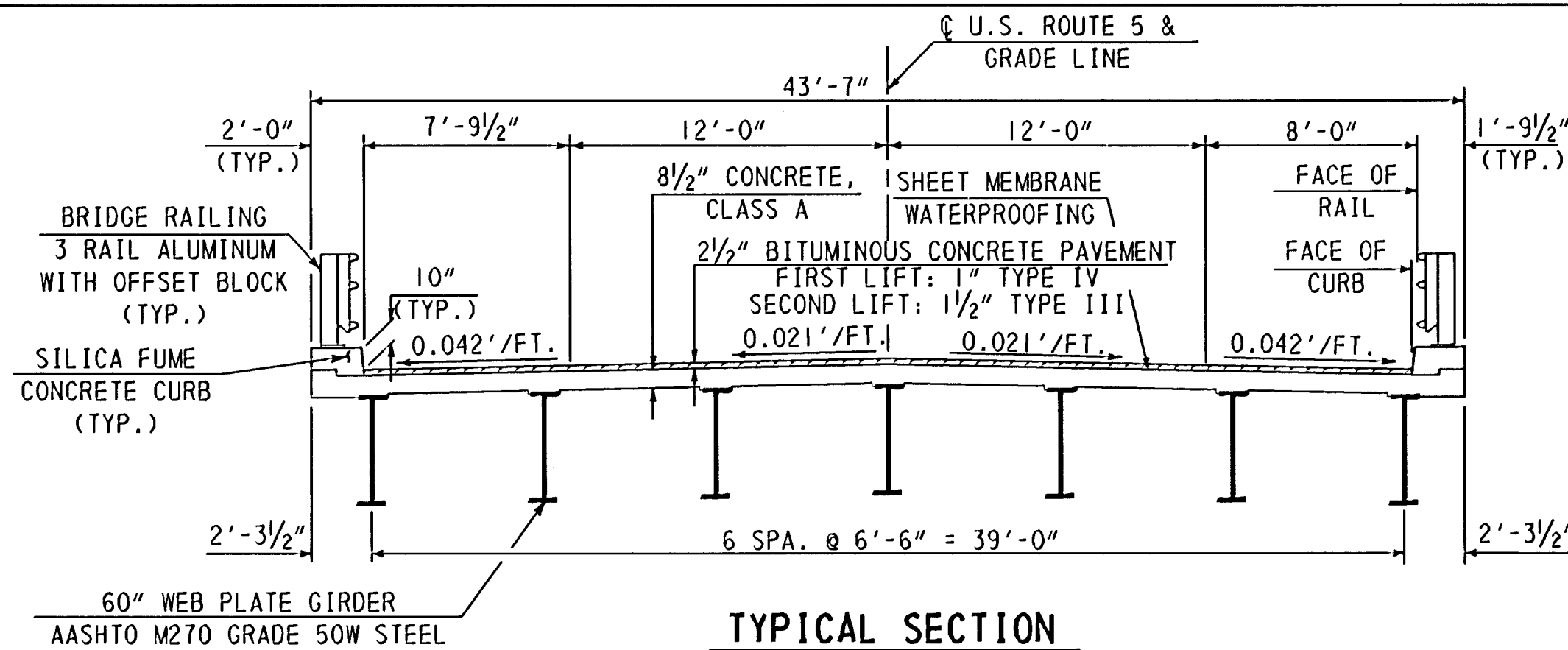


**GENERAL NOTES**

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION (DATED 1990), AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, AND ITS LATEST REVISIONS.
- DESIGN IS FOR HS25-44 LOADING, USING SERVICE LOAD METHOD.
- ALL STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED USING PROCEDURES AND TOLERANCES IN ACCORDANCE WITH SECTION 506.03 OF THE STANDARD SPECIFICATIONS.
- 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. THESE BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH SECTION 506.19.
- FASCIA OVERHANG BRACKETS SHALL BE SPACED AT A MAXIMUM OF FOUR (4) FEET, AND SHALL BE DESIGNED BY THE CONTRACTOR.
- ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER BOLTS, MEETING ASTM DESIGNATION A-325 (AASHTO M164 TYPE III). HOLES SHALL BE 1/8" DIAMETER. CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR.
- 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 IN SUBSTRUCTURES SHALL BE TWO (2) INCHES ALONG BACK FACES OF WALLS AGAINST EARTH AND THREE (3) INCHES ELSEWHERE, UNLESS OTHERWISE DESIGNATED ON PLANS.
- REINFORCING PLACEMENT TOLERANCES SHALL BE:  
SPACING +/- 1"  
CLEARANCE +/- 1/4"
- DECK CONCRETE SHALL BE "CONCRETE, CLASS A". CURBS AND HEADER OF ABUTMENT NO. 1 SHALL BE "SILICA FUME CONCRETE". 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".
- THE FOLLOWING THICKNESS TOLERANCES SHALL BE ADHERED TO:
 

MATERIAL	THICKNESS TOLERANCE
BIT. CONC. PAVEMENT (ON BRIDGE)	± 1/4 INCH
BIT. CONC. PAVEMENT (OFF BRIDGE)	± 1/4 INCH/LIFT
SUBBASE	± 1 INCH
GRANULAR BORROW	± 1 INCH
- WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF DECK BETWEEN DRIP BEADS.
- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68° F.
- 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.
- JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS 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.
- 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.
- 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 SMOOTHED WITH EITHER A WOOD OR MAGNESIUM FLOAT FINISH.



**TYPICAL SECTION**  
SCALE 3/16" = 1'-0"

**INDEX OF BRIDGE SHEETS**

BRI00	PRELIMINARY SHEET
BRI01	BRIDGE QUANTITY SHEET
BRI02	PROPOSED BRIDGE PLAN AND ELEVATION
BRI03	TYPICAL ABUTMENT AND WINGWALL SECTIONS
BRI04	SETTLEMENT INSTRUMENTATION PLAN
BRI05	BORING INFORMATION SHEET - 1
BRI06	BORING INFORMATION SHEET - 2
BRI07	BORING INFORMATION SHEET - 3
BRI08	BORING INFORMATION SHEET - 4
BRI09	BORING INFORMATION SHEET - 5
BRI10	DECK REINFORCING PLAN AND TYPICAL SECTION
BRI11	FRAMING PLAN AND GIRDER ELEVATION
BRI12	CROSS FRAME DETAILS
BRI13	SPLICE DETAILS
BRI14	BEARING DETAIL AT ABUTMENT NO. 1 & NO. 2
BRI15	BEARING DETAIL AT PIER
BRI16	FINGER JOINT DETAILS AT ABUTMENT NO. 1
BRI17	FINGER JOINT DETAILS AT ABUTMENT NO. 1
BRI18	FINGER JOINT DETAILS AT ABUTMENT NO. 1
BRI19	MISCELLANEOUS DETAILS
BRI20	ABUTMENT NO. 1 DETAILS
BRI21	ABUTMENT NO. 2 DETAILS
BRI22	WINGWALL NO. 1 & 2 DETAILS
BRI23	WINGWALL NO. 3 & 4 DETAILS
BRI24	ABUTMENT NO. 1 & 2 BACKWALL DETAILS
BRI25	ABUTMENT NO. 1 & 2 FOOTING REINFORCING
BRI26	ABUTMENT NO. 1 & 2 PILE LAYOUT
BRI27	PIER DETAILS
BRI28	APPROACH SLAB DETAILS
BRI29	ALUMINUM APPROACH RAILING DETAILS
BRI30	ALUMINUM BRIDGE RAILING DETAILS
BRI31	ALUMINUM BRIDGE RAILING DETAILS
BRI32	REINFORCING STEEL SCHEDULE
BRI33	REINFORCING STEEL SCHEDULE

