

FINAL HYDRAULICS REPORT (Dated 7-20-2000)

TOWN: ST Albans COUNTY: Franklin
PROJECT NO.: IM 089-3 (27) STREAM: Rugg Brook Tributary
HIGHWAY NO.: 189 North Bound STRUCTURE NO.: 87-3 NB

DRAINAGE AREA= 156 acres

Q2.33= 75 cfs	HEADWATER ELEVATION= 589.1
Q10= 110 cfs	" " = 589.8
Q25= 130 cfs	" " = 590.2
Q50= 160 cfs	" " = 590.8
Q100= 200 cfs	" " = 591.5

TAILWATER ELEVATION @ Q100 = no tailwater, outlet depth = 2.0'
OUTLET VELOCITY @ Q100 = 16.7 fps
AT WHAT FREQUENCY IS THE ROADWAY OVERTOPPED? Above Q100
DISCHARGE OVER ROAD @ Q100: None

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV, dissipater @ outlet

PERMIT INFORMATION

AVERAGE DAILY FLOW: 1.0 cfs	DEPTH: less than 0.5'
ORDINARY LOW WATER: 0.5 cfs	DEPTH: 1.0'
ORDINARY HIGH WATER: 30.0 cfs	

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.

CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY OF FULL OPENING:

The new structure is a 6' X 6' box with 1' high baffles, resulting in a 6' X 5' waterway opening. Length is 77.7'. Inlet invert elevation = 586.74 and outlet invert elevation = 577.29, resulting in a 12.27% slope.

FINAL HYDRAULICS REPORT (Dated 7-20-2000)

TOWN: ST Albans COUNTY: Franklin
PROJECT NO.: IM 089-3 (27) STREAM: Rugg Brook Tributary
HIGHWAY NO.: 189 South Bound STRUCTURE NO.: 87-3 SB

DRAINAGE AREA= 162 acres

Q2.33= 75 cfs	HEADWATER ELEVATION= 567.2
Q10= 110 cfs	" " = 568.0
Q25= 130 cfs	" " = 568.4
Q50= 160 cfs	" " = 568.9
Q100= 200 cfs	" " = 569.7

TAILWATER ELEVATION @ Q100 = no tailwater, outlet depth = 2.0'
OUTLET VELOCITY @ Q100 = 16.8 fps
AT WHAT FREQUENCY IS THE ROADWAY OVERTOPPED? Above Q100
DISCHARGE OVER ROAD @ Q100: None

REQUIRED CHANNEL PROTECTION: Stone Fill, Type IV, dissipater @ outlet

PERMIT INFORMATION

AVERAGE DAILY FLOW: 1.0 cfs	DEPTH: less than 0.5'
ORDINARY LOW WATER: 0.5 cfs	DEPTH: 1.0'
ORDINARY HIGH WATER: 30.0 cfs	

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.

CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY OF FULL OPENING:

The new structure is a 6' X 6' box with 1' high baffles, resulting in a 6' X 5' waterway opening. Length is 107.8'. Inlet invert elevation = 564.89 and outlet invert elevation = 552.25, resulting in a 12.27% slope.

FINAL HYDRAULICS REPORT (Dated 7-20-2000)

TOWN: ST Albans COUNTY: Franklin
PROJECT NO.: IM 089-3 (27) STREAM: Rugg Brook Tributary
HIGHWAY NO.: Private Drive STRUCTURE NO.: Distr. Of 87-3

DRAINAGE AREA= 162 acres

Q2.33= 75 cfs	HEADWATER ELEVATION= 532.9
Q10= 110 cfs	" " = 533.6
Q25= 130 cfs	" " = 534.0
Q50= 160 cfs	" " = 534.5
Q100= 200 cfs	" " = 535.1

TAILWATER ELEVATION @ Q25 = 531.2
OUTLET VELOCITY @ Q25 = 11.6 fps
AT WHAT FREQUENCY IS THE ROADWAY OVERTOPPED? Q80
DISCHARGE OVER ROAD @ Q100: 6 cfs

REQUIRED CHANNEL PROTECTION: Stone Fill, Type III

PERMIT INFORMATION

AVERAGE DAILY FLOW: 1.0 cfs	DEPTH: less than 0.5'
ORDINARY LOW WATER: 0.5 cfs	DEPTH: 1.0'
ORDINARY HIGH WATER: 30.0 cfs	

TEMPORARY BRIDGE REQUIREMENTS

STRUCTURE TYPE: No temporary bridge required.

