INDEX OF SHEETS

1	TITLE SHEET
2	PRELIMINARY INFORMATION SHEET
3	QUANTITY SHEET (1 OF 5)
4	QUANTITY SHEET (2 OF 5)
5	QUANTITY SHEET (3 OF 5)
6	QUANTITY SHEET (4 OF 5)
7	QUANTITY SHEET (5 OF 5)
8-9	RIGHT-OF-WAY SHEETS
10	SURVEY TIE SHEET
11	TYPICAL SECTION AND DETAILS
12	PLAN
13	PROFILE
14	TRAFFIC SIGN SUMMARY SHEET
15	REGIONAL DETOUR
16	REGIONAL DETOUR SIGNS
17	VILLAGE TRAFFIC CONTROL PLAN
18	BORING LAYOUT
19	BORING LOGS (1 OF 2)
20	BORING LOGS (2 OF 2)
21	BRIDGE PLAN & ELEVATION
22	GENERAL NOTES (1 OF 2)
23	GENERAL NOTES (2 OF 2)
24	BRIDGE TYPICAL SECTION
25	MISCELLANEOUS DETAILS
26	BRIDGE RAIL AND LIGHTING LAYOUT
27	OVERLAY REINFORCEMENT (1 OF 2)
28	OVERLAY REINFORCEMENT (2 OF 2)
29	SPAN 1 FRAMING PLAN
30	SPAN 2 FRAMING PLAN
31	SPAN 3 FRAMING PLAN
32	SPAN 1 & 3 BOX BEAM TYPICAL SECTIONS
33	SPAN 2 BOX BEAM TYPICAL SECTIONS
34	BOX BEAM DETAILS (1 OF 2)
35	BOX BEAM DETAILS (2 OF 2)
36	SUPERSTRUCTURE DETAILS
37	ABUTMENT REMOVAL & REPAIR
38	ABUTMENT 1
39	ABUTMENT 2
40	PIER REMOVAL & REPAIR DETAILS
41	PIER NO. 1 & NO. 2
42	RETAINING WALL LAYOUT (1 OF 2)
43	RETAINING WALL LAYOUT (2 OF 2)
44	RETAINING WALL DETAILS
45	BRIDGE LIGHTING DETAILS
46	APPROACH RAILING DETAILS (1 OF 2)
47	APPROACH RAILING DETAILS (2 OF 2)
48	BRIDGE RAILING DETAILS (1 OF 2)
49	BRIDGE RAILING DETAILS (2 OF 2)
50	REINFORCING STEEL SCHEDULE
51-56	EXISTING PLANS
57	EROSION CONTROL NARRATIVE
58	EXISTING CONDITIONS PLAN
59	EROSION PREVENTION & SEDIMENT CONTROL (EPSC) PLAN
60	FINAL CONDITIONS SITE PLAN
61	EPSC-1
62	EPSC-2
63	EPSC-3
64	EPSC-4
65	EPSC-5
66	EPSC-6
67-68	US ROUTE 4 CROSS SECTIONS
69-71	CHANNEL CROSS SECTIONS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF WOODSTOCK
COUNTY OF WINDSOR
US ROUTE 4 (PRINCIPAL ARTERIAL) BRIDGE NO. 50

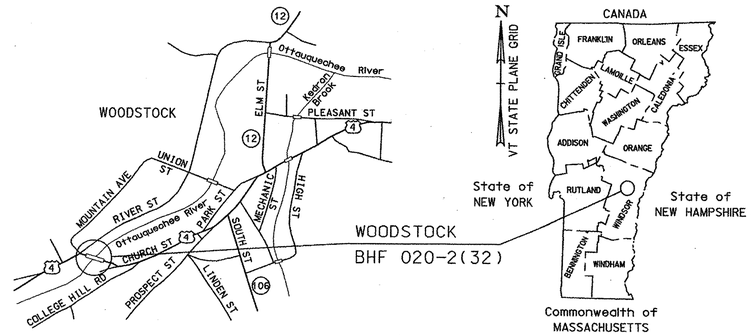
PROJECT LOCATION: BEGINNING AT A POINT 0.31 MILES WEST OF THE JUNCTION OF US ROUTE 4 AND VT 106 AND EXTENDING EASTERLY 0.10 MILES.

PROJECT DESCRIPTION: REMOVAL OF EXISTING SUPERSTRUCTURE, CONSTRUCTION OF PRESTRESSED CONCRETE BOX BEAM AND CONCRETE OVERLAY SUPERSTRUCTURE, REHABILITATION OF EXISTING SUBSTRUCTURE, CONSTRUCTION OF NEW RETAINING WALLS AND RELATED CHANNEL WORK.

LENGTH OF STRUCTURE: ~~202.54~~ 201.72 FEET

LENGTH OF ROADWAY: 147.46 FEET

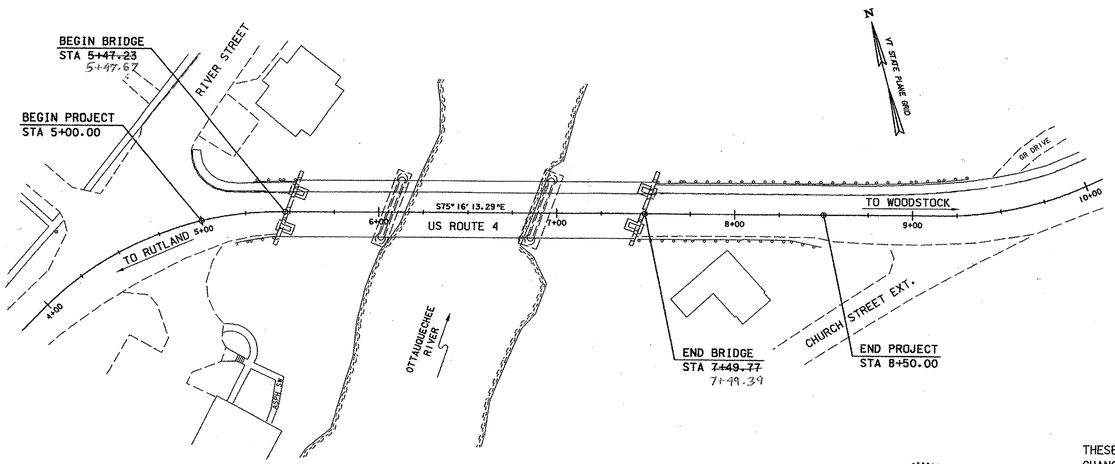
LENGTH OF PROJECT: 350 FEET



LOCATION MAP

STANDARDS

B-5	06-01-94	E-119	03-01-04
B-71	07-08-05	E-121	08-08-95
C-1	01-03-00	E-123	03-16-04
C-2B	10-14-05	E-127	08-08-95
C-3A	09-01-04	E-136A	08-08-95
C-3B	09-01-04	E-143	06-15-04
D-3	06-01-94	E-144	03-29-99
D-15	06-01-94	E-160	05-20-99
D-16	06-01-94	E-163	05-20-99
D-17	06-01-94	E-173	08-09-95
D-20	03-03-03	E-175	11-17-93
E-100	01-02-04	E-181	08-09-95
E-100A	01-02-04	E-191	02-01-99
E-101	05-30-03	E-192	10-12-00
E-102	06-30-03	E-193	08-18-95
E-102A	05-01-04	G-1	01-03-00
E-106	03-01-04	G-1D	01-03-00
E-107	06-30-03	G-18	06-01-94
E-107A	08-08-95	G-19	11-15-02
E-108	08-18-95		



PLAN
SCALE: 1" = 400'

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
R.O.W. LINE
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS (SR)
CLEAR ZONE (CZ)
TOP OF CUT
TOE OF SLOPE

DATUM
VERTICAL NAVD 88
HORIZONTAL ASSUMED

RECORD PLANS

CONTRACTOR: T. BUCK CONSTRUCTION, INC. – AUBURN, ME
RESIDENT ENGINEER: DARYL BASSETT
CONSTRUCTION BEGAN: MARCH 7, 2007
CONSTRUCTION COMPLETE: NOVEMBER 20, 2007
RECORD PLANS BY: DARYL BASSETT & AMOS KEMPTON

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

BY _____ RESIDENT ENGINEER
DATE 10/2/12

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.

STATE OF VERMONT
MARK A. COLGAN
NO. 8016
Structural
LICENSED
PROFESSIONAL ENGINEER

THESE PLANS ARE SUBJECT TO SUCH ENGINEERING CHANGES AS MAY BE REQUIRED BY THE FEDERAL HIGHWAY ADMINISTRATION 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.

VHB *Vanasse Hangen Brustlin, Inc.*

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATOR
APPROVED _____ DATE _____

DIRECTOR OF PROGRAM DEVELOPMENT
APPROVED Richard Stewart DATE 9-19-06

PROJECT MANAGER : CHRISTOPHER P. WILLIAMS

PROJECT NAME : WOODSTOCK
PROJECT NUMBER : BHF 020-2 (32)

SHEET 1 OF 71 SHEETS

LOAD FACTOR LOAD RATING (TONS)

LOAD LEVELS (LOAD FACTOR)	TRUCK (TONS)						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY A1 = 1.3, A2 = 2.17	26	44					
POSTED A1 = 1.3, A2 = 1.55	37	62	71		58	59	55
OPERATING A1 = 1.3, A2 = 1.3		74	85	88	69	71	

RF = $\frac{C - A1\ DL}{A2\ (LL+I)}$ C = ΦMn FLEXURE C = ΦVn SHEAR

WORKING STRESS LOAD RATING (TONS)

STRESS LEVELS	TRUCK (TONS)						
	H	HS	3S2	6 AXLE	3A. STR.	4A. STR.	5A. SEMI
INVENTORY *	36	49					
POSTED **	37	51	61		42	47	55
OPERATING ***		54	63	74	48	50	

* INVENTORY STRESSES
BOX BEAM TENSION
BOX BEAM COMPRESSION
OVERLAY COMPRESSION

** POSTED STRESSES
BOX BEAM TENSION
BOX BEAM COMPRESSION
OVERLAY COMPRESSION

*** OPERATING STRESSES
BOX BEAM TENSION
BOX BEAM COMPRESSION
OVERLAY COMPRESSION

RATING NOTE:

1. ALL VALUES REPRESENT MULTIPLE LANE LOADING.

SEEDING FORMULA
URBAN AREAS

% WT.	LBS./A.	NAME	PUR %	GERM %
42.5	34.0	CREEPING RED FESCUE	98	85
10.0	8.0	PERENNIAL RYE GRASS	95	90
42.5	34.0	KENTUCKY BLUE GRASS	85	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.00	80.0			

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 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 ENGINEER.

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

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

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

FINAL HYDRAULICS REPORT

HYDROLOGIC DATA

DRAINAGE AREA= 119.3 SQ MI
CHARACTER OF TERRAIN: HILLY TO MOUNTAINOUS
CHARACTER & TYPE OF STREAM: STRAIGHT WITH LARGE RADIUS BENDS, TRAPEZODIAL CHANNEL WITHOUT FLOODPLAIN
NATURE OF STREAMBED: VERY COARSE GRAVEL WITH BOULDERS

Q2.33= -
Q10= 9615 CFS
Q25= -
Q50= 17,645 CFS
Q100= 22,365 CFS
Q500= 36,595 CFS

DATE OF FLOOD OF RECORD: 1927
WATER SURFACE ELEV.: UNKNOWN ESTIMATED DISCHARGE: UNKNOWN
NATURAL STREAM VELOCITY @ Q -
ICE CONDITIONS: SEE NOTE 2 DEBRIS: SEE NOTE 2
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? NO
IS ORDINARY RISE RAPID? NO
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO
IF YES, DESCRIBE.

WATERSHED STORAGE 1% HEADWATERS UNIFORM THROUGHOUT WATERSHED X
IMMEDIATELY ABOVE SITE

EXISTING STRUCTURE

STRUCTURE TYPE: 3 SPAN BEAM W/ CONCRETE DECK YEAR BUILT: 1938
CLEAR SPAN (NORMAL TO STREAM): 179.3 FT REHAB: 1954
VERTICAL CLEARANCE ABOVE STREAMBED: 24.2 FT
WATERWAY OF FULL OPENING: 3523.0 SQ FT
DISPOSITION OF STRUCTURE: SUPERSTRUCTURE REPLACEMENT

TYPE OF MATERIAL UNDER SUBSTRUCTURE: UNKNOWN (ABUT. 1, PIER 1, AND ABUT. 2 ON SPREAD FOOTING, PIER 2 ON PILES)
WATER SURFACE ELEV. @ Q2.33= - VELOCITY= -
Q10= 689.0 " -
Q25= - " -
Q50= 693.9 " -
Q100= 695.9 " 8.8 fps

LONG TERM STREAM BED CHANGES: NEGLIGIBLE

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: -
RELIEF ELEVATION: 704.2 DISCHARGE OVER ROAD @ Q100: -

UPSTREAM STRUCTURE: TOWN: WOODSTOCK DISTANCE: 1.1 mi
HIGHWAY NO.: TH 50 STRUCTURE NO.: BR. NO. 30
STRUCTURE TYPE: PINNED THROUGH TRUSS
CLEAR SPAN: 177.0 ft CLEAR HEIGHT: 21.0 ft
YEAR BUILT: 1900 FULL WATERWAY: UNKNOWN

DOWNSTREAM STRUCTURE: TOWN: WOODSTOCK DISTANCE: 0.3 mi
HIGHWAY NO.: UNION STREET STRUCTURE NO.: BR. NO. 73
STRUCTURE TYPE: TIMBER COVERED BRIDGE
CLEAR SPAN: 181 ft CLEAR HEIGHT: 22.0 ft
YEAR BUILT: 1968, 1974 FULL WATERWAY: UNKNOWN

PROPOSED STRUCTURE

STRUCTURE TYPE: 3 SPAN CONCRETE BOX BEAM W/ CONCRETE OVERLAY

CLEAR SPAN (NORMAL TO STREAM): 179.3 FT
VERTICAL CLEARANCE ABOVE STREAMBED: 24.2 FT
WATERWAY OF FULL OPENING: 3523 SQ FT

WATER SURFACE ELEV. @ Q2.33= - VELOCITY= -
Q10= 689.0 " = -
Q25= - " = -
Q50= 693.9 " = -
Q100= 695.9 " = 8.8 fps

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: -
RELIEF ELEVATION= 704.3 DISCHARGE OVER ROAD @ Q100: -

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 700.4
VERTICAL CLEARANCE @ Q100 4.5 FT

SCOUR: NOT CALCULATED, SUPERSTRUCTURE REPLACEMENT PROJECT
REQUIRED CHANNEL PROTECTION: SEE NOTE 3

PERMIT INFORMATION

AVERAGE DAILY FLOW: 247.2 cfs
ORDINARY LOW WATER: 105.9 cfs DEPTH: WS EL = 678.1
ORDINARY HIGH WATER: 1942.3 cfs DEPTH: WS EL = 681.8

ADDITIONAL COMMENTS

1. HYDROLOGIC DATA AND WATER SURFACE ELEVATIONS ARE BASED ON THE 2002 FEMA FLOOD INSURANCE STUDY. ADDITIONAL ANALYSES WERE NOT CONDUCTED AT THIS SITE.
2. ALTHOUGH DEBRIS AND ICE FLOW ARE A CONCERN FOR OTHER BRIDGES OVER THE OTTAUQUECHEE RIVER, NEITHER IS TYPICALLY A PROBLEM AT THIS SITE.
3. THE ONLY MODIFICATION TO THE CHANNEL IS THE CHINKING OF STONE FILL IN EXISTING VOIDS AT PIER NO. 2.

DESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO HS 25
2. DESIGN SPAN (56'-8¾") - (81'-6¼") - (56'-8¾")
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL - ON LEDGE -
4. ALLOWABLE LOAD FOR PILING TYPE - ESTIMATED LENGTH -
5. STRUCTURAL STEEL -
6. REINFORCING STEEL GRADE 60
7. CONCRETE HIGH PERFORMANCE CLASS AA (MOD. - RAPID CURE) f'c 4000 psi
HIGH PERFORMANCE CLASS A (MOD.) f'c 4000 psi
HIGH PERFORMANCE CLASS B f'c 3500 psi
HIGH PERFORMANCE CLASS B (MOD. - SCC) f'c 3500 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 N/A 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: -

TRAFFIC DATA (US 4)

2000 ADT = 14,200
2000 DHV = 1,420
2000 ADTT = 769
2020 ADT = 19,810
2020 DHV = 1,980
2020 ADTT = 1,327

% D = 50
% T = 5
V = 25 MPH
2000-2020 (20 YR.) ESAL'S 15,175,800

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

PRELIMINARY INFORMATION SHEET

Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028P1	Sheet 2 of 71

VHB NO. 51298 plot date: 10/11/2006

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	SUPER-STRUCTURE	ABUTMENT 1	ABUTMENT 2	PIER 1	PIER 2	RETAINING WALLS	BRIDGE SUBTOTAL	ROADWAY	CHANNEL	EROSION CONTROL	FULL E & C	TOTAL	REMARKS
201.10	CLEARING AND GRUBBING (INCL. INDV. TREES & STUMPS)	LS								1				1	
203.15	COMMON EXCAVATION	CY								875				875	
204.20	TRENCH EXCAVATION OF EARTH	CY								130				130	
204.30	GRANULAR BACKFILL FOR STRUCTURES	CY						60	60					60	
208.30	COFFERDAM EXCAVATION, EARTH	CY				45	35		80					80	
208.40	COFFERDAM (PIER 1)	LS				1			1					1	
208.40	COFFERDAM (PIER 2)	LS					1		1					1	
210.10	COLD PLANING - BITUMINOUS PAVEMENT	SY								785				785	
301.15	SUBBASE OF GRAVEL	CY								625		60		685	
404.65	EMULSIFIED ASPHALT	CWT								4				4	
406.25	BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	TON								525				525	
501.32	CONCRETE, HIGH PERFORMANCE CLASS AA (MOD. - RAPID CURE) OVERLAY	CY	145						145					145	
501.33	CONCRETE, HIGH PERFORMANCE CLASS A (MOD.) SIDEWALK & CURBS	CY	52						52					52	
501.34	CONCRETE, HIGH PERFORMANCE CLASS B ABUTMENT 1 & 2 WINGWALLS	CY		7	6			96	109					109	
501.34	CONCRETE, HIGH PERFORMANCE CLASS B (MOD. - SCC)PIER & ABUT. REPAIRS	CY				86	83		169					169	
502.10	SHORING SUPERSTRUCTURE	LS	1						1					1	
504.10	FURNISHING EQUIPMENT FOR DRIVING PILING	LS						1	1					1	
505.35	PERMANENT STEEL SHEET PILING (33.1 IN^3)	SF						1200	1200					1200	
505.35	PERMANENT STEEL SHEET PILING (45.3 IN^3)	SF						4875	4875					4875	
507.15	REINFORCING STEEL	LB		580	500	4920	5920	1930	13,850					13,850	
507.16	DRILLING AND GROUTING DOWELS	LF		24	22				46					46	
507.17	EPOXY COATED REINFORCING STEEL	LB	24,020						24,020					24,020	
508.15	SHEAR CONNECTORS (80 - 7/8"x10") (MOD. - SHEET PILE)	LS						1	1					1	
508.15	SHEAR CONNECTORS (210 - 7/8"x13") (MOD. - SHEET PILE)	LS						1	1					1	
510.21	PRESTRESSED CONCRETE BOX BEAMS (27"x36") (MOD. - LIGHTWEIGHT)	LF	199						199					199	
510.21	PRESTRESSED CONCRETE BOX BEAMS (27"x48") (MOD. - LIGHTWEIGHT)	LF	1586						1586					1586	
510.24	GROUTING SHEAR KEYS	LF	1388						1388					1388	

N.A.B.I. = NOT A BID ITEM

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
QUANTITY SHEET (1 OF 5)	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028QNT1	Sheet 3 of 71

VHB NO. 51298 plot date: 10/11/2006

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	SUPER-STRUCTURE	ABUTMENT 1	ABUTMENT 2	PIER 1	PIER 2	RETAINING WALLS	BRIDGE SUBTOTAL	ROADWAY	CHANNEL	EROSION CONTROL	FULL E & C	TOTAL	REMARKS
514.10	WATER REPELLENT (MOD. - SILANE)	GAL	31	2	3	23	24	22	105					105	
516.10	BRIDGE EXPANSION JOINT (ASPHALTIC PLUG)	LF	60						60					60	
519.20	SHEET MEMBRANE WATERPROOFING (MOD. - TORCH APPLIED)	SY	630						630					630	
	BEGIN JOINT SEALER OPTIONS														
524.11	JOINT SEALER, HOT POURED	LF	26						26					26	
524.13	JOINT SEALER, COLD POURED	LF	26						26					26	
	END JOINT SEALER OPTIONS														
525.22	BRIDGE RAILING - 3 RAIL ALUMINUM (MOD. - ANODIZED BLACK)	LF	202						202					202	
525.23	BRIDGE RAILING - ALUMINUM/PEDESTRIAN (MOD. - ANODIZED BLACK)	LF	202						202					202	
527.10	MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS (MOD.)	LS								1				1	
529.10	REMOVAL OF BRIDGE PAVEMENT	SY	627						627					627	
529.20	PARTIAL REMOVAL OF STRUCTURE	EA	0.8	0.1	0.1				1					1	
531.10	BEARING DEVICE ASSEMBLY (ELASTOMERIC)	EA	108						108					108	
580.14	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS II (MOD. - SCC)	SY		2	2	3	2		9					9	ESTIMATED
580.15	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS III (MOD. - SCC)	CY		1	1	26	13		41					41	ESTIMATED
	BEGIN PIPE OPTIONS														
601.0215	18" CAAP .060 (2-2/3 x 1/2)	LF								162				162	
601.0415	18" PCCSP .064 (2-2/3 x 1/2)	LF								162				162	
601.0815	18" RCP CLASS III	LF								162				162	
601.2615	18" CPEP (SL)	LF								162				162	
601.0215	18" CAAP .060 (2-2/3 x 1/2)	LF								61				61	
601.0415	18" PCCSP .064 (2-2/3 x 1/2)	LF								61				61	
601.2615	18" CPEP (SL)	LF								61				61	
	END PIPE OPTIONS														
602.25	STONE MASONRY FACING (MOD.)	SY						230	230					230	
604.20	PRECAST REINFORCED CONCRETE CATCH BASIN WITH CAST IRON GRATE	EA								3				3	
604.30	PRECAST REINFORCED CONCRETE CURB DROP INLET WITH CAST IRON GRATE	EA								1				1	
609.10	DUST CONTROL WITH WATER	MGAL										50		50	ESTIMATED
609.15	DUST AND ICE CONTROL WITH CALCIUM CHLORIDE	TON										2		2	ESTIMATED

N.A.B.I. = NOT A BID ITEM

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
QUANTITY SHEET (2 OF 5)	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028QNT2	Sheet 4 of 71

VHB NO. 51298

plot date: 10/11/2006

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	SUPER-STRUCTURE	ABUTMENT 1	ABUTMENT 2	PIER 1	PIER 2	RETAINING WALLS	BRIDGE SUBTOTAL	ROADWAY	CHANNEL	EROSION CONTROL	FULL E & C	TOTAL	REMARKS
613.10	STONE FILL, TYPE I	CY										10		10	
613.10	STONE FILL, TYPE I (MOD. - CHECK DAM)	CY										5		5	ESTIMATED
613.10	STONE FILL, TYPE I (MOD. - CONSTRUCTION ENTRANCE)	CY										15		15	ESTIMATED
613.10	STONE FILL, TYPE I (MOD. - INLET PROTECTION)	CY										5		5	ESTIMATED
613.11	STONE FILL, TYPE II	CY										60		60	
613.12	STONE FILL, TYPE III	CY									131			131	
616.21	VERTICAL GRANITE CURB	LF								480				480	
616.41	REMOVAL OF EXISTING CURB	LF								263				263	
618.10	PORTLAND CEMENT CONCRETE SIDEWALK, 5 INCH (MOD.)	SY								167				167	
618.30	DETECTABLE WARNING SURFACE	SY								3				3	
619.17	YIELDING MARKER POSTS	EA								6				6	
620.50	REMOVING AND RESETTING FENCE (MOD. - STONE WALL)	LF								15				15	
620.70	SNOW FENCE (MOD. - ARCH)	LF								335				335	
620.70	SNOW FENCE (MOD. - PDF)	LF								510				510	
621.21	HEAVY DUTY STEEL BEAM GUARD RAIL (GALVANIZED)	LF								155				155	
621.60	ANCHOR FOR STEEL BEAM RAIL	EA								3				3	
621.74	ALUMINUM APPROACH RAILING (MOD. - ANODIZED BLACK)	LF								257				257	
621.80	REMOVAL AND DISPOSAL OF GUARD RAIL	LF								335				335	
621.90	TEMPORARY TRAFFIC BARRIER (MOD.)	LF								1010				1010	
630.10	UNIFORMED TRAFFIC OFFICERS	HR								700				700	ESTIMATED
630.15	FLAGGERS	HR								600				600	ESTIMATED

N.A.B.I. = NOT A BID ITEM

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
QUANTITY SHEET (3 OF 5)	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028QNT3	Sheet 5 of 71

VHB NO. 51298 plot date: 10/11/2006

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	SUPER-STRUCTURE	ABUTMENT 1	ABUTMENT 2	PIER 1	PIER 2	RETAINING WALLS	BRIDGE SUBTOTAL	ROADWAY	CHANNEL	EROSION CONTROL	FULL E & C	TOTAL	REMARKS
631.10	FIELD OFFICE - ENGINEERS	LS											1	1	
631.16	TESTING EQUIPMENT - CONCRETE	LS											1	1	
631.17	TESTING EQUIPMENT - BITUMINOUS	LS											1	1	
631.25	FIELD OFFICE - TELEPHONE (N.A.B.I.)	LU											1	1	
635.11	MOBILIZATION/DEMOBILIZATION	LS							1					1	
641.10	TRAFFIC CONTROL	LS								1				1	
641.12	PUBLIC RELATIONS OFFICER	LS								1				1	
641.17	PORTABLE CHANGEABLE MESSAGE SIGN RENTAL	DAY								350				350	
646.41	DURABLE 4" YELLOW LINE	LF								900				900	
646.46	DURABLE 24" STOP BAR	LF								15				15	
646.51	DURABLE CROSSWALK MARKING W/ DIAGONAL LINES	LF								35				35	
646.61	TEMPORARY 4" YELLOW LINE (PAINT)	LF								900				900	
646.76	LINE STRIPING TARGETS	EA								55				55	
649.31	GEOTEXTILE UNDER STONE FILL	SY										270		270	
649.51	GEOTEXTILE FOR SILT FENCE	SY										290		290	
649.61	GEOTEXTILE FOR FILTER CURTAIN	SY										200		200	ESTIMATED
651.15	SEED	LB										70		70	
651.18	FERTILIZER	LB										500		500	
651.20	AGRICULTURAL LIMESTONE	TON										2		2	
651.25	HAY MULCH	TON										2		2	
651.35	TOPSOIL	CY								84				84	
651.40	GRUBBING MATERIAL	SY										90		90	

N.A.B.I. = NOT A BID ITEM

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
QUANTITY SHEET (4 OF 5)	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028QNT4	Sheet 6 of 71

VHB NO. 51298

plot date: 10/6/2006

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	SUPER-STRUCTURE	ABUTMENT 1	ABUTMENT 2	PIER 1	PIER 2	RETAINING WALLS	BRIDGE SUBTOTAL	ROADWAY	CHANNEL	EROSION CONTROL	FULL E & C	TOTAL	REMARKS
652.10	EROSION PREVENTION & SEDIMENT CONTROL PLAN	LS										1		1	
652.20	MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN	HR										100		100	
652.30	MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN (N.A.B.I.)	LU										1		1	
654.10	EROSION MATTING	SY										240		240	
675.20	TRAFFIC SIGNS, TYPE A	SF								6.3				6.3	
	BEGIN SIGN POST OPTIONS														
675.301	FLANGED CHANNEL SIGN POST	LF								45				45	
675.341	SQUARE TUBE SIGN POSTS AND ANCHOR	LF								45				45	
	END SIGN POST OPTIONS														
675.50	REMOVING SIGNS	EA								12				12	
675.60	ERECTING SALVAGED SIGNS	EA								9				9	
678.23	WIRED CONDUIT (2") (PVC)	LF	405						405	110				515	
678.25	PULL BOX - STANDARD	EA								1				1	
678.26	JUNCTION BOX	EA	8						8					8	
678.30	ELECTRICAL CONDUIT SLEEVE (6") (PVC)	LF								40				40	
679.45	LIGHT POLE (MOD.)	EA	8						8					8	
679.50	LUMINAIRE (MOD.)	EA	8						8					8	
995.10	INCENTIVE/DISINCENTIVE WORK ORDER (N.A.B.I.)	LU								1				1	

N.A.B.I. = NOT A BID ITEM

VHB ***Vanasse Hangen Brustlin, Inc.***

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
QUANTITY SHEET (5 OF 5)	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028QNT5	Sheet 7 of 71

VHB NO. 51298 plot date: 10/6/2006

BEGIN R.O.W. PROJECT BHF 020-2(32)
STA. 3+68.35 57.71' RT.

BEGIN BRIDGE
STA. 5+47.50
F.G. EL. 704.43

LIMIT OF WORK
RIVER STREET
(MATCH EXISTING WIDTH)

BEGIN PROJECT
STA. 5+00.00

BEGIN APPROACH
STA. 4+00.00

STA. 5+00
67.50 LT.

STA. 5+18.40
40.30 LT.

STA. 4+49.30
17.30 LT.

LIMIT OF WORK
MOUNTAIN AVENUE
(MATCH EXISTING WIDTH)

N/F
FRITCH, STEPHEN G. & NANCY E.

DUNLEAVY, CHRISTINE Z.

TOWN OF WOODSTOCK

WOODSTOCK ASSOCIATES INC.

OTTAUQUECHEE RIVER

℄ PIER 1
STA. 6+06.50

℄ PIER 2
STA. 6+90.50

STA. 6+18.18
24.75' LT.

STA. 5+99.06
38.00 LT.

STA. 6+22.50
38.00 LT.

STA. 6+09.67 CL

STA. 6+60.86
24.75 LT.

STA. 6+53.99
CL

STA. 6+98.89
24.75 LT.

STA. 7+46.50
60.00 LT.

STA. 7+06.00
60.00 LT.

POE
Sta 52+00.00

52+00

CONST (T)
CHANNEL (P)

TEMPORARY
CONSTRUCTION LIMITS

STONE FILL TYPE IV
TEMPORARY
CONSTRUCTION LIMITS
STA. 6+01.53
24.75 RT.
STA. 5+95.00
45.00 RT.

STA. 6+46.92
24.75 RT.

STA. 6+82.50
50.00 RT.

STA. 6+93.66CL

STA. 6+88.01
24.75 RT.

STA. 5+85.00
45.00 RT.

STA. 5+45.00
45.00 RT.

STA. 4+97.00
47.70 RT.

STA. 7+06.50
48.00 RT.

STA. 7+46.50
45.00 RT.

STA. 7+25.00+(US RTE 4)
STA. 51+00.00 (CHANNEL)

STA. 7+49.50 =
STA. 6+97.00 (1938 PROJECT)

BEGIN R.O.W. PROJECT
BHF 020-2(32)
STA. 8+13.91 28.51' RT.

END BRIDGE
STA. 7+49.50
F.G. EL. 705.44

END PROJECT
STA. 8+50.00

END APPROACH
STA. 9+50.00

MCGEE, JOAN M.

MANDEL, DAVID B. & KATHIE

U.S. ROUTE 4

TH #1

TO WOODSTOCK

SEE INSERT

PROPOSED RETAINING WALL (TYP.)

CONSTRUCTION LIMITS (TYP.)

EXISTING ROW

EXCEPT RSVRE

STA. 9+72.73
24.75 LT.

STA. 9+40.50
38.5 LT.

STA. 8+46.50
38.0 RT.

STA. 8+50.80
38.8 RT.

STA. 8+16.50
30.00 RT.

STA. 8+03.20
18.47 RT.

STA. 8+00.43
16.00 RT.

STA. 7+85.69
16.00 RT.

STA. 7+82.40
18.47 RT.

CHURCH STREET EXT.

LIMIT OF WORK
CHURCH STREET EXTENSION
(MATCH EXISTING WIDTH)

8 TAMARACK TREES TO BE REMOVED BY PROPERTY OWNER PRIOR TO CONSTRUCTION

KEY

LIMITS OF COLD PLANING AND PAVEMENT OVERLAY

4A detail:
STA. 7+85.69 16.00 RT.
STA. 8+00.43 16.00 RT.
14.74'
3.89'
34SQ'
20.80'
3.45'
STA. 7+82.40 18.47 RT.
STA. 8+03.20 18.47 RT.
NOT TO SCALE

PLAN
SCALE: 1" = 20'

FOR R.O.W. USE ONLY

LEGEND

- EXISTING UNDERGROUND WATER LINE
- TOP OF CUT TO MATCH EXISTING
- TOE OF SLOPE TO MATCH EXISTING
- PROPOSED LIGHT POLE
- HYDRANT
- VALVE
- MANHOLE
- MAILBOX
- SIGNS
- UTILITY POLE GUY WIRE
- GAS SHUTOFF
- LIGHT POLE

CONSTRUCTION NOTES

REMOVE EXISTING WATERLINE
STA 5+09.0 - STA 8+10.0 LT

REMOVE EXISTING DROP INLET
STA 7+62.5 LT

REMOVE EXISTING CURB
STA 5+03.0 - STA 5+53.0 LT
STA 7+55.0 - STA 9+50.0 LT

REMOVE EXISTING GUARD RAIL
STA 5+16.4 - STA 5+42.3 RT
STA 5+30.1 - STA 5+53.8 LT
STA 7+44.4 - STA 8+48.4 RT
STA 7+55.7 - STA 9+32.4 LT

REMOVE EXISTING SIDEWALK
STA 5+03.0 - STA 5+53.0 LT
STA 7+55.0 - STA 9+50.0 LT

ALUMINUM APPROACH RAILING
STA 5+15.2 - STA 5+42.3 RT
STA 5+31.5 - STA 5+55.0 LT
STA 7+44.2 - STA 7+69.2 RT
STA 7+56.5 - STA 7+81.5 LT

STEEL BEAM GUARD RAIL
STA 5+00.6 - STA 5+15.2 RT
STA 5+09.0 - STA 5+31.5 LT
STA 7+69.2 - STA 8+63.0 RT
STA 7+81.5 - STA 9+41.0 LT

ANCHOR FOR STEEL BEAM GUARD RAIL
STA 5+09.1 RT
STA 5+10.3 LT
STA 8+50.8 RT
STA 9+26.9 LT

VERTICAL GRANITE CURB
STA 4+97.0 RT 28.7' - STA 5+42.4 RT 14.0'
STA 5+03.3 LT 41.1' - STA 5+52.6 LT 14.0'
STA 7+44.4 RT 14.0' - STA 8+86.8 RT 32.9'
STA 7+54.6 LT 14.0' - STA 9+39.1 LT 14.7'

DURABLE 4" YELLOW LINE (DOUBLE CENTER LINE)
STA 4+00.0 - STA 9+50.0

COLD PLANING - BITUMINOUS PAVEMENT
STA 4+13.0 - STA 5+16.3 LT
STA 8+75.0 - STA 9+50.0 RT

CONSTRUCT SIDEWALK
STA 5+07.1 LT 47.5' - STA 5+52.6 LT 14.0'
STA 7+54.6 LT 14.0' - STA 9+47.3 LT 14.7'

CONSTRUCT SIDEWALK RAMP, TYPE 1
(SEE STD. C-3A)
STA 9+47.3 LT

CONSTRUCT SIDEWALK RAMP, TYPE 6
(SEE STD. C-3)
STA 5+07.1 LT

CONSTRUCT DRIVE (PAVED APRON)
STA 4+33.8 - STA 5+13.5 RT
2" BCP, TYPE III

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
R.O.W. PLAN	
Designed By B.J. MASSE	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 6/04	Bridge Design Supervisor M.A. COLGAN Date 6/04
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	SEP 14 2006
R.O.W. SHEET 11 OF 11 SHEETS	SHEET 8 OF 71

STATE OF VERMONT
AGENCY OF TRANSPORTATION

RIGHT - OF - WAY DETAIL SHEET

TABLE OF PROPERTY ACQUISITION

PARCEL NO.	PROPERTY OWNER	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKE	REMAINDER	RIGHT			RECORDING DATA					REMARKS
					AREA±	AREA±	TYPE	(T)/(P)	AREA ±	TITLE	DATE	TOWN / CITY	BOOK	PAGE	
1A	WOODSTOCK ASSOCIATES, INC.	11	3+68.35 RT.	4+60.84 RT.			CONST.	(T)	3032 SF±	WD	11/29/05	WOODSTOCK	195	110-112	INCLUDES SNOWFENCE
1B		11	5+29.61 RT.	5+68.29 RT.			CONST.	(T)	299 SF±						INCLUDES PDF & EROSION CONTROL
1C		11	6+01.53 RT.	6+53.99 CL	1111SF±		ALL R.T. & I.								HWY. EASE. U.S. RTE. 4 (T.H. 1)
2	DUNLEAVY, CHRISTINE Z.	11	6+09.67 CL	6+60.86 LT.	1079 SF±		ALL R.T. & I.			WD	12/13/05	WOODSTOCK	195	334-335	HWY. EASE. U.S. RTE. 4 (T.H. 1)
3	MCGEE, JOAN M.	11	6+53.99 CL	6+98.87 LT.	976 SF±		ALL R.T. & I.			WD	10/07/05	WOODSTOCK	194	181-182	HWY. EASE. U.S. RTE. 4 (T.H.1)
			6+72.33 LT.	7+01.78 LT.			CONST.	(T)	357 SF±						
			6+82.78 LT.	6+99.69 LT.			CHANNEL	(P)	66 SF±						
4A	MANDEL, DAVID B. & KATHIE	11	7+82.40 RT.	8+03.20 RT.	34 SF±					WD	11/29/05	WOODSTOCK	195	105-107	
			7+77.76 RT.	8+07.34 RT.			SLOPE	(P)	49 SF±						
			7+53.80 RT.	8+13.91 RT.			INSTALL	(T)	176 SF±						SNOW FENCE & EROSION CONTROL
			8+55.68 RT.	8+67.60 RT.			EXCEPT & RESERVE								WOOD FENCE
4B		11	6+46.92 RT.	6+93.66 CL	1006 SF±		ALL R.T. & I.								HWY. EASE. U.S. RTE. 4 (T.H. 1)
			6+64.67 RT.	6+88.01 RT.			CHANNEL	(P)	32 SF±						
			6+53.04 RT.	6+87.78 RT.			CONST.	(T)	395 SF±						
5	VERIZON NEW ENGLAND, INC.														UTILITY
6	CENTRAL VERMONT PUBLIC SERVICE CORPORATION														UTILITY
7	WOODSTOCK AQUEDUCT COMPANY														UTILITY

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION	DATE
1	10,11	PARCEL NO. 2 DUNLEAVY. DELETE CONST. (T).	03/16/05
		DELETE SUB-PARCEL 2A. PER C.O. 9408.	
		MADE BY: M.R. APROVED BY: R.P.D.	
2	10,11	PARCEL NO. 4 MANDEL. ADD LANDSCAPE (T) AT STATION	03/16/05
		7+50 RT. ~ 8+25+00 RT. PER C.O. 9409.	
		MADE BY: M.R. APPROVED BY: R.P.D.	
3	10,11	PARCEL NO. 4 MANDEL. REMOVE LANDSCAPE (T) AT STA.	06/01/05
		7+50 RT. ~ 8+25+00 RT. PER C.O. 9423.	
		MADE BY: M.R. APPROVED BY: R.P.D.	
4	10,11	PARCEL NO. 3 MCGEE. REMOVE F. ALLEN MCGEE FROM	07/11/05
		PLANS AND DOCUMENTS. PER C.O. 9430.	
		MADE BY: M.R. APPROVED BY: R.P.D.	
		PAPER PRINTS TO STRUCTURES 9/14/06	

PLOT DATE 09/14/06

PLAN LEGEND

- EXISTING RIGHT-OF-WAY
- TAKING WITH ACCESS
- TAKING WITHOUT ACCESS
- CLEAR ZONE (CZ)
- PROPERTY LINE (P / L)
- TOE OF SLOPE
- TOP OF CUT
- SLOPE RIGHT (SR (P))
- CONSTRUCTION RIGHT (CONST. (T))
- PROJECT DEMARCATION FENCE (PDF — PDF)

(P) -PERMANENT
(T) -TEMPORARY
DR. -DRAINAGE RIGHT
DIT. -DITCHING RIGHT
CH. -CHANNEL RIGHT
DRIVE -DRIVE RIGHT
CUL. -CULVERT RIGHT
C&T -CLEARING & TRIMMING RIGHT
SR -SLOPE RIGHT
UE -UTILITY EASEMENT

APPROVED: ROGER P. DUMAS DATE: 02-02-05
CHIEF, PLANS & TITLES

PROJECT NAME: **WOODSTOCK**
PROJECT NUMBER: **BHF 020-2(32)**
SEP 14 2006

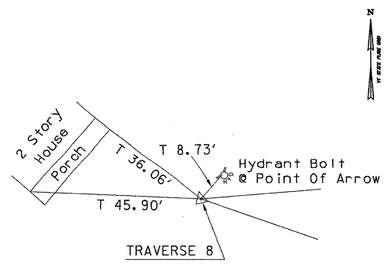
FILE NAME: **93J028**
PROJECT LEADER: **C. WILLIAMS**
DESIGNED BY:
R.O.W. SHEET 10 OF 11

PLOT DATE:
DRAWN BY: **MR**
CHECKED BY: **RF**
SHEET **9** OF **71**

TRAVERSE TIES

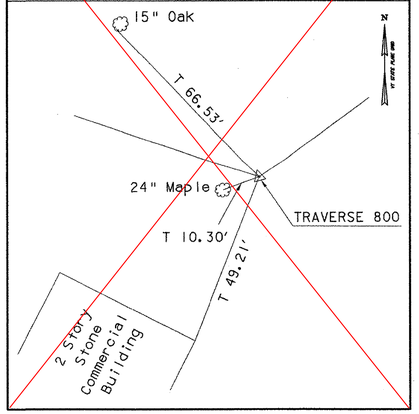
TRAVERSE #8

~~NORTH = 109045.778~~
~~EAST = 133418.399~~
~~ELEVATION = 704.204~~



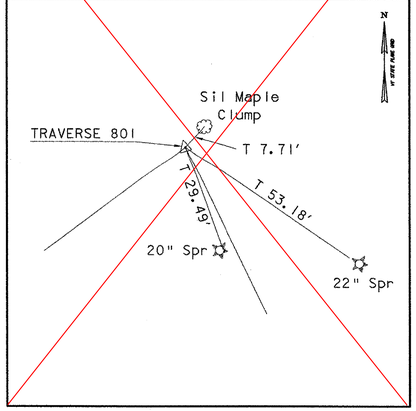
TRAVERSE #800

NORTH = 108954.498
EAST = 133555.694
ELEVATION = 699.614



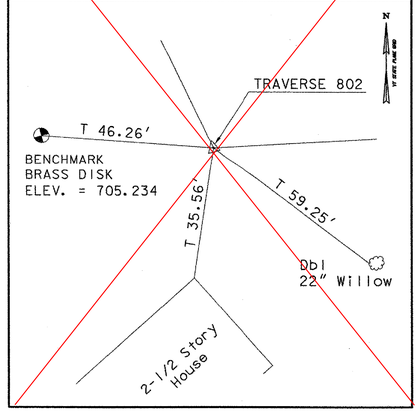
TRAVERSE #801

NORTH = 109051.191
EAST = 133797.022
ELEVATION = 687.774



TRAVERSE #802

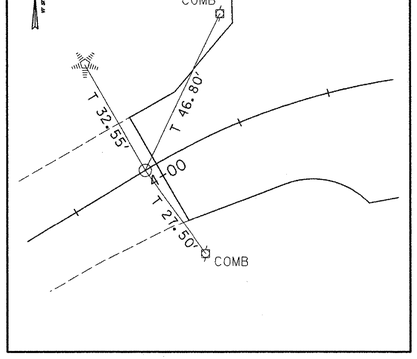
NORTH = 108984.879
EAST = 133810.090
ELEVATION = 705.615



ALIGNMENT TIES

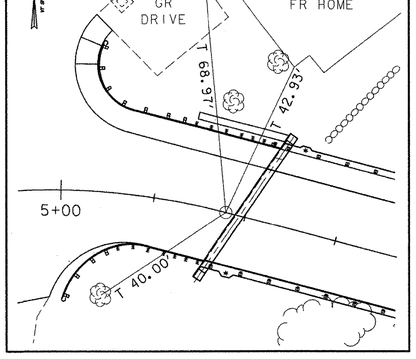
PC 3+96.56

~~NORTH = 109014.975~~
~~EAST = 133415.908~~



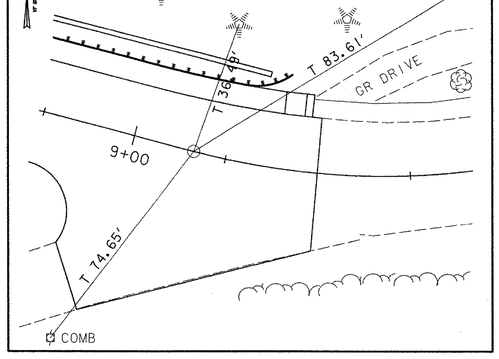
PT 5+44.73

~~NORTH = 109035.582~~
~~EAST = 133558.665~~



PC 9+16.32

~~NORTH = 108941.101~~
~~EAST = 133918.049~~



DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83 (92)

