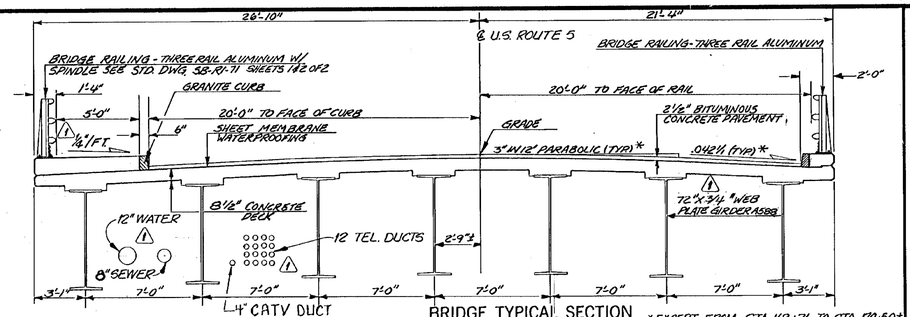
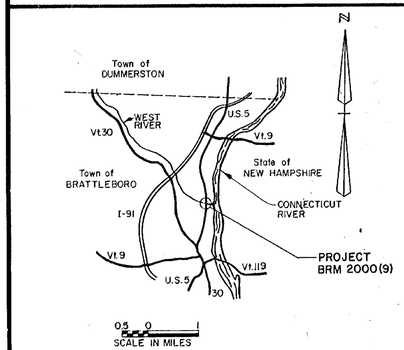
NEW HIGHWAY SECTION —



BRIDGE TYPICAL SECTION *EXCEPT FROM STA. 168+76 TO STA. 170+50± (SEE BANKING DIAG. SHT. 21 OF HWY. PLANS)

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



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-06-73 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

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: 29 - 28.25 - 321.33
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM): 2410 sq ft to 100 yr ELEV. — VERTICAL CLEARANCE ABOVE STREAMBED: 44'±
5. WATER SURFACE ELEVATION @ Q 233: 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: 396'-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: 45'
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM: SPAN #1 = 170'-6" SPAN #2 = 170'-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 233: 8000 cfs — WATER ELEVATION: 227.4 — VELOCITY: 1.6 fps.
   Q 10: 16300 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' — AVERAGE DAILY HIGH FLOW: 1500 cfs — DEPTH: ELEV 221.0
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED: TYPE II
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE: 3100' — SPAN: 38'-70'-38' — 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: 29,000 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 1/2 OF THE NEW BRIDGE.

ADDITIONAL DESIGN CONSIDERATIONS

LOAD RATING (TONS) ⚠

STRESS LEVELS	TRUCK H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
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			

STATEWIDE - SOUTHEAST REGION
BHF MEMB(21)

SHEET 29 OF 34
BRIDGE 8
FOR REFERENCE ONLY

RECOMMENDED FOR APPROVAL: Warren B Tryon — STRUCTURES ENGINEER — DATE 10/28/83
RECOMMENDED FOR APPROVAL: Arthur K Gates — CHIEF OF DESIGN — DATE 10/28/83
APPROVED BY: S J Gaye — DIRECTOR OF ENGINEERING & CONSTRUCTION — DATE 10/31/83

REVISIONS

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

STATE OF VERMONT — REGISTERED PROFESSIONAL ENGINEER — No. 4454 — RICHARD P. MILLER

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.

Markosian P-4852