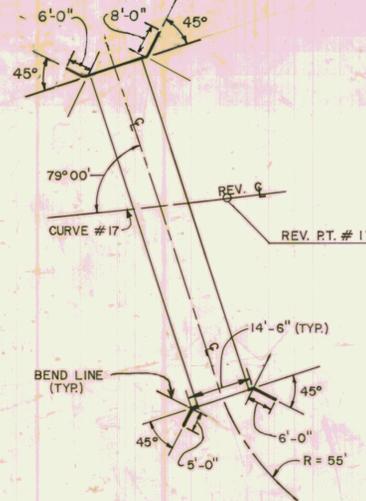


BROOK STATION 296+55

SCALE = 1" = 20'

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 IN AN OPEN DIAMOND OR TRIANGULAR PATTERN IN THE AREA INDICATED ON THE PLANS.
 - EACH BOULDER WILL BE BURIED 1/3 OF ITS 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 BY THE V.A.O.T. PRIOR TO PLACEMENT. TEMPORARY STRUCTURE WILL TRAVERSE BROOK NORMAL TO CHANNEL WITH A MINIMUM SPAN OF 25', MINIMUM WATERWAY AREA OF 30' SF, AND MINIMUM SUPERSTRUCTURE ELEV. OF 783.0.



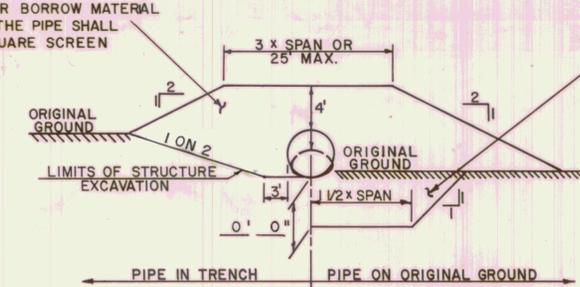
WING WALL DETAILS
N.T.S.

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

NOTES

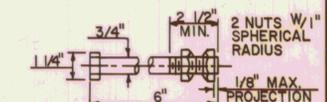
1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990, AND THE LATEST A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. DESIGN IS FOR HS-20 LIVE LOADING.
2. UNLESS OTHERWISE INDICATED FOUR(4) BOLTS PER LINEAR 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 STREAM BED MATERIAL APPROVED OF AND PLACED AS DIRECTED BY ENGINEER.
10. BEVELED INLET RING. BEVEL NOT REQUIRED BELOW FILLED INVERT.

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



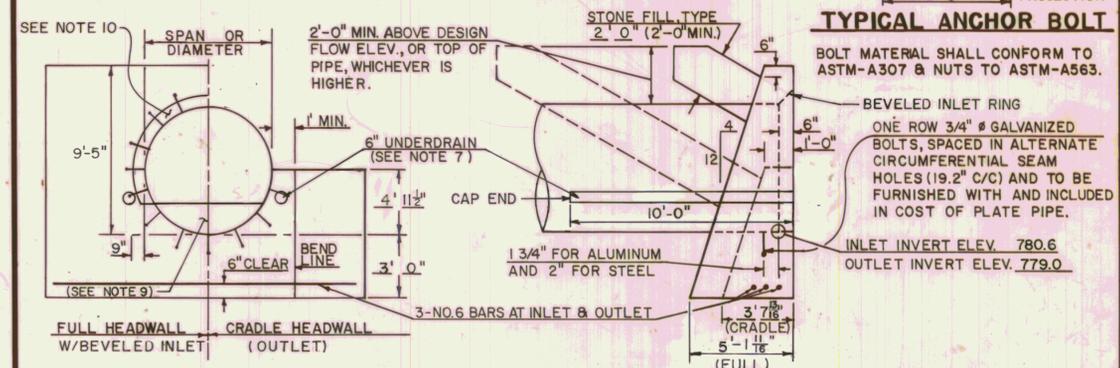
TYPICAL BACKFILL SECTION

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.



TYPICAL ANCHOR BOLT

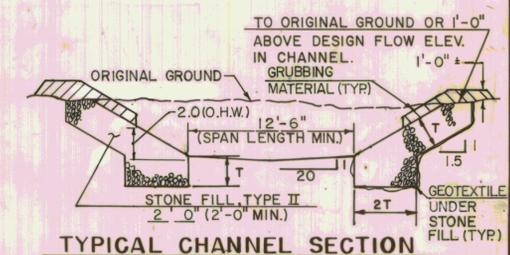
BOLT MATERIAL SHALL CONFORM TO ASTM-A307 & NUTS TO ASTM-A563.



