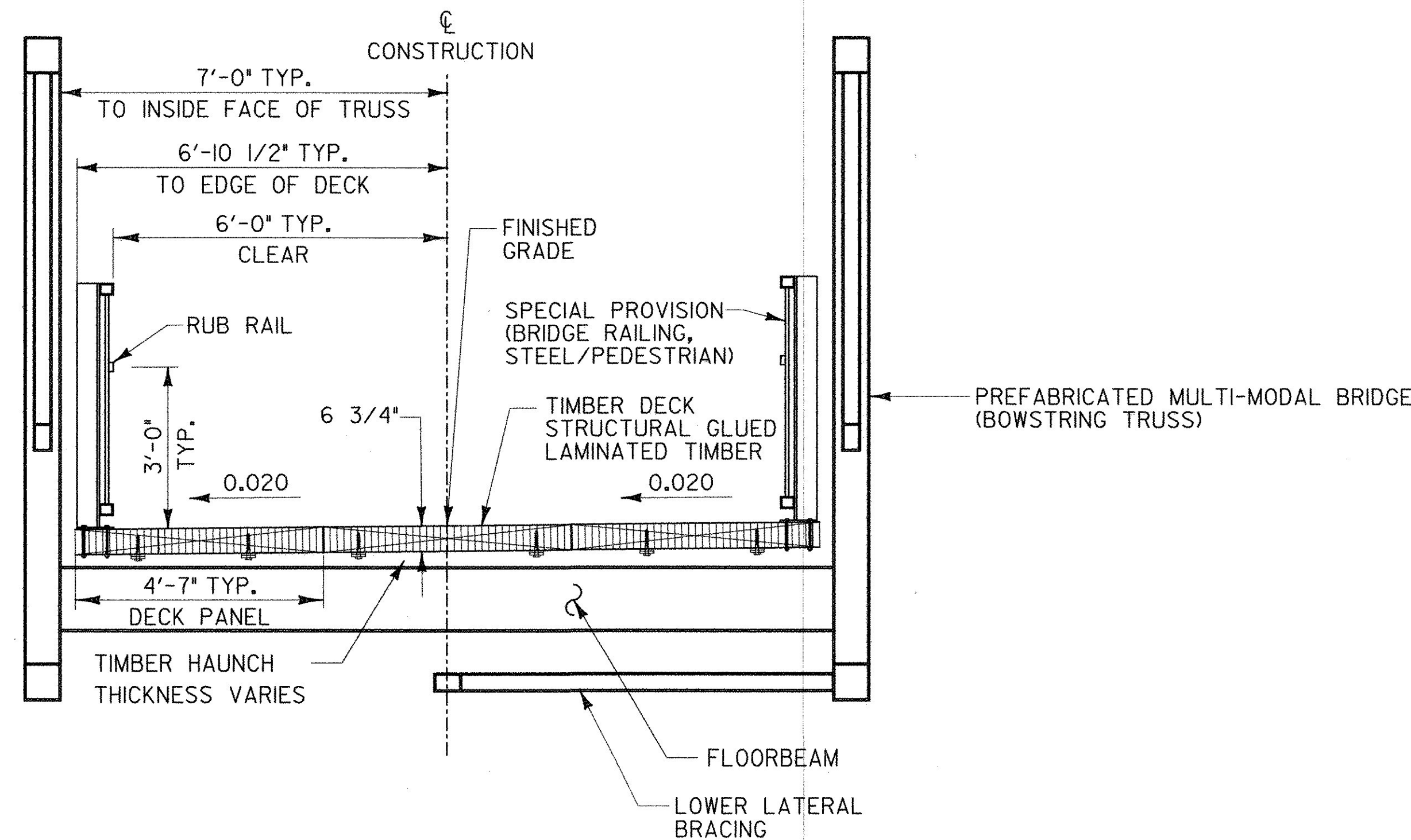


REHABILITATED PENNSYLVANIA THROUGH TRUSS TYPICAL SECTION
(SPANS 1 & 3)
SCALE: 1/2" = 1'-0"



PREFABRICATED MULTI-MODAL BRIDGE (BOWSTRING TRUSS) TYPICAL SECTION
(SPAN 2)
SCALE: 1/2" = 1'-0"

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA= 851 SQUARE MILES
CHARACTER OF TERRAIN: EAST PORTION-MOUNTAINOUS, WEST PORTION-ROLLING HILLS
CHARACTER & TYPE OF STREAM: CLASS B RIVER
NATURE OF STREAMBED: DENSE, GRAY, FINE TO COARSE SAND
Q2.33= 17,300 CFS Q50= 30,100 CFS
Q10= 22,300 CFS Q100= 33,800 CFS
Q25= 27,000 CFS Q500= 43,600 CFS

DATE OF FLOOD OF RECORD: NOVEMBER, 1927
WATER SURFACE ELEV. +15 FT. OVER DAMESTIMATED DISCHARGE > 2000
NATURAL STREAM VELOCITY @ Q50= 4.66 FPS
ICE CONDITIONS: HISTORY OF ICE JAMS DEBRIS: NO
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? YES
IS ORDINARY RISE RAPID? YES
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? DOWNSTREAM
IF YES, DESCRIBE: SWANTON VILLAGE DAM REGULATES LOW FLOWS BUT
HAS NO SIGNIFICANT FLOOD CONTROL CAPACITY
WATERSHED STORAGE: N/A HEADWATERS: UNIFORM THROUGHOUT WATERSHED
IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

