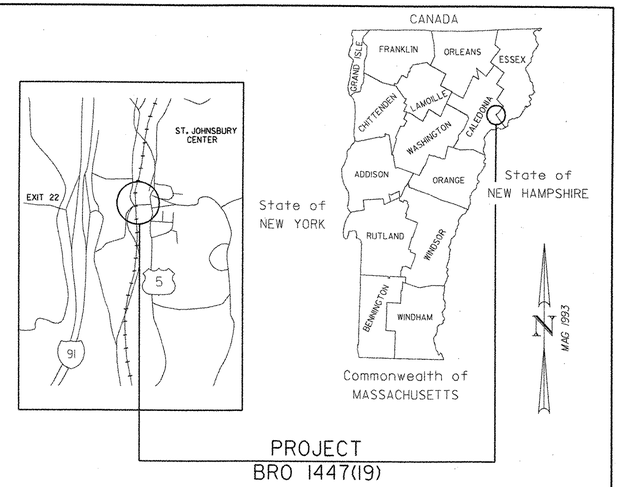
INDEX OF SHEETS
SEE SHEET 2

STATE OF VERMONT
AGENCY OF TRANSPORTATION



PROPOSED IMPROVEMENT
TOWN OF ST. JOHNSBURY
COUNTY OF CALEDONIA
T.H. 85 (CL. 3) BRIDGE NO. 29 OVER THE PASSUMPSIC RIVER

LENGTH OF ROADWAY 519 FEET
LENGTH OF BRIDGE 104 FEET
LENGTH OF PROJECT 623 FEET

BEGINNING ON T.H. 85 AT A POINT APPROXIMATELY 211 FEET WEST OF THE T.H. 85/U.S. ROUTE 5 INTERSECTION AND EXTENDING EAST ALONG T.H. 85 211 FEET. THE PROJECT ALSO BEGINS ON U.S. ROUTE 5 AT A POINT APPROXIMATELY 206 FEET SOUTH OF THE T.H. 85/U.S. ROUTE 5 INTERSECTION AND EXTENDING 348 FEET NORTH ON U.S. ROUTE 5.

WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE REPLACEMENT OF BRIDGE NO. 29 AND RELATED CHANNEL WORK, SUBBASE, COLD PLANING, RESURFACING WITH A SHIM/LEVELING COURSE, AND BITUMINOUS SURFACE COURSE, INSTALLATION OF GUARDRAIL, NEW PAVEMENT MARKINGS, NEW SIGNS AND INCIDENTAL ITEMS.

TRAFFIC DATA

2006 ADT = 820
2026 ADT = 1120
2026 DHV = 160
2026 ADTT = 5
T = <1%
V = 30 MPH

18 KIPS ESALS
2006-2026 36,000
2006-2036 99,000

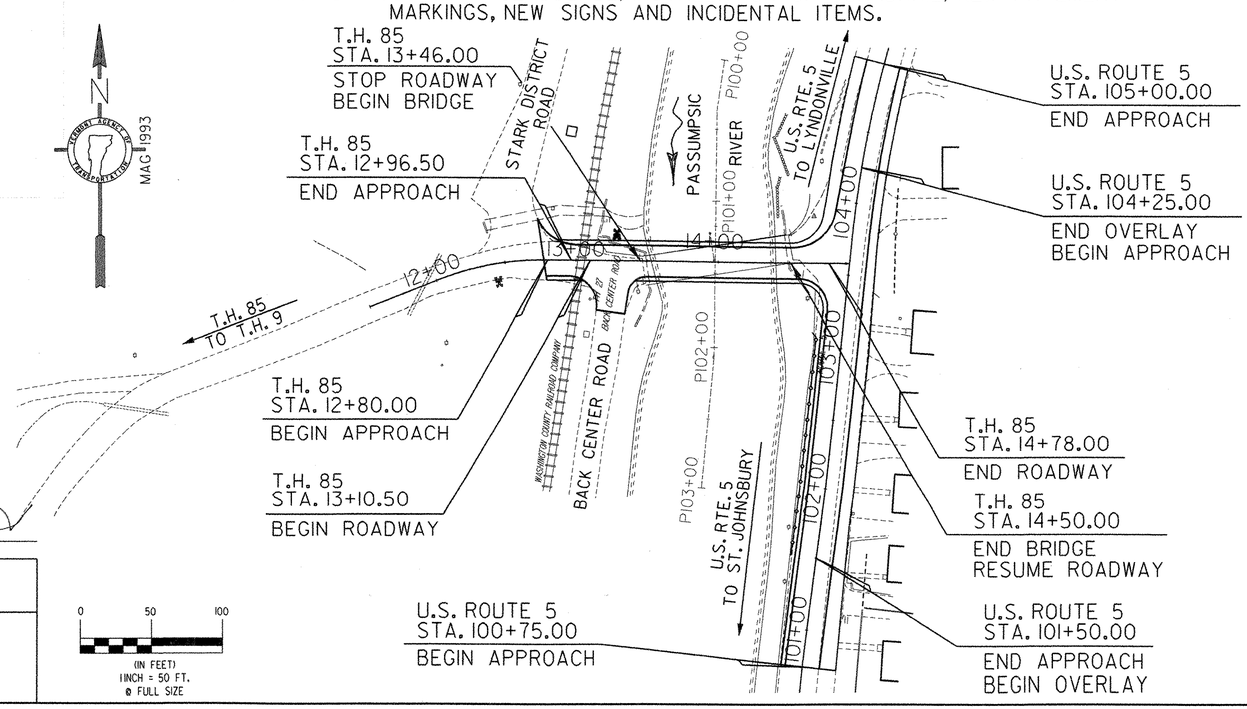
RECORD PLANS	
CONTRACTOR:	CPM CONSTRUCTORS – FREEPORT ME.
RESIDENT ENGINEER:	KEVIN MCCLURE
CONSTRUCTION BEGAN:	MAY 29, 2007
CONSTRUCTION COMPLETE:	JULY 1, 2008
RECORD PLANS BY:	K. MCCLURE & C. PIERCE

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

BY Kevin McClure RESIDENT ENGINEER

DATE 2-2-09

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.



CONVENTIONAL SYMBOLS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS (SR SR SR)
TOP OF CUT
TOE OF SLOPE

STATE OF VERMONT
J. PRESTON HALSTEAD
No. 6479
REGISTERED PROFESSIONAL ENGINEER

PLANS PREPARED BY
BY: J. Preston Halstead

SURVEYED BY : CHA
SURVEYED DATE : 1993

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 50 100
(IN FEET)
1INCH = 50 FT.
@ FULL SIZE

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINSTRATION OR THE DIRECTOR OF PROGRAM DEVELOPMENT.

CONSTRUCTION IS TO BE CARRIED ON IN ACCORDANCE WITH THESE PLANS AND THE STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, AS APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION ON JANUARY 4, 2001 FOR USE ON THIS PROJECT, INCLUDING ALL SUBSEQUENT REVISIONS AND SUCH REVISED SPECIFICATIONS AND SPECIAL PROVISIONS AS ARE INCORPORATED IN THESE PLANS.

CLOUGH HARBOUR & ASSOCIATES LLP
111 Winners Circle, PO Box 5269, Albany, NY 12205
(518) 453-4500
www.cloughharbour.com

APPROVED Richard Peterson DATE 12-21-06
DIRECTOR OF PROGRAM DEVELOPMENT

ST. JOHNSBURY
PROJECT BRO 1447(19)

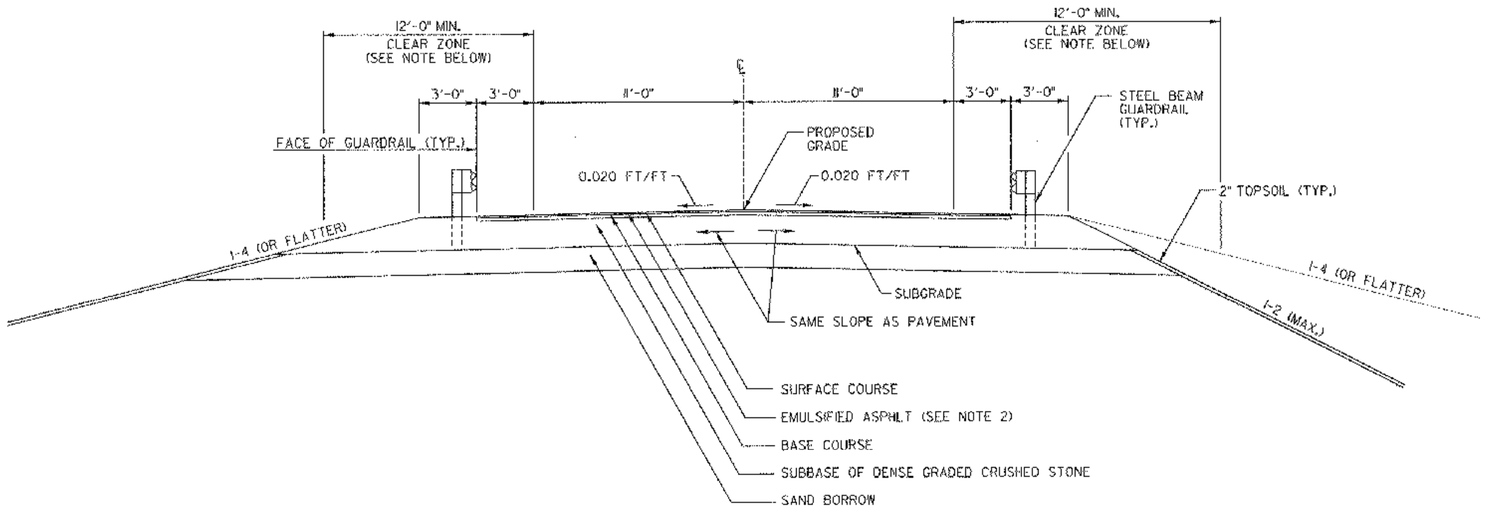
SHEET 1 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\3797cov.dgn
USER =2467

TYPICAL SECTION

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

1-1/2" BITUMINOUS CONCRETE PAVEMENT (PG 58-34), TYPE III
2" BASE COURSE, BITUMINOUS CONCRETE PAVEMENT (PG 58-34), TYPE II
18" SUBBASE OF DENSE GRADED CRUSHED STONE
15" SAND BORROW

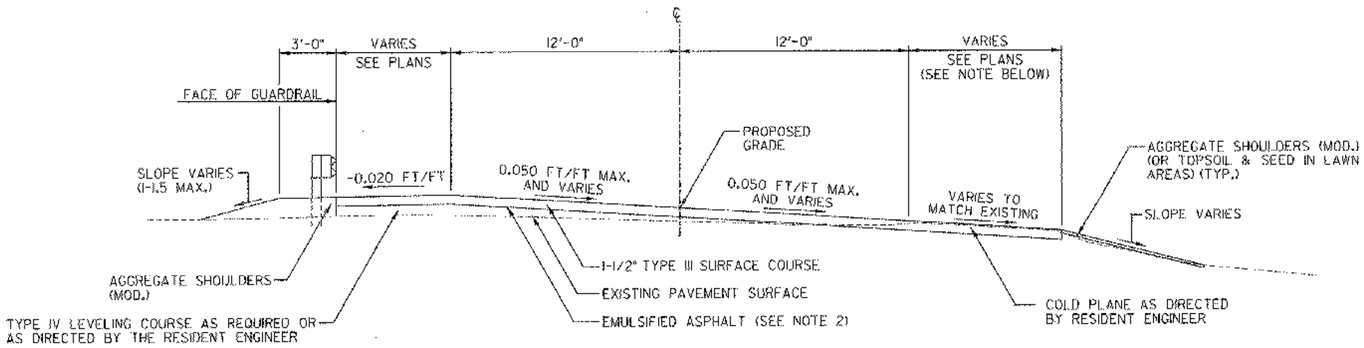


T.H. 85

NORMAL CROWN TYPICAL SECTION

N.T.S.
STA. 12+80 TO 13+46
STA. 14+50 TO 14+78

NOTE:
12'-0" CLEAR ZONE APPLIES ONLY FOR CONDITIONS WITHOUT GUARDRAIL AND SLOPES 1-4 OR FLATTER.



U.S. ROUTE 5

OVERLAY TYPICAL SECTION

N.T.S.
U.S. ROUTE 5 STA. 100+75 TO 105+00

NOTE:
THE RIGHT SHOULDER SHALL BE PAVED TO THE EXISTING OUTSIDE EDGE OF SHOULDER AS DIRECTED BY THE RESIDENT ENGINEER.

NOTES:

1. ELIMINATE TOPSOIL AND SEEDING BEHIND GUARDRAIL TO SUBGRADE CATCH POINT.
2. EMULSIFIED ASPHALT SHALL BE APPLIED ON ALL EXISTING PAVEMENT SURFACES, ON ALL COLD PLANED SURFACES AND BETWEEN ALL COURSES OF PAVEMENT AT THE RATE OF 0.025 GAL/SY OR AS DIRECTED BY THE RESIDENT ENGINEER.
3. THE WEARING COURSE SHALL BE TYPE III BITUMINOUS CONCRETE PAVEMENT. THE BASE COURSE SHALL BE TYPE II BITUMINOUS CONCRETE PAVEMENT. THE LEVELING COURSE SHALL BE TYPE IV BITUMINOUS CONCRETE PAVEMENT UNLESS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER. ALL ASPHALT CEMENT USED IN THE BITUMINOUS CONCRETE PAVEMENT SHALL BE PG 58-34.
4. THE PROPOSED GUARDRAIL SHALL BE INSTALLED IN A LOCATION THAT MAXIMIZES THE DISTANCE FROM THE CENTER OF THE ROAD TO THE FACE OF GUARDRAIL. 3.0 FT OF BACKING IS REQUIRED BEHIND THE FACE OF GUARDRAIL WITH 6.0 FT POSTS. IF THIS CANNOT BE OBTAINED, THEN 8.0 FT POSTS SHALL BE USED.
5. ALL DRIVEWAYS, MAILBOX TURNOUTS AND GRAVEL PULLOUTS SHALL RECEIVE A PAVED APRON AS DIRECTED BY THE RESIDENT ENGINEER. ANY AND ALL REQUIRED EXCAVATION IN DRIVE AREAS SHALL BE AS DIRECTED AND WILL BE PAID FOR UNDER ITEM 210.10 OR THE APPLICABLE RENTAL ITEM(S). IF REQUIRED, A NEW DRIVEWAY SUBBASE SHALL BE CONSTRUCTED AND WILL BE PAID FOR UNDER ITEM 301.35 SUBBASE OF DENSE GRADED CRUSHED STONE. A NEW BITUMINOUS OR AGGREGATE SURFACE SHALL BE CONSTRUCTED AS DIRECTED AND WILL BE PAID FOR UNDER ITEM 406.25 OR ITEM 401.10. QUANTITIES OF THE ABOVE ITEMS HAVE BEEN INCLUDED TO PAY FOR THIS WORK.

RURAL AREA - SEED MIXTURE

% WT.	LBS./ACRE	NAME	PUR%	GERM%
37.5	22.5	CREEPING RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYE GRASS	95	85
100.0	60.0			

GENERAL NOTES

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

SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE RESIDENT ENGINEER.

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED APPLIED AT THE RATE OF 500 LBS./ACRE (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE OR AS DIRECTED BY THE RESIDENT ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE OR AS DIRECTED BY THE RESIDENT ENGINEER.

TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

SLOPE ROUNDING: ALL CUT SLOPES TO BE ROUNDED IN ACCORDANCE WITH STANDARD SHEET B-5.

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

TYPICAL SECTION SHEET

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. ../3797/FINAL/TS-1.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 6 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\ts-1.dgn
USER =2467

THIS SHEET NOT USED FOR THE RECORD PLANS

ITEM DETAIL SUMMARY SHEET

LOCATION			GUARD RAIL							DRAINAGE STRUCTURES			REMARKS
			621.20	621.20	621.21	621.505	621.60	621.75	621.80	204.20	601.0817	604.10	
STATION	STATION	POS.	STEEL BEAM GUARDRAIL (GALVANIZED)	STEEL BEAM G.R. (GALVANIZED) (MOD. W/8' POSTS)	HEAVY DUTY STEEL BEAM G.R.	MANUF. TERM. SECT. (FLARED)	ANCHOR FOR GUARDRAIL	REMOVE & RESET GUARDRAIL	REMOVE & DISPOSE GUARDRAIL	TRENCH EXCAVATION OF EARTH	18" RCP CL. V	CONCRETE CB W/ CAST IRON GRATE	
			LF	LF	LF	EA	EA	LF	LF	CY	LF	EA	
T.H. 85													
12+85.7	13+45.6	LT								50	60	1	CONSTRUCT NEW 4'x4'x6'-6" RCDW W/TYPE E GRATE
													SEE VAOT STANDARD SHEETS D-6 & D-15, OUTLET NEW RCP CLASS V PIPE THROUGH BRIDGE WINGWALL.
													SEE SHEET BRM FOR DETAILS.
13+14.75	13+41.75	LT			27.0		1						SEE VAOT STANDARD SHEET G-ID. PROVIDE ANCHOR AT STA. 13+23.95. CONNECT HEAVY DUTY
													STEEL BEAM GUARDRAIL TO NEW BRIDGE RAIL AT ST. 13+41.75.
													SEE VAOT STANDARD SHEET SB-R6-82.
13+38.20	13+41.75	RT	14.5		25.0		1						SEE VAOT STANDARD SHEET G-ID. PROVIDE ANCHOR AT STA. 13+38.20. CONNECT HEAVY DUTY
													STEEL BEAM GUARDRAIL TO NEW BRIDGE RAIL AT STA. 13+41.75.
													SEE VAOT STANDARD SHEET SB-R6-82.
14+54.25	103+86.80	LT		325.0	25.0	1			33				CONNECT HEAVY DUTY STEEL BEAM GUARDRAIL TO NEW BRIDGE RAIL AT STA. 14+54.25.
													SEE VAOT STANDARD SHEET SB-R6-82.
													INSTALL NEW MANUFACTURED TERMINAL SECTION AT STA. 103+86.80.
14+54.25	100+00.90	RT			25.0	1			373				CONNECT HEAVY DUTY STEEL BEAM GUARDRAIL TO NEW BRIDGE RAIL AT STA. 14+54.25.
													SEE VAOT STANDARD SHEET SB-R6-82.
													INSTALL NEW MANUFACTURED TERMINAL SECTION AT STA. 100+00.90.
SHEET SUBTOTAL			14.5	325	102	2	2		406	50	60	1	
ROUNDING			-	-	-	-	-		-	-	-	-	
SHEET TOTALS			14.5	325	102	2	2		406	50	60	1	

ITEM DETAIL SHEET

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/detsum.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(9)
SHEET 8 OF 72 SHEETS

USER #2457 - 12:07 - N:\final\detsum.dgn

EARTHWORKS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATION	DIST	TOTAL EXCAVATION EARTH AND ROCK AREA	TOTAL EXCAVATION EARTH AND ROCK CU. YDS.	ROCK EXCAVATION AREA	ROCK EXCAVATION CU. YDS.	EMBANKMENT AREA	EMBANKMENT CU. YDS.		
T.H. 85									
13+00		0.0		0.0		0.0			
	20		52		0		5		
13+20		141.7		0.0		13.5			
	20		88		0		47		
13+40		95.7		0.0		114.0			
	20		35		0		42		
13+60		0.0		0.0		0.0			
	20		0		0		0		
13+80		0.0		0.0		0.0			
	20		0		0		0		
14+00		0.0		0.0		0.0			
	20		0		0		0		
14+20		0.0		0.0		0.0			
	20		0		0		0	C	272
14+40		0.0		0.0		0.0		FAC	4.00
	20		34		0		1	F	96
14+60		92.3		0.0		2.8		FAC	1.15
	18		63		0		1	EXC	162
14+78		95.8		0.0		0.0			
U.S. ROUTE 5									
100+75		0.0		0.0		0.0			
	25		0		0		0		
101+00		0.0		0.0		0.0			
	50		0		0		0		
101+50		0.0		0.0		0.4			
	50		0		0		1		
102+00		0.0		0.0		1.0			
	50		0		0		2		
102+50		0.0		0.0		1.6			
	50		0		0		4		
103+00		0.0		0.0		2.2			
	50		0		0		2		
103+50		0.0		0.0		0.0			
	50		0		0		1		
104+00		0.0		0.0		0.9			
	50		0		0		1	F	R
104+50		0.0		0.0		0.0		FAC	1.15
	50		0		0		0	EXF	13
105+00		0.0		0.0		0.0			
CHANNEL EXCAVATION								C	130
BR100			130		0		0	FAC	1.00
								EXC	130
COFFERDAM EXCAVATION								C	1570
			1570		175		0	FAC	1.00
								R	175
								FAC	1.30
								EXC	1657
NORTH DITCH								C	378
			378		0		545	FAC	1.00
								F	545
								FAC	1.15
								EXF	249
SOUTH DITCH								C	437
			437		0		91	FAC	1.00
								F	91
								FAC	1.15
								EXC	332
DRAINAGE								C	49
			49		0		0	FAC	1.00
								EXC	49
COLUMN FOOTING									
			2836		175		743		

SUMMARY AND BALANCES

STATION TO STATION		TOTAL EXCAV EARTH & ROCK	ROCK EXCAV CUBIC YARDS	EMBANKMENT CUBIC YARDS	EXCESSES CUT	EXCESSES FILL	ACCUMULATIVE EXCESSES CUT	ACCUMULATIVE EXCESSES FILL
T.H. 85								
13+00	14+92.52	272	0	96	162		162	-
U.S. ROUTE 5								
100+75	105+00	0	0	11		13	149	-
CHANNEL EXCAVATION								
		130	0	0	130		279	-
COFFERDAM EXCAVATION								
		1570	175	0	1657		1936	-
NORTH DITCH								
DESIGN ERROR SEE DESIGN FOLDER		378 FT³ 14 CY	0	545		249	1687	
SOUTH DITCH								
		437 FT³ 16 CY	0	91	332		2019	
DRAINAGE								
		49	0	0	49		2068	

SHEET NO.	COL. NO.	SUMMARY BY COLUMNS EXCAVATION TOTAL CY	EXCAVATION ROCK CY	EMBANKMENT CY
	1	2836	175	743
TOTAL		2836	175	743

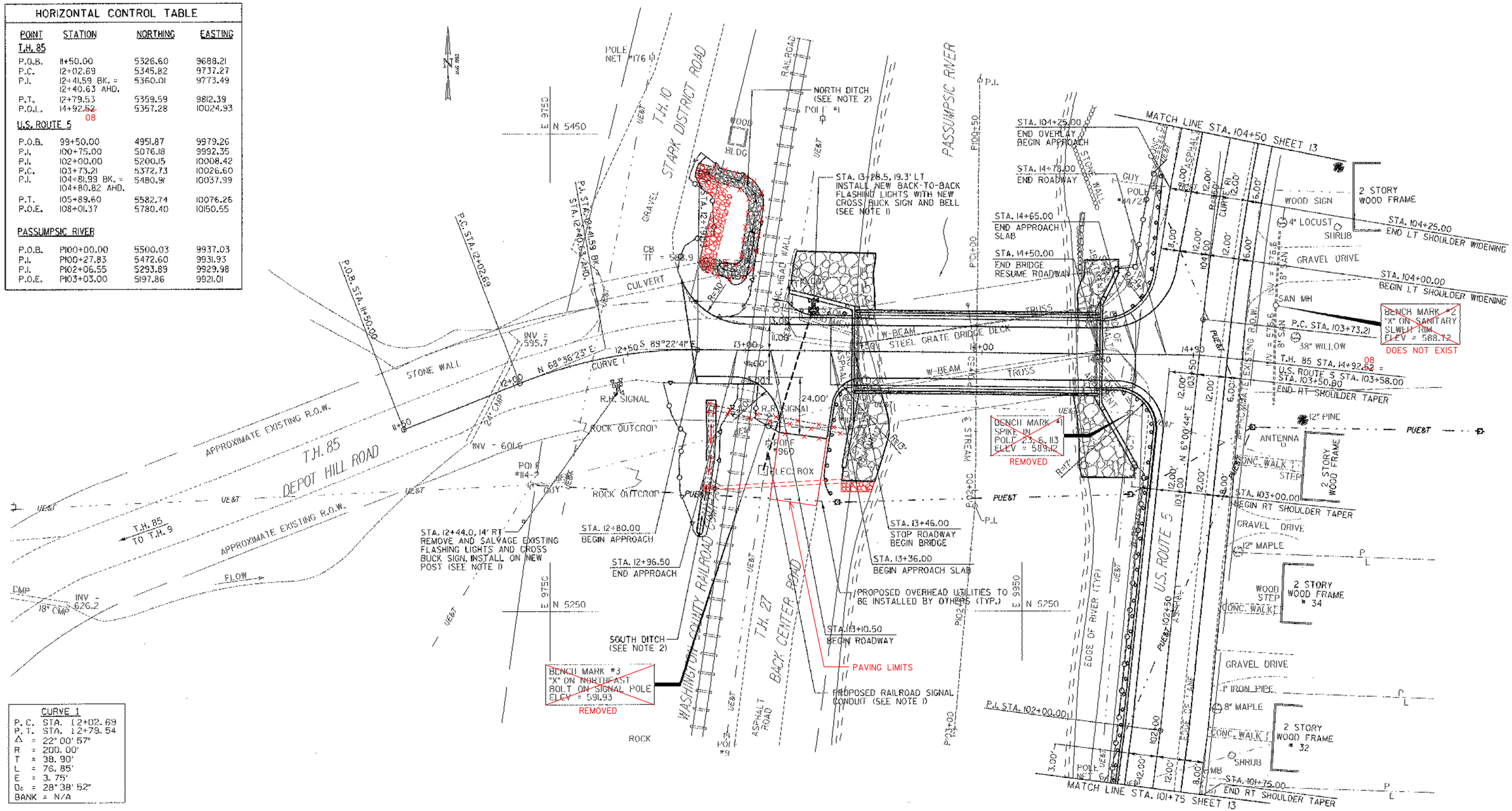
REMARKS	
EARTH AND ROCK EXCAVATION	2836 CY
SOLID ROCK EXCAVATION	175 CY
EARTH EXCAVATION	2661 CY
PLANIMETERED FILL	743 CY
SOLID ROCK FACTOR	1.30
LESS FACTORED SOLID ROCK	228 CY
LESS DISPLACEMENT OF ANY LARGE STRUCTURES	23 CY
NET PLANIMETERED FILL	492 CY
FACTOR	1.15
PLANIMETERED FILL INCLUDING FACTOR	566 CY
MATERIALS AVAILABLE FOR FILLS	
EARTH EXCAVATION	2661 CY
CHANNEL EXCAVATION (130 x 0.30)	39 CY
COFFERDAM EXCAVATION	1570 CY
TOTAL MATERIAL AVAILABLE FOR FILL	4270 CY
TOTAL FILL INCLUDING FACTOR	566
TOTAL MATERIAL FOR FILL	4270
EXCESS EXCAVATION SUBTOTAL	3704
EXCESS EXCAVATION SUBTOTAL ROUNDING	6
EXCESS EXCAVATION	3710 CY

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797EW.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 9 OF 72 SHEETS

FILE NAME = c:\u\3797\mstn\03\final\3797ew.dgn
USER = 2467

HORIZONTAL CONTROL TABLE

POINT	STATION	NORTHING	EASTING
T.H. 85			
P.O.B.	11+50.00	5326.60	9688.21
P.C.	12+02.69	5345.82	9737.27
P.I.	12+41.59 BK. = 12+40.63 AHD.	5360.01	9773.49
P.T.	12+79.53	5359.59	9812.39
P.O.E.	14+92.~~52~~ 08	5357.28	10024.93
U.S. ROUTE 5			
P.O.B.	99+50.00	4951.87	9979.26
P.I.	100+75.00	5076.18	9992.35
P.I.	102+00.00	5200.15	10008.42
P.C.	103+73.21	5372.73	10026.60
P.I.	104+81.99 BK. = 104+80.82 AHD.	5480.91	10037.99
P.T.	105+89.60	5582.74	10076.26
P.O.E.	108+01.37	5780.40	10150.55
PASSUMPSIC RIVER			
P.O.B.	P100+00.00	5500.03	9937.03
P.I.	P100+27.83	5472.60	9931.93
P.I.	P102+06.55	5293.89	9929.98
P.O.E.	P103+03.00	5197.86	9921.01



CURVE 1

P.C. STA. 12+02.69
P.T. STA. 12+79.54
Δ = 22° 00' 57"
R = 200.00'
T = 38.90'
L = 76.85'
E = 3.75'
Dc = 28° 38' 52"
BANK = N/A

CURVE R1

P.C. STA. 103+73.21
P.T. STA. 105+89.60
Δ = 14° 35' 09"
R = 850.00'
T = 108.78'
L = 216.39'
E = 6.93'
Dc = 06° 44' 26"
BANK = 0.050 FT/FT

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

621.20 STEEL BEAM GUARDRAIL (GALVANIZED) (MOD.- 8' POSTS)
U.S. ROUTE 5 103+01.00 126.00 LF
STA. 101+75.00 - STA. ~~103+25.90~~ LT ~~150.9 LF~~
BACK CENTER RD (27.0 LF)

621.20 STEEL BEAM GUARDRAIL (GALVANIZED)
~~T.H. ROUTE 85~~ STA. 13+15.0-13+23.0 LT (8.3 LF)
~~STA. 13+35.40 - STA. 13+38.20 RT (14.5 LF)~~ STA. 103+01.0-103+26.0 LT (25.0 LF)
STA. 103+75.0-103+87.0 LT (12.5 LF)

621.21 HEAVY DUTY STEEL BEAM GUARDRAIL (GALVANIZED)
STA. ~~13+14.75~~ 13+23.0 - STA. ~~13+41.75~~ LT 13+48.0 LT (27.0 LF)35.0 LF
STA. 13+38.20 48.00 - STA. 13+41.75 RT 75.00 (25.0 LF)32.5 LF
T.H. 85 STA. 14+~~54.25~~ LT - U.S. ROUTE 5 STA. 103+~~86.80~~ LT (25.0 LF)32.5 LF
T.H. 85 STA. 14+~~54.25~~ RT - U.S. ROUTE 5 STA. 103+25.90 LT (25.0 LF)32.5 LF
48.00

621.505
621.52 MANUFACTURED TERMINAL SECTION (FLARED)
U.S. ROUTE 5
STA. ~~103+86.80~~ LT 103+87 ~ 104+24 LT

621.60 ANCHOR FOR STEEL BEAM RAIL
T.H. ROUTE 85
~~STA. 13+35.40~~ 00
STA. 13+23.~~95~~ LT
STA. 13+38.20 RT

621.80 REMOVAL AND DISPOSAL OF GUARDRAIL
U.S. ROUTE 5 42.00
STA. 101+75.00 - STA. 103+~~40.00~~ LT (165.0 LF)167.0 LF
STA. 103+70.00 - STA. 103+37.00 LT (~~33.0~~ LF) 37.5 LF

NOTES:

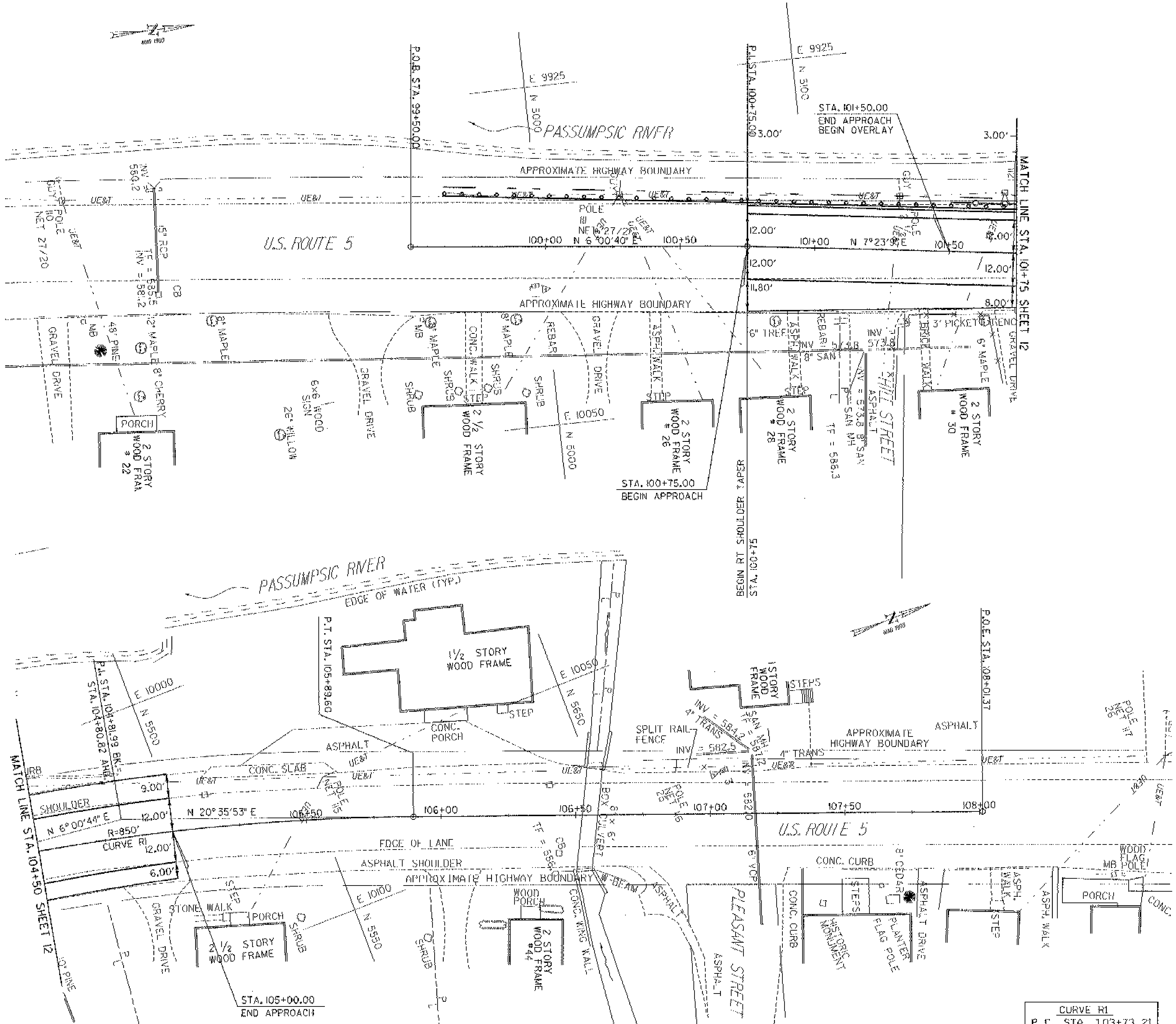
1. SEE THE SPECIAL PROVISIONS FOR RAILROAD SIGNAL SPECIFICATIONS. ALL RAILROAD SIGNAL WORK SHALL BE PAID FOR UNDER ITEM 915.15 FLASHING LIGHT SIGNAL.
2. SEE SHEET 14 FOR PROPOSED DRAINAGE AND DITCH GRADING.

0 20 40
1 INCH = 20 FT @ FULL SIZE

PLAN

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/3797P-1.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 12 OF 72 SHEETS

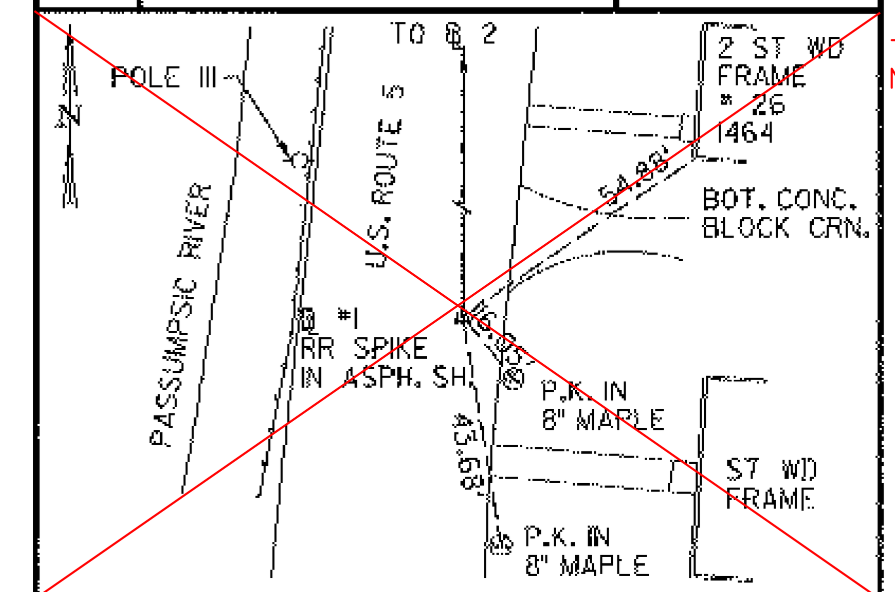
FILE NAME = ...\3797\FINAL\3797P-1.dgn
USER = 2467



CURVE R1	
P.C.	STA. 103+73.21
P.T.	STA. 105+89.60
Δ	= 14° 35' 09"
R	= 850.00'
T	= 108.78'
L	= 216.39'
E	= 6.93'
Dc	= 06° 44' 26"
BANK	= 0.050 FT/FT

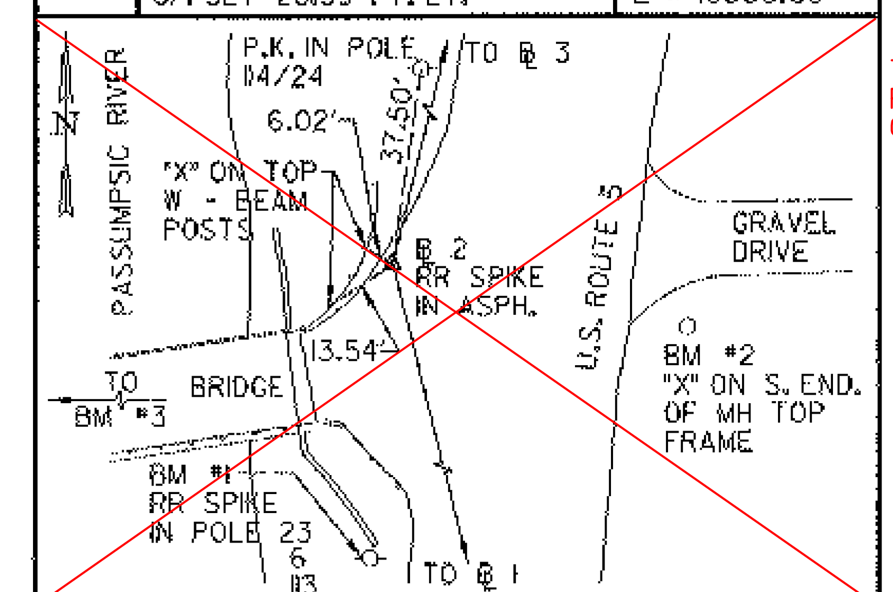
0 20 40
1 INCH = 20 FT @ FULL SIZE

		COORDINATES
℄ #1	STA. 100+00.00, OFFSET 15.59 FT. RT.	N = 5000.00 E = 10000.00



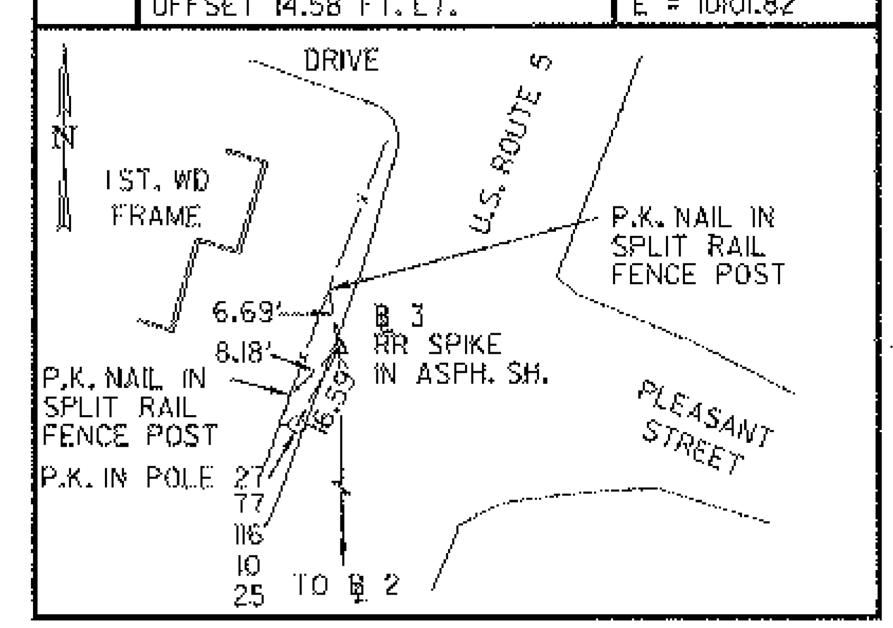
THIS POINT DOES NOT EXIST

		COORDINATES
℄ #2	STA. 103+87.92, OFFSET 28.39 FT. LT.	N = 5390.47 E = 10000.00



THIS POINT WAS REMOVED WHEN CONSTRUCTION BEGAN

		COORDINATES
℄ #3	STA. 107+01.37, OFFSET 14.58 FT. LT.	N = 5692.18 E = 10101.82



621.20 STEEL BEAM GUARDRAIL (GALVANIZED) (MOD. W/8.0 FT POSTS)

STA. ~~100+00.90~~ 100+01.00 - STA. 101+75.00 (174.1 LF)

621.52 MANUFACTURED TERMINAL SECTION (FLARED)

STA. ~~100+00.90~~ 99+64 ~ 100+01 LT

621.80 REMOVAL AND DISPOSAL OF GUARDRAIL

STA. 99+67.00 - STA. 101+75.00 LT (208.0 LF)

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

PLAN

SURVEYED BY	W. DEYETTE	DATE	10/93
DRAWN BY	C. KAHLBAUGH	DATE	7/06
SQUAD LEADER	J. P. HALSTEAD		
DESIGN FILE NO.	/3797/FINAL/BLTIES.DGN		
IPARM FILE		DATE PLOTTED	12/20/2006
PROJ. NAME	ST. JOHNSBURY, BRIDGE NO. 29		
PROJ. NO.	BRO 1447(19)		

SHEET 13 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\blties.dgn
USER =2467

BEGIN NORTH DITCH
STA. 12+78.3, 75.1' LT
INV. ELEV. = 595.0

NORTH DITCH
(SEE TYPICAL)

END NORTH DITCH
STA. 12+83.4, 38.5' LT
INV. ELEV. = 588.9

STA. 12+83.4
EXISTING CB TO REMAIN
EXISTING TF/ELEV. = 588.9

STARK DISTRICT ROAD

PASSUMPSIC RIVER

PI 101+00

PI 102+00

PI 103+50

PI 104+00

595 600 605 610 585 580 575 570 565 590

12+50 13+00 13+50 14+00

END SOUTH DITCH
STA. 12+85.7, 22.1' RT
INV. = 589.5

NEW 4'x4'x6'-6" RCDI
W/TYPE E GRATE
STA. 12+85.7, ~~22.1'~~ RT 57'
TF ELEV. = 589.5
PIPE INV. ELEV. = ~~584.3~~ 586.05

SOUTH DITCH
(SEE TYPICAL)

BEGIN SOUTH DITCH
STA. 12+81.6, 76.0' RT
INV. = 589.8

PIPE INV. ELEV. = 584.0
~~SEE SHEET BRIII FOR DETAILS~~

NEW 18"x60' RCP CLASS V
STA. 12+85.7 - STA. 13+45.6 RT

BACK CENTER ROAD

WASHINGTON COUNTY RAILROAD COMPANY

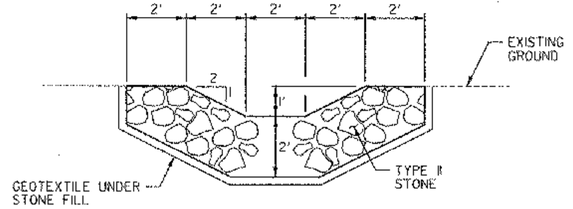
P.I. 102+00

12+50

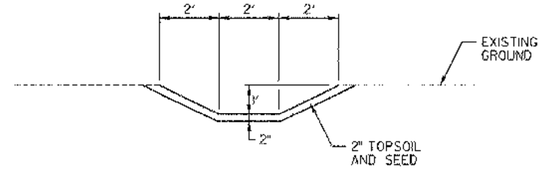
DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

604.0817 18" RCP CLASS V
STA. 12+85.7 ~ STA. 13+45.6 RT (60 LF)

604.10 CONCRETE CB W/CAST IRON GRATE
STA. 12+85.7 RT



NORTH DITCH
N.T.S.



SOUTH DITCH
N.T.S.

0 10 20
1 INCH = 10 FT
@ FULL SIZE

DRAINAGE PLAN

SURVEYED BY	W. DEYETTE	DATE	10/93
DRAWN BY	C. KARL BAUGH	DATE	7/06
SQUAD LEADER	J. P. HALSTEAD		
DESIGN FILE NO.	/3797/FINAL/DRAINAGE.DGN		
IPARM FILE		DATE PLOTTED	12/20/2006
PROJ. NAME	ST. JOHNSBURY, BRIDGE NO. 29		
PROJ. NO.	BRO 1447(19)		

SHEET 14 OF 72 SHEETS

FILE NAME = u:\3797\mstn\03\final\DRAINAGE.dgn
USER = 2467

646.40 DURABLE 4" WHITE LINE (EPOXY)
(ALL LINES WILL INCLUDE EDGE LINE BREAKS AND RADIUS FOR TOWN HIGHWAYS)
U.S. ROUTE 5
STA. 101+75.0 - STA. 104+50.0 LT & RT
T.H. 85
STA. 12+80.0 - STA. 14+75.0 LT & RT

646.60 TEMPORARY 4" WHITE LINE (PAINT)
(ALL LINES WILL INCLUDE EDGE LINE BREAKS AND RADIUS FOR TOWN HIGHWAYS)
U.S. ROUTE 5
STA. 101+75.0 - STA. 104+50.0 LT & RT

646.41 DURABLE 4" YELLOW LINE (EPOXY)
(ALL LINES WILL INCLUDE C/L BREAKS FOR TOWN HIGHWAYS) S=SOLID, D=DASHED

U.S. ROUTE 5	LT	℄	RT
STA. 101+75.0 - STA. 104+50.0	S	-	S
T.H. 85			
STA. 12+80.0 - STA. 14+75.0	S	-	S

646.61 TEMPORARY 4" YELLOW LINE (PAINT)
(ALL LINES WILL INCLUDE C/L BREAKS FOR TOWN HIGHWAYS) S=SOLID, D=DASHED

U.S. ROUTE 5	LT	℄	RT
STA. ~~101+75.0~~ 101+84 - STA. 104+50.0	S	-	S

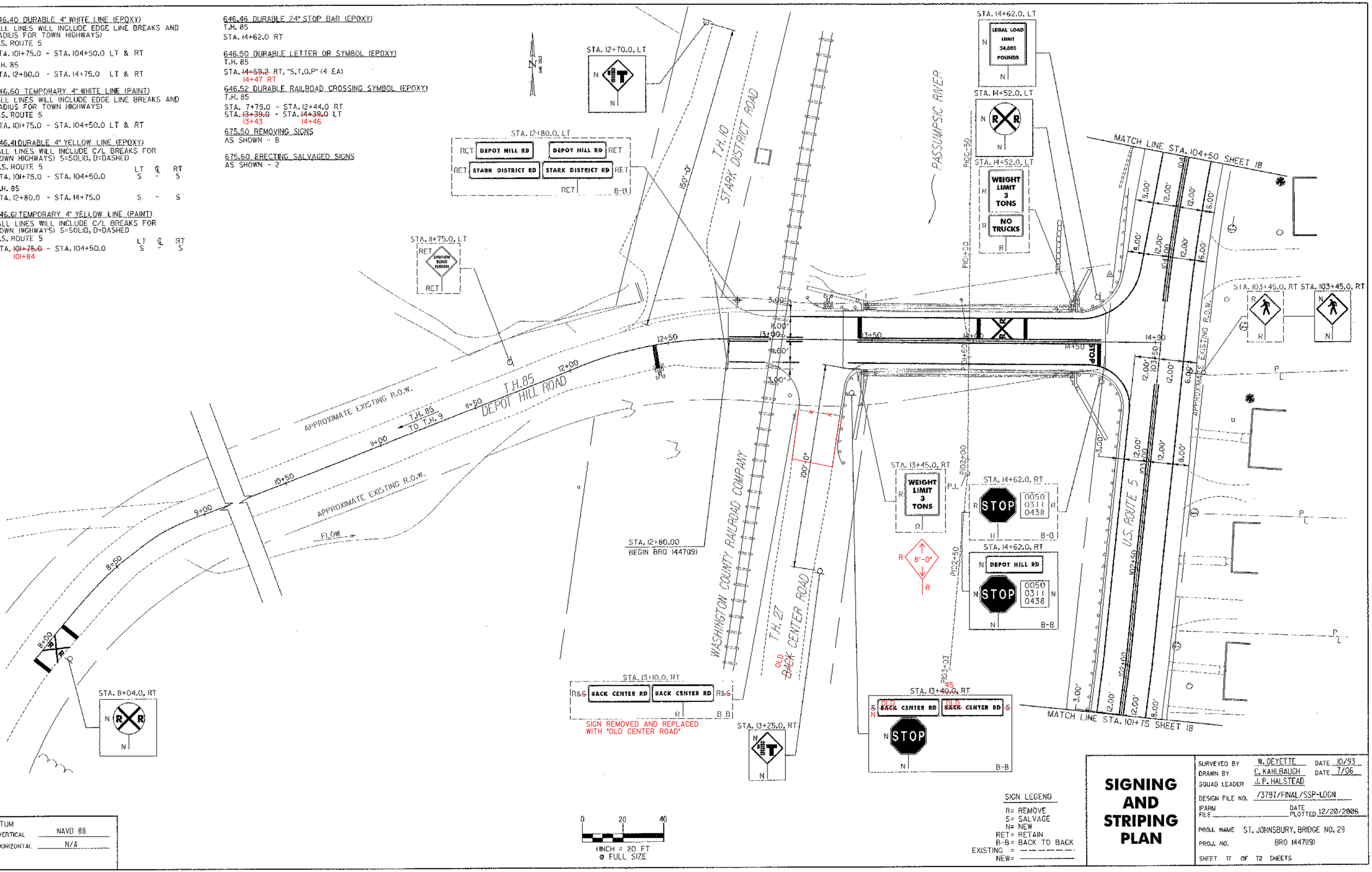
646.46 DURABLE 24" STOP BAR (EPOXY)
T.H. 85
STA. 14+62.0 RT

646.50 DURABLE LETTER OR SYMBOL (EPOXY)
T.H. 85
STA. ~~14+59.2~~ 14+47 RT, "S,T,O,P" (4 EA)

646.52 DURABLE RAILROAD CROSSING SYMBOL (EPOXY)
T.H. 85
STA. 7+79.0 - STA. 12+44.0 RT
STA. ~~13+39.0~~ 13+43 - STA. ~~14+39.0~~ 14+46

675.50 REMOVING SIGNS
AS SHOWN - 8

675.60 ERECTING SALVAGED SIGNS
AS SHOWN - 2



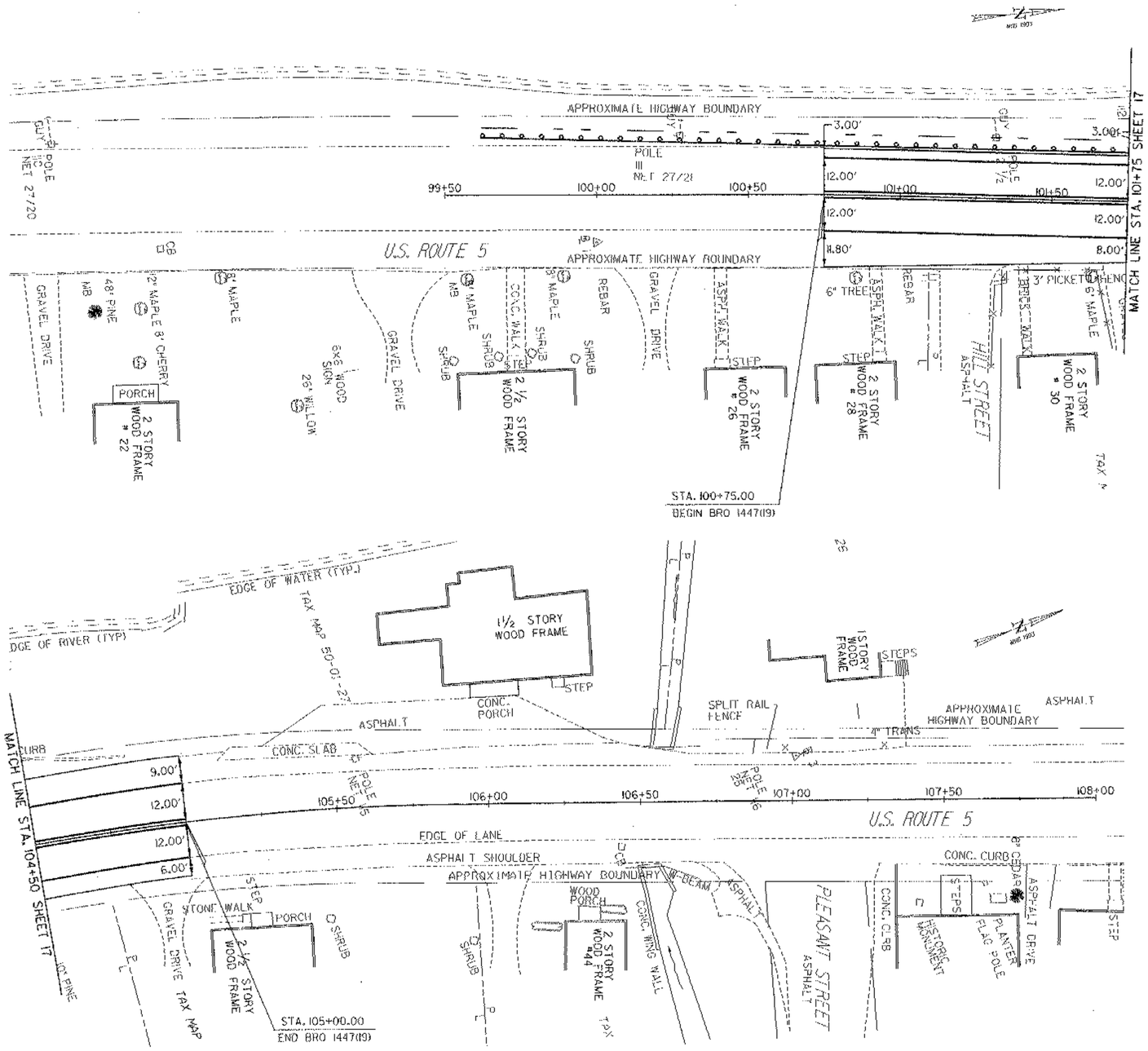
SIGN LEGEND
R= REMOVE
S= SALVAGE
N= NEW
RET= RETAIN
B-B= BACK TO BACK
EXISTING = ——— ——— ———
NEW= ———

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

SIGNING AND STRIPING PLAN

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/SSP-1.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 17 OF 72 SHEETS

FILE NAME = u:\3797\mstn\03\finalssp-1.dgn
USER = 2467



646.40 DURABLE 4" WHITE LINE (EPOXY)
(ALL LINES WILL INCLUDE EDGE LINE BREAKS AND RADIUS FOR TOWN HIGHWAYS)

STA. 100+75 - STA. 101+75 LT & RT
STA. 104+50 - STA. 105+00 LT & RT

646.60 TEMPORARY 4" WHITE LINE (PAINT)
(ALL LINES WILL INCLUDE EDGE LINE BREAKS AND RADIUS FOR TOWN HIGHWAYS)

STA. 100+75 - STA. 101+75 LT & RT
STA. 104+50 - STA. 105+00 LT & RT

646.41 DURABLE 4" YELLOW LINE (EPOXY)
(ALL LINES WILL INCLUDE C/L BREAKS FOR TOWN HIGHWAYS) S=SOLID, D=DASHED

	LT	C/L	RT
STA. 100+75 - STA. 101+75	S	-	S
STA. 104+50 - STA. 105+00	S	-	S

646.61 TEMPORARY 4" YELLOW LINE (PAINT)
(ALL LINES WILL INCLUDE C/L BREAKS FOR TOWN HIGHWAYS) S=SOLID, D=DASHED

	LT	C/L	RT
STA. 100+75 - STA. 101+75	S	-	S
STA. 104+50 - STA. ~~105+00~~ 105+47	S	-	S

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 20 40
1INCH = 20 FT

SIGNING AND STRIPING PLAN

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/SSP-2.DGN
IPARM FILE
DATE PLOTTED 12/28/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 18 OF 72 SHEETS

FILE NAME = c:\3797\mrstn\03\final\ssp-2.dgn
USER = 2467

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

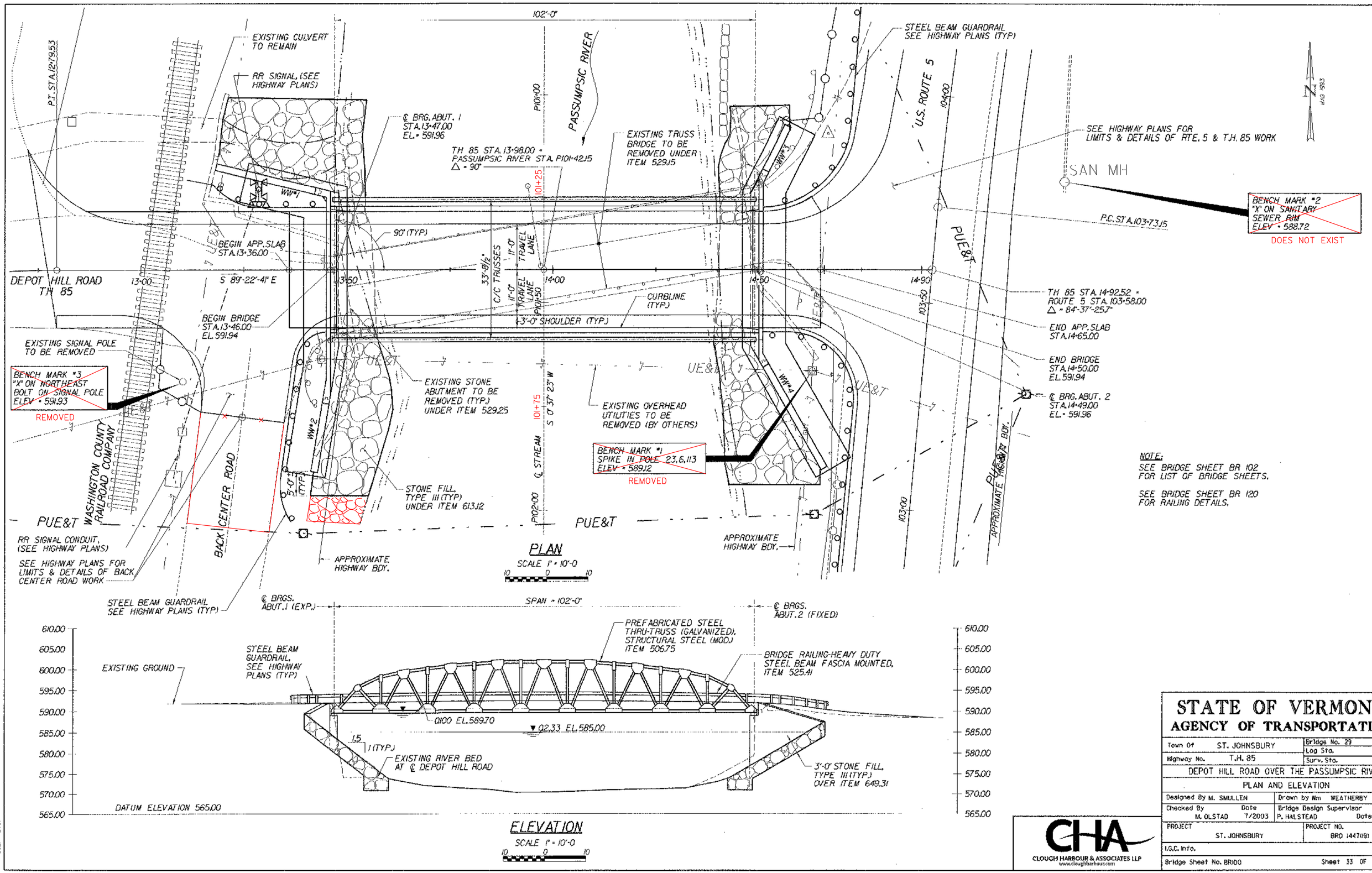
MILEMARKER, STATION, OR SIGN NUMBER	SIGN LEGEND	SIGN DIMENSIONS EA	WIDTH (in)	HEIGHT (in)	NEW & SALVAGED SIGNS "A"	"B"	SALV SIGN	SALV TIS	EXIST POST RETAIN	EXIST POST SALVAGE	NEW SIGN POSTS NO. OF POSTS	FLANGED CHANNEL lb/ft 1.12	2.0	3.0	SQUARE STEEL (in) lb/ft 1.75 1.88	2.0 2.16	2.5 3.35	ANCHOR	SLEEVE	TUBULAR ALUMINUM Ø (in) lb/ft 3.0 1.3	4.0 1.7	4.0 MOD 1.7	FOUNDATION	TUBULAR STEEL Ø (in) lb/ft 3.0 7.6	3.5 9.0	4.0 10.8	5.0 14.6	W-SHAPE STEEL FTG. SIZE 24"	30"	WEIGHT	POST SIZE	SIGN FRAMED REQUIRED	REMARKS	SIGN DETAIL DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
														OPTION ITEMS																							
T.H. 85 8+04.0, RT	R R	1	36	36	7.10						1			X 14 LF			X	X																SIGN ID CODE W10-1	-	E-190
12+70.0, LT	T	1	30	30	6.25						1			X 12 LF			X	X																SIGN ID CODE W10-4L	20	-
13+25.0, RT	T	1	30	30	6.25						1			X 16 LF			X	X																SIGN ID CODE W10-4L	20	-
45 13+~~40~~40.0, RT	~~BACK CENTER RD~~ OLD ~~BACK CENTER RD~~	~~2~~ 1	36	9	2.25		~~2~~				1			X 12 LF			X	X																SALVAGED SIGNS TO BE MOUNTED ON NEW POST. TOP MOUNTING BRACKET REQUIRED TO INSTALL SALVAGED SIGN ON NEW POST. COSTS ASSOCIATED WITH THIS BRACKET ARE INCIDENTAL TO THE SIGN POST. BACK-TO-BACK.		
	STOP	1	30	30	6.25						1																						SIGN ID CODE R1-1	-	E-143
14+52.0, LT	R R	1	36	36	7.10						1			X 12 LF			X	X																SIGN ID CODE W10-1	-	E-190
14+62.0, LT	FEDERAL LOAD LIMIT 20,000 POUNDS	1	24	30	5.00						1			X 12 LF			X	X																SIGN ID CODE VR-017	-	E-141
14+62.0, RT	DEPOT HILL RD	1	30	9	1.88						1			X 14 LF			X	X																NEW SIGN SHALL BE MOUNTED ON NEW POST. TOP MOUNTING BRACKET REQUIRED TO INSTALL NEW SIGN ON POST. COSTS ASSOCIATED WITH THIS BRACKET ARE INCIDENTAL TO THE SIGN POST.	-	E-123
	STOP 0050 0311 0438	1 1	30 6	30 10	6.25 0.42																												SIGN ID CODE R1-1 SIGN ID CODE VD-700 BACK-TO-BACK	- -	E-143 E-138
U.S. ROUTE 5 103+45.0, RT		1	30	30	6.25						1			X 12 LF			X	X																SIGN ID CODE W11-2 FLUORESCENT YELLOW GREEN BACKGROUND	-	E-152
												FT	FT	FT ~~112.0~~ 104.0	FT	FT	FT 112.0		EA	LB	LB	LB		LB	LB	LB	LB								
TOTALS			SF ~~52.75~~ 55.00	SF	EA. 2	SF						FT ~~112.0~~ 104.0			FT 112.0					LB			EA.	LB				EA.	EA.	LB					

FINAL POST LENGTHS ARE TO BE DETERMINED IN THE FIELD. POST SIZES ARE COMPUTED BASED ON INFORMATION FURNISHED ON THE STANDARD SHEETS AND THE TRAFFIC OPERATIONS SECTION "SIGN POST DESIGN GUIDELINE."

