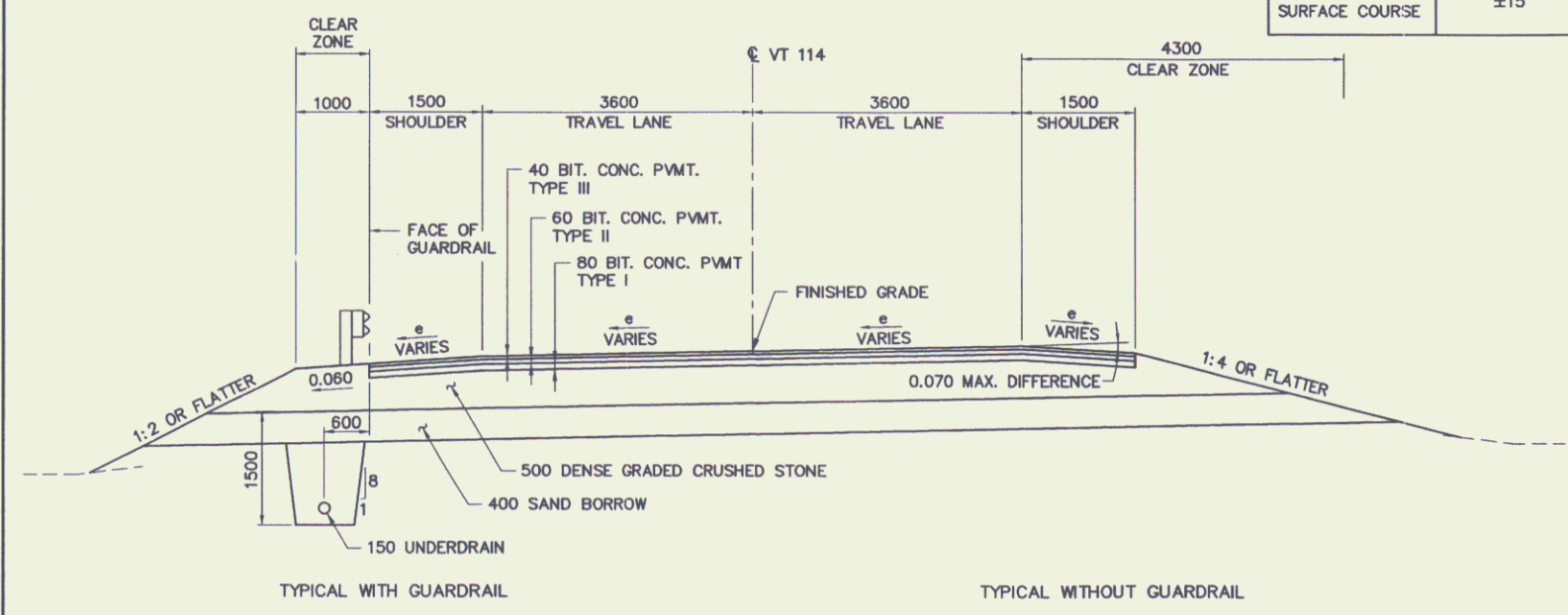


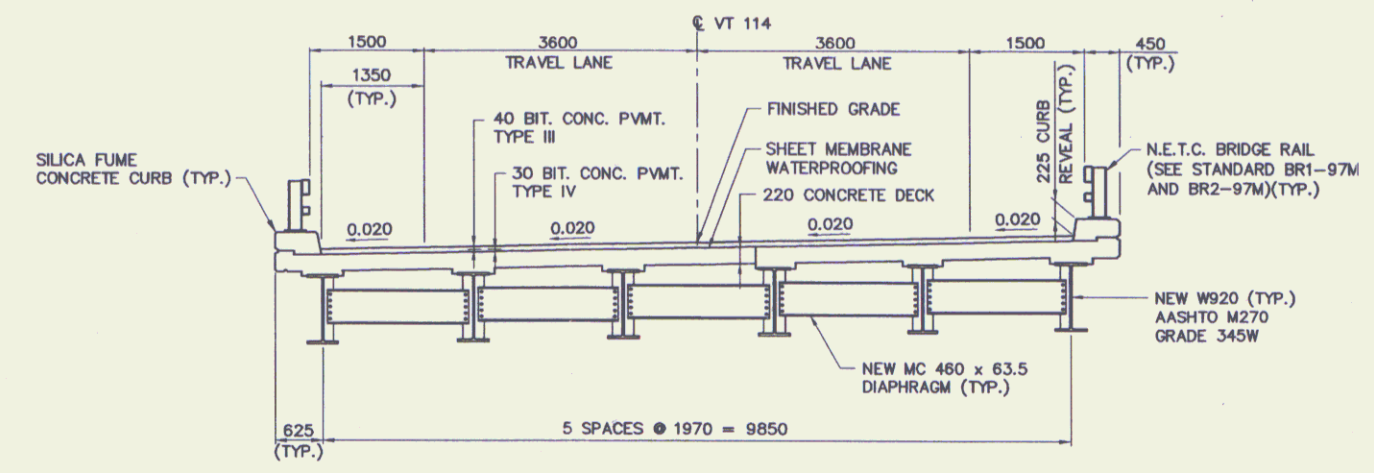
FINAL HYDRAULICS REPORT
(TO BE PROVIDED)



| MATERIAL ITEM | THICKNESS TOLERANCE |
|----------------------------|---------------------|
| PAVEMENT | ±5 (TOTAL) |
| DENSE GRADED CRUSHED STONE | ±30 |
| SAND BORROW | ±30 |
| AGGREGATE SURFACE COURSE | ±15 |