- ALL STRUCTURAL STEEL WITHIN EIGHT FEET OF ABUTMENT NO. 1 SHALL BE COATED WITH A PROTECTIVE PAINT SYSTEM AS SPECIFIED IN SUPPLEMENTAL SPECIFICATION 513. THE COLOR OF PAINT WILL BE BROWN, COLOR CHIP 20059.
- STEEL HP 12x74 PILES SHALL BE DRIVEN TO A REQUIRED ULTIMATE CAPACITY EQUAL TO 539 KIPS. PILE TIP REINFORCEMENT SHALL CONFORM TO SUBSECTION 505.04(D).
- 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.
- ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE, SHALL INCLUDE THE REMOVAL OF THE ENTIRE SUPERSTRUCTURE AND REMOVAL OF THE PIER TO STREAMBED AND TEMPORARY PILE BENT. ALSO INCLUDED IS THE REMOVAL OF ALL CONCRETE AND REINFORCING STEEL ABOVE ELEVATION (308 ±) AT THE EXISTING SOUTH ABUTMENT AND ELEVATION (291 ±) AT THE EXISTING NORTH ABUTMENT. THE EXISTING BEAMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
- TRAFFIC WILL BE MAINTAINED ON THE EXISTING BRIDGE.
- EARTH WORK QUANTITIES AT THE PIER HAVE BEEN COMPUTED ON THE ASSUMPTION THAT THE COFFERDAM LIMIT WILL BE 4.5 FT. OUTSIDE THE NEW FOOTING LIMIT.
- THE STRUCTURAL STEEL OF THE EXISTING BRIDGE ON THIS PROJECT IS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. THE STRUCTURAL STEEL IS THE PROPERTY OF THE CONTRACTOR AND THE CONTRACTOR MAY DISPOSE OF IT OR RETAIN IT FOR FUTURE USE. THE CONTRACTOR WILL INFORM THE ENGINEER OF HIS/HER PLANS FOR THE DISPOSAL OR RETAINAGE OF THE STRUCTURAL STEEL PRIOR TO ITS REMOVAL.
- SURCHARGING TREATMENT OF THE FOUNDATION SOILS PRIOR TO INSTALLATION OF PILES IS REQUIRED. FOR SURCHARGE TREATMENT AND GEOTECHNICAL INSTRUMENTATION SEE SHEET BRI04.
- AT BOTH ABUTMENTS, PAYMENT FOR GRANULAR BORROW USED AS SURCHARGE MATERIAL SHALL BE MADE UNDER ITEM 203.32. PAYMENT FOR THE REMOVAL OF THIS MATERIAL SHALL BE MADE UNDER ITEM 204.25. FINAL BACKFILLING ADJACENT TO STRUCTURES SHALL BE PAID FOR UNDER ITEM 204.30.
- EXISTING BRIDGE PLANS (BUILT 1940) ARE AVAILABLE FOR THIS PROJECT AND CAN BE OBTAINED THROUGH THE VERMONT AGENCY OF TRANSPORTATION.

**EXISTING STRUCTURE**

- STRUCTURE TYPE: 2 SPAN STEEL GIRDER OVERALL LENGTH: 285.66 FT. INVENTORY RATING: \_\_\_\_\_
- SPAN LENGTH(S), CENTER TO CENTER OF BEARINGS 280 FT.
- CLEAR SPAN LENGTH(S) (NORMAL TO STREAM) 280 FT.
- WATERWAY FULL OPENING (NORMAL TO STREAM) 8610 SF. VERTICAL CLEARANCE ABOVE STREAM BED) 28 FT.
- WATER SURFACE ELEVATION @ Q 2.33 293.64 FT. WATER SURFACE ELEVATION @ Q 25 299.06 FT.
- WATER SURFACE ELEVATION AT FLOOD OF RECORD \_\_\_\_\_ YEAR \_\_\_\_\_
- 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 TIMBER PILES @ ABUTMENT #1 & PIER, LEDGE @ ABUTMENT #2
- DISPOSITION OF STRUCTURE PARTIALLY REMOVE AS PER GENERAL NOTE 24