PROJECT NAME: ST. JOHNSBURY, BRIDGE NO. 29
PROJECT NUMBER: BRO 1447(19)

FILE NAME: TSS.DGN
PROJECT LEADER: J.P.H.
PLOT DATE: 12/20/2006
DRAWN BY: C.A.K.
CHECKED BY: D.W.E.
SHEET 19 OF 72 SHEETS

FILE NAME = c:\v3d97\msm\103\final\TSS.DGN
USER = 2467



STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

PLAN AND ELEVATION

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BR100	Sheet 33 OF 72

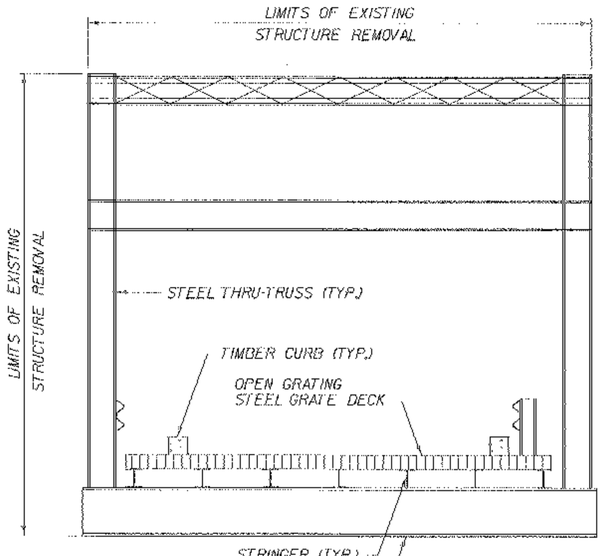
CLOUGH HARBOUR & ASSOCIATES LLP
www.cloughharbour.com

DATE TIME 12/20/2006 11:20:27
FILE NAME USER

BRIDGE QUANTITY SHEET

STATE OF VERMONT
AGENCY OF TRANSPORTATION
STRUCTURES DIVISION

ITEM NO.	ITEM	UNIT	QUANTITY BREAKDOWN: SUPER STR	ABUT 1	ABUT 2	APP SLABS	CHANN	MISC	TOTAL	FINAL
203.27	UNCLASSIFIED CHANNEL EXCAVATION	CY					130		130	130
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY		750	725				1475	1431.5
208.30	COFFERDAM EXCAVATION, EARTH	CY		~~700~~ 716.1	~~719~~ 749.9				1419	1466.0
208.35	COFFERDAM EXCAVATION, ROCK	CY		~~155~~ 162.9	~~161~~ 166.7				326	329.6
208.40	COFFERDAM @ ABUTMENT 1	LS		1					1	1
208.40	COFFERDAM @ ABUTMENT 2	LS			1				1	1
501.33	CONCRETE, HIGH PERFORMANCE CLASS A	CY	10						10	8.38
501.34	CONCRETE, HIGH PERFORMANCE CLASS B	CY		260	260	35			555	536.6
504.10	FURNISHING EQUIPMENT FOR DRIVING PILING	LS						1	1	1
505.17	STEEL PILING (HP 14 x 73)	LF		340	1080				1420	1492.3
505.40	STATIC PILE LOADING TEST	EA		1	1				2	2
506.75	STRUCTURAL STEEL (MOD.)	LS	1						1	1
507.15	REINFORCING STEEL	LB		28600	27000				55600	56389
507.17	EPOXY COATED REINFORCING STEEL	LB		1100	1000	3000			5100	7453
508.15	SHEAR CONNECTORS (29|2 - 1/2" x 2")	LS	1						1	1
509.20	STEEL GRID FLOORING (EXODERMIC)	SF	3200						3200	3172
512.30	MOBILIZATION OF DRILLED SHAFT EQUIPMENT	LS		1					1	1
512.31	DRILLED SHAFT IN EARTH (24" DIA)	LF		80					80	67.93
512.32	DRILLED SHAFT IN ROCK (24" DIA)	LF		30					30	33.98
514.10	WATER REPELLENT (MOD.- SILANE)	GAL	25	5	5	5			40	45
525.41	BRIDGE RAILING - HD STEEL BEAM/FASCIA MOUNTED (GALVANIZED)	LF	225						225	200
529.15	REMOVAL OF STRUCTURE (1500 SF - EST.)	EA						1	1	1
529.25	REMOVAL OF CONCRETE OR MASONRY	CY		15	20				35	35
613.12	STONE FILL, TYPE III	CY		175	100				275	409.7
649.31	GEOTEXTILE UNDER STONE FILL	SY		210	125				335	392
651.40	GRUBBING MATERIAL	SY		90	40				130	160



TYPICAL EXISTING BRIDGE SECTION
1/2" = 1'-0"

LIST OF BRIDGE SHEETS

SHEET NUMBER	DESCRIPTION
BRI00	PLAN AND ELEVATION
BRI01	PRELIMINARY INFORMATION
BRI02	BRIDGE QUANTITY SHEET AND INDEX OF DRAWINGS
BRI03	BORING INFORMATION SHEET
BRI04	BORING LOG SHEET - 1
BRI05	BORING LOG SHEET - 2
BRI06	BORING LOG SHEET - 3
BRI07	GENERAL NOTES
BRI08	SUPERSTRUCTURE DETAILS
BRI09	BRIDGE DECK PLAN AND DETAILS
BRI10	APPROACH SLAB DETAILS
BRI11	ABUTMENT 1 PLAN AND ELEVATION
BRI12	ABUTMENT 1 FOOTING REINFORCEMENT & PILE LAYOUT
BRI13	ABUTMENT 1 REINFORCING ELEVATION
BRI14	ABUTMENT 1 REINFORCING DETAILS
BRI15	ABUTMENT 2 PLAN AND ELEVATION
BRI16	ABUTMENT 2 FOOTING REINFORCEMENT & PILE LAYOUT
BRI17	ABUTMENT 2 REINFORCING ELEVATION
BRI18	ABUTMENT 2 REINFORCING DETAILS
BRI19	TYPICAL ABUTMENT REINFORCING SECTIONS
BRI20	BRIDGE RAILING PLAN
BRI21	REINFORCING STEEL SCHEDULE
------	CHANNEL CROSS SECTIONS (SEE ROADWAY PLANS)

CLOUGH HARBOUR & ASSOCIATES LLP
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

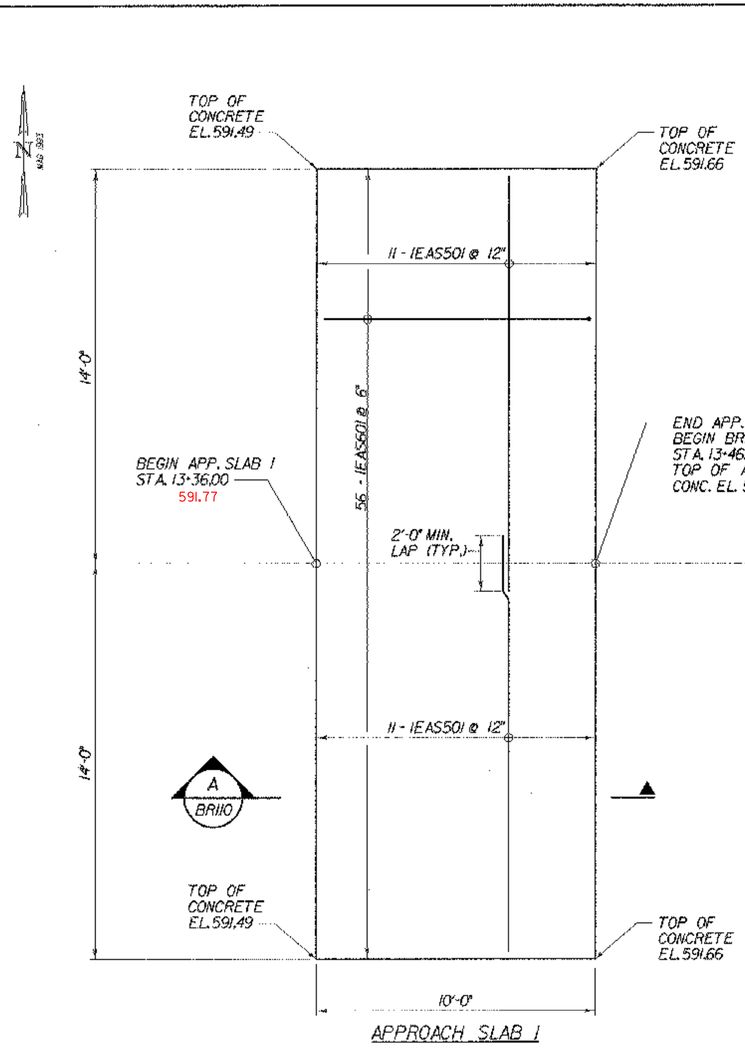
Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

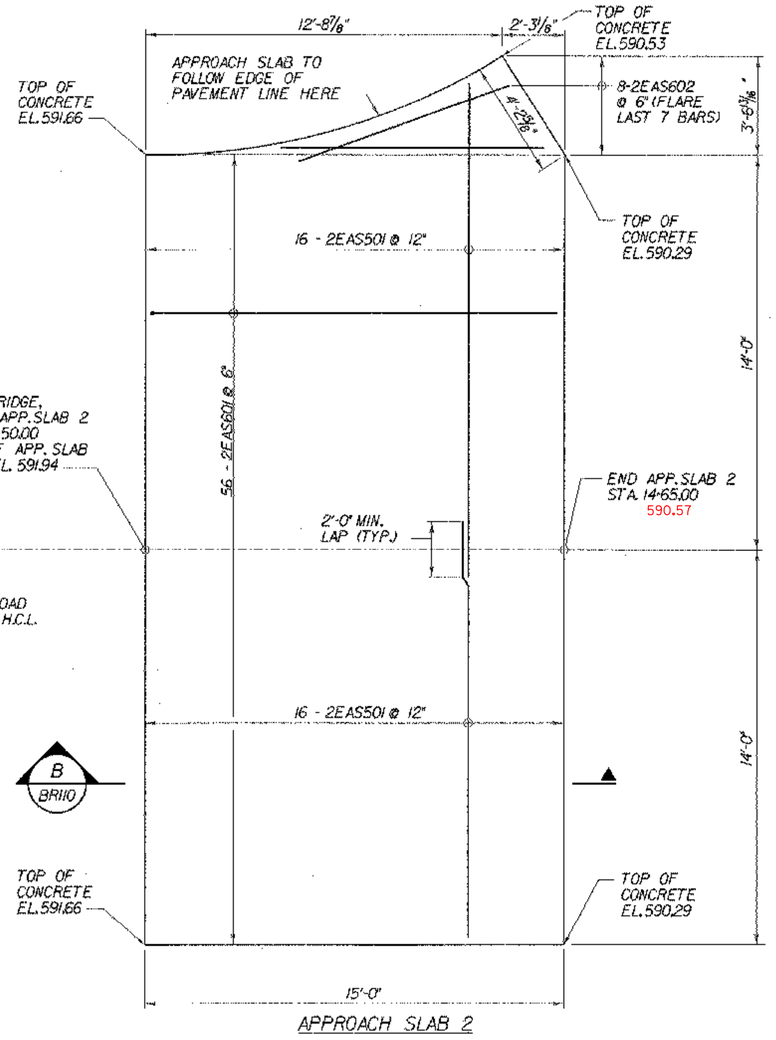
BRIDGE QUANTITY SHEET AND INDEX OF DRAWINGS

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.C.C. Info.	
Bridge Sheet No. BRI02	Sheet 35 OF 72

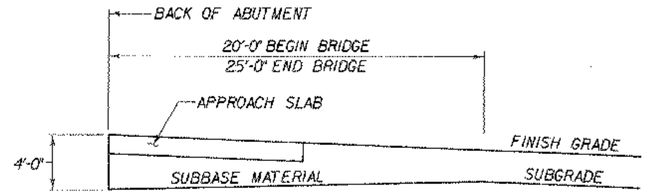
DATE/TIME = 1/17/2007
USER = ESY



APPROACH SLAB 1



APPROACH SLAB 2

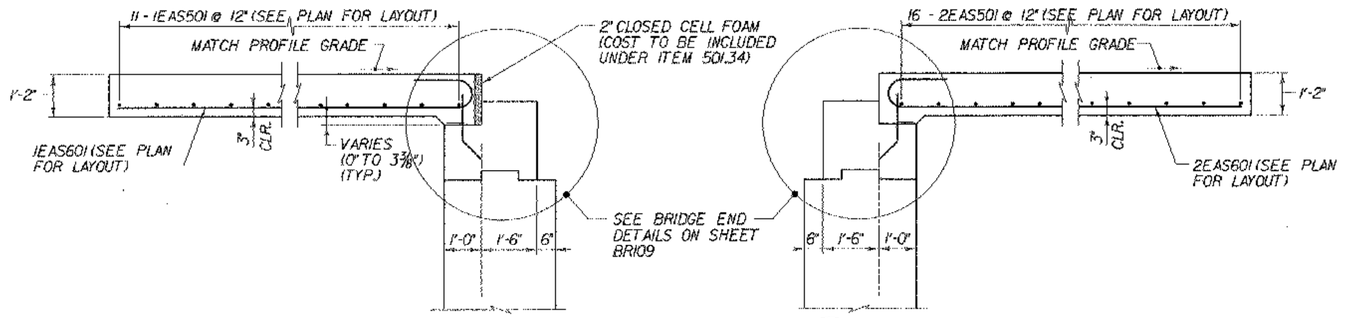


SUBBASE DETAIL AT ABUTMENTS

(ELEVATION IN CUT AND FILL)
N.T.S.

APPROACH SLAB PLAN

SCALE ⅜" = 1'-0
1 0 1 2 3 4



A BRII0 APPROACH SLAB 1 SECTION

SCALE ½" = 1'-0
1 0 1 2

B BRII0 APPROACH SLAB 2 SECTION

SCALE ½" = 1'-0
1 0 1 2

NOTES:

1. 3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

CLOUGH HARBOUR & ASSOCIATES LLP
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
	Log Sta.
Highway No. T.H. 85	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

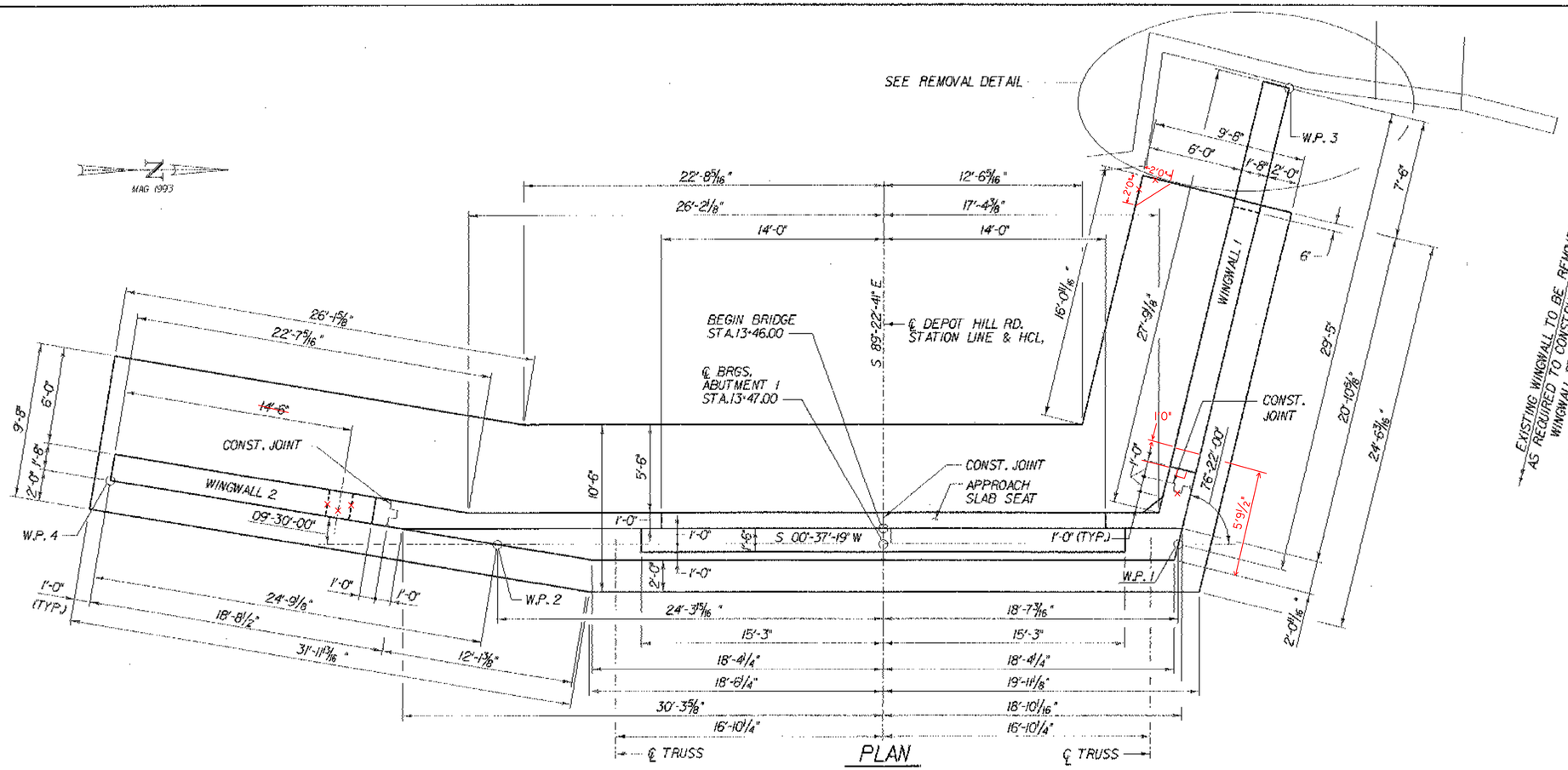
APPROACH SLAB DETAILS

Designed By M. SMULLEN	Drawn by B. D. / Wm. W.
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRII0	Sheet 43 OF 72

FILE NAME = u:\3797\master\185\br29\1447asp.dgn
DATE/TIME = 12/28/2006 12:49:47
USER = cmay

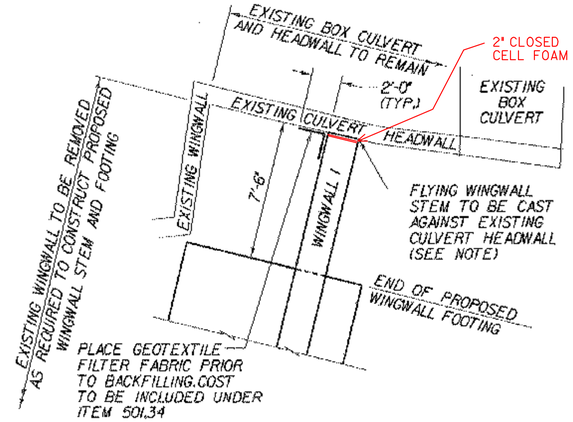
MAG 1993

SEE REMOVAL DETAIL



PLAN

SCALE 1/4" = 1'-0

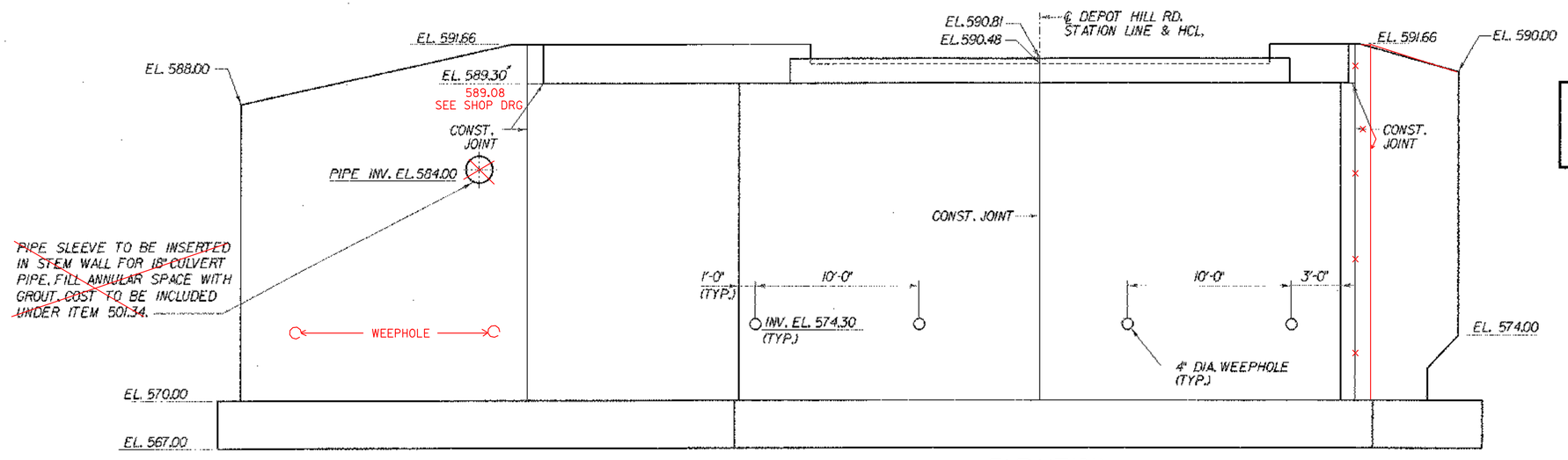


NOTE:

THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE THE EXISTING BOX CULVERT, OR CULVERT HEADWALL DURING CONSTRUCTION OPERATIONS. ANY DAMAGE TO THE EXISTING STRUCTURE SHALL BE REPAIRED IMMEDIATELY AS DIRECTED BY THE RESIDENT ENINGEER AT THE CONTRACTOR'S OWN EXPENSE.

REMOVAL DETAIL

SCALE 1/4" = 1'-0



ELEVATION

SCALE 1/4" = 1'-0

* THE BRIDGE SEAT ELEVATION IS BASED ON AN ASSUMED TOTAL BEARING HEIGHT OF 4". THE CONTRACTOR SHALL ADJUST THE BRIDGE SEAT ELEVATION AS NECESSARY IF THE ACTUAL BEARING HEIGHT DIFFERS FROM THE ASSUMED 4".

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

ABUTMENT 1 PLAN AND ELEVATION

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRIII	Sheet 44 OF 72

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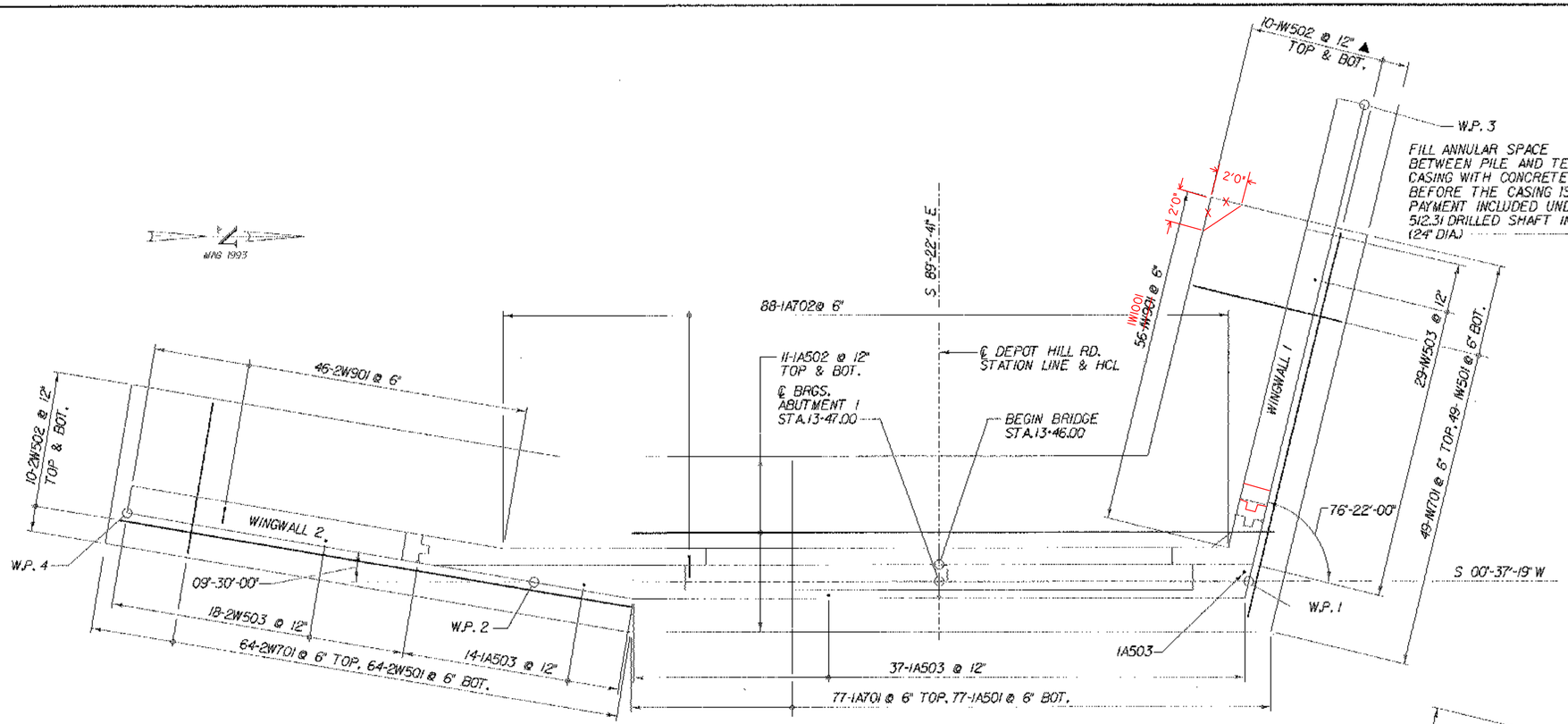
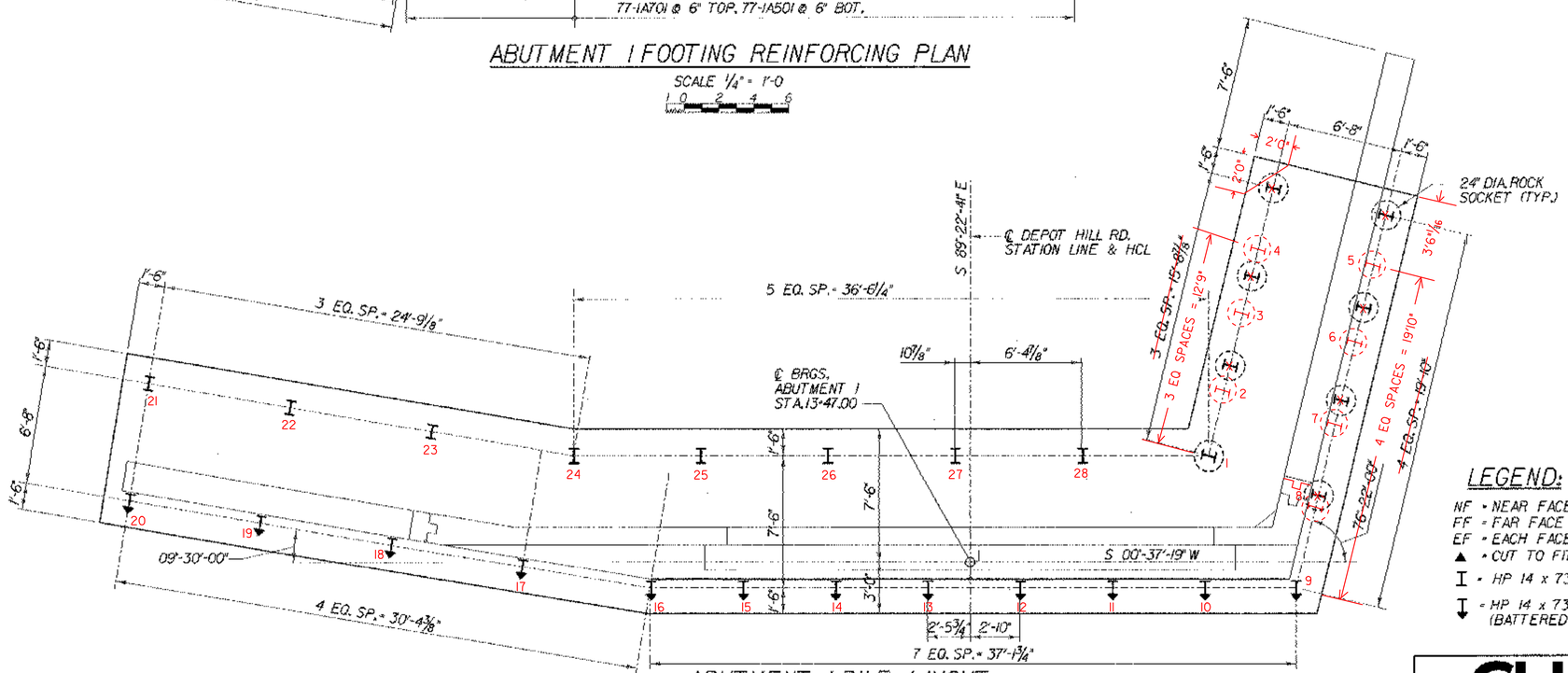


NOTE:
ALL PILES IN WINGWALL 1 SHALL BE INSTALLED IN ROCK SOCKETS AS SHOWN. REFER TO BRIDGE SHEET BRI07 FOR FOUNDATION NOTES.

ROCK SOCKET DETAIL
NOT TO SCALE

ABUTMENT 1 FOOTING REINFORCING PLAN
SCALE 1/4" = 1'-0



ABUTMENT 1 PILE LAYOUT
SCALE 1/4" = 1'-0

LEGEND:
NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
I = HP 14 x 73 PILE
↧ = HP 14 x 73 PILE (BATTERED 1:6)

NOTES:
1. SEE SHT. BRI19 FOR PILE DETAILS
2. THE EIGHT PILES UNDER WINGWALL 1 SHALL BE INSTALLED IN ROCK SOCKETS. IF BEDROCK IS FOUND TO BE LESS THAN 10 FT. BELOW THE BOTTOM OF FOOTING ELEVATION DURING THE INSTALLATION OF THE REMAINING PILES IN ABUTMENT 1 AND WINGWALL 2, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR INSTRUCTIONS ON HOW TO PROCEED.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta. / Surv. Sta.
DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER	
ABUTMENT 1 FOOTING REINFORCEMENT & PILE LAYOUT	
Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 1/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRI12	Sheet 45 OF 72

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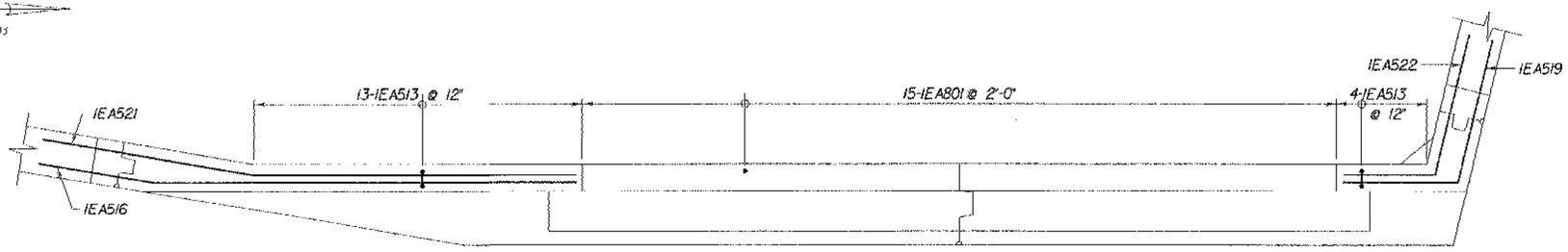
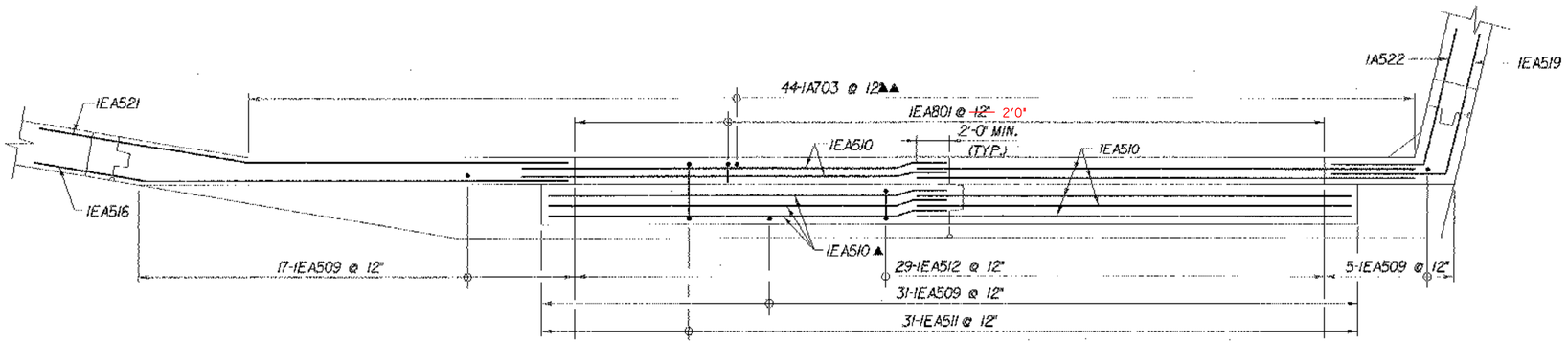


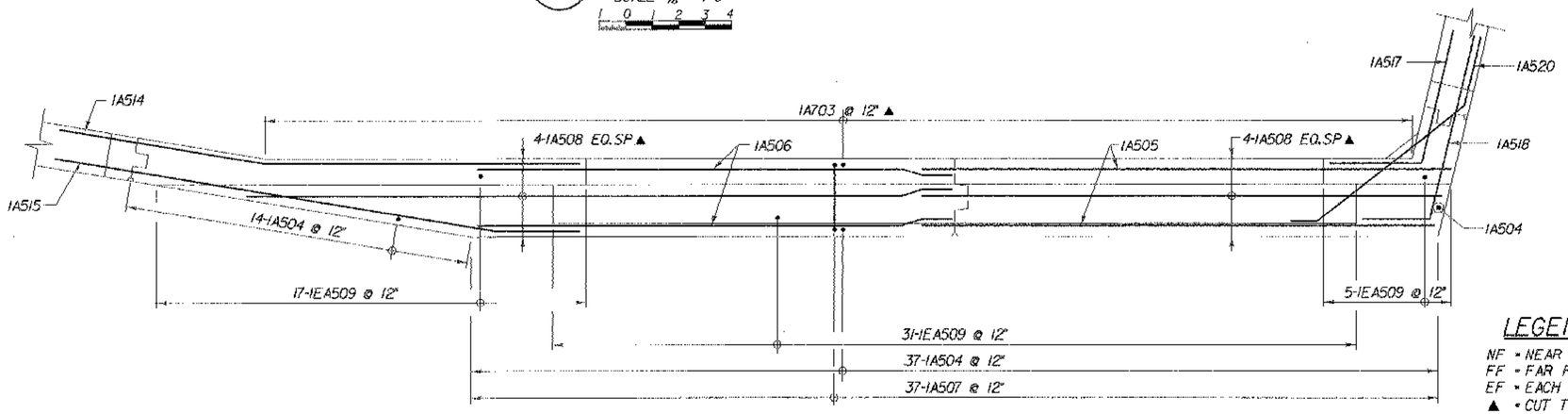
E / BR113 TOP OF BACKWALL AND TOP OF PEDESTAL REINFORCING PLAN

SCALE 3/8" = 1'-0



F / BR113 BACKWALL AND PEDESTAL REINFORCING PLAN

SCALE 3/8" = 1'-0



G / BR113 STEM REINFORCING PLAN

SCALE 3/8" = 1'-0

NOTES:

1. 3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta. / Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

ABUTMENT 1 REINFORCING DETAILS

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(9)
I.G.C. Info.	
Bridge Sheet No. BR14	Sheet 47 OF 72

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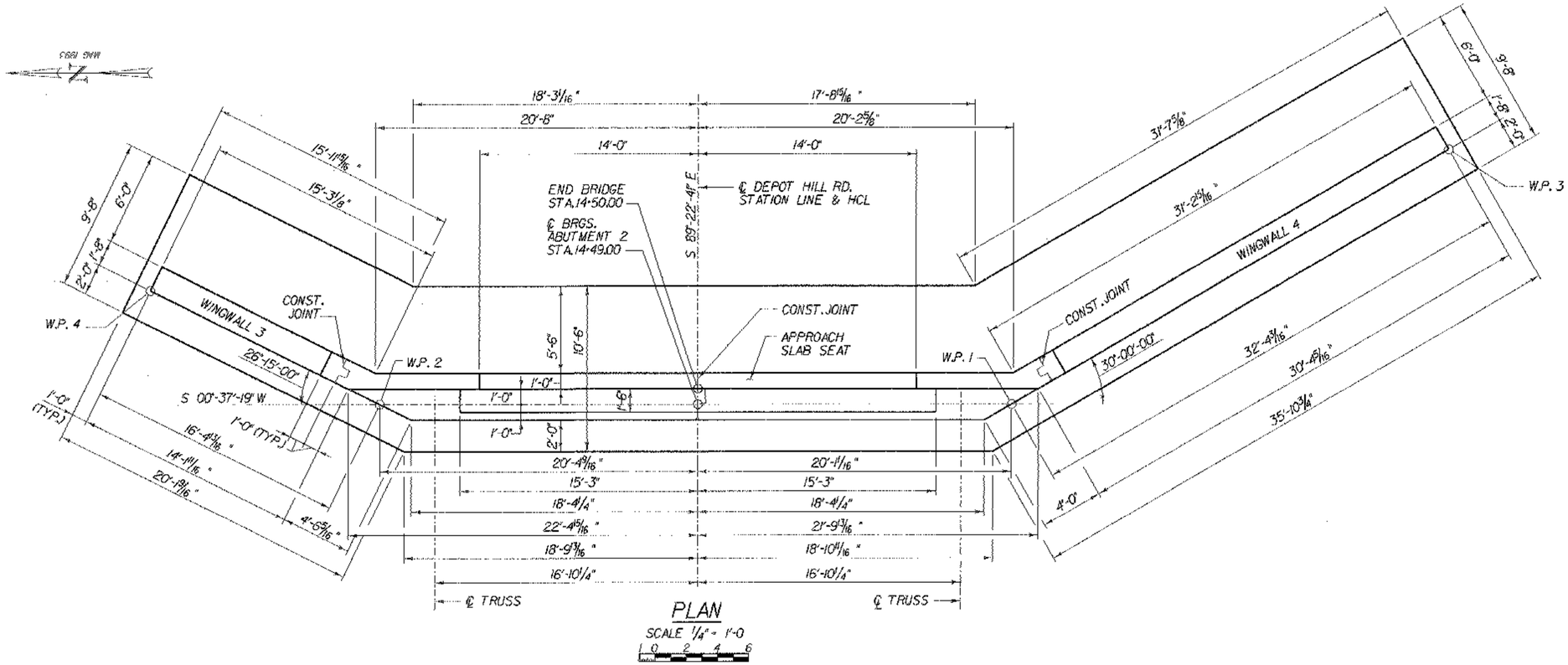
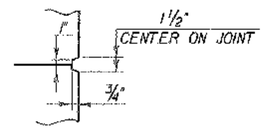


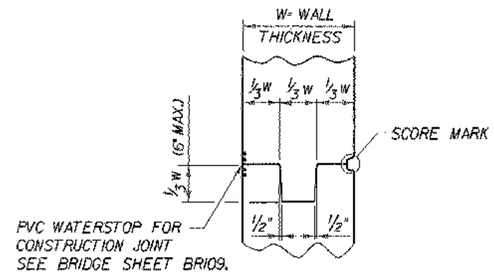
PLAN

SCALE 1/4" = 1'-0



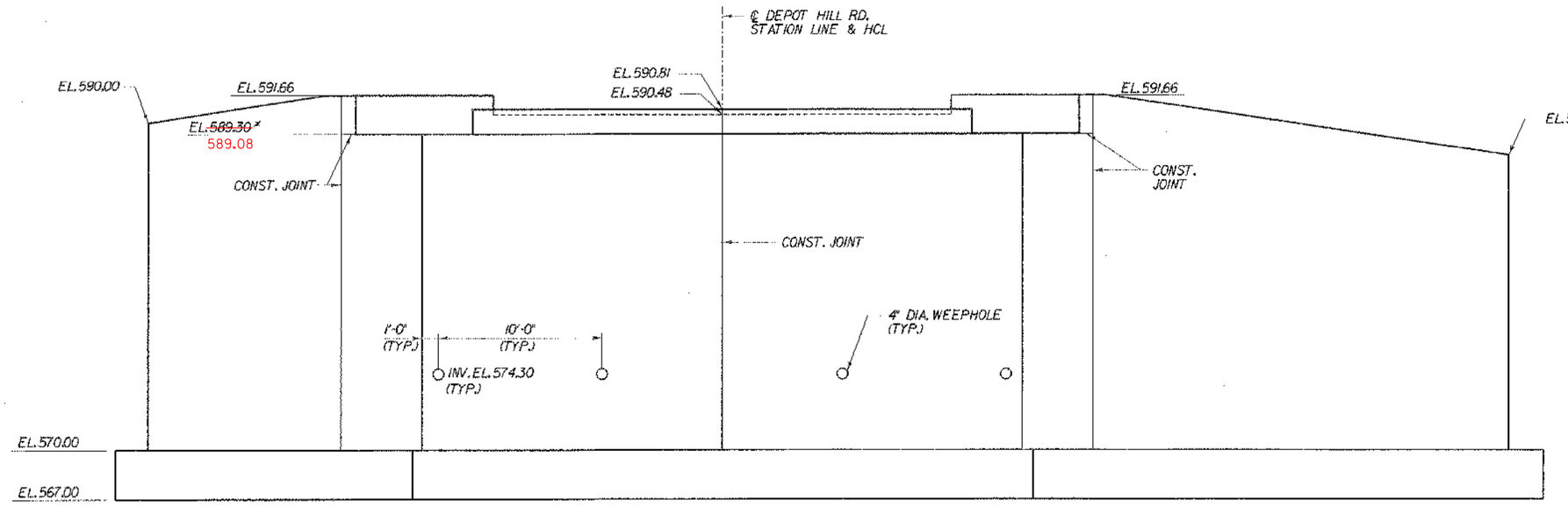
1 BRII5 SCORE MARK DETAIL

(NOT TO SCALE)



TYPICAL CONCRETE CONSTRUCTION JOINT

(NOT TO SCALE)



ELEVATION

SCALE 1/4" = 1'-0

* THE BRIDGE SEAT ELEVATION IS BASED ON AN ASSUMED TOTAL BEARING HEIGHT OF 4". THE CONTRACTOR SHALL ADJUST THE BEARING SEAT ELEVATION AS NECESSARY IF THE ACTUAL BEARING HEIGHT DIFFERS FROM THE ASSUMED 4".

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

ABUTMENT 2 PLAN AND ELEVATION

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRII5	Sheet 48 OF 72

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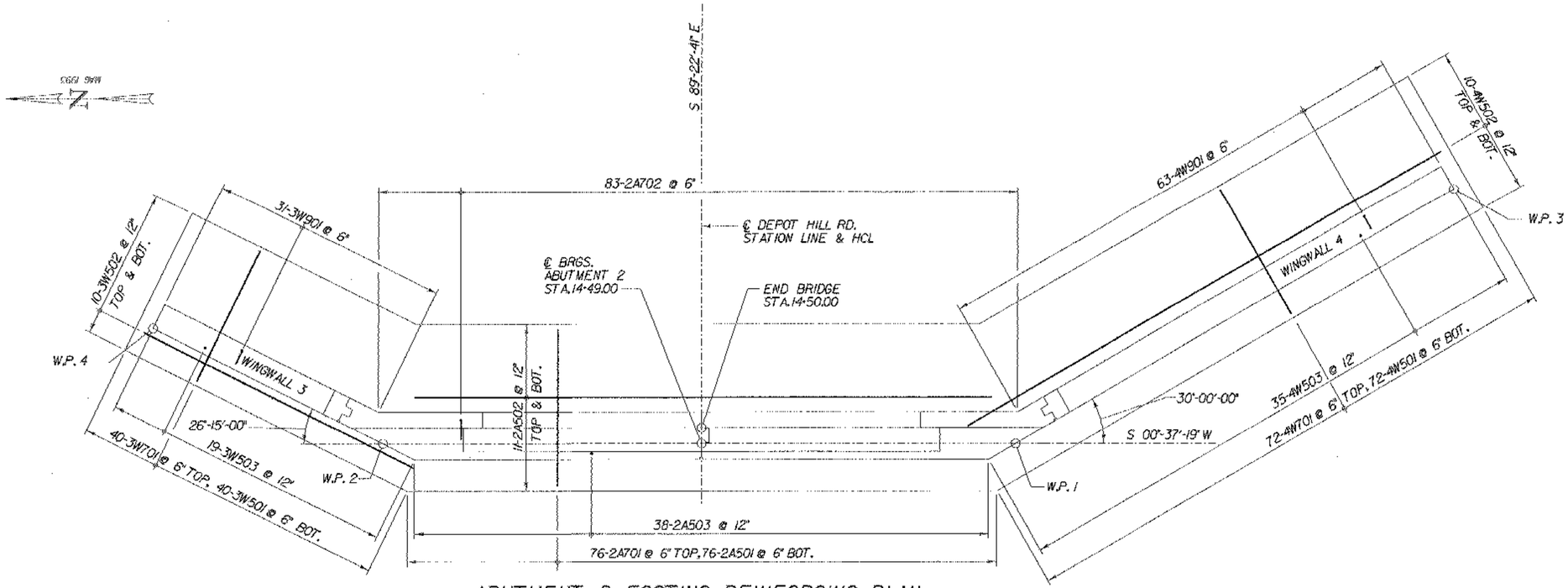
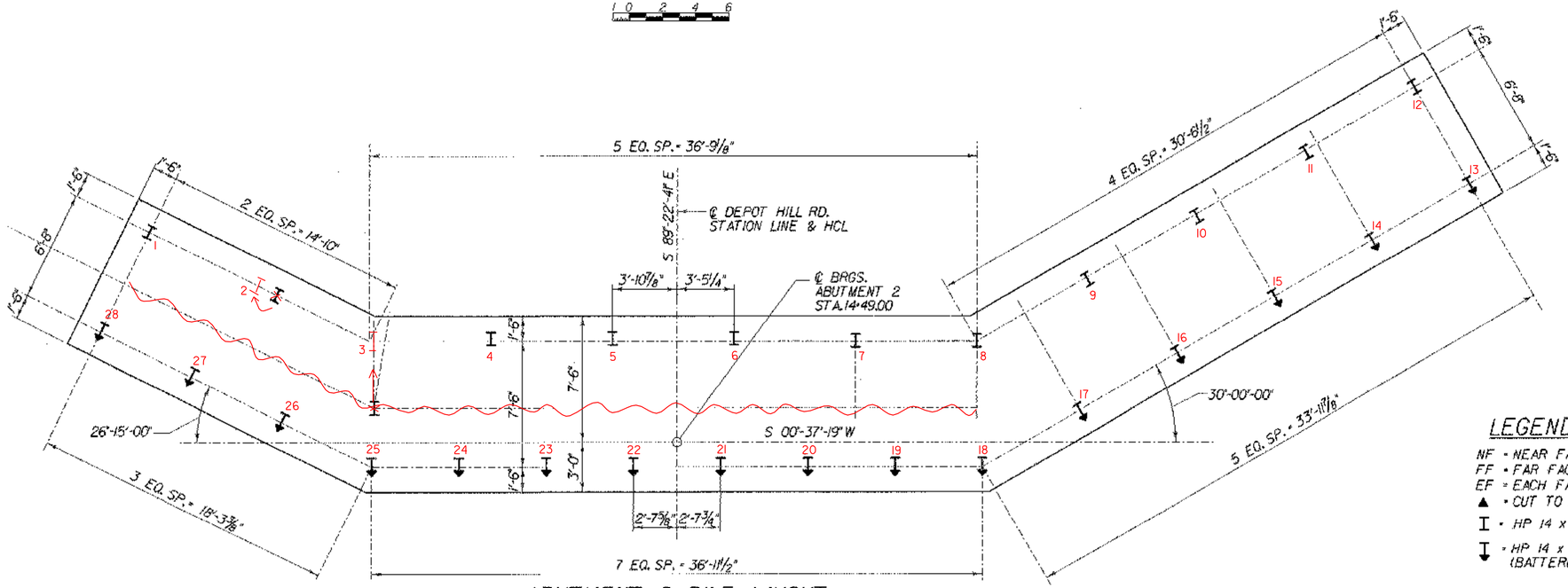


ABUTMENT 2 FOOTING REINFORCING PLAN

SCALE 1/4" = 1'-0

0 2 4 6



ABUTMENT 2 PILE LAYOUT

SCALE 1/4" = 1'-0

0 2 4 6

NOTES:

1. 3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.
2. SEE SHT. BR119 FOR PILE DETAILS.

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD
I = HP 14 x 73
I = HP 14 x 73 PILE (BATTERED 1:6)

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta. / Surv. Sta.
DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER	
ABUTMENT 2 FOOTING REINFORCEMENT & PILE LAYOUT	
Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.C.C. Info.	
Bridge Sheet No. BR116	Sheet 49 OF 72

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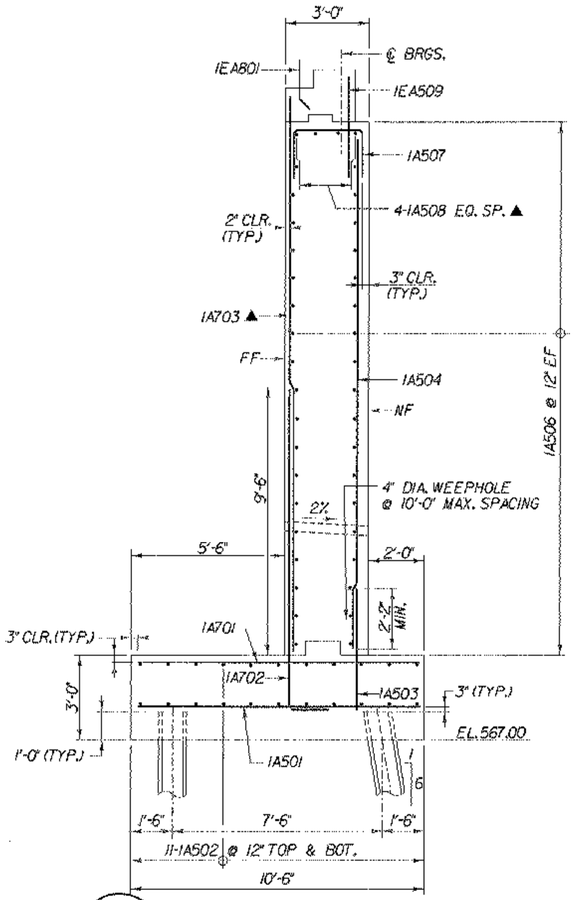
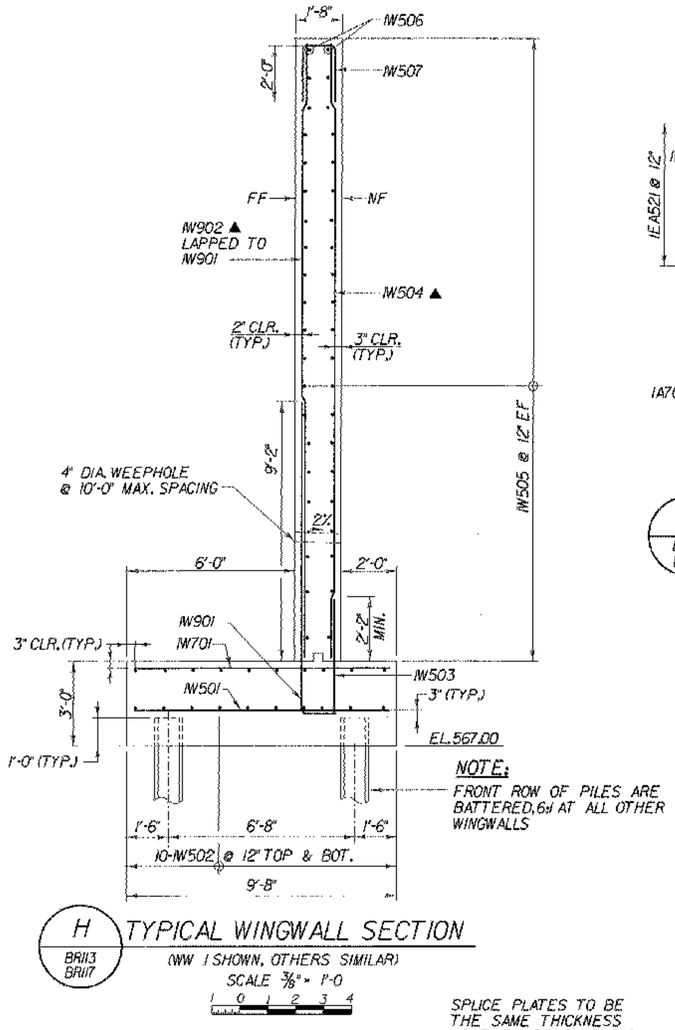


A BRII3 BRII7 ABUTMENT 1 SECTION

(ABUTMENT 2 SIMILAR)

SCALE 3/8" = 1'-0

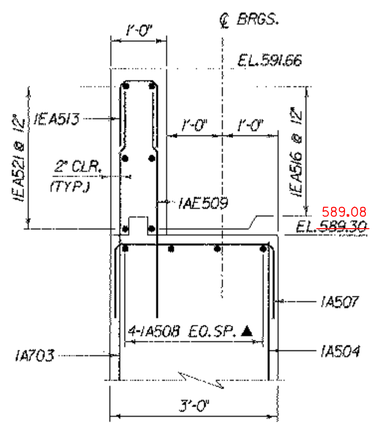


NOTE:
FRONT ROW OF PILES ARE BATTERED, 6:1 AT ALL OTHER WINGWALLS

H BRII3 BRII7 TYPICAL WINGWALL SECTION

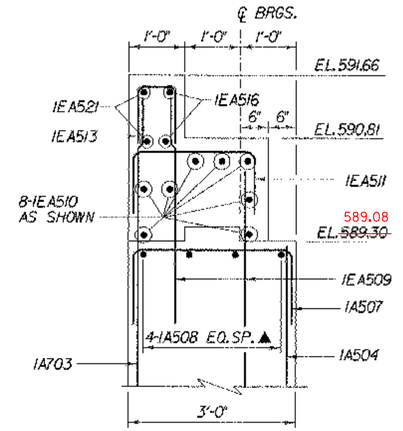
(WW 1 SHOWN, OTHERS SIMILAR)

SCALE 3/8" = 1'-0



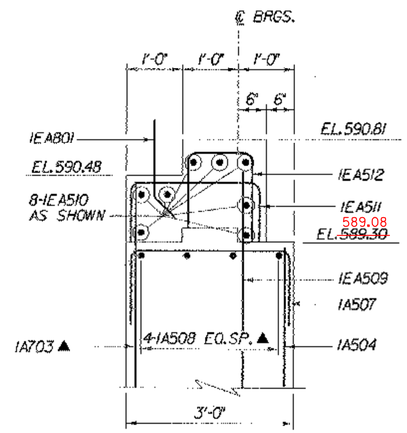
B BRII3 BRII7 BACKWALL SECTION

SCALE 3/4" = 1'-0



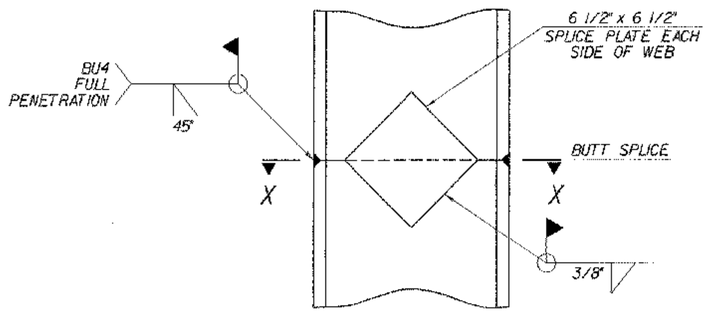
C BRII3 BRII7 BACKWALL SECTION

SCALE 3/4" = 1'-0



D BRII3 BRII7 BACKWALL SECTION

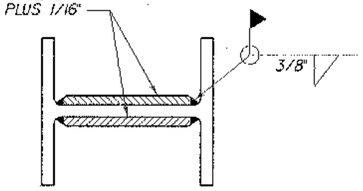
SCALE 3/4" = 1'-0



PILE SPLICE DETAIL

(NOT TO SCALE)

SPLICE PLATES TO BE THE SAME THICKNESS AS PILE WEB PLUS 1/16"



SECTION X-X

PREFABRICATED PILE SPLICE PLATES MAY BE USED WITH THE APPROVAL OF THE RESIDENT ENGINEER

PILE NOTES:

1. PILE SIZE: HP 14 x 73
2. PILE STEEL: AASHTO M270 GRADE 50
3. WELDING PROCEDURES TO BE APPROVED BY THE STRUCTURES ENGINEER PRIOR TO WELDING.

