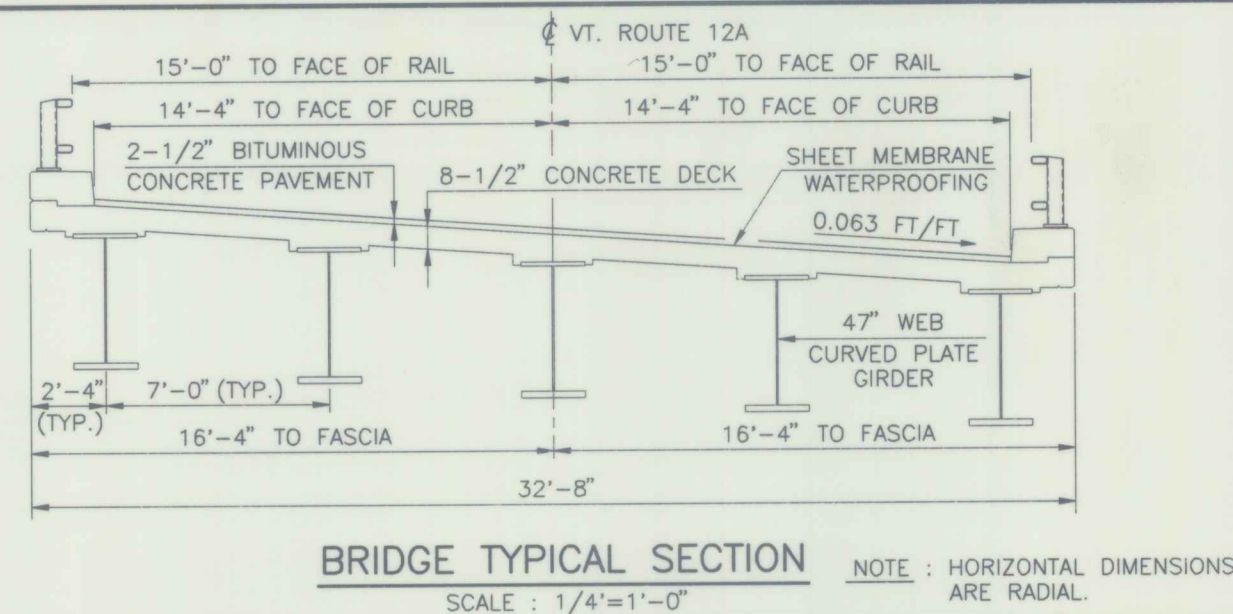


SEE HIGHWAY TYPICAL PLANS

NEW HIGHWAY SECTION - BRIDGE APPROACHES



GENERAL NOTES

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, AGENCY OF TRANSPORTATION, 1990 STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, AND ITS LATEST REVISIONS, AND THE 1989 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, AND ITS LATEST REVISIONS.
- DESIGN IS FOR HS25-44 LOADING WITH ALLOWANCE FOR FUTURE PAVING UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).
- WHEN NOT DETAILED ON THE PLANS, BEAMS SHALL BE CAMBERED FOR THE DEAD LOAD DEFLECTION PLUS ONE EIGHTH (1/8) INCH FOR EACH TEN FEET OF SPAN, OR FRACTION THEREOF. THE CAMBER SHALL APPROXIMATE A SIMPLE CIRCULAR CURVE FROM SUPPORT TO SUPPORT.
- ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER, TYPE III BOLTS MEETING ASTM DESIGNATION A-325. HOLES SHALL BE 15/16" DIAMETER. CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STATE FOR APPROVAL.
- ALL WELDING SHALL CONFORM WITH THE PROVISIONS OF SUBSECTION 506.10.
- AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF BEAMS SHALL BE TAKEN AS DIRECTED BY THE ENGINEER FOR USE IN DETERMINING FINAL GRADE.
- ANY HOLES IN FASCIA BEAMS OR FASCIA GIRDER WEBS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS. SEE STANDARD SPECIFICATION SECTION 506.19 FOR BOLT TENSIONING REQUIREMENTS.
- ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".
- MINIMUM COVER FOR REINFORCING STEEL SHALL BE TWO (2) INCHES ALONG BACK FACES OF WALLS AGAINST EARTH, AND THREE (3) INCHES ELSEWHERE. FOR BRIDGE DECK: 2 1/2" MIN. COVER FOR TOP REINFORCING, AND 1 1/2" MIN. COVER FOR BOTTOM REINFORCING.
- REINFORCING PLACEMENT TOLERANCES SHALL BE: SPACINGS +/- 1" CLEARANCE +/- 1/4"
- DRILLING AND GROUTING OF REINFORCING STEEL INTO EXISTING CONCRETE SHALL BE PAID FOR UNDER ITEM 507.16.
- DECK CONCRETE SHALL BE "CONCRETE, CLASS A". ALL OTHER CONCRETE SHALL BE "CONCRETE, CLASS B" UNLESS OTHERWISE DESIGNATED ON THE PLANS.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" BY 1".
- SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 1/2" PER FOOT. ABUTMENT SEATS SHALL BE SLOPED FULL WIDTH TOWARD CENTER SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.
- FOR BRIDGE DECK POURS, THE MAXIMUM TIME LIMIT FOR ANY COMBINATION OF POURS DONE IN ONE DAY SHALL BE EIGHT HOURS. THERE SHALL BE A MINIMUM DELAY OF NINETY SIX HOURS BETWEEN THE COMPLETION OF ONE DAY'S POUR AND THE BEGINNING OF ANY OTHER POUR.
- WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF DECK BETWEEN DRIP BEADS.
- THE FOLLOWING TABLE OF ALLOWABLE STRESSES AND WEIGHTS APPLY TO THESE PLANS FOR DESIGN PURPOSES:

CONCRETE:	f _c	=	3500 PSI
	f _t	=	1400 PSI
STRUCTURAL STEEL:	F _a =F _b	=	27,000 PSI
M270 - Grade 50W	F _v	=	17,000 PSI
M270 - Grade 36	F _a =F _b	=	20,000 PSI
	F _v	=	12,000 PSI
REINFORCING STEEL:	f _s	=	24,000 PSI
Grade 60	f _s	=	20,000 PSI
SOIL: UNIT WEIGHT		=	140 PCF

- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES F.
- FILL IN AREAS THROUGH WHICH PILES ARE TO BE DRIVEN SHALL HAVE A MAXIMUM STONE SIZE OF NINE (9) INCHES.
- TRAFFIC SHALL BE ALLOWED ON THE NEW BRIDGE ONLY AFTER THE SPECIFIED CURE PERIOD HAS EXPIRED AND DESIGN STRENGTH HAS BEEN ATTAINED.
- JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.
- IN-STREAM CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED DURING THE PERIOD OF JUNE 15 TO OCTOBER 01, UNLESS THE CONTRACTOR OBTAINS SPECIFIC PERMISSION FROM THE AGENCY OF NATURAL RESOURCES TO PERFORM SUCH WORK OUTSIDE OF THAT TIME FRAME.
- TEN CUBIC YARDS OF STONE FILL, TYPE IV HAS BEEN INCLUDED IN THE PROJECT FOR CONSTRUCTION OF A FISH HABITAT BOULDER CLUSTER. THIS CLUSTER SHALL BE LOCATED IN A HIGH VELOCITY PORTION OF THE STREAM A MINIMUM OF 25' DOWNSTREAM OF THE NEW BRIDGE, AS SHOWN ON THE PLANS.
- PLANS FOR THE EXISTING BRIDGE INDICATE SUBSTRUCTURES FOUNDED ON WOODEN PILES.

EXISTING STRUCTURE

- STRUCTURE TYPE: 2 SPAN CONCRETE T-BEAM OVERALL LENGTH: 110 FT. +/- INVENTORY RATING: _____
- SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS: 52'-0", 52'-0"
- CLEAR SPAN LENGTH(S) NORMAL TO STREAM: 42'-4", 42'-4"
- WATERWAY AREA OF FULL OPENING NORMAL TO STREAM: 570 SQ. FT. VERTICAL CLEARANCE ABOVE STREAMBED: 10.9 FT.
- WATER SURFACE ELEVATION @ 0.233: 787.9 WATER SURFACE ELEVATION @ 0.00: 761.5
- WATER SURFACE ELEVATION AT FLOOD OF RECORD (UNKNOWN) YEAR: _____ ESTIMATED DISCHARGE: _____
- DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? YES/IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? _____
- ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF: _____
- TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL: GRAVEL AND SAND ON SHALLOW LEDGE (30' TO 40')
- DISPOSITION OF STRUCTURE: SUPERSTRUCTURE TO BE REMOVED, PORTIONS OF SUBSTRUCTURE TO BE REMOVED AS SHOWN ON PLANS

