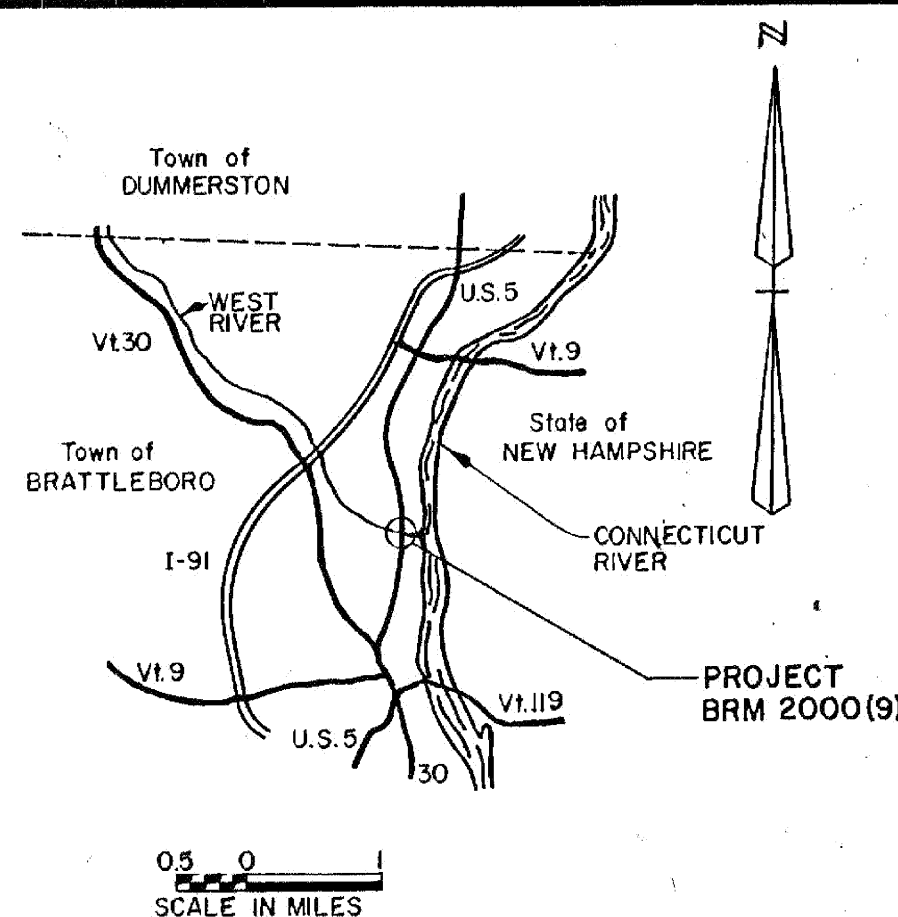


NEW HIGHWAY SECTION -



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 1 SUPERSTRUCTURE, INCLUDING THE APPROACH SLAB AND SHEETING. REMOVE EXISTING SIDEWALK AS REQUIRED.
5. CONSTRUCT STAGE 1 SUPERSTRUCTURE. INSTALL UTILITIES IN FINAL LOCATION. INSTALL TEMPORARY BARRIER RAIL, MEMBRANE, PAVEMENT, ETC.