NOTES:

1. MATERIAL FOR STEEL H-PILE SPLICES SHALL CONFORM TO AASTHO M270, GRADE 50.
2. 3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

TYPICAL ABUTMENT REINFORCING SECTIONS

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(9)
I.C.C. Info.	
Bridge Sheet No. BRII9	Sheet 52 OF 72

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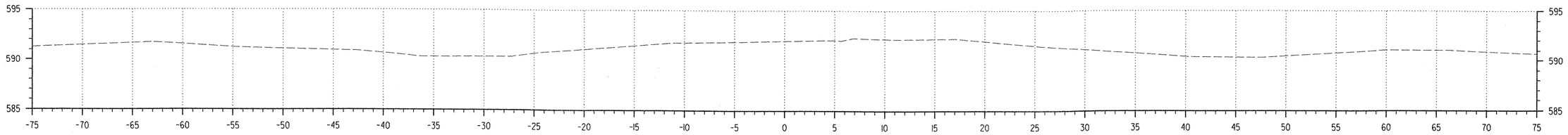

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T.H. 85

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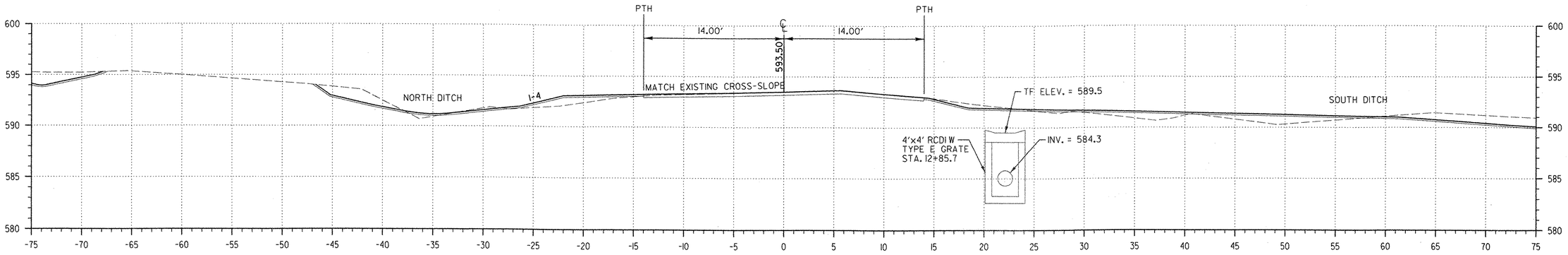

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HORIZONTAL N/A

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1 INCH = 5 FT
@ FULL SIZE

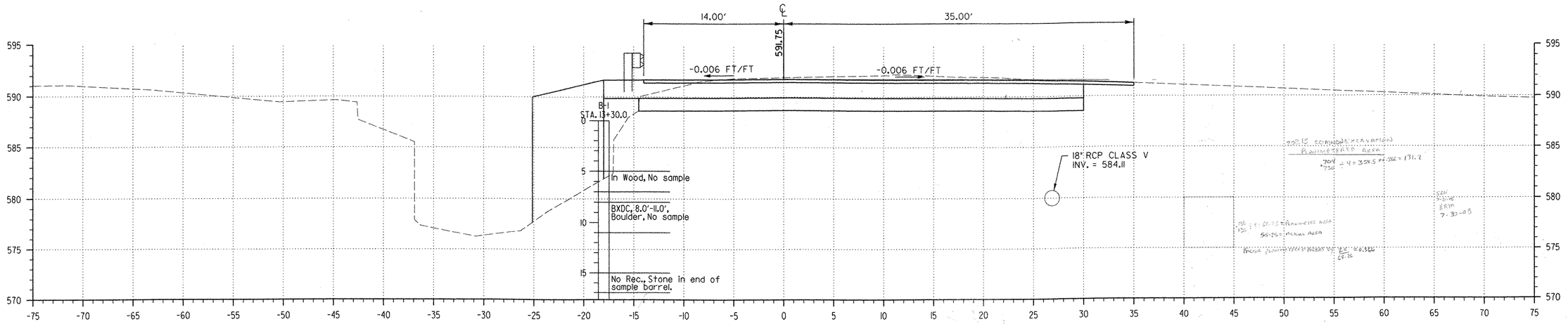
SECTION BUILT AS DESIGNED KMM 12-3-08

CROSS SECTIONS
T.H. 85

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 58 OF 72 SHEETS

CADD
CWP
12-22-09

13+25
F.G. 591.74



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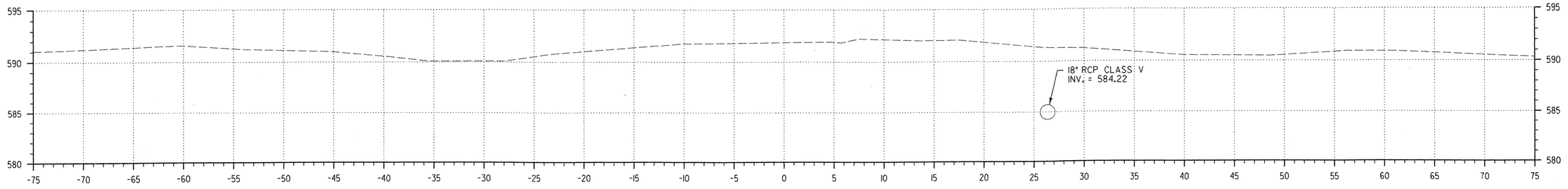

13+03
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DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

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1 INCH = 5 FT
@ FULL SIZE

CROSS SECTIONS
T.H. 85

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
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DATE PLOTTED 12/20/2006
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PROJ. NO. BRO 1447(19)
SHEET 59 OF 72 SHEETS

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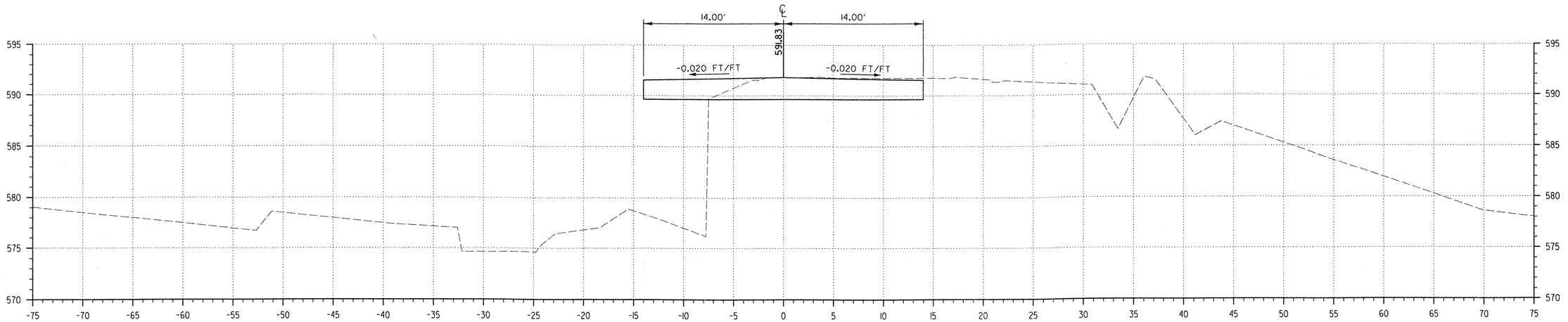
12-22-08



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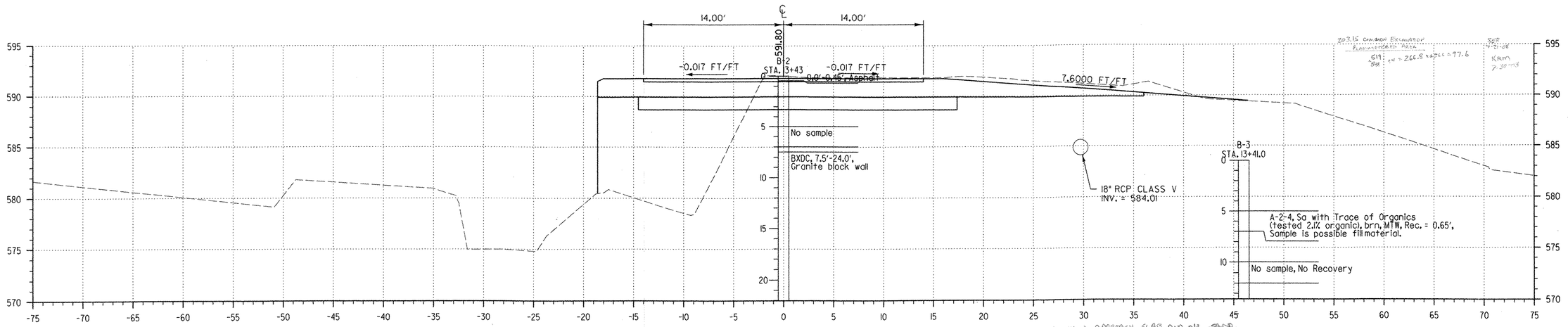
(ON BRIDGE)



2015 Common Excavation Planimeter Area
519 SHT: AV = 266.8 x 2ft = 97.6
SHT 12-22-08 KRM 7.30.08

13+40
T.H. 85

SECTION IN ERROR FROM CHA. SECTION SHOULD SHOW APPROACH SLAB AND NO SAND.
SECTION ONLY USED FOR COMMON EXCAVATION. KRM 12-3-08

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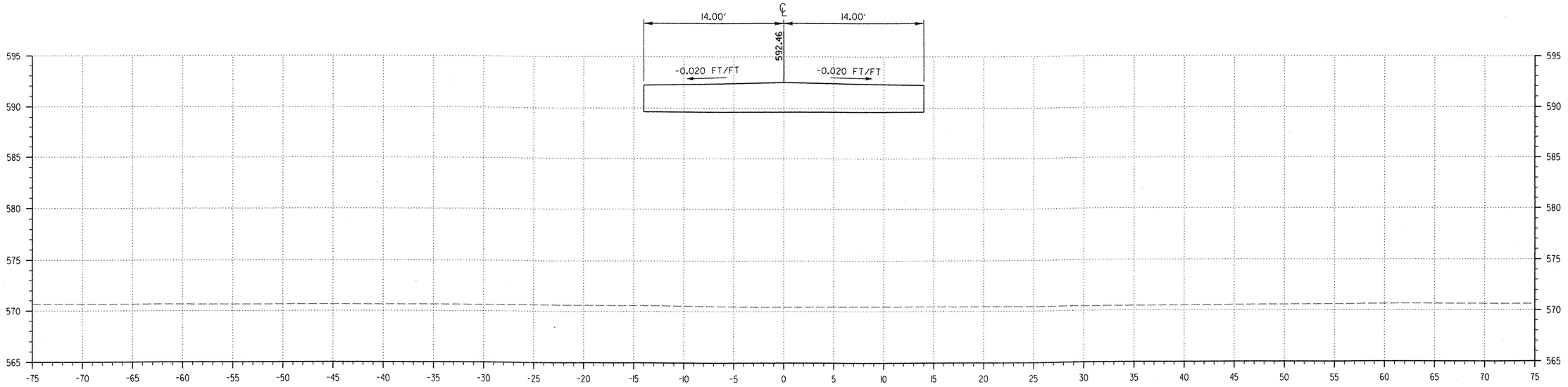
VERTICAL NAVD 88
HORIZONTAL N/A

0 5 10
1 INCH = 5 FT
@ FULL SIZE

CROSS SECTIONS
T.H. 85

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 60 OF 72 SHEETS



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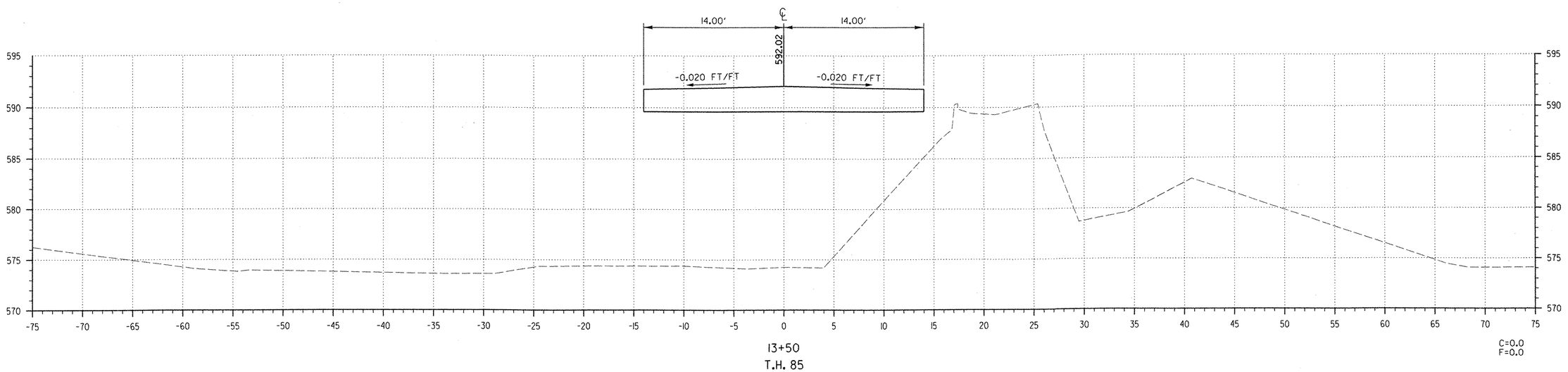

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DATUM
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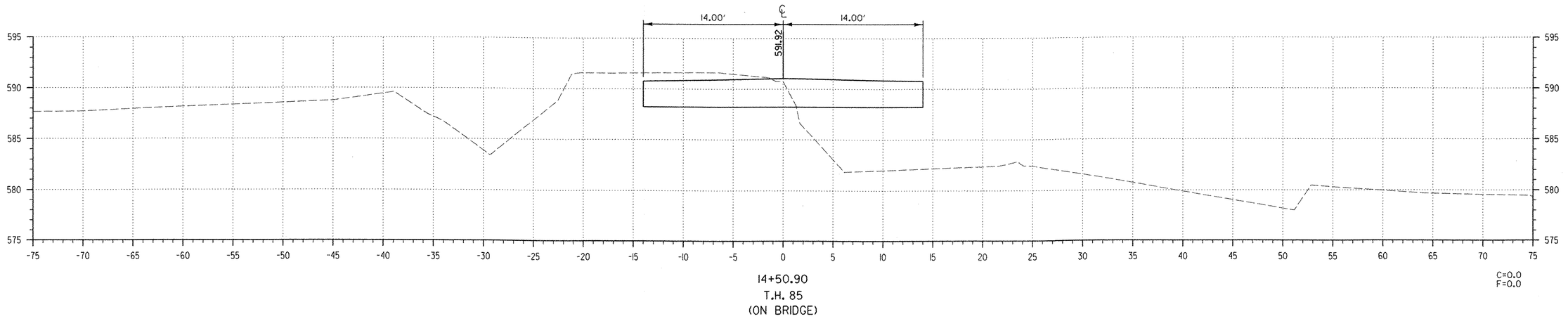
HORIZONTAL N/A

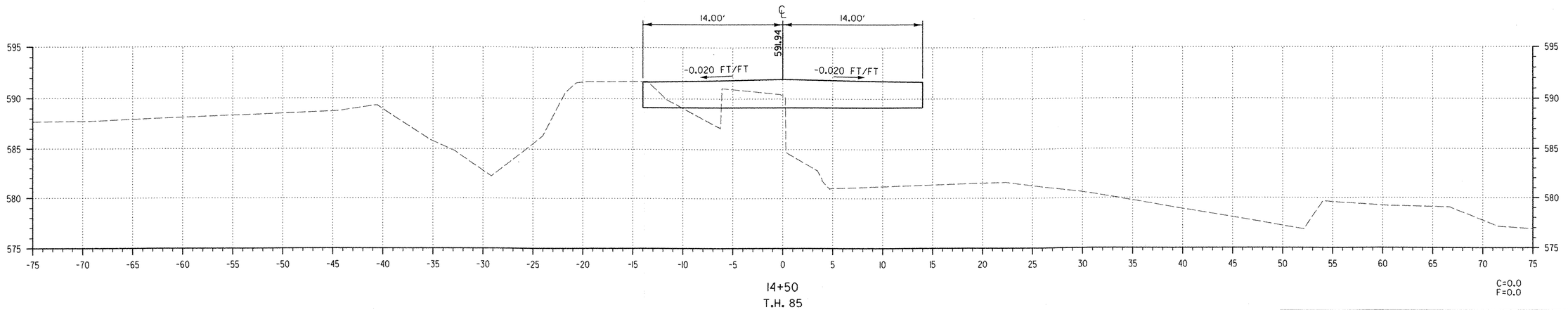
0 5 10
1 INCH = 5 FT
@ FULL SIZE

CROSS SECTIONS
T.H. 85

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 61 OF 72 SHEETS



14+50.90
T.H. 85
(ON BRIDGE)



14+50
T.H. 85
(ON BRIDGE)

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

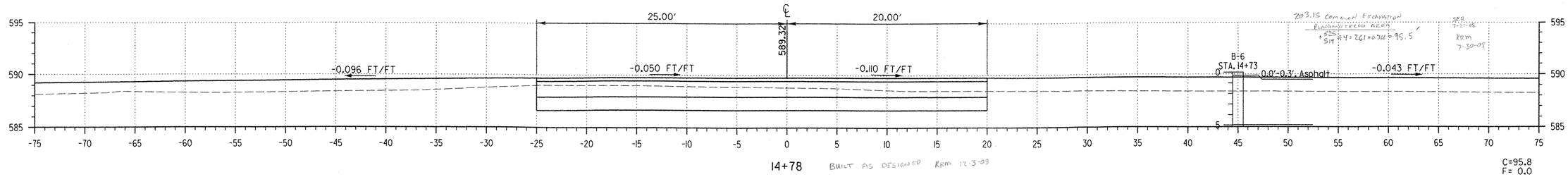
0 5 10
1 INCH = 5 FT
@ FULL SIZE

CROSS SECTIONS
T.H. 85

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 62 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\3797sect.dgn
USER =2467

CADD
Chkd
12-22-08

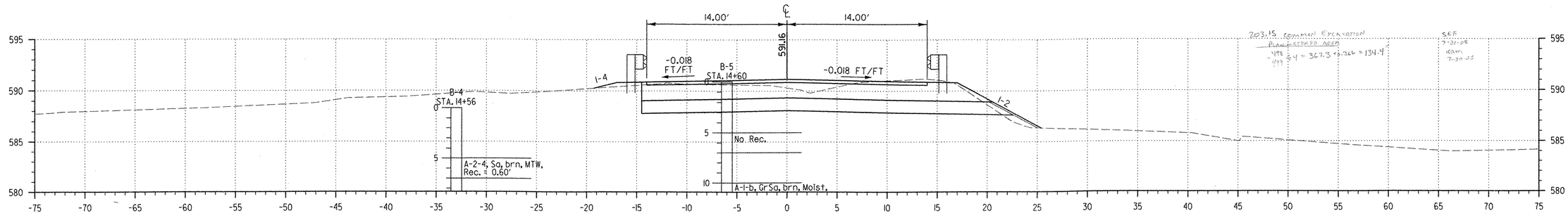


14+78
T.H. 85

BUILT AS DESIGNED KRM 12-3-09

C=95.8
F= 0.0

14+76
F.G. 589.43



14+60
T.H. 85

SECTION IN ERROR FROM CHA. SECTION SHOULD SHOW APPROXIMATE SAND AND NO SAND.
SECTION ONLY USED FOR COMMON EXCAVATION. KRM 12-3-09

C=92.3
F=2.8

FILE NAME =u:\3797\mstn\03\final\3797sect.dgn
USER =2467

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 5 10
1 INCH = 5 FT
@ FULL SIZE

CROSS SECTIONS
T.H. 85

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
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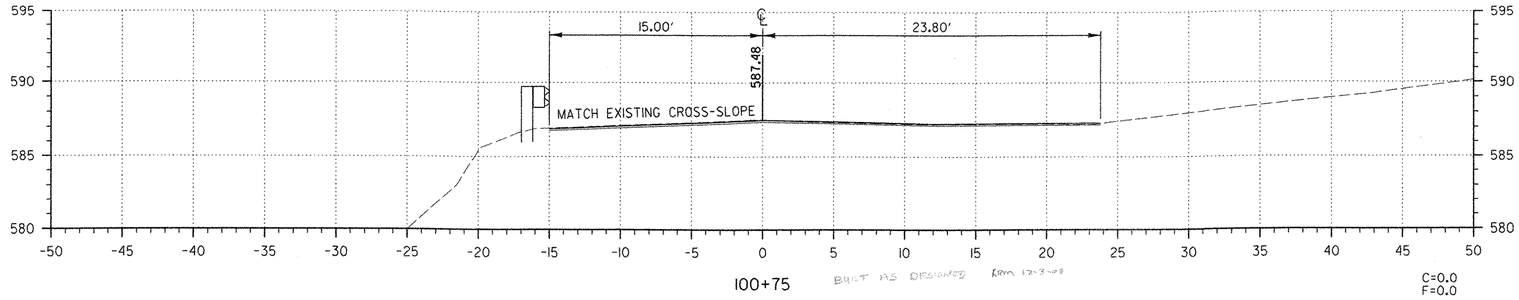
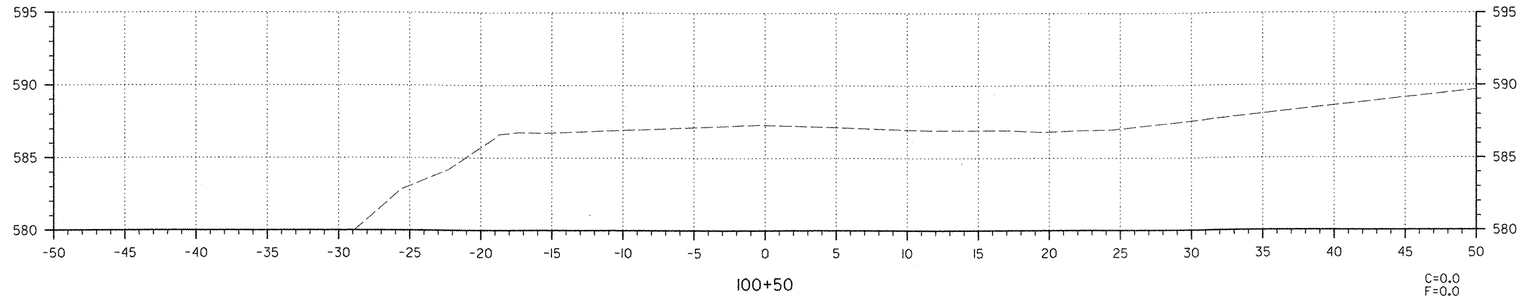
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 63 OF 72 SHEETS



100+75 BUILT AS DESIGNED RM 12-3-08

C=0.0
F=0.0

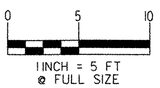
U.S. ROUTE 5



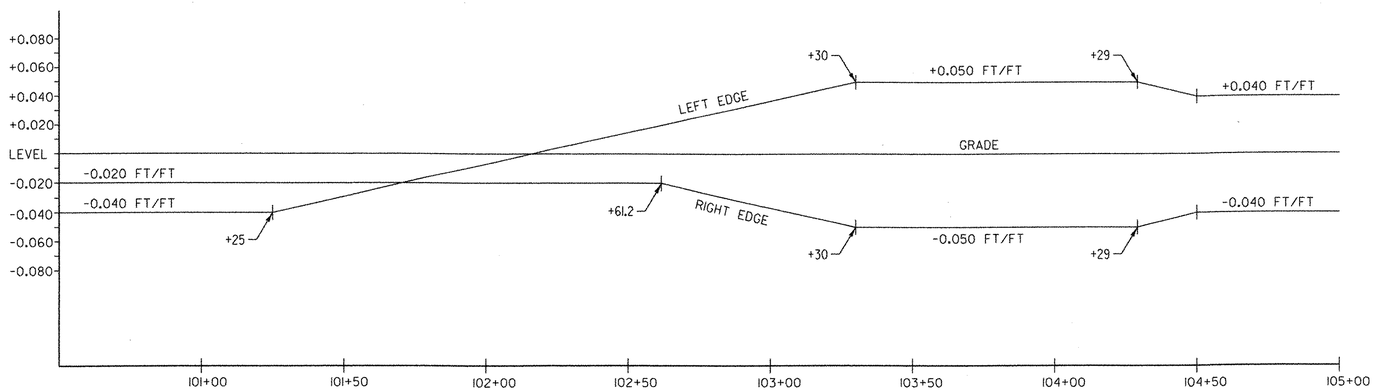
100+50

C=0.0
F=0.0

U.S. ROUTE 5



1 INCH = 5 FT
@ FULL SIZE



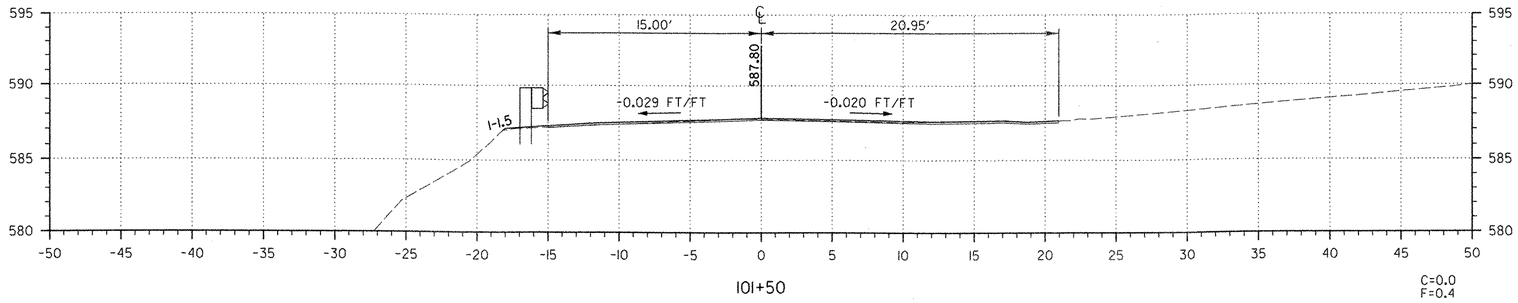
U.S. ROUTE 5 BANKING DIAGRAM
NTS

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

CROSS SECTIONS
U.S. ROUTE 5

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 64 OF 72 SHEETS

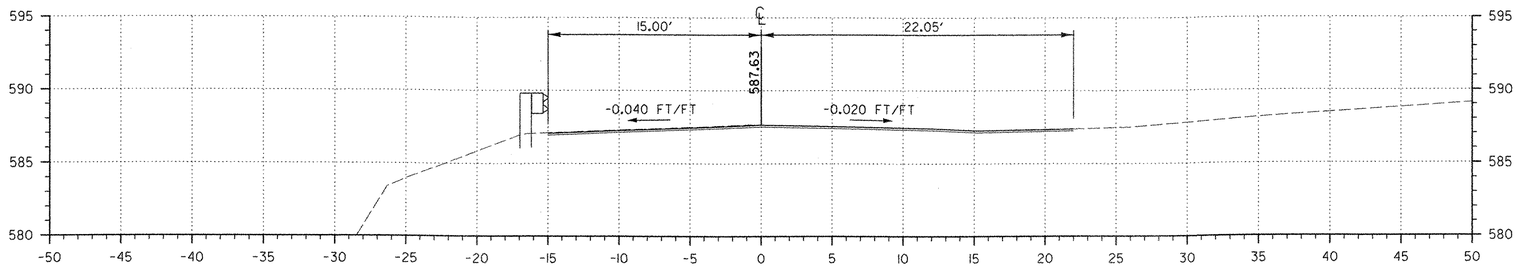
FILE NAME =u:\3797\mstn\03\final\3797sect.dgn
USER =2467



101+50

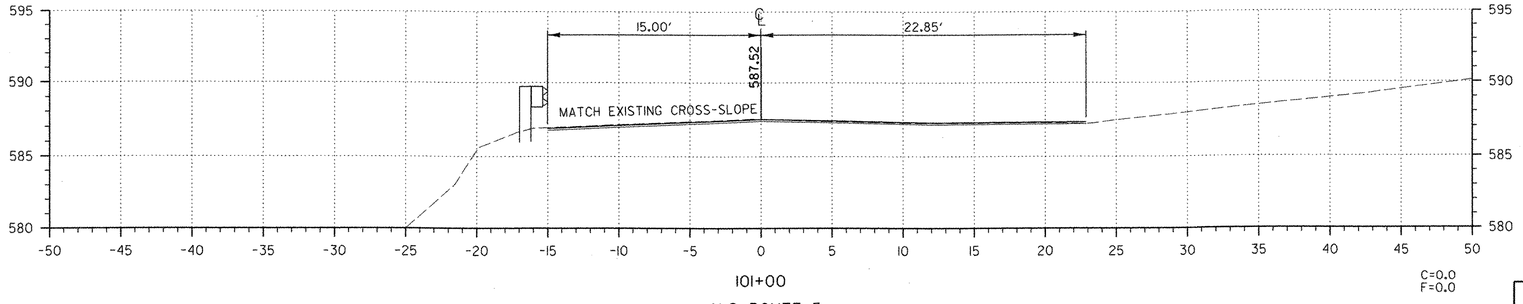
U.S. ROUTE 5

C=0.0
F=0.4



101+21

U.S. ROUTE 5



101+00

U.S. ROUTE 5

C=0.0
F=0.0

SECTIONS BUILT AS DESIGNED HRM 12-3-08

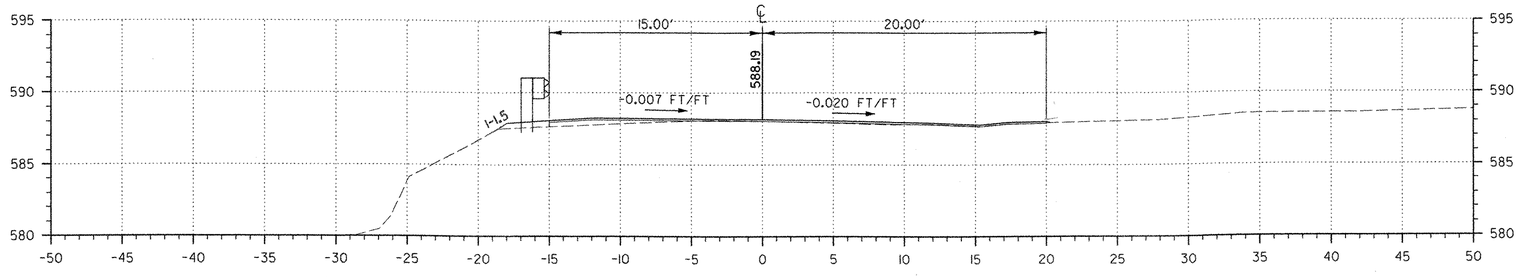
FILE NAME =u:\3797\mstn\03\final\3797sect.dgn
USER =2467

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 5 10
1 INCH = 5 FT
@ FULL SIZE

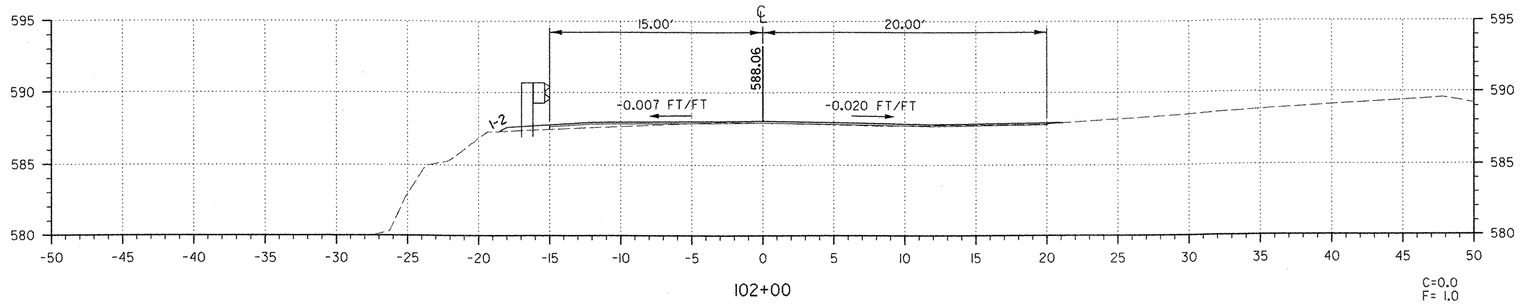
CROSS SECTIONS
U.S. ROUTE 5

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 65 OF 72 SHEETS



102+31

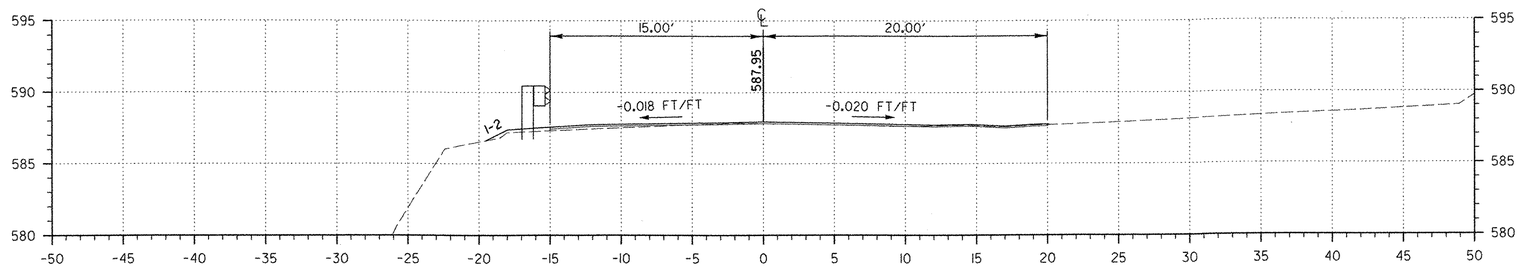
U.S. ROUTE 5



102+00

U.S. ROUTE 5

C=0.0
F= 1.0



101+75

U.S. ROUTE 5

SECTIONS BUILT AS DESIGNED KAM 12-3-08

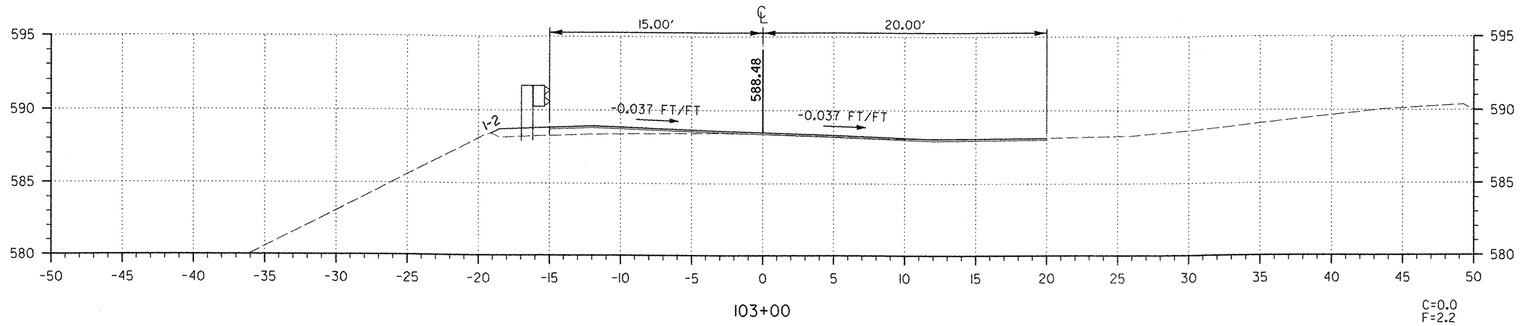
DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 5 10
1 INCH = 5 FT
@ FULL SIZE

CROSS SECTIONS
U.S. ROUTE 5

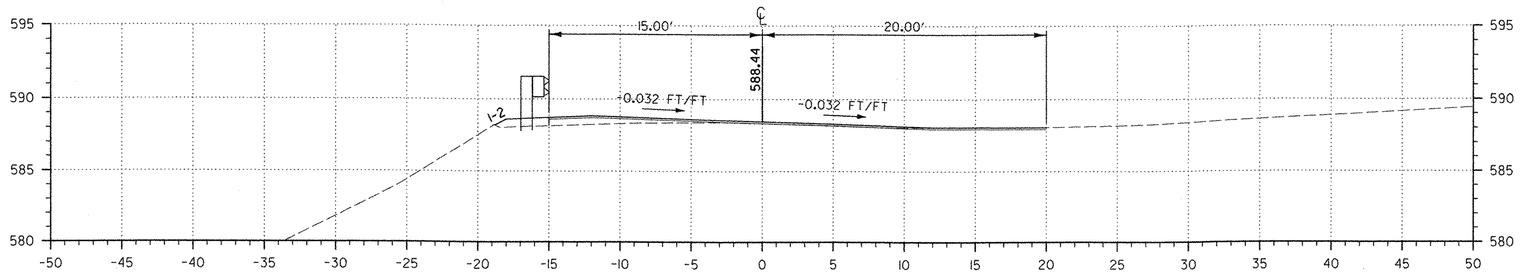
SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 66 OF 72 SHEETS

FILE NAME =u:\3797\msm\03\final\3797sect.dgn
USER =2467

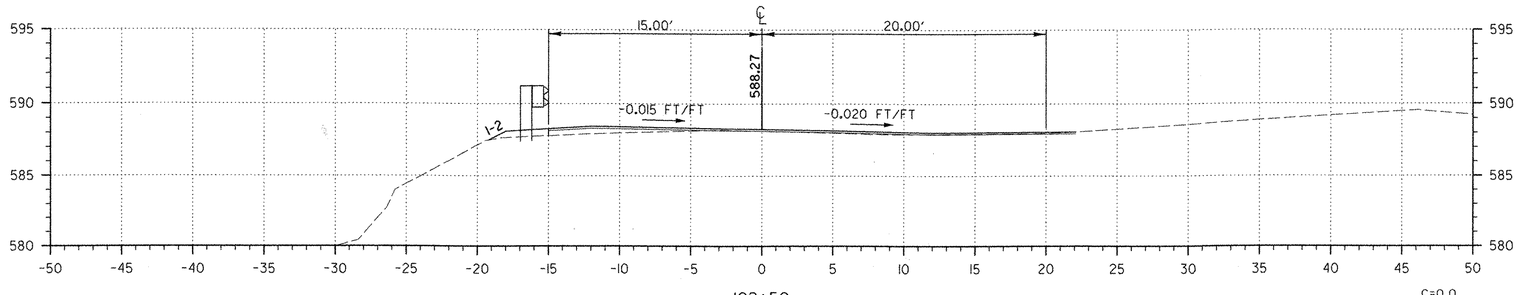


103+00
U.S. ROUTE 5

C=0.0
F=2.2



102+89
U.S. ROUTE 5



102+50
U.S. ROUTE 5

C=0.0
F=1.6

SECTIONS BUILT AS DESIGNED Kam 12-3-08

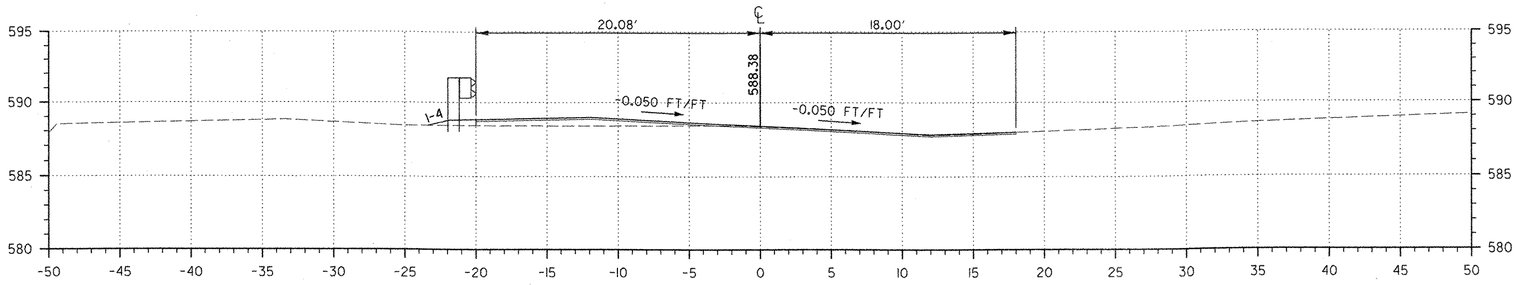
FILE NAME =u:\3797\mstn\03\final\3797sect.dgn
USER =2467

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 5 10
1 INCH = 5 FT
@ FULL SIZE

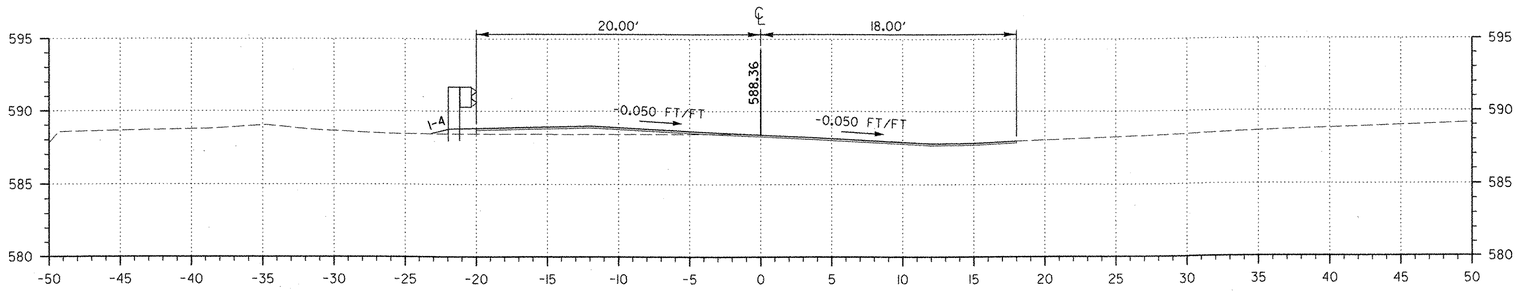
CROSS SECTIONS
U.S. ROUTE 5

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 67 OF 72 SHEETS



104+02

U.S. ROUTE 5



104+00

U.S. ROUTE 5

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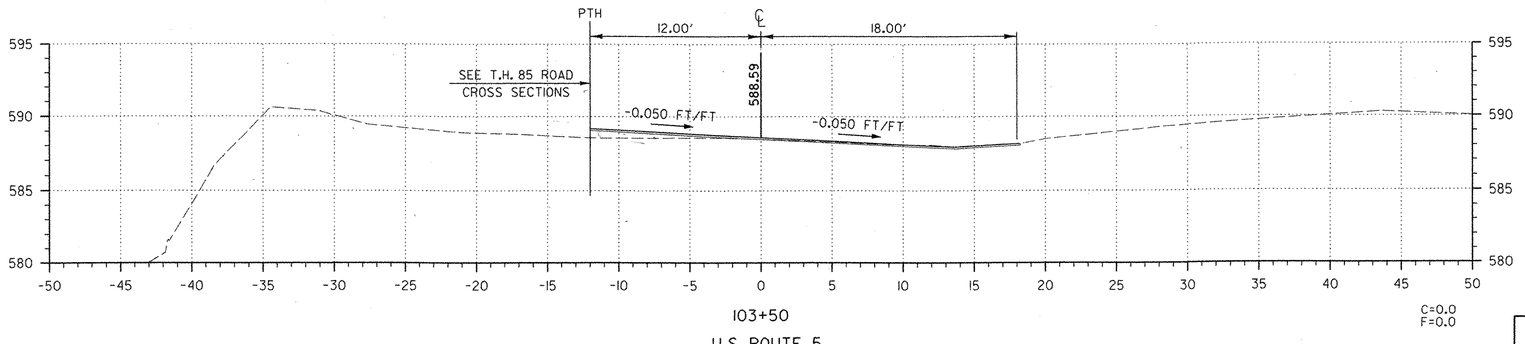
F=0.9



103+50

U.S. ROUTE 5

C=0.0
F=0.0

SECTIONS BUILT AS DESIGNED KRM 12-3-08

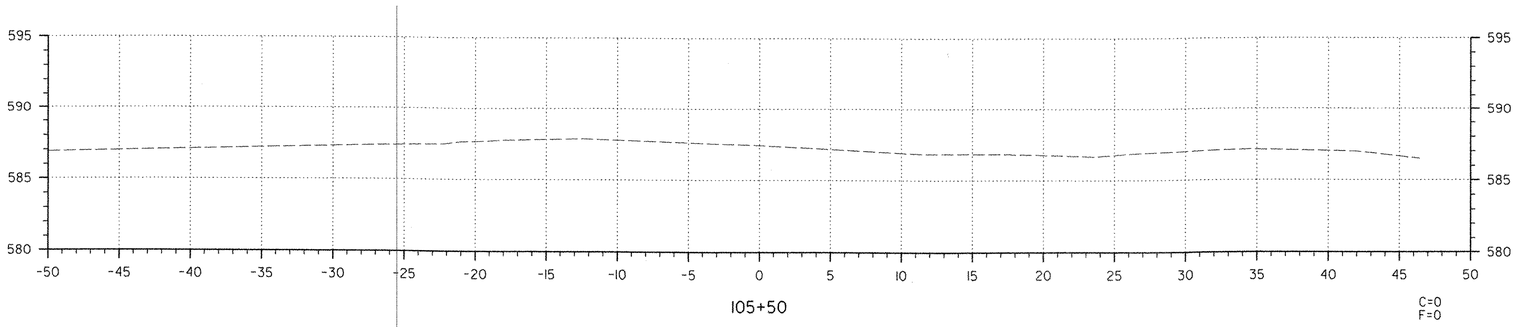
FILE NAME =u:\3797\msrn\03\final\3797sect.dgn
USER =2467

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 5 10
1 INCH = 5 FT
@ FULL SIZE

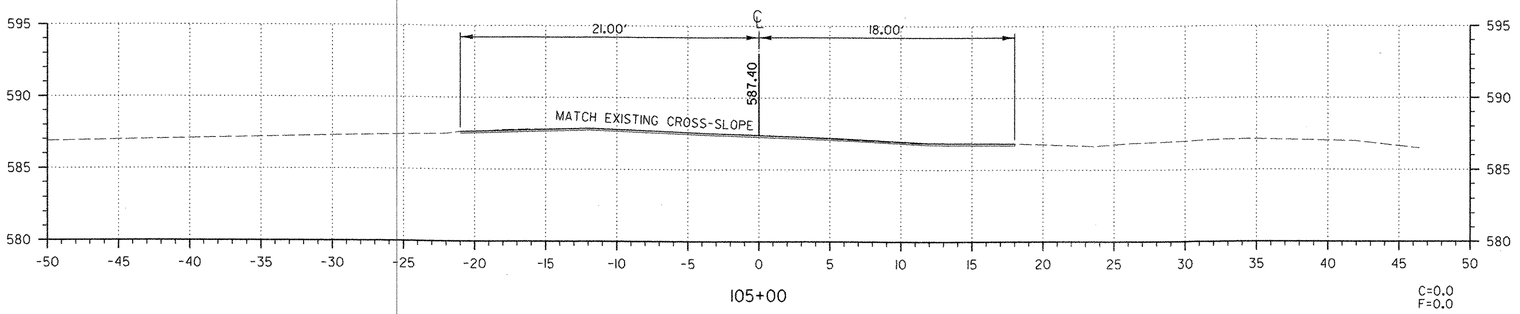
CROSS SECTIONS
U.S. ROUTE 5

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 68 OF 72 SHEETS



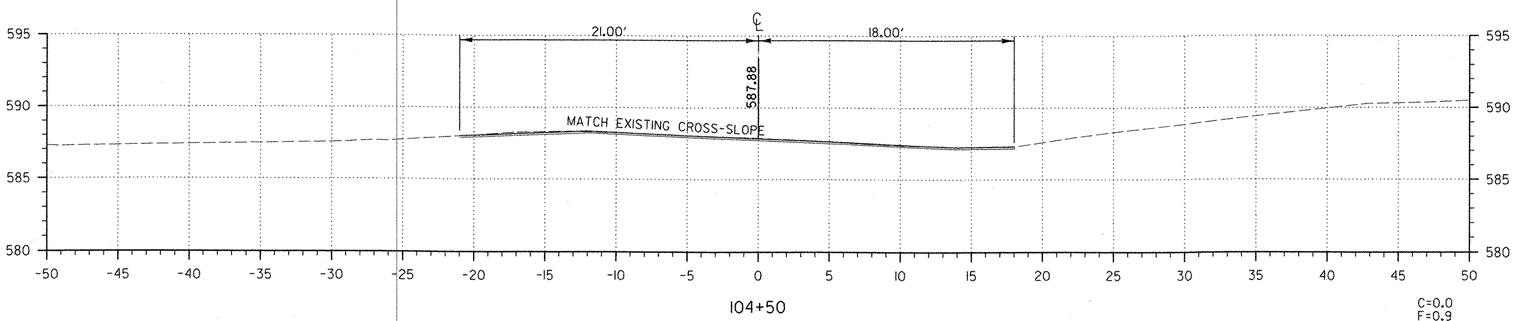
105+50

U.S. ROUTE 5



105+00

U.S. ROUTE 5



104+50

U.S. ROUTE 5

SECTIONS BUILT AS DESIGNED KRM 12-3-08

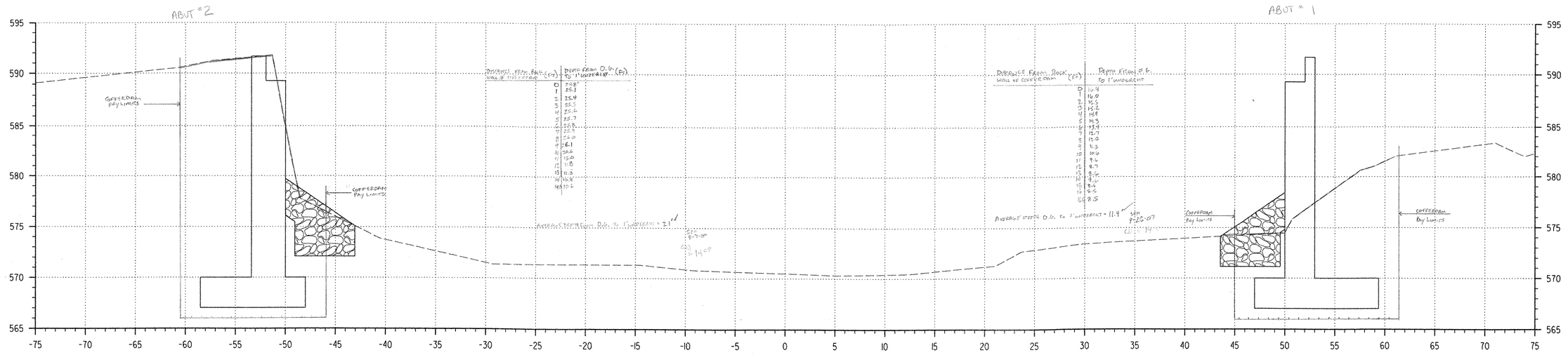
FILE NAME = u:\3797\mstn\03\final\3797sect.dgn
USER =2467

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

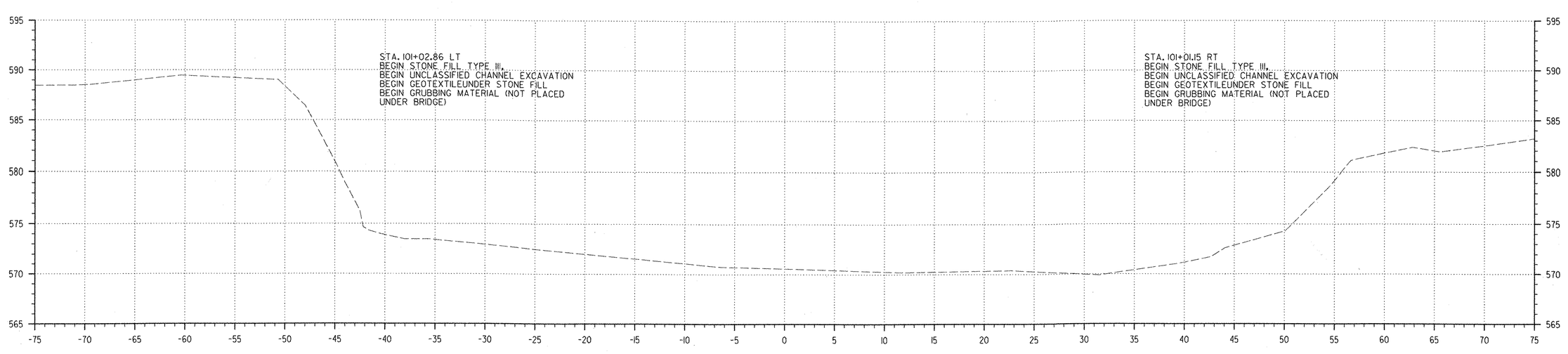
0 5 10
1 INCH = 5 FT
@ FULL SIZE

CROSS SECTIONS
U.S. ROUTE 5

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 69 OF 72 SHEETS



P101+25
PASSUMPSIC RIVER



P101+00
PASSUMPSIC RIVER

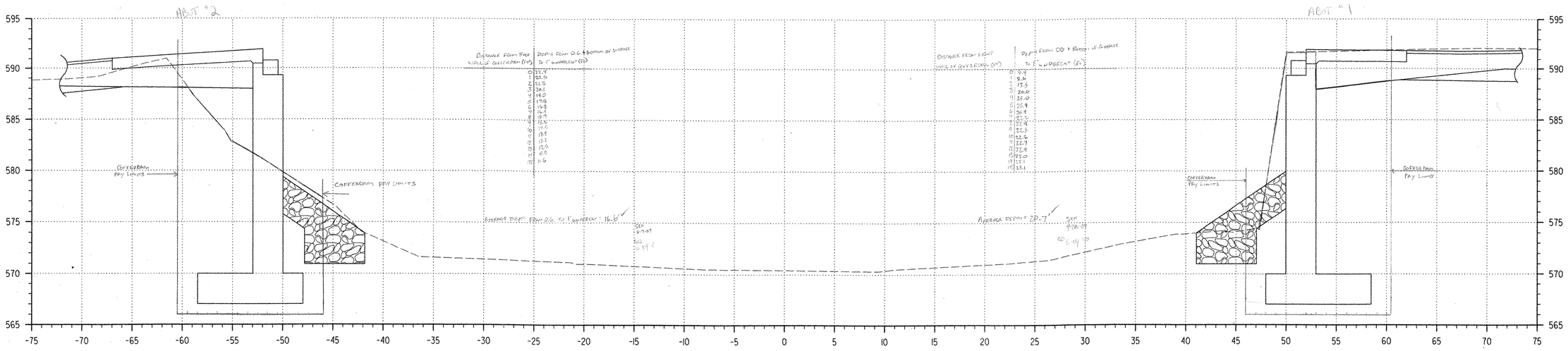
FILE NAME = u:\3797\mstn\03\final\3797sect.dgn
USER =2467

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

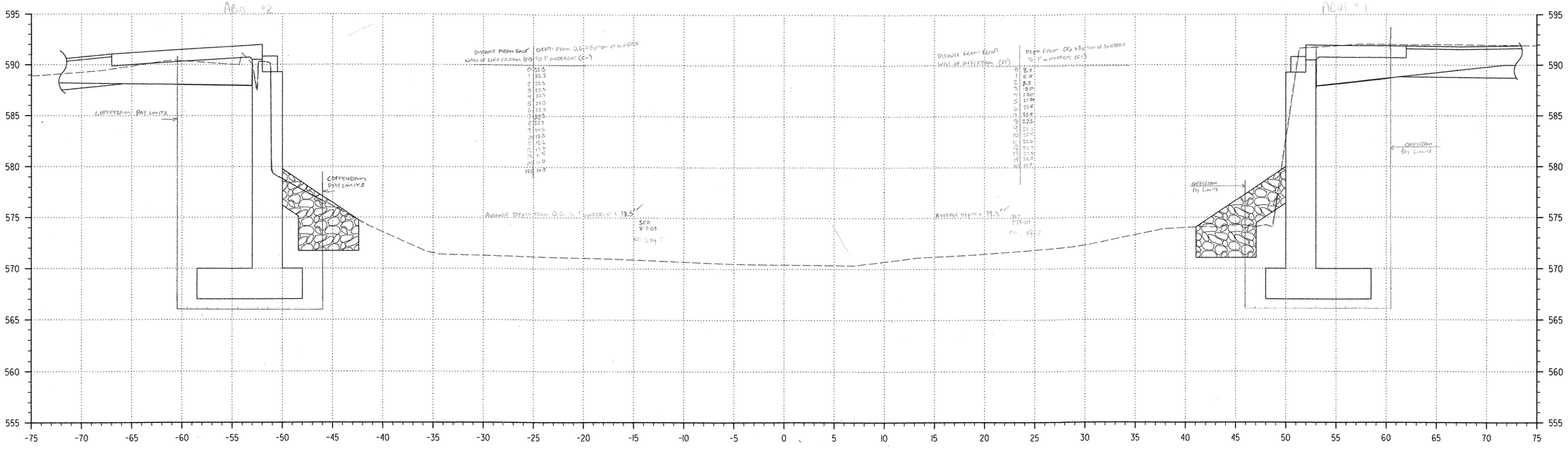
0 5 10
1 INCH = 5 FT
@ FULL SIZE

CROSS SECTIONS PASSUMPSIC RIVER

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 70 OF 72 SHEETS



P101+50
PASSUMPSIC RIVER



P101+42.13
PASSUMPSIC RIVER

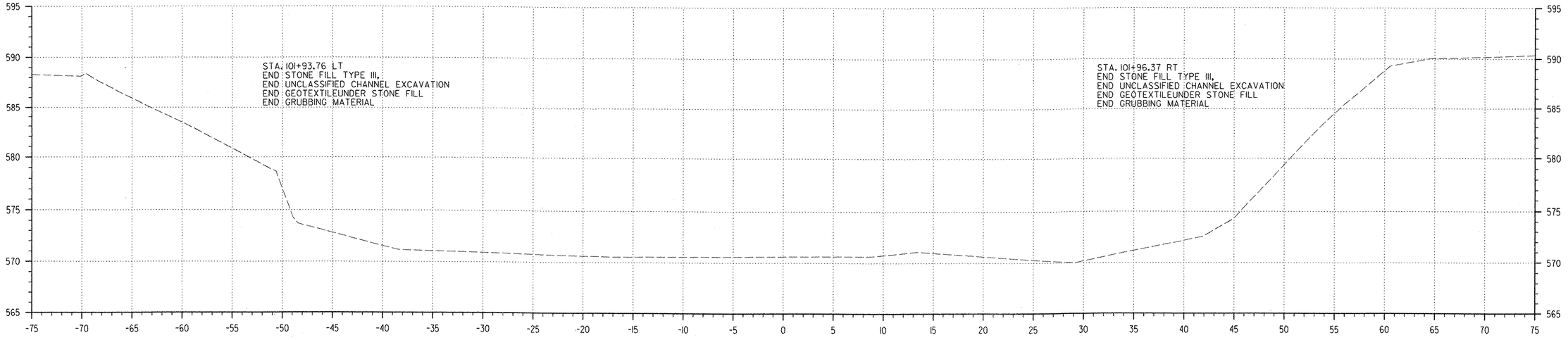
DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 5 10
1 INCH = 5 FT
@ FULL SIZE

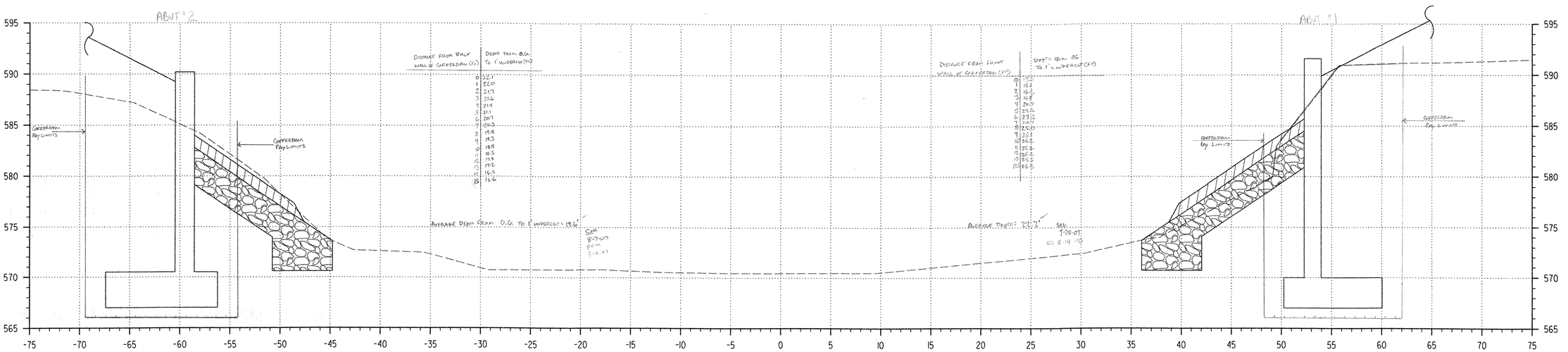
CROSS SECTIONS PASSUMPSIC RIVER

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 71 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\3797sect.dgn
USER =2467



P102+00
PASSUMPSIC RIVER



P101+75
PASSUMPSIC RIVER

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 5 10
1 INCH = 5 FT
@ FULL SIZE

CROSS SECTIONS PASSUMPSIC RIVER

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. 3797SECT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 72 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\3797sect.dgn
USER =2467

Casco Bay Steel Structures, Inc.

75 Spring Hill Road
Saco, Maine 04072

hone: (207) 282-7360 Fax: (207) 282-1179

WELDING PROCEDURE SPECIFICATION

Material specification ASTM-709-Gr36-50-50W / A709M Gr 250-345-345W
Welding process Flux Cored Arc welding (FCAW)
Manual or machine Semi AUTO
Position of welding Flat - Horizontal
Filler metal specification AWS A5-29
Filler metal classification E81T1-Ni1-H4 ESAB
Flux NA
Shielding gas 75%AR-25%CO2 Flow rate 35 CFH +5 -4
Single or multiple pass Single / Multiple Elec Ex 5/32 = 1/4
Single-or multiple arc Single
Welding current DC
Polarity DCEP
Welding progression See detail
Root treatment wire brush - area To be Free of Loose Scale, Slag, Rust & Moisture
Preheat and interpass temperature To 20°C(70) 10(50), 80°C(34) To 90(194) 20(70), 40°C(104) To 66(24) 65°C(15
Postheat temperature NA
Heat Input Min 27.7 KJ/lm Max 43.16 KJ/lm PQR FCM=8 39.6 KJ/lm

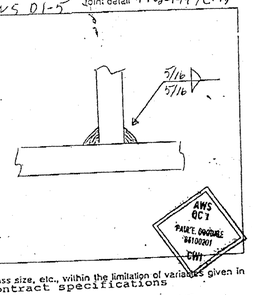
over 68(2½) 150(225)

ST. Johnsbury
Passumpsic River
BR=29 Vermont

WELDING PROCEDURE

AWS 5-13
AWS D1-5 Joint detail Prof-1447(18)

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed
		287	29	13
	1/16	258 TO .315	26.8 TO 31	11.4 TO 14



V TRANS RECEIVED JUN 06 2007

CK'D BY OK'D BY Jack
RESUBMIT APPROVED
BY DATE 6-19-07

AWS QC 1 "PART" ORIGINAL "REVISION" COPY

This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable A.W.S. codes or contract specifications

Procedure no. 101
Revision no.
Form W-2

Contractor Casco Bay Steel
Authorized By Paul C. Goodale
Date 12-6-06

074SSW

Casco Bay Steel Structures, Inc.
5 Industry Road
South Portland, Maine 04106
hone: (207) 772-2533 Fax: (207) 772-0580

WELDING PROCEDURE SPECIFICATION

Material specification ASTM 709 Gr 36-50-50W (250-345-345W)
Welding process Shielded Metal Arc Welding (SMAW)
Manual or machine Manual
Position of welding Flat (1F), Horizontal (2F)
Filler metal specification ANSI/AWS A5.1 - A5.5
Filler metal classification E7018 - 8018 C1/C3 - 702B
Flux NA
Shielding gas NA Flow rate NA
Single or multiple pass Single and multiple
Single or multiple arc Single
Welding current AC/DC
Polarity Straight / Reverse
Welding progression
Root treatment MEET AWS SPECIFICATION
Preheat and interpass temperature To 3/4(19) 50°(10°) 3/4(19) To 1 1/4(28) 70°(60°) 1 1/4(28) To 2 1/2(63.5) 150°(65°) over 2 1/2(63.5) 325°(160°)
Postheat temperature NA
Heat Input Min NA Max NA

TRANS
RECEIVED
JUN 06 2007
DKD BY JMK
RESUBMIT APPROVED
BY DATE 6-12-07

ST. Johns bury
Passumpsic River
Br #29 Vermont
Proj-1447(19)

(METRIC) WELDING PROCEDURE

Pass no.	Electrode size	Welding current: Amperes	Welding current: Volts	Travel speed	Joint detail: AWS D1.5 Fillet
AS REQ.	7018				1F
	1/8 (3.2)	70-170	22-26	AS REQ	
	5/32 (3.9)	120-225	22-26		3/16 To 3/8 (5 To 10) / 3/8 To 1/2 (10 To 13) / 1/2 To 5/8 (13 To 16)
	3/16 (4.8)	170-300	24-27		
	8018				2F
	1/8 (3.2)	90-160	22-26		
	5/32 (3.9)	120-225	22-26		
	3/16 (4.8)	180-290	24-27		3/16 To 5/16 (5 To 8) / 3/8 (10) / 7/16 To 5/8 (11 To 16)
	702B				
	5/32 (3.9)	190-290	22-26		
	3/16 (4.8)	210-330	24-27		

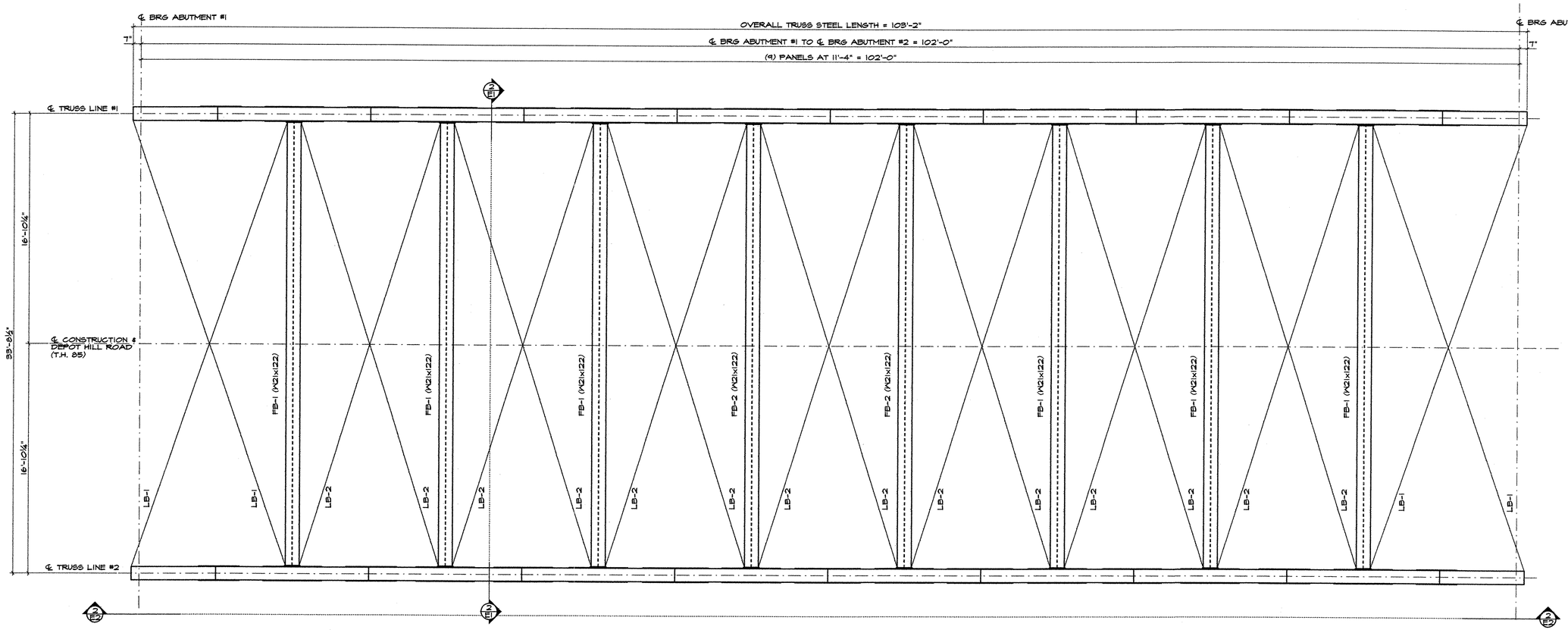
This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in applicable AWS codes or contract specifications

Procedure no. 401
Revision no.
Form III-2

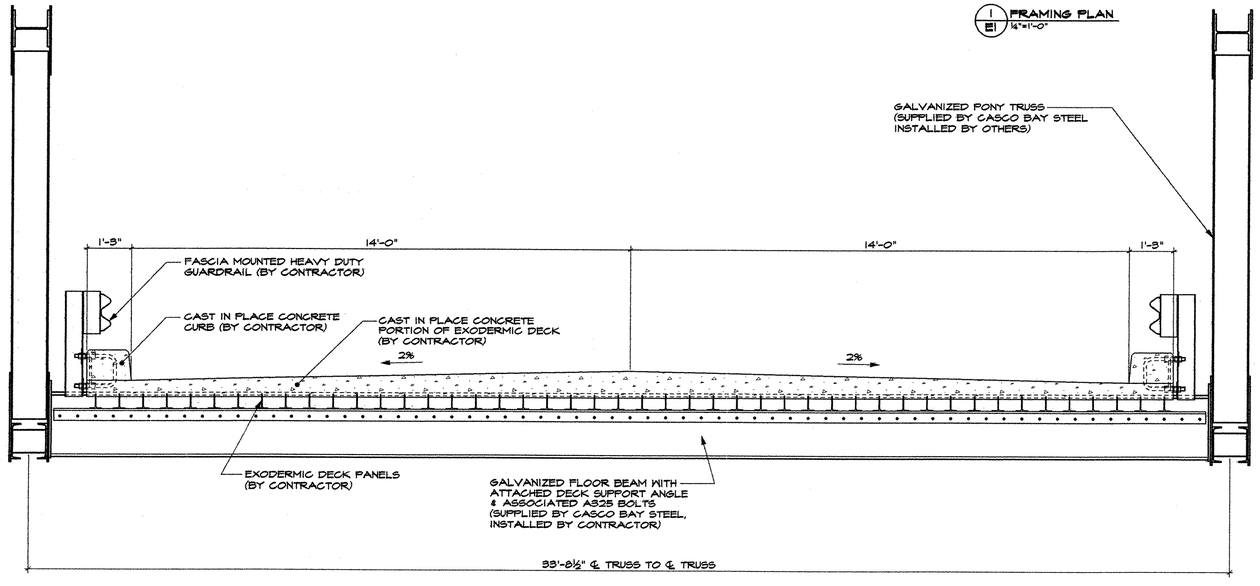
PAUL E. HOODALE CWI AWS QC 1

Contractor Casco Bay Steel
Authorized By Paul E. Hoodale
Date 3/2/00

07555W



1/E1 **FRAMING PLAN**
¼"=1'-0"



2/E1 **TRANSVERSE SECTION**
½"=1'-0"

STATE OF VERMONT · CALDERWOOD · NO. 9 Structural · LICENSED · PROFESSIONAL ENGINEER
6/26/07

REVIEWED
JAN 29
CPM CONSTRUCTORS

INVENTORY RATING = 24.12 T H 45.96 T HS
OPERATING RATING = 65.88 T HS

APPROVAL STAMP:
☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ REVISE AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM

REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE INFORMATION GIVEN IN THIS REVIEW DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ERRORS, OMISSIONS, DEVIATIONS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF THE WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF THE WORK.