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

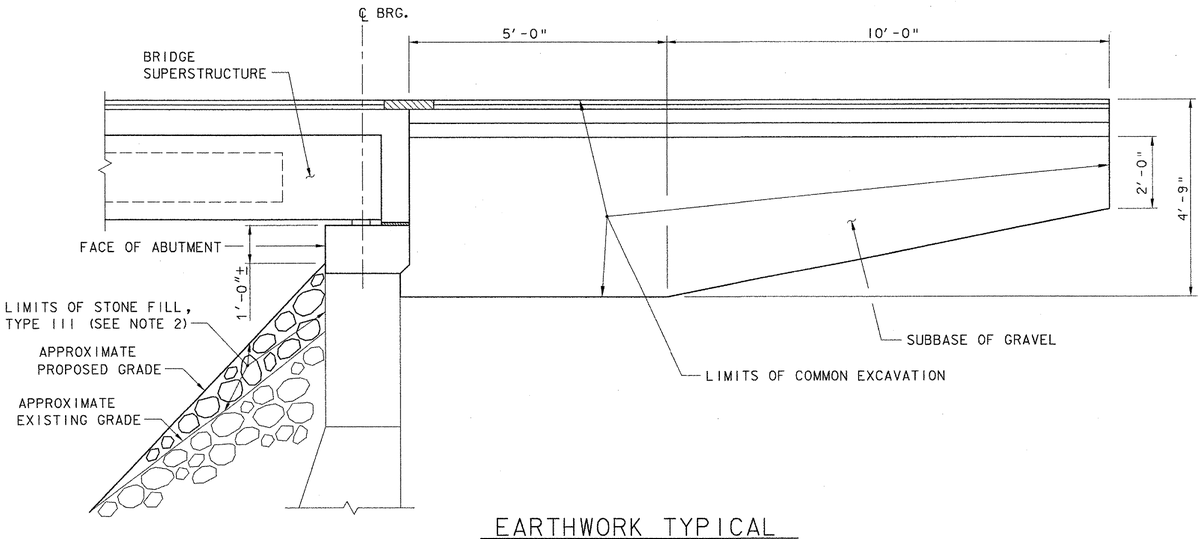
Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

SURVEY TIE SHEET

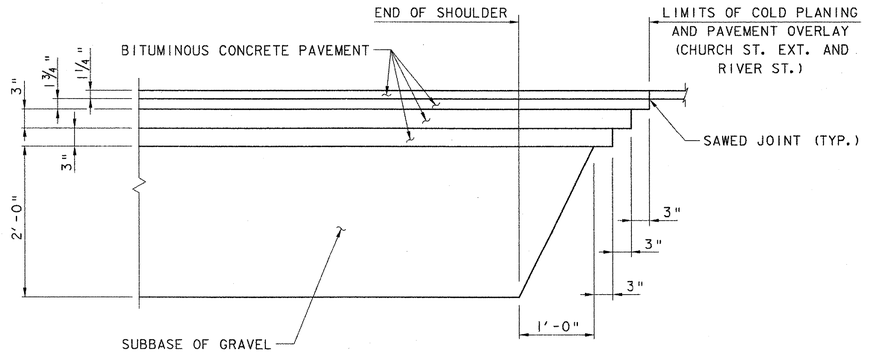
Designed By BRUNO ASSOC.	Drawn By B.J. MASSE
Checked By Date BRUNO/B.J.M. 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028TIE	Sheet 10 of 71

VHB NO. 51298 plot date: 9/14/2006



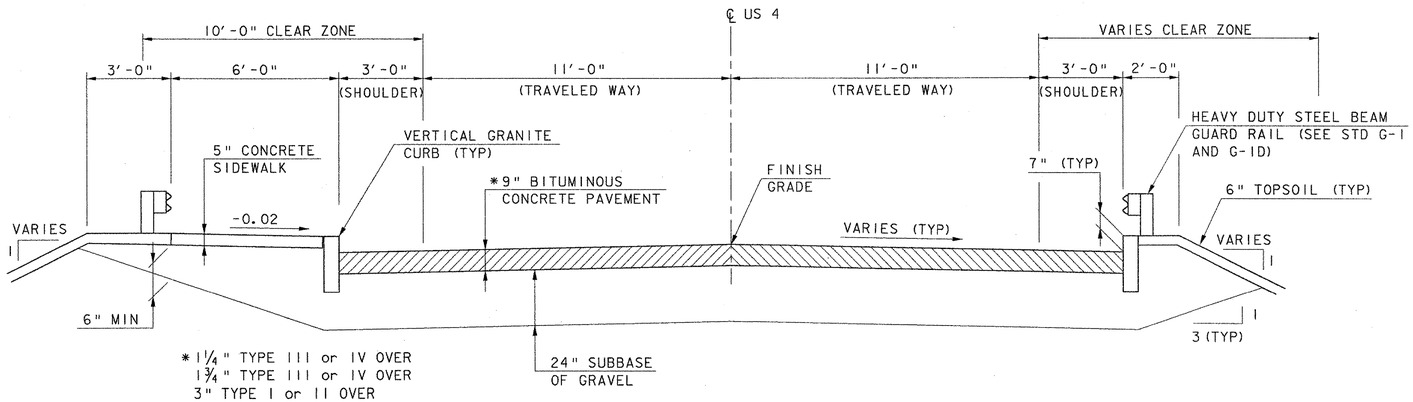
EARTHWORK TYPICAL

NOT TO SCALE



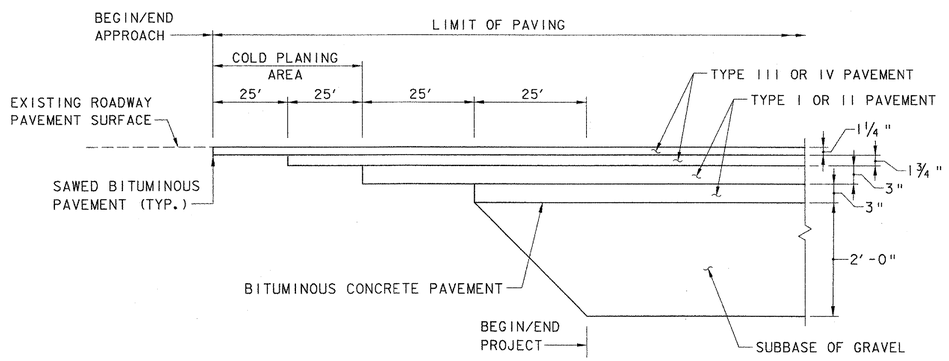
TRANSVERSE ROADWAY TRANSITION DETAIL

NOT TO SCALE



ROADWAY TYPICAL SECTION

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



MATERIAL TRANSITION DETAIL

NOT TO SCALE

NOTES:

1. SEE SHEET 24 FOR BRIDGE TYPICAL SECTION.
2. SEE SHEET 22, CONSTRUCTION NOTE 10 FOR ADDITIONAL STONE FILL INFORMATION.

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83 (92)

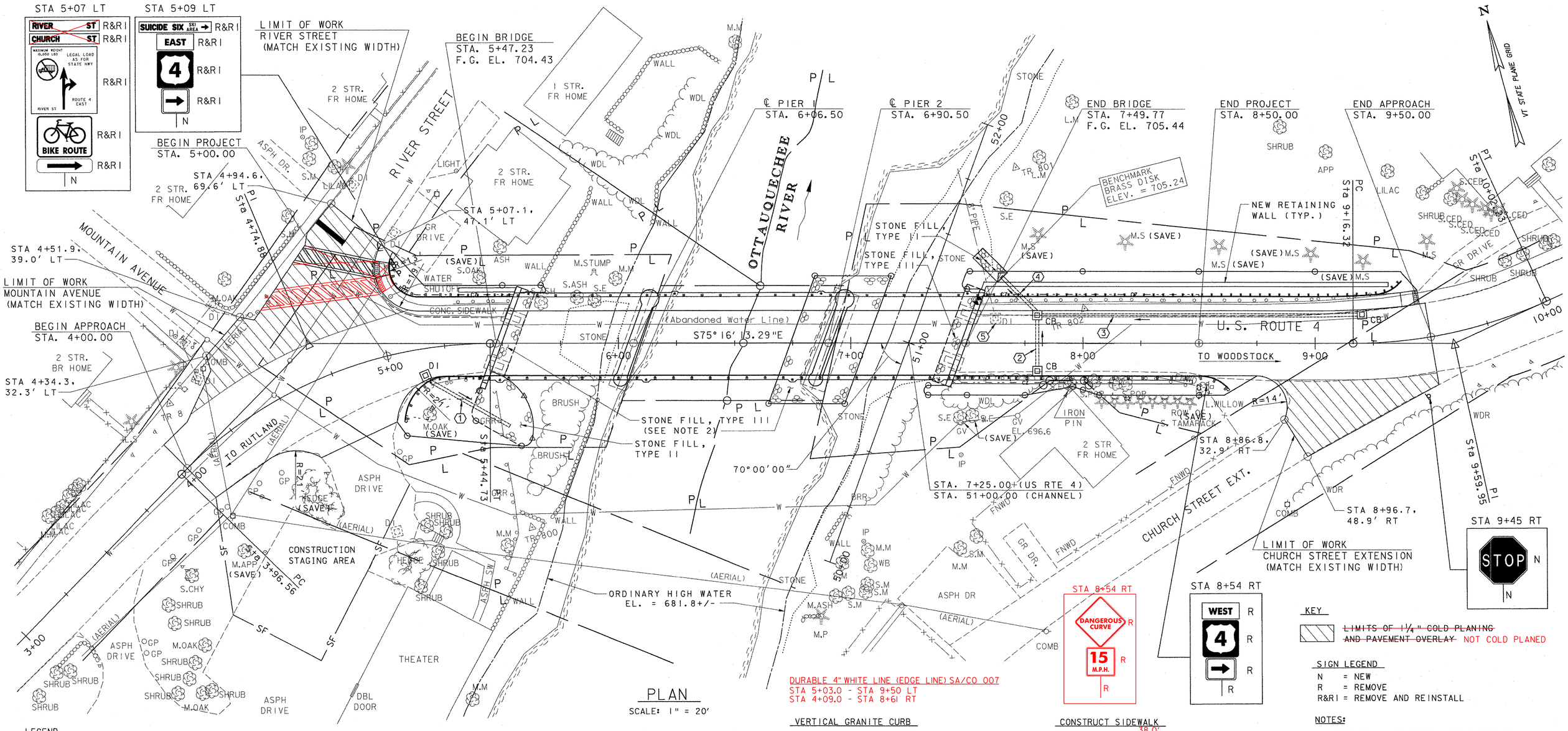
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
TYPICAL SECTION & DETAILS	
Designed By J.T.K./J.A.M.	Drawn By B.J. MASSE
Checked By Date T.S. BRYANT 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028TDS	Sheet 11 of 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

plot date: 10/11/2006



PLAN

SCALE: 1" = 20'

LEGEND

- SF — SNOW FENCE (MOD. - ARCH)
- W — EXISTING UNDERGROUND WATER LINE
- TOP OF CUT TO MATCH EXISTING
- TOE OF SLOPE TO MATCH EXISTING
- PROPOSED LIGHT POLE
- HYD — HYDRANT
- VALVE
- MANHOLE
- MAILBOX
- SIGNS
- UTILITY POLE GUY WIRE
- GAS SHUTOFF
- LIGHT POLE

CONSTRUCTION NOTES

REMOVE EXISTING WATERLINE
(INCL. IN TRENCH EXCAVATION OF EARTH)
STA 5+20.0 ~~5+09.0~~ - STA 5+50.1 LT
STA 7+52.7 - STA ~~8+10.0~~ 8+05 LT

REMOVE EXISTING CURB
STA 5+03.0 - STA 5+53.0 LT
STA 7+55.0 - STA 9+50.0 LT

REMOVE EXISTING GUARD RAIL
STA 5+16.4 - STA 5+42.3 RT
STA 5+30.1 - STA 5+53.8 LT
STA 7+44.4 - STA 8+48.4 RT
STA 7+55.7 - STA 9+32.4 LT

DETECTABLE WARNING SURFACE
STA 5+02.8 - STA 5+04.8 LT
~~STA 9+45.0 - STA 9+47.2 LT~~ NOT INSTALLED PER JOHN KAPLAN VAOT

ALUMINUM APPROACH RAILING (ANODIZED BLACK)
STA 5+15.2 - STA 5+42.3 RT
STA 5+31.5 - STA 5+55.0 LT
STA 7+44.2 - STA 7+69.2 RT
STA 7+56.5 - STA 9+41.0 LT

HEAVY DUTY STEEL BEAM GUARD RAIL ~~(GALVANIZED)~~ PAINTED BLACK
STA 5+00.6 - STA 5+15.2 RT
STA 5+09.0 - STA 5+31.5 LT
STA 7+69.2 - STA 8+63.0 RT

ANCHOR FOR STEEL BEAM RAIL
STA 5+09.1 RT
STA 5+10.3 LT
STA 8+50.8 RT

DURABLE 4" WHITE LINE (EDGE LINE) SA/CO 007
STA 5+03.0 - STA 9+50 LT
STA 4+09.0 - STA 8+61 RT

VERTICAL GRANITE CURB
STA 4+97.0 RT 28.7' - STA 5+42.4 RT 14.0'
STA 5+03.3 LT 41.1' - STA 5+52.6 LT 14.0'
STA 7+44.4 RT 14.0' - STA 8+86.8 RT 32.9'
STA 7+54.6 LT 14.0' - STA ~~9+39.1~~ 9+38.0 LT 14.7'

DURABLE 4" YELLOW LINE (DOUBLE CENTER LINE)
STA 5+00.0 - STA ~~9+50.0~~ 9+14.0

DURABLE CROSSWALK MARKING W/ DIAGONAL LINES
STA 4+79.6 - STA 5+06.5 LT SEE PLAN FOR LOCATION

DURABLE 24" STOP BAR
STA 4+88.7 - STA 4+95.0 LT
STA 9+15.0 - STA 9+29.0 RT

COLD PLANING - BITUMINOUS PAVEMENT
STA 4+13.0 - STA 5+16.3 LT
STA 8+75.0 - STA 9+50.0 RT

CONSTRUCT DRIVE (PAVED APRON)
STA 4+33.8 - STA 5+13.5 RT
~~2~~ 3" BCP, TYPE III

CONSTRUCT SIDEWALK
STA 5+07.1 LT ~~47.5'~~ 38.0' - STA 5+52.6 LT 14.0'
STA 7+54.6 LT 14.0' - STA ~~9+47.3~~ 9+38.0 LT 14.7'

CONSTRUCT SIDEWALK RAMP, TYPE I
(SEE STD. C-3A)
~~STA 9+47.3 LT~~
NOT INSTALLED PER JOHN KAPLAN VAOT

CONSTRUCT SIDEWALK RAMP, TYPE 6
(SEE STD. C-3B)
STA 5+07.1 LT

REMOVING AND RESETTING FENCE
(MOD. - STONE WALL)
~~STA 5+66.1 LT 25.0'~~ - ~~STA 5+73.2 LT 38.0'~~
STA 5+62.0 LT 25.0' - STA 5+70.0 LT 33'

KEY
~~LIMITS OF 1 1/4" COLD PLANING AND PAVEMENT OVERLAY~~ NOT COLD PLANED

SIGN LEGEND
N = NEW
R = REMOVE
R&RI = REMOVE AND REINSTALL

NOTES:
1. FOR DRAINAGE NOTES, SEE SHEET 23.
2. SEE SHEET 22, CONSTRUCTION NOTE 10 FOR ADDITIONAL STONE FILL INFORMATION.

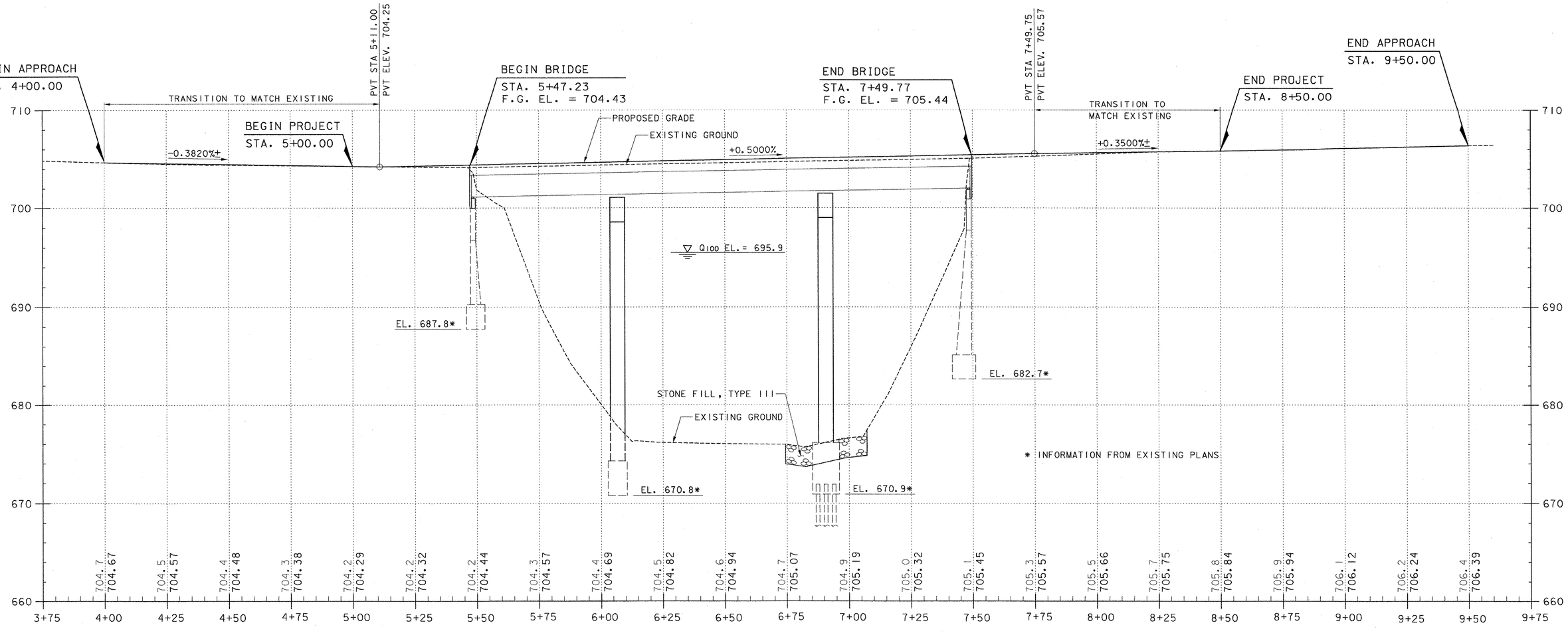
VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

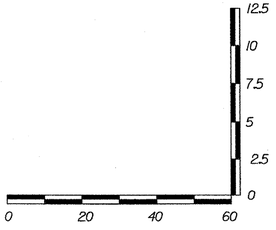
Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
PLAN	
Designed By B. J. MASSE	Drawn By B. J. MASSE
Checked By J. T. KLEIN Date 10/06	Bridge Design Supervisor M. A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028PLN	Sheet 12 of 71

VHB NO. 51298

plot date: 10/11/2006



US ROUTE 4 PROFILE



HORIZONTAL SCALE = 1 : 20
VERTICAL SCALE = 1 : 5

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
PROFILE	
Designed By B.J. MASSE	Drawn By B.J. MASSE
Checked By K.G. KRETSCH Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028PRF	Sheet 13 of 71

VHB NO. 51298

plot date: 10/11/2006

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TRAFFIC SIGN SUMMARY SHEET

MILE MARKER, 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	FOUND-ATION	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 FRAME REQUIRED	REMARKS	SIGN DETAIL DETAIL ON SHEET NUMBER	STD. SHEET NUMBER
											OPTION ITEMS																										
US ROUTE 4																																				
5+07 LT	RIVER ST CHURCH ST MAXIMUM WEIGHT 16,000 LBS — LEGAL LOAD AS FOR STATE HWY RIVER ST — ROUTE 4 EAST BIKE ROUTE	1 1 1 1 1					~~X~~ ~~X~~ X X X				1			X			~~X~~																			
5+09 LT	SUICIDE SIX SKI AREA → EAST 4	1 1 1 1					X X X X				1			X			~~X~~																			
9+45 RT	STOP	1	30	30	6.3						1			X			~~X~~																			E-143
											FT	FT	FT 45	FT	FT	FT ~~45~~		EA	LB	LB	LB		LB	LB	LB	LB									
	TOTALS				SF 6.3	SF	EA. ~~9~~ 7	SF			FT 45			FT ~~45~~			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 & SAFETY DIVISION'S "SIGN POST DESIGN GUIDELINE."

AVERAGE POST LENGTH = 15 FT

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
TRAFFIC SIGN SUMMARY SHEET	
Designed By B.J. MASSE	Drawn By B.J. MASSE
Checked By Date J.T. KLEIN 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028TS2	Sheet 14 of 71

VHB NO. 51298 plot date: 9/14/2006

REGIONAL DETOUR SIGN LOCATION NOTES:

1△ US 4 EB:

INSTALL TWO PORTABLE CHANGEABLE MESSAGE SIGNS "K" AND "L", THEN SIGNS "P" OR "Q" DEPENDING ON PROXIMITY TO LEFT TURN. OPTIONALLY, INSTALL SIGNS "Q" OR "R" IN GORE NEXT TO VT100 NB, THEN INSTALL SIGNS "A" EAST OF JUNCTION WITH KILLINGTON ACCESS ROAD AFTER VT100 INTERSECTION.

VT100 NB:

INSTALL CONFIRMATION SIGNS "S" JUST NORTH OF SLIP RAMP FROM US4 WB TO VT100 NB.

2△ VT100 NB (PITTSFIELD):

INSTALL CONFIRMATION SIGNS "S" 11 MILES FROM VT100/VT107, AT 8 MILE POINT ALONG VT100/VT107, JUST NORTH OF "PIT-STOP" CONVENIENCE STORE.

VT100 SB (PITTSFIELD):

INSTALL CONFIRMATION SIGNS "T" AT 8 MILE POINT ALONG VT100/VT107, JUST SOUTH OF "COUNTRY STORE" ON SOUTH END OF VILLAGE.

3△ JUNCTION OF VT100/VT107 IN STOCKBRIDGE AND DISTRICT 3/DISTRICT 4 MAINTENANCE CHANGE POINT

VT100 NB:

INSTALL SIGNS "U" NEXT TO EXISTING VT100 NB (LEFT) AND VT107 EB (RIGHT) SIGNS.

VT100 SB:

INSTALL INFORMATIONAL SIGN "B" IN ADVANCE OF JUNCTION, THEN INSTALL CONFIRMATION SIGNS "T" AFTER INTERSECTION.

VT107 EB:

INSTALL CONFIRMATION SIGNS "S" BEYOND INTERSECTION.

VT107 WB:

INSTALL SIGNS "V" BETWEEN VT100/VT107 JUNCTION AND EXISTING VT100 SB (AHEAD) AND VT100 NB (RIGHT) SIGNS.

4△ JUNCTION OF VT107/VT12 SB IN BETHEL

VT107 EB:

INSTALL SIGNS "JJ" IN ADVANCE OF THE INTERSECTION. INSTALL CONFIRMATION SIGN "S" AFTER THE INTERSECTION.

VT107 WB:

INSTALL SIGNS "V" IN ADVANCE OF THE INTERSECTION. INSTALL CONFIRMATION SIGN "T" AFTER THE INTERSECTION.

VT12 SB:

INSTALL INFORMATIONAL SIGN "B".

5△ JUNCTION OF VT107/VT12 NB IN BETHEL

VT107 EB:

INSTALL SIGNS "W" IN ADVANCE OF INTERSECTION NEXT TO EXISTING JCT 12 SIGNS OR SIGNS "U" NEXT TO MULTI-ROUTE MARKER ASSEMBLE AT RAILROAD UNDERPASS. THEN INSTALL CONFIRMATION SIGNS "S" JUST EAST OF THE INTERSECTION.

VT107 WB:

INSTALL SIGNS "X" IN ADVANCE OF INTERSECTION JUST WEST OF THE MULTI-SIGN ROUTE MARKER ASSEMBLY. THEN INSTALL CONFIRMATION SIGNS "T" JUST WEST OF THE INTERSECTION NEXT TO EXISTING VT107 WEST AT RAILROAD UNDERPASS.

6△ VT107 AT I-89 EXIT 3 IN ROYALTON

VT107 EB:

INSTALL SIGNS "P" IN ADVANCE OF EXIT 3 SB ON-RAMP, BETWEEN JCT. I-89 SIGN AND LARGE TYPE B SIGN (I-89 S WHITE RIVER JUNCTION LEFT LANE).

I-89 SB ON RAMP C:

INSTALL SIGNS "Y" AT THE BEGINNING OF ON-RAMP FOR CONFIRMATION.

I-89 SB:

INSTALL INFORMATIONAL PCMS SIGNS "K" ON MAINLINE IN ADVANCE OF THE INTERCHANGE. RECOMMENDED LOCATION IS IN CENTERLINE AT 22.93+/- FOR MAXIMUM VISIBILITY.

I-89 NB OFF RAMP C:

INSTALL SIGNS "Z" AT THE END OF OFF-RAMP.

VT 107 WB:

INSTALL CONFIRMATION SIGNS "AA" WEST OF SB OFF RAMP "D".

I-89 NB:

SIGNS IN THE LIST TO FOLLOW MAY BE LARGER THAN TYPICAL. INSTALL SIGNS "AA" OR "BB" NEXT TO OR JUST BEYOND 1 MILE GUIDE SIGN. INSTALL SIGNS "BB" JUST NORTH OF 1/4 MILE GUIDE SIGN (BEFORE BRIDGE). INSTALL SIGNS "CC" ON NORTH END OF BRIDGE AT APPROXIMATE BEGIN OF DECELERATION LANE TAPER.

7△ I-89 AT EXIT 2 IN SHARON:

I-89 SB:

SIGNS IN THE LIST TO FOLLOW MAY BE LARGER THAN TYPICAL. INSTALL SIGNS "DD" NEXT TO (LEFT OF) OR JUST BEYOND EXIT DIRECTIONAL GUIDE SIGN OR JUST BEYOND (SOUTH OF) THE EXIT 2 GORE SIGN (WITHOUT CARDINAL ARROW).

I-89 NB:

SIGNS IN THE LIST TO FOLLOW MAY BE LARGER THAN TYPICAL. INSTALL SIGNS "EE" NEXT TO (LEFT OF) OR JUST BEYOND EXIT DIRECTIONAL GUIDE SIGN OR JUST BEYOND (NORTH OF) THE EXIT 2 GORE SIGN (WITHOUT CARDINAL ARROW).

8△ I-89 AT EXIT 1 IN HARTFORD:

I-89 SB:

PCMS SIGN "K" AT MILE MARKER 4.70 +/- RT AND SIGN "M" AT MILE MARKER 4.22 +/- RT.

I-89 NB:

PCMS SIGN "K" AT MILE MARKER 2.90 +/- RT AND SIGN "N" AT MILE MARKER 3.27 +/-. THEN INSTALL SIGNS "FF" AT MILE MARKER 3.42 IN ADVANCE OF OFF RAMP AFTER SECOND PCMS. INSTALL SIGNS "AA" AT MILE MARKER 4.12 +/- BEYOND THE ON RAMP.

US4 WB:

INSTALL SIGN "C" AT THE WEST END OF THE NORTH SIDE PULL-OFF AT MILE MARKER 6.97 +/-. INSTALL SIGN "D" BEHIND RAIL ON NORTH SIDE JUST BEYOND DRIVE. THEN INSTALL SIGNS "GG" IN B-POSITION AT NB ON RAMP, THEN INSTALL SIGN "E" AT MILE MARKER 5.83 +/- NEAR US4 WEST SIGN.

9△ US5 AT I-91 EXIT 9 IN HARTLAND:

US5 NB:

INSTALL INFORMATIONAL SIGN "C" JUST NORTH OF SB OFF RAMP ON RIGHT SIDE AT MILE MARKER 0.66 +/-. INSTALL A SECOND SIGN ON VT12 JUST NORTH OF JUNCTION WITH US5.

I-91 NB:

INSTALL PCMS "K" AT MILE MARKER 61.3 +/- RT. INSTALL INFORMATIONAL PCMS "O" AT MILE MARKER 61.0 +/- RT TO GUIDE VT12 NB TRAFFIC TO USE THE DETOUR TO THE NORTH.

10△ VT131 AT I-91 EXIT 8 IN WEATHERSFIELD:

VT131 WB:

INSTALL INFORMATIONAL SIGN "C" IN ADVANCE OF NB ON RAMP AT MILE MARKER 8.48 +/-.

11△ VT106 AT VT131 IN WEATHERSFIELD:

VT106 NB:

INSTALL INFORMATIONAL SIGN "C" ON RIGHT SIDE AT MILE MARKER 4.34 +/-.

12△ VT100 AT VT100A IN PLYMOUTH:

VT100 NB:

INSTALL INFORMATIONAL SIGN "C" AT FORMER SPOT FOR BRIDGE CLOSED SIGN IN ADVANCE OF INTERSECTION AT MILE MARKER 5.08 +/-.

13△ VT100 AT US4 IN BRIDGEWATER:

US4 EB:

INSTALL INFORMATIONAL PCMS "K" IN ADVANCE OF INTERSECTION IN KILLINGTON JUST WEST OF MILE MARKER 8.31 +/-, THEN INSTALL SIGN "F" EAST OF INTERSECTION AT MILE MARKER 0.33 +/- IN BRIDGEWATER.

VT100 NB:

INSTALL SIGN "C".

14△ US4 AT VT100A IN BRIDGEWATER:

US4 EB:

INSTALL SIGN "C" IN ADVANCE OF JUNCTION, THEN INSTALL SIGN "G".

VT100A NB:

INSTALL SIGN "C".

15△ US4 AT VT12 IN HARTLAND:

US4 WB:

INSTALL SIGN "H" JUST WEST OF JUNCTION WITH VT12 AT MILE MARKER 0.12 +/-.

VT12 NB:

INSTALL SIGN "C" IN ADVANCE OF JUNCTION WITH US4.

16△ US4 AT VT12 AND AT VT106:

US4 WB:

INSTALL SIGNS "CC" IN ADVANCE OF JUNCTION WITH PLEASANT STREET AT MILE MARKER 6.55 +/-, THEN INSTALL SIGN "I" JUST WEST OF JUNCTION WITH PLEASANT STREET IN GREEN AT MILE MARKER 6.49 +/-.

PLEASANT ST (TH5) WB:

INSTALL SIGNS "AA" JUST WEST OF JUNCTION WITH US4, THEN INSTALL SIGNS "Z" AT JUNCTION WITH ELM STREET (TH3).

ELM ST (TH3), VT12:

INSTALL SIGNS "Z" AT JUNCTION WITH RIVER ST NEXT TO VT12 NB SIGN ASSEMBLY AT MILE MARKER 0.28 +/-.

VT12 NB:

INSTALL SIGNS "EE" IN ADVANCE OF POMFRET ROAD (TH-1) AT MILE MARKER 1.10 +/-, THEN INSTALL CONFIRMATION SIGN "AA" JUST NORTH OF JUNCTION WITH POMFRET ROAD AT MILE MARKER 1.18 +/-.

VT106 NB:

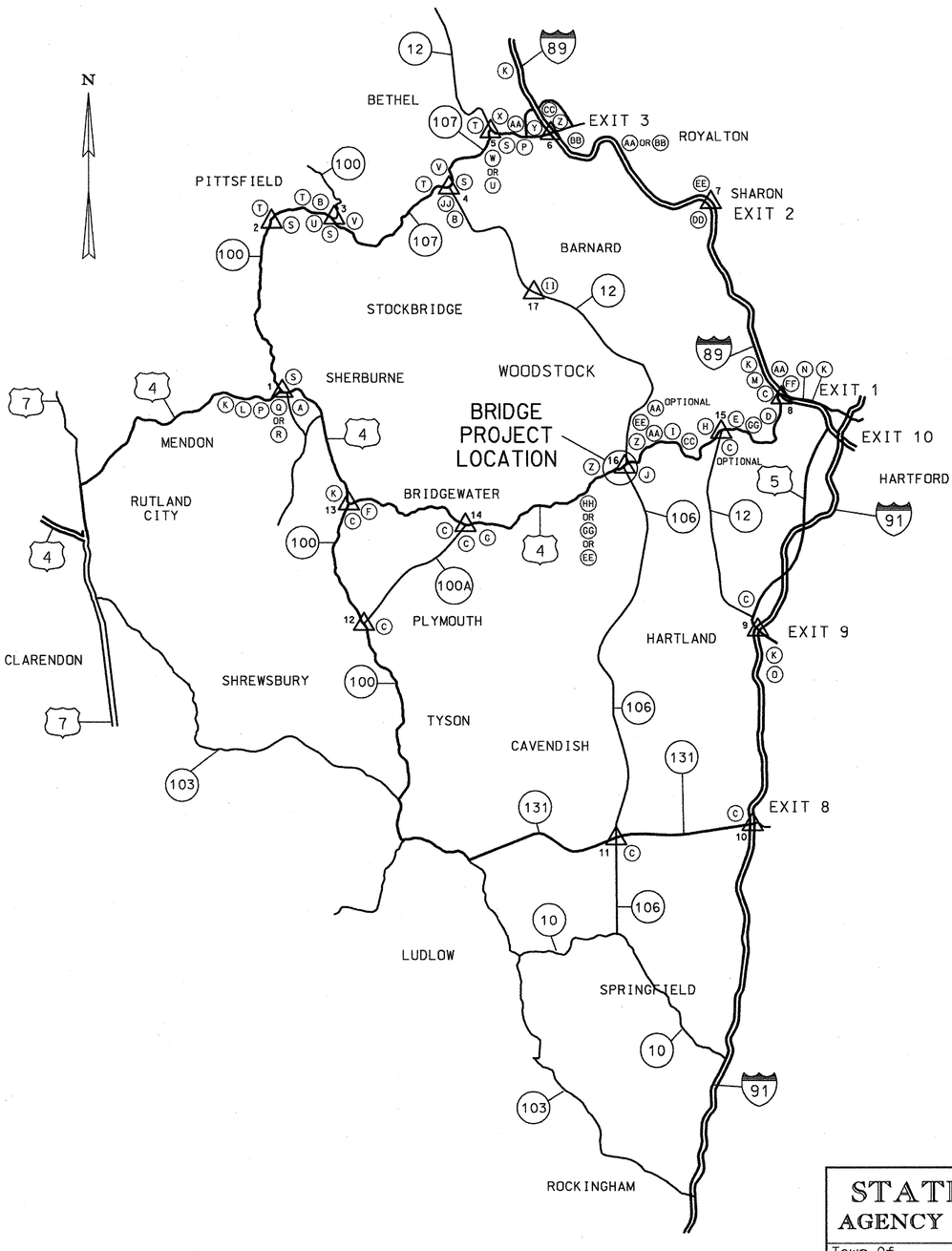
INSTALL SIGN "J" IN ADVANCE OF JUNCTION WITH US 4 ON SOUTH ST (VT 106) OR AT VILLAGE GREEN ACROSS FROM STOP SIGN TO THE RIGHT OF SIGNS FOR US4 WB AND EB.

US4 EB (THE GREEN):

INSTALL SIGN "HH", "GG", OR "EE" IN ADVANCE OF JUNCTION WITH ELM ST (TH3) (VT12).

17△ VT12 NB:

INSTALL SIGNS "II" JUST NORTH OF JUNCTION WITH NORTH ROAD (TH3) IN BARNARD VILLAGE.



REGIONAL TRAFFIC CONTROL PLAN

NOT TO SCALE

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
REGIONAL DETOUR	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date 10/06	Bridge Design Supervisor M. A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DTR2	Sheet 15 of 71

VHB NO. 51298

plot date: 10/11/2006

A	BRIDGE CLOSED US-4 WOODSTOCK 20 MILES AHEAD 5/29 TO 6/24	G	BRIDGE CLOSED US-4 WOODSTOCK 8 MILES AHEAD 5/29 TO 6/24	M	WOODSTCK ~~VILLAGE~~ USE EX 1 QUECHEE US 4 THRU TRAF USE 191 EX 8	S	DETOUR EAST 4	Y	DETOUR TO EAST 4	EE	DETOUR TO WEST 4 ↖
B	BRIDGE CLOSED US-4 WOODSTOCK W. OF JCT VT-12 5/29 TO 6/24	H	BRIDGE CLOSED US-4 WOODSTOCK 4 MILES AHEAD 5/29 TO 6/24	N	WOODSTCK ~~VILLAGE~~ USE EX 1 QUECHEE US 4 THRU TRAFFIC USE EX 3	T	DETOUR WEST 4	Z	DETOUR TO WEST 4 →	FF	DETOUR TO WEST 4 ↑
C	BRIDGE CLOSED US-4 WOODSTOCK W. OF JCT VT-106 5/29 TO 6/24	I	BRIDGE CLOSED 1/2 MILE AHEAD 5/29 TO 6/24	O	US 4 THRU TRAFFIC USE EXIT 10N TO 189 NB	U	DETOUR EAST 4 ↗	AA	DETOUR TO WEST 4 ←	GG	DETOUR TO WEST 4 ←
D	US-4 THRU TRAFFIC DETOUR VIA I-89 N TO EXIT 3	J	BRIDGE CLOSED ~~AT RIVER ST~~ RTE 4 WEST 5/29 TO 6/24	P	DETOUR TO EAST 4 ↰	V	DETOUR WEST 4 ↑	BB	DETOUR TO WEST 4 ↱	HH	DETOUR TO WEST 4 ↰
E	BRIDGE CLOSED US-4 WOODSTOCK 10 MILES AHEAD 5/29 TO 6/24	K	1 BRIDGE CLOSED 2 US 4 IN WOODSTCK 3 MAY 29 THRU JUNE 24	Q	DETOUR TO EAST 4 ←	W	DETOUR EAST 4 ↱	CC	DETOUR TO WEST 4 ↗	II	DETOUR WEST 4 ←
F	BRIDGE CLOSED US-4 WOODSTOCK 14 MILES AHEAD 5/29 TO 6/24	L	US 4 ~~THRU~~ TRUCK TRAFFIC DETOUR VIA VT100 NB	R	DETOUR TO EAST 4 ↙	X	DETOUR WEST 4 ↰	DD	DETOUR TO EAST 4 ↑	JJ	DETOUR EAST 4 ↑

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
REGIONAL DETOUR SIGNS	
Designed By VTRANS	Drawn By B.J. MASSE
Checked By Date VTRANS 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DTR5	Sheet 16 of 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

plot date: 10/11/2006

N

VT. STATE PLANE GRID

MOUNTAIN AVENUE

RIVER STREET

ELM STREET

CENTRAL STREET

COURT STREET

HIGH STREET

SOUTH STREET

SCHOOL STREET

CHURCH ST

COLLEGE HILL

E. PROSPECT STREET

LINDEN HILL

OTTAUQUECHEE RIVER

RWA

MOVED

MOUNTED ON
TYPE III BARRICADE

BRIDGE CLOSED

ROAD WORK AHEAD

PLACED
5/29 - 6/24
ONLY

BRIDGE CLOSED 500 FT

PROJECT LIMITS

END ROAD WORK

500 FT

ERW

RW
500'

RW
1000'

1000 FT

BRIDGE CLOSED AHEAD

ROAD CLOSED 500 FT AHEAD LOCAL TRAFFIC ONLY

BRIDGE CLOSED

MOUNTED ON
TYPE III BARRICADE

ROAD CLOSED TO THRU TRAFFIC BRIDGE CLOSED

MOUNTED ON
TYPE III BARRICADE

UNABLE TO
PLACE HERE

ROAD WORK 500 FT

1000 FT

VERMONT 106

4

VILLAGE TRAFFIC CONTROL PLAN

SCALE: 1" = 200'

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

VILLAGE TRAFFIC CONTROL PLAN

Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date 10/06	Bridge Design Supervisor M. A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DTR3	Sheet 17 of 71

VHB NO. 51298

plot date: 10/11/2006

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

SHEAR STRENGTH

UNDRAINED SHEAR STRENGTH IN kPa	CONSISTENCY
<12	Very Soft
12-24	Soft
24-48	Med. Stiff
48-96	Stiff
96-192	Very Stiff
>192	Hard

CORRELATION GUIDE OF "N" TO DENSITY/CONSISTENCY

DENSITY (GRANULAR SOILS) N	DENSITY (GRANULAR SOILS) DESCRIPTIVE TERM	CONSISTENCY (COHESIVE SOILS) N	CONSISTENCY (COHESIVE SOILS) 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 300 mm For: 50.8 mm O.D. Sampler 35.0 mm I.D. Sampler Hammer Weight Of 63.5 kg. Hammer Fall Of 762 mm
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 30.1mm
BX	Core Size 42.0 mm
NX	Core Size 54.7 mm
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 > 304.8 mm.

COBBLE - Rock fragments with an average dimension between 76.2 and 304.8 mm.

GRAVEL - Rounded particles of rock < 76.2 mm and > 2 mm (#10 sieve).

SAND - Particles of rock < 2 mm (#10 sieve) and > 75 μm (#200 sieve).

SILT - Soil < 75 μm (#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.

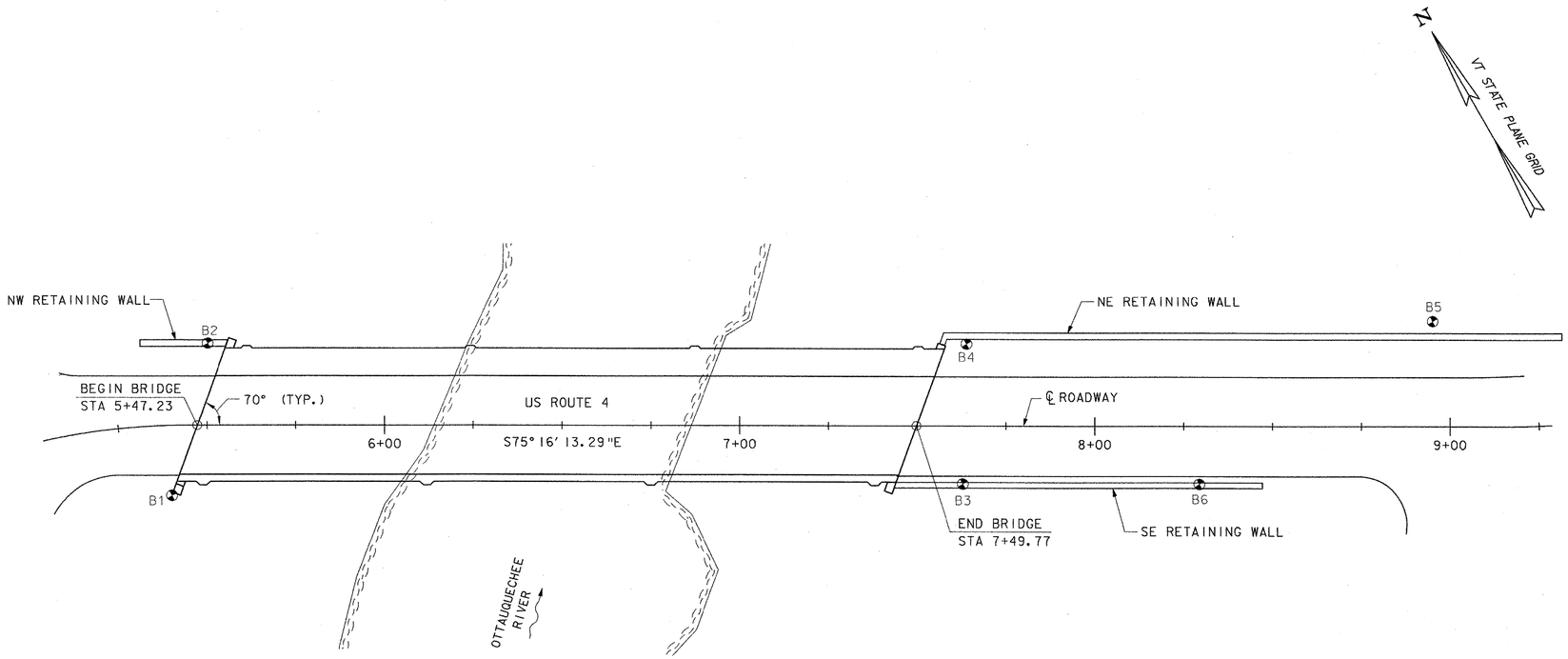
MUCK - Soft organic soil (containing > 10% organic material.

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.



BORING LOCATION PLAN

SCALE: 1" = 20'

BORING CHART

HOLE NO.	STATION	OFFSET	GROUND ELEV. (m)	GROUND ELEV. (ft)
B1	5+40.2	19.6'	214.30	703.08
B2	5+50.7	23.1'	214.11	702.46
B3	7+62.9	16.3'	214.66	704.26
B4	7+64.0	23.1'	215.02	705.44
B5	8+95.1	29.6'	213.38	700.06
B6	8+29.5	16.3'	215.05	705.54

GENERAL NOTES

1. The subsurface explorations shown herein were made between 6-3-96 and 7-17-96 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.
7. The Subsurface Explorations shown on this sheet are in metric units as recorded by VTRANS.

