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**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

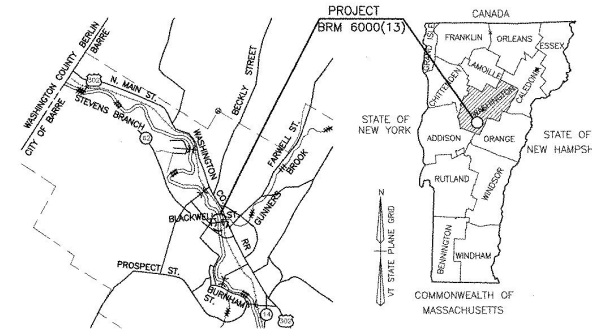


**PROPOSED IMPROVEMENT
CITY OF BARRE
COUNTY OF WASHINGTON
BLACKWELL STREET
CITY STREET (LOCAL-CLASS 2)**

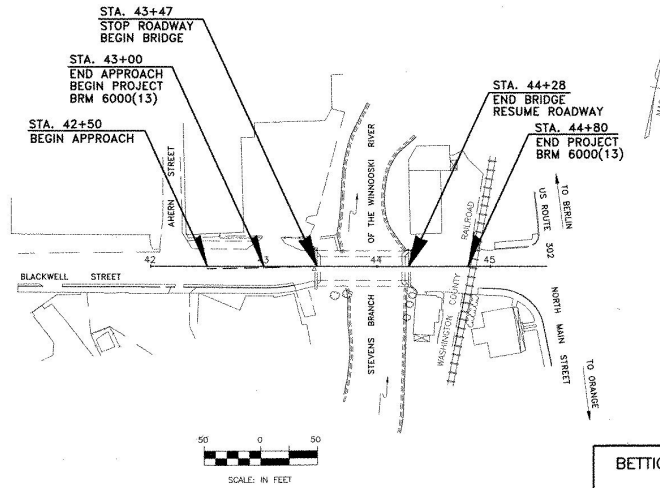
BEGINNING AT A POINT ON BLACKWELL STREET APPROXIMATELY 0.047 MILES WESTERLY OF THE INTERSECTION OF US ROUTE 302 AND EXTENDING EASTERLY 0.034 MILES.

PROJECT DESCRIPTION - THE REPLACEMENT OF STRUCTURALLY DEFICIENT BRIDGE #10 WITH A NEW SINGLE SPAN PLATE GIRDER STRUCTURE INCLUDING ALL THE NECESSARY ROADWAY APPROACH WORK.

LENGTH OF STRUCTURE	=	81.00 FEET	=	0.015 MILES
LENGTH OF ROADWAY	=	99.00 FEET	=	0.019 MILES
LENGTH OF PROJECT	=	180.00 FEET	=	0.034 MILES



LOCATION MAP



CONVENTIONAL SIGNS

COUNTY LINE	---
TOWN LINE	- - - -
LIMITS OF ACCESS	○-○-○
POINT OF ACCESS	X
FENCE LINE	-----X-----
STONE WALL	=====
TRAVELED WAY	=====
QUICK WALK	-----○-----
RAILROAD	=====
SURVEY LINE	-----○-----
CULVERT	-----○-----
POWER POLE	○
TELEPHONE POLE	○
TREES	○
CONTROL OF ACCESS	///
PROPERTY LINE	---
R.O.W. TAKING LINE	---
SLOPE RIGHTS	SR
TOP OF CUT	△
TOE OF SLOPE	○

TRAFFIC DATA

FUNCTIONAL CLASSIFICATION
CITY STREET (LOCAL CLASS 2)

1996 ADT = 1700
2016 ADT = 2290
2016 DHV = 320
D = 55%
T = 3%
V = 25 M.P.H.
(1996-2016) 18 RISE EQUAL = 689,450 / DESIGN LANE

DATUM
VERTICAL: NGVD 1929
HORIZONTAL: N/A

RECORD PLANS

CONTRACTOR: EDNEY INC. - BARNET, VT
RESIDENT ENGINEER: FRED REED
CONSTRUCTION BEGAN: JUNE 5, 2000
CONSTRUCTION COMPLETE: DECEMBER 1, 2000
RECORD PLANS BY: N. GARRACK

I HEREBY CERTIFY THAT ALL THE CONSTRUCTION REQUIRED BY THIS SET OF DRAWINGS HAS BEEN ACCOMPLISHED AS INDICATED HEREIN.

BY: *[Signature]* RESIDENT ENGINEER
DATE: April 12, 2005

NOTE: Any further information concerning final quantities, amounts or other details relative to this project may be found at Central Files in the electronic archives.

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION OR THE CHIEF ENGINEER. CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 1990, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON MARCH 15, 1990 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.



APPROVED: *[Signature]* DATE: 4/17/05
DIRECTOR OF PROJECT DEVELOPMENT

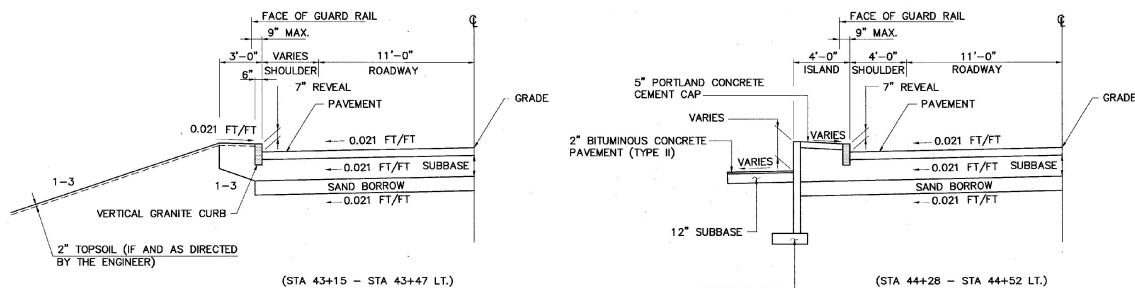
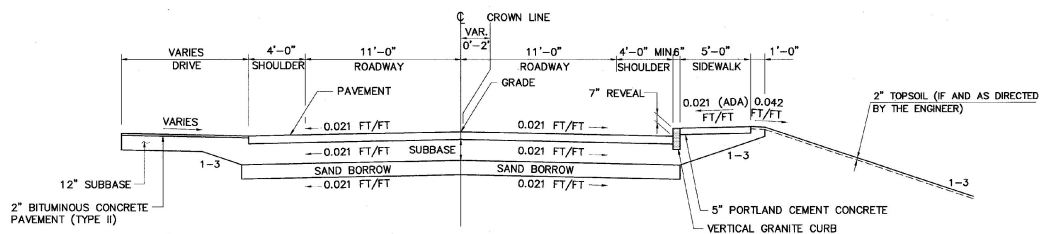
BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

PROJECT: BARRE CITY BRM 6000(13)
SHEET 1 OF 46 SHEETS

TYPICAL SECTIONS

MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT (TOTAL DEPTH)	± 1/4"
SUBBASE	± 1/2"
SAND BORROW	± 1"

- 1 1/2" BITUMINOUS CONCRETE PAVEMENT (TYPE III)
- 2" BITUMINOUS CONCRETE PAVEMENT (TYPE II)
- 3" BITUMINOUS CONCRETE PAVEMENT (TYPE I)
- 18" SUBBASE OF DENSE GRADED CRUSHED STONE
- 12" SAND BORROW



- GENERAL NOTES**
- SEED - TO BE APPLIED PER SEEDING FORMULA AS DIRECTED BY THE ENGINEER.
 - FERTILIZER - FORMULA 10-20-10 (19-19-19 FOR HYDROSEEDING) TO BE USED WITH SEED, AT THE RATE OF 500 LBS./ACRE.
 - AGRICULTURAL LIMESTONE - TO BE APPLIED AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.
 - HAY MULCH - TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE, OR AS DIRECTED BY THE ENGINEER.
 - TOPSOIL - TO BE USED WITH SEED AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
 - MARKER POSTS (WOOD OR STEEL, AS SPECIFIED) - TO BE PLACED AS DIRECTED BY THE ENGINEER.
 - SLOPE ROUNDING - ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5.
 - PAY LIMITS OF SAND BORROW WHEN USED IN CONJUNCTION WITH UNDERDRAIN - SEE STANDARD SHEET D-2.

**SEEDING FORMULA
URBAN AREAS CONSERVATION MIX**

% WT.	LBS./A.	NAME	PUR %	GERM %
42.5	34.0	CREeping RED FESCUE	98	85
10.0	8.0	PERENNIAL RYE GRASS	95	90
42.5	34.0	KENTUCKY BLUE GRASS	85	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.0	80.0			

THE SEED MIXTURE SHALL NOT HAVE A WEED CONTENT EXCEEDING 0.40% BY WEIGHT AND SHALL BE FREE OF ALL NOXIOUS WEED SEED.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

CITY OF	BARRE	BRIDGE NO.	B-10
LOG STA.			
STREET NAME	BLACKWELL STREET	SURV. STA.	
BLACKWELL STREET OVER STEVENS BRANCH			
TYPICAL SECTION			
DESIGNED BY	S. Bekier	DRAWN BY	S. Belonger
CHECKED BY	D. Kidder	DATE	12/95
		BRIDGE DESIGN SUPERVISOR	J. Patusky
		DATE	12/98
PROJECT	BARRE CITY	PROJECT NO.	BRM 6000(13)
DATE	12/98	B&C DRAWING NO.	92038B81/1-4
BRIDGE SHEET NO.		DATE	12/98
		SHEET	2 OF 46

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

QUANTITY SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

APPROXIMATE SUMMARY OF QUANTITIES

(PART 1 of 2)

UTILITY BID ITEMS NON-PARTICIPATING WATER	E # C	EROSION CONTROL	BRIDGE	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING	
				4	4	EA	REMOVING SMALL TREES	201.15		
				650	650	CY	COMMON EXCAVATION	203.15	15	
				10	10	CY	SOLID ROCK EXCAVATION	203.16	EST	
			20	20	20	CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27		
				175	175	CY	SAND BORROW	203.31	24	
124		5		375	375	CY	TRENCH EXCAVATION OF EARTH	204.20	23	
				5	5	CY	TRENCH EXCAVATION OF ROCK	204.21		
				65	65	CY	STRUCTURE EXCAVATION	204.25	3	
				580	580	CY	GRANULAR BACKFILL FOR STRUCTURE	204.30		
				1	1	LS	COFFERDAM (STA. 43+48)	204.40		
				1	1	LS	COFFERDAM (STA. 44+28)	204.40		
			15	35	410	460	CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	
				38	217	255	TON	BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	406.25	2
				100	100	CY	CONCRETE, CLASS A	501.22	3	
5				391	410	CY	CONCRETE, CLASS B	501.25	8	
				28	28	CY	SILICA - FUME CONCRETE	501.60		
				1	1	LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10		
				1465	1465	LF	STEEL PILING (HP 14x89)	505.18		
				102480	102480	LB	STRUCTURAL STEEL (PLATE GIRDER)	506.55		
				31500	1272	32772	LB	REINFORCING STEEL	507.15	
				43011	43011	LB	EPOXY COATED REINFORCING STEEL	507.17		
				1	1	LS	SHEAR CONNECTORS (1.032 x 7" LONG) (7/8")	508.15		
				1	1	LS	STRUCTURAL PAINTING, SHOP APPLIED (50 TON)	513.25		
				1	1	LS	SURFACE PREPARATION (50 TON)	513.40		
				22	22	GAL	WATER REPELLENT	514.10		
				30	30	LF	BRIDGE EXPANSION JOINT (ASPHALTIC PLUG-TYPE)	516.10		
				404	404	SY	SHEET MEMBRANE WATERPROOFING	519.20		
				2	2	GAL	JOINT SEALER, POLYURETHENE	524.20		
				88.5	88.5	LF	BRIDGE RAILING - 3 RAIL ALUMINUM	525.22		
				89.5	89.5	LF	BRIDGE RAILING - ALUM. PEDESTRIAN (WITH SPINDLES)	525.23		
				1	1	EA	REMOVAL OF STRUCTURE	529.15		
				1	32	LF	REMOVAL OF 12"-24" PIPE	529.50		
				12	12	EA	BEARING ASSEMBLY DEVICE	531.10		
							* BEGIN OPTION PIPES *			
				98	98	LF	18" RCP CLASS III	601.0815		
				32	32	LF	24" RCP CLASS III	601.0825		
				98	98	LF	18" CPEP	601.0915		
				32	32	LF	24" CPEP	601.0920		
				98	98	LF	18" CPEP (SL)	601.2615		
				32	32	LF	24" CPEP (SL)	601.2620		
							* END OPTION PIPES *			
				60	60	LF	CLEAN CULVERTS IN PLACE	601.995		
				6	6	EA	PRECAST REINF. CONC. D.I. WITH CAST IRON GRATE	604.25		
				1	1	EA	CHANGE ELEVATIONS OF DI, CB, OR MH	604.40		
3				3	3	EA	CHANGE ELEVATIONS OF SEWER MANHOLES	604.23		
				100	100	LF	6" UNDERDRAIN	607.10	EST	
				15	15	HR	ROADWAY PATROL MAINTENANCE	607.10	EST	
				1	1	HR	BULLDOZER RENTAL, TYPE I (N.A.B.I.)	608.10	EST	
				1	1	HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I (N.A.B.I.)	608.25	EST	
				1	1	HR	TRUCK RENTAL (N.A.B.I.)	608.37	EST	
				1	1	HR	LOADER RENTAL, TYPE I (N.A.B.I.)	608.40	EST	
				1	1	TON	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	609.15	EST	
				40	40	CY	STONE FILL, TYPE I	613.10	EST	
			238	238	238	CY	STONE FILL, TYPE II	613.11	EST	
				220	220	LF	VERTICAL GRANITE CURB	616.21	9	
				80	80	LF	REMOVAL OF EXISTING CURB	616.41	3	
				96	96	SY	PORTLAND CEMENT CONCRETE SIDEWALK 5"	618.10	3	
				1	1	EA	WOOD MARKER POSTS	619.15		
				25	25	LF	STEEL BEAM GUARD RAIL	621.20		
				73	73	LF	ALUMINUM APPROACH RAILING	621.74		
				60	60	LF	TEMPORARY TRAFFIC BARRIER	621.90		
				132	132	MFBM	INSULATION BOARD	622.10		
				2	2	LF	SLEEVES FOR UTILITIES (12" I.D.)	625.10	EST	
				2	2	LF	SLEEVES FOR UTILITIES (24" I.D.)	625.10	EST	
				3	3	EA	ADJUST ELEVATION OF VALVE BOX	629.20		
				210	210	LF	DUCTILE IRON PIPE CEMENT LINED (6" I.D.)	629.24		
180				180	180	LF	DUCTILE IRON PIPE CEMENT LINED (16" I.D.)	629.24		
				1	1	LS	TRANSFER TO NEW SYSTEM - WATER (6" I.D.)	629.42		
				1	1	LS	TRANSFER TO NEW SYSTEM - WATER (16" I.D.)	629.42		
				121	121	LF	PIPE INSULATION (6" I.D.)	629.44		
				121	121	LF	PIPE INSULATION (16" I.D.)	629.44		
121				1	1	LS	WATER MAIN ON BRIDGE (6" I.D.)	629.60		
				1	1	LS	WATER MAIN ON BRIDGE (16" I.D.)	629.60		
				30	30	HR	UNIFORMED TRAFFIC OFFICERS	630.10	EST	
				100	100	HR	FLAGGERS	630.15	EST	
				1	1	LS	FIELD OFFICE - ENGINEERS	631.10		
				1	1	LS	TESTING EQUIPMENT - CONCRETE	631.16		
				1	1	LS	TESTING EQUIPMENT - BITUMINOUS	631.17		
				1	1	LS	TESTING EQUIPMENT - PROTECTIVE COATING	631.18		
				1	1	LU	FIELD OFFICE - TELEPHONE (N.A.B.I.)	631.25		
				1	1	LS	MOBILIZATION	635.10		
				470	470	LF	DURABLE 4" WHITE LINE	646.40	10	

APPROXIMATE SUMMARY OF QUANTITIES (CON'T)

(PART 2 of 2)

UTILITY BID ITEMS NON-PARTICIPATING WATER	ITEMS PARTICIPATING WATER	E # C	EROSION CONTROL	BRIDGE	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING	
				154	470	470	LF	DURABLE 4" YELLOW LINE	646.41	10	
				10	35	154	SY	GEOTEXTILE UNDER STONE FILL	649.31		
				1		45	SY	GEOTEXTILE FOR SILT FENCE	649.51	EST	
				1		1	LB	SEED	651.15		
				2	6	8	LB	SEED - WINTER RYE	651.17		
							8	LB	FERTILIZER	651.18	
			0.25			0.25	TON	AGRICULTURAL LIMESTONE	651.20		
			0.25			0.25	TON	HAY MULCH	651.25		
			8		17	25	EA	HAY BALES FOR EROSION CONTROL	651.26		
			10			10	CY	TOPSOIL	651.35		
			10	23		23	SY	GRUBBING MATERIAL	651.40		
						10	SY	EROSION MATTING	654.10		
					48	48	SY	TRAFFIC SIGNS (TYPE A)	675.20	3	
					112	112	LF	FLANGED CHANNEL SIGN POST (20' LONG)	675.301		
					112	112	LF	SQUARE TREE SIGN POSTS # ANCHORS (20' LONG)	675.341		
					1	1	EA	REMOVING SIGNS	675.50		

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
COMMON EXCAVATION		
582	CY	BLACKWELL STREET
43	CY	DRIVES
15	CY	ROUND
650	CY	TOTAL
TRENCH EXCAVATION OF EARTH		
119	CY	DRAINAGE
5	CY	TEMPORARY EROSION CONTROL
118	CY	WATER LINE (6" I.D.) PARTICIPATING
124	CY	WATER LINE (16" I.D.) NON-PARTICIPATING
6	CY	ROUND
375	CY	TOTAL
SUBBASE OF DENSE GRADED CRUSHED STONE		
356	CY	BLACKWELL STREET
47	CY	DRIVES
15	CY	TEMPORARY EROSION CONTROL
35	CY	BRIDGE
7	CY	ROUND
460	CY	TOTAL

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
BITUMINOUS CONCRETE PAVEMENT		
192	TON	BLACKWELL STREET
24	TON	DRIVES
37	TON	BRIDGE
2	TON	ROUND
255	TON	TOTAL
TEMPORARY EROSION CONTROL (INCLUDED IN EROSION CONTROL)		
5	CY	TRENCH EXCAVATION OF EARTH
15	CY	SUBBASE OF DENSE GRADED CRUSHED STONE
10	SY	GEOTEXTILE FOR SILT FENCE
1	LB	SEED, WINTER RYE
8	EA	HAY BALES FOR EROSION CONTROL
10	SY	EROSION MATTING
EROSION CONTROL		
1	LB	SEED
2	LB	FERTILIZER
0.25	TON	AGRICULTURAL LIMESTONE
0.25	TON	HAY MULCH
10	CY	TOPSOIL

STATIONS		PAVEMENT WIDTHS		EQUATIONS		FEET	MILES	REMARKS
FROM	TO	30'-0"	VARIES	+	-			
43+00	43+47	47					0.009	ROADWAY
43+47	44+28	81					0.015	BRIDGE
44+28	44+80	52					0.010	ROADWAY
TOTALS		180					0.034	

PROJECT NAME BARRE CITY
PROJECT NUMBER BRM 6000(13)

BETTIGOLE ANDREWS & CLARK INC.
Consulting Engineers

BA&C NO. 20388QUA/1
DATE: 12/98
SHEET 3 OF 46 SHEETS

ITEM DETAIL AND DRAINAGE SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DRAINAGE STRUCTURES																														GUARD RAIL																																			
STA.	STAL	POSITION	ASKEW	TYPE IN/OUT	DITCH IN	PIPE ARCH			PIPE			ALLOWABLE OPTIONS			PIPE ELBOW	E M	DEPTH DI	CONC CL B	REN STEEL	DI GRAITH	CHAN ELEV	CRM	TR EARTH	EXCAV ROCK	CONC EXC	UNG EXC	STRUC EXCAV	GRAN BKF	GRAN BORN	EROS MATT	STONE FILL	MWR POSTS	REMARKS	STA.	STA.	LT.	RT.	END TREATMENT																											
						S	R	L	D	L	RCP	CPEP	CPEP	NO-DIA																								EA	LF	CY	LBS	TYPE	CY	CY	CY	CY	CY	CY	CY	SY	CY	TYPE	LT	RT	ANCHOR	APPR									
43+00	43+17	RT-LT		DI/				18	36		III	X	X			1																																																	
43+17	43+50	LT		DI/				24	32		III	X	X			1																																																	
44+52	44+54	RT-LT		DI/				18	28		III	X	X			1																																																	
44+54	44+54	LT		DI/				18	8		III	X	X			1																																																	
44+54	44+41	LT		DI/				18	12		III	X	X			1																																																	
44+41	44+25	LT		DI/				18	14		III	X	X			1																																																	
43+17	43+50	LT																																																															
TOTAL								18	98		III	X	X			6																																																	
								24	32		III	X	X																																																				
																												REMOVE 32' of 15' CGMP																																					
																												ALUMINUM APPROACH RAILING /w END CAPS																																					
																												43+17	43+48	X																																		31	
																												43+42	43+48																																				13
																												44+28	44+57	X																																		29	
																												TOTALS																																					

UNDERDRAIN															
STA.	STA.	POS.	D	L	TRENCH E R	GRAN BKF	FB	MWR PST							
44+28	44+52	U	LT.	6	26	0									
									TOTALS						

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**STATE OF VERMONT
AGENCY OF TRANSPORTATION
RIGHT OF WAY PLANS
DETAIL SHEET**

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS	REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY	
1	RIENDEAU DONALD	5	42+85 RT. 43+12 RT. 43+28 RT. 43+40 RT. 43+42 RT.	43+09 RT. 43+68 RT. 43+74 RT.			SLOPE (T) 0.01Ae WALK (T) DRIVE (T) SLOPE (P) 0.01Ae CONST (T) 0.01Ae	WDOE	09-16-97	BARRE CITY	167	472-473	18 S.F. ± 11' GRAVEL 144 S.F. ± 270 S.F. ±	1	5	PARCEL NO. 1 RIENDEAU, EXTEND CONSTRUCTION LIMITS OF DRIVE. PER C.O. 8722.	01-15-96	P. J. H.	L. W. B.	
2	GRANITE CITY TOOL CO. OF VERMONT INC.	5	43+10 LT. 43+16 LT. 43+16 LT. 43+20 LT. 43+44 LT.	43+54 LT. 43+66 LT. 43+45 LT. 43+46 LT.			DRIVE (T) SLOPE (P) 0.01Ae CONST. (T) 0.01Ae REMOVE & RESET (T) REMOVE & RESET (T)	WDOE	10-06-95	BARRE CITY	160	922-923	17' PAVED 74 S.F. ± 500 S.F. ± CHAIN LINK FENCE PIPE RAIL	2	3A, 3B 4, 5	PARCEL NO. 4 DENTE, ADD ACQUISITION 44+13 RT. ~ 44+62 RT. ±. ADD EASE (T) AT STA. 44+35 RT. ±. * TO RELOCATE POWER SERVICE.* CHANGE ENDING STA. OF EASE (T) FROM 44+43 RT. TO 44+52 RT. CHANGE REMARKS FOR THIS EASE. (T) TO READ - * TO REPLACE CONCRETE STEP & ALTER SIDING* CHANGE SHEET 3 TO 3A. ADD A NEW SHEET 3B. ADD NEW NOTES AND MODIFY EXISTING NOTES ON PLAN SHEET. PER C.O. 8894.	05-05-97	M. J. R.	L. W. B.	
3A	GREEN MOUNTAIN POWER CORP.	5	44+08 LT. 44+17 LT. 44+25 LT. 44+67 LT. 44+28 LT.	44+28 LT. 44+28 LT. 44+28 LT. 44+57 LT.			CONST. (T) 0.01Ae SLOPE (P) 0.01Ae CONST. & MAINT. (P) DRIVE (T) SLOPE (T) 0.01Ae	WDOE	10-15-96	BARRE CITY	164	384-386	276 S.F. ± 64 S.F. ± WING WALL 22' PAVED 112 S.F. ±	3	4	PARCEL NO. 4 DENTE, ADD EXCEPT & RESERVE FOR BUILDING OVERHANG AT STA. 44+35 RT. ± ~ 44+56 RT. ±. PER C.O. 8909.	07-29-97	M. J. R.	L. W. B.	
3B													UTILITY	4	4, 5	PARCEL NO. 4 DENTE, CHANGE EASE. (T) AT 44+35 RT. ~ 44+52 RT. TO INSTAL. (T); *SIDING.* PER C.O. 8914.	08-18-97	M. J. R.	L. W. B.	
4	DENTE, RICHARD H. & LUCILLE A.	3B, 5	44+31 RT. 44+35 RT. ± 44+20 RT. 44+20 RT. 44+29 RT. 44+33 RT. 44+35 RT. 44+35 RT. ± 44+57 RT.	44+62 RT. 44+33 RT. 44+33 RT. 44+33 RT. 44+52 RT. 44+55 RT. ± 44+57 RT.	27 S.F. ±		EASE. (T) SLOPE (P) 0.01Ae CONST. (T) 0.01Ae CONST. & MAINTAIN (P) INSTALL (T) EXCEPT & RESERVE DRIVE (T)			BARRE CITY			RELOCATE POWER SERVICE 79 S.F. ± 80 S.F. ± WING WALL SIDING BUILDING OVERHANG 12' GRAVEL							
5	WASHINGTON COUNTY RAILROAD - LESSEE STATE OF VERMONT - LESSOR	5	44+60 RT.	44+72 RT.			DRIVE (T)						12' GRAVEL							
6	GREEN MOUNTAIN POWER - SUB LESSEE WASHINGTON COUNTY RAILROAD - LESSEE STATE OF VERMONT - LESSOR	5	44+72 LT	44+84 LT.			DRIVE & PARKING (T)						AREA FOR DRIVE & PARKING							
7	NYNEX												UTILITY							
8	HELICON CABLE TV												UTILITY							
9	BARRE CITY SEWER & WATER												UTILITY							

6000013 200 1805 JDP

DR. (P)- DRAINAGE RIGHT
DIT. (P)- DITCHING RIGHT
CH. (P)- CHANNEL RT.
DRIVE (T)- DRIVE RIGHT
CUL. (P)- CULVERT RIGHT
W- WATER SOURCES

PRESENT R.O.W.
TAKING WITHOUT ACCESS
TAKING WITHOUT ACCESS ALONG PROPERTY LINE
TAKING WITH ACCESS
PERMANENT EASEMENT
TEMPORARY EASEMENT

LEGEND CZ (P) CLEAR ZONE
CONST. (T) CONSTRUCTION EASEMENT
SR SLOPE RIGHTS
P PROPERTY LINE
L TOP OF CUT
O TOE OF SLOPE

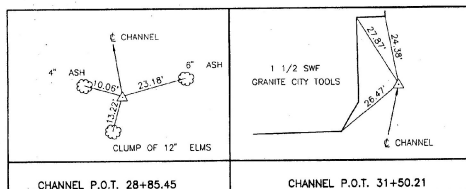
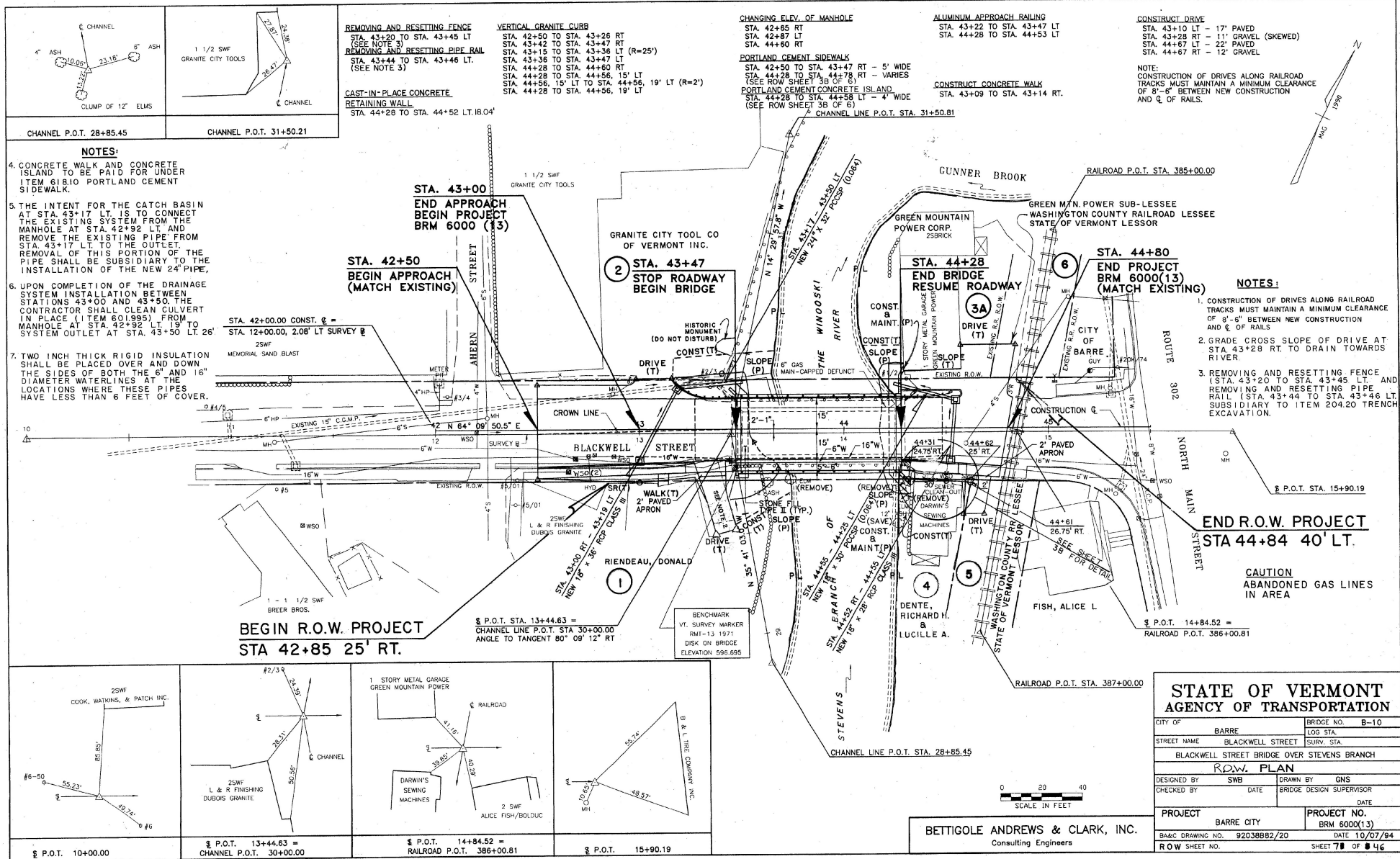
REVISED 08-18-97

R. O. W. PLANS

APPROVED: LAWRENCE W. BLISS DATE: 01-23-95
AGENT D. PLANS & TITLES.

