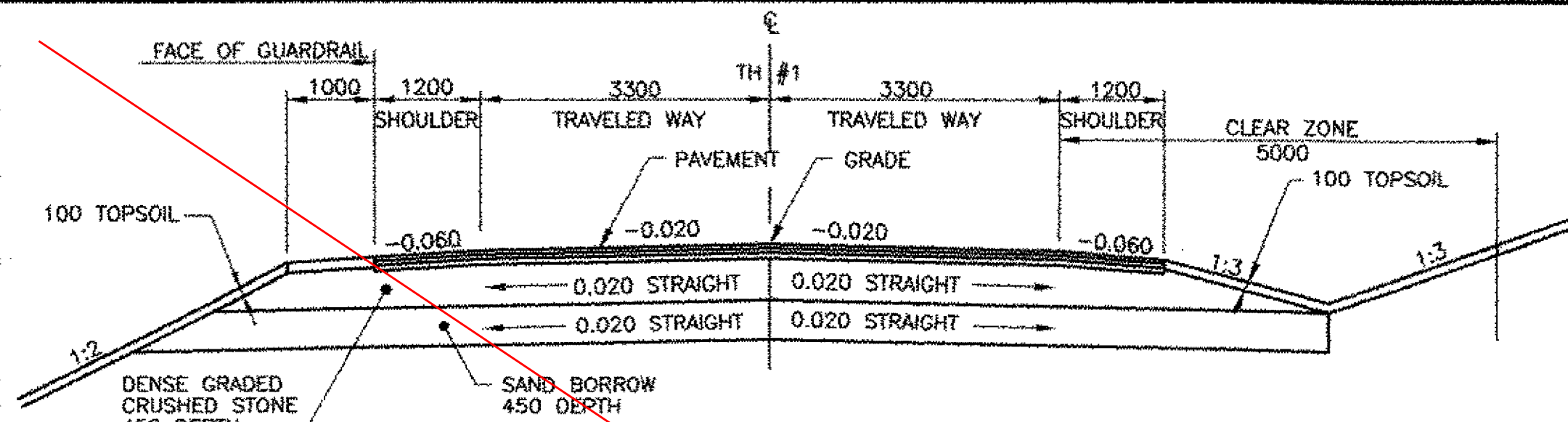


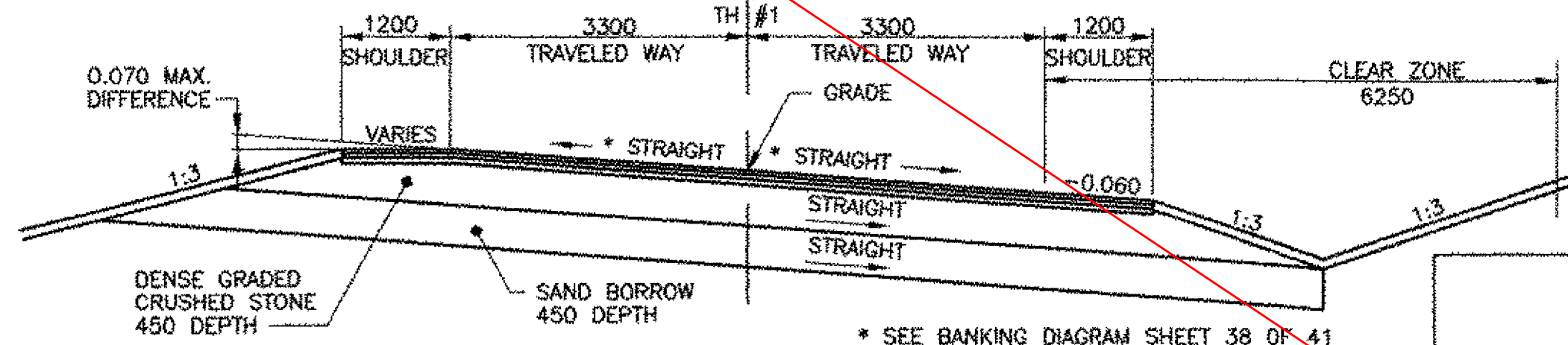
TYPICAL SECTIONS ROADWAY



NORMAL SECTION
NOT TO SCALE

- 40 BITUMINOUS CONCRETE PAVEMENT (TYPE III OR IV) OVER
- 40 BITUMINOUS CONCRETE PAVEMENT (TYPE III OR IV) OVER
- 70 BITUMINOUS CONCRETE PAVEMENT (TYPE I OR II) OVER
- 450 DENSE GRADED CRUSHED STONE
- 450 SAND BORROW