CLOUGH HARBOUR & ASSOCIATES LLP
ENGINEERS, SURVEYORS, PLANNERS
ARCHITECTS, LANDSCAPE ARCHITECTS
DATE 6/26/07 BY

MATERIAL	ELECTRODES	HOLES	SHOP BOLTS
NOTED	E-70XX		NONE

SURFACE PREP & PAINT:
SSPC SP-8, GALVANIZE IN ACCORDANCE WITH ASTM A123 ⚠1
(TYP. ALL SHEETS)

DESCRIPTION: FRAMING PLAN & TRANS SECTION	DRAWN BY:	DATE:
JOB: ST. JOHNSBURY VERMONT, TOWN HIGHWAY #85 OVER THE PASSUMPSIC RIVER BRIDGE #29	ETC	MAY 2007

CALDERWOOD ENGINEERING ETC LLC RICHMOND, MAINE 04357 PH. (207) 737-4101

PROJ. NO. BRO-1447(19)

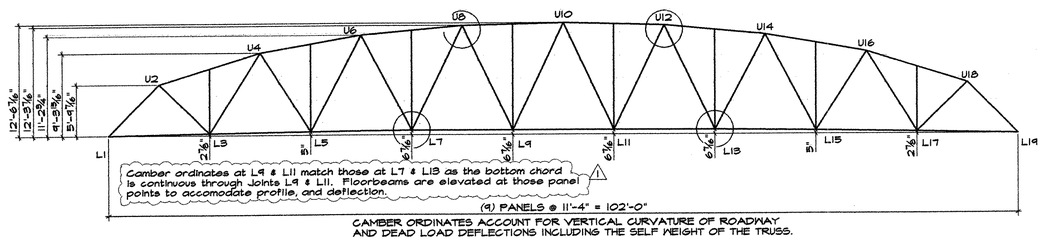
CUSTOMER: CPM CONSTRUCTORS, FREEPORT MAINE PH. (207) 865-0000

CASCO BAY STEEL STRUCTURES

75 SPRING HILL ROAD
SACO, MAINE 04072
PH. (207) 282-7360
FAX (207) 282-1179

JOB NO.	DRG. NO.
07655	E1
	REV. ⚠1

Filename: ...\00\bridge\msta\E1_ERECTION.dgn
Date:6/28/2007

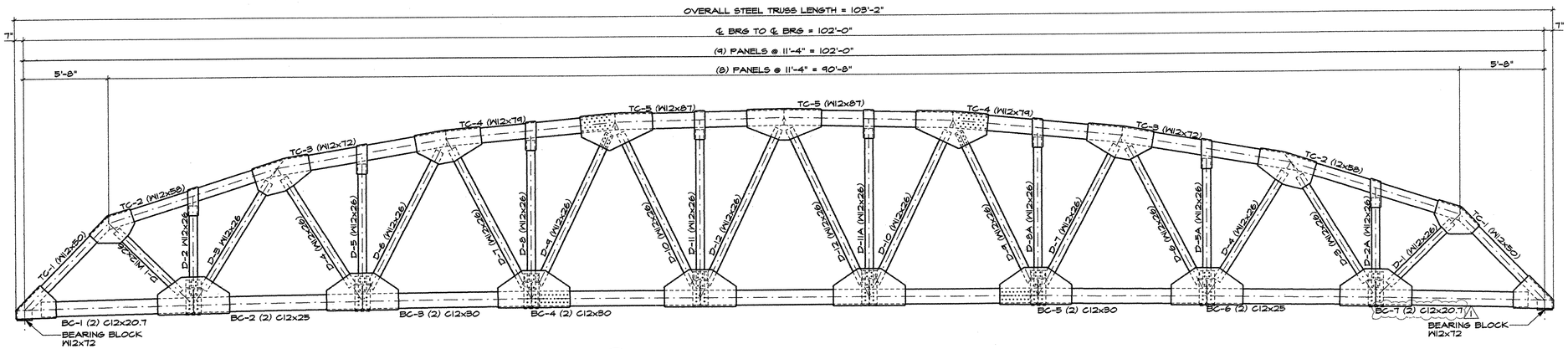


CAMBER ORDINATES ACCOUNT FOR VERTICAL CURVATURE OF ROADWAY AND DEAD LOAD DEFLECTIONS INCLUDING THE SELF WEIGHT OF THE TRUSS.

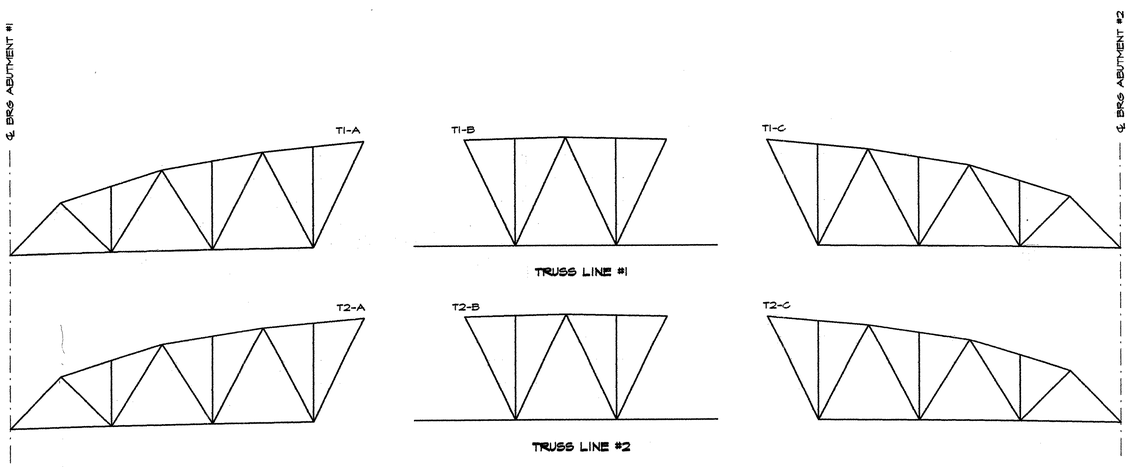
1/E2 ELEVATION & CAMBER DIAGRAM
⅛"=1'-0"

BOLT SCHEDULE	A325 TYPE 1 BOLTS (GALV.)												
LINE	NO REQ'D	BOLT Ø	BOLT LGTH	BOLTS/ CONN.	NO. OF CONN.	GRIP	THICKNESS OF PIECES CONNECTED					WASH. CODE	REMARKS
1	96	⅞"	3¼"	6	16	1⅞"	1"	½"	⅝"			1	FLBM END CONN. TO VERT.
2	12	⅞"	3"	3	4	1 9/16"	1"	½"	5/16"			1	FLBM END CONN. TO BTM CH (PANEL 1 & 9)
3	84	⅞"	3¼"	3	28	1⅞"-2"	1"	½"	⅝"-½"			1	FLBM END CONN. TO BTM CH (PANEL 2 - 8)
4													
5	520	⅞"	3¼"	65	8	1⅞"	⅝"	⅝"	⅝"			1	ANGLE TO FLBM CONN.
6													
7	192	⅞"	2½"	24	8	1¼"	½"	⅝"				1	GUSSET TO TOP CHORD
8	64	⅞"	2¼"	8	8	⅞"	½"	⅜"				1	GUSSET TO DIAGONAL @ TOP CHORD SPL.
9													
10	192	⅞"	2¼"	24	8	1"	½"	½"				1	GUSSET TO BOT. CHORD
11	8	⅞"	2¾"			1½"	½"	½"	½"			1	END PANEL LATERAL ROD ANCH. ASSEMBLY

BOLT SUMMARY	A325 TYPE 1 BOLTS (GALV.)		
	700	⅞"	3¼" A325 TYPE 1 GALV.
	12	⅞"	3" A325 TYPE 1 GALV.
	8	⅞"	2¾" A325 TYPE 1 GALV.
	192	⅞"	2½" A325 TYPE 1 GALV.
	256	⅞"	2¼" A325 TYPE 1 GALV.
	1168		HARD FLAT WASHERS FOR ⅞"Ø BOLT GALV TYPE 436



2/E2 ELEVATION TRUSS #2 (TRUSS #1 OPPOSITE HAND)
⅛"=1'-0"



3/E2 TRUSS LINE ERECTION MARKS
⅛"=1'-0"

GENERAL NOTES

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH STATE OF VERMONT, AGENCY OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001 WITH THE LATEST REVISIONS.
2. DESIGN SPECIFICATIONS - AASHTO STD. SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, 2002.
3. ALL HOLES SHALL BE PUNCHED OR DRILLED FULL SIZE
4. ~~STUDS ARE FURNISHED AND INSTALLED IN THE FIELD BY OTHERS~~ SEE F1
5. ALL FIELD CONNECTIONS SHALL BE MADE WITH ⅞"Φ A325 HIGH STRENGTH BOLTS INSTALLED IN ACCORDANCE WITH 506.19
6. ALL BOLTS SHALL HAVE A HEAVY HEX NUT, HEX HEAD, AND ONE FLAT WASHER EACH (WASHER TO BE INSTALLED AT THE END THAT IS TURNED DURING TIGHTENING)
7. CONFIGURATION OF WELD JOINTS & WELDING PROCEDURES SHALL BE IN ACCORDANCE WITH THE CURRENT PROVISIONS OF AWS D1.5
8. NON- DESTRUCTIVE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REFERENCED SPECIFICATIONS
9. ALL STEEL SHALL BE AASHTO M270 GR 50 (ASTM A709 GR. 50) U.N.O.
10. ERECTION MARKS SHALL BE LOCATED AS SHOWN ON THE ERECTION DRAWINGS
11. FAYING SURFACES OF BOLTED CONNECTIONS TO BE WIRE BRUSHED AFTER GALV.

REVIEWED
JAN 29
CPM CONSTRUCTORS

APPROVAL STAMP:
☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ AMEND AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM
REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF THE WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF THE WORK.
CLOUGH HARBOUR & ASSOCIATES LLP
DATE: 1/24/07 BY:

MATERIAL	ELECTRODES	HOLES	SHOP BOLTS
NOTED	E-70XX		NONE

SURFACE PREP & PAINT:
SSPC SP-6, GALVANIZE IN ACCORDANCE WITH ASTM A123

DESCRIPTION: CAMBER DIAGRAM & ELEVATION	DRAWN BY:	DATE:
JOB: ST. JOHNSBURY VERMONT, TOWN HIGHWAY #85 OVER THE PASSUMPSIC RIVER BRIDGE #29	ETC	MAY 2007

CALDERWOOD ENGINEERING ETC, LLC RICHMOND, MAINE 04357 PH.(207) 737-4001

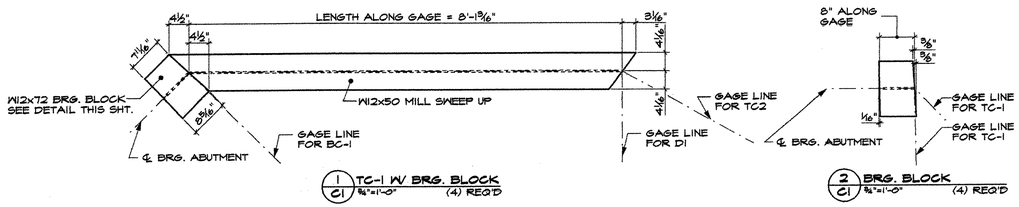
PROJ. NO. BRO-1447(19)

CUSTOMER: CPM CONSTRUCTORS, FREEPORT MAINE PH. (207) 865-0000

CASCO BAY STEEL STRUCTURES
75 SPRING HILL ROAD SACO, MAINE 04072
PH. (207) 282-7360 FAX (207) 282-1179

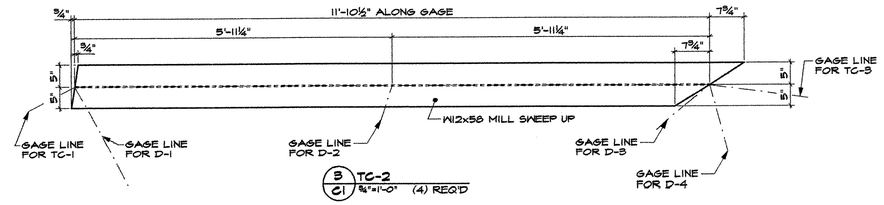
JOB NO. 02355
DRG. NO. E2
REV. 1

Date:6/28/2007 Filename: ...\00\bridge\vnsta\E2_ERECTION.dgn

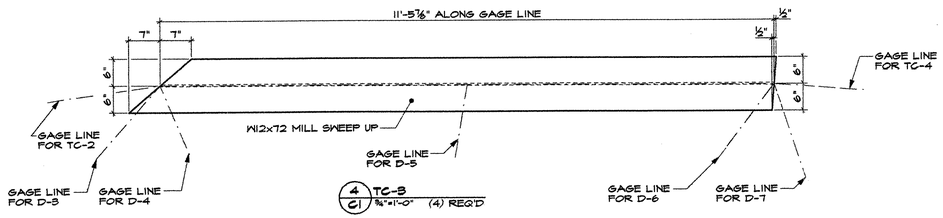


1 C1 TC-1 W/ BRG. BLOCK 3/4"=1'-0" (4) REQ'D

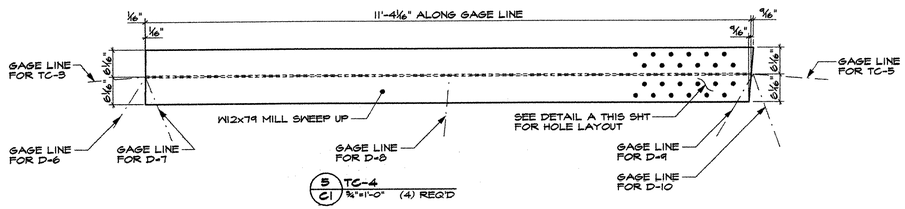
2 C1 BRG. BLOCK 3/4"=1'-0" (4) REQ'D



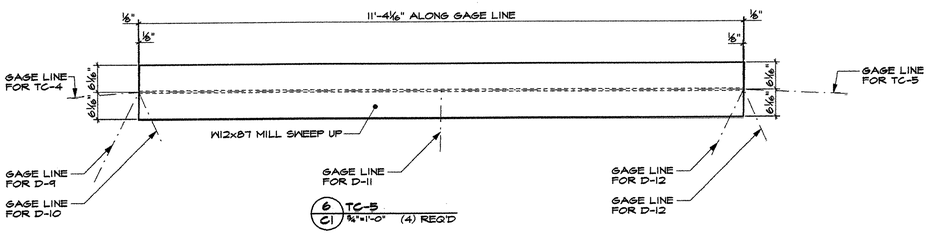
3 C1 TC-2 3/4"=1'-0" (4) REQ'D



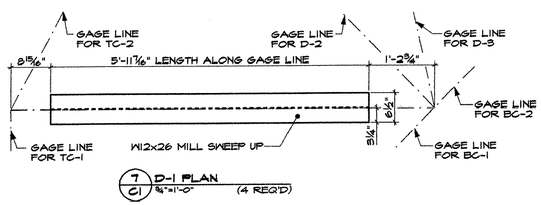
4 C1 TC-3 3/4"=1'-0" (4) REQ'D



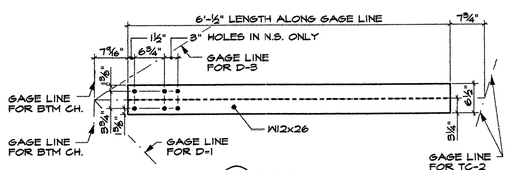
5 C1 TC-4 3/4"=1'-0" (4) REQ'D



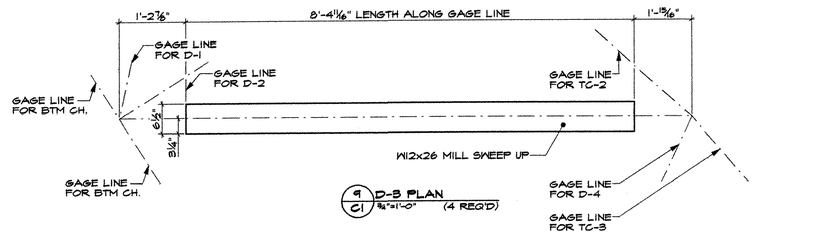
6 C1 TC-5 3/4"=1'-0" (4) REQ'D



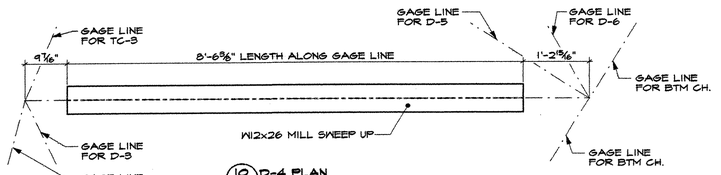
7 C1 D-1 PLAN 3/4"=1'-0" (4 REQ'D)



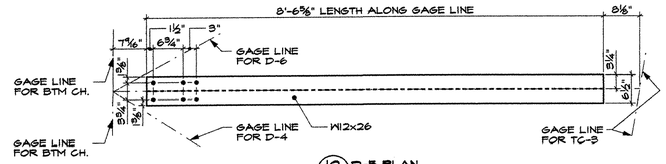
8 C1 D-2 PLAN 3/4"=1'-0" (2 REQ'D)
D-2A OPPOSITE HAND (2 REQ'D)
(HOLES IN N.S. ONLY)



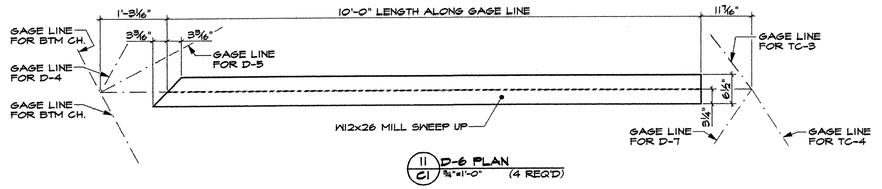
9 C1 D-3 PLAN 3/4"=1'-0" (4 REQ'D)



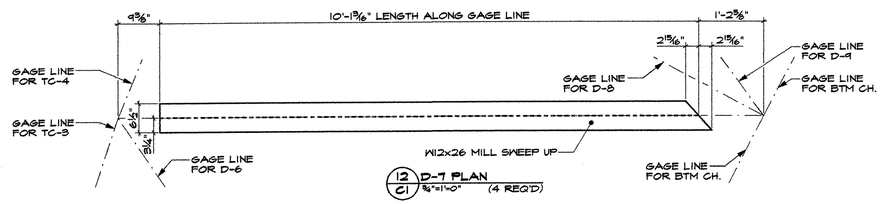
10 C1 D-4 PLAN 3/4"=1'-0" (4 REQ'D)



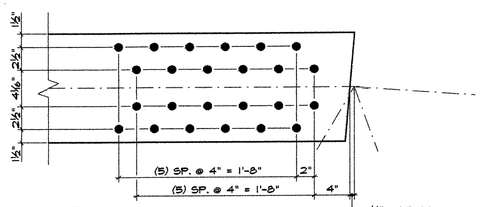
10 C1 D-5 PLAN 3/4"=1'-0" (2 REQ'D)
D-5A OPPOSITE HAND (2 REQ'D)
(HOLES IN N.S. ONLY)



11 C1 D-6 PLAN 3/4"=1'-0" (4 REQ'D)



12 C1 D-7 PLAN 3/4"=1'-0" (4 REQ'D)



A C1 TOP CHORD SPLICE HOLE LAYOUT 1 1/2"=1'-0"
(TYPICAL LAYOUT EACH FLANGE)

APPROVAL STAMP:

☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ REVISE AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM

REVIEWED JUN 29 CPM CONSTRUCTORS

MATERIAL	ELECTRODES	HOLES	SHOP BOLTS
ASTM A709 GR.50	E-70XX	15/16"	NONE

SURFACE PREP & PAINT:
SSPC SP-6, GALVANIZE IN ACCORDANCE WITH ASTM A123

DESCRIPTION: TOP CHORD & DIAGONAL DETAILS	DRAWN BY:	DATE:
JOB: ST. JOHNSBURY VERMONT, TOWN HIGHWAY #85 OVER THE PASSUMPSIC RIVER BRIDGE #29	ETC	MAY 2007

CALDERWOOD ENGINEERING ETC LLC RICHMOND, MAINE 04357 PH. (207) 737-4303

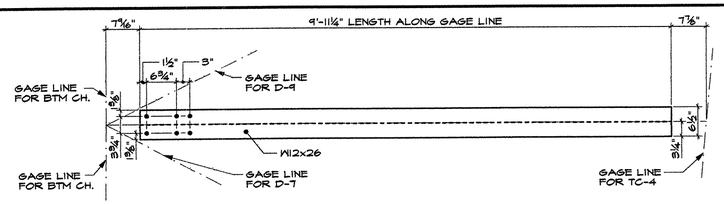
PROJ. NO. BRO-1447(19)

CUSTOMER: CPM CONSTRUCTORS, FREEPORT MAINE PH. (207) 865-0000

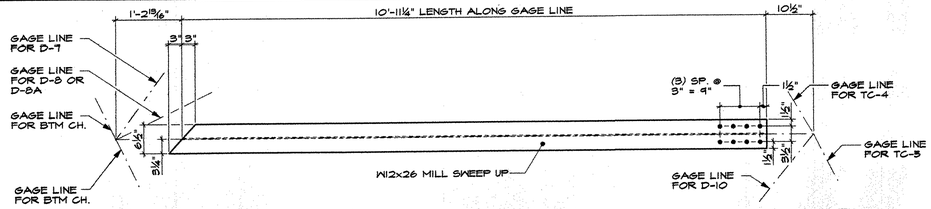
CASCO BAY STEEL STRUCTURES
75 SPRING HILL ROAD SACO, MAINE 04072
PH. (207) 282-7360 FAX (207) 282-1179

JOB NO.	DRG. NO.
07855	C1 REV.

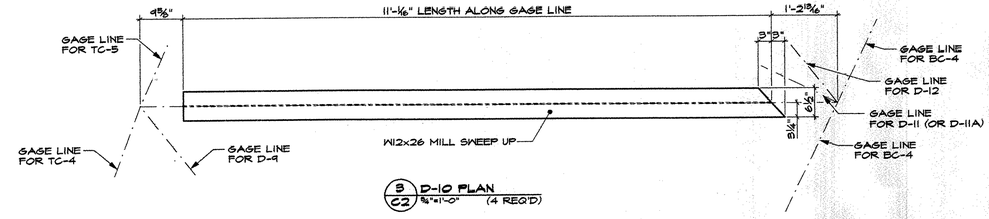
Filename: ...\00\bridge\mstr\C1_CHORD.dgn
Date: 6/28/2007



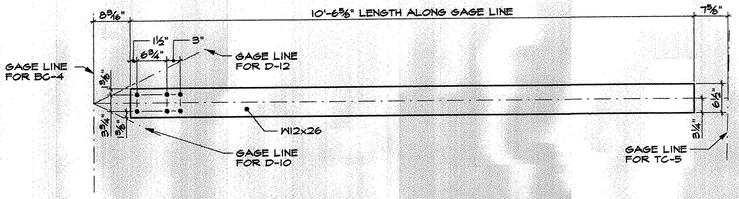
1 C2 **D-8 PLAN** ⅜"=1'-0" (2 REQ'D)
D-8A OPPOSITE HAND (2 REQ'D)
(HOLES IN N.S. ONLY)



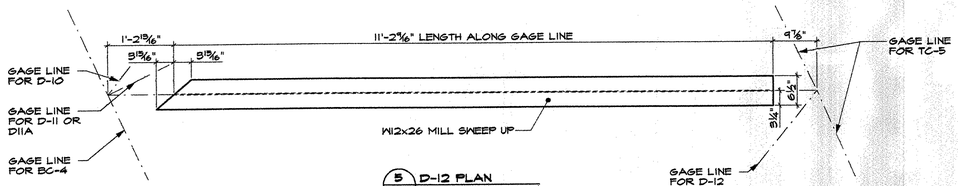
2 C2 **D-9 PLAN** ⅜"=1'-0" (4 REQ'D)
(HOLES IN N.S. & F.S.)



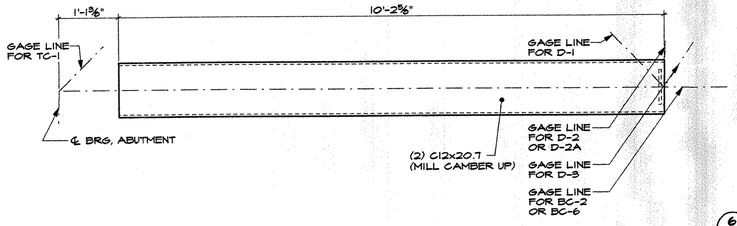
3 C2 **D-10 PLAN** ⅜"=1'-0" (4 REQ'D)

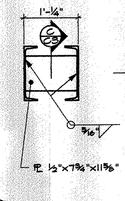


4 C2 **D-11 PLAN** ⅜"=1'-0" (2 REQ'D)
D-11A OPPOSITE HAND (2 REQ'D)
(HOLES IN N.S. ONLY)

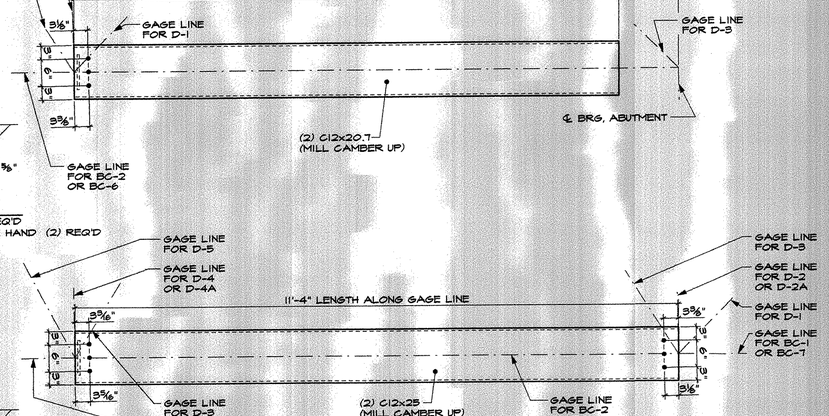


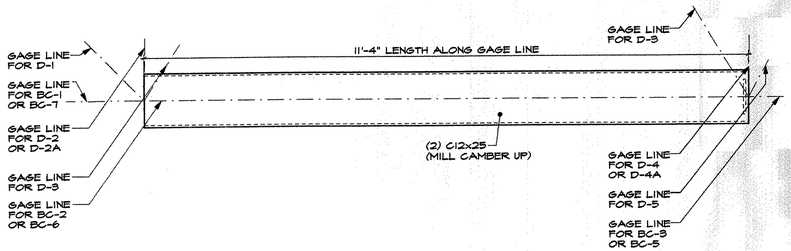
5 C2 **D-12 PLAN** ⅜"=1'-0" (4 REQ'D)

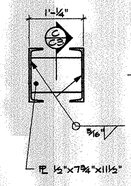




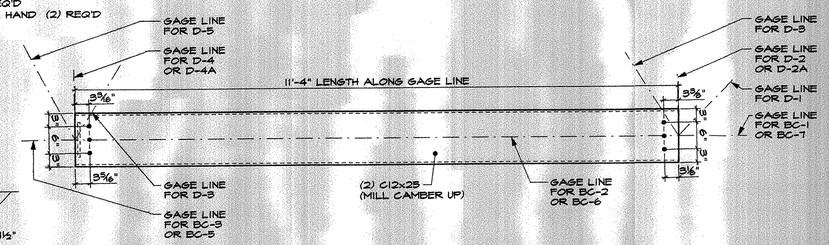
6 C2 **BC-1 PLAN** ⅜"=1'-0" (2) REQ'D
BC-7 OPPOSITE HAND (2) REQ'D







7 C2 **BC-2 PLAN** ⅜"=1'-0" (2) REQ'D
BC-6 OPPOSITE HAND (2) REQ'D



APPROVAL STAMP:

☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ REVISE AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE. FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION COORDINATION OF THIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF THE WORK.

CLOUGH HARBOUR & ASSOCIATES LLP

7/12/07

REVIEWED JUN 29 CPM CONSTRUCTORS

MATERIAL	ELECTRODES	HOLES	SHOP BOLTS
ASTM A709 GR.50	E-70XX	15/16"	NONE

SURFACE PREP & PAINT:
SSPC SP-6, GALVANIZE IN ACCORDANCE WITH ASTM A123

DESCRIPTION: DIAGONAL DETAILS & BTM CHORD DETAILS	DRAWN BY:	DATE:
JOB: ST. JOHNSBURY VERMONT, TOWN HIGHWAY #85 OVER THE PASSUMPSIC RIVER BRIDGE #29	ETC	MAY 2007

CALDERWOOD ENGINEERING ETC, LLC RICHMOND, MAINE 04357 PH.(207)737-4123

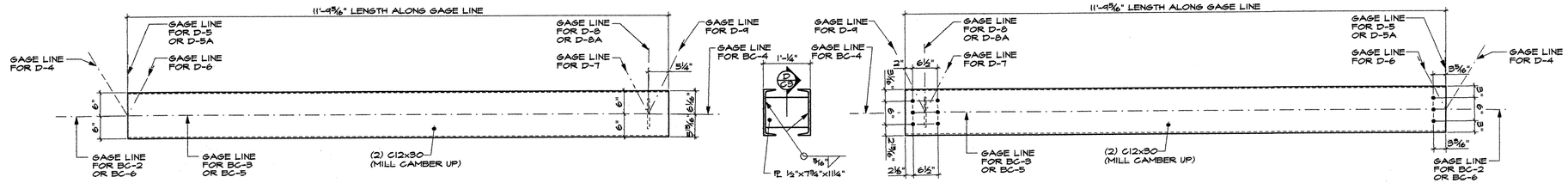
PROJ. NO. BRO-1447(19)

CUSTOMER: CPM CONSTRUCTORS, FREEPORT MAINE PH. (207) 865-0000

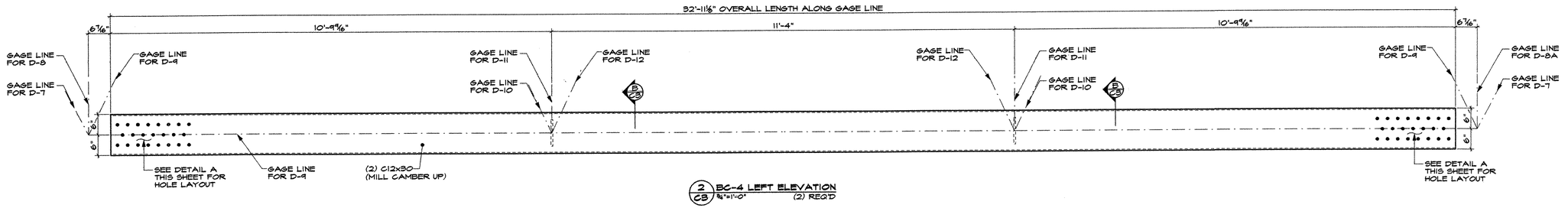
CASCO BAY STEEL STRUCTURES
75 SPRING HILL ROAD
PH. (207) 282-7360
SACO, MAINE 04072
FAX (207) 282-1179

JOB NO. 07955 | DRG. NO. C2 | REV.

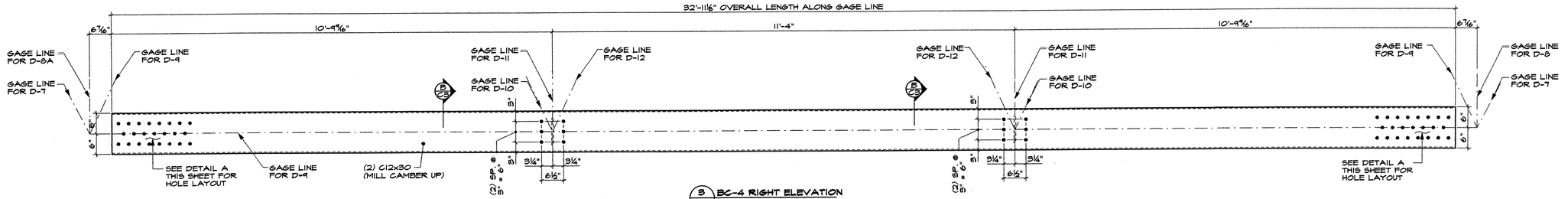
Filename: ...\00\bridge\msta\C2_CHORD.dgn
Date:6/28/2007



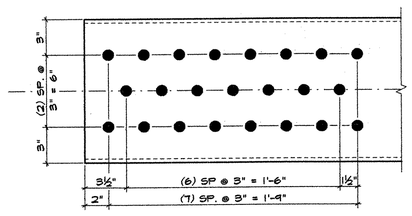
1/CB BC-3 PLAN
¾"=1'-0" (2) REQ'D
BC-5 OPPOSITE HAND (2) REQ'D



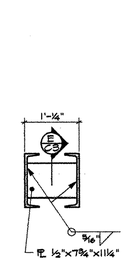
2/CB BC-4 LEFT ELEVATION
¾"=1'-0" (2) REQ'D



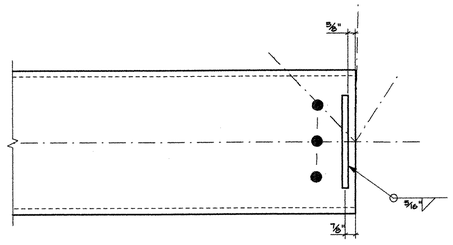
3/CB BC-4 RIGHT ELEVATION
¾"=1'-0" (2) REQ'D



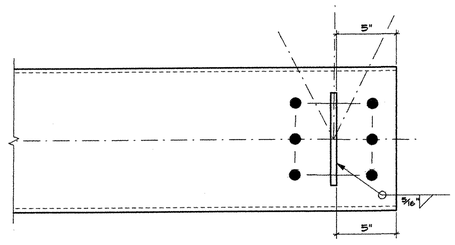
A/CB BOTTOM CHORD SPLICE HOLE LAYOUT
2"=1'-0"



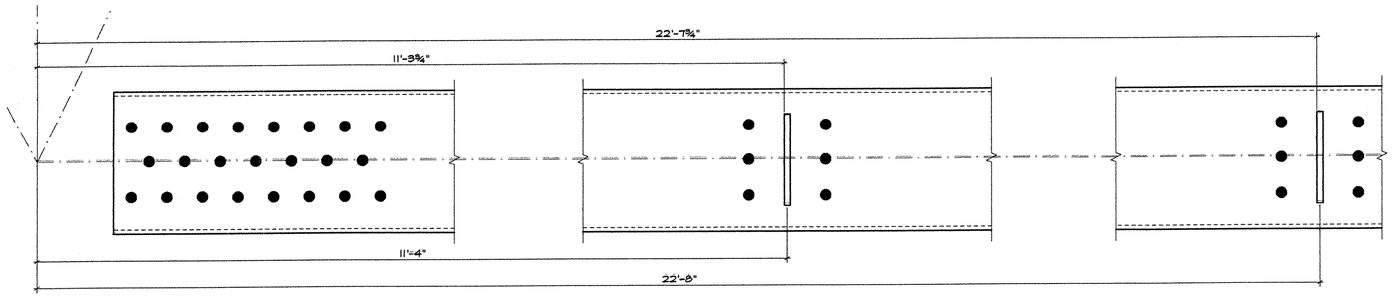
B/CB SECTION @ STIFFENER
¾"=1'-0"



C/CB BOTTOM CHORD STIFFENER LOCATION
2"=1'-0"



D/CB BOTTOM CHORD STIFFENER LOCATION
2"=1'-0"



E/CB BOTTOM CHORD STIFFENER LOCATION
2"=1'-0"

APPROVAL STAMP:
APPROVED AS NOTED
REJECTED
MAKE CORRECTIONS NOTED
REVISE AND RESUBMIT
SUBMIT SPECIFIED ITEMS
CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY DEVIATIONS IN DETAIL, QUANTITIES, ARRANGEMENT OR DIMENSIONS NOT CALLED TO THE ATTENTION OF THE ENGINEER AT THE TIME OF SHOP DRAWING REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR SUCH DEVIATIONS. THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS, WHICH SHALL CORRESPOND AND FIT AS REQUIRED AT THE JOB SITE. FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. REVIEW OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF ALL OTHER DUTIES AND RESPONSIBILITIES.
CLOUGH HARBOUR & ASSOCIATES LLP
7/12/07

MATERIAL	ELECTRODES	HOLES	SHOP BOLTS
ASTM A709 GR.50	E-70XX	15/16"	NONE

SURFACE PREP & PAINT:
SSPC SP-6, GALVANIZE IN ACCORDANCE WITH ASTM A123

DESCRIPTION: BOTTOM CHORD DETAILS	DRAWN BY:	DATE:
JOB: ST. JOHNSBURY VERMONT, TOWN HIGHWAY #85 OVER THE PASSUMPSIC RIVER BRIDGE #29	ETC	MAY 2007

CALDERWOOD ENGINEERING ETC, LLC RICHMOND, MAINE 04357 PH.(207)737-4301

PROJ. NO. BRO-1447(19)

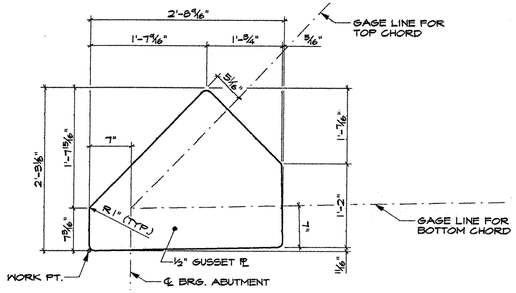
CUSTOMER: CPM CONSTRUCTORS, FREEPORT MAINE PH. (207) 865-0000

CASCO BAY STEEL STRUCTURES
75 SPRING HILL ROAD
SACO, MAINE 04072
PH. (207) 282-7360
FAX (207) 282-1179

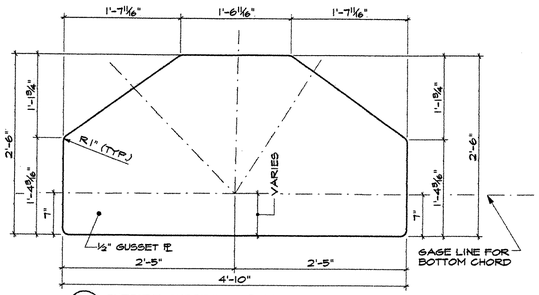
JOB NO.	DRG. NO.
03055	C3
	REV.

RECEIVED
JUN 29
CPM CONSTRUCTORS

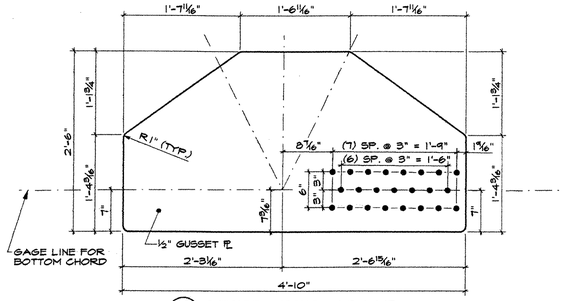
Filename: ...\00\bridge\mstc\C3_CHORD.dgn
Date:6/28/2007



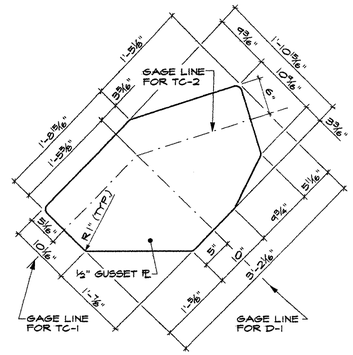
1 / G1 GUSSET @ L1 & L19
1"=1'-0" (8 REQ'D)



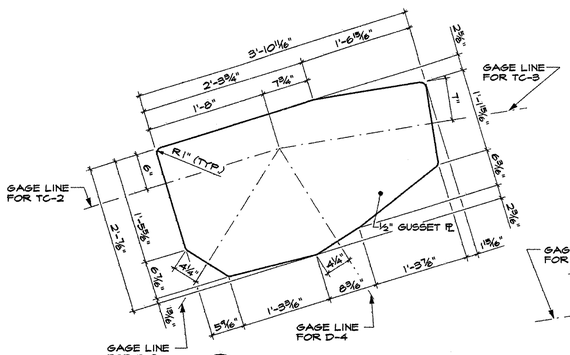
2 / G1 OUTSIDE GUSSET @ L3, L5, L9, L11, L15, & L17
1"=1'-0" (12 REQ'D)



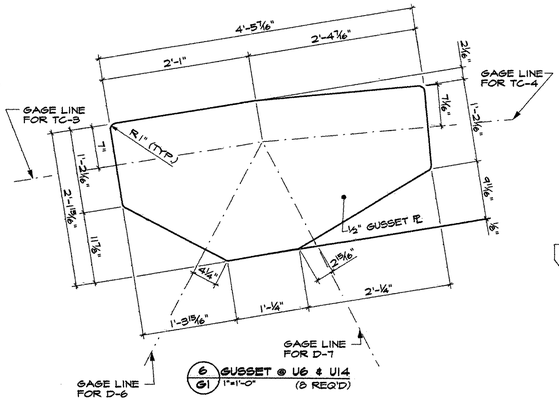
3 / G1 OUTSIDE GUSSET @ L7 & L13
1"=1'-0" (4 REQ'D)



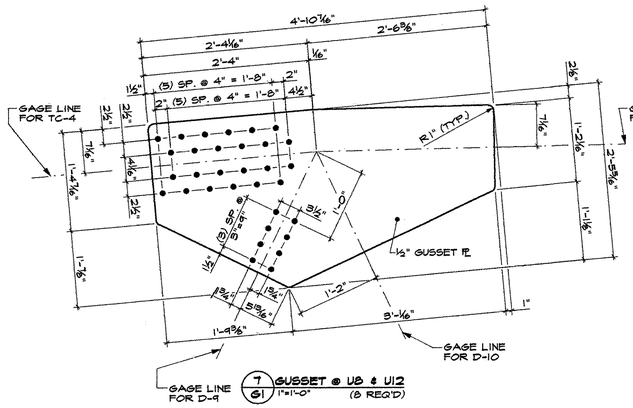
4 / G1 GUSSET @ U2 & U18
1"=1'-0" (8 REQ'D)



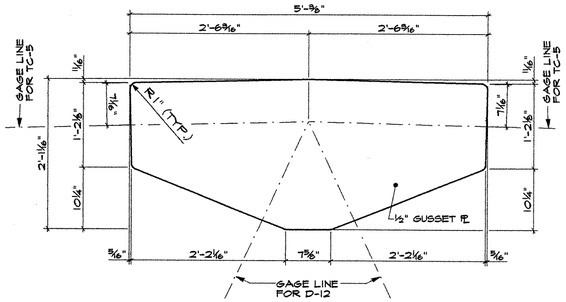
5 / G1 GUSSET @ U4 & U16
1"=1'-0" (8 REQ'D)



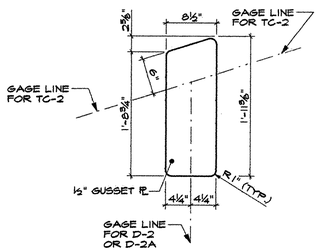
6 / G1 GUSSET @ U6 & U14
1"=1'-0" (8 REQ'D)



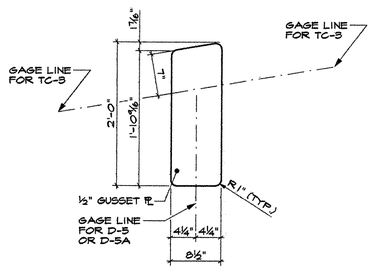
7 / G1 GUSSET @ U8 & U12
1"=1'-0" (8 REQ'D)



8 / G1 GUSSET @ U10
1"=1'-0" (4 REQ'D)



9 / G1 TOP GUSSET @ D-2 & D-2A
1"=1'-0" (8 REQ'D)



10 / G1 TOP GUSSET @ D-5 & D-5A
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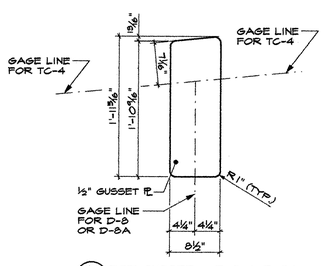
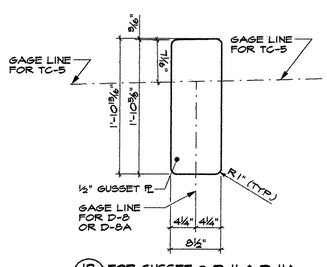


11 / G1 TOP GUSSET @ D-8 & D-8A
1"=1'-0" (8 REQ'D)



12 / G1 TOP GUSSET @ D-11 & D-11A
1"=1'-0" (8 REQ'D)

APPROVAL STAMP:

☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ REVISE AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL DIMENSIONS, FOR QUANTITIES, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

CLOUGH HARBOUR & ASSOCIATES LLP

3/1/07

REVIEWED
MAR 28
CPM CONSTRUCTORS

MATERIAL	ELECTRODES	HOLES	SHOP BOLTS
ASTM A709 GR.50	E-70XX	15/16"	NONE

SURFACE PREP & PAINT:
SSPC SP-6, GALVANIZE IN ACCORDANCE WITH ASTM A123

DESCRIPTION: GUSSET PLATE DIMENSIONAL DETAILS	DRAWN BY:	DATE:
JOB: ST. JOHNSBURY VERMONT, TOWN HIGHWAY #85 OVER THE PASSUMPSIC RIVER BRIDGE #29	ETC	MAY 2007

CALDERWOOD ENGINEERING ETC, LLC RICHMOND, MAINE 04357 PH.(207)737-4123

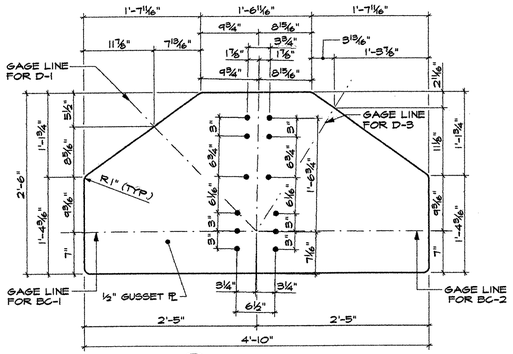
PROJ. NO. BRO-1447(19)

CUSTOMER: CPM CONSTRUCTORS, FREEPORT MAINE PH. (207) 865-0000

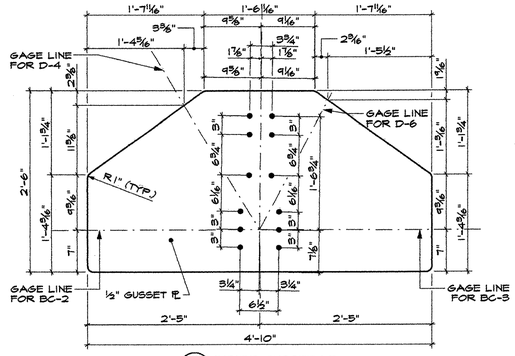
CASCO BAY STEEL STRUCTURES
75 SPRING HILL ROAD
PH. (207) 282-7360
SACO, MAINE 04072
FAX (207) 282-1179

JOB NO.	DRG. NO.
08155	G1
	REV.

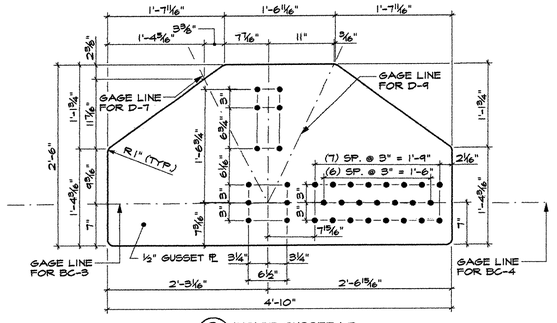
Filename: ...\00\bridge\vmsta\G1_GUSSET.dgn
Date:6/28/2007



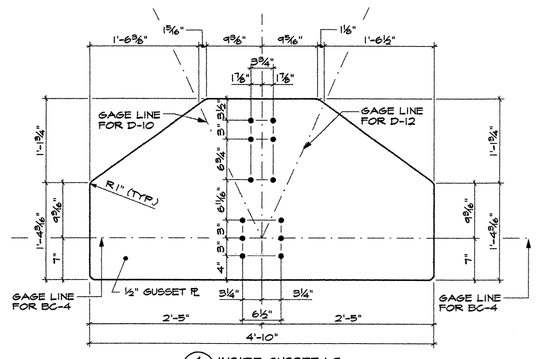
1 / 62 INSIDE GUSSET L3 (2 REQ'D) 1"=1'-0"
INSIDE GUSSET L17 OPPOSITE HAND (2 REQ'D)



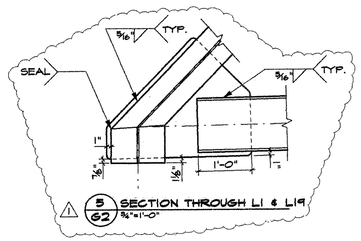
2 / 62 INSIDE GUSSET L5 (2 REQ'D) 1"=1'-0"
INSIDE GUSSET L15 OPPOSITE HAND (2 REQ'D)



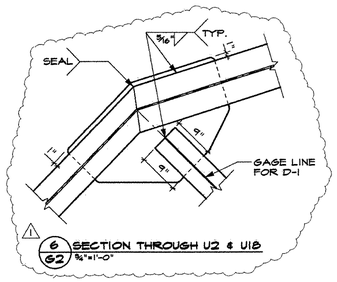
3 / 62 INSIDE GUSSET L7 (2 REQ'D) 1"=1'-0"
INSIDE GUSSET L13 OPPOSITE HAND (2 REQ'D)



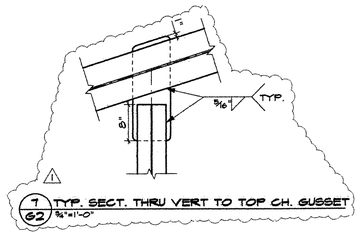
4 / 62 INSIDE GUSSET L9 (2 REQ'D) 1"=1'-0"
INSIDE GUSSET L11 OPPOSITE HAND (2 REQ'D)



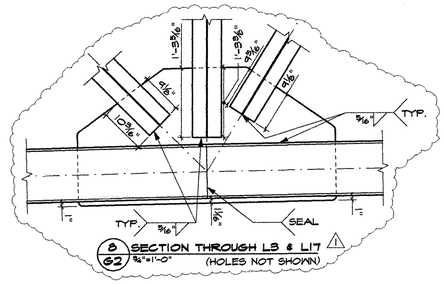
5 / 62 SECTION THROUGH L1 & L19 3/4"=1'-0"



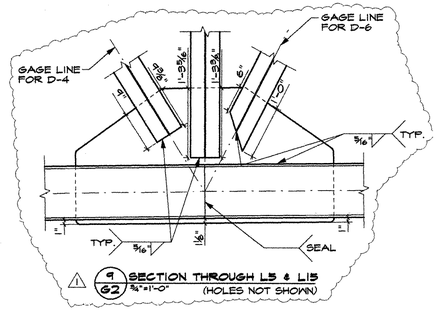
6 / 62 SECTION THROUGH U2 & U18 3/4"=1'-0"



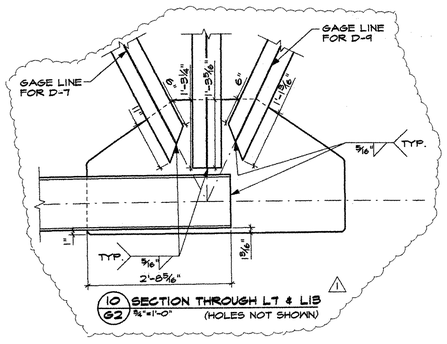
7 / 62 TYP. SECT. THRU VERT TO TOP CH. GUSSET 3/4"=1'-0"



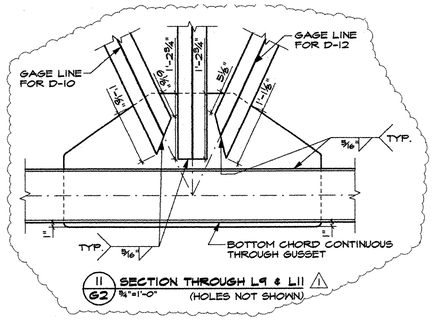
8 / 62 SECTION THROUGH L3 & L17 (HOLES NOT SHOWN) 3/4"=1'-0"



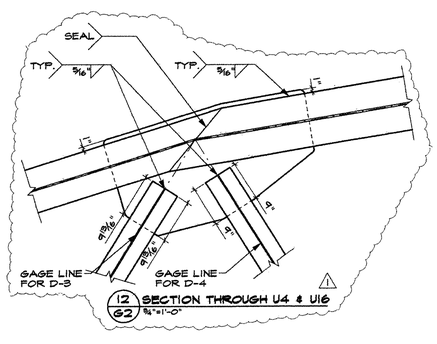
9 / 62 SECTION THROUGH L5 & L15 (HOLES NOT SHOWN) 3/4"=1'-0"



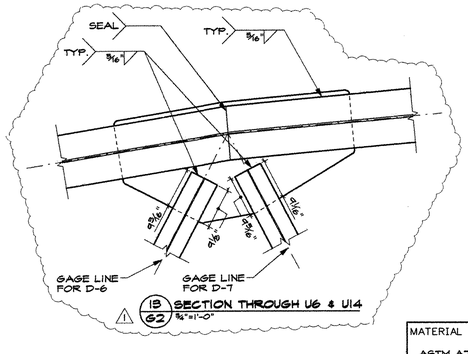
10 / 62 SECTION THROUGH L7 & L13 (HOLES NOT SHOWN) 3/4"=1'-0"



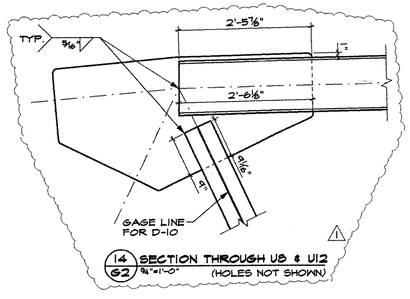
11 / 62 SECTION THROUGH L9 & L11 (HOLES NOT SHOWN) 3/4"=1'-0"



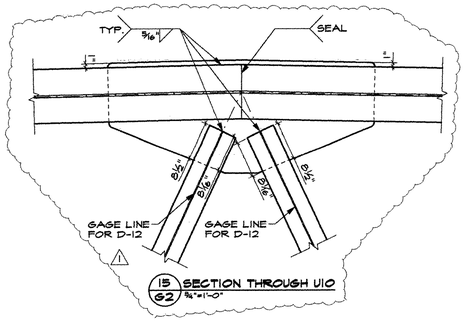
12 / 62 SECTION THROUGH U4 & U16 3/4"=1'-0"



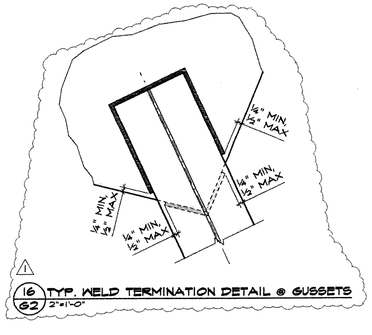
13 / 62 SECTION THROUGH U6 & U14 3/4"=1'-0"



14 / 62 SECTION THROUGH U8 & U12 (HOLES NOT SHOWN) 3/4"=1'-0"



15 / 62 SECTION THROUGH U10 3/4"=1'-0"



16 / 62 TYP. WELD TERMINATION DETAIL @ GUSSETS 2"=1'-0"

APPROVAL STAMP:
☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ REVISE AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM
CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ADJUSTMENT MADE ON THE SHOP DRAWINGS BY THE ENGINEER IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.
CLOUGH HARBOUR ASSOC. ENGINEERS
DATE 7/12/07 BY

MATERIAL	ELECTRODES	HOLES	SHOP BOLTS
ASTM A709 GR.50	E-70XX	15/16"	NONE

SURFACE PREP & PAINT:
SSPC SP-6, GALVANIZE IN ACCORDANCE WITH ASTM A123

DESCRIPTION: GUSSET PLATE DETAILS & WELDMENTS	DRAWN BY:	DATE:
JOB: ST. JOHNSBURY VERMONT, TOWN HIGHWAY #85 OVER THE PASSUMPSIC RIVER BRIDGE #29	ETC	MAY 2007

CALDERWOOD ENGINEERING ETC, LLC RICHMOND, MAINE 04357 PH.(207)737-4100

PROJ. NO. BRO-1447(19)

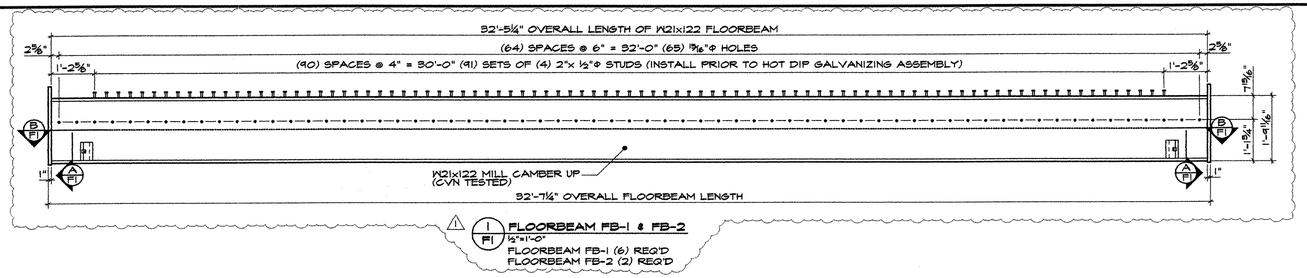
CUSTOMER: CPM CONSTRUCTORS, FREEPORT MAINE PH. (207) 865-0000

CASCO BAY STEEL STRUCTURES
75 SPRING HILL ROAD SACO, MAINE 04072
PH. (207) 282-7360 FAX (207) 282-1179

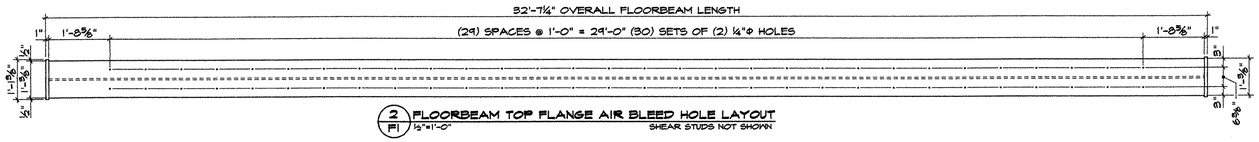
JOB NO.	DRG. NO.
082.55	62
	REV. ⚠

JUN 29 CPM CONSTRUCTORS

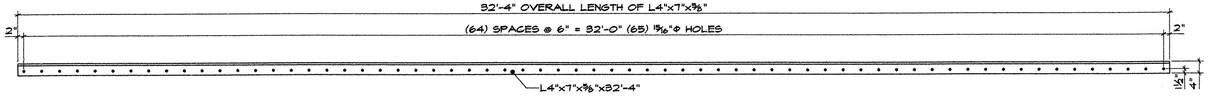
Filename: ...\00\bridge\mstol\62_GUSSET.dgn
Date:6/28/2007



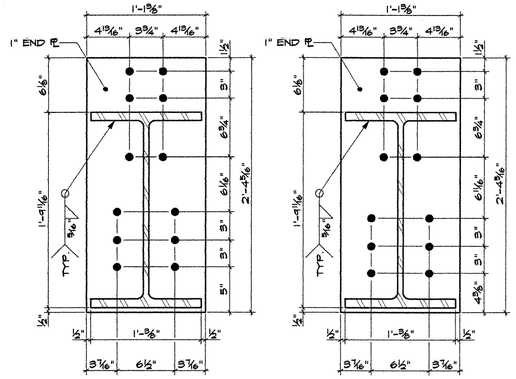
1 FI **FLOORBEAM FB-1 & FB-2**
½"=1'-0"
FLOORBEAM FB-1 (6) REQ'D
FLOORBEAM FB-2 (2) REQ'D



2 FI **FLOORBEAM TOP FLANGE AIR BLEED HOLE LAYOUT**
½"=1'-0"
SHEAR STUDS NOT SHOWN



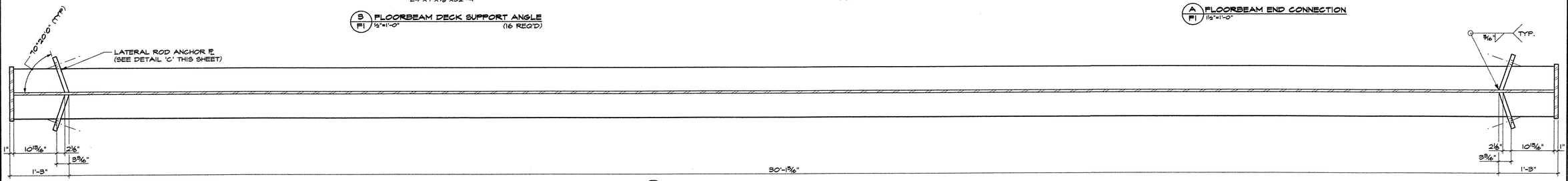
3 FI **FLOORBEAM DECK SUPPORT ANGLE**
½"=1'-0"
(16 REQ'D)