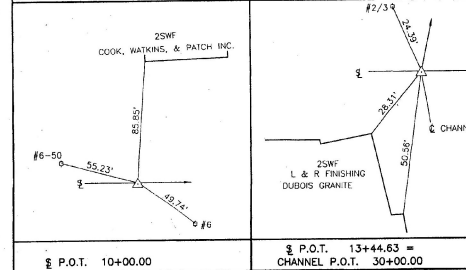
BARRE CITY
BRM 6000(13)
SHEET 6 OF 46

ACCT: pncp
/pncp/83@03/rd03d.dgn
DATE PLOTTED 22-AUG-1997
1:03:01



- REMOVING AND RESETTING FENCE**
STA. 43+20 TO STA. 43+45 LT
(SEE NOTE 3)
- REMOVING AND RESETTING PIPE RAIL**
STA. 43+44 TO STA. 43+46 LT.
(SEE NOTE 3)
- CAST-IN-PLACE CONCRETE RETAINING WALL**
STA. 44+28 TO STA. 44+52 LT. R.04'
- VERTICAL GRANITE CURB**
STA. 42+50 TO STA. 43+26 RT
STA. 43+42 TO STA. 43+47 RT
STA. 43+15 TO STA. 43+36 LT (R=25')
STA. 43+36 TO STA. 43+47 LT
STA. 44+28 TO STA. 44+60 RT
STA. 44+28 TO STA. 44+56, 15' LT
STA. 44+56, 15' LT TO STA. 44+56, 19' LT (R=2)
STA. 44+28 TO STA. 44+56, 19' LT
- CHANGING ELEV. OF MANHOLE**
STA. 42+85 RT
STA. 42+87 LT
STA. 44+60 RT
- PORTLAND CEMENT SIDEWALK**
STA. 42+50 TO STA. 43+47 RT - 5' WIDE
STA. 44+28 TO STA. 44+78 RT - VARIES
(SEE ROW SHEET 38 OF 6)
- PORTLAND CEMENT CONCRETE ISLAND**
STA. 44+28 TO STA. 44+58 LT - 4' WIDE
(SEE ROW SHEET 38 OF 6)
- ALUMINUM APPROACH RAILING**
STA. 43+22 TO STA. 43+47 LT
STA. 44+28 TO STA. 44+53 LT
- CONSTRUCT DRIVE**
STA. 43+10 LT - 17' PAVED
STA. 43+28 RT - 11' GRAVEL (SKEWED)
STA. 44+67 LT - 22' PAVED
STA. 44+67 RT - 12' GRAVEL
- NOTE:**
CONSTRUCTION OF DRIVES ALONG RAILROAD TRACKS MUST MAINTAIN A MINIMUM CLEARANCE OF 8'-6" BETWEEN NEW CONSTRUCTION AND C OF RAILS.
- CONSTRUCT CONCRETE WALK**
STA. 43+09 TO STA. 43+14 RT.

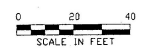
- NOTES:**
- CONCRETE WALK AND CONCRETE ISLAND TO BE PAID FOR UNDER ITEM 618.10 PORTLAND CEMENT SIDEWALK.
 - THE INTENT FOR THE CATCH BASIN AT STA. 43+17 LT IS TO CONNECT THE EXISTING SYSTEM FROM THE MANHOLE AT STA. 42+92 LT AND REMOVE THE EXISTING PIPE FROM STA. 43+17 LT TO THE OUTLET. REMOVAL OF THIS PORTION OF THE PIPE SHALL BE SUBSIDIARY TO THE INSTALLATION OF THE NEW 24" PIPE.
 - UPON COMPLETION OF THE DRAINAGE SYSTEM INSTALLATION BETWEEN STATIONS 43+00 AND 43+50 THE CONTRACTOR SHALL CLEAN CULVERT IN PLACE (ITEM 601.995) FROM MANHOLE AT STA. 42+92 LT, 19' TO SYSTEM OUTLET AT STA. 43+50 LT, 26'.
 - TWO INCH THICK RIGID INSULATION SHALL BE PLACED OVER AND DOWN THE SIDES OF BOTH THE 6" AND 16" DIAMETER WATERLINES AT THE LOCATIONS WHERE THESE PIPES HAVE LESS THAN 6 FEET OF COVER.
- BEGIN R.O.W. PROJECT**
STA 42+85 25' RT.
- END APPROACH BEGIN PROJECT**
BRM 6000 (13)
- STA. 42+50**
BEGIN APPROACH (MATCH EXISTING)
- STA. 43+47**
STOP ROADWAY BEGIN BRIDGE
- STA. 44+28**
END BRIDGE RESUME ROADWAY
- STA. 44+80**
END PROJECT BRM 6000 (13) (MATCH EXISTING)

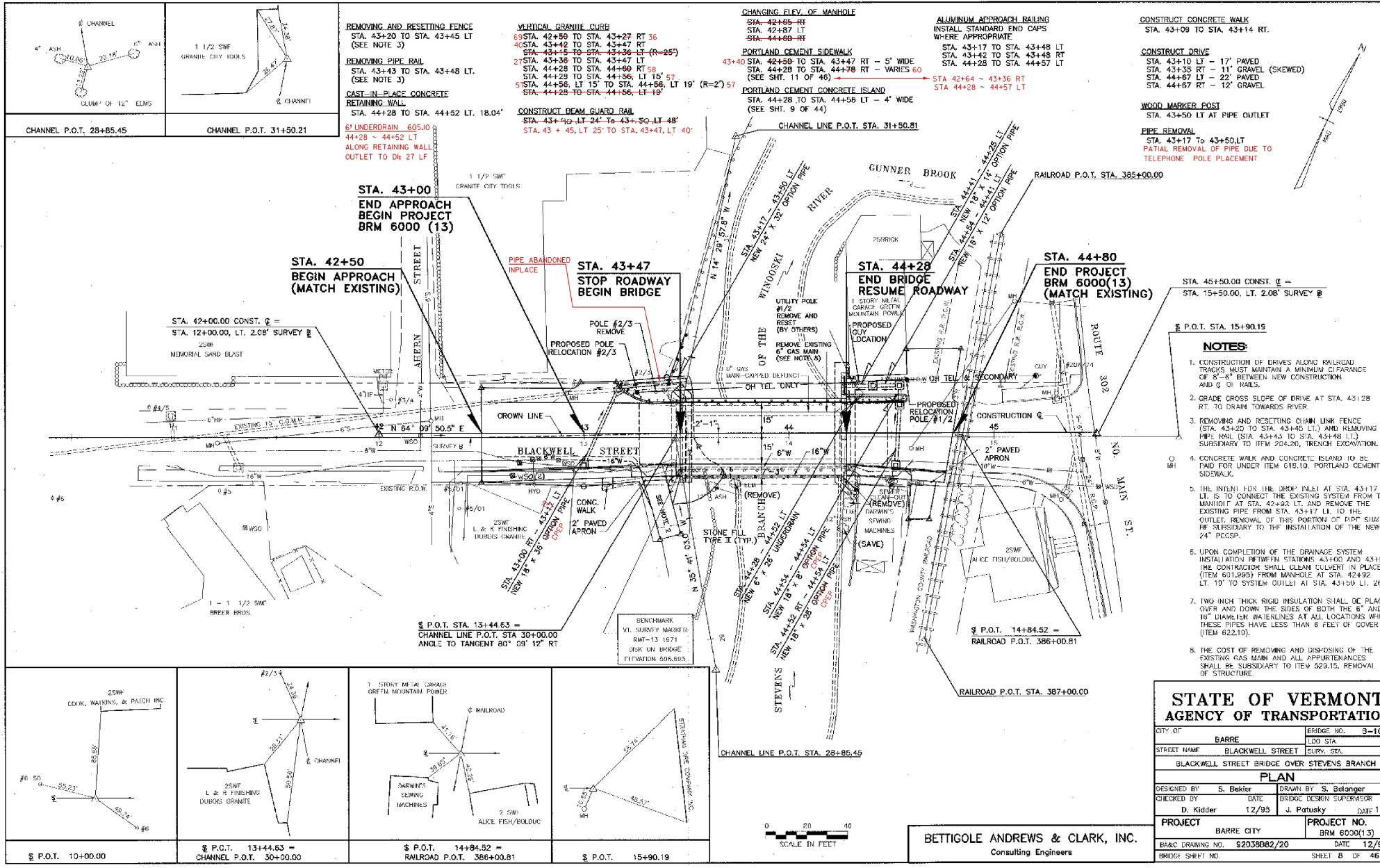


- NOTES:**
- CONSTRUCTION OF DRIVES ALONG RAILROAD TRACKS MUST MAINTAIN A MINIMUM CLEARANCE OF 8'-6" BETWEEN NEW CONSTRUCTION AND C OF RAILS.
 - GRADE CROSS SLOPE OF DRIVE AT STA. 43+28 RT. TO DRAIN TOWARDS RIVER.
 - REMOVING AND RESETTING FENCE (STA. 43+20 TO STA. 43+45 LT. AND REMOVING AND RESETTING PIPE RAIL (STA. 43+44 TO STA. 43+46 LT. SUBSIDIARY TO ITEM 204.20 TRENCH EXCAVATION.
- CAUTION**
ABANDONED GAS LINES IN AREA
- END R.O.W. PROJECT**
STA 44+84 40' LT.
- CHANNEL LINE P.O.T. STA. 28+85.45**
- CHANNEL LINE P.O.T. STA. 31+50.21**
- CHANNEL LINE P.O.T. STA. 31+50.81**
- CHANNEL LINE P.O.T. STA. 15+90.19**
- CHANNEL LINE P.O.T. STA. 14+84.52 = RAILROAD P.O.T. 386+00.81**
- CHANNEL LINE P.O.T. STA. 387+00.00**
- CHANNEL LINE P.O.T. STA. 388+00.00**
- CHANNEL LINE P.O.T. STA. 389+00.00**
- CHANNEL LINE P.O.T. STA. 390+00.00**
- CHANNEL LINE P.O.T. STA. 391+00.00**
- CHANNEL LINE P.O.T. STA. 392+00.00**
- CHANNEL LINE P.O.T. STA. 393+00.00**
- CHANNEL LINE P.O.T. STA. 394+00.00**
- CHANNEL LINE P.O.T. STA. 395+00.00**
- CHANNEL LINE P.O.T. STA. 396+00.00**
- CHANNEL LINE P.O.T. STA. 397+00.00**
- CHANNEL LINE P.O.T. STA. 398+00.00**
- CHANNEL LINE P.O.T. STA. 399+00.00**
- CHANNEL LINE P.O.T. STA. 400+00.00**

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
CITY OF BARRE	BRIDGE NO. B-10
STREET NAME BLACKWELL STREET	SURV. STA.
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH	
ROW PLAN	
DESIGNED BY SWB	DRAWN BY GNS
CHECKED BY	DATE
BRIDGE DESIGN SUPERVISOR	
DATE	
PROJECT BARRE CITY	PROJECT NO. BRM 6000(13)
B&C DRAWING NO. 920388B2/20	DATE 10/07/94
ROW SHEET NO.	SHEET 71 OF 46

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers





REMOVING AND RESETTING FENCE
 STA. 43+20 TO STA. 43+45 LT
 (SEE NOTE 3)

REMOVING PIPE RAIL
 STA. 43+43 TO STA. 43+48 LT.
 (SEE NOTE 3)

CAST-IN-PLACE CONCRETE RETAINING WALL
 STA. 44+28 TO STA. 44+52 LT. 18.04'

6\"/>

VERTICAL GRANITE CURB
 69 STA. 42+50 TO STA. 43+27 RT 36
 40 STA. 43+42 TO STA. 43+47 RT
 STA. 43+15 TO STA. 43+36 LT (R=25')
 27 STA. 43+36 TO STA. 43+47 LT
 STA. 44+28 TO STA. 44+60 RT 58
 STA. 44+28 TO STA. 44+36 LT 15' 57"
 5 STA. 44+56 LT 15' TO STA. 44+56 LT 19' (R=2') 57"
 STA. 44+28 TO STA. 44+56 LT 19'

CONSTRUCT BEAM GUARD RAIL
 STA. 43+40 LT 24' TO 43+50 LT 48'
 STA. 43+45 LT 25' TO STA. 43+47 LT 40'

CHANGING ELEV. OF MANHOLE
 STA. 42+65 RT
 STA. 42+67 LT
 STA. 44+60 RT

PORTLAND CEMENT SIDEWALK
 43+40 STA. 42+50 TO STA. 43+47 RT - 5' WIDE
 STA. 44+28 TO STA. 44+78 RT - VARIES 6.0
 (SEE SHT. 11 OF 46)

PORTLAND CEMENT CONCRETE ISLAND
 STA. 44+28 TO STA. 44+56 LT - 4' WIDE
 (SEE SHT. 9 OF 44)

ALUMINUM APPROACH RAILING
 INSTALL STANDARD END CAPS
 WHERE APPROPRIATE
 STA. 43+17 TO STA. 43+48 LT
 STA. 43+42 TO STA. 43+48 RT
 STA. 44+28 TO STA. 44+57 LT

STA 42+64 ~ 43+36 RT
 STA 44+28 ~ 44+57 LT

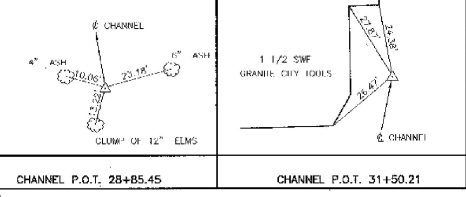
CONSTRUCT CONCRETE WALK
 STA. 43+09 TO STA. 43+14 RT.

CONSTRUCT DRIVE
 STA. 43+10 LT - 17' PAVED
 STA. 43+35 RT - 11' GRAVEL (SKEWED)
 STA. 44+67 LT - 22' PAVED
 STA. 44+67 RT - 12' GRAVEL

WOOD MARKER POST
 STA. 43+50 LT AT PIPE OUTLET

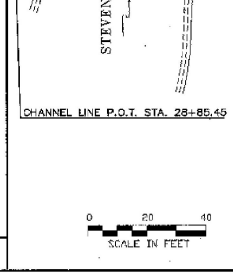
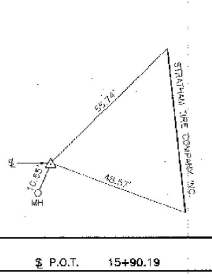
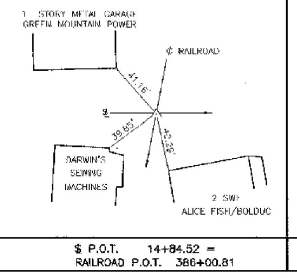
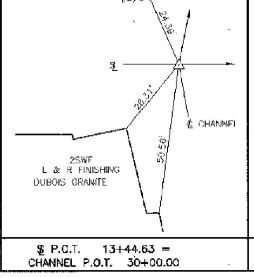
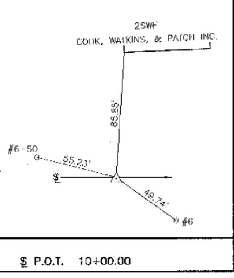
PIPE REMOVAL
 STA. 43+17 TO 43+50 LT
 PARTIAL REMOVAL OF PIPE DUE TO
 TELEPHONE POLE PLACEMENT

- STA. 45+50.00 CONST. @ =
 STA. 15+50.00 LT. 2.06' SURVEY @
- § P.O.T. STA. 15+90.19
- NOTES:**
- CONSTRUCTION OF DRIVES ALONG RAILROAD TRACKS MUST MAINTAIN A MINIMUM CLEARANCE OF 8'-6" BETWEEN NEW CONSTRUCTION AND 9' OF RAILS.
 - GRADE CROSS SLOPE OF DRIVE AT STA. 43+28 RT. TO DRAIN TOWARDS RIVER.
 - REMOVING AND RESETTING CHAIN LINK FENCE (STA. 43+40 TO STA. 43+46 LT.) AND MOVING PIPE RAIL (STA. 43+43 TO STA. 43+48 LT.) SUBSIDIARY TO ITEM 204.20, TRENCH EXCAVATION.
 - CONCRETE WALK AND CONCRETE ISLAND TO BE PAID FOR UNDER ITEM 616.10, PORTLAND CEMENT SIDEWALK.
 - THE INTENT FOR THE DRAIN INLET AT STA. 43+17 LT. IS TO CONNECT THE EXISTING SYSTEM FROM THE MANHOLE AT STA. 42+92 LT. AND REMOVE THE EXISTING PIPE FROM STA. 43+17 LT. TO THE OUTLET. REMOVAL OF THIS PORTION OF PIPE SHALL BE SUBSIDIARY TO THE INSTALLATION OF THE NEW 24" PCCSP.
 - UPON COMPLETION OF THE DRAINAGE SYSTEM INSTALLATION BETWEEN STATIONS 43+00 AND 43+50 THE CONTRACTOR SHALL CLEAN CULVERT IN PLACE (ITEM 601.995) FROM MANHOLE AT STA. 42+92 LT. 19' TO SYSTEM OUTLET AT STA. 43+50 LT. 26'.
 - TWO INCH THICK RIGID INSULATION SHALL BE PLACED OVER AND DOWN THE SIDES OF BOTH THE 8" AND 18" DIAMETER WATERLINES AT ALL LOCATIONS WHERE THESE PIPES HAVE LESS THAN 6 FEET OF COVER (ITEM 622.10).
 - THE COST OF REMOVING AND DISPOSING OF THE EXISTING GAS MAIN AND ALL APPURTENANCES SHALL BE SUBSIDIARY TO ITEM 529.15, REMOVAL OF STRUCTURE.



CHANNEL P.O.T. 28+85.45

CHANNEL P.O.T. 31+50.21



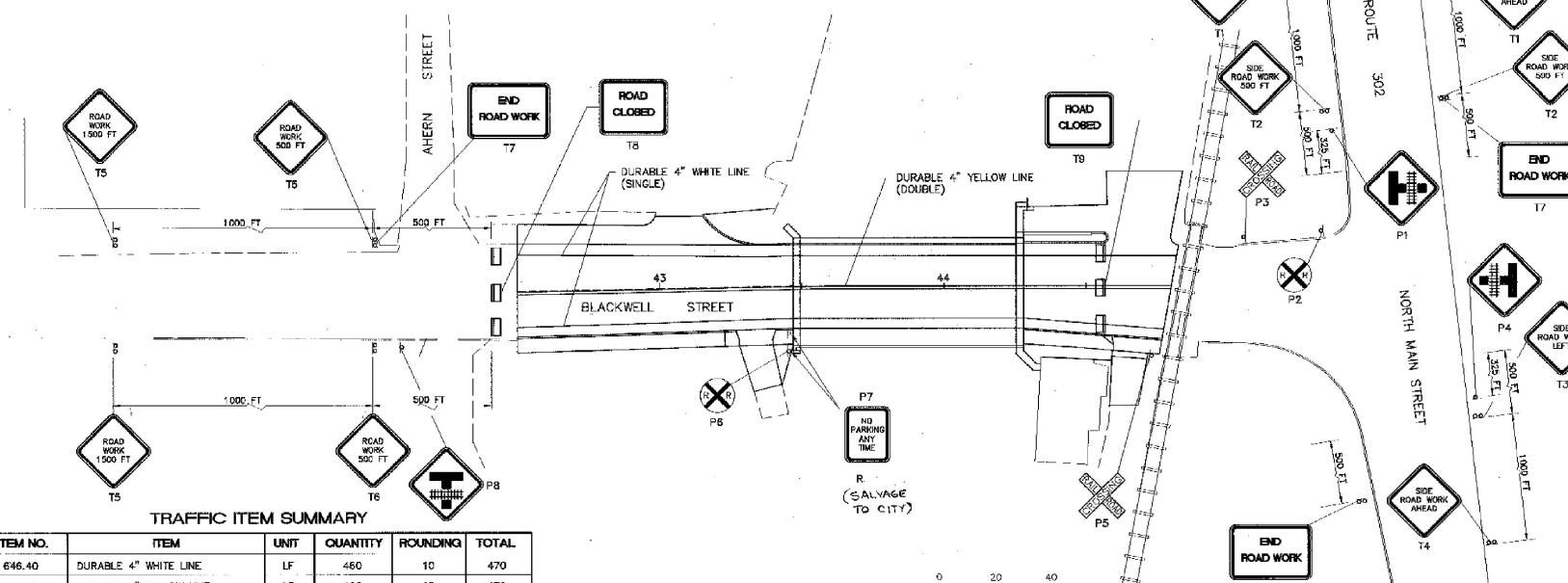
BETTIGOLE ANDREWS & CLARK, INC.
 Consulting Engineers

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
CITY OF BARRE	BRIDGE NO. 3-10
STREET NAME BLACKWELL STREET	LOD STA. SURV. STA.
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH	
PLAN	
DESIGNED BY S. Bekler	DRAWN BY S. Belanger
CHECKED BY D. Kidder	DATE 12/93
BRIDGE DESIGN SUPERVISOR J. Patusky	
PROJECT BARRE CITY	PROJECT NO. BRM 6000(13)
B&C DRAWING NO. §203882/20	DATE 12/98
BRIDGE SHEET NO.	SHEET 8 OF 46

TEMPORARY TRAFFIC SIGN SUMMARY SHEET

SIGN NUMBER	SIGN LEGEND	NEW SIGNS		NEW SIGN POSTS			REMARKS	STD. SHEET NUMBER
		SIGN DIMENSIONS	"A"	NUMBER OF POSTS	FLANGED CHANNEL LB./FT.	TUBULAR ALUMINUM 330°/		
T1	SIDE ROAD WORK AHEAD	48"x48"	16	2	X			E-100A
T2	SIDE ROAD WORK 500 FT	48"x48"	16	2	X			E-121
T3	SIDE ROAD WORK AHEAD	48"x48"	16	2	X			E-160
T4	SIDE ROAD WORK 500 FT	48"x48"	16	2	X			
T5	END ROAD WORK	48"x24"	8	1	X			
T6	SIDE ROAD WORK LEFT	48"x48"	16	2	X			
T7	SIDE ROAD WORK AHEAD	48"x48"	16	2	X			
T8	END ROAD WORK	48"x24"	8	1	X			
T9	ROAD CLOSED	48"x30"	10	1	X			
T10	ROAD CLOSED	48"x30"	10	1	X			
T11	ROAD WORK 500 FT	36"x36"	9	1	X			
T12	ROAD WORK AHEAD	36"x36"	9	1	X			
T13	ROAD WORK AHEAD	36"x36"	9	1	X			
T14	ROAD WORK 500 FT	36"x36"	9	1	X			
T15	END ROAD WORK	48"x24"	8	1	X			
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE DESIGN DIVISION'S "SIGN POST DESIGN MANUAL".			SF.					
TOTALS			176			788		

NOTE: TEMPORARY SIGNS & POSTS ARE SUBSIDIARY TO ITEM 035.10



TRAFFIC ITEM SUMMARY

ITEM NO.	ITEM	UNIT	QUANTITY	ROUNDING	TOTAL
646.40	DURABLE 4" WHITE LINE	LF	460	10	470
646.41	DURABLE 4" YELLOW LINE	LF	460	10	470
675.50	REMOVING SIGNS	EA	1		1
602.00	ERECTING SALVAGE SIGNS	EA	1		1
602.00	REMOVING SALVAGE SIGNS	EA	1		1

NOTE
1. CONSTRUCTION APPROACH SIGNING DISTANCE NOT TO SCALE.

