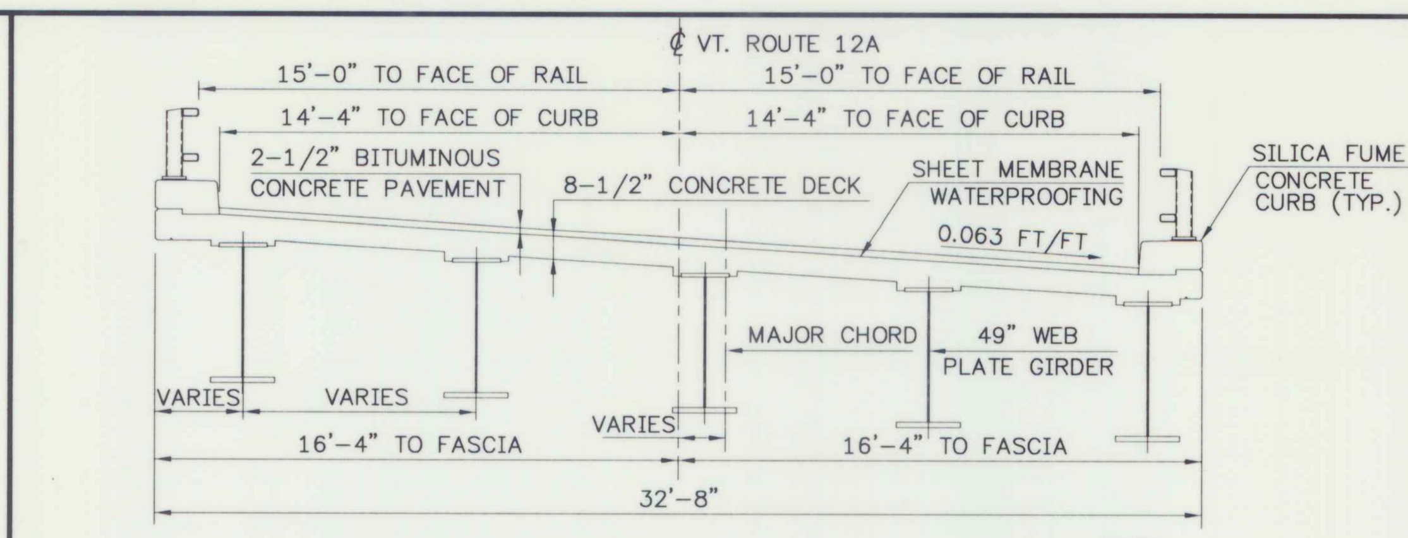

BRIDGE TYPICAL SECTION

SCALE : 1/4'=1'-0"

NOTE:
HORIZONTAL DIMENSIONS ARE RADIAL.

GENERAL NOTES:

1. 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 AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1992, WITH INTERIMS THROUGH 1994.
2. DESIGN IS BY THE ALLOWABLE STRESS DESIGN METHOD FOR HS25-44 LOADING. DESIGN DEAD LOAD INCLUDES AN ALLOWANCE FOR A ONE INCH FUTURE OVERLAY.
3. ASSUMED UNIT WEIGHT OF SOIL IS 140 PCF, FOR DESIGN OF SUBSTRUCTURE.
4. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 68 DEGREES F UNLESS OTHERWISE NOTED.
5. 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).
6. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER, ASTM A-325 (AASHTO M164) BOLTS. HOLES SHALL BE 15/16" DIAMETER. CONNECTIONS NOT DETAILED ON THE PLANS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STATE FOR APPROVAL.
7. MECHANICALLY GALVANIZED AND PAINTED TYPE I BOLTS ARE TO BE USED FOR PAINTED M270 GRADE 50 AND PAINTED M270 GRADE 36 STRUCTURAL STEEL CONNECTIONS. FIELD PAINTING OF BOLTS TO INCLUDE INTERMEDIATE AND FINAL COATING SYSTEMS AFTER CONNECTION APPROVAL.
8. TYPE III BOLTS ARE TO BE USED FOR UNPAINTED M270 GRADE 50W STRUCTURAL STEEL CONNECTIONS.
9. ALL STRUCTURAL STEEL WITHIN A DISTANCE OF 8.5 FEET FROM THE EXPANSION END OF GIRDERS WILL BE COATED WITH A PROTECTIVE PAINT SYSTEM WITH THE FINAL COAT TO BE DARK BROWN TO BLEND WITH THE AASHTO M270 GRADE 50W STEEL. THIS WORK WILL BE PAID FOR UNDER THE ITEM 513.25, "STRUCTURAL PAINTING, SHOP APPLIED" AND ITEM 513.40, "SURFACE PREPARATION". SEE SUPPLEMENTAL SPECIFICATION 513 PERTAINING TO THE PAINTING OF STRUCTURAL STEEL.
10. ALL WELDING SHALL CONFORM WITH THE PROVISIONS OF SUBSECTION 506.10.
11. 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 SUBSECTION 506.19 FOR BOLT TENSIONING REQUIREMENTS.
12. INTERMEDIATE DIAPHRAGM BOLTS SHALL BE ONLY SNUG TIGHT UNTIL THE ENTIRE DECK HAS BEEN PLACED AND CURED AT LEAST SEVEN DAYS. AT THAT TIME, THE BOLTS SHALL BE TIGHTENED TO SPECIFIED TORQUE.
13. 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.
14. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".
15. MINIMUM COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
    SUBSTRUCTURE: TWO (2) INCHES ALONG BACK FACES OF WALLS AGAINST EARTH, AND THREE (3) INCHES ELSEWHERE.
    BRIDGE DECK: 2 1/2" FOR TOP REINFORCING, AND 1 1/2" FOR BOTTOM REINFORCING.
16. REINFORCING PLACEMENT TOLERANCES SHALL BE:
    SPACING +- 1"
    CLEARANCE +- 1/4"
17. DECK CONCRETE SHALL BE "CONCRETE, CLASS A". CURB CONCRETE SHALL BE "SILICA FUME CONCRETE." ALL OTHER CONCRETE SHALL BE "CONCRETE, CLASS B" UNLESS OTHERWISE DESIGNATED ON THE PLANS.
18. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" BY 1".
19. 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 WITH EITHER A WOOD OR MAGNESIUM FLOAT FINISH.
20. THE DECK SHALL BE PLACED IN ONE CONTINUOUS OPERATION WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A NEAT (DAMMED) CONSTRUCTION JOINT SHALL BE USED. A NINETY-SIX HOUR DELAY BETWEEN PLACEMENTS SHALL BE OBSERVED.
21. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF DECK BETWEEN DRIP BEADS.
22. TRAFFIC SHALL BE ALLOWED ON THE NEW BRIDGE ONLY AFTER THE SPECIFIED CURE PERIOD HAS EXPIRED AND THE 28 DAY DESIGN STRENGTH HAS BEEN ATTAINED AS EVIDENCED BY TEST CYLINDERS CURED UNDER FIELD CONDITIONS.
23. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
24. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND SPACING OF FASCIA OVERHANG BRACKETS; HOWEVER, SPACING SHALL NOT EXCEED FOUR (4) FEET.
26. NO CONCRETE ABOVE THE ADJACENT BRIDGE SEATS SHALL BE PLACED UNTIL THE FINAL FINISHED GRADE OF THE DECK HAS BEEN ESTABLISHED, OR AS OTHERWISE PERMITTED BY THE ENGINEER.
27. ABUTMENTS ARE DESIGNED FOR HP 14X73 BEARING PILES DRIVEN TO REFUSAL ON ROCK. THE PILES SHALL BE DRIVEN TO AN ULTIMATE CAPACITY OF 425 KIPS.
28. ALL PILES SHALL BE FURNISHED WITH A REINFORCED PILE TIP OF PREFABRICATED CAST STEEL MEETING THE REQUIREMENTS OF ASTM A-27. SEE SUBSECTION 505.04 (d).
29. FILL, IN AREAS THROUGH WHICH PILES ARE TO BE DRIVEN SHALL HAVE A MAXIMUM STONE SIZE OF NINE (9) INCHES.
30. THE ITEM 204.40 "COFFERDAM" SHALL BE USED FOR THE CONSTRUCTION OF BOTH ABUTMENTS. THE DESIGN AND SUBMITTAL PROCEDURES SHALL BE AS PER SUBSECTION 204.07. STEEL SHEETING SHALL BE USED TO CONSTRUCT COFFERDAMS AS PER STREAM ALTERATION PERMIT REQUIREMENT.
31. THE STONE FILL, TYPE IV SHALL BE PLACED IN FRONT OF THE ABUTMENTS PRIOR TO ERECTING THE STRUCTURAL STEEL.
32. 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.
33. 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.
34. TRAFFIC SHALL BE MAINTAINED ON THE EXISTING BRIDGE DURING CONSTRUCTION OF THE PROJECT.
35. THE SUPERSTRUCTURE AND PORTIONS OF THE SUBSTRUCTURES OF THE EXISTING BRIDGE SHALL BE REMOVED AS INDICATED ON THE PLANS. PAYMENT FOR THIS WORK SHALL BE UNDER ITEM 529.20, "PARTIAL REMOVAL OF STRUCTURE."
36. PLANS FOR THE EXISTING BRIDGE INDICATE SUBSTRUCTURES FOUNDED ON WOODEN PILES.

