35'

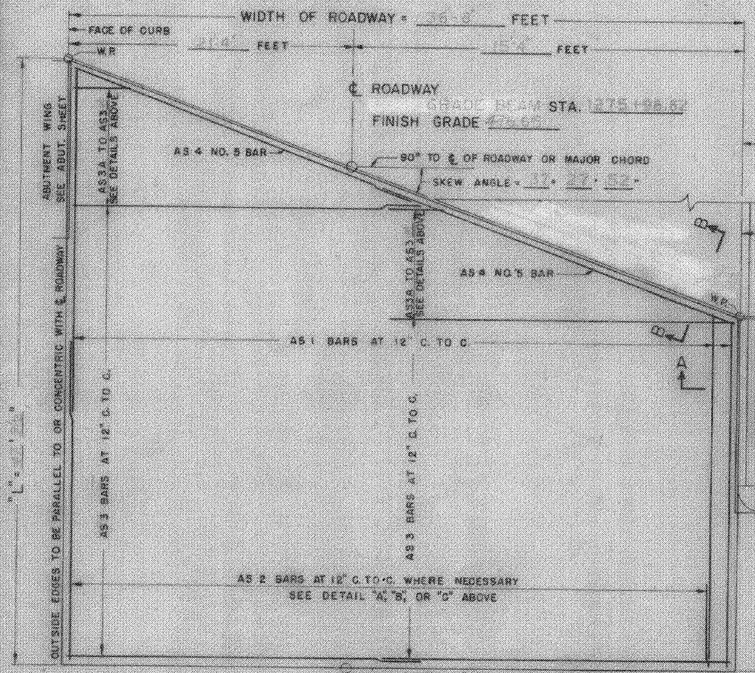


SECTION B-B

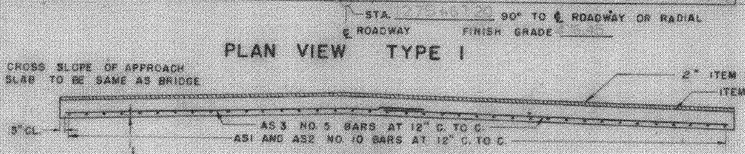
OTHER CONFIGURATIONS THAT SATISFY SPECIFICATIONS MAY BE USED



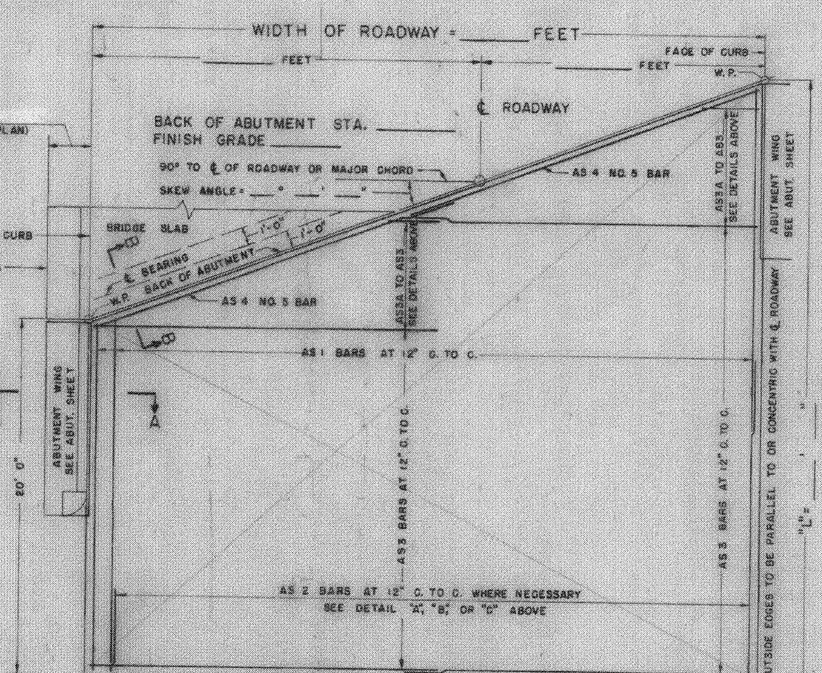
TYPE A
DETAILS ITEM 372 C JOINT SEALER PREFORMED MATERIAL TO BE PREMOLDED NEOPRENE RUBBER



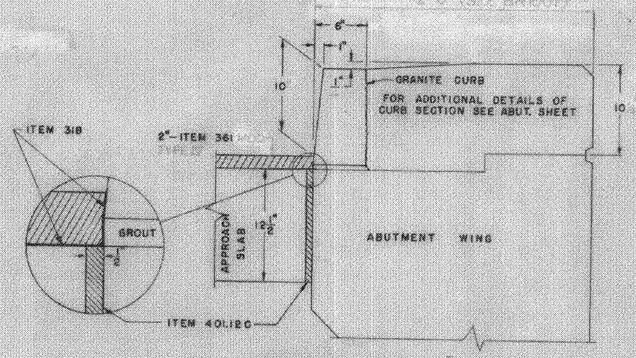
PLAN VIEW TYPE 1



END SECTION VIEW



PLAN VIEW TYPE 2



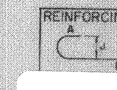
SECTION A-A

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED APRIL 1964, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1961. DESIGNED FOR HS 20-44 LOADING.
2. ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULE. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.

BITUMINOUS CONCRETE PAVEMENT SURFACE FROM END BRIDGE END TO START ROADWAY EMB.

REINFORCING BENDING DETAILS



LIST OF QUANTITIES

ITEM NO.	ITEM	UNIT
318	TAR EMULSION FOR BRIDGE FLOORS	GAL.
361	BITUMINOUS CONCRETE PAVEMENT	TONS
372-A	JOINT SEALER - HOT POURED	L.F.
372-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
401-B	CONCRETE CLASS B	CY.
402	REINFORCING STEEL	LB

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 25 OF 45
BRIDGE 10 E & W
FOR REFERENCE ONLY

REVISIONS AND CORRECTIONS
1. DIMENSIONS OF JOINT FOR SEALER TYPE A REVISED. 4/15/65 W.B.T.
2. DIMENSIONS OF JOINT SEALER TYPE B REVISED 6/23/65 W.B.T.
3. JOINT BETWEEN CURB AND SLAB REVISED, BITUMINOUS CONCRETE REVISED TO 2", QUANTITY TOTALS REMOVED. 12/7/65. W.B.T.

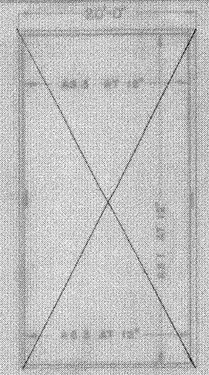
DRAWN BY: W.B.T Jan. 1965
TRACED BY: W.B.T Jan 1965
CHECKED BY: W.M.S Feb. 1965
RECOMMENDED FOR APPROVAL: BRIDGE ENGINEER DATE 2/4/65
RECOMMENDED FOR APPROVAL: ASSISTANT CHIEF ENGINEER DATE 2/4/65
APPROVED BY: CHIEF ENGINEER DATE 2/4/65

DETAILS OF APPROACH SLAB FOR 36'-0" (WIDTH) FOOT BRIDGE

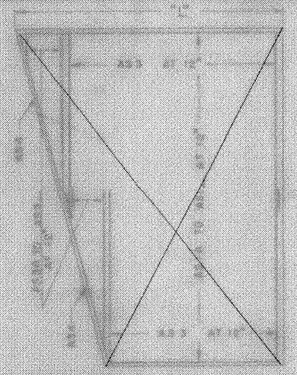
TO BE USED FOR BRIDGE AT STATION 1277+08 WB
LOCATION US ROUTE 4 BE LOCATION OVER RTE 30 BE LOCATION
APPROACH SLAB NO 10

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURE
SB-AS-65

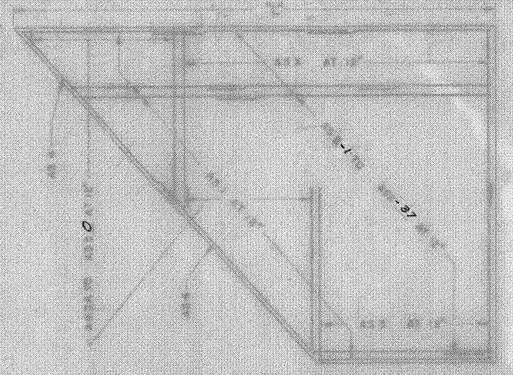
PROJECT FAIR HAVEN
TOWN OF CASTLETON
ROUTE NO. US 4 STA. 1277+08 WB
SKETCH LOCATION OVER RT 30 BE OF
APPROACH SLAB NO 10
NOT TO SCALE
IN CHARGE H.G.S.
DESIGNED BY AMD CHECKED BY
PROJECT NO. APO20(50)
SHEET ___ OF ___ BR
CONTRACT NO.



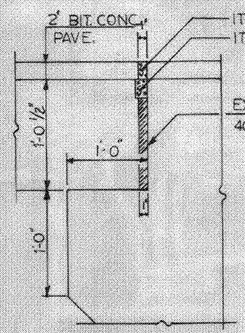
DETAIL "A" - SQUARE



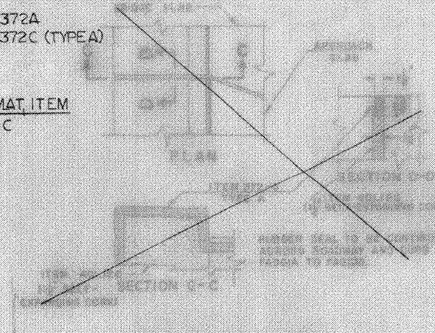
DETAIL "B" - "L" LESS THAN 55°



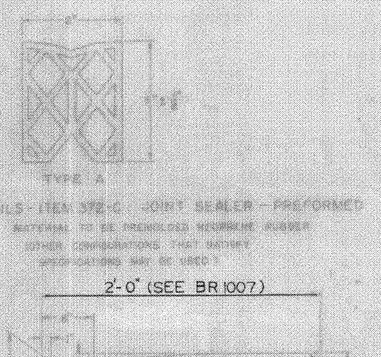
DETAIL "C" - "L" GREATER THAN 55°



SECTION B-B

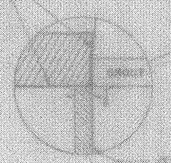


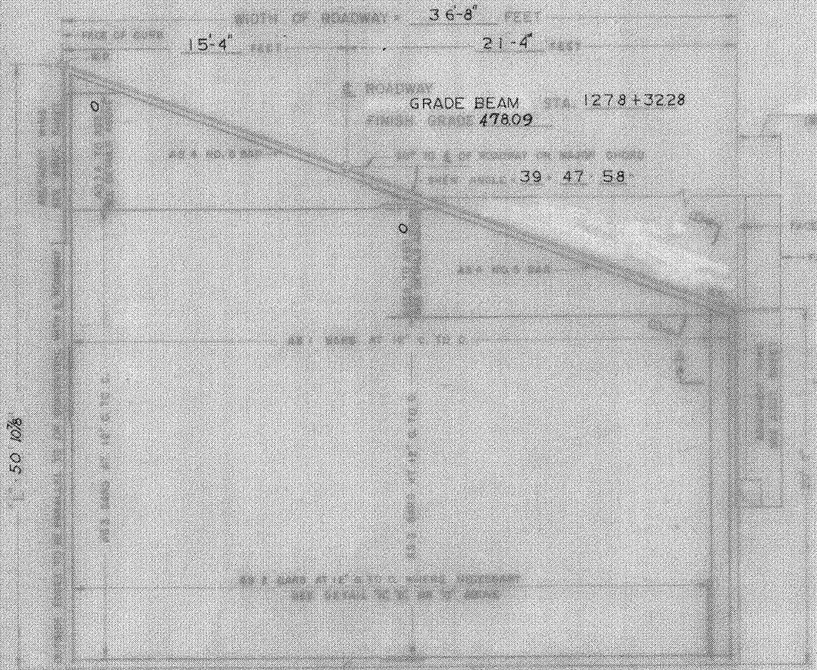
CURB JOINT DETAIL



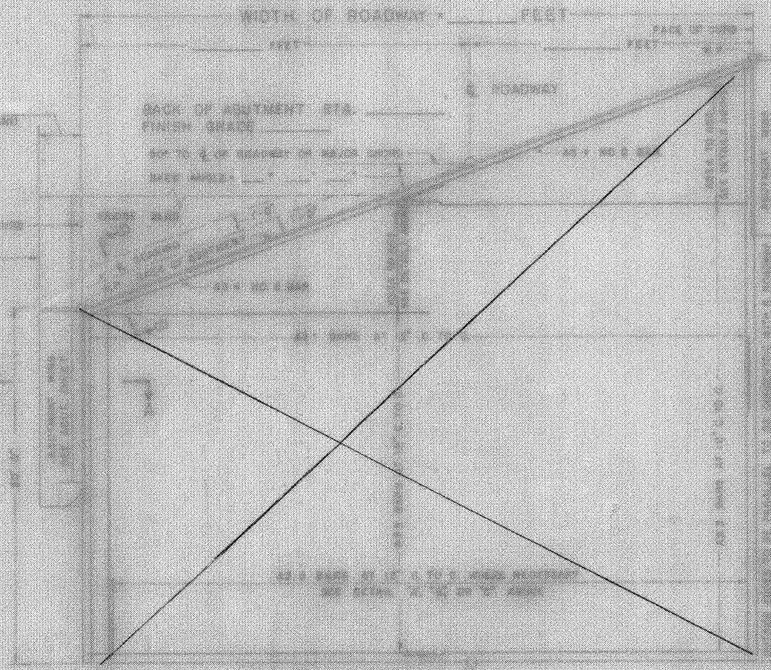
DETAILS ITEM 372-C JOINT SEALER - PREFORMED

SECTION A-A

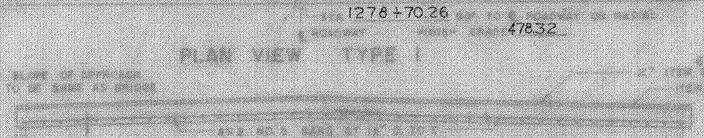




PLAN VIEW TYPE I



PLAN VIEW TYPE 2



END SECTION VIEW

MOD TYPE IV

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE OF VERMONT DEPARTMENT OF HIGHWAYS STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION ADOPTED APRIL 1960, AND THE A.A.S.H.O. SPECIFICATIONS DATED 1931. DESIGNED FOR H-20-44 LOADING.

2. ALL REINFORCING STEEL SHALL BE DETAILED ON THE REINFORCING STEEL SCHEDULES. ALL SPLICES SHALL BE A MINIMUM OF 40 BAR DIAMETERS.

3. BITUMINOUS CONCRETE PAVEMENT VARIES FROM 2" AT BRIDGE END TO 3" AT ROADWAY END.

REINFORCING SPACING DETAILS

LIST OF QUANTITIES

ITEM NO.	ITEM	UNIT
518	TAR EMULSION FOR BRIDGE FLOORS	GAL.
520	BITUMINOUS CONCRETE WEARING COURSE MOD TYPE IV	TONS
572-A	JOINT SEALER - HOT POURED	L.F.
572-C	JOINT SEALER - PREFORMED, TYPE A	L.F.
601-B	CONCRETE CLASS B	CU. YD.
602	REINFORCING STEEL	LB.

REVISIONS AND CORRECTIONS

DRAWN BY: A.F.T. JAN. 1965
TRACED BY: A.F.T. JAN. 1965
CHECKED BY: H.R.S. JAN. 1965

APPROVED BY: _____ DATE _____
BRIDGE ENGINEER

DETAILS OF APPROACH SLAB FOR 36'-8" FOOT BRIDGE

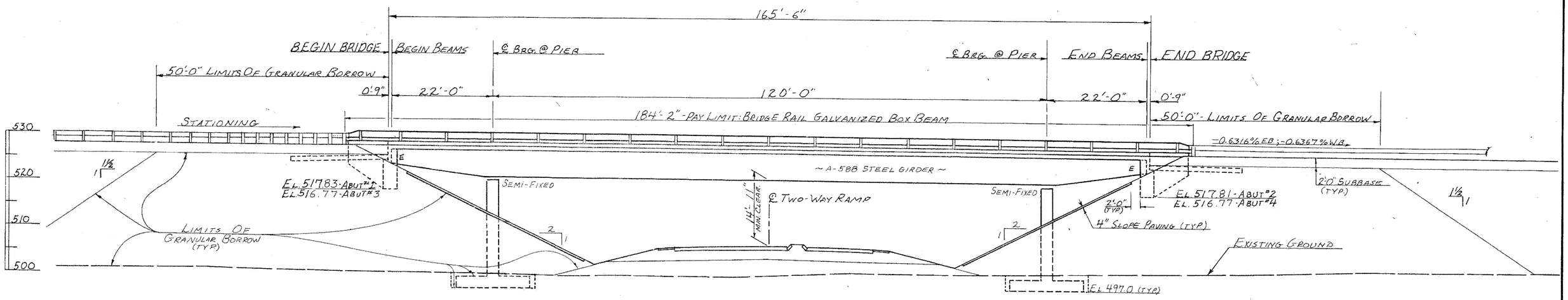
TO BE USED FOR BRIDGE AT STATION 1277+09 W.B.

LOCATION U.S. ROUTE 4 RELOCATION OVER RTE. 30 RELOCATION
(APPROACH SLAB NO. 2)

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURE
SB-AS-65

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 26 OF 45
BRIDGE 10 E & W
FOR REFERENCE ONLY

PROJECT FAIR HAVEN
TOWN OF CASTLETON
ROUTE NO. U.S. 4 STA. W.B. 1277+09 E.B. 1275+95
U.S. RTE. 4 RELOCATION OVER VT. 30 RELOC.
APPROACH SLAB NO. 2
NOT TO SCALE
IN CHARGE H.G.C.
DESIGNED BY A.M.S.D. CHECKED BY REC.
PROJECT NO. AP020-1(50) F020-1(8) SH. 206 OF 255
CONTRACT NO. BR 1020



WESTBOUND			EASTBOUND		
LOCATION	STATION	FINISH GRADE ELEV.	LOCATION	STATION	FINISH GRADE ELEV.
BEGIN BRIDGE	788+96.25	528.16	BEGIN BRIDGE	788+90.75	528.14
BEGIN BEAMS	788+97.00	528.15	BEGIN BEAMS	788+91.50	528.14
℄ BRG. PIER #1	789+19.00	528.01	℄ BRG. PIER #3	789+13.50	528.00
℄ BRG. PIER #2	790+39.00	527.25	℄ BRG. PIER #4	790+33.50	527.24
END BEAMS	790+61.00	527.11	END BEAMS	790+55.50	527.10
END BRIDGE	790+61.75	527.10	END BRIDGE	790+56.25	527.10

TYPICAL ELEVATION

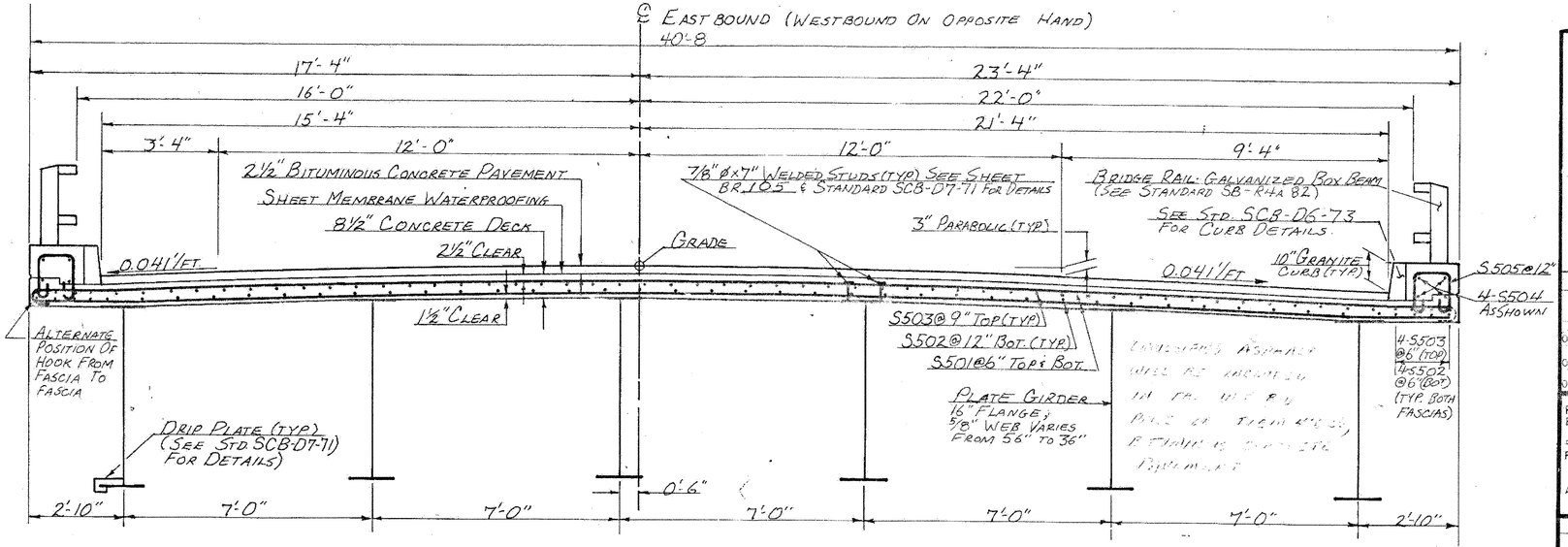
SCALE: 1"=10'-0"