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
BORING LAYOUT	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date 9/06	Bridge Design Supervisor M. A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028BOR	Sheet 18 of 71

VHB NO. 51298

plot date: 9/14/2006

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

HOLE NO.: B-1
SHEET 1 OF 1
DATE STARTED: 6/3/96
DATE COMPLETED: 6/5/96

PROJECT NAME: WOODSTOCK
SITE NAME: US Route 4
STATION: 1+282.00
GROUND EL.: 214.30

PROJECT NUMBER: BHF020-2(32)
SITE NO.: Br. 50
OFFSET: 6.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCBEAN
DRILLER: CHABOT
LOGGER: KELLY
ADDITIONAL CREW:

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

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	A-1-b, SaGr, brn, Moist, Rec.=0.088	7	13.6	49.7	35.1	15.2		
	A-1-a, SaGr, brn, Moist, Rec.=0.15	44	9.7	64.6	28.8	6.6		
5	A-4, SaSi, brn, MTW, Rec.=0.20	18	16.8	15.6	40.9	43.5		
	A-3, Sa, brn, MTW, Rec.=0.20	51	23.1	0.1	91.7	8.1		
	A-4, GrSi, gry, Wet, Rec.=0.20	21	24.9	25.2	16.1	58.7		
	A-4, SaSi, gry, Wet, Rec.=0.20	9	24.3	6.6	23	70.4		
10	A-2-4, GrSiSa, gry, Wet, Rec.=0.05	24	10.6	26.2	43.9	29.6		
	Boulders, No recovery	R						
	A-4, Si, HP, gry, Moist, Rec.=0.22	R	12.9	2.9	13	84.1		
15	A-4, SaSi, HP, gry, Moist, Rec.=0.22	R	14.9	19.2	40.6	40.3		
	A-4, GrSaSi, HP, gry, Moist, Rec.=0.18	R	18.2	28.5	33.6	37.9		
	A-2-4, GrSa, gry, Wet, Rec.=0.14	R	17.4	33.1	55	11.9		
20	A-4, Si, HP, gry, Moist, Rec.=0.28	51	26.5	0.4	11.1	88.5		
	A-4, Si, HP, gry, Moist, Rec.=0.30	R	20.2	0.1	7.3	92.7		
	A-4, Si, HP, gry, Moist, Rec.=0.12	R	30.3	19.3	11	69.6		
25	A-4, SaSi, HP, gry, Moist, Rec.=0.33	R	27.2	3	41.5	55.7		
	Hole stopped at 26.5 m							
	In boulders and sand							

687.80 FT
209.65 M
BOTTOM OF FOOTING EL.

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

HOLE NO.: B-2
SHEET 1 OF 1
DATE STARTED: 6/11/96
DATE COMPLETED: 6/14/96

PROJECT NAME: WOODSTOCK
SITE NAME: US Route 4
STATION: 1+285.00
GROUND EL.: 214.11

PROJECT NUMBER: BHF020-2(32)
SITE NO.: Br. 50
OFFSET: -7.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: KELLY
LOGGER:
ADDITIONAL CREW:

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

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	A-1-b, SaGr, brn, Moist, Rec.=0.24	31	12.4	46	38.9	15.1		
	Boulders, No sample.							
	A-1-a, SaGr, brn, Moist, Rec.=0.24	64	9.5	59.1	33.1	7.7		
5	A-1-b, SaGr, brn, Moist, Rec.=0.24	64	18.9	50.8	37.8	11.4		
	A-1-b, GrSa, brn, Moist, Rec.=0.19	43	12.4	33.7	48.8	17.5		
	A-1-b, GrSa, brn, Moist	R	16.2	39.2	46.7	14.1		
	A-4, Si, brn, Wet, Rec.=0.15	25	30.1	7.2	8.4	84.4		
	A-4, GrSi, gry, Wet, Rec.=0.09	22	37.3	22.7	2.7	74.5		
10	A-4, SaSi, gry, Wet, Rec.=0.12	10	25.7	15.3	22.5	62.1		
	A-1-b, SaGr, gry, MTW, Rec.=0.06	81	12	53.1	28.7	18.2		
	A-4, SaSi, gry, Moist, Rec.=0.09	R	11.1	19.7	38.7	41.7		
	No recovery.							
	BXMDC 12.65-13.56, No recovery.							
	No recovery, Boulders.							
15	BXMDC 14.02-15.24, Rec. 0.3.							
	No recovery							
	BXMDC 15.54-16.76							
	A-4, GrSi, gry, Moist, Rec.=0.09	R	19.2	41.4	17.1	41.5		
	Hole stopped at 17.07 m in HP							
20								
25								

683.00 FT
208.18 M
BOTTOM OF SHEET PILE EL.

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

HOLE NO.: B-3
SHEET 1 OF 1
DATE STARTED: 7/9/96
DATE COMPLETED: 7/12/96

PROJECT NAME: WOODSTOCK
SITE NAME: US Route 4
STATION: 1+347.00
GROUND EL.: 214.66

PROJECT NUMBER: BHF020-2(32)
SITE NO.: Br. 50
OFFSET: 5.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: WILLIS
DRILLER: DECROTI
LOGGER: KELLY
ADDITIONAL CREW:

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

DEPTH	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
	No recovery	22						
	A-1-a, SaGr, brn, Moist, Rec.=0.01	31		65.3	25.8	8.9		
5	A-1-b, SaGr, gry, Moist, Rec.=0.18	64	10.6	45	42.5	12.6		
	A-1-a, SaGr, gry, Moist, Rec.=0.18	R	6.45	56.4	34.1	9.5		
	A-2-4, GrSa, brn, Moist, Rec.=0.22	68	16.8	26.9	56.9	16.3		
	BXMDC 9.0-10.5, Boulders							
10	A-4, GrSi, gry, Moist, Rec.=0.38	13	19.2	41	17.9	41.1		
	A-1-b, SaGr, gry, Moist, Rec.=0.18	25	10.8	52.8	28.1	19.1		
	BXMDC 13.5-15.0, Boulders							
15	A-1-b, SiSaGr, gry, Moist, Rec.=0.12	R	11.9	49.1	30.4	20.4		
	A-2-4, SiSa, gry, Moist, Rec.=0.06	R	12.2	17.6	47.7	34.7		
	Hole stopped at 18.30 m in HP							
20								
25								

694.00 FT
211.53 M
BOTTOM OF SHEET PILE EL.

682.68 FT
208.08 M
BOTTOM OF FOOTING EL.

NOTE:
THE SUBSURFACE EXPLORATIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS AS RECORDED BY VTRANS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
BORING LOGS (1 OF 2)	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date 7/96	Bridge Design Supervisor M. A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028LG1	Sheet 19 of 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

plot date: 10/11/2006

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

HOLE NO.: B-4
SHEET 1 OF 1
DATE STARTED: 6/11/96
DATE COMPLETED: 6/14/96

PROJECT NAME: WOODSTOCK
SITE NAME: US Route 4
STATION: 1+350.00
GROUND EL.: 215.02

PROJECT NUMBER: BHF020-2(32)
SITE NO.: Br. 50
OFFSET: -6.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: WILLIS
DRILLER: MCGLYNN
LOGGER: KELLY
ADDITIONAL CREW: CHABOT

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

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		A-1-A, SaGr, brn, Moist, Rec. =0.15	18	14.1	53.3	36.5	10.1		
		BXMDC 2.5-2.8, Boulders							
		A-1-A, SaGr, brn, Moist, Rec. =0.24	40	14.4	57	32.7	10.3		
5		A-2-4, GrSa, brn, MTW, Rec. =0.29	20	18.8	30	57.3	12.7		
		BXMDC 5.8-6.4, Boulders, No recovery							
		A-1-b, GrSa, brn, Moist, Rec. =0.15	R	15.3	34.5	46.9	18.6		
		A-4, SaGrSi, gry, Wet, Rec. =0.18	49	20.7	30.8	26.1	43.1		
10		A-4, Si, gry, Wet, Rec. =0.33	9	11.1	1.4	2.4	96.3		
		A-2-4, GrSa, gry, Wet, Rec. =0.12	9	14	21.4	66.1	12.4		
		A-1-a, SaGr, gry, Wet, Rec. =0.15	R	9.6	70.3	21.2	8.6		
15		A-1-b, SaGr, gry, Wet, Rec. =0.15	R	11.8	55.6	26.4	18		
		A-2-4, SiGrSa, gry, Moist, Rec. =0.15	R	11.5	35.3	40.6	24.2		
		Hole stopped at 16.8 m							
20									
25									

682.68 FT BOTTOM OF FOOTING EL.
208.08 M
681.00 FT BOTTOM OF SHEET PILE EL.
207.57 M

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

HOLE NO.: B-5
SHEET 1 OF 1
DATE STARTED: 7/1/96
DATE COMPLETED: 7/3/96

PROJECT NAME: WOODSTOCK
SITE NAME: US Route 4
STATION: 1+390.00
GROUND EL.: 213.38

PROJECT NUMBER: BHF020-2(32)
SITE NO.: Br. 50
OFFSET: -9.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: KELLY
LOGGER:
ADDITIONAL CREW:

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

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		A-2-4, SiSa, brn, Moist, Rec. =0.15	5	30.3	15.6	53.9	30.5		
		A-2-4, SiSa, gry, Moist, Rec. =0.28	28	17	17.6	46.9	35.5		
5		No recovery	96						
		BXMDC 6.0-7.5, possible boulders							
		A-4, SaSi, HP, gry, Moist, Rec. =0.33	R	11.2	16.8	30.9	52.2		
10		BXMDC 9.0-10.5, Boulders	R	11.9	27.9	32.9	39.2		
		A-4, GrSaSi, HP, gry, Moist, Rec. =0.15							
		Hole stopped at 10.5 m in HP							
15									
20									
25									

681.00 FT BOTTOM OF SHEET PILE EL.
207.57 M

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

HOLE NO.: B-6
SHEET 1 OF 1
DATE STARTED: 7/16/96
DATE COMPLETED: 7/17/96

PROJECT NAME:
SITE NAME:
STATION: 1+370.00
GROUND EL.: 215.05

PROJECT NUMBER:
SITE NO.:
OFFSET: 5.00
G.W. DEPTH:

BORING CREW
CREW CHIEF: MCGLYNN
DRILLER: CHABOT
LOGGER: KELLY
ADDITIONAL CREW: HOLT

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

DEPTH	SYMBOL	CLASSIFICATION OF MATERIALS (Description)	BLOWS PER 0.3 m	M.C. %	GRAVEL %	SAND %	FINES %	LL	PI
		A-1-b, GrSa, brn, Moist, Rec. =0.06	R	17.4	30.3	52.8	16.9		
		A-1-a, SaGr, gry, Moist, Rec. =0.12	33	20.5	60.6	36.9	2.5		
5		A-2-4, SiSa, gry, Moist, Rec. =0.34	19	27.7	11.7	62.4	25.9		
		A-4, SaSi, gry, Moist, Rec. =0.15	R	11.2	13.3	32.5	54.2		
		A-4, SaSi, gry, Moist, Rec. =0.17	R	12.9	10.5	27.8	61.6		
		A-4, SaSi, gry, Moist, Rec. =0.22	R	14.8	1.8	23.2	75.1		
10		Hole stopped at 9.3 m in HP							
15									
20									
25									

694.00 FT BOTTOM OF SHEET PILE EL.
211.53 M

NOTE:
THE SUBSURFACE EXPLORATIONS SHOWN ON THIS SHEET ARE IN METRIC UNITS AS RECORDED BY VTRANS.

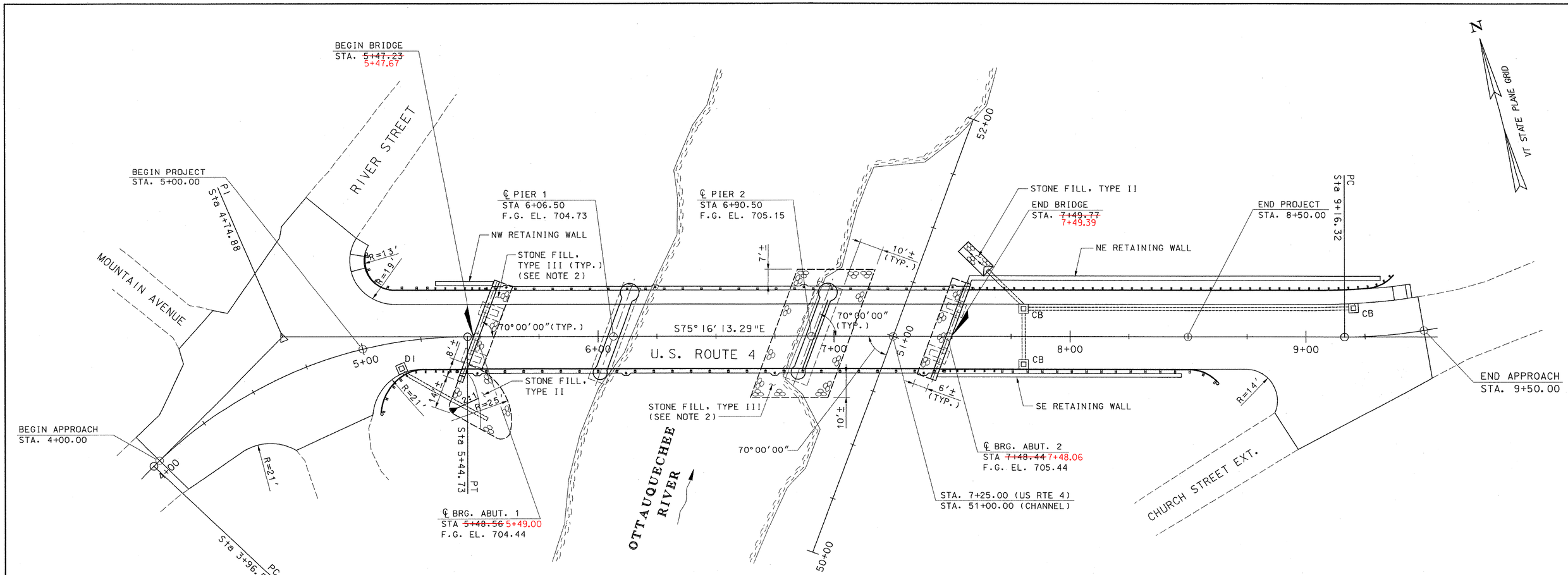
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
BORING LOGS (2 OF 2)	
Designed By VTRANS	Drawn By B.J. MASSE
Checked By VTRANS Date 7/96	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028LG2	Sheet 20 of 71

VHB Vanasse Hangen Brustlin, Inc.

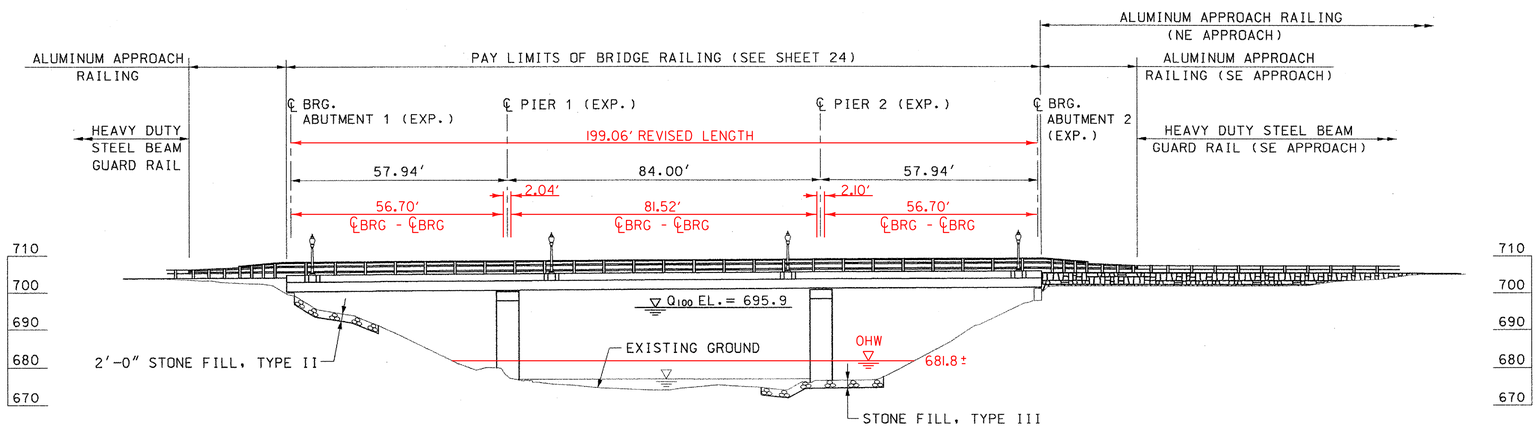
VHB NO. 51298

plot date: 10/11/2006



PLAN

SCALE: 1" = 20'



ELEVATION

SCALE: 1" = 20'

NOTES:

1. SEE SHEET 26 FOR DISTANCES TO FIRST GUARD RAIL POST OFF EACH CORNER OF BRIDGE.
2. SEE SHEET 22, CONSTRUCTION NOTE 10 FOR ADDITIONAL STONE FILL INFORMATION.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
BRIDGE PLAN & ELEVATION	
Designed By B. J. MASSE	Drawn By B. J. MASSE
Checked By J. T. KLEIN Date 10/06	Bridge Design Supervisor M. A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028GPE	Sheet 21 of 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

plot date: 10/11/2006

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR CONSTRUCTION, DATED 2001, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 17TH EDITION, DATED 2002, AND ITS LATEST REVISIONS.

2. DESIGN CRITIERIA:
   DESIGN LIVE LOAD FOR NEW SUPERSTRUCTURE: HS 25
   SEISMIC PERFORMANCE CATEGORY: A

3. THE FOLLOWING MATERIAL CRITERIA, DESIGNATIONS AND UNIT WEIGHTS APPLY TO THESE PLANS FOR DESIGN PURPOSES:

CONCRETE:	HIGH PERFORMANCE CLASS AA (MOD. – RAPID CURE)	f'c = 4000 PSI
	HIGH PERFORMANCE CLASS A (MOD.)	f'c = 4000 PSI
	HIGH PERFORMANCE CLASS B	f'c = 3500 PSI
	HIGH PERFORMANCE CLASS B (MOD. – SCC)	f'c = 3500 PSI

   REINFORCING STEEL: AASHTO M 31 GRADE 60
   UNIT WEIGHT OF SOIL: 140 lb/ft^3

4. FEATURES OF THE EXISTING BRIDGE SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND LIMITED FIELD INVESTIGATION AND MAY NOT ACCURATELY REFLECT ACTUAL FIELD CONDITIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAKING FIELD MEASUREMENTS OF ALL EXISTING STRUCTURE COMPONENTS IMPACTED BY THE NEW WORK TO ASSURE CONSISTENCY WITH THE PROPOSED MODIFICATIONS. ANY DISCREPANCIES IN DIMENSIONS, CHARACTER, OR EXTENT OF THE EXISTING FEATURES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER BEFORE ADVANCING THE WORK.

5. FULL SIZE COPIES OF THE EXISTING BRIDGE PLANS INCLUDED IN THIS SET ARE AVAILABLE FOR REVIEW DURING THE BIDDING PERIOD AT THE CONTRACT ADMINISTRATION OFFICE OF THE VERMONT AGENCY OF TRANSPORTATION.

6. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 68 DEGREES FAHRENHEIT, UNLESS NOTED OTHERWISE.

7. SEE SHEET 36 FOR BEARING NOTES.

8. SEE SHEET 40 FOR COFFERDAM NOTES.

CONSTRUCTION NOTES:

1. ESTIMATED QUANTITIES FOR THE FOLLOWING HAVE BEEN INCLUDED:
   613.10, STONE FILL, TYPE I (MOD. – CHECK DAM)
   613.10, STONE FILL, TYPE I (MOD. – CONSTRUCTION ENTRANCE)
   613.10, STONE FILL, TYPE I (MOD. – INLET PROTECTION)
   ITEM 649.61, GEOTEXTILE FOR FILTER CURTAIN

   THESE ITEMS ARE NOT CURRENTLY DETAILED ON THE PLANS BUT ARE INCLUDED FOR USE WITH THE CONCTRACTOR'S PROPOSED ERDSION PREVENTION AND SEDIMENT CONTROL PLAN.

2. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION, POLLUTION, AND DISCHARGE OF RAW CONCRETE INTO THE OTTAUQUECHEE RIVER AS DIRECTED BY THE RESIDENT ENGINEER.

3. ALL WORK REQUIRED TO MAINTAIN TRAFFIC DURING CONSTRUCTION SHALL BE PAID AS ITEM 641.10, TRAFFIC CONTROL OR ITEM 527.10, MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS (MOD.).

4. NOTE NOT USED.

5. THE BRIDGE PLAQUE SHALL BE FURNISHED BY THE AGENCY OF TRANSPORTATION AND SHALL BE INSTALLED BY THE CONTRACTOR AS SHOWN ON THE PLANS. ALL COSTS SHALL BE INCIDENTAL TO ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B.

6. THE CONTRACTOR SHALL ERECT, MAINTAIN, REMOVE, AND/OR RESET AS REQUIRED ALL ON-PROJECT SIGNS AND BARRICADES. ALL SIGNS AND BARRICADES SHALL BE INSPECTED AND REPAIRED DAILY. ALL SIGNS AND BARRICADES SHALL BE CLEANED OF DUST AND DEBRIS WEEKLY. THE COST OF ALL CONSTRUCTION SIGNS AND BARRICADES SHALL BE INCIDENTAL TO ITEM 641.10, TRAFFIC CONTROL. THE REGIONAL TRAFFIC CONTROL PLAN SHALL BE SUBMITTED AS PER THE REQUIREMENTS OF SECTION 641, AND SHALL BE PAID AS ITEM 641.10, TRAFFIC CONTROL.

7. ANY EXISTING SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE TOWN OF WOODSTOCK. THESE SIGNS SHALL BE REMOVED BY THE CONTRACTOR AND STOCKPILED AS DIRECTED BY THE RESIDENT ENGINEER FOR REMOVAL BY THE TOWN AND SHALL BE PAID AS ITEM 675.50, REMOVING SIGNS.

8. GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL AROUND THE PIER OR UNDER THE BRIDGE.

9. FULL ACCESS TO ALL DRIVES WITHIN THE PROJECT/APPROACH LIMITS SHALL BE MAINTAINED AT ALL TIMES.

10. STONE FILL, TYPE III SHALL BE USED TO CHINK EXISTING STONE FILL VOIDS AROUND PIER 2 AND SHALL BE PLACED AT ABUTMENTS 1 AND 2 TO THE PROPOSED GRADE SHOWN ON SHEETS 38 AND 39.

11. CONCRETE ON TOP OF THE WINGWALLS AND RETAINING WALLS ADJACENT TO THE BRIDGE SEATS SHALL NOT BE PLACED UNTIL THE FINISH GRADE HAS BEEN DETERMINED BY THE RESIDENT ENGINEER SO THAT THE FINAL TOP OF CURB/SIDEWALK ELEVATIONS MATCH TOP OF WALLS.

12. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO ENSURE THAT THE EXISTING STONE RETAINING WALL ADJACENT TO THE THEATER IS NOT DAMAGED. ANY DAMAGE TO THE RETAINING WALL SHALL BE REPAIRED TO THE SATISFACTION OF THE RESIDENT ENGINEER AT THE CONTRACTOR'S EXPENSE.

13. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL BURIED AND AERIAL UTILITIES AND POLES PRIOR TO STARTING WORK. SOME UTILITIES WERE RELOCATED DURING THE PREPARATION OF THESE PLANS AND THE CONTRACTOR WILL NEED TO COORDINATE WITH ALL UTILITY OWNERS TO CONFIRM ACTUAL LOCATIONS PRIOR TO CONSTRUCTION.

14. YIELDING MARKER POSTS ARE TO BE PLACED AS INDICATED OR AS DIRECTED BY THE ENGINEER.

15. EMULSIFIED ASPHALT TACK COAT IS TO BE APPLIED AT THE RATE 0.125 LB/SY BETWEEN SUCCESSIVE COURSES OF PAVEMENT AS DIRECTED BY THE ENGINEER.

GENERAL CONSTRUCTION SEQUENCING & TRAFFIC CONTROL NOTES:

1. HIGHWAY TRAFFIC SHALL BE MAINTAINED DURING CONSTRUCTION WITH A REGIONAL DETOUR AND A VILLAGE TRAFFIC CONTROL PLAN. PEDESTRIAN TRAFFIC SHALL BE MAINTAINED DURING CONSTRUCTION WITH A DETOUR VIA RIVER STREET AND MOUNTAIN AVENUE (ACROSS THE COVERED BRIDGE). THE PEDESTRIAN DETOUR SIGNAGE SHALL NOT BE REMOVED PRIOR TO OPENING THE NEW SIDEWALK ON THE BRIDGE. THE CONTRACTOR SHALL SUBMIT A PEDESTRIAN DETOUR PLAN FOR APPROVAL PRIOR TO THE COMMENCEMENT OF WORK.

2. ALL REGIONAL DETOUR SIGNS SHALL BE IN PLACE AND COVERED A MINIMUM OF ONE WEEK PRIOR TO BRIDGE CLOSURE AND SHALL BE COVERED AGAIN WITHIN 8 HOURS OF RE-OPENING THE BRIDGE TO TWO-WAY TRAFFIC.

3. ALL PEDESTRIAN DETOUR SIGNAGE AND LINE STRIPING SHALL BE REMOVED AT THE COMPLETION OF CONSTRUCTION. ALL COSTS ASSOCIATED WITH THE REGIONAL DETOUR, VILLAGE TRAFFIC CONTROL PLAN, AND PEDESTRIAN DETOUR (WITH THE EXCEPTION OF ITEM 641.17, PORTABLE CHANGEABLE MESSAGE SIGN RENTAL) SHALL BE PAID UNDER ITEM 641.10, TRAFFIC CONTROL.

4. SEE THE SPECIAL PROVISIONS FOR ADDITIONAL REGIONAL DETOUR AND TRAFFIC CONTROL REQUIREMENTS.

5. IT IS ANTICIPATED THAT THE MAJORITY OF THE CONCRETE REPAIRS FOR ABUTMENTS AND PIERS AND THE CONCRETE ENCASEMENT FOR THE PIERS CAN BE COMPLETED UNDER TRAFFIC WITH THE EXISTING SUPERSTRUCTURE IN PLACE. A CONSTRUCTION JOINT HAS BEEN ADDED TO THE PIER ENCASEMENTS JUST BELOW THE BRIDGE SEATS SO THAT ALL CONCRETE BELOW THE JOINT CAN BE COMPLETED UNDER TRAFFIC AND CONCRETE ABOVE THE JOINT CAN BE PLACED AFTER THE SUPERSTRUCTURE HAS BEEN REMOVED. ITEM 502.10, SHORING SUPERSTRUCTURE, HAS BEEN ADDED TO THE CONTRACT TO SHORE THE EXISTING SUPERSTRUCTURE AT THE PIERS.

6. UPON COMPLETION OF ALL IDENTIFIED WORK TO OPEN THE BRIDGE TO TWO-WAY TRAFFIC, THE CONTRACTOR MAY COMPLETE ITEMS SUCH AS LIGHTING AND BRIDGE RAILINGS UNDER TRAFFIC BY PLACING TEMPORARY BARRIERS AND PROVIDING TEMPORARY PAVEMENT MARKINGS. TWO TEMPORARY TRAVEL LANES SHALL BE MAINTAINED AT A MINIMUM OF 10'-0" WIDE EACH AT ALL TIMES. THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN AND HOURLY SCHEDULE FOR THIS WORK FOR APPROVAL AT THE PRE-CONSTRUCTION CONFERENCE. ESTIMATED QUANTITIES OF ITEM 621.90, TEMPORARY TRAFFIC BARRIER (MOD.) AND 646.76, LINE STRIPING TARGETS HAVE BEEN ADDED TO THE QUANTITY SUMMARY SHEETS FOR THIS USE. ALL OTHER COSTS ASSOCIATED WITH MAINTAINING TRAFFIC ON THE BRIDGE DURING CONSTRUCTION SHALL BE INCIDENTAL TO ALL OTHER ITEMS.

7. ALL WORK FOR SHEET MEMBRANE WATERPROOFING (MOD. – TORCH APPLIED) AND BITUMINOUS CONCRETE PAVEMENT ON THE BRIDGE SHALL BE COMPLETED USING TEMPORARY LANE CLOSURES. THE CONTRACTOR SHALL ENSURE THAT BOTH MEMBRANE AND THE FIRST COURSE OF PAVEMENT ARE APPLIED TO A SPECIFIC LANE ALL IN ONE DAY.

8. ITEM 641.17, PORTABLE CHANGEABLE MESSAGE SIGN RENTAL SHALL BE UTILIZED AS SHOWN ON THE REGIONAL DETOUR PLANS. THE CONTRACTOR SHALL NOTE THAT THIS ITEM MAY BE REQUIRED FOR USE IN WARNING THE PUBLIC OF THE UPCOMING CONSTRUCTION BEFORE BRIDGE CLOSURE AND POTENTIAL LANE CLOSURES AFTER BRIDGE CLOSURE.

9. SEE SHEET 17 FOR VILLAGE TRAFFIC CONTROL PLAN.

10. SEE SHEET 15 FOR REGIONAL DETOUR.

REMOVAL AND REPAIR NOTES:

1. REMOVAL OF EXISTING BRIDGE PAVEMENT SHALL BE PAID AS ITEM 529.10, REMOVAL OF BRIDGE PAVEMENT.

2. ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE SHALL INCLUDE:

   a) REMOVAL OF THE EXISTING BRIDGE RAILING, CONCRETE CURBS, CONCRETE BRIDGE DECK, AND CURTAIN WALLS.
   b) REMOVAL OF THE EXISTING STRUCTURAL STEEL BEAMS AND DIAPHRAGMS.

⚠ SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

   c) REMOVAL OF ALL THE BEARING DEVICES.
   d) REMOVAL OF PORTIONS OF THE EXISTING ABUTMENTS, WINGWALLS AND PIERS AS SHOWN ON THE PLANS AND DIRECTED BY THE RESIDENT ENGINEER.
   e) ERECTION, MAINTENANCE, AND REMOVAL OF TEMPORARY STRUCTURES TO PREVENT DEBRIS FROM FALLING INTO THE RIVER.
   f) REMOVAL OF EXISTING ABANDONED WATERLINE.

3. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURE SHALL BE APPROVED BY THE RESIDENT ENGINEER PRIOR TO ANY REMOVAL WORK.

4. THE RESIDENT ENGINEER SHALL ESTABLISH ACTUAL REMOVAL AND REPAIR LIMITS ON THE ABUTMENTS AND PIERS AFTER A JOINT INSPECTION BY THE CONTRACTOR AND THE ENGINEER. AREAS OF CONCRETE FOUND TO BE SPALLED, DELAMINATED, OR OTHERWISE UNSOUND WILL BE REMOVED. THE CONTRACTOR SHALL SUPPLY ANY STAGING AND LADDERS REQUIRED FOR THIS INSPECTION. EXISTING ELEVATIONS SHALL BE FIELD VERIFIED TO ENSURE THE REMOVAL LIMITS ARE ADEQUATE TO OBTAIN THE REQUIRED DIMENSIONS AND ELEVATIONS OF THE NEW CONSTRUCTION. ALL COSTS ASSOCIATED WITH THE INSPECTION AND FIELD VERIFICATION SHALL BE INCLUDED UNDER ITEM 635.11, MOBILIZATION/DEMOBILIZATION.

5. SAWCUTS SHALL BE 1 INCH DEEP ALONG ALL EXPOSED REMOVAL LINES WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE. THIS REQUIREMENT SHALL BE FOR ABUTMENT REPAIR ONLY. ALL COSTS SHALL BE INCLUDED IN ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS II (MOD. – SCC).

6. NO AREAS OF ABUTMENT CONCRETE REPAIR HAVE BEEN IDENTIFIED ON THE PLANS, HOWEVER SOME REPAIR MAY BE REQUIRED BASED UPON THE JOINT INSPECTION BY THE CONTRACTOR AND THE ENGINEER AFTER EXCAVATION AND REMOVAL OF THE WINGWALLS. SEE SHEET 37 FOR ADDITIONAL ABUTMENT REMOVAL INFORMATION. CONCRETE REPAIRS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 580.

7. AN ESTIMATED QUANTITY OF ITEM 580.14, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS II (MOD. – SCC), AND ITEM 580.15, REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS III (MOD. – SCC) HAS BEEN INCLUDED IN THE CONTRACT FOR POTENTIAL ABUTMENT REPAIRS.

8. THE PIERS HAVE SIGNIFICANT AREAS OF CONCRETE REMOVAL AND REPAIR ESTIMATED ON SHEET 40. THIS ANTICIPATED WORK IS BASED UPON A MAY 1995 INSPECTION AND IS FOR INFORMATION ONLY. ACTUAL REMOVAL LIMITS WILL BE ESTABLISHED DURING THE JOINT INSPECTION BY THE CONTRACTOR AND THE ENGINEER.

9. EXISTING REINFORCING STEEL EXPOSED DURING REMOVAL OPERATIONS, WITHIN THE LIMITS OF THE NEW MASONRY, SHALL BE RETAINED AND INCORPORATED INTO THE NEW MASONRY UNLESS OTHERWISE NOTED. EXISTING REINFORCING STEEL TO BE RETAINED SHALL BE CLEANED OF ALL CONCRETE, DIRT, DETRIMENTAL SCALE, PAINT, OIL AND OTHER FOREIGN SUBSTANCES. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE.

10. EXISTING REINFORCING STEEL THAT WILL NOT BE INCORPORATED INTO THE NEW MASONRY SHALL BE REMOVED A MINIMUM OF 1 INCH INTO THE EXISTING MASONRY SURFACE. CAVITIES PRODUCED BY REINFORCING STEEL REMOVAL SHALL BE CLEANED, SATURATED WITH WATER, AND POINTED AND TRUED WITH MORTAR PER SECTION 501. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE OR THE APPLICABLE 580 ITEM.

11. EXISTING ANCHOR BOLTS SHALL BE PARTIALLY REMOVED OR INCORPORATED INTO THE NEW WORK AS DIRECTED BY THE RESIDENT ENGINEER. DETAILS FOR PARTIAL REMOVAL OR INCORPORATION INTO THE NEW WORK SHALL BE SIMILAR TO THOSE FOR REINFORCING STEEL.

12. THE ENGINEER SHALL ORDER REPLACEMENT OF ANY EXISTING SUBSTRUCTURE REINFORCING STEEL THAT IS DETERIORATED (WITH MORE THAN 25% SECTION LOSS) WITH NEW REINFORCING STEEL OF THE SAME SIZE. ALL REINFORCING STEEL SHALL HAVE A MINIMUM 2'-0" LAP SPLICE. ALL NEW REINFORCING STEEL SHALL BE PAID UNDER ITEM 507.15, REINFORCING STEEL.

REVISION	DATE	BY
⚠ NOTE CHANGE	11/21/06	M. COLGAN

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

GENERAL NOTES (1 OF 2)

Designed By J.T KLEIN	Drawn By B.J. MASSE
Checked By Date M.A. COLGAN 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028GN	Sheet 22 of 71

VHB NO. 51298 plot date: 11/21/2006

PRESTRESSED CONCRETE GENERAL NOTES:

1. ALL BOX BEAMS SHALL HAVE ENDS OF STRANDS RECESSED AND GROUTED AS PER STANDARD PRACTICE, EXCEPT AS NOTED IN THE PLANS.

2. THE PRICE PER LINEAR FOOT OF BOX BEAM SHALL INCLUDE ALL OF THE MATERIALS, LABOR, AND ANY OTHER COSTS ASSOCIATED WITH THE INSTALLATION OF THE TRANSVERSE TENDONS.

3. ALL OF THE MATERIALS, LABOR, AND ANY OTHER COSTS ASSOCIATED WITH THE GROUTING OF THE SHEAR KEYS WITH MORTAR TYPE IV SHALL BE PAID AS ITEM 510.24, GROUTING SHEAR KEYS.

4. THE PRICE PER LINEAR FOOT OF BOX BEAM SHALL INCLUDE ALL OF THE MATERIALS, LABOR, AND OTHER COSTS ASSOCIATED WITH THE ANCHOR BOLTS AND THEIR INSTALLATION.

5. THE TOP SURFACE OF THE BOX BEAM UNITS SHALL BE ROUGHENED TO AN AMPLITUDE OF 1/4".

6. AN ALTERNATE STRAND CONFIGURATION FOR THE BOX BEAM UNITS MAY BE SUBMITTED FOR APPROVAL TO THE STRUCTURES ENGINEER. THE DESIGN MUST BE SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF VERMONT AND THE DESIGN MUST MEET ALL THE APPLICABLE DESIGN CRITERIA, LOADINGS AND CODES.

7. THE BOX BEAMS SHALL SET ON THE BEARINGS FOR 24 HOURS PRIOR TO STRESSING THE TRANSVERSE TENDONS AND GROUTING THE SHEAR KEYS.

8. AFTER THE BOX BEAMS HAVE BEEN SET ON THE BEARINGS, ELEVATIONS SHALL BE TAKEN ALONG THE TOP OF EACH BEAM UNDER THE DIRECTION OF THE RESIDENT ENGINEER. THESE ELEVATIONS SHALL BE USED IN DETERMINING THE FINAL GRADE.

9. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".

10. ENDS OF ALL PRECAST UNITS AND ANCHOR BOLTS SHALL BE VERTICAL IN FINAL ERECTED POSITION.

11. METAL STAY-IN-PLACE FORMS MAY BE USED BETWEEN BOX BEAM UNITS (1 & 4 AND 6 & 9) AT THE CONTRACTOR'S OPTION. DETAILS OF ANY METAL STAY-IN-PLACE FORMS OR ANY OTHER PROPOSED CONNECTION TO THE BOX BEAMS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO STARTING THE WORK. ALL COSTS SHALL BE INCIDENTAL TO ITEM 501.32, CONCRETE, HIGH PERFORMANCE CLASS AA (MOD. - RAPID CURE). ⚠1

12. ALL COSTS FOR BOX BEAMS SHALL BE PAID UNDER ITEM 510.21, PRESTRESSED CONCRETE BOX BEAMS (27"x36") (MOD. - LIGHTWEIGHT) OR (27"x48") (MOD. - LIGHTWEIGHT).

13. LENGTHS OF BOX BEAMS WERE BASED UPON LIMITED INFORMATION TAKEN FROM EXISTING PLANS AND MAY NOT REFLECT ACTUAL CONDITIONS IN THE FIELD. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO STARTING WORK. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED UNDER ITEM 635.11, MOBILIZATION/ DEMOBILIZATION.

BOX BEAM CONSTRUCTION AND PLACEMENT SEQUENCE:

A. WORKING LINES MEASURED FROM THE WORKING POINTS SHALL BE LAID OUT THE ENTIRE WIDTH OF THE BRIDGE ALONG CENTERLINE OF BEARING. THE WORKING LINES SHALL BE BASED ON THE NORMAL UNIT WIDTHS.

B. THE BRIDGE SEAT ELEVATIONS SHALL BE VERIFIED TO BE CORRECT PRIOR TO ERECTING THE PRESTRESSED UNITS. IF NECESSARY THE SEATS SHALL BE GROUND TO THE PROPER ELEVATION OR THE ELASTOMERIC BEARINGS SHALL BE SHIMMED TO PROVIDE EVEN LOAD DISTRIBUTION TO ALL BEARINGS AND PREVENT THE PRESTRESSED UNITS FROM "ROCKING". WHERE REQUIRED, SHIMS SHALL BE IN ACCORDANCE WITH SECTION 531.05. PRIOR TO ERECTING THE PRESTRESSED UNITS THE CONTRACTOR SHALL HAVE AN ADEQUATE SUPPLY OF APPROVED SHIMS FOR USE UNDER THE BEARINGS. ALL COSTS ASSOCIATED WITH THE GRINDING AND/OR THE INSTALLATION OF THE SHIMS IS INCIDENTAL TO ITEM 531.10, BEARING DEVICE ASSEMBLY (ELASTOMERIC).

C. ERECT THE PRESTRESSED UNITS TO FIT WITHIN THE WORKING LINES. AS THE WORK PROGRESSES INSTALL HARDWOOD WEDGES TO ENSURE PROPER JOINT OPENING. ONE WEDGE AT EACH TRANSVERSE TIE LOCATION SHALL BE THE MINIMUM. THE WEDGES SHALL BE REMOVED AND THE AFFECTED AREAS PATCHED PRIOR TO THE PLACING OF THE COMPOSITE OVERLAY.

D. THE OAKUM OR EQUIVALENT BACKER ROD SHALL BE INSTALLED AFTER THE PRESTRESSED UNITS HAVE BEEN ERECTED BUT PRIOR TO INSTALLING THE HARDWOOD WEDGES. THE BACKER ROD DIAMETER SHALL BE 1/8" GREATER THEN THE VOID BETWEEN UNITS AND SHALL BE INSTALLED UNIFORMLY IN THE BOTTOM OF THE SHEAR KEY.

E. DRILL INTO BRIDGE SEATS AT PIERS AND INSTALL ANCHOR BOLTS AT THE ENDS OF THE PRESTRESSED UNITS AFTER BEAMS HAVE BEEN SET.

F. INSTALL TRANSVERSE TIES AND POST TENSION TO 5000 LB TO REMOVE SAGS AND TO SEAT THE CHUCK.

G. GROUT SHEAR KEYS WITH MORTAR TYPE IV. THE SHEAR KEYS SHALL BE CLEANED WITH OIL FREE COMPRESSED AIR TO REMOVE ANY DEBRIS. THE SHEAR KEYS SHALL BE PRE-WETTED TO A SATURATED SURFACE DRY CONDITION IMMEDIATELY PRIOR TO PLACING THE MORTAR. MIX DESIGN FOR MORTAR TYPE IV SHALL BE SUBMITTED FOR APPROVAL.

H. THE FINAL POST TENSIONING OF THE TRANSVERSE TIES TO 30,000 LB SHALL BE DONE ONCE THE MORTAR HAS ATTAINED 1500 PSI COMPRESSIVE STRENGTH.

BOX BEAM NOTES:

1. PRESTRESSED BOX BEAM MEMBERS SHALL:

   A. CONFORM TO SECTION 510A PRESTRESSED CONCRETE USING LIGHTWEIGHT CONCRETE.

   B. BE DESIGNED FOR AASHTO HS25 LIVE LOAD.

   C. MEET THE FOLLOWING DESIGN CRITERIA

   PRESTRESSED CONCRETE STRENGTH
   RELEASE f'c = 5000 PSI
   SERVICE f'c = 6000 PSI
   CONTAIN CORROSION INHIBITOR @ 4 GAL/CY

MAXIMUM SERVICE LOADS - SPAN 1 AND 3	UNIT 1	UNIT 5	UNIT 2, 3, 4
MEMBER MOMENT	237 FT-K	192 FT-K	237 FT-K
DEAD LOAD ON MEMBER MOMENT	175 FT-K	97 FT-K	131 FT-K
SUPER DEAD LOAD ON MEMBER MOMENT	114 FT-K	66 FT-K	66 FT-K
LIVE LOAD + IMPACT MOMENT	35 FT-K	349 FT-K	349 FT-K
DEAD LOAD REACTION/MEMBER	37 K	25 K	30 K
LIVE LOAD REACTION/MEMBER (W/ IMPACT	3 K	28 K	28 K
TOTAL REACTION/MEMBER	40 K	53 K	58 K

MAXIMUM SERVICE LOADS - SPAN 2	UNIT 6	UNIT 10	UNIT 7, 8, 9
MEMBER MOMENT	491 FT-K	397 FT-K	491 FT-K
DEAD LOAD ON MEMBER MOMENT	370 FT-K	239 FT-K	279 FT-K
SUPER DEAD LOAD ON MEMBER MOMENT	260 FT-K	142 FT-K	162 FT-K
LIVE LOAD + IMPACT MOMENT	72 FT-K	547 FT-K	547 FT-K
DEAD LOAD REACTION/MEMBER	54 K	38 K	45 K
LIVE LOAD REACTION/MEMBER (W/ IMPACT)	4 K	29 K	29 K
TOTAL REACTION/MEMBER	58 K	67 K	74 K

   D. CONTAIN 0.6 INCH DIAMETER, 270 KSI LOW RELAXATION PRESTRESSING STRANDS, AND SHALL CONFORM TO AASHTO M203.

   E. PRESTRESSING STRANDS TENSIONED WITH A FORCE OF 44 KIPS PER STRAND.

   F. CONTAIN VOIDS TERMINATING AS SHOWN ON THE PLANS AND SHALL BE CONTINUOUS EXCEPT AT LOCATIONS OF THE TRANSVERSE TIE TENDONS AND SCUPPER SLEEVE LOCATIONS AS SHOWN ON THE PLANS.

2. VOID DRAINS SHALL BE PLACED TO CLEAR STRANDS IN EACH END OF ALL VOIDS. THE VOID SHALL BE 3/4" DIAMETER AND NON-FERROUS. THE DRAINS SHALL BE CLEANED UPON REMOVAL FROM FORMS.

3. CONCRETE SHALL NOT BE PLACED ABOVE THE BRIDGE SEAT UNTIL THE BOX BEAM UNITS HAVE BEEN SET, PROFILED, AND FINAL GRADE HAS BEEN DETERMINED.

