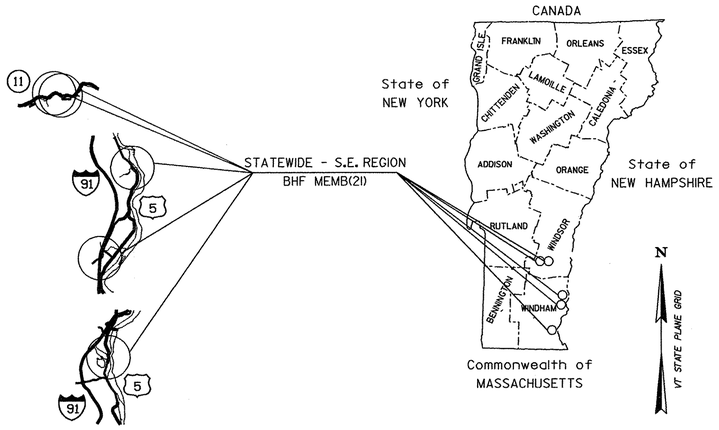
INDEX OF SHEETS

SEE SHEET 2

STATE OF VERMONT
AGENCY OF TRANSPORTATION



RECORD PLANS	
CONTRACTOR:	LANE CONSTRUCTION CORP. – MERIDAN, CT
RESIDENT ENGINEER:	PAUL PERRY
CONSTRUCTION BEGAN:	APRIL 21, 2010
CONSTRUCTION COMPLETE:	NOVEMBER 29, 2010
RECORD PLANS BY:	PAUL PERRY & AMOS KEMPTON

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

BY Paul K. Perry RESIDENT ENGINEER

DATE 8/5/11

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

PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWNS OF CHESTER, WESTMINSTER, AND BRATTLEBORO
COUNTIES OF WINDSOR AND WINDHAM
BRIDGES NO. 45 ON VT 11 (CHESTER), NO. 46 ON VT 11 (CHESTER), NO. 33 ON US 5 (WESTMINSTER), NO. D19 ON TH 4 (WESTMINSTER) & NO. 8 ON US 5 (BRATTLEBORO)

PROJECT LOCATION:

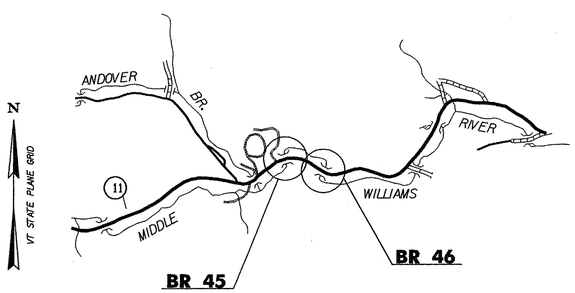
BRIDGE NO. 45 IS LOCATED ON VT 11 (MM 1.8) OVER THE MIDDLE BRANCH WILLIAMS RIVER IN THE TOWN OF CHESTER
BRIDGE NO. 46 IS LOCATED ON VT 11 (MM 2.1) OVER THE MIDDLE BRANCH WILLIAMS RIVER IN THE TOWN OF CHESTER
BRIDGE NO. 33 IS LOCATED ON US 5 (MM 8.2) OVER THE SAXTONS RIVER IN THE TOWN OF WESTMINSTER
BRIDGE NO. D19 IS LOCATED OVER I-91 (MM 26.8) ON TOWN HIGHWAY 4 (KURN HATTIN RD.) IN THE TOWN OF WESTMINSTER
BRIDGE NO. 8 IS LOCATED ON US 5 (MM 3.3) OVER THE WEST RIVER IN THE TOWN OF BRATTLEBORO

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

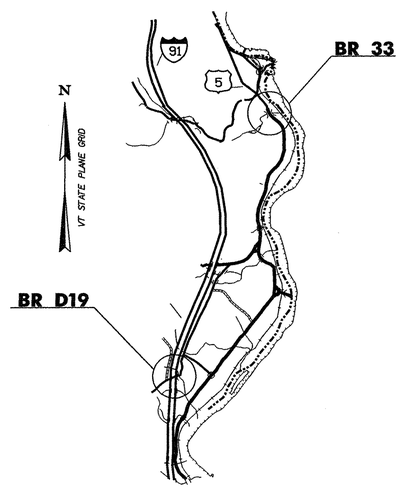
LENGTH OF BRIDGES: 45 117 FEET, 46 118 FEET, 33 434 FEET, D19 269 FEET, 8 356 FEET

TOTAL LENGTH OF BRIDGES: 1294'

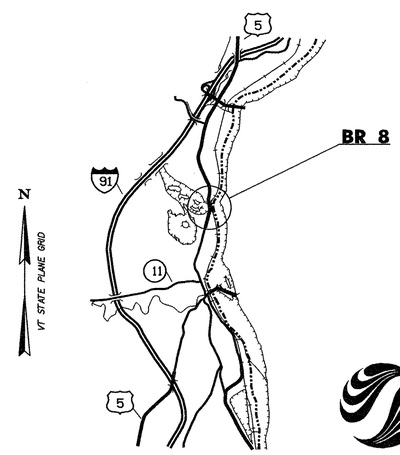
CHESTER



WESTMINSTER



BRATTLEBORO



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
TOP OF CUT
TOE OF SLOPE

SURVEYED BY : N/A
SURVEYED DATE :

DATUM
VERTICAL N/A
HORIZONTAL N/A

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

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

STATE OF VERMONT — GEORGE A. BOGUE NO. 5138 — REGISTERED PROFESSIONAL ENGINEER

10/12/09

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

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Ruth Poteet DATE 10/13/09

PROJECT MANAGER : SHERWARD G. FARNSWORTH

PROJECT NAME : STATEWIDE-SOUTHEAST REGION
PROJECT NUMBER : BHF MEMB (21)

INDEX OF SHEETS

1. TITLE SHEET
2. INDEX OF SHEETS AND PROJECT NOTES
3. BRIDGE LOCATION MAPS
4. QUANTITY SHEET
5. TRAFFIC CONTROL SHEET 1
6. TRAFFIC CONTROL SHEET 2
7. TRAFFIC CONTROL SHEET 3
8. TRAFFIC CONTROL NOTES
9. BITUMINOUS CONCRETE REMOVAL PLAN & DETAILS
10. BITUMINOUS CONCRETE DETAILS
11. PAVEMENT JOINT DETAILS

12.-14. REFERENCE PLANS - BRIDGE 45
15.-18. REFERENCE PLANS - BRIDGE 46
19.-23. REFERENCE PLANS - BRIDGE 33
24.-27. REFERENCE PLANS - BRIDGE D19
28.-34. REFERENCE PLANS - BRIDGE 8

VAOT STANDARD SHEETS

E-100	01/02/04
E-100A	01/02/04
E-101	05/30/03
E-102	06/30/03
E-102A	05/01/04
E-106	03/01/04
E-107	06/30/03
E-107A	06/08/09
E-110	08/08/95
E-120	08/08/95
E-121	08/08/95
E-140	08/30/96
E-171A	08/09/95
E-172	08/09/95
E-191	02/01/99
E-192	10/12/00

PROJECT NOTES

GENERAL

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

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

3. NOT USED.

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

5. TREE LIMBS AND/OR ANY PLANTS/BUSHES THAT PREVENT THE APPLICATION OF WATER REPELLENT, SILANE TO THE ABUTMENTS OR WINGWALLS SHALL BE REMOVED. THE COST OF REMOVING THESE TREE LIMBS AND/OR PLANTS/BUSHES SHALL BE INCIDENTAL TO ITEM 514.10.

6. 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.

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.

TRAFFIC CONTROL

8. SEE SHEETS 5, 6 & 7 FOR SITE SPECIFIC TRAFFIC CONTROL PLANS AND NOTES. SEE SHEET 8 FOR GENERAL TRAFFIC CONTROL NOTES.

PAVEMENT REMOVAL NOTES

9. 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".

10. 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.

11. 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.

12. 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".

13. 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.

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

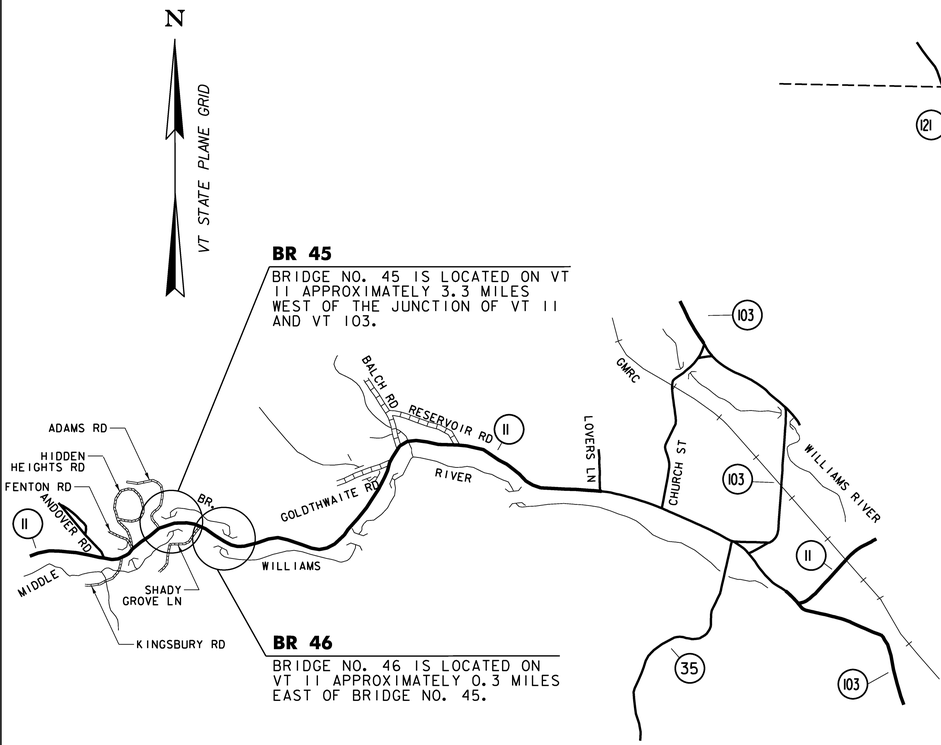
PAVEMENT NOTES

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

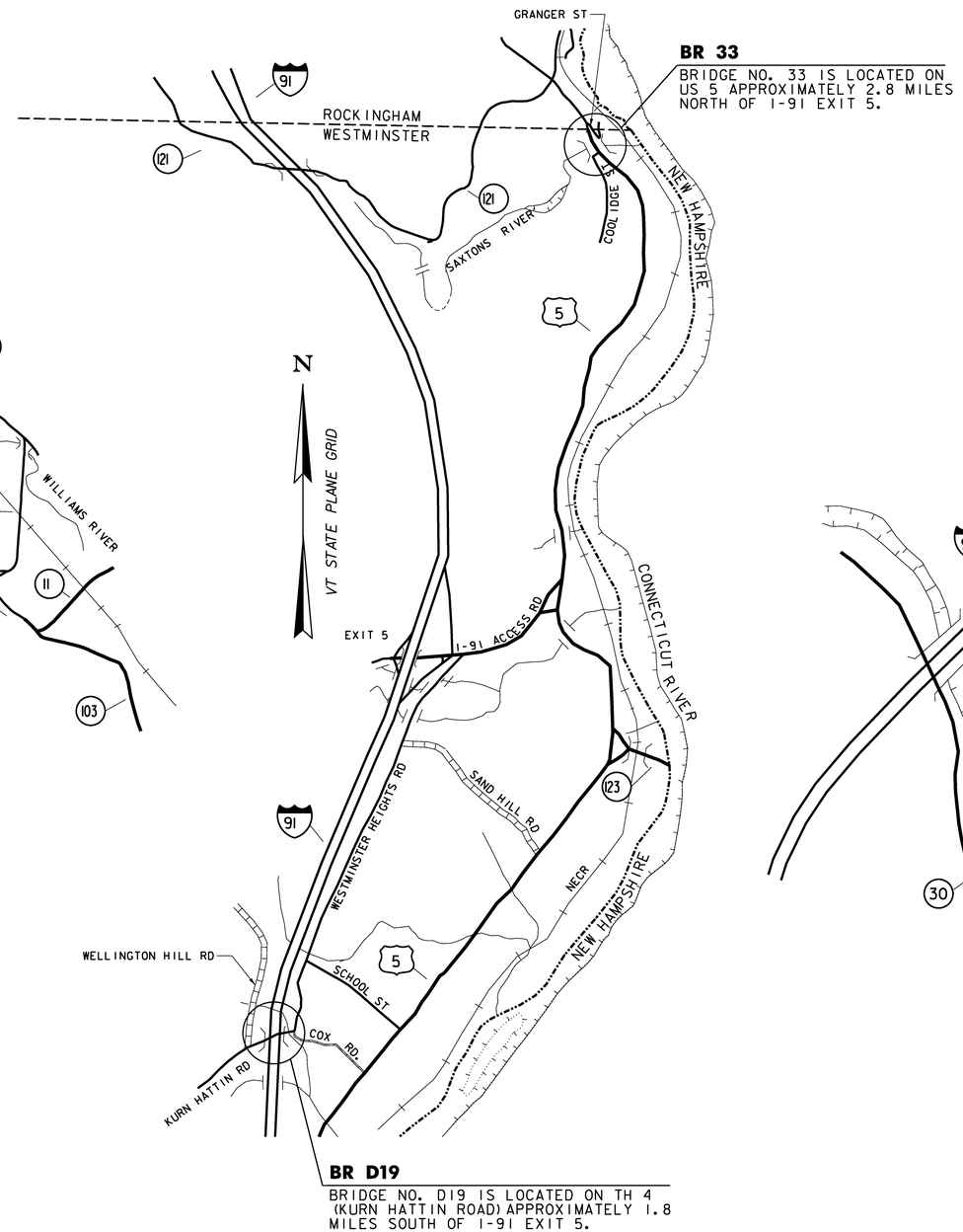
16. CARE SHALL BE EXERCISED TO SMOOTHLY TRANSITION THE NEW BRIDGE PAVEMENT INTO THE EXISTING PAVEMENT. ANY COLD PLANING NECESSARY FOR SHAPING BRIDGE APPROACHES SHALL BE PAID FOR UNDER ITEM 210.10, "COLD PLANING, BITUMINOUS PAVEMENT".

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

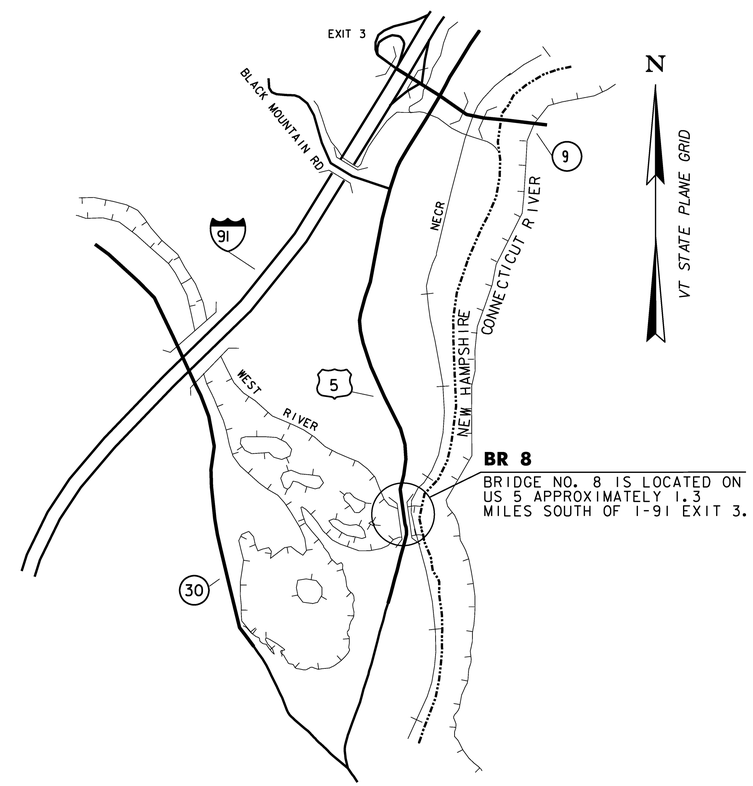
18. FOR PG BINDER GRADE SEE SECTION 406 OF THE GENERAL SPECIAL PROVISIONS.



CHESTER



WESTMINSTER



BRATTLEBORO

NOTE: LOCATION MAPS NOT TO SCALE

Stantec

PROJECT NAME: STATEWIDE SOUTHEAST REGION	
PROJECT NUMBER: BHF MEMB(21)	
FILE NAME: ...\plot files\03_map sheet.dgn	PLOT DATE: 10/13/2009
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: S. BURBANK	CHECKED BY: S. BURBANK
BRIDGE LOCATION MAPS	SHEET 3 OF 34

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET 1

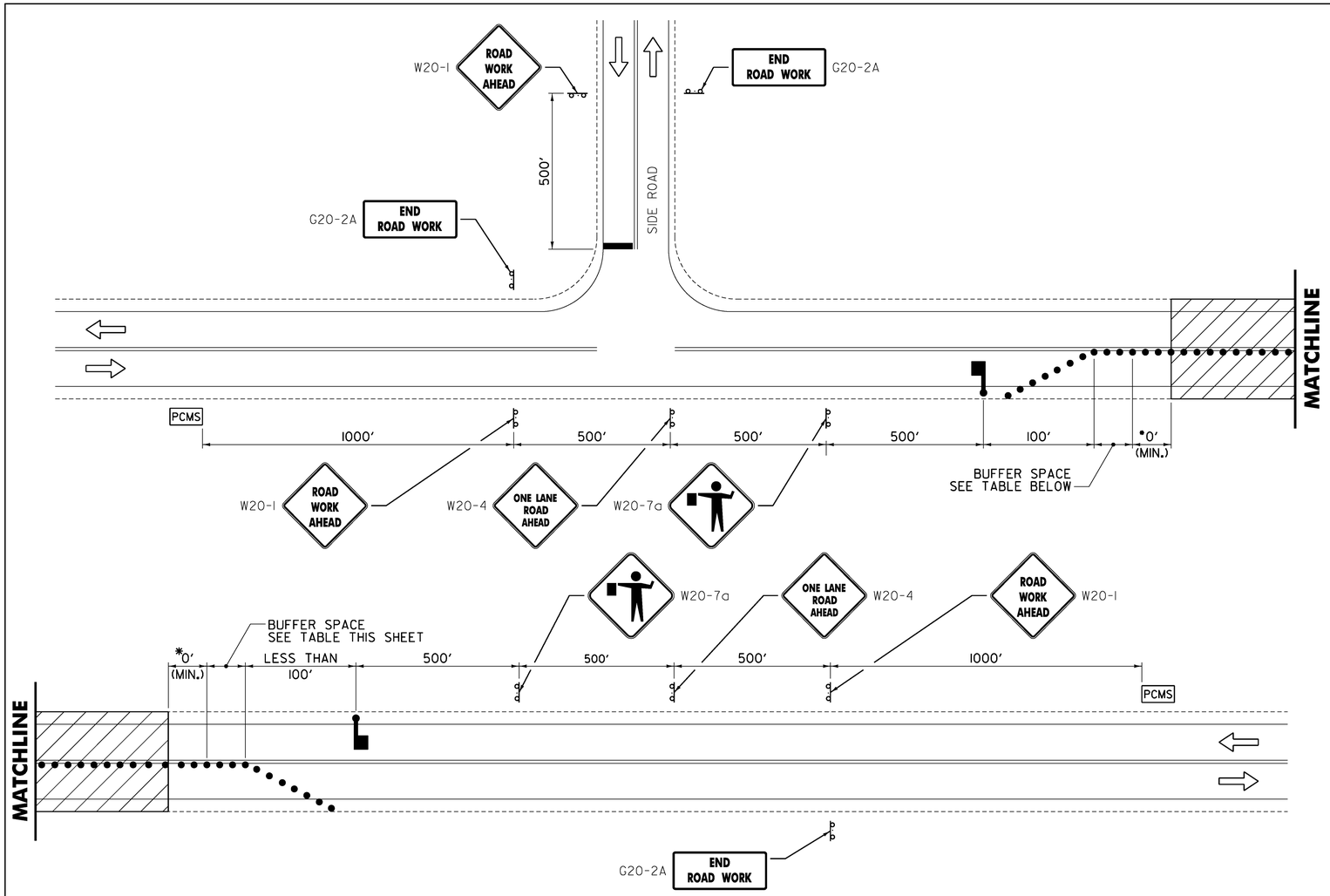
SUMMARY OF ESTIMATED QUANTITIES											TOTALS		DESCRIPTIONS					DETAILED SUMMARY OF QUANTITIES		
	ROADWAY	VT11 - BRIDGE NO. 45	VT11 - BRIDGE NO. 46	US5 - BRIDGE NO. 33	TH4 - BRIDGE NO. D19	US5 - BRIDGE NO. 8	FULL C.E. ITEMS		GRAND TOTAL	FINAL	UNIT	ITEMS	ITEM NUMBER	ROUND		QUANTITIES	UNIT	ITEMS
	1								1		CY	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	204.22					
			733	675	400	622			2430		SY	COLD PLANING, BITUMINOUS PAVEMENT	210.10					
			3	4	3	4			14		CWT	EMULSIFIED ASPHALT	404.65					
			165	338	175	296			974		TON	MEDIUM DUTY BITUMINOUS CONCRETE PAVEMENT	406.27					
			1	1	1	1			4		LU	MAT DENSITY PAY ADJUSTMENT (N.A.B.I.)	406.29					
	1								1		LU	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	406.50					
		35	30	55	25	50			195		GAL	WATER REPELLENT, SILANE	514.10					
		120	63		156				339		LF	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	516.10					
			507	1800	897	1556			4760		SY	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	519.20					
			126		60				186		LF	JOINT SEALER, HOT POURED	524.11					
			507	1800	897	1556			4760		SY	REMOVAL OF BRIDGE PAVEMENT	529.10					
			10	40	40	40			130		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS I	580.10					
			5	5	30	5			45		SY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS II	580.11					
			3	3	3	3			12		CY	REPAIR OF CONCRETE SUPERSTRUCTURE SURFACE, CLASS III	580.12					
			4563	16201	8070	14001			42835		SF	SURFACE PREPARATION FOR MEMBRANE	580.16					
			3	3	3	3			12		CF	RAPID SETTING CONCRETE REPAIR MATERIAL WITH COARSE AGGREGATE	580.20					
		120	120	240		220			700		HR	TRUCK-MOUNTED ATTENUATOR	608.45					
		410	410	1470	40	1270			3600		HR	FLAGGERS	630.15					
							1		1		LS	TESTING EQUIPMENT, BITUMINOUS	631.17					
	1								1		LS	MOBILIZATION/DEMOBILIZATION	635.11					
					1				1		LS	TRAFFIC CONTROL (TH 4 - BRIDGE NO. D19)	641.10					
				1					1		LS	TRAFFIC CONTROL (US 5 - BRIDGE NO. 33)	641.10					
						1			1		LS	TRAFFIC CONTROL (US 5 - BRIDGE NO. 8)	641.10					
		1							1		LS	TRAFFIC CONTROL (VT 11 - BRIDGE NO. 45)	641.10					
			1						1		LS	TRAFFIC CONTROL (VT 11 - BRIDGE NO. 46)	641.10					
		1	1	2	2	2			8		EACH	PORTABLE CHANGEABLE MESSAGE SIGN	641.15					
			1740	2700	780	2160			7380		LF	4 INCH WHITE LINE	646.20					
			1740	2700	780	2160			7380		LF	4 INCH YELLOW LINE	646.21					
			1740	2700	780	2160			7380		LF	TEMPORARY 4 INCH WHITE LINE	646.600					
			3480	5400	1340	4320			14540		LF	TEMPORARY 4 INCH WHITE LINE, TYPE II TAPE	646.601					
			1740	2700	780	2160			7380		LF	TEMPORARY 4 INCH YELLOW LINE	646.610					
			21	45	29	37			132		EACH	LINE STRIPING TARGETS	646.76					
			870	1340		1070			3280		SF	PAVEMENT MARKING MASK	646.86					
					1				1		EACH	TEMPORARY TRAFFIC SIGNAL SYSTEM	678.40					
	1								1		LU	PRICE ADJUSTMENT, FUEL (N.A.B.I.)	690.50					

Stantec

PROJECT NAME: STATEWIDE SOUTHEAST REGION
PROJECT NUMBER: BHF MEMB(21)

FILE NAME: ...\04_quantity sheets.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: S. BURBANK
QUANTITY SHEET

PLOT DATE: 10/13/2009
DRAWN BY: E. ALLING
CHECKED BY: S. BURBANK
SHEET 4 OF 34



* - 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 FOR DAYTIME WORK BRIDGES 45 & 46

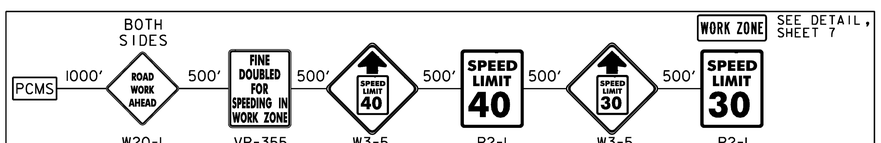
NOT TO SCALE

BRIDGES 45 & 46 TRAFFIC CONTROL NOTES:

1. 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.
2. IF IT IS NECESSARY TO KEEP TRAFFIC OFF OF PORTIONS OF THE BRIDGE OVERNIGHT, THE CONTRACTOR SHALL USE PHASED CONSTRUCTION AND FOLLOW THE TRAFFIC CONTROL SHOWN ON SHEET 6.
3. SEE SHEET 8 FOR GENERAL TRAFFIC CONTROL NOTES.
4. THE EXISTING SPEED LIMIT IS 50 MPH ON VT 11. THE SPEED LIMIT WILL BE REDUCED TO 30 MPH IN THE WORK ZONE PER THE "TRAFFIC CONTROL APPROACH SIGN PACKAGE FOR BRIDGES NO. 45 & 46" ON THIS SHEET. ANY EXISTING SPEED LIMIT SIGNS WITHIN THE SPEED REDUCTION AREA SHALL BE COMPLETELY COVERED.
5. NOT USED
6. IF CONTRACTOR OPTS TO USE A TEMPORARY TRAFFIC SIGNAL IN LIEU OF FLAGGERS, COST OF TEMPORARY TRAFFIC SIGNAL SHALL BE INCIDENTAL TO TO ITEMS 641.10 FOR TRAFFIC CONTROL.

BUFFER SPACE TABLE

POSTED SPEED (MPH)	MINIMUM BUFFER SPACE LENGTH (FT)
25	155
30	200
35	250
40	305
45	360
50	425



TRAFFIC CONTROL APPROACH SIGN PACKAGE FOR BRIDGES NO. 45 & 46

APPROACH SIGN NOTES:

1. REFER TO STANDARD E-100 FOR CONSTRUCTION APPROACH SIGNS CRITERIA.
2. ALL SIGNS ARE TO BE LOCATED ON THE RIGHT SIDE OF THE ROAD APPROACHING THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED.

LEGEND

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

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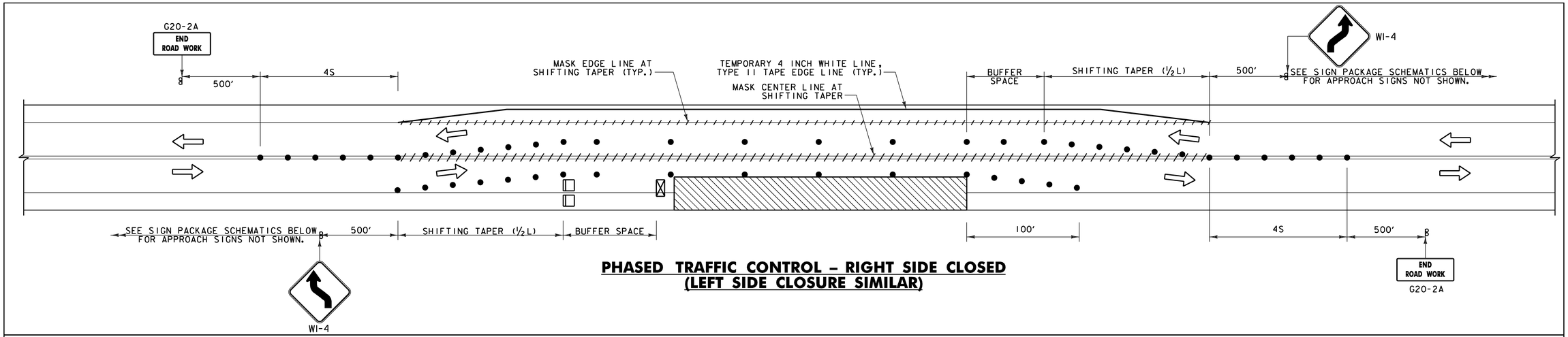
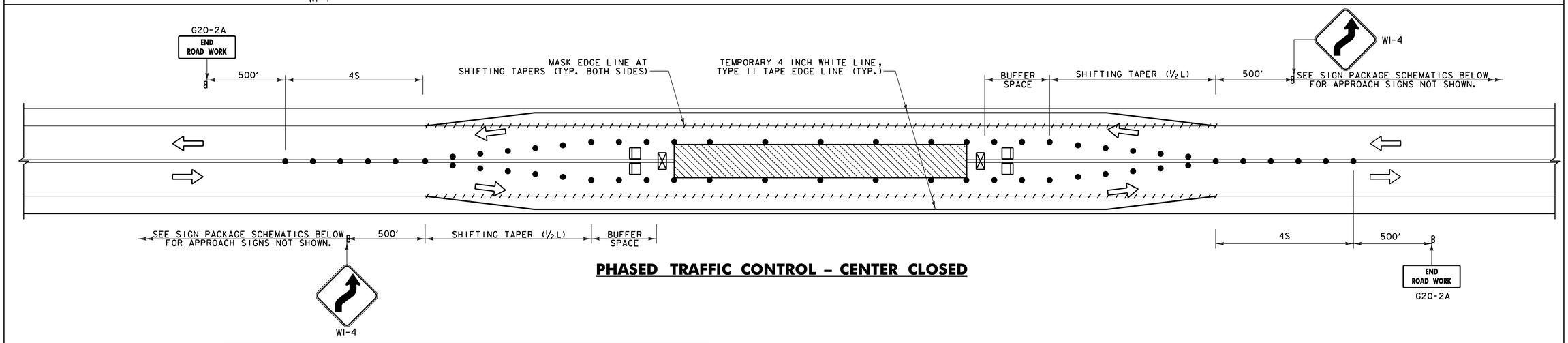
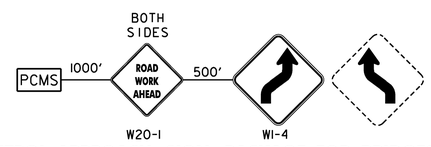
PROJECT NAME: STATEWIDE SOUTHEAST REGION	
PROJECT NUMBER: BHF MEMB(21)	
FILE NAME: ...\Plot Files\05_tcs 1.dgn	PLOT DATE: 10/23/2009
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: S. BURBANK	CHECKED BY: S. BURBANK
TRAFFIC CONTROL SHEET 1	SHEET 5 OF 34



PHASED TRAFFIC CONTROL – RIGHT SIDE CLOSED
(LEFT SIDE CLOSURE SIMILAR)



PHASED TRAFFIC CONTROL – CENTER CLOSED



TRAFFIC CONTROL APPROACH SIGN PACKAGE FOR BRIDGES NO. 33 & 8

APPROACH SIGN NOTES:

1. REFER TO STANDARD E-100 FOR CONSTRUCTION APPROACH SIGNS CRITERIA.
2. ALL SIGNS ARE TO BE LOCATED ON THE RIGHT SIDE OF THE ROAD APPROACHING THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED.

BRIDGES 33 & 8 TRAFFIC CONTROL NOTES:

1. THE EXISTING SPEED LIMIT IS 35 M.P.H. FOR U.S. 5 WESTMINSTER (BR 33) AND 30 M.P.H. FOR U.S. 5 IN BRATTLEBORO (BR 8).
2. DUE TO THE TRAFFIC VOLUMES ON U.S. 5, THE CONTRACTOR SHALL NOT USE A TEMPORARY TRAFFIC SIGNAL FOR TRAFFIC CONTROL ON BRIDGES NO. 33 AND 8.
3. SIDEWALK FOR BRIDGES 33 AND 8 SHALL REMAIN OPEN DURING CONSTRUCTION. COST TO MAINTAIN PEDESTRIAN ACCESS ACROSS THE BRIDGE SHALL BE INCIDENTAL TO CONTRACT ITEM 641.10.
4. SEE SHEET 8 FOR GENERAL TRAFFIC CONTROL NOTES.