MATERIAL ITEM	THICKNESS TOLERANCE IN MILLIMETERS
PAVEMENT (TOTAL DEPTH)	± 5
SUBBASE	± 25
GRANULAR BORROW	± 25
SAND BORROW	± 25



MAXIMUM BANKED SECTION
NOT TO SCALE

STRENGTH RF = $\frac{0.8M_n - 1.3M_{DL}}{A \times M_{LL+1}}$

*SERVICEABILITY RF = B $\left[\frac{0.95F_y S_{LL+1} - M_{DL} S_{LL+1} - M_{SD} S_{LL+1}}{1.07 M_{LL+1}} \right]$

STRESS LEVELS	TRUCK					
	H	HS	3S2	6 AXLE	3A STR	4A STR
INVENTORY A=2.17, B=1.00	43	58				
POSTED A=1.55, B=1.40	73	101		119	93	94
OPERATING A=1.30, B=1.67		140	164	195		

TYPICAL SECTION BRIDGE

- * TOP OF CONCRETE BOX BEAMS STRAIGHT -0.04
- ** 30 BIT. CONC. PAV. TYPE IV - 1st LIFT
- ** 40 BIT. CONC. PAV. TYPE III - 2nd LIFT

SEEDING FORMULA
RURAL AREAS

% WT.	KG/HA	NAME	PURITY %	GERM %
37.1	26	CREEPING RED FESCUE	98	85
37.1	26	TALL FESCUE	95	90
5.7	4	RED TOP	95	90
14.4	10	BIRDSFOOT TREFLOIL	98	85
5.7	4	ANNUAL RYE GRASS	95	85
100.0	70			

THE SEED MIXTURE SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS WEED SEED.

SEED TO BE APPLIED PER SEEDING FORMULA OR AS DIRECTED BY THE ENGINEER.

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED, APPLIED AT THE RATE OF 560 KG/HA. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 4500 KG/HA, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 4500 KG/HA OR AS DIRECTED BY THE ENGINEER.

TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.

TACK COAT: EMULSIFIED ASPHALT IS TO BE APPLIED AT THE RATE OF 0.0679 L/m² BETWEEN SUCCESSIVE COURSES OF PAVEMENT AT THE DISCRETION OF THE ENGINEER.

NOTES

- COFFERDAM LIMITS TO BE DETERMINED BY THE CONTRACTOR.
- THE PAY LIMITS OF "COFFERDAM EXCAVATION, EARTH" AND "COFFERDAM EXCAVATION, ROCK" SHALL BE 600 OUTSIDE THE PERIMETER OF THE FOOTING, UP TO EXISTING GROUND OR BOTTOM OF SUBBASE, WHICHEVER IS LOWER.
- 300 UNDERCUT AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.
- IF A COFFERDAM IS CONSTRUCTED WHICH IS LARGER THAN THE INDICATED COFFERDAM EXCAVATION PAY LIMITS, PAYMENT FOR ALL UNCLASSIFIED CHANNEL EXCAVATION, INCLUDING THAT PORTION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE COFFERDAM EXCAVATION PAY LIMITS, WILL BE MADE AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION.

