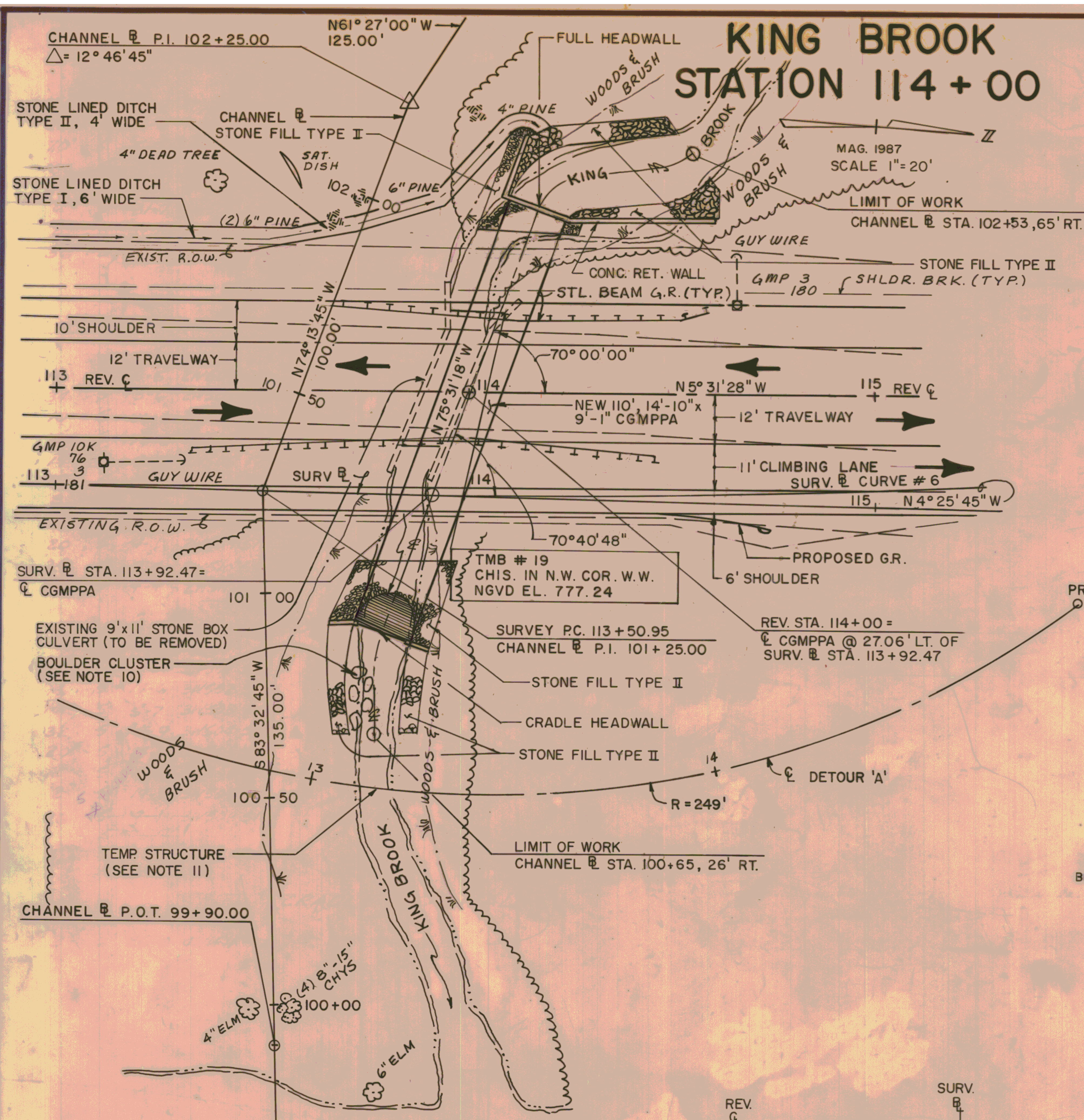
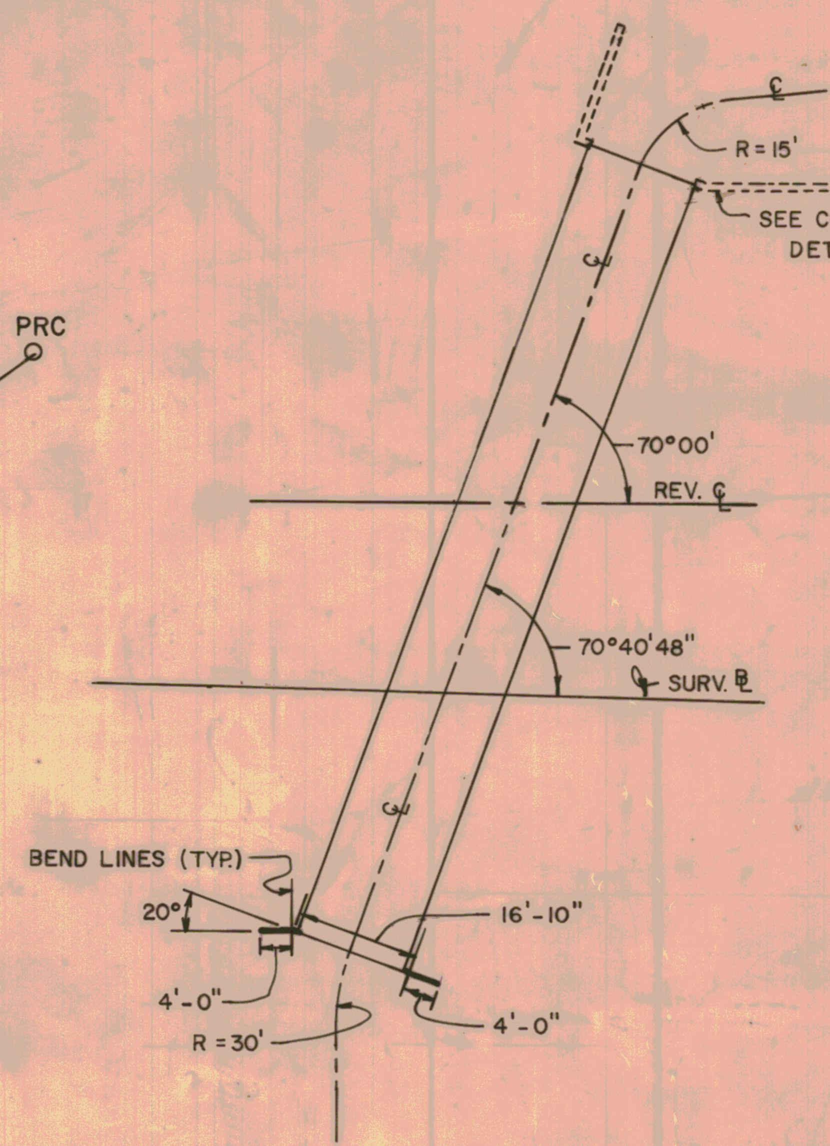
KING BROOK STATION 114 + 00



