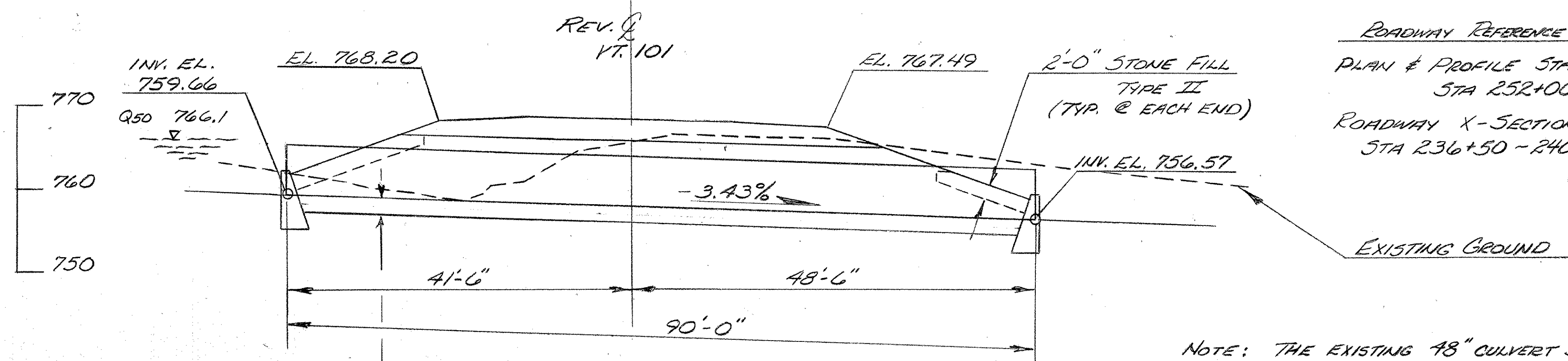


PLAN
SCALE: 1"=10'



ELEVATION @ PIPE ARCH
SCALE: 1"=10'

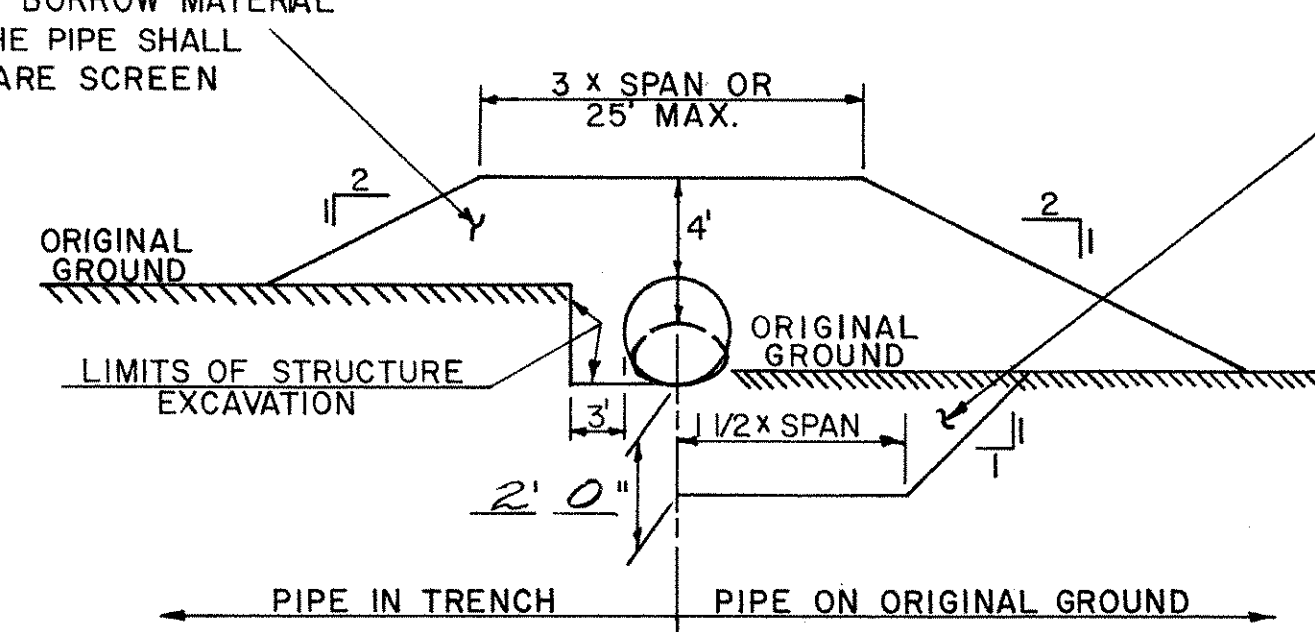
- INDEX OF SHEETS**
- 38 PLATE PIPE DETAILS
 - 156-157 CHANNEL X-SECTIONS (LINE "D")
- ROADWAY REFERENCE SHEETS**
- PLAN & PROFILE STA 236+00 ~ STA 252+00 (1-SHEET)
 - ROADWAY X-SECTIONS STA 236+50 - 240+00 (1-SHEET)

