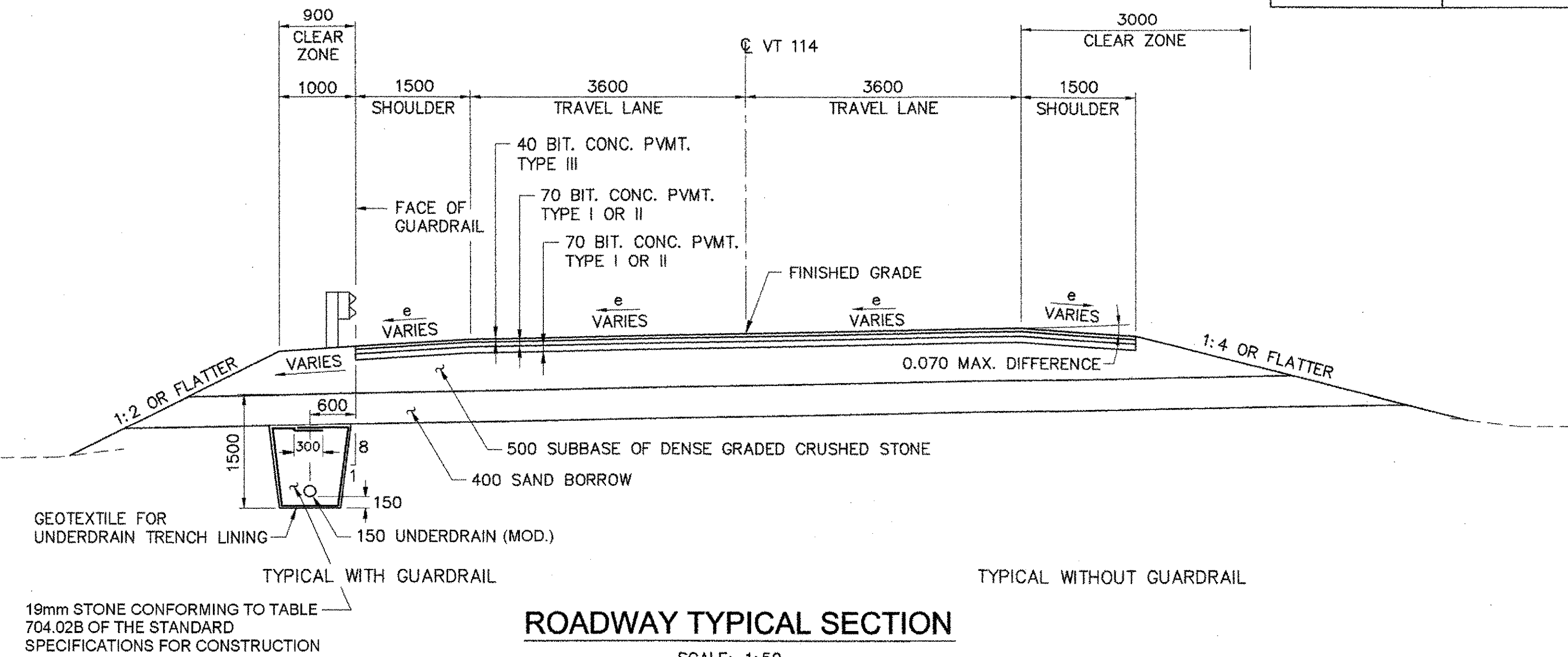
