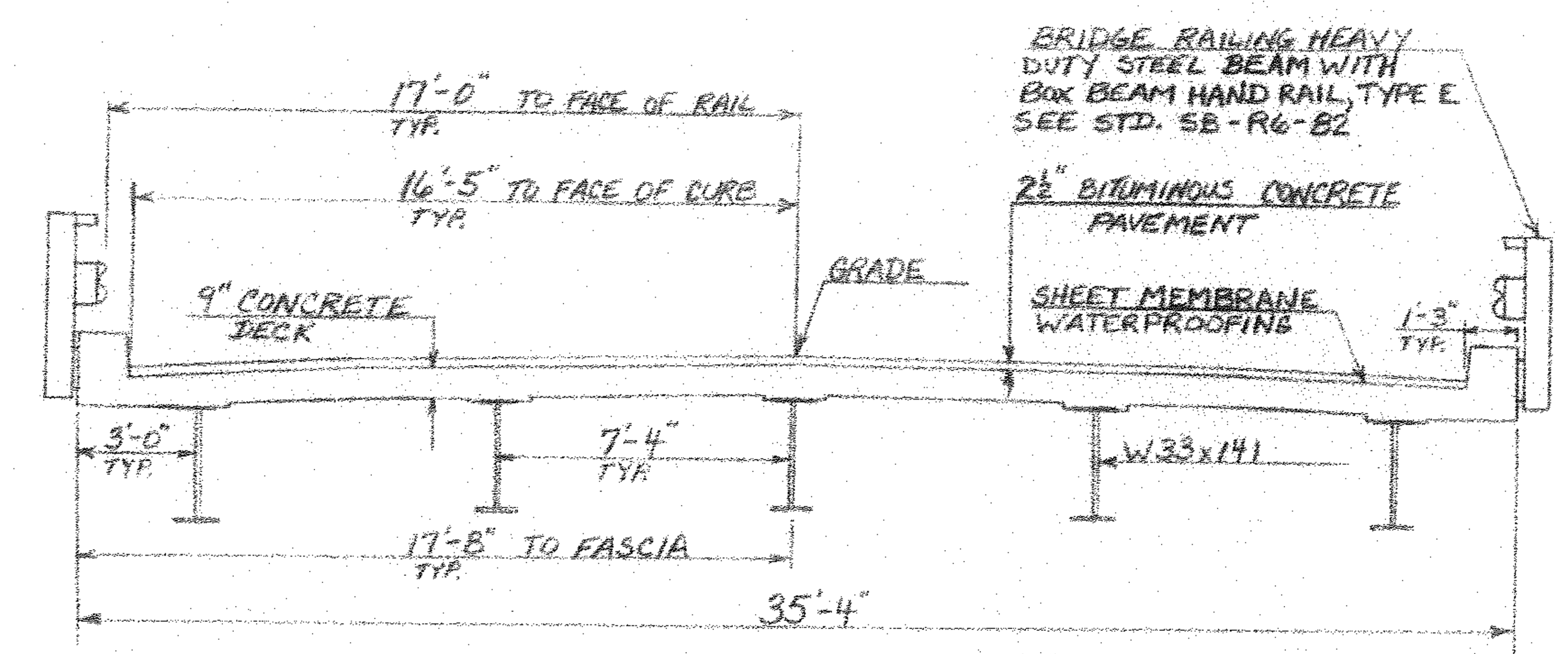
(SEE TYPICAL ROADWAY SECTIONS)

NEW HIGHWAY SECTION — BRIDGE APPROACHES



BRIDGE TYPICAL SECTION

GENERAL NOTES

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

2. ALL CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, STANDARD SPECIFICATION 104.11 TO PREVENT MATERIAL AND DEBRIS FROM FALLING INTO THE STREAM AND CAUSING POTENTIAL CONTAMINATION TO THE SUTTON RIVER.

3. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BOTH SUBSTRUCTURE AND SUPERSTRUCTURE, EXCEPT THE UNDERSIDE OF THE SLAB BETWEEN DRIP BEADS.

4. IN ALL HORIZONTAL CONSTRUCTION JOINTS, SHEAR KEYS SHALL BE FORMED AS DETAILED ON STANDARD DRAWING SCB-D4-73, DETAIL "B", AND THEY SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

5. TURF ESTABLISHMENT SHALL BE CONSIDERED SUBSIDIARY TO ALL OTHER ITEMS IN THE CONTRACT. SEE SPECIAL PROVISIONS.

6. IN-STREAM CONSTRUCTION SHALL BE RESTRICTED TO JUNE 1 THROUGH OCTOBER 1, UNLESS THE CONTRACTOR OBTAINS PERMISSION FROM THE AGENCY OF ENVIRONMENTAL CONSERVATION TO DO WORK OUTSIDE THAT TIME FRAME.

7. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" X 1".

8. ALL DIMENSIONS OF EXISTING MATERIALS ARE APPROXIMATE AND SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE START OF WORK.