NOTE: THE EXISTING 48" CULVERT SHALL REMAIN THE PROPERTY OF THE STATE.

NOTES

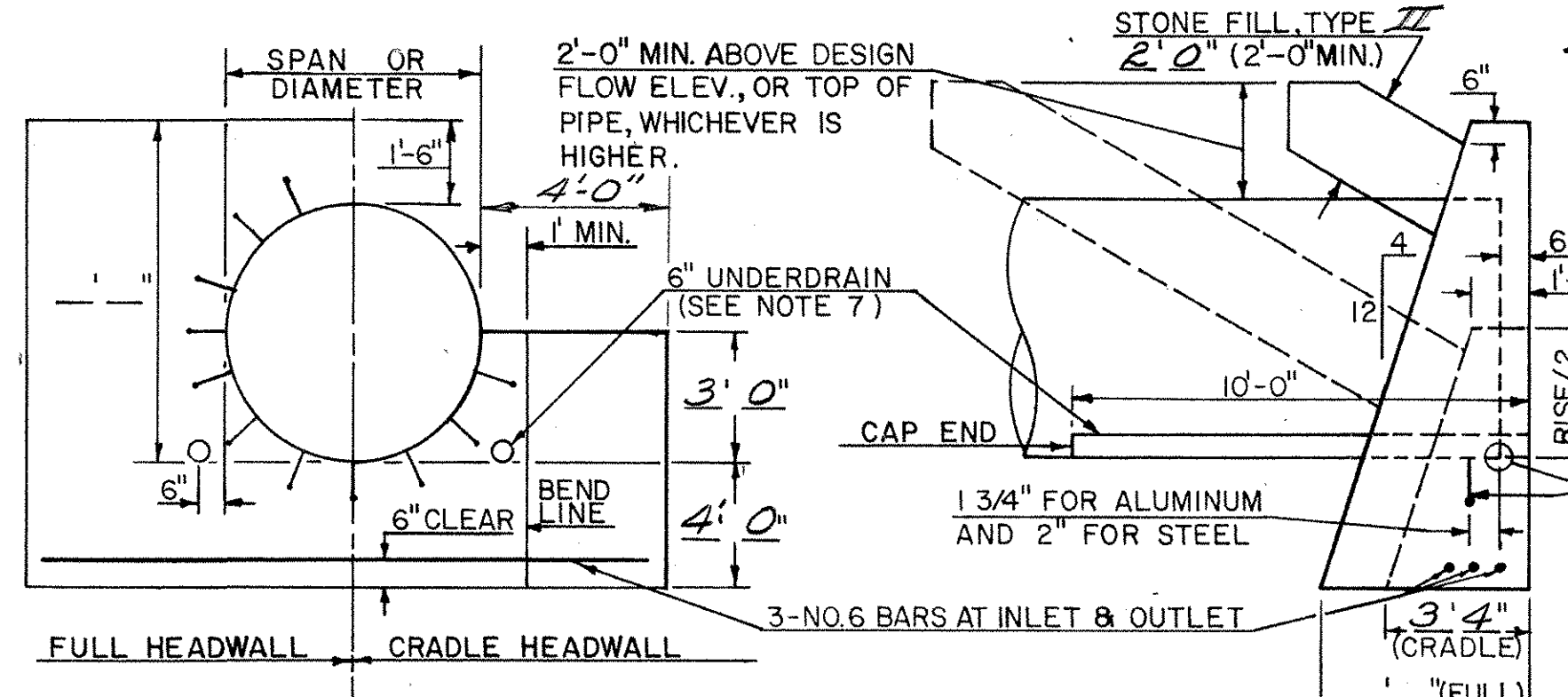
- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1986, AND THE LATEST A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. DESIGN IS FOR HS-20 LIVE LOADING.
- UNLESS OTHERWISE INDICATED FOUR (4) BOLTS PER LINEAR FOOT FOR STEEL PLATES AND FIVE AND ONE THIRD (5-1/3) BOLTS FOR ALUMINUM PLATES ARE REQUIRED ALONG THE LONGITUDINAL SEAMS. ALL CONNECTIONS FOR STRUCTURAL PLATE SECTIONS SHALL BE MADE WITH GALVANIZED ASTM A-449 BOLTS.
- WHEN NORMAL CONSTRUCTION OR REGULAR ROADWAY TRAFFIC IS MAINTAINED OVER THE PIPE THE CONTRACTOR SHALL MAINTAIN A MINIMUM COVER OF 3 FEET OF COMPACTED MATERIAL.
- ALUMINUM PIPE THAT IS TO BE IN CONTACT WITH CONCRETE SHALL HAVE CONTACT SURFACES THOROUGHLY COATED WITH ZINC CHROMATE, OR BITUMINOUS, OR ASPHALTIC PAINT.
- PIPES SHALL BE FACTORY ELONGATED 5% (PIPE ARCHES SHALL NOT BE ELONGATED).
- THE ENDS OF THE PIPE SHALL BE CUT SQUARE (NOT BEVELED TO MATCH SLOPES).
- AT THE OUTLET END INCLUDE A 10 FOOT PIECE OF 6" UNDERDRAIN EACH SIDE ON SAME GRADIENT AS CULVERT CONFORMING TO SECTION 711.01. COST TO BE INCLUDED IN UNIT PRICE BID FOR THE CULVERT PIPE.