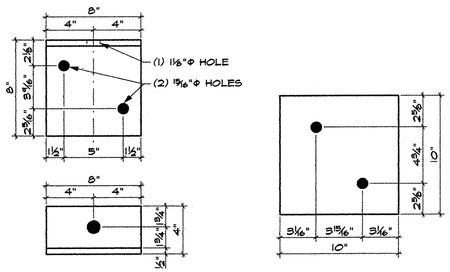
FLOORBEAM FB-1
(6 REQ'D)

FLOORBEAM FB-2
(2 REQ'D)

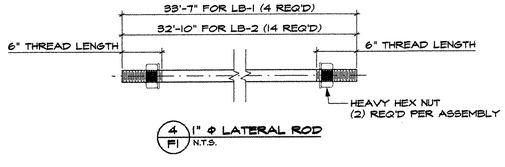
A FI **FLOORBEAM END CONNECTION**
1½"=1'-0"



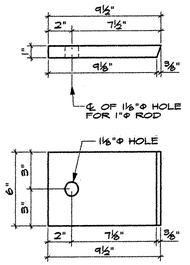
B FI **LATERAL ROD ANCHOR LAYOUT**
1"=1'-0"



10"x10"x½" PL & L8"x4"x½" FOR END PANEL ANCHOR ASSEMBLY

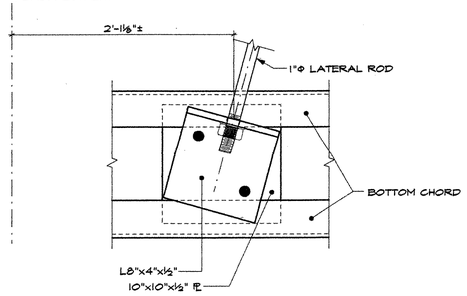


4 FI **1" Φ LATERAL ROD**
N.T.S.



C FI **LATERAL ROD ANCHOR PL DET.**
2"=1'-0"
(32 REQ'D)

℄ BRG. ABUTMENT



D FI **END PANEL LATERAL ROD ANCHORAGE**
2"=1'-0"
(4 REQ'D)

APPROVAL STAMP:

☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTE
☐ REJECTED ☐ CORRECT AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, WHICH SHALL BE COORDINATED WITH THE WORK OF ALL TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

CLOUGH HARBOUR & ASSOCIATES LLP
ENGINEER OF RECORD

DATE 7/12/07 BY

REVIEWED
JAN 29
CPM CONSTRUCTORS

MATERIAL	ELECTRODES	HOLES	SHOP BOLTS
ASTM A709 GR.50	E-70XX	15/16"Φ U.N.O.	NONE

SURFACE PREP & PAINT:
SSPC SP-6, GALVANIZE IN ACCORDANCE WITH ASTM A123

DESCRIPTION: FLOORBEAM DETAILS	DRAWN BY:	DATE:
JOB: ST. JOHNSBURY VERMONT, TOWN HIGHWAY #85 OVER THE PASSUMPSIC RIVER BRIDGE #29	ETC	MAY 2007

CALDERWOOD ENGINEERING ETC, LLC RICHMOND, MAINE 04357 PH. (207) 737-450

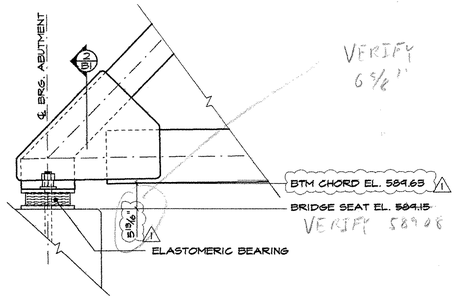
PROJ. NO. BRO-1447(19)

CUSTOMER: CPM CONSTRUCTORS, FREEPORT MAINE PH. (207) 865-0000

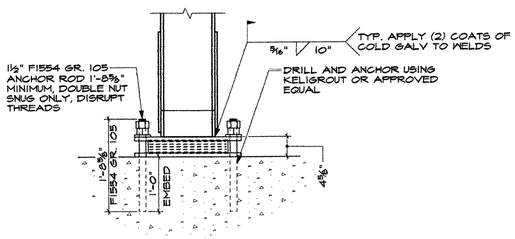
CASCO BAY STEEL STRUCTURES
75 SPRING HILL ROAD
SACO, MAINE 04072
PH. (207) 282-7360
FAX (207) 282-1179

JOB NO.	DRG. NO.
083 55	FI
	REV. ⚠

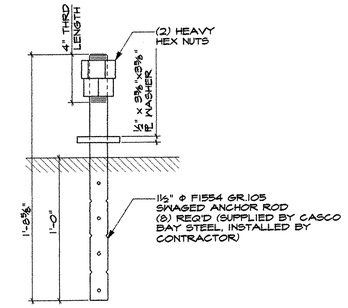
Filename: ...\bridge\msta\FI_FLOORBEAMS.dgn
Date:6/28/2007



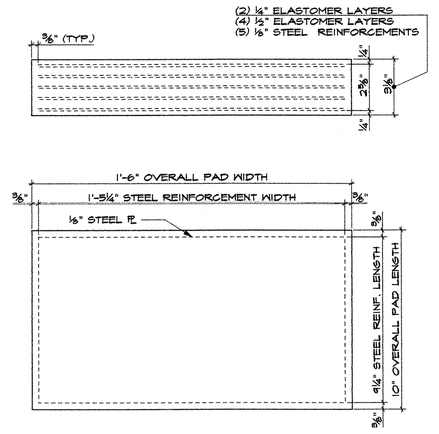
1 / B1 **TRUSS BEARING ELEVATION**
3/8"=1'-0"



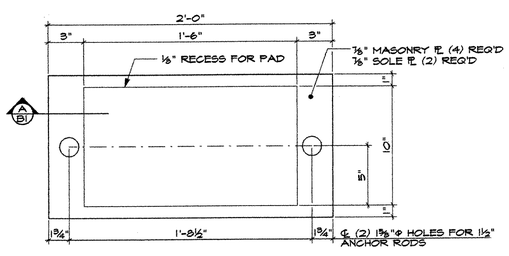
2 / B1 **TYP BEARING INSTALLATION**
3/4"=1'-0"



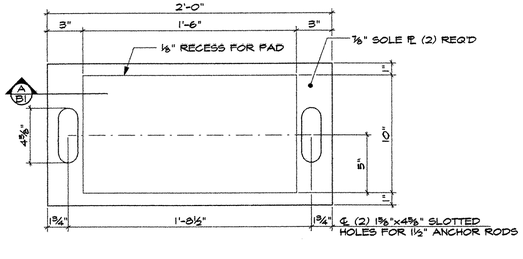
6 / B1 **ANCHOR ROD DETAIL**
2"=1'-0"



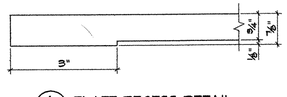
5 / B1 **STEEL REINFORCED ELASTOMERIC BEARING PAD DETAILS**
3"=1'-0" (4) REQ'D
(SUPPLIED BY CASCO BAY STEEL, INSTALLED BY CONTRACTOR)



4 / B1 **MASONRY & FIXED SOLE PLATE DETAIL**
2"=1'-0"
(SUPPLIED BY CASCO BAY STEEL INSTALLED BY CONTRACTOR)



5 / B1 **EXPANSION SOLE PLATE DETAIL**
2"=1'-0"
(SUPPLIED BY CASCO BAY STEEL INSTALLED BY CONTRACTOR)



A / B1 **PLATE RECESS DETAIL**
6"=1'-0"
(SOLE PLATE SHOWN, MASONRY PLATE SIMILAR)

RECEIVED
JUN 29
CPM CONSTRUCTORS

NOTES:

1. MASONRY PLATE & SOLE PLATE MATERIAL SHALL BE ASTM A709 GR. 50 SOLE PLATE IS NOT BEVELED.
2. STEEL REINFORCEMENTS & PLATE WASHER MATERIAL SHALL BE ASTM A709 GR. 36
3. ELASTOMER SHALL HAVE A SHORE A DUROMETER HARDNESS OF 60 WITH A SHEAR MODULUS BETWEEN 130PSI & 200PSI ELASTOMER SHALL BE GRADE 4
4. MASONRY, SOLE PLATES, AND PLATE WASHERS ARE TO BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123. THE ANCHOR RODS & NUTS ARE TO BE GALVANIZED IN ACCORDANCE WITH ASTM A153.
5. ELASTOMERIC PAD IS TO BE VULCANIZED TO THE MASONRY & SOLE PLATES

MATERIAL	ELECTRODES	HOLES	SHOP BOLTS
NOTED	E-70XX	NOTED	NONE

SURFACE PREP & PAINT:
SSPC SP-6, GALVANIZE IN ACCORDANCE WITH ASTM A123

DESCRIPTION: ELASTOMERIC BEARING DETAILS	DRAWN BY:	DATE:
JOB: ST. JOHNSBURY VERMONT, TOWN HIGHWAY #85 OVER THE PASSUMPSIC RIVER BRIDGE #29	ETC	MAY 2007

APPROVAL STAMP:
☐ NO EXCEPTION TAKEN ☒ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ FURNISH AS REQUIRED
☐ SUBMIT CERTIFIED ETC
CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS & SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, SHALL BE LIMITED TO, AND CONCLUSIVE FOR THE FABRICATION PROCESSES AND PROCEDURES CONSTRUCTION, COORDINATION OF THE WORK WITH THE OF ALL OTHER TRADES, AND THE SATISFACTORY PERFORMANCE OF HIS WORK.
CLOUGH HARBOUR & ASSOCIATES
DATE: 7/12/07

CALDERWOOD ENGINEERING ETC, LLC RICHMOND, MAINE 04357 PH.(207)737-4153

PROJ. NO. BRO-1447(19)

CUSTOMER: CPM CONSTRUCTORS, FREEPORT MAINE PH. (207) 865-0000

CASCO BAY STEEL STRUCTURES
75 SPRING HILL ROAD
PH. (207) 282-7360
SACO, MAINE 04072
FAX (207) 282-1179

JOB NO.	DRG. NO.
08455	B1
	REV. ⚠

Filename: ...\00\bridge\msta\B1_BEARINGS.dgn
Date: 6/28/2007

State of Vermont
Agency of Transportation
National Life Building
Drawer 33
Montpelier, VT
05633-5001

VTrans Working to Get You There

June 19, 2007

L. B. Foster Co.
General Offices
415 Holiday Drive
Pittsburgh, PA 15220

Re: St. Johnsbury BRO 1447(19) – TH 85, Bridge 29

The following Exodermic Deck details [Item #509.20, Steel Grid Flooring] for the above project (Vendor's Job #SD0181) that were received in this office on May 21, have been reviewed and are being returned herewith.

This submittal is approved as noted. Please see comments in red on sheet LB1. Weld procedures are approved and are being distributed with this submittal.

You must provide written notice to this office as to the date fabrication represented by these drawings will begin. That notice must be received at least seven days prior to that date, as per Specification 506.03. Any material fabricated prior to the notification date is subject to rejection without further cause.

Sincerely,

Christopher P. Williams, P.E.
Structures Project Manager

Attachments

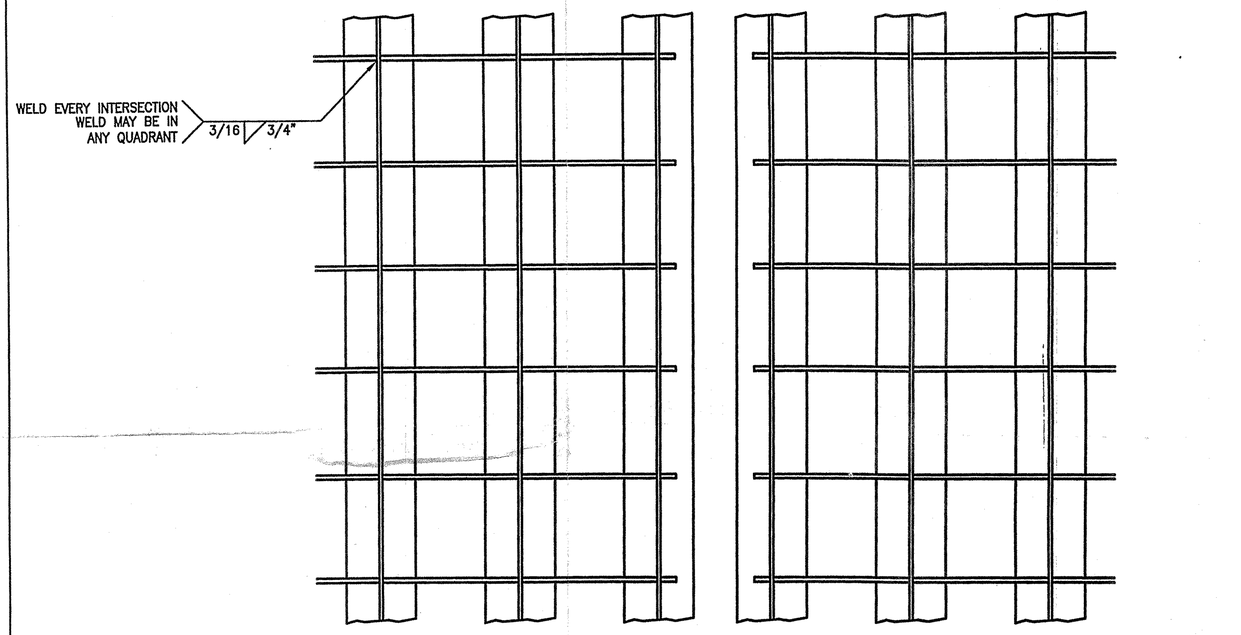
cc: [X] Kevin McClure – Resident Engineer
[X] CPM Constructors - Contractor
[X] Steel Inspector – Jeff Clark
[X] Concrete Inspector – Jim Wild
[X] Consultant - Clough, Harbour & Assoc. – letter only
[X] Construction Section - letter only
[X] Materials & Research (C&IA Unit) - letter only
[X] Project Files

085 BG

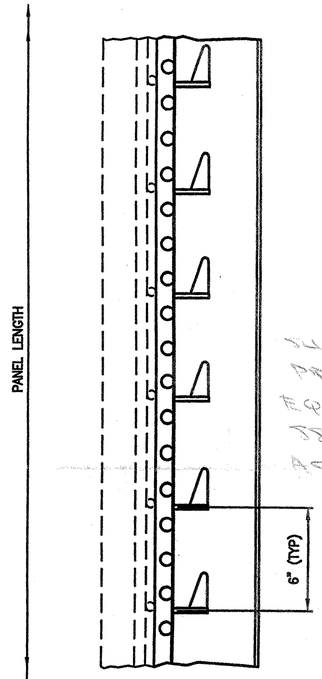
STANDARD PANEL TOLERANCES	
PANEL WIDTH	+0 −1/8
PANEL LENGTH	±1/4
SQUARENESS	±1/2
TRANSVERSE CAMBER (WIDTH)	.005 x WIDTH
LONGITUDINAL CAMBER (LENGTH)	.003 x LENGTH
SIDE BOW (SWEEP)	±1/4 PER 10'-0"
MAIN BAR VERTICALITY	±1/8
CROSS BAR VERTICALITY	±1/16

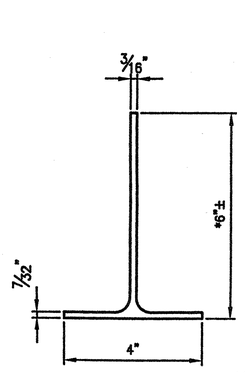
MATERIAL SPECIFICATIONS

DESCRIPTION	ASTM	ALLOY / GR.	REMARKS
WT6 X 7 AND DISTRIBUTION BARS	A 572 (AASHTO M270)	GRADE 50	
20 GA. FORM PAN	A 366		BLACK (SHOP WELDED PANS)
20 GA. FORM PAN	A 653	GR. 90 OR BETTER	GALV'D (FIELD INSTALLED PANS)
TEK SCREWS			SMD 8-18 X 1/2 HWH #4 ZINC PLATED



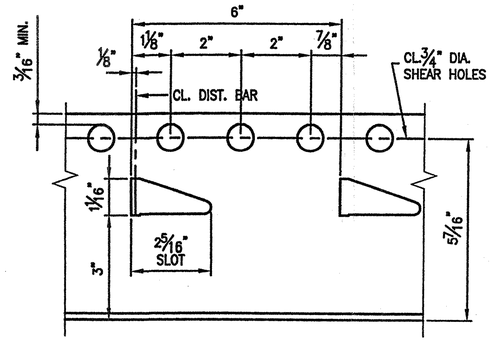
TYPICAL FLOORING DETAILS





WT 6 X 7 DETAIL

*DUE TO MILL TOLERANCES, THE WT6 X 7 MAY VARY IN HEIGHT.



GENERAL NOTES:

MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STATE OF VERMONT AGENCY OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" DATED 2001 AND ITS LATEST REVISIONS.

SHOP WELDING SHALL BE PERFORMED BY THE GAS METAL ARC PROCESS (MIG) USING ER70S-3 FILLER METAL PER AWS D1.5 OF THE BRIDGE WELDING CODE.

BLAST CLEANING NOT REQUIRED. SHOP WELD AREAS TO BE WIRE BRUSHED PRIOR TO WELDING.

AFTER FABRICATION, GRID PANELS SHALL BE HOT DIPPED GALVANIZED PER ASTM A123. DUE TO THE GALVANIZING PROCESS, PANELS MAY HAVE SOME DISTORTION AND SIDE SWEEP WHICH WILL REQUIRE ADJUSTMENT BY THE CONTRACTOR PRIOR TO INSTALLATION.

PAY ITEM: 509.20 STEEL GRID FLOORING (EXODERMIC)
PAY AREA: 3,172 SF

SURFACE PREP. TO BE EQUIVALENT TO SSPC-SP8 IN ACCORDANCE WITH 506.14(d)(1)

STRUCTURES COPY

☐ NO EXCEPTION TAKEN ☒ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ REVISE AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION GIVEN IN THE TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

CLOUGH HARBOUR & ASSOCIATES LLP
ENGINEERS, SURVEYORS, PLANNERS & LANDSCAPE ARCHITECTS
DATE 5/9/07 BY

REVIEWED MAY 18 CPM CONSTRUCTORS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL P. RIENA ENGINEER NO. 076396
5/9/07

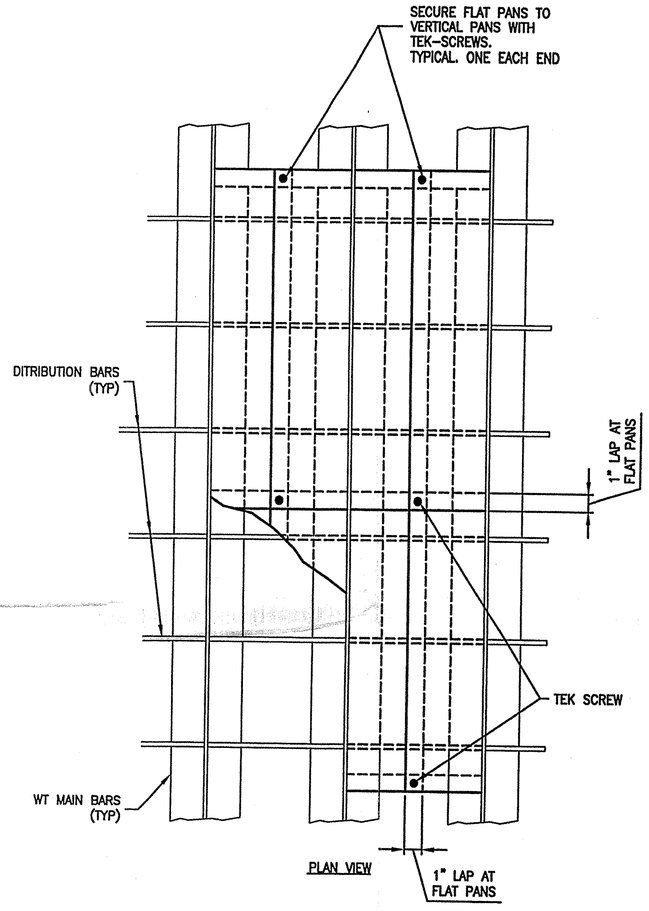
APPROVED: _____ RES'D APPL. DRAWING

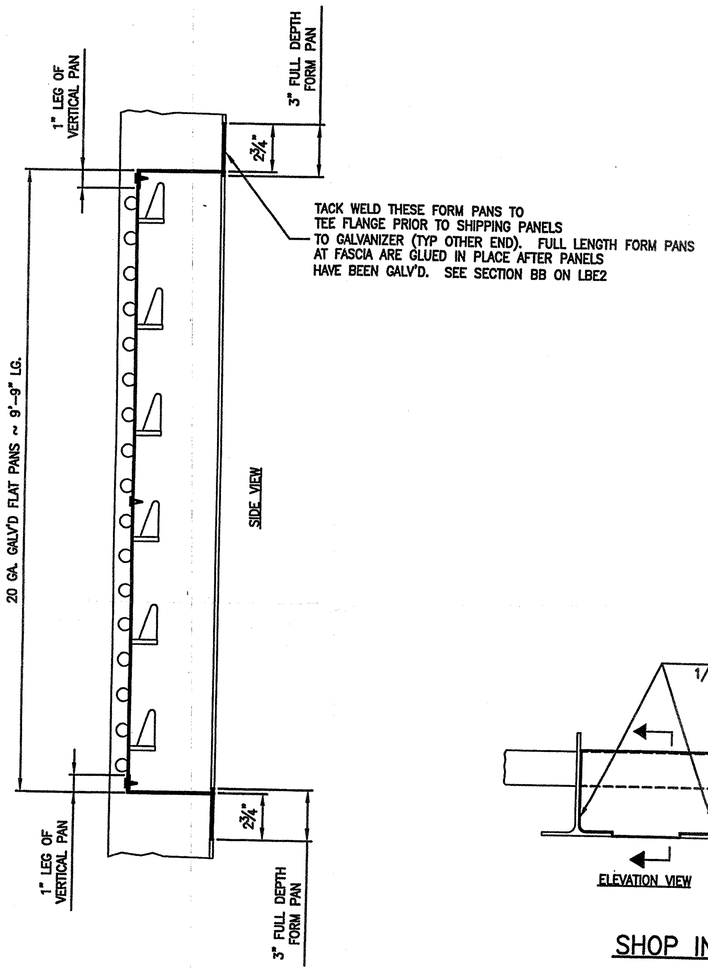
L. B. FOSTER CO.
GENERAL OFFICES
PITTSBURGH, PENNSYLVANIA 15220

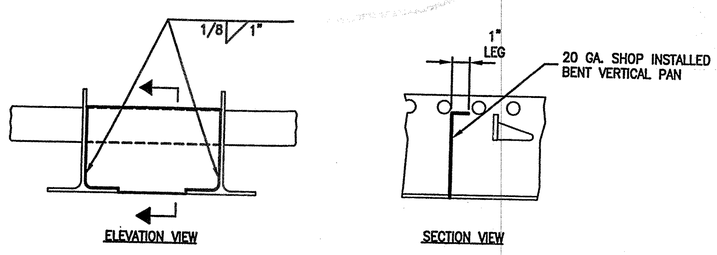
FOR: CPM CONSTRUCTORS
VERMONT AGENCY OF TRANSPROTATION
TOWN OF ST. JOHNSBURY, COUNTY OF CALEDONIA
T.H. 85 (CL.3) BRIDGE 29 OVER THE PASSUMPSIC RIVER
6" EXODERMIC GRID GENERAL NOTES AND TYPICAL DETAILS

REV	DESCRIPTION	BY	DATE	CH'D.

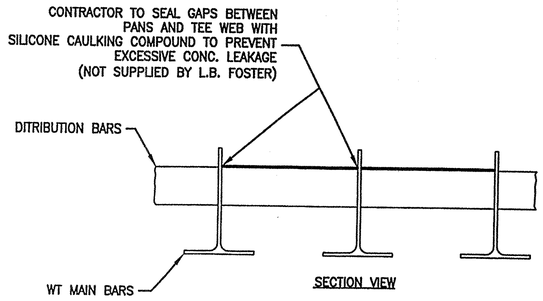
MADE RLP DATE 4/10/07 JOB NO. SD0181 CUST. NO. 086BG
CHECK BLJ DATE 4/30/07 DRAWING LB1 REV. NO.







SHOP INSTALLED VERTICAL PAN WELD DETAIL



TYPICAL PAN INSTALLATION DETAILS

REVIEWED
MAY 18
CPM CONSTRUCTORS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL F. ARENA
No. 049605E
5/9/07

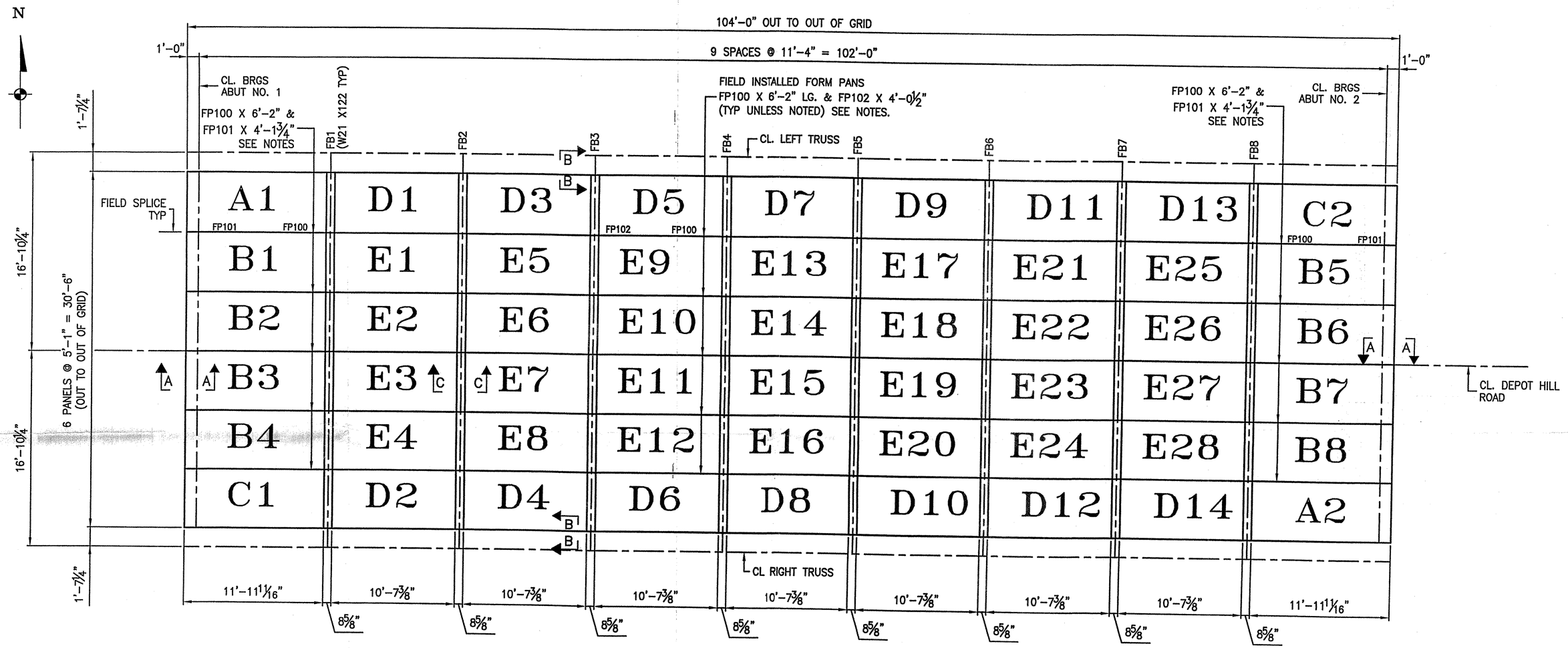
REV	DESCRIPTION	BY	DATE	CHK'D

APPROVED: _____ DES'D APPL. _____ DRAWING _____

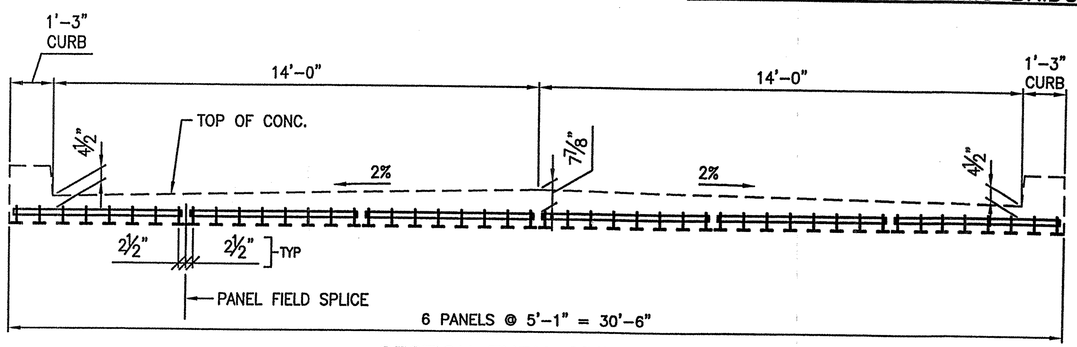
L. B. FOSTER CO.
GENERAL OFFICES
PITTSBURGH, PENNSYLVANIA 15220

FOR: CPM CONSTRUCTORS
VERMONT AGENCY OF TRANSPROTATION
TOWN OF ST. JOHNSBURY, COUNTY OF CALEDONIA
T.H. 85 (CL.3) BRIDGE 29 OVER THE PASSUMPSIC RIVER
EXODERMIC FORM PAN INSTALLATION DETAILS

MADE RLP DATE 4/10/07 JOB NO. SD0181 CUST. NO. 08786
CHECK BLJ DATE 4/30/07 DRAWING LB2 REV. NO. _____



PLAN VIEW – EXODERMIC BRIDGE DECK



SECTION THRU GRID DECK

NOTES:

DURING ERECTION OF GRID FLOOR UNITS, CARE MUST BE EXERCISED, TO PLACE EACH UNIT IN ITS PROPER LOCATION, MEASURING IN ALL CASES FROM SOME FIXED POINT AS OTHERWISE A CUMULATIVE ERROR IN SPACING WILL APPEAR CAUSING THE SPACE FOR THE FINAL UNITS TO BE MORE OR LESS THAN THE ACTUAL WIDTH OF UNITS.

PANELS WITH LIKE MARKS SUCH AS B1, B2, B3, ETC. ARE ALIKE AND INTERCHANGEABLE.

BUTT FIELD INSTALLED FORM PANS TOGETHER END TO END AND SEAL JOINT WITH SILICONE ADHESIVE TO MINIMIZED CONCRETE LEAKAGE.

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MICHAEL P. RIENA Expires MO 032502-E 5/1/07

REVIEWED MAY 18 CPM CONSTRUCTORS

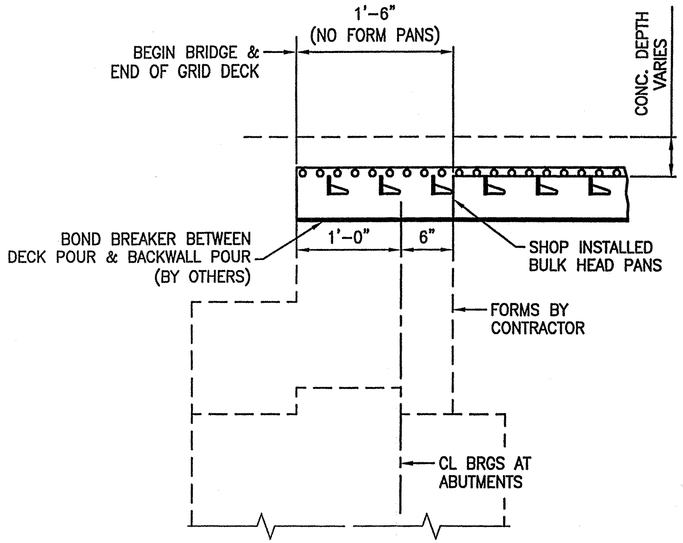
REV	DESCRIPTION	BY	DATE	CHK'D

APPROVED: _____ REC'D APPR. _____ DRAWING _____

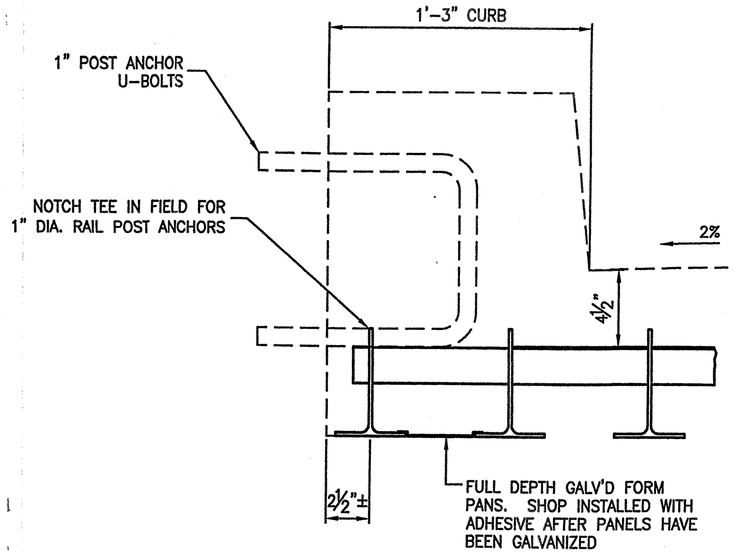
L. B. FOSTER CO.
GENERAL OFFICES
PITTSBURGH, PENNSYLVANIA 15220

FOR: CPM CONSTRUCTORS
VERMONT AGENCY OF TRANSPROTATION
TOWN OF ST. JOHNSBURY, COUNTY OF CALEDONIA
T.H. 85 (CL.3) BRIDGE 29 OVER THE PASSUMPSIC RIVER
6" EXODERMIC GRID-ERECTION PLAN

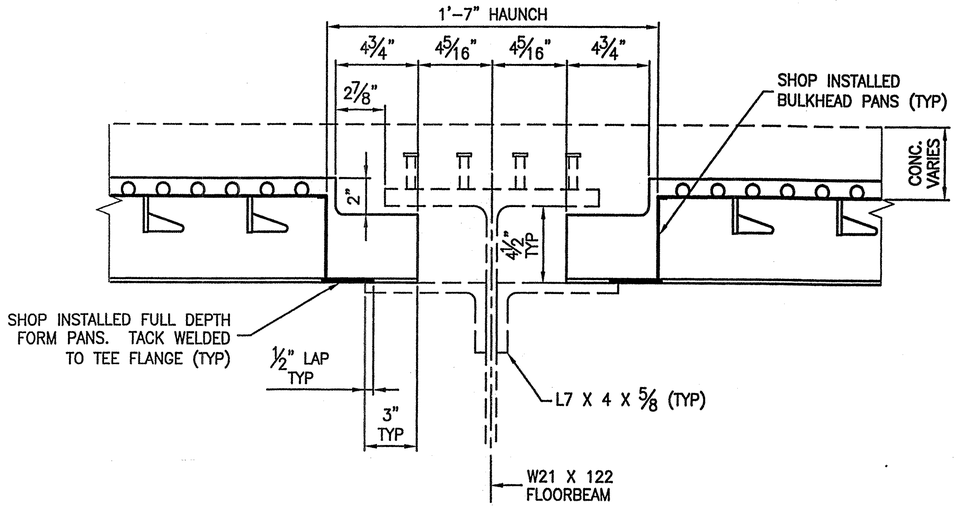
MADE RLP DATE 4/10/07 JOB NO. SD0181 CUST. NO. 088 B6
CHECK BLJ DATE 4/30/07 DRAWING LBE1 REV. NO.



SECTION A-A



SECTION B-B



SECTION C-C
(TYPICAL SECTION THRU FLOORBEAMS)

REVIEWED
CPM CONSTRUCTORS

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
MICHAEL A. REINA
ENGINEER
5/9/07

APPROVED:		REV'D APPL.
		DRAWING

L. B. FOSTER CO.
GENERAL OFFICES
PITTSBURGH, PENNSYLVANIA 15220

FOR: CPM CONSTRUCTORS
VERMONT AGENCY OF TRANSPROTATION
TOWN OF ST. JOHNSBURY, COUNTY OF CALEDONIA
T.H. 85 (CL.3) BRIDGE 29 OVER THE PASSUMPSIC RIVER
SECTIONS AND DETAILS

REV	DESCRIPTION	BY	DATE	CHK'D.

MADE RLP DATE 4/10/07 JOB NO. SD0181 CUST. NO. 0898G
CHECK BLJ DATE 4/30/07 DRAWING LBE2 REV. NO.

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7	PAVING DETAILS SHEET
8	ITEM DETAIL SUMMARY SHEET
9	EARTHWORK SUMMARY SHEET
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USER =2467

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

INDEX OF SHEETS

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/IND.DGN
IPARM FILE _____ DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 2 OF 72 SHEETS

QUANTITY SHEET 1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

SUMMARY OF ESTIMATED QUANTITIES

FULL E & C	EROSION CONTROL	RAILROAD (FEDERAL PARTICIPATION)	BRIDGE	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING
-	-	-	-	1	1	LS	CLEARING AND GRUBBING (INCL. INDV. TREES & STUMPS)	201.10	-
-	-	-	-	1100	1100	CY	COMMON EXCAVATION	203.15	13
-	-	-	130	-	130	CY	UNCLASSIFIED CHANNEL EXCAVATION	203.27	-
-	-	-	-	125	125	CY	SAND BORROW	203.31	4
-	-	-	-	50	50	CY	TRENCH EXCAVATION OF EARTH	204.20	-
-	-	-	1475	-	1475	CY	GRANULAR BACKFILL FOR STRUCTURES	204.30	-
-	-	-	1419	-	1419	CY	COFFERDAM EXCAVATION, EARTH	208.30	-
-	-	-	326	-	326	CY	COFFERDAM EXCAVATION, ROCK	208.35	-
-	-	-	1	-	1	LS	COFFERDAM (ABUTMENT 1)	208.40	-
-	-	-	1	-	1	LS	COFFERDAM (ABUTMENT 2)	208.40	-
-	-	-	-	1050	1050	SY	COLD PLANING - BIT. PAVEMENT	210.10	46
-	-	-	-	170	170	CY	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35	4
-	-	-	-	10	10	CY	AGGREGATE SURFACE COURSE	401.10	EST.
-	-	-	-	30	30	TON	AGGREGATE SHOULDERS (MOD.)	402.12	3
-	-	-	-	8	8	CWT	EMULSIFIED ASPHALT	404.65	0.1
-	-	-	-	500	500	TON	BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	406.25	6
-	-	-	10	-	10	CY	CONCRETE, HIGH PERFORMANCE CLASS A	501.33	-
-	-	-	555	-	555	CY	CONCRETE, HIGH PERFORMANCE CLASS B	501.34	-
-	-	-	1	-	1	LS	FURNISHING EQUIPMENT FOR DRIVING PILING	504.10	-
-	-	-	1420	-	1420	LF	STEEL PILING (HP 14 x 73)	505.17	-
-	-	-	2	-	2	EA	DYNAMIC PILE LOADING TEST	505.45	-
-	-	-	1	-	1	LS	STRUCTURAL STEEL (MOD.)	506.75	-
-	-	-	55600	-	55600	LB	REINFORCING STEEL	507.15	-
-	-	-	5100	-	5100	LB	EPOXY COATED REINFORCING STEEL	507.17	-
-	-	-	1	-	1	LS	SHEAR CONNECTORS (2912 - $\frac{1}{2}$" x 2")	508.15	-
-	-	-	3200	-	3200	SF	STEEL GRID FLOORING (EXODERMIC)	509.20	-
-	-	-	1	-	1	LS	MOBILIZATION OF DRILLED SHAFT EQUIPMENT	512.30	-
-	-	-	80	-	80	LF	DRILLED SHAFT IN EARTH (24" DIA.)	512.31	-
-	-	-	30	-	30	LF	DRILLED SHAFT IN ROCK (24" DIA.)	512.32	-
-	-	-	40	-	40	GAL	WATER REPELLENT (MOD. - SILANE)	514.10	-
-	-	-	225	-	225	LF	BRIDGE RAILING - HD STEEL BEAM/FASCIA MOUNTED (GALVANIZED)	525.41	-
-	-	-	1	-	1	EA	REMOVAL OF STRUCTURE (1500 SF - EST.)	529.15	-
-	-	-	35	-	35	CY	REMOVAL OF CONCRETE OR MASONRY	529.25	-
-	-	-	-	60	60	LF	18" RCP CLASS V	601.0817	-
-	-	-	-	1	1	EA	CONCRETE CATCH BASIN WITH CAST IRON GRATE	604.10	-
-	3	-	-	-	3	CY	STONE FILL, TYPE I (MOD. - CHECK DAM)	613.10	-
-	1	-	-	-	1	CY	STONE FILL, TYPE I (MOD. - INLET PROTECTION)	613.10	-

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS
		COLD PLANING - BITUMINOUS PAVEMENT
51	SY	T.H. 85
897	SY	U.S. ROUTE 5
56	SY	T.H. 27
46	SY	ROUNDING
1050	SY	TOTAL
		BITUMINOUS CONCRETE PAVEMENT (PG 58-34)
14	TON	BASE COURSE (TYPE II)
300	TON	LEVELING COURSE (TYPE IV)
175	TON	SURFACE COURSE (TYPE III)
5	TON	DRIVEWAYS
6	TON	ROUNDING
500	TON	TOTAL

PROJECT NAME: ST. JOHNSBURY, BRIDGE NO. 29
PROJECT NUMBER: BRO 1447(19)

FILE NAME: QUAN.DGN
PROJECT LEADER: J.P.H.

PLOT DATE: 1/17/2007
DRAWN BY: C.A.K.
CHECKED BY: J.P.H.
SHEET 3 OF 72

FILE NAME =u:\3797\mstn\03\final\quan.dgn
USER =597

QUANTITY SHEET 2

SUMMARY OF ESTIMATED QUANTITIES

FULL E & C	EROSION CONTROL	RAILROAD (FEDERAL PARTICIPATION)	BRIDGE	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING
-	-	-	-	75	75	CY	STONE FILL, TYPE II	613.11	-
-	-	-	275	-	275	CY	STONE FILL, TYPE III	613.12	-
-	570	-	-	-	570	LF	SNOW FENCE (MOD. - PDF)	620.70	4
-	-	-	-	14.5	14.5	LF	STEEL BEAM GUARDRAIL (GALVANIZED)	621.20	-
-	-	-	-	325	325	LF	STEEL BEAM GUARDRAIL (GALVANIZED) (MOD. - W/8' POSTS)	621.20	-
-	-	-	-	102	102	LF	HEAVY DUTY STEEL BEAM GUARDRAIL (GALVANIZED)	621.21	-
-	-	-	-	2	2	EA	MANUFACTURED TERMINAL SECTION (FLARED)	621.505	-
-	-	-	-	2	2	EA	ANCHOR FOR STEEL BEAM RAIL	621.60	-
-	-	-	-	406	406	LF	REMOVL AND DISP OF GUARDRAIL	621.80	-
-	-	-	-	400	400	LF	TEMPORARY TRAFFIC BARRIER	621.90	EST.
-	-	-	-	300	300	HR	UNIFORMED TRAFFIC OFFICERS	630.10	-
-	-	-	-	1000	1000	HR	FLAGGERS	630.15	-
-	-	320	-	-	320	HR	FLAGGERS (MOD. - RAILROAD)	630.15	-
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	LU	FIELD OFFICE - TELEPHONE (N.A.B.I.)	631.25	-
-	-	-	-	1	1	LS	MOBILIZATION / DEMOBILIZATION	635.11	-
-	-	-	-	1	1	LS	TRAFFIC CONTROL	641.10	-
-	-	-	-	2	2	EA	PORTABLE CHANGEABLE MESSAGE SIGN	641.15	-
-	-	-	-	1170	1170	LF	DURABLE 4" WHITE LINE (EPOXY PAINT)	646.40	6
-	-	-	-	1060	1060	LF	DURABLE 4" YELLOW LINE (EPOXY PAINT)	646.41	8
-	-	-	-	11	11	LF	DURABLE 24" STOP BAR (EPOXY PAINT)	646.46	-
-	-	-	-	4	4	EA	DURABLE LETTER OR SYMBOL (EPOXY PAINT)	646.50	-
-	-	-	-	2	2	EA	DURABLE RAILROAD CROSSING SYMBOL (EPOXY PAINT)	646.52	-
-	-	-	-	830	830	LF	TEMPORARY 4" WHITE LINE (PAINT)	646.60	4
-	-	-	-	1540	1540	LF	TEMPORARY 4" YELLOW LINE (PAINT)	646.61	-
-	-	-	-	20	20	EA	LINE STRIPING TARGETS	646.76	-
-	-	-	335	110	445	SY	GEOTEXTILE UNDER STONE FILL	649.31	-
-	130	-	-	-	130	SY	GEOTEXTILE FOR SILT FENCE	649.51	4
-	170	-	-	-	170	SY	GEOTEXTILE FOR FILTER CURTAIN	649.61	-
-	-	-	-	20	20	LB	SEED	651.15	EST.
-	-	-	-	75	75	LB	FERTILIZER	651.18	EST.
-	-	-	-	1	1	TON	AGRICULTURAL LIMESTONE	651.20	EST.
-	-	-	-	1	1	TON	HAY MULCH	651.25	EST.
-	-	-	-	50	50	CY	TOPSOIL	651.35	EST.
-	-	-	130	-	130	SY	GRUBBING MATERIAL	651.40	47
-	1	-	-	-	1	LS	EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.10	-

STATE OF VERMONT
AGENCY OF TRANSPORTATION

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: ST. JOHNSBURY, BRIDGE NO. 29
PROJECT NUMBER: BRO 1447(19)

FILE NAME: QUAN.DGN
PROJECT LEADER: J.P.H.

PLOT DATE: 1/17/2007
DRAWN BY: C.A.K.
CHECKED BY: D.W.E.
SHEET 4 OF 72

FILE NAME =u:\3797\mstn\03\final\quan.dgn
USER =597

QUANTITY SHEET 3

STATE OF VERMONT
AGENCY OF TRANSPORTATION

SUMMARY OF ESTIMATED QUANTITIES

				FULL E & C	EROSION CONTROL	RAILROAD (FEDERAL PARTICIPATION)	BRIDGE	ROADWAY	QUANTITIES GRAND TOTAL	UNIT	ITEMS	ITEM NO.	ROUNDING
				-	100	-	-	-	100	HR	MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.20	EST.
				-	1	-	-	-	1	LU	MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN (N.A.B.1)	652.30	-
				-	410	-	-	-	410	SY	EROSION MATTING	654.10	-
				-	-	-	-	52.75	52.75	SF	TRAFFIC SIGNS, TYPE A	675.20	-
											BEGIN OPTION ITEMS		
				-	-	-	-	112	112	LF	FLANGED CHANNEL SIGN POST	675.301	-
				-	-	-	-	112	112	LF	SQUARE TUBE SIGN POSTS AND ANCHOR	675.341	-
											END OPTION ITEMS		
				-	-	-	-	8	8	EA	REMOVING SIGNS	675.50	-
				-	-	-	-	2	2	EA	ERECTING SALVAGED SIGNS	675.60	-
				-	-	1	-	-	1	LS	FLASHING LIGHT SIGNALS	915.15	-

DETAILED SUMMARY OF QUANTITIES

QUANTITIES	UNIT	ITEMS

PROJECT NAME: ST. JOHNSBURY, BRIDGE NO. 29
PROJECT NUMBER: BRO 1447(19)

FILE NAME: QUAN.DGN
PROJECT LEADER: J.P.H.

PLOT DATE: 1/17/2007
DRAWN BY: C.A.K.
CHECKED BY: D.W.E.
SHEET 5 OF 72

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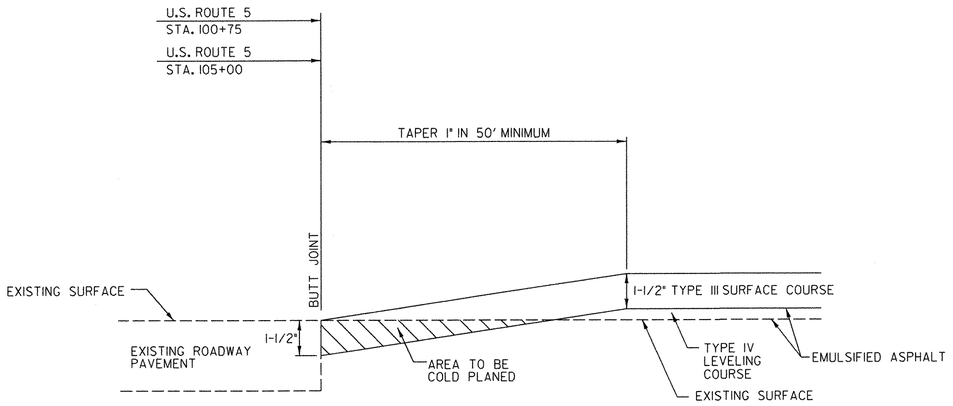
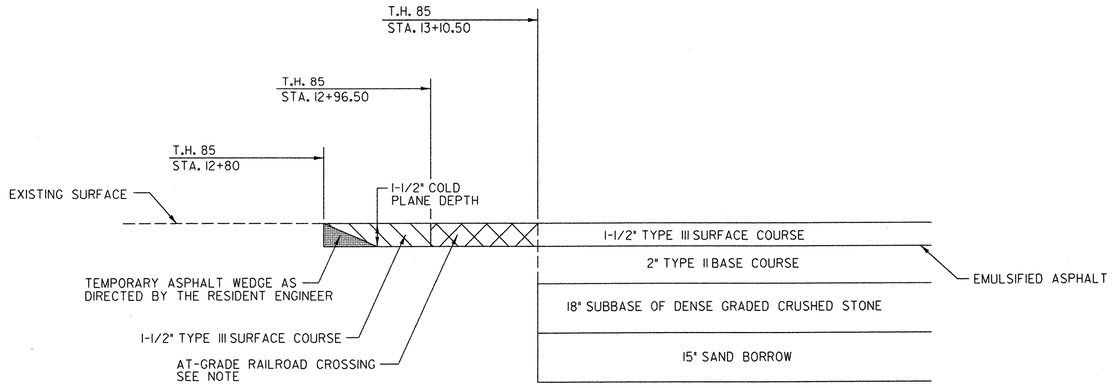
USER =597



U.S. ROUTE 5 APPROACH AREA DETAIL

U.S. ROUTE 5 STA. 100+75
U.S. ROUTE 5 STA. 105+00



T.H. 85 APPROACH AREA DETAIL

T.H. 85 STA. 12+80 - BEGIN RECONSTRUCTION

NOTE:

THE EXISTING AT-GRADE RAILROAD CROSSING IS TO BE PAVED. PAVEMENT PLACED ON AT-GRADE HIGHWAY-RAILROAD CROSSING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS FOR THE TYPE OF CROSSING INSTALLED BY THE RAILROAD OR AS DIRECTED BY THE ENGINEER

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

PAVING DETAILS SHEET

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/PAVDET.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 7 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\pavdet.dgn
USER =2467

Metric

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
1	YERKES, RICHARD	11,12	103+88 LT.	104+49 LT.			CONST. (T) 899 S.F.±	WDOE	07-10-03	ST. JOHNSBURY	283	200-201	INCLUDES EROSION CONTROL
			103+93 LT.	104+36 LT.			SLOPE (T) 180 S.F.±						
			104+29 LT.	104+32 LT.			INSTALL & MAINTAIN (P)						GUARD RAIL
			TH#85 14+43 LT.	TH#85 14+58 LT.			CHANNEL (P) 75 S.F.±						
2A	STATE OF VERMONT, JOINED BY WASHINGTON COUNTY RAILROAD COMPANY	11	TH#85 13+04 RT.	TH#85 13+13 RT.			CONST. (T) 112 S.F.±	QCD	06/19/03	ST. JOHNSBURY	282	191-194	INCLUDES EROSION CONTROL FORMERLY NEWPORT & RICHFORD RAILROAD COMPANY
2B			TH#85 12+76 LT.	TH#85 13+48 LT.	520SF±								
			TH#85 12+77 LT.	TH#85 12+94 LT.			SLOPE (T) 24 S.F.±						
			TH#85 12+78 LT.	TH#85 13+48 LT.			CONST. (T) 1426 S.F.±						INCLUDES EROSION CONTROL
			TH#85 13+17 LT.	TH#85 13+48 LT.			CHANNEL (P) 332 S.F.±						
3	CHARTER COMMUNICATIONS												UTILITY
4	CENTRAL VERMONT PUBLIC SERVICE CORP.												UTILITY
5	VERIZON NEW ENGLAND, INC.												UTILITY

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	1,2,7 8,10 11	PARCEL NO. 2 NEWPORT & RICHFORD RAILROAD COMPANY. CHANGE TITLE TO STATE OF VERMONT. PER C.O. 9821	02-18-03	M.J.R.	R.P.D.
2	10,11 12	PARCEL NO. 1 LECLERC. CHANGE OWNER TO YERKES, RICHARD. PER C.O. 9283.	03-10-03	P.J.H.	R.P.D.
3	10,11	PARCEL NO. 2 STATE OF VERMONT. CHANGE TITLE TO STATE OF VERMONT, JOINED BY WASHINGTON COUNTY RAILROAD COMPANY. PER C.O. 9297.	03-27-03	M.J.R.	R.P.D.
		REPRODUCIBLES TO STRUCTURES	10-16-03		
		PAPER PRINTS TO STRUCTURES	09-28-06		
		PAPER PRINTS TO STRUCTURES	02-28-07		

FEB 28 2007

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
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

LEGEND
C&T (P) CLEARING & TRIMMING
CZ (P) CLEAR ZONE
CONST. (T) CONSTRUCTION EASEMENT
SR SR SLOPE RIGHTS
P L PROPERTY LINE
TOP OF CUT
TOE OF SLOPE
UE (P) PERMANENT UTILITY EASEMENT

APPROVED: ROGER P. DUMAS DATE: 4-18-01
CHIEF, PLANS & TITLES

R. O. W. PLANS

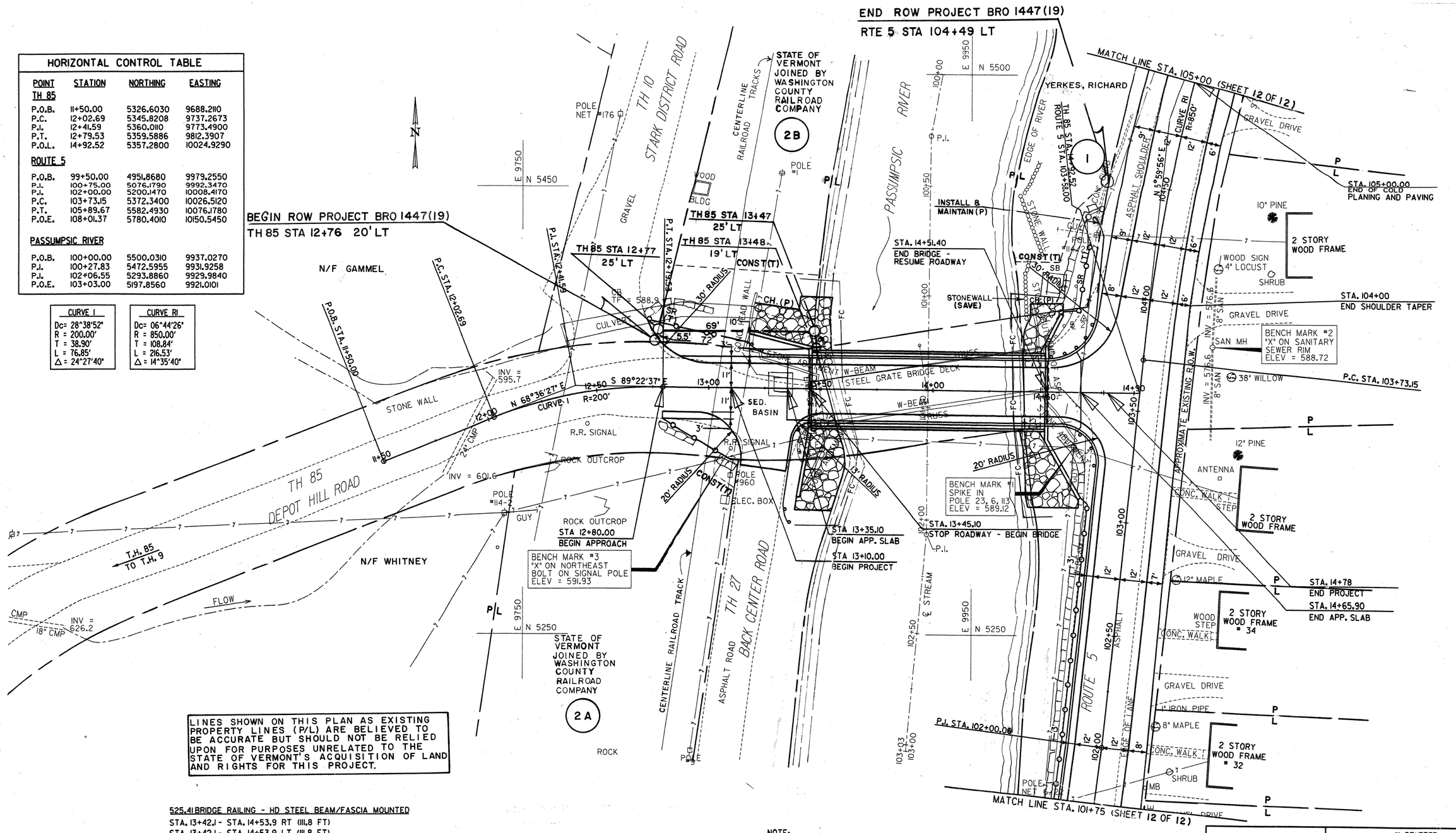
ST. JOHNSBURY
BRO 1447(19)
R.O.W. SHEET 10 OF 12 SHEETS
SHEET 10 OF 72

ACCT. jblanchard
M:\Projects\92J104\RightOfWay\rJ104cd.dgn
DATE PLOTTED 28-FEB-2007

HORIZONTAL CONTROL TABLE

POINT	STATION	NORTHING	EASTING
TH 85			
P.O.B.	11+50.00	5326.6030	9688.2110
P.C.	12+02.69	5345.8208	9737.2673
P.I.	12+41.59	5360.0110	9773.4900
P.T.	12+79.53	5359.5886	9812.3907
P.O.L.	14+92.52	5357.2800	10024.9290
ROUTE 5			
P.O.B.	99+50.00	4951.8680	9979.2550
P.I.	100+75.00	5076.1790	9992.3470
P.I.	102+00.00	5200.1470	10008.4170
P.C.	103+73.15	5372.3400	10026.5120
P.T.	105+89.67	5582.4930	10076.1780
P.O.E.	108+01.37	5780.4010	10150.5450
PASSUMPSIC RIVER			
P.O.B.	100+00.00	5500.0310	9937.0270
P.I.	100+27.83	5472.5955	9931.9258
P.I.	102+06.55	5293.8860	9929.9840
P.O.E.	103+03.00	5197.8560	9921.0101

CURVE I	CURVE RI
Dc= 28°38'52"	Dc= 06°44'26"
R = 200.00'	R = 850.00'
T = 38.90'	T = 108.84'
L = 76.85'	L = 216.53'
Δ = 24°27'40"	Δ = 14°35'40"



LINES SHOWN ON THIS PLAN AS EXISTING PROPERTY LINES (P/L) ARE BELIEVED TO BE ACCURATE BUT SHOULD NOT BE RELIED UPON FOR PURPOSES UNRELATED TO THE STATE OF VERMONT'S ACQUISITION OF LAND AND RIGHTS FOR THIS PROJECT.

525.41 BRIDGE RAILING - HD STEEL BEAM/FASCIA MOUNTED
STA. 13+42.1 - STA. 14+53.9 RT (111.8 FT)
STA. 13+42.1 - STA. 14+53.9 LT (111.8 FT)

621.20 STEEL BEAM GUARDRAIL W/8 FT POSTS (MOD.)
STA. 101+75 - STA. 103.29.7 (154.7 FT)

621.20 STEEL BEAM GUARDRAIL
STA. 13+17.5 - STA. 13+42.1 LT (24.6 FT)
STA. 13+33.9 - STA. 13+42.1 RT (52 FT)
STA. 14+53.9 - STA. 14+73.0 LT (19.1 FT)
STA. 14+53.9 - STA. 14+67.1 RT (13.2 FT)

621.60 ANCHOR FOR STEEL BEAM RAIL
STA. 13+23.5 LT
STA. 13+33.9 RT

621.80 REMOVAL AND DISPOSAL OF GUARDRAIL
STA. 101+75 - STA. 103+36.9 LT (161.9 FT)

NOTE:
1. THE CULVERT'S SIZE, TYPE AND CONDITION WILL BE DETERMINED AT A LATER DATE.

