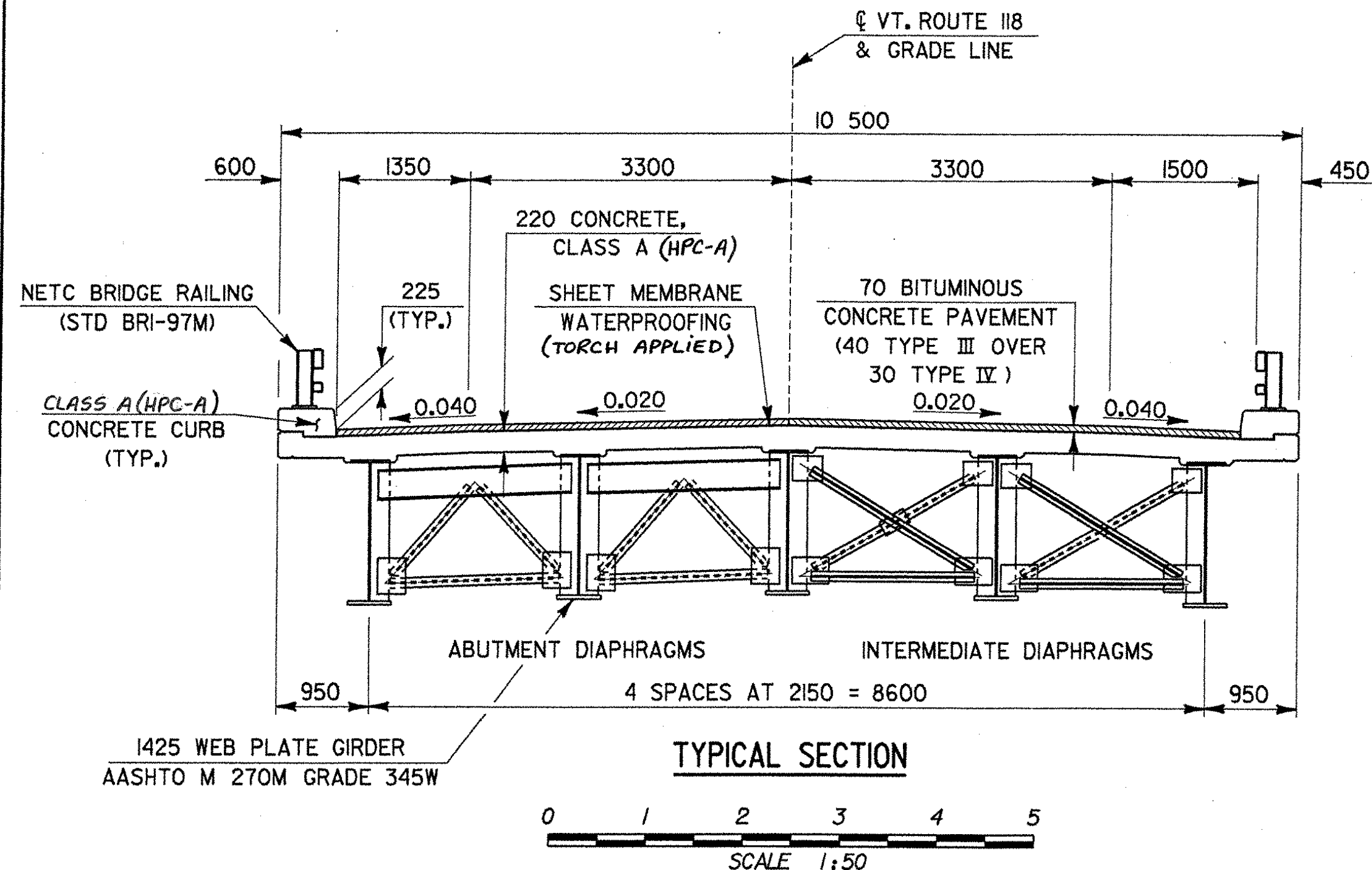


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GENERAL NOTES

1. UNLESS OTHERWISE NOTED, ALL STATIONS ARE IN KILOMETERS, ALL ELEVATIONS ARE IN METERS, AND ALL DIMENSIONS ARE IN MILLIMETERS.
2. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION (DATED 2001, AND ITS LATEST REVISIONS), AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (DATED 1996, AND ITS LATEST REVISIONS).
3. DESIGN IS FOR MS-22.5 LOADING, USING LOAD FACTOR METHOD.
4. ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH SECTION 506. OF THE STANDARD SPECIFICATIONS.
5. 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.
6. ANY HOLES IN FASCIA BEAMS OR FASCIA GIRDER WEBS NOT OTHERWISE FILLED SHALL BE FILLED WITH BUTTON HEAD OR HEX HEAD BOLTS MEETING AASHTO M 164M, TYPE III. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SECTION 506.19. GALVANIZED TYPE I BOLTS SHALL BE USED IN PAINTED AREAS.
7. FASCIA OVERHANG BRACKETS SHALL BE SPACED AT A MAXIMUM OF 1220, AND SHALL BE DESIGNED BY THE CONTRACTOR.
8. ALL FIELD CONNECTIONS SHALL BE MADE WITH M22 DIAMETER BOLTS, MEETING ASTM DESIGNATION A-325M (AASHTO M 164M TYPE III). HOLES SHALL BE 24 DIAMETER. CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR. GALVANIZED TYPE I BOLTS SHALL BE USED IN PAINTED AREAS.
9. ALL REINFORCING STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH APPLICABLE PUBLICATIONS OF THE "CONCRETE REINFORCING STEEL INSTITUTE".
10. MINIMUM COVER FOR REINFORCING STEEL IN SUBSTRUCTURES SHALL BE 50 ALONG BACK FACES OF WALLS AGAINST EARTH AND 75 ELSEWHERE, UNLESS OTHERWISE DESIGNATED ON PLANS.
11. REINFORCING PLACEMENT TOLERANCES SHALL BE: SPACING +/- 25 CLEARANCE +/- 6
12. DECK CONCRETE SHALL BE "CONC. CL A (HPC-A)". CURBS AND HEADER OF ABUTMENT NO. 2 SHALL BE "CONC. CL A (HPC-A)". ALL OTHER CONCRETE SHALL BE "CONC. CL B (HPC-B)" UNLESS OTHERWISE DESIGNATED ON THE PLANS.
13. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 25 BY 25
14. THE FOLLOWING THICKNESS TOLERANCES SHALL BE ADHERED TO:

MATERIAL	THICKNESS TOLERANCE
BIT. CONC. PAVEMENT (ON BRIDGE)	+/- 6
BIT. CONC. PAVEMENT (OFF BRIDGE)	+/- 6/LIFT
SUBBASE	+/- 25
GRANULAR BORROW	+/- 25
15. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF DECK BETWEEN DRIP BEADS.
16. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68°F, UNLESS NOTED.
17. TRAFFIC SHALL BE ALLOWED ON THE NEW BRIDGE ONLY AFTER THE SPECIFIED CURE PERIOD HAS EXPIRED AND THE 28 DAY DESIGN STRENGTH HAS BEEN REACHED AS EVIDENCED BY TEST CYLINDERS CURED UNDER FIELD CONDITIONS.
18. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
19. THE KEY IN CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT.
20. DECK POURS ARE TO BE CONSTRUCTED IN ONE CONTINUOUS OPERATION WITH A MAXIMUM DURATION OF EIGHT HOURS. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A NINETY-SIX HOUR DELAY BETWEEN THE COMPLETION OF ONE DAY'S POUR AND THE BEGINNING OF ANOTHER DECK POUR SHALL BE OBSERVED.
21. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 4.2% TOWARD CENTER SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTHED WITH EITHER A WOOD OR MAGNESIUM FLOAT FINISH.
22. ALL STEEL PAID UNDER THE ITEM 506.55 "STRUCTURAL STEEL" (PLATE GIRDER) SHALL CONFORM TO AASHTO M 270M GRADE 345W UNLESS OTHERWISE NOTED.
23. ALL STRUCTURAL STEEL WITHIN 2450 OF ABUTMENT NO. 2 SHALL BE COATED WITH A PROTECTIVE PAINT SYSTEM AND GREASE AS SPECIFIED IN SUPPLEMENTAL SPECIFICATION 513. THE COLOR OF PAINT WILL BE BROWN, COLOR CHIP 20059. ALL COSTS SHALL BE INCLUDED IN ITEM 513.40, SURFACE PREPARATION, SHOP, AND ITEM 513.25, STRUCTURAL PAINTING, SHOP APPLIED.
24. STEEL HP 360 X 108 PILES SHALL BE DRIVEN TO A REQUIRED ULTIMATE CAPACITY EQUAL TO 2600 KN. PILE TIP REINFORCEMENT IS REQUIRED AND SHALL CONFORM TO SUBSECTION 505.04(E). THE CONTRACTOR'S DRIVING HAMMER WILL HAVE TO OVERCOME A FRICTIONAL RESISTANCE OF 980 KN DURING DRIVING.
25. PAYMENT FOR REMOVAL OF ALL EXISTING BRIDGE BITUMINOUS CONCRETE PAVEMENT SHALL BE MADE UNDER ITEM 529.10. THE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PROPERLY AT AN OFF SITE LOCATION.
26. ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE, SHALL INCLUDE THE REMOVAL OF THE ENTIRE SUPERSTRUCTURE AND REMOVAL OF THE PIER TO 300 ABOVE STREAM BED. THE EXISTING BEAMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. NO TEMPORARY FILL SHALL BE PERMITTED IN THE RIVER FOR REMOVAL OPERATIONS UNLESS THE CONTRACTOR OBTAINS THE REQUIRED PERMITS.
27. TRAFFIC WILL BE MAINTAINED ON THE EXISTING BRIDGE.
28. THE STRUCTURAL STEEL OF THE EXISTING BRIDGE ON THIS PROJECT IS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. SEE SPECIAL PROVISIONS.
29. SURCHARGING TREATMENT OF THE FOUNDATION SOILS PRIOR TO INSTALLATION OF PILES IS REQUIRED. FOR SURCHARGE TREATMENT AND GEOTECHNICAL INSTRUMENTATION SEE SHEET BR4.
30. AT ABUTMENT NO. 2, PAYMENT FOR GRANULAR BORROW USED AS SURCHARGE MATERIAL SHALL BE MADE UNDER ITEM 204.3. PAYMENT FOR THE REMOVAL OF SURCHARGE MATERIAL SHALL BE MADE UNDER ITEM 203.15.
31. THE CHARPY V-NOTCH TEST IS REQUIRED FOR MEMBERS DESIGNATED AS SUCH AND ONLY FOR SUCH MEMBERS, AS SPECIFIED IN SECTION 714.01.