LEGEND

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

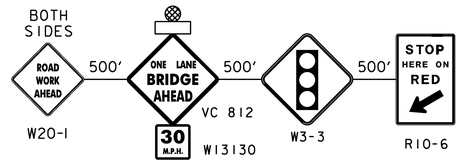
POSTED SPEED (MPH)	TAPER LENGTHS (FT)		TANGENT W=12 FT (L/2)	BARRIER FLARE RATE (MINIMUM)	MINIMUM BUFFER SPACE LENGTH (FT)	MAXIMUM CHANNELIZING DEVICE SPACING (FT)	
	SHOULDER W=8 FT (L/3)	MERGING 12 FT LANE (L)				TAPER (S)	TANGENT (2S)
25	28	130	65	1:9	155	25	50
30	40	180	90	1:9	200	30	60
35	55	250	125	1:9	250	35	70
40	72	310	155	1:9	305	40	80
45	120	540	270	1:9	360	45	90

TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATION:
$L = WS$ FOR POSTED SPEEDS OF 45 MPH OR GREATER
$L = WS^2/60$ 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

Stantec

PROJECT NAME: STATEWIDE SOUTHEAST REGION	
PROJECT NUMBER: BHF MEMB(21)	
FILE NAME: ...\plot files\06_tcs 2.dgn	PLOT DATE: 10/13/2009
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: S. BURBANK	CHECKED BY: S. BURBANK
TRAFFIC CONTROL SHEET 2	SHEET 6 OF 34

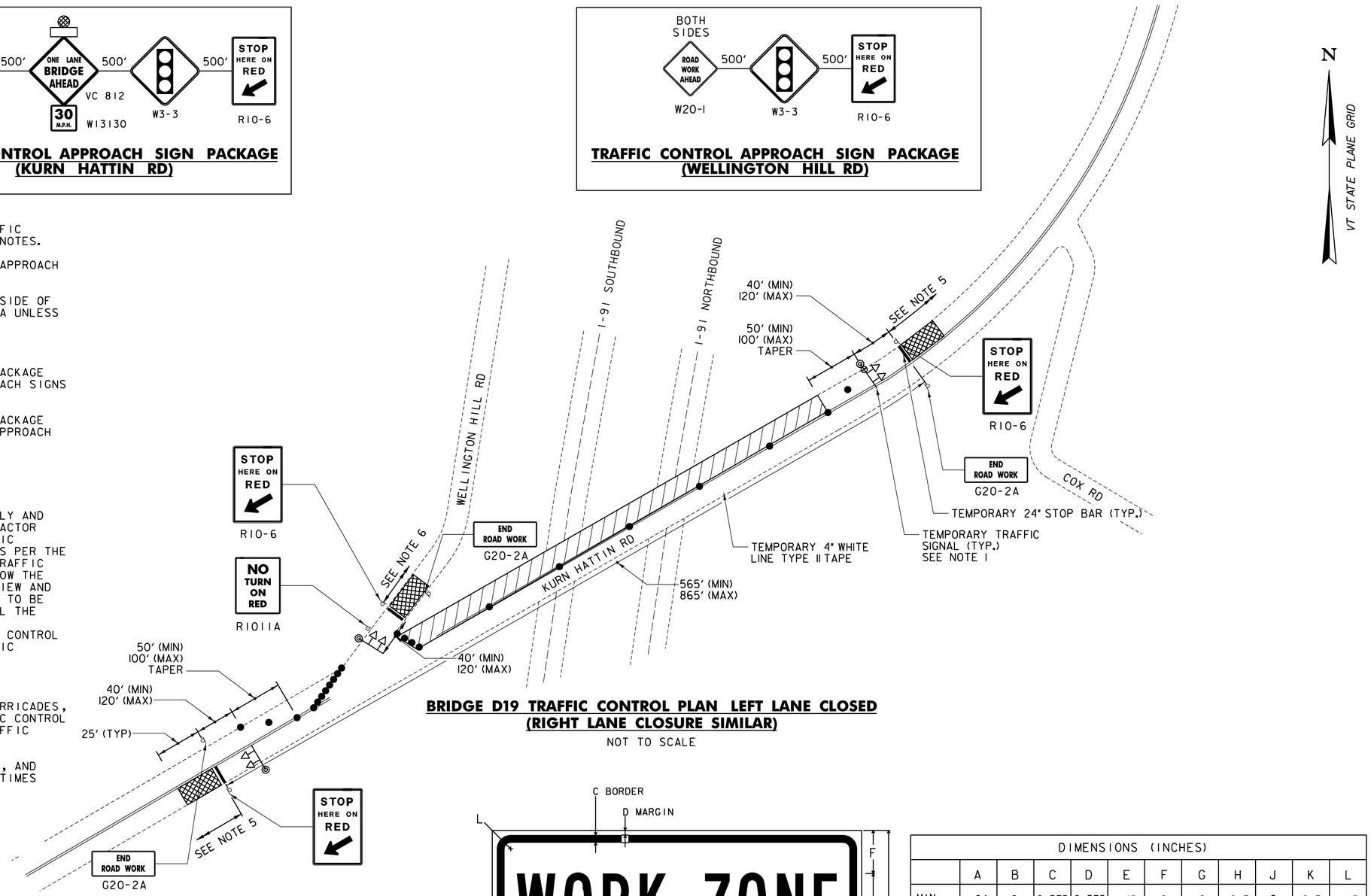


TRAFFIC CONTROL APPROACH SIGN PACKAGE (KURN HATTIN RD)

TRAFFIC CONTROL APPROACH SIGN PACKAGE (WELLINGTON HILL RD)

NOTES:

1. SEE SHEET 8 FOR BRIDGE D19 TEMPORARY TRAFFIC SIGNAL NOTES AND GENERAL TRAFFIC CONTROL NOTES.
2. REFER TO STANDARD E-100 FOR CONSTRUCTION APPROACH SIGNS CRITERIA.
3. ALL SIGNS ARE TO BE LOCATED ON THE RIGHT SIDE OF THE ROAD APPROACHING THE CONSTRUCTION AREA UNLESS OTHERWISE NOTED.
4. NOT USED.
5. REFER TO "TRAFFIC CONTROL APPROACH SIGN PACKAGE (KURN HATTIN RD)" ON THIS SHEET FOR APPROACH SIGNS NOT SHOWN.
6. REFER TO "TRAFFIC CONTROL APPROACH SIGN PACKAGE (WELLINGTON HILL RD)" ON THIS SHEET FOR APPROACH SIGNS NOT SHOWN.
7. CHANNELIZING DEVICE SPACING:
   TANGENT SECTIONS: 60 FT.
   TAPER SECTIONS: 30 FT.
8. THIS TRAFFIC CONTROL PLAN IS SCHEMATIC ONLY AND SHOULD BE USED AS A REFERENCE. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT A SITE SPECIFIC TRAFFIC CONTROL PLAN FOR ONE LANE CLOSURES PER THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR SHALL ALLOW THE RESIDENT ENGINEER 14 CALENDAR DAYS TO REVIEW AND ACCEPT THE PROPOSED PLANS BEFORE THEY ARE TO BE IMPLEMENTED. NO WORK SHALL COMMENCE UNTIL THE TRAFFIC CONTROL PLAN HAS BEEN APPROVED. DEVELOPMENT AND IMPLEMENTATION OF TRAFFIC CONTROL PLAN SHALL BE PAID AS ITEM 641.10, "TRAFFIC CONTROL PLAN (TH 4 - BRIDGE NO. D19)".
9. NOT USED
10. ALL SIGNS, PAVEMENT MARKINGS, BARRELS, BARRICADES, AND OTHER INCIDENTALS REQUIRED FOR TRAFFIC CONTROL SHALL BE PAID FOR UNDER ITEM 641.10, "TRAFFIC CONTROL (TH 4 - BRIDGE NO. D19)".
11. ACCESS TO ALL EXISTING SIDE ROADS, DRIVES, AND PARKING AREAS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

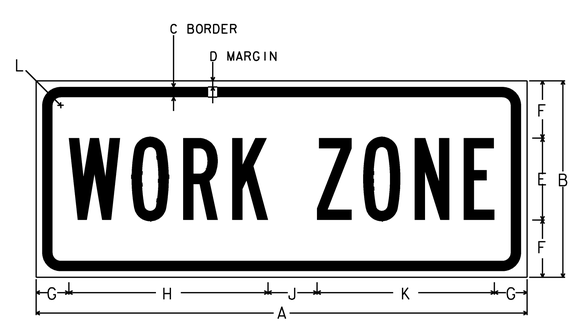


BRIDGE D19 TRAFFIC CONTROL PLAN LEFT LANE CLOSED (RIGHT LANE CLOSURE SIMILAR)

NOT TO SCALE

LEGEND

- ● RETROREFLECTIVE PLASTIC DRUM
- TEMPORARY TRAFFIC SIGNAL
- TEMPORARY CONSTRUCTION SIGN
- FLASHING BEACON
- WORK ZONE
- VEHICLE DETECTION ZONE



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

WORK ZONE SIGN DETAIL

NOT TO SCALE

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

Stantec

PROJECT NAME: STATEWIDE SOUTHEAST REGION
PROJECT NUMBER: BHF MEMB(21)

FILE NAME: ...\plot files\07_tcs 3.dgn
PROJECT LEADER: G. BOGUE
DESIGNED BY: S. BURBANK
TRAFFIC CONTROL SHEET 3

PLOT DATE: 10/13/2009
DRAWN BY: E. ALLING
CHECKED BY: S. BURBANK
SHEET 7 OF 34

BRIDGE D19 TEMPORARY TRAFFIC SIGNAL:

1. DESIGN OF THE SIGNAL SUPPORTS AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.

2. SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD AND PAYMENT SHALL BE INCIDENTAL TO ITEM 678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM". THE ENGINEER SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL-RED CLEARANCE INTERVAL.

3. NOT USED

4. SIGNAL FACES SHALL BE LED AND CONSIST OF 12" LENSES. (RED, YELLOW, AND GREEN)

5. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 16.5 FEET NOR MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE GROUND. CAUTION SHOULD BE USED TO INSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADE.

6. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 8 FEET APART MEASURED HORIZONTALLY BETWEEN CENTER FACES.

7. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE OF NO GREATER THAN 14.5 FEET FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 40 FEET FROM THE SIGNAL HEAD. CONSULT THE M.U.T.C.D. 2003 EDITION FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.

8. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.

9. THE SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, WARNING SIGNS, LUMINARIES, FLASHING BEACONS, ASSOCIATED PAVEMENT MARKINGS, AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN. IT ALSO INCLUDES PERMITS AND COSTS ASSOCIATED WITH PROVIDING ELECTRICAL POWER.

10. INSTALL WIRING BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION. ATTACHMENT TO UTILITY POLES TO BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY COMPANY.

11. PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE POSSIBLE.

12. POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL NOT BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELING PUBLIC.

13. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR REMOVAL INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC.

14. A 250 WATT MER/150 WATT HPS LUMINAIRE AND MAST ARM SHALL BE PROVIDED ON A POLE ON EACH APPROACH AT A MOUNTING HEIGHT OF 30 FEET ABOVE ROADWAY CENTERLINE. THE INTENT IS TO LIGHT UP THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT. LIGHTING SHALL BE PAID INCIDENTAL TO ITEM 678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM".

15. STOP BARS SHALL BE LOCATED A MINIMUM OF 40' AND A MAXIMUM OF 120' FROM THE NEAREST SIGNAL HEAD.

16. NOT USED

17. SEE STD. E-140 FOR "STOP HERE ON RED" SIGN DETAIL AND E-101 FOR "SIGNAL AHEAD" SYMBOL SIGN. SEE STD. E-121 FOR SIGN PLACEMENT. SEE STD, E-171A AND E-172 FOR ADDITIONAL INFORMATION ON SIGNALS.

18. ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE INSPECTOR.

19. ALL STOP SIGNS AND ANY TRAFFIC SIGNS MADE IRRELEVANT DUE TO THE TEMPORARY SIGNAL SHALL BE COVERED DURING OPERATION OF THE TEMPORARY SIGNAL OR AT THE DISCRETION OF THE ENGINEER. THE COSTS OF COVERING AND UNCOVERING THESE SIGNS SHALL BE PAID INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL (TH4 - BRIDGE NO. D19)".

20. CONSTRUCTION APPROACH SIGNS SHALL BE PROVIDED ON EACH APPROACH PER THE "TRAFFIC CONTROL APPROACH SIGN PACKAGE" SHOWN ON SHEET 7. ADDITIONAL CONSTRUCTION APPROACH SIGNS SHALL BE INSTALLED AS REQUIRED BY THE ENGINEER PER STANDARD E-100A, E-101, E-102 AND E-102A. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC., SHALL BE PAID INCIDENTAL TO ITEM 641.10, "TRAFFIC CONTROL (TH4 - BRIDGE NO. D19)".

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING SIGNAL PHASING. THE CONTRACTOR SHALL SUBMIT PHASING DIAGRAM TO THE ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL MAKE SIGNALS OPERATIONAL ONLY AFTER RECEIVING APPROVAL OF THE PHASING DIAGRAM BY THE ENGINEER. DEVELOPMENT OF THE PHASING DIAGRAM SHALL BE PAID INCIDENTAL TO ITEM 678.40, "TEMPORARY TRAFFIC SIGNAL SYSTEM".

GENERAL NOTES

22. 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 ALL BRIDGES 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.

23. NOT USED

24. SIGNS SHALL BE INSTALLED SO AS NOT TO OBSTRUCT EXISTING SIGNS OR CORNER SIGHT DISTANCE FROM HIGHWAYS OR DRIVES.

25. 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).

26. 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.

27. ROLL UP SIGNS SHALL HAVE RETROREFLECTIVE SHEETING EQUAL TO OR EXCEEDING ASTM TYPE VI.

28. 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.

29. 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.

30. 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.

31. 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.

32. THE CONTRACTOR SHALL HAVE SIGNS FOR CLOSURE OF RIGHT AND LEFT LANES ON PROJECT BEFORE WORK COMMENCES.

33. 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.

34. NOT USED.

35. 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.

36. TRAVEL LANES SHALL BE 11 FEET WIDE, MINIMUM.

37. THE CONTRACTOR SHALL SHIFT TRAFFIC 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.

38. NOT USED

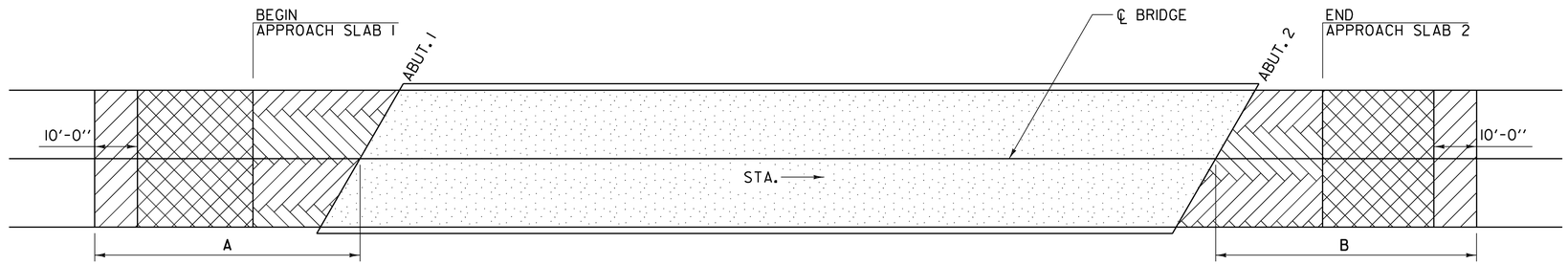
39. UNLESS COVERED UNDER INDIVIDUAL PAY ITEMS OR NOTED OTHERWISE, ALL COSTS FOR WORK SHOWN ON SHEETS 5, 6 & 7 FOR TEMPORARY TRAFFIC CONTROL DEVICES INCLUDING TRAFFIC SIGNALS, TRAFFIC BARRIERS, RETROREFLECTIVE DRUMS, SIGNS, AND SIGN POSTS WILL BE CONSIDERED TO BE INCLUDED IN THE CONTRACT LUMP SUM PRICE FOR TRAFFIC CONTROL, ITEM 641.10.

40. 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.

41. ANY PUBLIC HIGHWAYS BETWEEN THE FLAGGER AND THE WORK ZONE WILL REQUIRE AN ADDITIONAL FLAGGER TO MAINTAIN TRAFFIC CONTROL FOR THE PUBLIC HIGHWAY.

42. TEMPORARY TRAFFIC CONTROL DETAILS PROVIDED IN THE PLANS ARE INTENDED FOR DAYTIME USE ONLY. ANY COSTS ASSOCITATED WITH PROVIDING AN OVERNIGHT TRAFFIC CONTROL PACKAGE, IF PROPOSED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER, WILL BE INCLUDED IN THE UNIT PRICE BID FOR 641.10 CONTRACT ITEMS.

BRIDGE NO.	A(FT)	B(FT)
45	100.0	100.0
46	100.0	65.0
33	60.0	100.0
D19	60.0	60.0
8	70.0	70.0



COLD PLANE - 1¼". PAID AS ITEM 210.10.

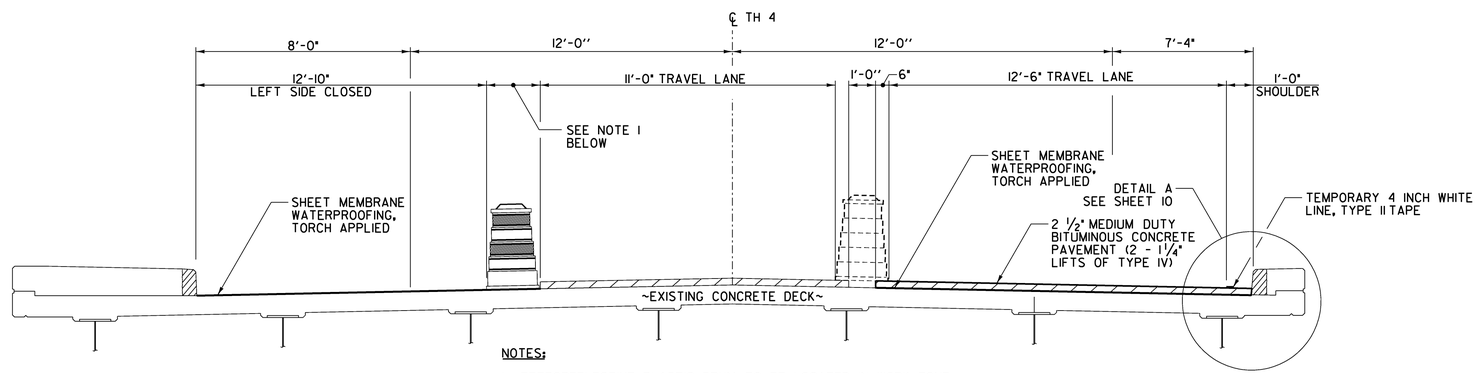
COLD PLANE - 2½". PAID AS ITEM 210.10.

COLD PLANE - TO THE TOP OF THE APPROACH SLABS AND REMOVE THE BARRIER MEMBRANE ON BRIDGES 46 & D19. COLD PLANE 2½" ON BRIDGES 33 & 8. COLD PLANING PAID AS ITEM 210.10.
REMOVAL OF THE BARRIER MEMBRANE WILL BE PAID FOR UNDER ITEM 580.16

BRIDGE PAVEMENT REMOVAL - 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.

BITUMINOUS CONCRETE REMOVAL & REPLACEMENT PLAN

NOT TO SCALE

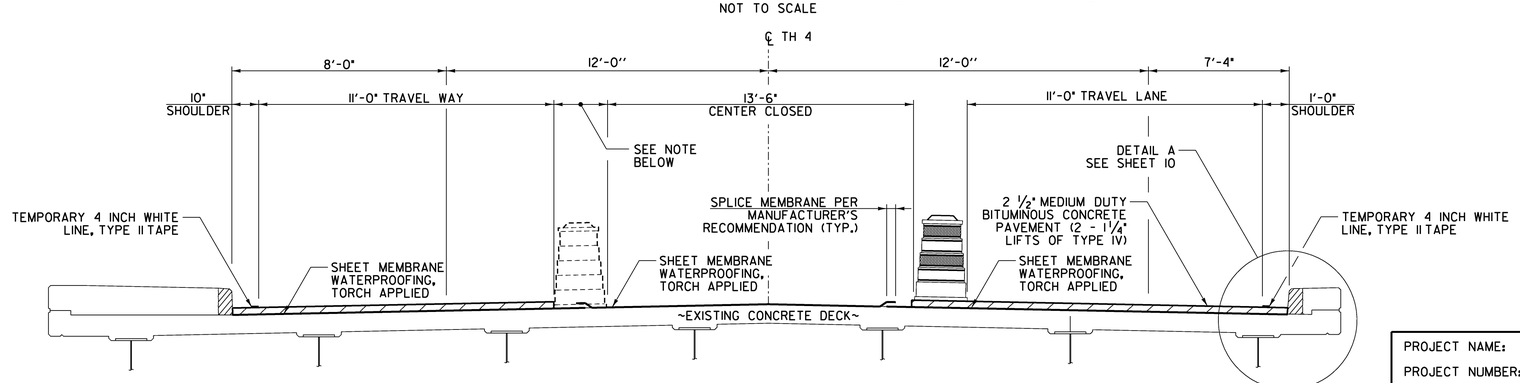


NOTES:

1. RETROREFLECTIVE PLASTIC DRUM TO BE LOCATED IN WORK ZONE AS NECESSARY TO MAINTAIN 11'-0" (MIN.) LANE WIDTH.
2. LEFT LANE CLOSURE SHOWN RIGHT LANE CLOSURE SIMILAR.

MEMBRANE SPLICE DETAIL – BRIDGE NO. 8 (LEFT SIDE CLOSED)

NOT TO SCALE



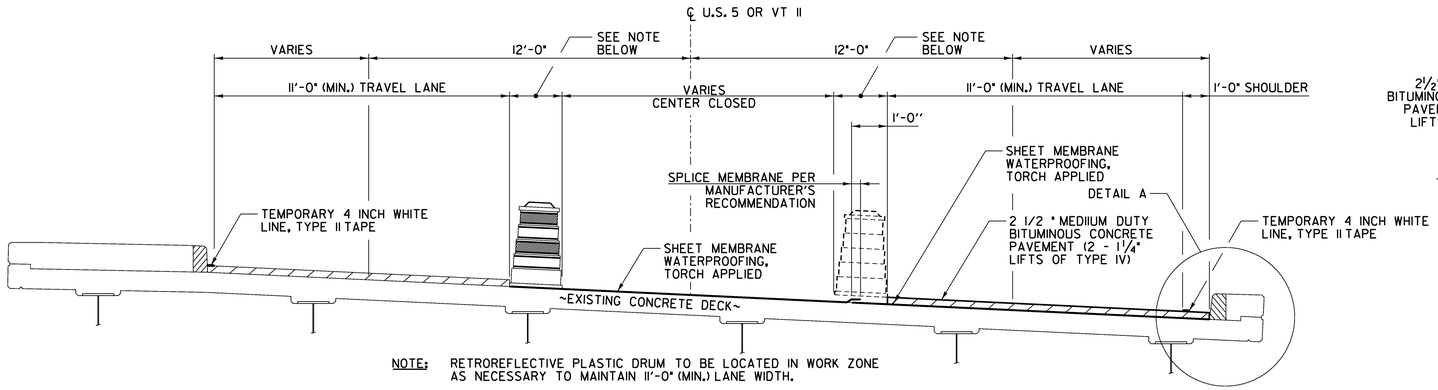
NOTE: RETROREFLECTIVE PLASTIC DRUM TO BE LOCATED IN WORK ZONE AS NECESSARY TO MAINTAIN 11'-0" (MIN.) LANE WIDTH

MEMBRANE SPLICE DETAIL – BRIDGE NO. 8 (CENTER CLOSED)

NOT TO SCALE

Stantec

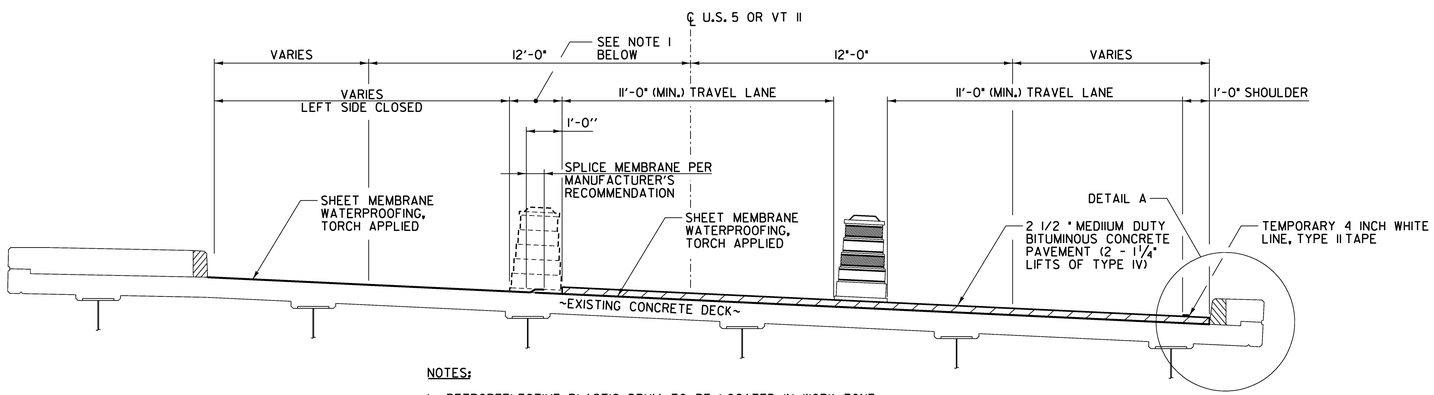
PROJECT NAME: STATEWIDE SOUTHEAST REGION	
PROJECT NUMBER: BHF MEMB(21)	
FILE NAME: ...\09_bit conc removal plan 1.dgn	PLOT DATE: 10/13/2009
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: S. BURBANK	CHECKED BY: S. BURBANK
BIT. CONC. REMOVAL PLAN & DETAILS	SHEET 9 OF 34



NOTE: RETROREFLECTIVE PLASTIC DRUM TO BE LOCATED IN WORK ZONE AS NECESSARY TO MAINTAIN 11'-0" (MIN.) LANE WIDTH.

MEMBRANE SPLICE DETAIL SUPERELEVATED ROADWAY (CENTER CLOSED)

NOT TO SCALE

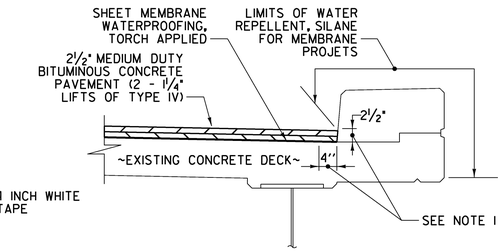


NOTES:

1. RETROREFLECTIVE PLASTIC DRUM TO BE LOCATED IN WORK ZONE AS NECESSARY TO MAINTAIN 11'-0" (MIN.) LANE WIDTH.
2. LEFT LANE CLOSURE SHOWN RIGHT LANE CLOSURE SIMILAR.

MEMBRANE SPLICE DETAIL SUPERELEVATED ROADWAY (LEFT LANE CLOSED)

NOT TO SCALE



DETAIL A

NOT TO SCALE

DETAIL A NOTES:

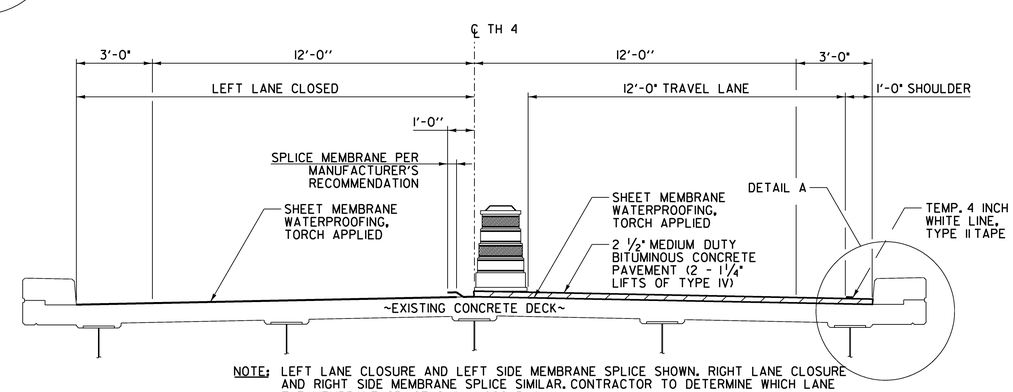
1. INDICATES AREA ALONG DECK AND UP FACE OF CURB FOR PLACEMENT OF TWO COATS OF POLYURETHANE MEMBRANE.
2. POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING, TORCH APPLIED.
3. SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN.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

BRIDGE LENGTH AND WIDTH (CURB TO CURB)

	WIDTH (CURB TO CURB) (FEET)	LENGTH (FEET)
45	38.67	117
46	38.67	118
33	37.33	434
D19	30.00	269
8	39.33	356

ASPHALTIC PLUG JOINT REPLACEMENT SCHEDULE

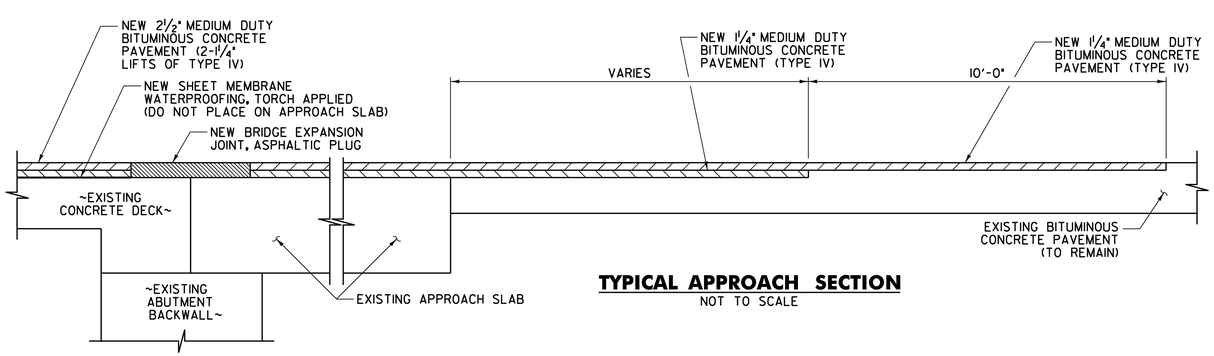
BRIDGE NO.	ABUT. 1	PIER 1	PIER 2	PIER 3	ABUT. 2	TOTAL
45	60.0				60.0	120.0
46	63.0				--	63.0
33	--	--	--		--	--
D19	39.0	--	39.0	39.0	39.0	156.0
8	--	--			--	--



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.

MEMBRANE SPLICE DETAIL – BRIDGE NO. D19

NOT TO SCALE

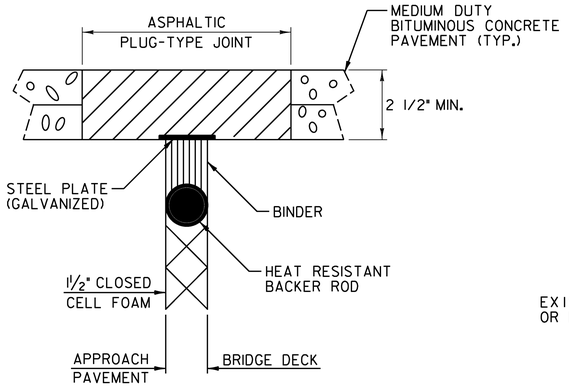


TYPICAL APPROACH SECTION

NOT TO SCALE

Stantec

PROJECT NAME: STATEWIDE SOUTHEAST REGION	
PROJECT NUMBER: BHF MEMB(21)	
FILE NAME: ...\10_bit conc dets 1.dgn	PLOT DATE: 10/13/2009
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: S. BURBANK	CHECKED BY: S. BURBANK
BITUMINOUS CONCRETE DETAILS	SHEET 10 OF 34



ASPHALTIC PLUG-TYPE JOINT DETAIL

NOTES:

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

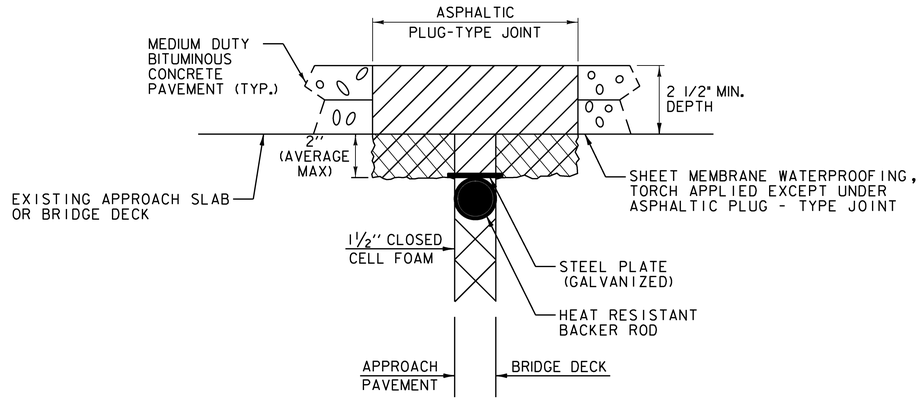
WEATHER LIMITATIONS

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

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

B. THE ROAD SURFACE IS SUFFICIENTLY DRY.

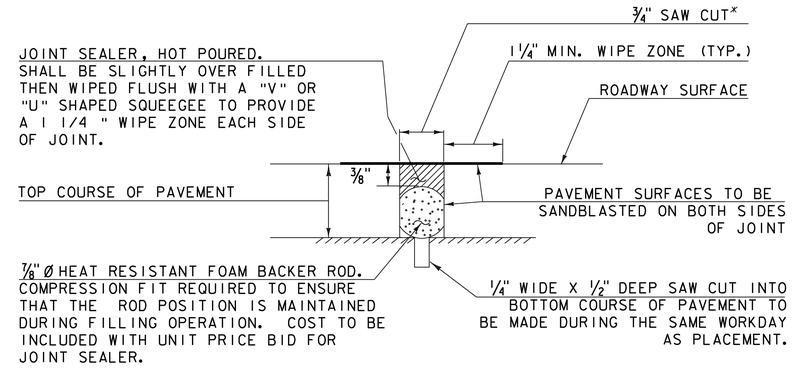
C. WEATHER CONDITIONS OR OTHER CONDITIONS ARE FAVORABLE AND ARE EXPECTED TO REMAIN SO FOR THE PERFORMANCE OF SATISFACTORY WORK.



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

NOTES:

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

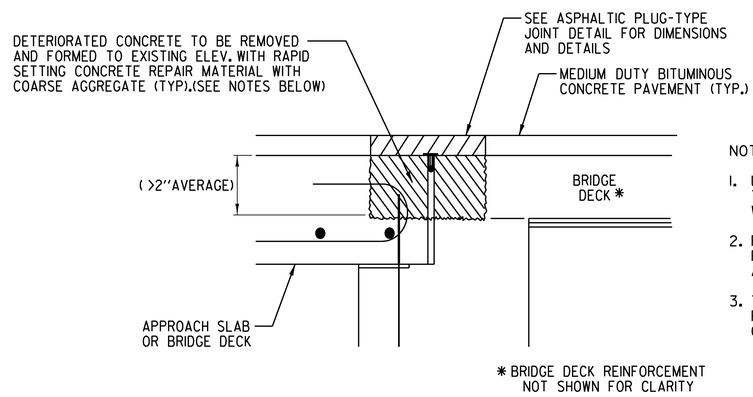


NOTE: PLACE JOINT SEALER, HOT POURED AT THE BEGINNING OF APPROACH SLABS.