STANDARDS

SB-R4A 82 -R-6-18-82
SB-R4B-82 - 12-28-81
SCB-D1-75 -R-9-14-81
SCB-D4-76 - 1-8-76
SCB-D6-73-R-1-3-79
SCB-D7-71-R-12-15-76

INDEX OF SHEETS

BR100 - PRELIMINARY INFORMATION; TYPICAL ELEVATION & BRIDGE SECTION
BR101 - PLAN
BR102 - BRIDGE QUANTITY SHEET
BR103 - BORING LOG
BR104 - BORING LOG & GENERAL NOTES
BR105 - FRAMING, GIRDER & SPLICE DETAILS
BR106 - BEARING & DIAPHRAGM DETAILS; DEAD LOAD & CAMBER DIAGRAMS
BR107 - ABUTMENT DETAILS
BR108 - APPROACH & DECK SLABS, FILLET & PIER DETAILS
BR109 - REINFORCING STEEL SCHEDULE



TYPICAL BRIDGE SECTION

SCALE: ½"=1'-0"

NEW STRUCTURE

STRUCTURE GEOMETRY:
1. STRUCTURE TYPE 3 SPAN CANTILEVER COMPOSITE PLATE GIRDER OVERALL LENGTH 165'-6"
2. SPAN LENGTH CENTER TO CENTER OF BEARINGS 22'-0" ; 120'-0" ; 22'-0"
3. VERTICAL CLEARANCE ABOVE ROAD UNDER 14'-11"

ALLOWABLE STRESSES:
1. DESIGN LIVE LOAD AASHTO HS 25
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N.A. ON LEDGE N.A.
3. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24,000 P.S.I. COMPRESSION 20,000 P.S.I.
4. ALLOWABLE STRESS FOR CONCRETE CLASS A f'_c 3,500 P.S.I. f_c 1400 P.S.I.
   CLASS B f'_c 3,500 P.S.I. f_c 1400 P.S.I.
5. ALLOWABLE LOAD FOR PILING N.A. TYPE N.A.
6. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A-588 TENSION 27,000 PSI

LOAD RATING (TONS)

STRESS LEVELS	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy = 27.0 KSI	40	50					
POSTED 0.67 Fy = 33.50 KSI	64	73	82		69	70	77
OPERATING 0.75 Fy = 37.5 KSI			97	110			

RECOMMENDED FOR APPROVAL Warren B. Tripp STRUCTURES ENGINEER 4/25/83 DATE
RECOMMENDED FOR APPROVAL R. P. Gendron CHIEF OF DESIGN 4/27/83 DATE
APPROVED BY DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS		
NO.	DESCRIPTION	BY & DATE
1	CHANGED PIER ON PILES TO A SPREAD FOOTING	G.V.S. 6-10-83

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 27 OF 45
BRIDGES 16 E & W
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WEST RUTLAND	Bridge No. 1
HIGHWAY NO. U.S. 4	Log Sta.
	Surv. Sta. 790+00
PRELIM. INFO. & TYP. ELEVATION & BRIDGE SECT.	
US 4 OVER TWO-WAY RAMP	
Designed by R.P. GENDRON	Drawn by S. BASCOM
Checked by R. RANALDO date 6-83	Bridge Design Supervisor R.S. HAUPT date
PROJECT WEST RUTLAND - RUTLAND	PROJECT NO. FEGC 020-1(15)
Bridge Sheet No. BR 100	Sheet 76 of 377

BRUNING 44 131 40151

BR-6

BEGIN BRIDGE
W.B. STA. 788+96.25
Δ=86°-35' LT.
FG. EL. 528.16

BEGIN BEAMS - ABUT #1
W.B. STA. 788+97.00
Δ=86°-35' LT.

END BRIDGE
W.B. STA. 790+61.75
Δ=86°-35' LT.
FG. EL. 527.10

END OF BEAMS - ABUT #2
W.B. STA. 790+61.00
Δ=86°-35' LT.

4'-0" | 20'-0" | 4'-0" | 4'-0" | 14'-0" | 4'-0"

LIMIT OF CLEAR ZONE (TYP)

WW#1 WW#2 WW#3 WW#4

℄ BRG. PIER #1
W.B. STA. 789+19.00
Δ=86°-35' LT.

W.B. STA 789+79.05 (FG. 526.63) =
TWO-WAY RAMP 786+07.73 (FG. 505.30)
Δ=86°-35' LT.

℄ BRG. PIER #2
W.B. STA. 790+39.00

LIMITS OF SLOPE PAVEING (TYP)
2'-0" (TYP)

2'-4" (TO CURB)
2'-0" (TO RAIL)
2'-4" (TO FASCIA)
15'-4" (TO CURB)
16'-0" (TO RAIL)
17'-4" (TO FASCIA)

3'-0"
22'-0"
16'-0"
3'-0"
FACE OF RAIL (TYP)
EDGE OF SHOULDER (TYP)

789+00 | 790+00 | 791+00 ℄ WEST BOUND STATIONING

786+00

1-2 TYP.

1-4 TYP.

33.79'

N 75°-16'-05" E

789+00 | 790+00 | 791+00 ℄ BASELINE US. 4 STATIONING

BASELINE POT. 789+77.03 =
TWO-WAY RAMP POT. 785+73.88
Δ=86°-35' LT.

BEGIN BRIDGE
E.B. STA. 788+90.75
Δ=86°-35' LT.
FG. EL. 528.14

BEGIN BEAMS - ABUT #3
E.B. STA. 788+91.50
Δ=86°-35' LT.

END BRIDGE
E.B. STA. 790+56.25
Δ=86°-35' LT.
FG. EL. 527.10

END BEAMS - ABUT #4
E.B. STA. 790+55.50
Δ=86°-35' LT.

56.21'

WW#5 WW#6 WW#7 WW#8

℄ BRG. - PIER #3
E.B. STA. 789+13.50
Δ=86°-35' LT.

℄ BRG. - PIER #4
E.B. STA. 790+33.50
Δ=86°-35' LT.

E.B. STA 789+73.67 (FG. 527.62) =
TWO-WAY RAMP 785+17.57 (FG. 505.96)
Δ=86°-35' LT.

MIN. CLEARANCE: 14'-11"

2'-4" (TO CURB)
2'-0" (TO RAIL)
2'-4" (TO FASCIA)
15'-4" (TO CURB)
16'-0" (TO RAIL)
17'-4" (TO FASCIA)

3'-0"
16'-0"
22'-0"
3'-0"
FACE OF RAIL (TYP)
EDGE OF SHOULDER (TYP)

789+00 | 790+00 | 791+00 ℄ EASTBOUND STATIONING

785+00

℄ TWO-WAY RAMP STATIONING

1-2

4" x 8" x 16" SOLID CONCRETE BLOCK (TYP)
8"
4"
2" BED OF SAND BORROW

SLOPE PAVING DETAILS
SCALE: 3/4"=1'-0"

PLAN
SCALE: 1" = 10'-0"

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 28 OF 45
BRIDGES 16 E & W
FOR REFERENCE ONLY

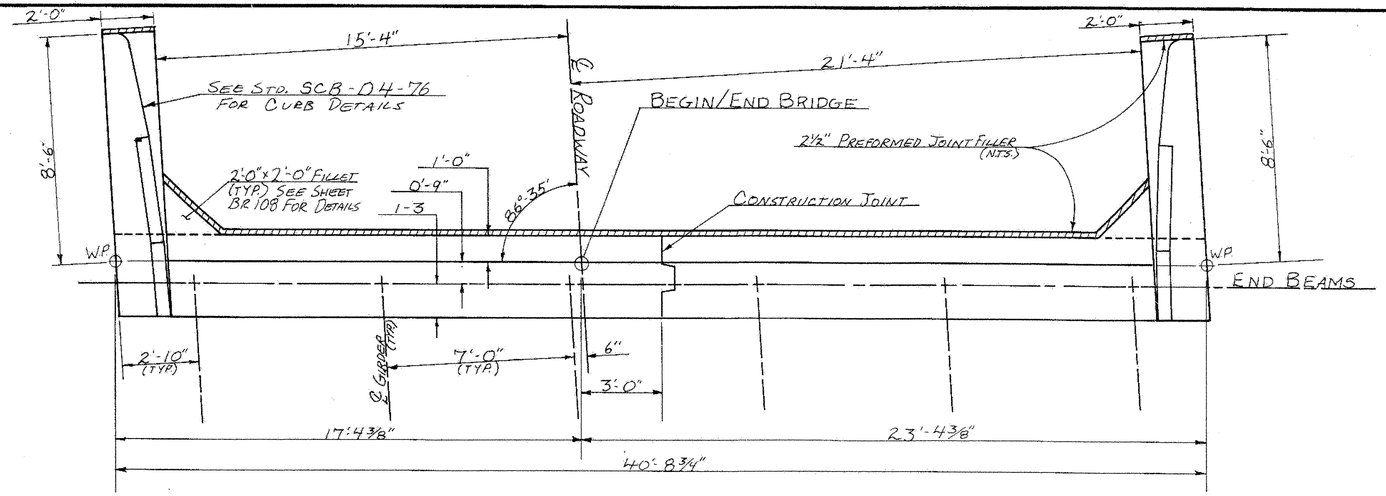
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WEST RUTLAND	Bridge No. 1
HIGHWAY NO. U.S. 4	Log Sta.
	Surv. Sta. 790+00

PLAN
U.S.4 OVER TWO-WAY RAMP

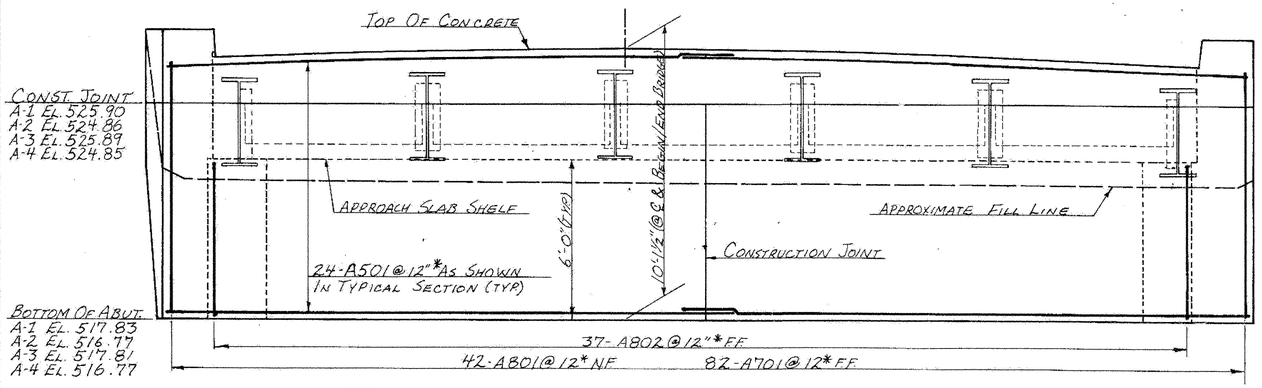
Designed by R.P. GENDRON	Drawn by S. BASCOM
Checked by R. RANALDO date 6-83	Bridge Design Supervisor R.S. HAUDT date
PROJECT WEST RUTLAND - RUTLAND	PROJECT NO. FEGC 020-1(15)
Bridge Sheet No. BR101	Sheet 77 of 377

BRUNING 44 131 40151



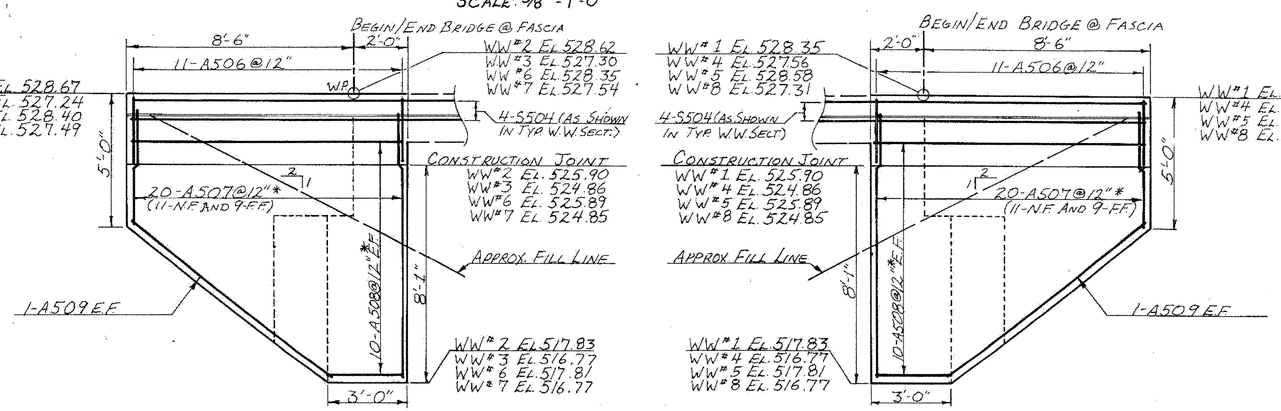
TYPICAL ABUTMENT PLAN **

SCALE: 3/8" = 1'-0"



TYPICAL ABUTMENT ELEVATION **

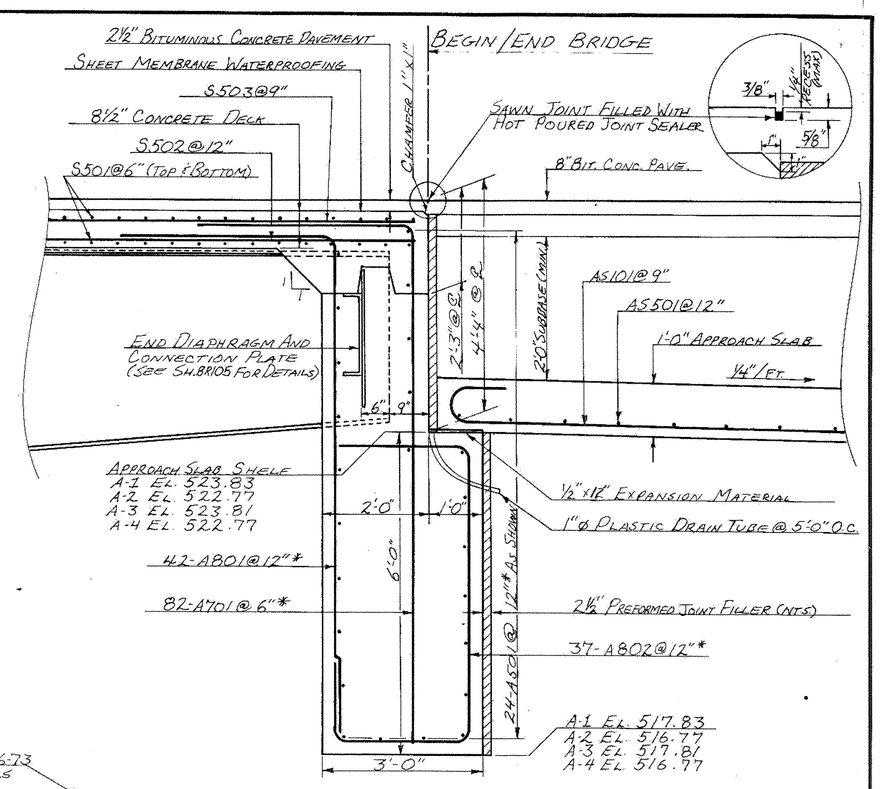
SCALE: 3/8" = 1'-0"



TYPICAL WINGWALL ELEVATIONS

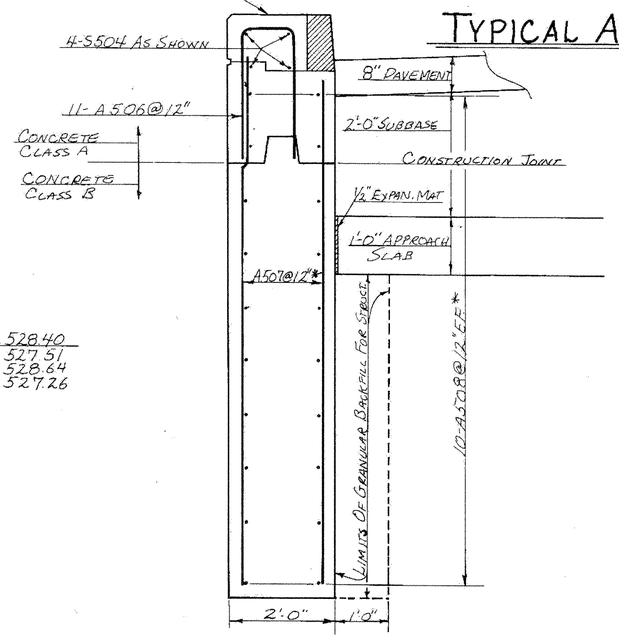
SCALE: 3/8" = 1'-0"

** ABUTMENTS #2 AND #3 ON OPPOSITE HAND.



TYPICAL ABUTMENT SECTION

SCALE: 3/4" = 1'-0"



TYPICAL WINGWALL SECTION

SCALE: 3/4" = 1'-0"

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 29 OF 45
BRIDGES 16 E & W
FOR REFERENCE ONLY

NOTES:
1. SEE STANDARD SCB-D6-73 FOR CONSTRUCTION JOINT DETAILS.
2. THE CLOSED CELL FOAM, PREFORMED JOINT FILLER, SHALL MEET THE REQUIREMENTS OF SUBSECTION 707.23. PAYMENT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE, CLASS A AND B.

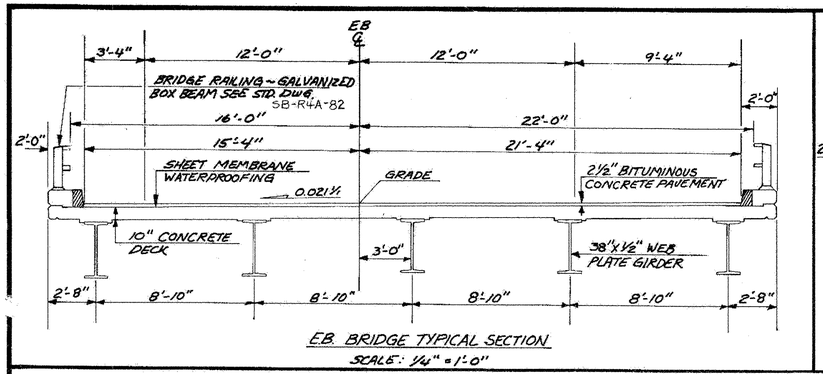
NOTE: N.F. = NEAR FACE
F.F. = FAR FACE
E.F. = EACH FACE
* = CUT IN FIELD WHERE NECESSARY TO MAINTAIN CLEARANCE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WEST RUTLAND	Bridge No. 1
HIGHWAY NO. US. 4	Log Sta. / Surv. Sta. 790+00
ABUTMENT DETAILS	
US.4 OVER TWO-WAY RAMP	
Designed by R.P. GENDRON	Drawn by S. BASCOM
Checked by R. RANALDO date 6-83	Bridge Design Supervisor R.S. HAUPT date
PROJECT WEST RUTLAND-RUTLAND	PROJECT NO. FEGC 020-1(15)
Bridge Sheet No. BR107	Sheet 79 of 377

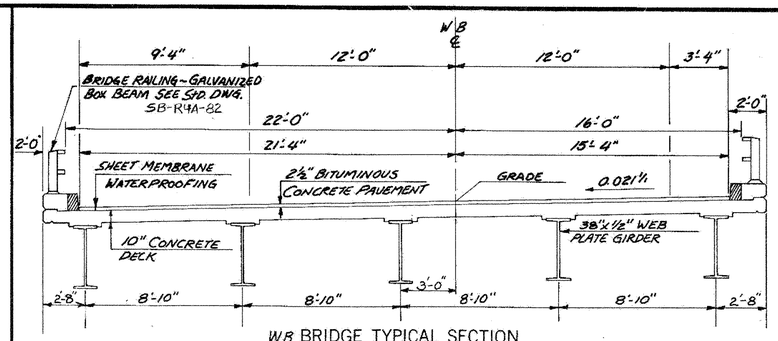
BRUNING 44-131 40151

BR-6



EB BRIDGE TYPICAL SECTION

SCALE: ¼" = 1'-0"



W.B. BRIDGE TYPICAL SECTION

SCALE: ¼" = 1'-0"

1. THE GENERAL NOTE PERTAINING TO SPECIFICATIONS, MATERIALS, AND CONSTRUCTION IS SHOWN ON STANDARD DRAWING SCB-D1-75. OTHER GENERAL NOTES ON THE STANDARD, NOT OTHERWISE SHOWN OR MODIFIED ON THESE PLANS, ARE NOTES 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, AND 16.

2. THE STRUCTURE IS DESIGNED FOR AN HS-25-44 LIVE LOAD WITH NO FUTURE PAVEMENT ALLOWANCE.

3. FLEMING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AT A MAXIMUM OF FOUR (4) FEET.

4. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BOTH SUBSTRUCTURE AND SUPERSTRUCTURE, EXCEPT THE BOTTOM OF THE DECK BETWEEN DRIP BEADS.

5. THE ABUTMENTS AND PIERS ARE DESIGNED TO SET ON FRICTION PILES WITH A DESIGN LOAD CAPACITY OF 90 KIPS PER PILE.

6. DRIP PLATES ON GIRDERS 1 AND 5 ARE TO BE PLACED ACCORDING TO DETAIL "C" ON STANDARD SHEET SCB-D7-71.

7. IN ALL HORIZONTAL CONSTRUCTION JOINTS, THE SHEAR KEYS SHALL BE FORMED AS DETAILED ON STANDARD DRAWING SCB-D6-73 DETAIL B, AND THEY SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. AN UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

8. SEE STANDARD DRAWING SCB-D6-73 DETAIL F FOR DETAILS OF FILLET AT FACE OF CURB AND OTHER DETAILS NOT SHOWN OR MODIFIED ON "CURB AND RAIL DETAIL", SHEET BR 509.

