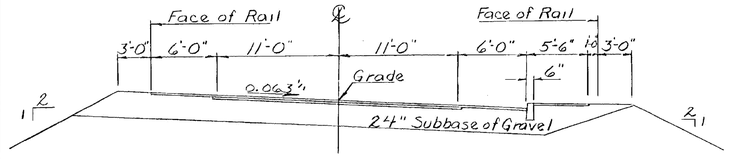
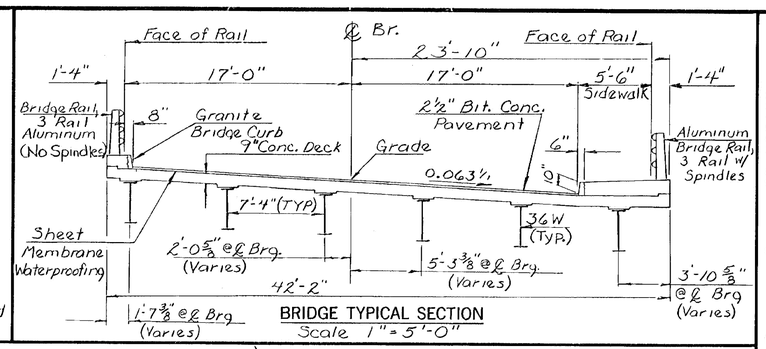
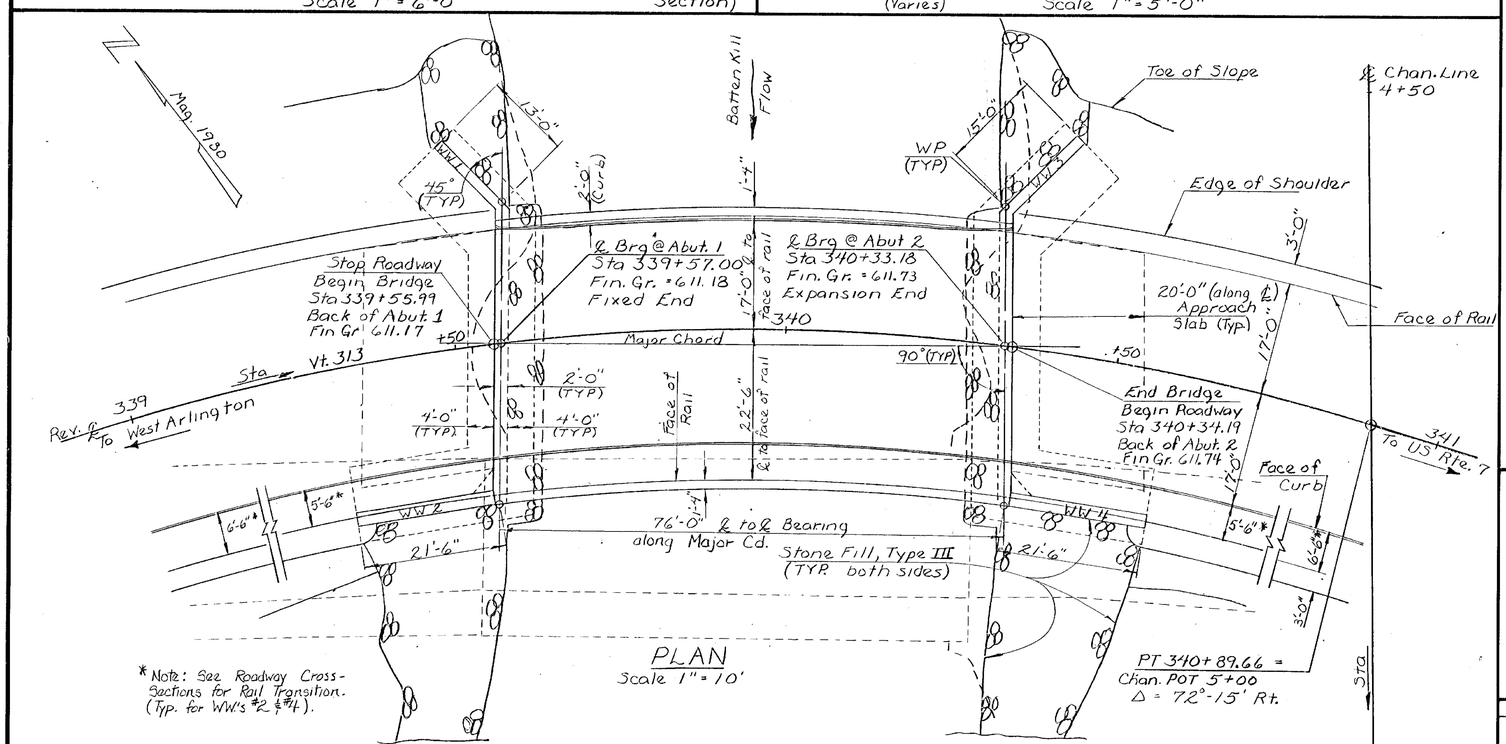


NEW HIGHWAY SECTION — BRIDGE APPROACHES (Maximum Banked Section)
Scale 1" = 6'-0"



BRIDGE TYPICAL SECTION
Scale 1" = 5'-0"



PLAN
Scale 1" = 10'

* Note: See Roadway Cross-Sections for Rail Transition. (Typ. for WW's #2 & #4).