SAWED PAVEMENT JOINT DETAIL

N. T. S.

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



NOTES:

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

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

Stantec

PROJECT NAME: STATEWIDE SOUTHEAST REGION	
PROJECT NUMBER: BHF MEMB(21)	
FILE NAME: ...\11_pavement jnt dets.dgn	PLOT DATE: 10/13/2009
PROJECT LEADER: G. BOGUE	DRAWN BY: E. ALLING
DESIGNED BY: S. BURBANK	CHECKED BY: S. BURBANK
PAVEMENT JOINT DETAILS	SHEET 11 OF 34

STATE OF VERMONT
AGENCY OF TRANSPORTATION

INDEX OF SHEETS

1.	TITLE		
2.	TYPICAL		
3-5.	DRAINAGE AND ITEM QUANTITY		
6.	EARTHWORK AND GRADE SHEET		
7.	BLANK		
8-10.	R.O.W. DETAIL AND PLAN SHEETS.		
11-12.	PLAN AND PROFILE SHEETS		
13-24.	BRIDGE SHEETS		
25.	CULVERT PLAN PROFILE AND SECTION DETAIL SHEET		
26-27.	BLANK		
	STANDARD SHEETS		
28.	A-60	DRILLING AND BLASTING OF SOLID ROCK SUBGRADE	8-31-81 R
29.	B-5	TYPICAL SLOPE ROUNDING	12- 6-71
30.	B-13	DRIVES	12-14-71
31.	C-1	TREATED TIMBER CURB	12-16-80 R
32.	D-2	REINFORCED CONCRETE HEADWALL, UNDERDRAIN & CARRIER PIPE CONSTRUCTION DETAILS.	12-16-76 R
33.	D-3	TREATED GUTTERS	4-27-73 R
34.	D-4	FLUSHING BASINS, END SECTION, ELBOWS	7-24-75 R
35.	D-6	REINFORCED CONC. DROP INLET WITH GRATE, DITCHES	4- 4-73 R
36.	D-11	GRATES AND COVERS	8-24-81 R
37.	D-16	PRECAST CURB DROP INLET, GRATE	11-14-72 R
38.	E-3	BRIDGE CONSTRUCTION APPROACH SIGNS	12-15-78 R
39.	E-6	ON PROJECT CONSTRUCTION SIGNS	4- 1-80 R
40.	E-7	DELINEATION & BARRICADES FOR CONSTRUCTION AREA	2-12-82 R
41.	E-7A	TYPE III BARRICADE - BREAKAWAY	4- 8-82 R
42.	E-24A	YIELDING TYPE FLANGED CHANNEL STEEL SIGN SUPPORTS	1- 8-81 R
43.	E-29	STANDARD SIGN PLACEMENT - NON EXPRESSWAY TYPE	8-25-81 R
44.	G-1	STEEL BEAM GUARD RAIL (50 MPH & OVER)	12-16-80 R
45.	G-4	MARKERS - GUIDE POSTS - PLANK GUARD RAIL	7-23-80 R
46.	G-14	BREAKAWAY CABLE TERMINAL FOR GUARD RAIL, STEEL BEAM WITH WOOD POSTS, TYPE II	8-12-81 R
47.	J-1	BOUNDARY MARKERS	6-27-80
48.	T-1	TEMPORARY EROSION CONTROL	12- 7-76 R
49.	T-2	TEMPORARY EROSION CONTROL	7- 5-72
50.	SB-R4A-82	BRIDGE RAILING, GALV. BOX BEAM	6-18-82 R
51.	SB-R4B-82	GUARD RAIL APPROACH SECTION, TYPE I	12-29-81
52.	SCB-D1-75	GENERAL INFORMATION	9-14-81 R
53.	SCB-D4-76	DETAIL OF W-BEAM BRIDGES	1- 8-76 R
54.	SCB-D6-73	DETAIL OF W-BEAM BRIDGES	1- 3-79 R
55.	SCB-D7-71	DETAIL OF W-BEAM BRIDGES	12-15-76 R
56.	SCB-D9-71	DETAIL OF W-BEAM BRIDGES	1-27-75 R
57.	BLANK		
58-64.	CROSS SECTIONS - MAIN LINE		
65.	CROSS SECTIONS - T.H. #54		
66-70.	CHANNEL SECTIONS FOR WILLIAMS RIVER BRIDGE		
71-75.	CHANNEL SECTIONS AT MAIN LINE 35+35.		

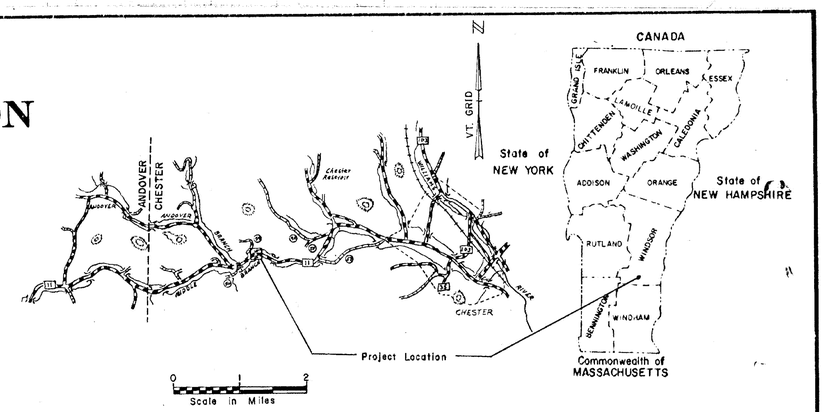
M

PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF CHESTER
COUNTY OF WINDSOR

ROUTE NO.: VT. RTE. 11 BRIDGE NO. 45

BEGINNING AT A POINT APPROXIMATELY 1.876 MILES EASTERLY OF THE ANDOVER — CHESTER TOWN LINE AND EXTENDING WESTERLY 0.180 MILES



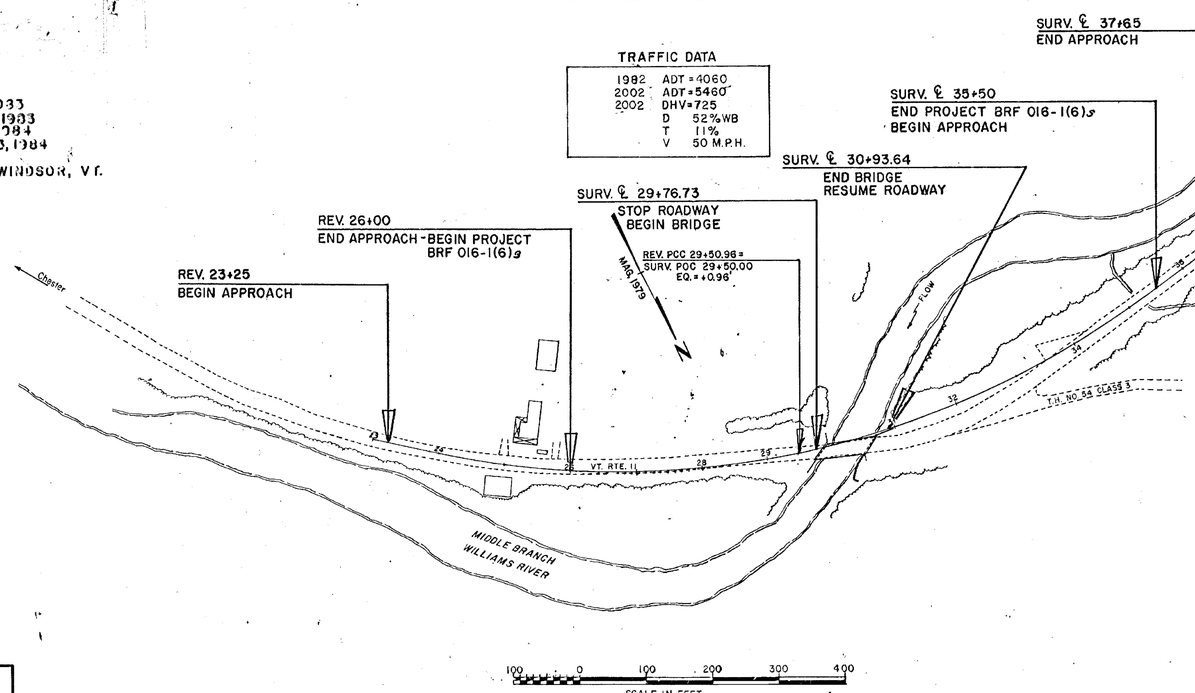
PROJECT DESCRIPTION
WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES CONSTRUCTION OF A NEW BRIDGE AND APPROACHES ON IMPROVED ALIGNMENT. APPROACH WORK CONSISTS OF GRADING, DRAINAGE, SUBBASE, PAVEMENT AND GUARD RAIL.

LENGTH	OF	ROADWAY	834.05	FEET 0.158	MILES
LENGTH	OF	BRIDGE	116.91	FEET 0.022	MILES
LENGTH	OF	PROJECT	950.96	FEET 0.180	MILES

RECORD PLANS
CONTRACT DATED — JAN. 6, 1983
CONSTRUCTION BEGAN — MARCH 21, 1983
CONSTRUCTION SUSPENDED — DEC. 20, 1983
CONSTRUCTION RESUMED — MAY 22, 1984
CONSTRUCTION COMPLETED — JULY 13, 1984
ACCEPTED — JULY 1984
CONTRACTOR — MILLER CONST. INC., WINDSOR, VT.
RESIDENT ENGINEER — S. H. LANGILL
RECORD PLANS, D. E. MAHONEY

TRAFFIC DATA

1982	ADT = 4060
2002	ADT = 5460
2002	DHV = 725
D	52% WB
T	11%
V	50 M.P.H.



MATERIALS & SUPPLIERS
GRAN. & SAND BORROW, GRAN. BACKFILL & GRAVEL — — ORCUTT PIT, CHESTER, VT.
BITUM. CONC. PAV'T. — F. W. WHITCOMB CONST. CORP., — NO. WALPOLE, N.H.
METAL PIPE — LANE METAL PRODUCTS, BALLSTON SPA, N.Y.
CONCRETE — CHARLESTOWN READYMIX, CHARLESTOWN, N.H.
STRUCTURAL STEEL — VERMONT STRUCTURAL STEEL, BURL., VT.
RESTEEL — PIONEER VALLEY STEEL CO. INC., SO. DEERFIELD, MASS.
PRECAST DROP INLETS & GRATES — S.T. GRISWOLD CO. INC., WILLISTON, VT.
GUARD RAIL & SIGNS — LAFAYETTE & SHELDON INC., ESSEX JCT., VT.
BRIDGE RAIL — O.W. HUBBELL & SONS INC., NEW HARTFORD, N.Y.
SEEDING — LAFAYETTE & SHELDON INC., ESSEX JCT. VT.

CONVENTIONAL SIGNS
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
TOP OF CUT
TOE OF SLOPE

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

STATEWIDE - SOUTHEAST
REGION
BHF MEMB(21)

SHEET 12 OF 34
BRIDGE 45
FOR REFERENCE ONLY

These plans are subject to such engineering changes as may be required by the Federal Highway Administration or the Director of Engineering and Construction.
Construction is to be carried on in accordance with these plans and the Standard Specifications for Highway and Bridge Construction dated March, 1976, as approved by the Federal Highway Administration on October 27, 1976 for use on this project, including all subsequent revisions and such revised specifications and special provisions as are incorporated in these plans.

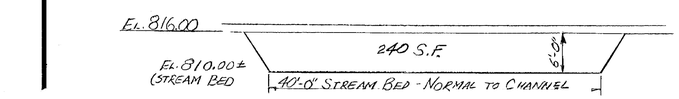
PROJECT PROCESSED UNDER SECONDARY ROAD PLAN

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD
APPROVED S. J. Gaggin DATE SEP. 3 1985
DIRECTOR OF ENGINEERING AND CONSTRUCTION

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

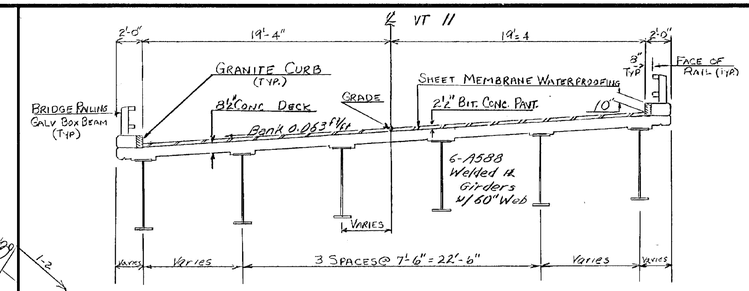
PROJECT BRF № 016-1(6)S
SHEET 1 OF 75 SHEETS

D-0 SRS 12/17/70

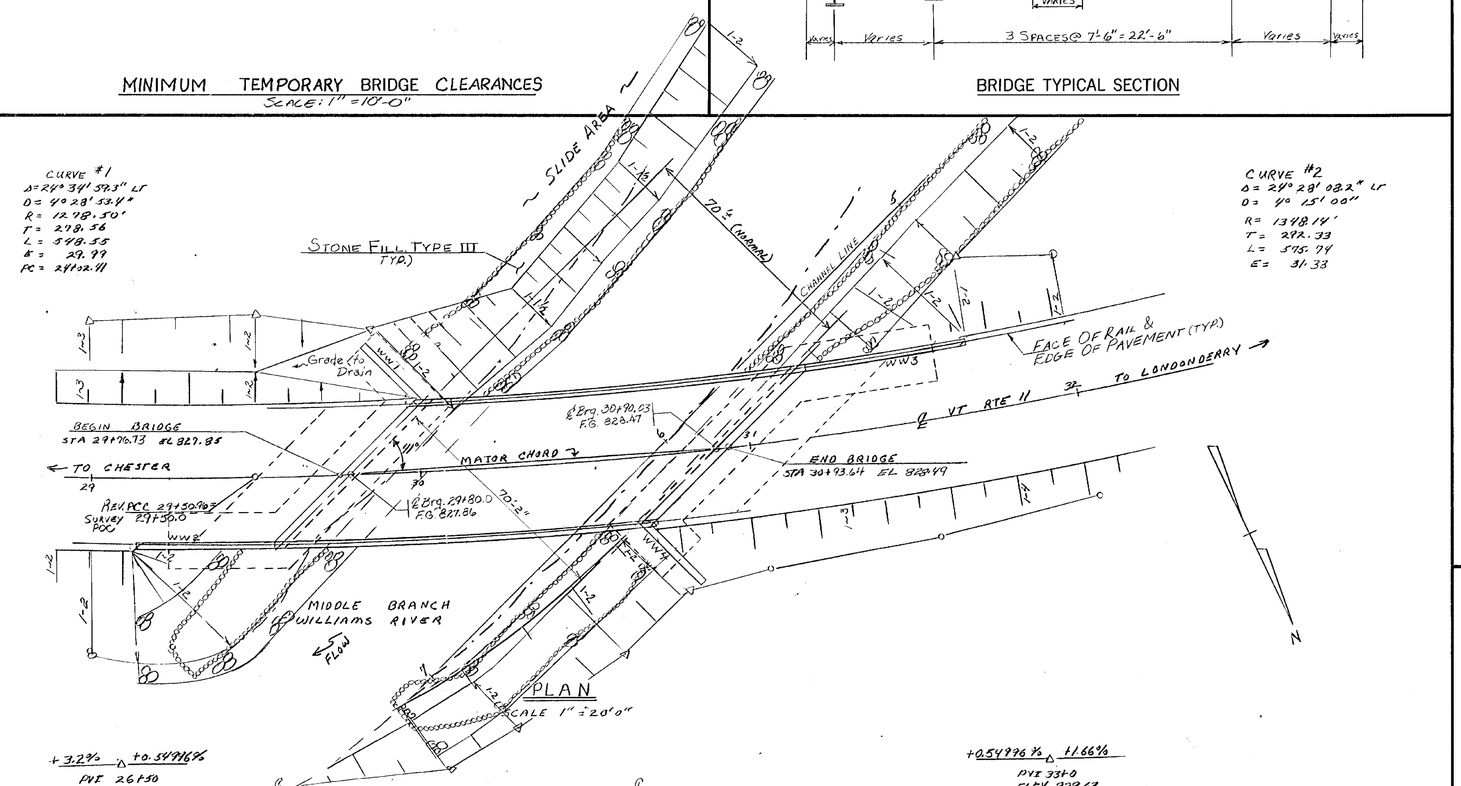


MINIMUM TEMPORARY BRIDGE CLEARANCES

SCALE: 1" = 10'-0"

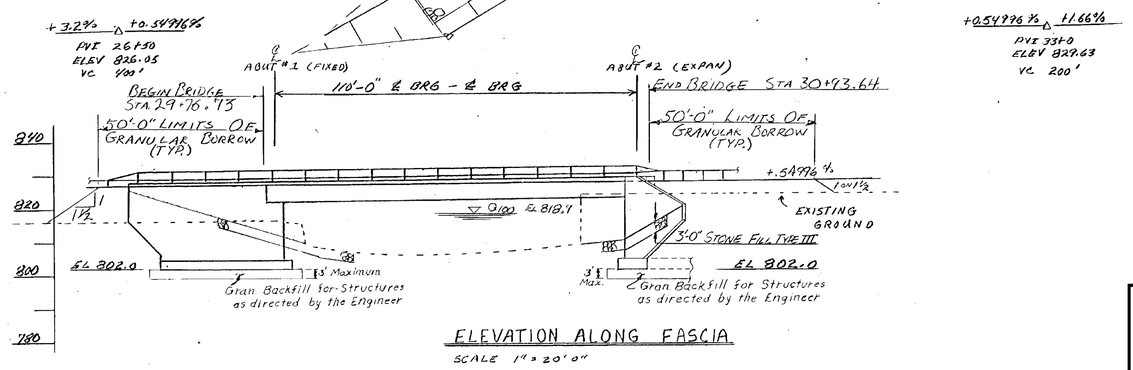


BRIDGE TYPICAL SECTION



PLAN

SCALE 1" = 20'-0"



ELEVATION ALONG FASCIA

SCALE 1" = 20'-0"

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 13 OF 34
BRIDGE 45
FOR REFERENCE ONLY

EXISTING STRUCTURE

1. STRUCTURE TYPE STEEL PONY TRUSS OVERALL LENGTH 79' INVENTORY RATING H-13
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 76'
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 58'
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 678 sq. ft. VERTICAL CLEARANCE ABOVE STREAMBED 11.0'
5. WATER SURFACE ELEVATION @ Q 2.33 813.5 WATER SURFACE ELEVATION @ Q 50 818.8
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD Unknown YEAR 1976 ESTIMATED DISCHARGE
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? Yes IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR?
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL Silty sand w/some gravel
9. DISPOSITION OF STRUCTURE Removal

NEW STRUCTURE

STRUCTURE GEOMETRY: SIMPLE SPAN

1. STRUCTURE TYPE WELDED COMPOSITE PLATE GIRDER OVERALL LENGTH 117'±
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 110'±
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 12'±
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 70'±
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 1005 sq. ft.
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:

1. Q 2.33 1150 cfs WATER ELEVATION 813.1 VELOCITY 8.1 fps
   Q 10 2650 cfs WATER ELEVATION 815.2 VELOCITY 9.8 fps
   Q 25 3700 cfs WATER ELEVATION 816.6 VELOCITY 11.9 fps
   Q 50 4700 cfs WATER ELEVATION 817.8 VELOCITY 12.9 fps
   Q 100 5650 cfs WATER ELEVATION 818.9 VELOCITY 13.7 fps
2. DRAINAGE AREA 27.13 sq. mi. CHARACTER OF TERRAIN Rolling to Hilly
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? No
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? Yes IS ORDINARY RISE RAPID? Yes
5. NATURE OF NATURAL STREAMBED Gravel - Boulders
6. ESTIMATED SCOUR DEPTH 2-4' COMMENT ON: DRIFT Mod. ICE Mod.
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 100 11'
9. ALLOWABLE WATER SURFACE ELEVATION 820.0 LIMITED BY Low Bridge Seat
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No IF YES, DESCRIBE
11. AVERAGE DAILY LOW FLOW 30 cfs DEPTH El. 812.0 AVERAGE DAILY HIGH FLOW 90 cfs DEPTH El. 812.5
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED Stone Fill, Type III
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 2200' SPAN 126' WATERWAY AREA OF FULL OPENING 182 sq. ft. Q
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 1800' SPAN 110' WATERWAY AREA OF FULL OPENING 105 sq. ft. Q

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS 25-44
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4.0 KSF ON LEDGE
3. ALLOWABLE LOAD FOR PILING TYPE ESTIMATED LENGTH
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

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 Two way TRAFFIC CONTROL SIGNALS REQUIRED No
   MINIMUM CLEAR SPAN 40' MINIMUM CLEAR HEIGHT 6' MINIMUM WATERWAY AREA 240 SF
   ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? N/A

STANDARDS

SB-R4A-82 6-18-82 R
SB-R4B-82 12-28-81

SCB-D1-75 9-14-81 R
SCB-D4-76 1-8-76 R
SCB-D6-73 1-3-79 R
SCB-D7-71 12-15-76 R
SCB-D9-71 1-27-75 R

INDEX OF SHEETS

BR100 - Preliminary Information
BR101 - Bridge Quantity Sheet
BR102 - Boring Sheet
BR103 - Typ Bridge Sect. & Slab Reinf.
BR104 - Girder Elevation & Framing Plan
BR105 - Approach Slabs & Typical Cross Frame & End Diaphragm Details
BR106 - Bearing Device Details
BR107 - Abutment #1 Details
BR108 - Wingwalls 1&2 Details
BR109 - Abutment #2 Details
BR110 - Wingwalls 3&4 Details
BR111 - Reinforcing Steel Schedule

LOAD RATING (TONS)

STRESS LEVELS	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy =	41	45					
POSTED 0.67 Fy =	64		80		66	67	75
OPERATING 0.75 Fy =			97	112	81	82	91

RECOMMENDED FOR APPROVAL W. M. Scott 9/8/80
STRUCTURES ENGINEER DATE

RECOMMENDED FOR APPROVAL [illegible] 9/8/80
CHIEF OF DESIGN DATE

APPROVED BY S. L. Gage P.E. SEP 08 1980
DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS

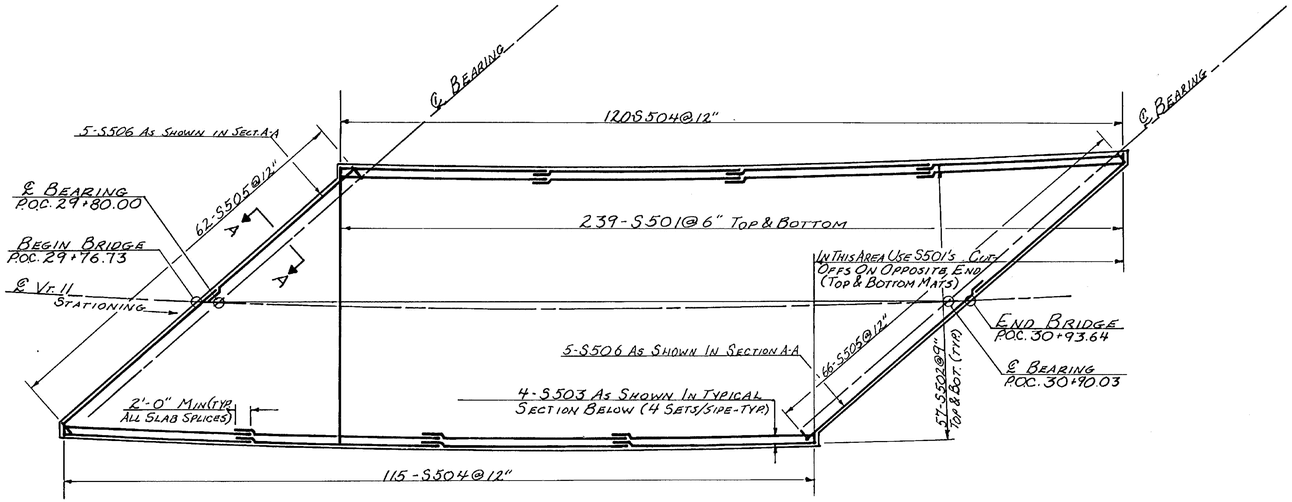
NO.	DESCRIPTION	BY & DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF CHESTER	Bridge No. 45
	Log Sta. 94+92
HIGHWAY NO. VT. RTE 11	Surv. Sta. 30+0
VT RTE 11 OVER MIDDLE BRANCH-WILLIAMS RIVER	
PRELIMINARY INFORMATION SHEET	
Designed by GVS 10/17/79	Drawn by GVS
Checked by D.R. LANDRY date 10/23/79	Bridge Design Supervisor R.S. HAUPT date 11-79
PROJECT CHESTER	PROJECT NO. BRF 016-1(6)
Bridge Sheet No. BR100	Sheet 13 of 75

BR-2

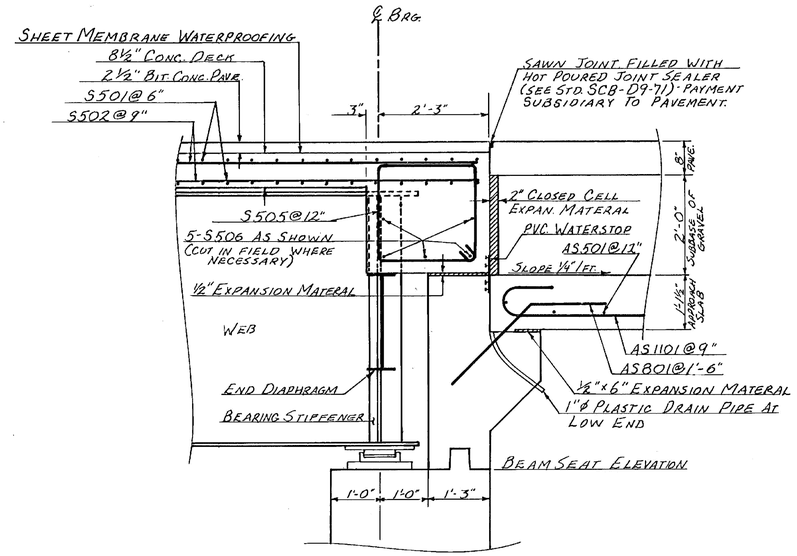
BRUNING 44-131 40151



Slab Reinforcing Steel Plan

Scale: 1" = 10'-0"

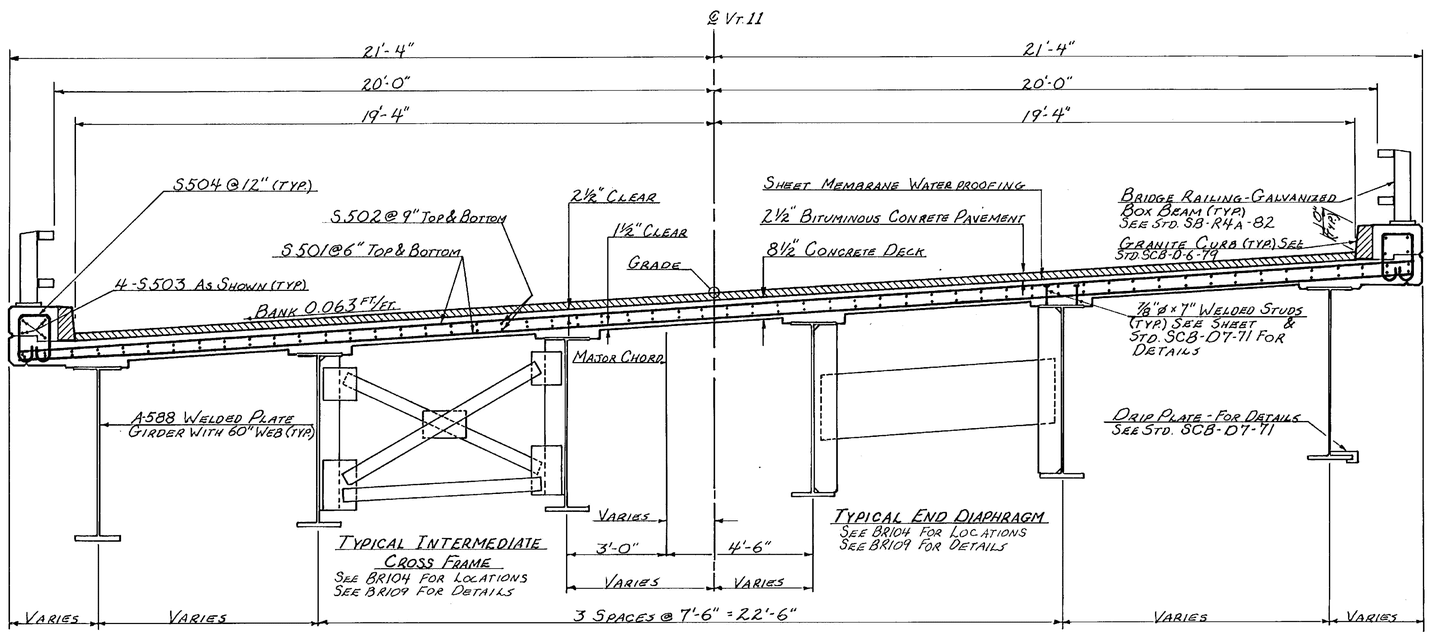
Note: See Standard SCB-D4-76 For Curb Details



Section A-A*

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

*= Typical Each End.



Typical Bridge Section

Scale: ½" = 1'-0"

BUILT AS DESIGNED

STATEWIDE - SOUTHEAST
REGION
BHF MEMB(21)

SHEET 14 OF 34
BRIDGE 45
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town of CHESTER	Bridge No. 45
Highway No. Vt. 11	Log Sta. 94+92
	Surv. Sta. 30+00
TYPICAL BRIDGE SECT. & SLAB REINF.	
Vt. 11 OVER MIDDLE-BRANCH WILLIAMS R.	
Designed by A. ELWOOD	Drawn by S. BASCOM
Checked by D. BURLEY date 6-82	Bridge Design Supervisor R. S. HAUPT date 6-82
Project CHESTER	Project No. BRF-016-1(6)
Bridge Sheet No. BR 103	Sheet 16 of 75

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
TOWN OF CHESTER
COUNTY OF WINDSOR
VT. ROUTE 11 (FAP)

MINOR ARTERIAL

BEGINNING AT A POINT APPROXIMATELY 2.170 MILES EASTERLY OF THE ANDOVER—CHESTER TOWN LINE AND EXTENDING WESTERLY 0.264 MILES

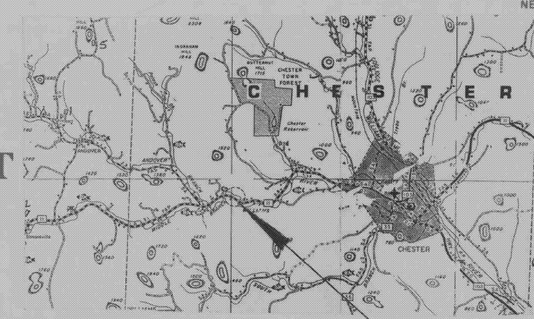
LENGTH OF ROADWAY 1274.91 FEET 0.241 MILES
LENGTH OF BRIDGE 117.84 FEET 0.022 MILES
LENGTH OF PROJECT 1392.75 FEET 0.264 MILES

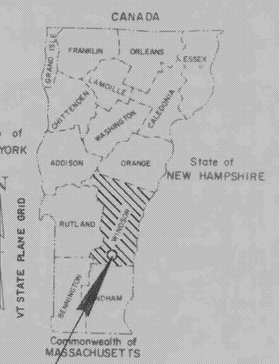
INDEX OF SHEETS

1	TITLE SHEET
2	TYPICAL SHEET
3-5	SUMMARY OF QUANTITIES
6	ITEM DETAIL AND DRAINAGE SHEET
7	EARTHWORK AND GRADE SHEET
8-9	BLANK
10-14	R.O.W. DETAIL SHEETS
15-17	PLAN AND PROFILE SHEETS
18-19	TRAFFIC SIGN AND PAVEMENT MARKING SHEETS
20-22	BLANKS
23-50	BRIDGE 100 SERIES (OVER MIDDLE BRANCH WILLIAMS RIVER)
51-54	BLANK
55-68	CROSS SECTION SHEETS, MAINLINE

STANDARDS

A-60	SLOPES IN SOLID ROCK EXCAV. (50MPH & OVER)	04-02-86
B-5	SLOPE GRADING, EMBANKMENTS, MUCK	12-06-71
B-11	UNDERDRAIN - ROCK SUBGRADE, SLOPE STABILIZ.	12-12-74 R
B-17	GUARD RAIL, BRIDGES, REST AREA, TURNOUTS	10-25-85 R
B-71	RESIDENTIAL AND COMMERCIAL DRIVES	07-23-80 R
B-71A	RESIDENTIAL DRIVES	03-07-90 R
C-1	CURBS, BITUMINOUS CONCRETE SIDEWALKS	10-25-85 R
D-2	C.R.M. HEADWALLS, UNDERDRAIN	10-30-85 R
D-3	TREATED GUTTERS	04-02-86
D-4	FLUSHING BASINS, END SECTION, ELBOWS	10-30-85 R
D-6	REINF. CONCRETE DROP INLET W/GRATE (DITCHES)	04-04-73
D-11	GRATES & COVERS	08-24-81 R
D-16	PRECAST CURB DI, GRATE, RCP END SECTION, ETC.	10-30-85 R
E-100	CONSTRUCTION APPROACH SIGNS	05-26-89 R
E-101	CONSTRUCTION SIGN DETAILS	10-30-87
E-102	CONSTRUCTION SIGN DETAILS	01-23-89 R
E-106	TRAFFIC CONTROL - MISCELLANEOUS DETAILS	01-23-89 R
E-107	DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS	04-29-88 R
E-107A	BREAKAWAY BARRICADE DETAILS	09-10-87
E-110	MAJOR MAINTENANCE OPERATION LANE CLOSURE	02-01-86 R
E-121	STANDARD SIGN PLACEMENT - CONVENTIONAL ROAD	01-23-89
E-132	GENERAL MOTORIST SERVICE - SIGN DETAILS	12-18-89 R
E-143	REGULATORY SIGN DETAILS	10-30-87
E-151	WARNING SIGN DETAILS	10-30-87
E-160	FLANGED CHANNEL STEEL SIGN POST DETAIL	03-01-88 R
G-1	STEEL BEAM GUARDRAIL (50MPH & OVER)	10-31-85 R
G-1D	STEEL BEAM GUARDRAIL (40MPH & LESS)	10-31-85 R
G-4	MARKERS - GUIDE POSTS - PLANK GUARD RAIL	10-31-85 R
G-14	BREAKAWAY CABLE TERMINAL W/WOOD POSTS	11-01-88 R
G-18	PRECAST CONCRETE TEMPORARY TRAFFIC BARRIER	01-19-88
J-1	PROJECT AND BOUNDARY MARKERS	06-27-80
T-1	TEMPORARY EROSION CONTROL DETAILS	12-07-76 R
T-2	TEMPORARY EROSION CONTROL DETAILS	07-05-72
SB-R4A-82	BRIDGE RAILING, GALVANIZED BOX BEAM	09-18-89 R
SB-R4B-82	GUARD RAIL APPROACH SECTION, TYPE I & II	03-30-88 R

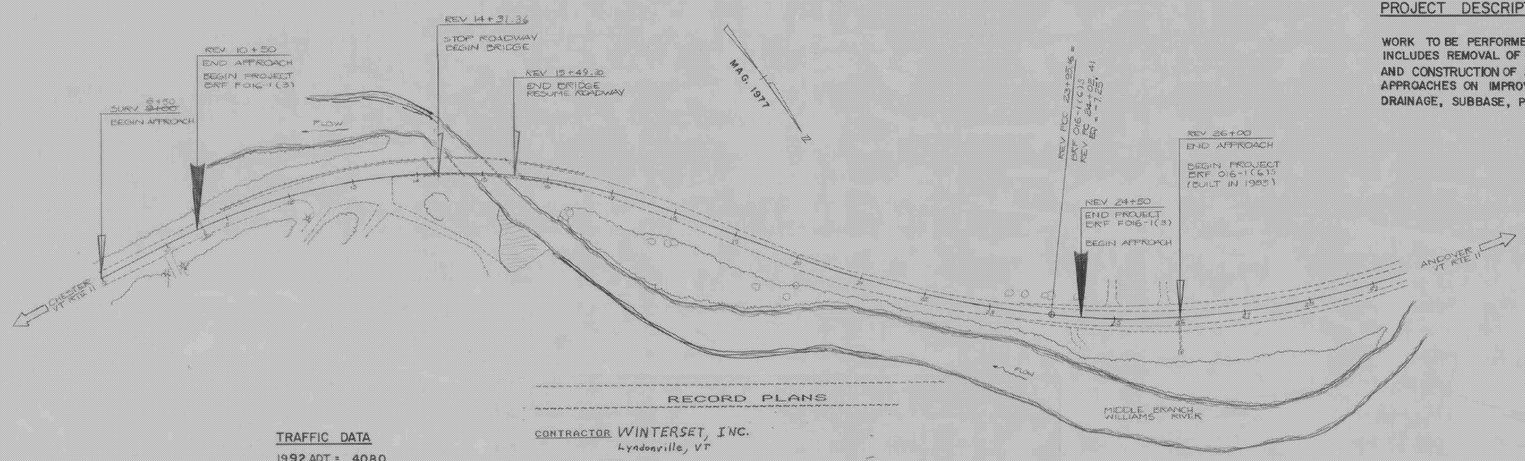




PROJECT LOCATION
BRF-F 016-1(3)

PROJECT DESCRIPTION

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REMOVAL OF EXISTING BRIDGE No. 46 AND CONSTRUCTION OF A NEW BRIDGE AND APPROACHES ON IMPROVED ALIGNMENT, GRADING DRAINAGE, SUBBASE, PAVEMENT AND GUARD RAIL.



