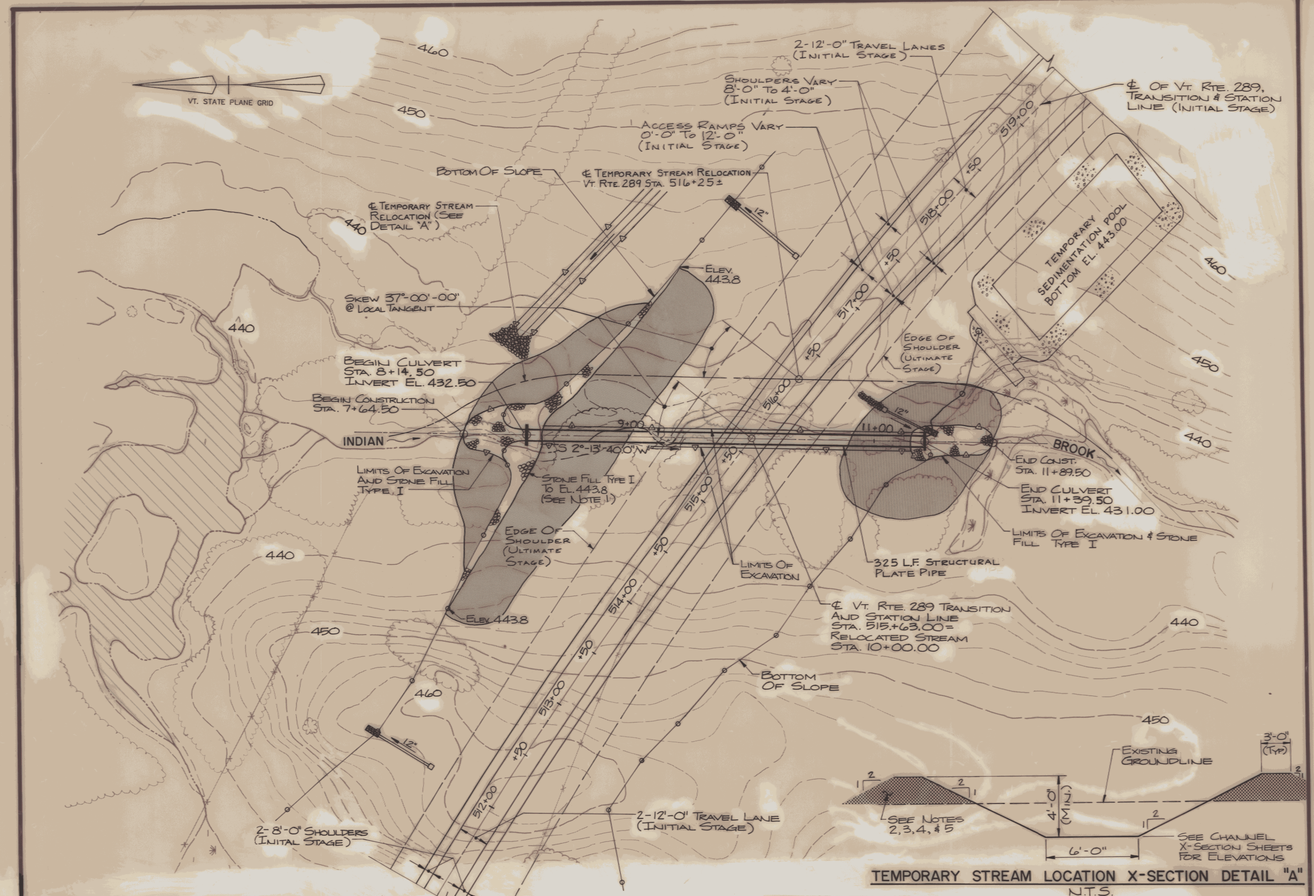

PLAN
1" = 50'-0"

TEMPORARY STREAM LOCATION X-SECTION DETAIL "A"
N.T.S.