9. SEE STANDARD DRAWING SCB-D9-71 DETAIL B, SECTION A-A, C-C, AND D-D FOR POLYURETHANE JOINT SEALER DETAILS TO BE USED BETWEEN CURBS ON SUPERSTRUCTURE AND CURBS ON WINGWALLS AT ABUTMENTS 2 AND 4. PAYMENT TO BE SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT. OMIT WATERSTOP.

10. ALL WEEP PIPES SHALL NOT BE PLACED MORE THAN TEN (10) FEET APART OR WITHIN TWO (2) HORIZONTAL FEET OF ABUTMENTS, PIER CAPS, OR DIAPHRAGMS. WEEP PIPES SHALL BE LOCATED ONLY BETWEEN THE PIERS AND ABUTMENTS.

11. THERE ARE FOUR (4) PILE LOADING TESTS INCLUDED IN THE ESTIMATE, ADDITIONAL PILE LOADING TESTS ARE TO BE USED AS DEEMED NECESSARY BY THE RESIDENT ENGINEER.

12. MODIFY STANDARD DRAWING SCB-D4-76, DETAIL "B", BY OMITTING PARAFFIN AT JOINTS IN CURBS AND BY RUNNING REINFORCING STEEL THROUGH JOINTS.

LIST OF SHEETS

BR 501	PRELIMINARY INFORMATION
BR 502	QUANTITY SHEETS
BR 503	BORINGS
BR 504	W.B. PLAN AND ELEVATION
BR 505	E.B. PLAN AND ELEVATION
BR 506	W.B. SUPERSTRUCTURE DETAILS
BR 507	E.B. SUPERSTRUCTURE DETAILS
BR 508	CURTAIN WALL, APPROACH SLAB & DECK STEEL DETAILS
BR 509	DIAPHRAGM AND CURB DETAILS
BR 510	EXPANSION JOINT DETAILS
BR 511	BEARING DEVICE DETAILS
BR 512	BEARING DETAILS, CAMBER DIAGRAMS, POUR SEQUENCES
BR 513	ABUTMENT # 1 DETAILS
BR 514	ABUTMENT # 2 DETAILS
BR 515	ABUTMENT # 3 DETAILS
BR 516	ABUTMENT # 4 DETAILS
BR 517	ABUTMENT FOOTING STEEL DETAILS
BR 518	ABUTMENT PILE LAYOUT
BR 519	PIER # 1 AND # 2 DETAILS
BR 520	PIER # 3 AND # 4 DETAILS
BR 521	REINFORCING STEEL SCHEDULE
BR 522	REINFORCING STEEL SCHEDULE
BR 523	REINFORCING STEEL SCHEDULE

LIST OF STANDARD DRAWINGS

STD. DWG.	SB-R4A-82	9/7/83 R
STD. DWG.	SB-R4B-82	9/7/83 R
STD. DWG.	SCB-D1-75	9/14/81 R
STD. DWG.	SCB-D4-76	1/8/76
STD. DWG.	SCB-D6-73, DET. B, D, F	1/3/79 R
STD. DWG.	SCB-D7-71, DET. C	12/15/76 R
STD. DWG.	SCB-D9-71, DET. B	1/27/75 R

REFERENCE SHEETS

U.S. RTE. 4 PLAN SHEET	STA. 924+00---940+00	(1 SHEET)
U.S. RTE. 4 PROFILE SHEET	STA. 924+00---940+00	(1 SHEET)
DORR DRIVE PROFILE SHEET	STA 20+00----30+00	(1 SHEET)
U.S. RTE. 4 SECTIONS	W.B. STA. 929+00---932+50	(4 SHEETS)
DORR DRIVE SECTIONS	STA. 24+00----28+00	(1 SHEET)
U.S. RTE. 4 SECTIONS	E.B. STA. 930+00---932+50	(3 SHEETS)

EXISTING STRUCTURE

1. STRUCTURE TYPE N/A OVERALL LENGTH INVENTORY RATING
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) VERTICAL CLEARANCE ABOVE STREAMBED
5. WATER SURFACE ELEVATION @ Q 2.33 WATER SURFACE ELEVATION @ Q
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD YEAR ESTIMATED DISCHARGE
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL
9. DISPOSITION OF STRUCTURE

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE 3 SPAN CONTINUOUS PLATE GIRDER BRIDGE OVERALL LENGTH E.B.=207'-0½" W.B.=247'-0½"
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS E.B. = 60'-93'-50' W.B. = 81'-98'-68'
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER E.B.= 28.5' W.B. = 33.7'
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM N/A
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) N/A
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:

1. Q 2.33 N/A WATER ELEVATION VELOCITY
   Q 10 WATER ELEVATION VELOCITY
   Q 25 WATER ELEVATION VELOCITY
   Q 50 WATER ELEVATION VELOCITY
   Q 100 WATER ELEVATION VELOCITY
2. DRAINAGE AREA CHARACTER OF TERRAIN
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM?
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? IS ORDINARY RISE RAPID?
5. NATURE OF NATURAL STREAMBED
6. ESTIMATED SCOUR DEPTH COMMENT ON: DRIFT ICE
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF
8. VERTICAL CLEARANCE ABOVE Q
9. ALLOWABLE WATER SURFACE ELEVATION LIMITED BY
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? IF YES, DESCRIBE
11. AVERAGE DAILY LOW FLOW DEPTH AVERAGE DAILY HIGH FLOW DEPTH
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE SPAN WATERWAY AREA OF FULL OPENING Q
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE SPAN WATERWAY AREA OF FULL OPENING Q

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS-25-44
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
3. ALLOWABLE LOAD FOR PILING 90 KIPS TYPE HP 12X53 ESTIMATED LENGTH ABUTMENTS: 44'± , PIERS-16'±
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A 588 TENSION 27,000 PSI
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24,000 PSI COMPRESSION 20,000 PSI
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f_c 3,500 PSI f_c 1,400 PSI
   CLASS B f_c 3,500 PSI f_c 1,400 PSI

TRAFFIC MAINTENANCE:

1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE N/A OR ON TEMPORARY BRIDGE N/A
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY TRAFFIC CONTROL SIGNALS REQUIRED
   MINIMUM CLEAR SPAN MINIMUM CLEAR HEIGHT MINIMUM WATERWAY AREA
   ARE SIDEWALKS REQUIRED? IF SO, ON WHAT SIDE?

ADDITIONAL DESIGN CONSIDERATIONS

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 30 OF 45
BRIDGES 19 E & W
FOR REFERENCE ONLY

EASTBOUND

LOAD RATING (TONS)

STRESS LEVELS	TRUCK H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy = 27.0 Ksi	41	49					
POSTED 0.67 Fy = 33.0 Ksi	58		83		63	63	75
OPERATING 0.75 Fy = 37.5 Ksi			101	117			

WESTBOUND

LOAD RATING (TONS)

STRESS LEVELS	TRUCK H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy = 27.0 Ksi	40	47					
POSTED 0.67 Fy = 33.0 Ksi	56		79		58	60	70
OPERATING 0.75 Fy = 37.5 Ksi			95	110			

RECOMMENDED FOR APPROVAL Warren B. Towne 4/14/83
STRUCTURES ENGINEER DATE

RECOMMENDED FOR APPROVAL
CHIEF OF DESIGN DATE

APPROVED BY
DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS

NO.	DESCRIPTION	BY & DATE

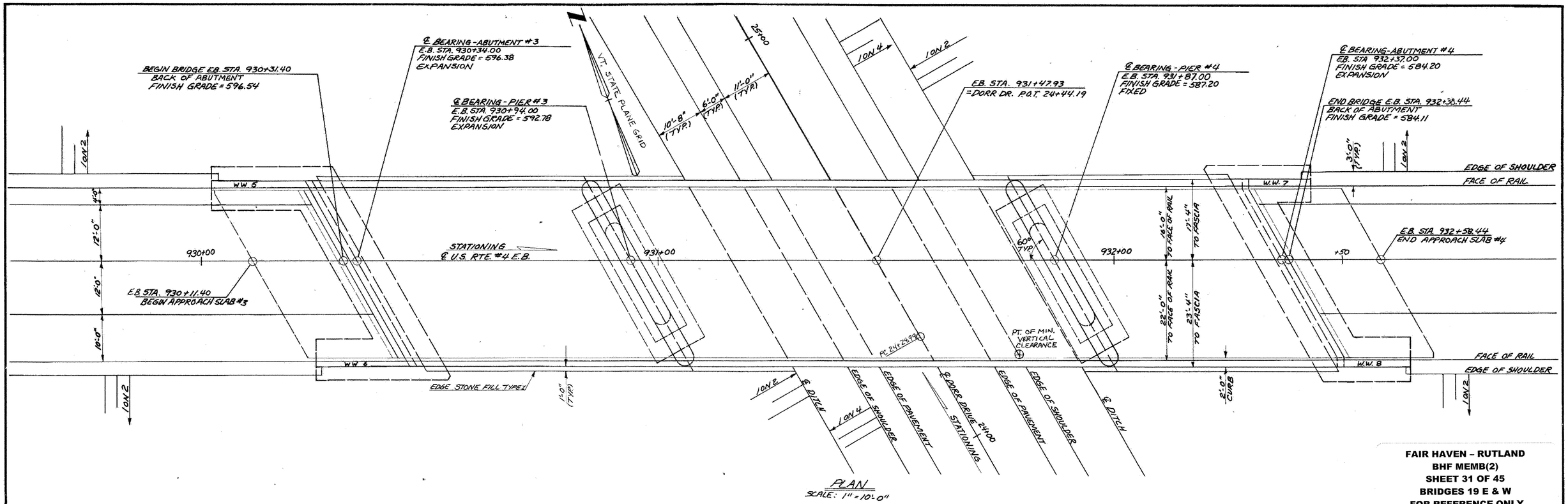
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF RUTLAND — Bridge No. 5 — Log Sta.
HIGHWAY NO. U.S. RTE. 4 — Surv. Sta. WB 930+81, EB 931+35

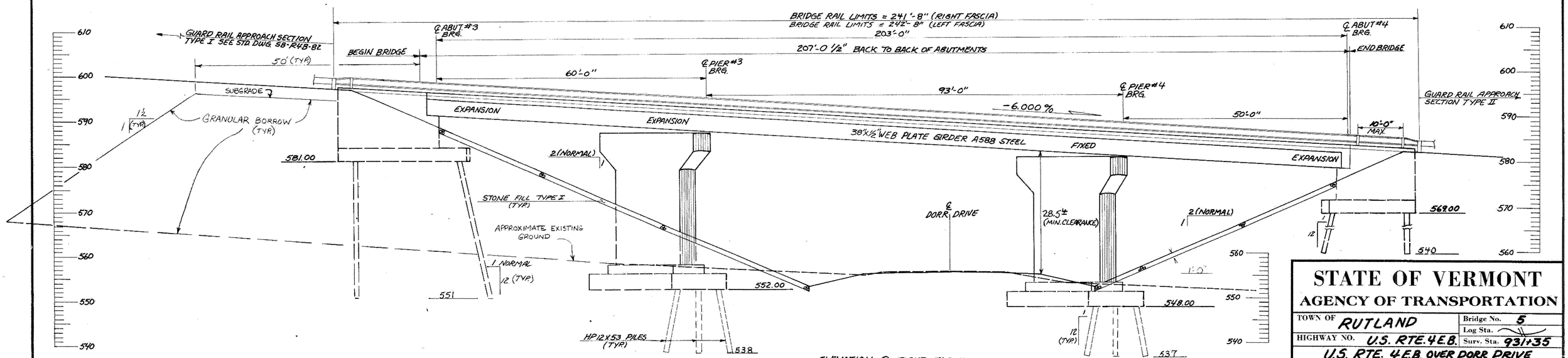
U.S. RTE. 4 OVER DORR DRIVE
PRELIMINARY INFORMATION

Designed by J.B. McCARTHY — Drawn by L.C. GATES
Checked by J.B. McCARTHY date 3/83 — Bridge Design Supervisor F.W. Bolkum date 4/83
PROJECT WEST RUTLAND - RUTLAND — PROJECT NO. FEGC 020-1(15)
Bridge Sheet No. BR 501 — Sheet 81 of 377

BRUNING 44-131-40151



PLAN
SCALE: 1" = 10'-0"



ELEVATION @ RIGHT FASCIA
SCALE: 1" = 10'-0"

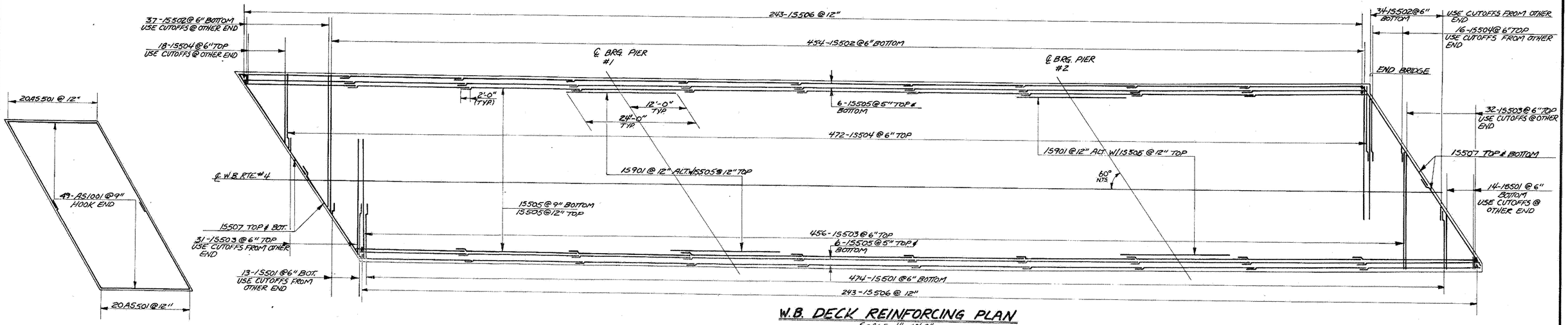
NOTE: FOR LENGTH OF PILES UNDER ABUTS., SEE SHEET BR-518.
FOR LENGTH OF PILES UNDER PIERS SHEETS BR-519 & BR-520.

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 31 OF 45
BRIDGES 19 E & W
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF RUTLAND	Bridge No. 5
HIGHWAY NO. U.S. RTE. 4 E.B.	Log Sta. / Surv. Sta. 931+35
U.S. RTE. 4 E.B. OVER DORR DRIVE	
PLAN AND ELEVATION	
Designed by J.B. McCARTHY	Drawn by L.C. GATES
Checked by J.B. McCARTHY date 3/83	Bridge Design Supervisor F.W. Balkum date 4/83
PROJECT WEST RUTLAND-RUTLAND	PROJECT NO. FEGC 020-1(15)
Bridge Sheet No. BR 505	Sheet 85 of 377

BRUNING 44-131-40151

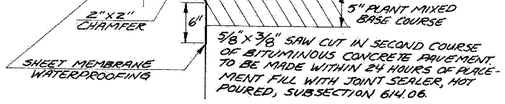


W.B. DECK REINFORCING PLAN

SCALE 1"=10'-0"

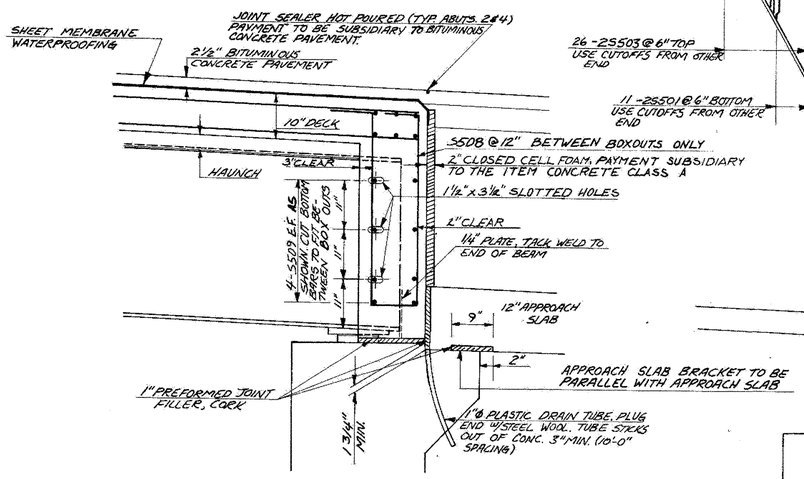
APPROACH SLAB STEEL DETAIL

SCALE: 1"=10'-0"



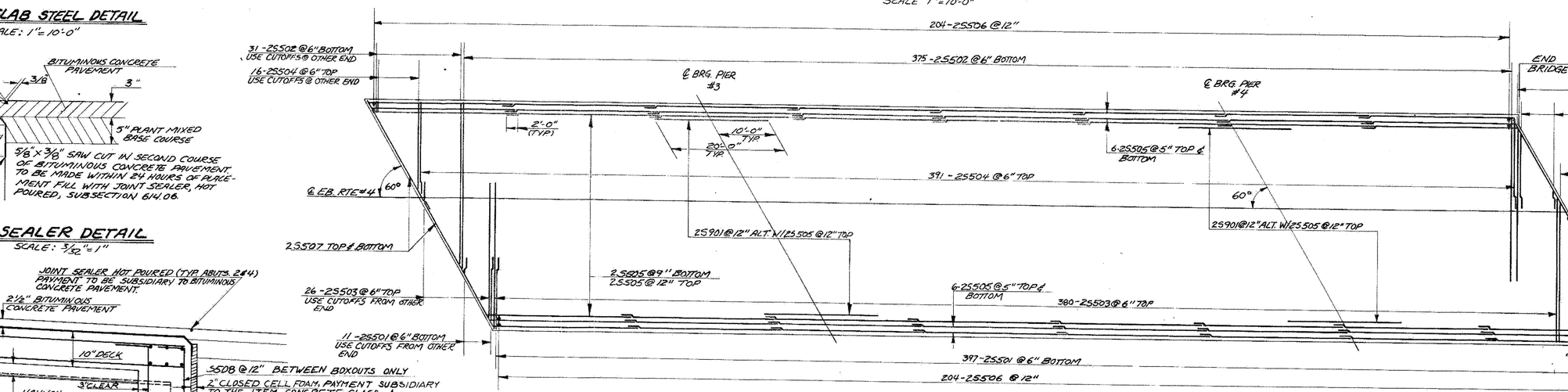
JOINT SEALER DETAIL

SCALE: 3/32"=1"



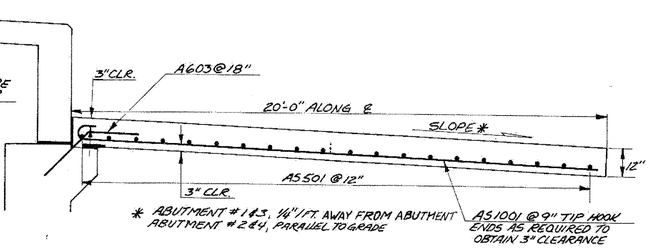
CURTAIN WALL DETAIL

SCALE: 3¼"=1'-0"



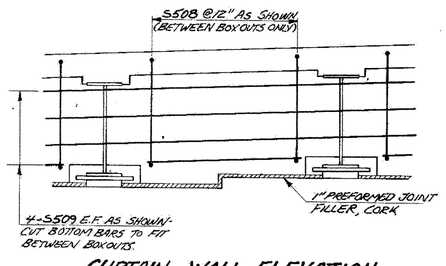
E.B. DECK REINFORCING PLAN

SCALE 1"=10'-0"



APPROACH SLAB TYPICAL SECTION

SCALE: 3/8"=1'-0"



CURTAIN WALL ELEVATION

SCALE: 3/8"=1'-0"

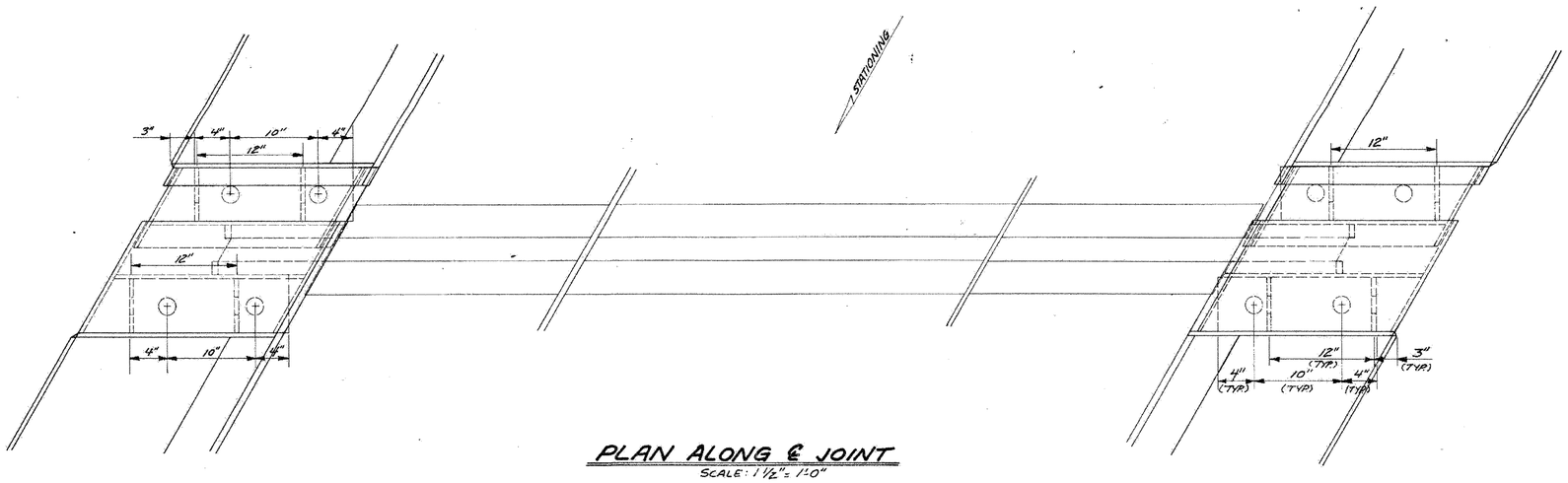
FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 32 OF 45
BRIDGES 19 E & W
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