NEW STRUCTURE

- STRUCTURE TYPE: SINGLE SPAN CURVED PLATE GIRDER WITH COMPOSITE CONCRETE DECK OVERALL LENGTH: 135'-4"
- SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS: 132'-8"
- VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER: 12.3 FT.
- CLEAR SPAN LENGTH(S) NORMAL TO STREAM: 72'-6"
- WATERWAY AREA OF FULL OPENING NORMAL TO STREAM: 805 SQ. FT.
- ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:

0.233	1650 CFS	WATER ELEVATION	756.0 @ STA. 51+50	VELOCITY	7.1 FPS @ STA. 50+00
0.10	3000 CFS	WATER ELEVATION	758.4 @ STA. 51+50	VELOCITY	8.0 FPS @ STA. 50+00
0.25	4100 CFS	WATER ELEVATION	759.6 @ STA. 51+50	VELOCITY	6.8 FPS @ STA. 50+00
0.50	5400 CFS	WATER ELEVATION	760.2 @ STA. 51+50	VELOCITY	6.8 FPS @ STA. 51+50
0.100	6100 CFS	WATER ELEVATION	760.8 @ STA. 51+50	VELOCITY	7.6 FPS @ STA. 51+50

2. DRAINAGE AREA: 41.3 SQ. MILES CHARACTER OF TERRAIN: ROLLING TO HILLY, FORESTED AND AGRICULTURAL

3. ARE THERE OBSTRUCTIONS TO A FIER IN THE STREAM? N/A

4. DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? YES IS ORDINARY RISE RAPID? YES

5. NATURE OF NATURAL STREAMBED: RELATIVELY STRAIGHT STREAMBED THROUGH NARROW VALLEY

6. ESTIMATED SCOUR DEPTH: 3.5' TOTAL SCOUR DEPTH: 8.0' CONTRACTOR COMMENT ON DRIFT, MODERATE ICE, MODERATE

7. WILL ALL WATER PASS THROUGH NEW STRUCTURE? YES, IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR? N/A

8. VERTICAL CLEARANCE ABOVE 0.100: 9.5 FT. (MIN) 13.1 FT. (MAX)

9. ALLOWABLE WATER SURFACE ELEVATION: 761.2 LIMITED BY: MINIMUM GIRDER ELEVATION

10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO IF YES, DESCRIBE

11. DRAINWAY LOW WATER: 40 CFS DEPTH: 2 FT. ORDINARY HIGH WATER: 785 CFS DEPTH: 5 FT.

12. STREAMBANK OR CHANNEL PROTECTION REQUIRED: YES, STONE FILL, TYPE IV

13. DISTANCE TO EXISTING UPSTREAM STRUCTURE: 0.22 MI SPAN: 74 FT. WATERWAY AREA OF FULL OPENING: 592 SQ. FT. 0

14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE: 2.3 MI SPAN: 108 FT. WATERWAY AREA OF FULL OPENING: 832 SQ. FT. 0

ALLOWABLE STRESSES:

- DESIGN LIVE LOAD AASHTO: HS25-44
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL: N/A ON LEDGE: N/A
- ALLOWABLE LOAD FOR PILING: 9000 PSI TYPE: HP 14X73 ESTIMATED LENGTH: 14' TO 32'
- ALLOWABLE STRESS FOR STRUCTURAL STEEL AASHTO M 270: GRADE 50W TENSION: 27,000 PSI
- ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60: TENSION: 24,000 PSI COMPRESSION: 20,000 PSI
- ALLOWABLE STRESS FOR CONCRETE CLASS A: f_c: 3500 PSI f_t: 1400 PSI CLASS B: f_c: 3500 PSI f_t: 1400 PSI

TRAFFIC MAINTENANCE:

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

ADDITIONAL DESIGN CONSIDERATIONS

LOAD RATING (TONS)

STRESS LEVELS	TRUCK				
	H	HS	352	6 AXLE 3 SA STR 14A	STR 15A SEM
INVENTORY	0.55	F _y =			
POSTED	0.67	F _y =			
OPERATING	0.75	F _y =			

NO.	DESCRIPTION	BY & DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of: BRAINTREE Bridge No.: 6
Log Sta.: _____
Highway No.: VT. Route 12A Surv. Sta.: _____
VT. ROUTE 12A OVER THE THIRD BRANCH OF THE WHITE RIVER

PRELIMINARY INFORMATION

Designed By: LNI Drawn By: ABT/JLF
Checked By: _____ Date: _____ Bridge Design Supervisor: _____ Date: _____

BRAINTREE
BRS 0187(6)
ROW SHEET 5 OF 10 SHEETS



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