NOTES - CONT'D.

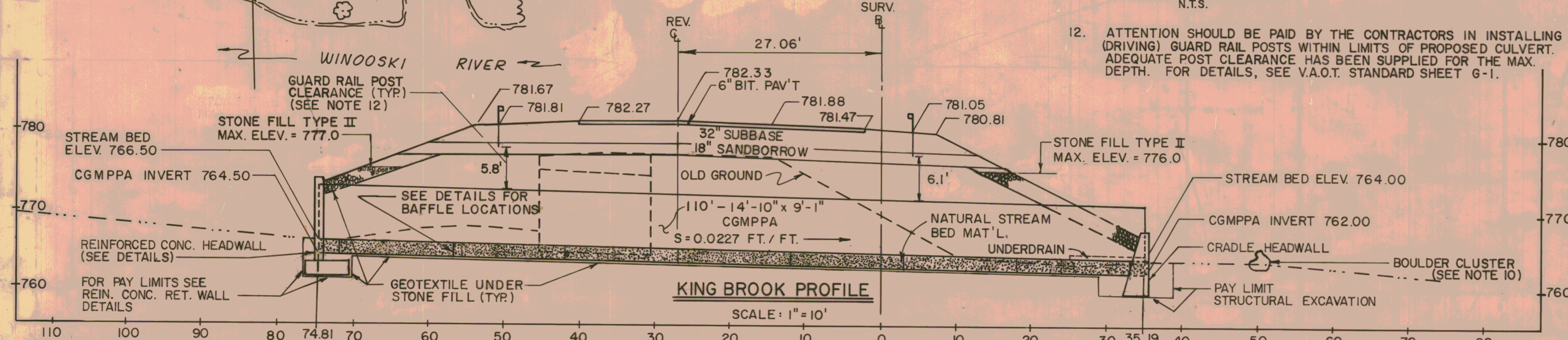
10. – INDIVIDUAL ROCKS WITHIN EACH BOULDER CLUSTER TO BE ANGULAR, 3'-5' IN DIAMETER, AND OF IGNEOUS ORIGIN.
 – EACH CLUSTER TO CONSIST OF 3 TO 5 BOULDERS PLACED IN AN OPEN DIAMOND OR TRIANGULAR PATTERN IN THE AREA INDICATED ON THE PLANS.
 – EACH BOULDER WILL BE BURIED 1/3 OF IT'S HEIGHT, HEIGHT BEING ITS LARGEST DIMENSION.
 – ALL LOCATIONS, PLACEMENT AND MATERIALS FOR BOULDER CLUSTERS WILL BE APPROVED AND AGREED UPON BY THE ENGINEER AND THE CONTRACTOR PRIOR TO PLACEMENT.