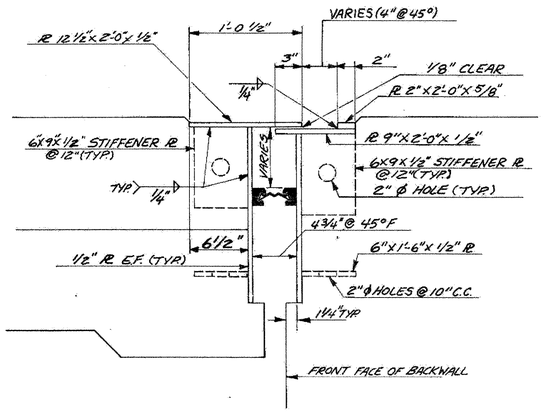
TOWN OF RUTLAND	Bridge No. 5
HIGHWAY NO. U.S. RTE. #4	Log Sta. ~
	Surv. Sta. 4/8 930-81, 2/8 931.35
U.S. RTE. #4 OVER DORR DRIVE	
CURTAIN WALL, APPROACH SLAB & DECK STEEL DETAILS	
Designed by J.B. McCARTHY	Drawn by L.C. GATES
Checked by G.S. ROGERS date 8/83	Bridge Design Supervisor F.W. Bolkum date 12/83
PROJECT WEST RUTLAND-RUTLAND	PROJECT NO. FEGC 020-1(15)
Bridge Sheet No. BR508	Sheet 88 of 377

BRUNING 44-131 59364

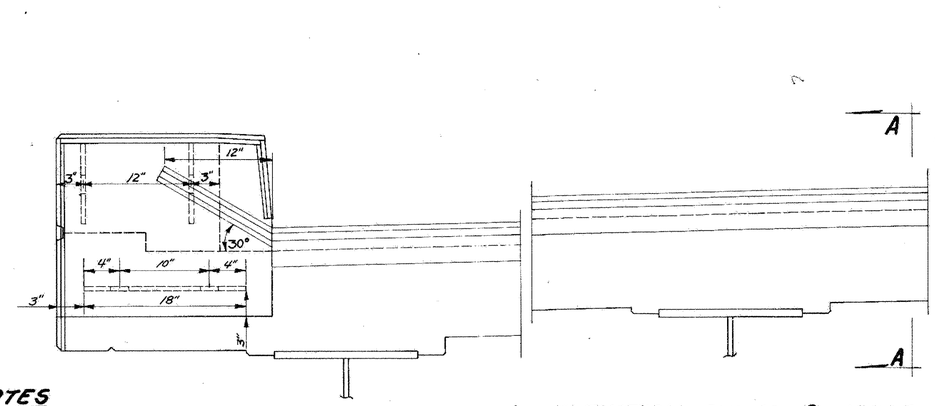
BR-6-'83



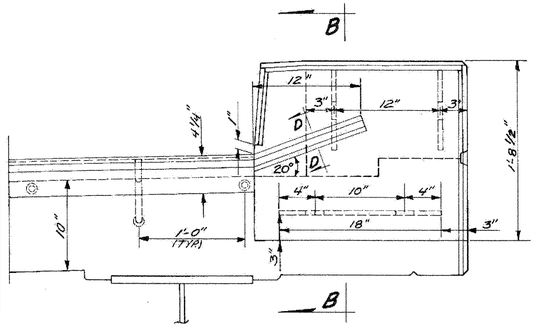
PLAN ALONG ℄ JOINT
SCALE: 1 1/2" = 1'-0"

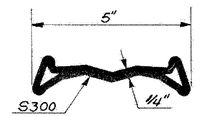


SECTION B-B
SCALE: 1 1/2" = 1'-0"

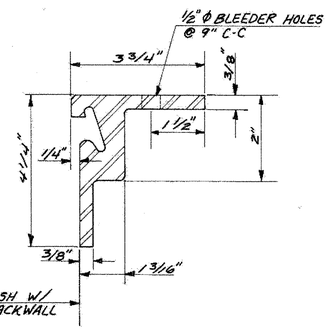


ELEVATION ALONG ℄ JOINT
SCALE: 1 1/2" = 1'-0"





NEOPRENE SEAL
N.T.S.

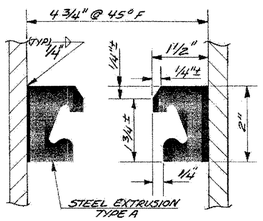


STEEL EXTRUSION
SCALE 1/2" = 1"
(TYPE C)

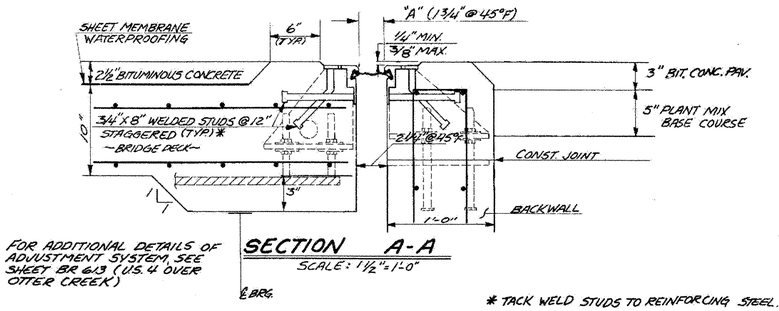
NOTES

1. ALTERNATE EXPANSION JOINTS CAPABLE OF PROVIDING A TOTAL MOVEMENT OF 3" MAY BE SUBMITTED FOR APPROVAL TO THE ENGINEER IN LIEU OF THE DESIGN AS DETAILED. SEE NOTE 6.
2. ALL STEEL COMPONENTS USED IN THE EXPANSION JOINT ASSEMBLY SHALL BE ASTM A-36 AND SHALL BE GALVANIZED OR METALIZED AS PER SECTION 731.06.
3. THE FABRICATOR SHALL SEND DETAILED DRAWINGS OF THE EXPANSION DAM TO THE STRUCTURES DIVISION FOR APPROVAL PRIOR TO FABRICATION.
4. THE ITEM "ELASTOMERIC EXPANSION DAM" (3" MOVEMENT) SHALL INCLUDE IN THE COST PER LINEAR FOOT THE FABRICATION AND ERECTION (INCLUDING TACK WELDS) OF THE COMPLETE EXPANSION JOINT ASSEMBLY INCLUDING THE EXTRUDED STEEL SECTIONS, PREFORMED NEOPRENE SEAL, WELDED STUDS, CURB PLATES AND ANY OTHER MISCELLANEOUS HARDWARE.
5. THE EXPANSION DAM SHALL BE SHIPPED WITH AN APPROVED ADJUSTABLE CONNECTION SYSTEM WHICH WILL ALLOW THE COMPLETE UNIT TO BE ADJUSTED FOR TEMPERATURE AND ANCHORED IN POSITION.
6. THE JOINT SHOWN ON SHEET BR 6/3 (U.S. 4 OVER OTTER CREEK) IS AN ACCEPTABLE OPTION FOR THE JOINT SHOWN HERE. IF THE JOINT SHOWN ON SHEET BR 6/3 IS SELECTED, THEN THE HOPPERS & DOWNSPOUT WILL BE PAID UNDER THE ITEM "STRUCTURAL STEEL".

SETTING TABLE	
TEMP°F	"A"
20	2 1/16"
30	1 15/16"
40	1 13/16"
50	1 11/16"
60	1 9/16"
70	1 7/16"
80	1 5/16"
90	1 3/16"
100	1 1/8"



SECTION D-D
SCALE: 1/2" = 1"



FOR ADDITIONAL DETAILS OF ADJUSTMENT SYSTEM SEE SHEET BR 6/3 (U.S. 4 OVER OTTER CREEK)

SECTION A-A
SCALE: 1 1/2" = 1'-0"
℄ BRG.

* TACK WELD STUDS TO REINFORCING STEEL.

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 33 OF 45
BRIDGES 19 E & W
FOR REFERENCE ONLY

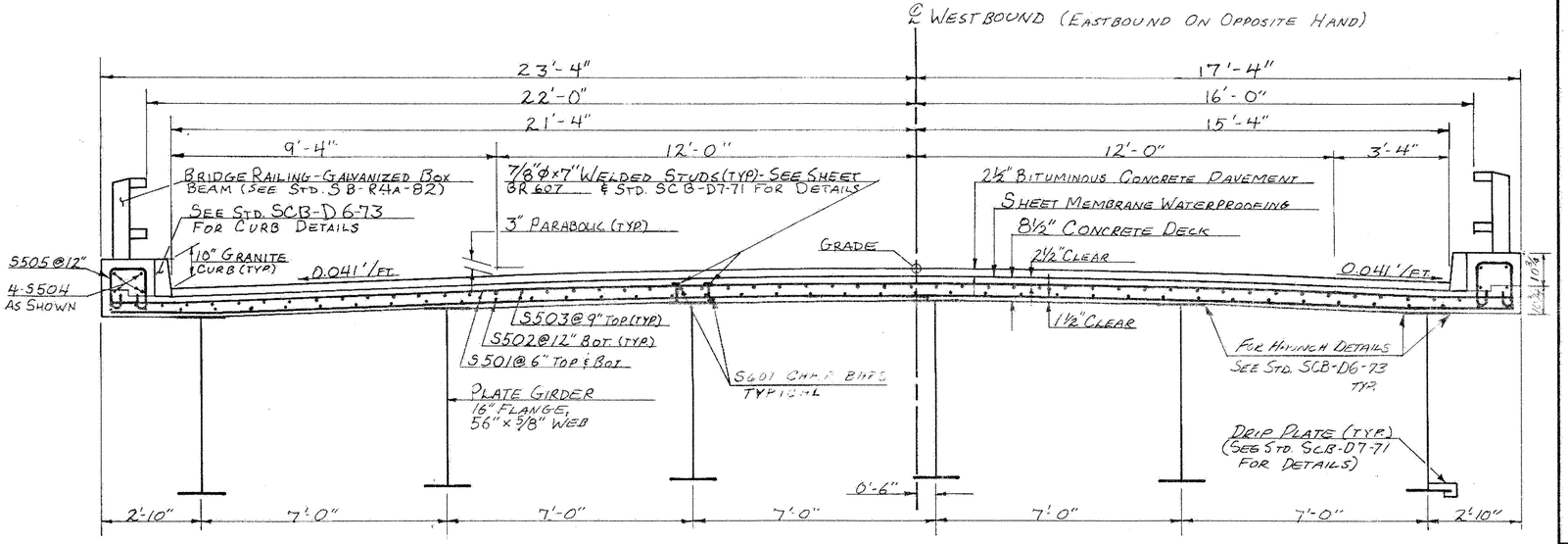
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF RUTLAND	Bridge No. 5
HIGHWAY NO. U.S. RTE. 4	Log Sta. ——
	Surv. Sta. W.B. 930+81 E.B. 931+35

U.S. RTE. 4 over DORR DRIVE
EXPANSION JOINT DETAILS (ABUT #1 & #3)

Designed by J.B. McCARTHY	Drawn by L.C. GATES
Checked by G.S. ROGERS date 8/83	Bridge Design Supervisor F.W. Bolkum date 12/83
PROJECT WEST RUTLAND - RUTLAND	PROJECT NO. FEGC 020-1(15)
Bridge Sheet No. BR 510	Sheet 90 of 377

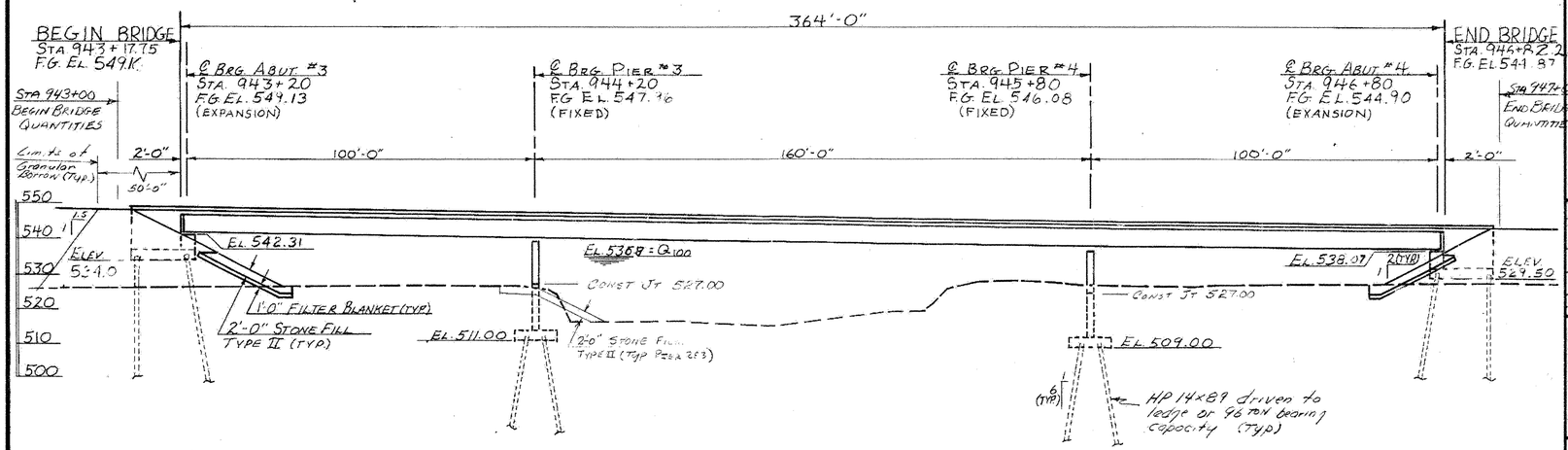
BRUNING 44-131 58384
BR-6-83



TYPICAL BRIDGE SECTION

SCALE: ½" = 1'-0"

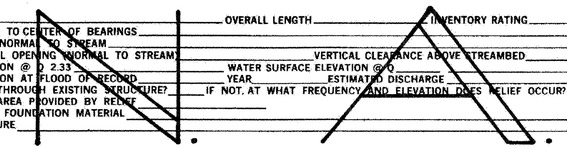
STA. 956+50
FG. EL. 533.50
1400' V.C.
WB -1.1754% +0.8889%
EB -1.1754% +0.8519%
N.T.S.



EASTBOUND ELEVATION ALONG RIGHT FASCIA

SCALE: 1" = 20'-0"

EXISTING STRUCTURE



1. STRUCTURE TYPE _____ OVERALL LENGTH _____ INVENTORY RATING _____
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS _____
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM _____
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) _____ VERTICAL CLEARANCE ABOVE STREAMBED _____
5. WATER SURFACE ELEVATION @ Q 2.33 _____ WATER SURFACE ELEVATION @ Q _____
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD _____ YEAR _____ ESTIMATED DISCHARGE _____
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? _____ IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? _____
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF _____
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL _____
9. DISPOSITION OF STRUCTURE _____

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE 3 SPAN CONTINUOUS COMPOSITE PLATE GIRDER (A588) OVERALL LENGTH 364'-0"
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 100'-0" ; 160'-0" ; 100'-0"
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 98'-0" ; 158'-0" ; 98'-0"
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 5600 S.F. (520 S.M.)
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? No

HYDRAULIC DATA:

1. Q 2.33 6,000 c.f.s. WATER ELEVATION 529.1 VELOCITY 2.6 F.P.S.
   Q 10 11,000 c.f.s. WATER ELEVATION 531.9 VELOCITY 3.5 F.P.S.
   Q 25 14,500 c.f.s. WATER ELEVATION 533.5 VELOCITY 4.0 F.P.S.
   Q 50 17,000 c.f.s. WATER ELEVATION 534.6 VELOCITY 4.3 F.P.S.
   Q 100 22,000 c.f.s. WATER ELEVATION 536.8 VELOCITY 4.7 F.P.S.
2. DRAINAGE AREA 241 Sq. Mi. CHARACTER OF TERRAIN ROLLING TO MOUNTAINOUS
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? No
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? No IS ORDINARY RISE RAPID? No
5. NATURE OF NATURAL STREAMBED SAND AND SILT
6. ESTIMATED SCOUR DEPTH 2'-6" COMMENT ON: DRIFT SLIGHT ICE MODERATE
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? YES IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? N.A.
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF —
8. VERTICAL CLEARANCE ABOVE Q 50 ≥ 4' @ ABUT #4
9. ALLOWABLE WATER SURFACE ELEVATION 538.0 LIMITED BY LOW BEAM (@ ABUT #4)
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No IF YES, DESCRIBE
11. AVERAGE DAILY LOW FLOW 200 CFS DEPTH 5' AVERAGE DAILY HIGH FLOW 650 CFS DEPTH 8'
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED YES - STONE FILL, TYPE II W/ GRAVEL FILTER BLANKET
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 10,000' SPAN 2@59' WATERWAY AREA OF FULL OPENING _____ Q _____
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 9,000' SPAN 127'-80' WATERWAY AREA OF FULL OPENING _____ Q _____

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS 25
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL NA ON LEDGE PILES TO LEDGE
3. ALLOWABLE LOAD FOR PILING 193 KIPS TYPE HP 14 x 89 ESTIMATED LENGTH SEE TABLE BELOW
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A 588 TENSION 27,000 PSI.
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24,000 PSI. COMPRESSION 20,000 PSI.
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f'_c 3500 PSI f_c 1400 PSI
   CLASS B f'_c 3500 PSI f_c 1400 PSI

ESTIMATED PILE LENGTHS

WEST BOUND		EAST BOUND	
ABUTMENT # 1	110'	ABUTMENT # 3	100'
PIER # 1	100'	PIER # 3	90'
PIER # 2	140'	PIER # 4	140'
ABUTMENT # 2	160'	ABUTMENT # 4	160'

ADDITIONAL DESIGN CONSIDERATIONS

LOAD AND CONTROLS 46 TON INVENT.