HYDROLOGIC DATA

DRAINAGE AREA= 92,720 sq km
 CHARACTER OF TERRAIN: RURAL, MOUNTAINOUS
 CHARACTER & TYPE OF STREAM: RURAL, HIGH ENERGY
 NATURE OF STREAMBED: 2.0% GRADIENT, COBBLE BED

DATE OF FLOOD OF RECORD: NOVEMBER 1927
 WATER SURFACE ELEV.: NOT AVAILABLE ESTIMATED DISCHARGE: NOT AVAILABLE
 NATURAL STREAM VELOCITY @ Q 25: 3.4 m/s
 ICE CONDITIONS: MODERATE DEBRIS: LIGHT
 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:

EXISTING STRUCTURE

STRUCTURE TYPE: STEEL PONY TRUSS W/ CONCRETE DECK BRIDGE YEAR BUILT: 1929
 CLEAR SPAN (NORMAL TO STREAM): 22.800
 VERTICAL CLEARANCE ABOVE STREAMBED: VARIES 3200 MIN. TO 3600 MAX.
 WATERWAY OF FULL OPENING: 73,000 sq m
 DISPOSITION OF STRUCTURE: TO BE REMOVED AND DISPOSED OF

TYPE OF MATERIAL UNDER SUBSTRUCTURE: DENSE GRANULAR WITH BOULDERS

WATER SURFACE ELEV. @ Q2.33= 172.2 VELOCITY= 2.3 m/s
 Q10= 172.6 " " 3.2 m/s
 Q25= 172.9 " " 3.5 m/s
 Q50= 173.1 " " 3.8 m/s
 Q100= 173.3 " " 4.1 m/s

LONG TERM STREAM BED CHANGES: AGGRADATION AND DEPOSITION OF MATERIAL WITHIN THE UPSTREAM APPROACH

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: N/A
 RELIEF ELEVATION: N/A DISCHARGE OVER ROAD @ Q100: N/A

UPSTREAM STRUCTURE: TOWN: CLARENDON DISTANCE: 700.000
 HIGHWAY NO.: US 7 STRUCTURE NO.: 96
 STRUCTURE TYPE: SINGLE SPAN PLATE GIRDER
 CLEAR SPAN: 37.500 CLEAR HEIGHT: 3.100
 YEAR BUILT: 1968 FULL WATERWAY: 100.3 sq m

DOWNSTREAM STRUCTURE: TOWN: CLARENDON DISTANCE: 255.000
 HIGHWAY NO.: VERMONT RAILWAY STRUCTURE NO.: N/A
 STRUCTURE TYPE: RAILROAD PLATE GIRDER
 CLEAR SPAN: 33.200 CLEAR HEIGHT: 3.000
 YEAR BUILT: N/A FULL WATERWAY: 100.0 sq m

DESIGN CRITERIA:

- DESIGN LIVE LOAD AASHTO MS 22.5
- DESIGN SPAN 25.400 @ BRG TO @ BRG
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 478 kPa ON LEDGE N/A
- ALLOWABLE LOAD FOR PILING N/A TYPE N/A ESTIMATED LENGTH N/A
- STRUCTURAL STEEL AASHTO 270M/270M GRADE N/A
- REINFORCING STEEL GRADE 420 160 MPa
- CONCRETE HIGH PERFORMANCE CLASS AA f_c 30 MPa
 CONCRETE HIGH PERFORMANCE CLASS B f_c 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 TWO WAY TRAFFIC CONTROL SIGNALS REQUIRED NO
- MINIMUM CLEAR SPAN (NORMAL TO STREAM): 27.000 VERTICAL CLEARANCE ABOVE STREAMBED: 3.4 m
 WATERWAY OF FULL OPENING: 103 sq m
 ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? N/A
 STRUCTURE TYPE: TWO SPAN BRIDGE

PROPOSED STRUCTURE

STRUCTURE TYPE: PRECAST CONCRETE BOX BEAM & CONCRETE DECK SUPERSTRUCTURE

CLEAR SPAN (NORMAL TO STREAM): 23.600
 VERTICAL CLEARANCE ABOVE STREAMBED: VARIES 3.200 MIN. TO 3.600 MAX.
 WATERWAY OF FULL OPENING: 78.0 sq m

WATER SURFACE ELEV. @ Q2.33= 172.3 VELOCITY= 2.4 m/s
 Q10= 172.7 " " 3.1 m/s
 Q25= 172.9 " " 3.5 m/s
 Q50= 173.1 " " 3.8 m/s
 Q100= 173.3 " " 4.0 m/s