CONCRETE NOTES:

1. CONCRETE PAYMENT AND CLASSIFICATION SHALL BE AS FOLLOWS:
   - ITEM 501.32, CONCRETE, HIGH PERFORMANCE CLASS AA (MOD. - RAPID CURE): OVERLAY, CURTAIN WALLS, AND PIER CLOSURE POURS
   - ITEM 501.33, CONCRETE, HIGH PERFORMANCE CLASS A (MOD.): BRIDGE CURB AND BRIDGE SIDEWALK
   - ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B: ABUTMENTS, RETAINING WALLS, AND ALL OTHER BRIDGE CAST-IN-PLACE COMPONENTS UNLESS OTHERWISE NOTED.
   - ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B (MOD. - SCC): PIERS
2. ITEM 514.10, WATER REPELLENT (MOD. - SILANE), SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BRIDGE SUPERSTRUCTURE EXCEPT THE BOTTOM OF THE BOX BEAMS BETWEEN DRIP EDGES. WATER REPELLENT SHALL ALSO BE APPLIED TO THE EXPOSED CONCRETE ON THE RETAINING WALLS, PIERS, AND ABUTMENTS TO 1'-0" BELOW FINISH GRADE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. THE REQUIRED CONCRETE CURE TIME FOR ALL BRIDGE SEATS MAY BE REDUCED TO THREE (3) DAYS. THE CONTRACTOR MAY BEGIN BOX BEAM PLACEMENT ON THE BRIDGE SEATS AFTER A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 1000 PSI IS ATTAINED, HOWEVER, PROPER CURING TECHNIQUES SHALL CONTINUE FOR THE THREE (3) DAY MINIMUM.
4. IF THE CONTRACTOR PROPOSES TO USE A CURING COMPOUND ON ANY ELEMENT THAT WILL HAVE WATER REPELLENT APPLIED, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A WRITTEN REQUEST THAT CLEARLY IDENTIFIES WHICH ELEMENTS ARE EFFECTED, HOW LONG CURING COMPOUND WILL REMAIN IN PLACE, NAME AND PRODUCT INFORMATION FOR CURING COMPOUND, AND HOW CURING COMPOUND WILL BE REMOVED.
5. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1" BY 1", UNLESS OTHERWISE NOTED, A 1/2" RADIUS SHALL BE USED ON THE TOP INSIDE CORNER OF CURBS AND SIDEWALKS.
6. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.
7. SURFACES OF THE BRIDGE SEATS UNDER THE BEARING DEVICE SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 1/4" PER 1'-0".
8. THE KEY ON CONCRETE CONSTRUCTION JOINTS SHALL BE MONOLITHIC AND CONTINUOUS FOR THE FULL LENGTH OF THE JOINT UNLESS OTHERWISE INDICATED. ANY UPWARD KEY SHALL BE PLACED INTEGRALLY WITH THE CONCRETE BELOW THE JOINT.

REINFORCING STEEL NOTES:

1. REINFORCING STEEL IN THE ABUTMENTS, PIERS, AND RETAINING WALLS SHALL BE PAID AS ITEM 507.15, REINFORCING STEEL. ALL OTHER REINFORCING STEEL SHALL BE EPOXY COATED AND PAID AS ITEM 507.17, EPOXY COATED REINFORCING STEEL UNLESS OTHERWISE NOTED.
2. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

ALONG BACK FACES OF WALLS AGAINST EARTH:	2"
ALONG TOP SURFACE OF DECK OVERLAY:	2"
ALONG BOTTOM SURFACE OF DECK OVERLAY:	1 1/2"
IN PIERS:	3"
IN PRECAST SUPERSTRUCTURE COMPONENTS:	2"
ELSEWHERE UNLESS OTHERWISE INDICATED:	3"

3. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:

   SPACING: ±1"
   CLEARANCE: ± 1/4"

4. ALL REINFORCING STEEL IN THE BOX BEAMS SHALL BE EPOXY COATED AND PAID UNDER ITEM 510.21, PRESTRESSED CONCRETE BOX BEAMS (27"x36") (MOD. - LIGHTWEIGHT) OR (27"x48") (MOD. - LIGHTWEIGHT).
5. WHEN EPOXY COATED REINFORCING STEEL 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.

DRAINAGE NOTES:

(1) STA. 5+15.0, RT. 12.4 - STA. 5+53.0, RT. 35.7
18" X 39.0 LF PCCSP, CAAP, OR CPEP (SL)
PC-DI WITH GRATE, TYPE E AT STA. 5+15.0, RT. 12.4
RIM ELEV. = 703.94
INV. OUT = 701.00
PC-DI SHALL CONFORM TO THE DIMENSIONS AND REINFORCING REQUIREMENTS AS SHOWN ON STANDARD SHEET D-16

(2) STA. 7+80.0, RT. 13.0 - STA. 7+80.0, LT. 13.0
18" X 22.0 LF PCCSP, CAAP, RCP, OR CPEP (SL)
PC-CB WITH GRATE, TYPE E AT STA. 7+80.0, RT. 13.0
RIM ELEV. = 705.25
INV. OUT = 699.75

(3) STA. 9+20.0, LT. 13.0 - STA. 7+80.0, LT. 13.0
18" X 140.0 LF PCCSP, CAAP, RCP, OR CPEP (SL)
PC-CB WITH GRATE, TYPE E AT STA. 9+20.0, LT. 13.0
RIM ELEV. = 705.88
INV. OUT = 700.38

(4) STA. 7+80.0, LT. 13.0 - STA. 7+66.8, LT. 26.0
18" X 22.0 LF PCCSP, CAAP, OR CPEP (SL)
PC-CB WITH GRATE, TYPE E AT STA. 7+80.0, LT. 13.0
RIM ELEV. = 705.25
INV. IN (E) = 699.68
INV. IN (S) = 699.64
INV. OUT = 697.50
CONST. 6' WIDE X 14' LONG X 2' DEEP STONE FILL SWALE, TYPE II

(5) STA. 7+62.5 LT
REMOVE EXISTING DI
REMOVE EXISTING 8"x66' PIPE TO R.O.W. LIMITS
(INCIDENTAL TO TRENCH EXCAVATION OF EARTH)

REVISION	DATE	BY
⚠1 NOTE CHANGE	11/21/06	M. COLGAN

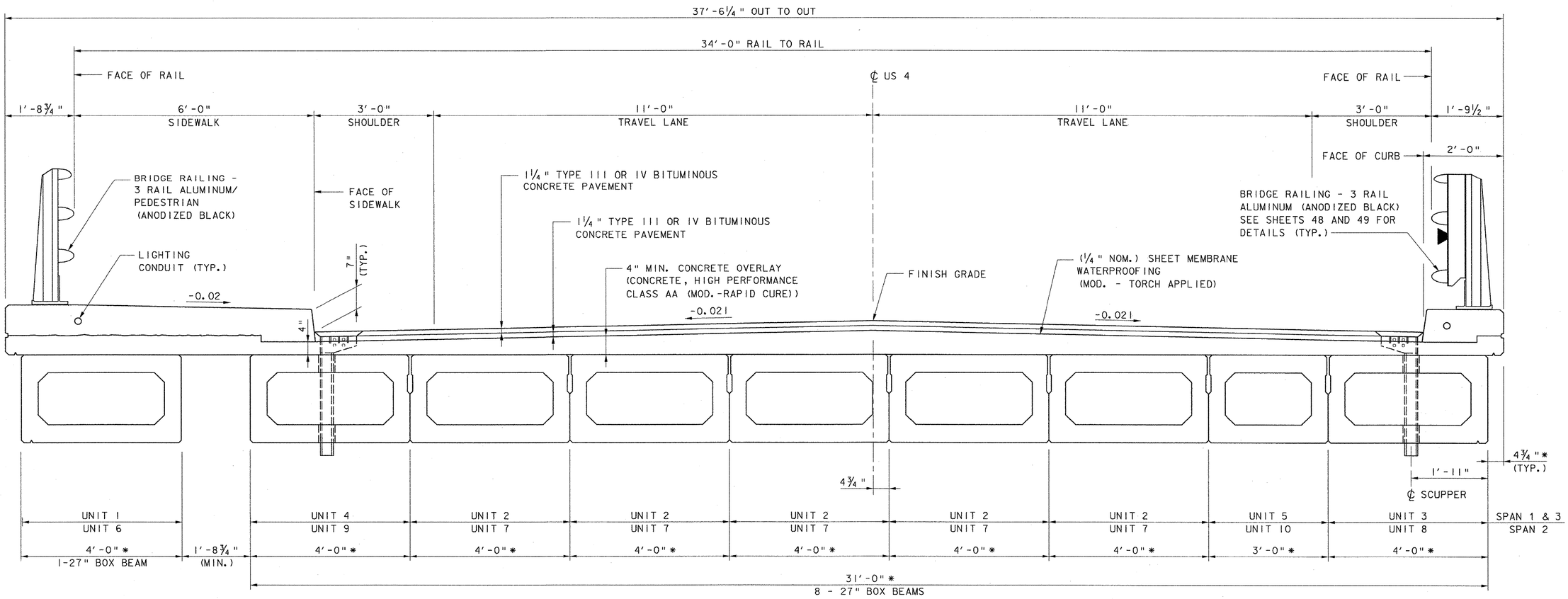
VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
GENERAL NOTES (2 OF 2)	
Designed By J. T. KLEIN	Drawn By B. J. MASSE
Checked By M. A. COLGAN Date 10/06	Bridge Design Supervisor M. A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028GN2	Sheet 23 of 71

VHB NO. 51298

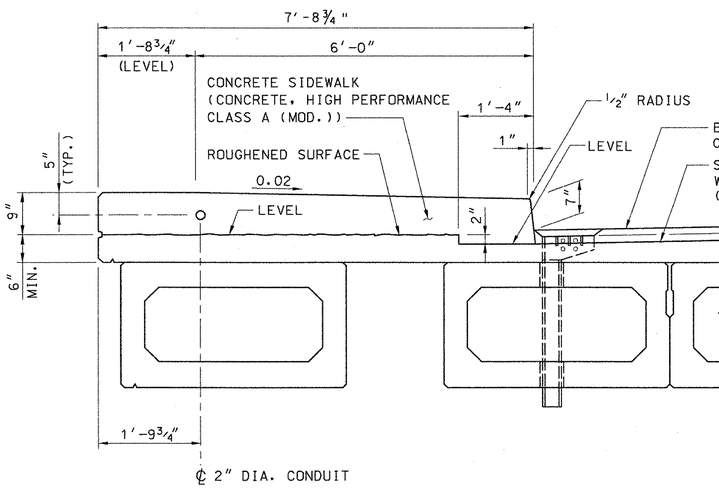
plot date: 11/21/2006



* NOMINAL DIMENSION - MAY VARY BASED UPON FINAL BOX PLACEMENTS

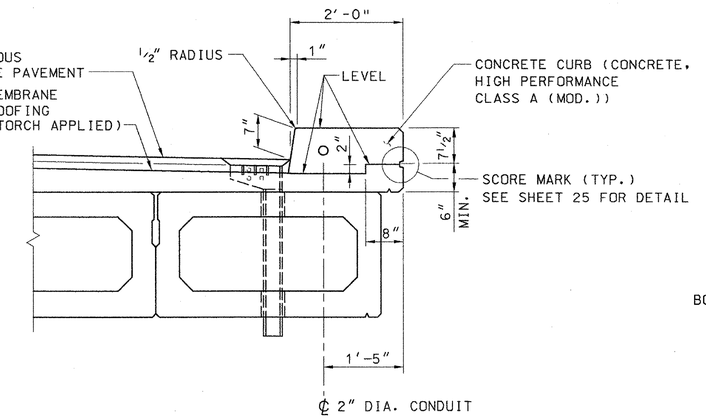
BRIDGE TYPICAL SECTION

SCALE: 3/4" = 1'-0"



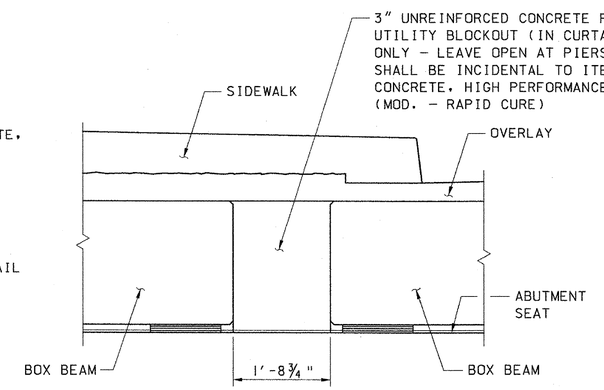
TYPICAL SIDEWALK DETAIL

SCALE: 3/4" = 1'-0"



TYPICAL CURB DETAIL

SCALE: 3/4" = 1'-0"



ELEVATION

FUTURE UTILITY BAY DETAILS

(ABUTMENT 1 SHOWN, PIERS & ABUTMENT 2 SIMILAR)

SCALE: 3/4 " = 1'-0"

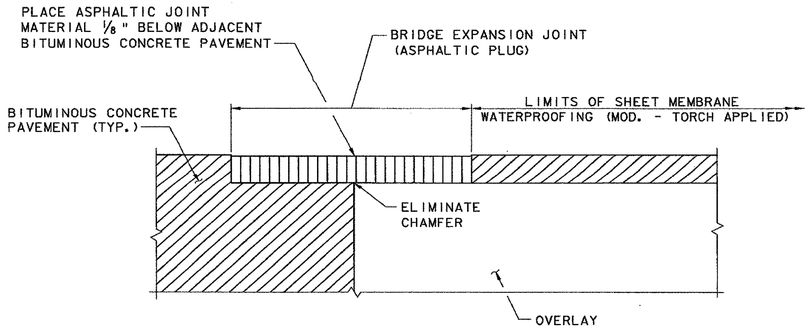
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
BRIDGE TYPICAL SECTION	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DD1	Sheet 24 of 71

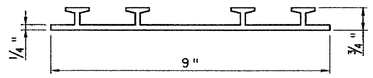
VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

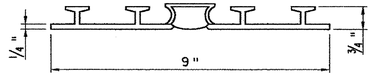
plot date: 10/11/2006



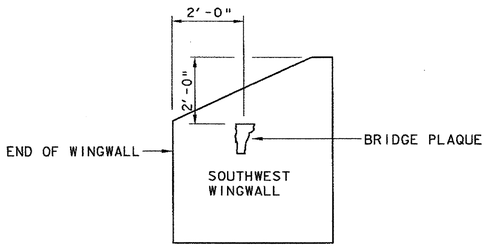
ASPHALTIC PLUG TYPE JOINT DETAIL
N. T. S.



P. V. C. WATERSTOP FOR CONSTRUCTION JOINTS
N. T. S.

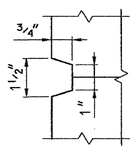


P. V. C. WATERSTOP FOR EXPANSION JOINTS
N. T. S.

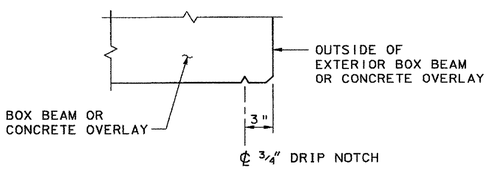


THE BRIDGE PLAQUE SHALL BE SUPPLIED BY THE AGENCY OF TRANSPORTATION AND INSTALLED BY THE CONTRACTOR AS SHOWN OR AS DIRECTED BY THE ENGINEER.

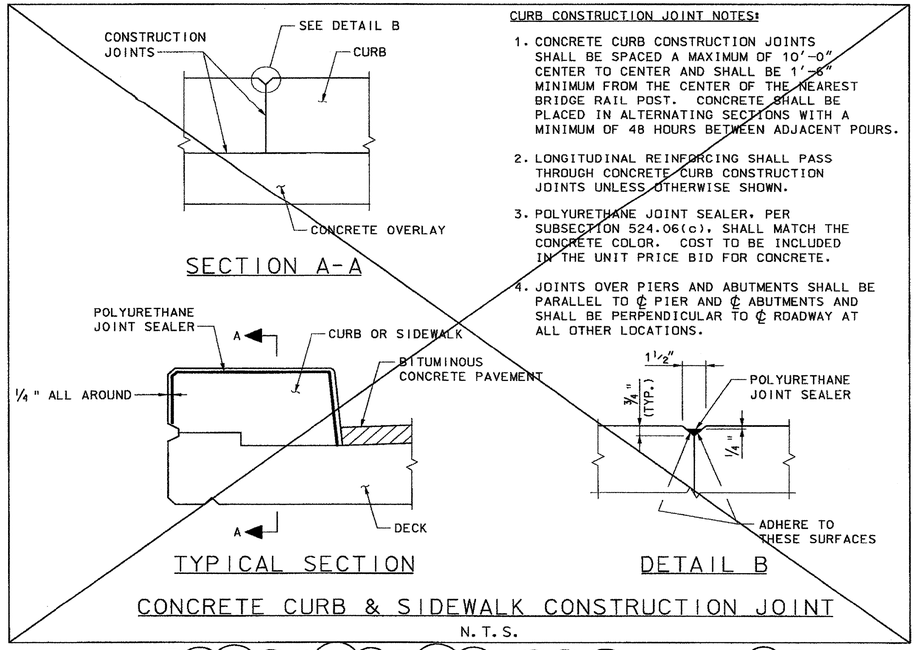
BRIDGE PLAQUE LOCATION
N. T. S.



SCORE MARK DETAIL
N. T. S.



DRIP NOTCH DETAIL
N. T. S.

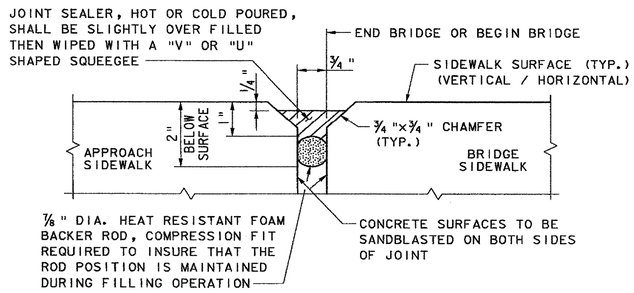


CURB CONSTRUCTION JOINT NOTES:

1. CONCRETE CURB CONSTRUCTION JOINTS SHALL BE SPACED A MAXIMUM OF 10'-0" CENTER TO CENTER AND SHALL BE 1'-6" MINIMUM FROM THE CENTER OF THE NEAREST BRIDGE RAIL POST. CONCRETE SHALL BE PLACED IN ALTERNATING SECTIONS WITH A MINIMUM OF 48 HOURS BETWEEN ADJACENT POURS.
2. LONGITUDINAL REINFORCING SHALL PASS THROUGH CONCRETE CURB CONSTRUCTION JOINTS UNLESS OTHERWISE SHOWN.
3. POLYURETHANE JOINT SEALER. PER SUBSECTION 524.06(c), SHALL MATCH THE CONCRETE COLOR. COST TO BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE.
4. JOINTS OVER PIERS AND ABUTMENTS SHALL BE PARALLEL TO ℄ PIER AND ℄ ABUTMENTS AND SHALL BE PERPENDICULAR TO ℄ ROADWAY AT ALL OTHER LOCATIONS.

CONCRETE CURB & SIDEWALK CONSTRUCTION JOINT
N. T. S.

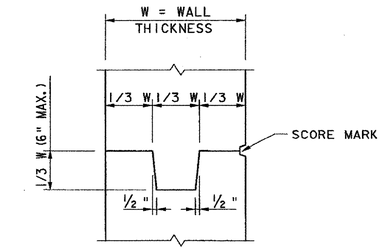
⚠1 BRIDGE CURB AND BRIDGE SIDEWALK CONCRETE MAY BE POURED CONTINUOUSLY FOR THE FULL LENGTH OF THE BRIDGE WITHOUT THE USE OF JOINTS.



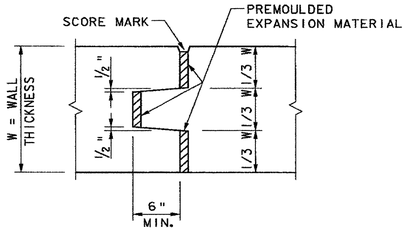
NOTES:

1. JOINT TO BE SEALED 24 HOURS PRIOR TO EXPOSURE TO GENERAL TRAFFIC, AND WITHIN 24 HOURS OF SAND BLASTING JOINT. SEE SPECIFICATION SECTION 524.
2. COST FOR SAND BLASTING AND FOR 1/8" DIA. BACKER ROD SHALL BE SUBSIDIARY TO UNIT PRICE FOR JOINT SEALER.
3. JOINT DETAIL SHALL APPLY FOR VERTICAL AND HORIZONTAL SURFACES OF JOINT.
4. ALL MATERIALS AND LABOR FOR SIDEWALK JOINTS SHALL BE PAID FOR UNDER THE ITEM 524.11, JOINT SEALER, HOT POURED, OR 524.13, JOINT SEALER, COLD POURED.

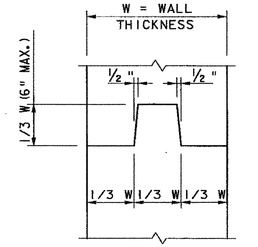
SIDEWALK EXPANSION JOINT DETAIL
(AT BEGIN AND END BRIDGE ONLY)
N. T. S.



TYPICAL CONCRETE CONSTRUCTION JOINT
N. T. S.



TYPICAL CONCRETE EXPANSION JOINT
N. T. S.



TYPICAL SHEAR KEY
N. T. S.

REVISION	DATE	BY
⚠1 JOINT CHANGE	11/21/06	M. COLGAN

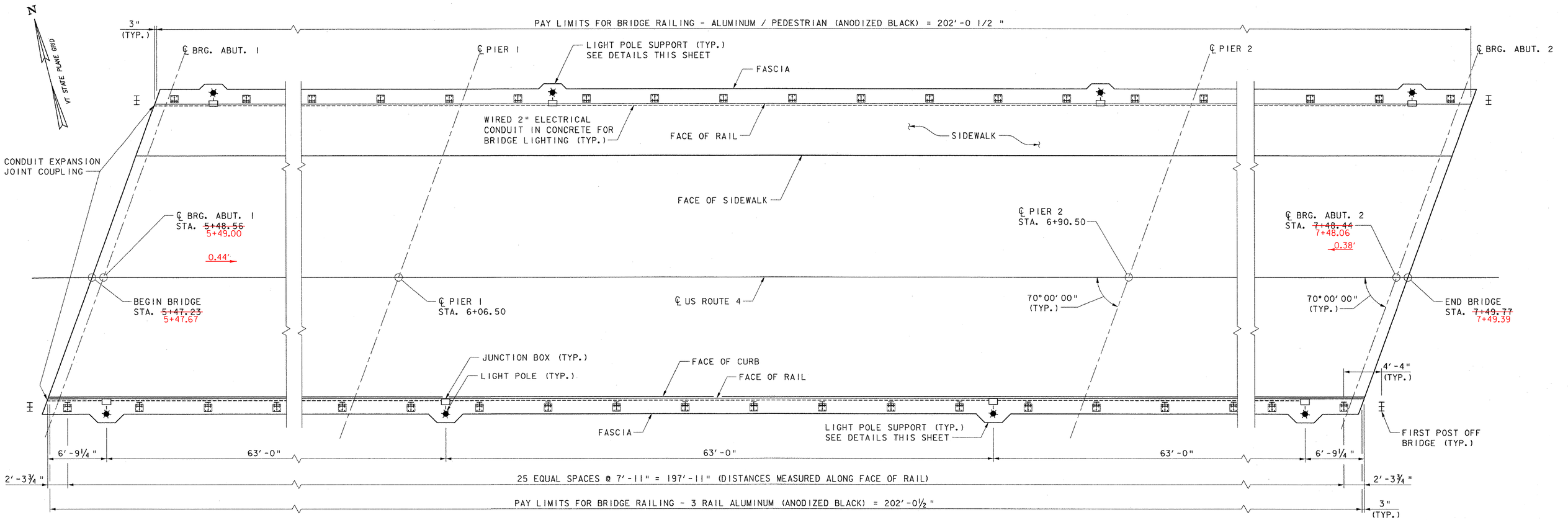
VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
MISCELLANEOUS DETAILS	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DD2	Sheet 25 of 71

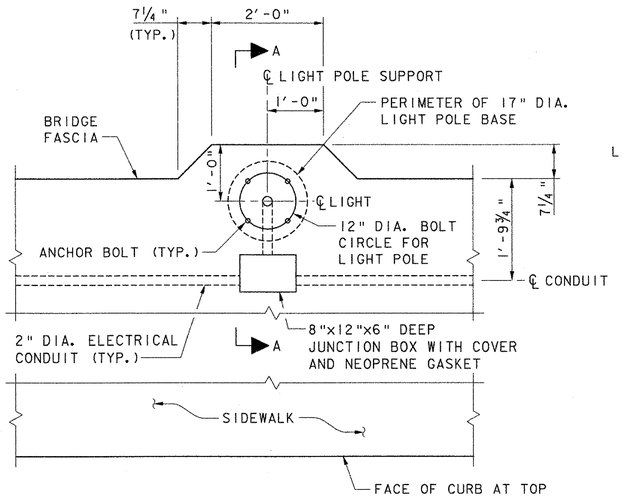
VHB NO. 51298

plot date: 11/21/2006

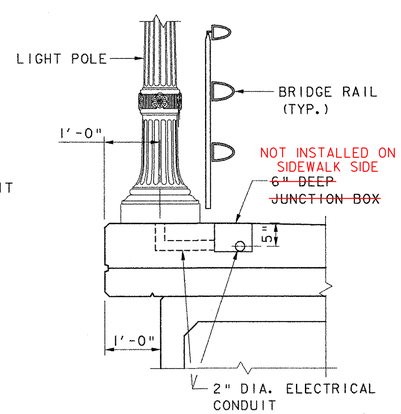


PLAN

SCALE: 3/16" = 1'-0"



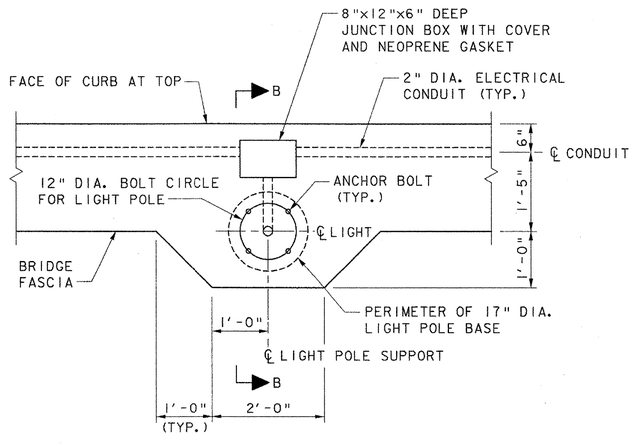
PLAN



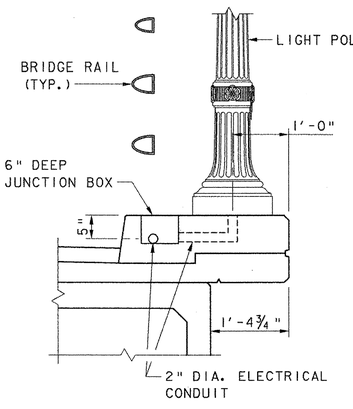
SECTION A-A

SIDEWALK SIDE TYPICAL BRIDGE LIGHT SUPPORT DETAILS

SCALE: 3/4" = 1'-0"



PLAN



SECTION B-B

CURB SIDE TYPICAL BRIDGE LIGHT SUPPORT DETAILS

SCALE: 3/4" = 1'-0"

NOTES:

1. SEE SHEET 45 FOR LOCATION OF ELECTRICAL CONDUIT BEYOND BRIDGE AND BRIDGE LIGHTING DETAILS.
2. RAIL POST AND LIGHT POLE SPACING ON SIDEWALK SIDE IS SAME AS SHOWN FOR CURB SIDE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING LIGHT POLE ANCHOR BOLT TYPE, LENGTH, AND SIZE PER MANUFACTURER'S RECOMENDATIONS. ALL COSTS SHALL BE PAID UNDER 679.45, LIGHT POLE (MOD.).

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

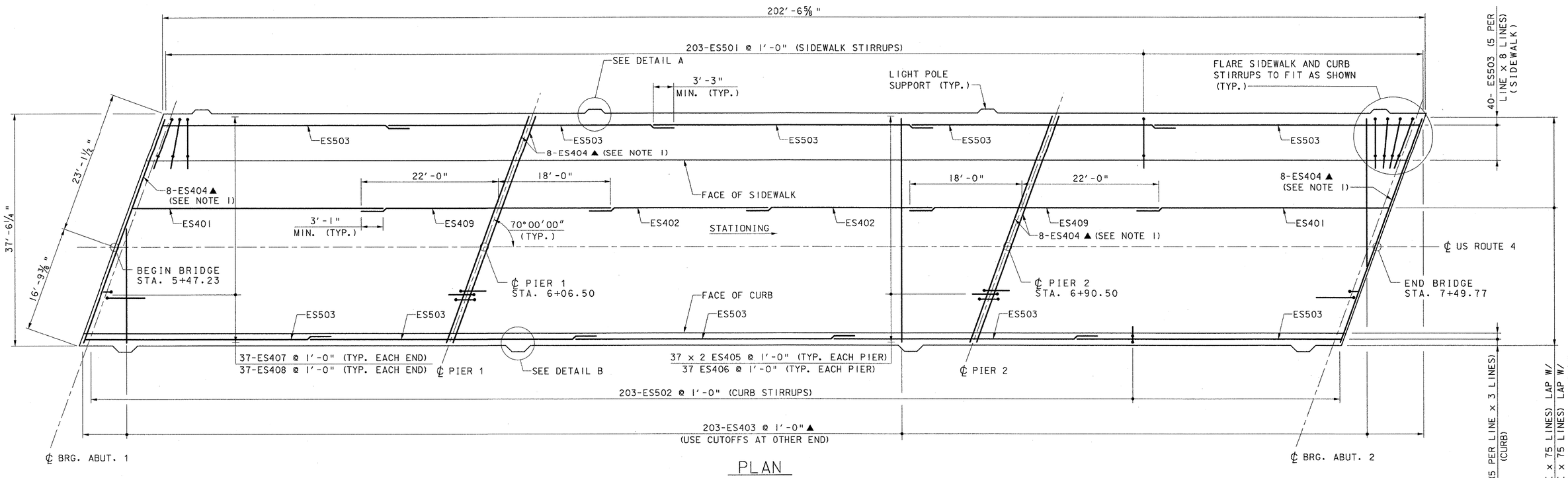
BRIDGE RAIL AND LIGHTING LAYOUT

Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By T.S. BRYANT Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028RL1	Sheet 26 of 71

VHB Vanasse Hangen Brustlin, Inc.

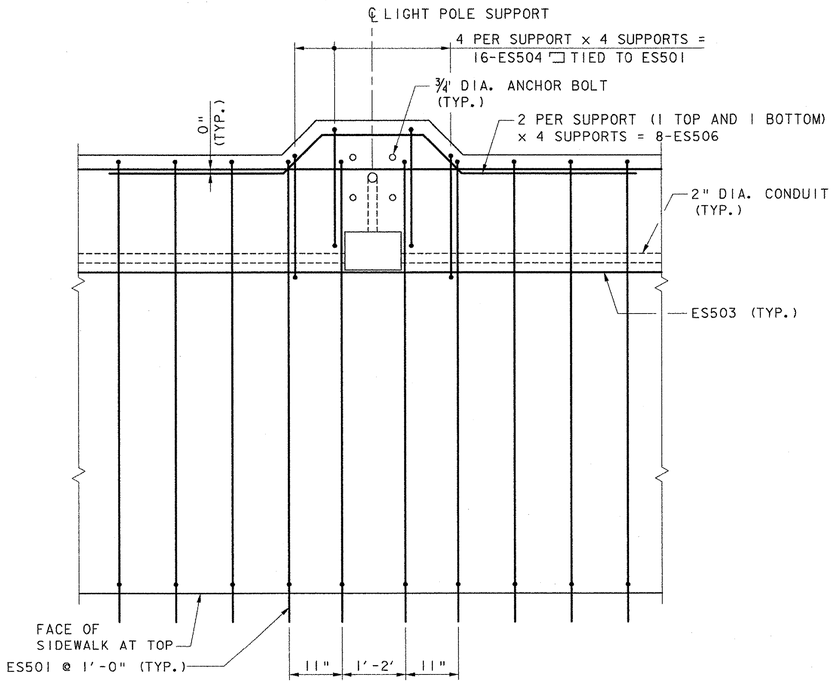
VHB NO. 51298

plot date: 10/11/2006



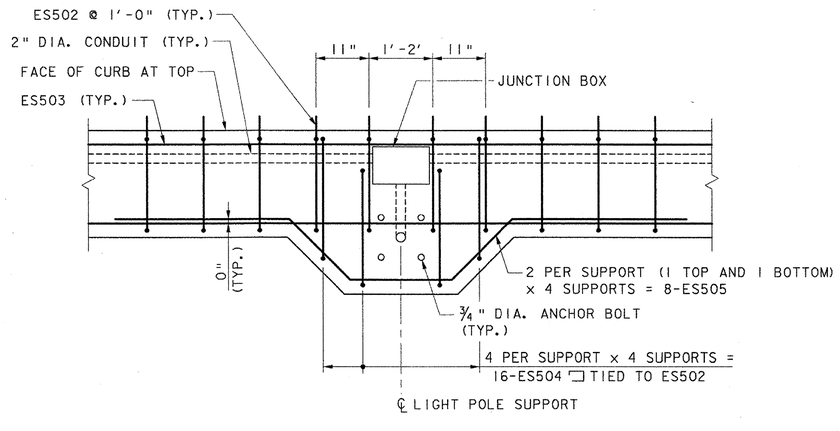
PLAN

SCALE 1/8 " = 1'-0



DETAIL A

SCALE 3/4 " = 1'-0



DETAIL B

SCALE 3/4 " = 1'-0

NOTES:

1. SEE SHEET 28 FOR REINFORCING DETAILS. CUT ES404 BARS TO FIT WITH UTILITY BLOCKOUT.
2. SEE SHEET 26 FOR RAIL POST LAYOUT AND LIGHT POLE SUPPORT DETAILS.
3. OVERLAY SHALL BE PLACED CONTINUOUSLY FROM ABUTMENT 1 END TO ABUTMENT 2 END.

REINFORCING KEY

▲ DENOTES BARS TO BE CUT IN FIELD

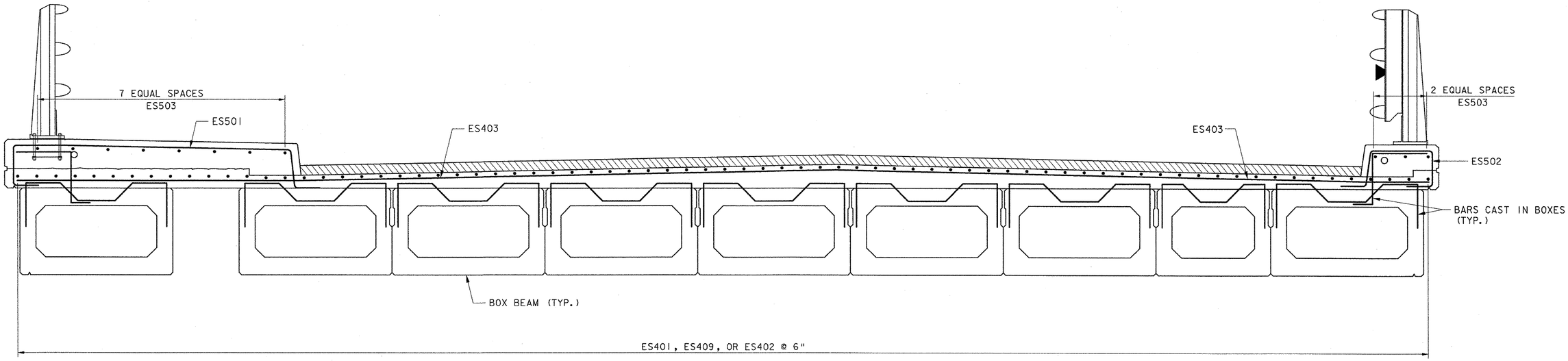
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
OVERLAY REINFORCEMENT (1 OF 2)	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DK	Sheet 27 of 71

VHB Vanasse Hangen Brustlin, Inc.

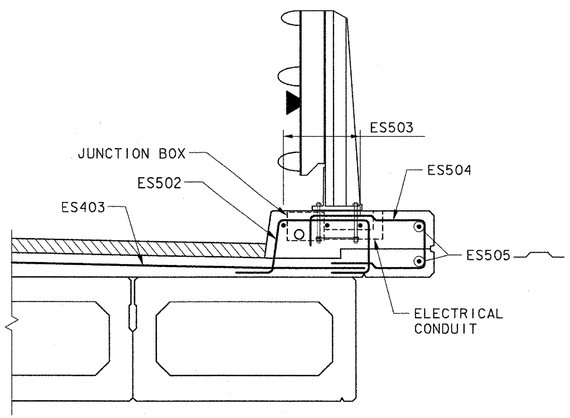
VHB NO. 51298

plot date: 10/6/2006



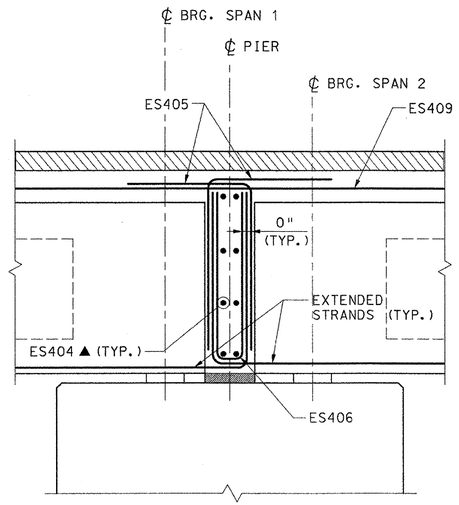
TYPICAL SIDEWALK & CURB REINFORCEMENT

SCALE: 3/4" = 1'-0"



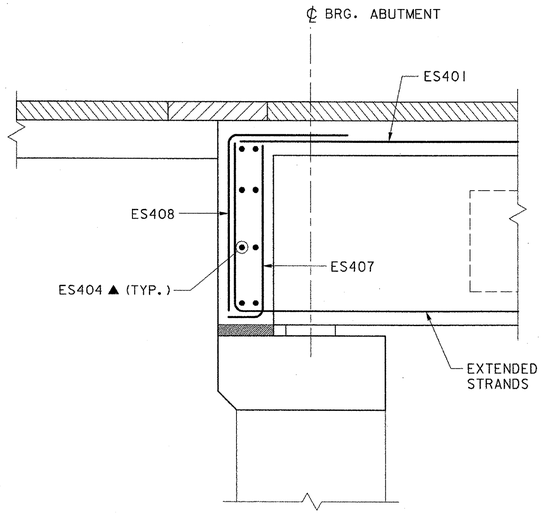
SECTION THRU CURB AT LIGHT POLE SUPPORT

(CURB REINFORCING SHOWN, SIDEWALK REINFORCING AT LIGHT POLE SUPPORT SIMILAR)
SCALE: 3/4" = 1'-0"



TYPICAL SECTION OVER PIERS

(PIER 1 SHOWN, PIER 2 SIMILAR OPPOSITE HAND)
(SHOWN PERPENDICULAR TO ℄ PIER)
N.T.S.



BRIDGE END DETAIL

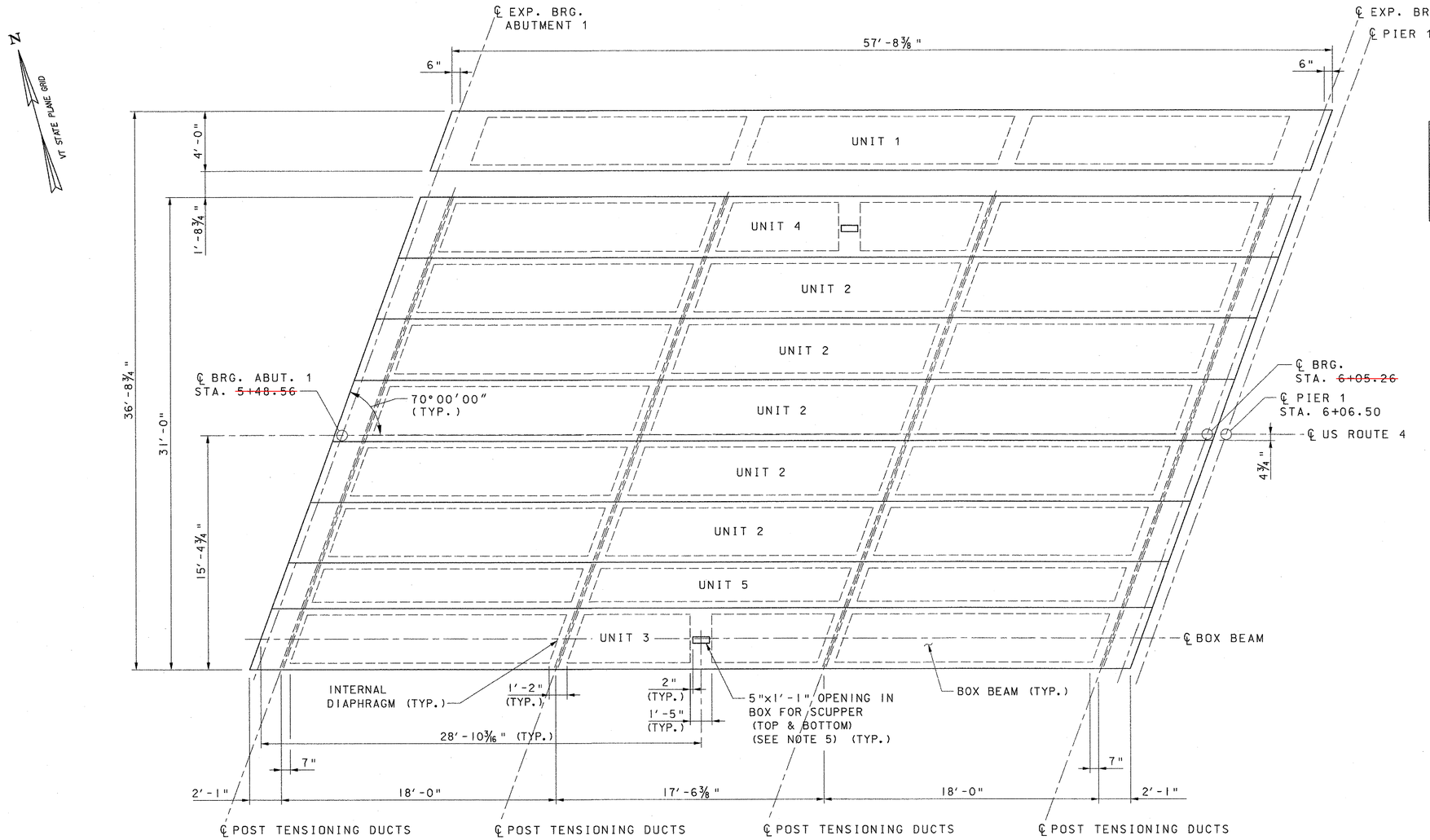
(SHOWN PERPENDICULAR TO ℄ BEARING)
SCALE: 1" = 1'-0"

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
OVERLAY REINFORCEMENT (2 OF 2)	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DK4	Sheet 28 of 71

VHB NO. 51298 plot date: 10/6/2006



PLAN

SCALE: 1/4" = 1′-0"

DEAD LOAD DEFLECTION AT MIDSPAN	
ANTICIPATED CAMBER AT ERECTION	+1"
NON-COMPOSITE DEAD LOAD DEFLECTION (OVERLAY)	-0⅞"
COMPOSITE DEAD LOAD DEFLECTION (CURB, SIDEWALK, PAVEMENT, ETC.)	-0⅛"
NET DEFLECTION	+0"

NOTES:

1. OMIT POST TENSIONING DUCTS IN UNIT 1.
2. OMIT KEYWAY ON UNIT 1 AND EXTERIOR OF UNITS 3 & 4.
3. EXTEND 3 BOTTOM STRANDS IN EACH BOX BEAM INTO CURTAIN WALL AND CLOSURE POUR AND TURN UP AS SHOWN IN SECTIONS ON SHEET 28. STRANDS SHALL EXTEND VERTICALLY TO REINFORCING STEEL MAT IN OVERLAY.
4. SEE SHEET 32 FOR TYPICAL SECTIONS.
5. SEE SHEET 35 FOR SCUPPER DETAILS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

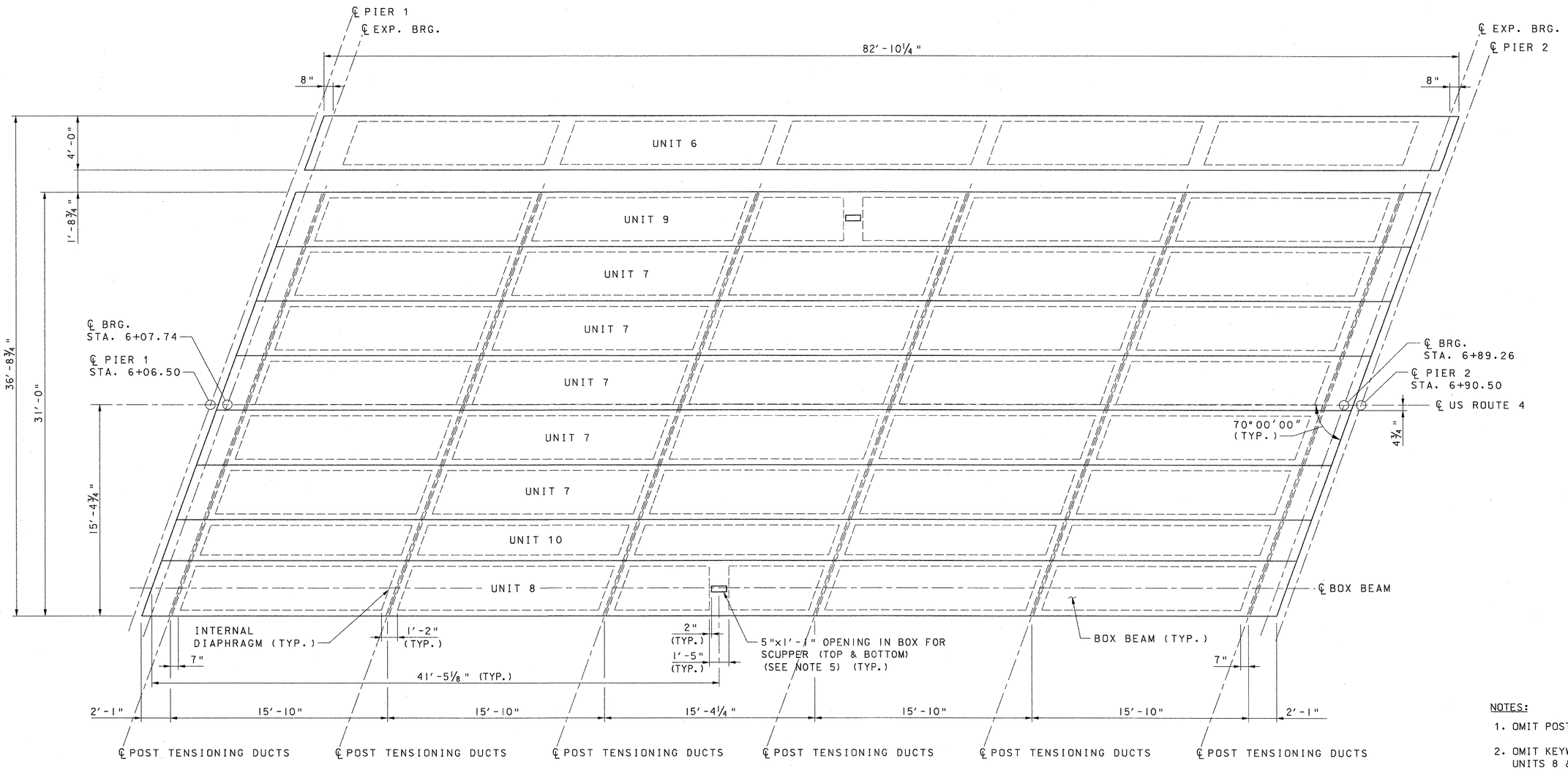
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

SPAN 1 FRAMING PLAN

Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DK1	Sheet 29 of 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298 plot date: 9/14/2006



PLAN

SCALE: 1/4" = 1′-0"

DEAD LOAD DEFLECTION AT MIDSPAN	
ANTICIPATED CAMBER AT ERECTION	+4" ↑
NON-COMPOSITE DEAD LOAD DEFLECTION (OVERLAY)	-3⅜" ↓
COMPOSITE DEAD LOAD DEFLECTION (CURB, SIDEWALK, PAVEMENT, ETC.)	-0⅜" ↓
NET DEFLECTION	+0¼" ↑

NOTES:

1. OMIT POST TENSIONING DUCTS IN UNIT 1.
2. OMIT KEYWAY ON UNIT 6 AND EXTERIOR OF UNITS 8 & 9.
3. EXTEND 6 BOTTOM STRANDS IN EACH BOX BEAM 2′-4" INTO CURTAIN WALL AND CLOSURE POUR AND TURN UP.
4. SEE SHEET 33 TYPICAL SECTIONS.
5. SEE SHEET 35 FOR SCUPPER DETAILS.