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 20 40
1 INCH = 20 FT

PLAN

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY J. LUKOVITS DATE 6/00
SQUAD LEADER T. KARIS
DESIGN FILE NO. /3797/FINAL/3797PL.DGN
IPARM FILE DATE PLOTTED
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
ROW Sheet 11 of 12 Sheets

FEB 28 2007

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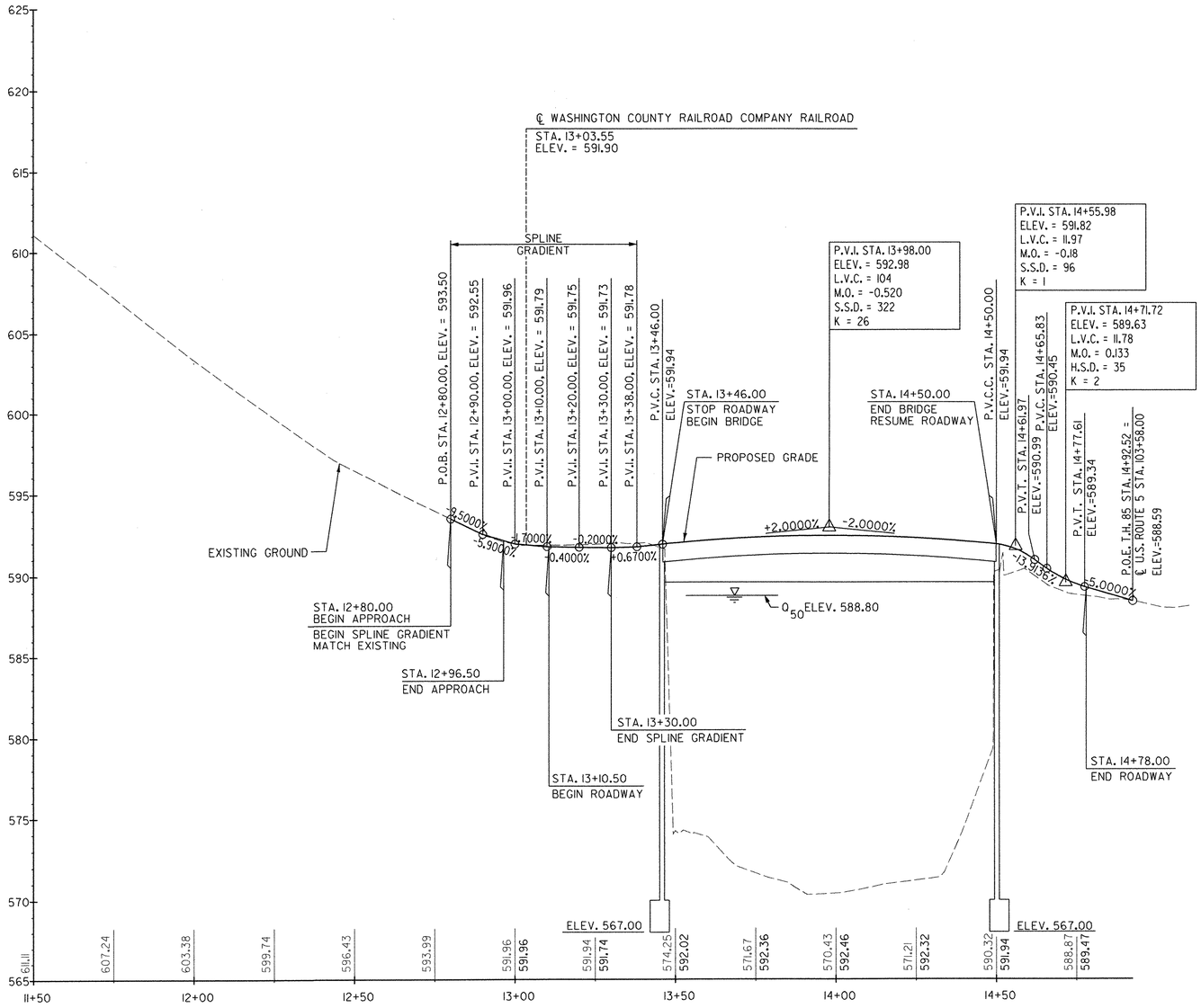
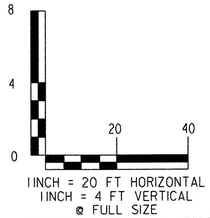
USER =597



T.H. 85 DEPOT HILL ROAD



1 INCH = 20 FT HORIZONTAL
1 INCH = 4 FT VERTICAL
@ FULL SIZE

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

PROFILE
T.H. 85

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J.P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/3797PRF.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 15 OF 72 SHEETS

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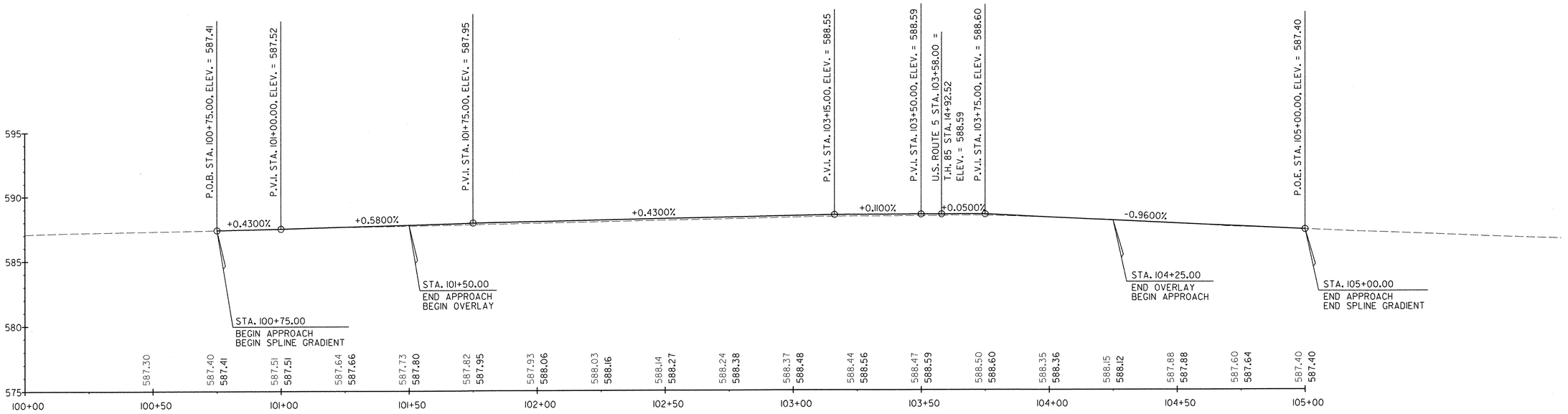
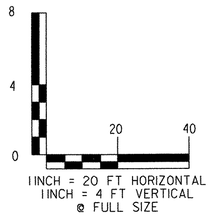


U.S. ROUTE 5



1 INCH = 20 FT HORIZONTAL
1 INCH = 4 FT VERTICAL
@ FULL SIZE

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

PROFILE
U.S. ROUTE 5

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DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/3797PRF.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
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PROJ. NO. BRO 1447(19)
SHEET 16 OF 72 SHEETS

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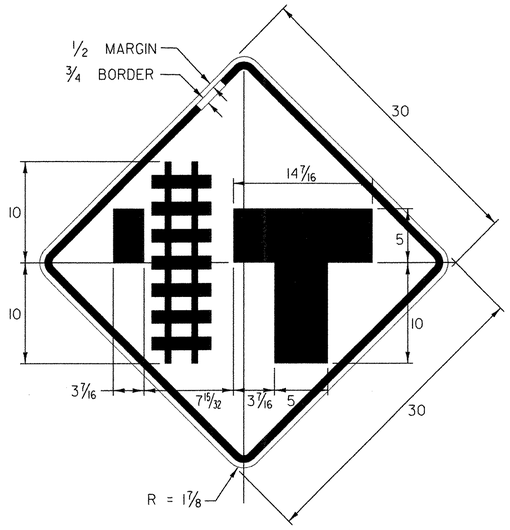

COLORS: BLACK BORDER & TEXT (REFLECTORIZED)
YELLOW BACKGROUND (REFLECTORIZED)

MATERIALS: PER VAOT STANDARD E-151
SIGN T.H. 85
STA. 12+70.0, LT
STA. 13+25.0, RT

NOTE:

TEXT LAYOUT DIMENSIONS ARE BASED ON THE "LETTER & NUMERAL WIDTHS & SPACES" TABLES FOUND IN THE "STANDARD HIGHWAY SIGNS" BOOKLET. MINOR VARIATIONS IN TEXT DIMENSIONS ARE ACCEPTABLE BASED ON INDIVIDUAL MANUFACTURER'S LETTER FABRICATION. SIGNIFICANT CHANGES THAT EFFECT SIGN APPEARANCE SHALL BE BROUGHT TO THE ATTENTION OF THE VAOT'S TRAFFIC OPERATIONS SECTION BEFORE FABRICATION.

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

TRAFFIC SIGN DETAIL SHEET

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/TDT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 20 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\tdt.dgn
USER =2467

NARRATIVE

1.1 PROJECT DESCRIPTION

BRO 1447(19) T.H. 85 BRIDGE NO. 29 OVER THE PASSUMPSIC RIVER IS LOCATED IN THE TOWN OF ST. JOHNSBURY, CALEDONIA COUNTY, VERMONT. THE PROJECT BEGINS APPROXIMATELY 211 FT WEST OF THE INTERSECTION OF T.H. 85 AND U.S. ROUTE 5 AND EXTENDS EAST ALONG T.H. 85 211 FT TO U.S. ROUTE 5. THIS PROJECT ALSO BEGINS ON U.S. ROUTE 5 AT A POINT APPROXIMATELY 206 FT SOUTH OF THE INTERSECTION OF T.H. 85 AND U.S. ROUTE 5 AND EXTENDS 378 FT NORTH ON U.S. ROUTE 5. WORK TO BE PERFORMED UNDER THIS PROJECT INCLUDES THE REPLACEMENT OF BRIDGE NO. 29 AND RELATED CHANNEL WORK, SUBBASE, COLD PLANING, RESURFACING WITH A SHIM/LEVELING COURSE AND WEARING COURSE, INSTALLATION OF NEW GUARDRAIL, NEW PAVEMENT MARKINGS, NEW SIGNS, AND INCIDENTAL ITEMS. THE TOTAL AREA OF DISTURBANCE FOR THIS PROJECT IS 0.55 ACRES.

1.2 SITE INVENTORY AND ANALYSIS

1.2.1 OFF-SITE DRAINAGE CHARACTERISTICS (UP AND DOWN GRADIENT)

THE PROJECT AREA LIES WITHIN A SMALL VALLEY ACROSS THE PASSUMPSIC RIVER LOCATED BETWEEN MOUNT PISGAH AND SADDLEBACK MOUNTAIN TO THE EAST AND AN AREA OF ROLLING TERRAIN AND HILLS TO THE WEST. THE PROJECT RUNS BOTH PERPENDICULAR AND PARALLEL TO THE PASSUMPSIC RIVER WHICH IS A TRIBUTARY OF THE CONNECTICUT RIVER AND RUNS FROM SEVERAL SOURCES LOCATED IN THE MOUNTAINS TO THE NORTH TO ITS OUTFALL IN THE CONNECTICUT RIVER. THE MAJORITY OF ALL SURFACE RUNOFF WATERS WITHIN IN THE PROJECT AREA FLOW OVERLAND AND THROUGH ROADSIDE DITCHES THAT OUTLET INTO THE PASSUMPSIC RIVER. THERE ARE ALSO SOME CULVERTS LOCATED WITHIN THE PROJECT AREA THAT CONVEY THE WATER FROM THE ROADSIDE DITCHES TO THE PASSUMPSIC RIVER.

1.2.2 DRAINAGE, WATERWAYS, BODIES OF WATER

THERE ARE A FEW ROADSIDE DITCHES THAT ARE LOCATED WITHIN THE PROJECT CORRIDOR THAT OUTLET DIRECTLY OR THROUGH CULVERTS INTO THE PASSUMPSIC RIVER. ALSO, THE PROJECT IS LOCATED OVER AND ALONG THE PASSUMPSIC RIVER WHICH IS A NATURAL WATERWAY THAT RUNS FROM SEVERAL SOURCES LOCATED IN THE MOUNTAINS TO THE NORTH AND EVENTUALLY FLOWS INTO THE CONNECTICUT RIVER SOUTH OF THE PROJECT AREA.

1.2.3 TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES

THE MAJORITY OF THE EXISTING SITE TOPOGRAPHY CONSISTS OF A RURAL MINOR ARTERIAL ROUTE AND LOCAL RURAL ROUTE SITUATED IN A RURAL RESIDENTIAL AREA WITH SOME COMMERCIAL ESTABLISHMENTS LOCATED IN THE PROJECT AREA. SANITARY SEWER FACILITIES ARE PRESENT WITHIN THE PROJECT AREA, BUT THERE ARE NO IMPACTS ASSOCIATED WITH THIS CONTRACT. AERIAL FACILITIES ARE ALSO PRESENT WITHIN THE PROJECT LIMITS WHICH WILL BE RELOCATED AS A RESULT OF THIS PROJECT.

1.2.4 VEGETATION

THE VEGETATION LOCATED WITHIN THE PROJECT LIMITS PRIMARILY CONSISTS OF GRASSED/LAWN AREAS ALONG THE BANKS OF THE PASSUMPSIC RIVER AND RESIDENTIAL AREAS. THERE ARE ALSO SOME AREAS OF SHRUBS/BRUSH LOCATED ALONG THE BANKS OF THE PASSUMPSIC RIVER AND SOME ISOLATED AREAS OF DENSE WOODED AREAS LOCATED TO THE EAST OF PROJECT CORRIDOR. IT IS ANTICIPATED THAT THERE WILL BE NO IMPACTS TO THE WOODED OR SHRUB/BRUSH AREAS DURING THE CONSTRUCTION OF THIS PROJECT. DUE TO THE REPLACEMENT OF BRIDGE 29 AND THE RECONSTRUCTION OF THE ROADWAYS IN THE IMMEDIATE VICINITY OF BRIDGE 29 MOST LAWN AREAS WILL NEED TO BE REGRADED AND RESEEDED TO ESTABLISH TURF AND TO STABILIZE THE SOIL.

1.2.5 SOILS

THE SOILS LOCATED WITHIN THE PROJECT LIMITS HAVE BEEN PRIMARILY CLASSIFIED AS POTENTIALLY HIGHLY ERODIBLE OR HIGHLY ERODIBLE BY THE UNITED STATES DEPARTMENT OF AGRICULTURE'S NATIONAL RESOURCE CONSERVATION SERVICE (NRCS). THE FOLLOWING IS A LIST OF SOIL TYPES THAT ARE LOCATED WITHIN THE PROJECT AREA AND ARE LIKELY TO BE ENCOUNTERED.

MAP UNIT TYPE	DESCRIPTION	SLOPES	ERODIBILITY	ERODIBILITY FACTOR (K)
104B	URBAN LAND-ADAMS-NICHOLVILLE COMPLEX	0-8	POTENTIALLY HIGHLY ERODIBLE	0.17
214E	VERSHIRE-LOMBARD COMPLEX	35-60	HIGHLY ERODIBLE	0.32

MAP UNIT TYPE IS FROM THE NRCS SOIL SURVEY MAP FOR CALEDONIA COUNTY, VERMONT. SEE SHEETS 27 THROUGH 28 FOR MAP UNIT BOUNDARY LINES.

1.2.6 SENSITIVE RESOURCE AREAS

THE PASSUMPSIC RIVER RUNS THROUGH THE PROJECT AREA AND THERE IS A 50 FT RIPARIAN BUFFER ASSOCIATED WITH THE RIVER. THE CONTRACTOR SHALL PROTECT ALL FEATURES BEYOND THE CONSTRUCTION LIMITS FROM IMPACTS THROUGHOUT THE DURATION OF THE PROJECT.

1.2.7 PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES

LOCATED WITHIN THE PROJECT LIMITS IS THE PASSUMPSIC RIVER, A TRIBUTARY TO THE CONNECTICUT RIVER WHICH FLOWS FROM SEVERAL SOURCES LOCATED IN THE MOUNTAINS TO THE NORTH UNDER BRIDGE 29 ON T.H. 85 TO ITS OUTFALL POINT IN THE CONNECTICUT RIVER SOUTH OF THE PROJECT AREA.

1.3 TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL

1.3.1 DESCRIPTION OF ALL TEMPORARY STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES

TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES WILL BE IMPLEMENTED THROUGH BEST MANAGEMENT PRACTICES AS SHOWN ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER. THE FOLLOWING IS A LIST OF TEMPORARY EROSION CONTROL MEASURES THAT SHALL BE IMPLEMENTED DURING THIS CONSTRUCTION OF THIS PROJECT AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER:

- PROJECT DEMARCATION FENCE
- SILT FENCE
- CULVERT INLET/OUTLET PROTECTION
- DRAINAGE STRUCTURE INLET PROTECTION
- FILTER CURTAIN
- EROSION MATTING
- STONE CHECK DAMS

1.3.2 DESIGN CALCULATIONS FOR ALL TEMPORARY STRUCTURAL CONTROL MEASURES

DUE TO THE LIMITED VARIATIONS IN THE TOPOGRAPHY ASSOCIATED WITH THE PROJECT ENVIRONS AND THE EXTENT OF THE PROPOSED WORK ANTICIPATED, NO TEMPORARY STRUCTURAL EROSION CONTROL MEASURE DESIGN CALCULATIONS WERE PERFORMED.

1.4 FINAL EROSION PREVENTION CONTROL MEASURES

1.4.1 DESCRIPTION OF PERMANENT EROSION AND SEDIMENT CONTROL MEASURES

EXISTING CULVERT OUTLETS SHALL BE PERMANENTLY PROTECTED WITH STONE APRONS AND THE EMBANKMENT SURROUNDING THE NEW STRUCTURE ALONG THE PASSUMPSIC RIVER WILL HAVE STONE PLACED ON TOP.

CONSTRUCTION SEQUENCING NOTES:

PHASE 1 - ESTABLISH PERIMETER CONTROLS

1. PRIOR TO BEGINNING ANY WORK WITHIN THE PROJECT LIMITS, PROJECT DEMARCATION FENCING SHALL BE ERECTED ALONG THE ENTIRE PROJECT AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER. THE COST OF INSTALLING THE PROJECT DEMARCATION FENCE SHALL BE PAID FOR UNDER ITEM 620.70 SNOW FENCE (MOD. - PDF).

2. INSTALL ALL NECESSARY EROSION PREVENTION ITEMS (E.G. SILT FENCE, FILTER CURTAIN, DRAINAGE STRUCTURE INLET PROTECTION AND CLUVERT INLET/OUTLET PROTECTION) AS SHOWN ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER. THE COST OF INSTALLING ALL EROSION PREVENTION AND SEDIMENT CONTROL ITEMS SHALL BE PAID FOR UNDER THERE RESPECTIVE ITEMS AS SHOWN IN THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

PHASE 2 - RECONSTRUCT EXISTING BRIDGE AND ROADWAYS

1. THE CONTRACTOR SHALL REPLACE THE EXISTING BRIDGE BY CLOSING DEPOT HILL ROAD AND BACK CENTER ROAD TO TRAFFIC WITHIN THE PROJECT AREA. DURING FINAL PAVING OPERATIONS, THE CONTRACTOR SHALL RECONSTRUCT U.S. ROUTE 5 BY UTILIZING TEMPORARY LANE CLOSURES AND MAINTAINING ONE-WAY TRAFFIC ON ONE UNOBSTRUCTED 10.0 FT LANE AT ALL TIMES THROUGH THE PROJECT AREA DURING WORKING HOURS. TRAFFIC SHALL BE RESTORED TO NORMAL OPERATIONS DURING NON-WORKING HOURS AND ALL HOLIDAYS PER SECTION 100 OF THE VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001.

2. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED ROADWAY IN SUCH A MANNER THAT MINIMIZES THE DURATION OF EXPOSED GROUND BY STAGING THEIR ACTIVITIES SO THAT ALL DISTURBED AREAS WILL BE EITHER PAVED OR STABILIZED AT THE END OF EACH WORK DAY. NO LONGITUDINAL DROP OFFS SHALL EXIST WITHIN THE PROJECT AREA DURING NON-WORKING HOURS. IT IS ANTICIPATED THAT THE CONTRACTOR WILL FIRST REPLACE THE EXISTING BRIDGE AND THEN OVERLAY THE U.S. ROUTE 5 PAVEMENT.

PHASE 3 - REMOVE ALL TEMPORARY EROSION CONTROL AND PERIMETER CONTROL MEASURES

1. THE CONTRACTOR SHALL ONLY REMOVE ALL TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AND THE PROJECT DEMARCATION FENCE ONCE ALL WORK HAS BEEN COMPLETED AND THE SLOPES HAVE BEEN STABILIZED AS DIRECTED BY THE RESIDENT ENGINEER.

GENERAL NOTES FOR TEMPORARY SOIL EROSION PREVENTION AND SEDIMENT CONTROL

1. THE EROSION PREVENTION & SEDIMENT CONTROL PLANS (EP&SCP) ARE MEANT AS A GUIDELINE FOR PREVENTING EROSION AND CONTROLLING SEDIMENT AS REQUIRED BY THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001. THE WORK OUTLINED IN THIS NARRATIVE CONSISTS OF APPLYING MEASURES THROUGHOUT THE LIFE OF THE PROJECT TO CONTROL EROSION AND MINIMIZE THE SEDIMENTATION OF RIVERS, STREAMS AND/OR IMPOUNDMENTS SUCH AS LAKES AND RESERVOIRS. THE MEASURES CONSIST OF STABILIZATION AND STRUCTURAL PRACTICES, STORM WATER CONTROLS AND OTHER MISCELLANEOUS POLLUTION PREVENTION CONTROLS.

2. COORDINATE THE INSTALLATION, USE, AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES WITH ROADWAY CONSTRUCTION ACTIVITIES TO ASSURE ECOLOGICAL, EFFECTIVE, AND CONTINUOUS EROSION PREVENTION AND SEDIMENT CONTROL. EMPLOY TEMPORARY STABILIZATION PRACTICES IN INCREMENTAL STAGES AS CONSTRUCTION PROCEEDS.

3. INSPECTION OF SOIL EROSION AND POLLUTION CONTROL MEASURES SHALL BE DONE EVERY SEVEN (7) CALENDER DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE OR AS DIRECTED BY THE RESIDENT ENGINEER. REPAIRS SHALL BE MADE AS NEEDED WHEN DAMAGE TO MEASURES ARE DISCOVERED AND SEDIMENT SHALL BE REMOVED WHEN THE STORAGE VOLUME OF AN EROSION CONTROL MEASURE IS APPROACHING ONE HALF OF ITS INTENDED CAPACITY OR AS DIRECTED BY THE RESIDENT ENGINEER.

4. INSTALL ALL EROSION PREVENTION AND SEDIMENT CONTROL MEASURES AS SHOWN IN THE EP&SCP OR AS DIRECTED BY THE RESIDENT ENGINEER. DO NOT MODIFY THE TYPE, SIZE, OR LOCATION OF ANY CONTROL OR PRACTICE WITHOUT APPROVAL FROM THE RESIDENT ENGINEER.

5. PREVENTING INITIAL SOIL EROSION IS MUCH MORE EFFECTIVE THAN TRYING TO CONTROL ERODED SEDIMENT. THEREFORE STABILIZE ALL DISTURBED AREAS AS SOON AS IS PRACTICAL BUT NO MORE THAN TWO DAYS AFTER CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED EXCEPT FOR PERIMETER CONTROL MEASURES, WHICH SHALL BE INSTALLED PRIOR TO THE START OF ANY CLEARING, GRUBBING OR GRADING ACTIVITY.

6. THE CONTRACTOR SHALL GRADE AND TRIM ALL SLOPES AS THE EXCAVATION PROGRESSES AND SEED ALL SLOPES AS DIRECTED BY THE RESIDENT ENGINEER.

7. THE CONTRACTOR SHALL HAVE A HYDROSEEDER AND/OR A MULCHING MACHINE AVAILABLE ON THE PROJECT SITE OR AVAILABLE AT ONE WEEK'S NOTICE (MAXIMUM) UNTIL THE PERMANENT SEEDING IS COMPLETED.

8. CONTROL ONLY SEDIMENT LADEN RUNOFF GENERATED BY THE PROJECT SITE. SEPARATE AND QUICKLY ROUTE CLEAN OFFSITE RUNOFF THROUGH THE PROJECT BY USING EARTH DIVERSION BERMS, DIVERSION CHANNELS, AND CULVERTS. A TEMPORARY LINING MATERIAL MAY BE REQUIRED WHERE THE CONTRACTOR PROVIDES TEMPORARY CHANNELS TO KEEP CONTRACTOR'S WORK SITES FREE FROM WATER DURING CONSTRUCTION AS DIRECTED BY THE RESIDENT ENGINEER

9. CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO PREVENT ANY DAMAGE TO THE WATERS OF THE UNITED STATES FROM POLLUTION BY DEBRIS, SEDIMENT, OR OTHER FOREIGN MATERIAL, OR FROM MANIPULATION OF EQUIPMENT AND/OR MATERIALS IN OR NEAR THE WATERS OF THE UNITED STATES. THE CONTRACTOR SHALL NOT RETURN DIRECTLY TO THE WATERS OF THE UNITED STATES ANY WATER WHICH HAS BEEN USED FOR WASH PURPOSES OR OTHER SIMILAR OPERATIONS WHICH WOULD CAUSE THIS WATER TO BECOME POLLUTED WITH SAND, SILT, CEMENT, OIL OR OTHER IMPURITIES. IF THE CONTRACTOR USES WATER FROM THE WATERS OF THE UNITED STATES, THE CONTRACTOR SHALL CONSTRUCT AN INTAKE OR TEMPORARY DAM TO PROTECT AND MAINTAIN STREAM WATER QUALITY.

10. DURING CONSTRUCTION, NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE INTO THE WATERS OF THE UNITED STATES, NOR SHALL WASHING FROM CONCRETE TRUCKS, MIXERS OR OTHER DEVICES BE ALLOWED TO ENTER ANY WETLANDS OR WATERS OF THE UNITED STATES.

11. DO NOT ALLOW CONSTRUCTION VEHICLES TO TRACK SEDIMENT OFFSITE OF THE PROJECT LIMITS.

12. DO NOT ALLOW ANY CONSTRUCTION EQUIPMENT TO OPERATE OR ACCESS ON THE DOWN SLOPE SIDE OF PERIMETER CONTROL MEASURES.

13. DO NOT ALLOW ANY CROSSING OF A FLOWING STREAM OR DISTURBANCE OF THE EXISTING STREAM BANK BY CONSTRUCTION EQUIPMENT EXCEPT AS AUTHORIZED BY THE RESIDENT ENGINEER.

14. IN GENERAL, PRESERVE EXISTING VEGETATION, TREES, AND SHRUBS WHEN POSSIBLE AS DIRECTED BY THE RESIDENT ENGINEER.

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

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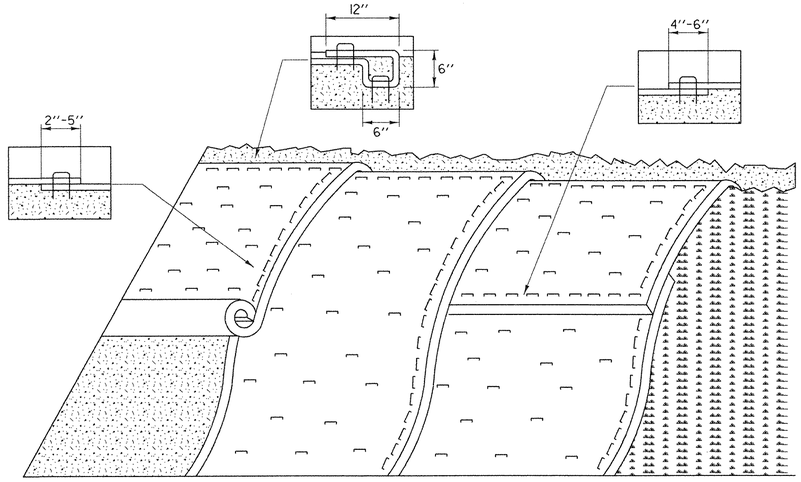
USER =2467

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL NOTES

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO.
IPARM FILE DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 21 OF 72 SHEETS



EROSION PREVENTION FOR SIDE SLOPES

N.T.S.

APPLICATION NOTES:

A. THE PURPOSE OF MATTING ON SIDE SLOPES IS TO REDUCE EROSION AND TO AID THE ESTABLISHMENT OF VEGETATION.

B. EROSION CONTROL MATTING SHALL BE USED FOR THE FOLLOWING REASONS:

- SIDE SLOPES > 1-3 OR STEEPER
- AREAS WHERE SEED AND MULCH WILL NOT STAY IN PLACE ALONE
- WHERE SEEDING IS OUTSIDE THE GROWING SEASON

GENERAL NOTES:

1. GRADE AND SMOOTH THE SLOPE TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
2. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
3. ANCHOR MATTING AS SHOWN UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
4. UNROLL MATTING VERTICALLY DOWN SLOPE IN THE DIRECTION OF WATER FLOW.
5. OVERLAP UPPER MATTING OVER LOWER MATTING AS SHOWN.
6. OVERLAP ADJACENT MATTING AS SHOWN.
7. CUT EXCESS MATTING AT END OF SLOPE AND ANCHOR THE END.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE OR AS DIRECTED BY THE RESIDENT ENGINEER.
9. MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
10. PAYMENT FOR INSTALLATION OF EROSION MATTING SHALL BE MADE UNDER ITEM 654.10 EROSION MATTING.
11. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER ITEM 652.20 MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN.
12. PAYMENT FOR MAINTAINING EROSION MATTING SHALL BE MADE UNDER ITEM 652.30 FIELD MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

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DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL DETAILS

SURVEYED BY W. DEYETTE DATE 10/93
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SQUAD LEADER J. P. HALSTEAD
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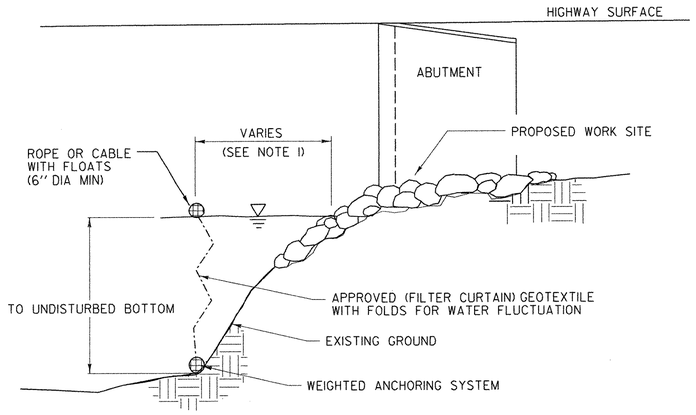
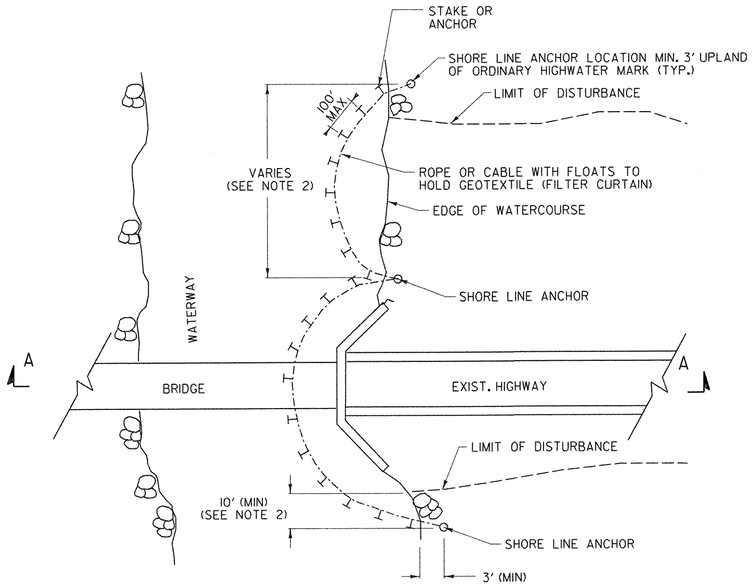
SHEET 22 OF 72 SHEETS



SECTION A-A



PLAN

FILTER CURTAIN - TEMPORARY

N.T.S.

STANDARD SYMBOL

FILTER CURTAIN

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF A FILTER CURTAIN IS TO SEPARATE WORK AREAS IN OR ADJACENT TO WATERS TO PREVENT SEDIMENT FROM ENTERING THE WATERS.

B. FILTER CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN MANUFACTURER'S RECOMMENDATIONS.

C. FILTER CURTAIN SHALL NOT BE PLACED AT THE OUTLET OF A CULVERT OR DITCH UNLESS THE VELOCITY DOES NOT EXCEED 1.5 FT/SEC.

D. THE DETAIL DEPICTS WORK AT A BRIDGE LOCATION, BUT FILTER CURTAIN MAY BE APPLIED AT OTHER LOCATIONS.

GENERAL NOTES:

1. THE FILTER CURTAIN SHALL BE PLACED AS CLOSE TO THE WORK AS POSSIBLE WITHOUT INTERFERING WITH CONSTRUCTION OPERATIONS.
2. THE FILTER CURTAIN SHALL BE A MAXIMUM OF 100 FEET LONG BETWEEN ANCHORS. LAST SECTION SHALL TERMINATE A MINIMUM OF 10 FEET BEYOND THE LIMIT OF DISTURBANCE.
3. THE CONTRACTOR SHALL MONITOR THE FILTER CURTAIN, TAKING INTO ACCOUNT WEATHER PATTERNS AND PREVAILING WIND DIRECTIONS THAT MAY AFFECT WATER LEVELS, VELOCITY AND MOVEMENT OF THE FILTER CURTAIN.
4. SEAMS IN THE FILTER CURTAIN FABRIC SHALL BE EITHER VULCANIZED, WELDED OR SEWN AND SHALL DEVELOP THE FULL STRENGTH OF THE FABRIC.
5. SOIL PARTICLES TRAPPED BY THE FILTER CURTAIN SHOULD ONLY BE REMOVED IF THERE HAS BEEN A SIGNIFICANT CHANGE IN THE ORIGINAL CONTOURS OF THE AFFECTED AREA IN THE WATER COURSE.
6. SOIL PARTICLES SHALL BE ALLOWED 6-12 HOURS TO SETTLE PRIOR TO THEIR REMOVAL OR THE REMOVAL OF THE FILTER CURTAIN.
7. THE FILTER CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE TO MINIMIZE ESCAPE OF SEDIMENTS INTO THE WATERWAY.
8. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE THAT ALLOWS THE FILTER CURTAIN TO CONFORM TO THE CONTOUR ON THE BOTTOM OF THE WATERWAY.
9. PAYMENT FOR INSTALLATION AND REMOVAL OF THE FILTER CURTAIN SHALL BE MADE UNDER ITEM 649.61 GEOTEXTILE FOR FILTER CURTAINS.
10. PAYMENT FOR MONITORING FILTER CURTAIN SHALL BE MADE UNDER ITEM 652.20 MONITORING EROSION & PREVENTION SEDIMENT CONTROL PLAN.
11. PAYMENT FOR MAINTAINING FILTER CURTAIN SHALL BE MADE UNDER ITEM 652.30 FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

RURAL AREAS - SEED MIXTURE

CONSERVATION SEED MIXTURE

% WT	LBS/ACRE	NAME	PUR %	GERM %
37.5	22.5	CREEPING RED FESCUE	98	85
37.5	22.5	TALL FESCUE	95	90
5.0	3.0	RED TOP	95	90
15.0	9.0	BIRDSFOOT TREFOIL	98	85
5.0	3.0	ANNUAL RYE GRASS	95	85
100.0	60.0			

GENERAL NOTES:

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

SEED: TO BE APPLIED PER SEEDING FORMULAS OR AS DIRECTED BY THE RESIDENT ENGINEER.

FERTILIZER: FORMULA 10-20-10, TO BE USED WITH SEED APPLIED, AT THE RATE OF 500 LBS/ACRE (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 2 TONS/ACRE OR AS DIRECTED BY THE RESIDENT ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 2 TONS/ACRE OR AS DIRECTED BY THE RESIDENT ENGINEER.

TOPSOIL: TO BE USED WITH SEED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL DETAILS

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO.
IPARM FILE DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 23 OF 72 SHEETS

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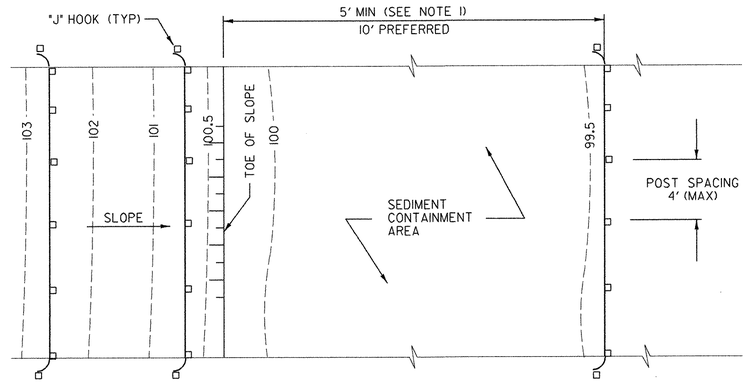
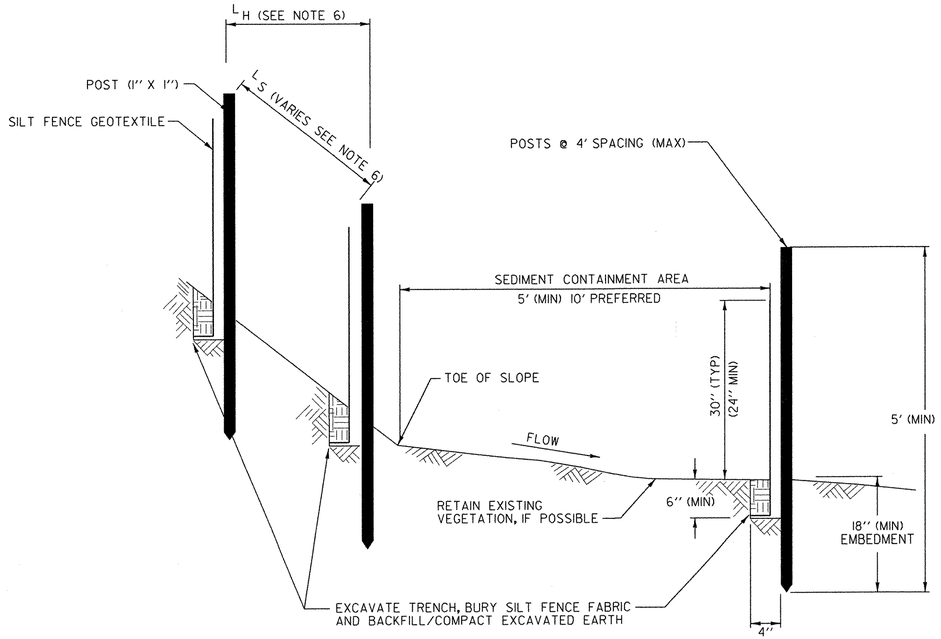
USER =2467



PLAN



SECTION
SILT FENCE – TEMPORARY

N.T.S.

STANDARD SYMBOL

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF SILT FENCE IS TO REDUCE RUNOFF VELOCITY AND TRAP SEDIMENT. VELOCITY IS REDUCED, WATER IS IMPOUNDED BEHIND THE MEASURE AND SEDIMENT FALLS OUT OF SUSPENSION.

B. SILT FENCE SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPES AS WELL AS AT THE BOTTOM AS SHOWN IN THE DETAIL.

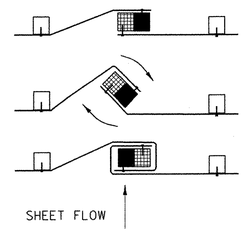
C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

GENERAL NOTES:

1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 5 FEET BEYOND TOE OF SLOPE, 10 FEET PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
2. ALL ENDS SHALL BE "J" HOOKED TO TRAP SEDIMENT.
3. IN AREAS WITH TWO SLOPES, SILT FENCE SHALL BE USED TO ERECT A DAM AND TRAP SEDIMENT AT THE BASE OF THE STEEPER SLOPE.
4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6 INCHES BELOW GROUND, AND KEYED IN 4 INCHES. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
5. MAXIMUM DRAINAGE AREA TRIBUTARY TO 100 FEET OF SILT FENCE SHALL BE 0.25 ACRE.
6. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

CONSTRUCTED SLOPE	SLOPE LENGTH (LS) FT	HORIZONTAL LENGTH (LH) FT
1-2	50	40
1-3	80	75
1-4	130	125
1-5	200	200
> 1-5	250	250

7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE OR AS DIRECTED BY THE RESIDENT ENGINEER.
8. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURED HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
9. SILT FENCE SHALL BE REMOVED WHEN THE AREA HAS BEEN STABILIZED. AT TIME OF REMOVAL OF THE SILT FENCE, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
10. PAYMENT FOR THE INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER ITEM 649.51 GEOTEXTILE FOR SILT FENCE.
11. PAYMENT FOR MONITORING SILT FENCE SHALL BE MADE UNDER ITEM 652.20 MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN.
12. PAYMENT FOR MAINTAINING SILT FENCE SHALL BE MADE UNDER ITEM 652.30 FIELD MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



1. PLACE THE END POST OF ONE FENCE INSIDE THE END POST OF THE OTHER FENCE.
2. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
3. DRIVE BOTH POSTS 18 INCHES INTO THE GROUND AND BURY THE FLAP IN THE TRENCH.

SPLICING DETAIL
N.T.S.

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL DETAILS

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO.
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 24 OF 72 SHEETS

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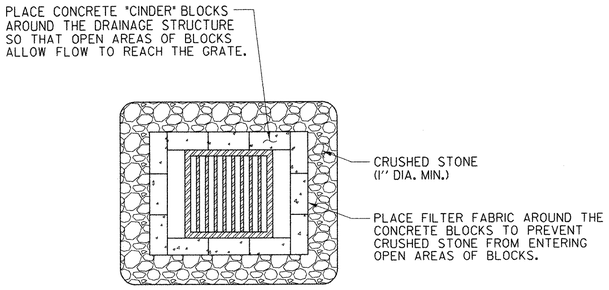
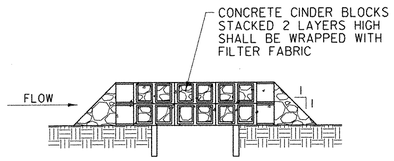
USER =2467

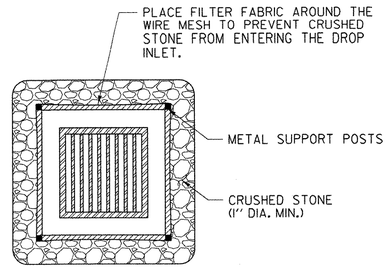


PLAN

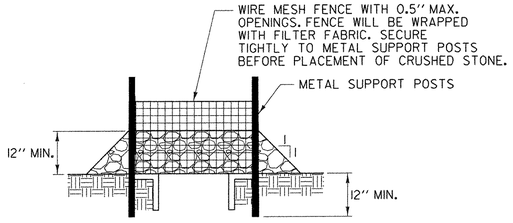


SECTION

ROCK BARRIER DROP INLET PROTECTION TEMPORARY PAVED AREAS



PLAN



SECTION

ROCK BARRIER INLET PROTECTION TEMPORARY UNPAVED AREAS

N.T.S.

STANDARD SYMBOL

APPLICATION NOTES:

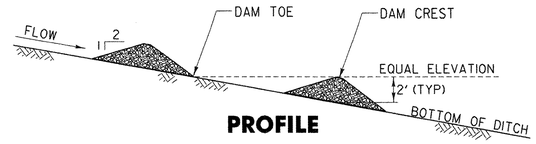
A. THE PRIMARY PURPOSE OF DRAINAGE STRUCTURE INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY PONDING WATER WHICH ALLOWS SEDIMENT TO FALL OUT OF SUSPENSION.

B. THESE EXAMPLES OF DROP INLET PROTECTION ARE NOT INTENDED FOR USE ON GRADES. ON GRADE THEY MAY CAUSE WATER TO BYPASS THE STRUCTURE, CREATING ADDITIONAL EROSION OR FLOODING.

C. POSSIBLE MODIFICATIONS FOR USE ON GRADE INCLUDE ADDING A BERM DOWNSTREAM OF THE INLET TO CREATE PONDING. CHECK DAMS MAY ALSO BE USED UPSTREAM OF THE INLET TO SLOW VELOCITIES.

GENERAL NOTES:

1. THE TOP OF THE INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL BASED ON FIELD LOCATION AND CONDITIONS OR AS DIRECTED BY THE RESIDENT ENGINEER.
2. FILTER FABRIC SHALL BE A SINGLE CONTINUOUS PIECE TO ELIMINATE JOINTS.
3. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE OR AS DIRECTED BY THE RESIDENT ENGINEER.
4. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED, SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
5. PAYMENT OF INLET PROTECTION SHALL BE MADE UNDER ITEM 613.10 STONE FILL, TYPE I (MOD. - INLET PROTECTION).
6. PAYMENT FOR MONITORING INLET PROTECTION SHALL BE MADE UNDER ITEM 652.20 MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN.
7. PAYMENT FOR MAINTAINING INLET PROTECTION SHALL BE MADE UNDER ITEM 652.30 FIELD MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



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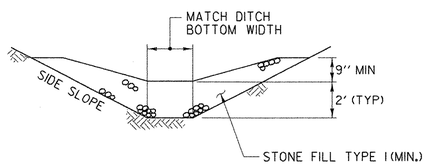
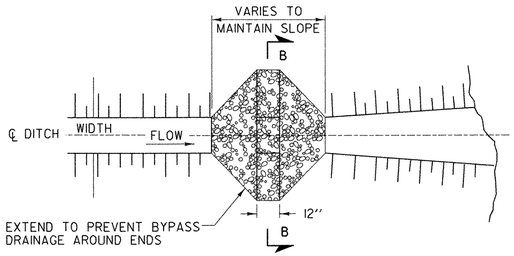


SECTION B–B

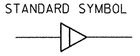


PLAN

CHECK DAM –TEMPORARY

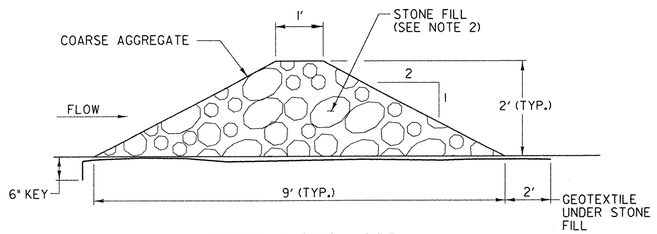
(STONE)

STANDARD SYMBOL



STONE CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL ••
1%	200 FT
2 %	100 FT
3 %	65 FT
4 %	50 FT
5 %	40 FT
6 %	30 FT
8 %	25 FT
10 %	20 FT

•• BASED ON 2' TYPICAL HEIGHT



CROSS SECTION

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF A STONE CHECK DAM IS TO REDUCE EROSION IN A CHANNEL BY REDUCING FLOW VELOCITY.

B. CHECK DAMS WILL CAPTURE SEDIMENT THAT FALLS OUT OF SUSPENSION BEHIND THE CHECK DAM DUE TO DECREASED VELOCITY.

C. CHECK DAMS ARE NOT INTENDED TO FILTER SEDIMENT FROM TURBID WATER.

D. DETAILS SHOWN SHALL BE USED FOR TEMPORARY INSTALLATION ONLY.

GENERAL NOTES:

1. GEOTEXTILE SHALL BE INSTALLED UNDER STONE FILL PER SECTION 649 OF THE VAOT STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001. IT SHALL BE KEYED IN ON THE UPHILL END AND SHALL EXTEND 2 FEET BEYOND THE STONE ON THE DOWNHILL END.
2. CORE MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF STONE FILL TYPE I (MIN.) PER VAOT'S STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001 STONE SIZE SHOULD BE INCREASED WITH INCREASED SLOPE AND VELOCITY.
3. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE OR AS DIRECTED BY THE RESIDENT ENGINEER.
4. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
5. AT TIME OF REMOVAL OF THE CHECK DAMS, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED AS DIRECTED BY THE RESIDENT ENGINEER.
6. PAYMENT FOR THE INSTALLATION AND REMOVAL OF STONE CHECK DAMS SHALL BE MADE UNDER ITEM 613.10 STONE FILL, TYPE I (MOD. - CHECK DAM)
7. PAYMENT FOR MONITORING CHECK DAMS SHALL BE MADE UNDER ITEM 652.20 MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN.
8. PAYMENT FOR MAINTAINING CHECK DAMS SHALL BE MADE UNDER ITEM 652.30 FIELD MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL DETAILS

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO.
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 25 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\edet03.dgn
USER =2467

APPLICATION NOTES:

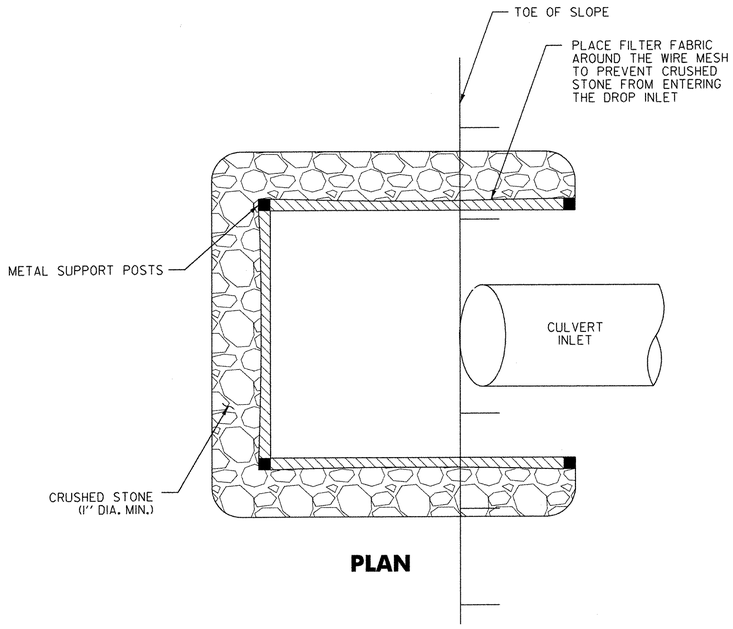
A. THE PRIMARY PURPOSE OF CULVERT INLET PROTECTION IS TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM BY PONDING WATER WHICH ALLOWS SEDIMENT TO FALL OUT OF SUSPENSION.

B. TEMPORARY CULVERT INLET PROTECTIONS ARE NOT INTENDED TO FILTER TURBID WATER.

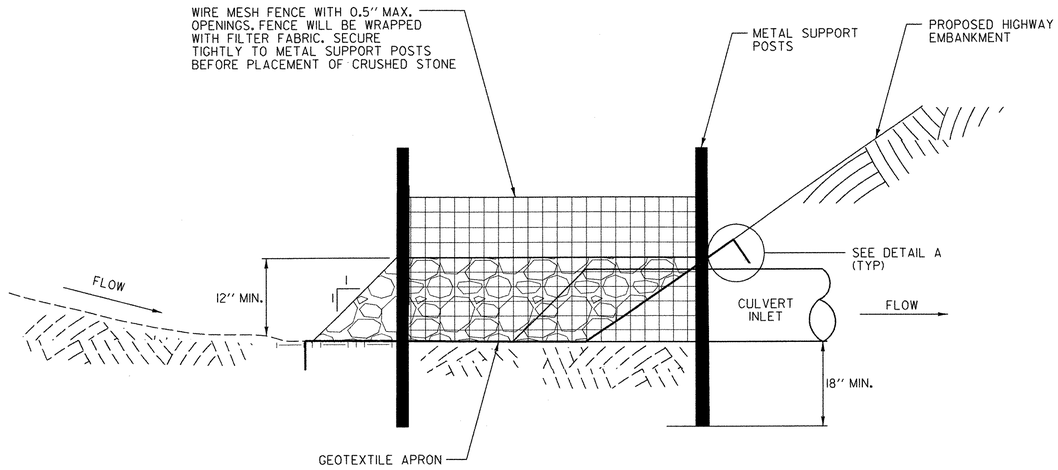
C. DETAILS SHOWN SHALL BE FOR TEMPORARY INSTALLATIONS ONLY.

GENERAL NOTES:

1. THE TOP OF THE CULVERT INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL BASED ON FIELD LOCATION AND CONDITIONS OR AS DIRECTED BY THE RESIDENT ENGINEER.
2. FILTER FABRIC SHALL BE A SINGLE CONTINUOUS PIECE TO ELIMINATE JOINTS.
3. DRIVE POSTS A MINIMUM OF 18 INCHES INTO GROUND.
4. FILTER FABRIC GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 6 INCHES AND BACKFILLED. GEOTEXTILE SHALL BE SECURELY FASTENED TO POSTS AND FRAME.
5. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE OR AS DIRECTED BY THE RESIDENT ENGINEER.
6. MEASURES SHALL BE CLEANED AND REPAIRED AS NEEDED, SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.
7. PAYMENT FOR CULVERT INLET PROTECTION SHALL BE MADE UNDER ITEM 613.10 STONE FILL, TYPE I (MOD. - INLET PROTECTION).
8. PAYMENT FOR MONITORING CULVERT INLET PROTECTION SHALL BE MADE UNDER ITEM 652.20 MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN.
9. PAYMENT FOR MAINTAINING CULVERT INLET PROTECTION SHALL BE MADE UNDER ITEM 652.30 FIELD MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



PLAN



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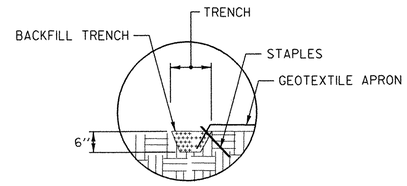

DETAIL A

STONE CULVERT INLET/OUTLET PROTECTION

N.T.S.

STANDARD SYMBOL

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL DETAILS

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO.
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 26 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\edet06.dgn
USER =2467

RESOURCES LEGEND

- XXX — SOIL MAP UNIT TYPE (SEE SHEET 21 FOR DETAILS)
- SOIL LINE BOUNDARY
- RIPARIAN BOUNDARY
- RIPARIAN BUFFER

NAD 1983

214E

17E

14C

W

104B

T.H. 10
STARK DISTRICT ROAD

T.H. 85
DEPOT HILL ROAD

T.H. 27
BACK CENTER ROAD

U.S. ROUTE 5

PASSUMPSIC RIVER

WASHINGTON COUNTY RAILROAD COMPANY

RAILROAD TRACKS

50' RIPARIAN BUFFER (TYP.)

MATCH LINE STA. 104+50 (SHEET 28)

MATCH LINE STA. 101+75 (SHEET 28)

BENCH MARK #3
"X" ON NORTHEAST BOLT ON SIGNAL POLE
ELEV = 591.93

BENCH MARK #
SPIKE IN POLE 23, 6, 113
ELEV = 589.12

BENCH MARK #2
"X" ON SANITARY SEWER RIM
ELEV = 588.72

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 20 40
1 INCH = 20 FT @ FULL SIZE

EXISTING CONDITIONS PLAN #1

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/3797P-1.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 27 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\EC01.dgn
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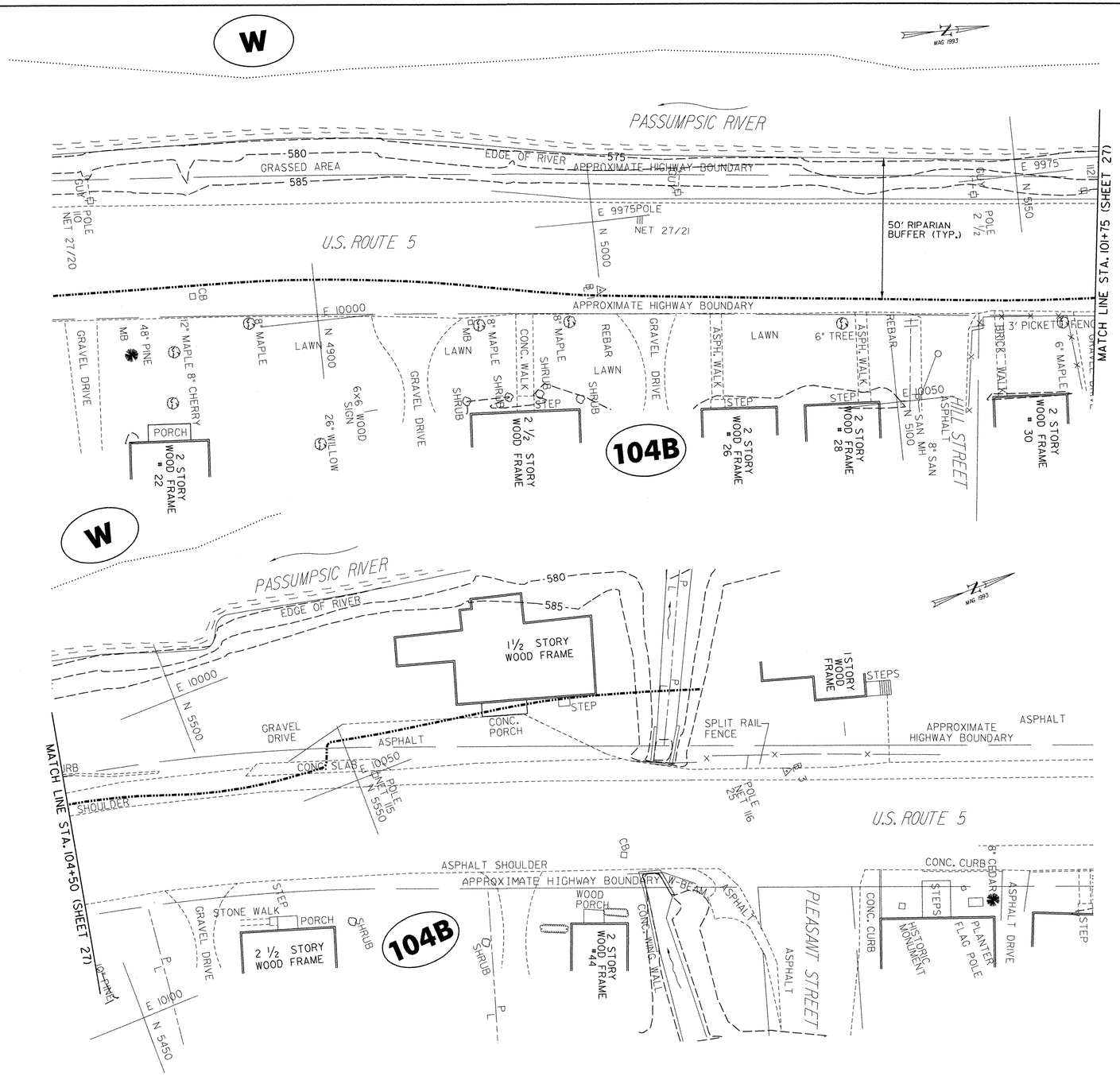

RESOURCES LEGEND	
XXX	SOIL MAP UNIT TYPE (SEE SHEET 21 FOR DETAILS)
	SOIL LINE BOUNDARY
	RIPARIAN BOUNDARY
	RIPARIAN BUFFER

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 20 40
1 INCH = 20 FT
@ FULL SIZE

EXISTING CONDITIONS PLAN #2

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/SSP-2.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 28 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\ec02.dgn
USER =2467

613.10 STONE FILL, TYPE I(MOD. - CHECK DAM)

T.H. 85
STA. 12+84.0 LT
STA. 12+90.0 LT
STA. 13+01.0 LT

613.10 STONE FILL, TYPE I(MOD. - INLET PROTECTION)

T.H. 85
STA. 12+83.0 LT
STA. 12+85.7 RT
STA. 13+21.0 LT

620.70 SNOW FENCE (MOD. - PDF)

U.S. ROUTE 5
STA. 101+75.0 - STA. 102+94.0 LT (133 LF)
STA. 104+00.0 - STA. 104+41.0 LT (54 LF)

T.H. 85
STA. 12+60.0 - STA. 12+83.0 RT (80 LF)
STA. 12+80.0 - STA. 13+06.0 LT (30 LF)
STA. 13+03.0 - STA. 13+13.0 RT (9 LF)
STA. 13+22.0 - STA. 13+48.0 LT (29 LF)
STA. 13+34.0 - STA. 13+51.0 RT (18 LF)

649.61 GEOTEXTILE FOR FILTER CURTAINS

PASSUMPSIC RIVER
STA. P101+09.0 - STA. P101+95.0 LT (85 SY)
STA. P101+06.0 - STA. P102+00.0 RT (85 SY)

649.51 GEOTEXTILE FOR SILT FENCE

U.S. ROUTE 5
STA. 101+75.0 - STA. 104+39.0 LT (33 SY)

T.H. 85
STA. 13+04.0 - STA. 13+12.0 RT (3 SY)
STA. 13+38.0 - STA. 13+50.0 LT (17 SY)
STA. 13+44.0 - STA. 13+50.0 RT (6 SY)

654.10 EROSION MATTING

U.S. ROUTE 5
STA. 101+75.0 - STA. 103+40.0 LT (74 SY)
STA. 103+69.0 - STA. 104+38.0 LT (68 SY)

T.H. 85
STA. 12+71.0 - STA. 13+07.0 LT (121 SY)
STA. 12+66.0 - STA. 12+98.0 RT (110 SY)
STA. 13+35.0 - STA. 13+45.0 RT (23 SY)

EROSION PREVENTION AND SEDIMENT CONTROL LEGEND	
DESCRIPTION	SYMBOL
STONE CHECK DAM	
SILT FENCE	
PROJECT DEMARCATION FENCE	PDF
TURBIDITY CURTAIN	
EROSION MATTING	
DRAINAGE STRUCTURE INLET PROTECTION	
CULVERT INLET/OUTLET PROTECTION	

RESOURCES LEGEND	
XXX	SOIL MAP UNIT TYPE (SEE SHEET 21 FOR DETAILS)
	SOIL LINE BOUNDARY
	RIPARIAN BOUNDARY
	RIPARIAN BUFFER

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 20 40
1 INCH = 20 FT
@ FULL SIZE

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL PLAN #1

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/3797P-1.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 29 OF 72 SHEETS

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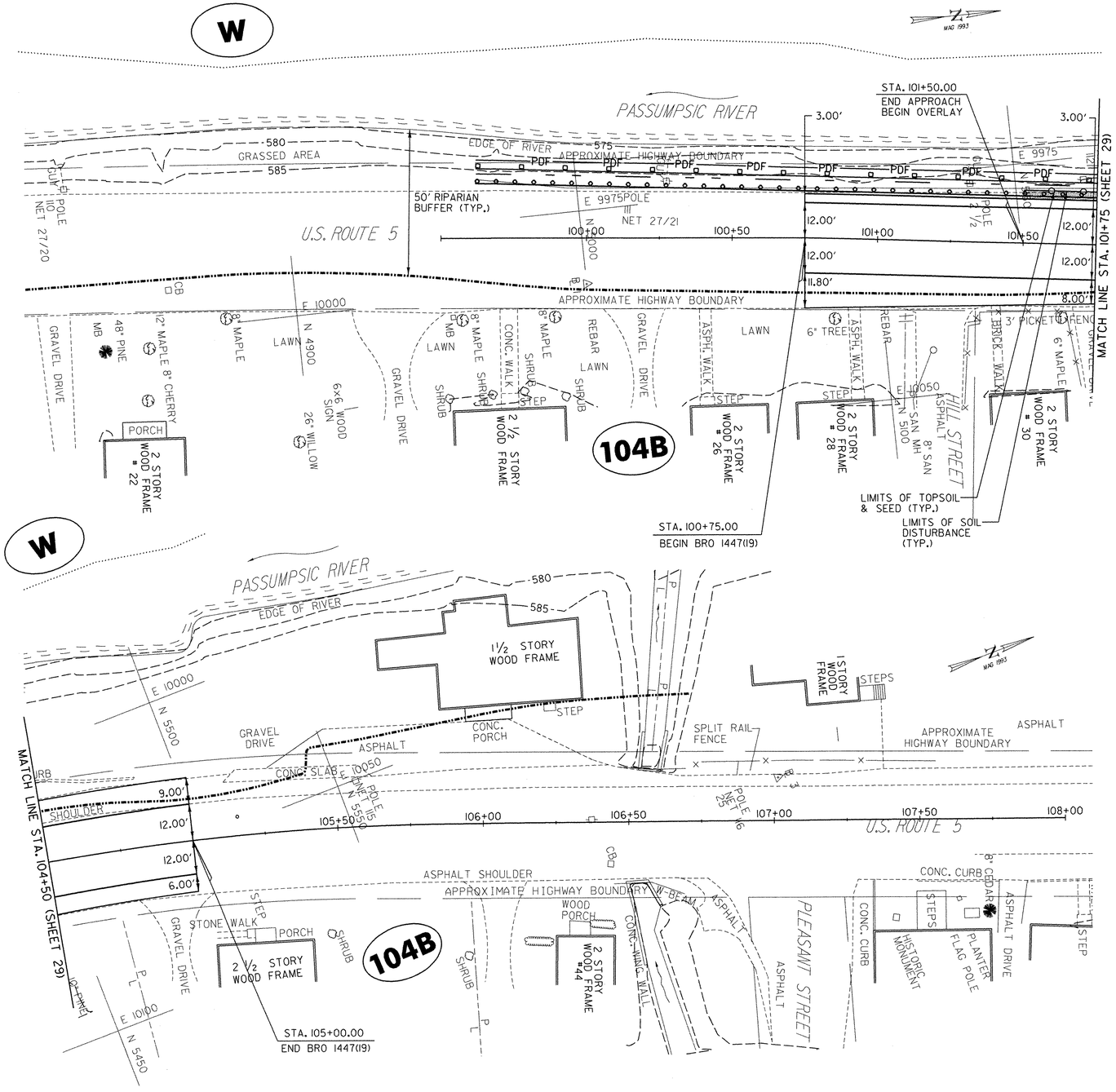

620.70 SNOW FENCE (MOD. - PDF)

U.S. ROUTE 5
STA. 99+62.0 - STA. 101+75.0 LT (213 LF)