CLEAR SPAN (NORMAL TO STREAM):
VERTICAL CLEARANCE ABOVE STREAMBED:

WATERWAY OF FULL OPENING:

The new structure is a 7' X 5' box with 1' high baffles, resulting in a 7' X 4' waterway opening. Length is 14.0'. Inlet invert elevation = 530.69 and outlet invert elevation = 529.75, resulting in a 6.71% slope.

NOTES

1. SCOPE OF WORK FOR BRIDGES 87-3 N & S: REPLACE THE EXISTING 60" DIA. CORRUGATED METAL PIPES WITH PRECAST 6' X 6' REINFORCED CONCRETE BOX CULVERTS WITH BAFFLES, ONE UNDER EACH LEG OF INTERSTATE I-89. PLACE PRECAST WINGWALLS AND APRONS WITH CUTOFF WALLS AT THE INLET AND OUTLET TO EACH STRUCTURE. CONSTRUCT ENERGY DISSIPATION STRUCTURES AT THE OUTLET OF BOTH BOX CULVERTS AS SHOWN IN THE PLANS. CONSTRUCT CHANNEL AND STREAM BANK REINFORCEMENT AS SHOWN IN THE PLANS AND AS DIRECTED BY THE RESIDENT ENGINEER.
2. SCOPE OF WORK FOR DOWNSTREAM DRIVE CULVERT: REPLACE THE EXISTING 36" DIA. CORRUGATED METAL PIPE WITH A PRECAST 7' X 5' REINFORCED CONCRETE BOX CULVERT. PLACE PRECAST WINGWALLS AND APRONS WITH CUTOFF WALLS AT THE INLET AND OUTLET. CONSTRUCT CHANNEL AND STREAM BANK REINFORCEMENT AS SHOWN IN THE PLANS AND AS DIRECTED BY THE RESIDENT ENGINEER.
3. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990, AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1996, AND ITS LATEST REVISIONS.