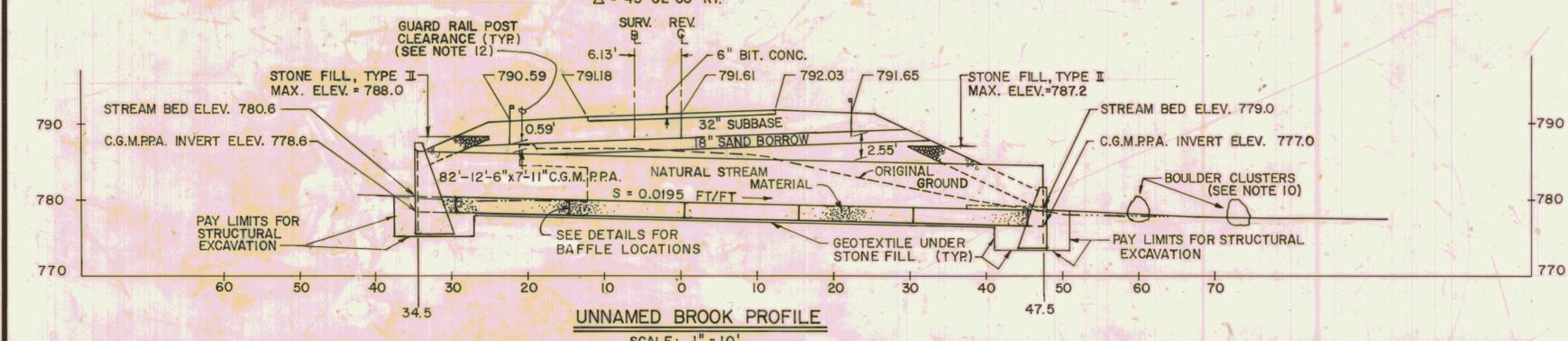
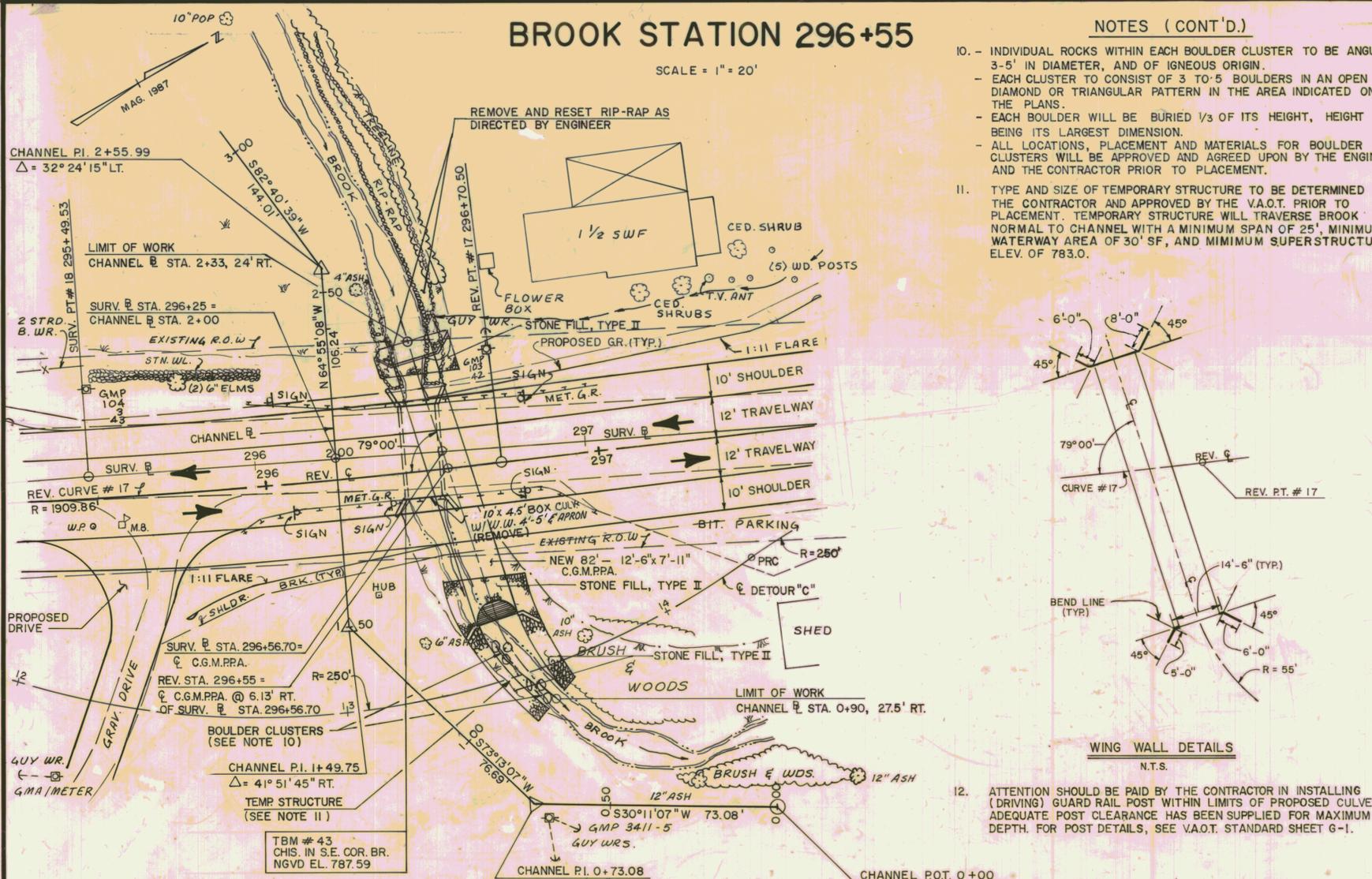
HEADWALL DETAILS