INDEX OF SHEETS

BR 600	PRELIMINARY INFORMATION
BR 601	BRIDGE QUANTITY SHEET
BR 602	PLAN
BR 603	BORING LOGS
BR 604	BORING LOGS
BR 605	BORING LOGS
BR 606	BORING LOGS
BR 607	FRAMING PLAN AND GIRDER ELEVATION
BR 608	CAMBER DIAGRAM & GENERAL NOTES
BR 609	CROSSFRAME & SCUPPER DETAILS
BR 610	GIRDER SPLICE & APPROACH SLAB DETAILS
BR 611	DECK REINFORCING, CURB & RAILING DETAILS
BR 612	EXPANSION DAM DETAILS - I
BR 613	EXPANSION DAM DETAILS - II
BR 614	BEARING
BR 615	ABUTMEN
BR 616	ABUTMEN
BR 617	WINGWAL
BR 618	PIER DE
BR 619	REINFOR
BR 620	REINFOR
BR 621	CHANNEL

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 34 OF 45
BRIDGES 20 E & W
FOR REFERENCE ONLY

LOAD RATING (TONS)

STRESS LEVELS	TRUCK H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy =	50	55					
POSTED 0.67 Fy =	75	82	91		77	77	87
OPERATING 0.75 Fy =			110	121			

RECOMMENDED FOR APPROVAL Warren B. Tripp 4/25/83
STRUCTURES ENGINEER DATE

RECOMMENDED FOR APPROVAL J. C. Ezzo Acting 4/27/83
CHIEF OF DESIGN DATE

APPROVED BY _____
DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS

NO.	DESCRIPTION	BY & DATE

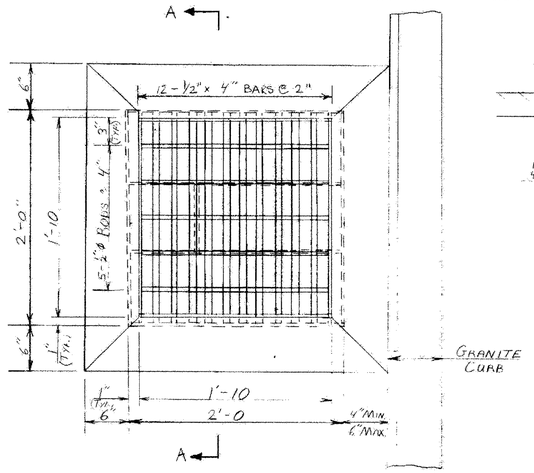
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF RUTLAND	Bridge No. 6
	Log Sta.
HIGHWAY NO. U.S.4	Surv. Sta. 945+00

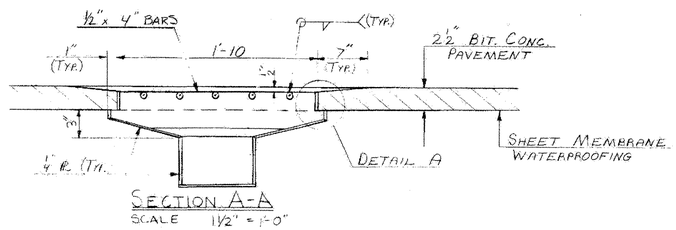
PRELIMINARY INFORMATION
U.S.4 OVER OTTER CREEK

Designed by G. V. Spulak	Drawn by S. Bascom
Checked by R.P. Gendron date 2-25-83	Bridge Design Supervisor R.S. Haupt date
PROJECT WEST RUTLAND-RUTLAND	PROJECT NO. FEGC 020-1(15)
Bridge Sheet No. BR600	Sheet 93 of 377

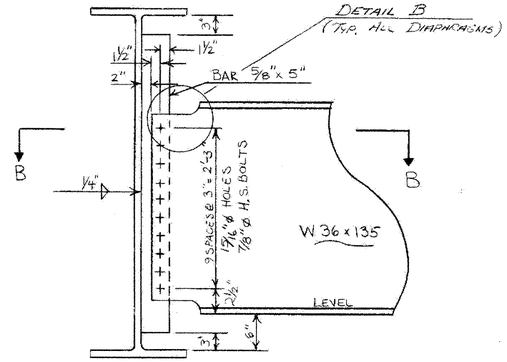
BRUNING 44-131 40151
BR-2



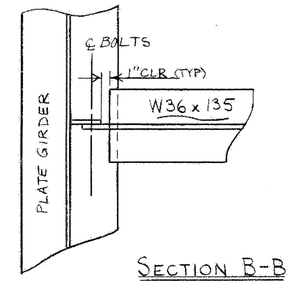
SCUPPER PLAN
SCALE 1½" = 1'-0"



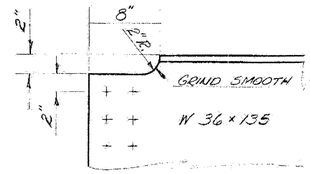
SECTION A-A
SCALE 1½" = 1'-0"



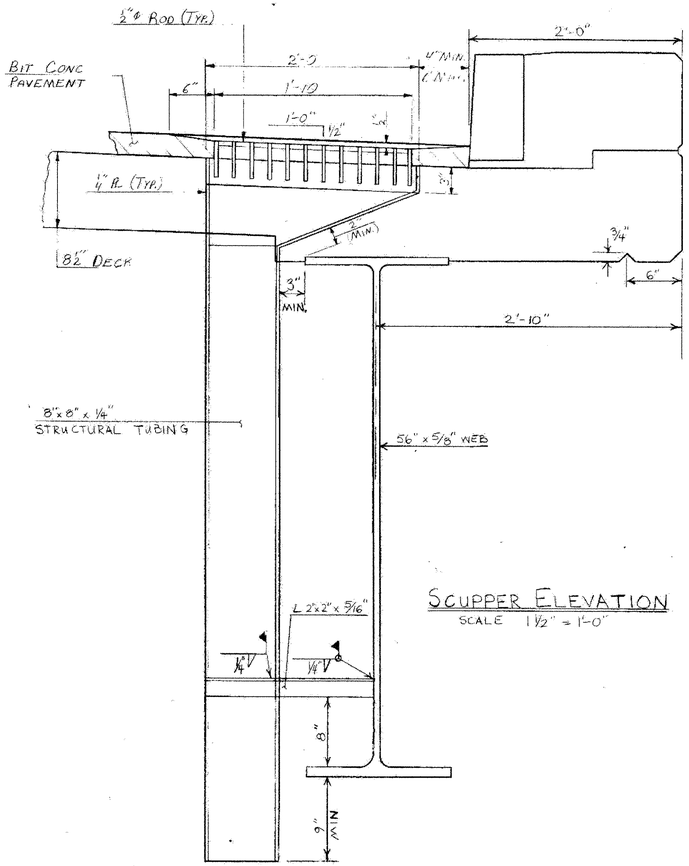
INTERMEDIATE DIAPHRAGM
SCALE 1"=1'-0"



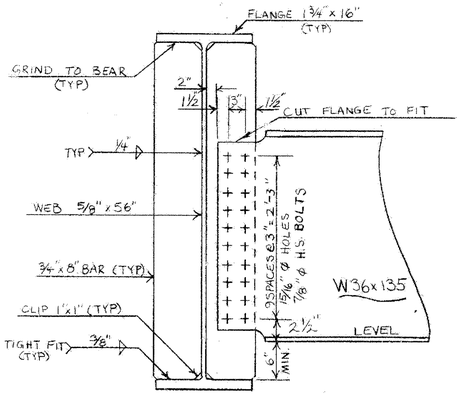
SECTION B-B
SCALE 1"=1'-0"



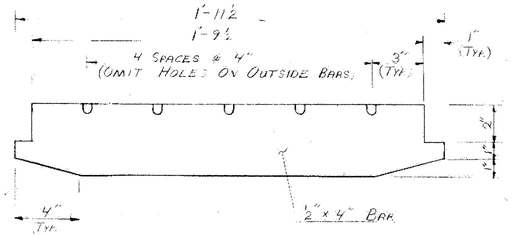
DETAIL B
SCALE: 1½"=1'-0"



SCUPPER ELEVATION
SCALE 1½" = 1'-0"

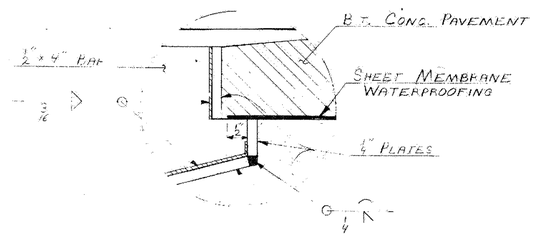


PIER DIAPHRAGM
SCALE 1"=1'-0"



SCUPPER GRATE BAR DETAIL
SCALE 3" = 1'-0

ABUTMENT DIAPHRAGM
SCALE 1"=1'-0"



DETAIL A
SCALE 2" = 1"

NOTES:

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 OR A-501. ALL PLATES, BARS, AND ANGLES SHALL CONFORM TO ASTM A-36.
2. ALL SCUPPERS SHALL BE GALVANIZED ACCORDING TO ASTM A-123 AFTER FABRICATION.
3. TOP SURFACE OF SCUPPERS MUST BE SLOPED TO MATCH ROADWAY CR(

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 35 OF 45
BRIDGES 20 E & W
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF Rutland	Bridge No. 6
HIGHWAY NO. US 4	Log Sta. / Surv. Sta. 945+00
Crossframe & Scupper Details	
US 4 BR6 Over Otter Creek	
Designed by R.P. Gendron	Drawn by S. Jung
Checked by A. Elwood date 8-83	Bridge Design Supervisor R.S. Haupt date
PROJECT West Rutland - Rutland	PROJECT NO. FEGC 020-1(15)
Bridge Sheet No. BR 609	Sheet 95 of 377

DRAWING 44131 38984
BR-6-'83

INDEX OF SHEETS

1. TITLE SHEET AND TYPICAL CROSS SECTION OF IMPROVEMENT
2. BRIDGE QUANTITY AND EARTHWORK SHEET
3. PLAN SHEET
4. PROFILE SHEET
5. PLAN SHEET
6. PROFILE SHEET
7. STANDARD SHEET E-2 (BARRICADES, SIGNS AND LIGHTS)
8. STANDARD SHEET G-3 (THREE CABLE GUARD RAIL W/ STEEL POSTS)
10. BRIDGE PLAN AND ELEVATION VIEWS
11. BORING LOGS
12. FRAMING, RAILING AND CURB PLAN
13. ABUTMENT NO. 1, PLAN AND ELEVATION
14. ABUTMENT NO. 2, PLAN AND ELEVATION
15. REINFORCING STEEL SCHEDULE
16. STANDARD SHEET SCR-30-62
17. STANDARD SHEET SCR-D1-62
18. STANDARD SHEET SCR-D2-62
19. STANDARD SHEET SCR-D4-62
20-23 STANDARD SHEETS SCR-D6 THRU D9-62
24-25 BLANK
26-28 ROADWAY SECTIONS
29-35 CHANNEL SECTIONS
9. BLANK

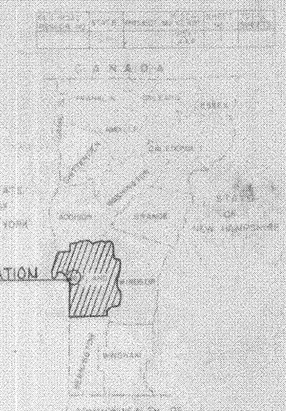
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

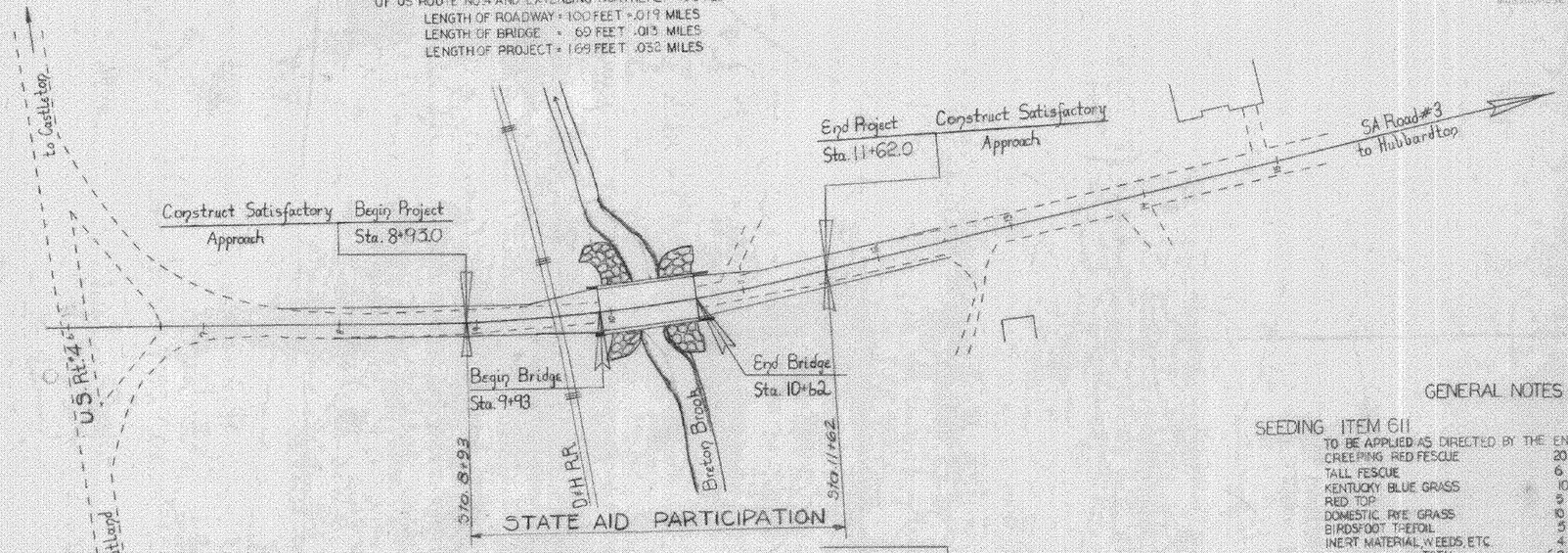
PROPOSED IMPROVEMENT

BRIDGE PROJECT
TOWN OF CASTLETON

COUNTY OF RUTLAND
STATE AID ROUTE NO. 3
CASTLETON – EAST HUBBARDTON ROAD

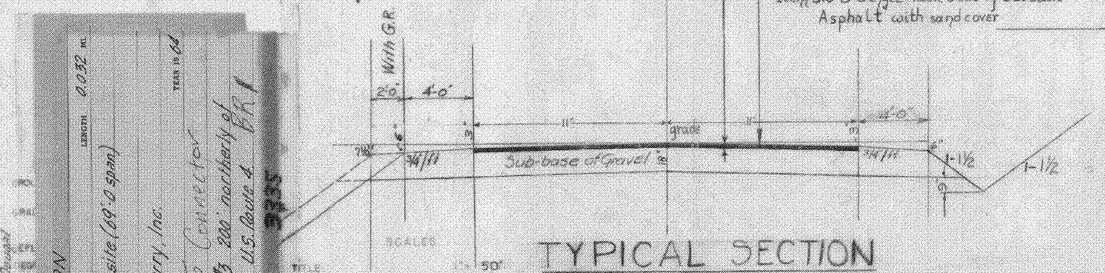
BEGINNING AT A POINT APPROXIMATELY 200 FEET NORTHERLY OF US ROUTE NO 4 AND EXTENDING NORTHERLY 450 FEET
LENGTH OF ROADWAY = 100 FEET = .019 MILES
LENGTH OF BRIDGE = 69 FEET .013 MILES
LENGTH OF PROJECT = 169 FEET .032 MILES





1½" Item 3b1-C Bituminous Concrete Pavement (Modified) (Special One Course Mix)
These items omitted from Contract by Supplemental Agreement Sept. 19, 1963.
Item 31b-B Single Tack Coat of Cut back Asphalt with sand cover

FUTURE
"NOT INCLUDED IN CONTRACT"



GENERAL NOTES

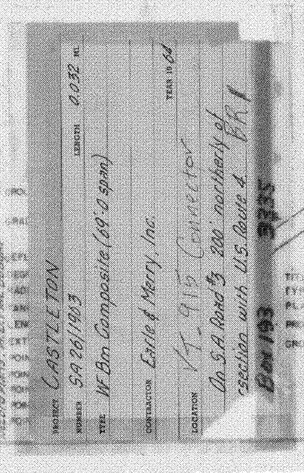
SEEDING ITEM 611
TO BE APPLIED AS DIRECTED BY THE ENGINEER

CREEPING RED FESCUE	20 LBS. PER ACRE
TALL FESCUE	6 LBS. PER ACRE
KENTUCKY BLUE GRASS	10 LBS. PER ACRE
RED TOP	5 LBS. PER ACRE
DOMESTIC RYE GRASS	10 LBS. PER ACRE
BIRDSFOOT TREFOIL	5 LBS. PER ACRE
INERT MATERIAL, WEEDS, ETC	4 LBS. PER ACRE
TOTAL	60 LBS. PER ACRE

COMMERCIAL FERTILIZER FOR GRASSES ITEM 615
FORMULA 10 10 10 TO BE USED WITH SEEDING ITEM 611 APPLIED AT THE RATE OF 1000 LBS. PER ACRE

MULCH (MODIFIED) ITEM 622
TO BE PLACED ON EARTH SLOPES AT THE RATE OF 1 1/2 TONS PER ACRE

ALLOWABLE TOLERANCES
SURFACE COURSE = ±1/4
18" SUB BASE = ±1"



CONVENTIONAL SIGNS
COUNTY LINE
TOWN LINE
FENCE LINE
STONE WALL
IMPROVED PROPERTY
GUARD RAIL
TRAVELED WAY
RAILROAD
RIPRAPING
CENTER LINE
BURIED LINE
DITCH
SHOP MAP
TROLLEY POLE
POWER POLE
TELEPHONE POLE
TREES
BRUSH

TITLE	1
TYPICAL	2
PLAN	3
PROFILE HORIZONTAL	4
PROFILE VERTICAL	5
CROSS SECTIONS	6

1" = 50'	
1" = 40'	
1" = 30'	
1" = 20'	
1" = 10'	

PROJECT NAME & NUMBER: CASTLETON S.A.26(1963)
SURFACE OF GRADE: Antelope's Pit
SUB BASE OF GRADE:
CRUSHED STONE:
GRAVEL:
CUTBACK ASPHALT:
S.A. CODE 08
PENETRATION MACADAM:
GRANITE: Universal Atlas Portland Cement
CONTRACTOR: Estle & Merry, Inc.
RESIDENT ENGR.: R.K. Bailey
INSPECTOR:
DIRECTOR: A.B. MacDougall
STRUCTURAL STEEL: Bethlehem Steel Corp.
REINFORCING STEEL: Concrete Steel Co.
PILES FOR GUARD RAIL: S.T.&. Arnold, Inc.
GUARD RAIL PAINT:
CONTRACT DATED: Sept. 19, 1963
ESTIMATED STARTED: Sept. 26, 1963
COMPLETED: July 1, 1966
CONTRACT ACCEPTED:

APPROVED: R.H. Arnold, ASST. CHIEF ENGINEER	DATE: 8/13/63	APPROVED: CONSTRUCTION ENGINEER	DATE:	APPROVED: Lee Byam	DATE: 8/13/63	APPROVED: J.A. Burchard	DATE: 8/12/63	APPROVED: HIGHWAY ENGINEER	DATE:
APPROVED: A.O.T. Sisbee, CHIEF ENGINEER	DATE: August 12, 1963	APPROVED AND SIGNED BY ORDER OF THE STATE HIGHWAY BOARD		PROJECT: S.A. NO. 26, 1963		SHEET: 1 OF 35 SHEETS			

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 36 OF 45
BRIDGE 1
FOR REFERENCE ONLY

Sta 8+46 20'RT 30°E
(Remove)
by Town

Sta. 11+30 L.T. Construct Drive

N.

Curve Data
Δ 13°-01'-30"Lt
D 4°-15' Lt.
R 1348.1
T 153.9
L 306.5
E 8.7
Bank 3/16"/ft.

P.O.T. 6+05.7

P.O.T. 6+32.4

CONSTRUCT SATISFACTORY APPROACH	STA. 8+93 BEGIN PROJECT S.A. 26, 1963

To Castleton

Road Sign

Fort Warren Monument
* See note for tie

Sign Historic Sites

Route #4

To Rutland

Drive to House

N 26°E

R.R. Signal Light

B.M. #1
Ch. a. R.R. Sig. Post Base
Elev. 500.00 [Assumed Datum]

STA. 9+93
BEGIN BRIDGE

P.C. 8+46.1

Item 521

Item 521 - Stone Fill (Heavy Type)

Bolton Brook

Field Drive

Main Line P.O.C. 9+95.0 ±
Chann. Line P.O.T. 5+00.0

Channel Line

D&H R.R.

N 13°E

13°-01'-30"Lt

STA. 10+62
END BRIDGE

P.I. 10+00 ±
9+98.7

P.T. 11+52.6

Card between 9+93.0 & P.T. 11+52.6
For Channel Line Location

STA. 11+62.0
END PROJECT
S.A. 26, 1963

CONSTRUCT SATISFACTORY APPROACH

Edge Pav't

Edge of Shoulder

To Hubbardton

36°M

* Monument tie point is the circle in the nine of 1904 (9**)

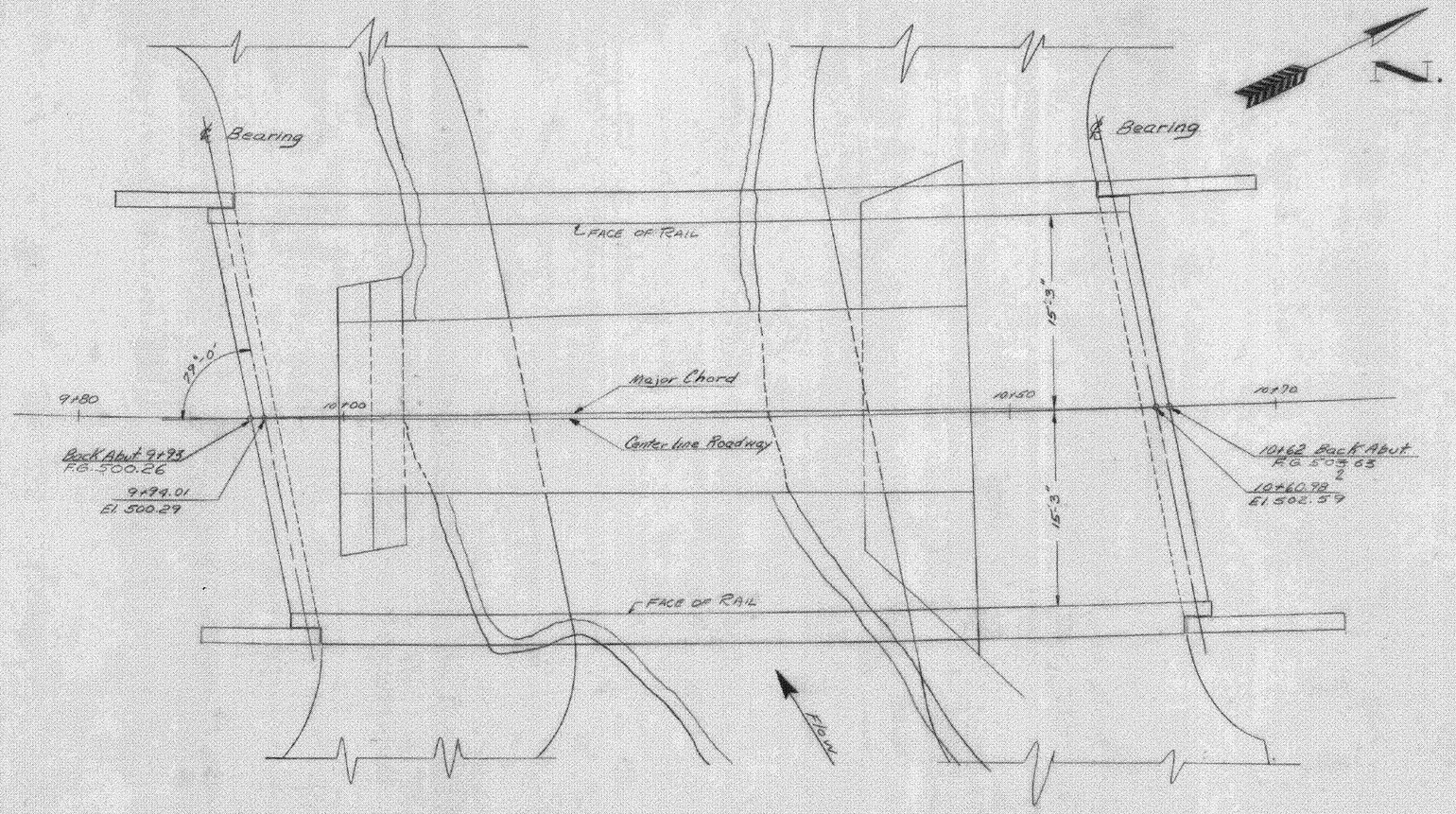
District #3
Bridge Data Br. S.A.R.d. #3

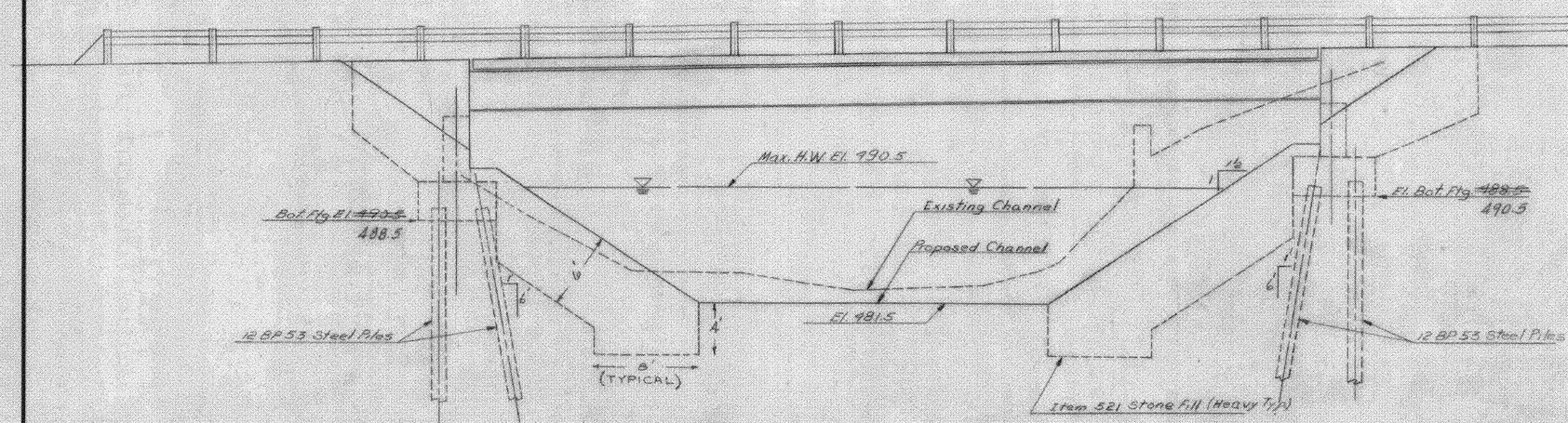
	Present	New
Type	Steel Truss	W.F. Bm. Composite
Clear Span	38'	6.5'
O.A.	49'	69'
Height	13'	13.8
Roadway	12.3'	30'
Condition		