TRAFFIC SIGN SUMMARY SHEET

SIGN NUMBER	SIGN LEGEND	NEW SIGNS		NEW SIGN POSTS			REMARKS	STD. SHEET NUMBER
		SIGN DIMENSIONS	"A"	NUMBER OF POSTS	FLANGED CHANNEL LB./FT.	TUBULAR ALUMINUM 330°/		
P1	W10-3	30"x30"	6.25				US 302 WEST	E 163
P2	RAILROAD CROSSING	36" DIAMETER	7				45+30 LT	E 190
P3	RAILROAD CROSSING	48"x9"	6				45+10 LT	
P4	W10-3	30"x30"	6.25				US 302 EAST	
P5	RAILROAD CROSSING	48"x9"	6				44+29 RT	
P6	RAILROAD CROSSING	36" DIAMETER	7				43+46 RT	
P7	R7-100 (NO PARKING ANY TIME)	12"x18"	1.5				43+46 RT	
P8	W10-3	30"x30"	6.25				42+40 RT	
FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE DESIGN DIVISION'S "SIGN POST DESIGN MANUAL".			SF.					
TOTALS			46.25			112 LF	112 LF	

TEMPORARY 4" YELLOW LINE
STA. 42+50 TO STA. 44+80 (R)

REMOVE AND REPLACE SIGN
STA. 43+45 (15' RT TO 22' RT)

DURABLE 4" WHITE LINE
STA. 42+50 (11' LT) TO STA. 44+83 (11' LT)
STA. 42+50 (14' RT) TO STA. 43+47 (11' RT)
STA. 43+47 (11' RT) TO STA. 44+28 (11' RT)
STA. 44+28 (11' RT) TO STA. 44+77 (15' RT)

DURABLE 4" YELLOW LINE
STA. 42+50 TO STA. 44+80 (L) DOUBLE SOLID

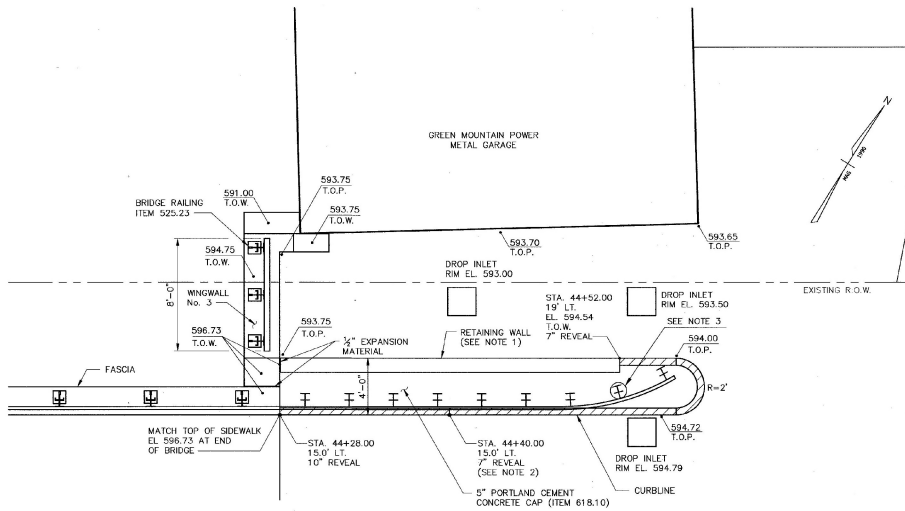
LEGEND

- R - REMOVE
- ① - SIGN NUMBER
- ▮ - TYPE II BARRICADE
- P - SIGN AND POSTS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

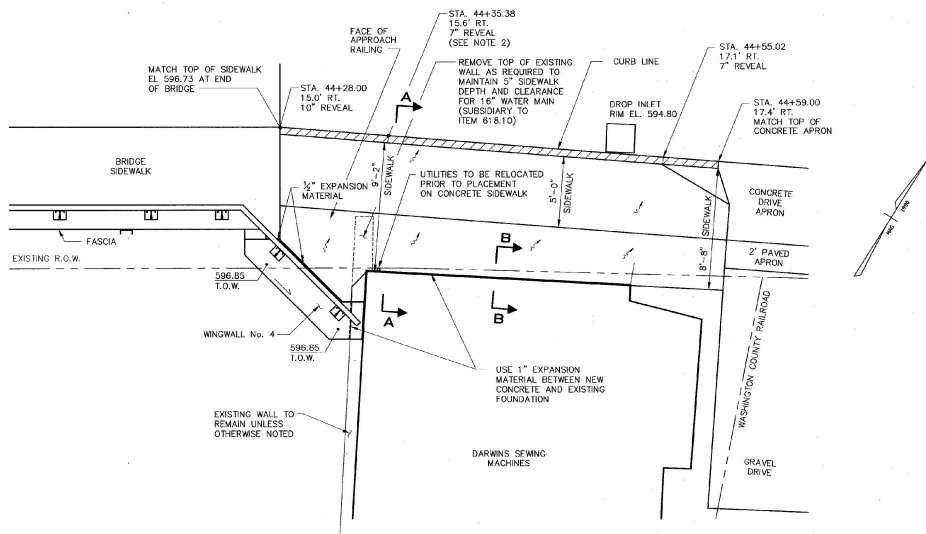
CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	SURV. STA.	
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH			
PAVEMENT MARKINGS/TRAFFIC SIGNS			
DESIGNED BY	L. Keefe	DRAWN BY	R. Clark
CHECKED BY	DATE	BRIDGE DESIGN SUPERVISOR	DATE
	D. Kidder 12/95	J. Patusky	DATE 12/98
PROJECT	BARRE CITY	PROJECT NO.	BRM 6000(13)
BASIC DRAWING NO.	920388/5/20	DATE	12/98
BRIDGE SHEET NO.		SHEET	10 OF 46

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers



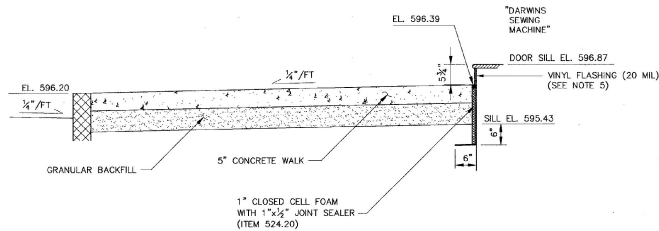
NORTHEAST CORNER RECONSTRUCTION PLAN

SCALE: 1/4" = 1'-0"



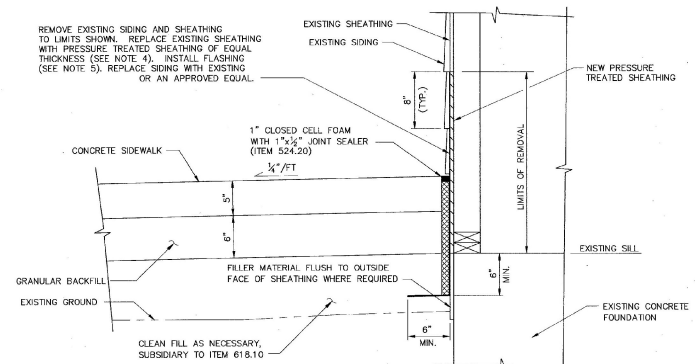
SOUTHEAST CORNER RECONSTRUCTION PLAN

SCALE: 1/4" = 1'-0"



SECTION A-A

(AT STA. 444-35.38)
SCALE: 1/2" = 1'-0"



SECTION B-B

SCALE: 1 1/2" = 1'-0"

NOTES

- FOR RETAINING WALL DETAILS, SEE SHEET 12 OF 46.
- SLOPE CURB REVEAL FROM 10" AT BRIDGE END TO 7" WHERE INDICATED ON PLANS.
- THE CONTRACTOR SHALL TAKE PRECAUTIONS WHEN DRIVING GUARD RAIL POSTS SO AS NOT TO DAMAGE THE RETAINING WALL FOOTING BELOW. SEE SHEET 12 OF 46.
- THE COST OF REMOVING AND REPLACING HOUSE SIDING AND FURNISHING AND INSTALLING FLASHING TO BE SUBSIDIARY TO ITEM 618.10, PORTLAND CEMENT CONCRETE SIDEWALK 5'.
- FLASHING SHALL BE INSTALLED TO THE TOP OF THE FIRST FULL CLAPBOARD ABOVE THE CONCRETE AS A MINIMUM HEIGHT.

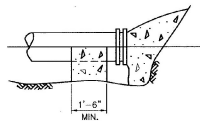
LEGEND

- T.O.W. TOP OF CONCRETE WALL
- T.O.S.W. TOP OF CONCRETE SIDEWALK
- SLOPE TO DRAIN
- 596.80 PROPOSED SPOT ELEVATION
- ▨ PROPOSED GRANITE CURB
- PORTLAND CEMENT CONCRETE

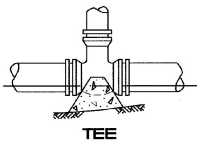
**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

CITY OF	BARRE	BRIDGE NO.	B10
STREET NAME	BLACKWELL STREET	LOG STA.	SURV. STA.
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH EAST END RECONSTRUCTION			
DESIGNED BY	V. DeAngelo	DRAWN BY	S. Belonger
CHECKED BY	D. Kidder	DATE	12/95
BRIDGE DESIGN SUPERVISOR		DATE 12/98	
PROJECT		PROJECT NO.	
BARRE CITY		BRM 6000(13)	
BAC DRAWING NO.	BLACK17/48	DATE	12/98
BRIDGE SHEET NO.		SHEET	11 OF 46

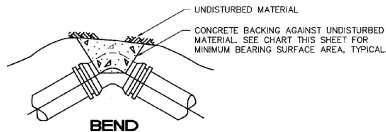
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Consulting Engineers



DEAD END



TEE



BEND

TYPICAL CONCRETE BACKING

NO SCALE

AREA OF BEARING FACE OF CONCRETE THRUST BLOCKS ON UNDISTURBED MATERIAL IN SQUARE FEET
BASED ON 450 P.S.I. & 2 TON/S.F. ALLOWABLE SOIL BEARING CAPACITY

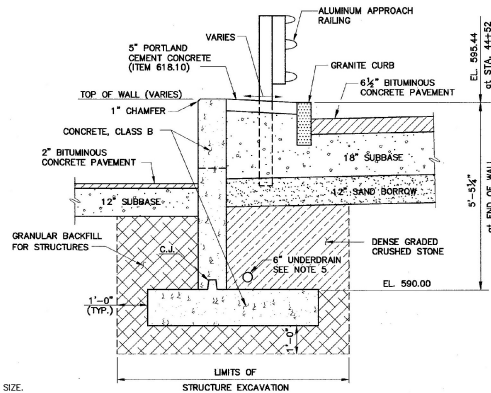
PIPE SIZE IN.	1/4 BEND	1/8 BEND	PLUG & TEES
4, 6, 8	8	4	6
10	13	7	9
12	18	9	13
16	32	16	23

NOTES

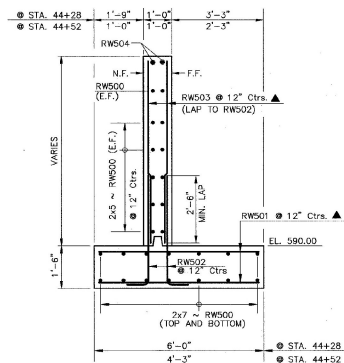
- THRUST BLOCKS REQUIRED:
 9 @ 15" ϕ PIPE (NON-PARTICIPATING)
 8 @ 7" ϕ PIPE (PARTICIPATING)
- CONCRETE FOR THRUST BLOCKS SHALL BE PAID FOR UNDER ITEM NO. 501.25.
- TEST PRESSURE SHALL BE AS STATED IN G29.11.

NOTES

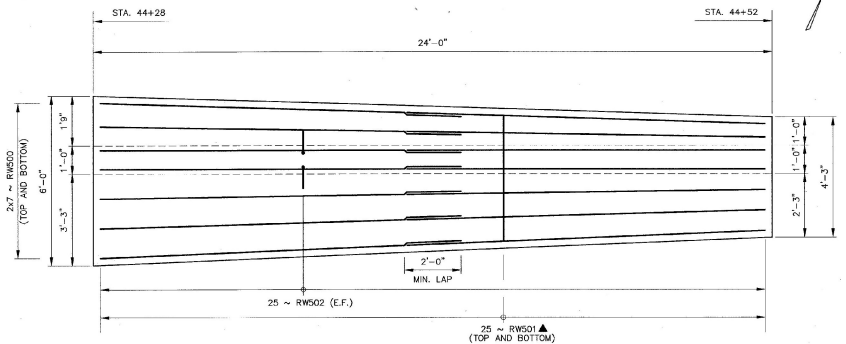
- FIGURES BASED ON 450 PSI.
- FOR PIPE SIZES NOT LISTED, USE NEXT LARGER PIPE SIZE.
- WHEN MORE THAN ONE SOIL TYPE IS ENCOUNTERED, THE ONE WITH LEAST BEARING CAPACITY SHALL BE USED.
- RETAINING RODS OR RESTRAINED JOINT PIPE, AS APPROVED BY THE ENGINEER, SHALL BE USED IN PLACE OF THRUST BLOCKS WHEN MUCK IS ENCOUNTERED.



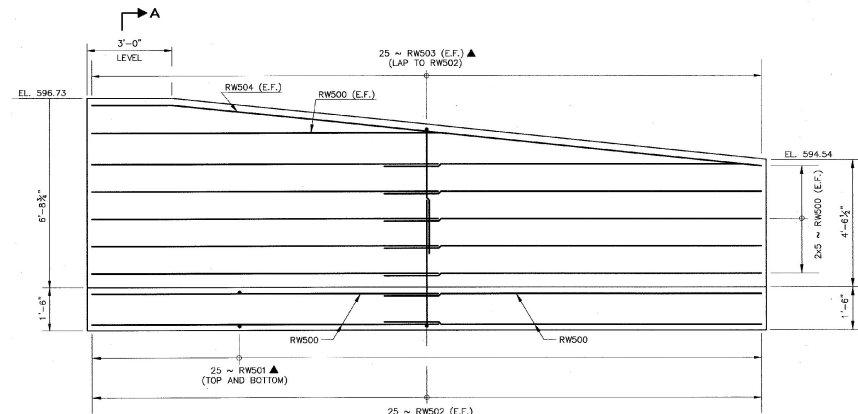
TYPICAL SECTION



SECTION A-A



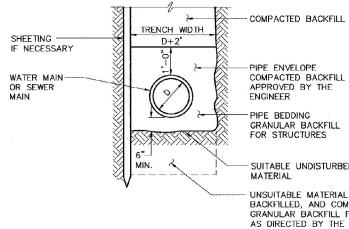
FOOTING PLAN



ELEVATION

RETAINING WALL DETAILS

SCALE: 1/2" = 1'-0"



TYPICAL TRENCH DETAIL IN CUT SECTIONS

NOT TO SCALE

LEGEND

- N.F. NEAR FACE
- F.F. FAR FACE
- E.E. EACH FACE
- ▲ CUT TO FIT IN FIELD
- C.J. CONSTRUCTION JOINT

NOTES

- PLACE 1/2" EXPANSION MATERIAL AGAINST THE BACKFACE OF WINGWALL NO. 3 PRIOR TO PLACEMENT OF CONCRETE.
- FOR CONSTRUCTION JOINT DETAILS, SEE SHEET 32 OF 46.
- CONCRETE CLASS B ($f'_c = 3500$ psi).
- GRADE 60 REINFORCEMENT.
- SLOPE UNDERDRAIN AT 1" PER FOOT TO CATCH BASIN AT STA. 44+54 LT. 14

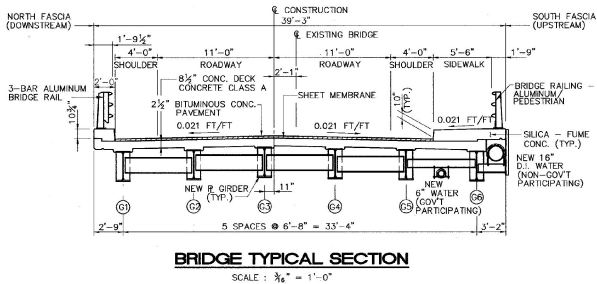
**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

CITY OF	BARRE	BRIDGE NO.	B10
STREET NAME	BLACKWELL STREET	LOG STA.	
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH		SURV. STA.	
MISCELLANEOUS DETAILS			
DESIGNED BY	V. DeAngelo	DRAWN BY	S. Belonger
CHECKED BY	D. Kidder	DATE	12/95
		BRIDGE DESIGN SUPERVISOR	J. Patusky
		DATE	11/98
PROJECT	BARRE CITY	PROJECT NO.	BRM 6000(13)
B&C DRAWING NO.	BLACK18\24	DATE	12/98
BRIDGE SHEET NO.		SHEET	12 OF 46

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(SEE HIGHWAY TYPICAL SECTIONS)

NEW HIGHWAY SECTION - BRIDGE APPROACHES



BRIDGE TYPICAL SECTION

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

GENERAL NOTES:

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION, STANDARD SPECIFICATIONS, 1990 AND ITS LATEST REVISIONS. DESIGN IS FOR HS-20-44 LOADING MODIFIED FOR THE NATIONAL SYSTEM OF INTERSTATE HIGHWAYS, APPLIED IN ACCORDANCE WITH THE PROVISIONS OF AASHTO STANDARD SPECIFICATIONS.
- ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO DESIGNATION M270, GRADE 50 PAINTED EXCEPT AS NOTED IN THE PLANS. ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" DIAMETER ASTM A-325, TYPE 1 (GALVANIZED) BOLTS IN 1 1/2" DIA. HOLES EXCEPT AS NOTED IN THE PLANS. WHERE CONNECTIONS ARE NOT DETAILED ON THE PLANS, THEY SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
- ALL WELDING AND DIMENSIONAL TOLERANCES OF WELDED MEMBERS SHALL CONFORM TO AWS D1.5-88 "BRIDGE WELDING CODE" AND ITS LATEST REVISIONS.
- AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF ERECTED BEAMS SHALL BE TAKEN UNDER THE DIRECTION OF THE ENGINEER FOR USE IN DETERMINING THE FINAL GRADE.
- WHERE THE GALVANIZING HAS BEEN REMOVED FROM BRIDGE COMPONENTS (INCLUDING DOWNSPOUTS) EITHER BY CUTTING, BURNING, WELDING, PLACING OR ANY MEANS, IT SHALL BE REPAIRED BY THOROUGHLY CLEANING THE DAMAGED AREAS WITH A WIRE BRUSH AND PAINTING THE DAMAGED AREAS WITH TWO COATS OF AN APPROVED SEALANT.
- ABUTMENT CONCRETE ABOVE THE ADJACENT BRIDGE SEAT ELEVATIONS SHALL NOT BE PLACED UNTIL GIRDERS HAVE BEEN ERECTED, BEAM PROFILES HAVE BEEN TAKEN, AND FINAL FINISHED GRADE OF DECK IS ESTABLISHED BY THE ENGINEER.
- MINIMUM COVER FOR REINFORCING STEEL (EXCEPT IN THE DECK) SHALL BE 2" IN BACK FACES OF SUBSTRUCTURE AGAINST EARTH AND 3" ELSEWHERE, UNLESS OTHERWISE SHOWN.
- ALL EXPOSED EDGES OF CONCRETE IN THE SUBSTRUCTURE AND THE SUPERSTRUCTURE SHALL BE CHAMFERED 1" X 1", UNLESS OTHERWISE SHOWN.
- DECK CONCRETE (INCLUDING BACKWALL HEADER) SHALL BE CONCRETE, CLASS A. BRUSH CURB CONCRETE AND SIDEWALK CONCRETE ON BRIDGE SHALL BE SILICA-FUME CONCRETE. ALL OTHER CONCRETE SHALL BE CONCRETE, CLASS B.
- BRIDGE SEATS OF BOTH ABUTMENTS SHALL BE SLOPED 1/2" PER FOOT EXCEPT UNDER BEARING PLATES WHERE THE SURFACES SHALL BE LEVEL. ABUTMENTS SHALL BE SLOPED FULL WIDTH. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.
- ANY FORM BRACKET HOLES IN FASCIA BEAMS OR GIRDER WEBS SHALL BE FILLED WITH BUTTONHEAD OR HEX-HEAD BOLTS (TYPE III).
- BORINGS INDICATED ON THE DRAWINGS HAVE BEEN MADE FOR DESIGN PURPOSES ONLY AND DO NOT WARRANT ACTUAL SUB-SURFACE CONDITIONS.
- ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL, AND ARE GIVEN AT 88 DEGREES F, EXCEPT AS NOTED ON THE PLANS.
- REINFORCING PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:
SPACING TOLERANCE = +/- 1"
CLEARANCE TOLERANCE = +/- 1/4"
- "WATER REPELLENT" SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BOTH SUBSTRUCTURE AND SUPERSTRUCTURE, EXCEPT THE BOTTOM OF DECK BETWEEN FASCIA GIRDERS.
- IN ALL HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS, SHEAR KEYS SHALL BE FORMED AS SHOWN ON BR119 AND THEY SHALL BE CONTINUOUS UP TO 3" FROM EACH END OF THE JOINT. THE UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

- THE COST OF INSTALLING P.V.C. WATERSTOPS, AS SHOWN IN THE PLANS, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE, CLASS B. THE TYPE OF P.V.C. WATERSTOP TO BE USED SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.
- REMOVAL OF THE EXISTING SUPERSTRUCTURE SHALL BE PAID FOR UNDER ITEM 625.15. REMOVAL OF STRUCTURE. THIS WORK SHALL INCLUDE REMOVAL OF UTILITIES AND OTHER SUPERSTRUCTURE APPURTENANCES. THE CITY SHALL RETAIN OWNERSHIP OF SELECTED "NEEDLE BEAMS".
- THE CONTRACTOR SHALL REMOVE THE EXISTING ABUTMENTS IN THEIR ENTIRETY. REMOVAL OF THE EXISTING ABUTMENTS OUTSIDE THE PAYMENT LIMITS OF COFFERDAM SHALL BE PAID FOR UNDER REMOVAL OF STRUCTURE.
- IN-STREAM CONSTRUCTION SHALL BE CONDUCTED DURING THE PERIOD JUNE 1 - OCTOBER 1 UNLESS THE CONTRACTOR OBTAINS PERMISSION FROM THE VERMONT AGENCY OF NATURAL RESOURCES TO DO WORK OUTSIDE THAT TIME PERIOD.
- FLAME CUTTING OF EPOXY COATED REINFORCING STEEL SHALL NOT BE PERMITTED.
- BRIDGE SHALL BE CLOSED TO ALL TRAFFIC DURING CONSTRUCTION.
- SHOP APPLIED STRUCTURAL COATINGS WILL BE ONE OF THE APPROVED SYSTEMS LISTED ON THE QUALIFIED PRODUCTS LIST MAINTAINED AT THE AGENCY'S LABORATORY.
- WATER MAINS ON BRIDGE SHALL HAVE MECHANICAL JOINT CONNECTIONS.

INDEX OF SHEETS:

BR100	PRELIMINARY INFORMATION SHEET
BR101	BRIDGE QUANTITY SHEET
BR102	PLAN & ELEVATION
BR103	BORING INFORMATION SHEET (1 OF 2)
BR104	BORING INFORMATION SHEET (2 OF 2)
BR105	TRANSVERSE SECTION
BR106	DECK PLAN
BR107	DECK END DETAILS
BR108	FRAMING PLAN
BR109	UTILITY DIAPHRAGM DETAILS
BR110	GIRDER ELEVATION
BR111	PLATE GIRDER BEARING DETAILS
BR112	ABUTMENT 1 MASONRY
BR113	ABUTMENT 1 REINFORCING
BR114	ABUTMENT 2 MASONRY
BR115	ABUTMENT 2 REINFORCING
BR116	WINGWALL REINFORCING AND DETAILS
BR117	ABUTMENT DETAILS
BR118	BRIDGE RAILING LAYOUT
BR119	STANDARD BRIDGE DETAILS
BR120	REINFORCING STEEL SCHEDULE
BR121	ALUMINUM BRIDGE RAILING DETAILS
BR122	ALUMINUM BRIDGE RAILING DETAILS
BR123	ALUMINUM APPROACH RAILING DETAILS

EXISTING STRUCTURE

- STRUCTURE TYPE: OPEN STEEL GRID DECK ON BEAMS OVERALL LENGTH: 83' INVENTORY RATING: N/A
- SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS: 80'
- CLEAR SPAN LENGTH(S) NORMAL TO STREAM: 72'
- WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM): 674' VERTICAL CLEARANCE ABOVE STREAMBED: 12'
- WATER SURFACE ELEVATION @ Q 2.33: 591.04' WATER SURFACE ELEVATION @ Q 100: 596.97'
- WATER SURFACE ELEVATION AT FLOOD OF RECORD YEAR: 1977 ESTIMATED DISCHARGE: _____
- DOES ALL WATER PASS THROUGH EXISTING STRUCTURE? NO IF NOT, AT WHAT FREQUENCY AND ELEVATION DOES RELIEF OCCUR? 0.2% 593.50'
- ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF: _____
- TYPE OF SUBSTRUCTURE FOUNDATION MATERIAL: GRANITE BLOCK ABUTMENTS
- DISPOSITION OF STRUCTURE: DEMOLISH

NEW STRUCTURE

- STRUCTURE GEOMETRY:
- STRUCTURE TYPE: CONC. DECK OVER STEEL PLATE GIRDERS OVERALL LENGTH: 81'
 - SPAN LENGTH(S) CENTER TO CENTER OF BEARINGS: 79'
 - VERTICAL CLEARANCE ABOVE STREAM OR ROAD UNDER: 12'
 - CLEAR SPAN LENGTH(S) NORMAL TO STREAM: 72'
 - WATERWAY AREA OF FULL OPENING (NORMAL TO STREAM): 664'
 - ARE PROVISIONS TO BE MADE FOR PUBLIC UTILITIES: YES

HYDRAULIC DATA:

Q 2.33	2,900 cfs	WATER ELEVATION	590.99	VELOCITY	4.72
Q 10	5,340 cfs	WATER ELEVATION	592.40	VELOCITY	9.63
Q 25	9,800 cfs	WATER ELEVATION	594.49	VELOCITY	19.56
Q 50	14,260 cfs	WATER ELEVATION	596.48	VELOCITY	30.56
Q 100	18,720 cfs	WATER ELEVATION	597.98	VELOCITY	40.89

- DRAINAGE AREA: 26.5 SQ. MI. CHARACTER OF TERRAIN: ROLLING TO MOUNTAINOUS
- ARE THERE OBJECTIONS TO A PIER IN THE STREAM: YES
- DOES STREAM REACH ITS MAXIMUM HIGH WATER ELEVATION RAPIDLY: YES
- NATURE OF NATURAL STREAMBED: SANDY SILT
- ESTIMATED SCOUR DEPTH: 2.0' COMMENT ON: DRIFT: SLIGHT DE: MODERATE
- WILL ALL WATER PASS THROUGH NEW STRUCTURE: NO IF NOT, WHAT FREQUENCY AND ELEVATION WILL RELIEF OCCUR: 0.2% 593.50'
- ADDITIONAL WATERWAY AREA PROVIDED BY RELIEF: N/A
- VERTICAL CLEARANCE ABOVE Q 100: STRUCTURE IS SUBMERGED
- ALLOWABLE WATER SURFACE ELEVATION: 597.80'
- IS DESIGN STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO LIMITED BY: BOTTOM OF LOW GORDER
- STREAMBANK OR CHANNEL PROTECTION REQUIRED: NONE FILL TYPE II
- DISTANCE TO EXISTING UPSTREAM STRUCTURE: 700' SPAN: N/A WATERWAY AREA OF FULL OPENING: N/A Q: N/A
- DISTANCE TO EXISTING DOWNSTREAM STRUCTURE: 1,050' SPAN: N/A WATERWAY AREA OF FULL OPENING: N/A Q: N/A
- ORDINARY HIGH WATER = 1073 cfs WATER ELEV. = 585.15' ORDINARY LOW WATER = 80 cfs WATER ELEV. = 582.36'

ALLOWABLE STRESSES:

- DESIGN LIVE LOAD: AASHTO HS-20-44
 - ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL: N/A ON LEDGE: N/A
 - ALLOWABLE LOAD FOR PILING: 45 PSF TYPE: HP14X80 (GRADE 36) ESTIMATED LENGTH: 40'
 - ALLOWABLE STRESS FOR STRUCTURAL STEEL: AASHTO M270, GRADE 50 TENSION: 27,000 psi
 - ALLOWABLE STRESS FOR REINFORCING STEEL: GRADE 60 TENSION: 25,000 psi COMPRESSION: 20,000 psi
 - ALLOWABLE STRESS FOR CONCRETE: SILICA FUME: f'c = 4000 psi f'c = 1600 psi
- H = HORIZONTAL CLASS A f'c = 4000 psi
V = VERTICAL CLASS B f'c = 3000 psi

TRAFFIC MAINTENANCE:

- IS TRAFFIC TO BE MAINTAINED? NO IF YES, ON EXISTING STRUCTURE: N/A OR ON TEMPORARY BRIDGE: N/A
- TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY: N/A TRAFFIC CONTROL SIGNALS REQUIRED: N/A
- MINIMUM CLEAR SPAN: N/A MINIMUM CLEAR HEIGHT: N/A
- ARE SIDEWALKS REQUIRED? N/A IF SO, ON WHAT SIDE: N/A MINIMUM WATERWAY AREA: N/A

ESTIMATED SCOUR DEPTHS (FEET)

SCOUR TYPE @ Q100	LOCATION	
	WEST ABUTMENT	EAST ABUTMENT
DEGRADATION	0	0
CONTRACTION	1	1
LOCAL		
TOTAL SCOUR	1	1
FOUNDATION TYPES	PILE SUPPORTED	PILE SUPPORTED

LOAD RATING (TONS)										
STRESS (psi)	TRUCK									
	H	HS	32	18 AXLE	3A	3R	4A	4R	5A	5R
INVENTORY	25	46								
POSTED	30	56	53			43	47	53		
OPERATING	35	63	59	92	48	53				

ADDITIONAL DESIGN CONSIDERATIONS

STATE OF VERMONT AGENCY OF TRANSPORTATION

CITY OF: BARRE BRIDGE NO.: B-10
 STREET NAME: BLACKWELL STREET LOC. STA.:
 SURV. STA.:
 BLACKWELL STREET OVER STEVENS BRANCH
PRELIMINARY INFORMATION SHEET
 DESIGNED BY: V. Deangelo DRAWN BY: G. Saucier
 CHECKED BY: DATE: BRIDGE DESIGN SUPERVISOR
 J. Potusky 12/98 J. Potusky DATE: 12/98
PROJECT BARRE CITY **PROJECT NO.**
 BRM 6000(13)
 B&C DRAWING NO. 9203887/1-1 DATE: 12/98
 BRIDGE SHEET NO. BR100 SHEET 13 OF 46

