

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA = _____
 CHARACTER OF TERRAIN: _____
 CHARACTER & TYPE OF STREAM: _____
 NATURE OF STREAMBED: _____
 Q2.33 = _____ Q50 = _____
 Q10 = _____ Q100 = _____
 Q25 = _____ Q500 = _____
 DATE OF FLOOD OF RECORD: _____
 WATER SURFACE ELEV. ESTIMATED DISCHARGE: _____
 NATURAL STREAM VELOCITY @ Q = _____
 ICE CONDITIONS: _____ DEBRIS: _____
 DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? _____
 IS ORDINARY RISE RAPID? _____
 IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? _____
 IF YES, DESCRIBE: _____
 WATERSHED STORAGE _____ HEADWATERS _____ UNIFORM THROUGHOUT WATERSHED _____
 IMMEDIATELY ABOVE SITE _____

EXISTING STRUCTURE

STRUCTURE TYPE: THREE SPAN CONTINUOUS STEEL BEAM WITH CONCRETE DECK YEAR BUILT: 1954
 CLEAR SPAN (NORMAL TO STREAM): 689 FEET
 VERTICAL CLEARANCE ABOVE STREAMBED: _____
 WATERWAY OF FULL OPENING: _____
 DISPOSITION OF STRUCTURE: BRIDGE TO BE REPLACED
 TYPE OF MATERIAL UNDER SUBSTRUCTURE: _____
 WATER SURFACE ELEV. @ Q2.33 = _____ VELOCITY = _____
 Q10 = _____ " _____
 Q25 = _____ " _____
 Q50 = _____ " _____
 Q100 = _____ " _____
 LONG TERM STREAM BED CHANGES: _____
 IS THE ROADWAY OVERTOPPED BELOW THE Q100? _____ FREQUENCY: _____
 RELIEF ELEVATION: _____ DISCHARGE OVER ROAD @ Q100: _____
 UPSTREAM STRUCTURE: TOWN: _____ DISTANCE: _____
 HIGHWAY NO.: _____ STRUCTURE NO.: _____
 STRUCTURE TYPE: _____ CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____
 DOWNSTREAM STRUCTURE: TOWN: _____ DISTANCE: _____
 HIGHWAY NO.: _____ STRUCTURE NO.: _____
 STRUCTURE TYPE: _____ CLEAR SPAN: _____ CLEAR HEIGHT: _____
 YEAR BUILT: _____ FULL WATERWAY: _____

PROPOSED STRUCTURE

STRUCTURE TYPE: SINGLE SPAN STEEL BEAM WITH CONCRETE DECK
 CLEAR SPAN (NORMAL TO RAILROAD): 762 FEET
 VERTICAL CLEARANCE ABOVE RAILROAD: 23 FEET
 WATERWAY OF FULL OPENING: _____
 WATER SURFACE ELEV. @ Q2.33 = _____ VELOCITY = _____
 Q10 = _____ " _____
 Q25 = _____ " _____
 Q50 = _____ " _____
 Q100 = _____ " _____
 IS THE ROADWAY OVERTOPPED BELOW THE Q100? _____ FREQUENCY: _____
 RELIEF ELEVATION: _____ DISCHARGE OVER ROAD @ Q100: _____
 AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: _____
 VERTICAL CLEARANCE @ Q = _____
 SCOUR: _____
 REQUIRED CHANNEL PROTECTION: _____

PERMIT INFORMATION

STRUCTURE TYPE: _____ YEAR BUILT: _____
 AVERAGE DAILY FLOW: _____ DEPTH: _____
 ORDINARY LOW WATER: _____ DEPTH: _____
 ORDINARY HIGH WATER: _____ DEPTH: _____

ADDITIONAL COMMENTS

TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	ADTT
2004	2300	230	50	3	80
2024	3100	300	50	3	100

18 kip ESAL for flexible pavement from 2004 to 2024: 250,000
 18 kip ESAL for flexible pavement from 2004 to 2044: 350,000
 Design speed: 35 mph

DESIGN CRITERIA:

- DESIGN LIVE LOAD AASHTO HS 25-44
- DESIGN SPAN 900 FEET
- ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 375 KSF (WEST) ON LEDGE N/A
- ALLOWABLE LOAD FOR PILING 300 KIPS PER PILE TYPE HP 12 X 74 ESTIMATED LENGTH 25 FEET
- STRUCTURAL STEEL AASHTO GRADE M270, GRADE 50M
- REINFORCING STEEL GRADE 60
- CONCRETE CLASS A (HPC-A) $f'_c = 4000$ PSI
 CONCRETE CLASS B (HPC-B) $f'_c = 3500$ PSI