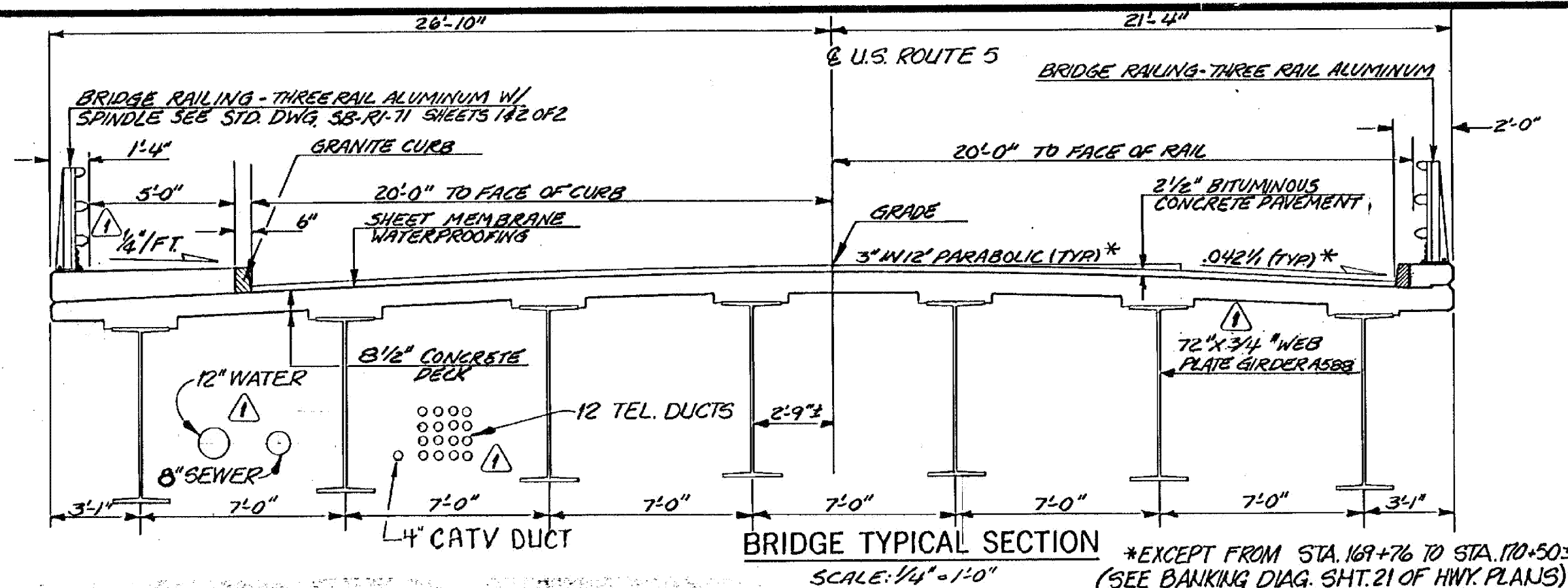
CONSTRUCTION SEQUENCE

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 1'-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 REMAINING 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 3.
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 14x53) 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.

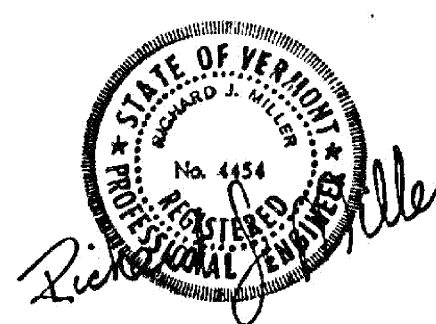


LIST OF BRIDGE SHEETS

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 I
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 11/2/85
G-8A	REVISED 7/01/78
SB-R1-71	(SHEET 1 OF 2) REVISED 2/1/85
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



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

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'-281.33
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 410.4 sq. ft. VERTICAL CLEARANCE ABOVE STREAMBED 44'±
5. WATER SURFACE ELEVATION @ Q 233 222.4 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
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL ABUT #1, PIER #1, PIER #2 - LEDGE ABUT #2 - ?
9. DISPOSITION OF STRUCTURE TO BE REMOVED