HYDROLOGIC DATA

DRAINAGE AREA= 22.015 HECTARE
 CHARACTER OF TERRAIN: GENTLY ROLLING HILLS WITH SOME AREAS OF FLAT LAND
 CHARACTER & TYPE OF STREAM: PERENNIAL STREAM, THE CHANNEL IS RELATIVELY SHALLOW AND MEANDERING WITH MODERATE TO SLOW FLOWAGE OVER GRAVELLY RAPIDS
 NATURE OF STREAMBED: GRAVEL MATERIAL

Q2.33= 73.6 CMS Q50= 277.5 CMS
 Q10= 147.2 CMS Q100= 344.0 CMS
 Q25= 215.2 CMS Q500= 481.4 CMS

DATE OF FLOOD OF RECORD: NOT AVAILABLE
 WATER SURFACE ELEV.: ESTIMATED DISCHARGE:
 NATURAL STREAM VELOCITY @ 0
 ICE CONDITIONS: MODERATE DEBRIS: MODERATE
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY?
 IS ORDINARY RISE RAPID?
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO
 IF YES, DESCRIBE.

WATERSHED STORAGE: HEADWATERS UNIFORM THROUGHOUT WATERSHED X
 IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

STRUCTURE TYPE: TWO-SPAN STEEL ROLLED BEAM YEAR BUILT: 1940'S
 CLEAR SPAN (NORMAL TO STREAM): 32.000 ±
 VERTICAL CLEARANCE ABOVE STREAMBED: 4.300 ±
 WATERWAY OF FULL OPENING: 110.7 SQUARE METERS
 DISPOSITION OF STRUCTURE: NORMAL TO FLOW

TYPE OF MATERIAL UNDER SUBSTRUCTURE: UNKNOWN

WATER SURFACE ELEV. @ Q2.33= 125.550 VELOCITY= 1.47 MPS
 Q10= 126.330 " 2.03 MPS
 Q25= 126.720 " 2.55 MPS
 Q50= 126.880 " 3.08 MPS
 Q100= 127.680 " 1.98 MPS

LONG TERM STREAM BED CHANGES: MINOR LATERAL MIGRATION OF STREAM PRESENT

IS THE ROADWAY OVERTOPPED BELOW THE Q100? YES FREQUENCY: Q50
 RELIEF ELEVATION: 126.600 DISCHARGE OVER ROAD @ Q100: 140.2 CMS

UPSTREAM STRUCTURE: TOWN: ENOSBURG DISTANCE: 20.440
 HIGHWAY NO.: TH17 STRUCTURE NO.:
 STRUCTURE TYPE: COVERED BRIDGE
 CLEAR SPAN: 27.700 CLEAR HEIGHT: 4.100
 YEAR BUILT: 1875 FULL WATERWAY: 89.3 SQUARE METERS