BETTIGOLE ANDREWS & CLARK, INC.
 Consulting Engineers

BRIDGE QUANTITY SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION
STRUCTURES DIVISION

ITEM NO.	ITEM	UNIT	QUANTITY BREAKDOWN							TOTAL	FINAL				
			SUPER-STRUCTURE		ABUTMENT NO. 1		ABUTMENT NO. 2		APPROACH SLABS			CHANNEL	UTILITY BID PARTICIPATING WATER	ITEMS NON-PART. WATER	
203.27	UNCLASSIFIED CHANNEL EXCAVATION	CY			10		10							20	
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY			270		310							580	
204.40	COFFERDAM (STA. 43+48)	LS			1									1	
204.40	COFFERDAM (STA. 44+28)	LS					1							1	
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE	CY			15		20							35	
406.25	BITUMINOUS CONCRETE PAVEMENT	TON	.37											37	
501.22	CONCRETE, CLASS A	CY	100											100	
501.25	CONCRETE, CLASS B	CY			138		190		56					384	
501.60	SILICA - FUME CONCRETE	CY	28											28	
504.10	FURNISHING EQUIPMENT FOR DRIVING PILING	LS			0.5		0.5							1	
505.18	STEEL PILING (HP 14 x 89)	LF			606		859							1465	
506.55	STRUCTURAL STEEL (PLATE GIRDER)	LB	102,480									3280		102,480	
507.15	REINFORCING STEEL	LB			13,460		18,040							31,500	
507.17	EPOXY COATED REINFORCING STEEL	LB	36,526						6485					43,011	
508.15	SHEAR CONNECTORS (1,020 x 7" LONG) (3/8")	LS	1											1	
51.3.25	STRUCTURAL PAINTING, SHOP APPLIED	LS	1											1	
51.3.40	SURFACE PREPARATION	LS	1											1	
514.10	WATER REPELLENT	GAL	1.3		2		7							22	
516.10	BRIDGE EXPANSION JOINT (ASPHALTIC PLUG-TYPE)	LF	30											30	
519.20	SHEET MEMBRANE WATERPROOFING	SY	270						134					404	
524.20	JOINT SEALER, POLYURETHANE	GAL			1		1							2	
525.22	BRIDGE RAILING - 3 RAIL ALUMINUM	LF	88.5											88.5	
525.23	BRIDGE RAILING - ALUM. PEDESTRIAN (WITH SPINDLES)	LF	89.5											89.5	
529.15	REMOVAL OF STRUCTURE	LS	1											1	
531.10	BEARING DEVICE ASSEMBLY	EA			6		6							12	
613.11	STONE FILL, TYPE II	CY			150		88							238	
625.10	SLEEVES FOR UTILITIES (12" I.D.)	LF									2			2	
625.10	SLEEVES FOR UTILITIES (24" I.D.)	LF										2		2	
629.60	WATER MAIN ON BRIDGE (6" I.D. DUCTILE IRON PIPE, CLASS 52, M.J.)	LS									1			1	
629.60	WATER MAIN ON BRIDGE (16" I.D. DUCTILE IRON PIPE, CLASS 52, M.J.)	LS										1		1	
631.16	TESTING EQUIPMENT - CONCRETE	LS	1											1	
631.18	TESTING EQUIPMENT - PROTECTIVE COATINGS	LS	1											1	
649.31	GEOTEXTILE UNDER STONE FILL	SY			60		94							154	
651.40	GRUBBING MATERIAL	SY			4		19							23	

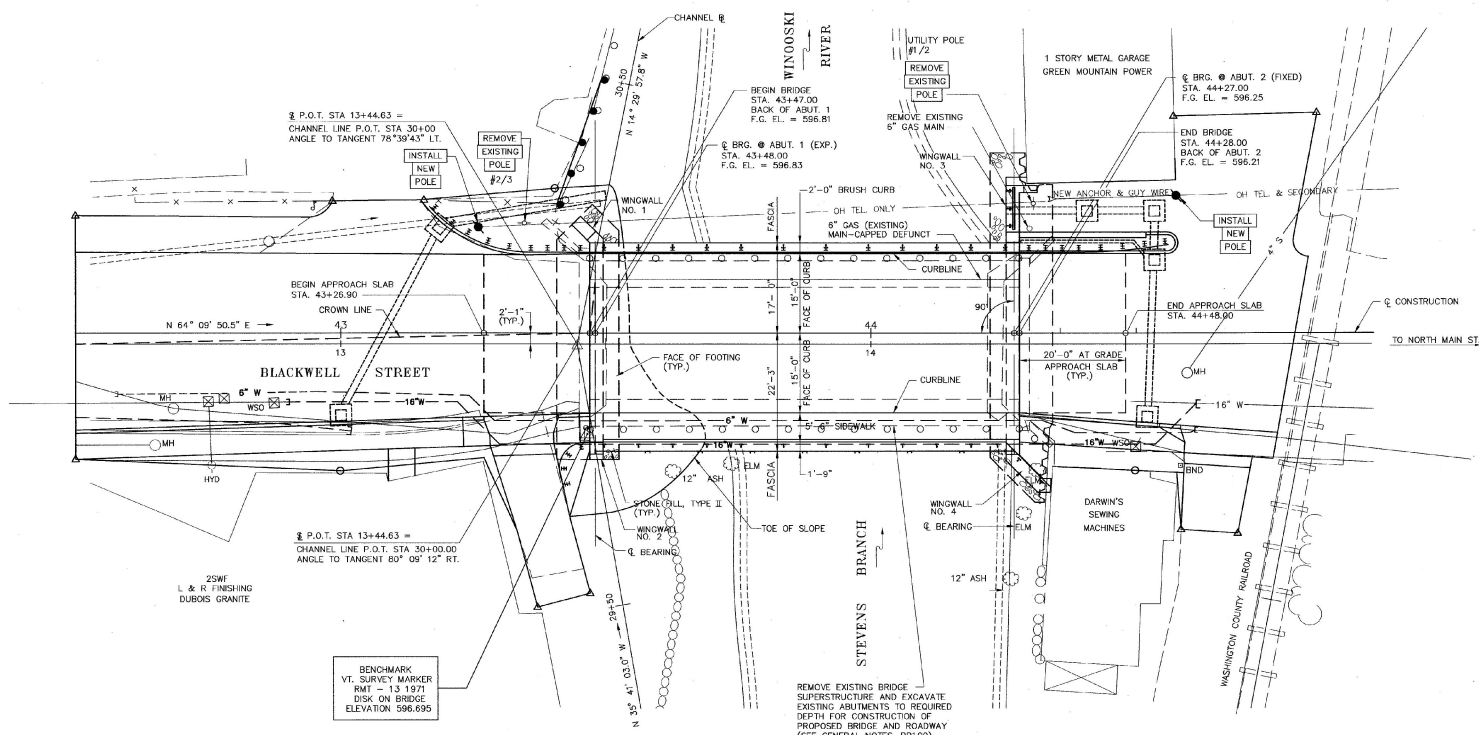
BRIDGE AT STATION B-10
LOCATION BLACKWELL STREET OVER STEVENS BRANCH

PREPARED BY: V Deangelo
SUPERVISOR: J Patusky

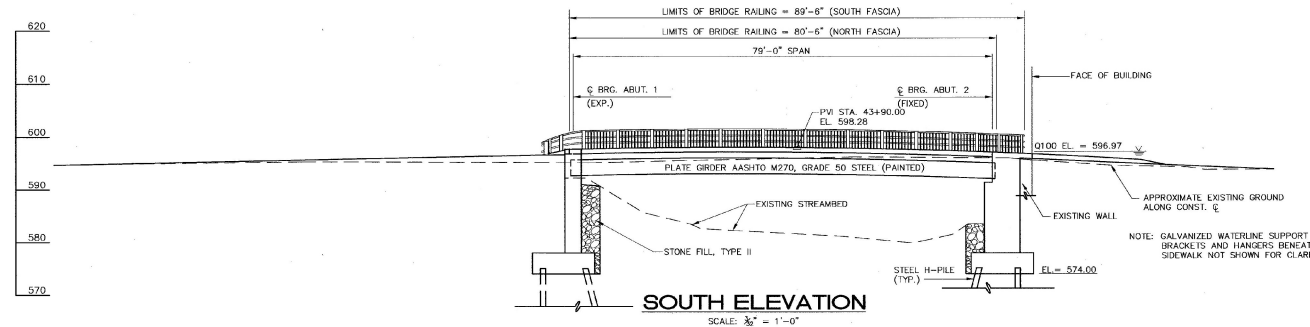
CHECKED BY: J Patusky

PROJECT: BARRE CITY
BR 101 OF

PROJECT NO: BRM 6000(15)
SHEET NO: 14 OF 46



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



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

BRIDGE VERTICAL CURVE DATA	
PV STA. 43+30.00	EL. 596.36
PVI STA. 43+90.00	EL. 598.28
PV STA. 44+50.00	EL. 595.28
LENGTH = 120' VC	
K = 15	
E = -1.23	
GRADE IN = 3.2000%	
GRADE OUT = -5.0000%	

* DISTANCE FROM END OF BRIDGE TO E. OF END POST = 3'-0".

STATE OF VERMONT			
AGENCY OF TRANSPORTATION			
CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	LOG STA.	
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH			
PLAN and ELEVATION			
DESIGNED BY	L. Keefe	DRAWN BY	S. Belanger
CHECKED BY	J. Patusky	DATE	12/98
BRIDGE DESIGN SUPERVISOR		DATE 12/98	
PROJECT NO.		PROJECT NO.	
BARRE CITY		BRM 6000(13)	
B&C DRAWING NO.	9203B801	DATE	12/98
BRIDGE SHEET NO.	BR102	SHEET	15 OF 46

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

V:\00000000\00000000\00000000.dwg P11 File 12.06.02.0955 Date: 12/98

SOIL CLASSIFICATION

AASHTO

A1	GRAVEL AND SAND
A3	FINE SAND
A4	SILTY OR CLAYEY GRAVEL AND SAND
A5	SILTY SOIL - LOW COMPRESSIBILITY
A6	SILTY SOIL - HIGHLY COMPRESSIBLE
A7	CLAYEY SOIL - LOW COMPRESSIBILITY
A7	CLAYEY SOIL - HIGHLY COMPRESSIBLE

UNIFIED SOIL SYSTEM

GW/CP	CLEAN GRAVELS (FEW FINES)
GM/GC	GRAVELS (APPRECIABLE FINES)
SW/SP	CLEAN SANDS (FEW FINES)
SM/SC	SAND (APPRECIABLE FINES)
ML/CL	LOW PLASTIC SILTS & CLAYS
OL	LOW PLASTIC ORGANIC SILT
MH/CH	HIGH PLASTIC SILTS & CLAYS
OH	HIGH PLASTIC ORGANIC SILT
PT	HIGHLY ORGANIC SILTS

MOISTURE

DESCRIPTIVE	OBSERVED	% +/- BY
WET	IN FIELD	ANALYSIS
DRY	NO VISIBLE WATER	<10
MOIST	DAMP	10-20
MOIST TO WET	MOIST TO WET	21-50
WET	VISIBLE WATER	51-70
SATURATED		>70

ROCK QUALITY DESIGNATION

R.Q.D.	ROCK DESCRIPTION
<.25	VERY POOR
.25 TO .50	POOR
.51 TO .75	FAIR
.76 TO .90	GOOD
>.90	EXCELLENT

SHEAR STRENGTH

UNDERDRAINED SHEAR STRENGTH	CONSISTENCY
IN P.S.F.	VERY SOFT
<250	SOFT
250-500	MED. STIFF
500-1000	STIFF
1000-2000	VERY STIFF
2000-4000	HARD
>4000	

CORRELATION GUIDE OF 'N' TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS)	CONSISTENCY (COHESIVE SOILS)
DESCRIPTIVE	DESCRIPTIVE
N	TERM
<5	VERY LOOSE
5-10	LOOSE
11-24	MED. DENSE
25-50	DENSE
>50	VERY DENSE
	1-2
	2-4
	5-8
	9-15
	16-30
	31-60
	>60

COMMONLY USED SYMBOLS

▼	WATER ELEVATION
⊙	STANDARD PENETRATION BORING
⊖	AUGER BORING
⊖	ROD SOUNDING
⊖	SAMPLE
N	STANDARD PENETRATION TEST
	BLOW COUNT PER FOOT FOR:
	2" O.D. SAMPLER
	1 3/8" L.D. SAMPLER
	HAMMER WEIGHT OF 140 LBS.
	HAMMER FALL OF 30"
VS	FIELD VANE SHEAR TEST
US	UNDISTURBED SOIL SAMPLE
B	BLAST
DC	DIAMOND CORE
MD	MUD DRILL
WA	WASH AHEAD
HS	HOLLOW STEM AUGER
AX	CORE SIZE 1 1/8"
BX	CORE SIZE 1 5/8"
NX	CORE SIZE 2 1/8"
M	DOUBLE TUBE CORE BARREL USED
LL	LIQUID LIMIT
PL	PLASTIC LIMIT
PI	PLASTICITY INDEX
NF	NON PLASTIC
w	MOISTURE CONTENT (DRY WGT. BASIS)
D	DRY
M	MOIST
MTW	MOIST TO WET
W	WET
SAT	SATURATED
BO	BOULDER
GR	GRAVEL
SA	SAND
SI	SILT
CL	CLAY
HP	HARDPAN
LE	LEDGE
NLTD	NO LEDGE TO DEPTH
CNPF	CAN NOT PENETRATE FURTHER
TLOB	TO LEDGE OR BOULDER
NR	NO RECOVERY
REC.	RECOVERY
PRC.	PERCENT RECOVERY
RQD	ROCK QUALITY DESIGNATION
CBR	CALIFORNIA BEARING RATIO
>	LESS THAN
>	GREATER THAN
R	REFUSAL (N>100)

COLOR

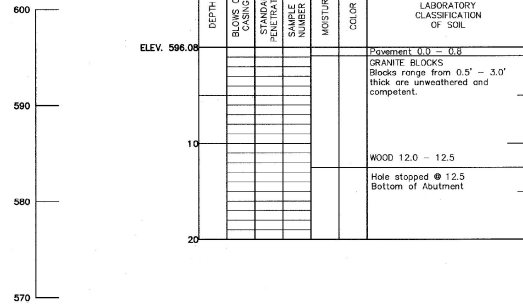
BLK	BLACK	PNK	PINK
BL	BLUE	PU	PURPLE
BRN	BROWN	RD	RED
DK	DARK	TN	TAN
GR	GRAY	WH	WHITE
GN	GREEN	YEL	YELLOW
LT	LIGHT	MITC	MULTICOLORED
OR	ORANGE		

DEFINITIONS (AASHTO)

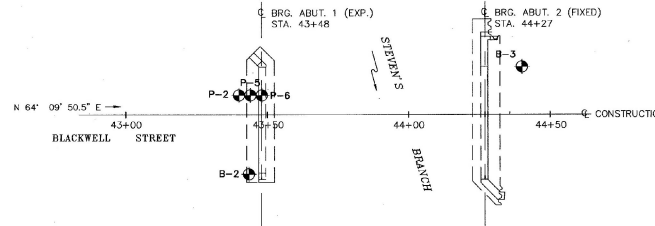
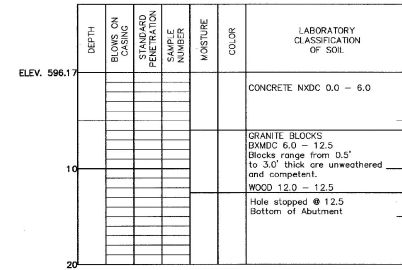
BEDROCK (LEDGE) - ROCK IN ITS NATIVE LOCATION OF INDEFINITE THICKNESS.
BOULDER - A ROCK FRAGMENT WITH AN AVERAGE DIMENSION OF >12 INCHES.
COBBLE - ROCK FRAGMENTS WITH AN AVERAGE DIMENSION BETWEEN 3 AND 12 INCHES.
GRAVEL - ROUNDED PARTICLES OF ROCK < 3" AND > 0.075" (#10 SIEVE).
SAND - PARTICLES OF ROCK < 0.075" (#10 SIEVE) AND > 0.0025" (#60 SIEVE).
SILT - SOIL < 0.0025" (#60 SIEVE), NON OR SLIGHTLY PLASTIC AND EXHIBITS NO STRENGTH WHEN AIR-DRIED.
CLAY - FINE GRAINED SOIL, EXHIBITS PLASTICITY WHEN MOIST AND CONSIDERABLE STRENGTH WHEN AIR-DRIED.

VARVED - ALTERNATE LAYERS OF SILT AND CLAY.
HARDPAN - EXTREMELY DENSE SOIL, CEMENTED LAYER, NOT SOFTENED WHEN WET.
MUCK - SOFT ORGANIC SOIL CONTAINING > 10% ORGANIC MATERIAL.
MOISTURE CONTENT - WEIGHT OF WATER DIVIDED BY DRY WEIGHT OF SOIL.
FLOWING SAND - GRANULAR SOIL SO SATURATED (LOOSE) THAT IT FLOWS INTO DRILL CASING DURING EXTRACTION OF WASH ROD.
STRIKE - ANGLE FROM MAGNETIC NORTH TO LINE OF INTERSECTION OF BED WITH A HORIZONTAL PLANE.
DIP - INCLINATION OF BED WITH A HORIZONTAL PLANE.

BORING NO. Barre City BRM 6000(13) P-5



BORING NO. Barre City BRM 6000(13) P-6



BORING PLAN
SCALE: 1" = 20'

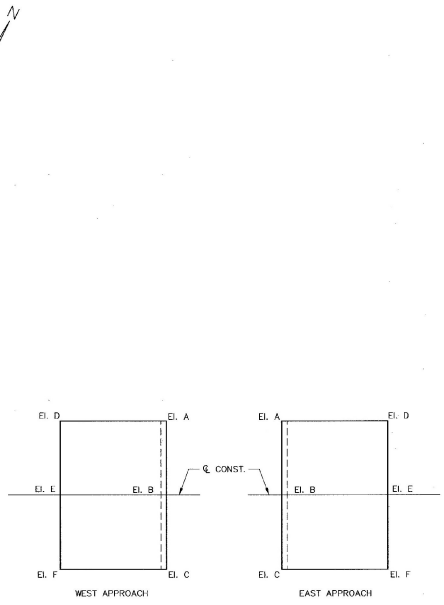
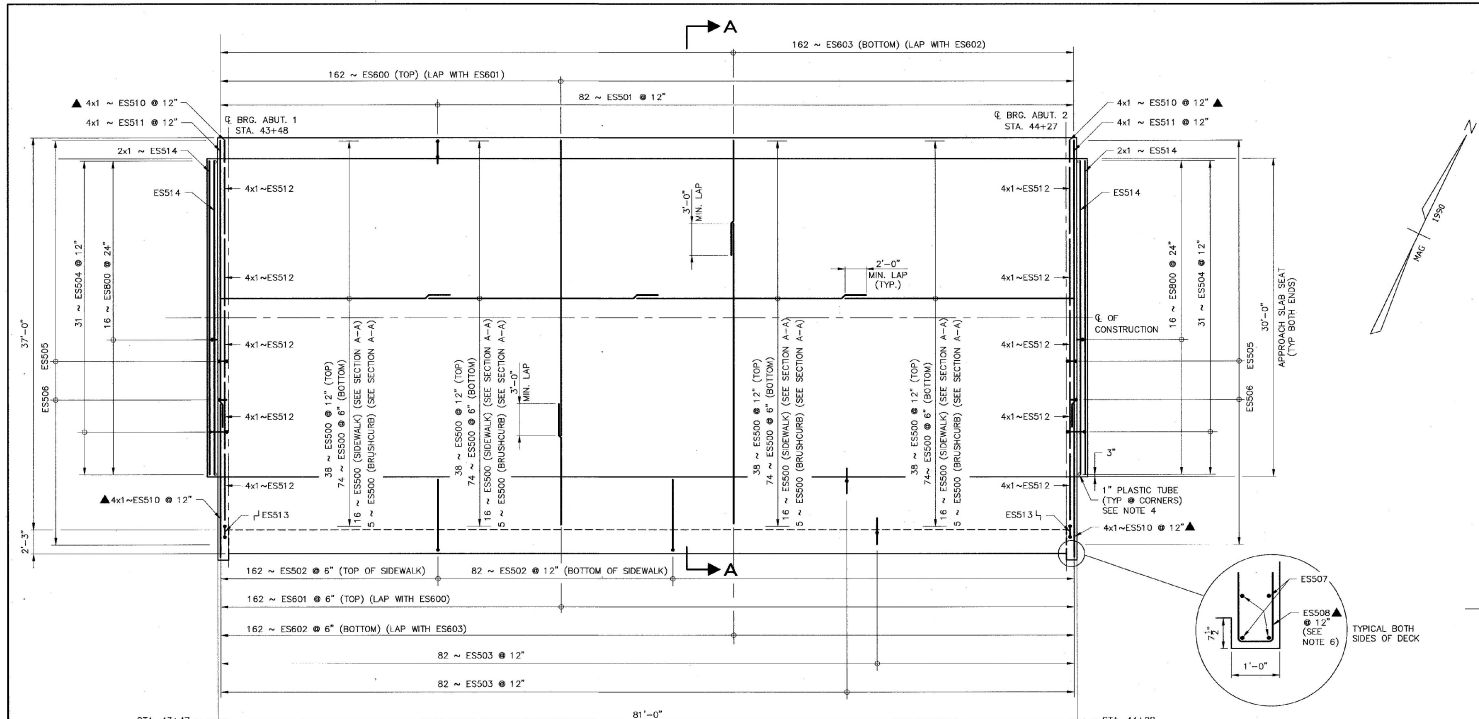
GENERAL NOTES

- THE SUBSURFACE EXPLORATIONS SHOWN HEREIN WERE MADE BETWEEN 8/12/93 AND 9/28/93 BY THE AGENCY.
- SOIL AND ROCK CLASSIFICATIONS, PROPERTIES AND DESCRIPTIONS ARE BASED ON ENGINEERING INTERPRETATION FROM AVAILABLE SUBSURFACE INFORMATION BY THE AGENCY AND MAY NOT NECESSARILY REFLECT ACTUAL VARIATIONS IN SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED BETWEEN INDIVIDUAL BORING OR SAMPLE LOCATIONS.
- OBSERVED WATER LEVELS AND/OR CONDITIONS INDICATED ARE AS RECORDED AT THE TIME OF EXPLORATION AND MAY VARY ACCORDING TO THE PREVAILING RAINFALL, METHODS OF EXPLORATION AND OTHER FACTORS.
- ENGINEERING JUDGEMENT WAS EXERCISED IN PREPARING THE SUBSURFACE INFORMATION PRESENTED HEREIN. ANALYSIS AND INTERPRETATION OF SUBSURFACE DATA WAS PERFORMED AND INTERPRETED FOR AGENCY DESIGN AND ESTIMATING PURPOSES. PRESENTATION OF THE INFORMATION IN THE CONTRACT IS INTENDED TO PROVIDE THE CONTRACTOR ACCESS TO THE SAME DATA AVAILABLE TO THE AGENCY. THE SUBSURFACE INFORMATION IS PRESENTED IN GOOD FAITH AND IS NOT INTENDED AS A SUBSTITUTE FOR PERSONAL INVESTIGATION, INDEPENDENT INTERPRETATION, INDEPENDENT ANALYSIS OR JUDGEMENT BY THE CONTRACTOR.
- PICTORIAL STRUCTURE DETAILS SHOWN ON THE BORING PLAN LAYOUT OR SOILS PROFILE ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY NOT ACCURATELY PORTRAY FINAL CONTRACT DETAILS.
- TERMINOLOGY USED ON BORING LOGS TO DESCRIBE THE HARDNESS, DEGREE OF WEATHERING AND SPACING OF FRACTURES, JOINTS AND OTHER DISCONTINUITIES IN THE BEDROCK IS DEFINED IN THE AASHTO MANUAL ON SUBSURFACE INVESTIGATION 1988.

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

STATE OF VERMONT AGENCY OF TRANSPORTATION

CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	LOC STA.	
BLACKWELL STREET OVER STEVENS BRANCH			
BORING INFORMATION SHEET (1 OF 2)			
DESIGNED BY	L. Keefe	DRAWN BY	A. Clark
CHECKED BY	J. Patusky	DATE	11/98
PROJECT		BRIDGE DESIGN SUPERVISOR	J. Patusky
BARRE CITY		DATE	11/98
B&C DRAWING NO. 9203B03/1-20		PROJECT NO. BRM 6000 (13)	
BRIDGE SHEET NO. BR103		DATE 1/2/98	
		SHEET 16 OF 46	



DECK PLAN

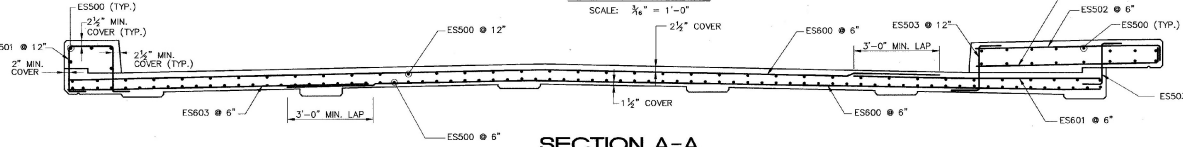
SCALE: 3/8" = 1'-0"

APPROACH SLAB ELEVATIONS

TOP OF APPROACH SLAB ELEVATIONS

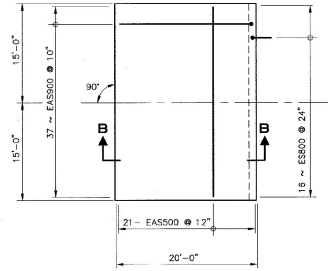
LOCATION	ABUT. 1	ABUT. 2
A	596.29	595.69
B	596.60	596.00
C	596.29	595.69
D	595.75	594.86
E	596.06	595.17
F	595.75	594.86

* APPROACH SLAB GRADES COULD CHANGE DEPENDING ON FINAL DECK GRADES.



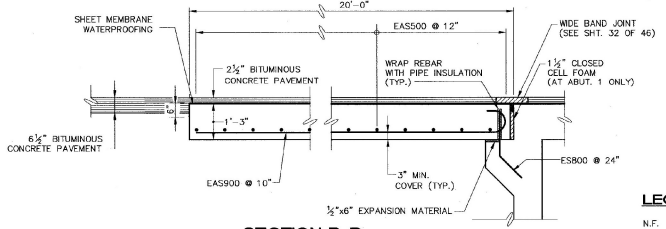
SECTION A-A

SCALE: 1/2" = 1'-0"



PLAN

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



SECTION B-B

SCALE: 1/2" = 1'-0"

NOTES:

- IF MORE THAN ONE CONCRETE DECK POUR IS REQUIRED BY THE CONTRACTOR, THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS AFTER COMPLETION OF EACH POUR BEFORE BEGINNING ANOTHER POUR. EACH CONCRETE DECK POUR SHALL BE PLACED CONTINUOUSLY WITHIN ONE EIGHT HOUR WORKING DAY.
- THE DECK CONCRETE SHALL BE RETARDED SUFFICIENTLY TO REMAIN FLUID UNTIL EACH POUR IS COMPLETE. THE QUANTITY OF RETARDANT SHALL BE APPROVED BY THE CONCRETE ENGINEER PRIOR TO PLACEMENT. ANY DEVIATIONS FROM THIS PROCEDURE MUST BE APPROVED BY THE STRUCTURES ENGINEER IN WRITING BEFORE THE POUR BEGINS.
- TIP HOOK END OF BAR AS REQUIRED TO ACHIEVE MINIMUM COVER.
- FOR PLASTIC TUBE DETAILS, SEE BRIDGE SHEET BR107.
- FOR TRANSVERSE DECK SECTION, SEE BRIDGE SHEET BR105.
- BAR IN PAIRS BELOW 24" PIPE SLEEVE IN BACKWALL. SEE BRIDGE SHEET BR107.