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: N/A
 RELIEF ELEVATION: N/A DISCHARGE OVER ROAD @ Q100: N/A

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 174.55
 VERTICAL CLEARANCE @ Q100 12.40

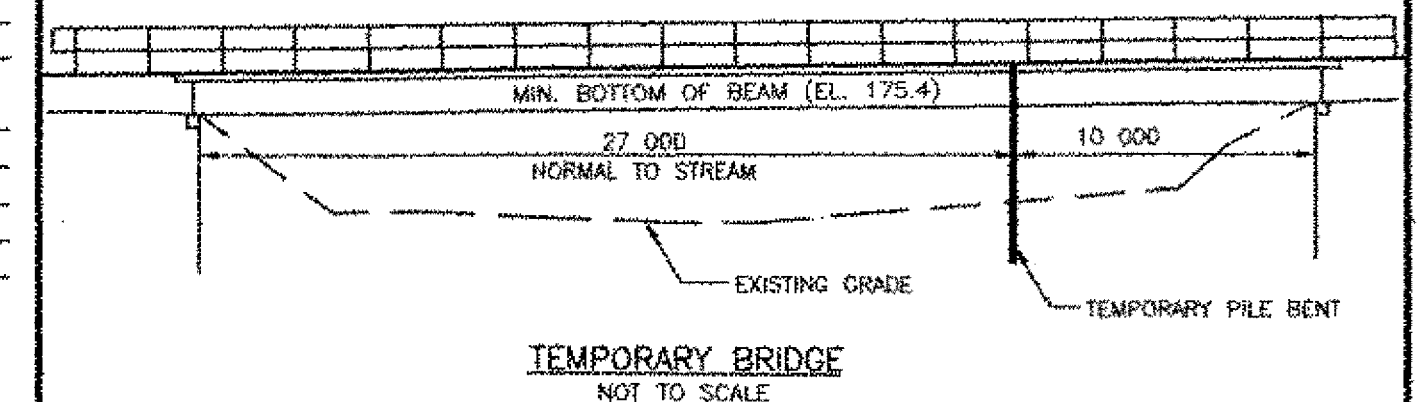
SCOUR: 1.0 m. CONTRACTION SCOUR
 REQUIRED CHANNEL PROTECTION: YES - TYPE III STONEFILL ON STREAM BED

PERMIT INFORMATION

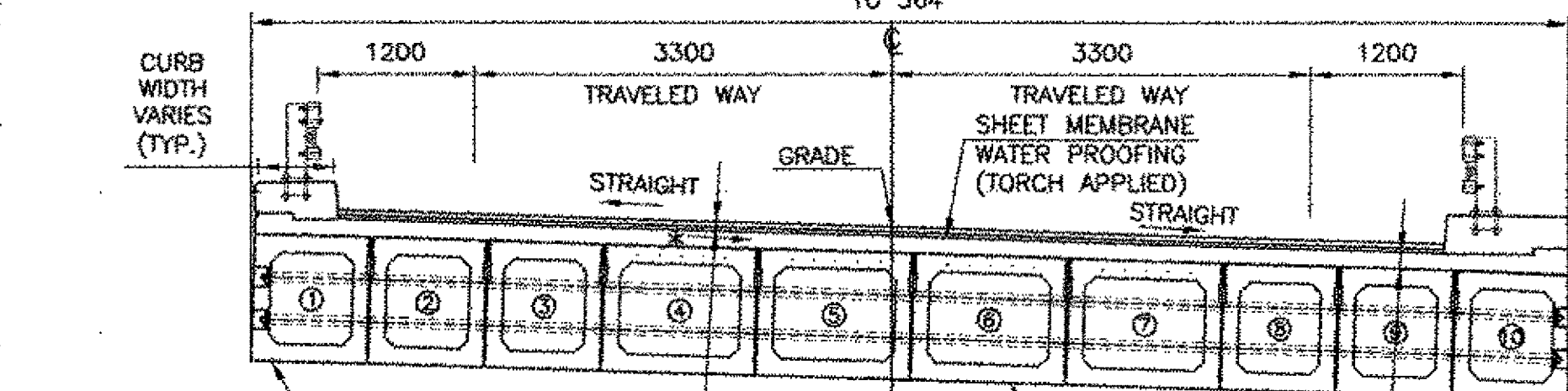
AVERAGE DAILY FLOW: 2.1 cms DEPTH: 0.45
 ORDINARY LOW WATER: 1.0 cms DEPTH: 0.34
 ORDINARY HIGH WATER: 14.5 cms DEPTH: 0.92