649.61 GEOTEXTILE FOR SILT FENCE

U.S. ROUTE 5
STA. 99+62.0 - STA. 101+75.0 LT (71 SY)

654.10 EROSION MATTING

U.S. ROUTE 5
STA. 101+50.0 - STA. 101+75.0 LT (9 SY)

RESOURCES LEGEND

XXX	SOIL MAP UNIT TYPE (SEE SHEET 21 FOR DETAILS)
.....	SOIL LINE BOUNDARY
- - - - -	RIPARIAN BOUNDARY
-·-·-·-	RIPARIAN BUFFER

EROSION PREVENTION AND SEDIMENT CONTROL LEGEND

DESCRIPTION	SYMBOL
STONE CHECK DAM	
SILT FENCE	
PROJECT DEMARCATION FENCE	—PDF—
TURBIDITY CURTAIN	
EROSION MATTING	
DRAINAGE STRUCTURE INLET PROTECTION	
CULVERT INLET/OUTLET PROTECTION	

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 20 40
1 INCH = 20 FT @ FULL SIZE

TEMPORARY EROSION PREVENTIION & SEDIMENT CONTROL PLAN #2

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/SSP-2.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 30 OF 72 SHEETS

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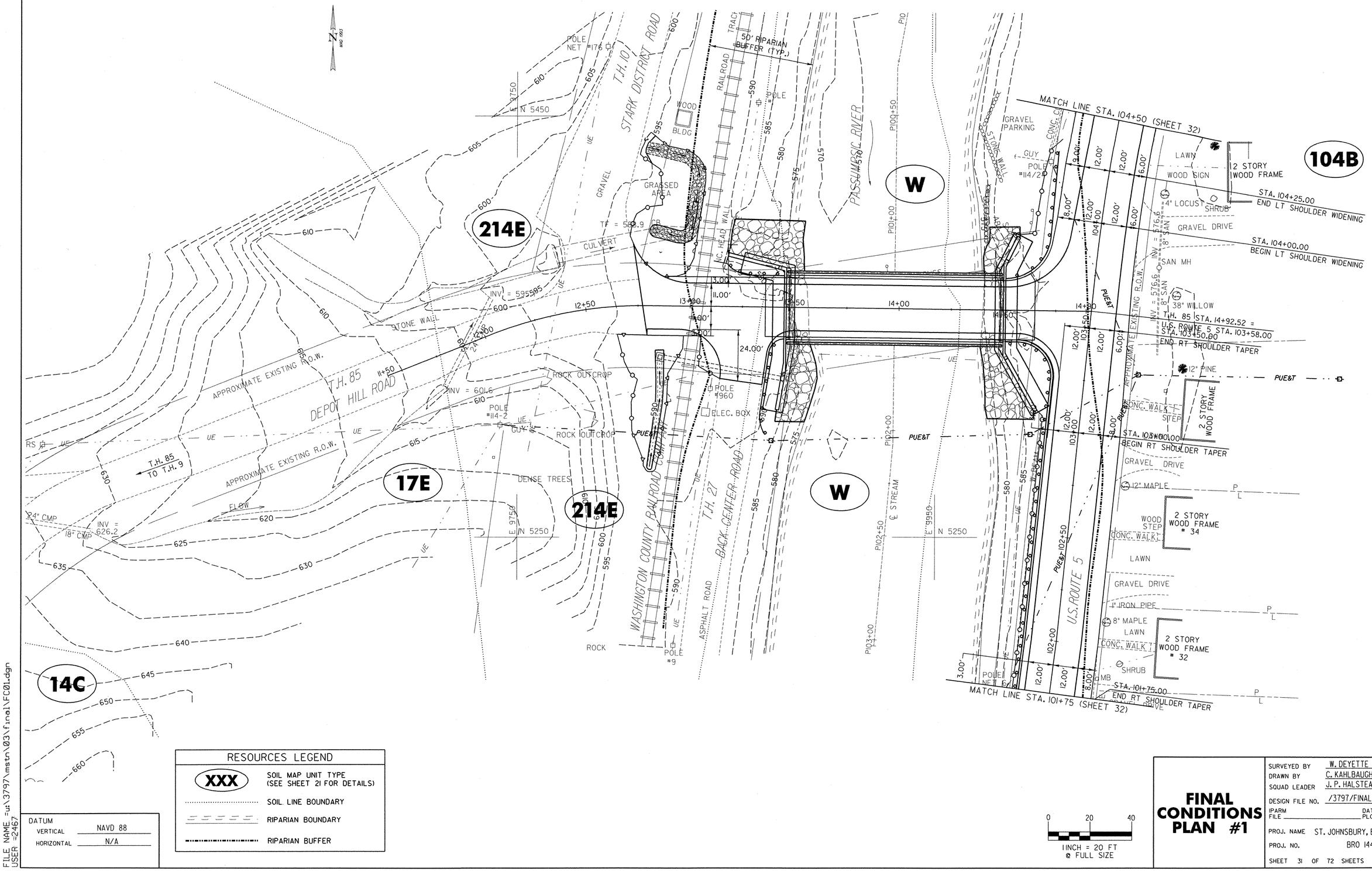

RESOURCES LEGEND

XXX	SOIL MAP UNIT TYPE (SEE SHEET 21 FOR DETAILS)
.....	SOIL LINE BOUNDARY
- - - - -	RIPARIAN BOUNDARY
——·——	RIPARIAN BUFFER

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 20 40
1 INCH = 20 FT
@ FULL SIZE

FINAL CONDITIONS PLAN #1

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/3797P-1.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 31 OF 72 SHEETS

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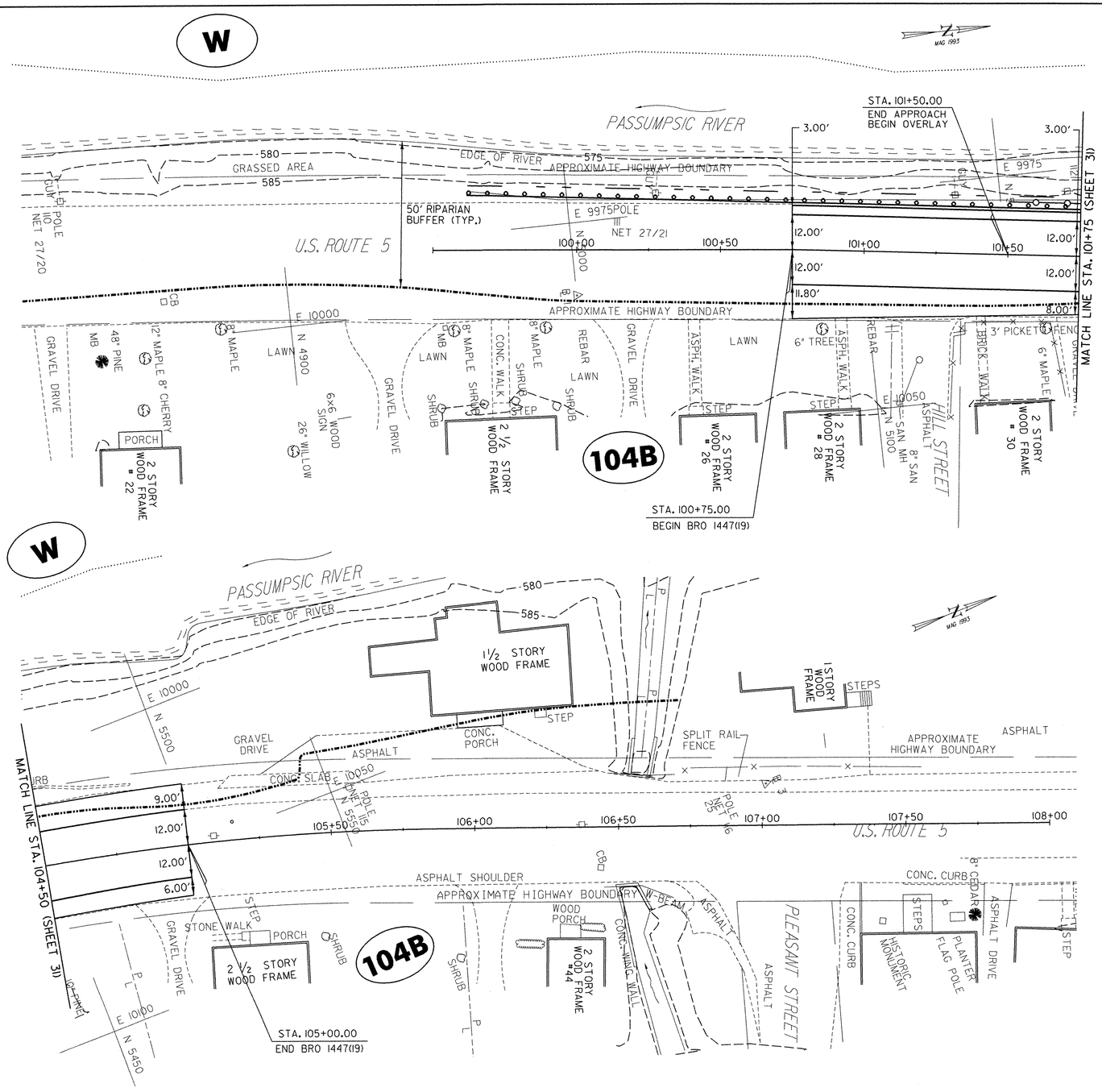

RESOURCES LEGEND	
XXX	SOIL MAP UNIT TYPE (SEE SHEET 21 FOR DETAILS)
	SOIL LINE BOUNDARY
	RIPARIAN BOUNDARY
	RIPARIAN BUFFER

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

0 20 40
1 INCH = 20 FT
@ FULL SIZE

FINAL CONDITIONS PLAN #2

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/SSP-2.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 32 OF 72 SHEETS

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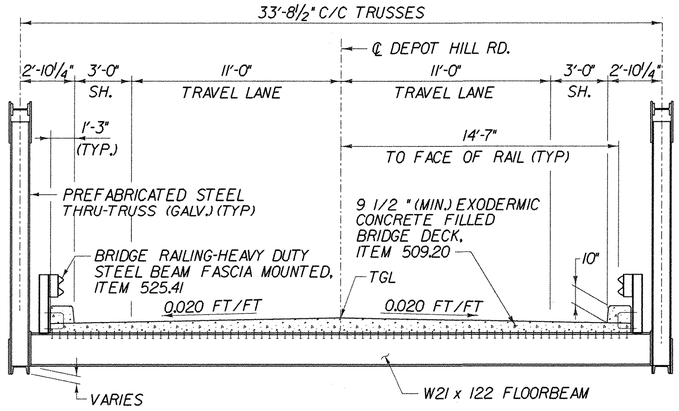
USER =2467



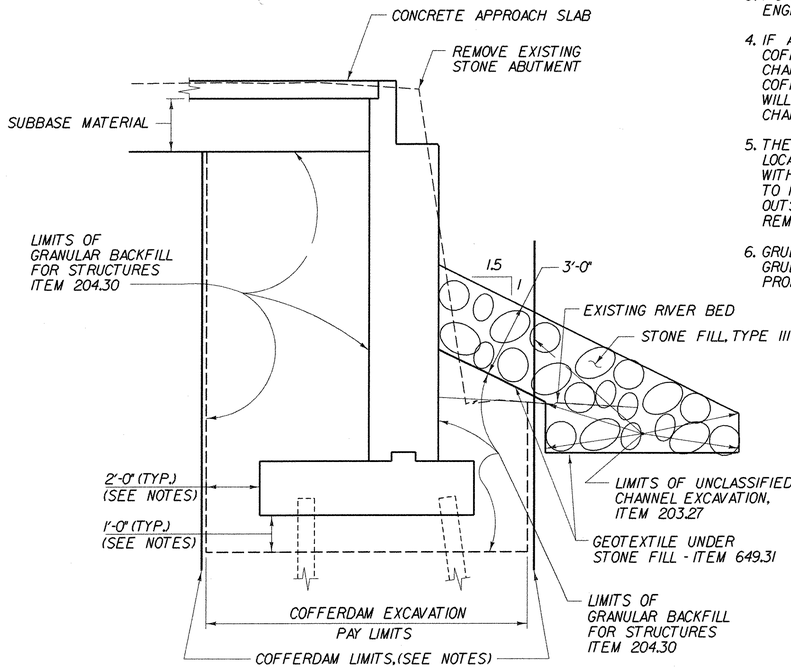
TYPICAL BRIDGE SECTION

SCALE 1/4" = 1'-0

0 2 4 6

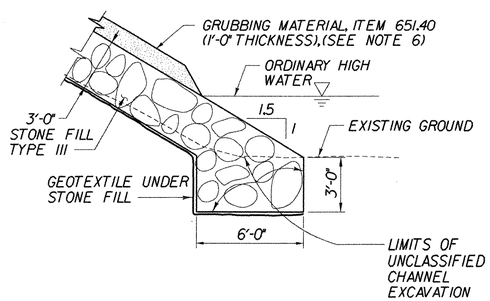
NOTES:

1. COFFERDAM SIZE TO BE DETERMINED BY THE CONTRACTOR
2. THE PAY LIMITS OF ITEM 208.35 "COFFERDAM EXCAVATION,(EARTH)" AND ITEM 208.30 "COFFERDAM EXCAVATION,(ROCK)" SHALL BE 2'-0" OUTSIDE THE PERIMETER OF THE FOOTING.
3. 1'-0" UNDERCUT AS DETERMINED NECESSARY BY THE RESIDENT ENGINEER.
4. IF A COFFERDAM IS CONSTRUCTED WHICH IS LARGER THAN THE COFFERDAM EXCAVATION PAY LIMITS, PAYMENT FOR ALL UNCLASSIFIED CHANNEL EXCAVATION, (EXCAVATION WHICH IS INSIDE THE COFFERDAM BUT OUTSIDE THE COFFERDAM EXCAVATION PAY LIMITS), WILL BE MADE AT THE CONTRACT UNIT PRICE FOR UNCLASSIFIED CHANNEL EXCAVATION.
5. THE COST TO REMOVE THE EXISTING ABUTMENTS AND WINGWALLS LOCATED INSIDE THE COFFERDAM LIMITS SHALL BE PAID FOR WITH COFFERDAM EXCAVATION ROCK, ITEM 208.35. THE COST TO REMOVE THE EXISTING ABUTMENTS AND WINGWALLS LOCATED OUTSIDE THE COFFERDAM LIMITS SHALL BE PAID FOR WITH REMOVAL OF CONCRETE OR MASONRY, ITEM 529.25.
6. GRUBBING MATERIAL SHALL BE PLACED AS INDICATED, EXCEPT GRUBBING MATERIAL SHALL NOT BE PLACED UNDER THE PROPOSED BRIDGE.



TYPICAL EARTHWORK DETAIL

N.T.S.



TYPICAL CHANNEL HALF SECTION

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

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA= 244 sq mi
CHARACTER OF TERRAIN: STEEP TO MODERATELY SLOPED HILLS
CHARACTER & TYPE OF STREAM: MEDIUM SIZE PERENNIAL STREAM WITH MODERATE VALLEY RELIEF AND A NARROW FLOOD PLAIN.
NATURE OF STREAMBED: SILT, SAND WITH RANDOM COBBLES.

Q2.33= 3700 CFS Q50= 11900 CFS
Q10= 7700 CFS Q100= 14100 CFS
Q25= 10,000 CFS Q500= 20600 CFS

DATE OF FLOOD OF RECORD: NOV. 1927
WATER SURFACE ELEV.: UNKNOWN ESTIMATED DISCHARGE: UNKNOWN
NATURAL STREAM VELOCITY @ Q50 = 7.4 ft/s
ICE CONDITIONS: YES DEBRIS: MODERATE
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? NO
IS ORDINARY RISE RAPID? NO
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? YES
IF YES, DESCRIBE. ARNOLD FALLS DAM APPROXIMATELY 2.3 MILES DOWNSTREAM
WATERSHED STORAGE X HEADWATERS UNIFORM THROUGHOUT WATERSHED
IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

STRUCTURE TYPE: THRU-TRUSS YEAR BUILT: 1919
CLEAR SPAN (NORMAL TO STREAM): 97'-2 1/2"
VERTICAL CLEARANCE ABOVE STREAMBED: 19'-0"
WATERWAY OF FULL OPENING: 1813 S.F.
DISPOSITION OF STRUCTURE: REMOVE EXISTING STRUCTURE

TYPE OF MATERIAL UNDER SUBSTRUCTURE: MEDIUM TO DENSE SILTY SAND

WATER SURFACE ELEV. @ Q2.33= 585.0 ft. VELOCITY = 3.0 ft/s
Q10= 586.9 ft. VELOCITY = 5.4 ft/S
Q25= 587.9 ft. VELOCITY = 6.6 ft/s
Q50= 588.8 ft. VELOCITY = 7.4 ft/s
Q100= 589.7 ft. VELOCITY = 8.2 ft/s

LONG TERM STREAM BED CHANGES: NEGLIGIBLE

IS THE ROADWAY OVERTOPPED BELOW THE Q100? YES FREQUENCY: BELOW Q 50
RELIEF ELEVATION: 588.0 DISCHARGE OVER ROAD @ Q100: 391 cfs

UPSTREAM STRUCTURE: TOWN: ST JOHNSBURY DISTANCE: 1.2 MILES
HIGHWAY NO.: U.S. 5 STRUCTURE NO.: BRI35
STRUCTURE TYPE: 5 SPAN MULTIGURDER
CLEAR SPAN: 412 FT. CLEAR HEIGHT:
YEAR BUILT: UNKNOWN FULL WATERWAY: 2900 S.F.

DOWNSTREAM STRUCTURE: TOWN: ST JOHNSBURY DISTANCE: 1.7 MILES
HIGHWAY NO.: TH 10 STRUCTURE NO.: VT973
STRUCTURE TYPE: UNKNOWN
CLEAR SPAN: 391 FT. CLEAR HEIGHT:
YEAR BUILT: UNKNOWN FULL WATERWAY: 3400 S.F.

PROPOSED STRUCTURE

STRUCTURE TYPE: THRU - MODIFIED WARREN TRUSS

CLEAR SPAN (NORMAL TO STREAM): 100'-0"
VERTICAL CLEARANCE ABOVE STREAMBED: 19'-4"
WATERWAY OF FULL OPENING: 1828 S.F.

WATER SURFACE ELEV. @ Q2.33= 585.0 ft. VELOCITY = 2.9 ft/s
Q10= 586.9 ft. VELOCITY = 5.2 ft/s
Q25= 587.9 ft. VELOCITY = 6.3 ft/s
Q50= 588.8 ft. VELOCITY = 7.1 ft/s
Q100= 589.7 ft. VELOCITY = 7.8 ft/s

IS THE ROADWAY OVERTOPPED BELOW THE Q100? YES FREQUENCY: BELOW Q 50
RELIEF ELEVATION: 588.0 ft, DISCHARGE OVER ROAD @ Q100: 397.0 cfs

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 589.63 ft.
VERTICAL CLEARANCE @ Q50 = 0.83 ft.

SCOUR: CONTRACTION SCOUR = 0, ALL EVENTS
REQUIRED CHANNEL PROTECTION: TYPE III STONE FILL AT ABUTMENTS

PERMIT INFORMATION

AVERAGE DAILY FLOW: 508 cfs
ORDINARY LOW WATER: 222 cfs ELEV: 573.3 ft.
ORDINARY HIGH WATER: 1588 cfs ELEV: 575.5 ft.

ADDITIONAL COMMENTS

ALL ELEVATIONS IN HYDRAULICS REPORT REFERENCE U.S. CUSTOMARY UNITS.

COFFERDAMS REQUIRED FOR ABUTMENT AND WINGWALL CONSTRUCTION.

FOUNDATION NOTES:
ABUT. 1: STEEL HP PILES (WWI) IN ROCK SOCKETS, AND DRIVEN STEEL HP PILES.
ABUT. 2: DRIVEN STEEL HP PILES.

DESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO HS 25
2. DESIGN SPAN 102'-0"
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL N/A ON LEDGE N/A
4. ALLOWABLE LOAD FOR PILING 353 K TYPE HP 14 x 73 ESTIMATED LENGTH 10' (AVG.) @ WINGWALL 1, 20' (AVG.) @ ABUT. 1 & WINGWALL 2, 45' (AVG.) @ ABUT. 2
5. STRUCTURAL STEEL AASHTO M270 GR 50 (GALVANIZED) TENSION 27,000 psi
6. REINFORCING STEEL GRADE 60 COMPRESSION 20,000 psi
7. CONCRETE, HIGH PERFORMANCE CLASS A f'_c = 4,000 psi
CONCRETE, HIGH PERFORMANCE CLASS B f'_c = 3,500 psi

TRAFFIC MAINTENANCE:
1. IS TRAFFIC TO BE MAINTAINED? NO IF YES, ON EXISTING STRUCTURE OR ON TEMPORARY BRIDGE
2. TEMPORARY BRIDGE REQUIREMENTS: ONE OR TWO WAY TRAFFIC CONTROL SIGNALS REQUIRED
MINIMUM CLEAR SPAN (NORMAL TO STREAM): VERTICAL CLEARANCE ABOVE STREAMBED:
WATERWAY OF FULL OPENING:
ARE SIDEWALKS REQUIRED? IF SO, ON WHAT SIDE?
STRUCTURE TYPE:

* TRUSS FABRICATOR SHALL SUPPLY DATA TO COMPLETE THE LOAD RATING TABLE

LOAD FACTOR LOAD RATING * (TONS)

LOADING LEVELS (LOAD FACTOR)	TRUCK						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY A=2.17; B=1.00			X	X	X	X	X
POSTED A=1.55; B=1.40				X	X	X	X
OPERATING A=1.30; B=1.67	X						X

STRENGTH RF = $\frac{\phi M_N - 1.3\, M_{DL}}{A \times M_{LL+I}}$ SERVICEABILITY RF= $B\left[\frac{.95\, F_y\, S_{LL+I} - M_{DL}\frac{S_{LL+I}}{S_{DL}} - M_{SDL}\frac{S_{LL+I}}{S_{SDL}}}{1.67\, M_{LL+I}}\right]$

PROJECTED TRAFFIC DATA

YEAR	ADT	DHV	% D	% T	% ADTT
2006	820	-	-	-	-
2026	1120	160	-	<1%	5

20 YEAR ESAL FOR FLEXIBLE PAVEMENT FROM 2006 TO 2026 : 36,000
40 YEAR ESAL FOR FLEXIBLE PAVEMENT FROM 2006 TO 2046 : 99,000
DESIGN SPEED: 30 MPH

CLOUGH HARBOUR & ASSOCIATES LLP
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

PRELIMINARY INFORMATION

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRI01	Sheet 34 OF 72

FILE NAME =u:\379\msts\15\br-29\1447pre.dgn
DATE/TIME = 12/20/2006
USER = 2467

SOIL CLASSIFICATION

AASHTO

A1	GRAVEL AND SAND
A3	FINE SAND
A2	SILTY OR CLAYEY GRAVEL AND SAND
A4	SILTY SOIL - LOW COMPRESSIBILITY
A5	SILTY SOIL - HIGHLY COMPRESSIBLE
A6	CLAYEY SOIL - LOW COMPRESSIBILITY
A7	CLAYEY SOIL - HIGHLY COMPRESSIBLE

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

UNIFIED SOIL SYSTEM

GW/GP	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 & CALYS
OH	HIGH PLASTIC ORGANIC SILT
PT	HIGHY ORGANIC SOILS

MOISTURE

DESCRIPTIVE TERM	OBSERVED IN FIELD	% • BY 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

SHEAR STRENGTH

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

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

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

COMMONLY USED SYMBOLS

▽	WATER ELEVATION
◕	STANDARD PENETRATION BORING
⊕	AUGER BORING
⊙	ROD SOUNDING
S	SAMPLE
N	STANDARD PENETRATION TEST BLOW COUNT PER FOOT FOR: 2" O.D. SAMPLER 1 3/8" I.D. SAMPLER HAMMER WEIGHT OF 140 LBS. HAMMER FALL OF 30 INCHES
VS	FIELD VANE SHEAR TEST
US	UNDISTURBED SOIL SAMPLE
B	BLAST
DC	DIAMOND CORE
MD	MUD DRILL
WA	WASH AHEAD
HSA	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
NP	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
%REC.	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
GRY	GRAY	WH	WHITE
GN	GREEN	YEL	YELLOW
LT	LIGHT	MLTC	MULTICOLORED
OR	ORANGE		

DEFINITIONS (AASHTO)

BEDROCK (LEDGE) ROCK IN ITS NATIVE LOCATION OF INDEFINITE THICKNESS.

BOULDER- A ROCK FRAGMENT WITH AN AVERAGE DIMENSION > 12 INCHES.

COBBLE- ROCK FRAGMENTS WITH AN AVERAGE DIMENSION BETWEEN 3 AND 12 INCHES.

GRAVEL - ROUNDED PARTICLES OF ROCK < 3" AND > 0.0787" (#10 SIEVE).

SAND - PARTICLES OF ROCK < 0.0787" (#10 SIEVE) AND > 0.0029" (#200 SIEVE).

SILT- SOIL < 0.0029" (#200 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.

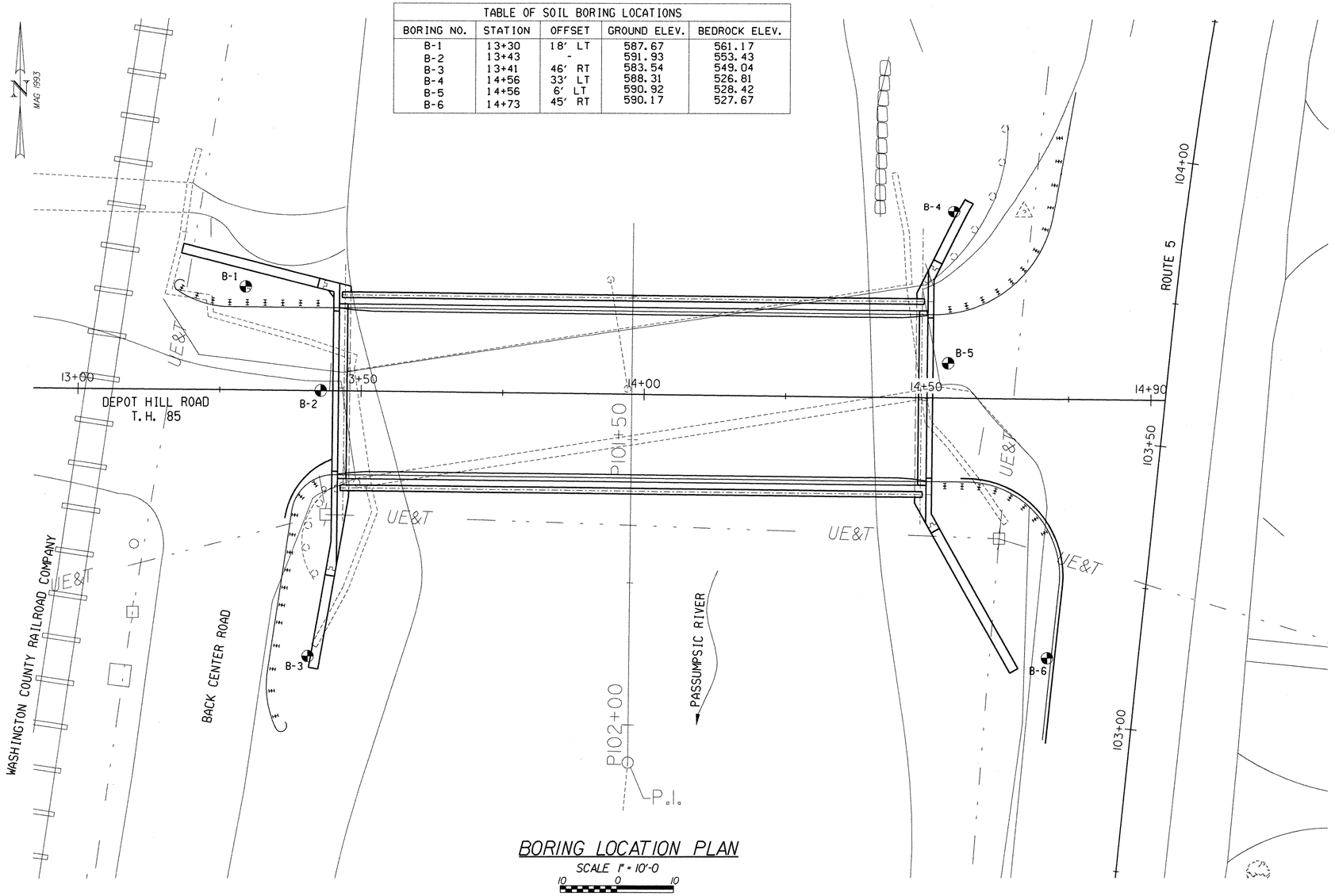
MOISTURE CONTENT - WEIGHT OF WATER DIVIDED BY DRY WEIGHT OF SOIL.

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.

TABLE OF SOIL BORING LOCATIONS				
BORING NO.	STATION	OFFSET	GROUND ELEV.	BEDROCK ELEV.
B-1	13+30	18' LT	587.67	561.17
B-2	13+43	-	591.93	553.43
B-3	13+41	46' RT	583.54	549.04
B-4	14+56	33' LT	588.31	526.81
B-5	14+56	6' LT	590.92	528.42
B-6	14+73	45' RT	590.17	527.67



BORING LOCATION PLAN

SCALE 1" = 10'-0

10 0 10

GENERAL NOTES

1. THE SUBSURFACE EXPLORATIONS SHOWN HEREIN WERE MADE BETWEEN 9/29/99 AND 10/29/99 BY THE AGENCY.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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 INVESTIGATIONS, 1988.

CLOUGH HARBOUR & ASSOCIATES LLP
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

BORING INFORMATION SHEET

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BR103	Sheet 36 OF 72

FILE NAME =\at\3797\mastr\15\br-29\1447bpi.dgn
DATE/TIME =12/20/2006
USER =24457

ABUT. 1 BOTTOM OF FTG. EL. 567.00

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-1
SHEET 1 OF 1
DATE STARTED: 10/15/99
DATE COMPLETED: 10/18/99

PROJECT NAME: ST. JOHNSBURY
SITE NAME: BR-29
STATION: 13+30.00
GROUND EL.: 587.67

PROJECT NUMBER: BRO 1447 (19)
SITE NO.: TH-85
OFFSET: -18.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: SKID RIG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		In Wood, No sample	R						
10		BXDC, 8.0'-11.0', Boulder, No sample							
15		No Rec., Stone in end of sample barrel.	24						
20		A-2-4, SiSa, brn, MTW, Rec. = 0.45'	12	29.1	3.8	72	24.2		
25		A-2-4, Sa, brn, MTW, Rec. = 0.15'	R	28.3	1.7	83	15.3		
							Top of bedrock @ 26.5'		
		Run #1: BXDC, 26.5'-27.5', Rec. = 0.90', See Geologist's Report.	RUN	REC%	RQD%	Dip°			
			1	90	80	50			
30		Run #2: BXMDC, 27.5'-32.5', Rec. = 5.00', See Geologist's Report.	2	100	100	50			
		Run #3: BXMDC, 32.5'-36.5', Rec. = 4.00', See Geologist's Report.	3	100	95	50			
35									
							Hole stopped @ 36.5'		
40									
45									

Geologist's Report:

Run #1: Gray limestone, Moderately hard, Unweathered Competent.

Run #2: Same as Run #1, Competent.

Run #3: Same as Run #1, Competent.

APPROX. PILE TIP ELEV. IN ROCK SOCKET.
SEE BRIDGE SHEET BR107 FOR FOUNDATION NOTES.

ABUT. 1 BOTTOM OF FTG. EL. 567.00

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-2
SHEET 1 OF 1
DATE STARTED: 10/5/99
DATE COMPLETED: 10/7/99

PROJECT NAME: ST. JOHNSBURY
SITE NAME: BR-29
STATION: 13+43.00
GROUND EL.: 591.93

PROJECT NUMBER: BRO 1447 (19)
SITE NO.: TH-85
OFFSET: 0.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: UNI-MOG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		0.0'-0.45', Asphalt							
5		No sample	4						
10		BXDC, 7.5'-24.0', Granite block wall							
15									
20									
25		A-2-4, SiSa, brn, MTW, Rec. = 0.15'	18	29.1	0.5	74.9	24.6		
30		A-2-4, SiSa, brn, MTW, Rec. = 1.00'	16	24.5		74.3	25.7		
35		A-2-4, SiSa, brn, MTW, Rec. = 1.30'	15	22.1		74.9	25.1		
							Top of bedrock @ 38.5'		
		Run #1: BXMDC, 38.5'-43.5', Rec. = 4.50' See Geologist's Report.	RUN	REC%	RQD%	Dip°			
40			1	90	83	55			
		Run #2: BXMDC, 43.5'-48.5', Rec. = 5.00' See Geologist's Report.	2	100	93	55			
45									
							Hole stopped @ 48.5'		

Geologist's Report:

Run #1: Gray limestone, Moderately hard, Unweathered, Competent.

Run #2: Gray limestone, Moderately hard, Unweathered, Competent.

APPROX. PILE TIP ELEV. (VARIES)

ABUT. 1 BOTTOM OF FTG. EL. 567.00

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-3
SHEET 1 OF 1
DATE STARTED: 10/12/99
DATE COMPLETED: 10/12/99

PROJECT NAME: ST. JOHNSBURY
SITE NAME: BR-29
STATION: 13+41.00
GROUND EL.: 583.54

PROJECT NUMBER: BRO 1447 (19)
SITE NO.: TH-85
OFFSET: 46.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: UNI-MOG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		A-2-4, Sa with Trace of Organics (tested 2.1% organic), brn, MTW, Rec. = 0.65', Sample is possible fill material.	5	24.6	17.3	64	18.7		
10		No sample, No Recovery	11						
15		A-1-a, SaGr, brn, Moist, Rec. = 0.50', Sample is possible fill material.	12	13.7	64.5	25.3	10.2		
20		A-1-b, SaGr with a Trace of organics (tested 1.8% organic), brn, Moist, Rec. = 0.75' Sample is possible fill material.	39	20.5	50.2	36.5	13.3		
25		A-2-4, SiSa, brn, MTW, Rec. = 1.90'	21	22.6		73.3	26.7		
30		A-4, SiSa, brn, MTW, Rec. = 1.50'	19	24	0.3	50.8	48.9		
							Top of bedrock @ 34.5'		
35		Run #1: BXMDC, 34.5'-36.5' Rec. = 2.0', See Geologist's Report.	RUN	REC%	RQD%	Dip°			
			1	100	95	50			
		Run #2: BXMDC, 36.5'-38.5' Rec. = 2.0', See Geologist's Report.	2	100	95	50			
40			3	100	100	50			
		Run #3: BXMDC, 38.5'-43.5', Rec. = 5.0' See Geologist's Report.							
45		Run #4: BXMDC, 43.5'-44.5', Rec. = 1.0' See Geologist's Report.	4	100	75	50			
							Hole stopped @ 44.5'		

Geologist's Report:

Run #1: Gray limestone, Moderately hard, Unweathered, Competent.

Run #2: Same as Run #1, Competent.

Run #3: Same as Run #1, But becomes phyllitic near bottom of Run.

Run #4: Same as Run #1, Competent.

APPROX. PILE TIP ELEV. (VARIES)

CLOUGH HARBOUR & ASSOCIATES LLP
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

BORING LOG SHEET - 1

Designed By M. SMULLEN	Drawn by B. DILLENBECK
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BR104	Sheet 37 OF 72

FILE NAME = su\3797\mstr\15\br-29\1447br1.dgn
DATE/TIME = 12/20/2006
USER = 2467

ABUT. 2 BOTTOM OF FTG. EL. 567.00

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-4
SHEET 1 OF 2
DATE STARTED: 9/29/99
DATE COMPLETED: 10/1/99

PROJECT NAME: ST. JOHNSBURY
SITE NAME: BR-29
STATION: 14+56.00
GROUND EL.: 588.31

PROJECT NUMBER: BRO 1447 (19)
SITE NO.: TH-85
OFFSET: -33.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: UNI-MOG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		A-2-4, Sa, brn, MTW, Rec. = 0.60'	3	27.3	0.6	88.8	10.6		
10		A-2-4, Sa, brn, MTW, Rec. = 0.45'	7	25.4	6.6	76.6	16.8		
15		A-2-4, SiSa, brn, MTW, Rec. = 1.20'	3	35.5		70.7	29.3		
20		A-1-a, SaGr, brn, Moist, Rec. = 0.15'	82	7.6	55.2	42	2.8		
25		A-2-4, Sa, brn, MTW, Rec. = 1.10'	8	23.7	2	82.8	15.2		
30		A-2-4, SiSa, red/brn, MTW, Rec. = 1.00'	27	22.6	0.5	72.2	27.3		
35		A-4, Si, gry, MTW, Rec. = 1.10'	18	29.6	0.1	17.8	82.1		
40		A-2-4, SiSa, brn/gry, MTW, Rec. = 1.40'	20	23.4		68.5	31.5		
45		A-2-4, Sa, brn/gry, Moist, Rec. = 0.90'	27	19.6		81.3	18.7		

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-4
SHEET 2 OF 2
DATE STARTED: 9/29/99
DATE COMPLETED: 10/1/99

PROJECT NAME: ST. JOHNSBURY
SITE NAME: BR-29
STATION: 14+56.00
GROUND EL.: 588.31

PROJECT NUMBER: BRO 1447 (19)
SITE NO.: TH-85
OFFSET: -33.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: UNI-MOG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
50		A-2-4, Sa, brn, MTW, Rec. = 1.00'	31	21.9		81.6	18.4		
55		A-2-4, Sa, brn, MTW, Rec. = 1.10'	19	21.9		80.7	19.3		
60		A-2-4, Sa, brn/gry, Moist, Rec. = 1.05'	R	16.5	5.5	79.2	15.3		
		Top of bedrock @ 61.5'							
		Run #1: BXMDC, 61.5'-64.5', Rec. = 2.75', See Geologist's Report.	RUN 1	REC% 92	RQD% 45	Dip° 50			
65		Run #2: BXMDC, 64.50'-67.25', Rec. =2.75' See Geologist's Report.	2	100	78	50			
70		Run #3: BXMDC, 67.25'-71.75', Rec. = 4.50', See Geologist's Report.	3	100	98	50			
		Hole stopped @ 71.75'							
75									
80									
85									
90									
95									

Geologist's Report:

Run #1: Gray limestone, Moderately hard, Unweathered, Competent.

Run #2: Same as Run #1, Competent.

Run #3: Same as Run #1, Competent.

APPROX. PILE TIP ELEV. (VARIES)

ABUT. 2 BOTTOM OF FTG. EL. 567.00

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-5
SHEET 1 OF 2
DATE STARTED: 10/21/99
DATE COMPLETED: 10/27/99

PROJECT NAME: ST. JOHNSBURY
SITE NAME: BR-29
STATION: 14+56.00
GROUND EL.: 590.92

PROJECT NUMBER: BRO 1447 (19)
SITE NO.: TH-85
OFFSET: -6.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: UNI-MOG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
5		No Rec.	20						
10		A-1-b, GrSa, brn, Moist, Rec. = 0.45'	R	12.6	39.8	49.6	10.6		
		BXDC, 11.25'-16.50', Granite blocks, No sample.							
15									
		BXDC, 16.50'-18.00', Boulder							
		Sawtooth Bit, 18.00'-20.50', Wood, No sample.							
20									
25		A-2-4, Sa, brn, MTW, Rec. = 1.00'	14	21.7	0.2	81.3	18.5		
30		A-4, SiSa, brn, Moist, Rec. = 1.00'	22	20.1	3.5	57.9	38.6		
35		A-2-4, SiSa, brn, MTW, Rec. = 0.75'	29	25.4	0.2	76.7	23.1		
40		A-4, SiSa, brn, MTW, Rec. = 1.20'	23	24.3	0.2	59.1	40.7		
45		A-2-4, SiSa, brn, Moist, Rec. = 0.80'	45	18.6		72.7	27.3		

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-5
SHEET 2 OF 2
DATE STARTED: 10/21/99
DATE COMPLETED: 10/27/99

PROJECT NAME: ST. JOHNSBURY
SITE NAME: BR-29
STATION: 14+56.00
GROUND EL.: 590.92

PROJECT NUMBER: BRO 1447 (19)
SITE NO.: TH-85
OFFSET: -6.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: UNI-MOG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
50		A-2-4, SiSa, brn, Moist, Rec. = 0.90'	26	20.6		71.4	28.6		
55		A-3, Sa, brn, Moist, Rec. = 1.20'	34	20.1	0.1	94.6	5.3		
60		A-3, Sa, brn, MTW, Rec. = 0.90'	42	21		95	5		
		Top of bedrock @ 62.5'							
		Run #1: BXMDC, 62.5'-65.5', Rec. = 2.15' See Geologist's Report.	RUN 1	REC% 72	RQD% 42	Dip° 55			
65		Run #2: BXMDC, 65.5'-70.0', Rec. = 4.50' See Geologist's Report.	2	100	95	55			
70		Run #3: BXMDC, 70.0'-73.0', Rec. = 2.90' See Geologist's Report.	3	97	90	55			
		Hole stopped @ 73.0'							
75									
80									
85									

Geologist's Report:

Run #1: Gray limestone, Moderately hard, Unweathered, Fairly competent.

Run #2: Same as Run #1, Competent.

Run #3: Same as Run #1, Competent.

APPROX. PILE TIP ELEV. (VARIES)

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
	Log Sta.
Highway No. T.H. 85	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

BORING LOG SHEET - 2

Designed By M. SMULLEN	Drawn by B. DILLENBECK
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRI05	Sheet 38 OF 72

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FILE NAME = u:\3797\mstn\15\br-29\1447br-2.dgn
DATE/TIME = 12/28/2006
USER = 2467

ABUT. 2 BOTTOM OF FTG. EL. 567.00

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-6
SHEET 1 OF 2
DATE STARTED: 10/28/99
DATE COMPLETED: 10/29/99

PROJECT NAME: ST. JOHNSBURY
SITE NAME: BR-29
STATION: 14+73.00
GROUND EL.: 590.17

PROJECT NUMBER: BRO 1447 (19)
SITE NO.: TH-85
OFFSET: 45.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: UNI-MOG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		0.0'-0.3', Asphalt							
5		A-4, SiSa, brn, MTW, Rec. = 0.65'	4	35.1		55	45		
10		A-4, SiSa, brn, MTW, Rec. = 0.85'	5	29.4	0.7	58.6	40.7		
15		A-2-4, SiSa, brn, MTW, Rec. = 0.90'	14	33.4	9.6	63.5	26.9		
20		A-2-4, Sa, brn, MTW, Rec. = 0.85'	23	32.5	0.5	79.7	19.8		
25		A-3, Sa, brn, MTW, Rec. = 1.90'	17	21.2		94.2	5.8		
30		A-3, Sa, brn, MTW, Rec. = 1.10'	14	27.1		93.5	6.5		
35		A-3, Sa, brn, MTW, Rec. = 1.45'	10	29.1		91.5	8.5		
40		A-4, SiSa, brn/gry, MTW, Rec. = 1.05'	23	31.7	1.4	57.5	41.1		
45		A-2-4, Sa, brn, MTW, Rec. = 1.95'	19	30.7		84.3	15.7		

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
SUBSURFACE INFORMATION

HOLE NO.: B-6
SHEET 2 OF 2
DATE STARTED: 10/28/99
DATE COMPLETED: 10/29/99

PROJECT NAME: ST. JOHNSBURY
SITE NAME: BR-29
STATION: 14+73.00
GROUND EL.: 590.17

PROJECT NUMBER: BRO 1447 (19)
SITE NO.: TH-85
OFFSET: 45.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: YOUNG
DRILLER: TALLMAN
LOGGER: RUSSELL

BORING RIG: UNI-MOG
BORING TYPE: WASH BORE
SAMPLE TYPE: SPLIT BARREL

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER FOOT	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
50		A-2-4, Sa, brn, MTW, Rec. = 1.90'	27	26.8		88.2	11.8		
55		A-2-4, SiSa, brn, Moist, Rec. = 0.85'	24	19.9	0.3	78.6	21.1		
60		A-2-4, Sa, brn, Moist, Rec. = 0.65'	26	16.8	0.1	86.3	13.6		
		Top of bedrock @ 62.5'							
		Run #1: BXMDC, 62.5'-67.5', Rec. = 3.50', See Geologist's Report.	RUN 1	REC% 70	RQD% 65	Dip° 55			
65									
		Run #2: BXMDC, 67.5'-71.5', No Rec., See Note.	2						
70									
		Hole stopped @ 71.50'							
75									
80									
85									
90									
95									

Note: For Run #2, The core barrel and about 70.0 feet of rod are still in the ground. Core barrel and rod could not be removed from hole, so the rod was cut off about 8 inches below the pavement.

Geologist's Report:

Run #1: Gray limestone, Moderately hard, Unweathered, Competent.

Run #2: No recovery, Lost core barrel in hole.

APPROX. PILE TIP ELEV. (VARIES)

FILE NAME =u:\3797\mstn\15\br-29\1447br3.dgn
DATE/TIME =12/20/2006
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
	Log Sta.
Highway No. T.H. 85	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

BORING LOG SHEET - 3

Designed By M. SMULLEN	Drawn by B. DILLENBECK
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRI06	Sheet 39 OF 72

GENERAL NOTES:

1. ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT AGENCY OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" 2001 AND ITS LATEST REVISIONS, AND AASHTO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" 17th EDITION AND ITS LATEST REVISIONS.
2. ANY REFERENCE TO "LEFT" AND/OR "RIGHT" ON THE PLANS OR IN THE NOTES REFERS TO THE DIRECTION OF STATIONING AND NOT THE DIRECTION OF TRAFFIC.
3. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT UNLESS OTHERWISE NOTED.
4. TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED PER THE EROSION PREVENTION AND SEDIMENT CONTROL PLANS.
5. THE CONTRACTOR SHALL CALL "DIG-SAFE" PRIOR TO PERFORMING ANY EXCAVATION. IN ACCORDANCE WITH DIG-SAFE'S RULES OF NOTIFICATION. THE COST OF COORDINATING WITH DIG-SAFE AND THE FOLLOWING UTILITY COMPANIES SHALL BE INCLUDED UNDER ITEM 635.11, "MOBILIZATION/DEMOBILIZATION". VERIZON, GREEN MOUNTAIN POWER CORP. AND NOVA CABLE. THE COST OF ANY EXPLORATORY EXCAVATION BY THE CONTRACTOR TO ASCERTAIN UTILITY LOCATIONS SHALL BE PAID FOR UNDER ITEM 204.20, "TRENCH EXCAVATION OF EARTH" IN ACCORDANCE WITH THE SPECIAL PROVISIONS. ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED IMMEDIATELY AS DIRECTED BY THE ENGINEER TO THE RESPECTIVE UTILITY COMPANY AT THE CONTRACTOR'S OWN EXPENSE.
6. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION OR POLLUTION, ESPECIALLY THE DISCHARGE OF RAW CONCRETE, FUEL AND/OR LUBRICANTS, INTO THE PASSUMPSIC RIVER OR ANY ADJACENT BROOK OR STREAM. ANY MATERIALS WHICH ESCAPE THE CONTRACTOR'S EFFORTS OF PREVENTION SHALL BE IMMEDIATELY AND ENTIRELY CLEANED UP OR REMOVED.
7. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL, AIR, GROUND AND WATER POLLUTION CONTROL REGULATIONS, HEALTH AND SAFETY REGULATIONS AND TRANSPORTATION REGULATIONS WHEN CLEANING, HANDLING, MOVING, PAINTING, CUTTING, WELDING, SANDING OR GRINDING ANY COATED OR TREATED MATERIAL.
8. TYPE III STONE FILL SHALL BE PLACED IN FRONT OF THE ABUTMENTS BEFORE SUPERSTRUCTURE STEEL IS PLACED.

CONCRETE NOTES:

1. REINFORCEMENT PLACING TOLERANCES SHALL BE:
   SPACING +/- 1"
   CLEARANCE +/- 1/4"
2. MINIMUM COVER FOR REINFORCING STEEL (EXCEPT IN THE EXODERMIC DECK) SHALL BE 2" IN BACK FACES OF SUBSTRUCTURES AGAINST EARTH AND 3" ELSEWHERE, UNLESS OTHERWISE SHOWN.
3. ALL REINFORCING STEEL IN THE APPROACH SLABS, ABUTMENT BACKWALLS AND CURBS SHALL BE EPOXY COATED AND PAID FOR UNDER ITEM 507.17 "EPOXY COATED REINFORCING STEEL". WHEN EPOXY COATED REINFORCING IS CUT THE UNCOATED ENDS SHALL BE REPAIRED WITH MATERIALS AND PROCEDURES APPROVED BY THE COATING MANUFACTURER. FLAME CUTTING OF EPOXY COATED REINFORCING STEEL WILL NOT BE PERMITTED.
4. ALL EXPOSED EDGES OF CONCRETE IN THE SUBSTRUCTURE AND THE SUPERSTRUCTURE SHALL BE CHAMFERED 1" x 1", UNLESS OTHERWISE SHOWN.
5. IN ALL HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS, SHEAR KEYS SHALL BE FORMED AS SHOWN ON BRIDGE SHEET BRI15, AND THEY SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF JOINT. IN HORIZONTAL CONSTRUCTION JOINTS THE UPWARD KEY SHALL BE PLACED INTEGRAL WITH THE CONCRETE BELOW THE JOINT.
6. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT THE UNDERSIDE OF THE EXODERMIC DECK AND SHALL BE PAID FOR UNDER ITEM 514.10, "WATER REPELLENT (MOD. SILANE)".
7. JOINTS AND SCORE MARKS SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.
8. CURB CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS A AND SHALL BE PAID FOR UNDER ITEM 501.33, "CONCRETE, HIGH PERFORMANCE CLASS A". ALL OTHER CONCRETE, EXCLUDING THE EXODERMIC DECK CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS B AND SHALL BE PAID FOR UNDER ITEM 501.34, "CONCRETE, HIGH PERFORMANCE CLASS B".
9. SURFACES OF BRIDGE SEATS UNDER BEARING DEVICES SHALL BE LEVEL WITH A CONSTRUCTION TOLERANCE OF 0.005 RADIANS. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 1/2" PER FOOT TOWARD CENTER SPAN. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.

STRUCTURAL STEEL NOTES:

1. CHARPY V-NOTCH TESTING WILL BE REQUIRED FOR WELDED/FRACTURE CRITICAL STEEL MEMBERS ON THIS PROJECT.
2. ALL BOLTS USED SHALL MEET AASHTO M164 (ASTM A 325 TYPE 1) HIGH STRENGTH BOLTS UNLESS NOTED OTHERWISE IN THE PLANS. ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED PER SECTION 506.19 OF THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.
3. ALL HARDWARE (BOLTS, WASHERS, NUTS, "C" CLIPS, ETC.) SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-232 (ASTM A153) UNLESS OTHERWISE NOTED IN PLANS, WHERE REQUIRED. OVERSIZE NUTS SHALL BE PROVIDED FOR GALVANIZING.
4. THE CONTRACTOR IS REMINDED THAT ALL HARDWARE FOR CONNECTIONS IS NOT PAID FOR DIRECTLY BUT SHALL BE INCLUDED UNDER ITEM 506.75, "STRUCTURAL STEEL (MOD)" AND ITEM 509.20, "STEEL GRID FLOORING (EXODERMIC)".
   THE CONTRACTOR IS URGED TO MAKE A DETAILED COUNT OF ALL HARDWARE NECESSARY AS REQUIRED TO COMPLETE THE WORK AS SHOWN ON THESE PLANS. BOLT LENGTHS SHALL BE FIELD VERIFIED BY THE CONTRACTOR TO ALLOW 1/2 INCH MINIMUM PROJECTION BEYOND THE NUT IN SNUG POSITION, AND HAVE SUFFICIENT THREAD LENGTH TO TIGHTEN AS MUCH AS NECESSARY.

FOUNDATION NOTES:

1. GRANULAR BACKFILL SHALL BE COMPACTED TO 95 PERCENT OF MAXIMUM DRY DENSITY.
2. COFFERDAMS TO BE DESIGNED BY THE CONTRACTOR.
3. BORINGS INDICATED ON THESE PLANS HAVE BEEN MADE FOR DESIGN PURPOSES ONLY AND DO NOT WARRANT ACTUAL SUB-SURFACE CONDITIONS.
4. PILES SHALL BE DRIVEN IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 505 TO REFUSAL. THE STEEL PILING SHALL HAVE A YIELD STRENGTH OF 50 KSI AND CONFORM TO AASHTO M270 GRADE 50.
5. ALL PILES UNDER WINGWALL 1 SHALL BE INSTALLED IN 3' DEEP 24" DIAMETER ROCK SOCKETS. THE ANNULAR SPACE AROUND THE PILE SHALL BE FILLED WITH CONCRETE HPC-B TO THE BOTTOM OF FOOTING ELEVATION BEFORE THE TEMPORARY CASING IS REMOVED. ALL PILES REQUIRING ROCK SOCKETS SHALL BE INSTALLED VERTICALLY WITHOUT REINFORCEMENT OF THE POINT. ALL PAYMENT FOR ROCK SOCKETED PILES SHALL BE MADE UNDER ITEMS 512.30, 512.31 AND 512.32. SEE THE SPECIAL PROVISIONS.
6. IF BEDROCK IS FOUND TO BE LESS THAN 10' BELOW THE BOTTOM OF FOOTING ELEVATION DURING INSTALLATION OF THE REMAINING PILES IN ABUTMENT 1 AND WINGWALL 2, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR INSTRUCTIONS ON HOW TO PROCEED.

PREFABRICATED TRUSS NOTES:

1. WHERE CONNECTIONS ARE NOT DETAILED ON THE PLANS, THEY SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURES ENGINEER FOR APPROVAL.
2. ITEM 529.15 "REMOVAL OF STRUCTURE" SHALL BE USED FOR REMOVAL OF THE EXISTING TRUSS SUPERSTRUCTURE. THE EXISTING STEEL IN THE TRUSS TO BE REMOVED UNDER ITEM 529.15 WAS PAINTED WITH A MATERIAL WHICH MAY CONTAIN LEAD. ALL STEEL REMOVED UNDER THIS ITEM IS THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL INDEMNIFY AND HOLD THE STATE, IT'S OFFICALS AND EMPLOYEES HARMLESS CONCERNING THE CONTRACTOR'S USE OR DISPOSITION OF THE STRUCTURAL STEEL.
3. ALL STRUCTURAL STEEL PAID UNDER ITEM 506.75, "STRUCTURAL STEEL (MOD)" SHALL CONFORM TO AASHTO M270 GR 50 AND SHALL BE GALVANIZED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 506.15(A).
4. THE PREFABRICATED STEEL TRUSS, TO BE PROVIDED UNDER ITEM 506.75, "STRUCTURAL STEEL (MOD)", SHALL BE DESIGNED, DETAILED, FABRICATED AND TRANSPORTED TO THE SITE AND ERECTED BY THE CONTRACTOR. THE TRUSS PROVIDED MUST BE SIMILAR TO THE CONFIGURATION SHOWN IN THE ELEVATION VIEW ON SHEET BRI00.
5. INCLUDED UNDER ITEM 506.75, "STRUCTURAL STEEL (MOD)", WILL BE THE COST OF THE STEEL TRUSS BRIDGE WITH NESTED FLOOR BEAMS, LATERAL RODS, KNEE BRACKETS, ERECTION BOLTS, BEARING DEVICES WITH ANCHOR BOLTS, AND DELIVERY OF ALL OF THE ABOVE MATERIALS TO THE JOB SITE.
6. THE TRUSS SHALL BE DESIGNED TO CONFORM TO THE LINE, GRADE, HYDRAULIC FREEBOARD, AND STRUCTURE WIDTH SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD CHECKING ALL VERTICAL AND HORIZONTAL DIMENSIONS PRIOR TO ORDERING THE PREFABRICATED TRUSS.
7. THE SUPPLIER SHALL ASSIST AND ADVISE THE CONTRACTOR IN UNLOADING AND ERECTING THE TRUSS SUPERSTRUCTURE. ALL INSTRUCTIONS ON ERECTION AND FIELD CONNECTIONS PROVIDED BY THE MANUFACTURER SHALL BE ADHERED TO BY THE CONTRACTOR, TO THE SATISFACTION OF THE RESIDENT ENGINEER.
8. THE TRUSS SHALL BE FABRICATED SUCH THAT THE FINISHED GRADE ALONG THE CENTERLINE OF THE BRIDGE AND THE CROSS SLOPES WILL BE AS SHOWN ON THE PLANS UNDER FULL DEAD LOAD.
9. THE TRUSS SHALL BE DESIGNED TO CARRY AN HS-25 LIVE LOAD APPLIED IN ACCORDANCE WITH THE PROVISIONS OF AASHTO STANDARD SPECIFICATIONS.
10. THE DESIGN AND FABRICATION DRAWINGS SHALL BE SIGNED, STAMPED AND DATED BY A PROFESSIONAL ENGINEER (STRUCTURAL OR CIVIL) REGISTERED IN THE STATE OF VERMONT.
11. BEARING DEVICES SHALL CONFORM TO APPLICABLE SUBSECTIONS OF SECTION 531 AND 731. THE SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED OR METALIZED AS PER SECTION 531.04(B). AREAS OF GALVANIZING OR METALIZING DAMAGED BY WELDING AND/OR HANDLING SHALL BE PAINTED WITH A ZINC RICH PAINT. ANY PLATES USED IN THE BEARINGS SHALL BE A MINIMUM OF 1 INCH IN THICKNESS.

EXODERMIC DECK NOTES:

1. EXODERMIC DECK CONCRETE SHALL BE CONCRETE, HIGH PERFORMANCE CLASS AA AND SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED UNDER ITEM 509.20, "STEEL GRID FLOORING (EXODERMIC)".
2. EXODERMIC DECK REINFORCEMENT SHALL BE EPOXY COATED AND SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED UNDER ITEM 509.20. "STEEL GRID FLOORING (EXODERMIC)".
3. EXODERMIC DECK STRUCTURAL STEEL SHALL CONFORM TO AASHTO M270 GR 50 AND SHALL BE GALVANIZED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 506.15(A). EXODERMIC DECK STRUCTURAL STEEL SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED UNDER ITEM 590.20. "STEEL GRID FLOORING (EXODERMIC)".
4. THE SUPPLIER SHALL ASSIST AND ADVISE THE CONTRACTOR IN UNLOADING AND ERECTING THE EXODERMIC DECK. ALL INSTRUCTIONS ON ERECTION AND FIELD CONNECTIONS PROVIDED BY THE MANUFACTURER SHALL BE ADHERED TO BY THE CONTRACTOR, TO THE SATISFACTION OF THE RESIDENT ENGINEER.
5. THE EXODERMIC DECK SHALL BE DESIGNED TO CARRY AN HS-25 LIVE LOAD APPLIED IN ACCORDANCE WITH THE PROVISIONS OF AASHTO STANDARD SPECIFICATIONS.
6. THE DESIGN AND FABRICATION DRAWINGS SHALL BE SIGNED, STAMPED AND DATED BY A PROFESSIONAL ENGINEER (STRUCTURAL OR CIVIL) REGISTERED IN THE STATE OF VERMONT.
7. AFTER THE TRUSSES AND THE EXODERMIC GRID DECK PANELS HAVE BEEN ERECTED, ELEVATIONS SHALL BE TAKEN ALONG THE GRID PANELS UNDER THE DIRECTION OF THE RESIDENT ENGINEER. THESE ELEVATIONS SHALL BE USED IN DETERMINING THE FINAL GRADE.

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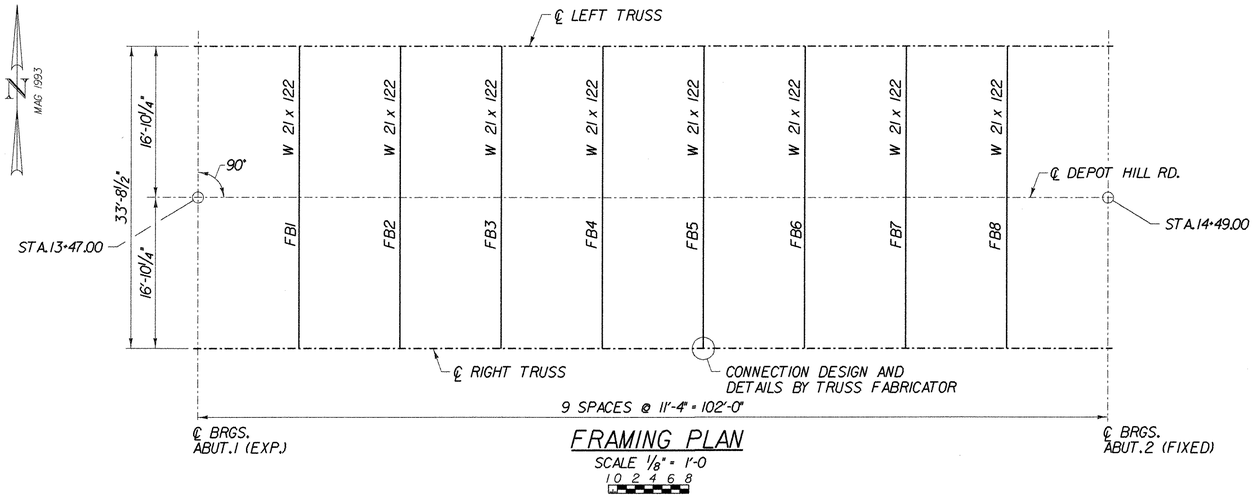
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
	Log Sta.
Highway No. T.H. 85	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

GENERAL NOTES

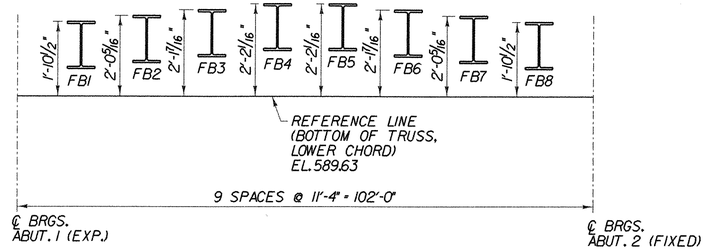
Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRI07	Sheet 40 OF 72



FRAMING PLAN

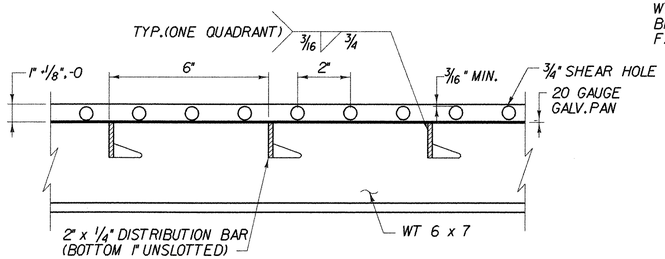
SCALE 1/8" = 1'-0

1 0 2 4 6 8



FLOORBEAM PROFILE DIAGRAM

(NOT TO SCALE)

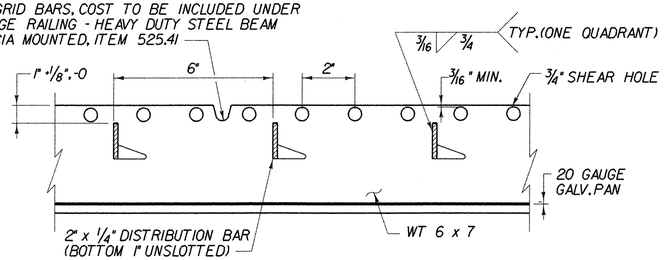


NOTE: TOP OF FORM PAN LOCATED BELOW BOTTOM OF ¾" SHEAR HOLES TO MINIMIZE CONCRETE LEAKAGE DURING POUR

TYPICAL EXODERMIC BRIDGE DECK FABRICATION DETAILS

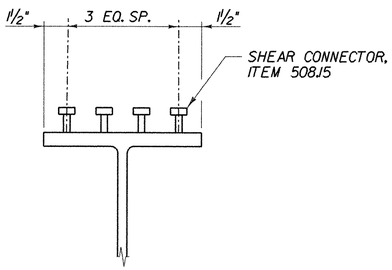
(NOT TO SCALE)

NOTCHES FOR 1" DIA. RAILING ANCHOR "U" BOLTS SHALL BE FIELD CUT INTO FASCIA WT GRID BARS, COST TO BE INCLUDED UNDER BRIDGE RAILING - HEAVY DUTY STEEL BEAM FASCIA MOUNTED, ITEM 525.41



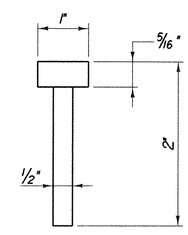
EXODERMIC BRIDGE DECK DETAIL AT FASCIA / FIRST INTERIOR BAY

(NOT TO SCALE)



STUD SHEAR CONNECTOR DETAIL

(NOT TO SCALE)



STUD DETAIL

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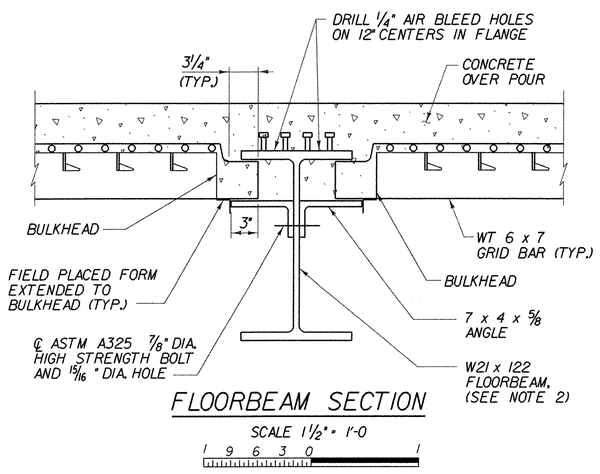
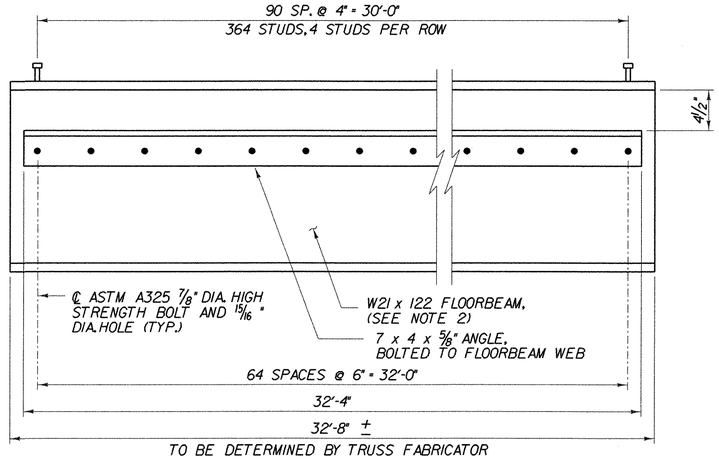


FLOORBEAM SECTION

SCALE 1½" = 1'-0

1 9 6 3 0 1



FLOORBEAM ELEVATION

(NOT TO SCALE)

NOTES:

1. ALL STRUCTURAL STEEL SHALL BE AASHTO M270, GRADE 50, UNLESS OTHERWISE NOTED
2. MEMBERS INDICATED SHALL BE CHARPY V-NOTCH (CVN) TESTED IN ACCORDANCE WITH SECTION 714.01 OF THE SPECIFICATION.