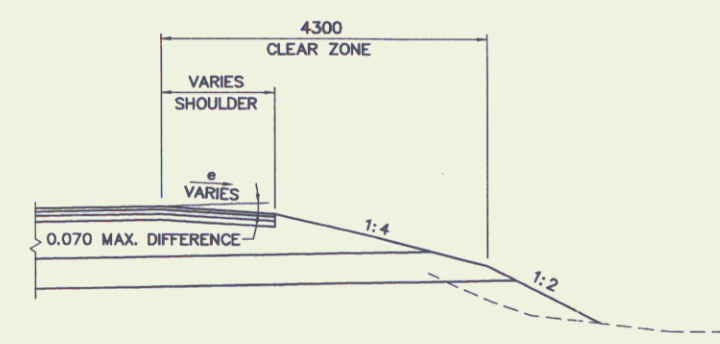


ROADWAY TYPICAL SECTION
SCALE: 1:50

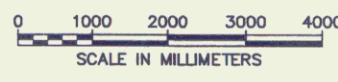


BRIDGE TYPICAL SECTION
SCALE: 1:50

| MATERIAL THICKNESSES | |
|-------------------------------|---|
| T.H. 5, T.H. 118, WATER ST. | 40 mm BIT. CONC. P.V.M.T. TYPE III 60 mm BIT CONC. P.V.M.T. TYPE II 500 mm DENSE GRADED CRUSHED STONE |
| T.H. 118 | 100 mm AGGREGATE SURFACE COURSE 500 mm DENSE GRADED CRUSHED STONE |
| RESIDENTIAL DRIVES | 50 mm BIT. CONC. P.V.M.T. TYPE III 300 mm DENSE GRADED CRUSHED STONE |
| 3 m FIELD DRIVE APPROACH AREA | 40 mm BIT. CONC. P.V.M.T. TYPE III 60 mm BIT CONC. P.V.M.T. TYPE II 500 mm DENSE GRADED CRUSHED STONE |
| 3 m FIELD DRIVE | 75 mm AGGREGATE SURFACE COURSE 425 mm DENSE GRADED CRUSHED STONE |



TYPICAL VARIABLE SIDESLOPE
SCALE: 1:50



HYDROLOGIC DATA

DRAINAGE AREA= 208 km²
 CHARACTER OF TERRAIN: HILLY, MODERATE TO WIDE FLOOD PLAIN
 CHARACTER & TYPE OF STREAM: PERENNIAL
 NATURE OF STREAMBED: SAND, SMALL COBBLES
 (SEE NOTE 1)
 Q2.33= 51 m³/s Q50= 139 m³/s
 Q10= 93 m³/s Q100= 181 m³/s
 Q25= 119 m³/s Q500= 221 m³/s
 DATE OF FLOOD OF RECORD: 1927
 WATER SURFACE ELEV.: SEE NOTE 2 ESTIMATED DISCHARGE: APPROX. Q100
 NATURAL STREAM VELOCITY @ Q50: 2.4 m/s
 IS ORDINARY RISE RAPID? YES
 ICE CONDITIONS: HEAVY DEBRIS: HEAVY
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? YES
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO
 IF YES, DESCRIBE.
 WATERSHED STORAGE: HEADWATERS: UNIFORM THROUGHOUT WATERSHED.
 IMMEDIATELY ABOVE SITE: X

EXISTING STRUCTURE

STRUCTURE TYPE: SIMPLE SPAN STEEL BEAM, CONCRETE DECK YEAR BUILT: 1938
 CLEAR SPAN (NORMAL TO STREAM): 24.4 m
 VERTICAL CLEARANCE ABOVE STREAMBED: 5.2 m
 WATERWAY OF FULL OPENING: 83 m²
 DISPOSITION OF STRUCTURE: REHABILITATE
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: UNKNOWN
 WATER SURFACE ELEV. @ Q2.33= 214.7 m VELOCITY= 2.3 m/s
 Q10= 215.8 m " " 2.3 m/s
 Q25= 216.3 m " " 2.4 m/s
 Q50= 216.6 m " " 2.4 m/s
 Q100= 217.3 m " " 2.2 m/s
 LONG TERM STREAM BED CHANGES: UNKNOWN (SEE NOTE 5)
 IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: Q500
 RELIEF ELEVATION: DISCHARGE OVER ROAD @ Q100: NONE