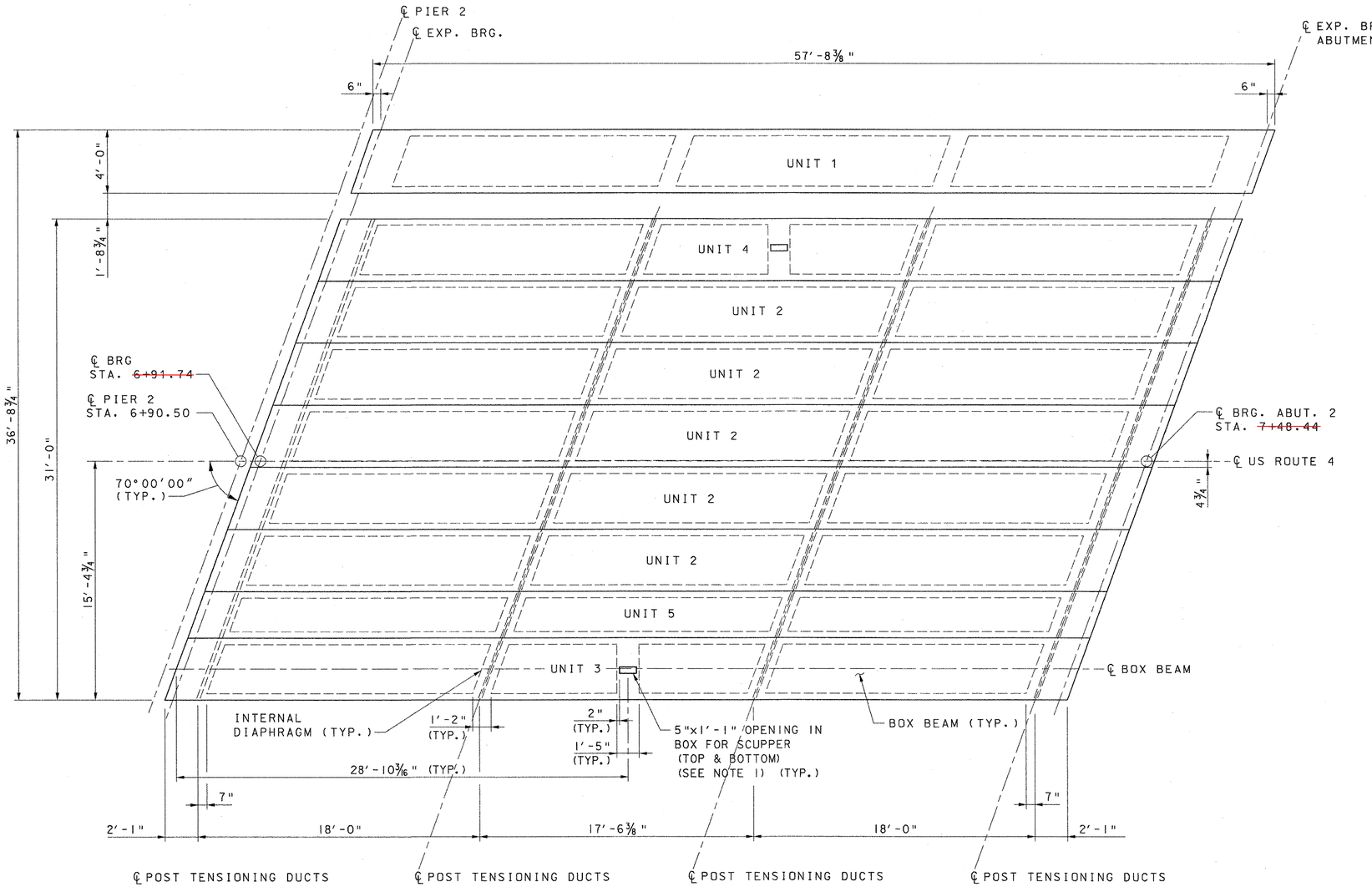
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
SPAN 2 FRAMING PLAN	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DK2	Sheet 30 of 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

plot date: 9/14/2006



PLAN

SCALE: 1/4" = 1′-0"

NOTE:

1. SEE SHEET 29 FOR NOTES, SHEET 32 FOR TYPICAL SECTIONS FOR EACH UNIT, AND SHEET 35 FOR SCUPPER DETAILS.

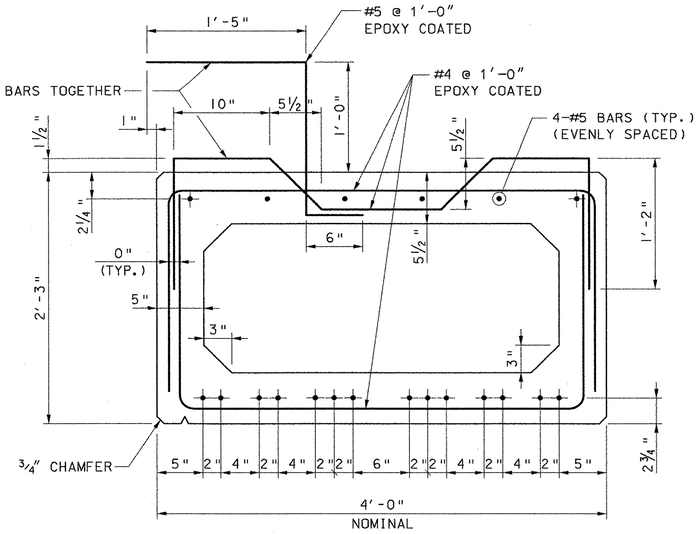
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
SPAN 3 FRAMING PLAN	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By Date S.M. HODGDON 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DK3	Sheet 31 of 71

VHB Vanasse Hangen Brustlin, Inc.

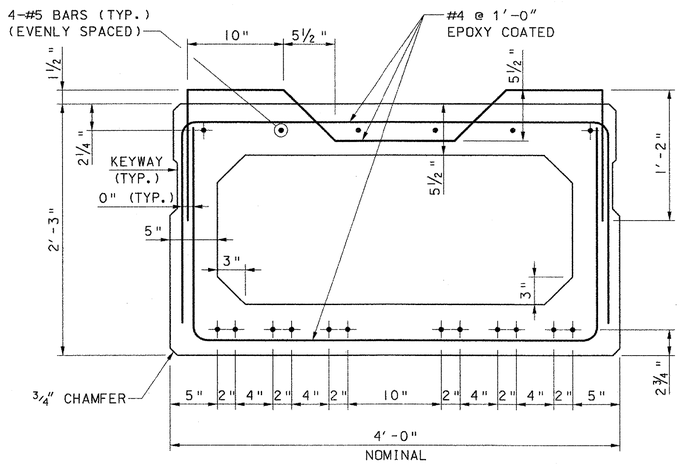
VHB NO. 51298

plot date: 9/14/2006



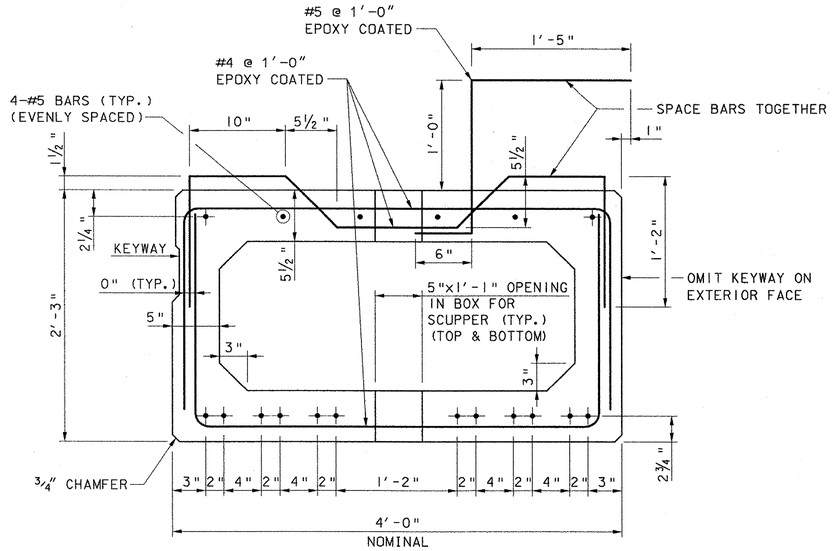
TYPICAL SECTION – UNIT 1

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



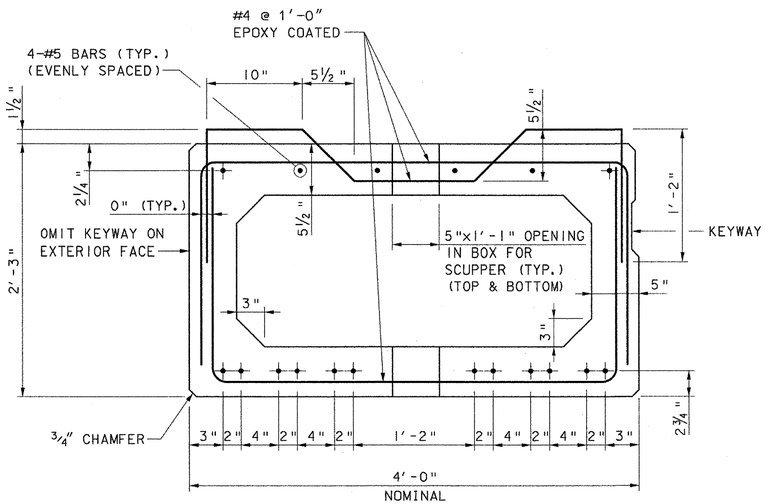
TYPICAL SECTION – UNIT 2

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



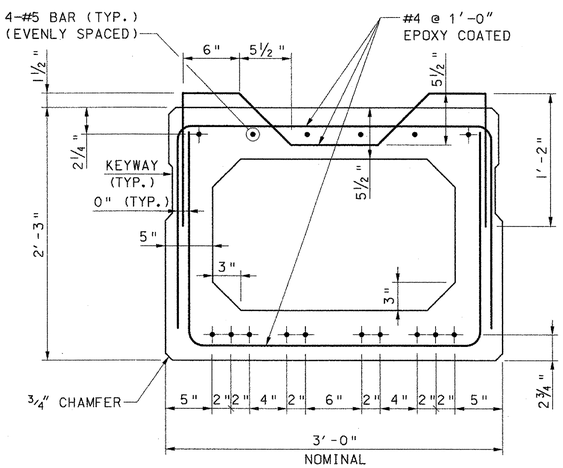
TYPICAL SECTION – UNIT 3

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



TYPICAL SECTION – UNIT 4

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



TYPICAL SECTION – UNIT 5

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

• = #5 REINFORCING BAR

+ = 0.6" DIA. STRAND

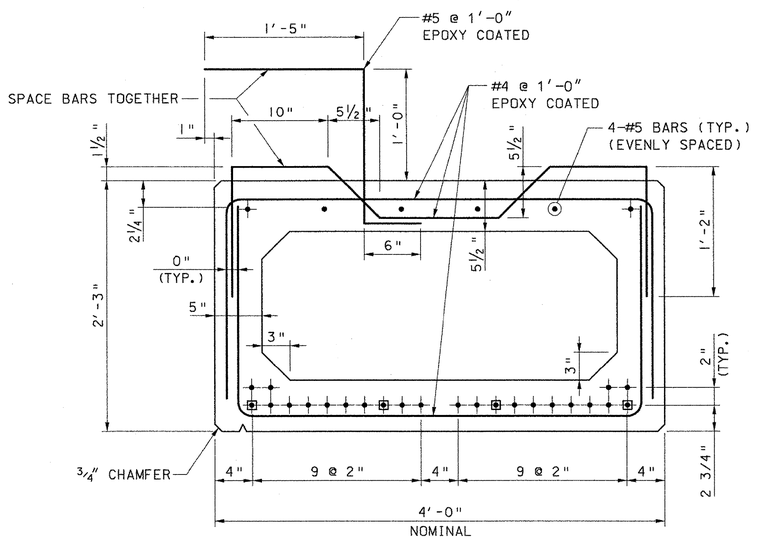
VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
SPAN 1 & 3 BOX BEAM TYPICAL SECTIONS	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By Date S.M. HODGDON 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DK5	Sheet 32 of 71

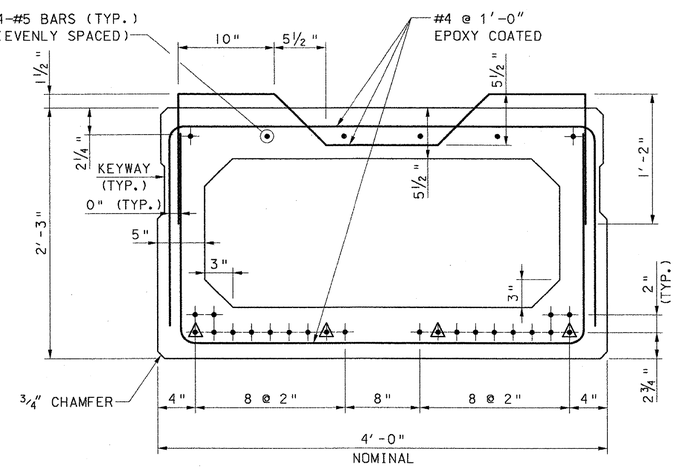
VHB NO. 51298

plot date: 9/14/2006



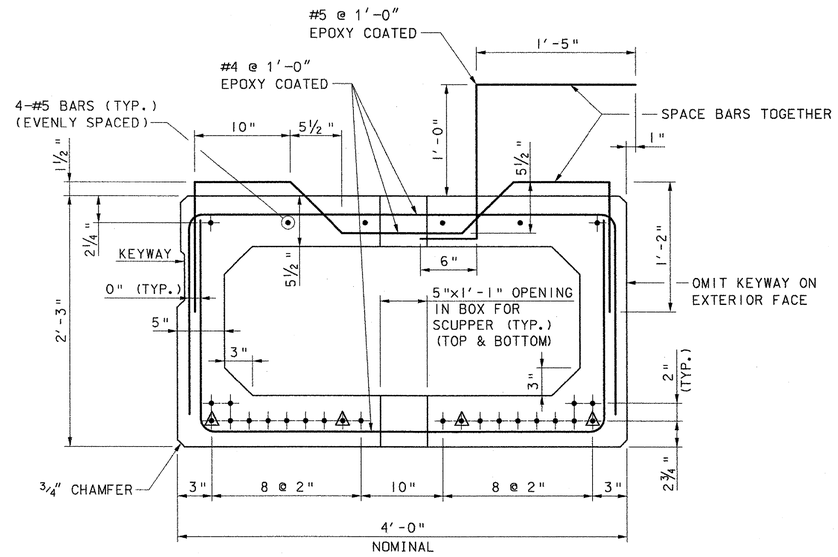
TYPICAL SECTION – UNIT 6

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



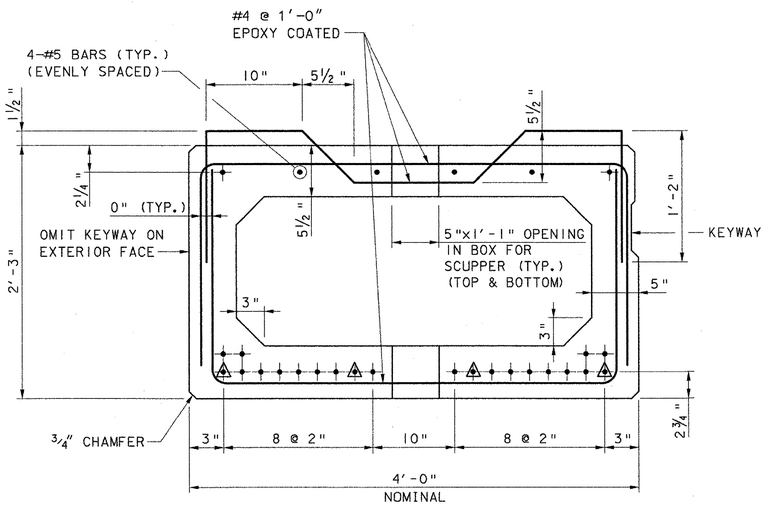
TYPICAL SECTION – UNIT 7

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



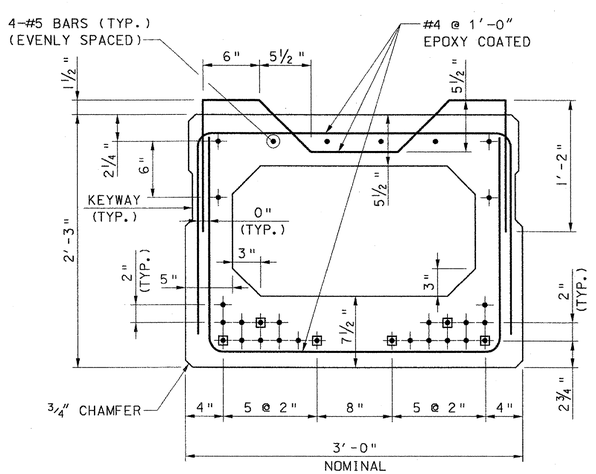
TYPICAL SECTION – UNIT 8

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



TYPICAL SECTION – UNIT 9

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



TYPICAL SECTION – UNIT 10

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

KEY:

- • = #5 REINFORCING BAR
- ⊕ = 0.6" DIA. 270 STRAND
- ⧋ = DEBOND 6'-0"
- ⊞ = DEBOND 24'-0"

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

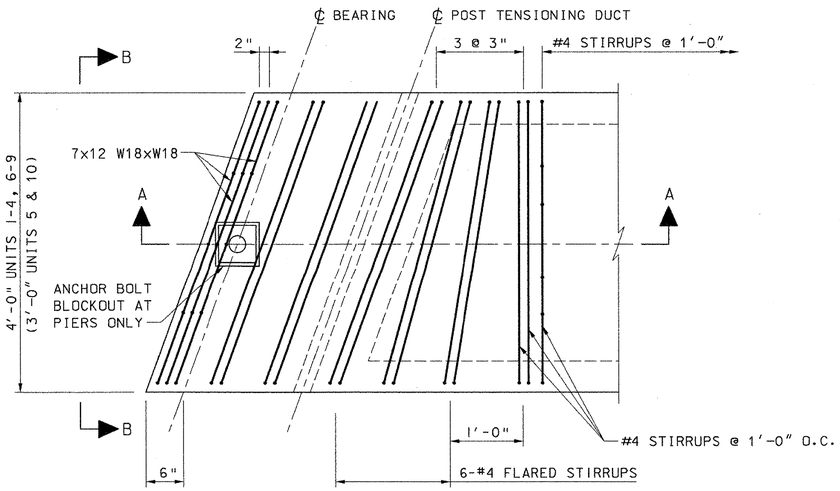
Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

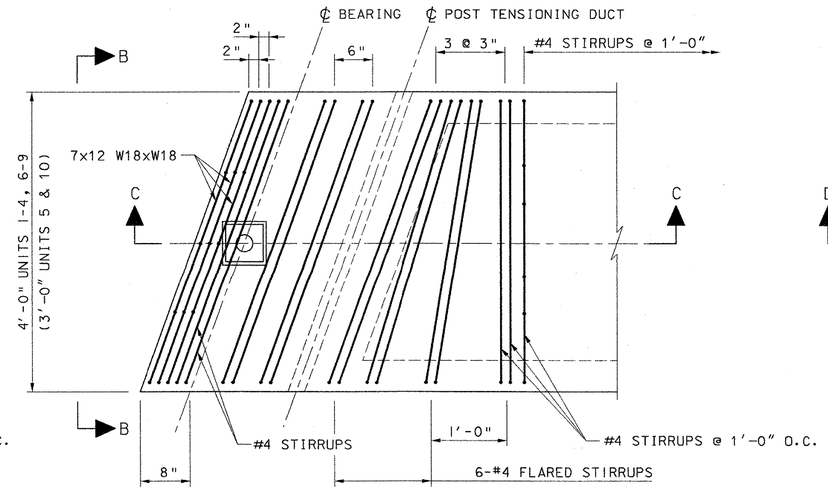
SPAN 2 BOX BEAM TYPICAL SECTIONS

Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028DK6	Sheet 33 of 71

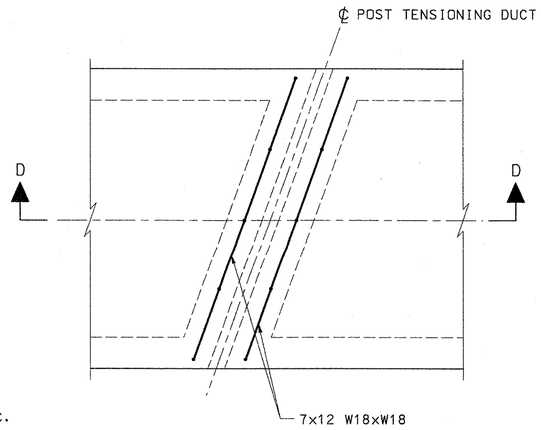
VHB NO. 51298 plot date: 9/14/2006



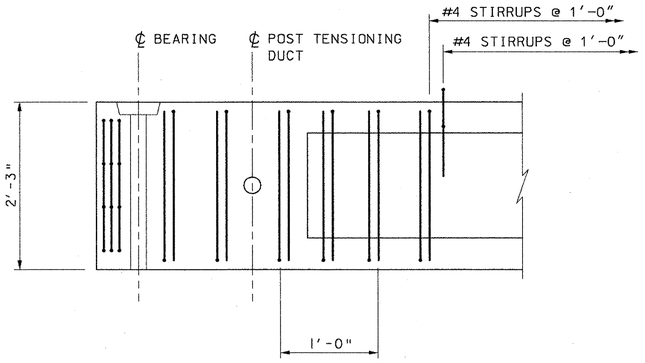
END BLOCK DETAIL
SPANS 1 & 3
SCALE: 1" = 1'-0"



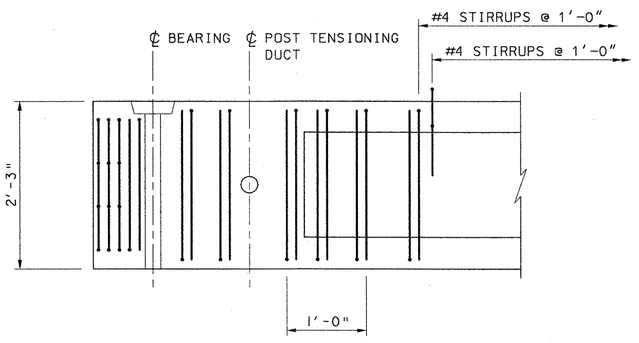
END BLOCK DETAIL
SPAN 2
SCALE: 1" = 1'-0"



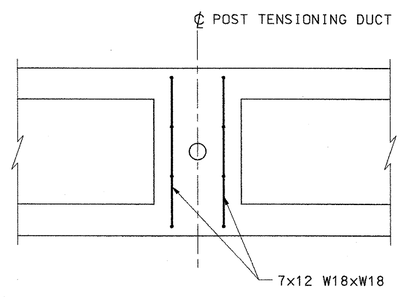
DETAIL AT TRANSVERSE TENDON
SCALE: 1" = 1'-0"



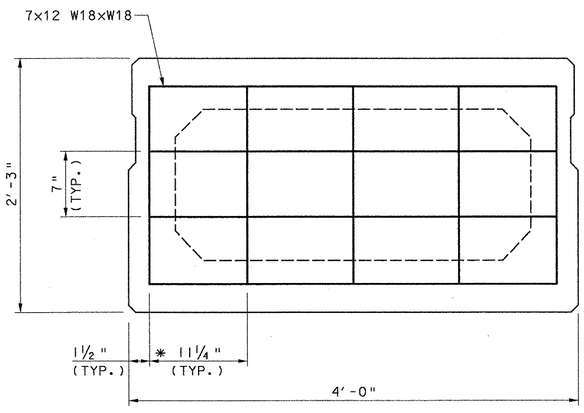
BOX BEAM SECTION A-A
SCALE: 1" = 1'-0"



BOX BEAM SECTION C-C
SCALE: 1" = 1'-0"

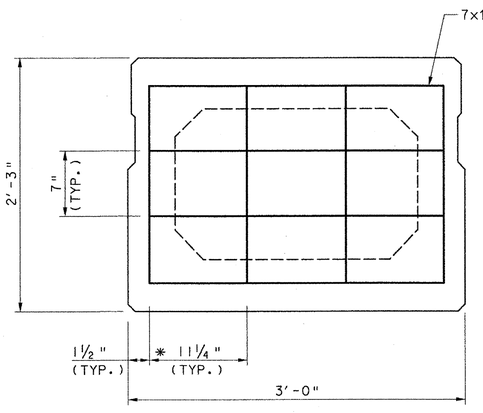


BOX BEAM SECTION D-D
SCALE: 1" = 1'-0"



UNITS 1-4, 6-9
SCALE: 1 1/2" = 1'-0"

VIEW B-B



UNITS 5 & 10
SCALE: 1 1/2" = 1'-0"

* EFFECTS OF SKEW ON GRID

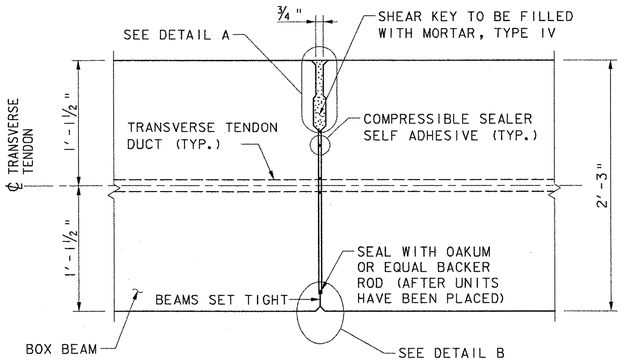
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
BOX BEAM DETAILS (1 OF 2)	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By S.M. HODGDON 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028BB2	Sheet 34 of 71

VHB Vanasse Hangen Brustlin, Inc.

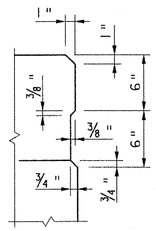
VHB NO. 51298

plot date: 9/14/2006



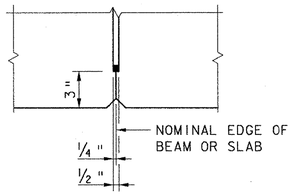
BOX BEAM SHEAR KEY

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



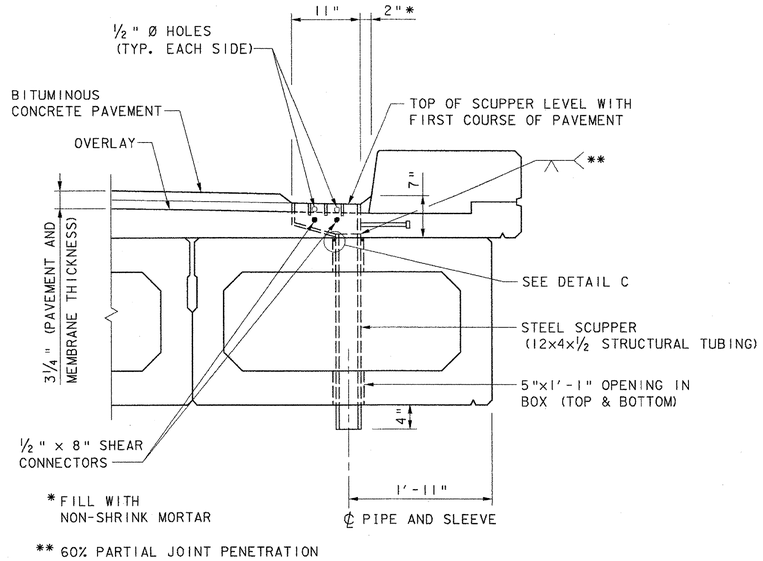
DETAIL A

SCALE: 3" = 1'-0"

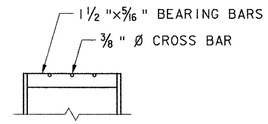


DETAIL B

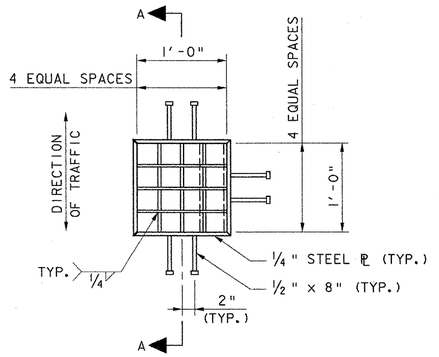
SCALE: 3" = 1'-0"



SECTION



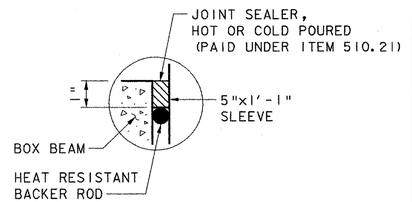
SECTION A-A



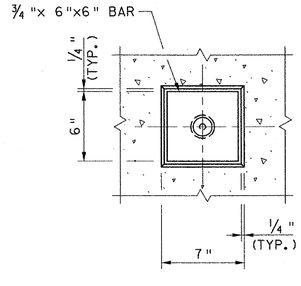
PLAN

SCUPPER DETAILS

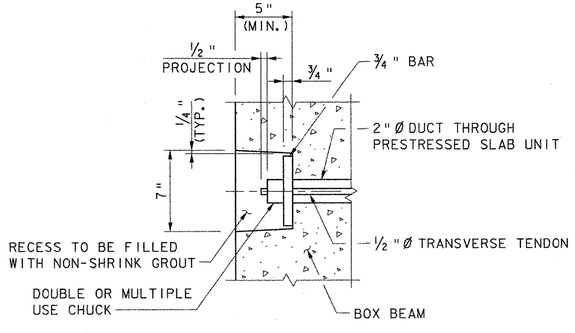
(BRUSH CURB LOCATION SHOWN, SIDEWALK LOCATION SIMILAR)



DETAIL C



ELEVATION



SECTION

TRANSVERSE TENDON DETAIL

SCALE: 3" = 1'-0"

SCUPPER NOTES

1. ALL PLATES SHALL BE ¼" THICK AND SHALL CONFORM TO AASHTO M183 (ASTM A36).
2. THE DOWNSPOUT SHALL BE SCHEDULE 80 STEEL PIPE CONFORMING TO ASTM A501.
3. GRATING SHALL BE A COMMERCIAL HEAVY-DUTY GRATING WITH 1½" x ⅝" BEARING BARS AND ⅜" Ø CROSS BARS.
4. THE CONTRACTOR SHALL SUBMIT FABRICATION DRAWINGS FOR SCUPPERS IN ACCORDANCE WITH SUBSECTION 105.03. DRAWINGS, DETAILS, AND WELDING PROCEDURES MUST BE SUBMITTED IN A COMPLETE PACKAGE. ALL FABRICATION OF STEEL COMPONENTS SHALL BE IN ACCORDANCE WITH APPLICABLE SECTIONS OF 506 AND 508. ALL COSTS FOR SCUPPERS WILL BE INCLUDED UNDER ITEM 510.21.
5. ALL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111 (ASTM A123).

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

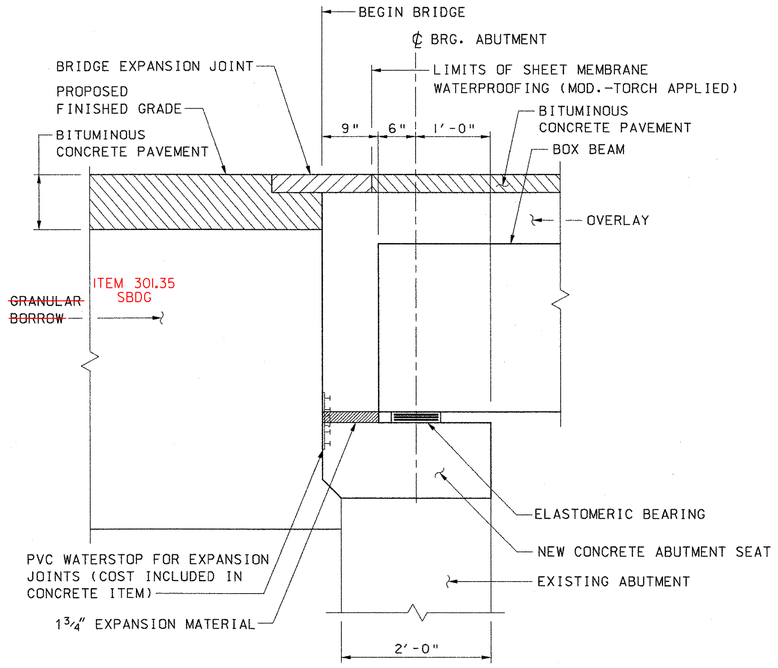
BOX BEAM DETAILS (2 OF 2)

Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028BB1	Sheet 35 of 71

VHB Vanasse Hangen Brustlin, Inc.

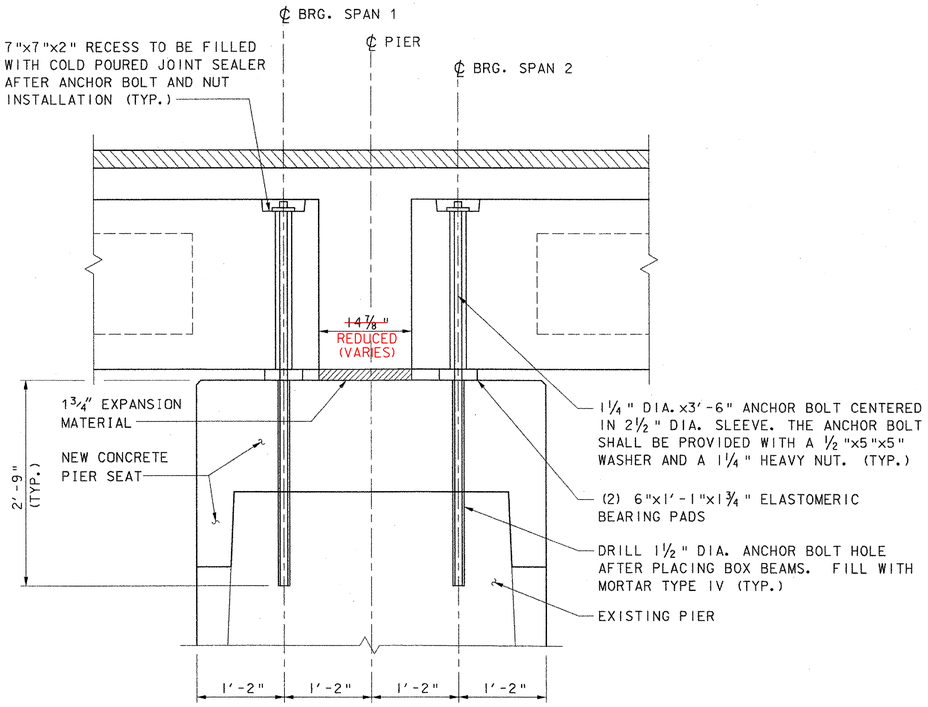
VHB NO. 51298

plot date: 9/14/2006



END OF BRIDGE DETAIL

(ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR)
(SHOWN PERPENDICULAR TO ABUTMENT)
SCALE: 1" = 1'-0"

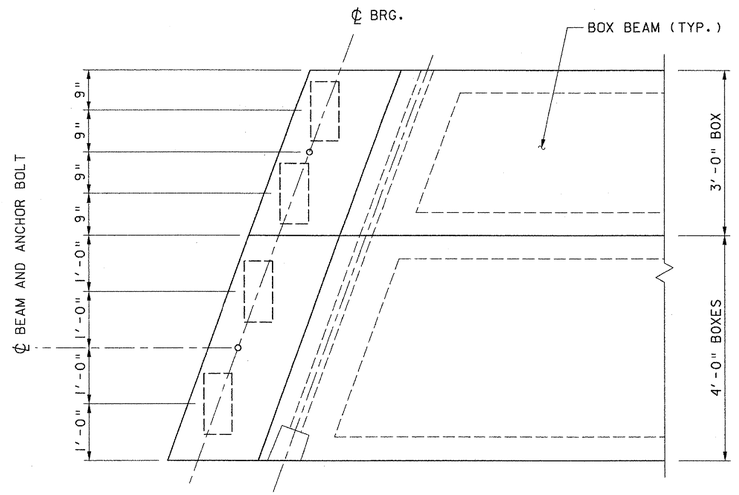


TYPICAL SECTION OVER PIERS

(PIER 1 SHOWN, PIER 2 SIMILAR)
(SHOWN PERPENDICULAR TO ℄ PIER)
SCALE: 1" = 1'-0"

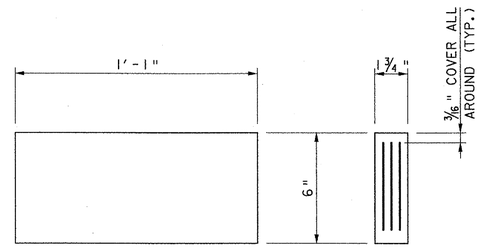
ANCHOR BOLT NOTE:

1. FABRICATOR SHALL SUPPLY A SELF ADHESIVE COMPRESSIBLE SEALER BETWEEN THE BOTTOM OF THE UNITS AND THE BRIDGE SEAT. THIS COMPRESSIBLE SEALER SHALL SURROUND THE 2½" DIA. SLEEVE IN THE UNIT. THE PURPOSE OF THE SEALER IS TO FACILITATE PLACEMENT OF THE COLD POURED JOINT SEALER AROUND THE ANCHOR BOLTS.



TYPICAL BEARING PLACEMENT

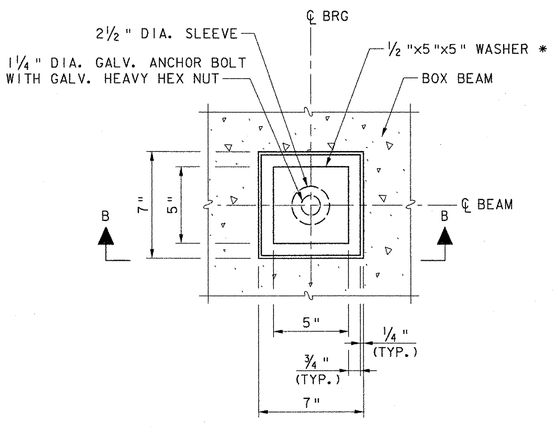
(ANCHOR BOLTS AT PIERS ONLY)
SCALE: 3/4" = 1'-0"



PLAN SIDE VIEW

ELASTOMERIC BEARING DETAIL

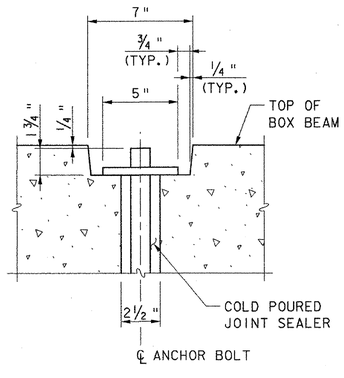
* 2 - 0.50" INTERNAL LAYERS OF ELATOMERIC ALTERNATING WITH 3 - ⅛" STEEL REINFORCING PLATES
SCALE: 3" = 1'-0"



* EM-3 ½" x 5" x 5" WASHER WITH 1½" DIA. HOLE GALVANIZED.

ANCHOR BOLT DETAIL

NOT TO SCALE



SECTION B-B

NOT TO SCALE

ELASTOMERIC BEARING NOTES:

1. ALL COST FOR BOX BEAM ELASTOMERIC BEARINGS SHALL BE PAID UNDER ITEM 531.10, BEARING DEVICE ASSEMBLY (ELASTOMERIC).
2. ALL MATERIALS AND FABRICATION SHALL BE PER AASHTO DIVISION II SECTION 18.2 AND AASHTO MATERIAL SPECIFICATION M251.

DESIGN CRITERIA: (AASHTO METHOD "B")

A) TEMPERATURE RANGE: 80° F

B) 50 DUROMETER ELASTOMER, TEMPERATURE GRADE 3

C) MAXIMUM BEARING STRESS: 600 PSI

D) DESIGN ROTATION: 0.015 RAD.

E) MAX. REACTION/BEAM:

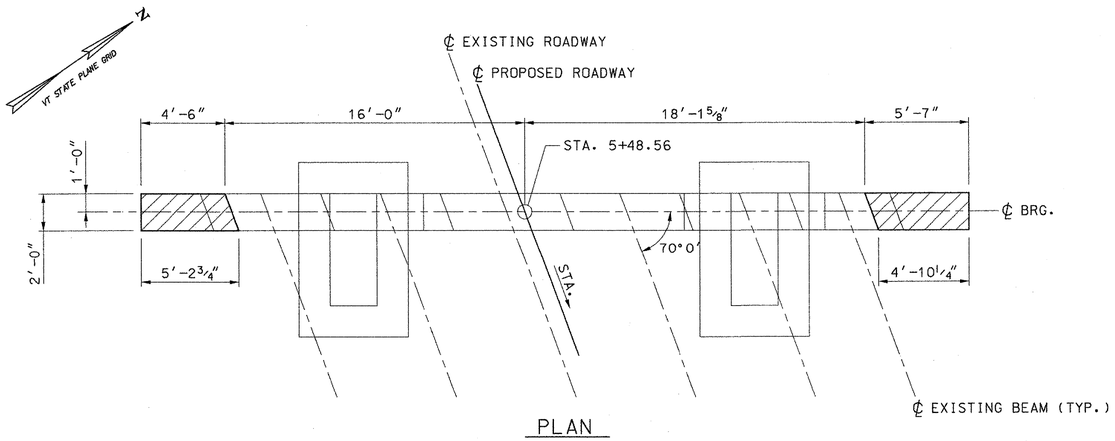
DEAD LOAD: 54 K
LIVE LOAD: 29 K (W/ IMPACT)

VHB Vanasse Hangen Brustlin, Inc.