9. THE "STONE FILL, TYPE II" SHALL BE PLACED IN FRONT OF THE ABUTMENTS BEFORE THE STRUCTURAL STEEL IS SET.

10. THE DRILLING AND GROUTING OF REINFORCING STEEL INTO EXISTING CONCRETE SHALL BE SUBSIDIARY TO THE ITEM "REINFORCING STEEL".

11. WHERE NEW CONCRETE IS POURED AGAINST EXISTING CONCRETE, NEAT CEMENT GROUT SHALL BE USED. SEE STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED MARCH 1976, SECTION 501.12(b).

12. THE SUPERSTRUCTURE WILL BE REMOVED UNDER THE ITEM "REMOVAL OF EXISTING SUPERSTRUCTURE", AND SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

13. THE EXISTING ABUTMENTS AND WINGWALLS SHALL BE REMOVED TO THE LIMITS SHOWN ON THESE PLANS UNDER THE ITEMS "STRUCTURE EXCAVATION" AND "UNCLASSIFIED CHANNEL EXCAVATION".

14. EXISTING ABUTMENT NO. 1 SHALL BE REMOVED TO A DEPTH OF FOUR (4) FEET BELOW SUBGRADE. EXISTING ABUTMENT NO. 2 SHALL BE REMOVED AS SHOWN ON THESE PLANS ON SHEET BR 110. PARTIAL REMOVAL OF BOTH ABUTMENTS SHALL BE PAID FOR UNDER THE ITEM "PARTIAL REMOVAL OF STRUCTURE".

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

16. THE ABUTMENTS ARE DESIGNED TO SET ON BEARING PILES, PILES DRIVEN TO BEDROCK, WITH A DESIGN LOAD CAPACITY OF 140 KIPS PER PILE.

17. THE COST OF ON-PROJECT SIGNS AND BARRICADES REQUIRED SHALL BE SUBSIDIARY TO ALL OTHER CONTRACT ITEMS. OFF-PROJECT DETOUR SIGNS WILL BE BY OTHERS.

18. EXISTING ROADWAY SIGNS TO REMAIN PROPERTY OF TOWN.

19. NO TRAFFIC SHALL BE ALLOWED ON THE NEW SLAB UNTIL THE CURE PERIOD IS UP AND THE 28 DAY DESIGN STRENGTH IS ATTAINED AS EVIDENCED BY TEST CYLINDER BREAKS.

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

21. THE PREFORMED JOINT FILLER, CLOSED CELL FOAM, SHALL MEET THE REQUIREMENTS OF SUBSECTION 707.23. SEE GENERAL SPECIAL PROVISIONS FOR THIS PROJECT. PAYMENT SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "CONCRETE, CLASS A".

22. SEE ADDITIONAL NOTES PERTAINING TO BEARINGS AND BRIDGE SEATS ON SHEET BR 107.

23. DRIP PLATES AT BOTH ENDS OF BEAMS NO. 1 AND 5 ARE TO BE PLACED ACCORDING TO DETAIL "C" ON STANDARD SHEET SCB-D7-71.

24. THE BRIDGE SEATS UNDER THE BEARINGS SHALL BE LEVEL AND THE SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.

25. THE BRIDGE WILL BE CLOSED TO TRAFFIC AND SHALL REMAIN CLOSED FOR THE DURATION OF THE CONTRACT.

26. SEE STANDARD DRAWING SCB-D9-71, DETAIL B, SECTIONS A-A, C-C, AND D-D FOR POLYURETHANE JOINT SEALER DETAILS TO BE USED BETWEEN CURBS ON SUPERSTRUCTURE AND CURB ON WINGWALL NO. 1. PAYMENT TO BE SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT. OMIT WATERSTOP.

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

28. THE VERMONT STANDARD SPECIFICATION, 204.12, CONCERNING COMPACTION OF THE BACKFILL FOR STRUCTURES SHALL BE STRICTLY FOLLOWED.

29. EXTREME CARE SHALL BE TAKEN TO PREVENT THE DISCHARGE OF RAW CONCRETE, PAINT, CHEMICALS, AND DEBRIS INTO THE SUTTON RIVER.

30. THE GENERAL SPECIFICATIONS ADDRESSING THE CONTROL OF EROSION AND SILTATION SHALL BE CAREFULLY ADHERED TO IN ORDER TO MINIMIZE TURBIDITY AND OTHER ADVERSE IMPACTS. THE LARGE AMOUNT OF SILTATION EVIDENT ABOVE THE CRIB DAMS SHALL NOT BE RELEASED DOWNSTREAM FOR ANY REASON.

31. THE TWO EXISTING CRIB DAMS SHALL BE RETAINED IN THEIR PRESENT LOCATION AND ELEVATIONS. IF DAMAGED DURING CONSTRUCTION, THEY SHALL BE REPAIRED TO THE SATISFACTION OF THE RESIDENT ENGINEER.