ELEVATION
Scale 1" = 10'

EXISTING STRUCTURE

1. STRUCTURE TYPE Single Span Steel Slide Girder Br. OVERALL LENGTH 73' INVENTORY RATING H-10
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 70.
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 67.
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 556. S.F. VERTICAL CLEARANCE ABOVE STREAMBED 8'
5. WATER SURFACE ELEVATION @ Q 2.33 605.0 WATER SURFACE ELEVATION @ Q 50 608.4
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD 610 ± YEAR 1927 ESTIMATED DISCHARGE Unknown
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? No IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? Q5± 605. ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF 688 S.F.
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL Gravel & Cobbles
9. DISPOSITION OF STRUCTURE Remove

NEW STRUCTURE

STRUCTURE GEOMETRY:
1. STRUCTURE TYPE Single Span Steel Beam Br. OVERALL LENGTH 78.20'
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 76.00
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 10.'
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 74
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 648. SF
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? —

HYDRAULIC DATA:

1. Q 2.33	3280 cfs	WATER ELEVATION	604.8	VELOCITY	5.9 fps
Q 10	5750 cfs	WATER ELEVATION	606.7	VELOCITY	7.4 fps
Q 25	7200 cfs	WATER ELEVATION	607.6	VELOCITY	8.3 fps
Q 50	8350 cfs	WATER ELEVATION	608.2	VELOCITY	9.1 fps
Q 100	9600 cfs	WATER ELEVATION	608.8	VELOCITY	9.9 fps

2. DRAINAGE AREA 132 S. Mi. CHARACTER OF TERRAIN Rolling to Mountainous
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? Yes
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? No IS ORDINARY RISE RAPID? No
5. NATURE OF NATURAL STREAMBED Gravel & Cobbles
6. ESTIMATED SCOUR DEPTH 2 to 6 COMMENT ON: DRIFT Moderate ICE Moderate
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? No IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? Q5± 605 ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF 688 S.F.
8. VERTICAL CLEARANCE ABOVE Q 2.33 4.7'
9. ALLOWABLE WATER SURFACE ELEVATION 607. LIMITED BY No increase in existing flood levels.
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No IF YES, DESCRIBE N/A
11. AVERAGE DAILY LOW FLOW 120 CFS DEPTH 2.1' AVERAGE DAILY HIGH FLOW 400. CFS DEPTH 4.7'
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED Stone Fill Type III
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 3000.' SPAN 38.5' WATERWAY AREA OF FULL OPENING ____ Q ____
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 10,000.' SPAN 77' WATERWAY AREA OF FULL OPENING ____ Q ____

ALLOWABLE STRESSES:
1. DESIGN LIVE LOAD AASHTO HS 25-44
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4.0 KSF ON LEDGE N/A
3. ALLOWABLE LOAD FOR PILING N/A TYPE — ESTIMATED LENGTH —
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL ASTM A 588 TENSION 24,000 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 ONE-Way TRAFFIC CONTROL SIGNALS REQUIRED YES
   MINIMUM CLEAR SPAN 20 Ft * MINIMUM CLEAR HEIGHT 8.0 Ft * MINIMUM WATERWAY AREA 560 SF
   ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? —

* See General Notes #10, #13, and #20.

ADDITIONAL DESIGN CONSIDERATIONS

Horizontal Curve Data
PI = 339+33.74 = 338+92.42
Δ = 63° 34'-10" Rt.
D = 18°-00'-00"
R = 318.31'
T = 197.24'
L = 353.16'
E = 56.16'

VERTICAL CURVE DATA
PVI STA = 339+00
EL = 610.77
L = 120.0'
E = -.3190
K = 56
G_1 = +2.8467 %
G_2 = +.7200 %

(General Notes Appear on Sheet BR505)

LOAD RATING (TONS)

STRESS LEVELS	TRUCK H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy =	43	50					
POSTED 0.67 Fy =	66		94		69	71	84
OPERATING 0.75 Fy =			113	139			

RECOMMENDED FOR APPROVAL Warren B. Tyson STRUCTURES ENGINEER 5/24/84 DATE
RECOMMENDED FOR APPROVAL Arthur Ross CHIEF OF DESIGN 6/7/84 DATE
APPROVED BY J. J. Gage PE 6/8/84 DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS

NO.	DESCRIPTION	BY & DATE

SHEET INDEX

BR	501	PRELIMINARY INFORMATION
BR	502	BRIDGE QUANTITY SHEET
BR	503	BORING LOGS
BR	504	SUPERSTRUCTURE DETAILS
BR	505	GENERAL NOTES, DECK, CURTAINWALL AND APPROACH SLAB REBARS
BR	506	APPROACH SLAB DETAILS
BR	507	BEARING AND SOLE PLATE DETAILS
BR	508	ABUTMENT NO. 1 DETAILS
BR	509	ABUTMENT NO. 2 DETAILS
BR	510	FOOTING REINFORCEMENT PLAN
BR	511	WINGWALL DETAILS
BR	512	REINFORCING STEEL SCHEDULE
BR	513-516	CHANNEL X-SECTIONS

REFERENCE SHEETS

VT 313	PLAN STA. 337+00 TO 344+00 (1 SHEET)
VT 313	PROFILE STA. 337+00 TO 344+00 (1 SHEET)
VT 313	X-SECTIONS STA. 338+12 to 341+00 (2 SHEETS)

STATEWIDE - SOUTHWEST REGION
BHF MEMB(20)
SHEET 15 OF 47
BRIDGE 5
FOR REFERENCE ONLY

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF Arlington	Bridge No. 5
HIGHWAY NO. Vt. Rte. 313	Log Sta: 339+96 Surv. Sta. 339+95.09
Vt. Rte. 313 over the Batten Kill	
Preliminary Information	
Designed by E. Blodgett	Drawn by E. Blodgett
Checked by S. Farnsworth date 3/82	Bridge Design Supervisor F.W. Balkum date 8/84
PROJECT Arlington	PROJECT NO. BRS 0108(2)
Bridge Sheet No. BR 501	Sheet 21 of 105

BRUNING 44-131 40151
BR-2