VT. RTE. 289 CURVE DATA #3

ΔT	32°-12'-45" Rt.
Δc	29°-42'-03" Rt.
Dc	01°-30'-00"
R	3819.72'
TT	1186.76'
TC	1012.81'
ET	186.37'
EC	131.99'
LT	2314.94'
LC	1980.06'
LS	1671.44'
Bank	0.030 Ft./Ft. Right

KEY: ▭ - NATIVE TURF ESTABLISHMENT AREA SEE DETAIL SHEET BR 802

IT IS A VIOLATION FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER ANY ITEM IN THESE CONTRACT DOCUMENTS IN ANY WAY. IF AN ITEM BEARING THE SEAL OF AN ENGINEER OR LAND SURVEYOR IS ALTERED, THE ALTERING ENGINEER OR LAND SURVEYOR SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.
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CLOUGH, HARBOUR & ASSOCIATES
ENGINEERS & PLANNERS

NOTES:

1. EXTEND STONE TO MEET EXISTING GROUND-LINE ELEVATION 443.8 (INLET ONLY).
2. DESIGN FOR TEMPORARY STREAM CHANNEL BASED ON 10-YEAR STORM.
3. IN ORDER TO MAINTAIN A 4-FOOT-MINIMUM CHANNEL DEPTH, USE EXCAVATED MATERIAL TO CONSTRUCT CHANNEL EMBANKMENT SLOPE TO CORRECT HEIGHT.
4. WHEREVER FILL IS REQUIRED TO BUILD UP CHANNEL EMBANKMENT, THE CONTRACTOR IS REQUIRED TO REMOVE TOPSOIL AND CLEAR AREA OF ANY VEGETATION.
5. EXCAVATED MATERIAL USED TO BUILD UP TEMPORARY STREAM CHANNEL EMBANKMENT SHALL BE COMPACTED TO 95 PERCENT OF STANDARD PROCTOR DENSITY.

CHA CLOUGH, HARBOUR & ASSOCIATES ENGINEERS & PLANNERS

RECOMMENDED FOR APPROVAL John McKnight 10/29/90 DATE

STATE OF VERMONT JOHN M. KRUEGER NO. 5599 REGISTERED PROFESSIONAL ENGINEER

HYDRAULIC DATA

DRAINAGE AREA = 3.32 SQ. MI. DESIGN FLOW Q 50

Q 10 =	190 C.F.S.	Q 10 HEADWATER ELEVATION =	439.5
Q 25 =	270 C.F.S.	Q 25 HEADWATER ELEVATION =	440.7
Q 50 =	330 C.F.S.	Q 50 HEADWATER ELEVATION =	441.8
Q 100 =	370 C.F.S.	Q 100 HEADWATER ELEVATION =	442.5

TAILWATER DEPTH AT Q 50 = 6.3 FEET, ELEVATION 439.3

OUTLET VELOCITY AT Q 50 = 7.8 FEET PER SECOND

ORDINARY HIGHWATER DEPTH — FEET

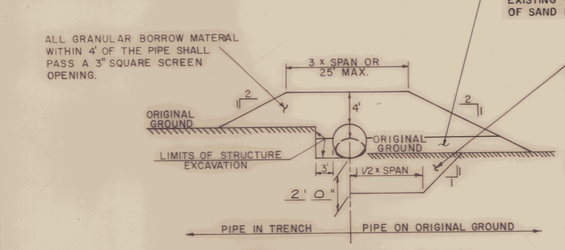
COMMENTS: —

DETAILS OF STRUCTURAL PLATE PIPE CULVERTS

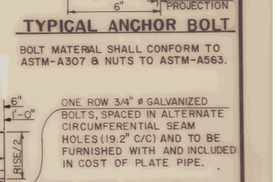
	OPTION 1 STEEL	STEEL	OPTION 2 ALUMINUM
CORRUGATIONS	6" x 2"		9" x 2½"
SIZE OF PIPE OR PIPE ARCH	9'-0" DIA.		9'-0" DIA.
WATERWAY AREA (S.F.)	53.1		53.1
PLATE THICKNESS (COATED)	0.168"		0.200"
BOLT SIZE	¾"		¾"
WEIGHT PER LINEAR FOOT	285 LBS/FT.		122.5 lbs./Ft.
TOTAL WEIGHT	92.6 KIPS		39.8 KIPS