32. THE STATION AND SKEW OF CENTERLINE BEARING AT EXISTING ABUTMENT NO. 2 SHALL BE CHECKED AND VERIFIED BEFORE CONSTRUCTION OF ABUTMENT NO. 1 BEGINS. ABUTMENT NO. 1 SHALL BE PARALLEL TO ABUTMENT NO. 2.

33. PAYMENT FOR THE ITEM "JOINT SEALER, POLYURETHANE", TO BE USED AT THE CURB JOINT AT WINGWALL NO. 1, SHALL BE SUBSIDIARY TO THE SURROUNDING CONCRETE.

INDEX OF SHEETS

LIST OF STANDARDS

SB-R6-82	6-18-82R
SCB-D1-75	9-14-81 R
SCB-D6-73, DET. B	1-3-79R
SCB-D7-71, DET. C	12-15-76R
SCB-D9-71, DET. B	1-27-75R

EXISTING STRUCTURE

1. STRUCTURE TYPE THRU PLATE GIRDER BRIDGE OVERALL LENGTH 80'-0" INVENTORY RATING 16 TONS
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 75'-0"
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 73'-0"
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 740 SQ. FT. VERTICAL CLEARANCE ABOVE STREAMBED 10'±
5. WATER SURFACE ELEVATION @ Q 2.33 896.9 WATER SURFACE ELEVATION @ Q 50 898.7
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD UNKNOWN YEAR 1927 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 NA
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL BRIDGE IS ON TIMBER PILING
9. DISPOSITION OF STRUCTURE TO BE REMOVED

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE ROLLED BEAM BRIDGE OVERALL LENGTH 59'-0"
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 57'-0"
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 8'±
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 55'-0"
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 485 ft²
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:

1. Q 2.33 525 cfs WATER ELEVATION 896.9 VELOCITY 5.6 fps
   Q 10 1100 cfs WATER ELEVATION 897.8 VELOCITY 7.6 fps
   Q 25 1500 cfs WATER ELEVATION 898.4 VELOCITY 8.6 fps
   Q 50 1800 cfs WATER ELEVATION 898.7 VELOCITY 9.2 fps
   Q 100 2100 cfs WATER ELEVATION 899.0 VELOCITY 9.8 fps
2. DRAINAGE AREA 11.3 mi² CHARACTER OF TERRAIN HILLY TO MOUNTAINOUS
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? NA
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? YES IS ORDINARY RISE RAPID? YES
5. NATURE OF NATURAL STREAMBED SAND/SILT/GRAVEL
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 NA
8. VERTICAL CLEARANCE ABOVE Q 50 = 5.3'
9. ALLOWABLE WATER SURFACE ELEVATION 904.0 LIMITED BY BOTTOM OF BEAM
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO IF YES, DESCRIBE
11. AVERAGE DAILY LOW FLOW 10 cfs DEPTH 1'-0" AVERAGE DAILY HIGH FLOW 35 cfs DEPTH 1.5'
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED STONE FILL TYPE II
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 400' SPAN 20' WATERWAY AREA OF FULL OPENING 0
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE SPAN WATERWAY AREA OF FULL OPENING 0

ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS 25-44
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
3. ALLOWABLE LOAD FOR PILING 140 KIPS TYPE HP 12 x 53 ESTIMATED LENGTH 40 FT.
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A 588 TENSION 27,000 PSI
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24,000 PSI COMPRESSION 20,000 PSI
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f'_c 3,500 PSI f_c 1,400 PSI
   CLASS B f'_c 3,500 PSI f_c 1,400 PSI

TRAFFIC MAINTENANCE:

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

ADDITIONAL DESIGN CONSIDERATIONS

STATEWIDE – N.E. REGION
BHF MEMB(19)
SHEET 31 OF 80
BRIDGE No. 1
FOR REFERENCE ONLY

LOAD RATING (TONS)

STRESS LEVELS	TRUCK H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy = 27.0 ksi	34	45	X	X	X	X	X
POSTED 0.67 Fy = 33.5 ksi	51	X	87	X	56	57	74
OPERATING 0.75 Fy = 37.5 ksi	X	X	105	115	X	X	X

RECOMMENDED FOR APPROVAL [signature] STRUCTURES ENGINEER DATE 6/25/85
RECOMMENDED FOR APPROVAL [signature] CHIEF OF DESIGN DATE 6/24/85
APPROVED BY [signature] ACTING DIRECTOR OF ENGINEERING & CONSTRUCTION DATE 6/26/85

REVISIONS

NO.	DESCRIPTION	BY & DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF BURKE — Bridge No. 1 — Log Sta.
HIGHWAY NO. VT. RTE. 5A — Surv. Sta. 111+31.5

VT. RTE. 5A OVER SUTTON RIVER
PRELIMINARY INFORMATION

Designed by J.B. MCCARTHY — Drawn by J.B. MCCARTHY
Checked by KINIRY/MCCARTHY date 6/84 — Bridge Design Supervisor R.L. Oatley date 6-85
PROJECT BURKE — PROJECT NO. BRS 0287(3)S
Bridge Sheet No. BR101 — Sheet 17 of 81