ALL GRANULAR BORROW MATERIAL WITHIN 4' OF THE PIPE SHALL PASS A 3" SQUARE SCREEN OPENING.



TYPICAL BACKFILL SECTION

EXCAVATE POOR MATERIAL TO DEPTH SHOWN OR AS DIRECTED BY THE ENGINEER AND REPLACE WITH GRANULAR BACKFILL FOR STRUCTURES OR SAND BORROW. IF LEDGE OR OTHER UNYIELDING MATERIAL IS ENCOUNTERED IT SHALL BE REMOVED TO A DEPTH OF TWELVE (12) INCHES BELOW BOTTOM OF PIPE AND REPLACED WITH SUITABLE MATERIAL AS DIRECTED BY ENGINEER.



HEADWALL DETAILS

TYPICAL ANCHOR BOLT

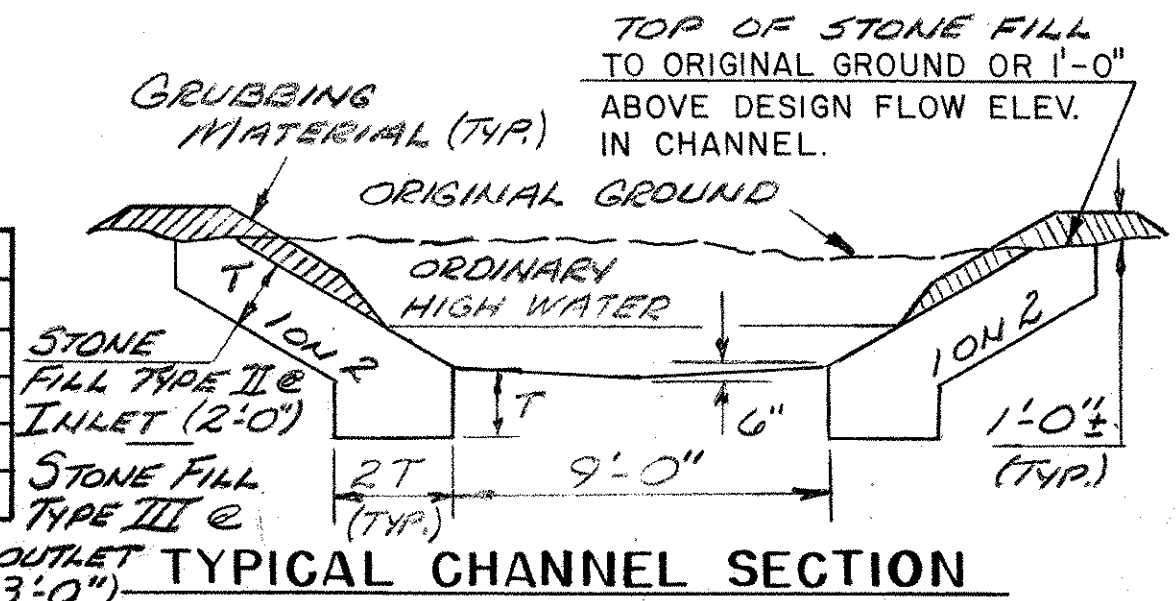
BOLT MATERIAL SHALL CONFORM TO ASTM-A307 & NUTS TO ASTM-A563.