ADDITIONAL COMMENTS

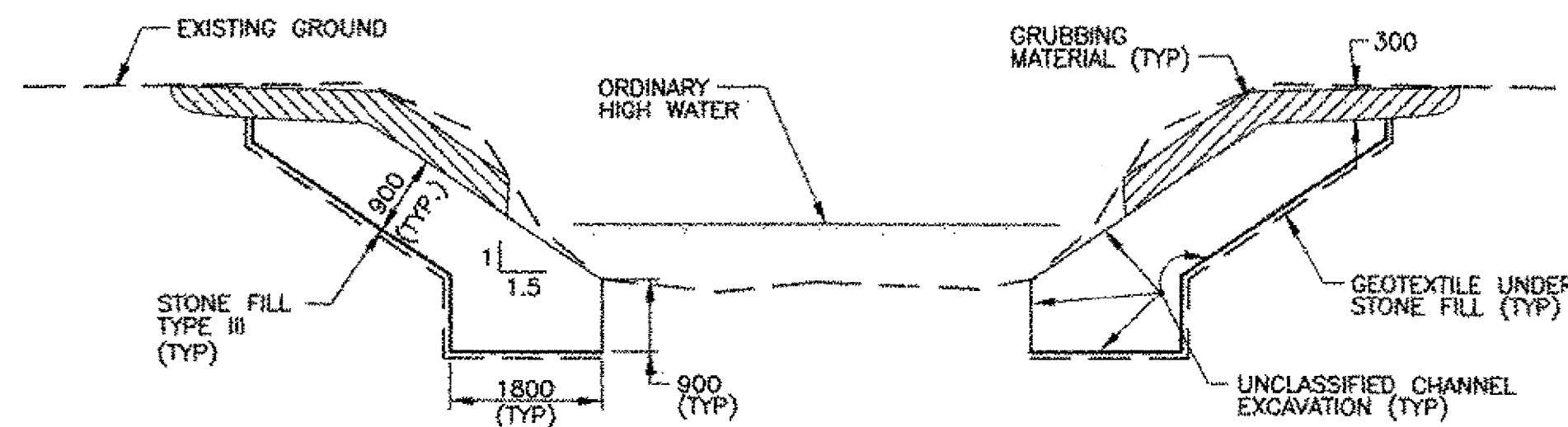
THERE IS EVIDENCE OF SCOUR ALONG THE LEFT DOWNSTREAM ABUTMENT



SEE VALUE ENGINEERING (FOLLOWING SHEET)