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
 BRIDGE DETOUR TO BE DESIGNED BY OTHERS

ARE SIDEWALKS REQUIRED? NO IF SO, ON WHAT SIDE? N/A

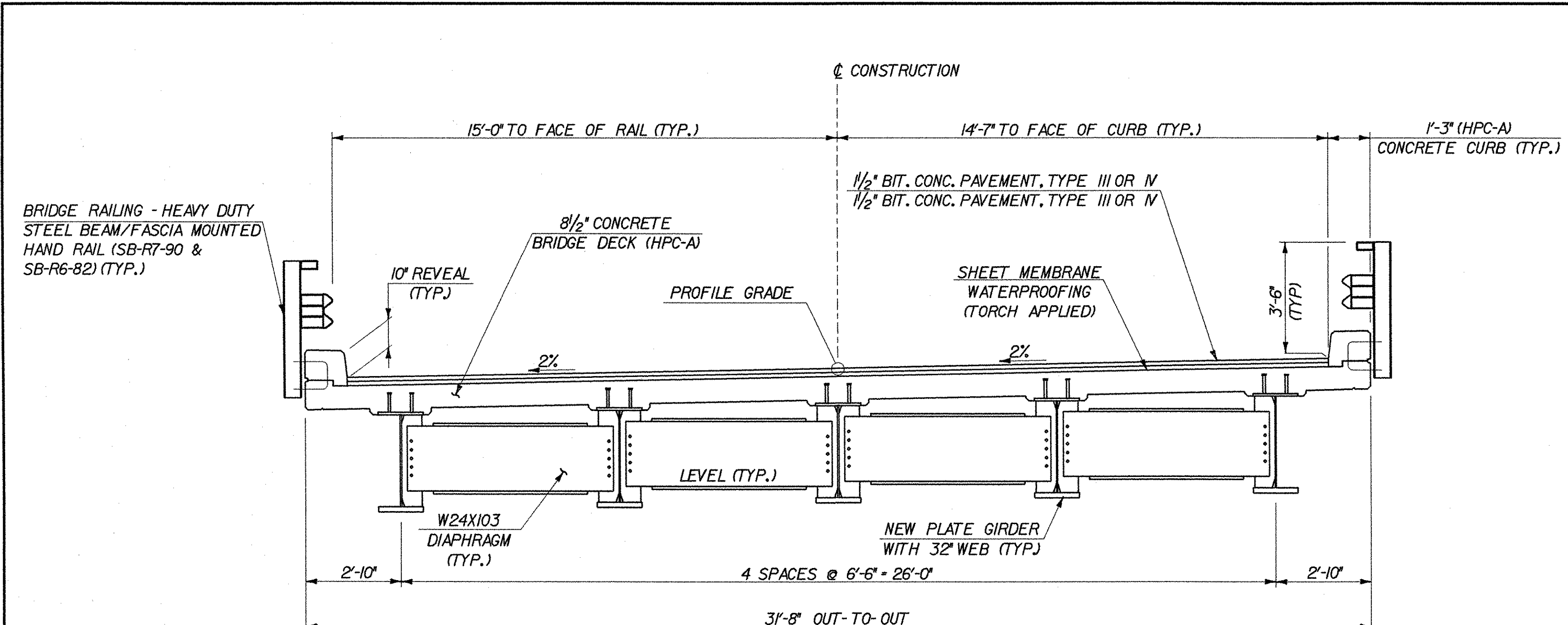
LOAD FACTOR LOAD RATING (TONS)

LOADING LEVELS (LOAD FACTOR)	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY	48	68					
A=2.17; B=1.00							
POSTED							
A=1.55; B=1.40	67	95	110		87	89	102
OPERATING							
A=1.30; B=1.67			113	131	153	104	106

STRENGTH RF = $\frac{M_N - 1.3 M_{DL}}{A \times M_{LL+I}}$ SERVICEABILITY RF = $B \left[.95 F_y S_{LL+I} - M_{DL} \frac{S_{LL+I}}{S_{DL}} - M_{SDL} \frac{S_{LL+I}}{S_{SDL}} \right] / 1.67 M_{LL+I}$