NOTES

1. 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-25 LIVE LOADING.
2. UNLESS OTHERWISE INDICATED FOUR (4) BOLTS PER LINEAR FOOT FOR STEEL PLATES AND FIVE AND ONE THIRD (5 1/2) 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. BOLT HOLES NEAREST THE VISIBLE EDGE OF LONGITUDINAL LAPPED JOINTS (WHEN VIEWED FROM THE INSIDE OF THE PIPE) SHALL BE PLACED IN THE VALLEYS OF THE CORRUGATIONS.

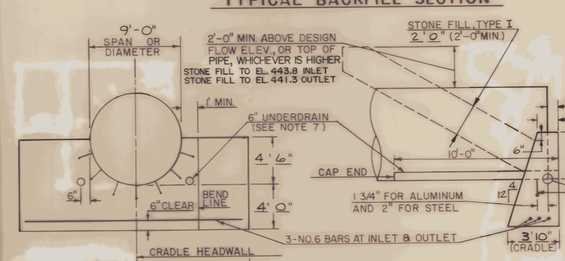


TYPICAL BACKFILL SECTION



TYPICAL ANCHOR BOLT

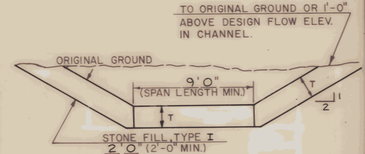
BOLT MATERIAL SHALL CONFORM TO ASTM-A307 & NUTS TO ASTM-A563.



HEADWALL DETAILS

REINFORCING STEEL SCHEDULE

NO. PIECES	SIZE	LENGTH	MARK	TYPE		
6	6	16'-6"	CH601	STR		



TYPICAL CHANNEL SECTION

ESTIMATED QUANTITIES * Denotes Roadway Item AS BUILT 6/9/94

NO.	ITEM	UNIT	TOTAL	FINAL
203.27	Unclassified Channel Excavation	C.Y.	180	216
203.31	Sand Borrow - Modified	C.Y.	2480	2180
203.32	Granular Borrow	C.Y.	2210	2432
204.25	Structure Excavation	C.Y.	960	1032
501.25	Concrete Class "B"	C.Y.	22	22.960
507.15	Reinforcing Steel	LBS.	150	150
	Begin Options			
511.15	108"ø Corr. Galv. Metal Plate	EA.	1	1
	Pipe (0.168")			
511.25	108"ø Corr. Alum. Alloy Plate	EA.	1	
	Pipe (0.200")			
	End Options			
613.10	Stone Fill Type I	C.Y.	450	277.800
613.10	Stone Fill, Type I (Culvert Liner)	C.Y.	130	130.
614.10	Temp. Relocation of Stream	L.S.	1	1
651.40	Grubbing Material (NTE)	S.Y.	4000	28895

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF Essex	Bridge No. 14-4
	Log Sta.
HIGHWAY NO. VT. RTE. 289	Surv. Sta. 515+63.00
VT. RTE. 289 OVER INDIAN BROOK	
PLAN AND DETAILS	
Designed by PJB	Drawn by RFU
Checked by RJS date 10-12-90	Bridge Design Supervisor MWO date 10-12-90
PROJECT Williston-Colchester	PROJECT NO. PB 033-1(2)
Bridge Sheet No. BR801	Sheet 225 of 400

REV. 3/24/97

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