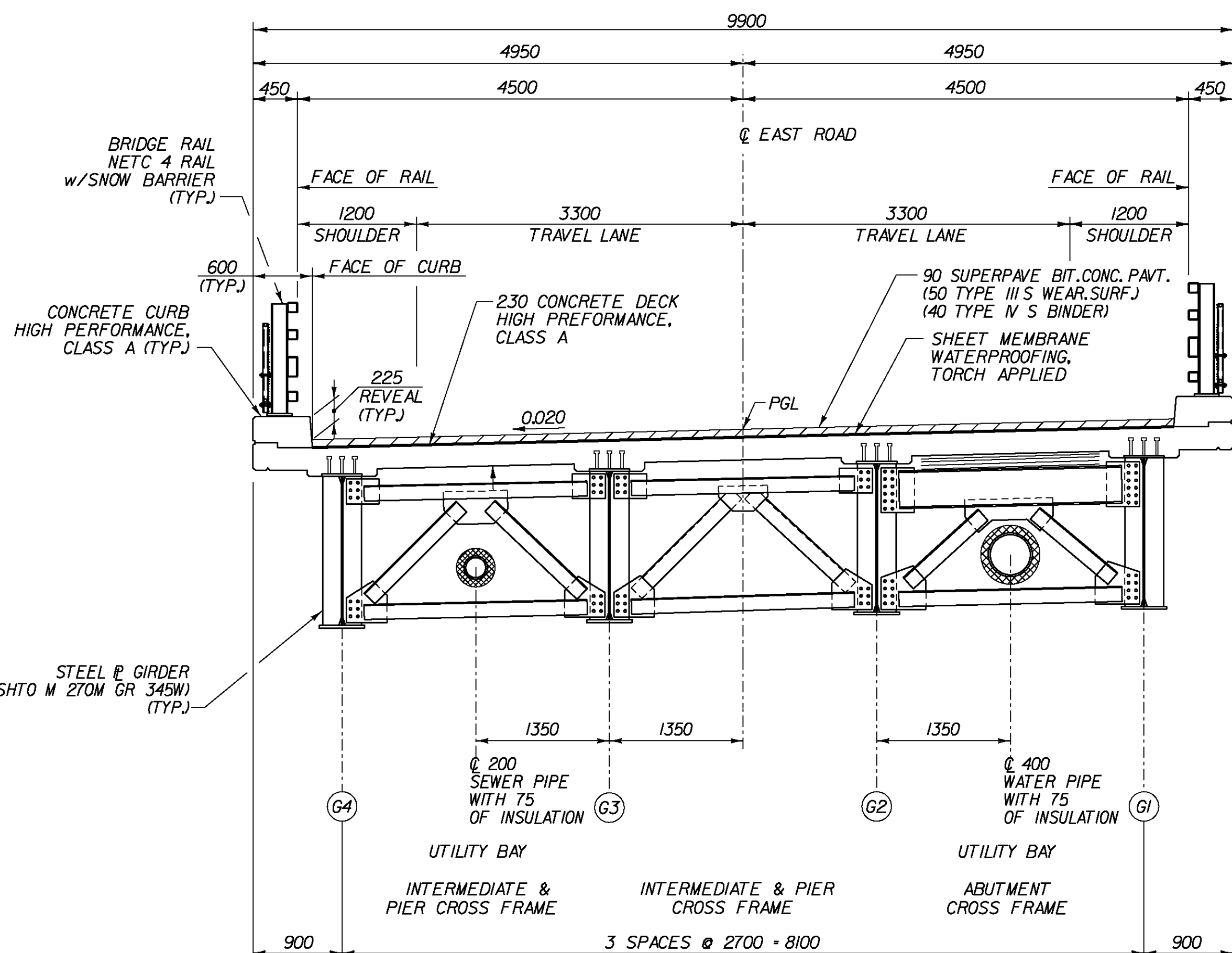


FINAL HYDRAULICS REPORT



TYPICAL BRIDGE SECTION - VEHICLE
SCALE 1:40

NOTE: ALL DIMENSIONS ARE RADIAL AND CONCENTRIC WITH @ EAST ROAD.