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DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

SUPERSTRUCTURE DETAILS

Designed By M. SMULLEN	Drawn by B.D./WM.W.
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRI08	Sheet 41 OF 72

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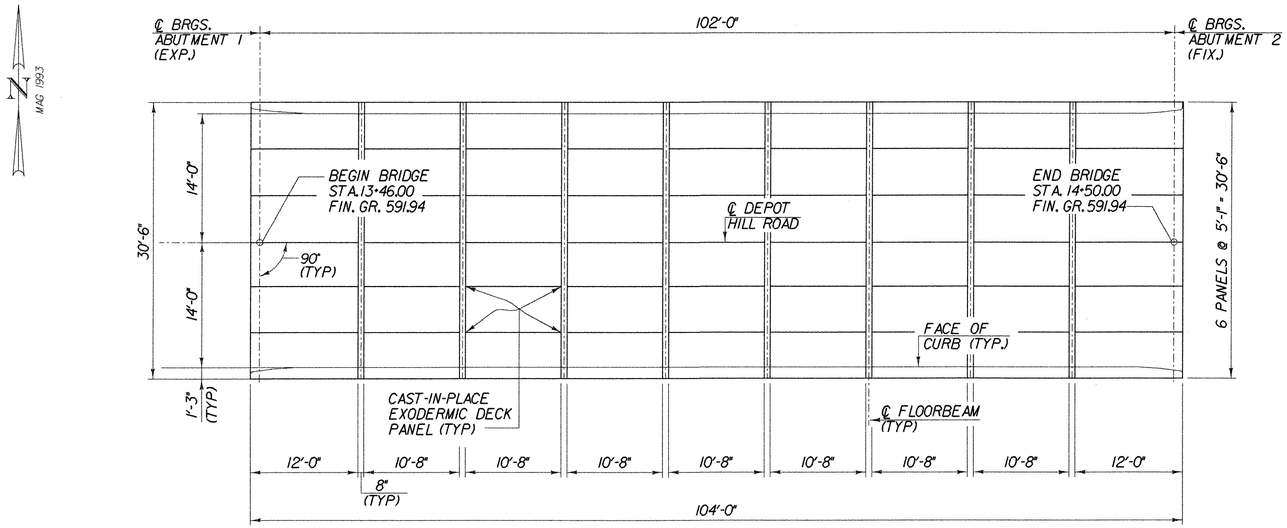
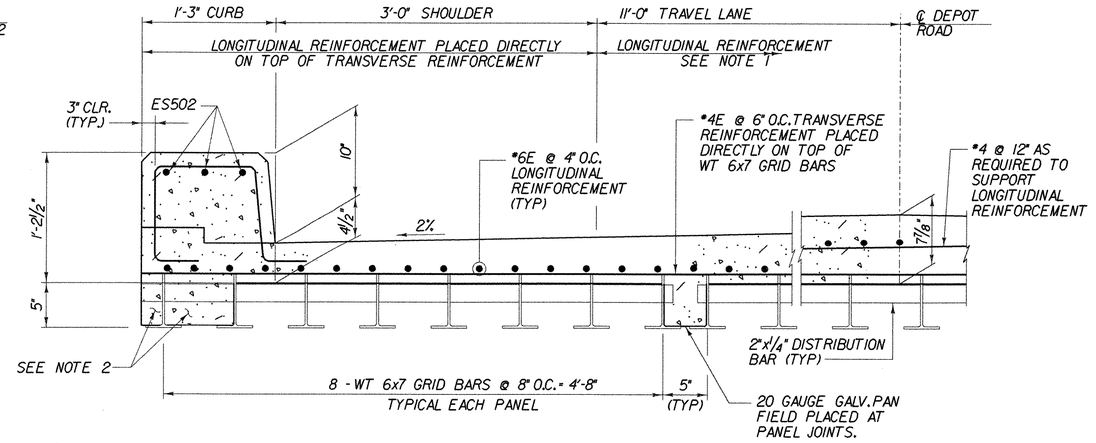


DECK PANEL LAYOUT PLAN

SCALE 1/8" = 1'-0

1 0 2 4 6 8



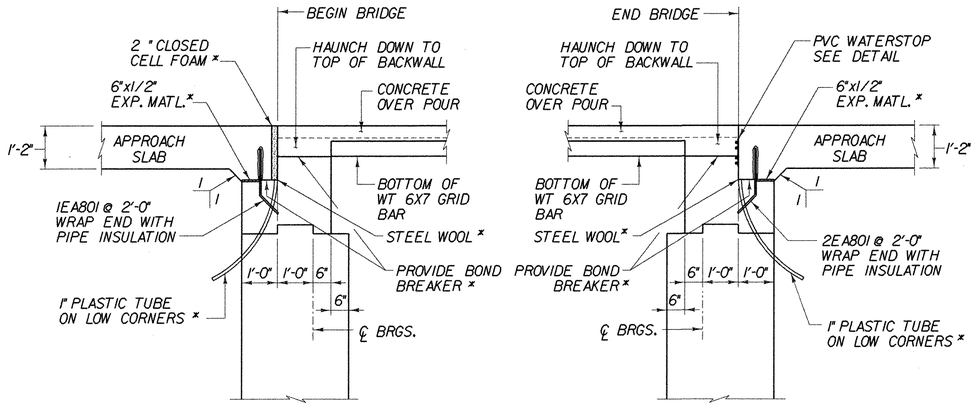
EXODERMIC DECK REINFORCEMENT SECTION

SCALE 1 1/2" = 1'-0

1 9 6 3 0 1

NOTES:

1. PLACEMENT HEIGHT OF LONGITUDINAL REINFORCMENT VARIES TO PROVIDE CONSTANT 3" TOP COVER WITH AN ALLOWABLE TOLERANCE OF 1/2" TOWARDS THE BOTTOM OF THE SLAB.
2. FASCIA AND FIRST INTERIOR BAY SHALL BE CONCRETE-FILLED, FULL DEPTH, TO PROVIDE FOR RAILING ANCHORAGE. FIELD PLUG OR TAPE FABRICATION HOLES ON FASCIA SIDE OF MAIN GRID BARS PRIOR TO PLACING CONCRETE. HOLES FOR ANCHOR "U" BOLTS SHALL BE FIELD-DRILLED INTO FASCIA WT GRID BARS. COST TO BE INCLUDED UNDER BRIDGE RAILING ITEM.
3. SEE STANDARD DRAWING SB-R6-82 FOR RAILING ANCHORAGE DETAILS.



BRIDGE END DETAIL-ABUTMENT 1

SCALE 1/2" = 1'-0

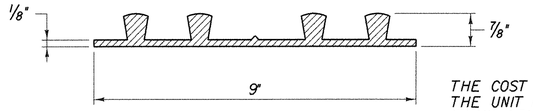
1 0 1 2

* COST TO BE INCLUDED UNDER ITEM 501.34

BRIDGE END DETAIL-ABUTMENT 2

SCALE 1/2" = 1'-0

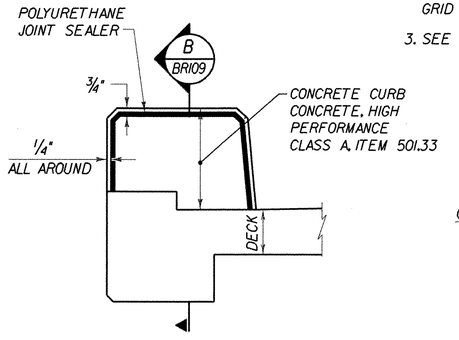
1 0 1 2

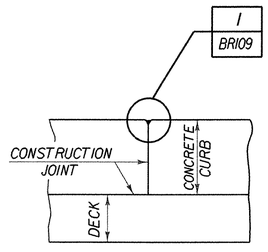


P.V.C. WATERSTOP FOR CONSTRUCTION JOINTS

N.T.S.

THE COST FOR P.V.C. WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE APPROPRIATE CONCRETE ITEMS. OTHER CONFIGURATIONS MAY BE USED UPON APPROVAL OF THE STRUCTURES ENGINEER.



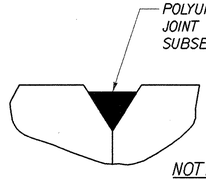


B BRI09 CONC. CURB SECTION

(NOT TO SCALE)

CURB NOTES:

1. CONSTRUCTION JOINTS THROUGH CONCRETE CURBS SHALL BE SPACED MAXIMUM 15'-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 POURS.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS.



NOTE:
COLOR TO MATCH CONCRETE. COST TO BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE

I BRI09 ENLARGED JOINT DETAIL

(NOT TO SCALE)

STATE OF VERMONT
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DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

BRIDGE DECK PLAN AND DETAILS

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
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Bridge Sheet No. BRI09	Sheet 42 OF 72

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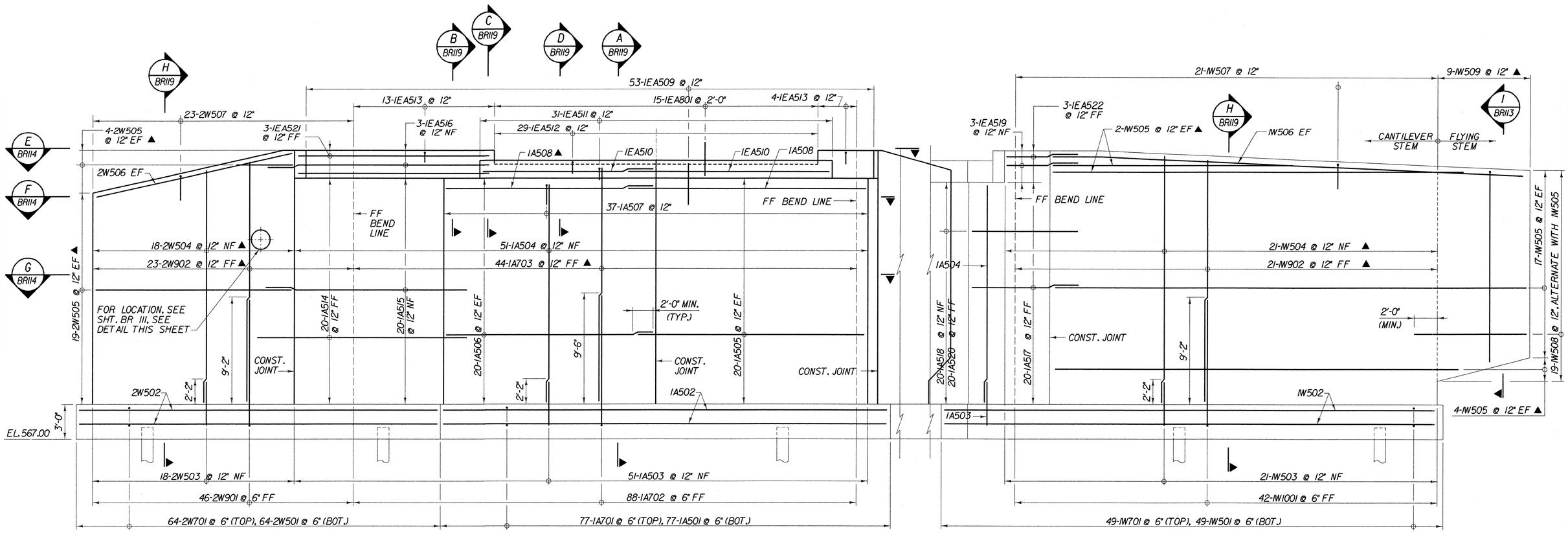
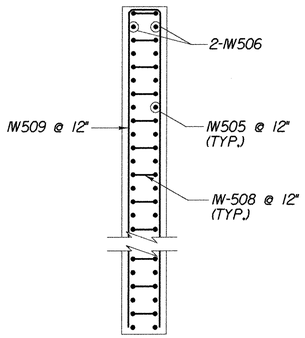


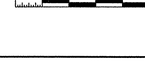
ABUTMENT 1 REINFORCING ELEVATION

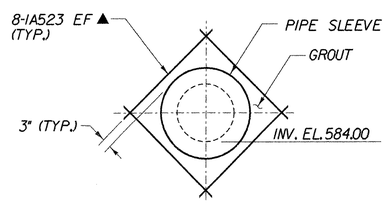
SCALE 1/4" = 1'-0



1 / BRII3 FLYING STEM REINFORCING

SCALE 3/8" = 1'-0





PIPE SLEEVE DETAIL

(ENLARGED)
(NOT TO SCALE)

NOTE: CUT HORIZONTAL AND VERTICAL REINFORCING BARS TO FIT

NOTES:

1. 3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

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DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER	
ABUTMENT 1 REINFORCING ELEVATION	
Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRII3	Sheet 46 OF 72

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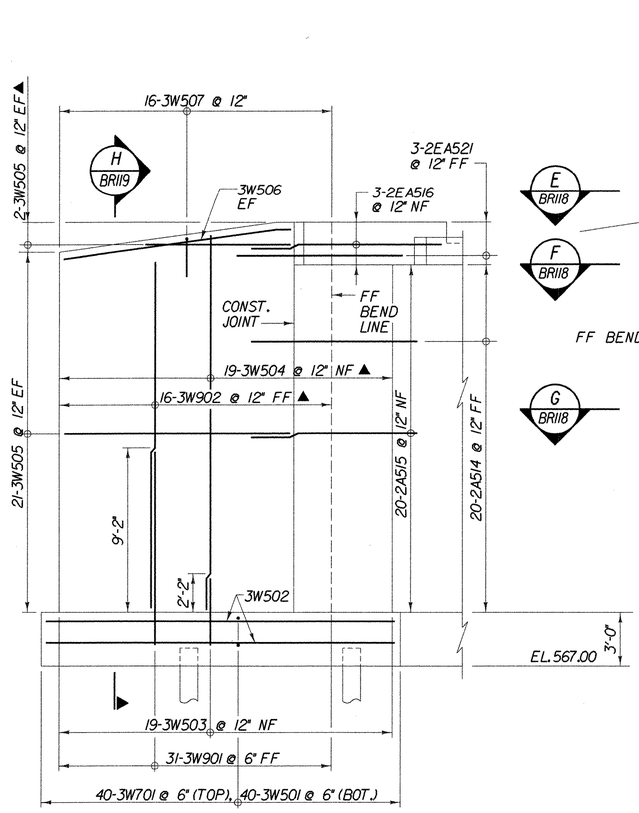
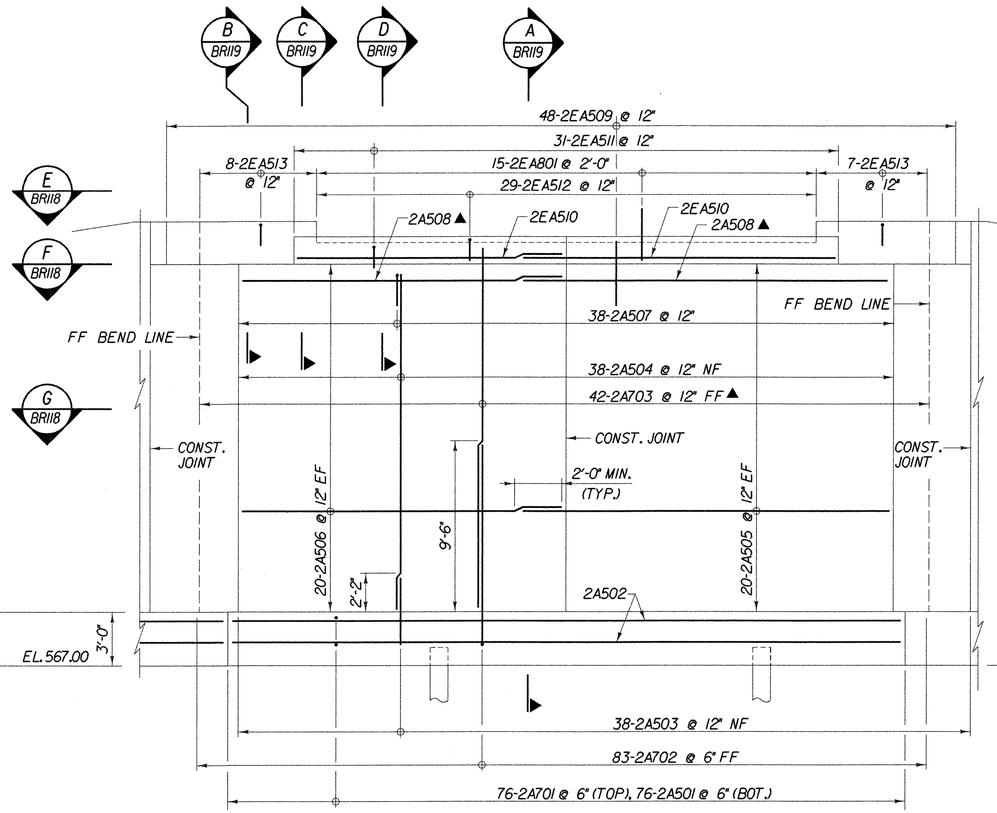
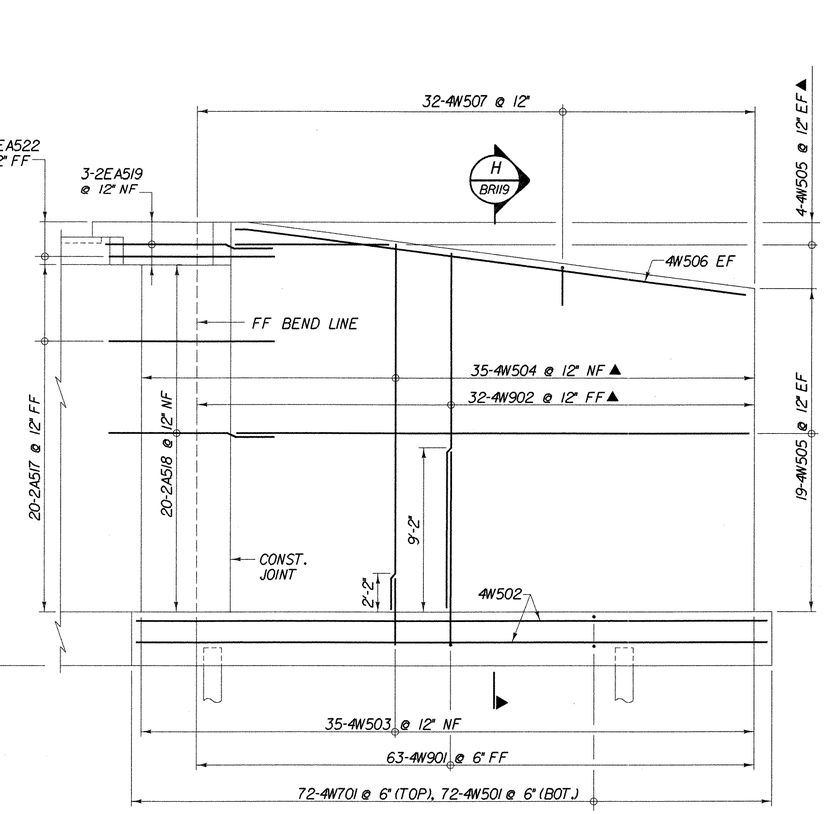


WINGWALL 3



ABUTMENT 2 REINFORCING ELEVATION

SCALE 1/4" = 1'-0



WINGWALL 4

NOTES:

1. 3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

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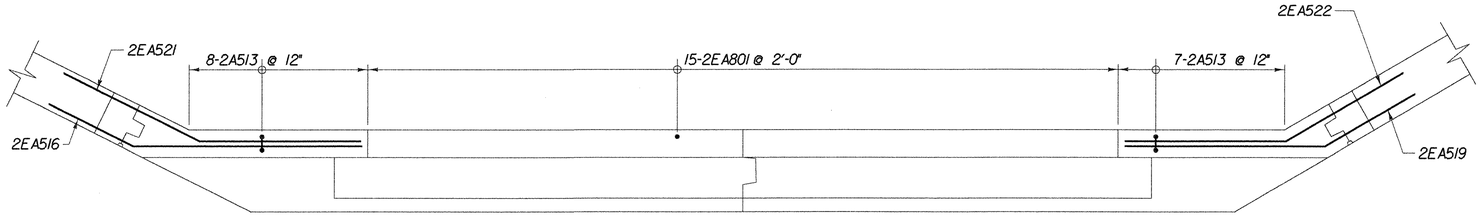
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.
DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER	
ABUTMENT 2 REINFORCING ELEVATION	
Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRII7	Sheet 50 OF 72

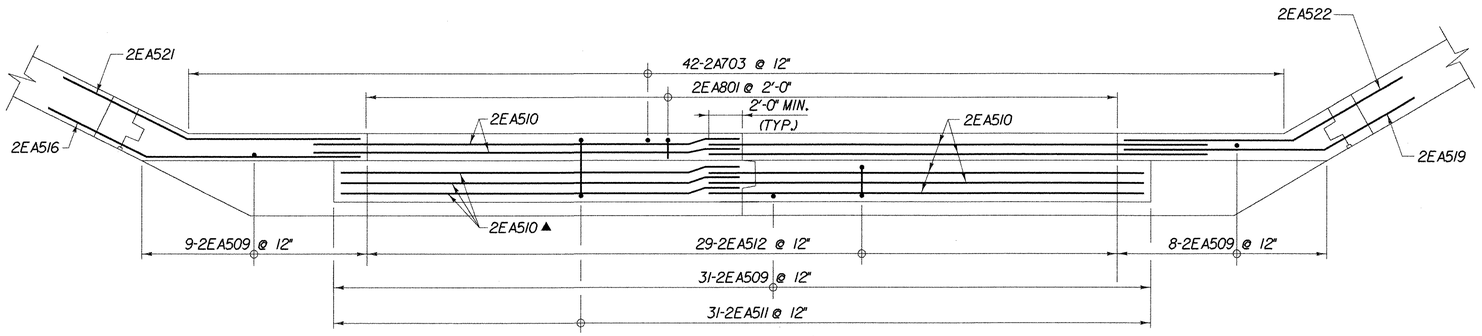
FILE NAME =u:\3797\mastr\15\br-29\1447ab2_rf2.dgn
DATE/TIME =12/20/2006
USER =2467

MAG 1993



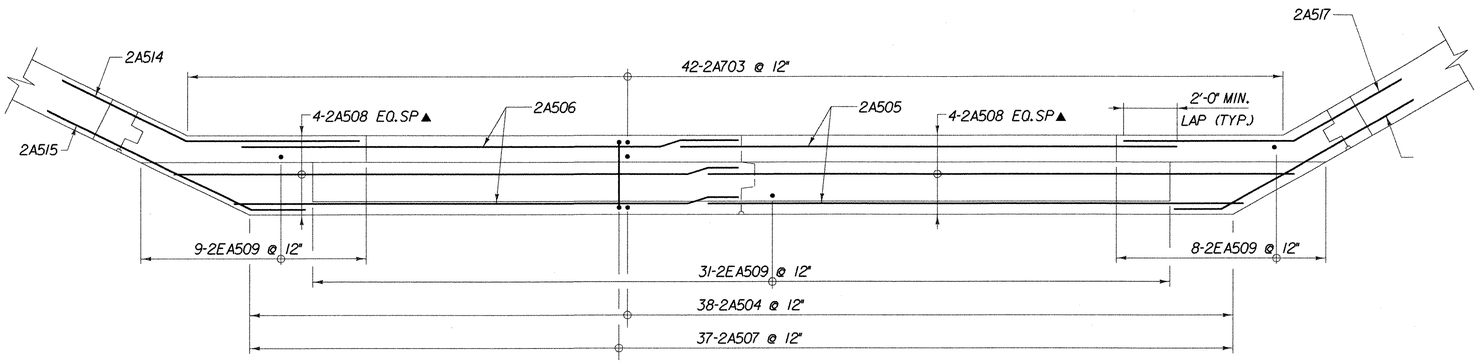
E BRII7 TOP OF BACKWALL AND TOP OF PEDESTAL REINFORCING PLAN

SCALE 3/8" = 1'-0



F BRII7 BACKWALL AND PEDESTAL REINFORCING PLAN

SCALE 3/8" = 1'-0



G BRII7 STEM REINFORCING PLAN

SCALE 3/8" = 1'-0

NOTES:

1. 3" CLR. UNLESS OTHERWISE SPECIFIED ON THE PLANS.

LEGEND:

NF = NEAR FACE
FF = FAR FACE
EF = EACH FACE
▲ = CUT TO FIT IN FIELD

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
Highway No. T.H. 85	Log Sta.
	Surv. Sta.
DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER	
ABUTMENT 2 REINFORCING DETAILS	
Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BRII8	Sheet 51 OF 72

FILE NAME =u:\3797\mstr\15\br-29\1447eb2_rf1.dgn
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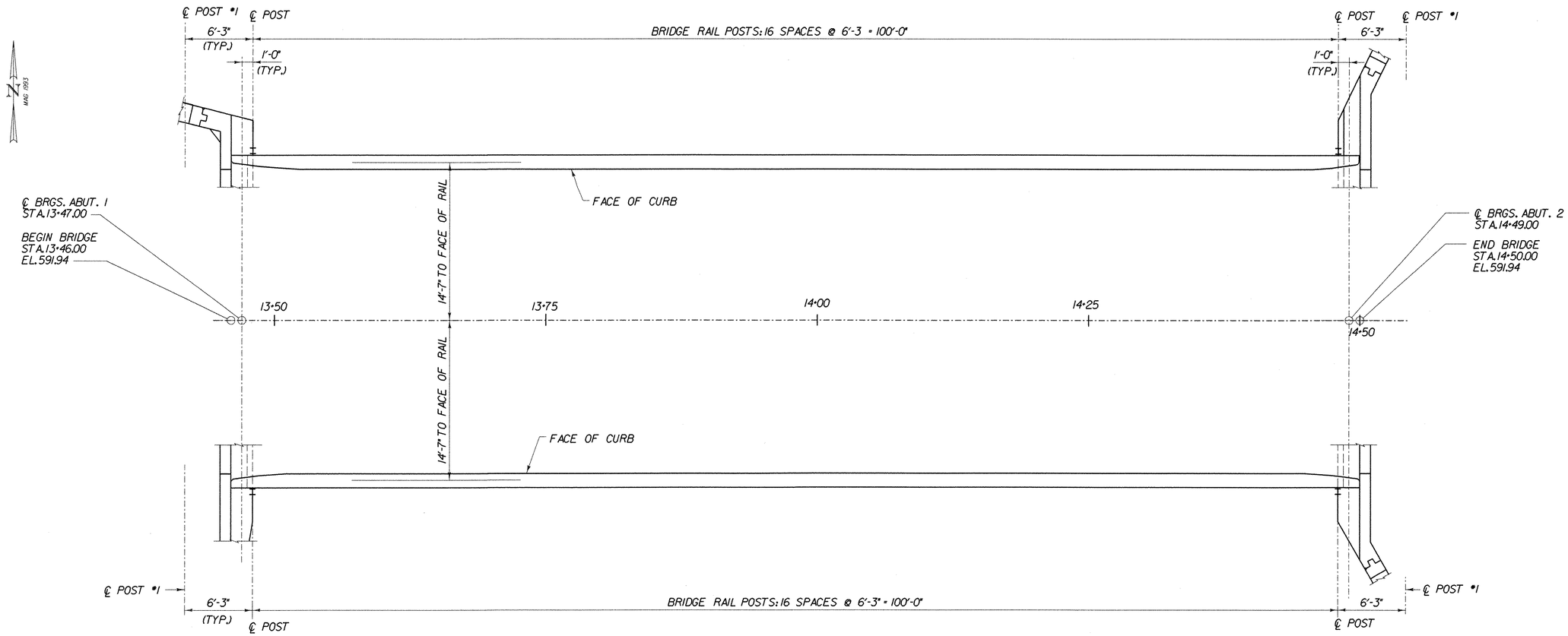
USER = 2467



DECK RAILING PLAN

SCALE 1" = 5'-0

5 0 5

NOTES:

1. THE CURB SHALL BE PLACED IN 15'-0" MAX. SECTIONS. THE POUR SEQUENCE SHALL BE IN ALTERNATING SECTIONS
2. FOR BRIDGE RAILING DETAILS, SEE STANDARD SHEET SB-R6-82.
3. FOR APPROACH RAIL DETAILS, SEE STANDARD SHEET SB-R6-82.

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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
	Log Sta.
Highway No. T.H. 85	Surv. Sta.
DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER	
BRIDGE RAILING PLAN	
Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BR120	Sheet 53 OF 72

FILE NAME = u:\3797\mstr\15\br-29\1447dk_rl_plan.dgn
DATE/TIME = 12/20/2006
USER = 2457

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
1	ABUTMENT 1																
2																	
3	78	5	10'-0"	1A501 ✳	STR												
4	22	5	38'-2"	1A502	STR												
5	52	5	3'-11"	1A503	STR												
6	52	5	19'-0"	1A504	STR												
7	40	5	20'-1"	1A505	STR												
8	40	5	18'-1"	1A506	STR												
9	37	5	6'-7"	1A507	S10		2'-0"	2'-7"	2'-0"								
10	8	5	29'-0"	1A508 ▲	STR												
11	53	5	4'-1"	1EA509	STR												
12	17	5	18'-0"	1EA510▲✳	STR												
13	31	5	3'-11"	1EA511	S10		0'-11"	2'-1"	0'-11"								
14	29	5	2'-7"	1EA512	S10		0'-9"	1'-1"	0'-9"								
15	17	5	2'-7"	1EA513	S10		1'-0"	0'-7"	1'-0"								
16	20	5	18'-10"	1A514	22		6'-11"	11'-11"					1'-2"		6'-10"		
17	20	5	17'-2"	1A515	22		2'-0"	15'-2"					0'-4"		2'-0"		
18	3	5	19'-0"	1EA516	22		3'-0"	16'-0"					0'-6"		3'-0"		
19	21	5	7'-7"	1A517 ✳	22		3'-4"	4'-3"					3'-3"		0'-9"		
20	20	5	8'-8"	1A518	22		2'-0"	6'-8"					1'-11"		0'-6"		
21	4	5	9'-0"	1EA519 ✳	22		4'-4"	4'-8"					4'-3"		1'-0"		
22	20	5	11'-10"	1A520	22		2'-0"	7'-10"	2'-0"				1'-3"	1'-3"	1'-7"	1'-7"	
23	3	5	18'-10	1EA521	22		6'-11"	11'-11"					1'-2"		6'-10"		
24	3	5	7'-7"	1EA522	22		3'-4"	4'-3"					3'-3"		0'-9"		
25	8	5	6'-0"	1EA523	STR												
26	78	7	10'-0"	1A701 ✳	STR												
27	88	7	12'-5"	1A702	2	1'-2"	11'-3"										
28	45	7	21'-5"	1A703 ▲✳	STR												
29	15	8	1'-11"	1EA801	22		0'-7"	1'-4"					0'-4"		0'-6"		
30																	
31	WINGWALL 1																
32	50	5	9'-2"	1W501 ✳	STR												
33	20	5	24'-0"	1W502 ▲	STR												
34	21	5	3'-11"	1W503	STR												
35	22	5	21'-5"	1W504 ▲✳	STR												
36	46	5	25'-6"	1W505 ▲	STR												
37	2	5	25'-6"	1W506	22		1'-0"	24'-6"					0'-1"		1'-0"		
38	21	5	5'-3"	1W507	S10		2'-0"	1'-3"	2'-0"								
39	19	5	21'-0"	1W508	S10		10'-0"	1'-0"	10'-0"								
40	9	5	37'-3"	1W509 ▲	S10		18'-0"	1'-3"	18'-0"								
41	51	7	9'-2"	1W701 △	STR												
42	43	10	12'-9"	1W1001 ✳	2	1'-10"	10'-11"										
43	22	9	21'-5"	1W902 ▲✳	STR												
44																	
45	WINGWALL 2																
46	65	5	9'-2"	2W501 ✳	STR												
47	20	5	31'-6"	2W502	STR												
48	18	5	3'-11"	2W503	STR												
49	19	5	21'-5"	2W504 ▲✳	STR												
50	46	5	17'-5"	2W505 ▲	STR												
51	2	5	17'-10"	2W506	22		1'-0"	16'-10"					0'-3"		1'-0"		
52	23	5	5'-3"	2W507	S10		2'-0"	1'-3"	2'-0"								
53	66	7	9'-2"	2W701 △	STR												
54	47	9	12'-6"	2W901 ✳	2	1'-7"	10'-11"										
55	24	9	21'-5"	2W902 ▲✳	STR												
56																	
57	ABUTMENT 2																
58	77	5	10'-0"	2A501 ✳	STR												
59	22	5	37'-5"	2A502	STR												
60	38	5	3'-11"	2A503	STR												
61	38	5	19'-0"	2A504	STR												
62	40	5	20'-1"	2A505	STR												
63	40	5	18'-1"	2A506	STR												
64	38	5	6'-7"	2A507	S10		2'-0"	2'-7"	2'-0"								
65	8	5	24'-5"	2A508 ▲	STR												
66	48	5	4'-1"	2EA509	STR												
67	17	5	18'-0"	2EA510▲✳	STR												
68	31	5	3'-11"	2EA511	S10		0'-11"	2'-1"	0'-11"								
69	29	5	2'-7"	2EA512	S10		0'-9"	1'-1"	0'-9"								
70	15	5	2'-7"	2EA513	S10		1'-0"	0'-7"	1'-0"								
71	20	5	10'-9"	2A514	22		4'-1"	6'-8"					1'-10"		3'-8"		
72	20	5	9'-6"	2A515	22		2'-0"	7'-6"					0'-11"		1'-10"		
73	3	5	10'-11"	2EA516	22		3'-0"	7'-11"					1'-4"		2'-8"		
74	21	5	10'-2"	2A517 ✳	22		3'-11"	6'-3"					2'-0"		3'-5"		
75	20	5	9'-0"	2A518	22		2'-0"	7'-0"					1'-0"		1'-9"		
76	4	5	10'-4"	2EA519 ✳	22		3'-0"	7'-4"					1'-6"		2'-7"		
77	3	5	10'-9"	2EA521	22		4'-1"	6'-8"					1'-10"		3'-8"		
78	3	5	10'-2"	2EA522	22		3'-11"	6'-3"					2'-0"		3'-5"		
79	77	7	10'-0"	2A701 ✳	STR												
80	83	7	12'-5"	2A702	2	1'-2"	11'-3"										
81	43	7	21'-5"	2A703▲✳	STR												
82	15	8	1'-11"	2EA801	22		0'-7"	1'-4"									
83																	
84	WINGWALL 3												0'-4"		0'-6"		
85	41	5	9'-2"	3W501 ✳	STR												
86	20	5	19'-8"	3W502	STR												
87	19	5	3'-11"	3W503	STR												
88	20	5	21'-5"	3W504 ▲✳	STR												
89	46	5	12'-10"	3W505 ▲	STR												
90																	
91																	
92																	
93																	
94																	
95																	
96																	
97																	
98																	

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
99	WINGWALL 3 (CONTINUED)																
100	2	5	13'-0"	3W506	22		1'-0"	12'-0"									
101	16	5	5'-3"	3W507	S10		2'-0"	1'-3"	2'-0"								
102																	
103	42	7	9'-2"	3W701 △	STR												
104																	
105	32	9	12'-6"	3W901 ✳	2	1'-7"	10'-11"										
106	17	9	21'-5"	3W902 ▲✳	STR												
107																	
108	WINGWALL 4																
109	73	5	9'-2"	4W501 ✳	STR												
110	20	5	35'-5"	4W502	STR												
111	35	5	3'-11"	4W503	STR												
112	36	5	21'-5"	4W504 ▲✳	STR												
113	46	5	29'-1"	4W505 ▲	STR												
114	2	5	29'-4"	4W506	22		1'-0"	28'-4"									
115	32	5	5'-3"	4W507	S10	1'-3"	2'-0"		2'-0"								
116																	
117	74	7	9'-2"	4W701 △	STR												
118																	
119	64	9	12'-6"	4W901 ✳	2	1'-7"	10'-11"										
120	33	9	21'-5"	4W902 ▲✳	STR												
121																	
122	DECK SLAB																
123	EXODERMIC DECK REINFORCEMENT SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE INCLUDED																
124	UNDER ITEM 509.20 "STEEL GRID FLOORING (EXODERMIC)".																
125																	
126	312	5	4'-0"	ES501	S5	0'-10"	0'-10"	0'-8"	0'-10"			0'-10"					
127	18	5	36'-0"	ES502	STR												
128																	
129																	
130																	
131	APPROACH SLAB 1																
132	13	5	17'-0"	1EAS501 △	STR												
133																	
134	57	6	10'-2"	1EAS601 ✳	1	0'-8"										0'-6"	
135																	
136																	
137	APPROACH SLAB 2																
138	18	5	18'-4"	2EAS501 △	STR												
139																	
140	57	6	15'-2"	2EAS601 ✳	1	0'-8"										0'-6"	
141	13	6	10'-0"	2EAS602 ✳	STR												
142																	
143																	
144																	
145																	
146																	
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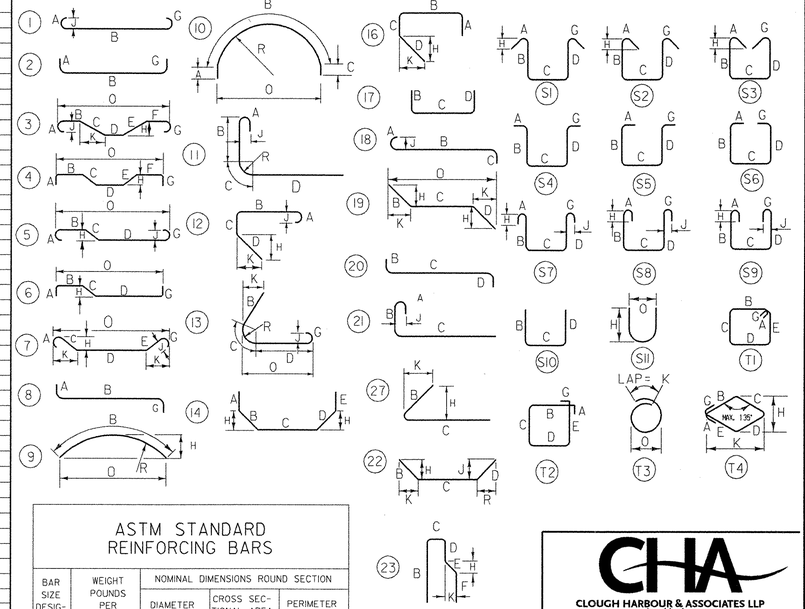
~ NOTES ~

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-91). ALL BARS SHALL BE GRADE 60, UNLESS OTHERWISE DESIGNATED.
2. FOR TYPICAL BENDING DETAILS, RECOMMENDED PIN DIAMETER "D" OF BENDS AND HOOKS, AND OTHER STANDARD PRACTICE, SEE CURRENT CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
3. BARS WHICH REQUIRE MORE ACCURATE BENDING THAN STANDARD PRACTICES SHOULD HAVE LIMITS INDICATED.
4. ALL DIMENSIONS ARE OUT TO OUT OF BAR EXCEPT "A" AND "G" ON STANDARD 180 DEGREE AND 135 DEGREE HOOKS.
5. "J" DIMENSION ON 180 DEGREE HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
8. ▲ DENOTES BARS TO BE CUT IN FIELD.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.



ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	CROSS SECTIONAL AREA SQ. INCHES	PERIMETER INCHES
#3	.376	.375	.11	1.178
#4	.668	.500	.20	1.571
#5	1.043	.625	.31	1.963
#6	1.502	.750	.44	2.356
#7	2.044	.875	.60	2.749
#8	2.670	1.000	.79	3.142
#9	3.400	1.128	1.00	3.544
#10	4.303	1.270	1.27	3.990
#11	5.313	1.410	1.56	4.430
#14	7.65	1.693	2.25	5.32
#18	13.60	2.257	4.00	7.09

CHA
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STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of ST. JOHNSBURY	Bridge No. 29
	Log Sta.
Highway No. T.H. 85	Surv. Sta.

DEPOT HILL ROAD OVER THE PASSUMPSIC RIVER

REINFORCING STEEL SCHEDULE

Designed By M. SMULLEN	Drawn by Wm WEATHERBY
Checked By M. OLSTAD Date 7/2003	Bridge Design Supervisor P. HALSTEAD Date 9/2006
PROJECT ST. JOHNSBURY	PROJECT NO. BRO 1447(19)
I.G.C. Info.	
Bridge Sheet No. BR121	Sheet 54 OF 72

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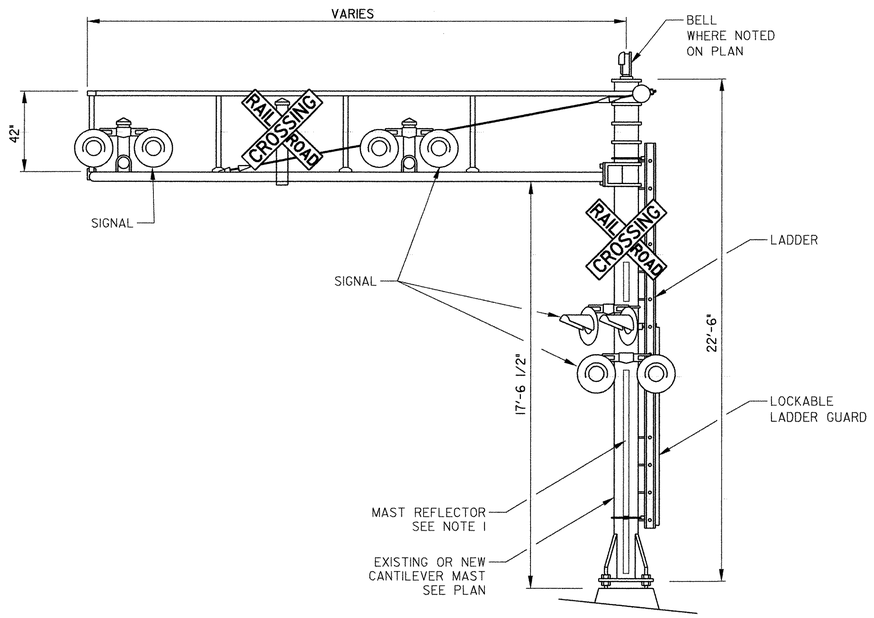
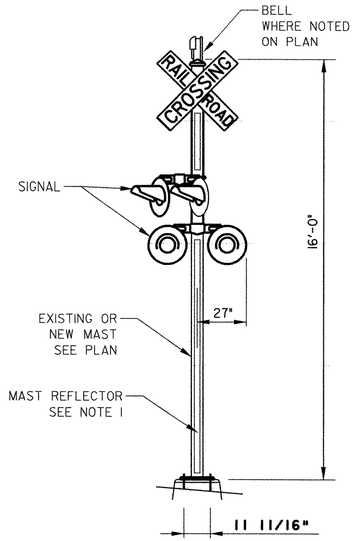
DATE/TIME = 7/29/2006
USER = 2467



TYPICAL RAILROAD CANTILEVER SIGNAL DETAIL

NTS

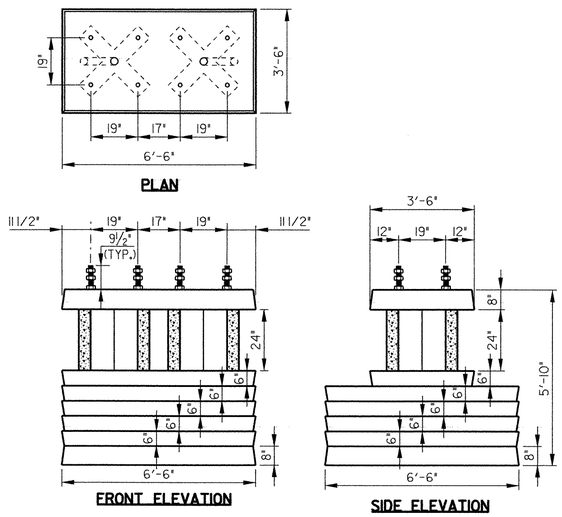


TYPICAL RAILROAD SIGNAL DETAIL

NTS

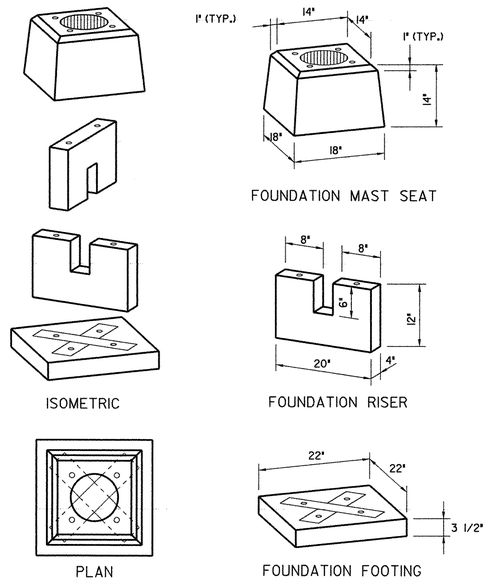
NOTES:

1. A STRIP OF ASTM TYPE III OR TYPE V RETROREFLECTIVE WHITE MATERIAL NOT LESS THAN 2 INCHES IN WIDTH, SHALL BE USED ON EACH SUPPORT AT HIGHWAY-RAIL GRADE CROSSING FOR THE FULL LENGTH OF THE FRONT AND BACK OF THE SUPPORT FROM THE CROSSBUCK SIGN OR NUMBER OF TRACKS SIGN TO NEAR GROUND LEVEL.
2. PLACE A MINIMUM OF (3) I-13a SIGNS AT EACH CROSSING. ONE ON EACH SIDE OF THE CROSSING ON SIGNAL MASTS AND ONE ON THE SIGNAL CASE OR HOUSE.
3. FLASHING LIGHT SIGNAL EQUIPMENT SHALL BE 12" LED FLASHING LIGHT UNITS.



TYPICAL DOUBLE MAST FOUNDATION DETAIL

NTS



TYPICAL FOUNDATION DETAIL

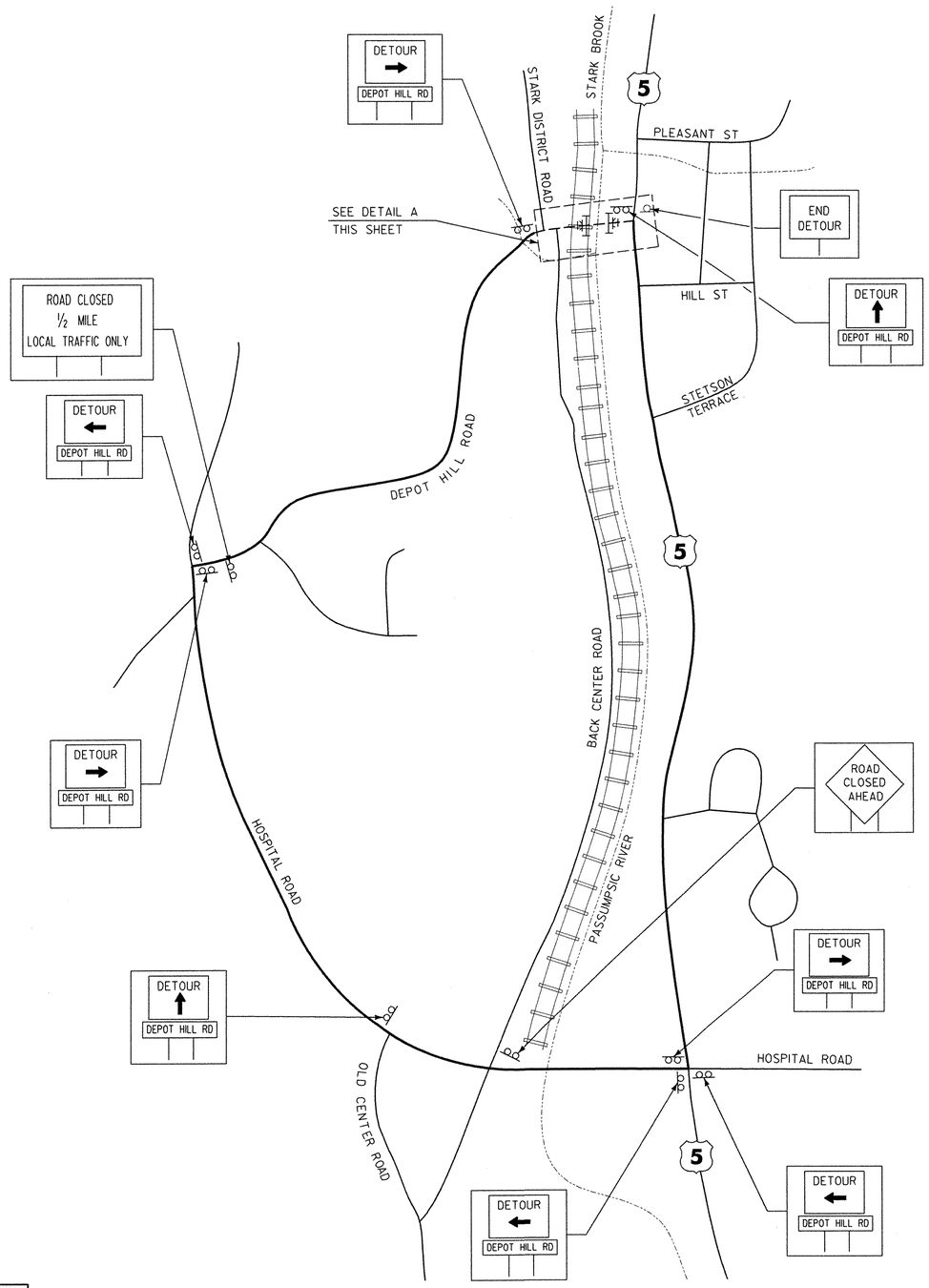
NTS

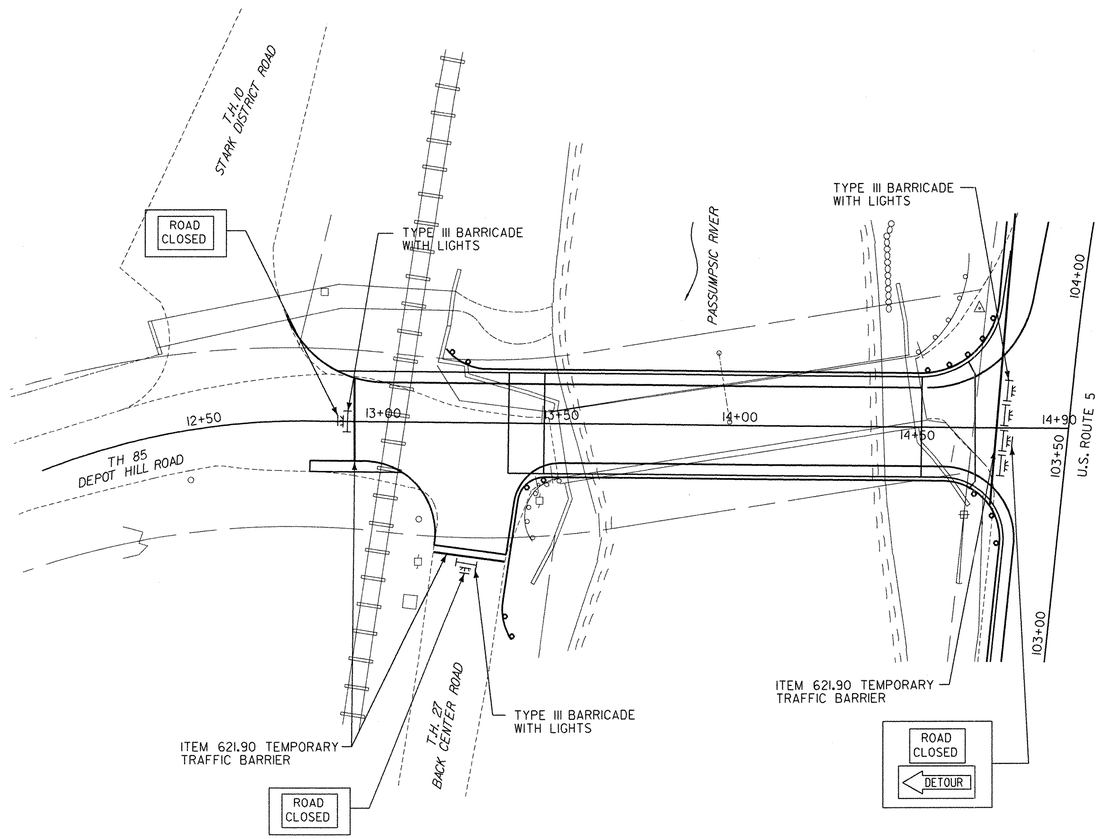
PROJECT NAME: ST. JOHNSBURY

PROJECT NUMBER: BRO 1447(19)

FILE NAME: S92J104RRFNDTN.dgn
PROJECT LEADER: C. WILLIAMS
DESIGNED BY: C. WILLIAMS

PLOT DATE: 10/16/06
DRAWN BY: C. WILLIAMS
CHECKED BY: C. WILLIAMS
SHEET 55 OF 72





DETAIL A

NOTE:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE ENTIRE DETOUR SIGNING PACKAGE AND MUST PROMPTLY REPAIR OR REPLACE ANY SIGNS OR POSTS WHICH BECOME DAMAGED OR OTHERWISE INEFFECTIVE.

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

DETOUR PLAN

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/DETOUR.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 56 OF 72 SHEETS

FILE NAME =u:\3797\mstn\03\final\detour.dgn
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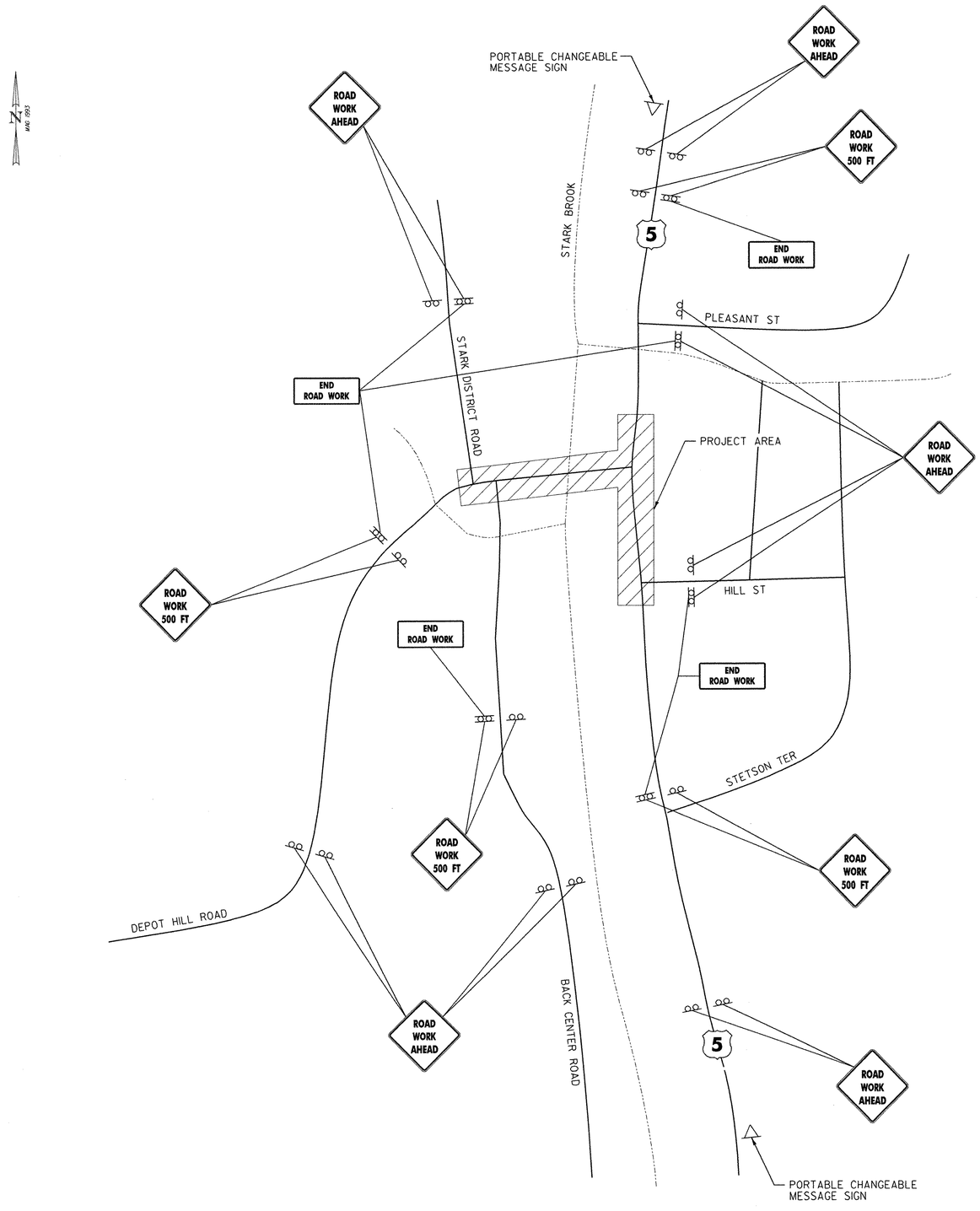

CONSTRUCTION APPROACH SIGNING
N.T.S.

NOTES:

1. THE CONTRACTOR SHALL INCLUDE A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH SECTION 641 OF THE VERMONT AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001 AND THE LATEST VAOT STANDARDS AND SECTION 6 OF THE MANUAL ON TRAFFIC CONTROL DEVICES (MUTCD). PAYMENT FOR TRAFFIC CONTROL PLAN SHALL BE INCLUDED UNDER ITEM 641.10 TRAFFIC CONTROL OR AS DIRECTED BY THE RESIDENT ENGINEER.
2. THE CONTRACTOR SHALL PROVIDE AT LEAST ONE UNOBSTRUCTED 10 FOOT WIDE TRAVEL LANE ALONG U.S. ROUTE 5 DURING WORKING HOURS TO ALLOW FOR THE SAFE PASSAGE OF EMERGENCY VEHICLES. NO LANE CLOSURES SHALL REMAIN IN PLACE DURING NON-WORKING HOURS
3. THE CONTRACTOR SHALL PROVIDE TWO UNOBSTRUCTED 11 FOOT WIDE TRAVEL LANES ON U.S. ROUTE 5 DURING NON-WORKING HOURS. THE LANES SHALL BE MAINTAINED WITHIN THE LIMITS OF THE EXISTING ROW. THE CONTRACTOR SHALL PROVIDE DELINEATION BETWEEN PEDESTRIAN ROUTES, THE TRAVEL LANES AND TO PROTECT TRAFFIC FROM WORK ACTIVITIES.
4. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN SAFE INGRESS AND EGRESS TO AND FROM INTERSECTING ROADWAYS, RESIDENCES AND COMMERCIAL ESTABLISHMENTS AT ALL TIMES AS DIRECTED BY THE RESIDENT ENGINEER.
5. SEE VAOT STD. E-100 FOR ADDITIONAL SIGN PLACEMENT DETAILS.
6. CONSTRUCTION ZONE SIGN LAYOUT SHALL BE IN ACCORDANCE WITH SECTION 6 OF THE LATEST EDITION OF THE MUTCD.
7. CONSTRUCTION SIGNS SHALL BE IN NEW OR LIKE NEW CONDITION PER VAOT STANDARDS.
8. DIAMOND SHAPED SIGNS SHALL BE 4'x4' WITH BLACK LEGEND ON FLUORESCENT ORANGE BACKGROUND.
9. REFLECTIVE SHEETING SHALL BE TYPE VII OR BETTER.
10. CONSTRUCTION ZONE SIGNS SHALL BE INSTALLED ON TWO POSTS EACH OR AS AN NCHRP 350 COMPLIANT SIGN/STAND SYSTEM.

DATUM
VERTICAL NAVD 88
HORIZONTAL N/A

CONSTRUCTION APPROACH SIGNING SHEET

SURVEYED BY W. DEYETTE DATE 10/93
DRAWN BY C. KAHLBAUGH DATE 7/06
SQUAD LEADER J. P. HALSTEAD
DESIGN FILE NO. /3797/FINAL/MDT.DGN
IPARM FILE
DATE PLOTTED 12/20/2006
PROJ. NAME ST. JOHNSBURY, BRIDGE NO. 29
PROJ. NO. BRO 1447(19)
SHEET 57 OF 72 SHEETS

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