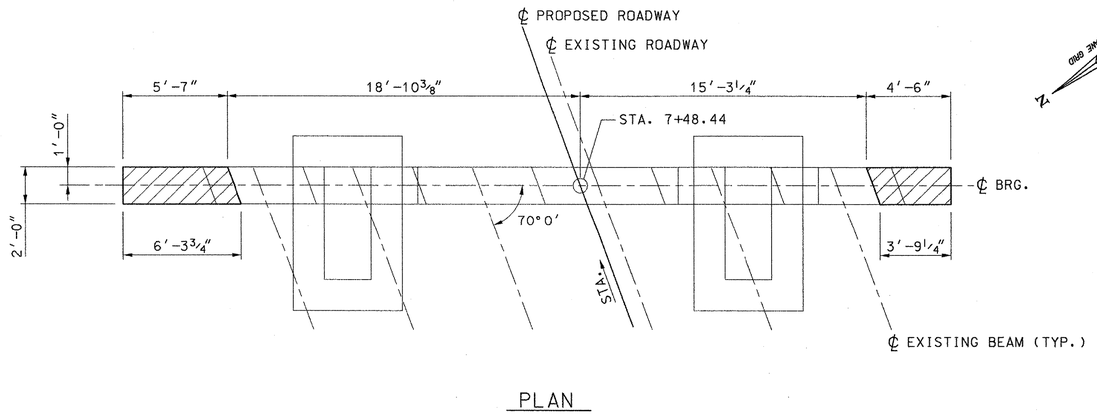
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
SUPERSTRUCTURE DETAILS	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By S.M. HODGDON Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028BRG	Sheet 36 of 71

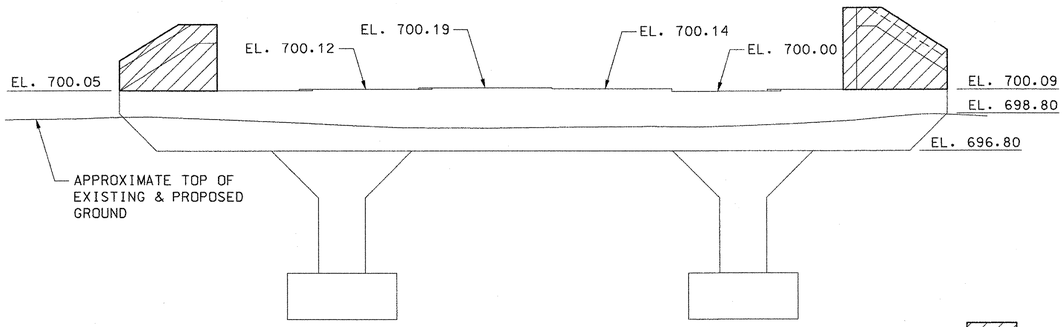
VHB NO. 51298 plot date: 9/14/2006



PLAN



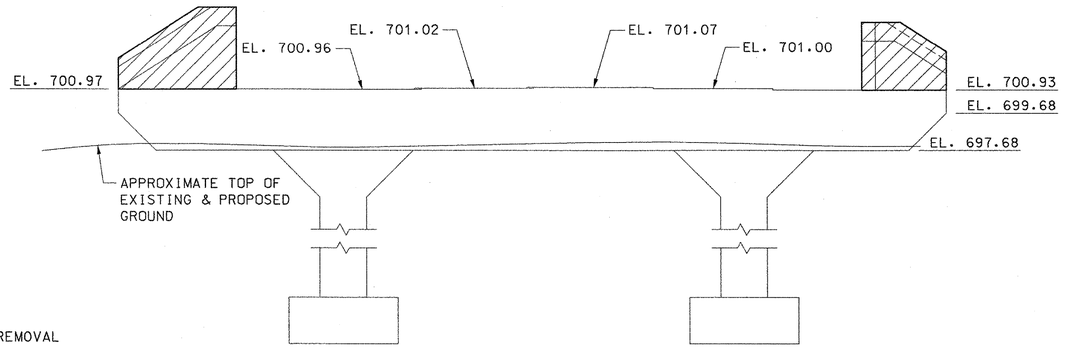
PLAN



ELEVATION

ABUTMENT NO. 1

SCALE: 1/4″ = 1′-0″

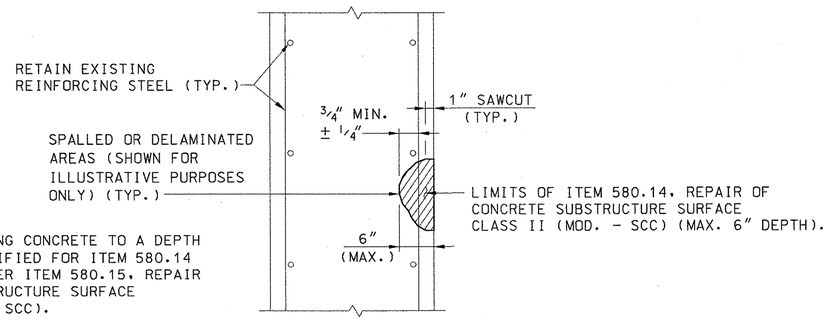


ELEVATION

ABUTMENT NO. 2

SCALE: 1/4″ = 1′-0″

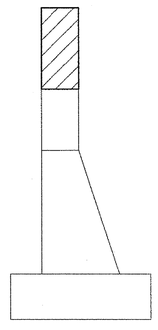
DENOTES LIMIT OF REMOVAL



REPAIR OF CONCRETE SUBSTRUCTURE SURFACE

CLASS II

N.T.S.



SECTION

N.T.S.

NOTE:

1. SEE SHEET 22 FOR REMOVAL AND REPAIR NOTES.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

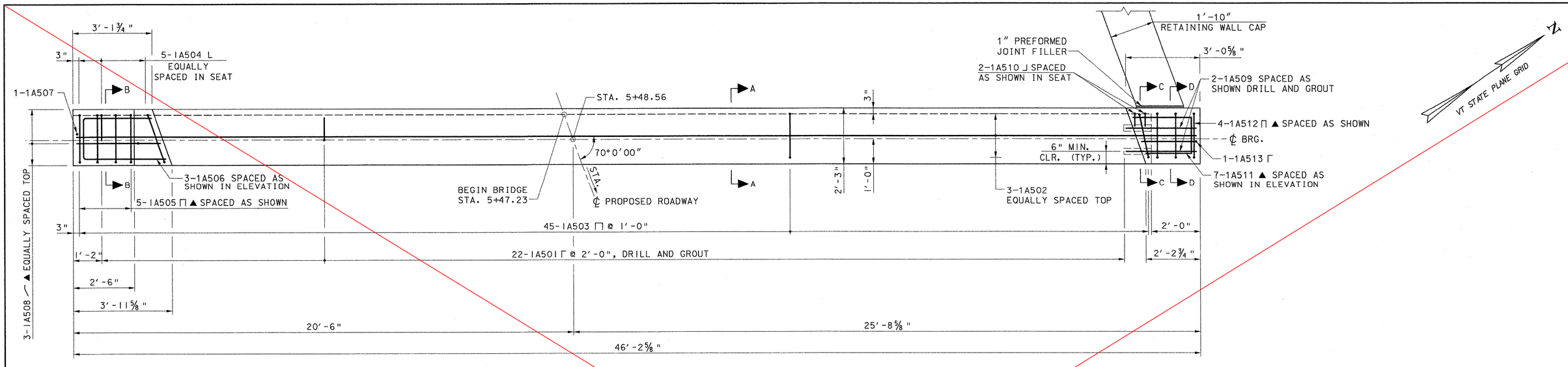
ABUTMENT REMOVAL & REPAIR

Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info. ZJ028	
Bridge Sheet No. ZJ028MAR	Sheet 37 of 71

VHB Vanasse Hangen Brustlin, Inc.

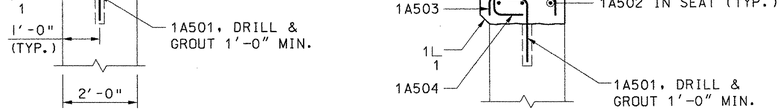
VHB NO. 51298

plot date: 9/14/2006



PLAN

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

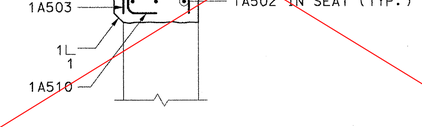


SECTION A-A

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

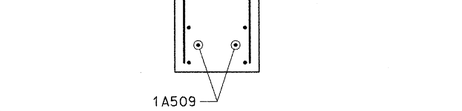
SECTION B-B

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



SECTION C-C

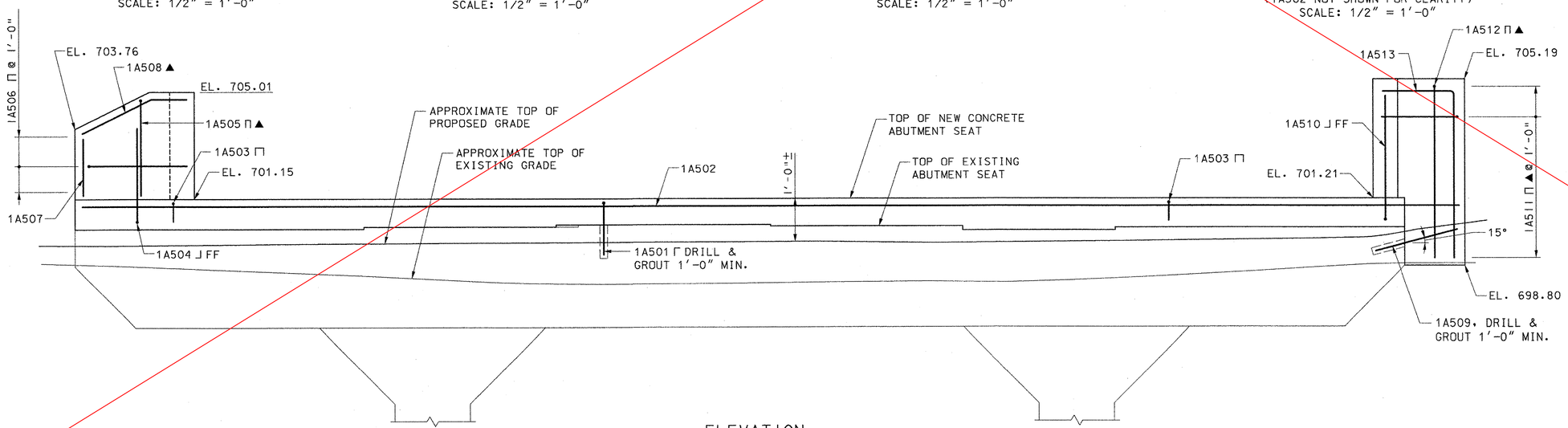
SCALE: 1/2" = 1'-0"



SECTION D-D

(1A502 NOT SHOWN FOR CLARITY)
SCALE: 1/2" = 1'-0"

SEE REVISED SHEET 38R



ELEVATION

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

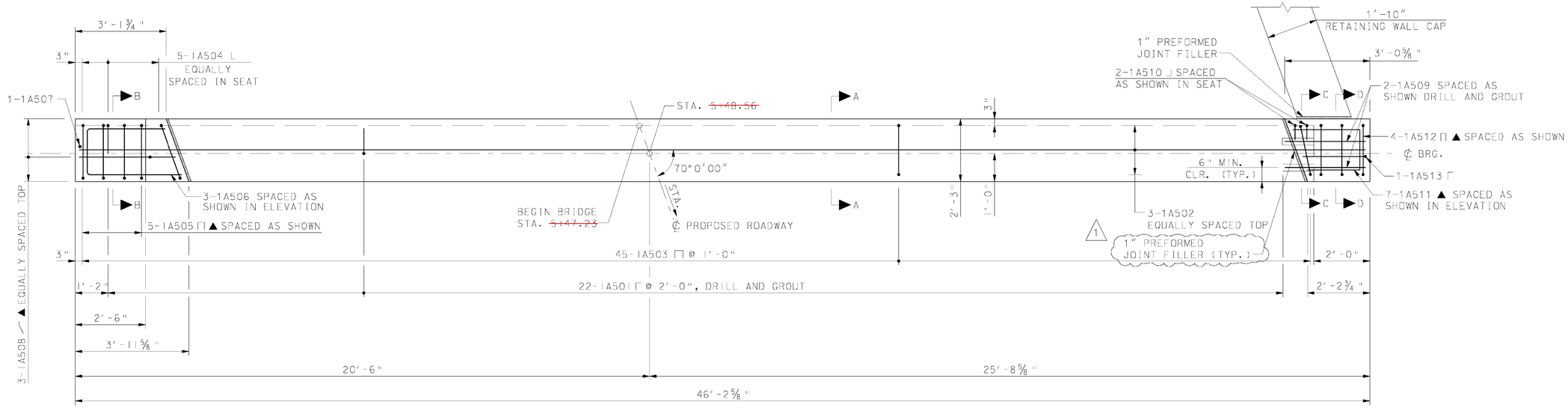
ABUTMENT 1

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028MA1	Sheet 38 of 71

VHB Vanasse Hangen Brustlin, Inc.

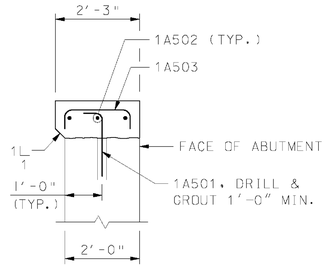
VHB NO. 51298

plot date: 10/11/2006



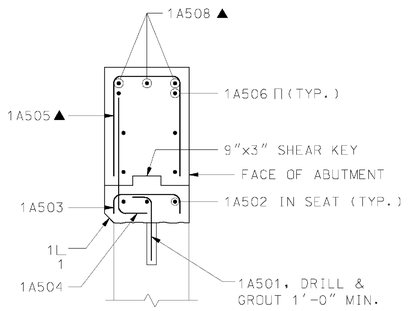
PLAN

SCALE: 1/2" = 1′-0"



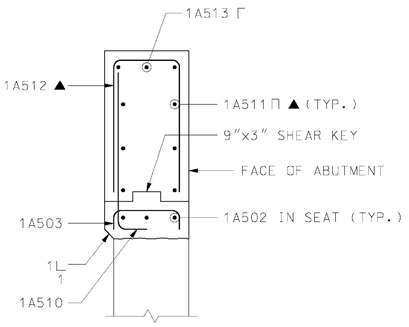
SECTION A-A

SCALE: 1/2" = 1′-0"



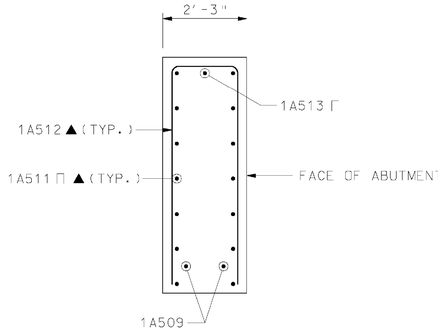
SECTION B-B

SCALE: 1/2" = 1′-0"



SECTION C-C

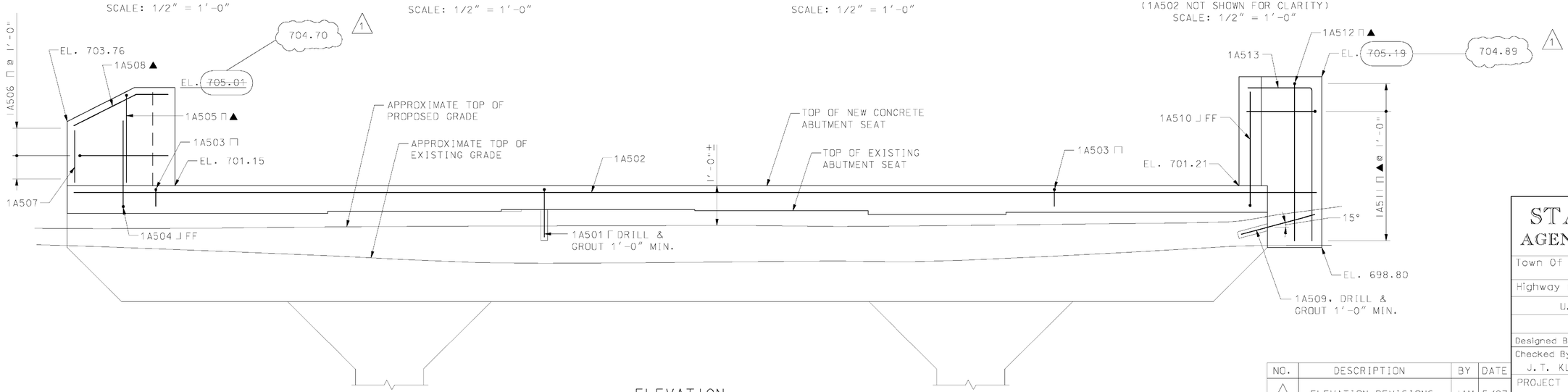
SCALE: 1/2" = 1′-0"



SECTION D-D

(1A502 NOT SHOWN FOR CLARITY)

SCALE: 1/2" = 1′-0"



ELEVATION

SCALE: 1/2" = 1′-0"

NO.	DESCRIPTION	BY	DATE
1	ELEVATION REVISIONS	JAM	5/07

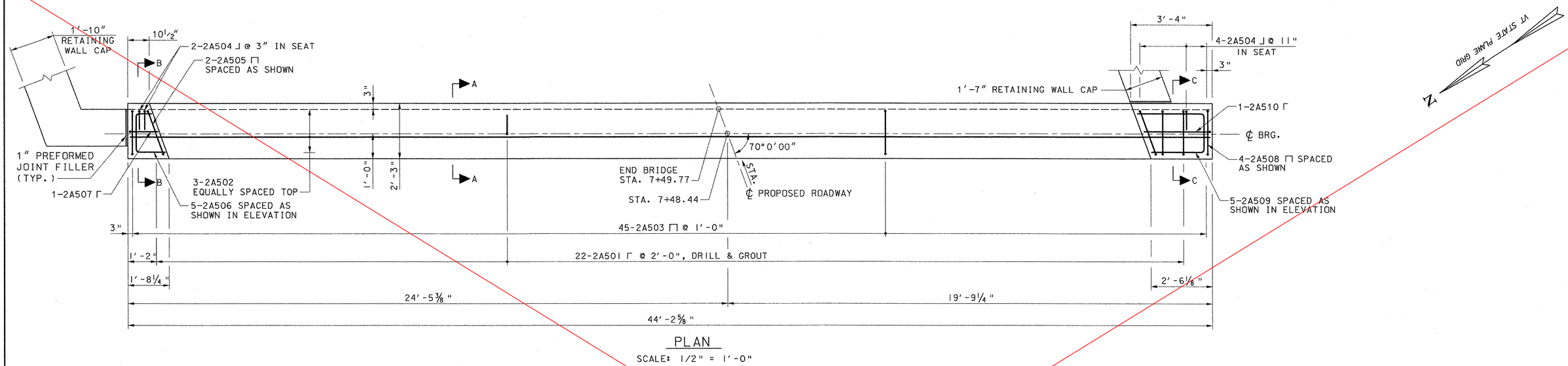
VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
ABUTMENT 1	
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By Date J.T. KLEIN 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028MA1_R	Sheet 38R of 71

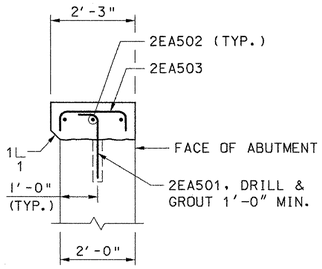
VHB NO. 5298

plot date: 5/30/2007



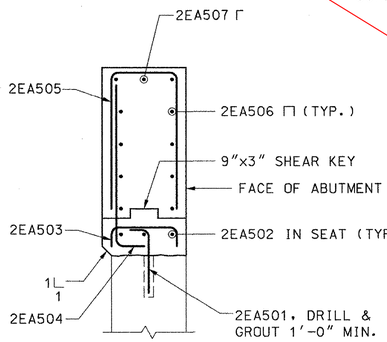
PLAN

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



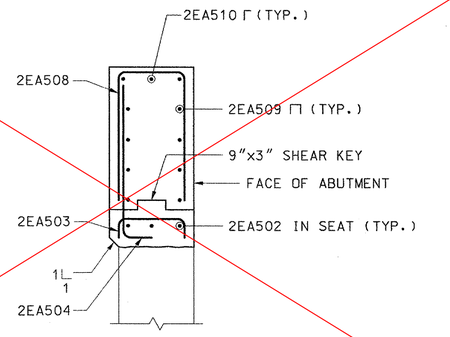
SECTION A-A

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



SECTION B-B

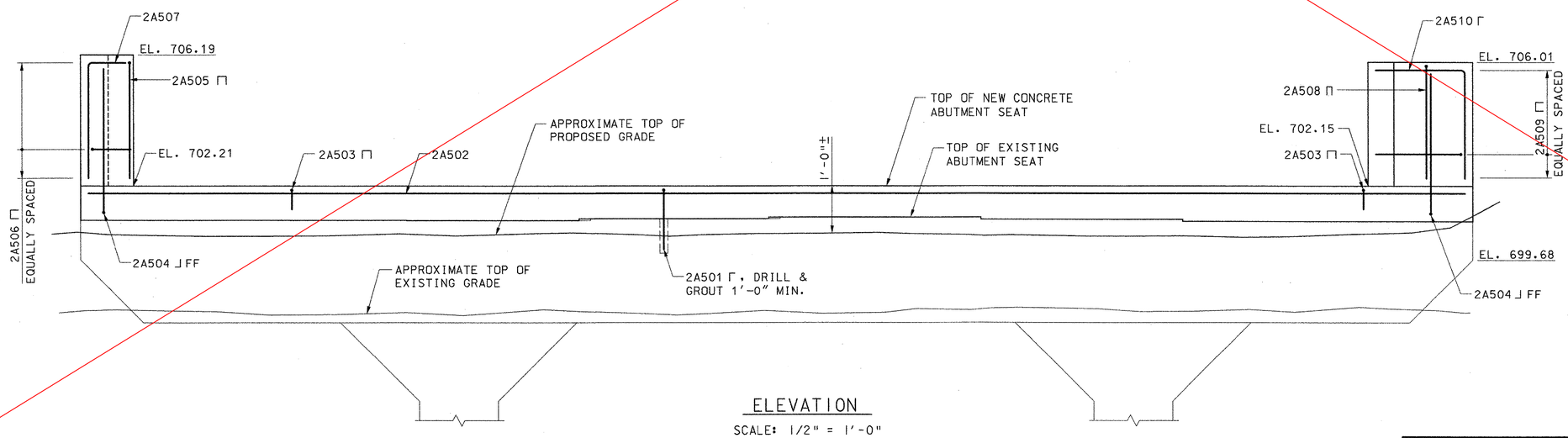
SCALE: 1/2" = 1'-0"



SECTION C-C

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

SEE REVISED SHEET 39R



ELEVATION

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

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

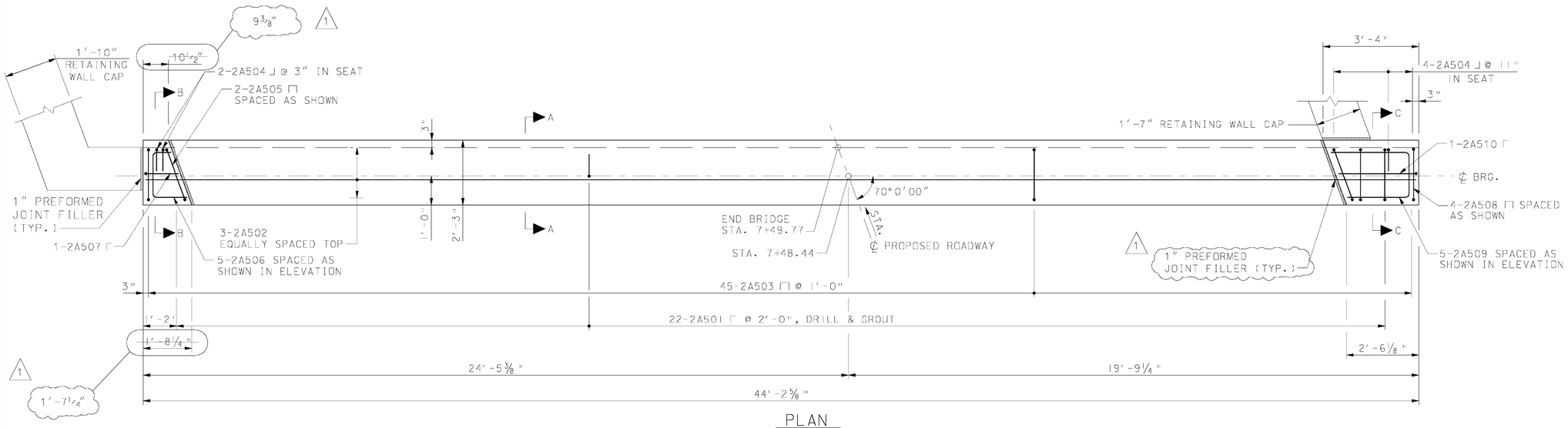
ABUTMENT 2

Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info. ZJ028	
Bridge Sheet No. ZJ028MA2	Sheet 39 of 71

VHB Vanasse Hangen Brustlin, Inc.

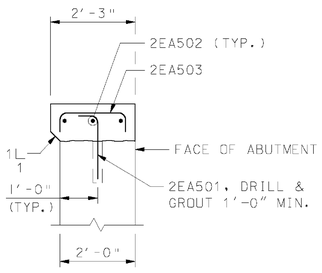
VHB NO. 51298

plot date: 10/11/2006



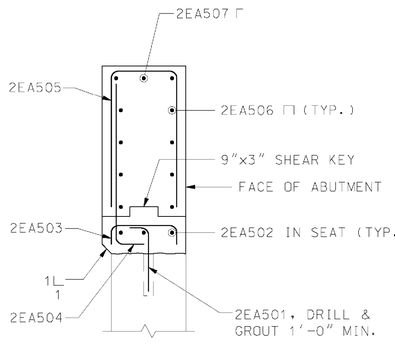
PLAN

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



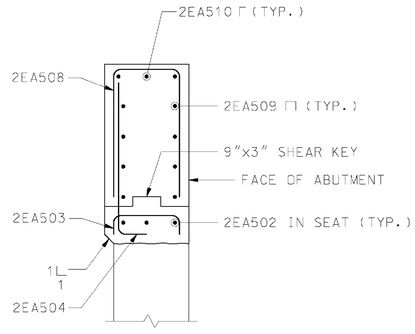
SECTION A-A

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



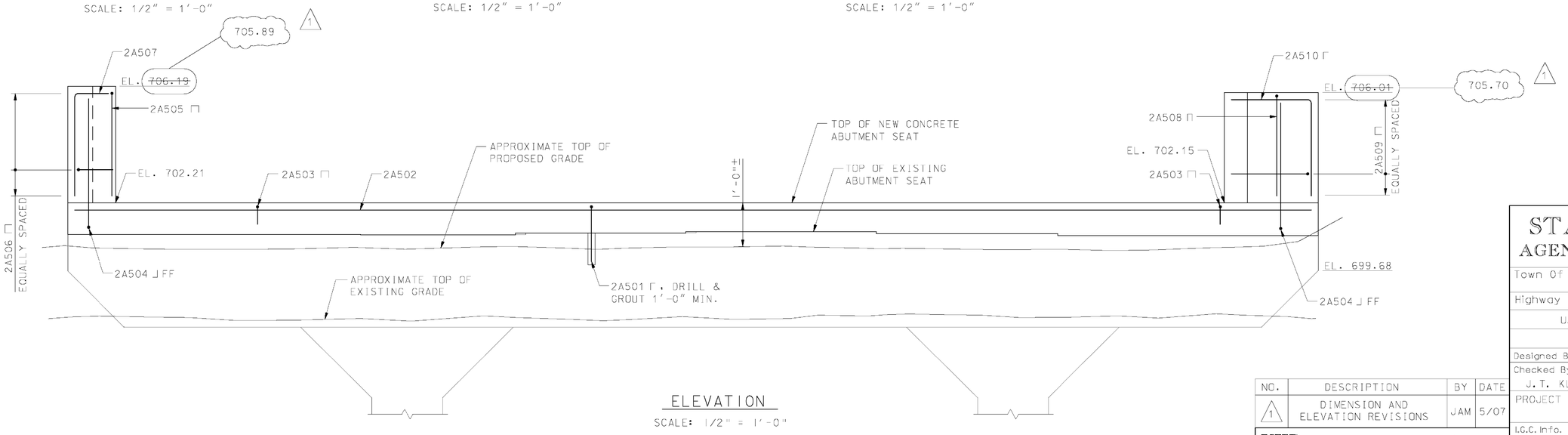
SECTION B-B

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



SECTION C-C

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



ELEVATION

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

NO.	DESCRIPTION	BY	DATE
1	DIMENSION AND ELEVATION REVISIONS	JAM	5/07

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

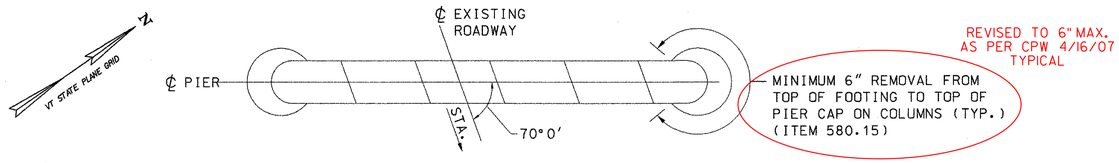
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

ABUTMENT 2

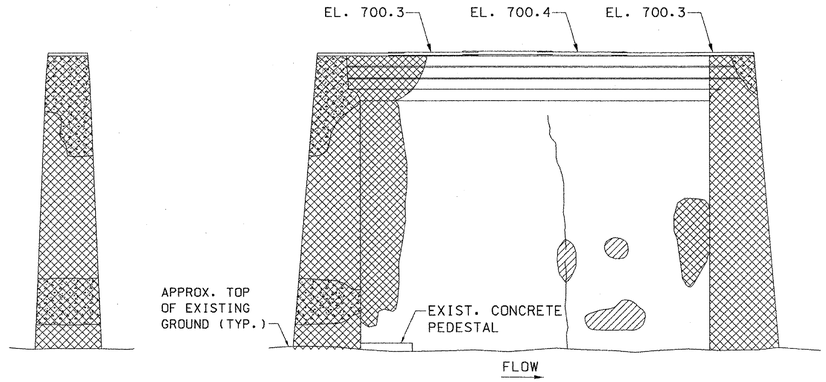
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info. ZJ028	
Bridge Sheet No. ZJ028MA2_R	Sheet 39R of 71

VHB NO. 5298

plot date: 5/30/2007

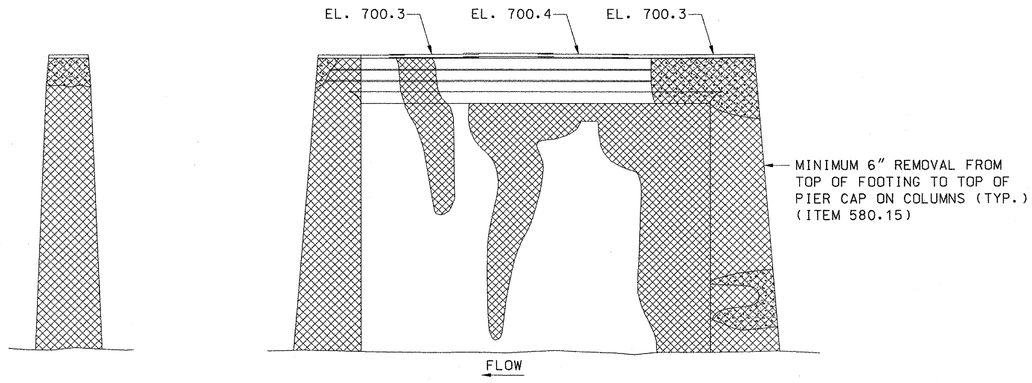


TOP



UPSTREAM FACE

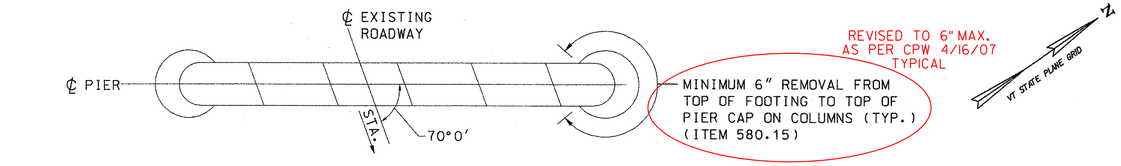
EAST FACE



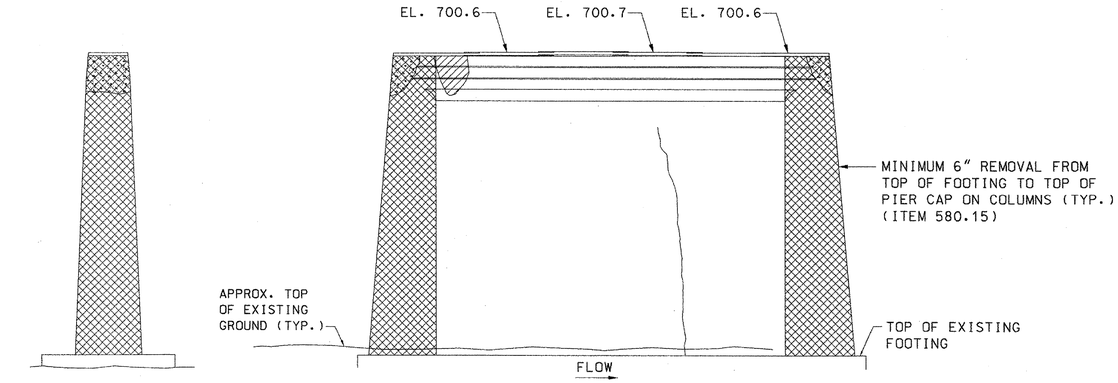
DOWNSTREAM FACE

WEST FACE

PIER 1
NOT TO SCALE

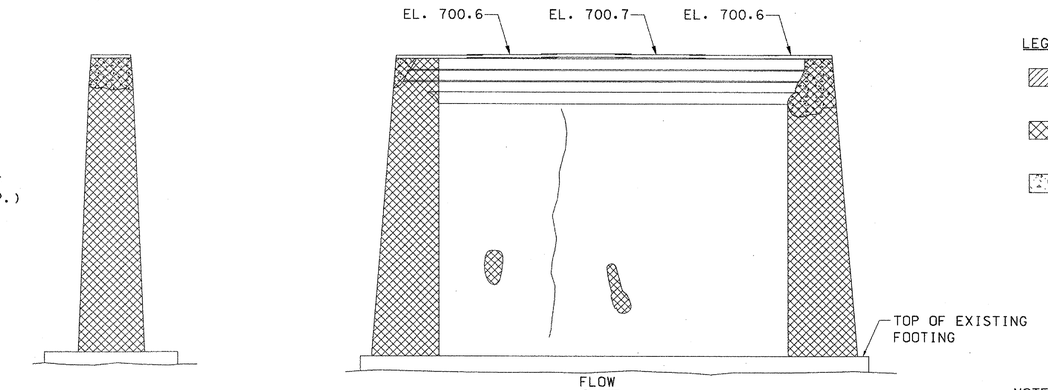


TOP



UPSTREAM FACE

EAST FACE



DOWNSTREAM FACE

WEST FACE

PIER 2
NOT TO SCALE

LEGEND:

- AREAS ANTICIPATED TO REQUIRE ITEM 580.14
- AREAS ANTICIPATED TO REQUIRE ITEM 580.15
- PREVIOUSLY REPAIRED AREAS

NOTES:

1. ALL PREVIOUS REPAIRED CONCRETE ON THE PIERS SHALL BE REMOVED AND REPAIRED.
2. ALL REINFORECED STEEL IN THE EXISTING END COLUMNS THAT IS WITHIN THE ~~MINIMUM~~ MAXIMUM LIMITS OF REPAIR SHALL BE REMOVED. (REVISED AS PER CPW 4/16/07 TYPICAL)
3. SEE SHEET 22 FOR REMOVAL AND REPAIR NOTES.

COFFERDAM NOTES:

1. THE CONTRACTOR MAY ACCOMPLISH THE PIER REMOVAL AND REPAIR TO THE TOP OF FOOTINGS BY DIRECTING THE RIVER FLOW AROUND THE WORK AREA WITH A TEMPORARY CHANNEL, THROUGH TEMPORARY CULVERTS, OR BY THE USE OF COFFERDAMS AND PUMPS. THE COST FOR ANY OF THE ABOVE OPTIONS FOR THE REMOVAL AND REPAIR OF PIER NO. 1 AND NO. 2 AND SHALL BE PAID AS ITEM 208.40, COFFERDAM (PIER 1) AND ITEM 208.40, COFFERDAM (PIER 2).
2. THE LIMITS OF THE COFFERDAMS ARE TO BE 2′-0" OUTSIDE THE FOOTINGS AT EACH PIER.
3. COFFERDAMS SHALL BE DESIGNED SO AS NOT TO DAMAGE OR UNDERMINE THE EXISTING STRUCTURE NOR CONFLICT WITH THE PROPOSED WORK.
4. NO PORTION OF THE EXISTING STRUCTURE TO REMAIN SHALL BE INCORPORATED INTO THE COFFERDAM.
5. IF THE COFFERDAM IS ENLARGED FOR THE CONTRACTOR'S CONVENIENCE, ANY ADDITIONAL EXCAVATION WILL BE AT THE CONTRACTOR'S EXPENSE.
6. ALL IN STREAM CHANNEL WORK WILL TAKE PLACE IN A DRY CHANNEL WITH THE EXCEPTION OF CLEAN STONE FILL PLACEMENT. ABSOLUTELY NO RAW CONCRETE CAN BE ALLOWED TO MIX WITH THE RIVER FLOW.
7. SPECIAL CONSIDERATION SHOULD BE GIVEN TO THE FIRST PUMP DOWN OF THE COFFERDAMS. THIS WILL CONTAIN THE GREATEST VOLUME OF WATER WITH A HIGH SEDIMENT LOAD. SEDIMENT TRAPS SHALL BE DESIGNED BY THE CONTRACTOR WITHIN THE RIGHT-OF-WAY AND APPROVED BY THE RESIDENT ENGINEER.
8. AFTER COMPLETION OF THE WORK, THE SEDIMENT IN THE TRAP(S) SHALL BE REMOVED AND PROPERLY DISPOSED AND THE GROUND SHALL BE RESTORED TO ITS ORIGINAL SLOPES.

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

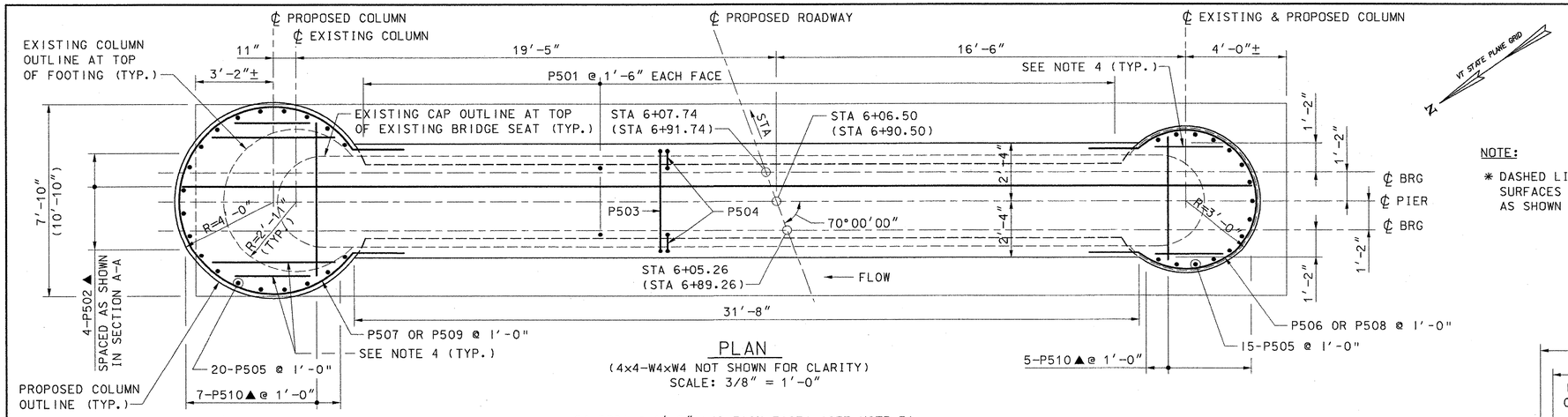
Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	

PIER REMOVAL & REPAIR DETAILS

Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028PAR	Sheet 40 of 71

VHB NO. 51298

plot date: 10/11/2006



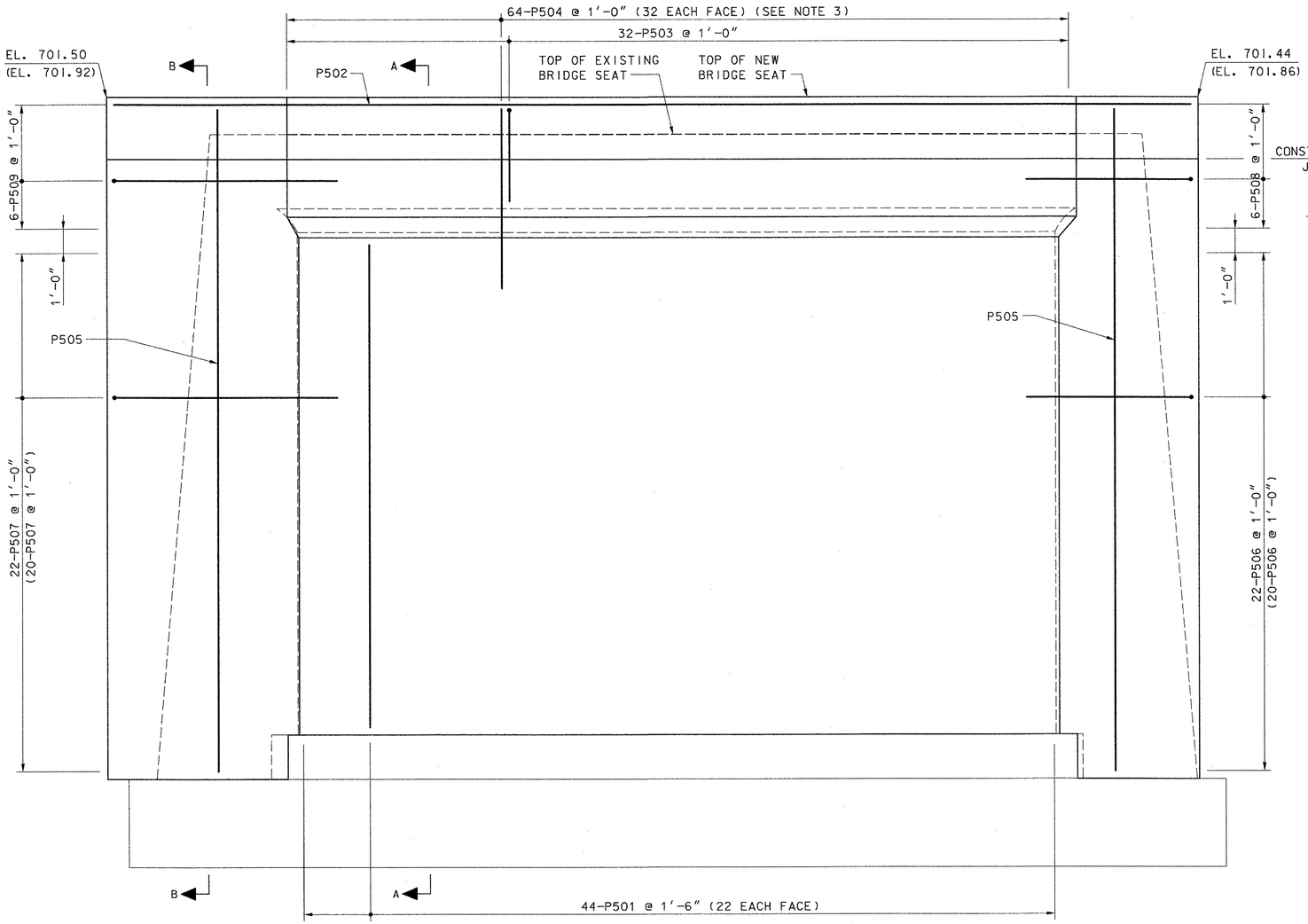
PLAN

(4x4-W4xW4 NOT SHOWN FOR CLARITY)

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

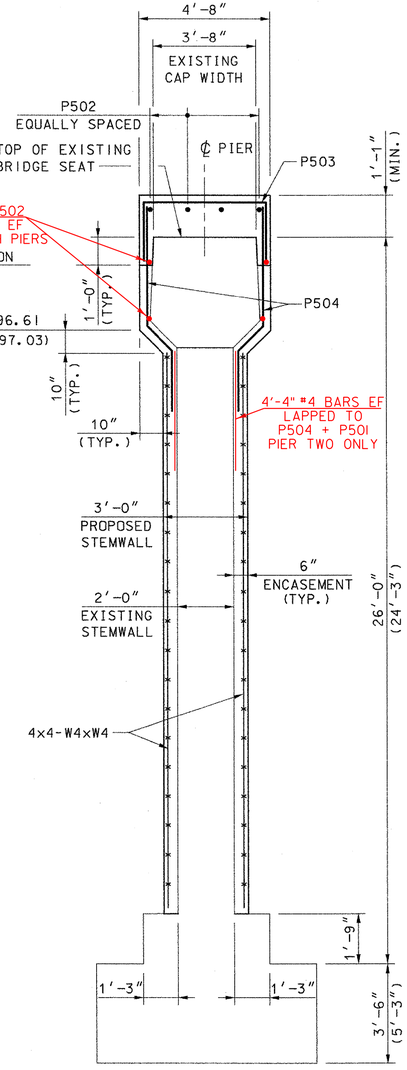
NOTE:

* DASHED LINES INDICATE EXISTING PIER SURFACES PRIOR TO REMOVAL AND REPAIR AS SHOWN ON SHEET 40.



ELEVATION

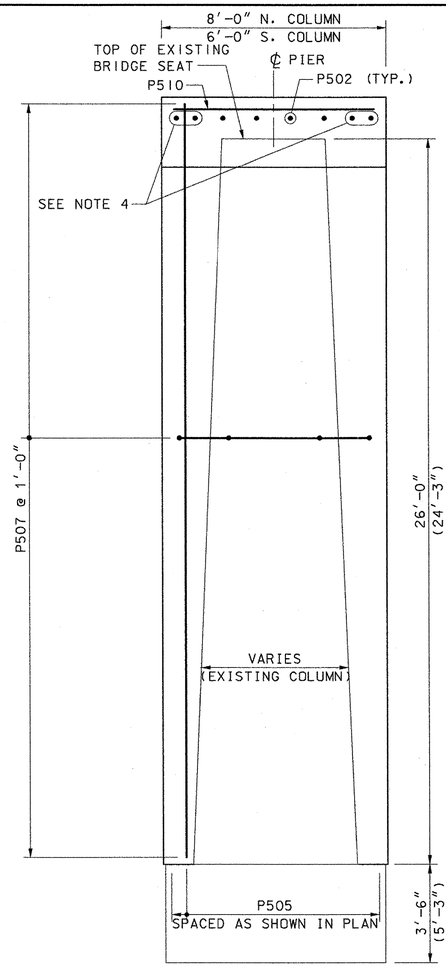
SCALE: 3/8" = 1'-0"



SECTION A-A

(VERTICAL P501 BARS NOT SHOWN FOR CLARITY)

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



SECTION B-B

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

NOTES:

1. PIER NO. 1 SHOWN, PIER NO. 2 SHOWN IN PARENTHESES WHERE IT VARIES.
2. PIER PREFIX FOR REINFORCING IS OMITTED FOR CLARITY. PREFIX IS CALLED OUT ON REINFORCING STEEL SCHEDULE.
3. IT IS ANTICIPATED THAT THE PIER ENCASEMENT WILL BE COMPLETED FROM TOP OF FOOTINGS TO THE CONSTRUCTION JOINT UNDER TRAFFIC WITH THE EXISTING SUPERSTRUCTURE IN PLACE. THIS WILL REQUIRE THAT THE P504 BARS BE SPACED TO CLEAR THE EXISTING BEAMS AS DIRECTED BY THE ENGINEER.
4. REUSE CUTOFFS FROM P510 AS SHOWN.