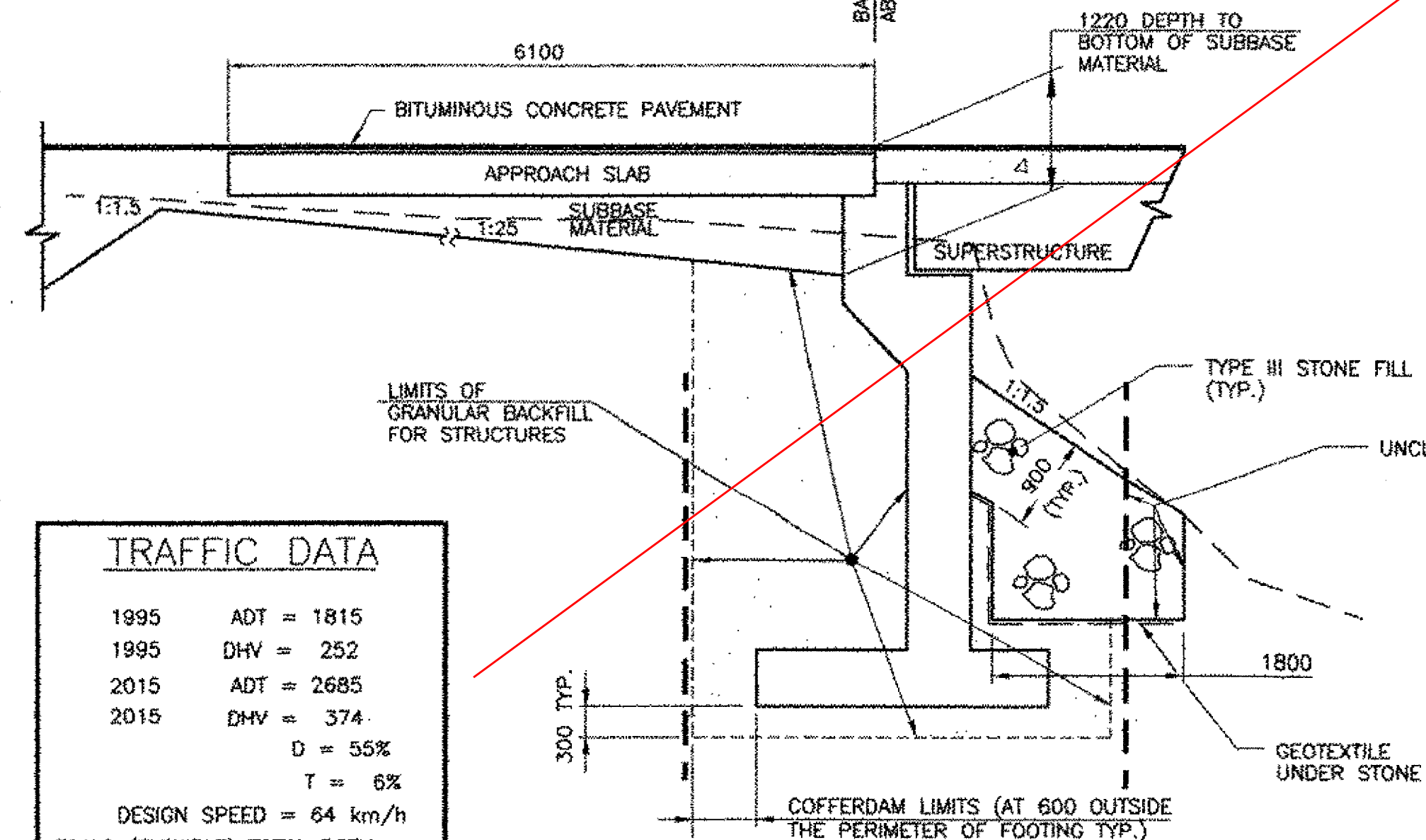


TYPICAL CONCRETE BOX BEAM CROSS SECTION
SCALE 1:50



TYPICAL CHANNEL SECTION
NOT TO SCALE

NOTE: GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN AREA UNDER THE BRIDGE. WHENEVER CHANNEL SLOPE INTERSECTS ROADWAY SUBBASE, GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE.



TYPICAL ABUTMENT SECTION
NOT TO SCALE

TRAFFIC DATA

1995	ADT = 1815
1995	DHV = 252
2015	ADT = 2685
2015	DHV = 374
	D = 55%
	T = 6%
DESIGN SPEED = 64 km/h	
ESALS (FLEXIBLE) TOTAL BOTH DIRECTIONS (1995-2015) 196,000	

REVISIONS		
NO.	DESCRIPTION	BY & DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

CLARENDON, VERMONT Bridge No. 14

TOWN HIGHWAY NO. 1 Log Sta.

TOWN HIGHWAY NO. 1 OVER THE COLD RIVER

PRELIMINARY INFORMATION SHEET

Designed by: W.S. CHESBROUGH Drawn by: N.B. DIMICK

Checked by: K. S. MARSHIA date 05/02 Bridge Design Supervisor J.W. TUCKER date 05/02

PROJECT CLARENDON PROJECT NO. BRO 1443(29)

Bridge Sheet No. SHEET 3 OF 41

