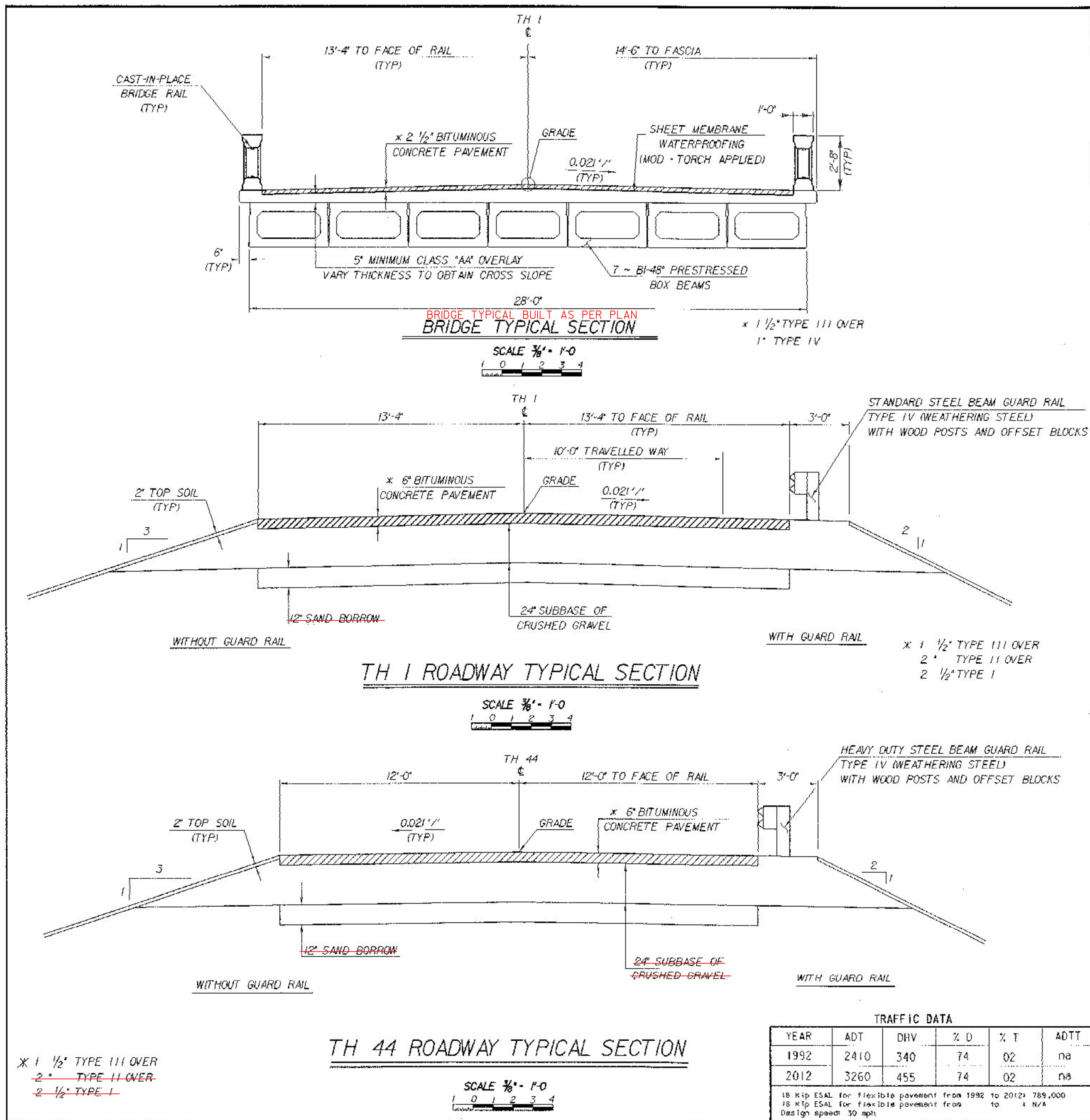




FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA: 15.7 sq. mi. (40.7 sq. km)
CHARACTER OF TERRAIN: RILLY TO MODERATELY
CHARACTER & TYPE OF STREAM: Steep, narrow flood plain, not incised,
braided, or anabranching, moderate relief valley
NATURE OF STREAMBED: Gravel, cobbles, and boulders

02.33: 1900 cfs (52.3 cms) 050: 2800 cfs (79.3 cms)
010: 1850 cfs (52.4 cms) 0100: 3350 cfs (94.9 cms)
025: 2400 cfs (68.0 cms) 0500: 5700 cfs (161.4 cms)

DATE OF FLOOD OF RECORD: Unknown
WATER SURFACE ELEV.: Unknown ESTIMATED DISCHARGE: Unknown
NATURAL STREAM VELOCITY @ 025: 5.9 fps (1.72 m/s)
ICE CONDITIONS: Moderate DEBRIS: Moderate
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? Yes
IS ORDINARY RISE RAPID? Yes
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? No
IF YES, DESCRIBE:

WATERSHED STORAGE: 1X HEADWATERS UNIFORM THROUGHOUT WATERSHED X
(IMMEDIATELY ABOVE SITE)

EXISTING STRUCTURE

STRUCTURE TYPE: Single span concrete side girder YEAR BUILT: 1922
CLEAR SPAN (NORMAL TO STREAM): 42 ft. (12.7 m)
VERTICAL CLEARANCE ABOVE STREAMBED: 9.5 ft. (2.9 m)
WATERWAY OF FULL OPENING: 425 sq. ft. (39.4 sq. m)
DISPOSITION OF STRUCTURE: Remove

TYPE OF MATERIAL UNDER SUBSTRUCTURE: Unknown

WATER SURFACE ELEV. @ 02.33: 792.1 VELOCITY: 9.1 fps (2.72 m/s)
010: 794.8 " 11.0 fps (3.35 m/s)
025: 795.2 " 12.0 fps (3.66 m/s)
050: 796.2 " 12.6 fps (3.84 m/s)
0100: 797.1 " 13.3 fps (4.05 m/s)

LONG TERM STREAM BED CHANGES: 1 ft. (0.3 m) of channel degradation
IS THE ROADWAY OVERTOPPED BELOW THE 0100? No FREQUENCY:
RELIEF ELEVATION: DISCHARGE OVER ROAD @ 0100:

UPSTREAM STRUCTURE: TOWN UNDERHILL DISTANCE: 0.4 mi. (0.6 km)
HIGHWAY NO.: 3 N. 1 STRUCTURE NO.: 8
STRUCTURE TYPE: Single span steel beam bridge w/ corr. deck
CLEAR SPAN 66 ft. (19.8 m) CLEAR HEIGHT: 7 ft. (2.1 m)
YEAR BUILT: 1957 FULL WATERWAY: 425 sq. ft. (39.4 sq. m)

DOWNSTREAM STRUCTURE: TOWN JERICHO DISTANCE: 3.1 mi. (5.0 km)
HIGHWAY NO.: 31 STRUCTURE NO.: 19
STRUCTURE TYPE: Single span steel beam bridge w/ corr. deck
CLEAR SPAN 66 ft. (19.8 m) CLEAR HEIGHT: 12 ft. (3.7 m)
YEAR BUILT: 1982 FULL WATERWAY: 800 sq. ft. (74.3 sq. m)

DESIGN CRITERIA:

- DESIGN LIVE LOAD AASHTO: HS-20
- DESIGN SPAN: 58'-0"
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL: 6 Ksf
- ALLOWABLE LOAD FOR PILING: N/A TYPE: N/A ESTIMATED LENGTH: N/A
- STRUCTURAL STEEL AASHTO GRADE: N/A
- REINFORCING STEEL GRADE: 60
- CONCRETE CLASS: A f_c: 4000 PSI f_c: 1600 psi
CONCRETE CLASS: B f_c: 3500 PSI f_c: 1400 psi
SILICA-FUME CONCRETE f_c: 5000 PSI f_c: 2000 psi
CONCRETE CLASS: AA f_c: 4000 PSI f_c: 1600 psi

TRAFFIC MAINTENANCE:

- IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE YES
- TEMPORARY BRIDGE REQUIREMENT: ONE OR TWO WAY TWO-WAY TRAFFIC CONTROL SIGNALS REQUIRED NO
MINIMUM CLEAR SPAN (NORMAL TO STREAM): 40' (12.2 m) MINIMUM CLEAR HEIGHT: 7.5 ft. (2.3 m)
MINIMUM WATERWAY AREA: 300 sq. ft. (27.8 sq. m)
ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE?
STRUCTURE TYPE: SINGLE SPAN BRIDGE (TO BE REMOVED BEFORE WINTER)

ALLOWABLE STRESS LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTOR)	INVENTORY	POSTED	OPERATING
H	57	60	79
HS	70	74	104
SS2		98	118
6 AXLE		65	69
34 STR.		67	72
44 STR.			
54 STR.			

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town of UNDERHILL Bridge No. 9
Highway No. TH 1 Loc. Sta. 1821
SURV. Sta. 1821

TH 1 OVER BROWNS RIVER

PRELIMINARY INFORMATION

Designed By: R.M. HIGGINS Drawn By: R.M. HIGGINS
Checked By: P.M. THURBER Date: 5/96 Bridge Design Supervisor: C.P. WILLIAMS Date: 2/95

PROJECT: UNDERHILL PROJECT NO.: BRS 0233(2)
L&C. Info: M:\88\099\Structures\099pl.dgn s:\099pl.1
Bridge Sheet No. 2 of 43