EAST ROAD - ESTIMATED TRAFFIC DATA

2010 ADT :	4550
2030 ADT :	6100
% T :	3%
% D :	50%
DESIGN SPEED :	50KPH (35 MPH)

INDEX OF SHEETS

BR600	PRELIMINARY INFORMATION SHEET	BR630	FRAMING PLAN (S.U.P.)
BR601	TYPICAL EARTHWORK SECTIONS	BR631	CROSSFRAME DETAILS (S.U.P.)
BR602	QUANTITY SHEET	BR632	BEARING DETAILS (S.U.P.)
BR603-604	BORING INFO SHEETS	BR633	PIER BEARING DETAILS (S.U.P.)
BR605-613	BORING LOGS	BR634	EXPANSION JOINT PLAN (S.U.P.)
BR614	PLAN AND ELEVATION	BR635	ABUTMENT 1 PLAN AND ELEVATION
BR615	VT ROUTE 279 PROFILES	BR636	ABUTMENT 1 WINGWALL DETAILS
BR616	GENERAL NOTES	BR637	ABUTMENT 1 FOOTING
BR617	TYPICAL BRIDGE SECTION	BR638	ABUTMENT 2 PLAN AND ELEVATION
BR618	DECK PLAN	BR639	ABUTMENT 2 WINGWALL DETAILS
BR619	FRAMING PLAN	BR640	ABUTMENT 2 FOOTING
BR620	SPLICE DETAILS	BR641	PIER DETAILS
BR621	CROSSFRAME DETAILS	BR642	PIER DETAILS (S.U.P.)
BR622	MISCELLANEOUS DETAILS	BR643	RAILING PLAN
BR623	ABUTMENT BEARING DETAILS	BR644	BRIDGE RAILING - NETC 4 RAIL
BR624	PIER BEARING DETAILS	BR645	APPROACH RAILING
BR625	EXPANSION JOINT PLAN	BR646	DETAILS - NETC 4 RAIL
BR626	EXPANSION JOINT DETAILS	BR647	SNOW FENCE - NETC 4 RAIL
BR627	DOWNSPOUT DETAILS	BR648	PROTECTIVE SCREENING DETAILS
BR628	APPROACH SLAB DETAILS	BR649	REINFORCING STEEL SCHEDULE I
BR629	TYPICAL SECTION (S.U.P.)	BR650	REINFORCING STEEL SCHEDULE II

NOTE:
ALL DIMENSIONS ON SHEETS BR600 TO BR650 ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

HYDROLOGIC DATA

DRAINAGE AREA: _____
 CHARACTER OF TERRAIN: _____
 CHARACTER & TYPE OF STREAM: _____
 NATURE OF STREAMBED: _____
 02.33= _____ cms 050= _____ cms
 010= _____ cms 0100= _____ cms
 025= _____ cms 0500= _____ cms

DATE OF FLOOD OF RECORD: _____
 WATER SURFACE ELEV.: _____ ESTIMATED DISCHARGE: _____
 NATURAL STREAM VELOCITY @ 050 = _____ mps
 ICE CONDITIONS: _____ DEBRIS: _____
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? _____
 IS ORDINARY BASE RAPID? _____
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? _____
 IF YES, DESCRIBE: _____
 WATERSHED STORAGE _____ HEADWATERS _____ UNIFORM THROUGHOUT WATERSHED _____
 IMMEDIATELY ABOVE SITE _____

PROPOSED STRUCTURE

STRUCTURE TYPE: Two span continuous curved plate girder bridge

CLEAR SPAN (NORMAL TO STREAM): N/A
 VERTICAL CLEARANCE ABOVE STREAMBED: N/A
 WATERWAY OF FULL OPENING: N/A

WATER SURFACE ELEV. @ 02.33= _____ VELOCITY= _____ mps
 010= _____ " = _____ mps
 025= _____ " = _____ mps
 050= _____ " = _____ mps
 0100= _____ " = _____ mps

IS THE ROADWAY OVERTOPPED BELOW THE 0100? N/A FREQUENCY: N/A
 RELIEF ELEVATION: N/A DISCHARGE OVER ROAD @ 0100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: _____
 VERTICAL CLEARANCE @ 0100 = _____ m

SCOUR: Channel = N/A
 REQUIRED CHANNEL PROTECTION: N/A

EXISTING STRUCTURE

STRUCTURE TYPE: N/A YEAR BUILT: N/A
 CLEAR SPAN (NORMAL TO STREAM): N/A
 VERTICAL CLEARANCE ABOVE STREAMBED: N/A
 WATERWAY OF FULL OPENING: N/A
 DISPOSITION OF STRUCTURE: N/A
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: N/A

WATER SURFACE ELEV. @ 02.33= _____ VELOCITY= _____ mps
 010= _____ " = _____ mps
 025= _____ " = _____ mps
 050= _____ " = _____ mps
 0100= _____ " = _____ mps

