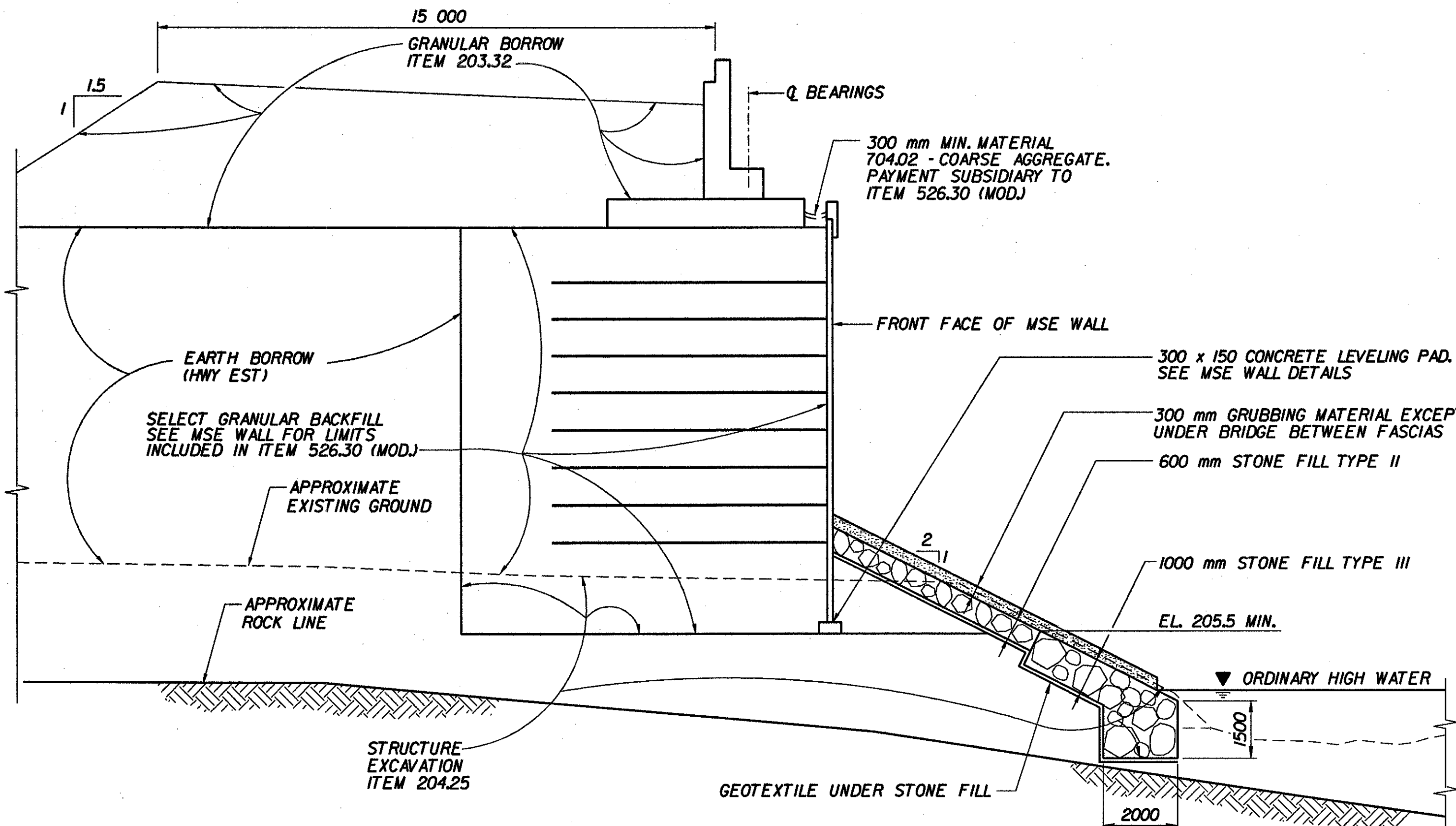


TYPICAL BRIDGE SECTION



EARTHWORK DETAIL - ABUTMENT 1



NOTE: SEE SHEET BR402 FOR EARTHWORK DETAILS AT ABUTMENT 2.