CONVENTIONAL SIGNS

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
TOP OF CUT
TOE OF SLOPE

TRAFFIC DATA

1992 ADT = 4080
2012 ADT = 5590
2012 DHV = 740
D = 53%
T = 4%
V = 50 M.P.H.
1992-2012 18 KIP ESAL 4,202,000

DATUM
VERTICAL NGVD 1929
HORIZONTAL N/A

RECORD PLANS

CONTRACTOR WINTERSET, INC. Lyndonville, VT
RESIDENT ENGINEER R. Suckert
CONSTRUCTION BEGAN 4/30/92
CONSTRUCTION COMPLETED 11/2/92
RECORD PLANS BY J. Lavallee

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

By _____ Resident Engineer
Date 2-14-94

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

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE CHIEF ENGINEER.
CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON MARCH 15, 1990 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

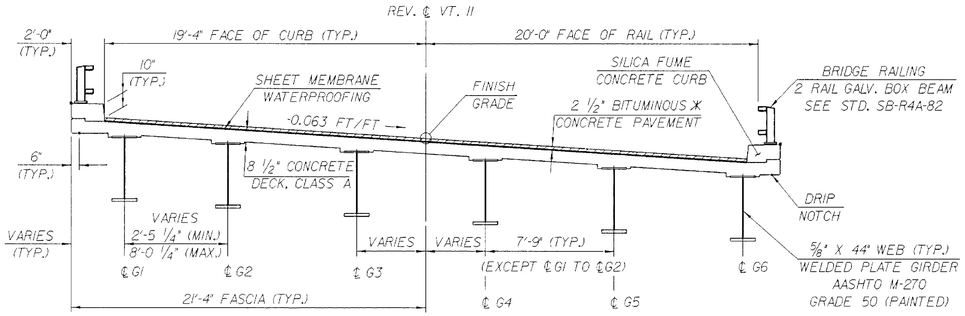
SHEET 15 OF 34
BRIDGE 46
FOR REFERENCE ONLY

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD
APPROVED _____ DATE 1/29/92
DIRECTOR OF ENGINEERING

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED George A. Jensen DATE 3/23/92
DIVISION ADMINISTRATOR

PROJECT No. CHESTER BRF-F016-1(3)
SHEET 1 OF 68 SHEETS

D-16 SRS 12/17/70



TYPICAL BRIDGE SECTION

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

*TOTAL DEPTH TOLERANCE = 1/4" ±

EXISTING STRUCTURE

1. STRUCTURE TYPE 3 SPAN CONCRETE T-BEAM OVERALL LENGTH 130 FT INVENTORY RATING
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 38 FT - 54 FT - 38 FT
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 28 FT - 37 FT - 23 FT - 88 FT
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 625 SF VERTICAL CLEARANCE ABOVE STREAMBED 10 FT
5. WATER SURFACE ELEVATION @ Q 2.33 791.0 WATER SURFACE ELEVATION @ Q 100 795.6
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD UNKNOWN YEAR 1938 ESTIMATED DISCHARGE UNKNOWN
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? YES IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR?
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF N/A
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL SILTY SAND AND GRAVEL
9. DISPOSITION OF STRUCTURE REMOVE

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE SIMPLE SPAN PLATE GIRDER OVERALL LENGTH 117.84 FT
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 113.78 FT
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 68 FT
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 695 SF
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES?

HYDRAULIC DATA:

1. Q 2.33 1150 CFS WATER ELEVATION 791.2 VELOCITY 8.5 FPS
   Q 10 2850 CFS WATER ELEVATION 793.0 VELOCITY 10.7 FPS
   Q 25 3700 CFS WATER ELEVATION 794.1 VELOCITY 11.8 FPS
   Q 50 4700 CFS WATER ELEVATION 795.0 VELOCITY 12.6 FPS
   Q 100 5650 CFS WATER ELEVATION 795.8 VELOCITY 13.4 FPS
2. DRAINAGE AREA 27.2 SQ MI CHARACTER OF TERRAIN ROLLING TO HILLY
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? N/A
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? YES IS ORDINARY RISE RAPID? YES
5. NATURE OF NATURAL STREAMBED SILT, SAND & GRAVEL - ARMORED WITH ROCKS & BOULDERS
6. ESTIMATED SCOUR DEPTH 4 FT COMMENT ON: DRIFT MODERATE 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 N/A
8. VERTICAL CLEARANCE ABOVE Q 50 0.4 FT AVERAGE
9. ALLOWABLE WATER SURFACE ELEVATION 795.4 LIMITED BY AVERAGE BOTTOM OF LOW GIRDER ELEVATION
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO IF YES, DESCRIBE N/A
11. AVERAGE DAILY LOW FLOW 25 CFS DEPTH 2.0 FT AVERAGE DAILY HIGH FLOW 500 CFS DEPTH 4.5 FT
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED STONE FILL, TYPE III
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 1,800 FT SPAN 70 FT WATERWAY AREA OF FULL OPENING Q
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 4,000 FT SPAN 40 FT WATERWAY AREA OF FULL OPENING Q

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS 25
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4 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-270 GR 50 PAINTED 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 NO OR ON TEMPORARY BRIDGE YES
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY X TRAFFIC CONTROL SIGNALS REQUIRED X
   MINIMUM CLEAR SPAN 50 FT MINIMUM CLEAR HEIGHT 8 FT MINIMUM WATERWAY AREA
   ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? N/A

*SEE ROADWAY DESIGN DETAILS

ADDITIONAL DESIGN CONSIDERATIONS

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 16 OF 34
BRIDGE 46
FOR REFERENCE ONLY

ARCHIVED ON CADD

LIST OF SHEETS

BRI00	PRELIMINARY INFORMATION
BRI01	GENERAL NOTES
BRI02	BRIDGE QUANTITY SHEET
BRI03	PLAN & ELEVATION
BRI04	BORING SHEET
BRI05	TYPICAL SECTION & DECK REINFORCING PLAN
BRI06	FRAMING PLAN
BRI07	DIAPHRAGM DETAILS
BRI08	MISCELLANEOUS STRUCTURAL STEEL DETAILS
BRI09	APPROACH SLAB DETAILS
BRI10	BEARING DETAILS
BRI11	GURB DETAILS
BRI12	ABUTMENT 1 DETAILS
BRI13	ABUTMENT 2 DETAILS
BRI14	FOOTING REINFORCING PLAN
BRI15	WINGWALL DETAILS
BRI16	BACKWALL REINFORCING & CORNER DETAILS
BRI17	END BRIDGE RAIL DETAILS
BRI18	EXPANSION JOINT DETAILS
BRI19	HOPPER & DOWNSPOUT DETAILS
BRI20	SCUPPER DETAILS
BRI21	REINFORCING STEEL SCHEDULE
BRI22-127	CHANNEL SECTIONS

LIST OF STANDARDS

SB-R4a-82	9-18-89 R
SB-R4b-82	3-30-88 R

LOAD RATING (TONS)

STRESS LEVELS	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy =	42	47					
POSTED 0.67 Fy =	69	76	86		72	75	82
OPERATING 0.75 Fy =		94	106	121	89	93	

REVISIONS

NO.	DESCRIPTION	BY & DATE

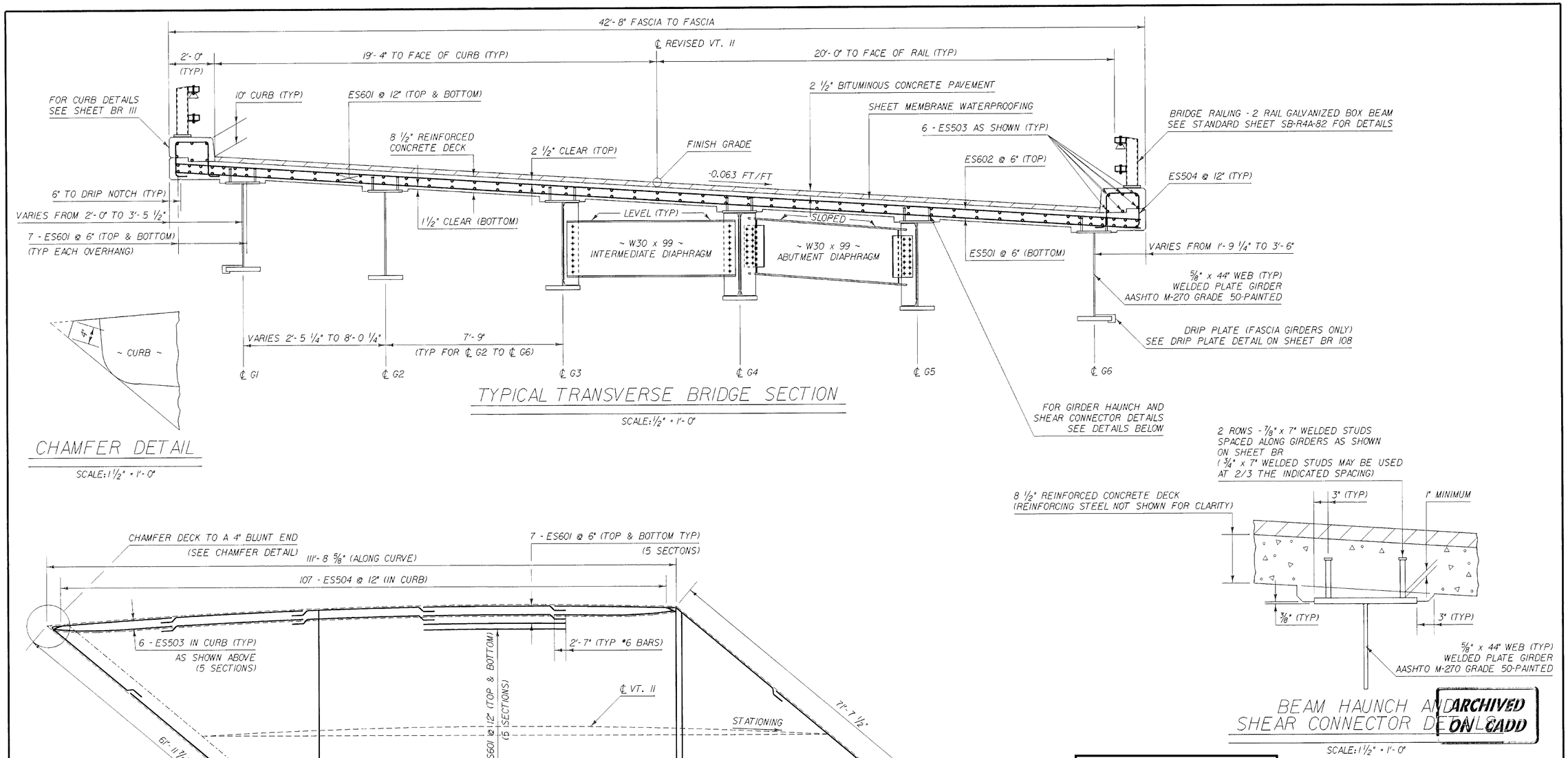
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	CHESTER	Bridge No.	46
Highway No.	VT. 11	Log Sta.	110+16
		Surv. Sta.	15+00

VT. ROUTE 11 OVER THE MIDDLE BRANCH WILLIAMS RIVER

PRELIMINARY INFORMATION

Designed By D. J. HOYNE	Drawn By G. ROY
Checked By D.J. HOYNE Date 10-91	Bridge Design Supervisor Date
PROJECT CHESTER	PROJECT NO. BRF-F 016-1(3)
I.G.C. Info. 2H14.30.72.77B015BRG.DGN;1	77B015P1.PRF
Bridge Sheet No. BRI00	Sheet 23 of 68

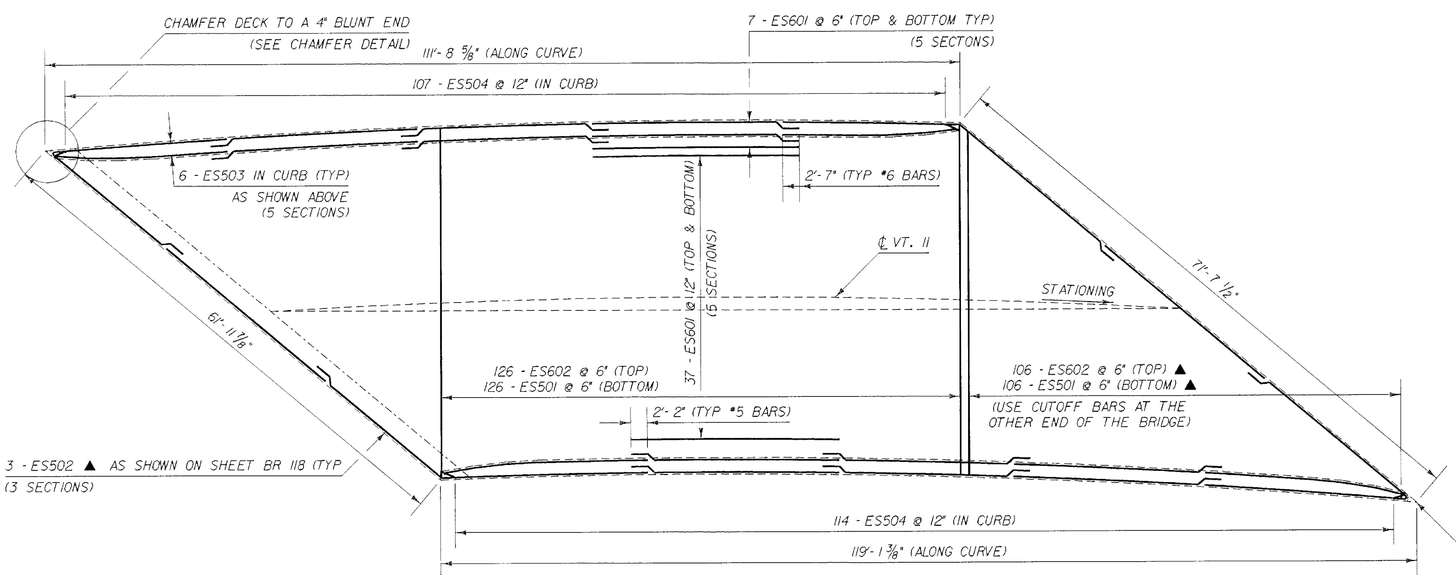


TYPICAL TRANSVERSE BRIDGE SECTION

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

CHAMFER DETAIL

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



DECK REINFORCING PLAN

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

BEAM HAUNCH AND SHEAR CONNECTOR DETAILS

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

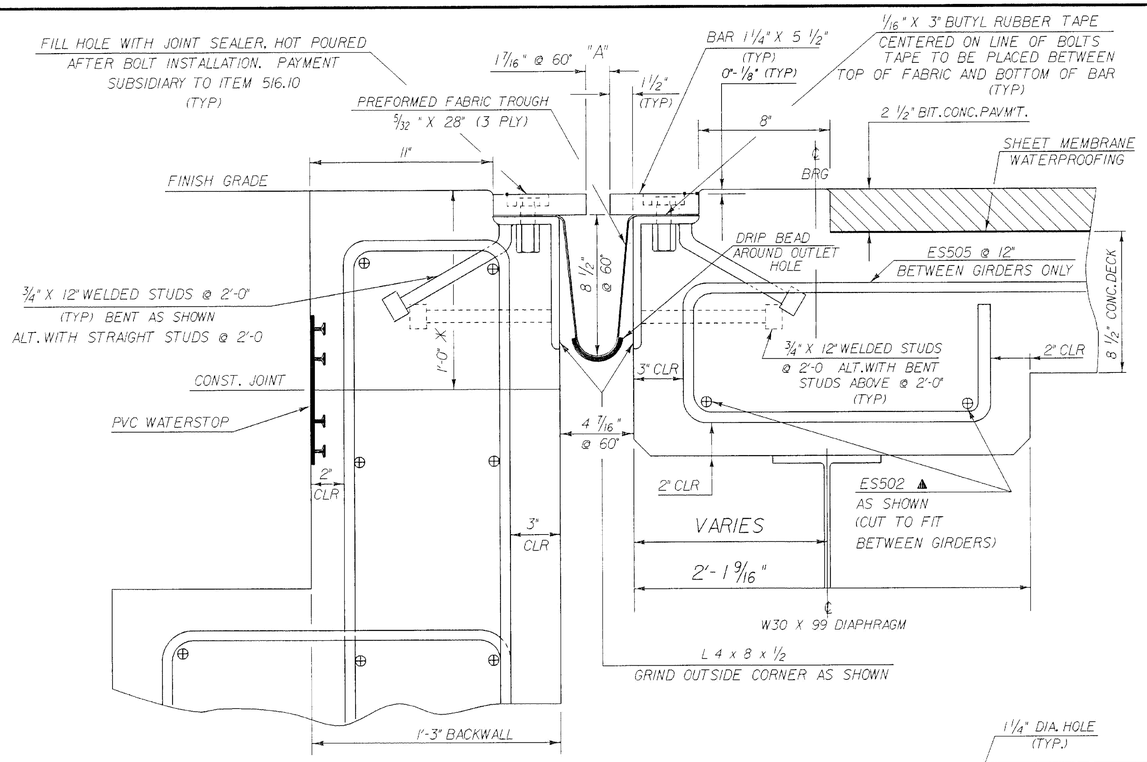
ARCHIVED ON CADD

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 17 OF 34
BRIDGE 46
FOR REFERENCE ONLY

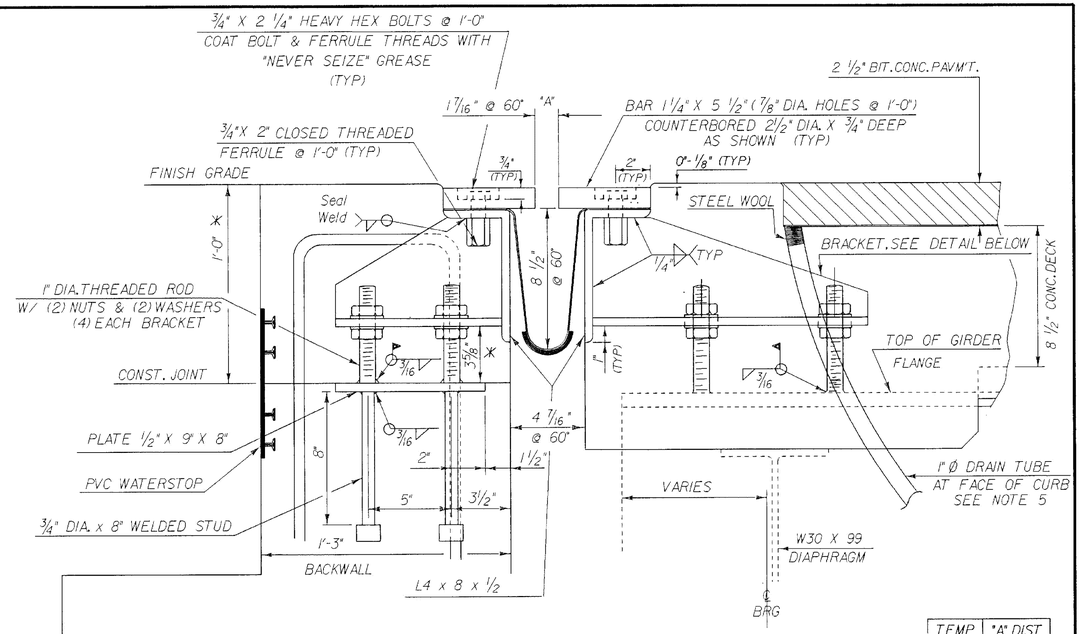
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of CHESTER		Bridge No. 46	
Highway No. VT. 11		Log Sta. 110+16	
		Rev. Sta. 15+00	
TYPICAL SECTION AND DECK REINFORCING PLAN			
VT. ROUTE 11 OVER THE MIDDLE BRANCH WILLIAMS RIVER			
Designed By D. J. HOYNE		Drawn By K. S. CLAIRMONT	
Checked By D. J. HOYNE	Date 10-91	Bridge Design Supervisor "	Date "
PROJECT CHESTER		PROJECT NO. BRF-F 016-1(3)	
I.G.C. Info.	ZHI: [30,47] 77B015FP.DGN;1		
Bridge Sheet No. BR 105		Sheet 28 of 68	



TYPICAL SECTION BETWEEN GIRDERS (NORMAL)

SCALE: 3" = 1'-0

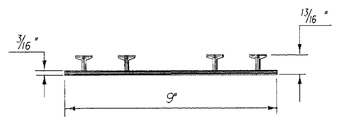


TYPICAL SECTION AT GIRDERS (NORMAL)

SCALE: 3" = 1'-0

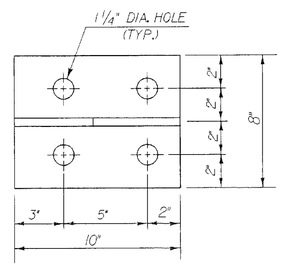
TEMP	"A" DIST
0°FF	1 3/4"
15°FF	1 11/16"
30°FF	1 9/16"
45°FF	1 1/2"
60°FF	1 7/16"
75°FF	1 5/16"
90°FF	1 1/4"
105° F	1 3/16"

* THESE DIMENSIONS ARE THEORETICAL AND MAY CHANGE DEPENDING UPON THE OUTCOME OF THE BEAM PROFILES



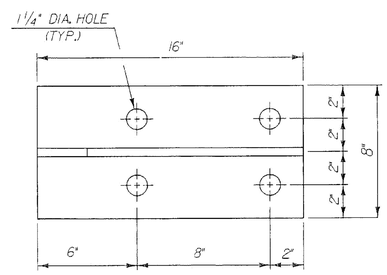
P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS

THE COSTS FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.



BRACKET PLAN IN BACKWALL

SCALE: 3" = 1'-0



BRACKET PLAN ON GIRDER

SCALE: 3" = 1'-0

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

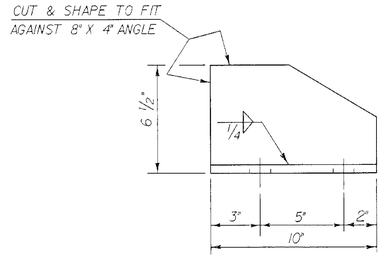
SHEET 18 OF 34
BRIDGE 46
FOR REFERENCE ONLY

ARCHIVED ON CADD

NOTES

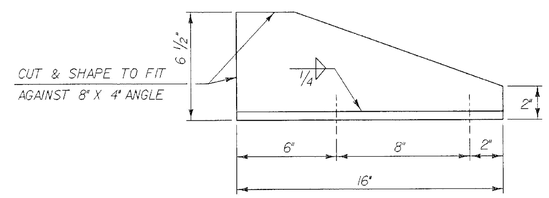
1. THE FINAL FINISH OF THE EXPANSION DEVICE SHALL BE COVERED DURING THE PLACING OF BRIDGE DECK CONCRETE.
2. ALL STEEL COMPONENTS SHALL BE AASHTO M270 GRADE 36 GALVANIZED OR METALIZED AS PER SUBSECTION 506.15 (b) OR (c).
3. THE 1 1/4" X 5 1/2" BARS SHALL BE FURNISHED IN 2 PIECES.
4. DETAILS ON THIS SHEET ARE FOR ITEM 516.10 "BRIDGE EXPANSION JOINTS".
5. A 1" DIAMETER PLASTIC DRAIN TUBE SHALL BE INSTALLED AS SHOWN AT THE FACE OF CURB. THE UPPER END IS TO BE PLUGGED WITH STEEL WOOL AND THE LOWER END IS TO EXTEND 6" BELOW THE BOTTOM OF THE ADJACENT GIRDER. THE DRAIN TUBES SHALL BE FASTENED TO THE GIRDERS USING A METHOD APPROVED BY THE ENGINEER.
6. PAYMENT FOR PVC WATERSTOP SHALL BE SUBSIDIARY TO CONCRETE, CLASS B.
7. A DRIP BEAD OF PREFORMED FABRIC MATERIAL SHALL BE CEMENTED TO THE BOTTOM OF THE FABRIC TROUGH USING AN ADHESIVE APPROVED BY THE MANUFACTURER. THE DRIP BEAD SHALL COMPLETELY SURROUND THE OUTLET HOLE IN THE FABRIC.

ALL PLATES 1/2"



BRACKET ELEVATION IN BACKWALL

SCALE: 3" = 1'-0



BRACKET ELEVATION ON GIRDER

SCALE: 3" = 1'-0

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of	CHESTER	Bridge No.	46
Highway No.	VT. 11	Log Sta.	110+16
		Surv. Sta.	15 + 00

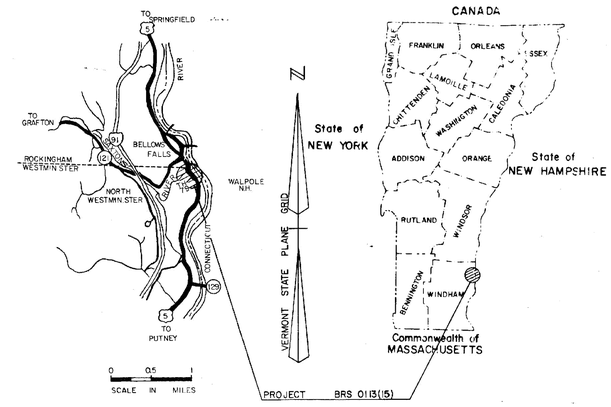
VT. ROUTE 11 OVER THE MIDDLE BRANCH WILLIAMS RIVER

EXPANSION JOINT DETAILS

Designed By	D. J. HOYNE	Drawn By	G. ROY
Checked By	Date	Bridge Design Supervisor	
C.P. WILLIAMS	11-91	Date	
PROJECT	CHESTER	PROJECT NO.	BRF-F 016-1(3)
I.G.C. Info.	ZH:(3072)77B015BRG.DGN;1		77B015JNT.PRF
Bridge Sheet No.	BR 118	Sheet	41 of 68

1	TITLE SHEET		
2-5	TYPICAL SHEETS		
6-8	QUANTITY SHEETS		
9-10	ITEM DETAIL AND DRAINAGE SHEETS		
11-13	EARTHWORK SHEETS		
14-15	BLANK		
16-28	ROW DETAIL SHEETS		
29-34	PLAN SHEETS		
35-44	BLANK		
45-53	PROFILE AND TIE SHEETS		
54-64	UTILITIES SHEETS		
65	BLANKS		
66	GRADING PLAN (TRK. LANES)		
68-69	TRAFFIC SIGNS, SIGNALS (SHEET 67-BLANK)		
70-77	BLANK		
78-131	BRIDGE BR. SERIES (INCLUDES CHANNEL X-SECTIONS)		
132-133	BLANK		
134	A-26	17 JUN 82	
135	A-66	21 NOV 80 R	
136	BLANK		
137	B-1	BANKING TABLES	08 DEC 71
138	B-5	SLOPE ROUNDING	06 DEC 71
139	B-11	SLOPE STABILIZATION	12 DEC 74 R
140	B-13	DRIVE INTERSECTIONS	14 DEC 71
141	B-71	DRIVE STANDARDS	23 JUL 80 R
142	BLANK		
143	C-1	VERTICAL GRANITE CURB	16 DEC 80 R
144	C-2A	PORTLAND CEMENT CONCRETE SIDEWALK	14 DEC 71
145	C-2B	PORTLAND CEMENT CONCRETE SIDEWALK	14 DEC 71
146	C-3	SIDEWALK RAMPS	07 AUG 80
147	BLANK		
148	D-2	UNDERDRAIN	16 DEC 76 R
149	D-4	UNDERDRAIN, PIPE ELBOWS	24 JUL 75 R
150	D-6	REINFORCED CONCRETE DROP INLET WITH GRATE	04 APR 73 R
151	D-8	REINFORCED CONCRETE DROP INLET WITH GRATE	06 DEC 71
152	D-9	REINFORCED CONCRETE DROP INLET WITH VERTICAL CURB	06 DEC 71
153	D-11	CAST IRON GRATE, TYPE A	24 AUG 81 R
154	D-13	CONCRETE CATCH BASIN WITH CAST IRON GRATE	10 AUG 81 R
155	D-16	PRECAST REINFORCED CONCRETE CURB DROP INLET, CAST IRON GRATE, TYPE B	14 NOV 72 R
156	D-20	HIGHWAY CROSSINGS FOR UNDERGROUND UTILITES	09 SEPT 75 R
157	D-22	SANITARY SEWER SYSTEMS	01 OCT 76
158-159	BLANK		
160	E-2	ROAD CONSTRUCTION APPROACH SIGNS	04 MAR 81 R
161	E-7	DELINEATION AND BARRICADES	02 FEB 83 R
162	E-7A	BARRICADE DETAILS - BREAKAWAY	03 JAN 85 R
163	E-8	TYPICAL MAJOR MAINTENANCE OPERATION	15 JUN 83 R
164	E-15A	REGULATORY SIGNS	18 JUL 84
165	E-15B	REGULATORY SIGNS	27 DEC 84 R
166	E-15C	REGULATORY SIGNS	18 JUL 84
167	E-19A	WARNING SIGNS	03 OCT 84
168	E-19B	WARNING SIGNS	19 FEB 85 R
169	E-23	GUIDE SIGNS PLACEMENT	10 FEB 83 R
170	E-24A	SIGN POSTS	08 JAN 81 R
171	E-29	SIGN PLACEMENT - NON EXPRESSWAY	25 AUG 81R
172	BLANK		
173	E-40	BRIDGE LIGHTING DETAILS	02 JAN 85 R
174	E-50	PAVEMENT MARKING DETAILS	20 SEPT 85 R
175-176	BLANKS		
177	F-2	CHAIN LINK FENCE	01 FEB 79 R
178	F-3	CHAIN LINK FENCE	01 FEB 79 R
179	F-4	CHAIN LINK FENCE	19 MAR 79 R
180	BLANK		
181	G-1	GUARD RAIL, STANDARD STEEL BEAM	21 DEC 84 R
182	G-1D	GUARD RAIL, STANDARD STEEL BEAM	21 DEC 84 R
183	G-4	GUARD RAIL, PLANK WITH WOOD POSTS	25 MAY 82 R
184	G-8A	APPROACH RAILING - 2 RAIL ALUMINUM	01 JUL 78 R
185-186	BLANK		
187	J-1	BOUNDARY MARKERS	27 JUN 80
188	BLANK		
189	T-1	TEMPORARY EROSION CONTROL DETAILS	07 DEC 76 R
190	T-2	TEMPORARY EROSION CONTROL DETAILS	05 JUL 72
191	BLANK		
192	SCB-D1-75	GENERAL INFORMATION	14 SEPT 81 R
193	SCB-D4-76	DETAILS OF W BEAM BRIDGES	12 OCT 83 R
194	SCB-D6-73	DETAILS OF W BEAM BRIDGES	03 JAN 79 R
195	SCB-D7-71	DETAILS OF W BEAM BRIDGES	15 DEC 76 R
196	SB-R1-71	ALUMINUM BRIDGE RAILING DETAILS	11 FEB 85 R
197-203	BLANKS		
204-232	CROSS SECTIONS - MAINLINE		
233-237	CROSS SECTIONS - HOLMES DRIVE		
238-243	CROSS SECTIONS - TH 79		
244-251	CROSS SECTIONS - TRK 1		
252-254	CROSS SECTIONS - TRK 2		
255-257	CROSS SECTIONS - TRK 3		
258-259	BLANK		
260	DRIVE SECTION (417+25 RT.)		
261	TURN-A-ROUND CROSS SECTIONS		
262	REINFORCED CONC. DROP INLET DETAILS (BAFFLED)		

STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
TOWNS OF WESTMINSTER & ROCKINGHAM
COUNTY OF WINDHAM
US ROUTE 5 (FAS)

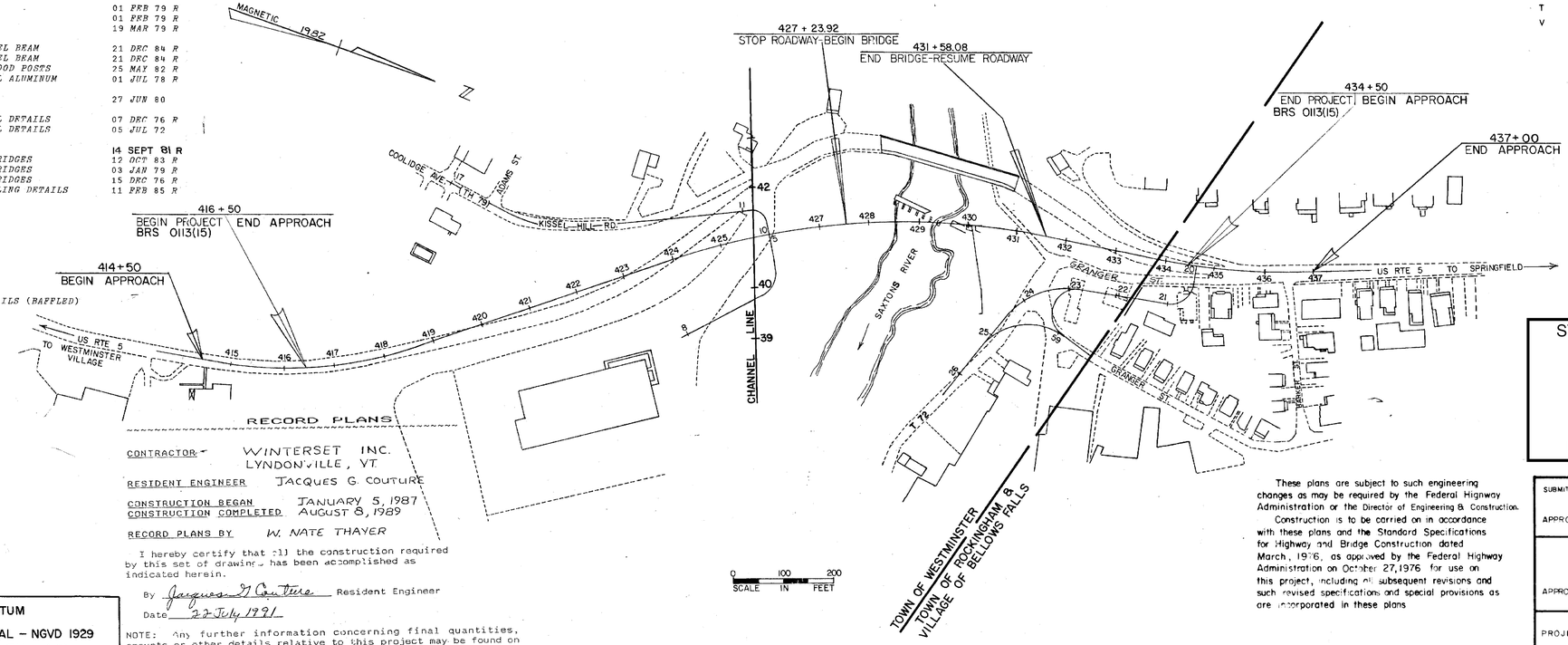
BEGINNING AT A POINT ON US ROUTE 5, IN THE TOWN OF WESTMINSTER, APPROXIMATELY 0.331 MILES SOUTHERLY FROM THE WESTMINSTER-ROCKINGHAM TOWN LINE AND PROCEEDING NORTHERLY FOR 0.341 MILES.