11. TYPE AND SIZE OF TEMPORARY STRUCTURE TO BE DETERMINED BY THE CONTRACTOR AND APPROVED OF BY THE V.A.O.T. PRIOR TO PLACEMENT. TEMPORARY STRUCTURE WILL TRAVERSE BROOK NORMAL TO THE CHANNEL WITH A MINIMUN SPAN OF 38', MINIMUN WATERWAY AREA OF 40 SF, AND MINIMUM SUPERSTRUCTURE ELEV. OF 768.0.



WING WALL DETAILS
N.T.S.

12. ATTENTION SHOULD BE PAID BY THE CONTRACTORS IN INSTALLING (DRIVING) GUARD RAIL POSTS WITHIN LIMITS OF PROPOSED CULVERT. ADEQUATE POST CLEARANCE HAS BEEN SUPPLIED FOR THE MAX. DEPTH. FOR DETAILS, SEE V.A.O.T. STANDARD SHEET G-1.



KING BROOK PROFILE
SCALE: 1"=10'

HYDRAULIC DATA

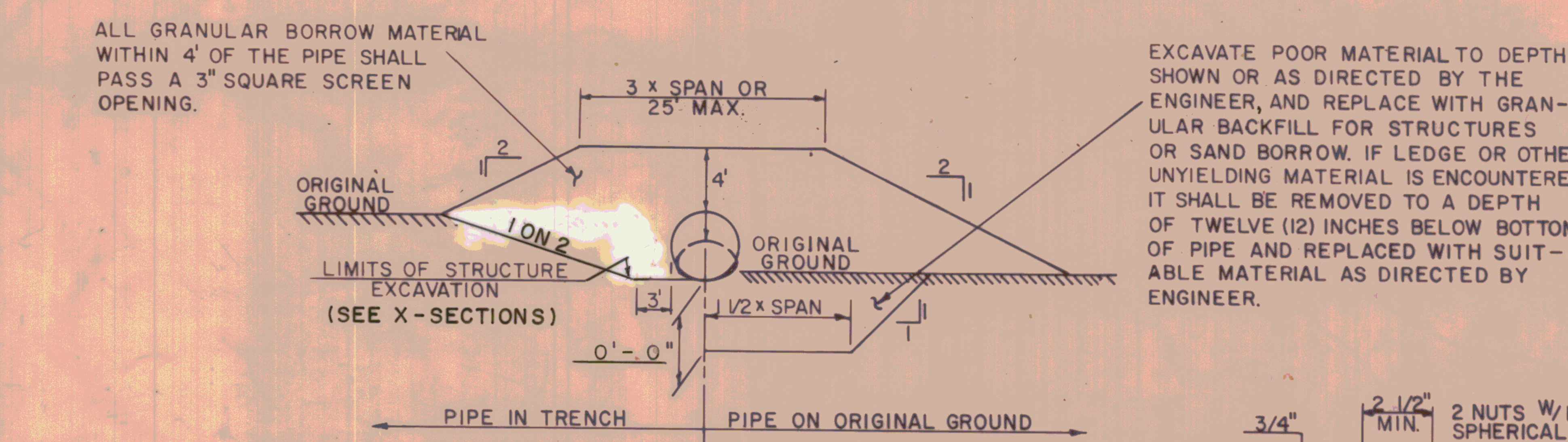
DRAINAGE AREA = 2.28 SQ. MI.
DESIGN FLOW Q 50
Q_{10} = 350 C.F.S.
Q_{25} = 425 C.F.S.
Q_{50} = 550 C.F.S.
Q_{100} = 675 C.F.S.
Q_{10} HEADWATER ELEVATION = 772.0
Q_{25} HEADWATER ELEVATION = 772.6
Q_{50} HEADWATER ELEVATION = 773.7
Q_{100} HEADWATER ELEVATION = 774.9
TAILWATER DEPTH AT Q 50 = 3.6 FEET, ELEVATION 767.6
OUTLET VELOCITY AT Q 50 = 11.1 FEET PER SECOND
ORDINARY HIGHWATER DEPTH 2.5 FEET
COMMENTS: OVERTOPPING FREQUENCY EXCEEDS Q100