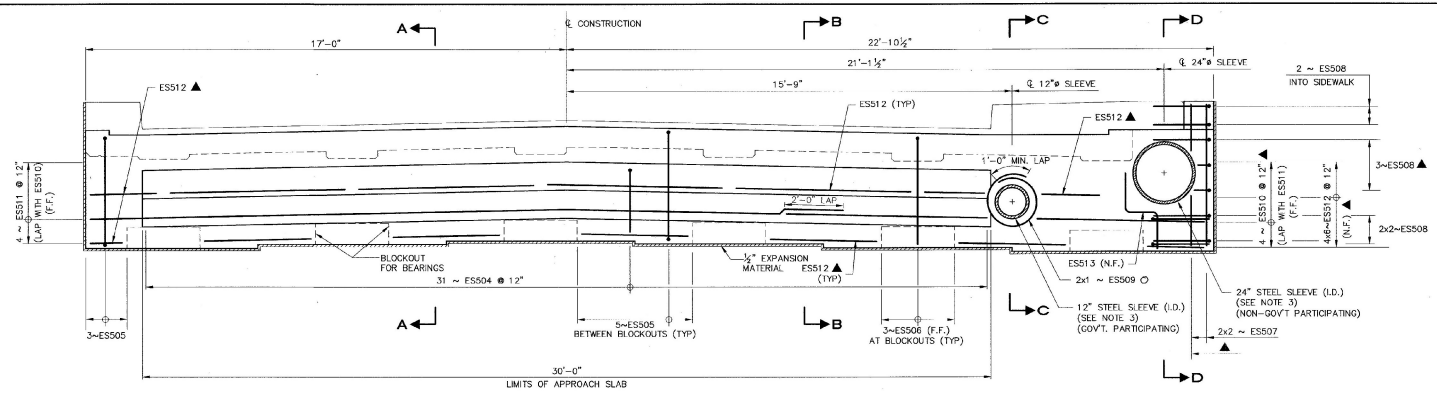
LEGEND

- N.F. NEAR FACE
- F.F. FAR FACE
- E.F. EACH FACE
- ▲ CUT TO FIT IN FIELD

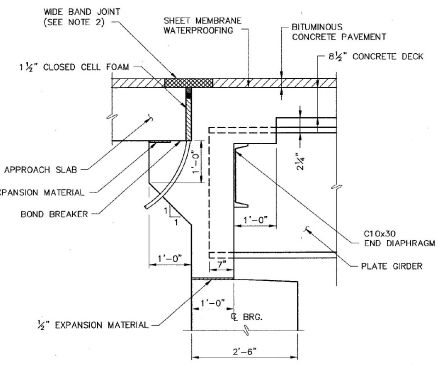
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Consulting Engineers

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

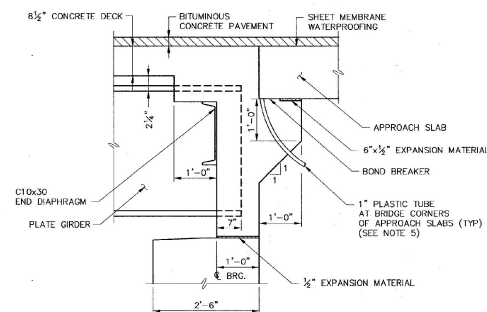
CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	LOC. STA.	
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH			
DECK PLAN			
DESIGNED BY	V. DeAngelo	DRAWN BY	S. Belanger
CHECKED BY	J. Patusky	DATE	12/98
		BRIDGE DESIGN SUPERVISOR	J. Patusky
		DATE	12/98
PROJECT		PROJECT NO.	
BARRE CITY		BRM 6000(13)	
B&C DRAWING NO.	9203BB90	DATE	12/98
BRIDGE SHEET NO.	BR106	SHEET	19 OF 46



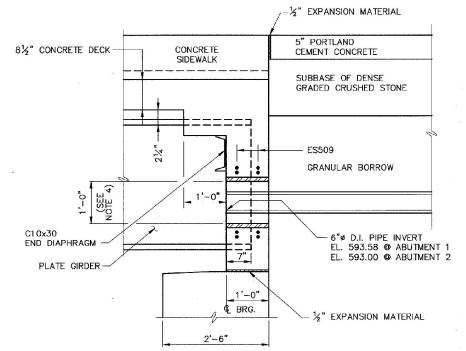
FAR FACE ELEVATION OF DECK END
 (ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR)
 SCALE: 3/8" = 1'-0"



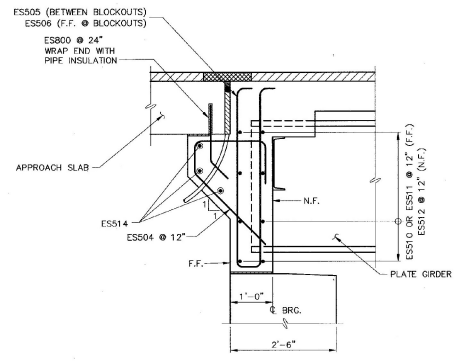
SECTION A-A MASONRY DETAIL



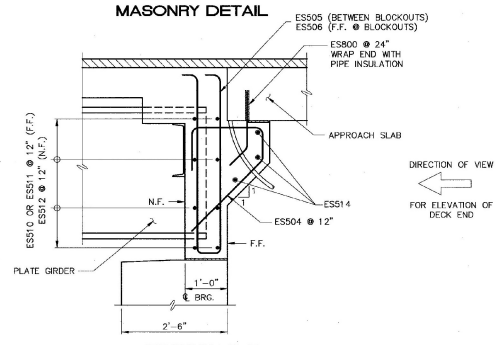
SECTION B-B MASONRY DETAIL



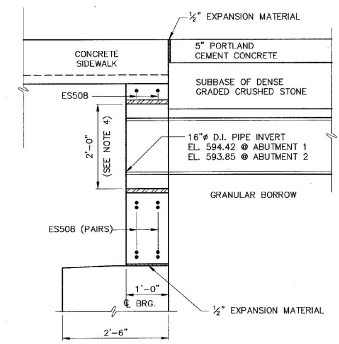
SECTION C-C



SECTION A-A REINFORCING DETAIL



SECTION B-B REINFORCING DETAIL



SECTION D-D

BACKWALL DETAILS AT SIDEWALK
 SCALE: 3/8" = 1'-0"

ABUTMENT 1 BACKWALL DETAILS AT APPROACH SLABS
 SCALE: 3/8" = 1'-0"

ABUTMENT 2 BACKWALL DETAILS AT APPROACH SLABS
 SCALE: 3/8" = 1'-0"

LEGEND

- N.F. NEAR FACE
- F.F. FAR FACE
- E.F. EACH FACE
- ▲ CUT TO FIT IN FIELD

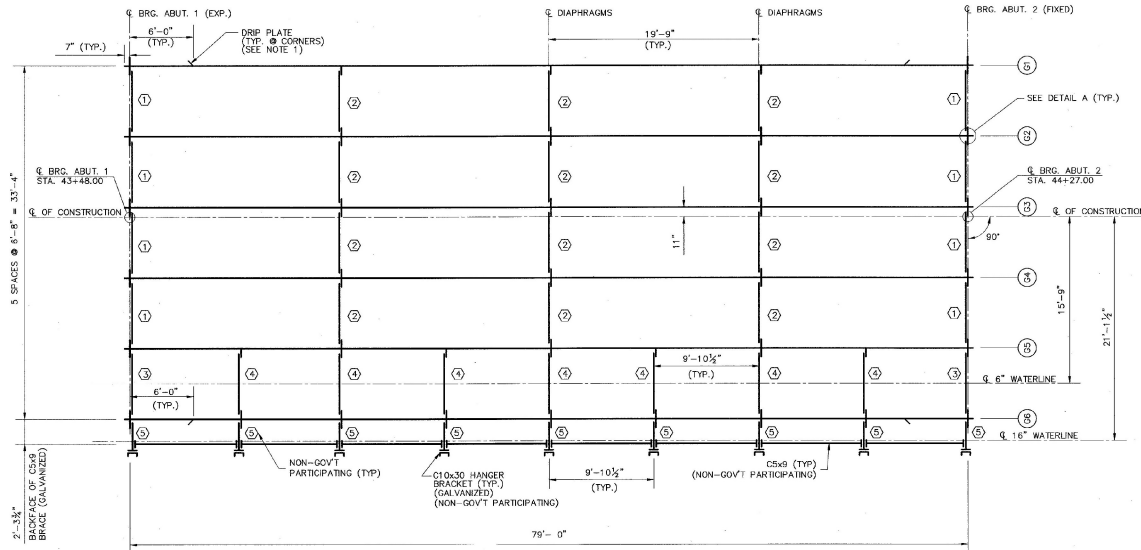
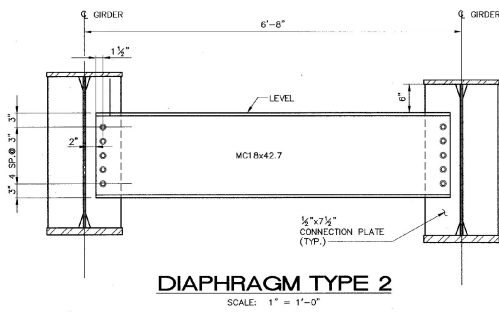
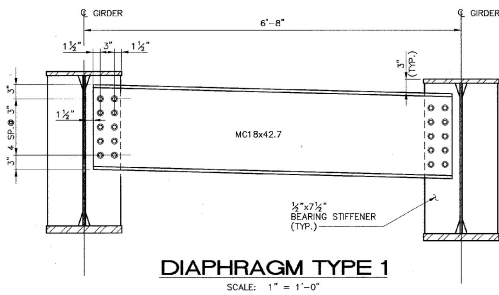
NOTE

1. ADJUST BAR SPACING OR CUT BAR AS REQUIRED TO FIT AT PIPE OPENING IN BACKWALL.
2. WIDE BAND JOINT TO BE PAID FOR UNDER ITEM 516.10, BRIDGE EXPANSION JOINT (ASPHALTIC PLUG-TYPE).
3. STEEL SLEEVES (CASINGS) SHALL HAVE A MINIMUM WALL THICKNESS OF 3/8".
4. SPACER(S) BETWEEN PIPE AND CASING TO BE APPROVED BY THE ENGINEER. COST TO BE INCLUDED UNDER ITEM 625.10.
5. FOR LOCATION OF PLASTIC TUBES, SEE PLAN, BRIDGE SHEET BR106.

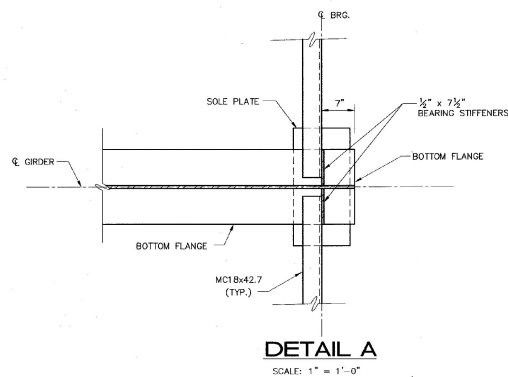
STATE OF VERMONT AGENCY OF TRANSPORTATION

CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	SURV. STA.	
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH			
DECK END DETAILS			
DESIGNED BY	V. DeAngelo	DRAWN BY	S. Belonger
CHECKED BY	J. Patuskay	DATE	12/98
PROJECT	BARRE CITY	PROJECT NO.	BRM 6000(13)
B&C DRAWING NO.	BLACK13	DATE	12/98
BRIDGE SHEET NO.	BR107	SHEET	20 OF 46

BETTIGOLE ANDREWS & CLARK, INC.
 Consulting Engineers



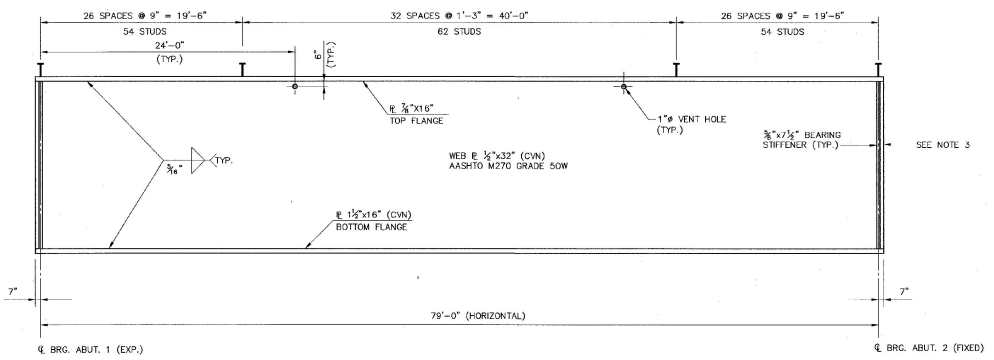
- LEGEND**
- ① DIAPHRAGM TYPE 1 (PAINTED)
 - ② DIAPHRAGM TYPE 2 (PAINTED)
 - ③ DIAPHRAGM TYPE 3 (PAINTED)
 - ④ DIAPHRAGM TYPE 4 (PAINTED)
 - ⑤ DIAPHRAGM TYPE 5 (GALVANIZED)



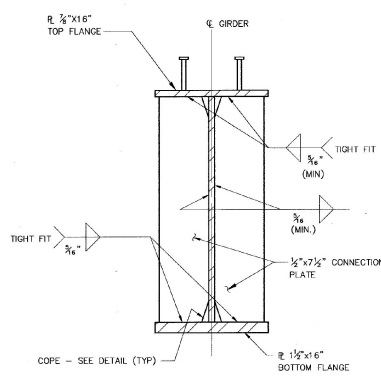
- NOTES:**
1. FOR DRIP PLATE DETAIL SEE BRIDGE SHEET BR119.
 2. FOR DIAPHRAGM TYPES 3, 4, AND 5, SEE BRIDGE SHEET BR109.
 3. MEMBER LINES OF ACTION SHALL PASS AS CLOSE AS PRACTICAL TO THE TOP AND BOTTOM OF THE ORDER WEB, EXCEPT AS SHOWN.
 4. ALL BOLTS SHALL BE FULLY TIGHTENED BEFORE THE CONCRETE DECK IS POURED.
 5. ALL STEEL IS PAINTED UNLESS OTHERWISE NOTED.

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
CITY OF BARRE	BRIDGE NO. B10
STREET NAME BLACKWELL STREET	LOC. STA.
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH	
FRAMING PLAN	
DESIGNED BY V. DeAngelo	DRAWN BY S. Belonger
CHECKED BY J. Patusky	DATE 12/98
PROJECT NO. BRM 6000(13)	
BARRE CITY	
DATE 12/98	DATE 12/98
BRIDGE SHEET NO. BR108	SHEET 21 OF 46

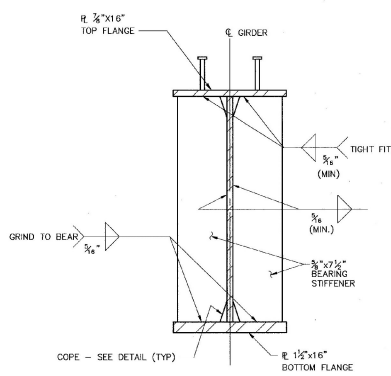
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Consulting Engineers



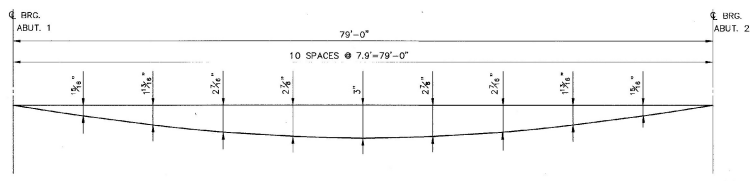
GIRDER ELEVATION
N.T.S.



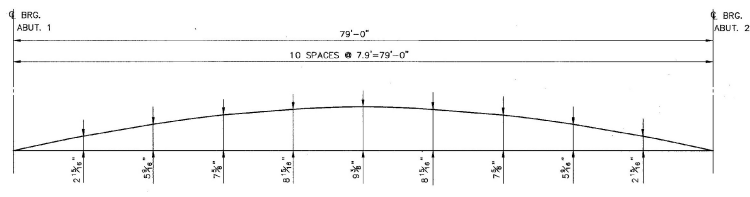
CONNECTION PLATES
SCALE: 1 1/2" = 1'-0"



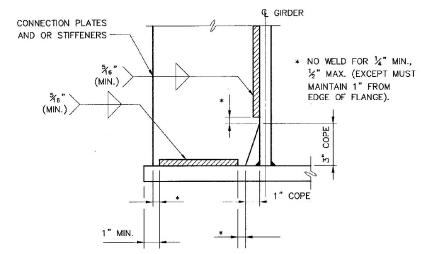
BEARING STIFFENERS
SCALE: 1 1/2" = 1'-0"



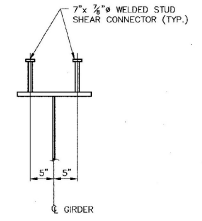
DEAD LOAD DEFLECTION DIAGRAM
N.T.S.



CAMBER DIAGRAM
N.T.S.



WELD TERMINATION AND COPING DETAIL
SCALE: 3" = 1'-0"



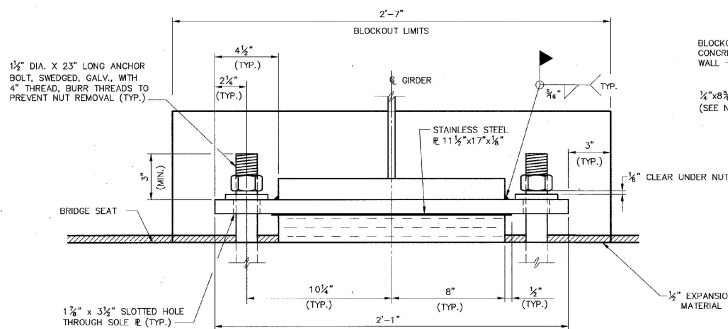
STUD DETAIL
N.T.S.

- NOTES:**
1. THE WEB AND BOTTOM FLANGE ARE TO BE CHARPY V-NOTCH (CWN) TESTED.
 2. EXACT FLANGE AND WEB CUTS TO BE RESPONSIBILITY OF THE FABRICATOR.
 3. GIRDER ENDS SHALL BE VERTICAL AFTER ALL DEAD LOADS ARE APPLIED.

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Consulting Engineers

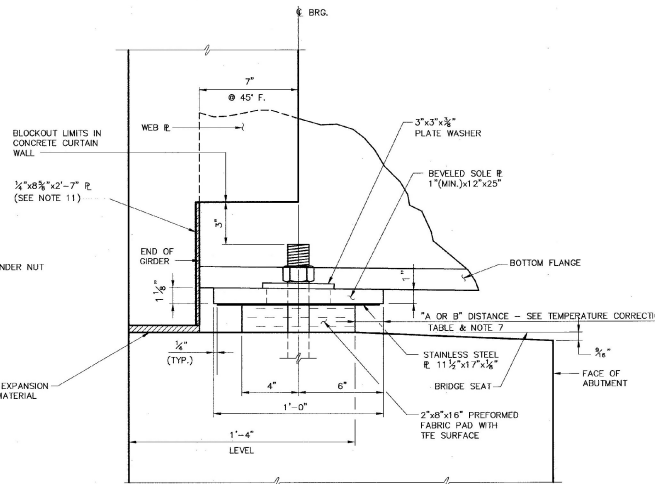
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
CITY OF BARRE	BRIDGE NO. B10
STREET NAME BLACKWELL STREET	LOG STA. SURV. STA.
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH	
GIRDER ELEVATION	
DESIGNED BY V. DeAngelo	DRAWN BY S. Belanger
CHECKED BY J. Patuskay	DATE 12/98
PROJECT	
BARRE CITY	BRM 6000(13)
B&C DRAWING NO. 9203BB88/64	DATE 12/98
BRIDGE SHEET NO. BR110	SHEET 23 OF 46

V:\2002\1045\10451000\BRIDGE.DWG PLOTED 12/12/98 10:52:52 AM C:\WINDOWS\4.09



FRONT ELEVATION

SCALE: 3" = 1'-0"

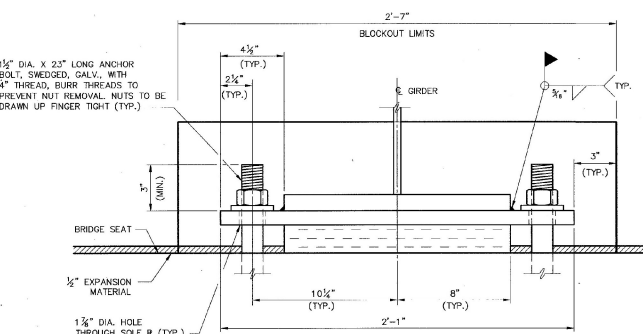


SIDE ELEVATION

SCALE: 3" = 1'-0"

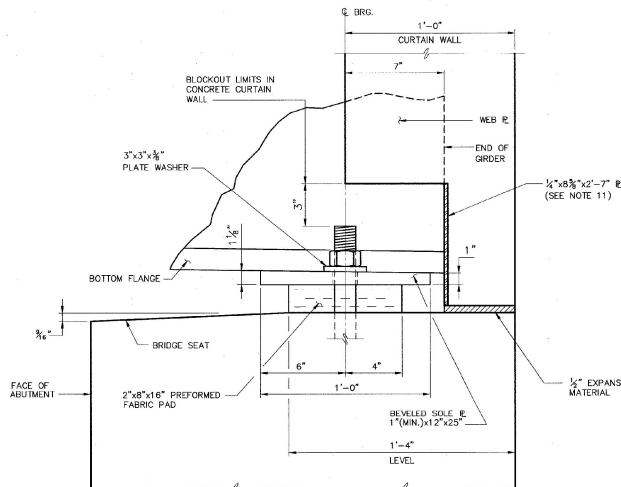
EXPANSION BEARING (ABUT. 1)

NUMBER REQUIRED = 6



FRONT ELEVATION

SCALE: 3" = 1'-0"



SIDE ELEVATION

SCALE: 3" = 1'-0"

FIXED BEARING (ABUT. 2)

NUMBER REQUIRED = 6

NOTES:

- BEARINGS SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTION 531.
- BEARINGS SHALL BE PAID FOR UNDER ITEM 531.10, BEARING DEVICE ASSEMBLY.
- SHOP DRAWINGS CONFORMING TO SUBSECTION 531.03 SHALL BE SUBMITTED TO INCLUDE WELDING AND BONDING PROCEDURES.
- THE CONCRETE SURFACE UNDER THE BEARINGS SHALL BE LEVEL.
- THE FIELD WELD CONNECTING THE BOTTOM FLANGE WITH THE BEARING DEVICE SHALL BE MADE WITH E 7018 RODS.
- BRIDGE SEAT ELEVATIONS MAY BE REVISED TO ACCOMMODATE AN ALTERNATE CONFIGURATION. THE CONTRACTOR SHALL SUBMIT SKETCHES OF THE BRIDGE SEAT REVISIONS FOR APPROVAL OF THE ENGINEER. REVISIONS TO CONCRETE AND REINFORCING STEEL DIMENSIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
- THE "A" DISTANCE IS THE SOLE PLATE ADJUSTMENT TO BE USED BEFORE DEAD LOAD IS ADDED TO THE BEAMS. THE "B" DISTANCE IS THE SOLE PLATE ADJUSTMENT TO BE USED AFTER THE DECK AND CURBS HAVE BEEN POURED. THE 3/8" DIFFERENCE IS THE ELONGATION DUE TO DEAD LOAD DEFLECTION OF SLAB, CURB AND PAVEMENT.
- DESIGN CRITERIA:
 - PREFORMED FABRIC PAD PLATE TO CONCRETE DESIGN PRESSURE = 1000 PSI MAXIMUM.
 - MINIMUM ALLOWABLE DESIGN ROTATION = 0.015 RADIAN.
 - HORIZONTAL CAPACITY SHALL BE A MINIMUM 10% OF VERTICAL LOAD.
 - DEAD LOAD = 37.7 KIPS.
SUPERIMPOSED DEAD LOAD = 15.7 KIPS.
LIVE LOAD PLUS IMPACT = 60 KIPS.
TOTAL DESIGN LOAD PER BEARING = 113 KIPS.
- ALL STEEL IN SOLE PLATES, ANCHOR BOLTS AND WASHERS SHALL BE M270, GRADE 36 GALVANIZED. NUTS SHALL BE HEAVY HEX AND CONFORM TO THE REQUIREMENTS OF ASTM A-307.
- ANCHOR BOLTS SHALL HAVE A MINIMUM OF 15" EMBEDMENT INTO CONCRETE.
- FOR USE AS A BLOCK OUT DURING CURTAIN WALL POUR, TACK WELD 3/4" PLATE TO END OF GIRDER.

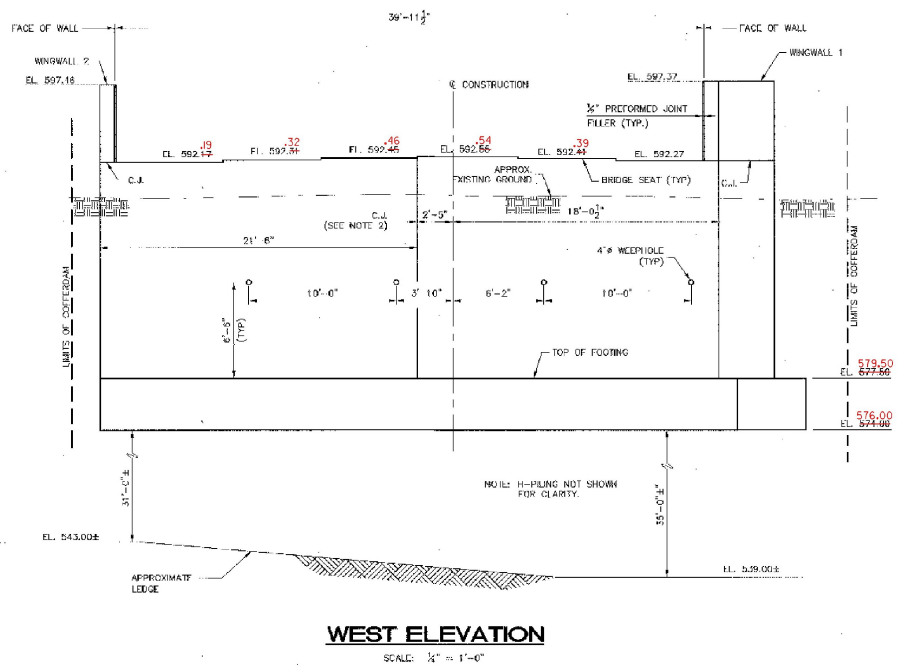
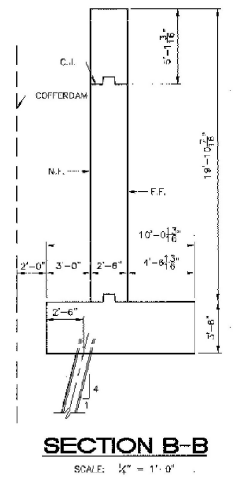
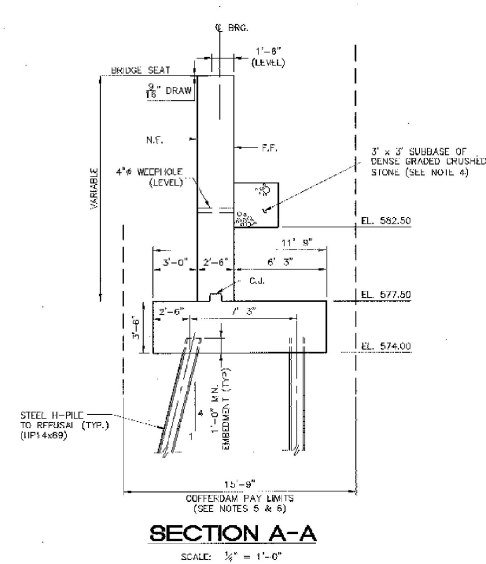
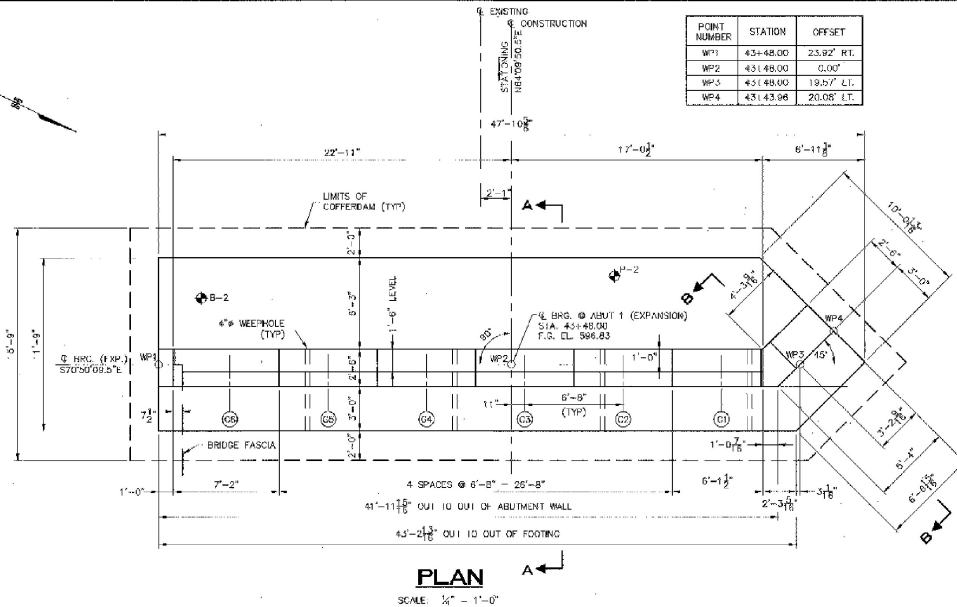
TEMPERATURE CORRECTION (° F & INCHES)				
TEMP.	Δ TO MEAN TEMP.	TEMP. CORR.	A	B
+105	-60	-3/8	1 3/8	1 3/8
90	-45	-3/8	1 3/8	1 3/8
75	-30	-3/8	1 3/8	1 3/8
60	-15	-3/8	1 3/8	1 3/8
(MEAN) 45	0	0	2	1 3/8
30	15	3/8	2 3/8	1 3/8
15	30	3/8	2 3/8	2
0	45	3/8	2 3/8	2 3/8

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

CITY OF BARRE		BRIDGE NO. B-10	
STREET NAME BLACKWELL STREET		LOC. STA.	
		SURV. STA.	
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH			
PLATE GIRDER BEARING DETAILS			
DESIGNED BY V. DeANGELO	DATE	DRAWN BY S. BELANGER	DATE
CHECKED BY J. PATUSKY	DATE 12/98	BRIDGE DESIGN SUPERVISOR	DATE
PROJECT BARRE CITY		PROJECT NO. BRM 6000(13)	
BAC DRAWING NO. BLACK10/4		DATE 12/98	
BRIDGE SHEET NO. BR111		SHEET 24 OF 46	

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

POINT NUMBER	STATION	OFFSET
WP1	43+48.00	23.92' RT.
WP2	43+48.00	0.00'
WP3	43+48.00	19.57' LT.
WP4	43+43.96	20.05' LT.