MATERIAL ITEM	TOLERANCE
PAVEMENT	: 5 mm TOTAL THICKNESS
AGGREGATE SURFACE COURSE	: 10 mm
BASE COURSE	: 10 mm
SUBBASE	: 30 mm
SAND BORROW	: 30 mm
GRANULAR BORROW	: 30 mm

HYDROLOGIC DATA

DRAINAGE AREA: 684 ha  
 CHARACTER OF TERRAIN: PRIMARILY UNDEVELOPED WOODED AREAS  
 CHARACTER & TYPE OF STREAM: SMALL PERENNIAL STREAM THAT IS WILDLY SINUOUS  
 NATURE OF STREAMBED: COBBLES, SMALL DIASTONES AND SAND  
 02.33+ 3.57 m<sup>3</sup>/sec. 050+ 13.31 m<sup>3</sup>/sec.  
 010+ 8.50 m<sup>3</sup>/sec. 000+ 15.88 m<sup>3</sup>/sec.  
 025+ 11.05 m<sup>3</sup>/sec. 0500+ 215.3 m<sup>3</sup>/sec.  
 DATE OF FLOOD OF RECORD: UNGAGED STREAM, FLOOD OF RECORD UNKNOWN  
 WATER SURFACE ELEV.: ESTIMATED DISCHARGE:  
 NATURAL STREAM VELOCITY @ 050: 3.94 m/sec.  
 ICE CONDITIONS: MINOR DEBRIS: MINOR  
 DOES THE STREAM REACH MAXIMUM HIGH WATER ELEVATION RAPIDLY? YES  
 IS ORDINARY RISE RAPID? YES  
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO  
 IF YES, DESCRIBE: N/A  
 WATERSHED STORAGE: MINIMAL HEADWATERS: UNIFORM THROUGHOUT WATERSHED  
 IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

STRUCTURE TYPE: N/A YEAR BUILT:  
 CLEAR SPAN (NORMAL TO STREAM):  
 VERTICAL CLEARANCE ABOVE STREAMBED:  
 WATERWAY OF FULL OPENING:  
 DISPOSITION OF STRUCTURE:  
 TYPE OF MATERIAL UNDER SUBSTRUCTURE:  
 WATER SURFACE ELEV. @ 02.33+ VELOCITY:  
 010+ \* = \*  
 025+ \* = \*  
 050+ \* = \*  
 0100+ \* = \*  
 LONG TERM STREAM BED CHANGES:  
 IS THE ROADWAY OVERTOPPED BELOW THE 0100? FREQUENCY:  
 RELIEF ELEVATION: DISCHARGE OVER ROAD @ 0100:  
 UPSTREAM STRUCTURE: TOWN: N/A DISTANCE:  
 HIGHWAY NO.: STRUCTURE NO.1:  
 STRUCTURE TYPE:  
 CLEAR SPAN: CLEAR HEIGHT:  
 YEAR BUILT: FULL WATERWAY:  
 DOWNSTREAM STRUCTURE: TOWN: N/A DISTANCE:  
 HIGHWAY NO.: STRUCTURE NO.1:  
 STRUCTURE TYPE:  
 CLEAR SPAN: CLEAR HEIGHT:  
 YEAR BUILT: FULL WATERWAY:

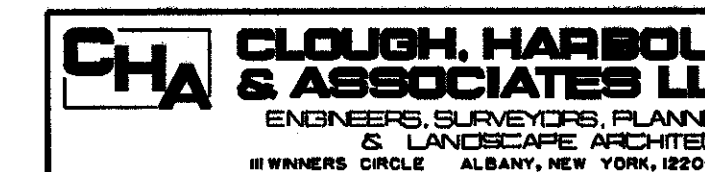
PROPOSED STRUCTURE

STRUCTURE TYPE: SINGLE SPAN STEEL GIRDER BRIDGE  
 CLEAR SPAN (NORMAL TO STREAM): 52.55 m  
 VERTICAL CLEARANCE ABOVE STREAMBED: 12.8 m  
 WATERWAY OF FULL OPENING: 575 m<sup>2</sup>  
 WATER SURFACE ELEV. @ 02.33+ 204.17 VELOCITY = 2.66 m/sec  
 010+ 204.27 = 3.44 m/sec  
 025+ 204.32 = 3.73 m/sec  
 050+ 204.36 = 3.94 m/sec  
 0100+ 204.60 = 4.12 m/sec  
 IS THE ROADWAY OVERTOPPED BELOW THE 0100? NO FREQUENCY: N/A  
 RELIEF ELEVATION: N/A DISCHARGE OVER ROAD @ 0100: N/A  
 AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 216.90 m  
 VERTICAL CLEARANCE @ 0100 = 12.170  
 SCOUR: N/A  
 REQUIRED CHANNEL PROTECTION: TYPE III STONE FILL AS BANK PROTECTION

PERMIT INFORMATION

AVERAGE DAILY FLOW: 0.1 m<sup>3</sup>/sec  
 ORDINARY LOW WATER: 0.1 m<sup>3</sup>/sec DEPTH: 0.10 m  
 ORDINARY HIGH: 1.7 m<sup>3</sup>/sec DEPTH: 0.13 m

ADDITIONAL COMMENTS



- DESIGN CRITERIA:
- DESIGN LIVE LOAD AASHTO MS 22.5
  - DESIGN SPAN 55.00 m
  - ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 200 kPa ON LEDGE N/A
  - ALLOWABLE LOAD FOR PILING N/A TYPE N/A ESTIMATED LENGTH N/A
  - STRUCTURAL STEEL AASHTO M270M GRADE 345W
  - REINFORCING STEEL GRADE 420
  - CONCRETE CLASS A GC/OA f<sub>c</sub> 30 MPa  
CONCRETE CLASS B f<sub>c</sub> 25 MPa

- TRAFFIC MAINTENANCE:
- IS TRAFFIC TO BE MAINTAINED? N/A IF YES, ON EXISTING STRUCTURE OR ON TEMPORARY BRIDGE
  - TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY TRAFFIC CONTROL SIGNALS REQUIRED
- MINIMUM CLEAR SPAN (NORMAL TO STREAM): VERTICAL CLEARANCE ABOVE STREAMBED:  
 WATERWAY OF FULL OPENING:  
 ARE SIDEWALKS REQUIRED? IF SO, ON WHAT SIDE?  
 STRUCTURE TYPE:

LOADING LEVELS (LOAD FACTOR)	LOAD FACTOR LOAD RATING (TONS)						
	M	MS	3S2	6 AXLE	3A,STR.	4A,STR.	5A,SEMI
INVENTORY A=2.17; B=1.00	31*	56*					
POSTED A=1.55; B=1.40	43*	78*	96*		87*	88*	93*
OPERATING A=1.30; B=1.67		93*	115*	130*	103*	104*	

STRENGTH OF  $\pm B M_x - 1.3 M_{DL}$  SERVICEABILITY  $R_F = B$   $0.95 F_{SLL} - M_{LL} - M_{IM} - M_{IM}$   $1.67 M_{LL}$

PROJECTED TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	% ADTT
2000	5300	675	52	7	370
2020	6600	840	52	7	460

20 year ESAL for flexible pavement from 2000 to 2020: 4,825,000  
 40 year ESAL for flexible pavement from 2000 to 2040: 11,229,000  
 Design speed: 100 km/h

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town of BENNINGTON Bridge No. BR400  
 Highway No. VT, RTE. 9 Log Sta. 14+140  
 PROJECT BENNINGTON-HOOSICK PROJECT NO. D.P.J. 0146(1)  
 I.G.C. Info. Bridge Sheet No. BR401 Sheet 190 OF 473

PRELIMINARY INFORMATION  
 Designed By M. GOGUEN Drawn By B. WEATHERBY/K. DETRICK  
 Checked By P. PERKINS II/01 Bridge Design Supervisor M. OLSTAD Date II/01