LENGTH OF ROADWAY = 1365.84 FEET = 0.259 MILES
LENGTH OF BRIDGE = 434.16 FEET = 0.082 MILES
LENGTH OF PROJECT = 1800.00 FEET = 0.341 MILES

PROJECT DESCRIPTION

WORK TO BE PERFORMED UNDER THIS CONTRACT CONSISTS OF REPLACEMENT OF BRIDGE NO. 33 OVER THE SAXTONS RIVER, ON NEW LOCATION AND ASSOCIATED ROADWAY WORK WHICH INCLUDES GRADING, DRAINAGE, SUBBASE AND PAVEMENT FOR U.S. ROUTE 5.

TRAFFIC DATA	
1987 ADT	4780
2007 ADT	6430
2007 DHV	830
D	57%
T	4%
V	40mph



CONVENTIONAL SIGNS

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
TOP OF CUT
TOE OF SLOPE

DATUM

VERTICAL – NGVD 1929
HORIZONTAL – N/A

RECORD PLANS

CONTRACTOR WINTERSET INC. LYNDONVILLE, VT
RESIDENT ENGINEER JACQUES G. COUTURE
CONSTRUCTION BEGAN JANUARY 5, 1987
CONSTRUCTION COMPLETED AUGUST 8, 1989
RECORD PLANS BY W. NATE THAYER

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

By Jacques G. Couture Resident Engineer
Date 22 July 1991

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

These plans are subject to such engineering changes as may be required by the Federal Highway Administration or the Director of Engineering & Construction.

Construction is to be carried on in accordance with these plans and the Standard Specifications for Highway and Bridge Construction dated March, 1976, as approved by the Federal Highway Administration on October 27, 1976 for use on this project, including all subsequent revisions and such revised specifications and special provisions as are incorporated in these plans

STATEWIDE - SOUTHEAST
REGION
BHF MEMB(21)

SHEET 19 OF 34
BRIDGE 33
FOR REFERENCE ONLY

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD

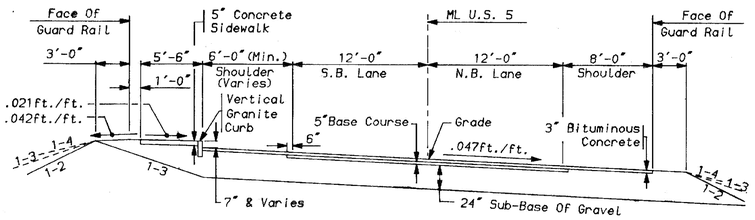
APPROVED _____ DATE _____
DIRECTOR OF ENGINEERING AND CONSTRUCTION

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

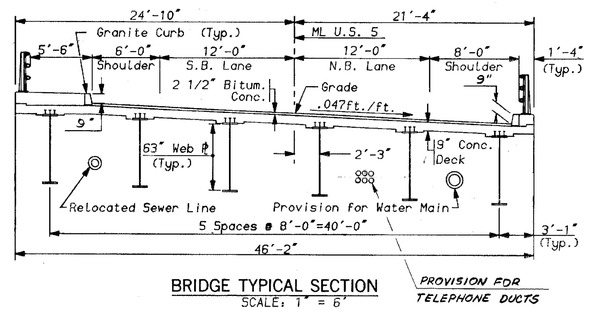
APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

PROJECT BRS № 0113(15)

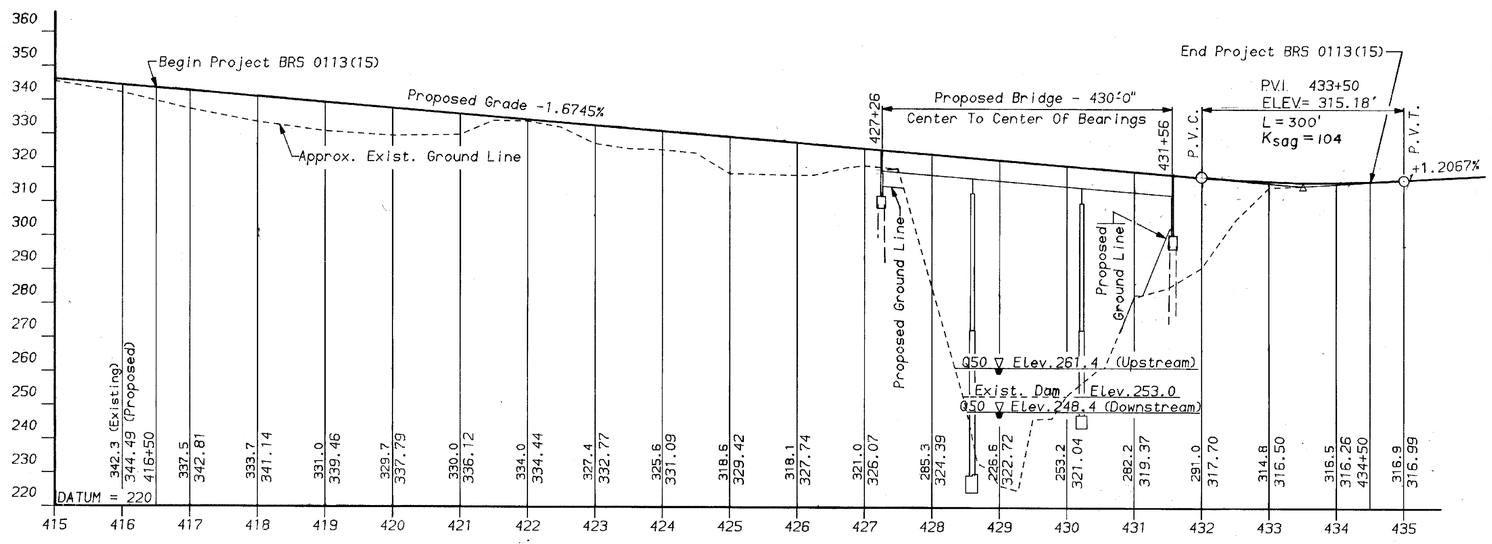
SHEET 1 OF 262 SHEETS



NEW HIGHWAY SECTION — BRIDGE APPROACHES
SCALE: 1" = 6'



BRIDGE TYPICAL SECTION
SCALE: 1" = 6'



PROFILE - ROUTE U.S. 5

SCALES: Vert. 1" = 20'
Horiz. 1" = 100'

EXISTING STRUCTURE

1. STRUCTURE TYPE CONCRETE ARCH & T BEAM APPROACHES OVERALL LENGTH 282'-0" INVENTORY RATING
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 25.75' - 25.75' - 130' - 31.5' - 31.5'
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 24' - 23.5' - 128' - 29.4' - 29.4' - 29'
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 1060 Sq.Ft. VERTICAL CLEARANCE ABOVE STREAMBED 60'±
5. WATER SURFACE ELEVATION @ Q 2.33 254.9 WATER SURFACE ELEVATION @ Q 50 261.4
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD UNKNOWN YEAR 1938 ESTIMATED DISCHARGE
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? YES IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? N.A.
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF N.A.
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL LEDGE
9. DISPOSITION OF STRUCTURE TO BE REMOVED AND DISPOSED OF BY THE CONTRACTOR

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE CONTINUOUS COMPOSITE WELDED ℄ GIRDER OVERALL LENGTH 430'-0
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 134' - 162' - 134' (MEASURED ALONG ML)
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 90'
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 130' - 158' - 130'
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 1360 Sq.Ft. TO Q100 ELEVATION (ABOVE EXISTING DAM CREST OF ELEV. 253.0)
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? YES

HYDRAULIC DATA:

1. Q 2.33 3000 c.f.s. WATER ELEVATION 254.9' VELOCITY 5.5 f.p.s.
   Q 10 6100 c.f.s. WATER ELEVATION 259.2' VELOCITY 7.0 f.p.s.
   Q 25 8300 c.f.s. WATER ELEVATION 260.6' VELOCITY 7.9 f.p.s.
   Q 50 9500 c.f.s. WATER ELEVATION 261.4' (See Note 2) VELOCITY 8.3 f.p.s.
   Q 100 11500 c.f.s. WATER ELEVATION 262.5' VELOCITY 8.9 f.p.s.
2. DRAINAGE AREA 78.1 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 LEDGE & BOULDERS
6. ESTIMATED SCOUR DEPTH 0' to 2' COMMENT ON: DRIFT MODERATE 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 N.A.
8. VERTICAL CLEARANCE ABOVE Q 100 50'
9. ALLOWABLE WATER SURFACE ELEVATION 262.5' LIMITED BY EXISTING CONDITIONS
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO IF YES, DESCRIBE
11. AVERAGE DAILY LOW FLOW 75 c.f.s. DEPTH 253.3' AVERAGE DAILY HIGH FLOW 300 c.f.s. DEPTH 253.9'
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED TYPE IV STONE TO ELEV. 250.0 ON SOUTH RIVER BANK BELOW EXISTING DAM
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 1.45 Mi. SPAN 2 @ 62' WATERWAY AREA OF FULL OPENING Q
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 800' SPAN 3 @ 80' WATERWAY AREA OF FULL OPENING Q

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS-25
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4 K.S.F. ON LEDGE 10 K.S.F.
3. ALLOWABLE LOAD FOR PILING 9000 P.S.I. TYPE STEEL H-PILES ESTIMATED LENGTH 50 Ft. MAXIMUM
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A 588 TENSION 27.0 K.S.I.
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24.0 K.S.I. COMPRESSION 20.0 K.S.I.
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f_c 3,500 P.S.I. f_c 1,400 P.S.I.
   CLASS B f_c 3,500 P.S.I. f_c 1,400 P.S.I.

TRAFFIC MAINTENANCE:

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

ADDITIONAL DESIGN CONSIDERATIONS

1. SEE GENERAL NOTES, SHEET No. BR 2.
2. DESIGN SPECIFICATIONS ARE 1977* A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES WITH SUBSEQUENT INTERIMS, AS AMENDED BY Vt. A. O. T.
3. DESIGN LOADING IS Vt. A. O. T. HS25-44 WHICH EQUALS A. A. S. H. T. O. HS20-44 WITH 25% INCREASE
4. HYDRAULIC DATA FOR ELEVATIONS BASED ON WHOLE, UNBREACHED DAM WITH CREST AT ELEVATION 253.0. HYDRAULIC DATA FOR VELOCITIES BASED ON DAM BEING REMOVED. EXISTING DAM IS BREACHED.
5. Q50 ELEVATION UPSTREAM OF DAM IS AT ELEVATION 261.4. Q50 ELEVATION DOWNSTREAM OF DAM IS ASSUMED TO BE AT ELEVATION 248.4.

* MAJORITY OF PROJECT DESIGNED BEFORE 1983 EDITION WAS RELEASED.

LOAD RATING (TONS)

STRESS LEVELS	HS	H	TRUCK 3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy = 27.5	60	42					
POSTED 0.67 Fy = 33.5		69	101		91	91	97
OPERATING 0.75 Fy = 37.5			125	137			

STEINMAN BOYNTON GRONQUIST & BIRDSALL
CONSULTING ENGINEERS
NEW YORK, N.Y.

RECOMMENDED FOR APPROVAL Warren B. Fraser 2/12/85
STRUCTURES ENGINEER DATE
RECOMMENDED FOR APPROVAL Arthur J. Foss 2/12/85
CHIEF OF DESIGN DATE
APPROVED BY Frank E. Ulrich 2/13/85
DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS

NO.	DESCRIPTION	BY & DATE
1	ADDED UTILITY SUPPORTS FOR TELEPHONE DUCTS.	GRS 3-21-86
2	CHANGED ALL SUPERSTRUCTURE REINFORCING STEEL FROM PLAIN TO EPOXY COATED.	GRS 4-30-86

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WESTMINSTER	Bridge No. B 33 / Log Sta. 432+00
HIGHWAY NO. U.S. 5	Surv. Sta. 430+00

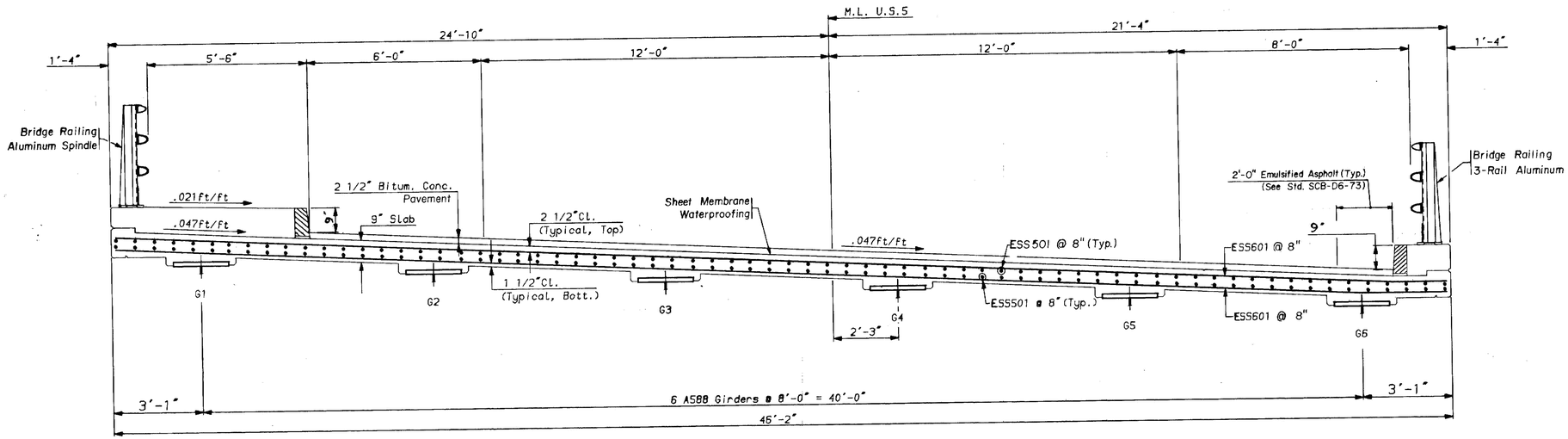
U. S. 5 OVER SAXTONS RIVER
PRELIMINARY INFORMATION SHEET

Designed by T. FISHER	Drawn by E. REIZE
Checked by P. CHASE date 9/84	Bridge Design Supervisor T. FISHER date 10/84
PROJECT WESTMINSTER - ROCKINGHAM	PROJECT NO. BRS 0113 (15)
Bridge Sheet No. BR1	Sheet 78 of 262

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

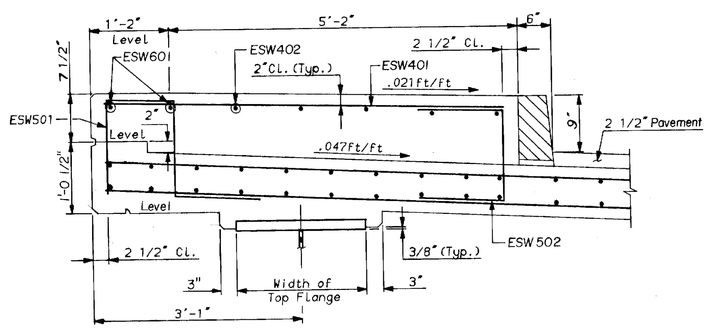
SHEET 20 OF 34
BRIDGE 33
FOR REFERENCE ONLY

BR-2



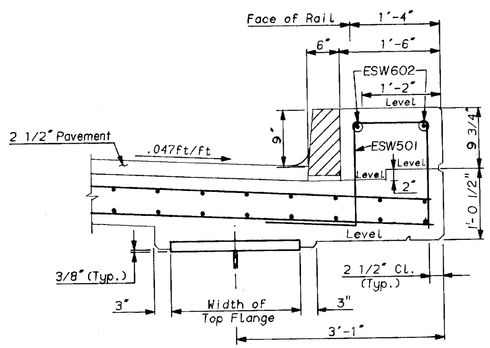
TYPICAL SECTION (Looking North)

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



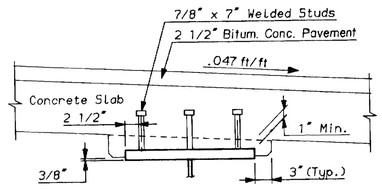
WEST SIDE SIDEWALK AND CURB SECTION

SCALE: 1"=1'-0"



EAST SIDE CURB SECTION

SCALE: 1"=1'-0"

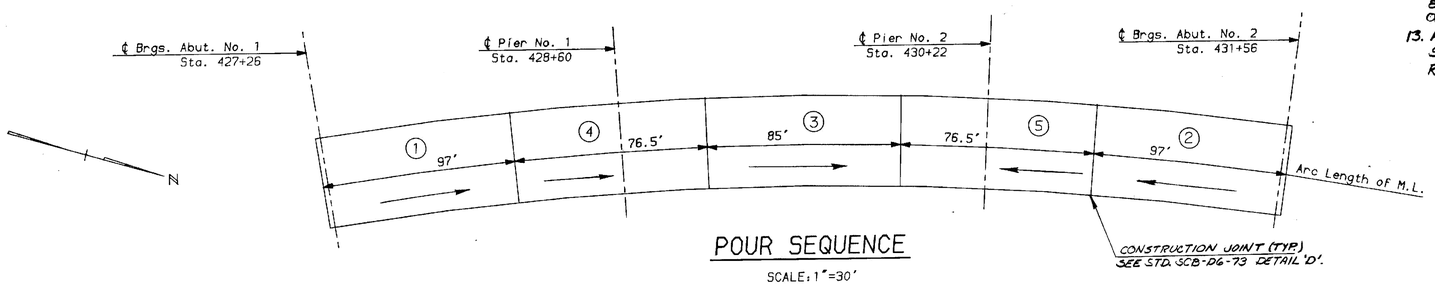


BEAM HAUNCH AND SHEAR CONNECTOR DETAILS

N.T.S.

NOTES

1. FOR GENERAL NOTES SEE SHEET NO. BR2.
2. FOR RAILING DETAILS SEE VAOT STANDARD SB-R1-71.
3. WATERPROOFING MEMBRANE SHALL CONFORM TO SECTION 519.
4. FOR HAUNCH DETAILS SEE VAOT STANDARD SCB-D7-71.
5. FOR TYPICAL CURB DETAILS, SEE VAOT STANDARDS SCB-D6-73 AND SCB-D4-76.
6. FOR TRANSVERSE CONSTRUCTION JOINT DETAIL IN SLAB, SEE VAOT STANDARD SCB-D6-73.
7. FOR PLAN OF DECK SLAB AND FINAL DECK ELEVATIONS SEE SHEET NO. BR22.
8. FOR REINFORCING STEEL SCHEDULE, SEE BR. 29.
9. POURS SHALL BE DONE IN THE NUMBERED SEQUENCE, EXCEPT #1 AND #2 MAY BE INTERCHANGED AND #4 AND #5 MAY BE INTERCHANGED.
10. THE MAXIMUM TIME LIMIT FOR ANY COMBINATION OF POURS DONE IN ONE DAY SHALL BE 8 HOURS. A RETARDING ADMIXTURE SHALL BE USED AS DIRECTED BY THE CONCRETE ENGINEER.
11. ARROWS INDICATE THE DIRECTION WHICH THE POUR SHALL PROGRESS.
12. THERE SHALL BE A MINIMUM DELAY OF 96 HOURS BETWEEN THE END OF AN 8 HOUR POUR AND THE BEGINNING OF ANOTHER POUR.
13. ALL SUPERSTRUCTURE REINFORCING STEEL, INCLUDING SIDEWALK AND CURB REINFORCING, SHALL BE EPOXY COATED.



POUR SEQUENCE

SCALE: 1"=30'

STATEWIDE - SOUTHEAST
REGION
BHF MEMB(21)

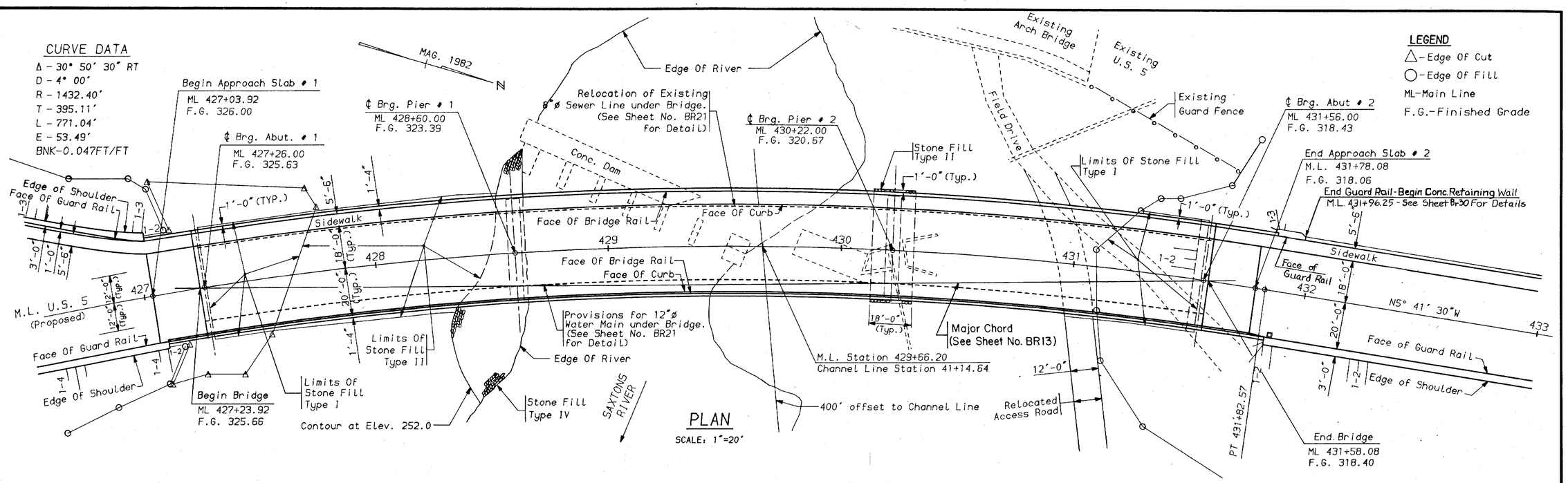
SHEET 21 OF 34
BRIDGE 33
FOR REFERENCE ONLY

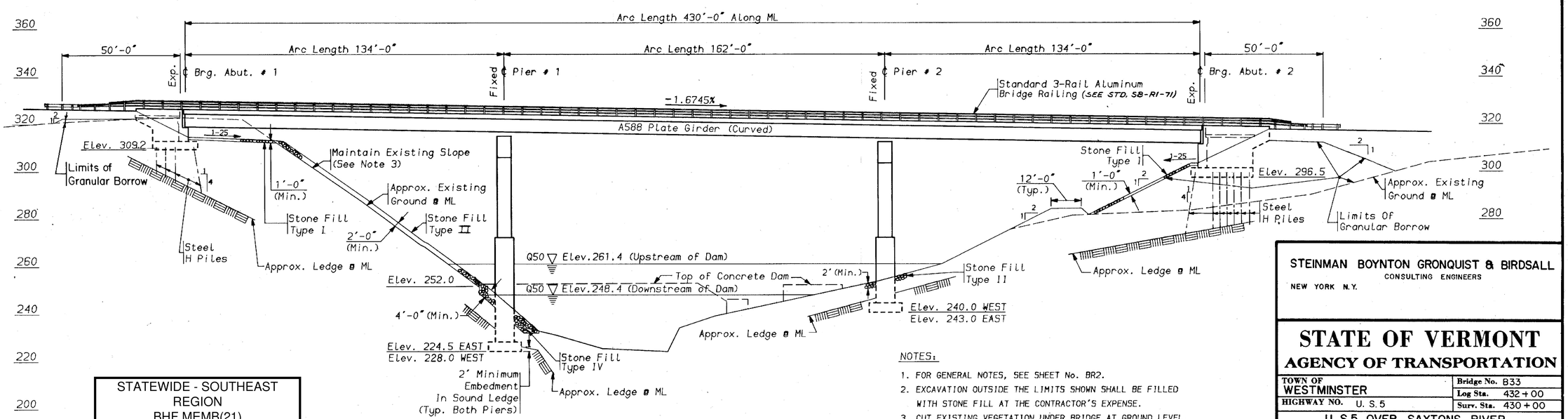
STEINMAN BOYNTON GRONQUIST & BIRDSALL
CONSULTING ENGINEERS
NEW YORK, N.Y.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WESTMINSTER	Bridge No. B 33
	Log Sta. 432+00
HIGHWAY NO. U.S. 5	Surv. Sta. 430+00
U.S. 5 OVER SAXTONS RIVER	
DECK SLAB SECTION AND DETAILS	
Designed by P. CHASE	Drawn by E. REIZE
Checked by G. LOZANO date 9/84	Bridge Design Supervisor T. A. FISHER date 10/84
PROJECT WESTMINSTER-ROCKINGHAM	PROJECT NO. BRS 0113 (15)
Bridge Sheet No. BR 23	Sheet 100 of 262

BRINING 44.131 55384





NOTES:

1. FOR GENERAL NOTES, SEE SHEET No. BR2.
2. EXCAVATION OUTSIDE THE LIMITS SHOWN SHALL BE FILLED WITH STONE FILL AT THE CONTRACTOR'S EXPENSE.
3. CUT EXISTING VEGETATION UNDER BRIDGE AT GROUND LEVEL. LEAVE ROOT SYSTEMS INTACT. SEE SPECIAL PROVISIONS.
4. FOR LOCATIONS OF SCUPPERS AND LIGHT POSTS ON BRIDGE, SEE SHEET No. BR25.

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

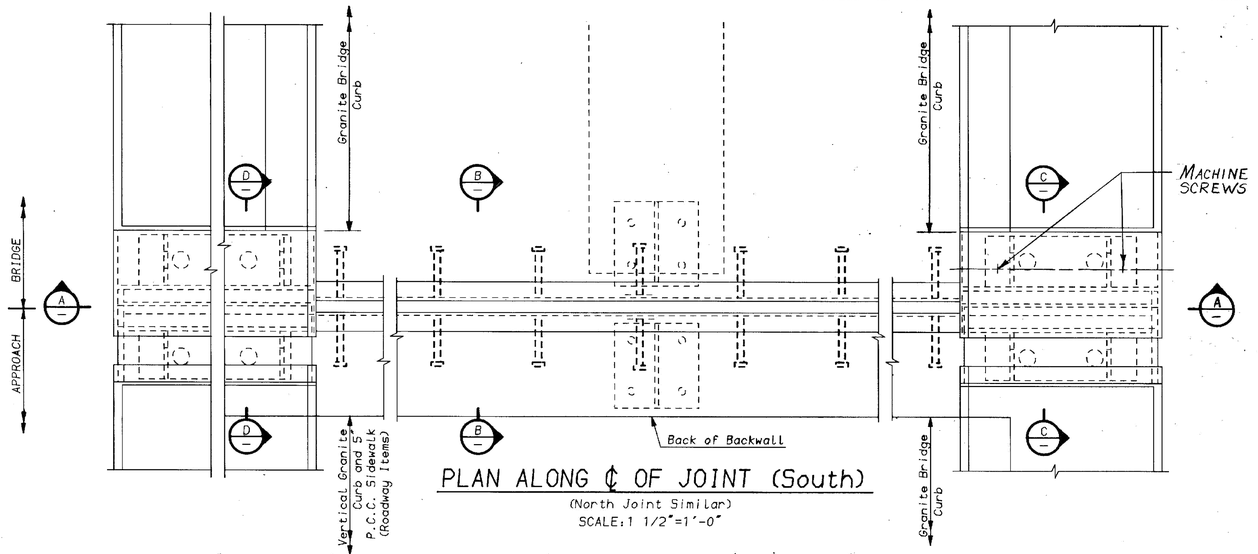
SHEET 22 OF 34
BRIDGE 33
FOR REFERENCE ONLY

STEINMAN BOYNTON GRONQUIST & BIRDSALL
CONSULTING ENGINEERS
NEW YORK N.Y.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

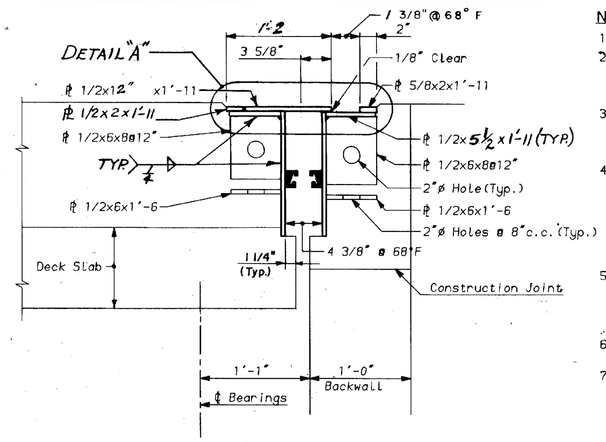
TOWN OF WESTMINSTER	Bridge No. B33
HIGHWAY NO. U. S. 5	Log Sta. 432 + 00
	Surv. Sta. 430 + 00
U. S.5 OVER SAXTONS RIVER	
GENERAL PLAN AND ELEVATION	
Designed by P. CHASE	Drawn by E. REIZE
Checked by J. HANKE date 9/84	Bridge Design Supervisor T. A. FISHER date 10/84
PROJECT WESTMINSTER–ROCKINGHAM	PROJECT NO. BRS 0113(15)
Bridge Sheet No. BR 8	Sheet 85 of 262

BR-6-'83



PLAN ALONG ℄ OF JOINT (South)

(North Joint Similar)
SCALE: 1 1/2"=1'-0"

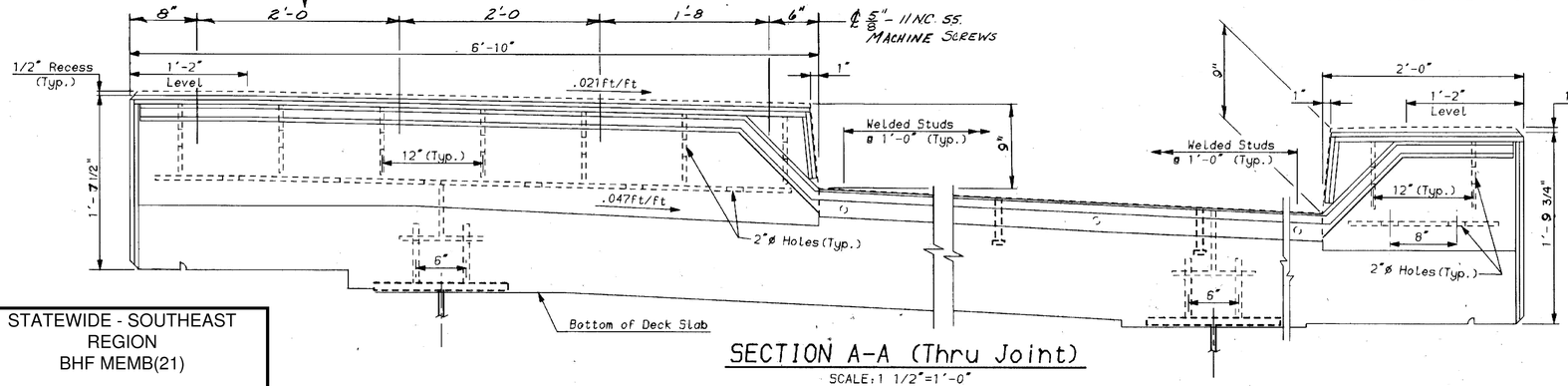


SECTION C-C

(Section D-D Similar)
SCALE: 1 1/2"=1'-0"

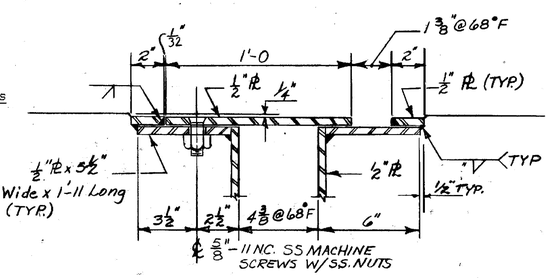
NOTES

1. FOR GENERAL NOTES SEE SHEET NO. BR2.
2. 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.
3. ALL STRUCTURAL STEEL USED IN THE EXPANSION JOINT ASSEMBLY SHALL BE ASTM A-36. ALL PLATES ARE 1/2", JOINED BY FILLET WELDS, UNLESS OTHERWISE MARKED.
4. THE ITEM, "ELASTOMERIC EXPANSION DAM (4" MOVEMENT)" SHALL INCLUDE THE COSTS OF FABRICATION AND ERECTION 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 ASSEMBLED IN THE SHOP AND SHIPPED WITH AN APPROVED ADJUSTABLE CONNECTION SYSTEM WHICH WILL ALLOW THE COMPLETE UNIT TO BE ADJUSTED FOR TEMPERATURE AND ANCHORED IN POSITION.
6. THE EXPANSION DAM SHALL BE CONSTRUCTED PARALLEL TO THE CENTERLINE OF BEARING.
7. ALL STEEL COMPONENTS SHALL BE GALVANIZED OR METALLIZED PER SUBSECTION 731.06.
8. WHERE INDICATED EPOXY BONDING COMPOUND CONFORMING TO SECTION 719.03 SHALL BE APPLIED. PAYMENT IS TO BE INCLUDED IN THE UNIT PRICE BID FOR "ELASTOMERIC EXPANSION DAM (4" MOVEMENT)", ITEM 516.34.
9. ALL WELDING SHALL CONFORM TO AWS AND AASHTO SPECIFICATIONS.