DETAILS OF STRUCTURAL PLATE PIPE CULVERTS

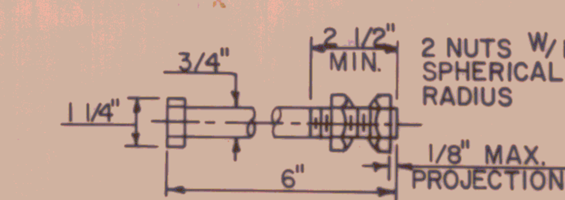
	STEEL	STEEL	ALUMINUM
CORRUGATIONS	6"x 2"		
SIZE OF PIPE OR PIPE ARCH	14'-10" x 9'-1" CGMPPA		
WATERWAY AREA (S.F.)	81.87		
PLATE THICKNESS (COATED)	0.109		
BOLT SIZE	3/4" DIA.		
WEIGHT PER LINEAR FOOT	271		
TOTAL WEIGHT (LBS.)	29,810		

NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990, AND THE LATEST A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. DESIGN IS FOR HS-20 LIVE LOADING.
2. 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.
3. 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.
4. ALUMINUM PIPE THAT IS TO BE IN CONTACT WITH CONCRETE SHALL HAVE CONTACT SURFACES THOROUGHLY COATED WITH ZINC CHROMATE, OR BITUMINOUS, OR ASPHALTIC PAINT.
5. PIPES SHALL BE FACTORY ELONGATED 5% (PIPE ARCHES SHALL NOT BE ELONGATED).
6. THE ENDS OF THE PIPE SHALL BE CUT SQUARE (NOT BEVELED TO MATCH SLOPES).
7. 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.
8. PIPE IS TO BE FILLED WITH 2'-0" OF NATURAL STREAM BED MATERIAL.
9. FILLED INVERT FOR C.G.M.P.P.A. TO BE NATURAL STREM BED MATERIAL APPROVED OF AND PLACED AS DIRECTED BY ENGINEER.