DOWNSTREAM STRUCTURE: TOWN: DISTANCE:
 HIGHWAY NO.: STRUCTURE NO.:
 STRUCTURE TYPE:
 CLEAR SPAN: CLEAR HEIGHT:
 YEAR BUILT: FULL WATERWAY:

PROPOSED STRUCTURE

STRUCTURE TYPE: SINGLE SPAN COMPOSITE PLATE GIRDER

CLEAR SPAN (NORMAL TO STREAM): 43.200
 VERTICAL CLEARANCE ABOVE STREAMBED: 4.100
 WATERWAY OF FULL OPENING: 155 SQUARE METERS

WATER SURFACE ELEV. @ Q2.33= 125.660 VELOCITY= 1.18 MPS
 Q10= 126.520 " = 1.52 MPS
 Q25= 127.020 " = 1.79 MPS
 Q50= 127.320 " = 1.99 MPS
 Q100= 127.710 " = 1.97 MPS

IS THE ROADWAY OVERTOPPED BELOW THE Q100? YES FREQUENCY: Q50
 RELIEF ELEVATION: 126.700 DISCHARGE OVER ROAD @ Q100: 53.8 CMS

* AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 127.870
 VERTICAL CLEARANCE @ Q100 = 0.160

SCOUR: PROTECTION AT ABUTMENTS REQUIRED
 REQUIRED CHANNEL PROTECTION: TYPE IV STONE FILL
 * MINIMUM ELEVATION OF BRIDGE AT WEST ABUTMENT = 127.50.

PERMIT INFORMATION

AVERAGE DAILY FLOW: 4.96 CMS
 ORDINARY LOW WATER: 2.24 CMS DEPTH: 0.910
 ORDINARY HIGH WATER: 30.38 CMS DEPTH: 1.520

ADDITIONAL COMMENTS

DESIGN CRITERIA:

1. DESIGN LIVE LOAD AASHTO MS 22.5
2. DESIGN SPAN 44.000 METERS
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL ON LEDGE 500 kPa
4. ULTIMATE LOAD FOR PILING 2600 KN
5. STRUCTURAL STEEL AASHTO GRADE M 270M GRADE 345W
6. REINFORCING STEEL GRADE 420
7. CONCRETE CLASS A $f_c = 30 \text{ MPa (HPC-A)}$
 CONCRETE CLASS B $f_c = 25 \text{ MPa (HPC-B)}$
 CONCRETE CLASS C $f_c = 20 \text{ MPa}$

TRAFFIC MAINTENANCE:

1. IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE X OR ON TEMPORARY BRIDGE
 2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY TRAFFIC CONTROL SIGNALS REQUIRED
- MINIMUM CLEAR SPAN (NORMAL TO STREAM):
 WATERWAY OF FULL OPENING:
 ARE SIDEWALKS REQUIRED? IF SO, ON WHAT SIDE?
 STRUCTURE TYPE:

LOADING LEVELS (LOAD FACTOR)	LOAD FACTOR LOAD RATING (TONS)						
	M	MS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY A=2.17; B=1.00	40	42					
POSTED A=1.55; B=1.40	56	60	68		57	59	63
OPERATING A=1.30; B=1.67		71	82	86	68	70	

STRENGTH $RF = \frac{\phi M_N - 1.3 M_{DL}}{A \times M_{LL+1}}$ SERVICEABILITY $RF = B \left[\frac{.95 F_y S_{LL+1} - M_{DL} \frac{S_{LL+1}}{S_{DL}} - M_{SDL} \frac{S_{LL+1}}{S_{SDL}}}{1.67 M_{LL+1}} \right]$

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

Town Of **BERKSHIRE** Bridge No. **26**
 Highway No. **VT.ROUTE 118** Log Sta. **Surv. Sta.**

**VT.ROUTE 118 OVER TROUT RIVER
PRELIMINARY INFORMATION SHEET**

Designed By **S.JOHNSON** Drawn By **S.DELIA**
 Checked By **S.JOHNSON** Date **02/00** Bridge Design Supervisor **Date**

PROJECT **BERKSHIRE** PROJECT NO. **BRF-RS 0283(7)**

I.G.C. Info. **ys\914562\z184mp1.dgn** I\PARM\z184mp1

Bridge Sheet No. **BRI** Sheet **40** of **140**