NO. PIECES	SIZE	LENGTH	MARK	TYPE
3	6	30'-0"	6W601	STR.
3	6	27'-0"	6W602	STR.

NO.	ITEM	UNIT	TOTAL	FINAL
203.16	SOLID ROCK EXCAVATION	CY	43	
203.25	CHANNEL EXCAVATION OF EARTH	CY	38	
204.25	STRUCTURE EXCAVATION	CY	1065	
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY	80	
501.25	CONCRETE, CLASS B	CY	31	
506.60	STRUCTURAL STEEL (BAFFLES)	LBS.	4,604	
507.15	REINFORCING STEEL	LBS.	260	
511.16130	12'-6" x 7'-11" C.G.M.P.P.A. (0.109)	EACH	1	
613.11	STONE FILL, TYPE II	CY	101	
649.31	GEOTEXTILE UNDER STONE FILL	SY	670	
651.26	HAY BALES FOR EROSION CONTROL	EACH	85	
203.32	GRANULAR BORROW (EST.)	CY	567	



TYPICAL CHANNEL SECTION



DRAINAGE AREA =	1.17	SQ. MI.	DESIGN FLOW Q ₅₀	
Q ₁₀ =	200	C.F.S.	Q ₁₀ HEADWATER ELEVATION =	784.7
Q ₂₅ =	275	C.F.S.	Q ₂₅ HEADWATER ELEVATION =	785.5
Q ₅₀ =	350	C.F.S.	Q ₅₀ HEADWATER ELEVATION =	786.2
Q ₁₀₀ =	425	C.F.S.	Q ₁₀₀ HEADWATER ELEVATION =	786.9
TAILWATER DEPTH AT Q ₅₀ =	3.0	FEET, ELEVATION		782.0
OUTLET VELOCITY AT Q ₅₀ =	10.0	FEET PER SECOND		
ORDINARY HIGHWATER DEPTH	2.0	FEET		
COMMENTS:	OVERTOPPING FREQUENCY EXCEEDS Q ₁₀₀			

	STEEL	STEEL	ALUMINUM
CORRUGATIONS	6" x 2"		
SIZE OF PIPE OR PIPE ARCH	12'-6" x 7'-11"		
WATERWAY AREA (S.F.)	57.52		
PLATE THICKNESS (COATED)	0.109		
BOLT SIZE	3/4" DIA.		
WEIGHT PER LINEAR FOOT	233 lbs./ft.		
TOTAL WEIGHT	19,106 lbs.		

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF MARSHFIELD
HIGHWAY NO. U.S. RTE. 2
UNNAMED BROOK - BR - 130
REV. STA. 296+55

Designed by SMB
Checked by
date

Bridge No. _____
Log Sta. _____
Surv. Sta. 296+24.29

Drawn by SJB
Bridge Design Supervisor
date

PROJECT
U.S. RTE. 2 - MARSHFIELD

PROJECT NO.
FEGC FO28-3-(28)

Bridge Sheet No. 1
Sheet 246 of 392