SECTION A-A (Thru Joint)

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



DETAIL "A"

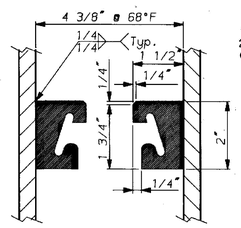
STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 23 OF 34
BRIDGE 33
FOR REFERENCE ONLY

TEMP °F	"A" AT ABUT. No.2	"A" AT ABUT. No.1
20°	2 1/8"	2 5/16"
30°	2"	2 1/8"
40°	1 13/16"	1 15/16"
50°	1 11/16"	1 3/4"
60°	1 1/2"	1 9/16"
70°	1 3/8"	1 3/8"
80°	1 1/4"	1 3/16"
90°	1 1/16"	1"
100°	15/16"	13/16"

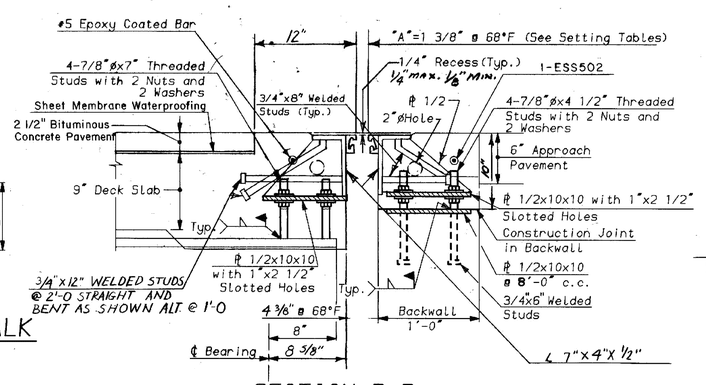
SETTING TABLES

(See Section B-B)



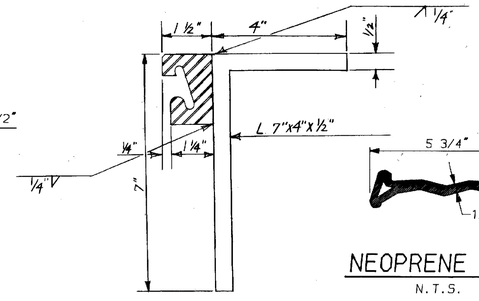
EXTRUSION AT SIDEWALK

SCALE: 1/2"=1"



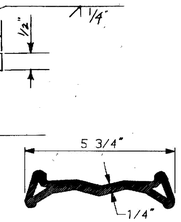
SECTION B-B

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



STEEL EXTRUSION

SCALE: 1/2"=1"



NEOPRENE SEAL

N.T.S.

STEINMAN BOYNTON GRONQUIST & BIRDSALL
CONSULTING ENGINEERS
NEW YORK, N.Y.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF WESTMINSTER	Bridge No. B33
HIGHWAY NO. U.S. 5	Log Sta. 432+00
	Surv. Sta. 430+00

U.S. 5 OVER SAXTONS RIVER
EXPANSION JOINT DETAILS

Designed by G. LOZANO	Drawn by E. REIZE
Checked by P CHASE date 9/84	Bridge Design Supervisor T. A. FISHER date 10/84
PROJECT WESTMINSTER-ROCKINGHAM	PROJECT NO. BRS 0113(15)
Bridge Sheet No. BR 24	Sheet 101 of 262

BRUNING 44-131 5534
BR-6-'83

INDEX OF SHEETS

1. TITLE PAGE
2 - 3 TYPICAL SECTIONS OF IMPROVEMENT - (GRADING AND DRAINAGE)
4. TYPICAL SECTIONS OF IMPROVEMENT - S.A. #4
5. ALIGNMENT
6. SUMMARY - ITEMS
6. SUMMARY - ITEMS DRAINAGE
7. BLANK
9 - 10 GRADES
11 - 12 EARTHWORKS
13 A - 13 C FINAL EARTHWORKS
14 - 28 PLAN & PROFILE
29. GENERAL PLAN - MILLBROOK BOX CULVERT STA. 1390+00
30. PLAN ELEVATIONS & SECTIONS
31. REINFORCEMENT PLAN & ELEVATIONS
32. SECTIONS & DETAILS - JOINTS & WING WALLS
33 - 34 REINFORCING SCHEDULE
35. GENERAL PLAN (BRIDGE, S.A.#4) STA. 1423+80.2
36. BORINGS
37. PLAN & ELEVATION
38. ABUTMENT NO.1 AND NO.2
39. APPROACH SLABS
40. PIERS "A", "B", "C"
41. STRUCTURAL STEEL PLANS AND DETAILS
42 - 43 REINFORCING SCHEDULE
44. A-61 DRILLING & BLASTING
45. B-1 BANKING
46. B-5 ROUNDING OF SLOPES
47. BLANK
48. BLANK
49. D-2 CEMENT RUBBLE MASONRY
50. D-3 TREATED GUTTERS
51. D-4 UNDERDRAIN FLUSHING BASINS
52. D-8 REINFORCED CONCRETE DROP INLETS
53. BLANK
54. D-11 DROP INLET GRATES
55. D-13 CONCRETE CATCH BASIN
56. F-1 PROPERTY LINE FENCE
57. BLANK
58. G-2A TWO CABLE GUARD RAIL
59. G-2B DEAD END ANCHORAGE
60. BLANK
61. G-4 WOOD AND STEEL MARKER POSTS
62. J-1 BOUNDARY & PROJECT MARKERS
63. SB-AS-45° SKEW 57
64 - 65 SB-SG-60 (1 & 2)
66. SB - 20-58
67. SB - 22-58
68 - 69 SCB - 30-56 (1 & 2)
70. E - 1 BARRICADES, SIGNS & LIGHTS
71. 10 SHEETS BRIDGE RAILING & STEEL
72. BLANK
73. BLANK
74. BLANK
75. E - 9 CONSTRUCTION IDENTIFICATION SIGNS
76. BLANK
77. BLANK
78. BLANK
79 - 138 CROSS SECTIONS, ROADWAY
139 - 146 CROSS SECTIONS, S.A. #4
147 - 149 CROSS SECTIONS, MILLBROOK CHANNEL STA.1390.00

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

PROPOSED IMPROVEMENT

INTERSTATE PROJECT

TOWN OF WESTMINSTER

ROUTE I-91

COUNTY OF WINDHAM

BRATTLEBORO - BELLOWS FALLS ROAD

BEGINNING A POINT 2.212 MILES NORTH OF THE PUTNEY-WESTMINSTER TOWN LINE AND EXTENDING NORTHERLY 1.847 MILES.

CONTRACT NO I

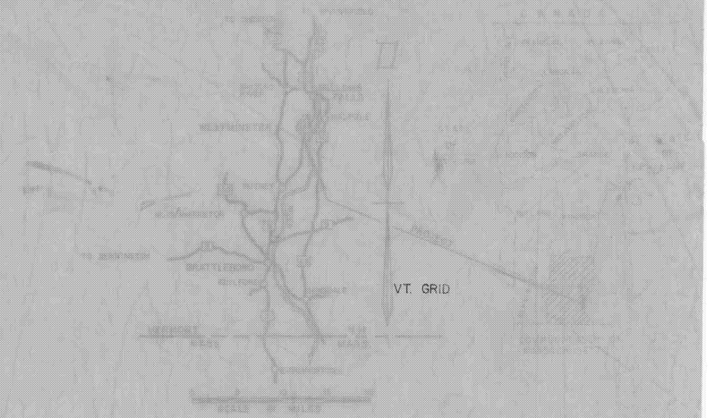
STAGE I CONSTRUCTION

LENGTH OF ROADWAY 9750.0' FEET = 1.847 MILES

LENGTH OF PROJECT 9750.0' FEET = 1.847 MILES

DESIGN DESIGNATION

1960	3350
	6560
	920
	8
60	

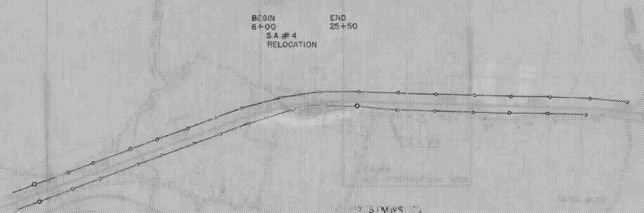


PROJECT NAME & NUMBER STAGE I
WESTMINSTER-I-91-1(17)C-1 GRADING & DRAINAGE

RECORD PLANS
MATERIALS

SUBBASE OF GRAVEL-PARDA PIT — WESTMINSTER, VT.
SUBBASE OF SAND— PARKER PIT—WESTMINSTER, VT.
SUBBASE OF CRUSHED GRAVEL— JAMES, PARDA, GOLDSMITH QUARRY (PERINI CRUSHER) — WESTMINSTER, VT.
GRAVEL BACKFILL— WADES PIT —WESTMINSTER, VT.
PEA STONE — CARPENTERS QUARRY— WESTMINSTER, VT.
REFINED TAR— OLD COLONY TAR CO. — WORCESTER, MASS.
ASPHALT — ESSO — EVERETT, MASS.
BITUMINOUS CONCRETE—COLD RIVER HOT MIX CORP.— NO. WALPOLE, N.H.
CONCRETE CLASS "B"— CHARLESTOWN READY MIX, INC.— CHARLESTOWN, N.H.
REINFORCING STEEL— BETHLEHEM STEEL CO. — BETHLEHEM, PA.
STRUCTURAL STEEL — CITY IRON WORKS — WEATHERSFIELD, CONN.
BRIDGE PAINT — AMSTERDAN COLOR WORKS— NEW YORK, N.Y.
REINF. CONC. PIPE—MARTIN MARIETTA CO.— WINSOR, VT.
A.C.C.G. METAL PIPE —NORTHEASTERN CULVERT CORP. — WESTMINSTER, VT.
BOUNDARY MARKERS, PLANK & TWO CABLE GUARD RAIL, GUIDE & MARKER POSTS, PROPERTY LINE FENCE S.T. GRISWOLD & CO. INC. — WILLISTON, VT.

CONTRACTOR—PERINI CORP. FRAMINGHAM, MASS.	CONTRACT
RES. ENG.— R.L. WORKMAN.	DATED—DECEMBER 21, 19
INSPECTOR— R. HAUGER.	STARTED-FEB. 26, 1962
RECORD PLANS— R. HAUGER.	COMPLETED-JAN. 17, 196
	ACCEPTED- JAN. 17, 196



NO ACCESS

VT GRID

STATEWIDE - SOUTHEAST
REGION
BHF MEMB(21)

SHEET 24 OF 34
BRIDGE D19
FOR REFERENCE ONLY

NOTE: ANY FURTHER IMPROVEMENT CONTRACTS FOR QUANTITIES, AMOUNTS, OR DETAILS RELATIVE TO THIS PROJECT, MUST BE ESTIMATED FROM THE FIELD NOTES OR THE FINAL PLANS.

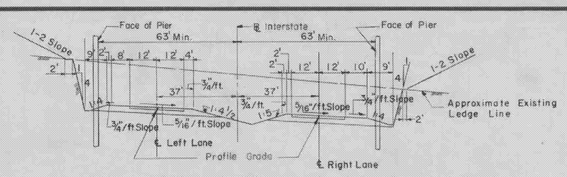
STAGE I CONSTRUCTION

WESTMINSTER I-91-1(17) Contr. I
CONTRACTOR - PERINI CORP.
FRAMINGHAM, MASS.
RECORD PLANS—R. HAUGER.
CONST. COMPLETED—JANUARY 17, 1963.

E. H. Stickney 8/9/61 | Lon Bjorn 8/8/61 | R. O. Mann 8-31-61 | G. M. Lane 8-8-61 | A. W. Bishop Jr. 8-8-61

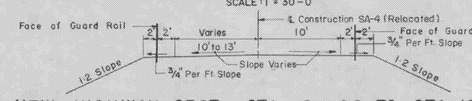
I 91 -1 (17)

35



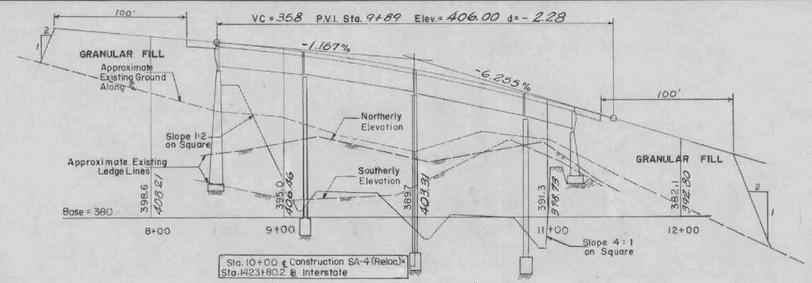
NEW HIGHWAY SECT. STA.1422 + 00 TO STA. 1426 + 00

SCALE: 1" = 30'-0"



NEW HIGHWAY SECT. STA. 8 + 00 TO STA. 12 + 18.7

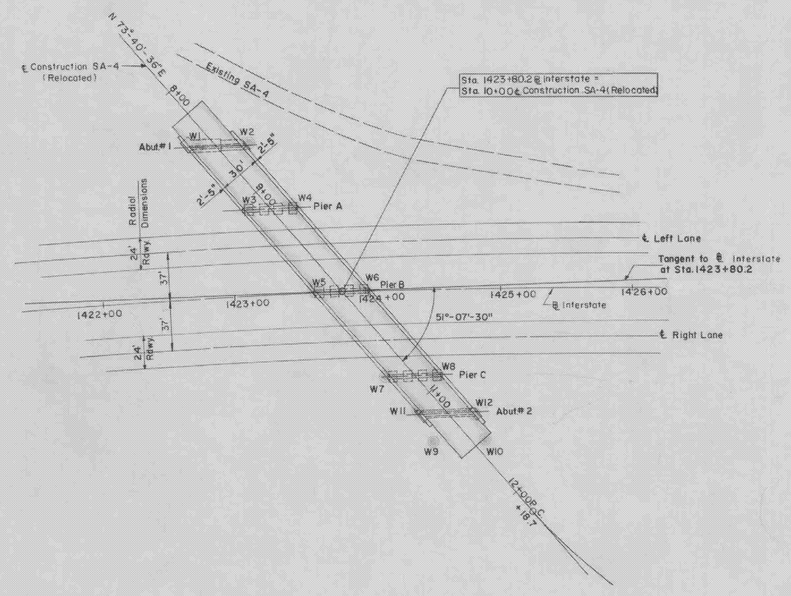
SCALE: 1/8" = 1'-0"



NEW HIGHWAY PROFILE ALONG ℄ SA-4 (RELOCATED)

SCALE Hor. 1" = 50'-0" Vert. 1" = 10'-0"

HIGHWAY NO. SA-4 (Relocated)	NAME OF HIGHWAY Interstate		B.P.R. DIV. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
STRUCTURE NO.	COUNTY Windham	TOWN Westminster	1	VT.	I 91-1(17)	209	555
PROJECT NO. I 91 -1(17)	LOCATION Sta. 1423 +80.2						



CURVE DATA (Interstate)
Δ = 22°-30'-00" Rt.
D = 1°-00'-00"
R = 5729.65'
T = 1139.7'
L = 2250.0'
E = 112.2
Bank = 5/16" Per ft.

Note: Location of Wash Borings indicated thus ◉ W2

PLAN

SCALE: 1" = 50'-0"

FOUNDATION INFORMATION

OBTAINED FOR DESIGN PURPOSES ONLY, AND THE STATE ASSUMES NO RESPONSIBILITY WHATSOEVER FOR THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN. BOULDERS MAY BE ENCOUNTERED AT ANY PIER OR ABUTMENT LOCATION. FOR BORING LOGS SEE SHEET NO. 210

GENERAL NOTES

DESIGN SPECIFICATIONS:

AASHO: 1953 Edition and as modified by Vermont Dept. of Highways.

LIVE LOAD

H20-44

DESIGN STRESSES

Structural steel fs = 18,000 p.s.i.
Reinforcing steel fs = 20,000 p.s.i.
Concrete fc = 1,200 p.s.i. for f'c = 3,000 p.s.i.

CLEARANCE

Horizontal: As shown on drawings
Vertical: 16'-6"

SUPERSTRUCTURE

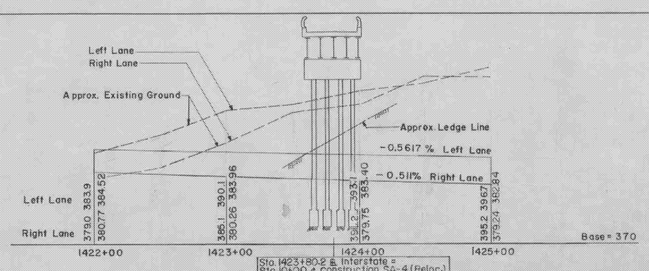
30' Roadway, 1'-6" Safety Walks, as per SCB-30-56
4 Simple spans, rolled beams, composite designs similar to SCB-30-56
Aluminum bridge railing, or galvanized bridge railing, and granite bridge curb as per SB-SG-60 as indicated in General Special Provisions
Bearing and diaphragm connections as per SB-20-56
Approach slabs as per SB-AS-45° Skew 57

SUBSTRUCTURE

Open piers, round columns spaced 11'-0" o.c.
Stub Abutments

FOUNDATIONS:

Piers Individual footings on ledge
Abutments: Footing on Ledge.



PROFILE OF PROPOSED INTERSTATE

SCALE: Hor. 1" = 50'-0" Vert. 1" = 10'-0"

SUMMARY OF QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	NET	OVER-RUN	TOTAL	FINAL
107	Structure Excavation	C.Y.	~~373~~	~~37~~	~~410~~	807
204	Sub-base of Crushed Rock (Mod.) MODIFIED STANDARD	C.Y.	~~89~~	~~13~~	~~102~~	54
222	Gravel Backfill	C.Y.	~~119~~	~~31~~	~~150~~	136
361-B	Bituminous Concrete Pavement (Mod.)	Tons	~~126~~	~~19~~	~~145~~	*
401-B	Concrete Class B (Mod.)	C.Y.	~~739~~	~~37~~	~~776~~	930
402	Reinforcing Steel	Lbs.	114124	–	114124	116,304
403	Spiral Reinforcement (1000 LB.)	L.S.	1 ✓	–	1 ✓	1
404-A	Structural Steel	Lbs.	~~353,375~~	~~7065~~	~~360,440~~	320,404
407	Asphaltic-Asbestos Coating	S.Y.	~~65~~	–	~~65~~	64
556-C	Granite Bridge Curb (Mod.)	L.F.	~~570~~	–	~~570~~	579
572	Bridge Railing	L.F.	525 ✓	–	525 ✓	525
318	TAR EMULSION FOR BR. FLR.	GAL.	~~443~~	–	~~443~~	*
372	Joint Sealer, Hot poured Elastic Type	L.F.	~~793~~	–	~~793~~	*

* Included in Roadway Quantities

LIST OF SHEETS

SHEET NO.	DESCRIPTION
35	GENERAL PLAN
36	BORINGS
37	PLAN & ELEVATION
38	ABUTMENTS NO. 1 AND 2
39	APPROACH SLABS
40	PIERS A, B AND C
41	STRUCTURAL STEEL PLAN AND DETAILS
42	REINFORCING SCHEDULE
43	REINFORCING SCHEDULE
122-23	INTERSTATE PLAN & PROFILE
115-116	INTERSTATE CROSS SECTIONS
140-141	SA-4 (Rel.) CROSS SECTIONS
63	SB-AS-45° SKEW 57
64-65	SB-SG-60 (1 & 2)
66	SB-20-56
67	SB-22-58
68-69	SCB-30-56 (1 & 2)

STAGE I CONSTRUCTION

GENERAL PLAN

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

INTERSTATE PROJECT in the town of WESTMINSTER

INTERSTATE STA. 1423+80.2
UNDER
SA-4 (RELOCATED) STA. 10+00

APPROVED BY Wm. A. Henderson DATE 2-10-59

THE CLARKESON ENGINEERING CO., INC.
CONSULTING ENGINEERS
BOSTON MASSACHUSETTS

SURVEYED BY	DRAWN BY S.A.L.	CHECKED BY D.S.-R.G.B.	IN CHARGE J.V.B.	SCALE AS NOTED	DATE 12/5/57

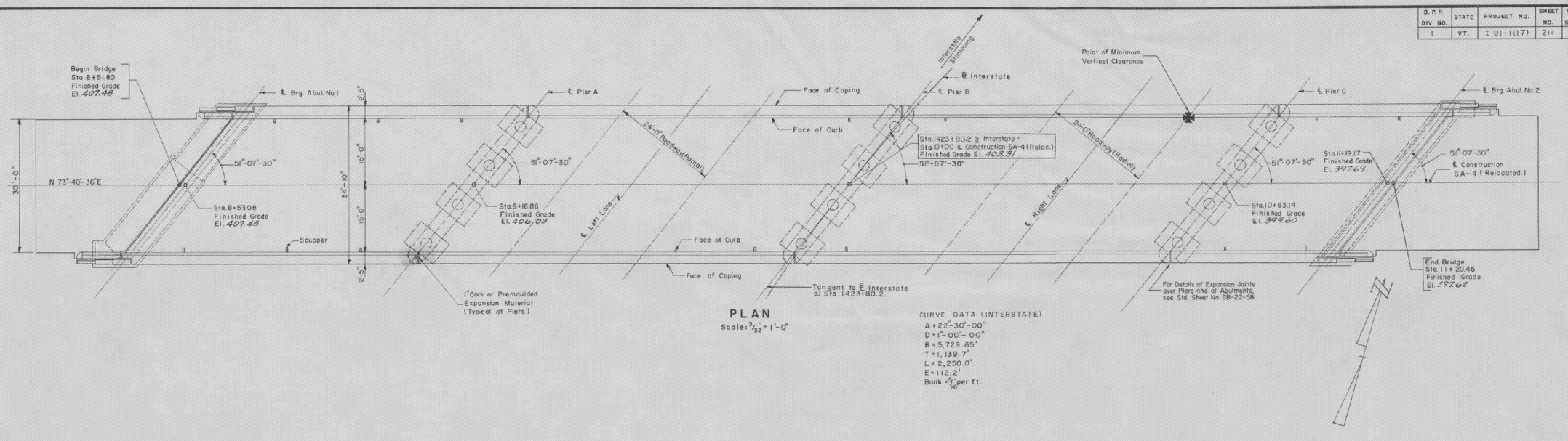
PROJECT NO. I 91 -1(17) SHEET 35 OF 149

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 25 OF 34
BRIDGE D19
FOR REFERENCE ONLY

CONTRACT NO. 135

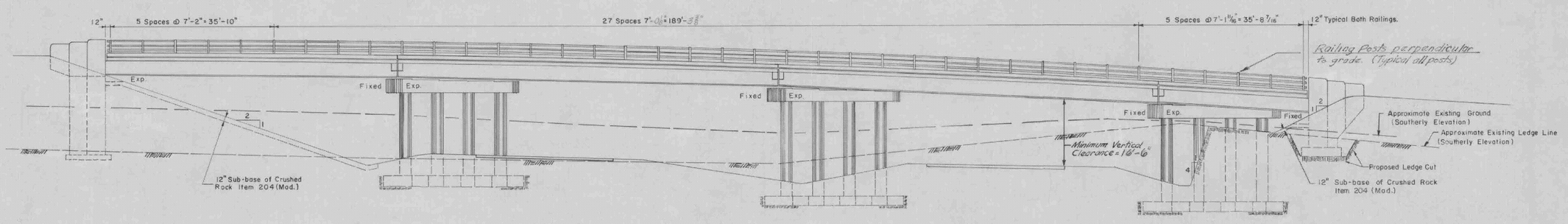
B.P.R. DIV. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	VT.	I 91-1(17)	211	555



PLAN

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

CURVE DATA (INTERSTATE)
Δ = 22°-30'-00"
D = 1°-00'-00"
R = 5,729.65'
T = 1,139.7'
L = 2,250.0'
E = 112.2'
Bank = 9/16" per ft.



SOUTHERLY ELEVATION
NORTHERLY ELEVATION (SIMILAR)

Scale 3/32" 1'-0"

STATEWIDE - SOUTHEAST
REGION
BHF MEMB(21)

SHEET 26 OF 34
BRIDGE D19
FOR REFERENCE ONLY

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	NET	OVER-RUN	TOTAL	FINAL
556-C	Granite Bridge Curb (Mod)	L.F.	~~570~~	–	~~570~~	514
572	Bridge Railing	L.F.	525 ✓	–	525 ✓	525

Notes:
1. Railing posts to be set normal to grade
2. Omit set screws at one end of railing panel at expansion joints over piers.
3. All dimensions are horizontal dimensions.
4. For scupper spacing see Sheet 215.
5. For Bridge Marker see Drawing SB-20-56 (Detail A)
6. For Details of Railing see standard Sheet SB-5G-60 (1 & 2)

BRIDGE 19
STAGE I CONSTRUCTION
PLAN AND ELEVATION

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
INTERSTATE PROJECT in the town of
WESTMINSTER
INTERSTATE STA. 1423 + 80.2
UNDER
SA-4 (RELOCATED) STA. 10+00
THE CLARKESON ENGINEERING CO. INC.
CONSULTING ENGINEERS
BOSTON MASSACHUSETTS

SURVEYED BY	CHECKED BY D.S.B.G.B.	SCALE AS NOTED
DRAWN BY A.R.C.	IN CHARGE J.V.B.	DATE 12-5-57

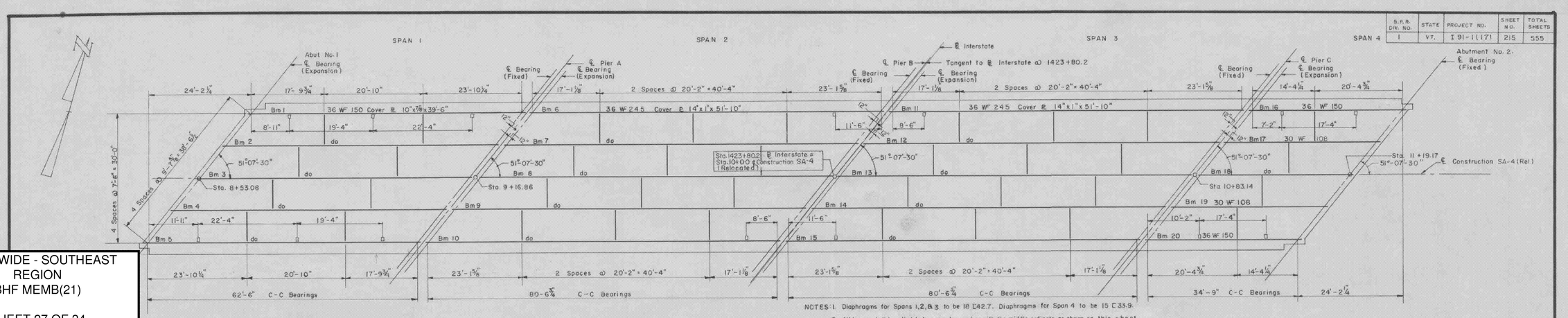
PROJECT NO. I 91-1(17) SHEET 37 OF 123

CONTRACT NO. I 37

F.A.R. DIV. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
1	VT.	I 91-1(17)	215	555

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 27 OF 34
BRIDGE D19
FOR REFERENCE ONLY

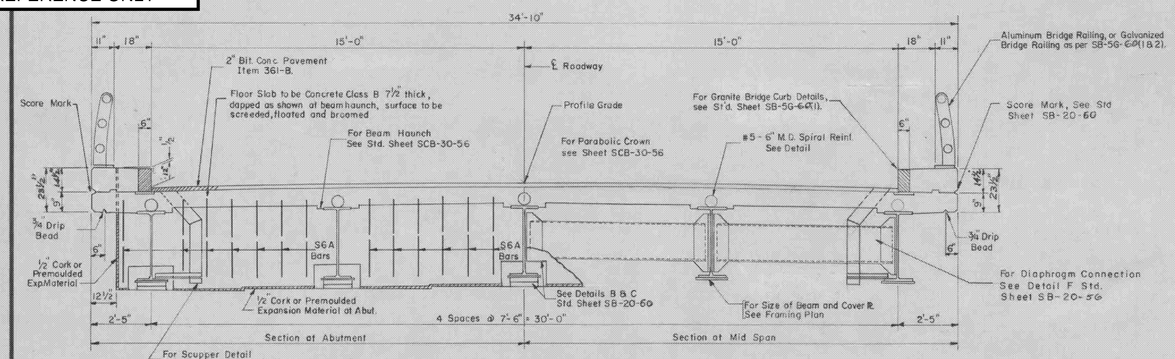


FRAMING PLAN

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

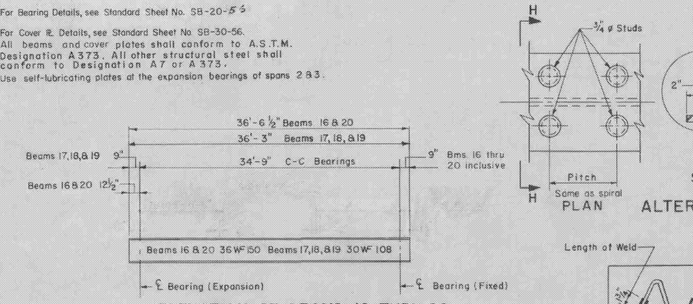
NOTES: 1. Diaphragms for Spans 1, 2, & 3 to be 18 [42.7. Diaphragms for Span 4 to be 15 [33.9.
2. All beams shall be rolled to true circular camber with the middle ordinate as shown on this sheet.
3. All dimensions are horizontal dimensions.
4. Cut flanges as per Standard Sheet No. SB-22-58
5. For Bearing Details, see Standard Sheet No. SB-20-55
6. For Cover ℞ Details, see Standard Sheet No. SB-30-56.
7. All beams and cover plates shall conform to A.S.T.M. Designation A 373. All other structural steel shall conform to Designation A7 or A 373.
8. Use self-lubricating plates at the expansion bearings of spans 2 & 3.

NOTE: WHERE A DOUBLE SPIRAL IS CALLED FOR IN THE SCHEDULE (4) FOUR 6 1/2" LONG STUDS ARE REQUIRED PER PITCH.