INDEX OF SHEETS

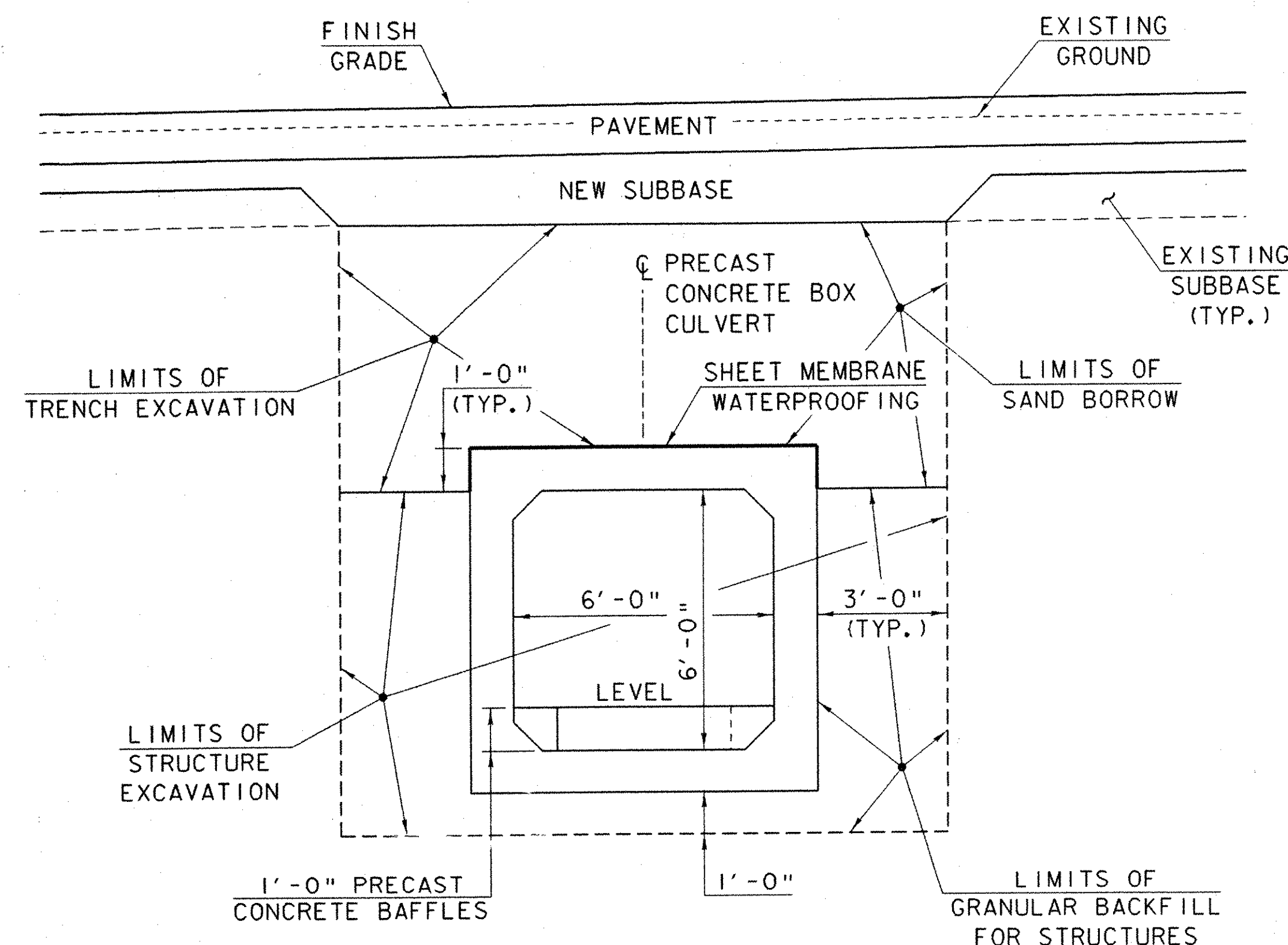
BR300	87-3 N&S PRELIMINARY INFORMATION SHEET
BR301	87-3 N&S EARTHWORK TYPICALS
BR302	87-3 N&S ENERGY DISSIPATER AND BAFFLE DETAILS
BR303-305	87-3 N&S R.O.W. SHEETS
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BR317-323	CHANNEL CORSS SECTIONS
BR324-325	DRIVE CROSS SECTIONS

IMPORTANT NOTE: BRIDGE FINISHED GRADES ARE CENTERLINE GRADES.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAIRFAX-FAIRFIELD-ST. ALBANS	Bridge No. 87-3 N&S
Highway No. 1-89	Log Sta. Surv. Sta.
1-89 OVER THE RUGG BROOK	
87-3 N&S PRELIMINARY INFORMATION SHEET	
Designed By G.ROY	Drawn By G.ROY
Checked By M.LOZIER	Bridge Design Supervisor R.R.WHITCOMB
Date 06/00	Date 06/00
PROJECT FAIRFAX-FAIRFIELD-ST. ALBANS	PROJECT NO. IM 089 - 3 (27)
I.G.C. Info. 96a056structures\sa056pl5.dgn	sa056pl5j
Bridge Sheet No. BR300	Sheet 126 of 370

PLOTTED 21-SEP-2000



BRIDGES 87-3 N&S EARTHWORK TYPICAL

SCALE: 3/8" = 1'-0"