UPSTREAM STRUCTURE: TOWN: LYNDON DISTANCE: 0.46 km
 HIGHWAY NO.: TH 36 STRUCTURE NO.: 47
 STRUCTURE TYPE: SINGLE SPAN STEEL BEAM BRIDGE
 CLEAR SPAN: 15.2 m CLEAR HEIGHT: 4.6 m
 YEAR BUILT: 1973 FULL WATERWAY: 70 m²
 DOWNSTREAM STRUCTURE: TOWN: LYNDON DISTANCE: 0.21 km
 HIGHWAY NO.: RAILROAD STRUCTURE NO.: UNKNOWN
 STRUCTURE TYPE: UNKNOWN
 CLEAR SPAN: UNKNOWN CLEAR HEIGHT: UNKNOWN
 YEAR BUILT: UNKNOWN FULL WATERWAY: UNKNOWN

- DESIGN CRITERIA:
- DESIGN LIVE LOAD AASHTO MS 22.5
 - DESIGN SPAN 24.94 m BRG TO E BRG
 - ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL ON LEDGE ESTIMATED LENGTH
 - ALLOWABLE LOAD FOR PILING TYPE ESTIMATED LENGTH
 - STRUCTURAL STEEL AASHTO GRADE 345W
 - REINFORCING STEEL GRADE 420
 - CONCRETE CLASS A f_c: 30 MPa
 CONCRETE CLASS B f_c: 25 MPa
 SILICA FUME CONCRETE f_c: 35 MPa

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 TRAFFIC CONTROL SIGNALS REQUIRED YES
 MINIMUM CLEAR SPAN (NORMAL TO STREAM): VERTICAL CLEARANCE ABOVE STREAMBED:
 WATERWAY OF FULL OPENING: ARE SIDEWALKS REQUIRED? IF SO, ON WHAT SIDE?
 STRUCTURE TYPE:

PROPOSED STRUCTURE

(SUPERSTRUCTURE REPLACEMENT)
 STRUCTURE TYPE: SIMPLE SPAN STEEL BEAM, CONCRETE DECK
 CLEAR SPAN (NORMAL TO STREAM): 24.4 m
 VERTICAL CLEARANCE ABOVE STREAMBED: 5.6 m
 WATERWAY OF FULL OPENING: 94 m²
 WATER SURFACE ELEV. @ Q2.33= 214.7 m VELOCITY= 2.3 m/s
 Q10= 215.8 m " " 2.3 m/s
 Q25= 216.3 m " " 2.4 m/s
 Q50= 216.6 m " " 2.4 m/s
 Q100= 217.3 m " " 2.2 m/s
 IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: Q500
 RELIEF ELEVATION: DISCHARGE OVER ROAD @ Q100: NONE
 AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 217.8 m
 VERTICAL CLEARANCE @ Q50: 1.2 m
 SCOUR:
 REQUIRED CHANNEL PROTECTION: STONE FILL, TYPE II

PERMIT INFORMATION

AVERAGE DAILY FLOW: 5 cms DEPTH: 0.6 m
 ORDINARY LOW WATER: 2 cms DEPTH: 1.6 m
 ORDINARY HIGH WATER: 22 cms DEPTH: 1.6 m

TEMPORARY STRUCTURE

STRUCTURE TYPE: NOT USED
 CLEAR SPAN (NORMAL TO STREAM): N/A
 VERTICAL CLEARANCE ABOVE STREAMBED: N/A
 WATERWAY OF FULL OPENING: N/A

ADDITIONAL COMMENTS

- PEAK DISCHARGES FOR 10 YEAR, 50 YEAR, 100 YEAR AND 500 YEAR EVENTS WERE OBTAINED FROM THE LYNDON FIS (MAY 1988) AND THE 2.33 YEAR AND 25 YEAR EVENTS WERE APPROXIMATED USING GRAPHICAL METHODS.
- THE EXISTING 1937 PLANS INDICATE MAXIMUM HIGH WATER APPROXIMATELY 0.3 m BELOW THE EXISTING STEEL BEAMS.
- HYDRAULIC CONDITIONS FOR THE PROPOSED STRUCTURE ARE COMPARABLE TO THE EXISTING STRUCTURE.
- WATER SURFACE ELEVATIONS ARE PROVIDED AT A SECTION APPROXIMATELY 12 m UPSTREAM OF THE EXISTING/PROPOSED BRIDGE. VELOCITIES ARE PROVIDED AT THE BRIDGE.
- THE RIVER WAS RELOCATED THROUGH THE PROJECT AREA AS PART OF THE 1938 BRIDGE CONSTRUCTION. THE CHANNEL AND BANKS ARE ARMORED UPSTREAM, DOWNSTREAM AND THROUGH THE BRIDGE.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

| | | | |
|-------------------------------|-----------|--------------------------|--------------|
| Town Of | LYNDON | Bridge No. | 2 |
| Highway No. | VT 114 | Log Sta. | |
| VT 114 OVER PASSUMPSIC RIVER | | | |
| PRELIMINARY INFORMATION SHEET | | | |
| Designed By | S.M. GUNN | Drawn By | R.F. CLARK |
| Checked By | Date | Bridge Design Supervisor | Date |
| PROJECT | LYNDON | PROJECT NO. | BHF 0269(10) |
| I.G.C. Info. | | | |
| ROW SHEET 2 OF 15 SHEETS | | | |

VANASSE HANGEN BRUSTLIN, INC.