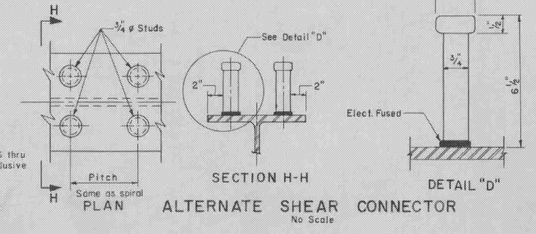


TYPICAL CROSS SECTION

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

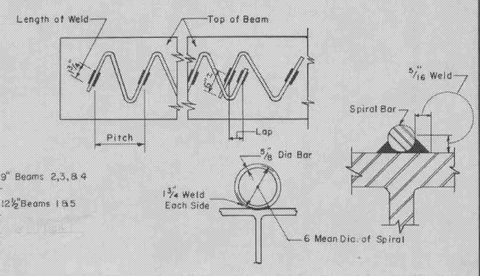


ELEVATION OF BEAMS 16 THRU 20



ALTERNATE SHEAR CONNECTOR

No Scale

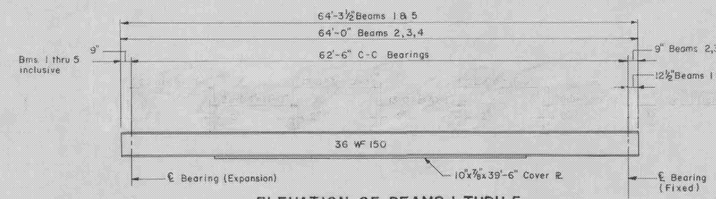


SPIRAL WELDING DETAILS

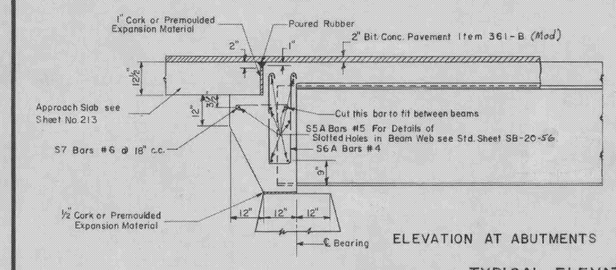
No Scale

SPIRAL SCHEDULE

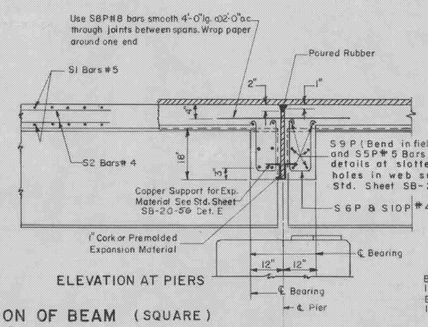
LENGTH OF SPAN	39'	64'	84'
SPIRAL PITCH 0'-10' FROM BRNG.	DOUBLE @ 5"	DOUBLE @ 5"	DOUBLE @ 5 1/2"
" " 10'-20' OR ℄ SPAN	4"	DOUBLE @ 6 1/2"	DOUBLE @ 6 1/2"
" " 20'-30' OR ℄ SPAN		5"	4"
" " 30'-40' OR ℄ SPAN		7 1/2"	5 1/2"
" " 40' - ℄ SPAN			8"



ELEVATION OF BEAMS 1 THRU 5



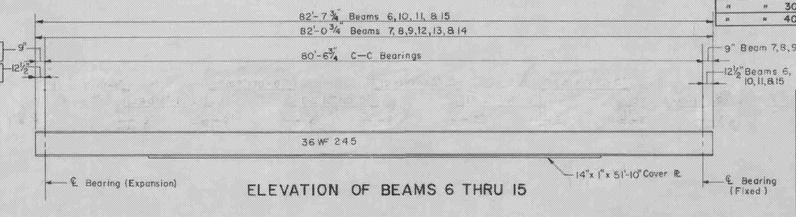
ELEVATION AT ABUTMENTS



ELEVATION AT PIERS

TYPICAL ELEVATION OF BEAM (SQUARE)

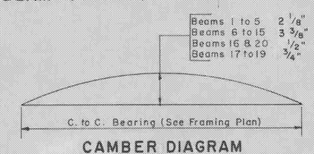
Scale: 1/2" = 1'-0"



ELEVATION OF BEAMS 6 THRU 15

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	SUPERSTRUCTURE NET	OVER-RUN	TOTAL	FINAL
361-B	Bituminous Concrete Pavement (Mod.)	Tons	102	15	117	
401-6	Concrete Class B (Mod.)	C.Y.	300	15	315	
402	Reinforcing Steel	LBS.	See Reinforcing Schedule			
403	Spiral Reinforcement (8,000 LB.)	L.S.	1	-	1	
404-A	Structural Steel	LBS.	353,375	7,065	360,440	
318	Tar Emulsion for Bridge Floors	Gal.	443	-	443	
312	Joint Sealer, Hot-poured El. Type	L.F.	193	-	193	



CAMBER DIAGRAM

NO Scale

STAGE I CONSTRUCTION

STRUCTURAL STEEL PLAN AND DETAILS

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

INTERSTATE PROJECT in the town of WESTMINSTER

INTERSTATE STA. 1423+80.2
UNDER
SA-4 (RELOCATED) STA. 10+00

THE CLARKESON ENGINEERING CO. INC.
CONSULTING ENGINEERS
BOSTON MASSACHUSETTS

SURVEYED BY	CHECKED BY DS & SB.	SCALE AS NOTED
DRAWN BY C.K.L.	IN CHARGE J.V.B.	DATE 12-6-57

PROJECT NO. I 91-1(17) SHEET 41 OF 149

CONTRACT NO. 1 41

BRATTLEBORO
BRM 2000 (9)

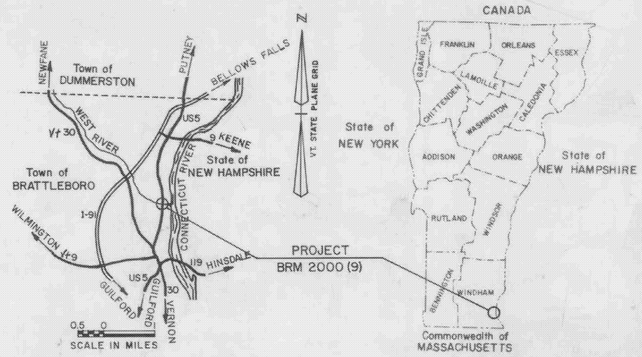
INDEX OF SHEETS

1	TITLE PAGE		
2	TYPICAL SECTIONS		
3	RAISED CURB DETAILS		
4-5	QUANTITY SHEETS		
6	ITEM DETAIL AND DRAINAGE SHEET		
7	PAVEMENTWORK AND GRADE SHEET		
8	BLANK		
9-14	RIGHT-OF-WAY DETAIL AND PLAN SHEETS		
15-20	PLAN AND PROFILE SHEETS		
21-30	UTILITY SHEETS		
31	PAVEMENT MARKINGS AND SIGNS		
32	STREET LIGHTING		
33	BLANK		
34-72	BP 100 SERIES - US ROUTE 5 OVER WEST RIVER		
73	BLANK		
74	B-5	EMBANKMENT ON EARTH SLOPES	12/06/71
75	B-11	METHODS OF SLOPE STABILIZATION	12/12/74R
76	C-1	VERTICAL GRANITE CURB	12/16/80R
77	C-2B	PORTLAND CEMENT CONCRETE SIDEWALK	12/14/71
78	C-3	SIDEWALK RAMPS	08/07/80
79	D-2	UNDERDRAIN DETAILS	12/16/76R
80	D-4	UNDERDRAIN FLUSHING BASINS	07/24/75R
81	D-6	REINFORCED CONCRETE DROP INLET W/GRATE (DITCHES)	04/04/78R
82	D-8	REINFORCED CONCRETE DROP INLET (BOTTOM SECTION)	12/06/71
83	D-9	REINFORCED CONCRETE DROP INLET W/VERTICAL CURB	12/06/71
84	D-15	CAST IRON GRATES TYPES D AND E	10/06/78R
85	E-2	ROAD CONSTRUCTION APPROACH SIGNS	03/04/81R
86	E-6	ON PROJECT CONSTRUCTION SIGNS	04/01/80R
87	E-7	DELINEATION AND BARRICADES FOR CONSTRUCTION AREAS	02/02/83R
88	E-7A	BARRICADE DETAILS	01/03/85R
89	E-8	TYPICAL MAJOR MAINTENANCE OPERATION	06/15/83R
90	E-39	STREET LIGHTING ITEM DETAILS	06/17/85R
91	E-40	TYPICAL BRIDGE LIGHTING DETAILS	01/02/85R
92	E-50	PAVEMENT MARKING DETAILS	09/20/85R
93	G-1	GUARD RAIL STANDARD STEEL BEAM W/WOOD POSTS TYPE II	12/21/84R
94	G-1D	ANCHOR FOR STEEL BEAM GUARD RAIL W/STEEL OR WOOD POST AT OPENINGS	12/21/84R
95	G-8A	APPROACH RAILING IN TRANSITION W/GUARD RAIL STANDARD STEEL BEAM	07/01/78R
96	G-14	BREAKAWAY CABLE TERMINAL FOR GUARD RAIL, STEEL BEAM WITH WOOD POSTS TYPE II	12/21/84R
97	J-1	BOUNDARY MARKERS	06/27/80
98	J-2	METAL YARD RAILING	08/21/81R
99	SR-R1-71	ALUMINUM RAILING DETAILS SHT. 1 OF 2	07/01/77R
100	SR-R1-71	ALUMINUM RAILING DETAILS SHT. 2 OF 2	07/01/77R
101	SCB-D1-75	GENERAL INFORMATION	09/14/81R
102	SCB-D4-76	PLAN AND REINFORCEMENT LAYOUT AT ABUTMENT	10/12/83R
103	SCB-D6-73	SCUPPER, CURB CONSTRUCTION DETAILS	01/08/79R
104	SCB-D7-71	DRIP PLATE AND BEAM HAUNCH DETAILS	12/15/76R
105	T-1	TEMPORARY EROSION CONTROL DETAILS	12/07/76R
106	T-2	TEMPORARY EROSION CONTROL DETAILS	07/05/72
107-124		ROADWAY CROSS SECTIONS	

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT

TOWN OF BRATTLEBORO
COUNTY OF WINDHAM
U.S. ROUTE 5-PUTNEY ROAD (F.A.S.)



BEGINNING AT A POINT 2.283 MILES SOUTHERLY OF THE BRATTLEBORO-DUMMERSTON TOWN LINE AND EXTENDING NORTHERLY 0.095 MILES.

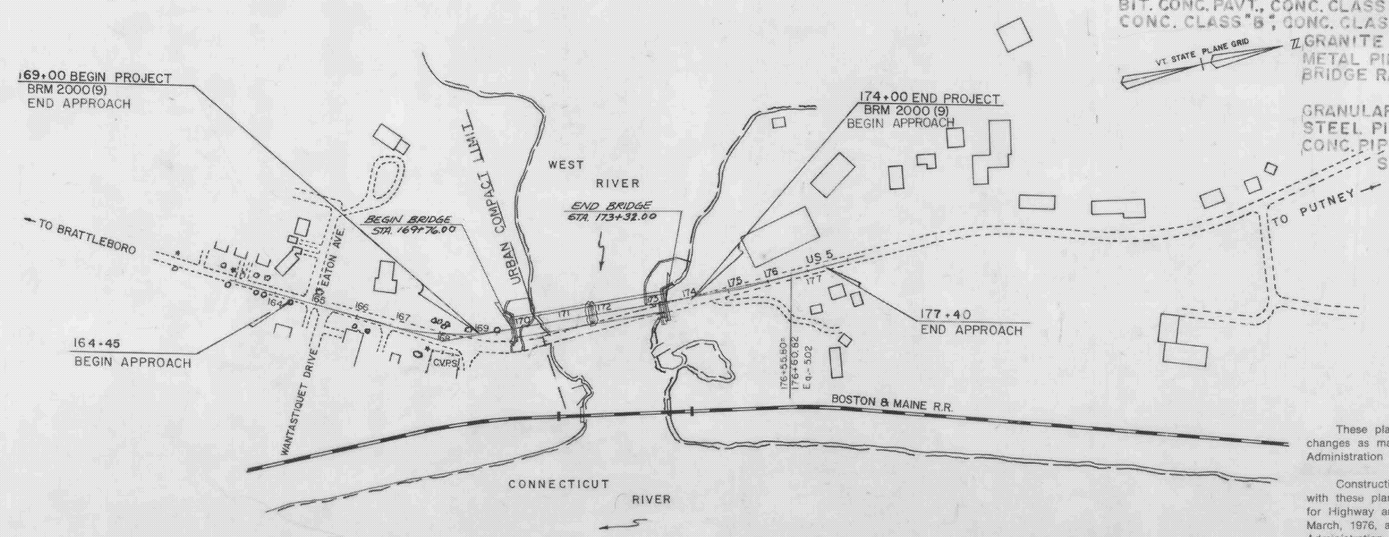
LENGTH OF ROADWAY	144.0 FT. =	0.028	MILES
LENGTH OF BRIDGE	356.0 FT. =	0.067	MILES
LENGTH OF PROJECT	500.0 FT. =	0.095	MILES

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES REPLACING STEEL TRUSS BRIDGE NO. 8 AND NECESSARY ROADWAY APPROACHES.

TRAFFIC DATA
1985 ADT = 15090
2005 ADT = 23840
2005 DHV = 1520
D = 52%
T = 2%
V = 30 MPH

RECORD PLANS AND MATERIAL SUPPLIERS
CONTRACTOR: BRIDGE CONSTRUCTION P.O. BOX 229 AUGUSTA, ME.
RESIDENT ENGINEER: RONALD L. STANCLIFF
CONTRACT DATED: AUGUST 14, 1986
CONSTRUCTION BEGAN: AUGUST 18, 1986.
CONSTRUCTION SUSPENDED: DEC. 19, 1986 CONSTRUCTION RESUMED: MAR. 23, 1987
CONSTRUCTION COMPLETION: NOV. 12, 1987 CONSTRUCTION ACCEPTED - DEC. 9, 1987
RECORD PLANS: ROBERT E. SMITH
SUBBASE OF GRAVEL, SUBBASE OF DENSE GRADED CRUSHED STONE, PLANT MIX BASE COURSE
REINF. STEEL: RUSCO STEEL CO., WARWICK, R.I.
STRUCTURAL STEEL: HIGH STEEL STRUCTURES, INC. 1905 OLD PHILADELPHIA PIKE LANCASTER, PA.
GUARD RAIL: TRINITY INDUSTRIES INC. LIMA, OH.
BIT. CONC. PAVT., CONC. CLASS "A" FRANK W. WHITCOMB CONST. CORP., WALPOLE, N.H.
CONC. CLASS "B", CONC. CLASS "C": BRATTLEBORO SAND & GRAVEL BRATTLEBORO, VT.
GRANITE BRIDGE CURB: BARRETO GRANITE CO. MILFORD, N.H.
METAL PIPE, CAST IRON GRATE W/FRAME - NORTHEASTERN CULVERT CORP. WESTMINSTER VT
BRIDGE RAILING: WARD WEKKER HUDSON MA.
GRANULAR BORROW: STUBS INC. BRATTLEBORO, VT.
STEEL PILING - BETHLEHEM STEEL CORP. BETHLEHEM, PA.
CONC. PIPE: S.T. GRISWOLD CO. INC. WILLISTON, VT.
STREET LIGHTING: A.D. ELECTRIC, SABATTUS, ME.

NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES, AMOUNTS OR OTHER DETAILS RELATIVE TO THIS PROJECT MAY BE OBTAINED EITHER THE FIELD OFFICE OR THE PROJECT FILE.



CONVENTIONAL SIGNS

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
TOP OF CUT
TOE OF SLOPE

DATUM
VERTICAL NGVD 1929
HORIZONTAL NAD 1927

These plans are subject to such engineering changes as may be required by the Federal Highway Administration or the Chief Engineer.

Construction is to be carried on in accordance with these plans and the Standard Specifications for Highway and Bridge Construction dated March, 1976, as approved by the Federal Highway Administration on October 27, 1976 for use on this project, including all subsequent revisions and such revised specifications and special provisions as are incorporated in these plans.

STATEWIDE - SOUTHEAST
REGION
BHF MEMB(21)

SHEET 28 OF 34
BRIDGE 8
FOR REFERENCE ONLY

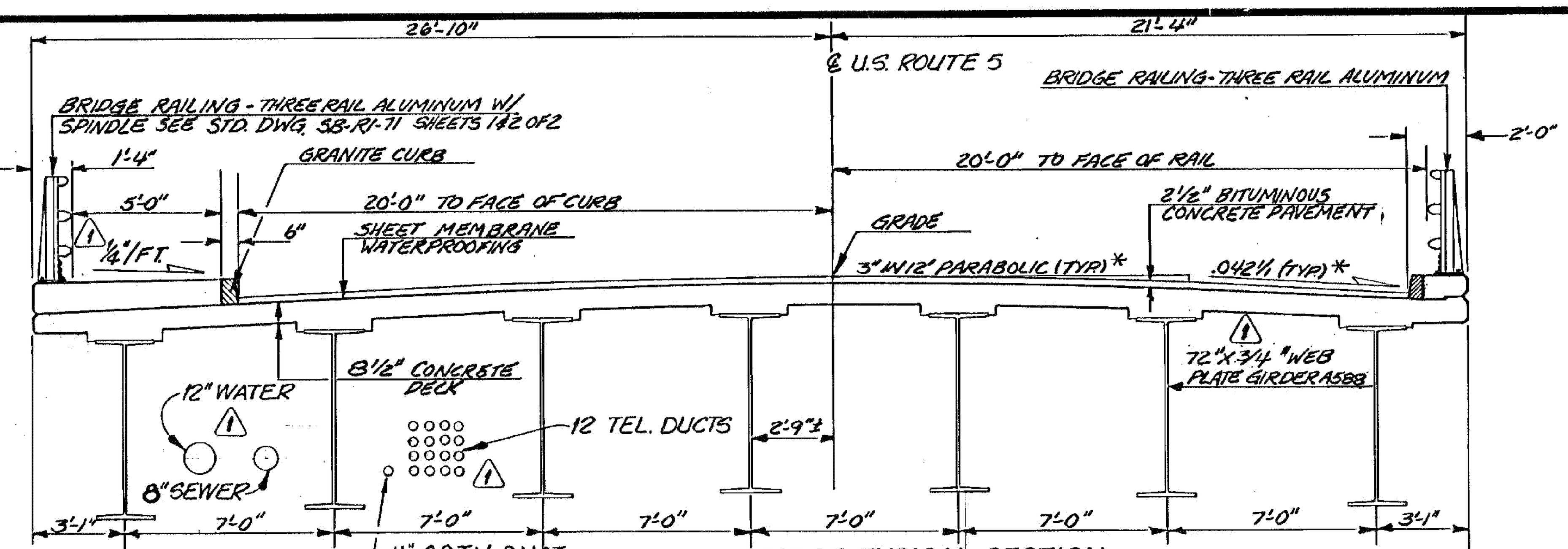
SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD
APPROVED [signature] DATE 8-15-86
CHIEF ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED _____ DATE _____
DIVISION ADMINISTRATOR

PROJECT BRM Nº 2000 (9)
SHEET 1 OF 124 SHEETS

D-10 S.R.S. 12/17/70

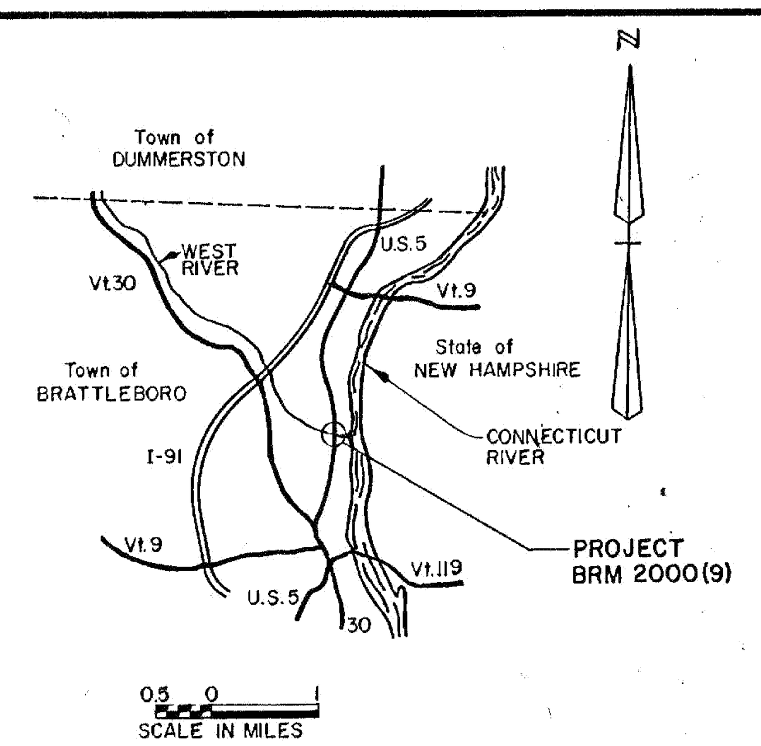
NEW HIGHWAY SECTION —



BRIDGE TYPICAL SECTION

SCALE: ¼" = 1'-0"

*EXCEPT FROM STA. 169+76 TO STA. 170+50± (SEE BANKING DIAG. SHT. 21 OF HWY. PLANS)



PROJECT LOCATION

CONSTRUCTION SEQUENCE

STAGE 1

1. CONSTRUCT TEMPORARY FOOT BRIDGE.
2. CONSTRUCT ENTIRE ABUTMENT #1 EXCEPT FOR WINGWALL NO. 2. REMOVE EXISTING SIDEWALK AS REQUIRED.
3. CONSTRUCT ENTIRE PIER. REMOVE EXISTING SIDEWALK AS REQUIRED.
4. CONSTRUCT PORTION OF ABUTMENT #2 REQUIRED FOR STAGE I SUPERSTRUCTURE, INCLUDING THE APPROACH SLAB AND SHEETING. REMOVE EXISTING SIDEWALK AS REQUIRED.
5. CONSTRUCT STAGE I SUPERSTRUCTURE. INSTALL UTILITIES IN FINAL LOCATION. INSTALL TEMPORARY BARRIER RAIL, MEMBRANE, PAVEMENT, ETC.

CONSTRUCTION SEQUENCE

STAGE II

1. DEMOLISH EXISTING BRIDGE.
2. CONSTRUCT REMAINING PORTIONS OF SUBSTRUCTURE.
3. ERECT REMAINING STEEL GIRDERS AND DIAPHRAGMS EXCEPT DO NOT CONNECT DIAPHRAGMS BETWEEN STAGE I AND STAGE II GIRDERS.
4. PLACE 18'- 10" OF STAGE II DECK LEAVING A 2'-6" CLOSURE SECTION ADJACENT TO THE STAGE I DECK. INSTALL STAGE II CURB AND RAILING. PLACE 14'-0" OF BITUMINOUS CONCRETE BINDING COURSE ADJACENT TO CURB.
5. PLACE CHANNELIZING DEVICES ON WEST SIDE OF STAGE II CONSTRUCTION TO FORM ONE TRAFFIC LANE (MIN. WIDTH = 13'-9"). COVER CLOSURE SECTION WITH PLYWOOD.
6. TRANSFER NORTHBOUND LANE OF TRAFFIC FROM STAGE I DECK TO EAST SIDE OF STAGE II DECK. REMOVE EASTERLY TEMPORARY BARRIER RAIL ON THE STAGE I DECK AND REPLACE WITH CHANNELIZING DEVICES PLACED TO KEEP THE SOUTHBOUND TRAFFIC AS CLOSE TO THE WEST SIDE OF THE BRIDGE AS POSSIBLE (MIN. 13'-9" LANE).
7. CONNECT DIAPHRAGMS BETWEEN STAGE I AND STAGE II GIRDERS. PLACE 2'-6" CONCRETE CLOSURE PIECE IN DECK. INSTALL REMAINDER OF MEMBRANE WATERPROOFING AND BINDER COURSE.
8. MOVE THE CHANNELIZING DEVICES ON THE WEST SIDE OF THE STAGE II DECK TO THE WEST UNTIL THERE IS SUFFICIENT ROOM (MIN. 24'-0) FOR TWO LANES OF TRAFFIC. ROUTE THE SOUTHBOUND TRAFFIC ONTO THE WEST SIDE OF THE LANE JUST FORMED.
9. REPLACE CHANNELIZING DEVICES ON THE EAST SIDE OF STAGE I DECK WITH THE TEMPORARY BARRIER RAIL REMOVED EARLIER (STEP 6) FROM, THE EAST SIDE OF STAGE I CONSTRUCTION.
10. REMOVE TEMPORARY BARRIER RAIL ON WEST FASCIA AND CONSTRUCT NEW SIDEWALK AND RAILING ON STAGE I DECK.
11. REMOVE REMAINING TEMPORARY BARRIER RAIL AND PLACE FINAL BITUMINOUS CONCRETE WEARING COURSE.

GENERAL NOTES

1. THE GENERAL NOTES PERTAINING TO MATERIALS AND CONSTRUCTION SHOWN ON STANDARD DRAWING SCB-D1-75 SHALL ALL APPLY EXCEPT NOTES 2 AND 8.
2. THE CONSTRUCTION SHALL BE ACCOMPLISHED IN TWO STAGES AND TWO WAY TRAFFIC MAINTAINED AS DIRECTED IN "CONSTRUCTION SEQUENCE".
3. THE EXISTING STRUCTURE SHALL BE REMOVED UNDER THE ITEM "REMOVAL OF STRUCTURE". THE EXISTING ABUTMENTS AND PIERS SHALL BE COMPLETELY REMOVED WHERE NEW ABUTMENTS OR WINGWALLS ARE TO BE PLACED AND REMOVED TO 4 FEET BELOW FINISH ELEVATIONS OF THE ROADWAY OR 1 FOOT BELOW THE CHANNEL ELSEWHERE.
4. REMOVAL SHALL BE DONE IN A SAFE, WORKMANLIKE MANNER. ALL MATERIALS REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
5. A TEMPORARY PEDESTRIAN BRIDGE SHALL BE ERECTED AT START OF STAGE I CONSTRUCTION. SECTIONS OF SIDEWALK ON EXISTING BRIDGE REMOVED DURING STAGE I TO ALLOW SUBSTRUCTURE CONSTRUCTION SHALL BE INCLUDED UNDER THE STAGE II ITEM "REMOVAL OF STRUCTURE".
6. THE DESIGN LOADING FOR THE PIER PILES (HP 14x89) IS 235 KIPS AND FOR THE ABUTMENT #2 PILES (HP 12x53) 140 KIPS. ALL PILES SHALL BE DRIVEN TO ROCK.
7. FOR INFORMATION ABOUT "COFFERDAM AT STATION 171+54". SEE SPECIAL PROVISIONS. PRICE FOR COFFERDAM SHALL INCLUDE PRICE OF PLACING COFFERDAM SEAL AND EXCAVATION FOR PIER.
8. ABUTMENT #1 SHALL BE CONSTRUCTED ON SOUND ROCK WITH A CONCRETE SUBFOOTING BELOW ELEVATIONS NOTED FOR BOTTOM OF FOOTING. SUBFOOTING SHALL BE CONCRETE CLASS C.
9. DECK CONCRETE SHALL BE CONCRETE CLASS A. ALL OTHER CONCRETE SHALL BE CONCRETE CLASS B EXCEPT ABUTMENT #1 SUBFOOTING WHICH SHALL BE CONCRETE CLASS C.
10. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BOTH SUBSTRUCTURE AND SUPERSTRUCTURE, EXCEPT THE BOTTOM OF THE DECK BETWEEN DRIP NOTCHES.
11. 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.
12. ALL STRUCTURAL STEEL SHALL BE ASTM A588 UNPAINTED, UNLESS OTHERWISE NOTED.

LIST OF BRIDGE SHEETS

BR 101	PRELIMINARY INFORMATION
BR 102	BRIDGE QUANTITY SHEET
BR 103	PLAN AND ELEVATION
BR 104-106	BORING LOGS
BR 107	TYPICAL SECTION
BR 108	BRIDGE DECK DETAILS
BR 109	SCUPPER AND RAILING DETAILS
BR 110	DECK EXPANSION JOINT - STAGE 1
BR 111	DECK EXPANSION JOINT - STAGE II
BR 112	DECK EXPANSION DAM - OPTION
BR 113	APPROACH SLAB DETAILS
BR 114	FRAMING PLAN
BR 115	GIRDER ELEVATION
BR 116	CROSS FRAME DETAILS
BR 117	BEARING DEVICE DETAILS
BR 118	ABUTMENT #1 PLAN AND ELEVATION
BR 119	WINGWALLS #1 & #2 DETAILS
BR 120	PIER DETAILS
BR 121	ABUTMENT #2 PLAN AND ELEVATION
BR 122	WALLS #3 & #4 PILES & SECTIONS
BR 123-125	REINFORCING STEEL SCHEDULES
BR 126-139	CHANNEL SECTIONS

STANDARDS

E-40	REVISED 1/2/85
G-8A	REVISED 7/01/78
SB-R1-71	(SHEET 1 OF 2) REVISED 2/11/85
SB-R1-71	(SHEET 2 OF 2) REVISED 7/1/77
SCB-D1-75	REVISED 9/14/81
SCB-D4-76	REVISED 10/12/83
SCB-D6-73	REVISED 1/03/79
SCB-D7-71C&F	REVISED 12/15/76

EXISTING STRUCTURE

1. STRUCTURE TYPE STEEL TRUSS BRIDGE OVERALL LENGTH 393' INVENTORY RATING 15 TONS
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 30 - 30 - 325.33
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 28 - 28.25 - 321.33
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 7410 sq.ft. to 100 yr. ELEV. VERTICAL CLEARANCE ABOVE STREAMBED 44'±
5. WATER SURFACE ELEVATION @ Q 2.33 227.4 WATER SURFACE ELEVATION @ Q 100 ELEV. 232.8
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD 238 YEAR 1936 ESTIMATED DISCHARGE
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? YES IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? N/A ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF N/A
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL ABUT. #1, PIER #1, PIER #2 - LEDGE ABUT. #2 - ?
9. DISPOSITION OF STRUCTURE TO BE REMOVED

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE 2-SPAN CONTINUOUS PLATE GIRDER BRIDGE OVERALL LENGTH 356'-0"
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS SPAN #1 = 176'-0", SPAN #2 = 176'-0"
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 44'
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM SPAN #1 = 174'-6", SPAN #2 = 174'-6"
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 6977 SQ. FT. TO 100 YR. ELEV.
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? YES

HYDRAULIC DATA:

1. Q 2.33 8000 cfs WATER ELEVATION 227.4 VELOCITY 1.6 fps.
   Q 10 16500 cfs WATER ELEVATION 229.8 VELOCITY 2.8 fps.
   Q 25 22000 cfs WATER ELEVATION 231.1 VELOCITY 3.4 fps.
   Q 50 25600 cfs WATER ELEVATION 232.0 VELOCITY 3.8 fps.
   Q 100 30000 cfs WATER ELEVATION 232.8 VELOCITY 4.3 fps.
2. DRAINAGE AREA 423 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 LEDGE, SAND, GRAVEL
6. ESTIMATED SCOUR DEPTH 0-6' COMMENT ON: DRIFT SLIGHT ICE HEAVY
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 N/A
8. VERTICAL CLEARANCE ABOVE Q 100 = 46' @ ABUT. #2
9. ALLOWABLE WATER SURFACE ELEVATION 232.8 LIMITED BY EXISTING CONDITIONS
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? YES IF YES, DESCRIBE BACKWATER FROM VERNON DAM
11. AVERAGE DAILY LOW FLOW 400 cfs DEPTH ELEV 220.1 AVERAGE DAILY HIGH FLOW 1500 cfs DEPTH ELEV 221.0
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED TYPE IV
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 5100' SPAN 3@ TOTAL = 989 WATERWAY AREA OF FULL OPENING Q
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 200' SPAN 3 @ 50' - 200'-50' WATERWAY AREA OF FULL OPENING Q

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS-25-44 (NO FUTURE PAVEMENT ALLOWANCE)
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4.0 KSF ON LEDGE 10.0 KSF
3. ALLOWABLE LOAD FOR PILING SEE NOTE 6 TYPE SEE NOTE 6 ESTIMATED LENGTH PIER-30', ABUT #2-60'
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 1400 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 YES * OR ON TEMPORARY BRIDGE NO
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY PEDESTRIAN * TRAFFIC CONTROL SIGNALS REQUIRED NO
   MINIMUM CLEAR SPAN MINIMUM CLEAR HEIGHT MINIMUM WATERWAY AREA
   ARE SIDEWALKS REQUIRED? IF SO, ON WHAT SIDE? N/A

* PEDESTRIAN TRAFFIC TO BE MAINTAINED ON THE TEMPORARY FOOT BRIDGE & 2 WAY VEHICULAR TRAFFIC IS TO BE MAINTAINED FIRST ON THE EXISTING BRIDGE AND THEN ON ½ OF THE NEW BRIDGE.

ADDITIONAL DESIGN CONSIDERATIONS

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 29 OF 34
BRIDGE 8
FOR REFERENCE ONLY

LOAD RATING (TONS) ⚠1

STRESS LEVELS	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
			TRUCK				
INVENTORY 0.55 Fy = 27	50	49					
POSTED 0.67 Fy = 33.5	82		94		84	85	91
OPERATING 0.75 Fy = 37.5			116	125			

RECOMMENDED FOR APPROVAL Warren B. Tripp 10/28/83 STRUCTURES ENGINEER DATE

RECOMMENDED FOR APPROVAL Arthur Goss 10/28/83 CHIEF OF DESIGN DATE

APPROVED BY S. J. Gage 10/31/83 DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS

NO.	DESCRIPTION	BY & DATE
⚠1	BRIDGE TYPICAL SECTION REVISED FOR SIDEWALK SLOPE, UTILITIES AND GIRDER WEB, LOAD RATINGS ADDED.	J. J. WALSH 7-84

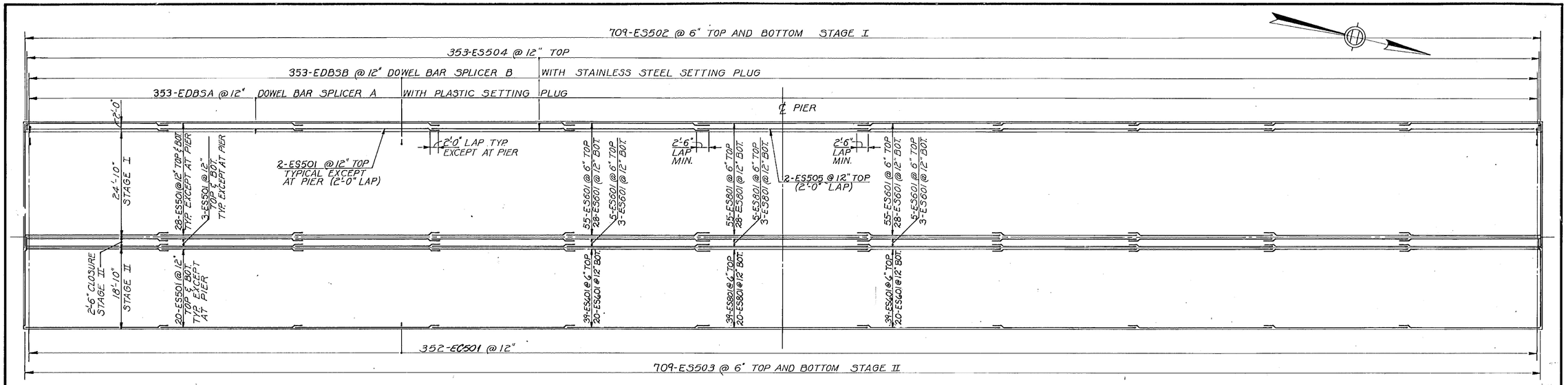
STATE OF VERMONT PROFESSIONAL ENGINEER RICHARD J. MILLER No. 4454 REGISTERED

BARNES & JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS. 02116

STATE OF VERMONT
AGENCY OF TRANSPORTATION

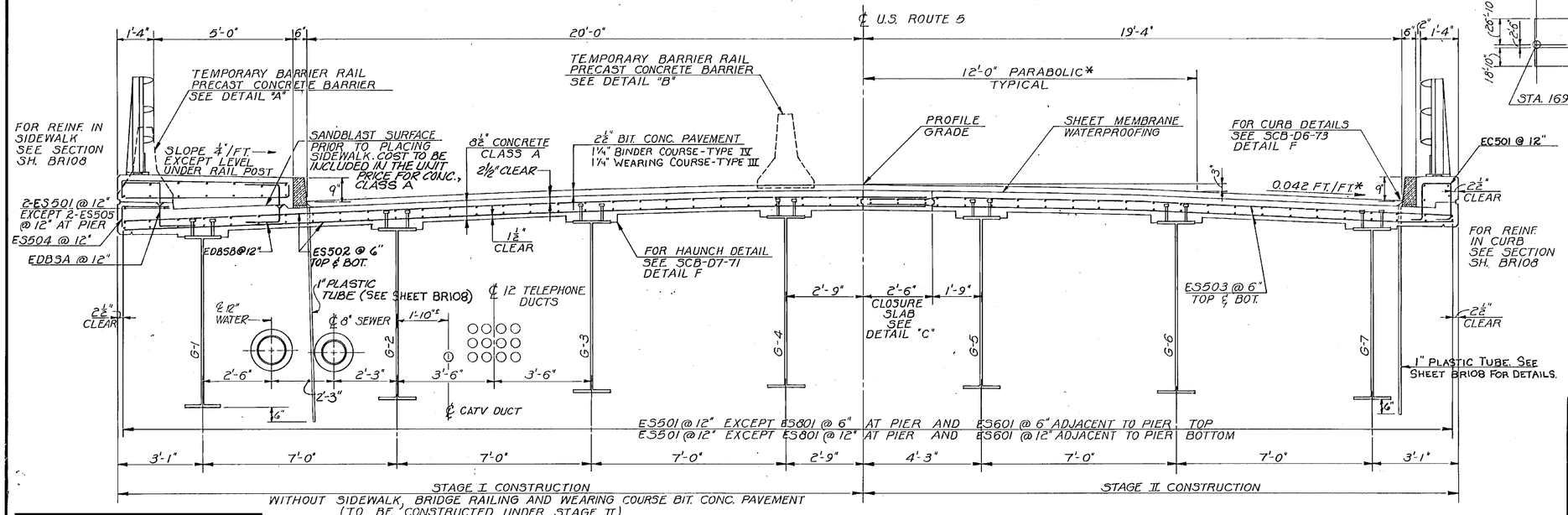
TOWN OF BRATTLEBORO	Bridge No. 8
	Log Sta.
HIGHWAY NO. U.S. RTE. 5	Surv. Sta. 171+59
U.S. RTE. 5 OVER WEST RIVER	
PRELIMINARY INFORMATION	
Designed by J.B. McCARTHY	Drawn by L. C. GATES
Checked by J.B. McCARTHY date 9/83	Bridge Design Supervisor Charles W. Terenzio date 1/85
PROJECT BRATTLEBORO	PROJECT NO. BRM 2000(9)
Bridge Sheet No. BR101	Sheet 34 of 124

Makepeace P-4652



DECK REINFORCEMENT PLAN

SCALE: $\frac{3}{32}$" = 1'-0"

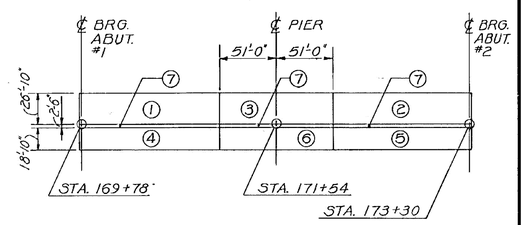


TYPICAL BRIDGE SECTION

SCALE: $\frac{1}{2}$" = 1'-0"

* EXCEPT FROM STA. 169+76.00 TO STA. 170+50± SEE BANKING DIAGRAM SHEET 21 OF HWY. PLANS

NOTE: ALL SUPERSTRUCTURE REINFORCING STEEL SHALL BE EPOXY COATED (DESIGNATED BY PREFIXES "E" & "EC").