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 37 OF 45
BRIDGE 1
FOR REFERENCE ONLY

Scale 1"=20'

CASTLETON
S.A. 26, 1963
Sheet 3 of 35
Revised by AMS Checked by TCS





General Notes

1. Extreme High water Elevation at new structure is 490.5.
2. Drainage area = 910 acres.
3. Velocity of stream at high water stage = 12 feet per sec.
4. Area of Full Opening = 580 sq. feet
5. Area below ordinary high water = 300.6'
6. Elevation of Bench Mark No. 1 is based on an assumed datum of 500.00
7. For additional notes see SCB-D1-62.
8. For Bearing Devices see SCB-D9-62, Detail "A."
9. All wings & abutments shall be Concrete class B (Mod)

List of Bridge sheets

BR 1. Plan and Elevation
2. Bridge Quantity Sheet
3. Boring Logs
4. Framing, Railing and Curb Plan & Details
5. Abutment No. 1 Plan and Elevation
6. Abutment No. 2. Plan and Elevation
7. Reinforcing steel Schedule

BR 8-19 Channel Sections

Bridge Standards

SCB-30-62
SCB-D1-62
SCB-D2-62
SCB-D4-62
SCB-D6-62
SCB-D7-62
SCB-D8-62
SCB-D9-62

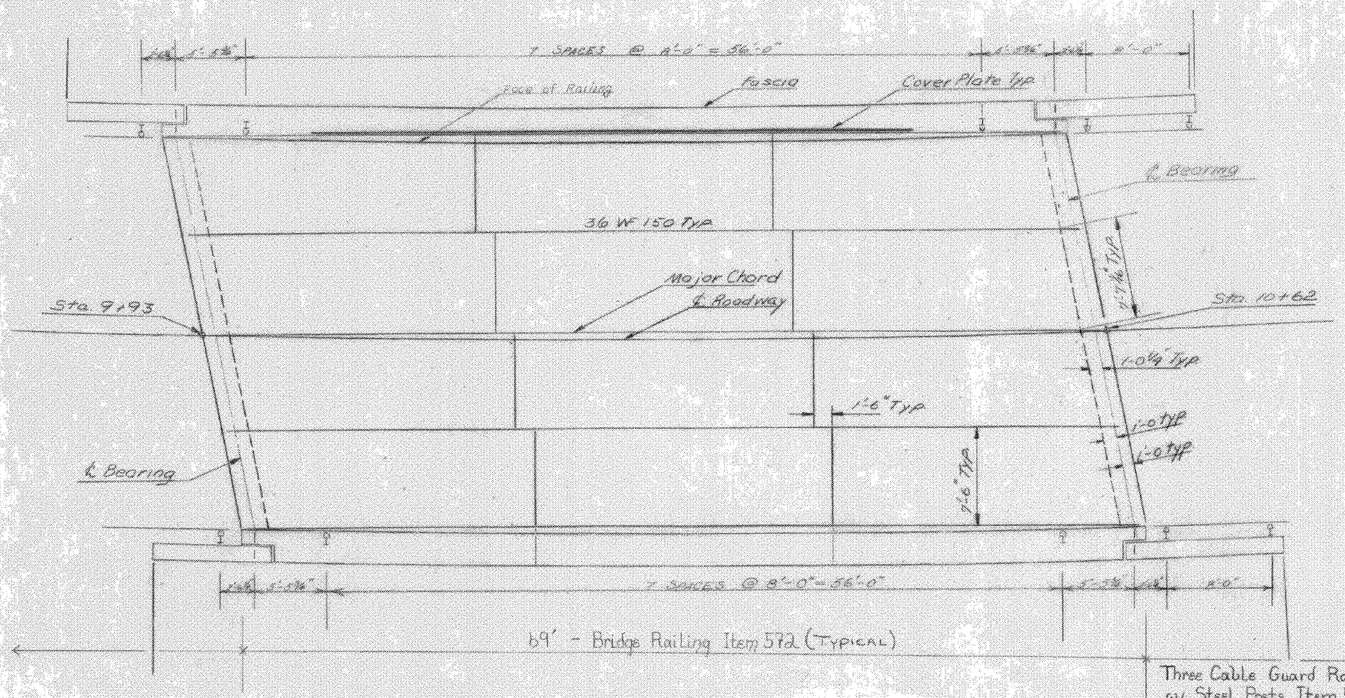
10. The Surface shall be constructed 12" low to allow for future paving
11. Standard SCB-30-62 is Mod. is Detailed on Sheet No. BR 6 of 19

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 38 OF 45
BRIDGE 1
FOR REFERENCE ONLY

Br

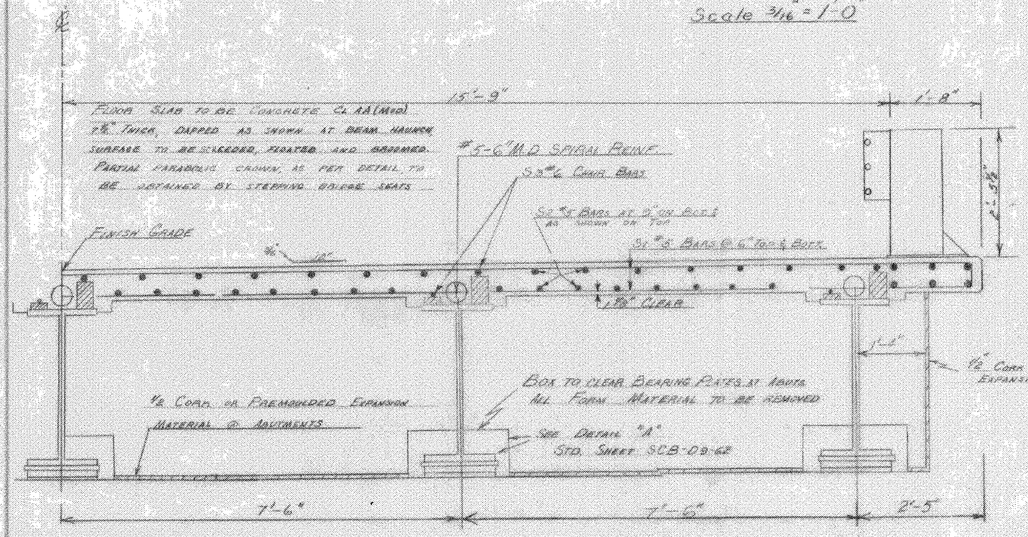
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Castleton
ROUTE NO. SA W 3 LOG STA.
Plan & Elevation
Revised by ATTS Checked by T.C.S.
SCALE 1"-0" = 5'-0"
SURVEYED BY Martin
DRAWN BY SHS CHECKED BY TCS
PROJECT NO. SA W 26-1963
SHEET 10 OF 35



PLAN

Scale 3/16" = 1'-0"



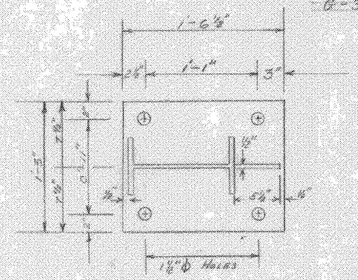
TYPICAL HALF SECTION

Scale 3/4" = 1'

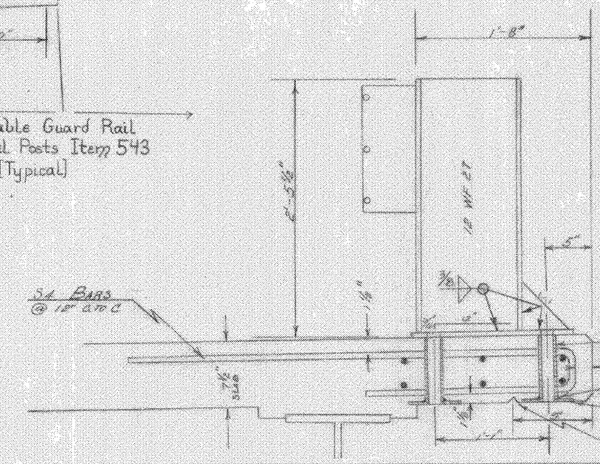
1. For additional details of Cover Plates & Diaphragms See Std. Sheet SCB-07-62 & SCB-30-62

2. For additional details of Bridge Rail, Curb & Scuppers see std. sheets SCB-06-62, Detail A

3. The Railing Spacing Shown is Typical For Each Side & it Shall Conform To Standard Sheet B-3 Item # 543



SCALE 1½" = 1'



1" ϕ Anchor Bolts, 10" Long Galvanized
8-2 3/4" O.D Std. Washers Top & Bott. Galvanized
4 Nuts (Hex.) Galvanized
2-1 1/8" I.D Galvanized Pipe
Sleeves 6 1/2" Long

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.				
451 B	CONC. CLASS D (MOD.)	C.Y.				
452	REINF. STEEL	LBS.				
457	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.				

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 39 OF 45
BRIDGE 1
FOR REFERENCE ONLY

BR 4 OF 14

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Castleton
ROAD NO. SA #3 BRIDGE NO.
Framing, Railing & Curb Plan
SCALE AS Shown
SURVEYED BY Martin & TCS
DRAWN BY S.H.S. CHECKED BY
PROJECT NO SA #26-1963
SHEET 12 OF 35

CASTLETON RS 0142(11)

HOLE NO. B-1 STA. 302+08 OFFSET RT. 10'
DRILLER MCGLYNN
LOG APPROVED BY D. G. CADIZ
DATE START 10-31-84 FINISH
SURFACE ELEVATION 455.3'

DEPTH	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
							NO SAMPLE FILL
10		12			MTW	GR	A-1-b SILTY GRAVEL
		23			MTW	GR	A-2-4 SILTY GRAVEL
20		51					NO SAMPLE
		69			M	GR	A-4 SANDY SILT
30		78			M	GR	A-2-4 SILTY SAND
		68			M	GR	A-4 GRAVELLY SILT
40							HOLE STOPPED @ 36.5' IN HARDPAN
							NLTD

460. 450. 440. 430. 420. 410.
BOTTOM FOOTING ABUT #1
EL. 442.00

CASTLETON RS 0142(11)

HOLE NO. B-2 STA. 302+60 OFFSET LT. 13'
DRILLER MCGLYNN
LOG APPROVED BY D. G. CADIZ
DATE START 11-1-84 FINISH
SURFACE ELEVATION 454.6'

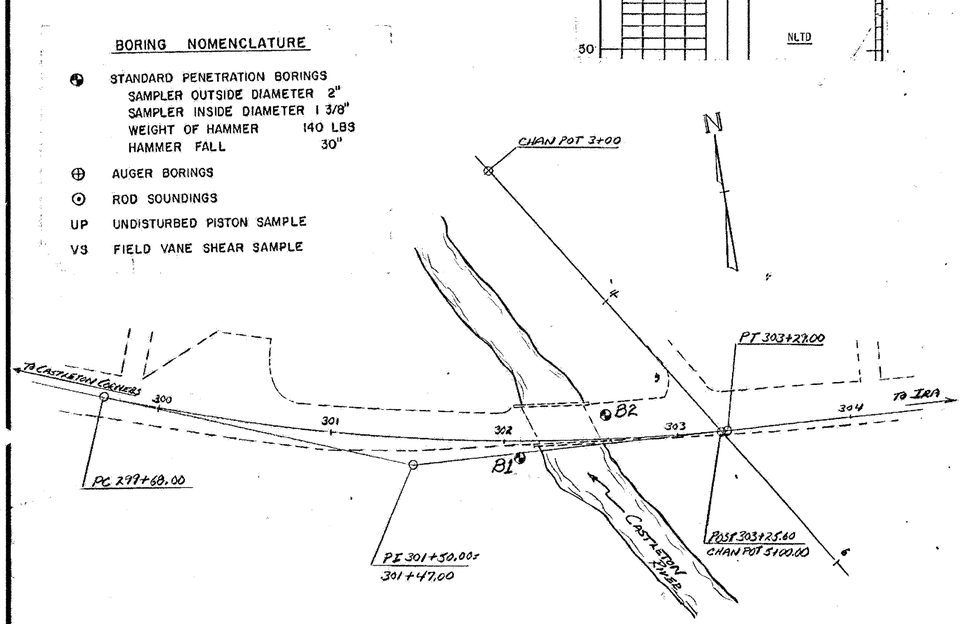
DEPTH	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
							NO SAMPLE FILL
10		R					NO SAMPLE BO.
		45			MTW	BR	A-1-b SILTY GRAVEL
20		21			MTW	BR	A-2-4 SILTY GRAVEL
		12			MTW	BR	A-1-a SANDY GRAVEL
30		83			M	GR	A-4 SANDY SILT
		81			M	GR	A-4 SILT
40		124			M	GR	A-4 SILT
							HOLE STOPPED @ 41.5' IN HARDPAN
50							NLTD

BOTTOM FOOTING ABUT #2
EL. 442.00

BORING NOMENCLATURE

- STANDARD PENETRATION BORINGS
  SAMPLER OUTSIDE DIAMETER 2"
  SAMPLER INSIDE DIAMETER 1 3/8"
  WEIGHT OF HAMMER 140 LBS
  HAMMER FALL 30"
- AUGER BORINGS
- ROD SOUNDINGS

UP UNDISTURBED PISTON SAMPLE
VS FIELD VANE SHEAR SAMPLE



PLAN
SCALE: 1"=40'

GENERAL NOTES

THE SUBSURFACE EXPLORATIONS SHOWN HEREON WERE MADE BETWEEN 10-31-84 AND 11-1-84 BY THE VERMONT AGENCY OF TRANSPORTATION.

1. SOIL AND ROCK (WHERE ENCOUNTERED) CLASSIFICATION, PROPERTIES AND DESCRIPTIONS ARE BASED ON ENGINEERING INTERPRETATION OF AVAILEABLE SUBSURFACE INFORMATION BY THE VERMONT AGENCY OF TRANSPORTATION AND MAY NOT NECESSARILY REFLECT ACTUAL VARIATIONS IN SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED BETWEEN INDIVIDUAL BORING OR SAMPLE LOCATIONS.
2. OBSERVED WATER LEVELS AND/OR WATER CONDITIONS INDICATED ARE AS RECORDED AT THE TIME OF EXPLORATION AND MAY VARY ACCORDING TO THE PREVAILING RAINFALL, METHODS OF EXPLORATION AND OTHER FACTORS.
3. SOUND ENGINEERING JUDGEMENT WAS EXERCISED IN PREPARING THE SUBSURFACE INFORMATION PRESENTED HEREON. ANALYSIS AND INTERPRETATION OF SUBSURFACE DATA WAS PERFORMED AND INTENDED FOR AGENCY DESIGN AND ESTIMATE PURPOSES ONLY. PRESENTATION OF THE INFORMATION ON THE PLANS OR ELSEWHERE IS FOR THE PURPOSE OF PROVIDING INTENDED USERS WITH ACCESS TO THE SAME DATA AVAILABLE TO THE AGENCY. THE SUBSURFACE INFORMATION IS PRESENTED IN GOOD FAITH AND IS NOT INTENDED AS A SUBSTITUTE FOR PERSONAL INVESTIGATION, INDEPENDENT INTERPRETATIONS, INDEPENDENT ANALYSIS OR JUDGEMENT OF THE CONTRACTOR.
4. PICTORIAL STRUCTURE DETAILS SHOWN HEREON ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY NOT BE INDICATIVE OF THE FINAL DESIGN CONDITIONS SHOWN IN THE CONTRACT PLANS.

LIST OF STANDARD DRAWINGS

58-R4A-82	12-13-84R
58-R4B-82	12-13-84R

INDEX OF BRIDGE SHEETS

BR 100 PRELIMINARY INFORMATION & BORINGS
BR 101 QUANTITY SHEET
BR 102 PLAN & ELEVATION
BR 103 BRIDGE TYPICAL SECTION & FRAMING DETAILS
BR 104 APPROACH SLAB & SUPERSTRUCTURE DETAILS
BR 105 CURTAINWALL DETAILS
BR 106 BEARING DEVICE DETAILS
BR 107 ABUTMENT #1 DETAILS
BR 108 ABUTMENT #2 DETAILS
BR 109 WINGWALL DETAILS
BR 110 REINFORCING STEEL SCHEDULE
BR 111 REFERENCE SHEET
BR 112 REFERENCE SHEET
BR 113 REFERENCE SHEET
BR 114-118 CHANNEL CROSS SECTIONS

EXISTING STRUCTURE

1. STRUCTURE TYPE ONE SPAN CONCRETE SIDE GIRDER OVERALL LENGTH 45' INVENTORY RATING H 15
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 39'
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 39'
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 307 SQ FT. VERTICAL CLEARANCE ABOVE STREAMBED 8'
5. WATER SURFACE ELEVATION @ Q 2.33 447.3 WATER SURFACE ELEVATION @ Q 50 453.2
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD UNKNOWN YEAR 1927 ESTIMATED DISCHARGE
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? NO IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? Q25
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF UNDETERMINED
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL SAND, SILT, SOME GRAVEL
9. DISPOSITION OF STRUCTURE REMOVE, BECOMES PROPERTY OF CONTRACTOR

NEW STRUCTURE

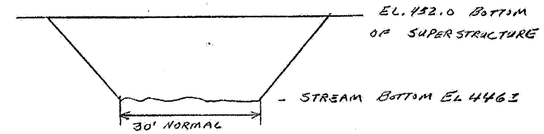
STRUCTURE GEOMETRY:
1. STRUCTURE TYPE SIMPLE SPAN COMPOSITE ROLLED BEAM OVERALL LENGTH 62'-5½"
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 60'-0" (ALONG MAJOR CHORD)
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 9'
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 42'
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 403 SQ FT
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:
1. Q 2.33 800 CFS WATER ELEVATION 449.8 VELOCITY 5.7 FPS
   Q 10 1700 CFS WATER ELEVATION 451.7 VELOCITY 9.6 FPS
   Q 25 2130 CFS WATER ELEVATION 452.6 VELOCITY 8.2 FPS
   Q 50 2500 CFS WATER ELEVATION 453.0 VELOCITY 9.5 FPS
   Q 100 2900 CFS WATER ELEVATION 453.5 VELOCITY 10.5 FPS
2. DRAINAGE AREA 28.9 SQ. MI. CHARACTER OF TERRAIN ROLLING TO MOUNTAINOUS
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? YES
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? NO IS ORDINARY RISE RAPID? NO
5. NATURE OF NATURAL STREAMBED SAND, SILT, SOME GRAVEL
6. ESTIMATED SCOUR DEPTH 4.6' COMMENT ON: DRIFT MODERATE ICE HEAVY
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? NO IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? Q25 @ 452.5'
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF UNDETERMINED
8. VERTICAL CLEARANCE ABOVE Q 50 0.1FT
9. ALLOWABLE WATER SURFACE ELEVATION 453.6 LIMITED BY NO WORSENING OF EXISTING CONDITIONS
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO IF YES, DESCRIBE
11. AVERAGE DAILY LOW FLOW 20 CFS DEPTH 1.0' AVERAGE DAILY HIGH FLOW 125 CFS DEPTH 3.0
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED TYPE R STONE
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 0.55 mi. SPAN 25' WATERWAY AREA OF FULL OPENING Q
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 1.53 MI SPAN WATERWAY AREA OF FULL OPENING Q

ALLOWABLE STRESSES:
1. DESIGN LIVE LOAD AASHTO HS-25
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4.0 KSF ON LEDGE N.A.
3. ALLOWABLE LOAD FOR PILING N.A. TYPE N.A. ESTIMATED LENGTH N.A.
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL AASHTO M 222 TENSION 22.0 KSI
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24.0 KSI COMPRESSION 20.0 KSI
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f_t 3.5 KSI f_c 1.4 KSI
   CLASS B f_t 3.5 KSI f_c 1.4 KSI

TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE YES
2. TEMPORARY BRIDGE REQUIREMENTS: ~~ONE OR TWO WAY~~ TEMPORARY SIGNALS REQUIRED
   MINIMUM CLEAR SPAN SEE BELOW MINIMUM CLEAR HEIGHT SEE BELOW MINIMUM WATERWAY AREA SEE BELOW
   ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE?
   TEMPORARY BRIDGE IS TO BE LOCATED SOUTHERLY OF THE EXISTING BRIDGE.