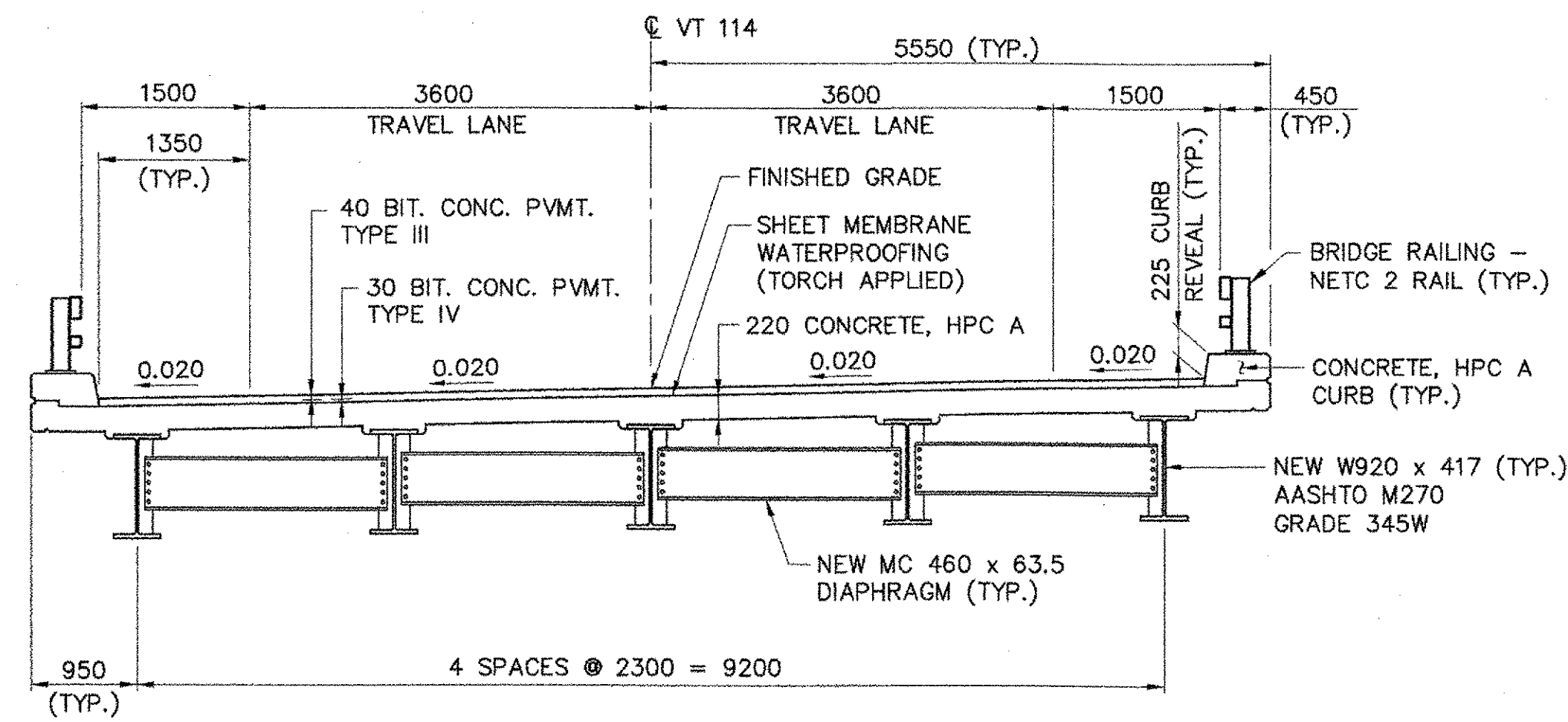


MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT	±5 (TOTAL)
DENSE GRADED CRUSHED STONE	±30
SAND BORROW	±30
AGGREGATE SURFACE COURSE	±15



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. PVMT. TYPE III 60 mm BIT. CONC. PVMT. TYPE I OR 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. PVMT. TYPE III 300 mm DENSE GRADED CRUSHED STONE
3 m FIELD DRIVE APPROACH AREA	40 mm BIT. CONC. PVMT. TYPE III 60 mm BIT. CONC. PVMT. TYPE I OR II 500 mm DENSE GRADED CRUSHED STONE
3 m FIELD DRIVE	75 mm AGGREGATE SURFACE COURSE 425 mm DENSE GRADED CRUSHED STONE

\* UNLESS OTHERWISE SHOWN ON CROSS SECTIONS.

HYDROLOGIC DATA

DRAINAGE AREA= 208 km<sup>2</sup>  
 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 m<sup>3</sup>/s Q50= 139 m<sup>3</sup>/s  
 Q10= 93 m<sup>3</sup>/s Q100= 161 m<sup>3</sup>/s  
 Q25= 119 m<sup>3</sup>/s Q500= 221 m<sup>3</sup>/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  
 ICE CONDITIONS: POTENTIALLY HEAVY DEBRIS: POTENTIALLY HEAVY  
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? YES  
 IS ORDINARY RISE RAPID? YES  
 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: SIMPLE SPAN STEEL BEAM, CONCRETE DECK YEAR BUILT: 1938  
 CLEAR SPAN (NORMAL TO STREAM): 24.4 m  
 VERTICAL CLEARANCE ABOVE STREAMBED: 5.6 m  
 WATERWAY OF FULL OPENING: 83 m<sup>2</sup>  
 DISPOSITION OF STRUCTURE: REPLACE  
 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 m<sup>2</sup>  
 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 29.57 m @ BRG TO @ BRG
  - ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL \_\_\_\_\_ ON LEDGE \_\_\_\_\_
  - DESIGN LOAD FOR PILING 880 kN TYPE HP 310x125 ESTIMATED LENGTH 21.0 m (INCLUDING 1.0 m CONCRETE EMBEDMENT)
  - STRUCTURAL STEEL AASHTO GRADE 345W
  - REINFORCING STEEL GRADE 420
  - CONCRETE, HIGH PERFORMANCE CLASS A f<sub>c</sub>: 30 MPa  
 CONCRETE, HIGH PERFORMANCE CLASS B f<sub>c</sub>: 25 MPa

- TRAFFIC MAINTENANCE:
- IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE YES
  - TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY ONE WAY TRAFFIC CONTROL SIGNALS REQUIRED YES  
 MINIMUM CLEAR SPAN (NORMAL TO STREAM): 24.4 VERTICAL CLEARANCE ABOVE STREAMBED: MIN. BOTTOM OF SUPERSTRUCTURE = EL. 216.7  
 WATERWAY OF FULL OPENING: 75 SM  
 ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? \_\_\_\_\_  
 STRUCTURE TYPE: UNKNOWN

LOAD FACTOR LOAD RATING (METRIC TONNES)						
LOADING LEVELS (LOAD FACTORS)	TRUCK					
	M	MS	3S2	6 AXLE	3A STR	4A STR
INVENTORY	25	46				
POSTED	36	64	77		61	63
OPERATING			77	91	104	73
A=2.17 B=1.00						71
A=1.55 B=1.40						
A=1.30 B=1.67						

VT 114 TRAFFIC DATA  
 1997 ADT = 4200  
 1997 DHV = 505  
 1997 ADTT = 215  
 2017 ADT = 5740  
 2017 DHV = 690  
 2017 ADTT = 255  
 % D = 56  
 % T = 4.0  
 1997-2017 ESAL'S 2,454,000  
 1997-2037 ESAL'S 6,384,000  
 POSTED SPEED (EXISTING) = 35 mph  
 DESIGN SPEED = 60 km/h

PROPOSED STRUCTURE

(BRIDGE 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: 96 m<sup>2</sup>  
 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 IV

PERMIT INFORMATION

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

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. \_\_\_\_\_  
 Surv. Sta. \_\_\_\_\_  
 VT 114 OVER PASSUMPSIC RIVER

PRELIMINARY INFORMATION SHEET

Designed By S.M. GUNN Drawn By B.J. MASSE  
 Checked By M.A. COLGAN Date 3/06 Bridge Design Supervisor M.A. COLGAN Date 3/06  
 PROJECT LYNDON PROJECT NO. BRF 0269(10)  
 I.G.C. Info. Bridge Sheet No. 50544PI Sheet 2 of 72