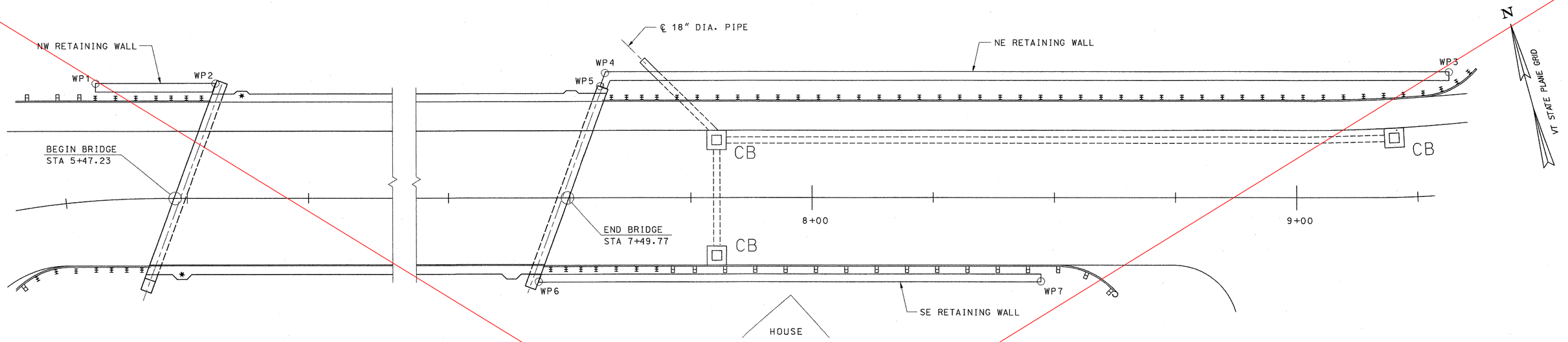
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
PIER NO. 1 & NO. 2	
Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028PA3	Sheet 41 of 71

VHB Vanasse Hangen Brustlin, Inc.

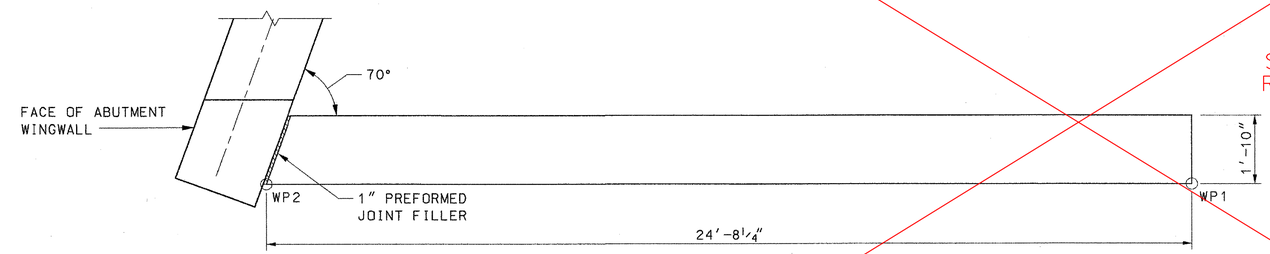
VHB NO. 51298

plot date: 9/14/2006

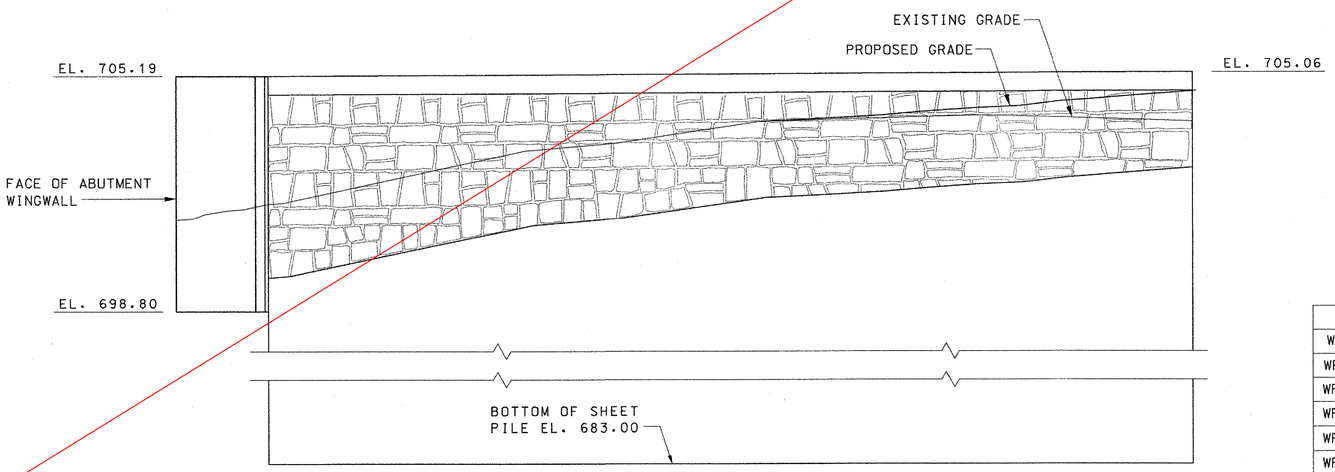


PLAN

SCALE: 1" = 10'



PLAN



ELEVATION

NW RETAINING WALL

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

SUPERCEDED BY VALUE ENGINEERING
RETAINING WALL DESIGN SHEETS 1& 2
DATED 5/9/2007.

NOTES:

1. CONCRETE ARCHITECTURAL TREATMENT ON THE RETAINING WALL FACES SHALL BE FINISHED WITH AN ASHLAR STONE PATTERN. THE ASHLAR PATTERN SHALL BE ACHIEVED BY THE USE OF FORM LINERS. THE ASHLAR PATTERN FORM LINER SHALL BE ASHLAR STONE NO. 330 MULTI-CAST, AS MANUFACTURED BY GREENSTREAK, OR ASHLAR STONE P/C 30664, SYMONS DURA-TEX, AS MANUFACTURED BY SYMONS CORPORATION OR APPROVED EQUAL. ALL COSTS FOR CONCRETE AND FORM LINERS SHALL BE PAID UNDER ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B. ALL COSTS FOR WELDED WIRE REINFORCEMENT SHALL BE PAID UNDER ITEM 507.15, REINFORCING STEEL.
2. SHEET PILING MATERIAL SHALL BE ASTM A-328.
3. SE RETAINING WALL SHEET PILE SECTIONS SHALL BE PZ22 AND PAID AS ITEM 505.35, PERMANENT STEEL SHEET PILING (33.1 IN^3). NE AND NW RETAINING WALL SHEET PILE SECTIONS SHALL BE PZ27 AND PAID AS ITEM 505.35, PERMANENT STEEL SHEET PILING (45.3 IN^3).
4. PLACE A MINIMUM OF 1 SHEAR CONNECTOR PER 10 SF OF SHEETING, EACH FACE (SEE DETAIL ON SHEET 44). SHEAR CONNECTOR LENGTHS SHALL BE 10" AT THE SE RETAINING WALL AND 13" AT THE NE AND NW RETAINING WALLS. ALL COSTS SHALL BE PAID UNDER ITEM 508.15.
5. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO SHEETING INSTALLATION. THE PROPOSED RETAINING WALL MAY BE PENETRATED BY STOPPING ANY ONE SINGLE SHEET OVER EXISTING OR PROPOSED UTILITY AND CONTINUING ADJACENT SHEETS.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING SHEETING LAYOUT, ARCHITECTURAL TREATMENT TYPE, SHEAR STUD LAYOUT, AND REINFORCING STEEL DETAILS PRIOR TO CONSTRUCTION PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 505.35.

WORKING POINT COORDINIATES

WP	STATION	OFFSET	NORTHING	EASTING
WP1	5+32.75 LT	24.45'	109062.2566	133551.6526
WP2	5+55.88 LT	24.00'	109055.9578	133575.5543
WP3	9+33.66 LT	25.59'	108962.6466	133939.3372
WP4	7+57.46 LT	26.25'	109006.8799	133771.0848
WP5	7+56.13 LT	23.22'	109004.2336	133769.2497
WP6	7+43.50 RT	17.46'	108968.1581	133746.4678
WP7	8+47.18 RT	17.46'	108941.7975	133846.7368

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

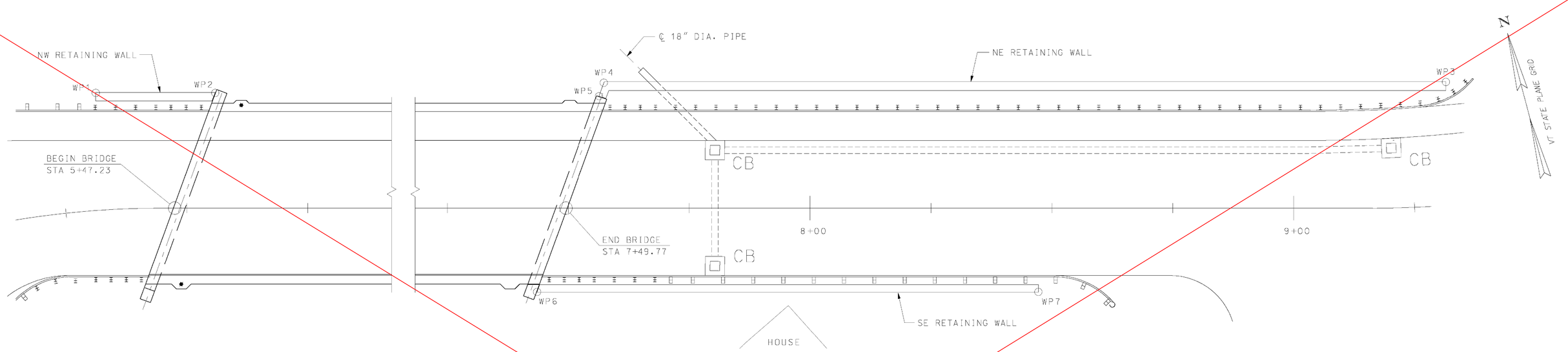
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

RETAINING WALL LAYOUT (1 OF 2)

Designed By W.M. MOSHER	Drawn By B.J. MASSE
Checked By K.G. KRETSCH Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028RW1	Sheet 42 of 71

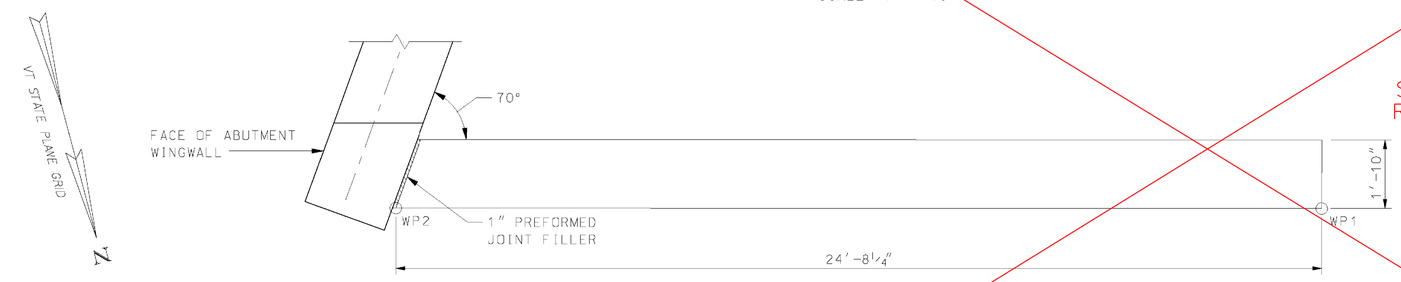
VHB NO. 51298

plot date: 9/14/2006

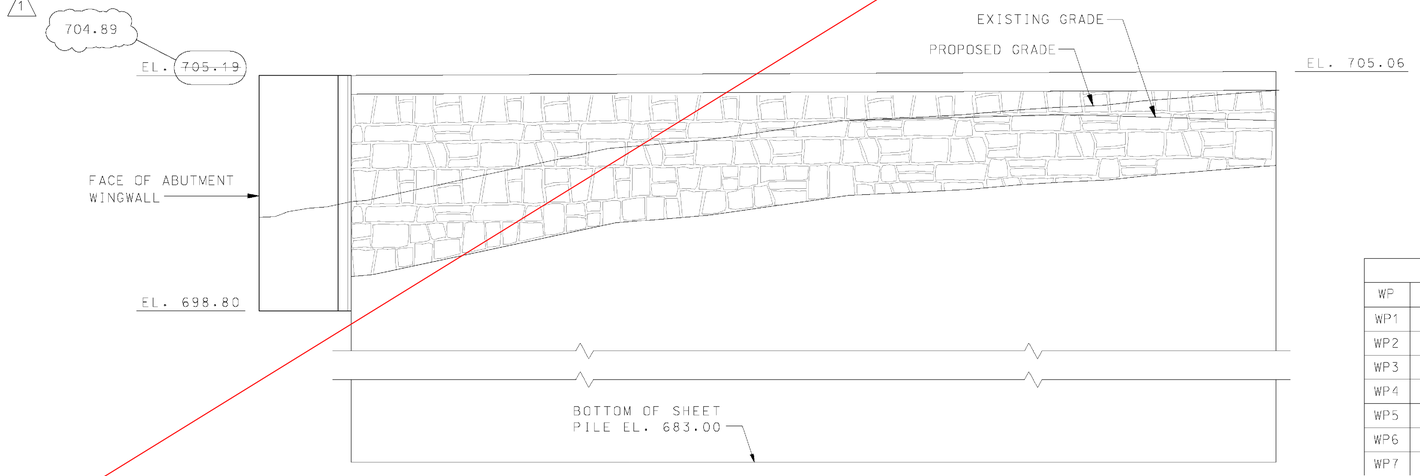


PLAN

SCALE: 1" = 10'



PLAN



ELEVATION

NW RETAINING WALL

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

SUPERCEDED BY VALUE ENGINEERING
RETAINING WALL DESIGN SHEETS 1 & 2
DATED 5/9/2007.

NOTES:

1. CONCRETE ARCHITECTURAL TREATMENT ON THE RETAINING WALL FACES SHALL BE FINISHED WITH AN ASHLAR STONE PATTERN. THE ASHLAR PATTERN SHALL BE ACHIEVED BY THE USE OF FORM LINERS. THE ASHLAR PATTERN FORM LINER SHALL BE ASHLAR STONE NO. 330 MULTI-CAST, AS MANUFACTURED BY GREENSTREAK, OR ASHLAR STONE P/C 30664, SYMONS DURA-TEX, AS MANUFACTURED BY SYMONS CORPORATION OR APPROVED EQUAL. ALL COSTS FOR CONCRETE AND FORM LINERS SHALL BE PAID UNDER ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B. ALL COSTS FOR WELDED WIRE REINFORCEMENT SHALL BE PAID UNDER ITEM 507.15, REINFORCING STEEL.
2. SHEET PILING MATERIAL SHALL BE ASTM A-328.
3. SE RETAINING WALL SHEET PILE SECTIONS SHALL BE PZ22 AND PAID AS ITEM 505.35, PERMANENT STEEL SHEET PILING (33.1 IN^3). NE AND NW RETAINING WALL SHEET PILE SECTIONS SHALL BE PZ27 AND PAID AS ITEM 505.35, PERMANENT STEEL SHEET PILING (45.3 IN^3).
4. PLACE A MINIMUM OF 1 SHEAR CONNECTOR PER 10 SF OF SHEETING, EACH FACE (SEE DETAIL ON SHEET 44). SHEAR CONNECTOR LENGTHS SHALL BE 10" AT THE SE RETAINING WALL AND 13" AT THE NE AND NW RETAINING WALLS. ALL COSTS SHALL BE PAID UNDER ITEM 508.15.
5. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO SHEETING INSTALLATION. THE PROPOSED RETAINING WALL MAY BE PENETRATED BY STOPPING ANY ONE SINGLE SHEET OVER EXISTING OR PROPOSED UTILITY AND CONTINUING ADJACENT SHEETS.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING SHEETING LAYOUT, ARCHITECTURAL TREATMENT TYPE, SHEAR STUD LAYOUT, AND REINFORCING STEEL DETAILS PRIOR TO CONSTRUCTION PER SUBSECTION 105.03. ALL COSTS SHALL BE INCLUDED IN ITEM 505.35.

WORKING POINT COORDINIATES

WP	STATION	OFFSET	NORTHING	EASTING
WP1	5+32.75 LT	24.45'	109062.2566	133551.6526
WP2	5+55.88 LT	24.00'	109055.9578	133575.5543
WP3	9+33.66 LT	25.59'	108962.6466	133939.3372
WP4	7+57.46 LT	26.25'	109006.8799	133771.0848
WP5	7+56.13 LT	23.22'	109004.2336	133769.2497
WP6	7+43.50 RT	17.46'	108968.1581	133746.4678
WP7	8+47.18 RT	17.46'	108941.7975	133846.7368

NO.	DESCRIPTION	BY	DATE
1	ELEVATION REVISION	JAM	5/07

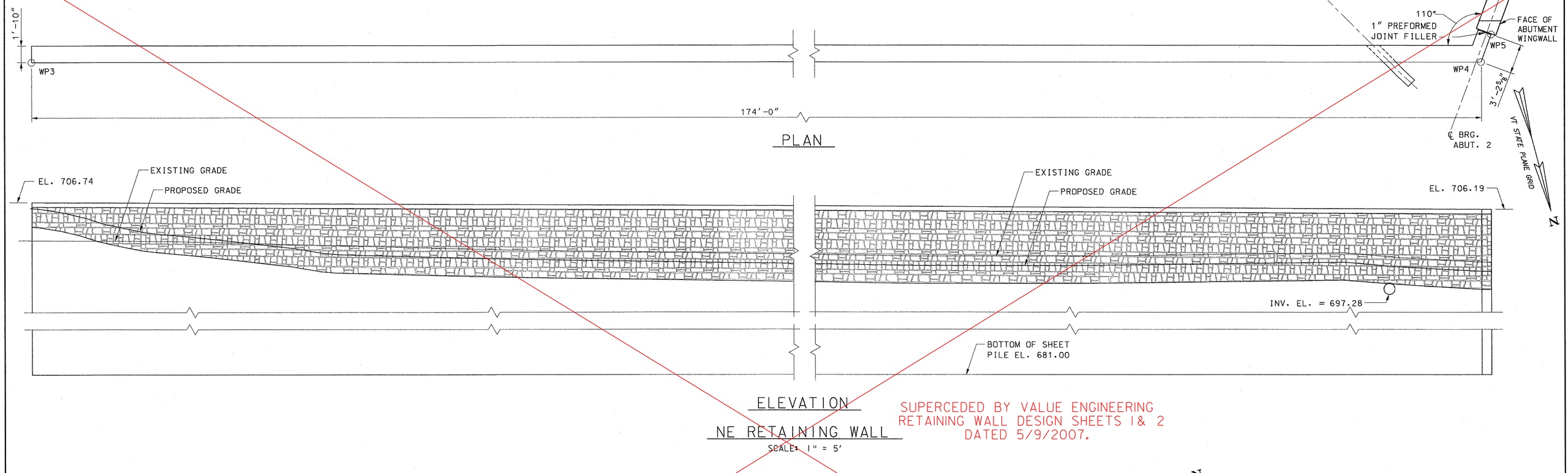
VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
RETAINING WALL LAYOUT (1 OF 2)	
Designed By W.M. MOSHER	Drawn By B.J. MASSE
Checked By K.G. KRETSCH Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 080-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ02BRWL_R	Sheet 42R of 71

VHB NO. 5298

plot date: 5/30/2007



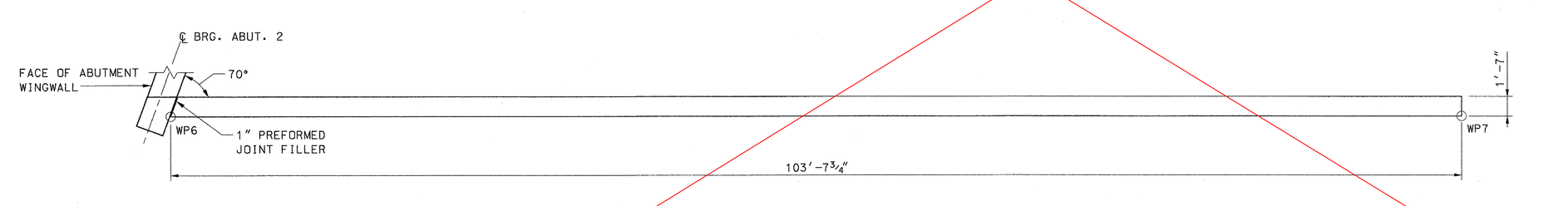
PLAN

ELEVATION

NE RETAINING WALL

SCALE: 1" = 5'

SUPERCEDED BY VALUE ENGINEERING RETAINING WALL DESIGN SHEETS 1& 2 DATED 5/9/2007.



PLAN

ELEVATION

SE RETAINING WALL

SCALE: 1" = 5'

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

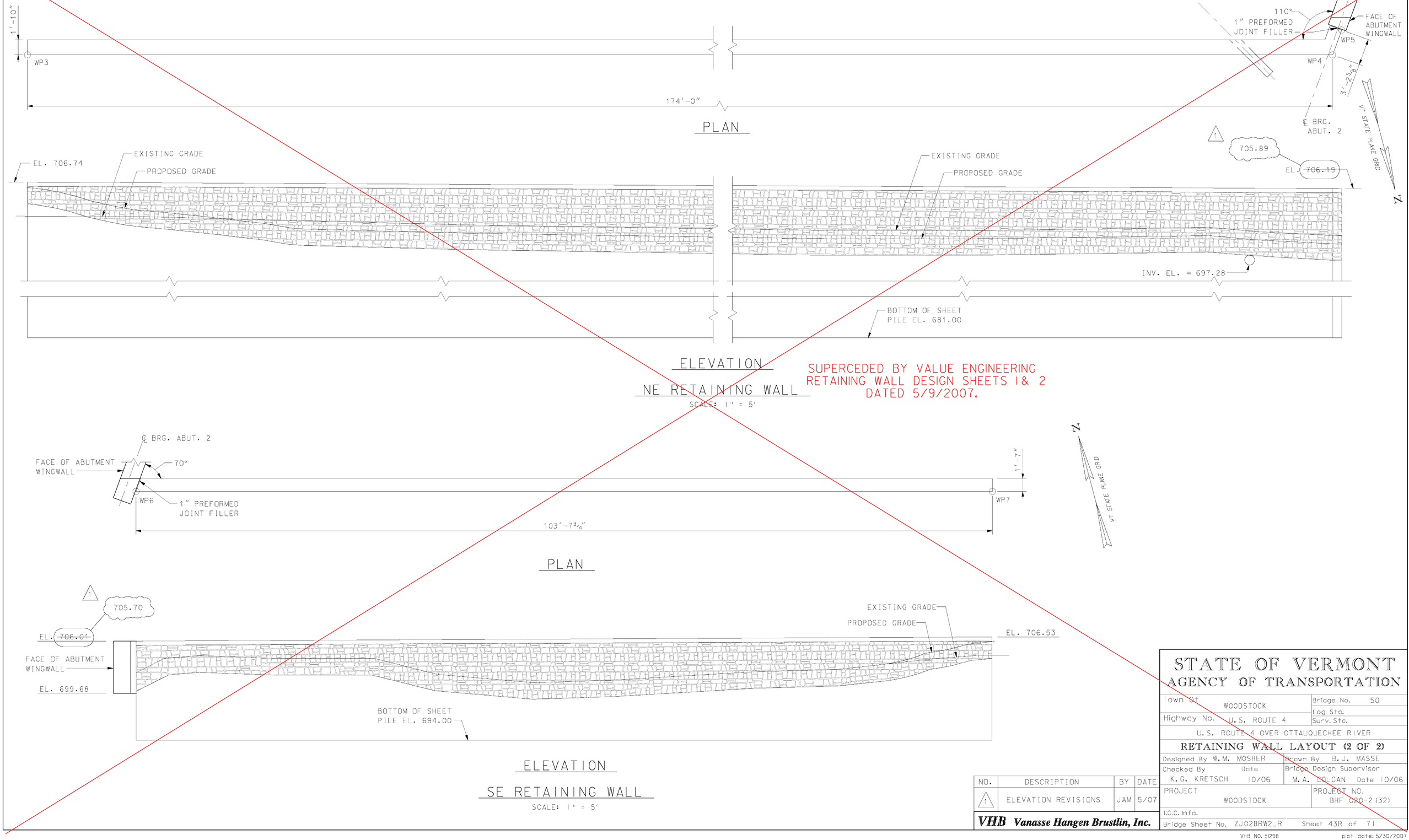
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

RETAINING WALL LAYOUT (2 OF 2)

Designed By W.M. MOSHER	Drawn By B.J. MASSE
Checked By Date K.G. KRETSCH 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028RW2	Sheet 43 of 71

VHB NO. 51298

plot date: 9/14/2006



NO.	DESCRIPTION	BY	DATE
1	ELEVATION REVISIONS	JAM	5/07

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

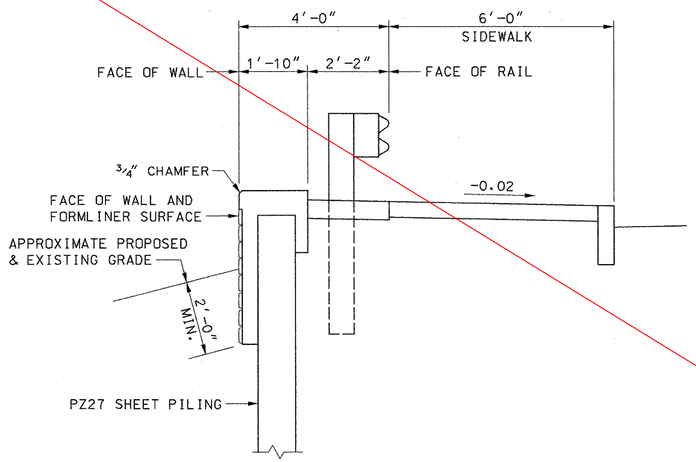
Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

RETAINING WALL LAYOUT (2 OF 2)

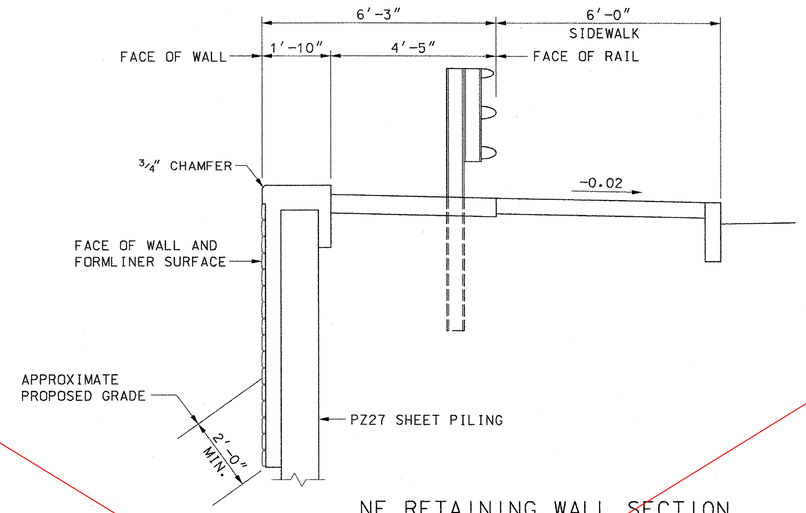
Designed By W.M. MOSHER	Drawn By B.J. MASSE
Checked By K.G. KRETSCH Date 10/06	Bridge Design Supervisor M.A. ÇOLCAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.C.C. Info.	
Bridge Sheet No. ZJ028RW2_R	Sheet 43R of 71

VHB NO. 51298 plot date: 5/30/2007



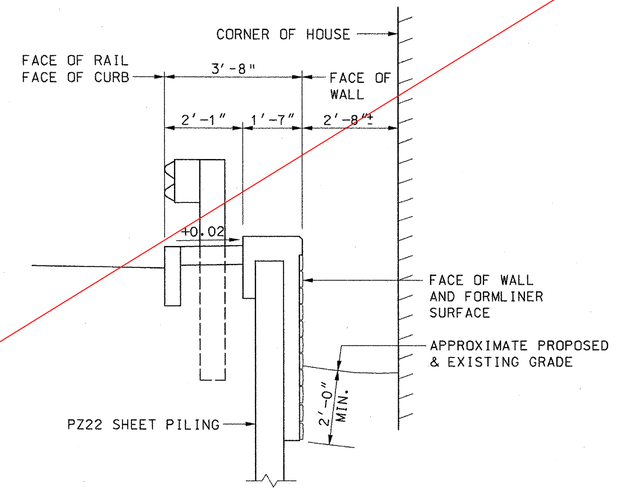
NW RETAINING WALL SECTION

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



NE RETAINING WALL SECTION

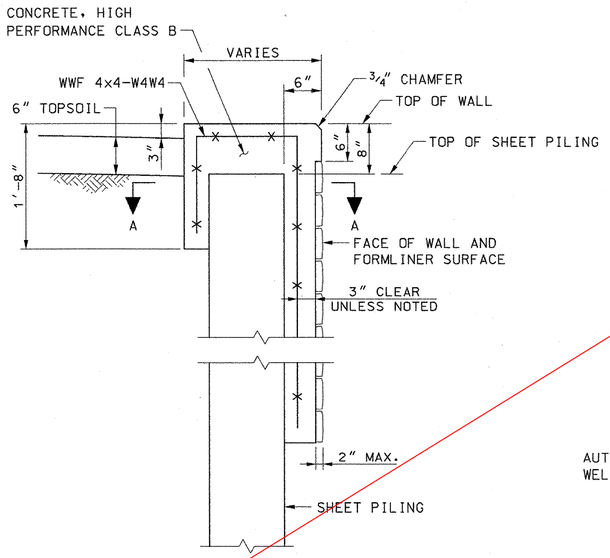
SCALE: 1/2" = 1'-0"



SE RETAINING WALL SECTION

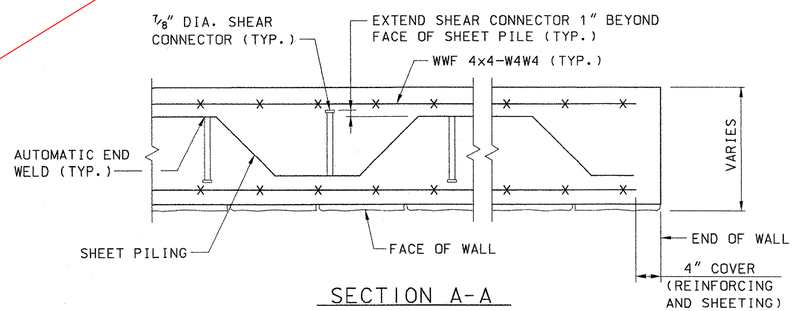
SCALE: 1/2" = 1'-0"

SUPERCEDED BY VALUE ENGINEERING
RETAINING WALL DESIGN SHEETS 1& 2
DATED 5/9/2007.



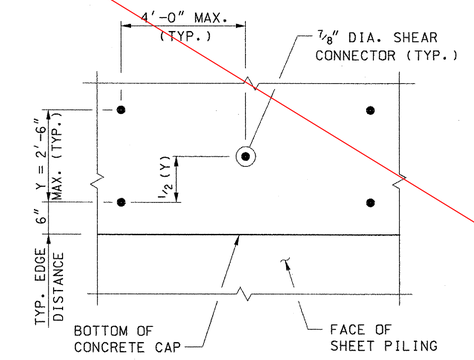
TYPICAL RETAINING WALL SECTION

SCALE: 1" = 1'-0"



SECTION A-A

SCALE: 1" = 1'-0"



TYPICAL SHEAR CONNECTOR SPACING

N.T.S.

NOTE:

1. SEE SHEET 11 AND CROSS SECTIONS FOR EARTHWORK DETAILS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

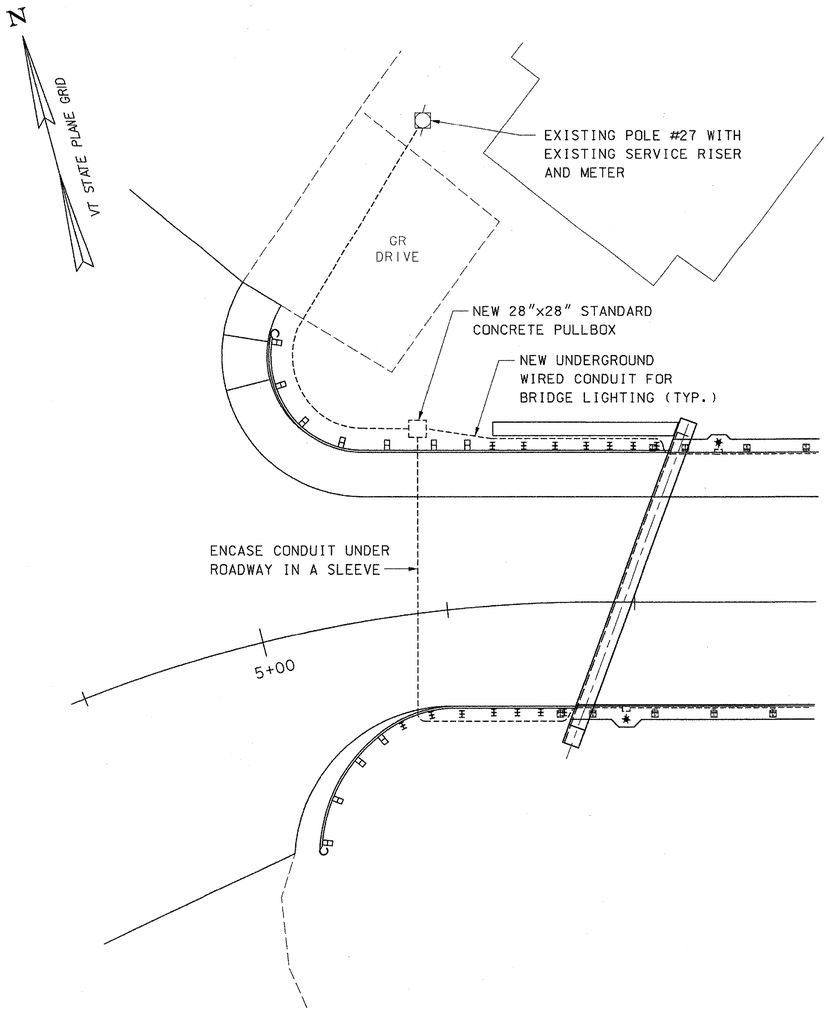
RETAINING WALL DETAILS

Designed By W.M. MOSHER	Drawn By B.J. MASSE
Checked By K.G. KRETSCH Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028RW3	Sheet 44 of 71

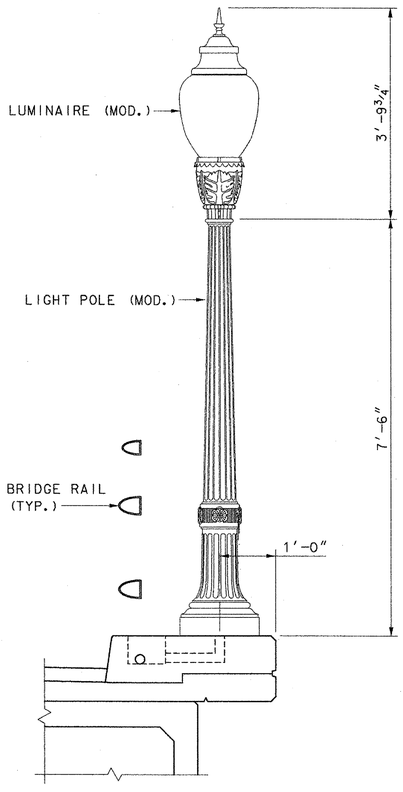
VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

plot date: 9/14/2006



WEST APPROACH
BRIDGE LIGHTING CONDUIT PLAN
SCALE: 1" = 10'



TYPICAL TRANSVERSE SECTION
AT BRIDGE LIGHT
(CURB SIDE SHOWN, SIDEWALK SIDE SIMILAR)
NOT TO SCALE

BRIDGE LIGHTING NOTES:

1. THE CONTRACTOR SHALL PROVIDE A DESIGN FOR THE ELECTRICAL SYSTEM FOR THE BRIDGE LIGHTING IN CONFORMANCE WITH ALL LOCAL AND STATE CODES AND VTRANS STANDARDS E-173, E-175, E-180A, E-180B, AND E-181 AS APPLICABLE. THE DESIGN SHALL INCLUDE ANY ADDITIONAL DETAILS NECESSARY FOR THE CONSTRUCTION OF THE POWER SUPPLY INCLUDING BUT NOT LIMITED TO CONDUITS, SLEEVES, WIRE, GROUNDING, PULL BOXES AND JUNCTION BOXES.
2. ELECTRICAL SERVICE FOR THE NEW BRIDGE LIGHTING SYSTEM SHALL BE PROVIDED FROM THE EXISTING SERVICE RISER AND METER AT UTILITY POLE NUMBER 27 NORTHWEST OF THE BRIDGE. THE CONTRACTOR SHALL COORDINATE CONNECTION OF THE NEW LIGHTING SYSTEM TO THE EXISTING ELECTRICAL SERVICE WITH CENTRAL VERMONT PUBLIC SERVICE. CONTRACTOR SHALL ENSURE POWER SERVICE DOES NOT CONFLICT WITH ANY EXISTING OR PROPOSED UTILITIES OR DRAINAGE.
3. SEE SPECIAL PROVISIONS FOR ADDITIONAL LIGHTING SYSTEM REQUIREMENTS.
4. ALL CONDUIT SHALL BE A MINIMUM OF SCHEDULE 40 P.V.C. OR GALVANIZED RIGID STEEL ELECTRICAL CONDUIT.
5. ALL CONDUIT UNDER THE ROADWAY SHALL BE INSTALLED IN RIGID PLASTIC SLEEVES.
6. THE ACCEPTED QUANTITIES OF BRIDGE LIGHTING SHALL BE PAID FOR AS 678.23 WIRED CONDUIT (2") (PVC), 678.25 PULL BOX - STANDARD, 678.26 JUNCTION BOX, 678.30 ELECTRICAL CONDUIT SLEEVE (6") (PVC), 679.45 LIGHT POLE (MOD.), AND 679.50 LUMINAIRE (MOD.).

NOTES:

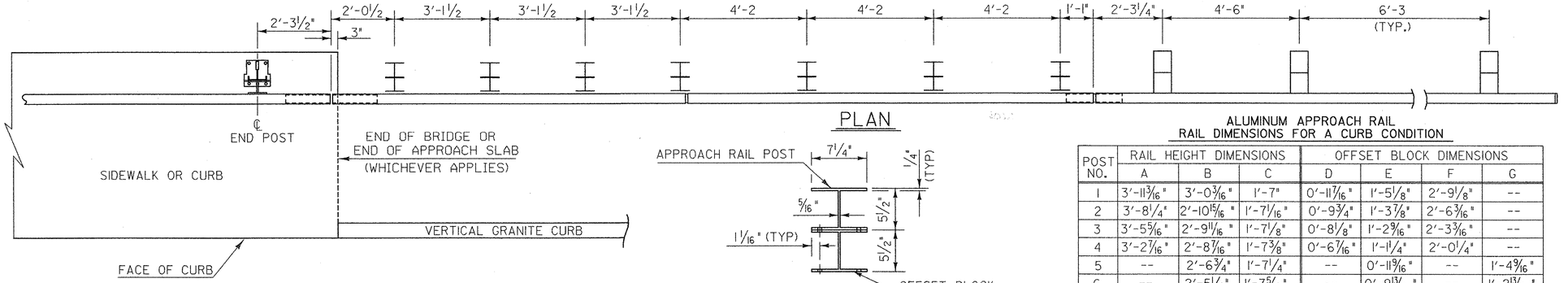
1. SEE SHEET 26 FOR LIGHTING AND CONDUIT LAYOUT ON BRIDGE.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
BRIDGE LIGHTING DETAILS	
Designed By T.S. BRYANT	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028LT1	Sheet 45 of 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298 plot date: 10/11/2006



PLAN

PLAN

ALUMINUM APPROACH RAIL
RAIL DIMENSIONS FOR A CURB CONDITION

POST NO.	RAIL HEIGHT DIMENSIONS			OFFSET BLOCK DIMENSIONS			
	A	B	C	D	E	F	G
1	3'-11 3/16"	3'-0 3/16"	1'-7"	0'-11 7/16"	1'-5 1/8"	2'-9 1/8"	--
2	3'-8 1/4"	2'-10 15/16"	1'-7 1/16"	0'-9 3/4"	1'-3 7/8"	2'-6 3/16"	--
3	3'-5 5/16"	2'-9 11/16"	1'-7 1/8"	0'-8 1/8"	1'-2 9/16"	2'-3 3/16"	--
4	3'-2 7/16"	2'-8 7/16"	1'-7 3/8"	0'-6 7/16"	1'-1 1/4"	2'-0 1/4"	--
5	--	2'-6 3/4"	1'-7 1/4"	--	0'-11 9/16"	--	1'-4 9/16"
6	--	2'-5 1/8"	1'-7 5/16"	--	0'-9 13/16"	--	1'-2 13/16"
7	--	2'-3 7/16"	1'-7 3/8"	--	0'-8 1/16"	--	1'-1 1/16"

ALL REMAINING POSTS ARE TO HAVE THE SAME DIMENSIONS AS POST NO. 7

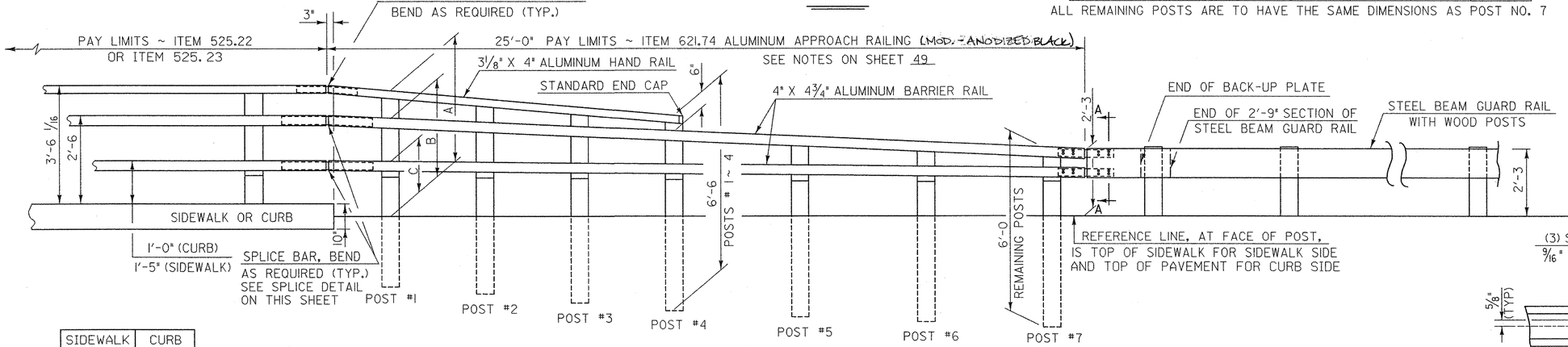
NOTES

1. POST 1 THROUGH 7 SHALL BE EXTRUDED ALUMINUM.
2. ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36 GALVANIZED AFTER FABRICATION.
3. ALL ITEMS NOT OTHERWISE INDICATED SHALL MEET THE SPECIFICATION REQUIREMENTS OF THE STANDARD SHEETS ON WHICH THEY ARE DETAILED.
4. SEE STANDARD G-1 FOR STEEL BEAM GUARD RAIL DETAILS. SEE SHEETS 48 AND 49 FOR ALUMINUM BRIDGE RAILING DETAILS.
5. THE COST OF ALL MATERIALS AND LABOR FOR THE SPLICE BETWEEN THE ALUMINUM APPROACH RAILING AND THE STEEL BEAM GUARD RAIL SHALL BE SUBSIDIARY TO ITEM 621.74, ALUMINUM APPROACH RAILING (MOD. - ANODIZED BLACK).
6. DETAILS ARE SHOWN FOR TRANSITION TO A 3 RAIL ALUMINUM BRIDGE RAILING.
7. DIMENSIONS SHOWN ARE FROM A REFERENCE LINE AT THE FACE OF POST FOR A NORMAL CROWNED SECTION. APPROPRIATE CORRECTIONS SHALL BE MADE FOR CROSS SLOPES OTHER THAN A NORMAL SECTION.