EXISTING STRUCTURE

1. STRUCTURE TYPE 2 SPAN CONCRETE T-BEAM OVERALL LENGTH 110 FT. +/- INVENTORY RATING ____
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 52'-0", 52'-0"
3. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 43'-4", 43'-4"
4. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 570 SQ. FT. VERTICAL CLEARANCE ABOVE STREAMBED 10.9 FT.
5. WATER SURFACE ELEVATION @ Q 2.33 757.3 WATER SURFACE ELEVATION @ Q100 761.5
6. WATER SURFACE ELEVATION AT FLOOD OF RECORD UNKNOWN YEAR ____ ESTIMATED DISCHARGE ____
7. DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? YES IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? ____
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF ____
8. TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL GRAVEL AND SAND ON SHALLOW LEDGE (30' TO 40')
9. DISPOSITION OF STRUCTURE SUPERSTRUCTURE TO BE REMOVED. PORTIONS OF SUBSTRUCTURE TO BE REMOVED AS SHOWN ON PLANS

NEW STRUCTURE

STRUCTURE GEOMETRY:
1. STRUCTURE TYPE SINGLE SPAN PLATE GIRDER WITH COMPOSITE CONCRETE DECK OVERALL LENGTH 137'-11 1/4"
2. SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS 130'-0" ALONG ROADWAY CENTERLINE
3. VERTICAL CLEARANCE ABOVE STREAMBED OR ROAD UNDER 12.3 FT.
4. CLEAR SPAN LENGTH(S) NORMAL TO STREAM 70'-6"
5. WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 805 SQ. FT.
6. ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? NO

HYDRAULIC DATA:
1. Q 2.33 1690 CFS WATER ELEVATION 756.0 @ STA. 51+50 VELOCITY 7.1 FPS @ STA. 50+20
   Q 10 3000 CFS WATER ELEVATION 758.4 @ STA. 51+50 VELOCITY 8.0 FPS @ STA. 50+20
   Q 25 4100 CFS WATER ELEVATION 759.6 @ STA. 51+50 VELOCITY 6.8 FPS @ STA. 50+20
   Q 50 5100 CFS WATER ELEVATION 760.2 @ STA. 51+50 VELOCITY 6.8 FPS @ STA. 51+50
   Q 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 OBJECTIONS TO A PIER 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 5.5' TOTAL: 5' HISTORICAL & 0.5' CONTRACTION 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
   ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF N/A
8. VERTICAL CLEARANCE ABOVE Q 100 0.5 FT. (MIN) 1.1 FT. (MAX)
9. ALLOWABLE WATER SURFACE ELEVATION 761.3 LIMITED BY MINIMUM GIRDER ELEVATION
10. IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO IF YES, DESCRIBE ____
11. ORDINARY LOW WATER 40 CFS DEPTH 2 FT. ORDINARY HIGH WATER 725 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. Q ____
14. DISTANCE TO EXISTING DOWNSTREAM STRUCTURE 2.3 MI SPAN 108 FT. WATERWAY AREA OF FULL OPENING 2322 SQ. FT. Q ____

ALLOWABLE STRESSES:
1. DESIGN LIVE LOAD AASHTO HS25-44
2. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
3. ALLOWABLE LOAD FOR PILING 192.6 KIPS TYPE HP 14X73 ESTIMATED LENGTH ABUT 1: 19' TO 32'; ABUT 2: 14' TO 20'
4. ALLOWABLE STRESS FOR STRUCTURAL STEEL AASHTO M 270 GRADE 50W TENSION 27,000 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 4000 PSI f_c 1400 PSI
   CLASS B f'_c 3500 PSI f_c 1400 PSI
   SILICA FUME f'_c 5000 PSI f_c 2000 PSI

TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE YES OR ON TEMPORARY BRIDGE NO
2. 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 MINIMUM WATERWAY AREA N/A
   ARE SIDEWALKS REQUIRED? N/A IF SO, ON WHAT SIDE? N/A

INDEX OF BRIDGE SHEETS

LOAD RATING (TONS) (WORKING STRESS)

RATING LEVEL	TRUCK H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A.SEMI
INVENTORY .55fy= 27 ksi	36	61					
POSTED .67fy= 33.5 ksi	56	95	105		91	92	100
OPERATING .75fy= 37.5 ksi		118	130	146	113	113	

REVISIONS NO.	DESCRIPTION	BY & DATE

Costello, Lomasney & de Napoli, Inc.
Consulting Engineers
540 Commercial Street
Manchester, NH 03101
(603)668-8223 FAX(603)668-8802

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 E.M.Stumph	Drawn By. J.L.Fryer
Checked By E.M.Stumph Date 1/95	CLD Project Manager C.R.Bean Date 1/95
PROJECT BRAINTREE	PROJECT NO. BRS 0187 (6)

I.G.C. Info.

Bridge Sheet No. BR 100 Sheet 24 Of 79

90282PI (1=48) "Plot"