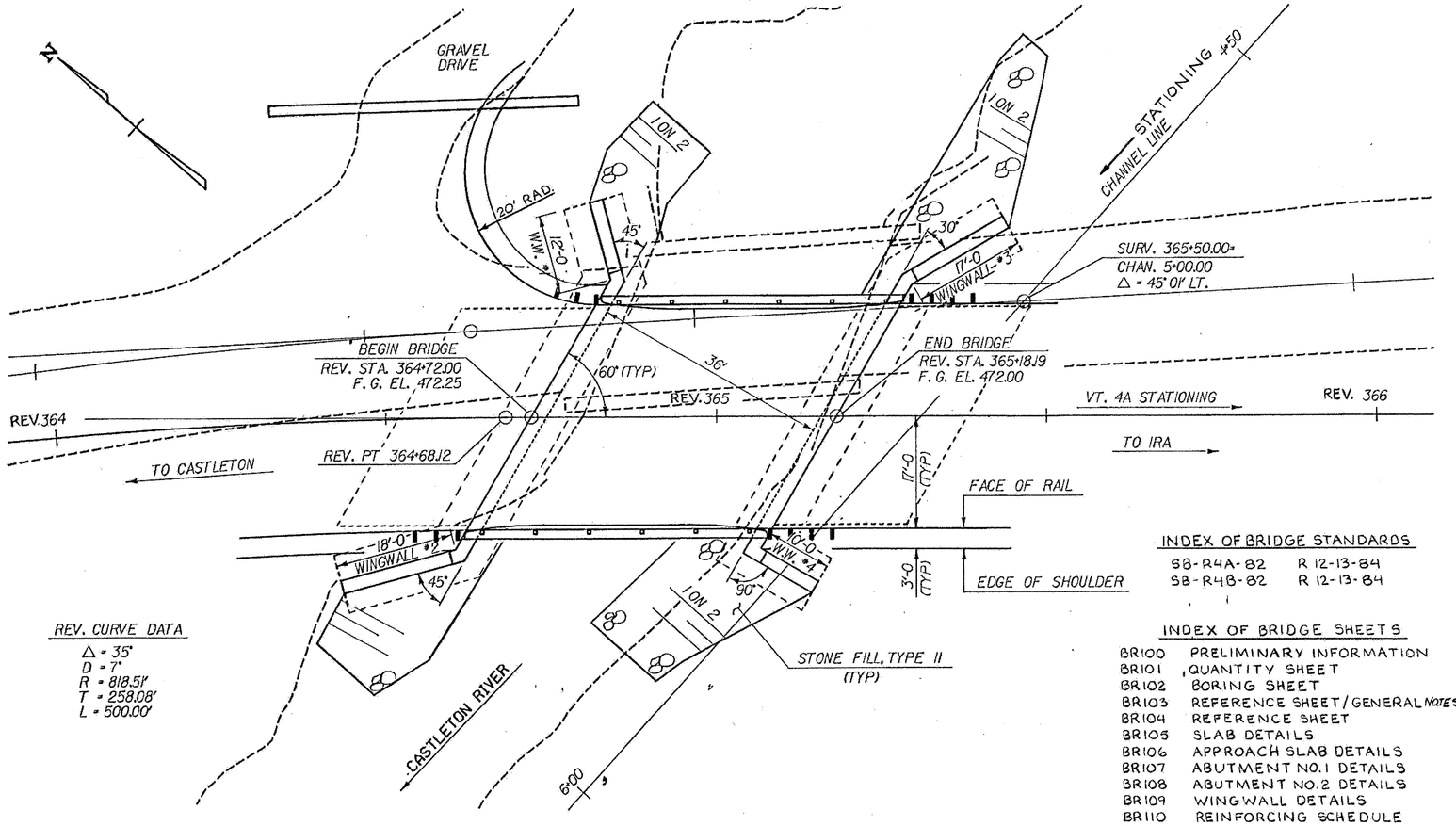


REV. CURVE DATA

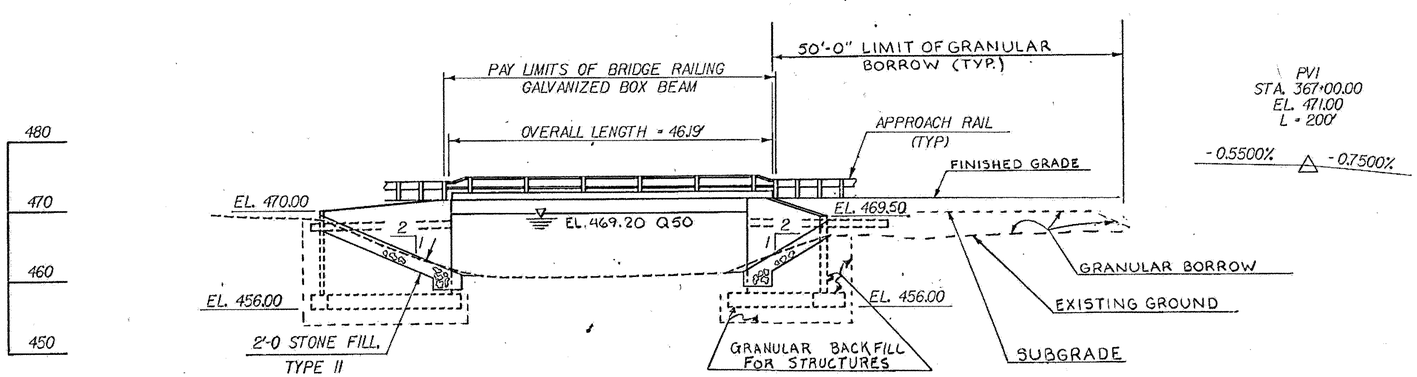
Δ = 35°
D = 7°
R = 818.51'
T = 258.08'
L = 500.00'

PLAN
SCALE 1" = 10'

INDEX OF BRIDGE STANDARDS

SB-R4A-82	R 12-13-84
SB-R4B-82	R 12-13-84

INDEX OF BRIDGE SHEETS



ELEVATION
SCALE 1" = 10'

EXISTING STRUCTURE

1. STRUCTURE TYPE Single Span Concrete Side Girder OVERALL LENGTH 45'± INVENTORY RATING H15
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 41'
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 34'
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) ±204 SQ. FT. VERTICAL CLEARANCE ABOVE STREAMBED 6'±
5. WATER SURFACE ELEVATION @ Q 2.33 465.6 WATER SURFACE ELEVATION @ Q 50 468.0
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD UNKNOWN YEAR 1927 ESTIMATED DISCHARGE
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? NO IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? Q5, 467.8± ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF UNLIMITED
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL SILT, SAND
9. DISPOSITION OF STRUCTURE REMOVE

NEW STRUCTURE

STRUCTURE GEOMETRY:

1. STRUCTURE TYPE Single Span Light Weight Concrete Slab OVERALL LENGTH 46.19'
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 43.88'
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 8'
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 35'
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) ±320 SQ. FT.
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:

1. Q 2.33 700 CFS (20 CMS) WATER ELEVATION 465.6 VELOCITY 4.4 FPS
   Q 10 1400 CFS (40 CMS) WATER ELEVATION 467.8 VELOCITY 6.1 FPS
   Q 25 1800 CFS (50 CMS) WATER ELEVATION 468.5 VELOCITY 7.0 FPS
   Q 50 2100 CFS (60 CMS) WATER ELEVATION 469.2 VELOCITY 7.6 FPS
   Q 100 2400 CFS (68 CMS) WATER ELEVATION 469.9 VELOCITY 7.5 FPS
2. DRAINAGE AREA 22.0 SQ MI CHARACTER OF TERRAIN Rolling to Mountains
3. ARE THERE OBJECTIONS TO A PIER IN THE STREAM? N.A.
4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? No IS ORDINARY RISE RAPID? No
5. NATURE OF NATURAL STREAMBED Sand, Silt, Gravel
6. ESTIMATED SCOUR DEPTH 4-6' COMMENT ON: DRIFT Mod. ICE Heavy
7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? NO IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? ±Q25, 468.8 ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF UNLIMIT
8. VERTICAL CLEARANCE ABOVE Q 50 = 0.8'
9. ALLOWABLE WATER SURFACE ELEVATION 470.0 LIMITED BY Bottom of Slab
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No IF YES, DESCRIBE
11. AVERAGE DAILY LOW FLOW 25 CFS DEPTH 1.0' AVERAGE DAILY HIGH FLOW 70 CFS DEPTH 3.0'
12. STREAMBANK OR CHANNEL PROTECTION REQUIRED Stone Fill, Type II
13. DISTANCE TO EXISTING UPSTREAM STRUCTURE 2.6 MI SPAN ±300' WATERWAY AREA OF FULL OPENING N/A Q
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 0.8 MI SPAN 25' WATERWAY AREA OF FULL OPENING 160 SQ. FT. Q

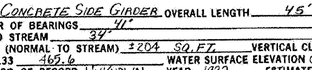
ALLOWABLE STRESSES:

1. DESIGN LIVE LOAD AASHTO HS25
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 4.0 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 ASTM A N.A. TENSION N.A.
5. ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24 KSI COMPRESSION 20 KSI
6. ALLOWABLE STRESS FOR CONCRETE CLASS A f_c f_c
   CLASS B f_c 3.5 KSI f_c 1.4 KSI
   L.W. CONCRETE f_c 4.0 KSI f_c 1.6 KSI

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 [redacted] WAY TRAFFIC CONTROL SIGNALS REQUIRED YES
   MINIMUM CLEAR SPAN SEE BELOW MINIMUM CLEAR HEIGHT SEE BELOW MINIMUM WATERWAY AREA SEE BELOW
   ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? N/A

ADDITIONAL DESIGN CONSIDERATIONS



TEMP. BRIDGE WATERWAY REQUIREMENTS

FAIR HAVEN – RUTLAND
BHF MEMB(2)
SHEET 43 OF 45
BRIDGE 12.
FOR REFERENCE ONLY

LOAD RATING (TONS)							
STRESS LEVELS \ TRUCK	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY 0.55 Fy =							
POSTED 0.67 Fy =							
OPERATING 0.75 Fy =							

⚠ THE TEMPORARY BRIDGE WATERWAY REQUIREMENTS ALLOW THE INSTALLATION OF THE TEMPORARY BRIDGE AT ANYTIME AND IS ADEQUATE FOR WINTER USE PROVIDED THAT ALL ENVIRONMENTAL REGULATIONS ARE ADHERED TO.

RECOMMENDED FOR APPROVAL Warren B. Tyler 6/21/85
STRUCTURES ENGINEER DATE

RECOMMENDED FOR APPROVAL [signature] Actg 6/24/85
CHIEF OF DESIGN DATE

APPROVED BY Acting [signature] 6/24/85
DIRECTOR OF ENGINEERING & CONSTRUCTION DATE

REVISIONS

NO.	DESCRIPTION	BY & DATE
⚠	ADDED NOTE	TP 6-88

I.G.C. INFO. QSA1:[30,25]78F195PL.DGN

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF CASTLETON	Bridge No. 12
HIGHWAY NO. Vt. Rte. 4A	Log Sta.
	Surv. Sta. 365

PRELIMINARY INFORMATION
Vt. Rte. 4A Over The Castleton River

Designed by G.V. Spilak	Drawn by D.C. Willey
Checked by G.V. Spilak date 6/85	Bridge Design Supervisor R.S. Haupt date 5-85
PROJECT CASTLETON-IRA	PROJECT NO. RS 0142 (12)
Bridge Sheet No. BR100	Sheet 33 of 95

Makepeace P-4652