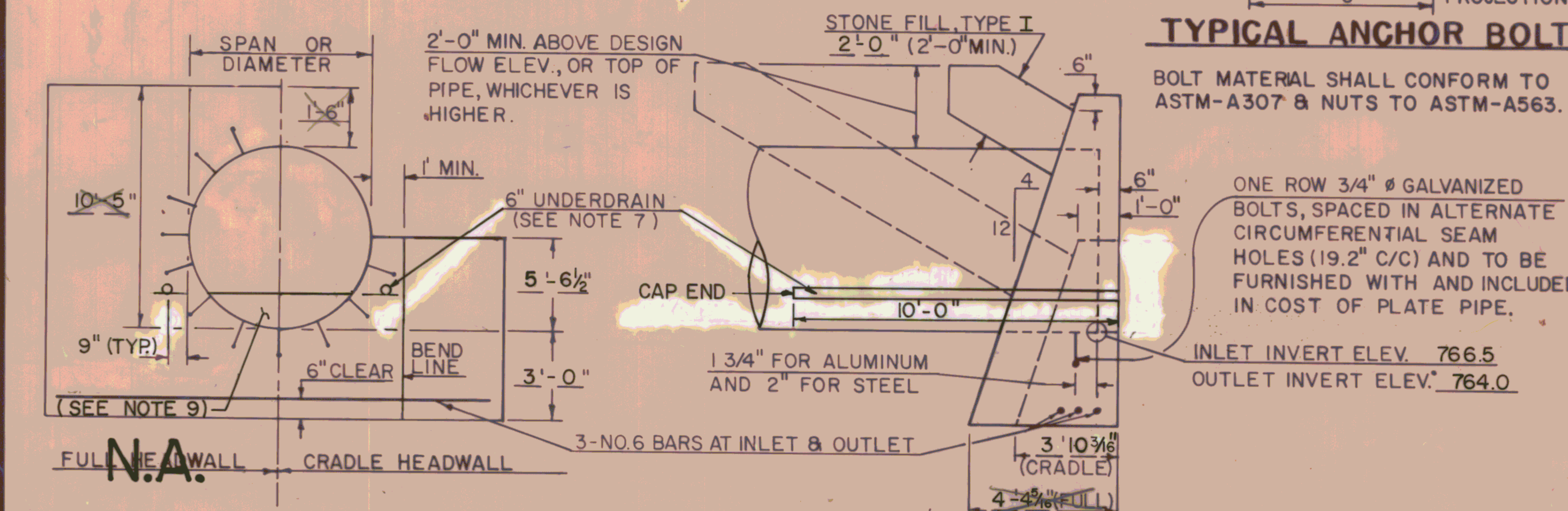


TYPICAL BACKFILL SECTION



TYPICAL ANCHOR BOLT

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

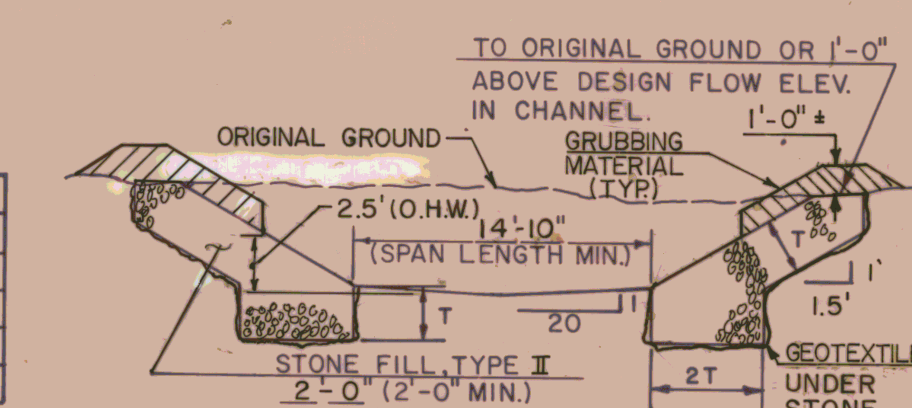


GRAVITY HEADWALL DETAILS

CRADLE HEADWALL REINFORCING STEEL SCHEDULE

NO. PIECES	SIZE	LENGTH	MARK	TYPE		
3	6	26'-0"	4W601	STR.		

(NOTE: FOR REINFORCED CONCRETE RETAINING WALL STEEL SCHEDULE SEE REINFORCED CONCRETE RETAINING WALL DETAILS)



TYPICAL CHANNEL SECTION

ESTIMATED QUANTITIES

NO.	ITEM	UNIT	TOTAL	FINAL
203.16	SOLID ROCK EXCAVATION	CY	60	
203.25	CHANNEL EXCAVATION OF EARTH	CY	62	
204.25	STRUCTURE EXCAVATION	CY	1943	
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY	100	
501.25	CONCRETE, CLASS B	CY	15	
506.60	STRUCTURAL STEEL	LBS.	7,126	
507.15	REINFORCING STEEL	LBS.	117	
511.16100	14'-10" x 9'-1" C.G.M.P.P.A. (0.109)	EACH	1	
613.11	STONE FILL, TYPE II	CY	135	
649.	GEOTEXTILE UNDER STONE FILL	SY	850	
651.26	HAY BALES FOR EROSION CONTROL	EACH	100	
203.32	GRANULAR BORROW (EST.)	CY	1350	
NOTE:	QUANITIES DO NOT INCLUDE ANY ITEM ESTIMATES FOR CONCRETE RETAINING WALLS (SEE DETAILS)			

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF MARSHFIELD	Bridge No.
	Log Sta.
HIGHWAY NO. US RTE 2	Surv. Sta. 113+96
KING BROOK - BR - 100	
REV. ℄ STA. 114+00	
Designed by SMB	Drawn by SJB
Checked by date	Bridge Design Supervisor date
PROJECT U.S. ROUTE 2 - MARSHFIELD	PROJECT NO. FEGC F028-3(28)
Bridge Sheet No.	Sheet 328 of 352

REV. 3/24/87