ADDITIONAL DESIGN CONSIDERATIONS



TEMPORARY BRIDGE CLEARANCES

STRESS LEVELS	LOAD RATING (TONS) TRUCK H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy =	38	47					
POSTED 0.67 Fy =	56		92		60	63	79
OPERATING 0.75 Fy =			110	125			

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 40 OF 45
BRIDGE 11
FOR REFERENCE ONLY

RECOMMENDED FOR APPROVAL Warren B. Town 2/20/85
STRUCTURES ENGINEER DATE

RECOMMENDED FOR APPROVAL
CHIEF OF DESIGN DATE

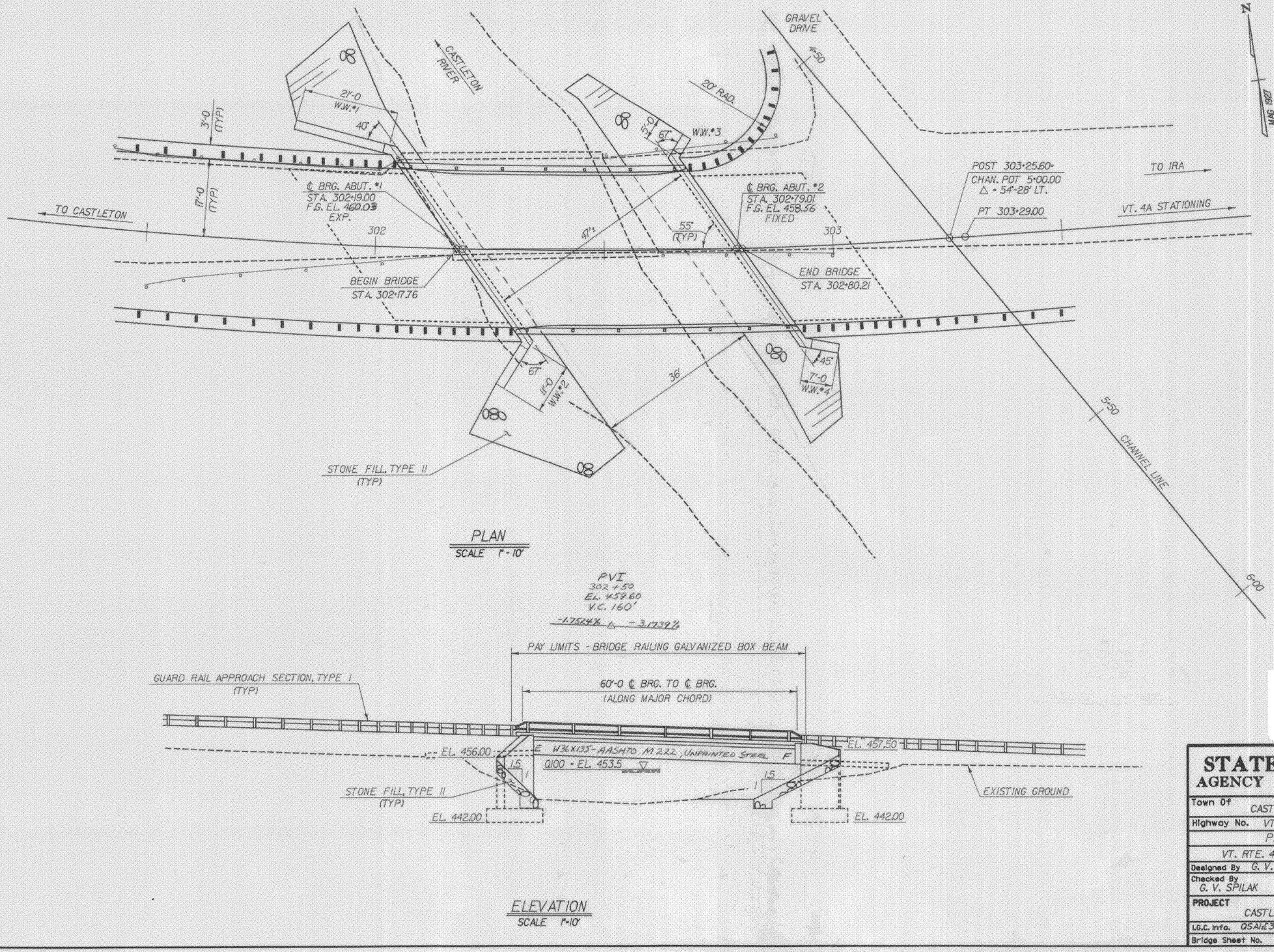
APPROVED BY Frank E. Aldrich 2-21-85
CHIEF ENGINEER DATE

REVISIONS NO.	DESCRIPTION	BY & DATE
	VT 4A BR 11	

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF CASTLETON	Bridge No. 11
	Log Sta.
HIGHWAY NO. VT. 4A	Surv. Sta. 302+50
PRELIMINARY INFORMATION & BORINGS	
VT 4A OVER CASTLETON RIVER	
Designed by G.V. SPILAR	Drawn by R. RANALDO
Checked by G.V. SPILAR date 2/85	Bridge Design Supervisor R.S. HAUPT date 3/87
PROJECT CASTLETON	PROJECT NO. RS0142(11)
Bridge Sheet No. BR 100	Sheet 26 of 90

Marsden P-4952



CURVE DATA

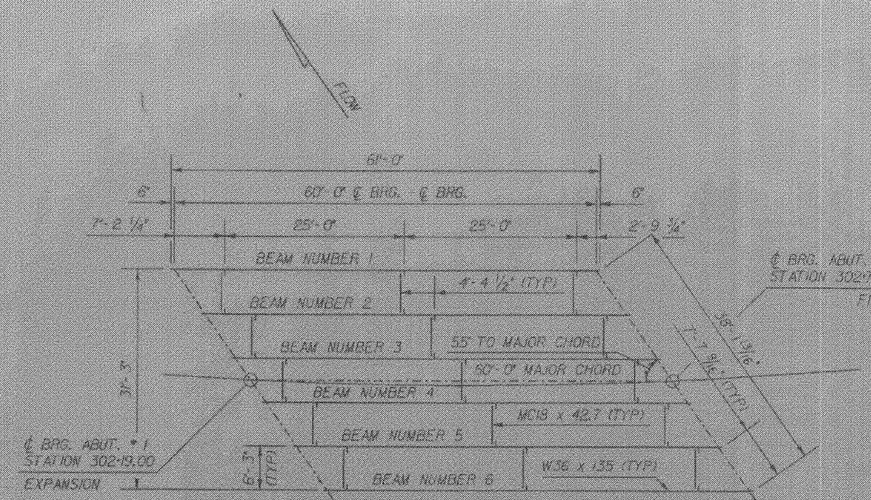
△ = 18° 03' LT.
D = 5°
R = 1145.92
T = 182.00'
L = 361.00'
E = 14.36'
BANK 0.060 FT./FT.

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 41 OF 45
BRIDGE 11
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

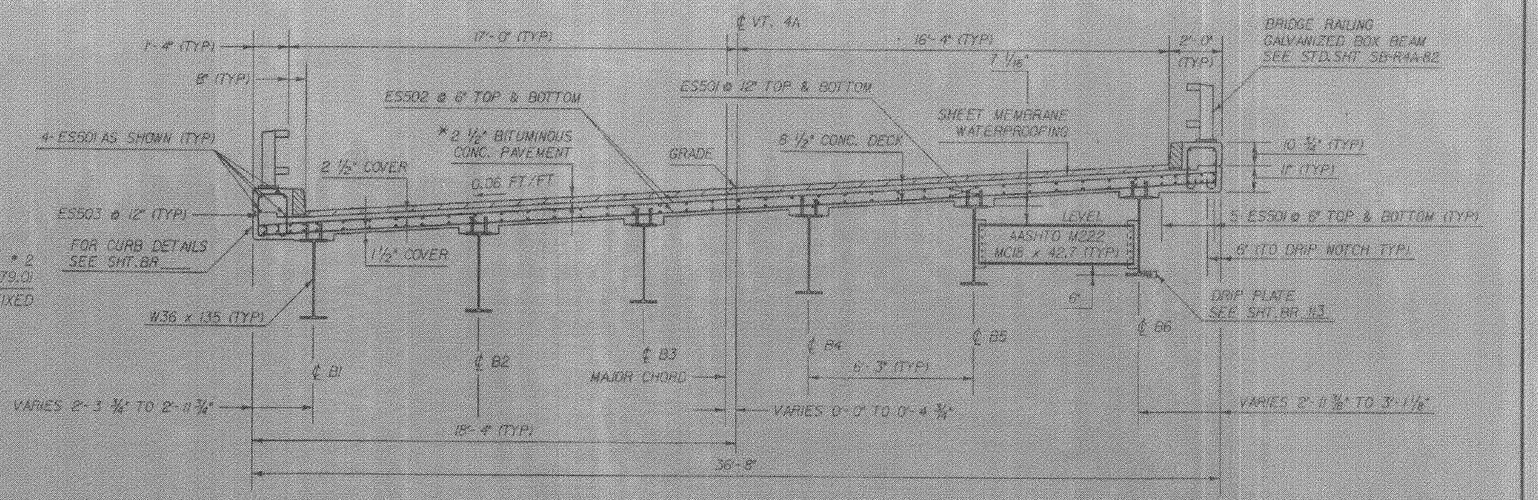
Town Of CASTLETON	Bridge No. 11
Highway No. VT. 4A	Log Sta. / Surv. Sta. 302+49
PLAN AND ELEVATION	
VT. RTE. 4A OVER THE CASTLETON RIVER	
Designed By G. V. SPILAK	Drawn By D. C. WILLEY
Checked By G. V. SPILAK Date 2-85	Bridge Design Supervisor R. S. HAUPT Date 3/87
PROJECT CASTLETON	PROJECT NO. RS 0142 (11)
I.G.C. Info. QSAI#[30,25,178F194PI.DGN	
Bridge Sheet No. BRIDGE	Sheet 28 of 90

BR-6



FRAMING PLAN

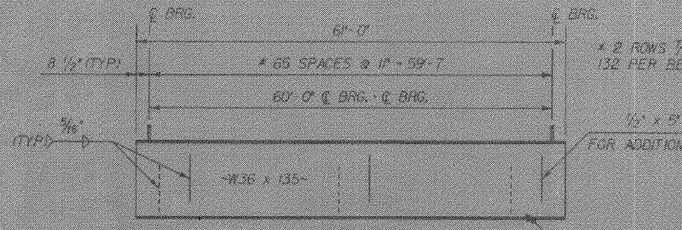
SCALE: 1" = 10'-0"



* 2 1/2" BIT. CONC. SHALL BE:
BOTTOM LAYER 1" OF TYPE IV
TOP LAYER 1 1/2" OF TYPE III

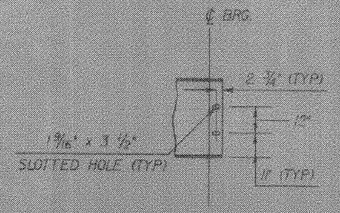
TYPICAL BRIDGE SECTION

SCALE: 3/8" = 1'-0"



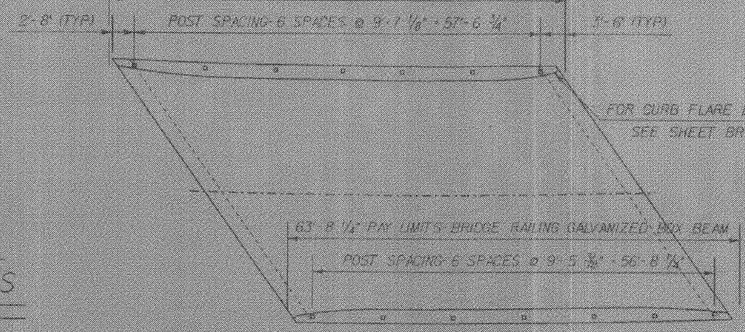
BEAM ELEVATION

SCALE: HORIZONTAL: 1" = 10'-0"
SCALE: VERTICAL: 3/8" = 1'-0"



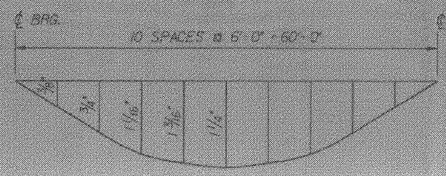
BEAM END DETAIL TYPICAL BOTH ENDS

SCALE: 3/8" = 1'-0"



BRIDGE RAIL AND CURB PLAN

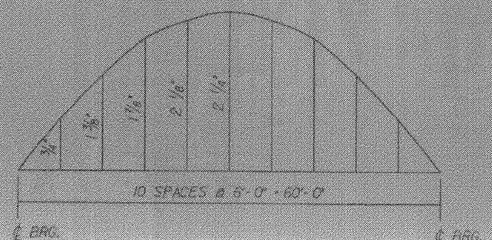
SCALE: 1" = 10'-0"



** DEAD LOAD DEFLECTION

SCALE: HORIZONTAL: 1" = 10'-0"
SCALE: VERTICAL: 1" = 1"

** DEAD LOAD DEFLECTION INCLUDES THE FOLLOWING
1. WEIGHT OF W36 x 135 BEAM
2. " " BRIDGE RAILING GALVANIZED BOX BEAM
3. " " DIAPHRAGMS
4. " " REINFORCED CONCRETE CURBS
5. " " 2 1/2" BITUMINOUS CONCRETE PAVEMENT
6. " " 8 1/2" REINFORCED CONCRETE DECK



CAMBER DIAGRAM

SCALE: HORIZONTAL: 1" = 10'-0"
SCALE: VERTICAL: 1" = 1"

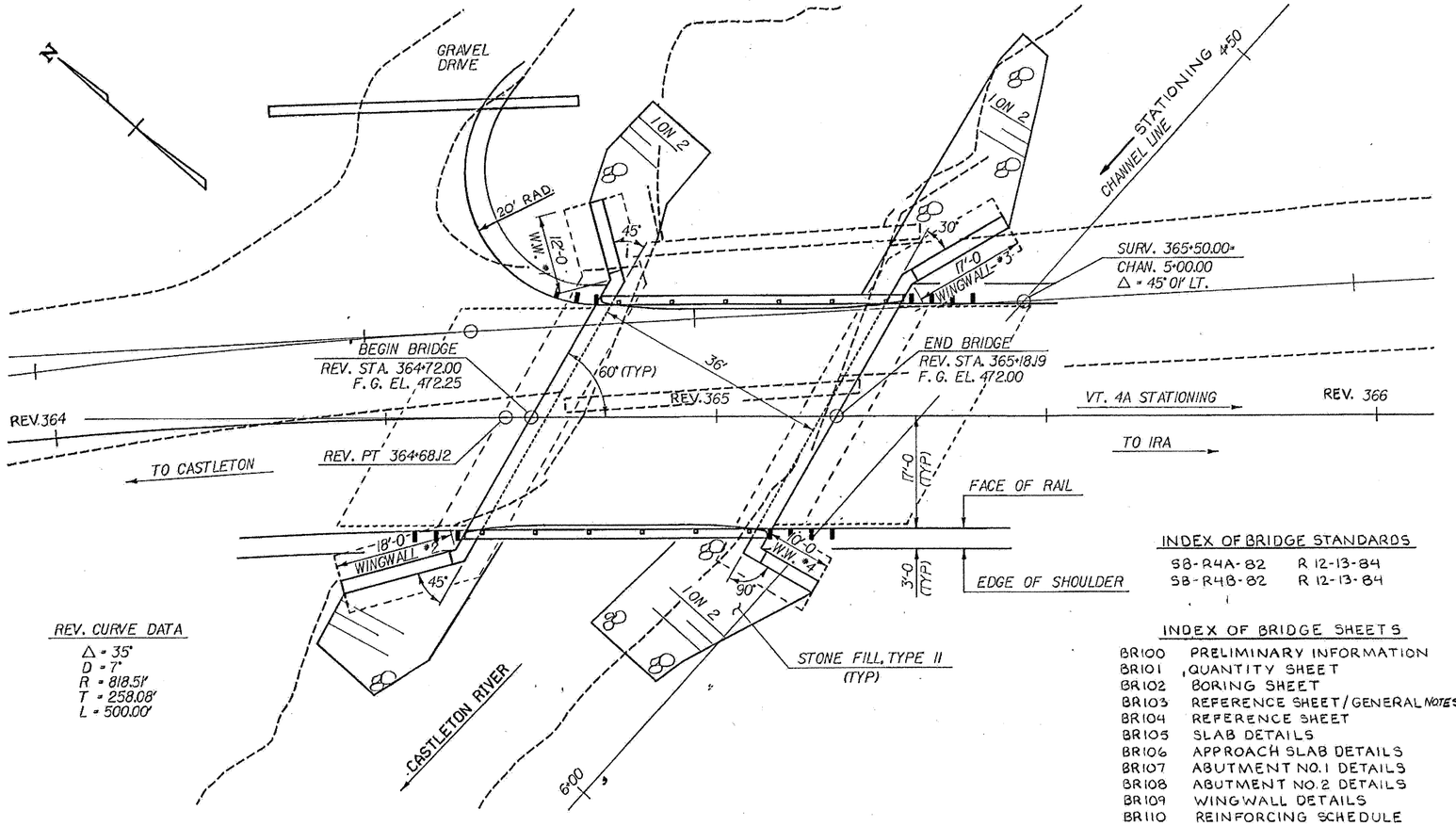
FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 42 OF 45
BRIDGE 11
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of CASTLETON	Bridge No. 11
Highway No. VT. 4A	Log Sta.
	Surv. Sta. 302+50

SUPERSTRUCTURE DETAILS
VT. 4A OVER THE CASTLETON RIVER

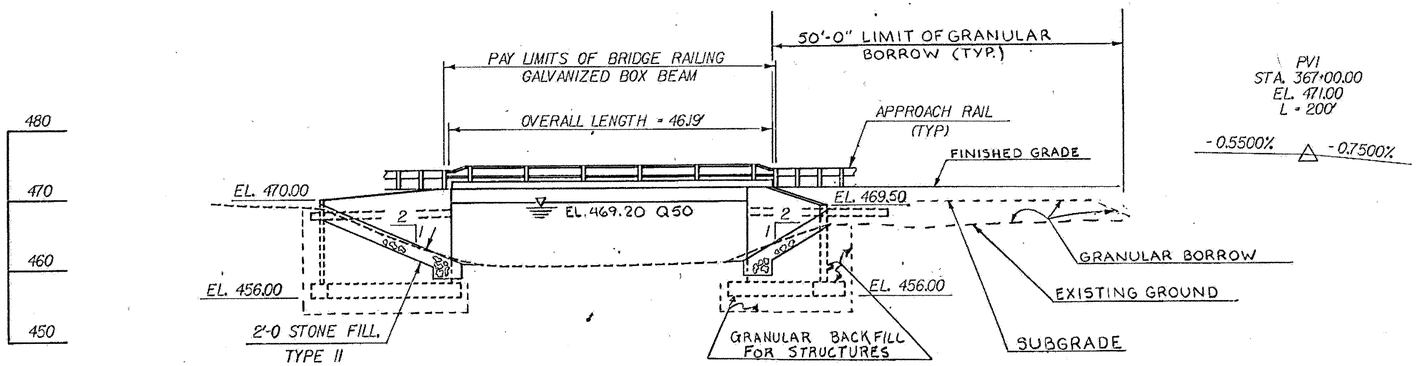
Designed By R. J. PANALDO	Drawn By K. S. CLAIRMONT
Checked By M. J. POLOGRUTO Date 1/87	Bridge Design Supervisor R. S. HAUPT Date 3/87
PROJECT CASTLETON	PROJECT NO. RS 0142(11)
L.O.C. Info. ZFAI: E30.47 J 78F194SEC. DGN: 1 PRF-78F SEC	
Bridge Sheet No. BR103	Sheet 29 of 30



REV. CURVE DATA

Δ = 35°
D = 7°
R = 818.51'
T = 258.08'
L = 500.00'

PLAN
SCALE 1" = 10'



ELEVATION
SCALE 1" = 10'