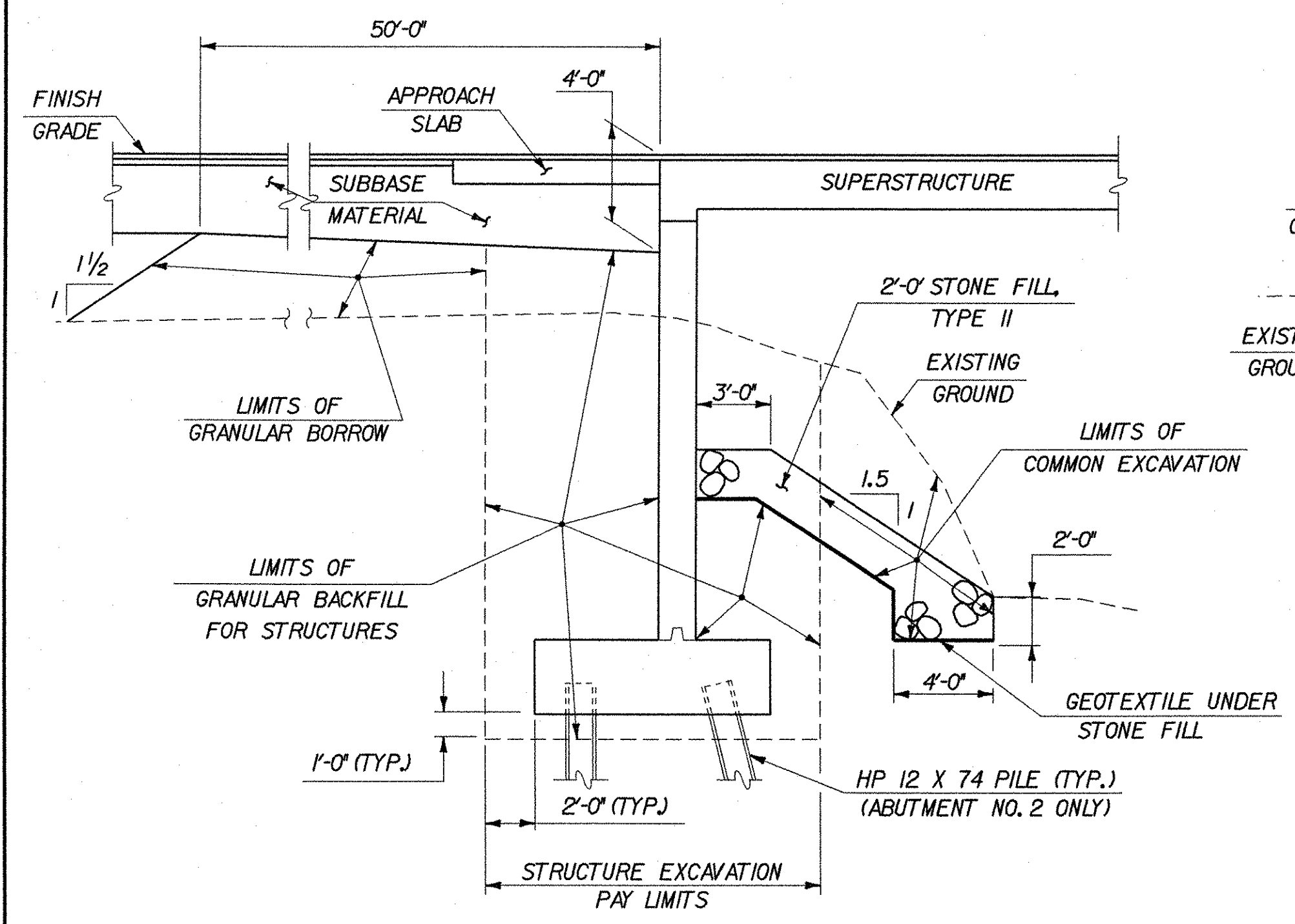
STATE OF VERMONT AGENCY OF TRANSPORTATION

Town Of SHELBURNE Bridge No. 15
 Highway No. TH 3 Log Sta. _____
 Surv. Sta. _____
BOSTWICK ROAD OVER VERMONT RAILWAY
 PRELIMINARY INFORMATION SHEET
 Designed By L. WIXSON Drawn By B. COLBURN
 Checked By R. JOY Date 05/03 Bridge Design Supervisor M. ZYDEL Date 05/03
 PROJECT SHELBURNE PROJECT NO. BRO 1445(30)
 I.G.C. Info. m:\595402_Bostwick\BRIDGE\6m\lar\z\196pl.dgn
 Bridge Sheet No. BR100 Sheet 40 of 73