NOTES:

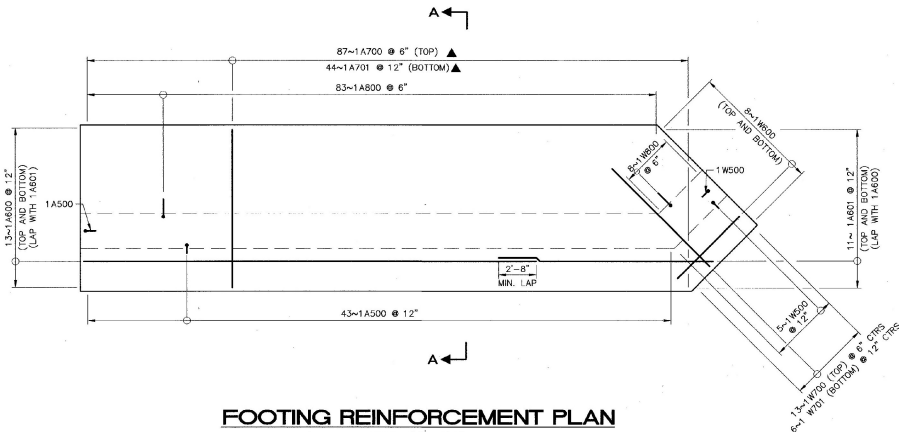
1. FOR ABUTMENT REINFORCING, SEE BRIDGE SHEET BR13.
2. FOR CONSTRUCTION JOINT DETAIL, SEE BRIDGE SHEET BR110.
3. ABUTMENTS AND WINGWALLS SHALL BE CONSTRUCTED OF CLASS "B" CONCRETE (ITEM 501.25).
4. SUBBASE OF DENSE GRADED CRUSHED STONE SHALL BE PLACED FOR THE ENTIRE LENGTH OF BOTH WINGWALLS AND THE ABUTMENTS AND SHALL BE PAID FOR UNDER ITEM 301.35.
5. THE DESIGN OF THE COFFERDAM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 1980 AND ITS LATEST REVISIONS.
6. COFFERDAMS ADJACENT TO EXISTING STRUCTURES SHALL BE SUFFICIENTLY SIZED AND BRACED TO SUPPORT THE STRUCTURE(S) THROUGH OUT CONSTRUCTION. DAMAGE TO EXISTING STRUCTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

LEGEND

- N.F. NEAR FACE
- F.F. FAR FACE
- C.J. CONSTRUCTION JOINT
- (C) CIRCLE OR D W/ NUMBER DESIGNATION

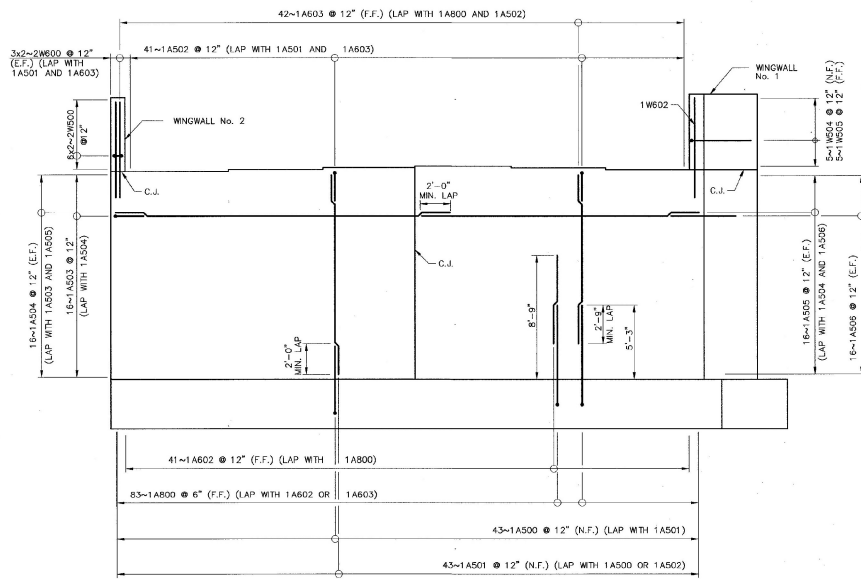
STATE OF VERMONT AGENCY OF TRANSPORTATION			
CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	LOG STA.	
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH		SURV. STA.	
ABUTMENT 1 MASONRY			
DESIGNED BY	V. DeAngelo	DRAWN BY'S	Belangar
CHECKED BY	J. Potusky	DATE	12/98
PROJECT	BARRE CITY	BRIDGE DESIGN SUPERVISOR	J. Potusky
PROJECT NO.	BRM 8000(13)	DATE	12/98
EM&C DRAWING NO.	BLACK03/4B	DATE	12/98
BRIDGE SHEET NO.	BR12	SHEET	25 OF 46

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers



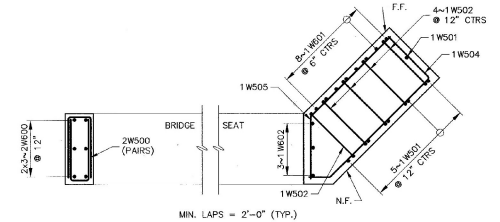
FOOTING REINFORCEMENT PLAN

SCALE: 1/4" = 1'-0"



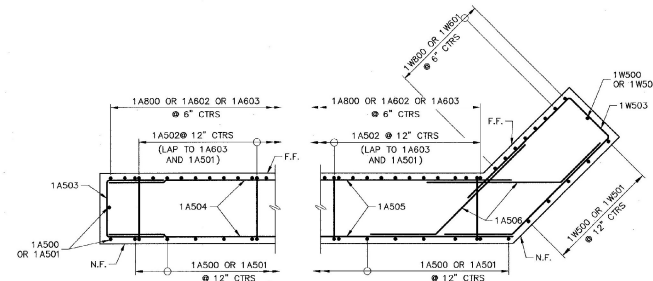
WEST ELEVATION

SCALE: 1/4" = 1'-0"



PLAN ABOVE BRIDGE SEAT

MIN. LAPS = 2'-0" (TYP.)

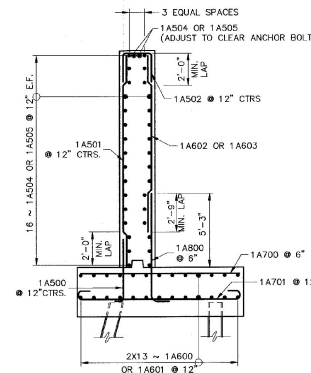


PLAN BELOW BRIDGE SEAT

MIN. LAPS = 2'-0" (TYP.)

CORNER REINFORCEMENT DETAILS

SCALE: 1/4" = 1'-0"



SECTION A-A

SCALE: 1/4" = 1'-0"

NOTE

FOR WINGWALL 1 REINFORCING, SEE BRIDGE SHEET BR116.

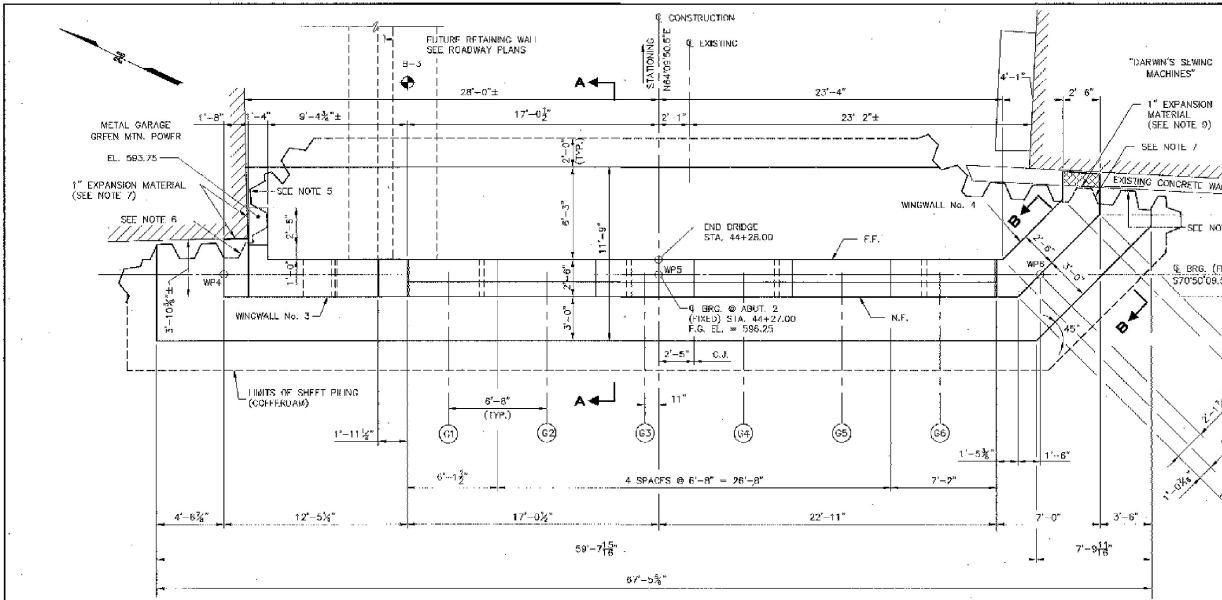
LEGEND

- N.F. NEAR FACE
- F.F. FAR FACE
- E.F. EACH FACE
- C.J. CONSTRUCTION JOINT
- ▲ CUT TO FIT IN FIELD

**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

CITY OF BARRE		BRIDGE NO. B-10
STREET NAME BLACKWELL STREET		LOG STA.
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH		
ABUTMENT 1 REINFORCING		
DESIGNED BY V. DeAngelo	DATE 12/98	DRAWN BY S. Belonger
CHECKED BY J. Patusky	DATE 12/98	BRIDGE DESIGN SUPERVISOR J. Patusky
PROJECT NO. BARRE CITY		PROJECT NO. BRM 6000(13)
B&C DRAWING NO. BLACK06/48	DATE 12/98	SHEET 26 OF 46
BRIDGE SHEET NO. BR113		

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers



PLAN
SCALE: 1/4" = 1'-0"

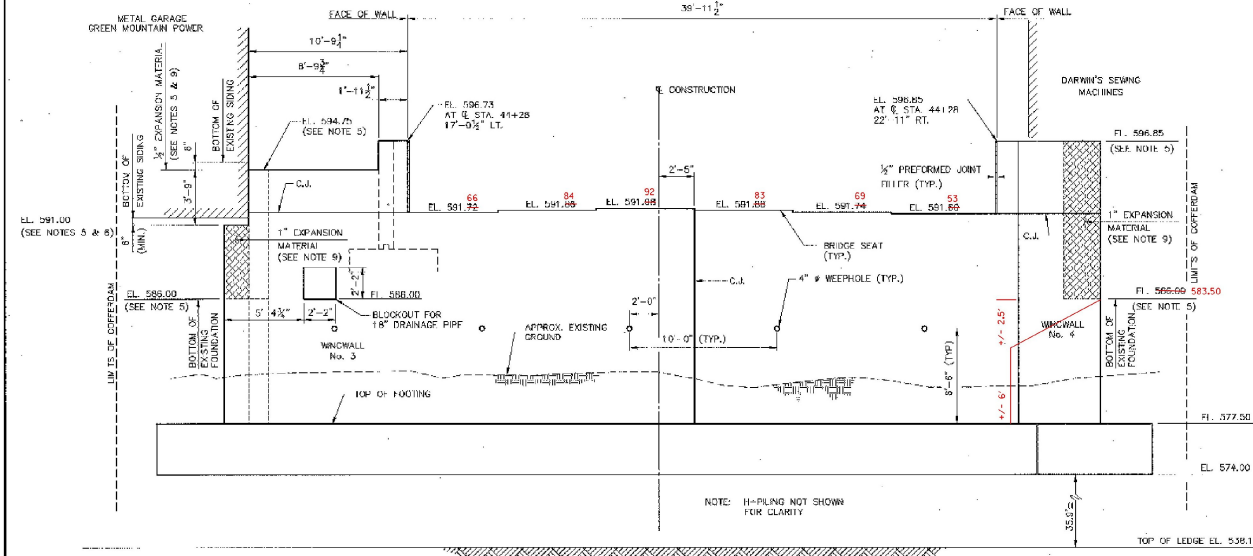
POINT NUMBER	STATION	OFFSET
WP4	44+27.00	34.00' LT.
WP5	44+27.00	0
WP6	44+27.00	31.35' RT.

NOTES:

- FOR ABUTMENT REINFORCING, SEE BRIDGE SHEET BR115.
- FOR WINDOW REINFORCING, SEE BRIDGE SHEET BR116.
- FOR CONSTRUCTION JOINT DETAIL, SEE BRIDGE SHEET BR119.
- BRIDGE SEAT ELEVATIONS SHOWN AT Q BEARING.
- THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AND DIMENSIONS ADJACENT TO EXISTING STRUCTURES PRIOR TO THE INITIATION OF WORK.
- THE CONTRACTOR SHALL LOCATE SHEET PILING ADJACENT TO EXISTING BUILDINGS, FOUNDATIONS AND/OR RETAINING WALLS AS CLOSE AS POSSIBLE AND OF SUFFICIENT DEPTH AS TO INSURE BUILDING AND COFFERDAM STABILITY THROUGHOUT THE CONSTRUCTION PERIOD. FIELD ADJUSTMENTS TO CONTRACT PLAN DIMENSIONS FOR COFFERDAMS MAY BE MADE ONLY WITH THE APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL REMOVE SHEET PILING TO THE BOTTOM OF EXISTING BUILDING FOUNDATION AS REQUIRED TO CONSTRUCT CANTILEVERED WALLS ADJACENT TO EXISTING BUILDINGS. PRECAUTIONS SHALL BE TAKEN TO TEMPORARILY SHORR POSTING STRUCTURES AS DIRECTED BY THE ENGINEER. TEMPORARY SHORING SHALL BE SUBSIDIARY TO ITEM 204.40. COFFERDAMS SHALL BE MADE ONLY WITH THE APPROVAL OF THE ENGINEER.
- ANY PORTION OF COFFERDAM REQUIRED TO BE LEFT IN PLACE DURING CONSTRUCTION OF ABUTMENT SHALL BE INCLUDED IN THE UNIT BID PRICE FOR COFFERDAM (ITEM 204.40).
- PLACE EXPANSION MATERIAL AGAINST EXISTING CONCRETE PRIOR TO PLACEMENT OF CONCRETE FOR NEW WALLS.
- SUBBASE OF DENSE GRADED CRUSHED STONE SHALL BE PLACED FOR THE ENTIRE LENGTH OF BOTH WINDOW WALLS AND THE ABUTMENTS AND SHALL BE PAID FOR UNDER ITEM 301.55.
- THE DESIGN OF THE COFFERDAM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 1090, AND ITS LATEST REVISIONS.
- COFFERDAMS ADJACENT TO EXISTING STRUCTURES SHALL BE SUFFICIENTLY SET UP AND BRACED TO SUPPORT THE STRUCTURE THROUGHOUT CONSTRUCTION. DAMAGE TO EXISTING STRUCTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SECTION A-A
SCALE: 1/4" = 1'-0"

SECTION B-B
SCALE: 1/4" = 1'-0"



EAST ELEVATION
SCALE: 1/4" = 1'-0"

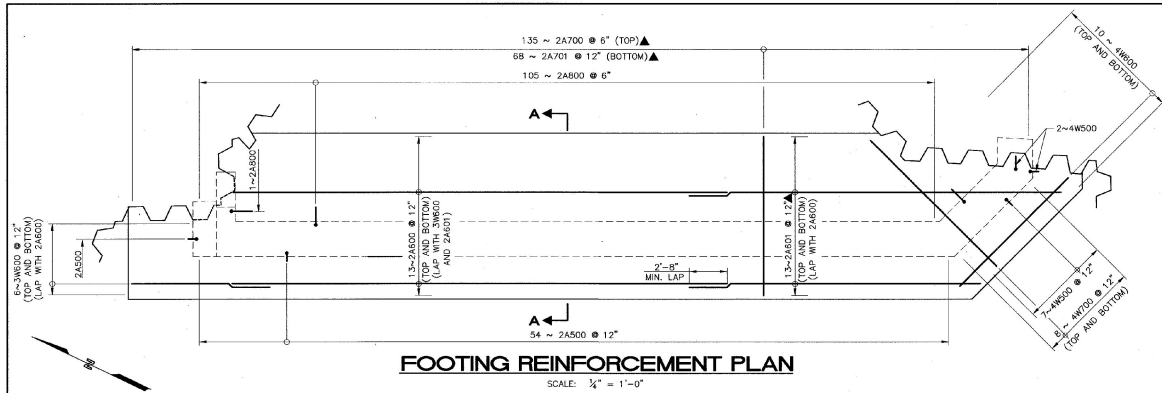
LEGEND

N.F.	NEAR FACE
F.F.	FAR FACE
C.J.	CONSTRUCTION JOINT

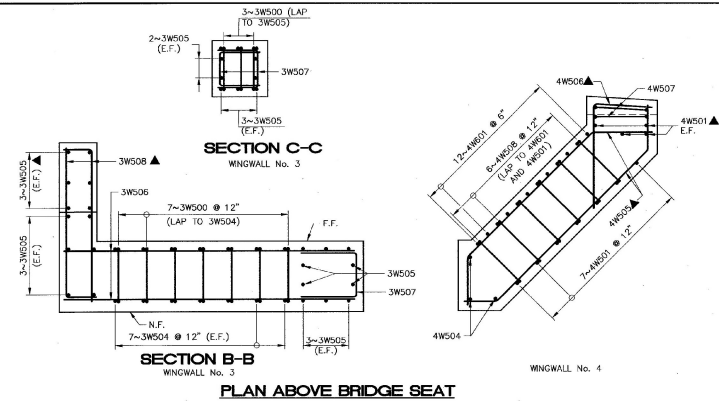
BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

STATE OF VERMONT
AGENCY OF TRANSPORTATION

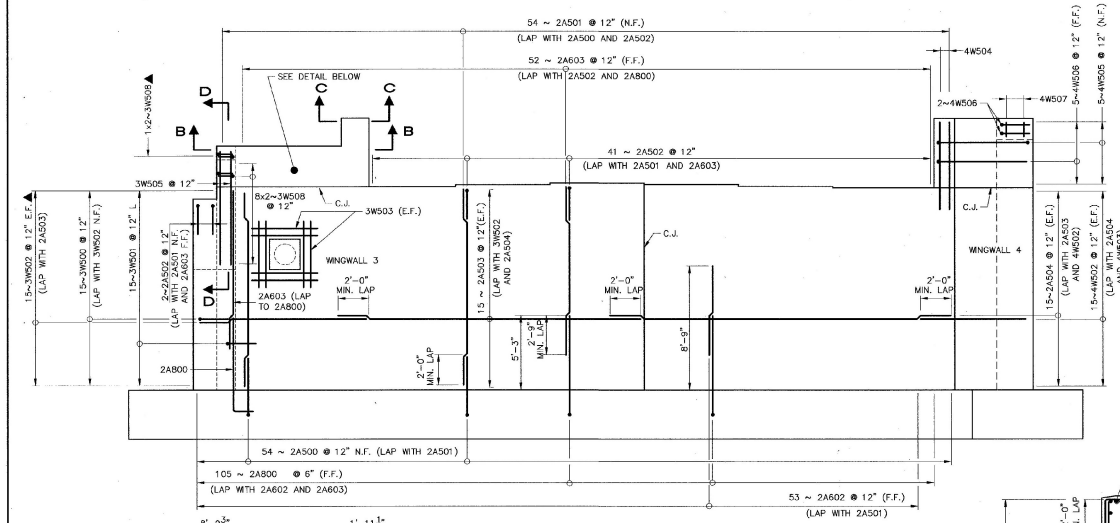
CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	LDG. STA.	
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH		ABUTMENT 2 MASONRY	
DESIGNED BY	V. DeANGELO	DRAWN BY	S. BELANGER
CHECKED BY	J. PATUSKY	DATE	12/98
BRIDGE DESK SUPERVISOR	J. PATUSKY	DATE	12/98
PROJECT	BARRE CITY	PROJECT NO.	BRM 5000(13)
BASIC DRAWING NO.	BLACK01/48	DATE	12/98
BRIDGE SHEET NO.	BR114	SHEET	27 OF 46



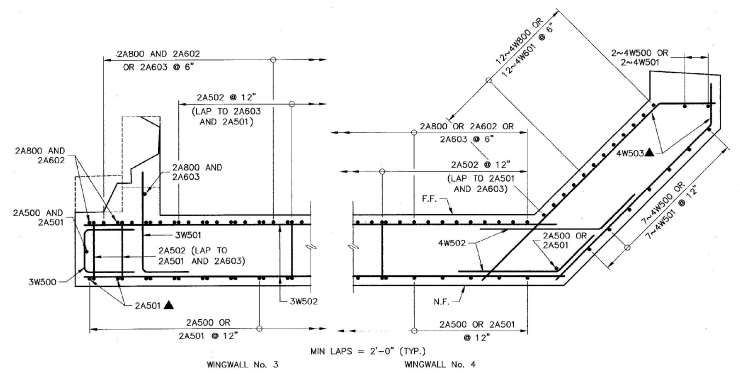
FOOTING REINFORCEMENT PLAN
SCALE: 1/4" = 1'-0"

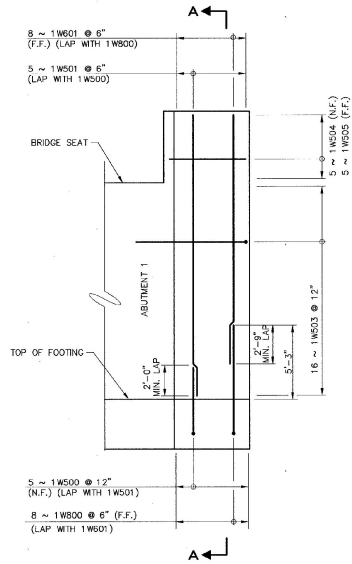


SECTION C-C
WINGWALL No. 3
SECTION B-B
WINGWALL No. 3
PLAN ABOVE BRIDGE SEAT
WINGWALL No. 4



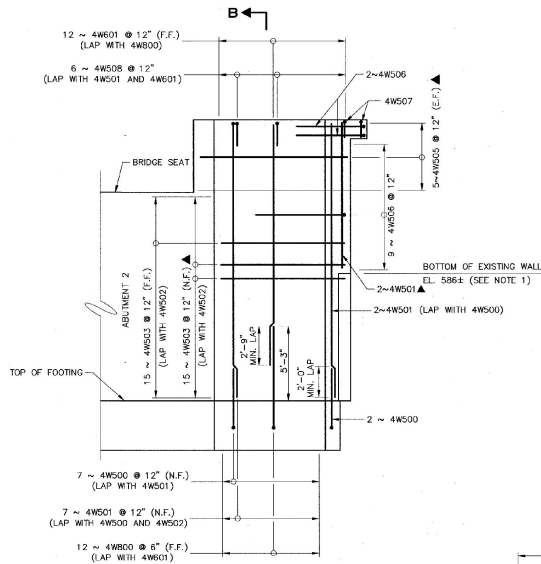
EAST ELEVATION
SCALE: 1/4" = 1'-0"





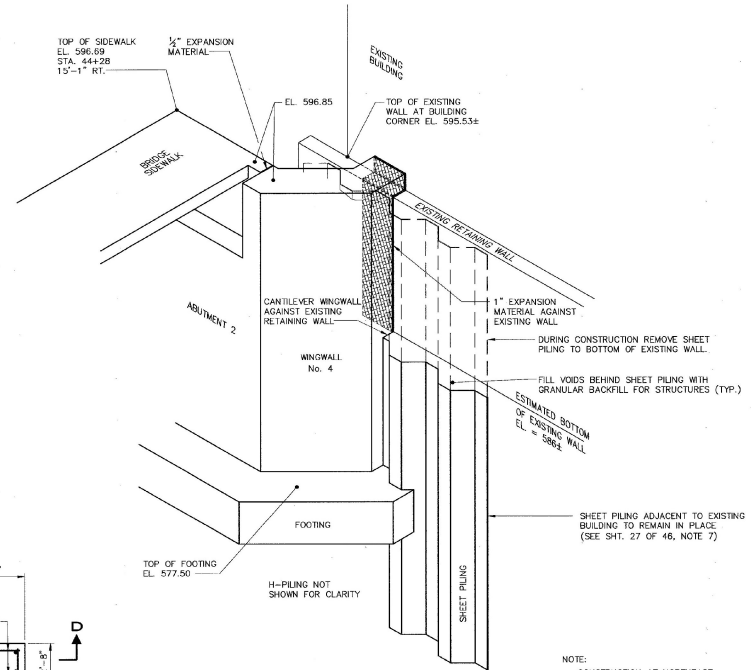
**WEST ELEVATION
WINGWALL No. 1**

SCALE: 1/4" = 1'-0"



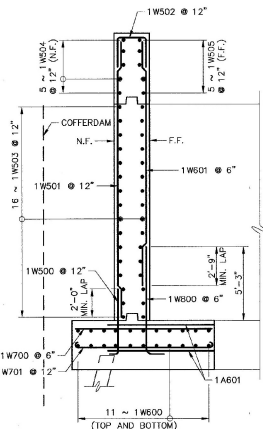
**EAST ELEVATION
WINGWALL No. 4**

SCALE: 1/4" = 1'-0"



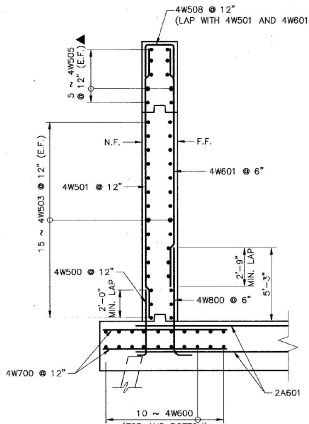
SOUTHEAST CORNER DETAIL

NOTE:
CONSTRUCTION AT NORTHEAST CORNER SIMILAR.