STRUCTURE TYPE: WOODEN COVERED RAILROAD BRIDGE (NO LONGER IN PLACE)
CLEAR SPAN (NORMAL TO STREAM): SPAN 1 - 116 FT., SPAN 2 - 117 FT., SPAN 3 - 116 FT.
VERTICAL CLEARANCE ABOVE STREAMBED: 11.49 FT. MIN., 30.18 FT. MAX.
WATERWAY OF FULL OPENING: +/- 8800 SF
DISPOSITION OF STRUCTURE: PREVIOUS WOODEN COVERED BRIDGE WAS DESTROYED BY FIRE IN 1987
TYPE OF MATERIAL UNDER SUBSTRUCTURE: BLACK SHALE EXISTS 3' TO 8' BELOW STREAMBED BASED ON SOIL BORINGS AT PIERS.
WATER SURFACE ELEV. @ Q2.33= 115.36 FT. VELOCITY= 3.40 FPS
Q10= 116.48 FT. " 4.07 FPS
Q25= 117.49 FT. " 4.63 FPS
Q50= 118.09 FT. " 4.98 FPS
Q100= 118.80 FT. " 5.37 FPS

LONG TERM STREAM BED CHANGES: NO SIGNIFICANT CHANGE IN 21 YEARS BASED ON COMPARISON OF SURVEY AND FEMA STUDY.
IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY:
RELIEF ELEVATION: 128.6 FT. DISCHARGE OVER ROAD @ Q100= NONE

UPSTREAM STRUCTURE: TOWN: SWANTON DISTANCE: 2 MILES
HIGHWAY NO.: STRUCTURE NO:
STRUCTURE TYPE: RAILROAD BRIDGE
CLEAR SPAN: CLEAR HEIGHT: +/- 24 FT.
YEAR BUILT: FULL WATERWAY:

DOWNSTREAM STRUCTURE: TOWN: SWANTON DISTANCE: 0.3 MILES
HIGHWAY NO.: N/A STRUCTURE NO.:
STRUCTURE TYPE: SWANTON VILLAGE DAM
CLEAR SPAN: CLEAR HEIGHT: -
YEAR BUILT: FULL WATERWAY: -

DESIGN CRITERIA:

- DESIGN LIVE LOAD AASHTO H-10
- DESIGN SPAN SPAN 1 & 3 = 161 FT. - 10 IN. / SPAN 2 = 123 FT. - 1 1/2 IN.
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE
- ALLOWABLE LOAD FOR PILING 30 TON TYPE HP 10x42 ESTIMATED LENGTH 40'
- STRUCTURAL STEEL AASHTO GRADE fy = 36 ksi NEW STEEL (UNLESS NOTED OTHERWISE)
- REINFORCING STEEL GRADE 60
- CONCRETE, HIGH PERFORMANCE CLASS B fc = 3500 PSI

TRAFFIC MAINTENANCE:

- IS TRAFFIC TO BE MAINTAINED? N/A IF YES, ON EXISTING STRUCTURE OR ON TEMPORARY BRIDGE
- TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY N/A TRAFFIC CONTROL SIGNALS REQUIRED N/A
MINIMUM CLEAR SPAN NORMAL TO STREAM VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY AT FULL OPENING:
ARE SIDEWALKS REQUIRED? IF SO, ON WHAT SIDE?

WORKING STRESS LOAD RATING (TONS)

STRESS LEVELS	TRUCK				
	H	HS	3S2	6 AXLE	3A. STR. 4A. STR. 5A. SEMI
INVENTORY 0.55Fy	15.6				
POSTED 0.67Fy	22.3				
OPERATING 0.75Fy	25.8				

RF = C-1.0+DL
60*LL

PROPOSED STRUCTURE

STRUCTURE TYPE: PENNSYLVANIA THROUGH TRUSS/PREFABRICATED BOWSTRING TRUSS
CLEAR SPAN (NORMAL TO STREAM): SPAN 1-155.24 FT., SPAN 2-117 FT., SPAN 3-155.24 FT.
VERTICAL CLEARANCE ABOVE STREAMBED: 13.99 FT. MIN., 32.68 FT. MAX.
WATERWAY OF FULL OPENING: +/- 9555 SF

WATER SURFACE ELEV. @ Q2.33= 115.36 FT. VELOCITY= 3.40 FPS
Q10= 116.48 FT. " 4.07 FPS
Q25= 117.49 FT. " 4.63 FPS
Q50= 118.10 FT. " 4.98 FPS
Q100= 118.80 FT. " 5.37 FPS

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY:
RELIEF ELEVATION: 129.7 FT. DISCHARGE OVER ROAD @ Q100= NONE

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 128 FT
VERTICAL CLEARANCE @ Q100= 9.20 FT. @ MID-SPAN

SCOUR: PIER 1 - YS (100) = 19.66 FT., PIER 2 - YS (100) = 17.72 FT.
REQUIRED CHANNEL PROTECTION: NONE

PERMIT INFORMATION

AVERAGE DAILY FLOW: 1,632 CFS
ORDINARY LOW WATER: 960 CFS ELEV. = 110.82 FT.
ORDINARY HIGH WATER: 2,500 CFS ELEV. = 111.82 FT.

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/A
CLEAR SPAN (NORMAL TO STREAM): N/A
VERTICAL CLEARANCE ABOVE STREAMBED: N/A
WATERWAY OF FULL OPENING: N/A

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of SWANTON Bridge No. 18
Log Sta.
Highway No. Surv. Sta.

RAIL TRAIL OVER MISSISQUOI RIVER

PRELIMINARY INFORMATION SHEET

Designed By R. SACCHI Drawn By R. ROSS
Checked By Date Bridge Design Supervisor
H. BUI 1/23/08 R. SACCHI Date 1/23/08

PROJECT SWANTON PROJECT NO.
STP ST MHTB(I)

I.G.C. Info. zf024pil.dgn
Bridge Sheet No. BR3 Sheet 2 of 63