ONE ROW 3/4" Ø GALVANIZED BOLTS, SPACED IN ALTERNATE CIRCUMFERENTIAL SEAM HOLES (19.2" C/C) AND TO BE FURNISHED WITH AND INCLUDED IN COST OF PLATE PIPE.

INLET INVERT ELEV. 759.66
OUTLET INVERT ELEV. 756.57

REINFORCING STEEL SCHEDULE

NO.	PIECES	SIZE	LENGTH	MARK	TYPE	A	B
6	6	17-11	C601	I	14-0	3-11	



TYPICAL CHANNEL SECTION

ESTIMATED QUANTITIES

NO.	ITEM	UNIT	TOTAL	FINAL
203.27	UNCLASS. CHANNEL EXCAV.	CY	390	
203.32	GRANULAR BORROW	CY	340	
204.25	STRUCTURE EXCAVATION	CY	450	
204.30	GRAN. BACKFILL FOR STRUCT.	CY	100	
501.25	CONCRETE CL. B	CY	18	
507.15	REINFORCING STEEL	LB	160	
511.16	CORR. GALV. METAL PLATE PIPE ARCH (0.138) WGT 18,270#	EA.	1	
527.10	MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS	LS	1	
603.11	STONE FILL TYPE II	CY	130	
603.12	STONE FILL TYPE III	CY	250	
621.90	TEMPORARY TRAFFIC BARRIER	LF	1460	
651.40	GRUBBING MATERIAL	SY	220	

HYDRAULIC DATA

DRAINAGE AREA = 1.41 SQ. MI.	DESIGN FLOW Q 50
Q ₁₀ = 200 C.F.S.	Q ₁₀ HEADWATER ELEVATION = 768.4
Q ₂₅ = 250 C.F.S.	Q ₂₅ HEADWATER ELEVATION = 765.2
Q ₅₀ = 300 C.F.S.	Q ₅₀ HEADWATER ELEVATION = 766.1
Q ₁₀₀ = 350 C.F.S.	Q ₁₀₀ HEADWATER ELEVATION = 767.1
TAILWATER DEPTH AT Q 50 = 2.5' FEET, ELEVATION	
OUTLET VELOCITY AT Q 50 = 12.3 FEET PER SECOND	
ORDINARY HIGHWATER DEPTH	FEET
COMMENTS: STONE FILL: TYPE II @ INLET, TYPE III @ OUTLET CHAN.	

DETAILS OF STRUCTURAL PLATE PIPE CULVERTS

	STEEL	STEEL	ALUMINUM
CORRUGATIONS	6" x 2"		
SIZE OF PIPE OR PIPE ARCH	8'-7" x 5'-11"		
WATERWAY AREA (S.F.)	40		
PLATE THICKNESS (COATED)	0.138		
BOLT SIZE	3/4"		
WEIGHT PER LINEAR FOOT	203 #		
TOTAL WEIGHT	18,270 #		

STATE OF VERMONT AGENCY OF TRANSPORTATION

TOWN OF	TROY	Bridge No.	
HIGHWAY NO.	RTE 101	Log Sta.	237+48
RTE 101 OVER BUGBEE BROOK			
8'-7" x 5'-11" PLATE PIPE DETAILS			
Designed by	M. GARCIA	Drawn by	M. GARCIA
Checked by	G. SPILAK	Bridge Design Supervisor	
PROJECT	TROY	date	4/87
		F.W. Bol Kum	date 4/87
		PROJECT NO.	25 0311(1)
Bridge Sheet No.	38	Sheet	107 of 229