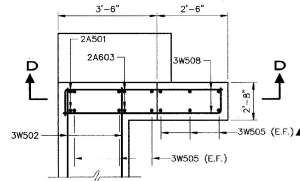
SECTION A-A

SCALE: 1/4" = 1'-0"



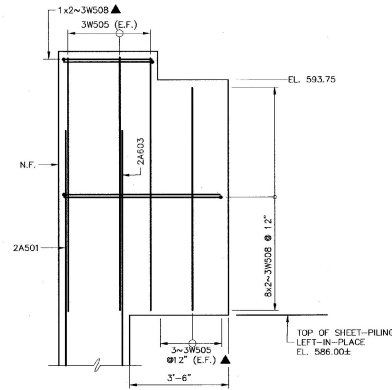
SECTION B-B

SCALE: 1/4" = 1'-0"



**SECTION D-D
WINGWALL No. 3**

SCALE: 1/2" = 1'-0"



NOTE

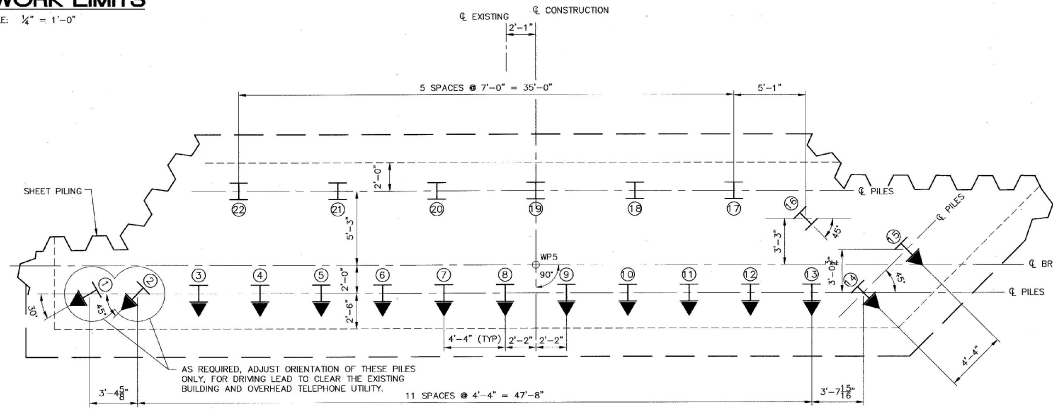
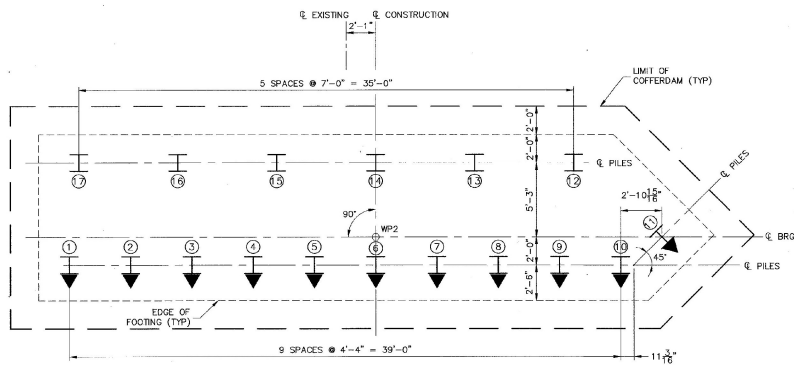
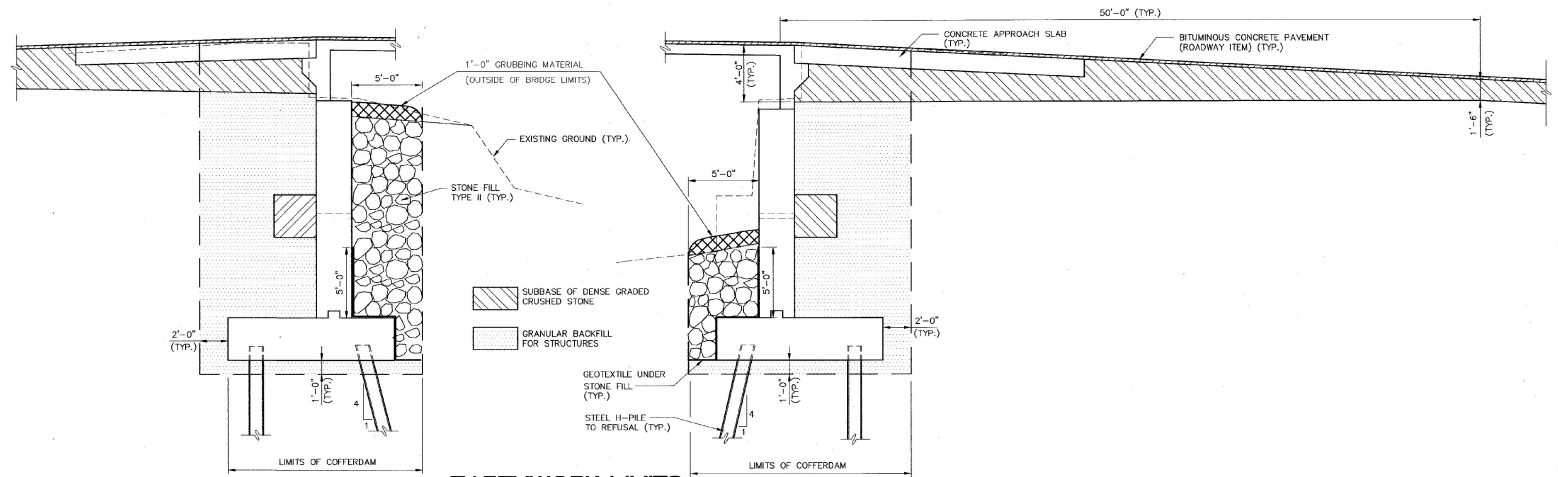
1. THE CONTRACTOR SHALL VERIFY ALL ELEVATIONS AND DIMENSIONS ADJACENT TO EXISTING STRUCTURES PRIOR TO THE INITIATION OF WORK.

LEGEND

- N.F. NEAR FACE
- F.F. FAR FACE
- E.F. EACH FACE
- ▲ CUT TO FIT IN FIELD

STATE OF VERMONT AGENCY OF TRANSPORTATION	
CITY OF BARRE	BRIDGE NO. B-10
STREET NAME BLACKWELL STREET	LOC. STA.
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH WINGWALL REINFORCING and DETAILS	
DESIGNED BY V. DeAngelo	DRAWN BY S. Belonger
CHECKED BY J. Patusky	DATE 12/98
BRIDGE DESIGN SUPERVISOR J. Patusky	DATE 12/98
PROJECT BARRE CITY	PROJECT NO. BRM 6000(13)
B&C DRAWING NO. BLACK08/48	DATE 12/98
BRIDGE SHEET NO. BR116	SHEET 29 OF 46

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers



PILE LAYOUT FOR ABUTMENT 1

HP 14x89 PILE AASHTO M270 (GRADE 36 STEEL) (TYP.)
▼ INDICATES BATTERED PILE 1:4

PILE LAYOUT FOR ABUTMENT 2

HP 14x89 PILE AASHTO M270 (GRADE 36 STEEL) (TYP.)
▼ INDICATES BATTERED PILE 1:4

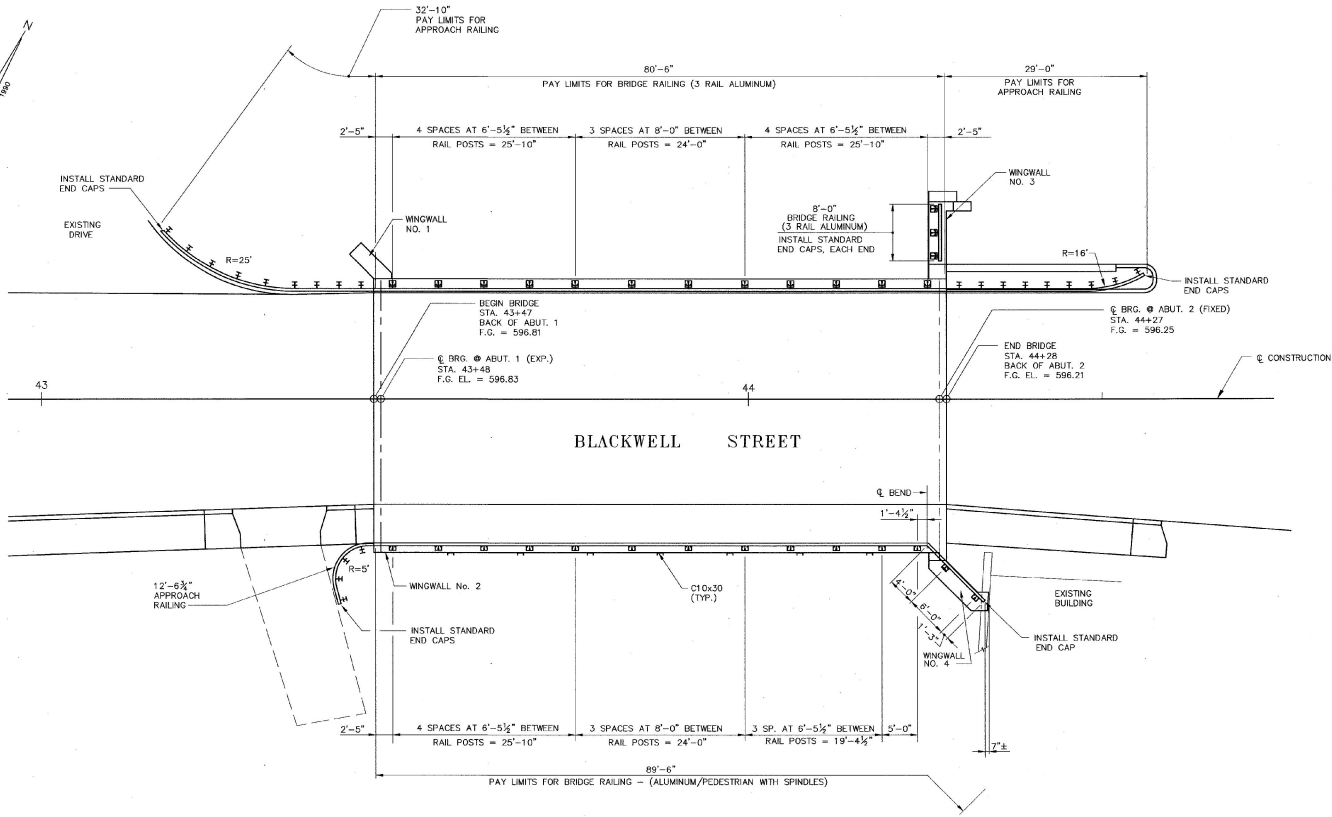
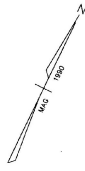
NOTES:

- SEE BRIDGE SHEET BR119 FOR PILE SPLICE DETAILS.
- THE DRIVING POINT OF ALL PILING SHALL BE REINFORCED IN ACCORDANCE WITH SECTION 505.04(d).
- COFFERDAM LIMITS MAY BE ADJUSTED BY THE CONTRACTOR.
- FOR PURPOSES OF ESTIMATING EARTHWORK QUANTITIES, THE LIMITS OF COFFERDAM HAVE BEEN ASSUMED TO BE 2'-0" OUTSIDE THE PERIMETER OF THE FOOTING.
- IF A COFFERDAM IS CONSTRUCTED WHICH IS MORE THAN THE INDICATED MINIMUM DISTANCE OUTSIDE THE FOOTING LIMITS, PAYMENT FOR ALL UNCLASSIFIED CHANNEL EXCAVATION INCLUDING THAT PORTION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE MINIMUM COFFERDAM LIMITS SHOWN WILL BE MADE AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION.

POINT NUMBER	STATION	OFFSET
WP2	43+48.00	0
WP5	44+27.00	0

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

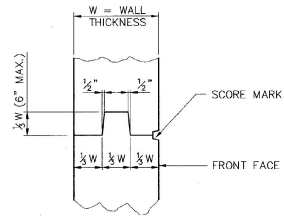
STATE OF VERMONT AGENCY OF TRANSPORTATION	
CITY OF BARRE	BRIDGE NO. B-10
STREET NAME BLACKWELL STREET	LOG STA.
BLACKWELL STREET BRIDGE OVER STEVENS BRANCH	
ABUTMENT DETAILS	
DESIGNED BY V. DeAngelo	DRAWN BY S. Belonger
CHECKED BY J. Patusky	DATE 12/98
PROJECT NO. 6000(13)	
BARRE CITY	DATE 12/98
B&C DRAWING NO. BLACK02/48	DATE 12/98
BRIDGE SHEET NO. BR117	SHEET 30 OF 46



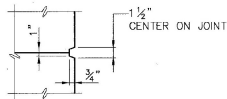
**STATE OF VERMONT
AGENCY OF TRANSPORTATION**

CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	LOG STA.	
BLACKWELL STREET OVER STEVENS BRANCH		SURV. STA.	
BRIDGE RAILING LAYOUT			
DESIGNED BY	V. DeAngelo	DRAWN BY	S. Belonger
CHECKED BY	J. Patusky	DATE	12/98
		BRIDGE DESIGN SUPERVISOR	J. Patusky
		DATE	12/98
PROJECT	BARRE CITY	PROJECT NO.	BRM 6000 (13)
BA&C DRAWING NO.	BLACK11/96	DATE	12/98
BRIDGE SHEET NO.	BR118	SHEET	31 OF 46

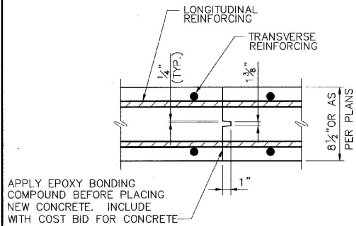
BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers



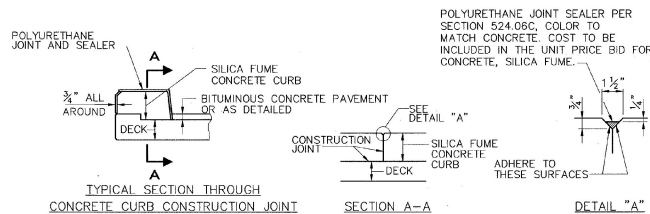
TYPICAL CONCRETE CONSTRUCTION JOINT



SCORE MARK DETAIL



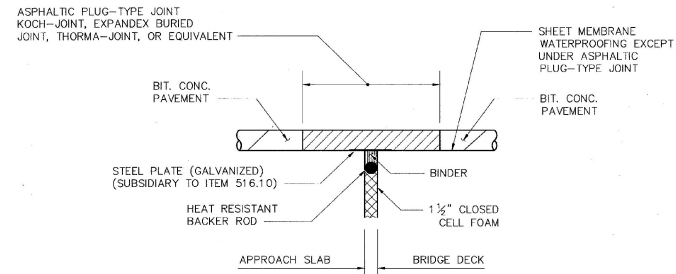
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAIL



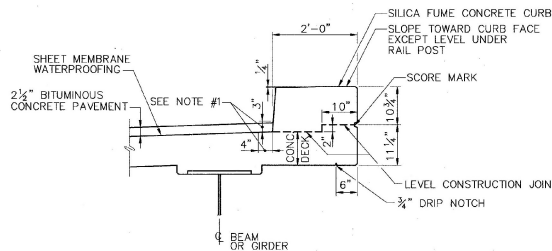
CURB JOINT DETAILS

NOTES

- CONSTRUCTION JOINTS FOR 2'-0" CURB SHALL BE SPACED MAXIMUM 20'-0" CENTER TO CENTER AND CONSTRUCTION JOINTS FOR THE SIDEWALK SHALL BE SPACED MAXIMUM 10'-0" CENTER TO CENTER AND SHALL BE 1'-6" MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS DELAY BETWEEN ADJACENT FOURS.
- LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS.



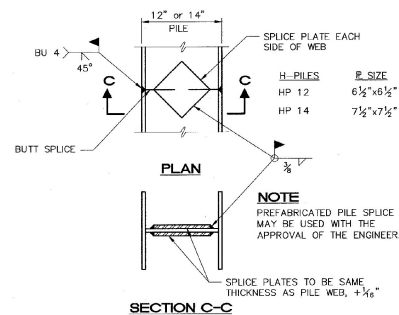
ASPHALT PLUG TYPE JOINT DETAIL



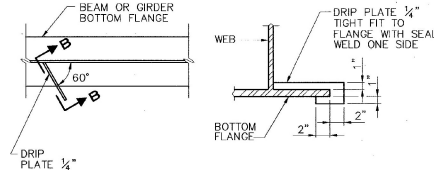
TYPICAL 2'-0" CURB SECTION (SHOWN) (SIDEWALK SECTION SIMILAR)

NOTES

- INDICATES AREA ALONG DECK AND UP FACE OF CURB OR SIDEWALK FOR PLACEMENT OF 2 COATS OF POLYURETHANE MEMBRANE. SEE SPEC. 519.05 (B)
- POLYURETHANE MEMBRANE AND BLAST CLEANING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR SHEET MEMBRANE WATERPROOFING.
- SHEET MEMBRANE WATERPROOFING SHALL EXTEND TO FACE OF CURB AS SHOWN ABOVE, OR SIDEWALK.
- BLAST CLEAN 3'-0" FROM FACE OF CURB OR SIDEWALK AND 3" UP CURB OR SIDEWALK FACE PRIOR TO PLACING MEMBRANE.



DETAILS OF PILE SPLICE

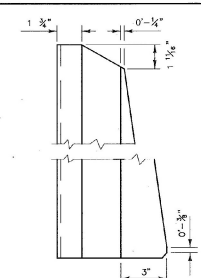


DRIP PLATE DETAILS

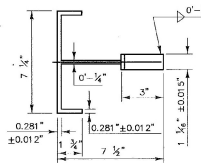
STATE OF VERMONT AGENCY OF TRANSPORTATION

CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	LOG STA.	
		SURV. STA.	
BLACKWELL STREET OVER STEVENS BRANCH			
STANDARD BRIDGE DETAILS			
DESIGNED BY	J. Potusky	DRAWN BY	S. Belonger
CHECKED BY	L. Keefe	DATE	9/95
		BRIDGE DESIGN SUPERVISOR	J. Potusky
		DATE	12/98
PROJECT	BARRE CITY	PROJECT NO.	BRM 6000(13)
B&C DRAWING NO.	BLACK07/24	DATE	12/98
BRIDGE SHEET NO.	BR119	SHEET	32 OF 46

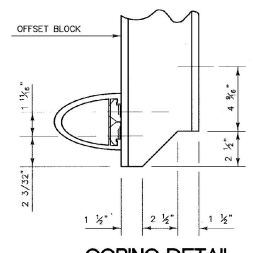
BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers



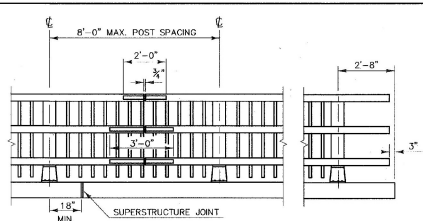
POST SIDE VIEW



POST PLAN VIEW



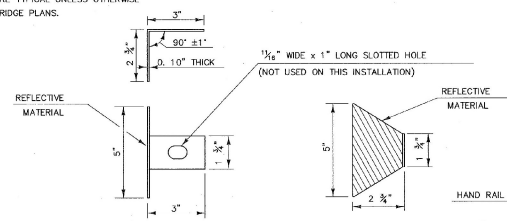
COPING DETAIL



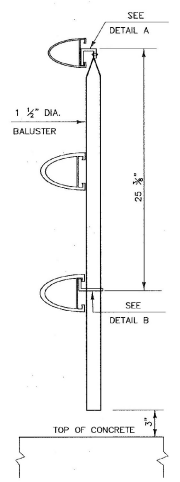
FRONT ELEVATION OF THREE RAIL WITH SPINDLES

NOTE: RAIL POSTS ARE TO BE SET NORMAL TO GRADE UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS. ALL DIMENSIONS ARE TYPICAL UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS.

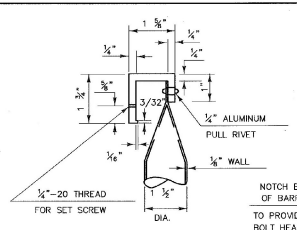
* THIS REFLECTORIZED ALUMINUM DELINEATOR IS TO BE ERRECTED EVERY 30 FEET (OR CLOSEST POST) WITH 2 NO. 8 X 3/4" SELF-TAPPING SCREWS. DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052-H32. REFLECTIVE MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER. AMBER IS TO BE INSTALLED ON THE DRIVER'S LEFT AND SILVER ON THEIR RIGHT. PAYMENT SHALL BE SUBSIDIARY TO ALL OTHER ITEMS.



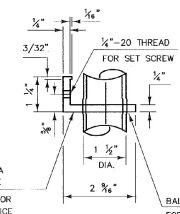
REFLECTOR DETAILS



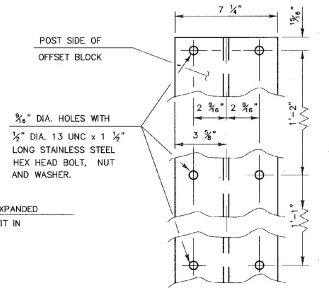
SECTION AA



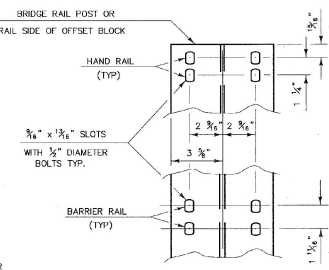
DETAIL A



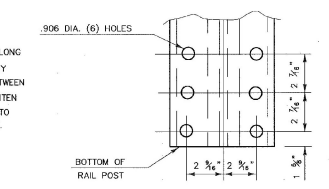
DETAIL B



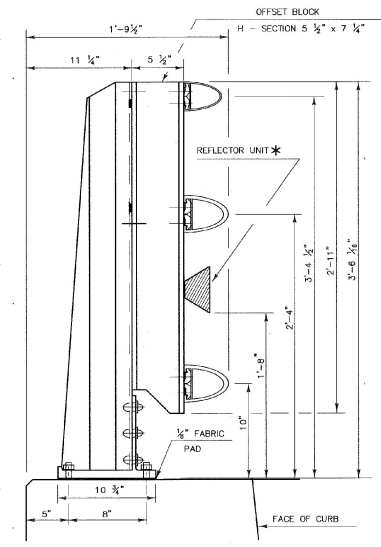
OFFSET BLOCK CONNECTION



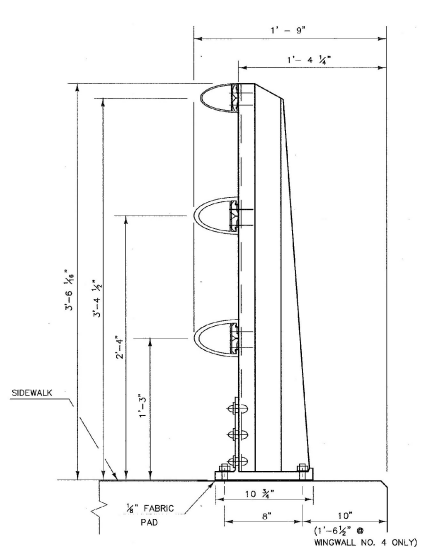
RAIL CONNECTION



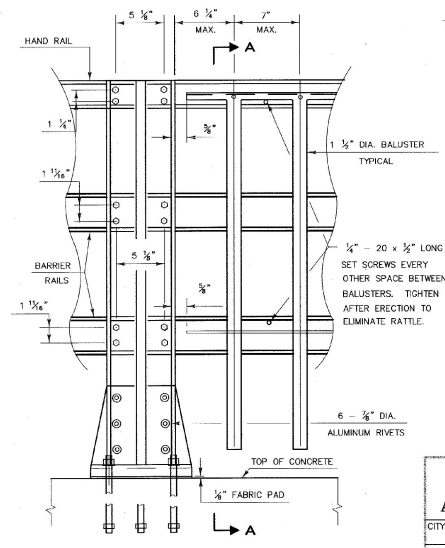
POST BASE BOLT HOLE DETAILS



SIDE ELEVATION OF THREE RAIL TO BE USED ON CURB SIDE



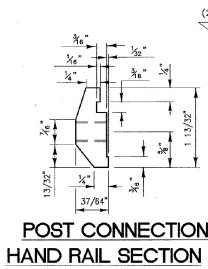
SIDE ELEVATION OF THREE RAIL TO BE USED ON SIDEWALK SIDE



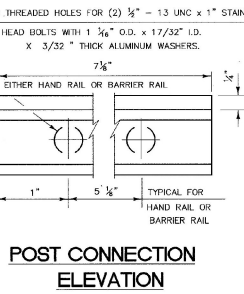
OUTSIDE ELEVATION OF THREE RAIL POST & SPINDLES

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

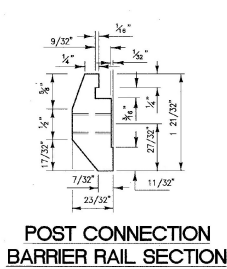
STATE OF VERMONT AGENCY OF TRANSPORTATION			
CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	LOG STA.	
DESIGNED BY	J. Patusky	DRAWN BY	S. Belanger
CHECKED BY	V. DeAngelo	BRIDGE DESIGN SUPERVISOR	
DATE	11/98	DATE	1/98
PROJECT	BARRE CITY	PROJECT NO.	BRM 6000(13)
BAC&C DRAWING NO.	BLACK14/1	DATE	12/98
BRIDGE SHEET NO.	BR121	SHEET	34 OF 46



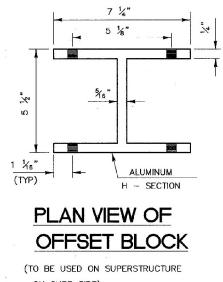
**POST CONNECTION
HAND RAIL SECTION**



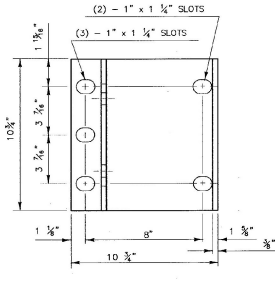
**POST CONNECTION
ELEVATION**



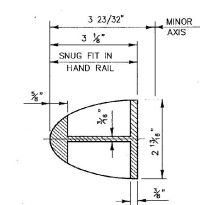
**POST CONNECTION
BARRIER RAIL SECTION**



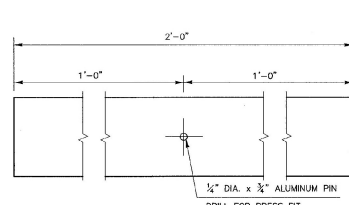
**PLAN VIEW OF
OFFSET BLOCK**
(TO BE USED ON SUPERSTRUCTURE
ON CURB SIDE)



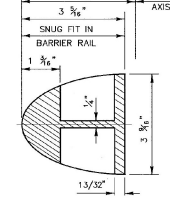
**POST BASE
PLAN**



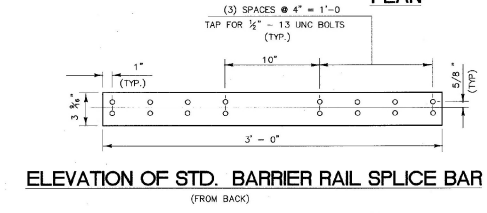
**HAND RAIL
SPLICE SECTION**



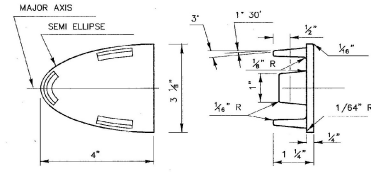
**ELEVATION OF
HAND RAIL SPLICE BAR**



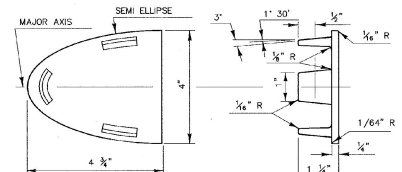
**BARRIER RAIL
SPLICE SECTION**



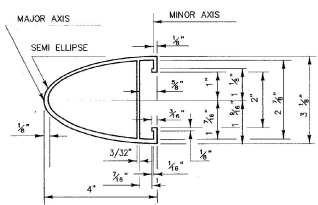
**ELEVATION OF STD. BARRIER RAIL SPLICE BAR
(FROM BACK)**