POUR SEQUENCE

SCALE: 1" = 60'

NOTES:

1. THE BRIDGE RAILING SHALL BE 3 RAIL ALUMINUM. RAILING ON THE SIDEWALK SIDE (WEST FASCIA) SHALL HAVE SPINDLES, SEE STANDARD DWG. SB-R1-71.
2. SEE STANDARD DWG. SCB-D7-71, DETAIL F FOR GIRDER HAUNCH AND SHEAR CONNECTOR DETAILS.
3. FOR DETAILS "A", "B", AND "C" SEE BR108.
4. FOR UTILITY SUPPORT DETAILS SEE BR116.
5. DECK POURS ① AND ② AND ④ AND ⑤ MAY BE COMBINED IF THE CONTRACTOR CAN DEMONSTRATE HIS ABILITY TO DO SO IN AN 8HR. PERIOD.

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 30 OF 34
BRIDGE 8
FOR REFERENCE ONLY

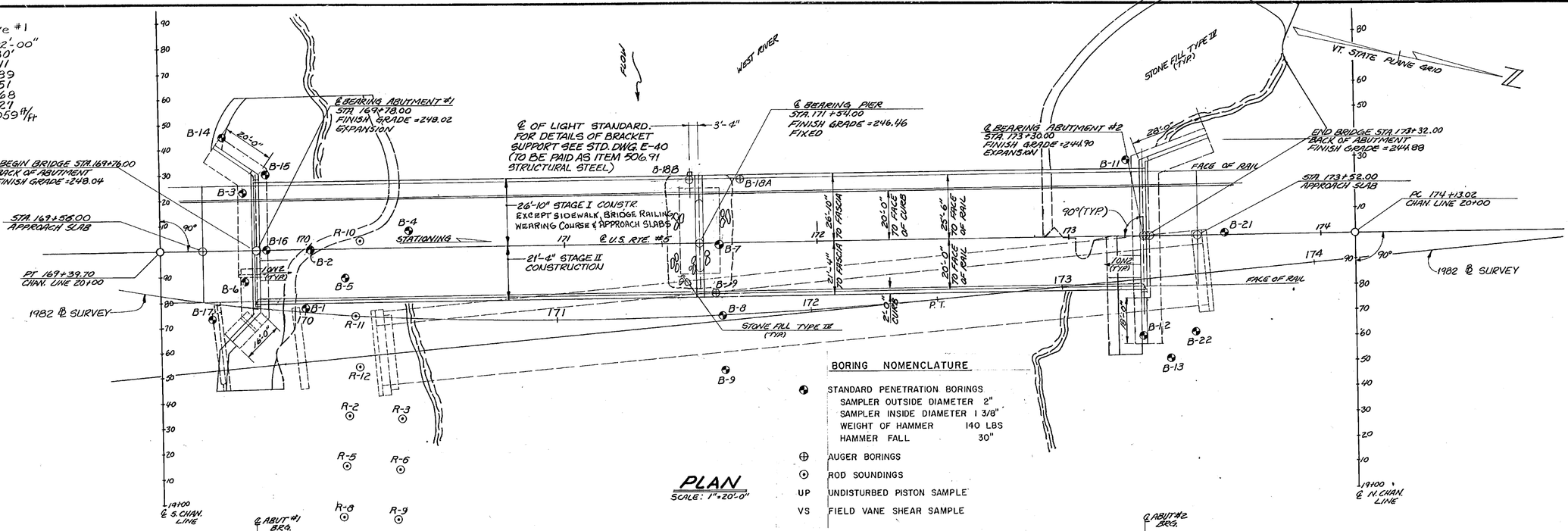
BARNES & JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS. 02116

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF BRATTLEBORO	Bridge No. 8
HIGHWAY NO. U.S. RTE. 5	Log Sta. / Surv. Sta. 171+54
U.S. RTE. 5 OVER WEST RIVER	
TYPICAL SECTION	
Designed by J. J. WALSH	Drawn by C. R. GAY
Checked by J. J. WALSH date 7-84	Bridge Design Supervisor Charles W. Terenzio date 1/85
PROJECT BRATTLEBORO	PROJECT NO. BRM2000(9)
Bridge Sheet No. BR107	Sheet 40 of 124

BR
BRIJNING 44-131 SR304

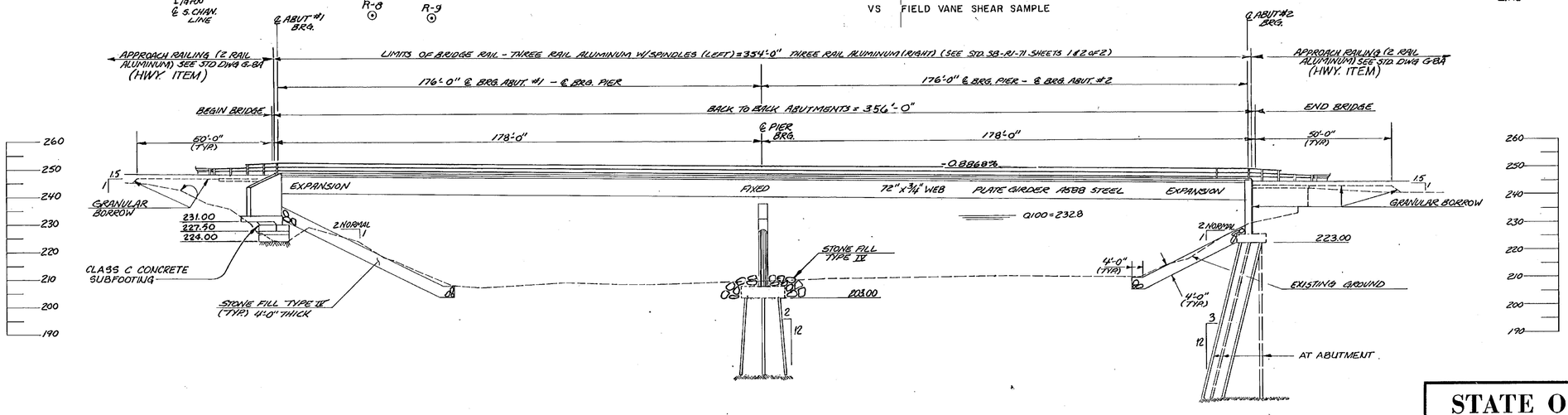
Curve #1
Δ 25°-02'-00"
D 9°-30'
R 603.11
T 133.89
L 263.51
E 14.68
2T-L 4.27
Bank 0.059 ft/ft



PLAN
SCALE: 1" = 20'-0"

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



ELEVATION @ RIGHT FASCIA
SCALE: 1" = 20'-0"

STATEWIDE - SOUTHEAST
REGION
BHF MEMB(21)

SHEET 31 OF 34
BRIDGE 8
FOR REFERENCE ONLY

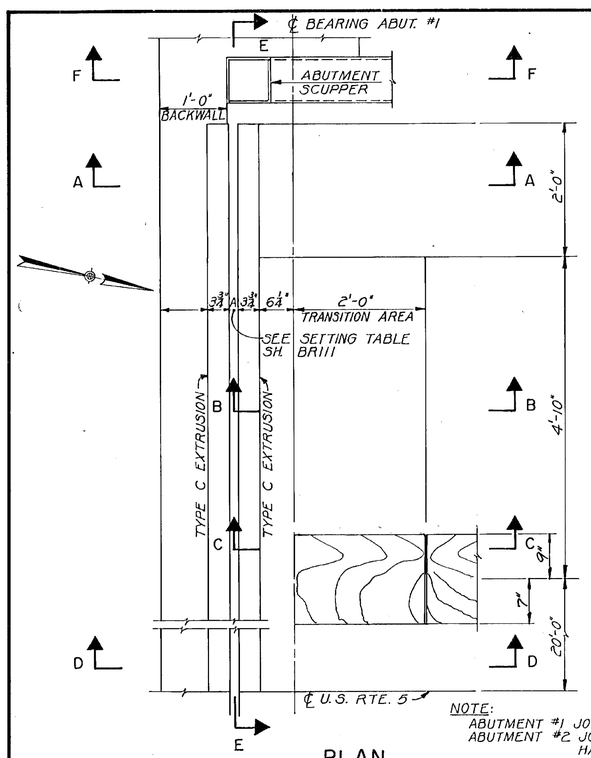
BARNES & JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS. 02116

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF BRATTLEBORO	Bridge No. 8
	Log Sta.
HIGHWAY NO. U.S. RTE. 5	Surv. Sta. 171+54
U.S. RTE. 5 OVER WEST RIVER	
PLAN AND ELEVATION	
Designed by J.B. McCARTHY	Drawn by L.C. GATES
Checked by J.B. McCARTHY date 9-83	Bridge Design Supervisor Charles W. Terenzio date 11/85
PROJECT BRATTLEBORO	PROJECT NO. BRM 2000(9)
Bridge Sheet No. BR 103	Sheet 36 of 124

BRUNING 44-131 58584

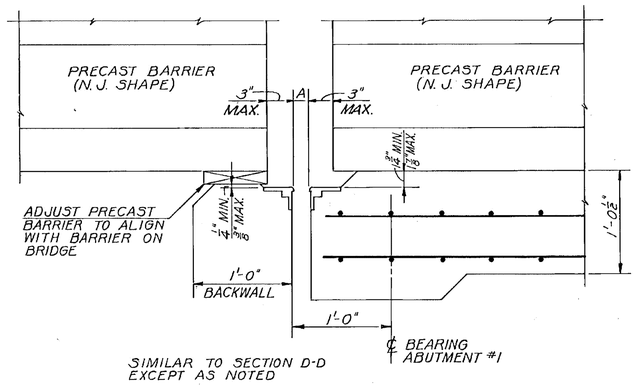
BR-6-'83



NOTE:
ABUTMENT #1 JOINT SHOWN
ABUTMENT #2 JOINT OPPOSITE HAND

PLAN

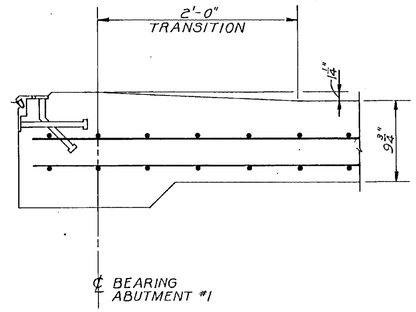
SCALE: 1" = 1'-0"



SIMILAR TO SECTION D-D EXCEPT AS NOTED

SECTION A-A

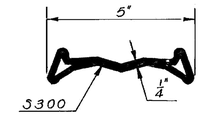
SCALE: $1\frac{1}{2}$" = 1'-0"



SECTION B-B

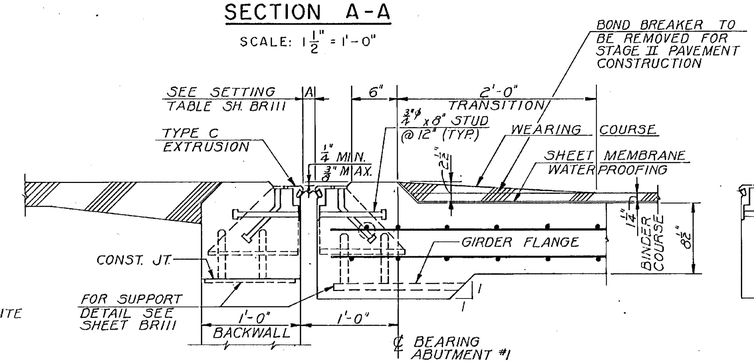
SCALE: $1\frac{1}{2}$" = 1'-0"

SIMILAR TO SECTION D-D EXCEPT AS NOTED



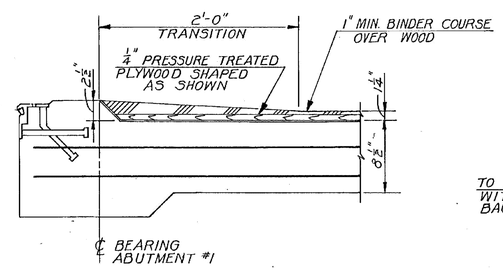
NEOPRENE SEAL

NOT TO SCALE



SECTION D-D

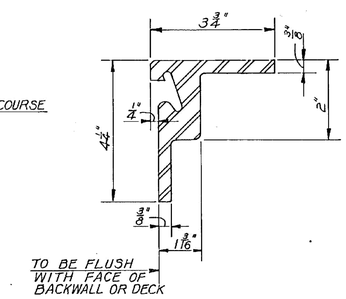
SCALE: $1\frac{1}{2}$" = 1'-0"



SECTION C-C

SCALE: $1\frac{1}{2}$" = 1'-0"

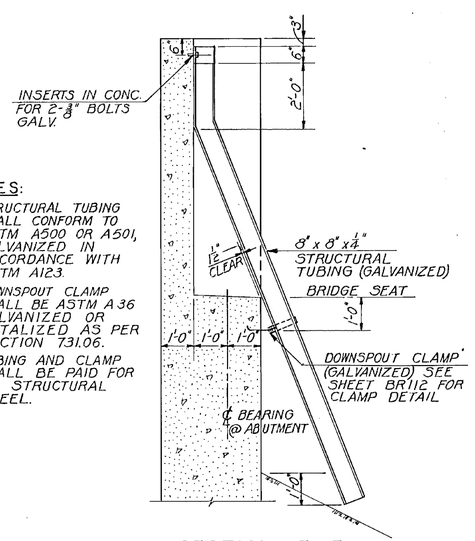
SIMILAR TO SECTION D-D EXCEPT AS NOTED



STEEL EXTRUSION

(TYPE C)

SCALE: $\frac{1}{2}$" = 1'-0"

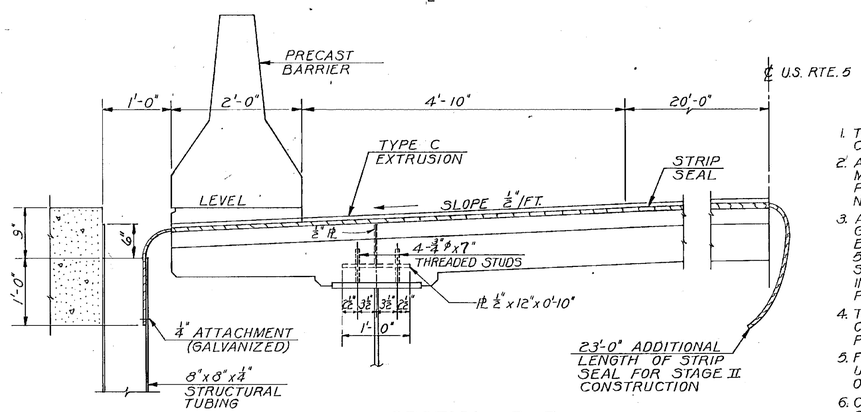


NOTES:

1. STRUCTURAL TUBING SHALL CONFORM TO ASTM A500 OR A501, GALVANIZED IN ACCORDANCE WITH ASTM A123.
2. DOWNSPOUT CLAMP SHALL BE ASTM A36 GALVANIZED OR METALIZED AS PER SECTION 731.06.
3. TUBING AND CLAMP SHALL BE PAID FOR AS STRUCTURAL STEEL.

SECTION F-F

SCALE: $\frac{1}{2}$" = 1'-0"



SECTION E-E

SCALE: 1" = 1'-0"

NOTES

EXPANSION JOINT (SINGLE SEAL)

1. THE FINAL FINISH OF THE EXPANSION JOINT SHALL BE COVERED DURING THE PLACING OF THE BRIDGE DECK CONCRETE.
2. ALL STEEL COMPONENTS SHALL BE ASTM A36 GALVANIZED OR METALIZED AS PER SECTION 731.06 OF GENERAL SPECIAL PROVISIONS FOR BEARING MATERIALS UNLESS OTHERWISE NOTED.
3. ALL SIDEWALK PLATES SHALL BE ASTM A36 STEEL AND GALVANIZED. SIDEWALK PLATES AND WELDED STUDS SHALL BE INCLUDED IN THE COST PER LINEAR FOOT BID FOR ITEM 516.21 "ELASTOMERIC EXPANSION JOINT (SINGLE SEAL)". THE SIDEWALK PLATES SHALL BE GALVANIZED AND PAINTED GRAY IN COLOR (FED. COLOR NO. 24693) IN ACCORDANCE WITH THE SPECIAL PROVISION 708.09 "PAINTING HOT DIP GALVANIZED STEEL".
4. THE EXTRUSION, TYPE C, SHALL BE CONTINUOUS FOR EACH STAGE OF CONSTRUCTION AND WELDED TOGETHER BEFORE CONCRETE CLOSURE PIECE IS PLACED. THE NEOPRENE SEAL SHALL BE CONTINUOUS.
5. FOR $\frac{1}{2}$" TO $\frac{3}{4}$" PLATES, USE $\frac{1}{4}$" FILLET WELD. FOR $\frac{3}{4}$" TO $1\frac{1}{2}$" PLATES, USE $\frac{3}{8}$" FILLET WELD. GROOVE WELDS SHALL BE FOR $\frac{1}{2}$ DEPTH OF PLATE. ALL PLATES SHALL BE WELDED BOTH SIDES.
6. COAT CONCRETE CONTACT SURFACES WITH AN EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SECTION 719.03. PAYMENT TO BE INCLUDED UNDER THE UNIT PRICE BID FOR ITEM 516.21 "ELASTOMERIC EXPANSION JOINT (SINGLE SEAL)".
7. OPTIONAL DESIGN FOR ITEM 516.21 "ELASTOMERIC EXPANSION JOINT (SINGLE SEAL)" AS SHOWN ON SHEET BR112 MAY BE SUBMITTED.

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

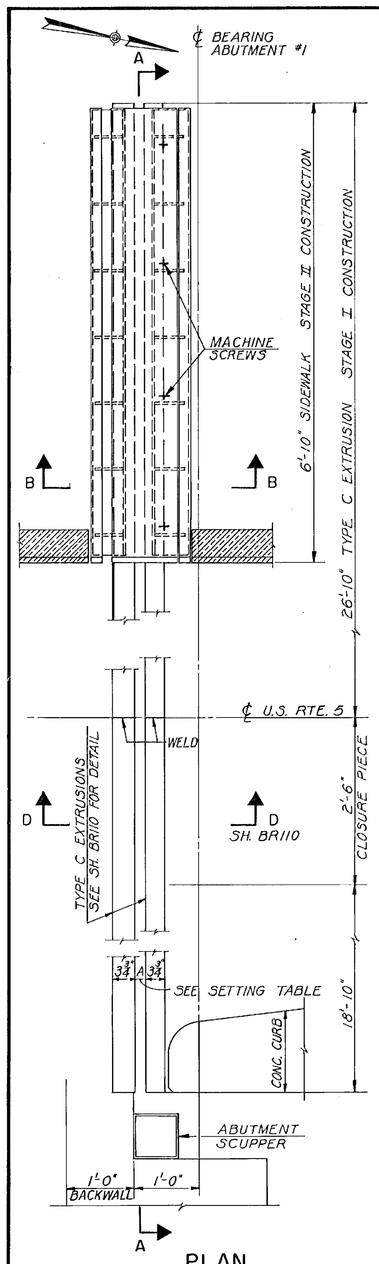
SHEET 32 OF 34
BRIDGE 8
FOR REFERENCE ONLY

BARNES & JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS. 02116

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF BRATTLEBORO	Bridge No. 8
HIGHWAY NO. U.S. RTE. 5	Log Sta. / Surv. Sta. 171+54
U.S. RTE. 5 OVER WEST RIVER DECK EXPANSION JOINT - STAGE I	
Designed by J. V. WALSH	Drawn by C. R. GAY
Checked by J. V. WALSH date 7-84	Bridge Design Supervisor Charles W. Terenzio date 1/85
PROJECT BRATTLEBORO	PROJECT NO. BRM2000(9)
Bridge Sheet No. BR110	Sheet 43 of 124

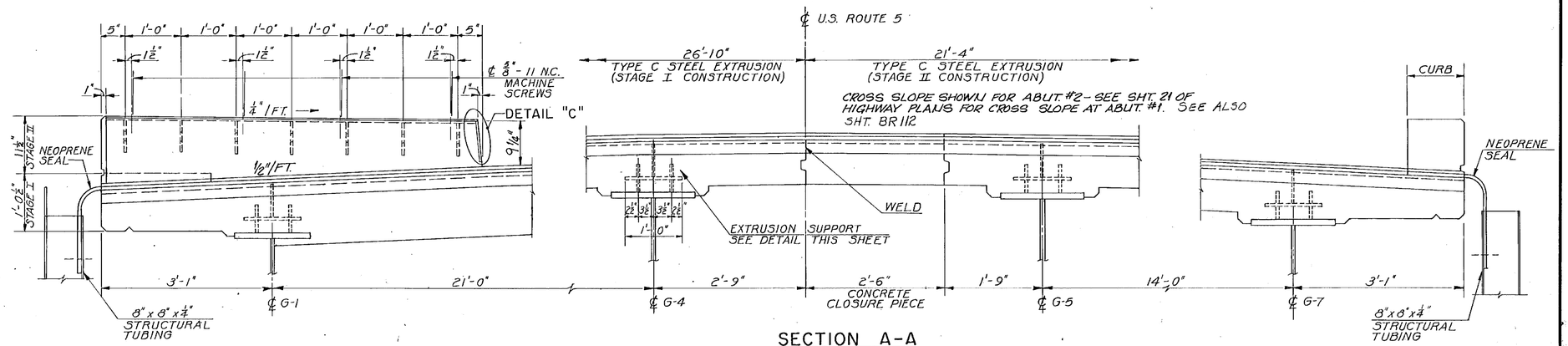
BR-6-'83



PLAN
ABUTMENT #1 JOINT

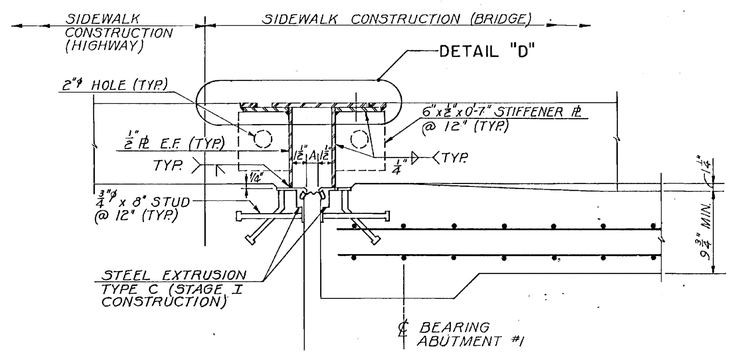
SCALE: 1" = 1'-0"

NOTE: ABUTMENT #2 JOINT OPPOSITE HAND EXCEPT ROADWAY CROSS SLOPE



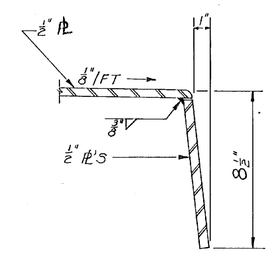
SECTION A-A

SCALE: 1" = 1'-0"



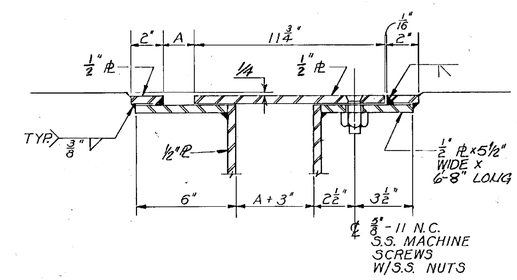
SECTION B-B

SCALE: 1½" = 1'-0"



DETAIL "C"

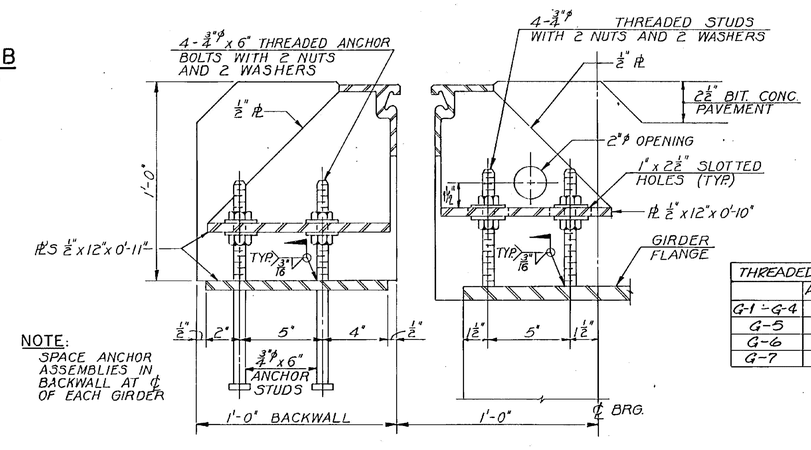
SCALE: 3" = 1'-0"



DETAIL "D"

SCALE: 3" = 1'-0"

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



NOTE: SPACE ANCHOR ASSEMBLIES IN BACKWALL AT ℄ OF EACH GIRDER

EXTRUSION SUPPORT DETAIL

SCALE: 3" = 1'-0"

THREADED STUD LENGTH		
	ABUT #1	ABUT #2
G-1 - G-4	7"	7"
G-5	9"	7"
G-6	12"	7"
G-7	12"	7"

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

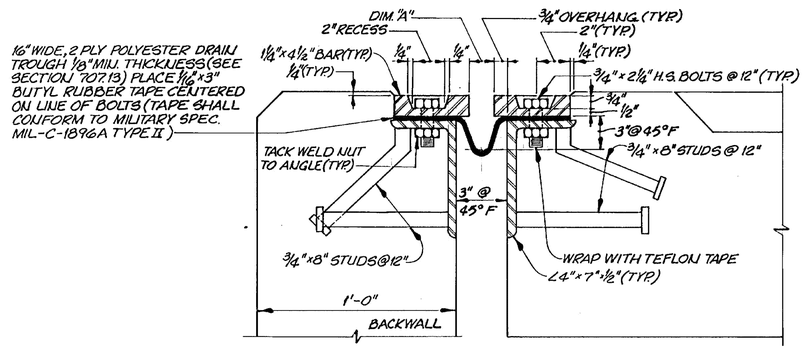
SHEET 33 OF 34
BRIDGE 8
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF BRATTLEBORO	Bridge No. 8 / Log Sta.
HIGHWAY NO. U.S. RTE. 5	Surv. Sta. 171+54
U.S. RTE. 5 OVER WEST RIVER	
DECK EXPANSION JOINT - STAGE II	
Designed by J. J. WALSH	Drawn by C. R. GAY
Checked by J. J. WALSH date 7-84	Bridge Design Supervisor Charles W. Terenzio date 1/85
PROJECT BRATTLEBORO	PROJECT NO. BRM2000(9)
Bridge Sheet No. BR111	Sheet 44 of 124

BARNES & JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS. 02116

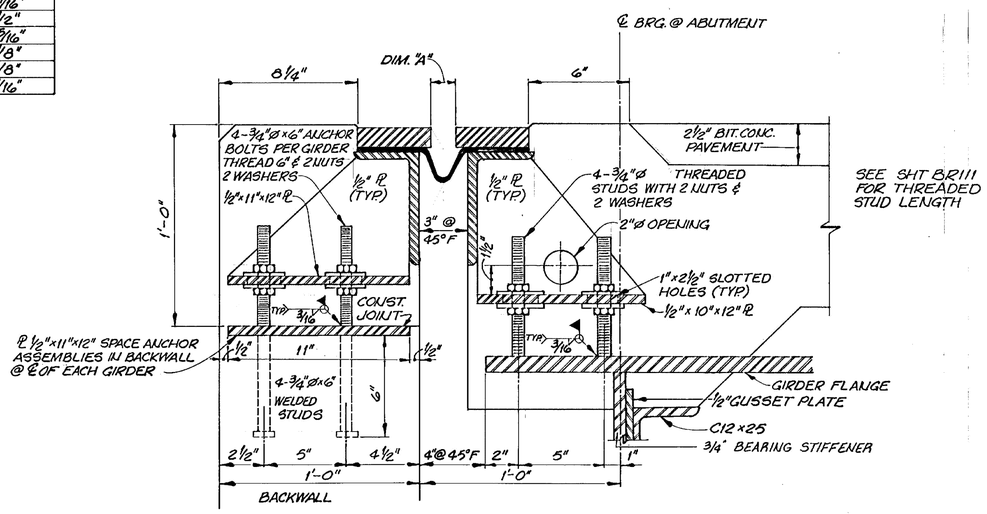
BR-6-'83



EXPANSION DAM SECTION

SCALE : 3" = 1'-0"

SETTING TABLE	
TEMP.	DIM."A"
0°F	2 1/16"
15°F	1 7/8"
30°F	1 11/16"
45°F	1 1/2"
60°F	1 3/16"
75°F	1 1/8"
90°F	7/8"
105°F	11/16"



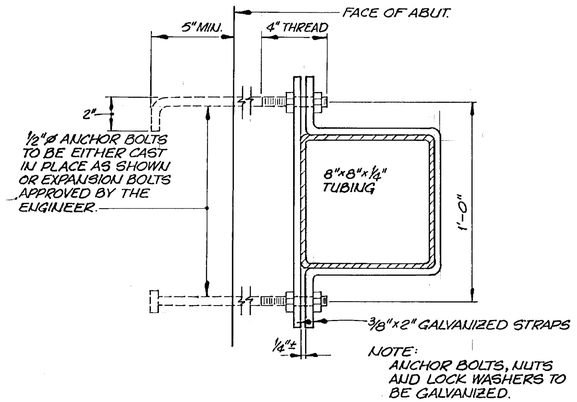
EXPANSION DAM SUPPORT

SCALE : 3" = 1'-0"

NOTES:

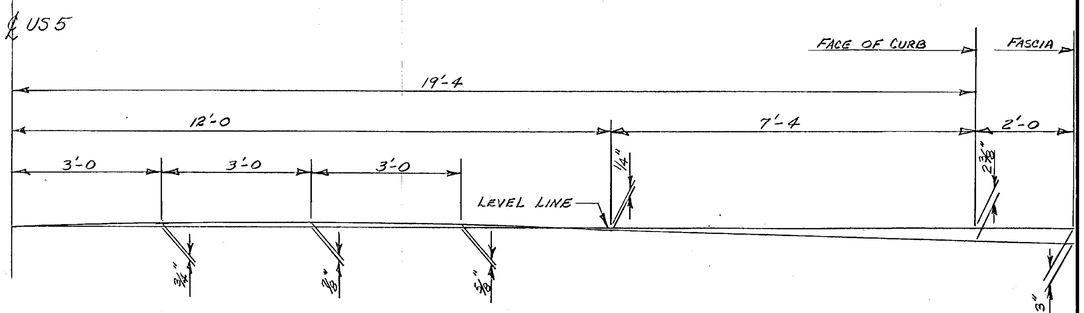
EXPANSION DAM (3" MOVEMENT)

1. THE EXPANSION DAM SHALL BE CONSTRUCTED IN 2 STAGES SIMILAR TO EXPANSION JOINT SHOWN ON SHEETS BR110 & BR111
2. EXPANSION DAM SHALL BE PLACED AT BOTH ABUTMENTS WITH STRUCTURAL DOWNSPOUTS AT EACH END OF FABRIC TROUGH.
3. THE FINAL FINISH OF THE EXPANSION DAM SHALL BE COVERED DURING THE PLACING OF THE BRIDGE DECK CONCRETE.
4. ALL STEEL COMPONENTS SHALL BE A.S.T.M. A-36 GALVANIZED OR METALIZED AS PER SECTION 731.06, UNLESS OTHERWISE NOTED.
5. ALL SIDEWALK PLATES SHALL BE A.S.T.M. A-36 STEEL AND GALVANIZED. SIDEWALK PLATES AND WELDED STUDS SHALL BE INCLUDED IN THE COST PER LINEAR FOOT BID FOR ITEM 516.21, "ELASTOMERIC EXPANSION JOINT (SINGLE SEAL). THE PLATES SHALL BE GALVANIZED AND PAINTED GRAY IN COLOR (FEDERAL COLOR NO. 26493) IN ACCORDANCE WITH THE SPECIAL PROVISION 708.09, "PAINTING HOT DIP GALVANIZED STEEL."
6. THE 1 1/4"x4 1/2" PLATES SHALL BE CONSTRUCTED IN 4 EQUAL LENGTHS FOR STAGE I CONSTRUCTION AND 3 EQUAL LENGTHS FOR STAGE II CONSTRUCTION. THE 7"x4"x1/2" ANGLES SHALL BE CONTINUOUS FOR EACH STAGE OF CONSTRUCTION AND WELDED TOGETHER. THE FABRIC TROUGH SHALL BE CONTINUOUS PREFORMED FABRIC MATERIAL CONFORMING TO SECTION 707.13.
7. FOR 1/2" TO 3/4" PLATES, USE 1/4" FILLET WELD. FOR 3/4" TO 1 1/2" PLATES, USE 5/16" FILLET WELD. GROOVE WELDS SHALL BE FOR 1/2" DEPTH OF PLATE. ALL PLATES SHALL BE WELDED BOTH SIDES.
8. COAT CONCRETE CONTACT SURFACES WITH AN EPOXY BONDING COMPOUND MEETING THE REQUIREMENTS OF SUBSECTION 719.03. PAYMENT TO BE INCLUDED UNDER THE UNIT PRICE BID FOR ITEM 516.21, "ELASTOMERIC EXPANSION JOINT (SINGLE SEAL).



DOWNSPOUT CLAMP DETAIL

SCALE : 3" = 1'-0"



HALF DECK SECTION AT ABUTMENT NO. 1

NOTE: The above section is detailed to indicate the deck shape at Abutment No. 1 where the right side of the highway is in transition from full bank to normal section on the structure. The shape of the above section is the same as that of a normal section on the structure except that it has been rotated upward about ℄ in order to comply with the banking diagram on sheet 27 of the roadway cross sections. The reasoning for maintaining this shape is so that no adjustments will be necessary in the deck finishing machine as it travels through the transition from the abutment to the normal section on the structure. This shape will be the same for the top of backwall and the expansion device at abutment No. 1 on the right side.

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 34 OF 34
BRIDGE 8
FOR REFERENCE ONLY

BARNES & JARNIS, INC.
CONSULTING ENGINEERS
BOSTON, MASS. 02116

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF BRATTLEBORO	Bridge No. 8
HIGHWAY NO. U.S. RTE. 5	Log Sta. / Surv. Sta. 171+54
U.S. RTE. 5 OVER WEST RIVER	
DECK EXPANSION DAM - OPTION	
Designed by J. J. WALSH	Drawn by E. D. LEVECKIS
Checked by J. J. WALSH date 7-84	Bridge Design Supervisor Charles W. Terenzio date 1/85
PROJECT BRATTLEBORO	PROJECT NO. BRM2000(9)
Bridge Sheet No. BR112	Sheet 45 of 124

BRUNING 44-131 58394

BR-6-'83