**NEW STRUCTURE**

- STRUCTURE GEOMETRY:
- STRUCTURE TYPE 2 SPAN STEEL GIRDER OVERALL LENGTH 289.65 FT.
  - SPAN LENGTH(S) CENTER TO CENTER BEARINGS 2 SPANS @ 142 FT.
  - VERTICAL CLEARANCE ABOVE STREAM BED OR ROAD UNDER 33 FT.
  - CLEAR SPAN LENGTH(S) 139.75 FT. EACH
  - WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM) 8800 S.F.
  - ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES? YES

**HYDRAULIC DATA:**

- Q 2.33 1590 C.F.S. WATER ELEVATION 293.65 FT. VELOCITY 1.06 F.P.S.
- Q 10 3500 C.F.S. WATER ELEVATION 297.05 FT. VELOCITY 1.56 F.P.S.
- Q 25 5400 C.F.S. WATER ELEVATION 299.07 FT. VELOCITY 2.00 F.P.S.
- Q 50 6020 C.F.S. WATER ELEVATION 300.36 FT. VELOCITY 2.00 F.P.S.
- Q 100 7500 C.F.S. WATER ELEVATION 302.36 FT. VELOCITY 2.15 F.P.S.
- DRAINAGE AREA 206 SQ. MI. CHARACTER OF TERRAIN ROLLING HILLS TO MOUNTAINOUS
- ARE THERE OBJECTIONS TO A PIER IN THE STREAM? NO
- DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY? NO IS ITS ORDINARY RISE RAPID NO
- NATURE OF STREAMBED SAND AND GRAVEL
- ESTIMATED SCOUR DEPTH AT PIER 10 FT. COMMENT ON: DRIFT MINOR ICE MODERATE
- WILL ALL WATER PASS THOUGH NEW STRUCTURE? YES IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? \_\_\_\_\_ ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF \_\_\_\_\_
- VERTICAL CLEARANCE ABOVE Q 50 = 15.51 FT.
- ALLOWABLE WATER SURFACE ELEVATION 315.87 FT. LIMITED BY LOW STEEL ELEVATION
- IS DESIGN STAGE AFFECTED BY DOWNSTREAM CONDITIONS? YES IF YES, DESCRIBE BACKWATER EFFECTS FROM THE CONNECTICUT RIVER CONTROL WATER SURFACE ELEVATIONS.
- ORDINARY LOW WATER 290 FT. ORDINARY HIGH WATER 292 FT
- STREAMBANK OR CHANNEL PROTECTION REQUIRED STONE FILL TYPE III
- DISTANCE TO EXISTING UPSTREAM STRUCTURE \_\_\_\_\_ SPAN \_\_\_\_\_ WATERWAY FULL OPENING \_\_\_\_\_ Q
- DISTANCE TO EXISTING DOWNSTREAM STRUCTURE \_\_\_\_\_ SPAN \_\_\_\_\_ WATERWAY FULL OPENING \_\_\_\_\_ Q