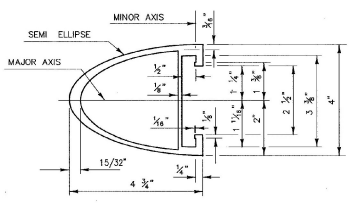
HAND RAIL END CAP



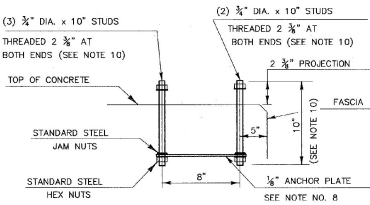
BARRIER RAIL END CAP



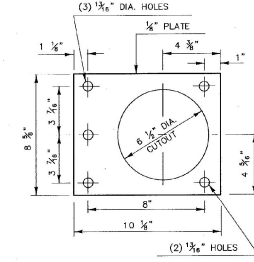
HAND RAIL SECTION



BARRIER RAIL SECTION



POST ANCHOR ASSEMBLY



ANCHOR PLATE

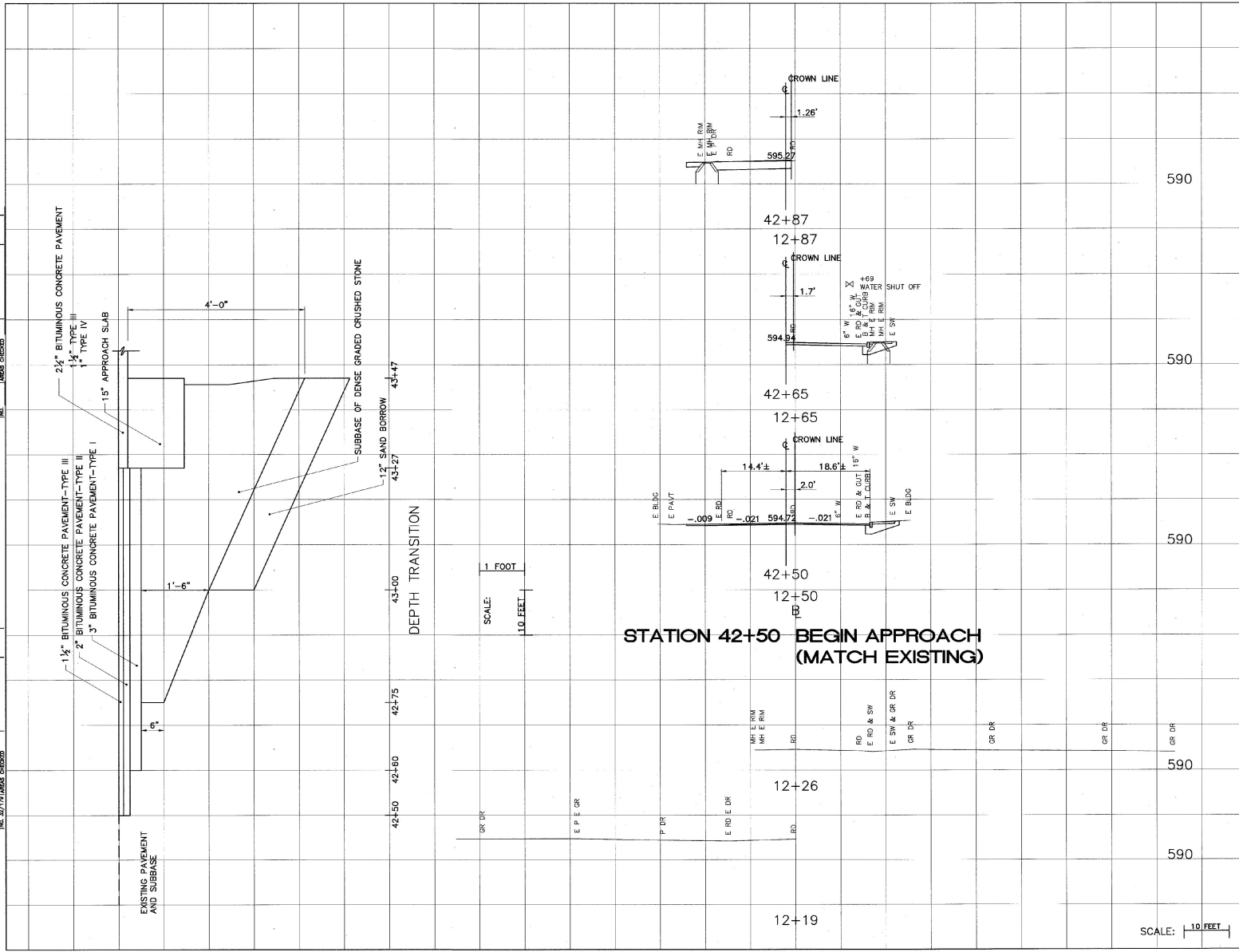
- NOTES:**
- ANCHOR BOLTS, WASHERS, AND HEAVY HEX NUTS MAY BE ANY OF THE FOLLOWING:
 - ASTM A449 GALVANIZED, OR
 - AASHTO M164 (ASTM A325) GALVANIZED
 - BOLTS AND WASHERS OF STAINLESS STEEL ASTM A276, TYPE 304 (MINIMUM ULTIMATE STRENGTH OF 100,000 PSI) WITH STAINLESS STEEL NUTS OF ASTM A194, GRADE 8A.
 - ALUMINUM POSTS, POST BASES, SPLICE BARS, CONNECTION BARS, RAILS AND BALUSTER FRAMES SHALL CONFORM TO ASTM B221 ALLOY 6061-T6 OR ALLOY 6351-T5. MINIMUM ALLOWABLE STRESS $F_y = 35,000$ PSI.
 - ALUMINUM BALUSTER TUBES SHALL CONFORM TO ASTM B210 ALLOY 6061-T5 OR 6063-T5.
 - ALUMINUM RAIL END CAPS SHALL CONFORM TO ASTM B26 ALLOY 356-T6.
 - THE POST, RAIL, AND OFFSET BLOCK CONNECTION BOLTS SHALL BE EITHER ASTM A193 OR ASTM A320. EITHER ONE SHALL BE CLASS 1, BB GRADE AISI 304 WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI. NUTS FOR EITHER OF THE ABOVE BOLTS SHALL BE ASTM A194, GRADE 8, STAINLESS STEEL WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI.
 - SET SCREWS FOR ATTACHING BALUSTERS TO RAILING SHALL BE ASTM F880, TYPE 303 MATERIAL.
 - RVETS SHALL BE COLD DRIVEN HIGH BUTTON HEAD "CONE POINT", CONFORMING TO ASTM B316 ALLOY 6061-T6.
 - THE ANCHOR PLATE FOR THE POST ANCHOR ASSEMBLY SHALL BE ASTM A36 STRUCTURAL STEEL.
 - WELDING SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 506.10 USING THE GMAW-INERT GAS PROCESS AND AWS ER 5356 ELECTRODE WIRE.
 - UNLESS OTHERWISE SPECIFIED, ANCHOR BOLTS SHALL BE CAST INTO THE CONCRETE AS DETAILED.
 - WHENEVER FEASIBLE BARRIER RAIL AND HAND RAIL SECTIONS, SHALL BE FULL LENGTH SECTIONS (40'+) AND WHEN POSSIBLE SHALL BE ATTACHED TO THREE POSTS. RAILS SHALL BE SPLICED AT EACH JOINT AND INTERMITTENTLY AS REQUIRED. SPLICES SHALL OCCUR WITHIN THE SAME PANEL.
 - ENDS OF RAILS SHALL BE CUT SQUARE AND GROUND FREE OF BURRS OR RAGGED EDGES. EXPOSED ENDS SHALL BE CAPPED.
 - THE CONCRETE CONTACT SURFACE AT THE POST BASE SHALL BE BUSH HAMMERED AND/OR SHIMMED AS REQUIRED FOR PROPER POST ALIGNMENT. POST HEIGHT ADJUSTMENTS LESS THAN 1/4" SHALL BE WITH 1/16" AND 1/8" SHIMS. CORRECTIONS EXCEEDING 1/4" SHALL BE WITH EPOXY MORTAR CONFORMING WITH SECTION 530. FABRIC BEARING PADS AND ANY REQUIRED SHIMS OR EPOXY MORTAR ARE SUBSIDIARY TO THE UNIT PRICE BID FOR THE RAILING.
 - SHIMS AND 1/8" FABRIC BEARING PADS SHALL BE 10 3/4" SQUARE WITH SLOTTED HOLES 3/16" AND LOCATED THE SAME AS THE POST BASE DETAIL. FABRIC BEARING PADS SHALL CONFORM TO SUBSECTION 731.01 OR 731.02. SHIM MATERIAL SHALL BE ASTM B 209 ALLOY 1100-O.
 - EXTRUDED SECTIONS ARE DETAILED TO COMPLY WITH CURRENT AASHTO-AGC-ARBA STANDARDS. MINOR VARIATIONS OF THE DETAILS SHOWN MAY BE CONSIDERED PROVIDING THEY DO NOT REDUCE THE STRENGTH CAPACITY OF THE RAIL SYSTEM.
 - ALUMINUM WASHERS SHALL BE ASTM B209 ALLOY A6428-24-T4.

STATE OF VERMONT AGENCY OF TRANSPORTATION			
CITY OF	BARRE	BRIDGE NO.	B-10
STREET NAME	BLACKWELL STREET	LOG STA.	
		SURV. STA.	
ALUMINUM BRIDGE RAILING DETAILS			
DESIGNED BY	J. Potusky	DRAWN BY	S. Belanger
CHECKED BY	V. DeAngelo	DATE	11/98
		BRIDGE DESIGN SUPERVISOR	J. Potusky
		DATE	11/98
PROJECT	BARRE CITY	PROJECT NO.	BRM 6000(13)
DATE	11/98	DATE	12/98
BRIDGE SHEET NO.	BR122	SHEET	35 OF 46

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

ORIGINAL	SCALE	DATE	BY
FILE BOOK	DATE	BY	BY
NO. 27/171	DATE	BY	BY
UNLESS CHECKED			

FINAL	SCALE	DATE	BY
FILE BOOK	DATE	BY	BY
NO. 27/171	DATE	BY	BY
UNLESS CHECKED			



SCALE: 1 FOOT
1.0 FEET

STATION 42+50 BEGIN APPROACH (MATCH EXISTING)

SCALE: 10 FEET

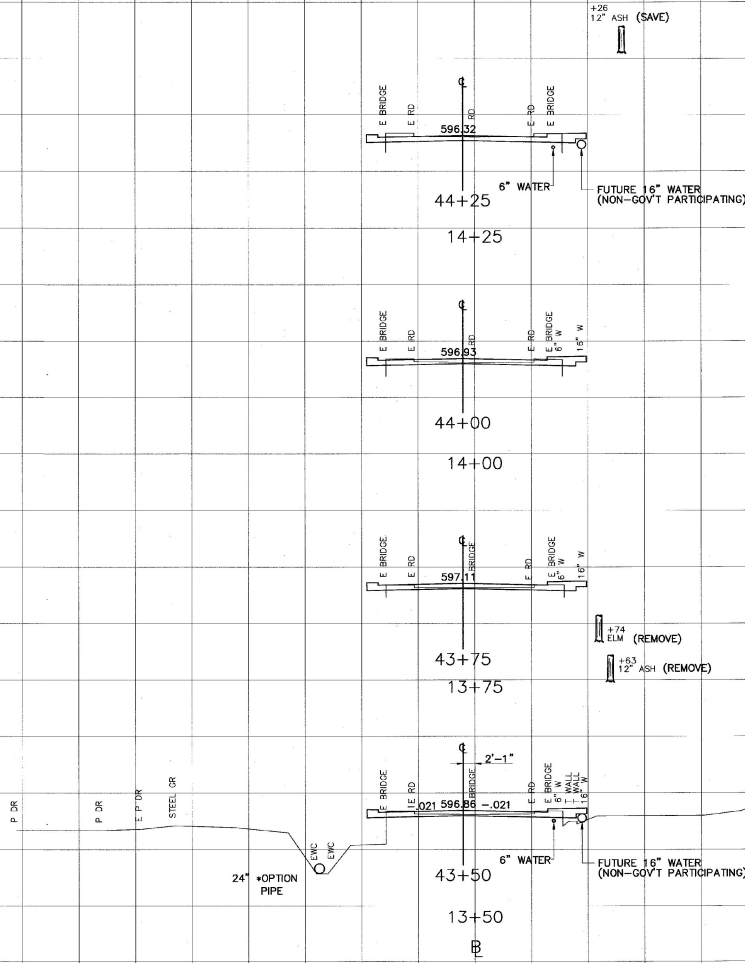
BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

FROM STA. 12+19	TO STA. 12+97
PROJECT NAME BAINL CITY MAIN	
NO. BDM 6000(13)	
SURVEYED BY REED	PLOTTED 12/08
SHEET 37 OF 46 SHEETS	B A & C NO. 920388B4 (1-10)

DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
PROJECT NO.	
SCALE	
NO.	

DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
PROJECT NO.	
SCALE	
NO.	

STATION 44+28 END BRIDGE
RESUME ROADWAY



STATION 43+47 STOP ROADWAY
BEGIN BRIDGE

SCALE: 10 FEET

OPTION PIPES

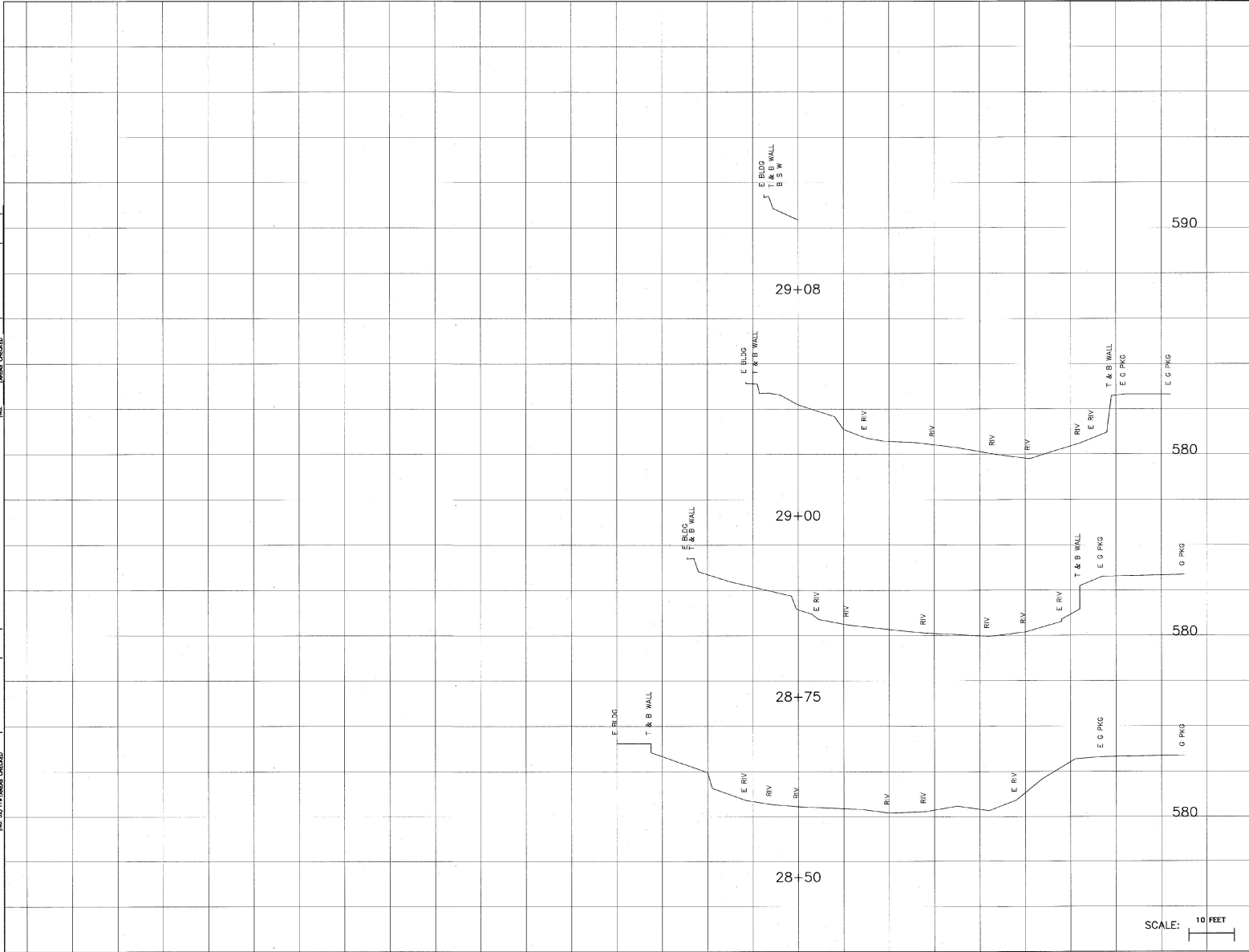
- CPEP
- CPEP (SL)
- RCP CLASS III

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

FROM STA.	33+50	TO STA.	14+25
PROJECT NAME	BARRÉ CITY MAIN		
NO.	BSM 600(13)		
SURVEYED BY	REED	FLOTTED	12/98
SHEET	39 OF 46 SHEETS	B & C NO. 520388B4 (1-10)	

FINAL	ISSUED	BY	DATE
NO.	NO.	NO.	NO.

ORIGINAL	ISSUED	BY	DATE
NO.	NO.	NO.	NO.



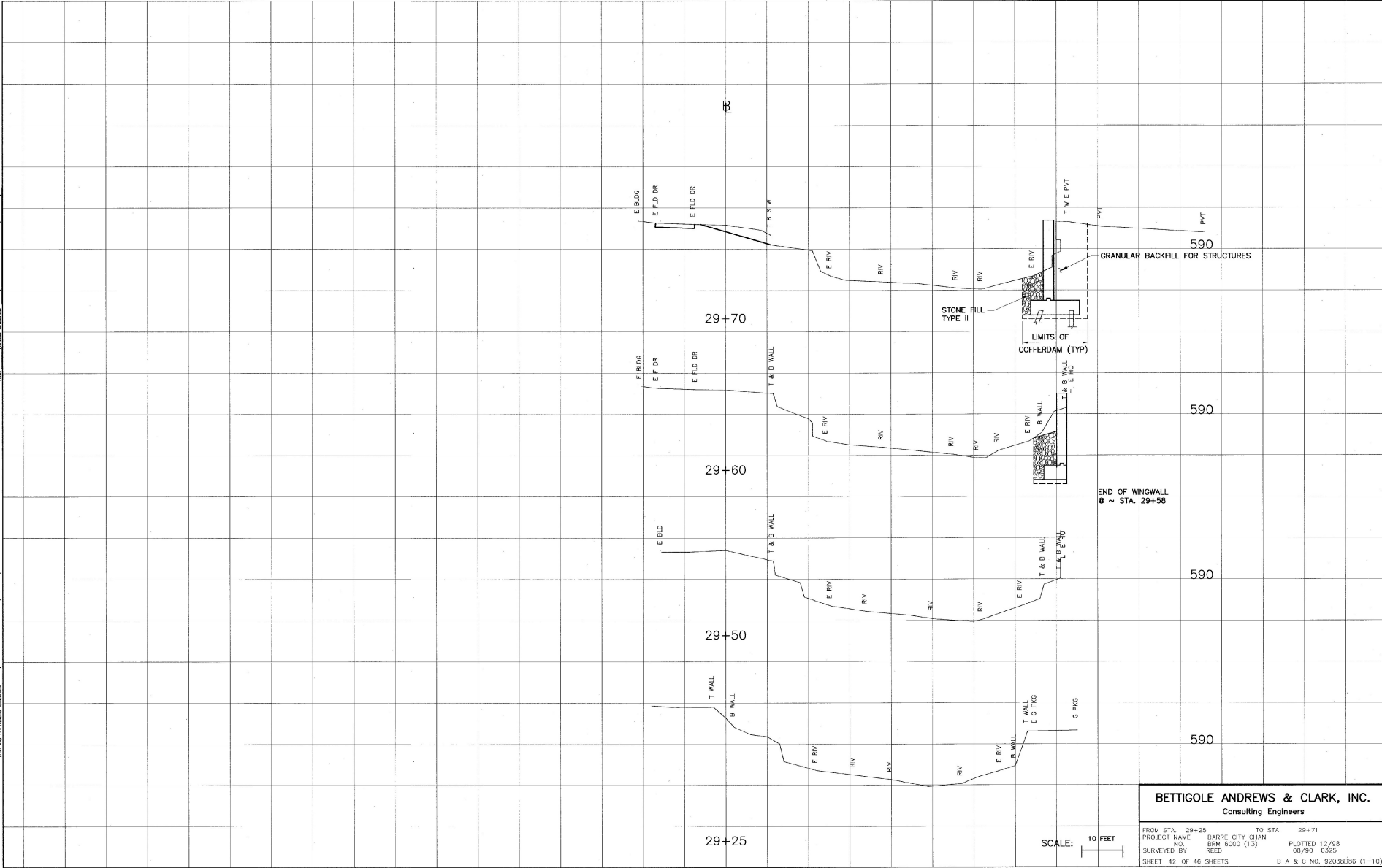
SCALE: 10 FEET

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

FROM STA.	28+50	TO STA.	29+08
PROJECT NAME	BARRE CITY CHAN		
NO.	ERM 6000 (13)	PLOTTED	12/98
SURVEYED BY	REID	DATE	08/90 0325
SHEET 41	OF 46	SHEETS	B A & C NO. 92038886 (1-10)

DESIGNED BY	DATE
CHECKED BY	DATE
IN CHARGE BY	DATE
NO.	

DESIGNED BY	DATE
CHECKED BY	DATE
IN CHARGE BY	DATE
NO.	

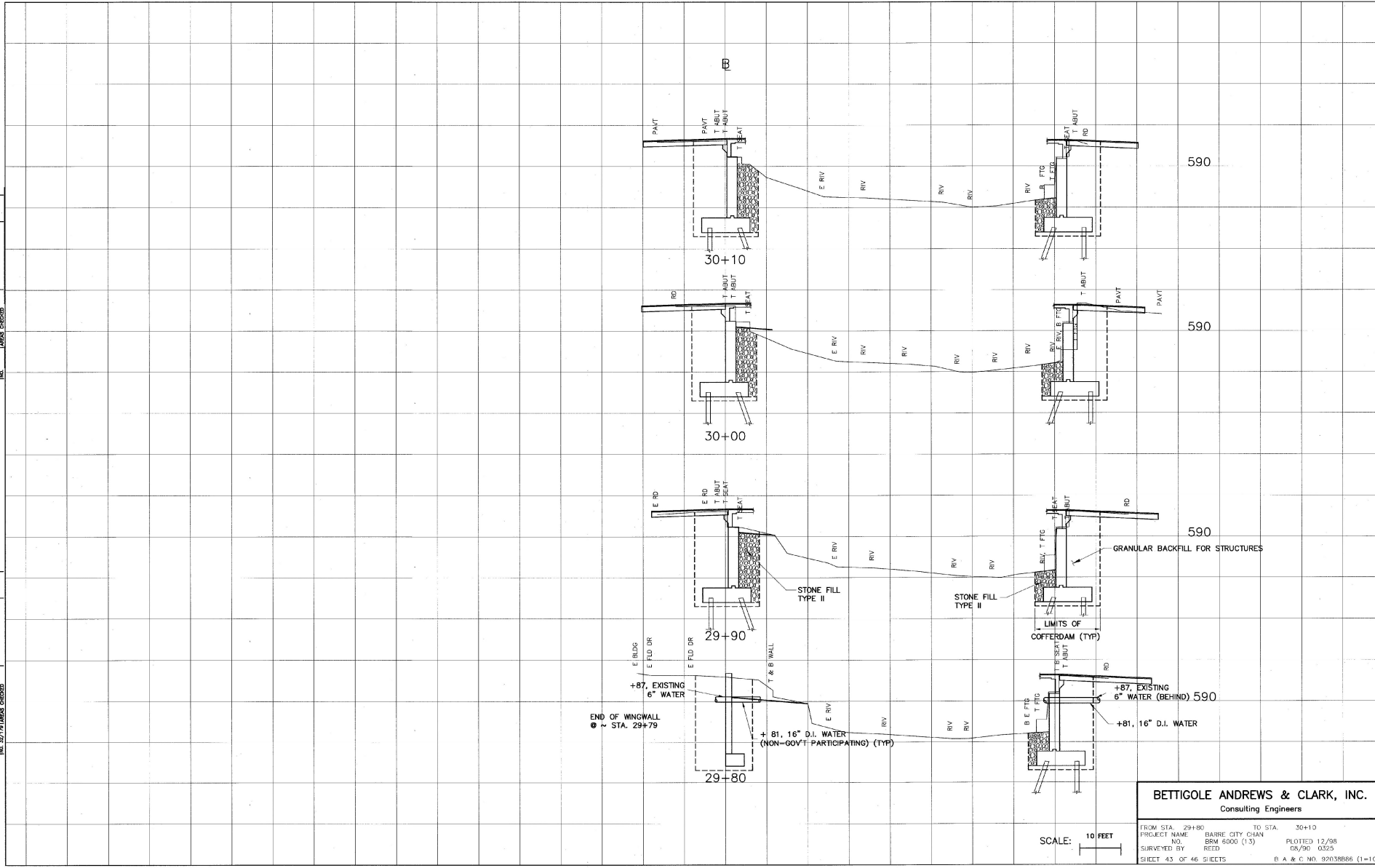


BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

FROM STA.	29+25	TO STA.	29+71
PROJECT NAME	BARRE CITY CHAN		
NO.	08/90	DATE	12/98
SURVEYED BY	REED	DATE	08/90
SHEET 42 OF 46 SHEETS		B A & C NO. 9203886 (1-10)	

DESIGNED	BY	DATE
CHECKED	BY	DATE
IN CHARGE	BY	DATE
NO.		

DESIGNED	BY	DATE
CHECKED	BY	DATE
IN CHARGE	BY	DATE
NO.		



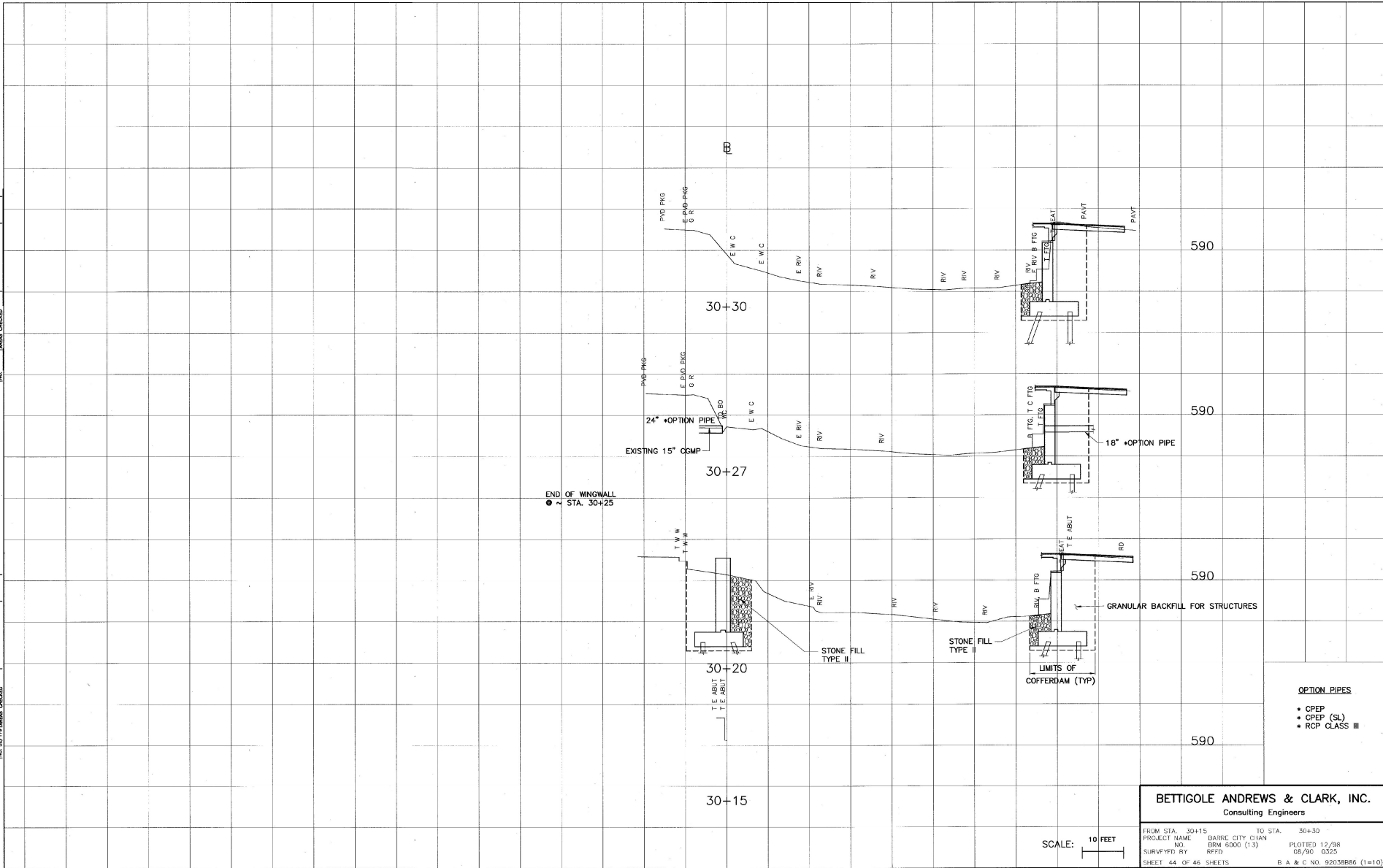
BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

FROM STA. 29+80	TO STA. 30+10
PROJECT NAME BARRE CITY CHAN	PLOTTED 12/98
NO. EDM 6000 (1.3)	DATE 08/90 0525
SURVEYED BY	RETD
SHEET 43 OF 46 SHEETS	B & C NO. 92038686 (1-10)

SCALE: 10 FEET

DATE	BY	CHKD
12/12/98	W. J. BARNETT	W. J. BARNETT
12/12/98	W. J. BARNETT	W. J. BARNETT
12/12/98	W. J. BARNETT	W. J. BARNETT
12/12/98	W. J. BARNETT	W. J. BARNETT

DATE	BY	CHKD
12/12/98	W. J. BARNETT	W. J. BARNETT
12/12/98	W. J. BARNETT	W. J. BARNETT
12/12/98	W. J. BARNETT	W. J. BARNETT
12/12/98	W. J. BARNETT	W. J. BARNETT



OPTION PIPES

- CPEP
- CPEP (SL)
- RCP CLASS III

BETTIGOLE ANDREWS & CLARK, INC.
Consulting Engineers

SCALE: 10 FEET

FROM STA. 30+15	TO STA. 30+30
PROJECT NAME	BARRE CITY CHAN
NO.	DEM 5000 (1-3)
SURVEYED BY	RFED
	08/90 0325
SHEET 44 OF 46 SHEETS	
B A & C NO. 92038B86 (1=10)	