NEW STRUCTURE

1. STRUCTURE GEOMETRY: 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	<u>8000 cfs</u>	WATER ELEVATION	<u>222.4</u>	VELOCITY	<u>1.6 fps</u>
Q 10	<u>18500 cfs</u>	WATER ELEVATION	<u>229.8</u>	VELOCITY	<u>2.8 fps</u>
Q 25	<u>22000 cfs</u>	WATER ELEVATION	<u>231.1</u>	VELOCITY	<u>3.4 fps</u>
Q 50	<u>25000 cfs</u>	WATER ELEVATION	<u>232.0</u>	VELOCITY	<u>3.8 fps</u>
Q 100	<u>30000 cfs</u>	WATER ELEVATION	<u>232.8</u>	VELOCITY	<u>4.3 fps</u>
2. DRAINAGE AREA	<u>423 sq. mi.</u>	CHARACTER OF TERRAIN	<u>ROLLING TO MOUNTAINOUS</u>		
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM?	<u>NO</u>	IS ORDINARY RISE RAPID?	<u>NO</u>		
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY?	<u>NO</u>	IS ORDINARY RISE RAPID?	<u>NO</u>		
5. NATURE OF NATURAL STREAMBED	<u>LEDGE, SAND, GRAVEL</u>	COMMENT ON: DRIFT	<u>SLIGHT</u>	ICE	<u>HEAVY</u>
6. ESTIMATED SCOUR DEPTH	<u>0-6'</u>	IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR?	<u>N/A</u>		
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE?	<u>YES</u>	IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR?	<u>N/A</u>		
8. VERTICAL CLEARANCE ABOVE Q 100	<u>44' ±</u>	AT ABUT #2			
9. ALLOWABLE WATER SURFACE ELEVATION	<u>232.8</u>	LIMITED BY	<u>EXISTING CONDITIONS</u>		
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS?	<u>YES</u>	IF YES, DESCRIBE	<u>BACKWATER FROM VERNON DAM</u>		
11. AVERAGE DAILY LOW FLOW	<u>400 cfs</u>	DEPTH	<u>ELEV 220.1</u>	AVERAGE DAILY HIGH FLOW	<u>1500 cfs</u>
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED	<u>PIER #1</u>	DEPTH	<u>ELEV 22.0</u>		
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE	<u>700'</u>	SPAN	<u>30'-30'</u>	WATERWAY AREA OF FULL OPENING	<u>Q</u>
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE	<u>200'</u>	SPAN	<u>30'-30'</u>	WATERWAY AREA OF FULL OPENING	<u>Q</u>

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO	<u>H20-44 (NO FUTURE PAVEMENT ALLOWANCE)</u>	ON LEDGE	<u>10.0 KSF</u>
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL	<u>4.0 KSF</u>	ESTIMATED LENGTH	<u>PIER-30', ABUT #2-60'</u>
3. ALLOWABLE LOAD FOR PILING SEE NOTE 6	<u>TYPE SEE NOTE 6</u>	TENSION	<u>27,000 PSI</u>
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A	<u>250</u>	COMPRESSION	<u>20,000 PSI</u>
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION	<u>24,000 PSI</u>	COMPRESSION	<u>20,000 PSI</u>
6. ALLOWABLE STRESS FOR CONCRETE CLASS A 1	<u>3,500 PSI</u>	COMPRESSION	<u>1,400 PSI</u>
	CLASS B 1	COMPRESSION	<u>1,400 PSI</u>

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

* 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

STATEWIDE - SOUTHEAST
REGION
BHF MEMB(21)

SHEET 29 OF 34
BRIDGE 8
FOR REFERENCE ONLY

LOAD RATING (TONS) Δ		TRUCK					
STRESS LEVELS		H	HS	352	6 AXLE	3A STR	4A STR
INVENTORY		50	49				
0.55 Fy = 27							
POSTED		82		94		84	85
0.67 Fy = 33.5							91
OPERATING				116	125		
0.75 Fy = 37.5							

RECOMMENDED FOR APPROVAL	<u>Wayne B. Jones</u>	DATE	<u>10/28/83</u>
RECOMMENDED FOR APPROVAL	<u>Richard J. Barnes</u>	DATE	<u>10/29/83</u>
APPROVED BY	<u>S. J. Jones</u>	DATE	<u>10/31/83</u>
	DIRECTOR OF ENGINEERING & CONSTRUCTION		

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

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