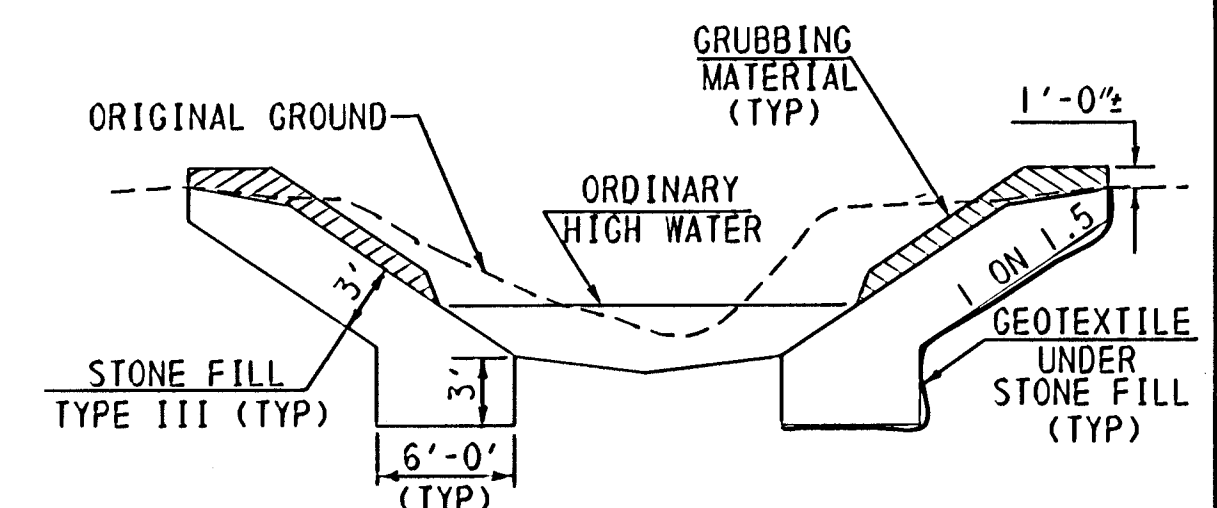
**ALLOWABLE STRESSES:**

- DESIGN LIVE LOAD AASHTO HS-25-44
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
- ALLOWABLE LOAD FOR PILING 196 KIPS TYPE HPI2x74 ESTIMATED LENGTH TO BED ROCK
- ALLOWABLE STRESS FOR STRUCTURAL STEEL AASHTO M 270 GRADE 50W TENSION 27 KSI
- ALLOWABLE STRESS FOR REINFORCING STEEL GRADE 60 TENSION 24 KSI COMPRESSION
- ALLOWABLE STRESS FOR CONCRETE CLASS A fb 4,000 PSI fc 1,600 PSI  
CLASS B fb 3,500 PSI fc 1,400 PSI  
SILICA FUME CONCRETE fb 5,000 PSI fc 2,000 PSI

**TRAFFIC MAINTENANCE:**

- IS TRAFFIC MAINTAINED? YES IF YES, ON EXISTING STRUCTURE? YES OR ON TEMPORARY BRIDGE \_\_\_\_\_
- TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY \_\_\_\_\_ TRAFFIC CONTROL SIGNALS REQUIRED \_\_\_\_\_  
MINIMUM CLEAR SPAN \_\_\_\_\_ MINIMUM CLEAR HEIGHT \_\_\_\_\_ MINIMUM WATERWAY AREA \_\_\_\_\_  
ARE SIDEWALKS REQUIRED? \_\_\_\_\_ IF SO, ON WHAT SIDE? \_\_\_\_\_

GRUBBING MATERIAL SHOULD NOT BE PLACED ON THE STONE FILL AREA UNDER BRIDGE.



**TYPICAL CHANNEL SECTION**

**LOAD RATING (TONS)**

STRESS LEVELS	TRUCK					
	H	HS	3S2	6 AXLE 3A STR	4A STR	5A STR
INVENTORY 0.55Fy=27 KSI	27	49				
POSTED 0.67Fy=33.5KSI	45	79	87	75	76	83
OPERATING 0.75Fy=37.5KSI		96	106	116	91	93

**STATE OF VERMONT AGENCY OF TRANSPORTATION**

Town Of **SPRINGFIELD** Bridge No. **44**

Highway No. **U.S. ROUTE 5** Log Sta. \_\_\_\_\_  
Surv. Sta. \_\_\_\_\_

**U.S. ROUTE 5 OVER BLACK RIVER**

PRELIMINARY INFORMATION

Designed By **S. BAKI** Drawn By **K. NICHOLS/W. GAYNOR**

Checked By **S. BAKI** Date **7/95** Bridge Design Supervisor **P. PIERCE** Date **5/96**

PROJECT **SPRINGFIELD** PROJECT NO. **BRS-RS 0113 (8)**

I.G.C. Info. **c:\usr\j9145622\sprplsh1.dgn**

Bridge Sheet No. **BRI00** Sheet **29** of **90**