INDEX OF BRIDGE STANDARDS

SB-R4A-82	R 12-13-84
SB-R4B-82	R 12-13-84

INDEX OF BRIDGE SHEETS

BR100	PRELIMINARY INFORMATION
BR101	QUANTITY SHEET
BR102	BORING SHEET
BR103	REFERENCE SHEET/GENERAL NOTES
BR104	REFERENCE SHEET
BR105	SLAB DETAILS
BR106	APPROACH SLAB DETAILS
BR107	ABUTMENT NO.1 DETAILS
BR108	ABUTMENT NO.2 DETAILS
BR109	WINGWALL DETAILS
BR110	REINFORCING SCHEDULE
BR111-113	CHANNEL CROSS SECTIONS

EXISTING STRUCTURE

1. STRUCTURE TYPE Single Span Concrete Side Girder OVERALL LENGTH 45'± INVENTORY RATING H15
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 41'
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 34'
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) ±204 SQ. FT. VERTICAL CLEARANCE ABOVE STREAMBED 6'±
5. WATER SURFACE ELEVATION @ Q 2.33 465.6 WATER SURFACE ELEVATION @ Q 50 468.0
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD UNKNOWN YEAR 1927 ESTIMATED DISCHARGE
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? NO IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? Q5, 467.8± ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF UNLIMITED
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL SILT, SAND
9. DISPOSITION OF STRUCTURE REMOVE

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE Single Span Light Weight Concrete Slab OVERALL LENGTH 46.19'
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 43.88'
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 8'
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 35'
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) ±320 SQ. FT.
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:

1. Q 2.33 700 CFS (20 CMS) WATER ELEVATION 465.6 VELOCITY 4.4 FPS
   Q 10 1400 CFS (40 CMS) WATER ELEVATION 467.8 VELOCITY 6.1 FPS
   Q 25 1800 CFS (50 CMS) WATER ELEVATION 468.5 VELOCITY 7.0 FPS
   Q 50 2100 CFS (60 CMS) WATER ELEVATION 469.2 VELOCITY 7.6 FPS
   Q 100 2400 CFS (68 CMS) WATER ELEVATION 469.9 VELOCITY 7.5 FPS
2. DRAINAGE AREA 22.0 SQ MI CHARACTER OF TERRAIN Rolling to Mountains
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? N.A.
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? No IS ORDINARY RISE RAPID? No
5. NATURE OF NATURAL STREAMBED Sand, Silt, Gravel
6. ESTIMATED SCOUR DEPTH 4-6' COMMENT ON: DRIFT Mod. ICE Heavy
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? NO IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? ±Q25, 468.8 ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF Unlimit
8. VERTICAL CLEARANCE ABOVE Q 50 = 0.8'
9. ALLOWABLE WATER SURFACE ELEVATION 470.0 LIMITED BY Bottom of Slab
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No IF YES, DESCRIBE
11. AVERAGE DAILY LOW FLOW 25 CFS DEPTH 1.0' AVERAGE DAILY HIGH FLOW 70 CFS DEPTH 3.0'
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED Stone Fill, Type II
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 2.6 MI SPAN ±300' WATERWAY AREA OF FULL OPENING N/A Q
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 0.8 MI SPAN 25' WATERWAY AREA OF FULL OPENING 160 SQ. FT. Q

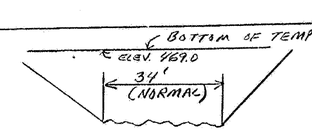
ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS25
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4.0 KSF ON LEDGE N.A.
3. ALLOWABLE LOAD FOR PILING N.A. TYPE N.A. ESTIMATED LENGTH N.A.
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A N.A. TENSION N.A.
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24 KSI COMPRESSION 20 KSI
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f'_c f'_c
   CLASS B f'_c 3.5 KSI f'_c 1.4 KSI
   L.W. CONCRETE f'_c 4.0 KSI f'_c 1.6 KSI

TRAFFIC MAINTENANCE:

1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE YES
2. TEMPORARY BRIDGE REQUIREMENTS: ONE [redacted] WAY TRAFFIC CONTROL SIGNALS REQUIRED YES
   MINIMUM CLEAR SPAN See Below MINIMUM CLEAR HEIGHT See Below MINIMUM WATERWAY AREA See Below
   ARE SIDEWALKS REQUIRED? No IF SO, ON WHAT SIDE? N/A

ADDITIONAL DESIGN CONSIDERATIONS



TEMP. BRIDGE WATERWAY REQUIREMENTS

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 43 OF 45
BRIDGE 12.
FOR REFERENCE ONLY

LOAD RATING (TONS)	TRUCK						
STRESS LEVELS	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 F_y =							
POSTED 0.67 F_y =							
OPERATING 0.75 F_y =							

⚠ THE TEMPORARY BRIDGE WATERWAY REQUIREMENTS ALLOW THE INSTALLATION OF THE TEMPORARY BRIDGE AT ANYTIME AND IS ADEQUATE FOR WINTER USE PROVIDED THAT ALL ENVIRONMENTAL REGULATIONS ARE ADHERED TO.

RECOMMENDED FOR APPROVAL Warren B. Tyler 6/21/85
STRUCTURES ENGINEER DATE

RECOMMENDED FOR APPROVAL Richard Emery Actg 6/24/85
CHIEF OF DESIGN DATE

APPROVED BY Acting Arthur Gosse 6/24/85
DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS

NO.	DESCRIPTION	BY & DATE
⚠	ADDED NOTE	TP 6-88

I.G.C. INFO. QSA1:[30,25]78F195PL.DGN

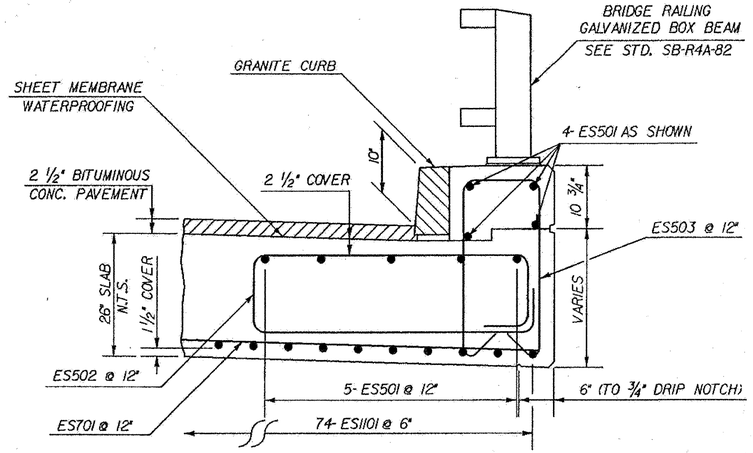
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF CASTLETON	Bridge No. 12
HIGHWAY NO. Vt. Rte. 4A	Log Sta.
	Surv. Sta. 365

PRELIMINARY INFORMATION
Vt. Rte. 4A Over The Castleton River

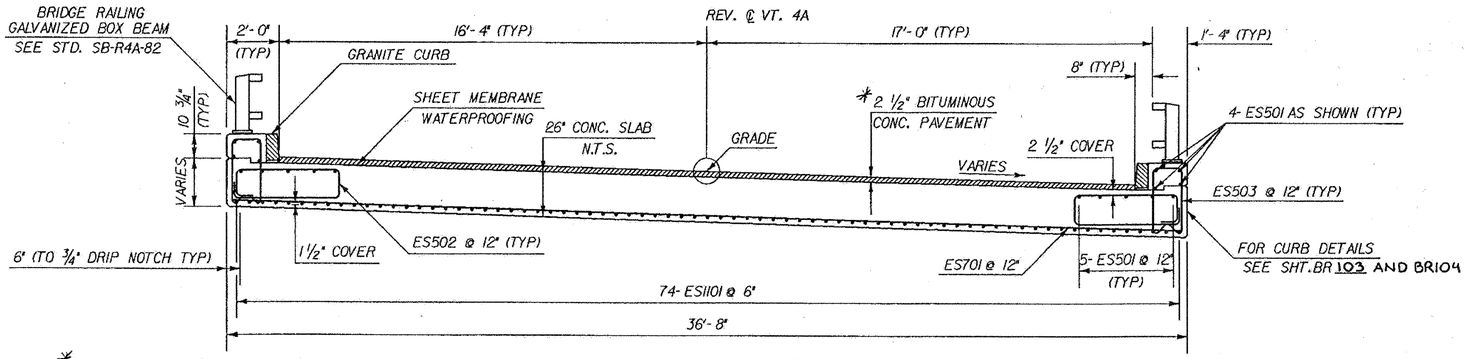
Designed by G.V. Spilak	Drawn by D.C. Willey
Checked by G.V. Spilak date 6/85	Bridge Design Supervisor R.S. Haupt date 5-85
PROJECT CASTLETON-IRA	PROJECT NO. RS 0142 (12)
Bridge Sheet No. BR100	Sheet 33 of 95

Makepeace P-4852



FASCIA & RAILING DETAIL

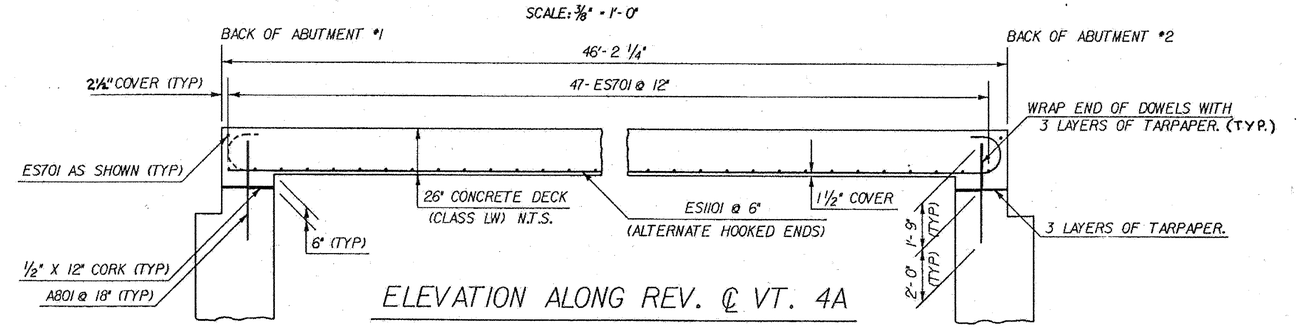
SCALE: 1" = 1'-0"



* NOTE: THE 2 1/2" BIT. CONC. SHALL BE:
BOTTOM LIFT = 1" OF TYPE II
TOP LIFT = 1 1/2" OF TYPE III

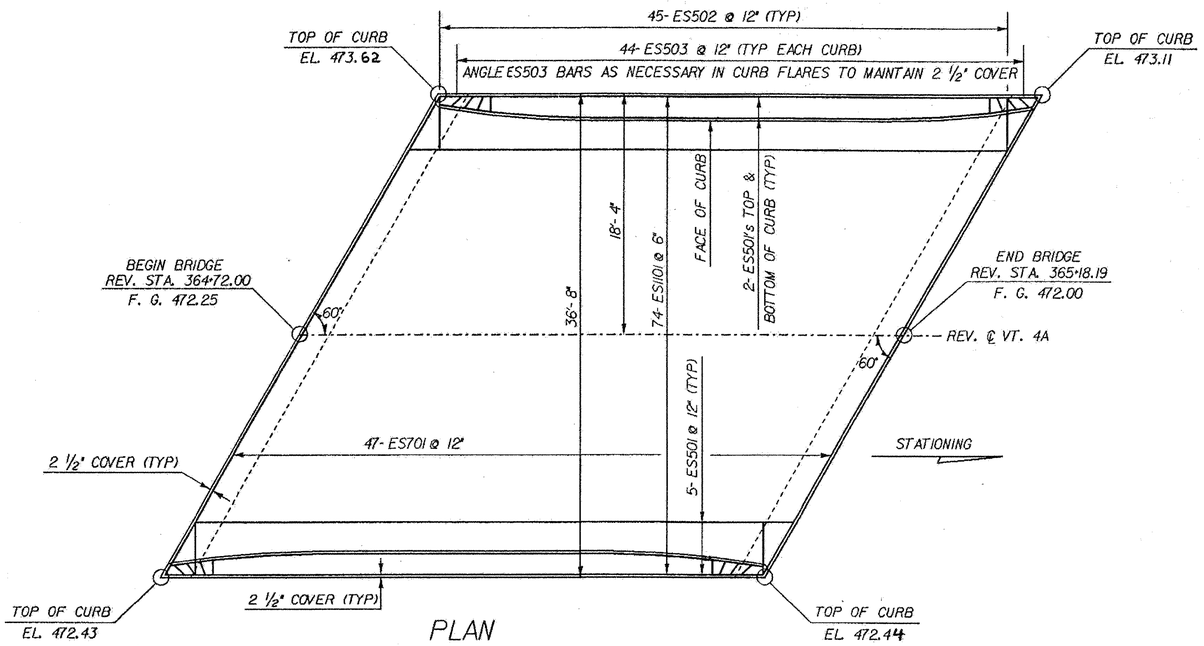
TYPICAL BRIDGE SECTION

SCALE: 3/8" = 1'-0"



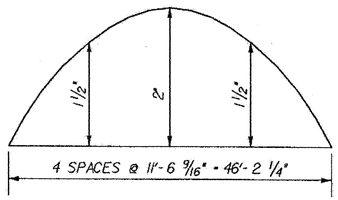
ELEVATION ALONG REV. ℄ VT. 4A

SCALE: 3/8" = 1'-0"



PLAN

SCALE: 3/16" = 1'-0"



CAMBER DIAGRAM

SCALE: HORIZONTAL 1" = 10'-0"
SCALE: VERTICAL 1" = 1"

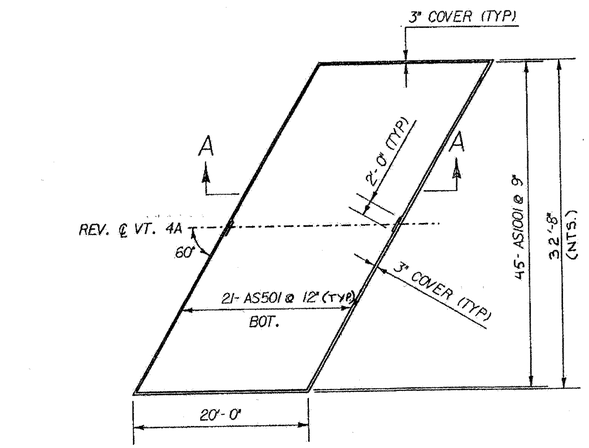
FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 11 OF 45
BRIDGE 12
FOR REFERENCE ONLY

NOTES

1. PAYMENT FOR ALL CORK AND TARPAPER SHALL BE SUBSIDIARY TO THE ITEM, CONCRETE, CLASS B.
2. FOR CURB DETAILS SEE SHEET BR103 AND BR104.
3. A FINISHING MACHINE SHALL BE USED TO PREPARE THE SLAB SURFACE IN ACCORDANCE WITH SUBSECTION 501.16 (b).

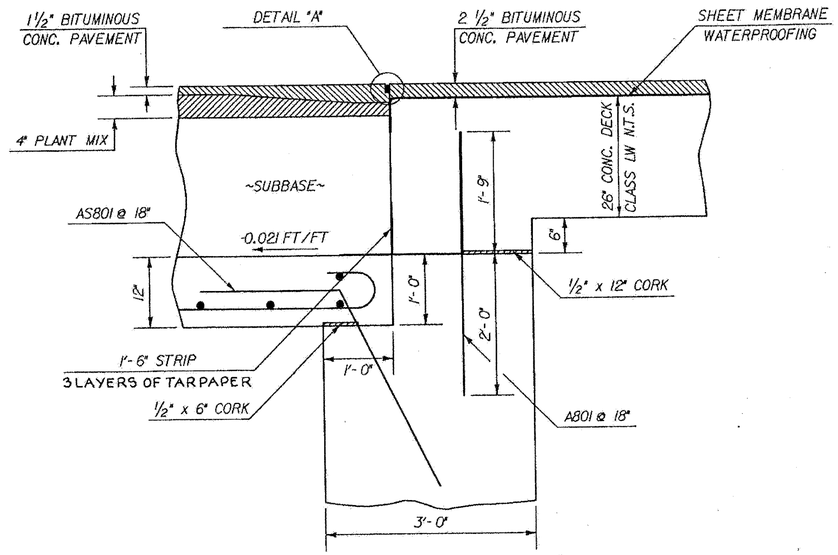
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of CASTLETON	Bridge No. 12
Highway No. VT. 4A	Log Sta. / Surv. Sta. 369+70
SLAB DETAILS	
VT. 4A OVER THE CASTLETON RIVER	
Designed By G.V. SPILAK	Drawn By K. S. CLAIRMONT
Checked By R.J. RANALDO Date 8/87	Bridge Design Supervisor F.W. Balkum Date 10/87
PROJECT CASTLETON-IRA	PROJECT NO. RS 0142(12)
I.G.C. Info.	ZFAI: [30,47] 78F195SL.DGN;1
Bridge Sheet No. BR 105	Sheet 38 of 95



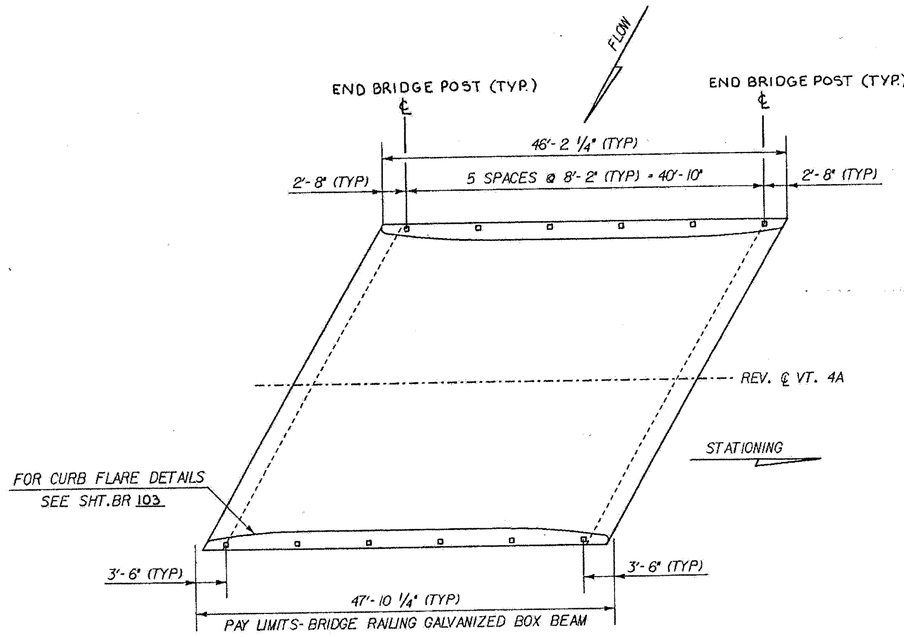
APPROACH SLAB PLAN
TYPICAL BOTH ABUTMENTS

SCALE: 1/8" = 1'-0"



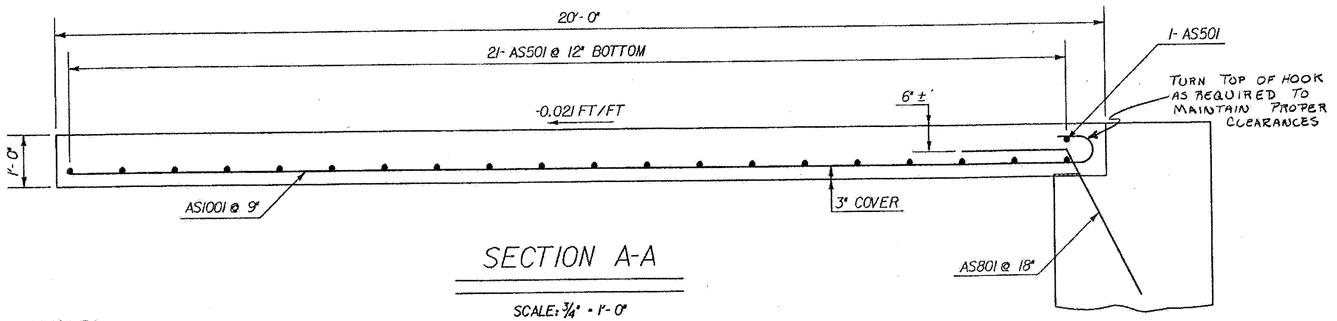
ABUTMENT/SLAB DETAIL

SCALE: 1" = 1'-0"



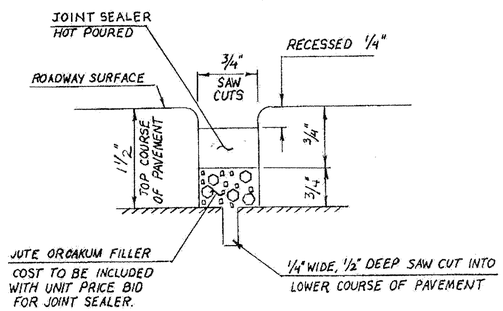
BRIDGE RAILING PLAN

SCALE: 1/8" = 1'-0"



SECTION A-A

SCALE: 3/4" = 1'-0"



DETAIL "A"

NTS.

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 45 OF 45
BRIDGE 12
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of CASTLETON	Bridge No. 12
Highway No. VT. 4A	Log Sta. / Surv. Sta.
APPROACH SLAB DETAILS	
VT. 4A OVER THE CASTLETON RIVER	
Designed By G. SPILAK	Drawn By K. S. CLAIRMONT
Checked By R. J. RANALDO Date 8/87	Bridge Design Supervisor F.W. Bolkum Date 10/87
PROJECT CASTLETON-IRA	PROJECT NO. RS 0142(12)
I.G.C. Info.	ZFAI: [30,47] 78F195AS. DGN: 1
Bridge Sheet No. BR 106	Sheet 39 of 95