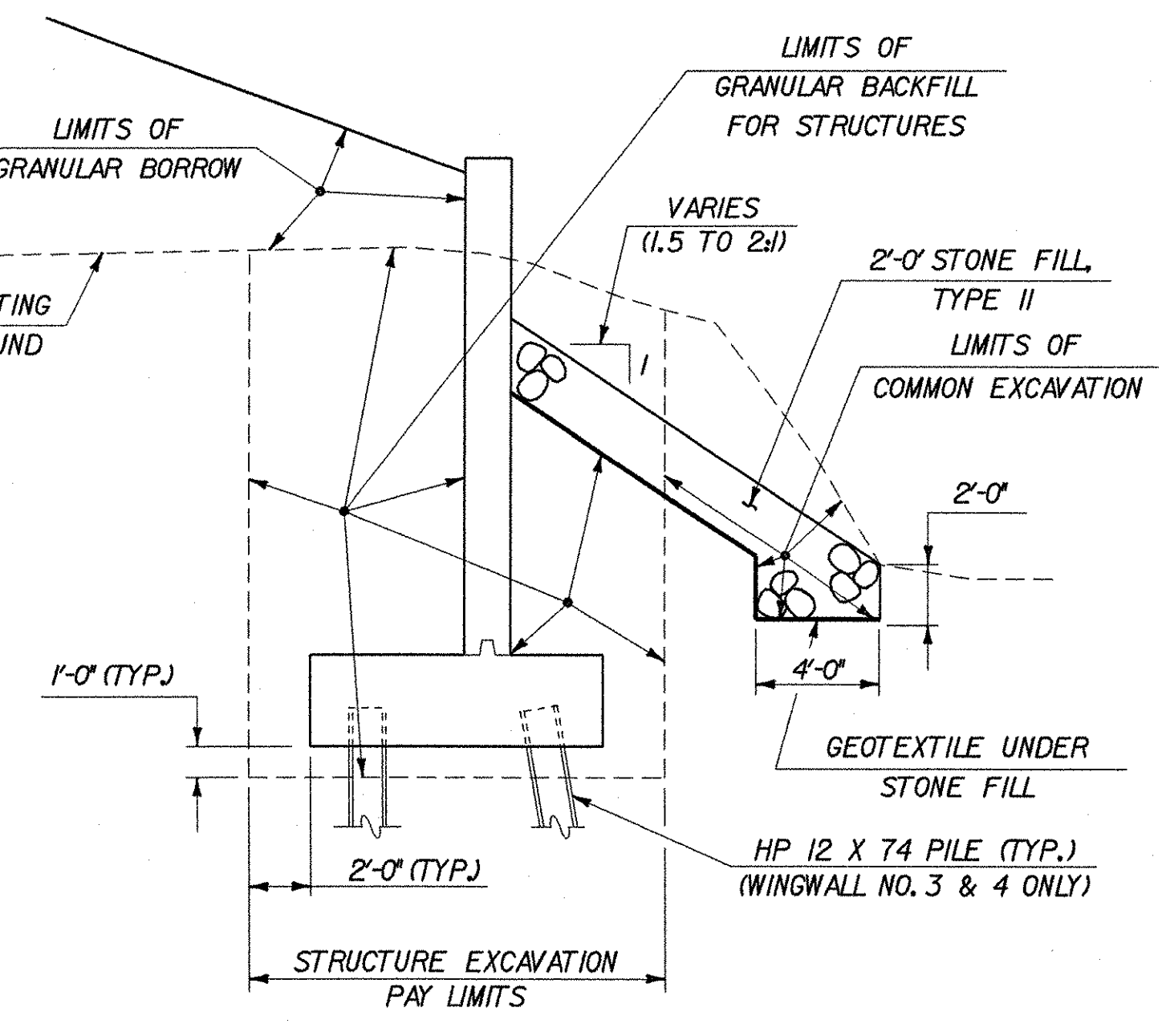
TYPICAL BRIDGE SECTION

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



TYPICAL ABUTMENT SECTION

(NOT TO SCALE)



TYPICAL WINGWALL SECTION

(NOT TO SCALE)

NOTE

1. FOR TYPICAL ROADWAY SECTION AND MATERIAL TOLERANCES, SEE SHEETS 3-5 OF 73.



PLOTTED 05-AUG-2003