LONG TERM STREAM BED CHANGES: N/A

PERMIT INFORMATION

AVERAGE DAILY FLOW: N/A
 ORDINARY LOW WATER: _____ cms ELEV.: _____
 ORDINARY HIGH WATER: _____ cms ELEV.: _____

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: N/A
 CLEAR SPAN (NORMAL TO STREAM): N/A
 VERTICAL CLEARANCE ABOVE STREAMBED: N/A
 WATERWAY OF FULL OPENING: N/A

UPSTREAM STRUCTURE: TOWN: N/A DISTANCE: _____
 HIGHWAY NO.: _____ STRUCTURE NO.: _____
 STRUCTURE TYPE: _____
 CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____

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

DESIGN CRITERIA:

- DESIGN LIVE LOAD AASHTO MS-22.5 (Vehicle); M-9 or 4.07 kPa Live Load (Shared Use Path)
- DESIGN SPAN 38,900 m + 32,900 m = 71,800 m (Vehicle); 38,758 m + 33,052 m = 71,810 m (Shared Use Path)
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 383 kPa (Abut. 1, Pier (Vehicle), Pier (Shared Use Path) & Abut. 2) ON LEDGE N/A
- ALLOWABLE LOAD FOR PILING N/A TYPE N/A ESTIMATED LENGTH N/A
- STRUCTURAL STEEL AASHTO GRADE AASHTO M 270M, GRADE 345W
- REINFORCING STEEL GRADE 420
- CONCRETE, HIGH PERFORMANCE CLASS A f_c : 30 MPa
- CONCRETE, HIGH PERFORMANCE CLASS B f_c : 25 MPa
- DESIGN METHOD LOAD FACTOR DESIGN (LFD)

TRAFFIC MAINTENANCE:

- IS TRAFFIC TO BE MAINTAINED? YES IF YES, ON EXISTING STRUCTURE NO OR ON TEMPORARY BRIDGE TEMPORARY DETOUR
- TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY N/A TRAFFIC CONTROL SIGNALS REQUIRED N/A

MINIMUM CLEAR SPAN (NORMAL TO STREAM): N/A VERTICAL CLEARANCE ABOVE STREAMBED: N/A
 WATERWAY AT FULL OPENING: N/A
 ARE SIDEWALKS REQUIRED? N/A IF SO, ON WHAT SIDE? N/A

LOAD FACTOR LOAD RATING (LFD) (METRIC TONS)

LOADING LEVELS (LOAD FACTOR)	TRUCK						
	M	MS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY A=2.17; B=1.00	39	44					
POSTED A=1.55; B=1.40	55	61	68		58	59	67
OPERATING A=1.30; B=1.67		73	82	91	69	70	

STRENGTH $RF = \frac{0.75 M_N - 1.3 M_{DL}}{A \times M_{LL+1}}$ SERVICEABILITY $RF = B \left[\frac{0.95 F_y S_{LL+1} - M_{DL} S_{LL+1} - M_{SDL} S_{SDL}}{1.67 M_{LL+1}} \right]$

SHARED USE PATH LOAD RATING (LFD)

LOADING LEVELS (LOAD FACTOR)	M-TRUCK	PEDESTRIAN
	TONS	KPa
INVENTORY A=2.17; B=1.00	16	5.16
POSTED A=1.55; B=1.40	23	
OPERATING A=1.30; B=1.67	28	

* INDICATES RATING CONTROLLED BY SERVICEABILITY

STRENGTH $RF = \frac{0.75 M_N - 1.3 M_{DL}}{A \times M_{LL+1}}$ SERVICEABILITY $RF = B \left[\frac{0.95 F_y S_{LL+1} - M_{DL} S_{LL+1} - M_{SDL} S_{SDL}}{1.67 M_{LL+1}} \right]$

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of **BENNINGTON** Bridge No. **B11**
 Highway No. **TH 5** Log Sta. _____
 Surv. Sta. _____

EAST ROAD OVER VT ROUTE 279

PRELIMINARY INFORMATION SHEET

Designed By **G. BOGUE** Drawn By **J. SOTER**
 Checked By _____ Date _____ Bridge Design Supervisor
M. CHENETTE 11/04 **G. BOGUE** Date 03/07

PROJECT **BENNINGTON** PROJECT NO. **AC NH 019-1(53)**
 Dgn: ... \Design\ER\ER-P15ht.dgn Plot Date: 5/25/2011
 Bridge Sheet No. BR600 Sheet 247 of 577

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