ALUMINUM APPROACH RAIL
RAIL DIMENSIONS FOR A SIDEWALK CONDITION

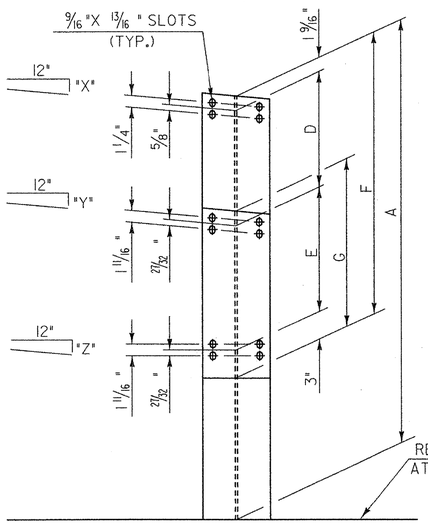
POST NO.	RAIL HEIGHT DIMENSIONS			OFFSET BLOCK DIMENSIONS			
	A	B	C	D	E	F	G
1	3'-4 3/4"	2'-5 3/4"	1'-5 3/16"	0'-11 7/16"	1'-0 9/16"	2'-4 9/16"	--
2	3'-2 11/16"	2'-5 3/8"	1'-5 1/2"	0'-9 3/4"	0'-11 7/8"	2'-2 3/16"	--
3	3'-0 11/16"	2'-5"	1'-5 13/16"	0'-8 1/8"	0'-11 3/16"	1'-11 7/8"	--
4	2'-10 5/8"	2'-4 5/8"	1'-6 1/16"	0'-6 7/16"	0'-10 9/16"	1'-9 9/16"	--
5	--	2'-4 1/8"	1'-6 1/2"	--	0'-9 5/8"	--	1'-2 5/8"
6	--	2'-3 5/8"	1'-6 7/8"	--	0'-8 3/4"	--	1'-1 3/4"
7	--	2'-3 1/8"	1'-7 1/4"	--	0'-7 7/8"	--	1'-0 7/8"

ALL REMAINING POSTS TO HAVE THE SAME DIMENSIONS AS POST NO. 7

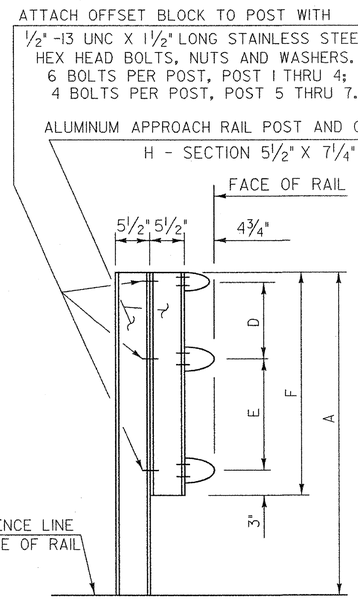


ELEVATION

	SIDEWALK SIDE	CURB SIDE
"X"	0.6512"	0.9310
"Y"	0.1200"	0.4000"
"Z"	-0.0950"	-0.0150

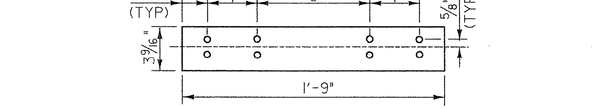


FRONT ELEVATION

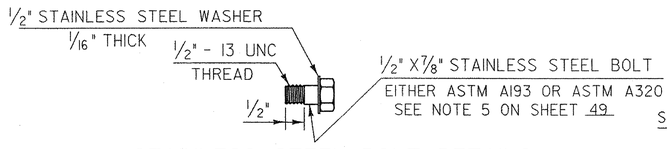


SIDE ELEVATION

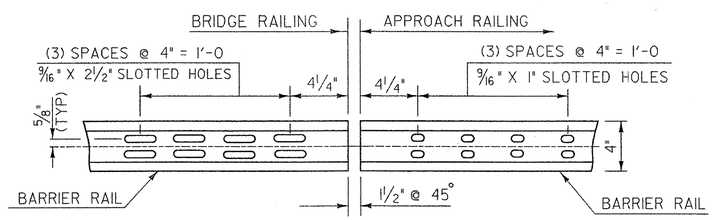
APPROACH RAIL DETAILS



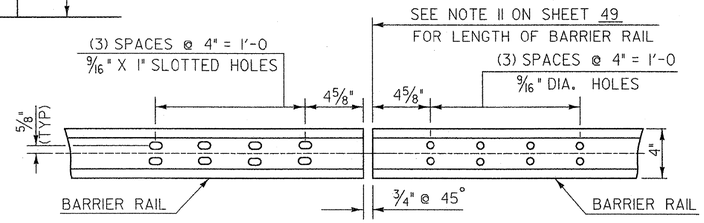
ELEVATION OF BARRIER RAIL SPLICE BAR
TO BE USED AT TRANSITION BETWEEN
APPROACH RAIL & GUARD RAIL (FROM BACK)



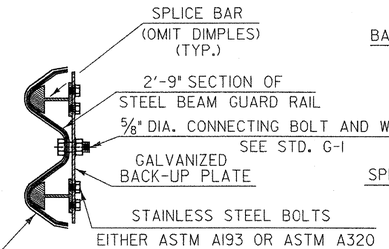
STAINLESS STEEL BOLT DETAILS

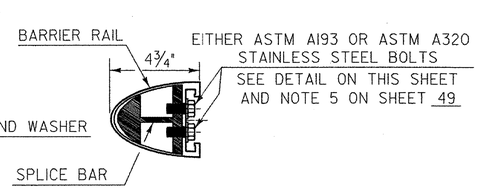


ELEVATION OF BARRIER RAIL (FROM BACK)

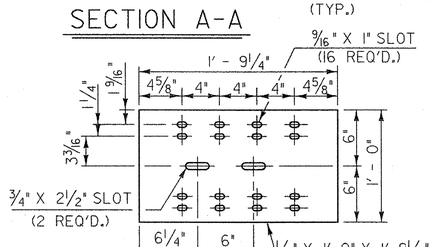


ELEVATION OF BARRIER RAIL (FROM BACK)
AT ALL INTERMEDIATE RAIL SPLICES





SECTION A-A



BACK-UP PLATE DETAILS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U. S. ROUTE 4	Log Sta.
	Surv. Sta.

U. S. ROUTE 4 OVER OTTAUQUECHEE RIVER

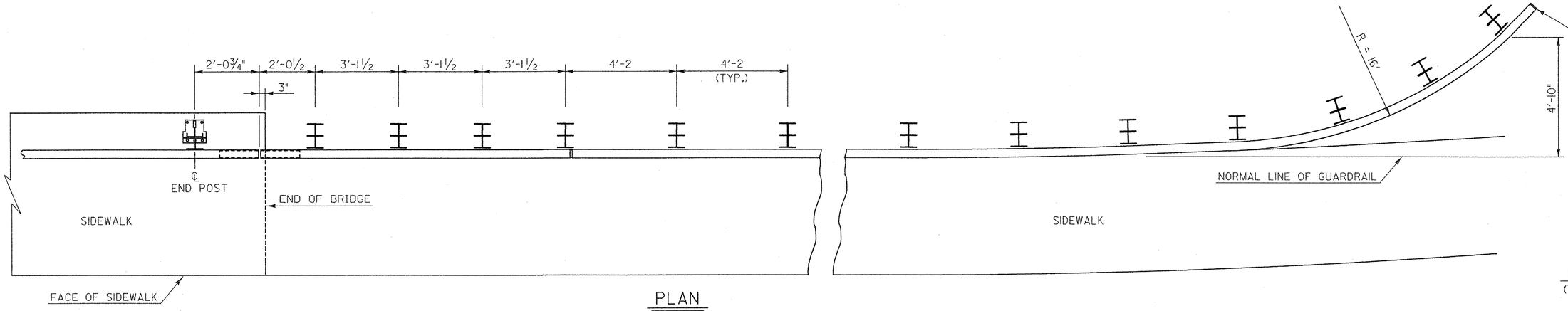
APPROACH RAILING DETAILS (1 OF 2)

Designed By VTRANS	Drawn By VTRANS
Checked By T. S. BRYANT Date 10/06	Bridge Design Supervisor M. A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028RL	Sheet 46 of 71

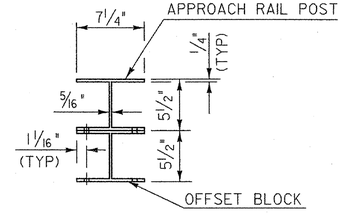
VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

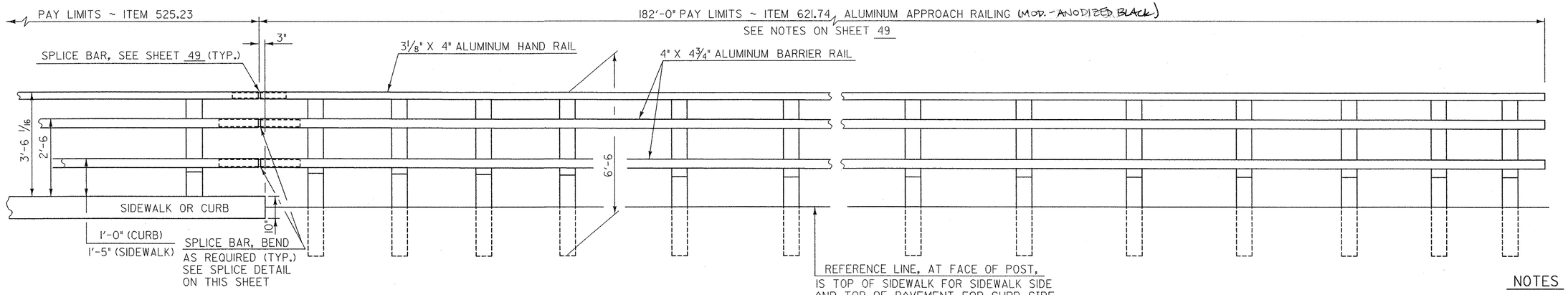
plot date: 10/11/2006



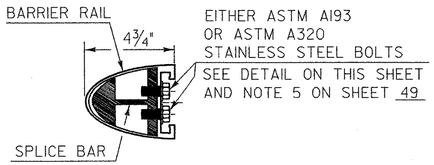
PLAN

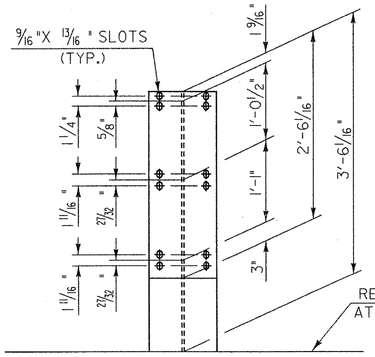


PLAN

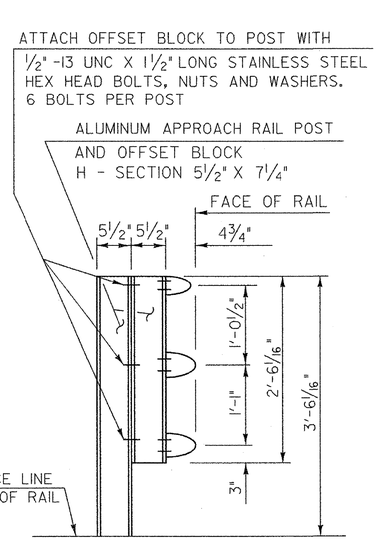


ELEVATION



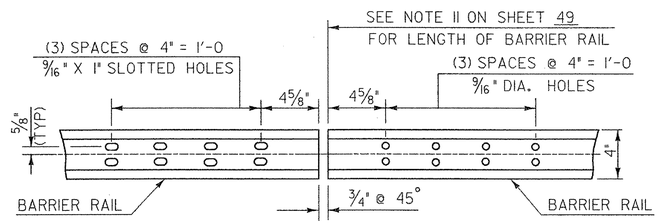


FRONT ELEVATION

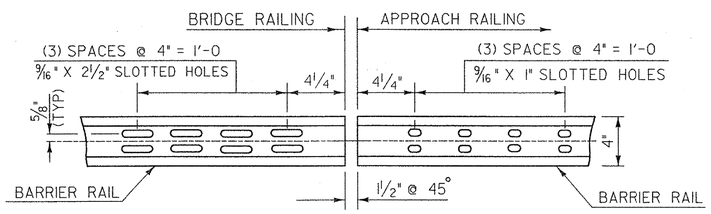


SIDE ELEVATION

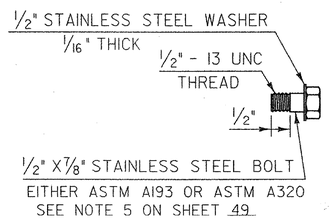
APPROACH RAIL DETAILS



ELEVATION OF BARRIER RAIL (FROM BACK) AT ALL INTERMEDIATE RAIL SPLICES



ELEVATION OF BARRIER RAIL (FROM BACK)



STAINLESS STEEL BOLT DETAILS

NOTES

1. POSTS SHALL BE EXTRUDED ALUMINUM.
2. ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 36 GALVANIZED AFTER FABRICATION.
3. ALL ITEMS NOT OTHERWISE INDICATED SHALL MEET THE SPECIFICATION REQUIREMENTS OF THE STANDARD SHEETS ON WHICH THEY ARE DETAILED.
4. SEE STANDARD G-1 FOR STEEL BEAM GUARD RAIL DETAILS. SEE SHEETS 48 AND 49 FOR ALUMINUM BRIDGE RAILING DETAILS.
5. THE COST OF ALL MATERIALS AND LABOR FOR THE SPLICE BETWEEN THE ALUMINUM APPROACH RAILING AND THE STEEL BEAM GUARD RAIL SHALL BE SUBSIDIARY TO ITEM 621.74, ALUMINUM APPROACH RAILING (MOD. - ANODIZED BLACK).
6. DETAILS ARE SHOWN FOR TRANSITION TO A 3 RAIL ALUMINUM BRIDGE RAILING.
7. DIMENSIONS SHOWN ARE FROM A REFERENCE LINE AT THE FACE OF POST FOR A NORMAL CROWNED SECTION. APPROPRIATE CORRECTIONS SHALL BE MADE FOR CROSS SLOPES OTHER THAN A NORMAL SECTION.
8. INSTALL HAND RAIL END CAP AND BARRIER RAIL END CAP AT END OF RAILING. SEE SHEET 49 FOR DETAILS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

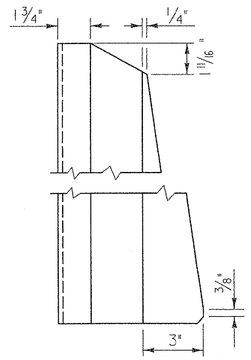
APPROACH RAILING DETAILS (2 OF 2)

Designed By VTRANS	Drawn By VTRANS
Checked By T.S. BRYANT Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028RL	Sheet 47 of 71

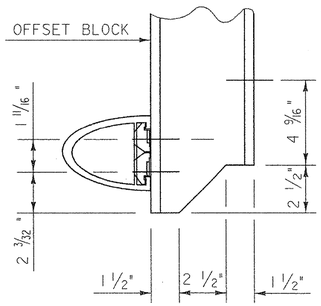
VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

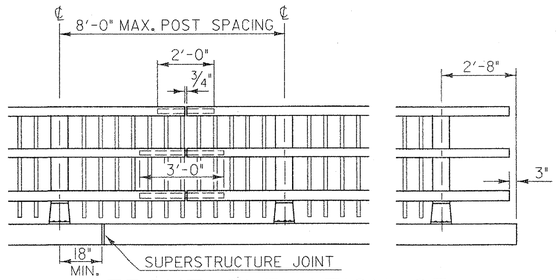
plot date: 10/11/2006



POST SIDE VIEW

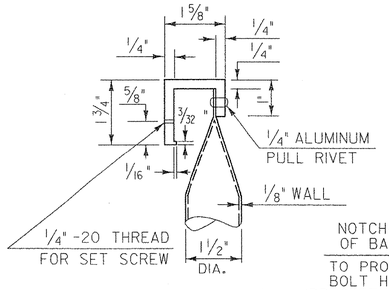


COPING DETAIL

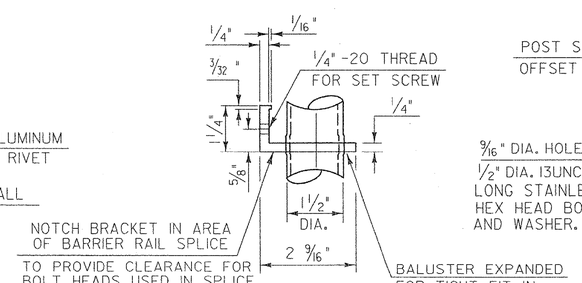


FRONT ELEVATION OF THREE RAIL WITH SPINDLES

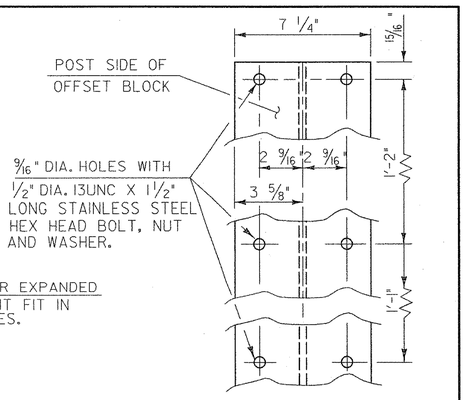
NOTE : RAIL POSTS ARE TO BE SET NORMAL TO GRADE UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS. ALL DIMENSIONS ARE TYPICAL UNLESS OTHERWISE DESIGNATED ON BRIDGE PLANS.



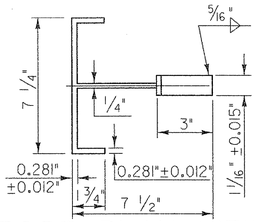
DETAIL A



DETAIL B



OFFSET BLOCK CONNECTION



POST PLAN VIEW

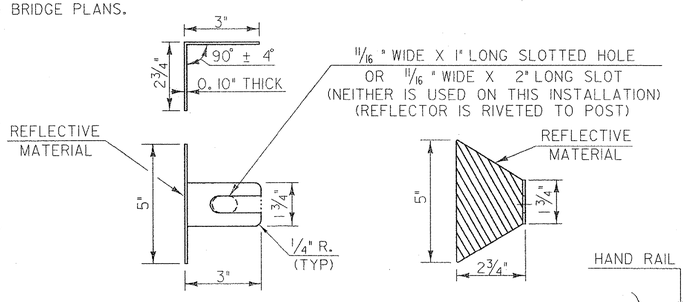
THIS REFLECTORIZED ALUMINUM DELINEATOR IS TO BE ERECTED EVERY 30 FEET (OR CLOSEST POST) WITH 2 NO. 8 X 3/4" SELF-TAPPING SCREWS.

DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052-H32.

REFLECTIVE MATERIAL SHALL MEET THE REQUIREMENTS OF SUBSECTION 750.08 AND SHALL BE OF ENCAPSULATED LENS SILVER OR AMBER. AMBER IS TO BE INSTALLED ON THE DRIVER'S LEFT AND SILVER ON THEIR RIGHT.

ON BRIDGES WITH A SIDEWALK, DELINEATORS ARE NOT TO BE INSTALLED ON THE SIDEWALK SIDE OF THE BRIDGE (IE. DELINEATORS INSTALLED ONLY ON THE CURB SIDE AND ON THE APPROACH RAIL ON THE CURB SIDE)

PAYMENT SHALL BE SUBSIDIARY TO ALL OTHER ITEMS.

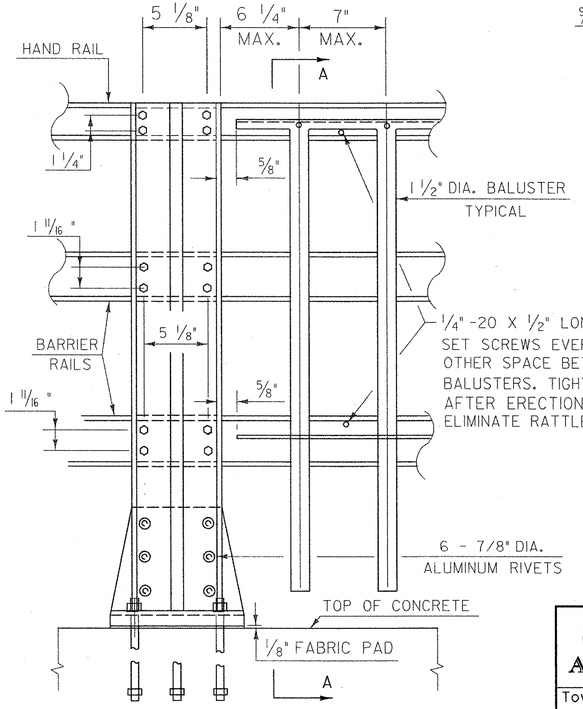


REFLECTOR DETAILS

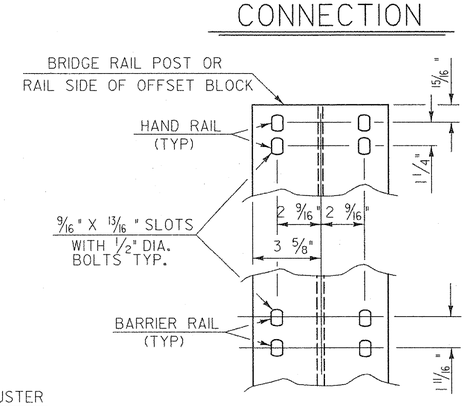
ALLOWABLE STRESSES:

RAILING : 21,000 PSI TENSION
22,000 PSI COMPRESSION

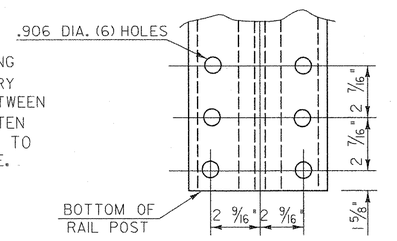
POSTS : 17,000 PSI TENSION
19,000 PSI COMPRESSION



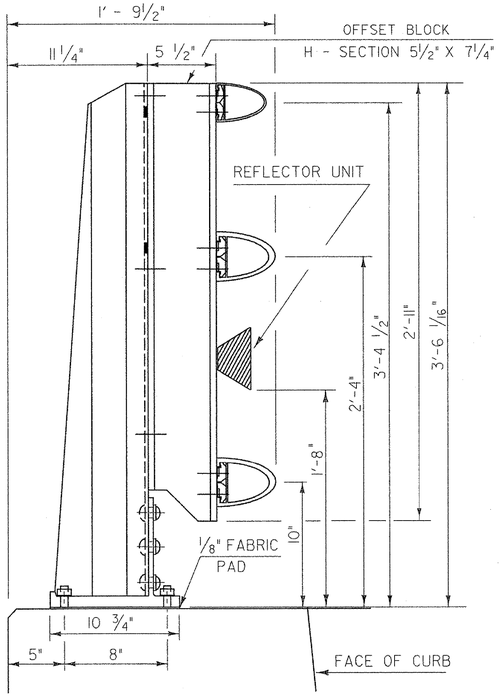
OUTSIDE ELEVATION OF THREE RAIL POST & SPINDLES



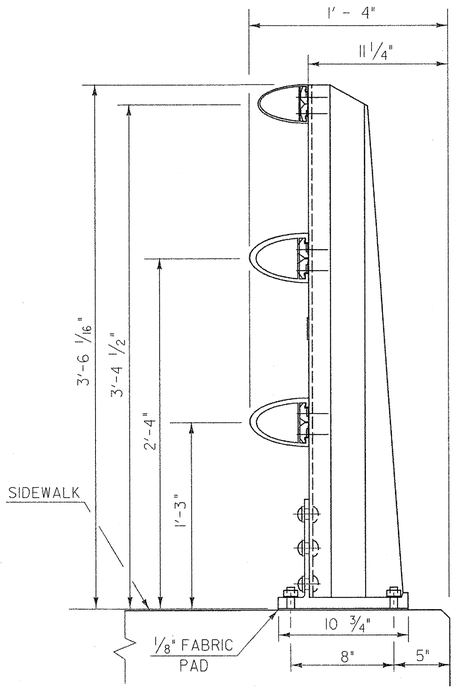
RAIL CONNECTION



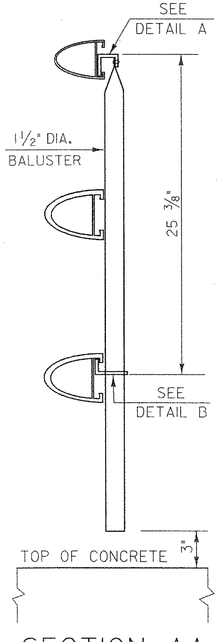
POST BASE BOLT HOLE DETAILS



SIDE ELEVATION OF THREE RAIL TO BE USED ON CURB SIDE



SIDE ELEVATION OF THREE RAIL TO BE USED ON SIDEWALK SIDE



SECTION AA

RAIL POST DETAILS ON SUPERSTRUCTURE

DETAILS OF SPINDLES FOR ALUMINUM RAILING

NOTE : SPINDLES ON SIDEWALK SIDE ONLY

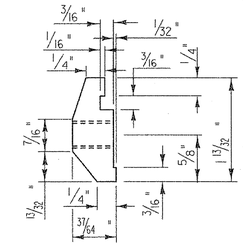
VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

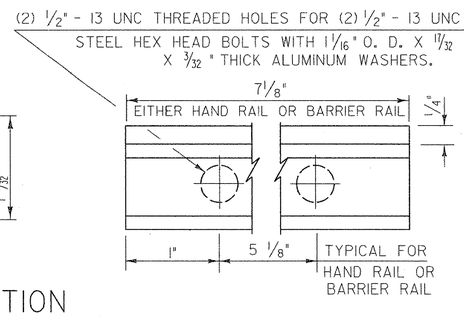
Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
BRIDGE RAILING DETAILS (1 OF 2)	
Designed By VTRANS	Drawn By VTRANS
Checked By T.S. BRYANT Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028RL	Sheet 48 of 71

VHB NO. 51298

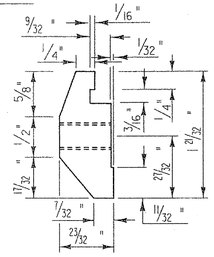
plot date: 9/12/2006



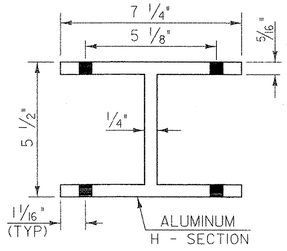
POST CONNECTION HAND RAIL SECTION



POST CONNECTION ELEVATION

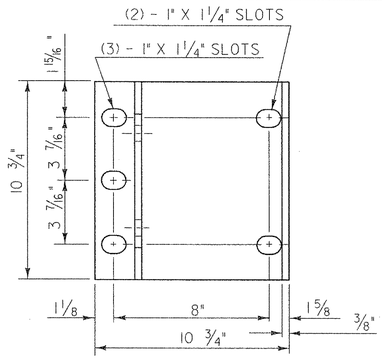


POST CONNECTION BARRIER RAIL SECTION

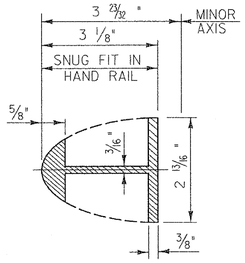


PLAN VIEW OF OFFSET BLOCK

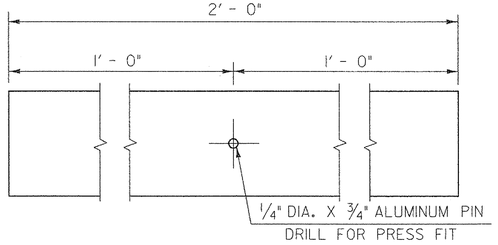
(TO BE USED ON SUPERSTRUCTURE ON CURB SIDE)



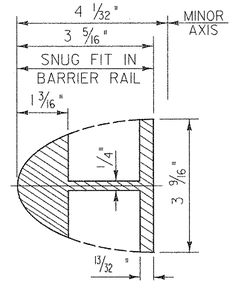
POST BASE PLAN



HAND RAIL SPLICE SECTION

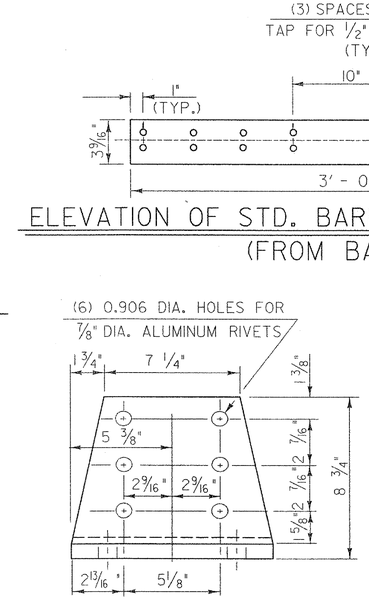


ELEVATION OF HAND RAIL SPLICE BAR

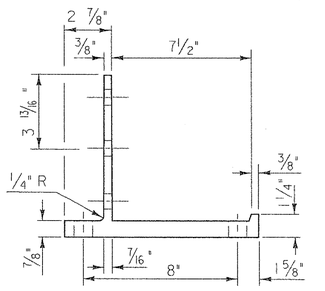


BARRIER RAIL SPLICE SECTION

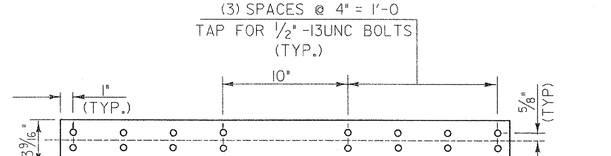
(SEE SHEET 43 FOR ELEVATION OF BARRIER RAIL SPLICE BAR)



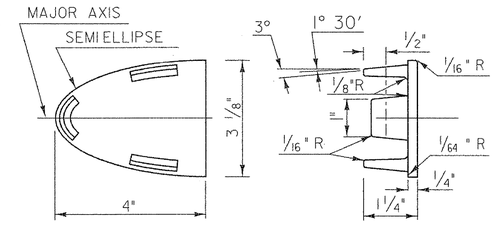
POST BASE FRONT ELEVATION



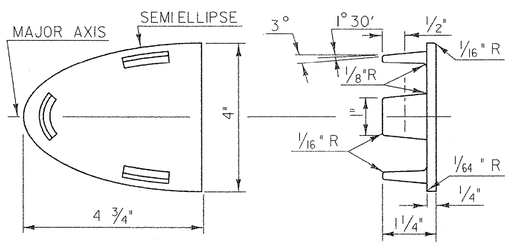
POST BASE SECTION



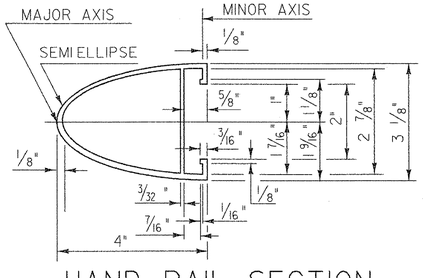
ELEVATION OF STD. BARRIER RAIL SPLICE BAR (FROM BACK)



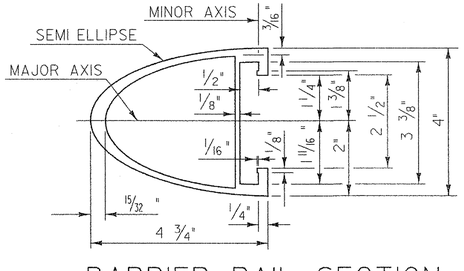
HAND RAIL END CAP



BARRIER RAIL END CAP

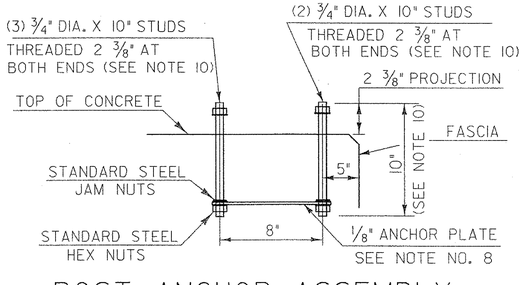


HAND RAIL SECTION

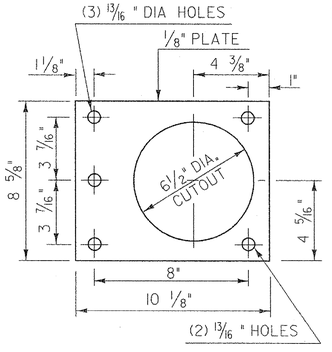


BARRIER RAIL SECTION

(SEE SHEET 43 FOR ELEVATION OF BARRIER RAIL)



POST ANCHOR ASSEMBLY



ANCHOR PLATE

NOTES

1. ANCHOR BOLTS, WASHERS AND HEAVY HEX NUTS MAY BE ANY OF THE FOLLOWING:
   - A. ASTM A449 GALVANIZED, OR
   - B. AASHTO M164 (ASTM A325) GALVANIZED
   - C. BOLTS AND WASHERS OF STAINLESS STEEL ASTM A276, TYPE 304 (MINIMUM ULTIMATE STRENGTH OF 100,000 PSI) WITH STAINLESS STEEL NUTS OF ASTM A194, GRADE 8NA.
2. ALUMINUM POSTS, POST BASES, SPLICE BARS, CONNECTION BARS, RAILS AND BALUSTER FRAMES SHALL CONFORM TO ASTM B221 ALLOY 6061-T6 OR ALLOY 6351-T5. MINIMUM ALLOWABLE STRESS F_y = 35,000 PSI.
3. ALUMINUM BALUSTER TUBES SHALL CONFORM TO ASTM B210 ALLOY 6061-T5 OR 6063-T5.
4. ALUMINUM RAIL END CAPS SHALL CONFORM TO ASTM B26 ALLOY 356-T6.
5. THE POST, RAIL, AND OFFSET BLOCK CONNECTION BOLTS SHALL BE EITHER ASTM A193 OR ASTM A320. EITHER ONE SHALL BE CLASS 1, B8 GRADE AISI 304 WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI. NUTS FOR EITHER OF THE ABOVE BOLTS SHALL BE ASTM A194, GRADE 8, STAINLESS STEEL WITH AN ULTIMATE TENSILE STRENGTH OF 75,000 PSI.
6. SET SCREWS FOR ATTACHING BALUSTERS TO RAILING SHALL BE ASTM F880, TYPE 303 MATERIAL.
7. RIVETS SHALL BE COLD DRIVEN HIGH BUTTON HEAD "CONE POINT", CONFORMING TO ASTM B316 ALLOY 6061-T6.
8. THE ANCHOR PLATE FOR THE POST ANCHOR ASSEMBLY SHALL BE ASTM A36 STRUCTURAL STEEL.
9. WELDING SHALL CONFORM TO THE REQUIREMENTS OF SUBSECTION 506.10 USING THE GMAW-INERT GAS PROCESS AND AWS ER 5356 ELECTRODE WIRE.
10. UNLESS OTHERWISE SPECIFIED, ANCHOR BOLTS SHALL BE CAST INTO THE CONCRETE AS DETAILED.
11. WHENEVER FEASIBLE BARRIER RAIL AND HAND RAIL SECTIONS, SHALL BE FULL LENGTH SECTIONS (40' ±) AND WHEN POSSIBLE SHALL BE ATTACHED TO THREE POSTS. RAILS SHALL BE SPLICED AT EACH DECK JOINT AND INTERMITTENTLY AS REQUIRED. SPLICES SHALL OCCUR WITHIN THE SAME PANEL.
12. ENDS OF RAILS SHALL BE CUT SQUARE AND GROUND FREE OF BURRS OR RAGGED EDGES. EXPOSED ENDS SHALL BE CAPPED.
13. THE CONCRETE CONTACT SURFACE AT THE POST BASE SHALL BE BUSH HAMMERED AND/OR SHIMMED AS REQUIRED FOR PROPER POST ALIGNMENT. POST HEIGHT ADJUSTMENTS LESS THAN 1/4" SHALL BE WITH 1/16" AND 1/8" SHIMS. CORRECTIONS EXCEEDING 1/4" SHALL BE WITH EPOXY MORTAR CONFORMING WITH SECTION 530. FABRIC BEARING PADS AND ANY REQUIRED SHIMS OR EPOXY MORTAR ARE SUBSIDIARY TO THE UNIT PRICE BID FOR THE RAILING.
14. SHIMS AND 1/8" FABRIC BEARING PADS SHALL BE 10 3/4" SQUARE WITH SLOTTED HOLES SIZED AND LOCATED THE SAME AS THE POST BASE DETAIL. FABRIC BEARING PADS SHALL CONFORM TO SUBSECTION 731.01 OR 731.02, SHIM MATERIAL SHALL BE ASTM B 209 ALLOY 1100-0.
15. EXTRUDED SECTIONS ARE DETAILED TO COMPLY WITH CURRENT AASHTO-AGC-ARTBA STANDARDS. MINOR VARIATIONS OF THE DETAILS SHOWN MAY BE CONSIDERED PROVIDING THEY DO NOT REDUCE THE STRENGTH CAPACITY OF THE RAIL SYSTEM.
16. ALUMINUM WASHERS SHALL BE ASTM B209 ALLOY ACLAD 2024-T4.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

BRIDGE RAILING DETAILS (2 OF 2)

Designed By VTRANS	Drawn By VTRANS
Checked By T.S. BRYANT Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028RL	Sheet 49 of 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

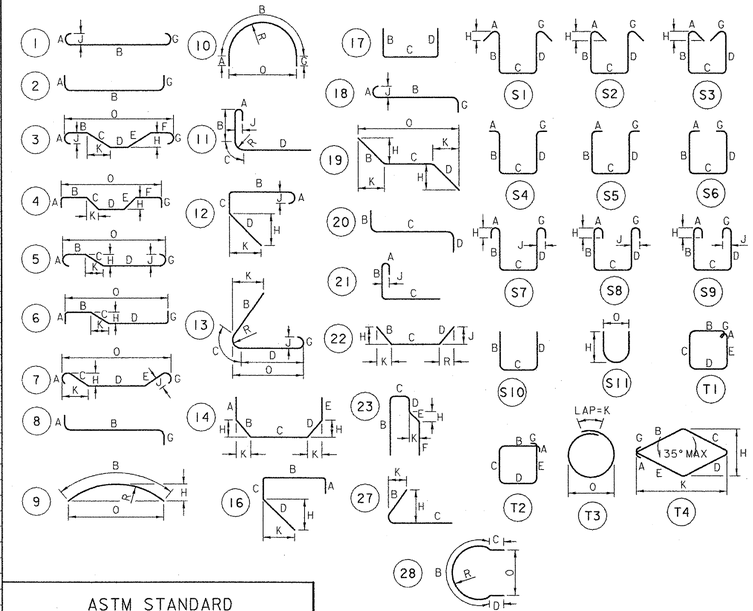
plot date: 9/12/2006

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
1	DECK OVERLAY																
2	150	4	40'-2"	ES401	STR												
3 ✳	151	4	28'-8"	ES402	STR												
4 ▲✳	204	4	37'-0"	ES403	STR												
5 ▲	32	4	39'-5"	ES404	STR												
6	150	4	40'-0"	ES409	STR												
7																	
8																	
9	148	4	5'-8"	ES405	17		2'-2"	3'-6"	—								
10	74	4	5'-1"	ES406	17		2'-2"	0'-9"	2'-2"								
11	74	4	2'-6"	ES407	2	0'-4"	2'-2"					—					
12	74	4	5'-8"	ES408	17		2'-2"	3'-6"	—								
13																	
14																	
15	55	5	43'-0"	ES503	STR												
16																	
17																	
18 ✳	204	5	10'-4"	ES501	S5	0'-10"	0'-9"	7'-2"	0'-9"			0'-10"					
19	203	5	4'-8"	ES502	S5	0'-10"	0'-9"	1'-6"	0'-9"			0'-10"					
20	32	5	5'-1"	ES504	S6	0'-5"	2'-1"	0'-9"	1'-10"			—					
21	8	5	10'-7"	ES505	4	—	3'-1"	1'-5"	1'-7"	1'-5"	3'-1"	—	1'-0"		1'-0"		9'-9"
22 ✳	9	5	9'-5"	ES506	4	—	3'-1"	0'-10"	1'-7"	0'-10"	3'-1"	—	0'-7"		0'-7"		8'-11"
23																	
24																	
25	ABUTMENT 1																
26	3	5	45'-8"	1A502	STR												
27	1	5	2'-0"	1A507	STR												
28	2	5	2'-10"	1A509	STR												
29																	
30																	
31	22	5	2'-6"	1A501	17		0'-10"	1'-8"	—								
32	45	5	2'-9"	1A503	17		0'-6"	1'-9	0'-6"								
33	5	5	4'-2"	1A504	17		1'-0"	3'-2"	—								
34 ▲✳	6	5	8'-5"	1A505	17		3'-4"	1'-9"	3'-4"								
35 ✳	4	5	7'-9"	1A506	17		3'-5"	1'-9"	2'-7"								
36 ▲	3	5	3'-10"	1A508	22		2'-9"	1'-1"	—				1'-3"	—	2'-6"	—	
37	2	5	5'-7"	1A510	17		1'-0"	4'-7"	—								
38 ▲	7	5	5'-11"	1A511	17		2'-6"	1'-9"	1'-8"								
39 ▲	4	5	13'-5"	1A512	17		5'-10"	1'-9	5'-10"								
40	1	5	7'-11"	1A513	17		2'-1"	5'-10"	—								
41																	
42																	
43	ABUTMENT 2																
44	3	5	43'-8"	2A502	STR												
45																	
46																	
47	22	5	2'-8"	2A501	17		0'-10"	1'-10"	—								
48	45	5	2'-9"	2A503	17		0'-6"	1'-9	0'-6"								
49	6	5	5'-8"	2A504	17		4'-8"	1'-0"	—								
50 ✳	3	5	8'-9"	2A505	17		3'-6"	1'-9"	3'-6"								
51	5	5	3'-3"	2A506	17		1'-2"	1'-9"	0'-4"								
52	1	5	4'-3"	2A507	17		3'-6"	0'-9"	—								
53 ✳	5	5	8'-5"	2A508	17		3'-4"	1'-9"	3'-4"								
54	5	5	6'-7"	2A509	17		2'-0"	1'-9"	2'-10"								
55	1	5	5'-9"	2A510	17		3'-4"	2'-5"	—								
56																	
57																	
58	PIER 1																
59 ✳	23	5	19'-7"	1P501	STR												
60 ▲	4	5	43'-4"	1P502	STR												
61 ✳	36	5	26'-7"	1P505	STR												
62 ▲	12	5	8'-6"	1P510	STR												
63																	
64	32	5	7'-4"	1P503	17		1'-7"	4'-2"	1'-7"								
65	64	5	7'-10"	1P504	6	—	4'-6"	1'-2"	2'-2"			—	0'-10"		0-10"		7'-6"
66	22	5	19'-0"	1P506	28		14'-8"	2'-2"	2'-2"							2'-9"	2'-6"
67	22	5	25'-4"	1P507	28		21'-0"	2'-2"	2'-2"							3'-9"	2'-6"
68	6	5	16'-11"	1P508	28		12'-7"	2'-2"	2'-2"							2'-9"	4'-2"
69	6	5	23'-6"	1P509	28		19'-2"	2'-2"	2'-2"							3'-9"	4'-2"
70																	
71																	
72																	
73																	
74	PIER 2																
75 ✳	23	5	17'-10"	2P501	STR												
76 ▲	4	5	43'-4"	2P502	STR												
77 ✳	36	5	24'-10"	2P505	STR												
78 ▲	12	5	8'-6"	2P510	STR												
79																	
80	32	5	7'-4"	2P503	17		1'-7"	4'-2"	1'-7"								
81	64	5	7'-10"	2P504	6	—	4'-6"	1'-2"	2'-2"			—	0'-10"		0-10"		7'-6"
82	20	5	19'-0"	2P506	28		14'-8"	2'-2"	2'-2"							2'-9"	2'-6"
83	20	5	25'-4"	2P507	28		21'-0"	2'-2"	2'-2"							3'-9"	2'-6"
84	6	5	16'-11"	2P508	28		12'-7"	2'-2"	2'-2"							2'-9"	4'-2"
85	6	5	23'-6"	2P509	28		19'-2"	2'-2"	2'-2"							3'-9"	4'-2"
86																	
87																	
88																	
89																	
90																	
91																	
92																	
93																	
94																	
95																	
96																	

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
97																	
98																	
99																	
100																	
101																	
102																	
103																	
104																	
105																	
106																	
107																	
108																	
109																	
110																	
111																	
112																	
113																	
114																	
115																	
116																	
117																	
118																	
119																	
120																	
121																	
122																	
123																	
124																	
125																	
126																	
127																	
128																	
129																	
130																	
131																	
132																	
133																	
134																	
135																	
136																	
137																	
138																	
139																	
140																	
141																	
142																	
143																	
144																	
145																	
146																	
147																	
148																	
149																	
150																	
151																	
152																	
153																	
154																	
155																	
156																	
157																	
158																	
159																	
160																	
161																	
162																	
163																	
164																	
165																	
166																	
167																	
168																	
169																	
170																	
171																	
172																	
173																	
174																	
175																	
176																	
177																	
178																	
179																	
180																	
181																	
182																	
183																	
184																	
185																	
186																	
187																	
188																	
189																	
190																	

NOTES

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENT OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615-SI). 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 ARE TO BE SHOWN ONLY WHEN NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS ARE TO BE SHOWN ONLY WHEN NECCESSARY 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	NOMINAL MASS lbs/ft	NOMINAL DIMENSIONS ROUND SECTION: DIAMETER inches	CROSS SECTIONAL AREA sq. inches	PERIMETER inches
3	0.376	0.375	0.11	1.178
4	0.668	0.500	0.20	1.571
5	1.043	0.625	0.31	1.963
6	1.502	0.750	0.44	2.356
7	2.044	0.875	0.60	2.749
8	2.670	1.000	0.79	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	7.650	1.693	2.25	5.320
18	13.600	2.257	4.00	7.090

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

REINFORCING STEEL SCHEDULE

Designed By L.S. GARDNER	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 9/06	Bridge Design Supervisor M.A. COLGAN Date 9/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028RS	Sheet 50 of 71

VHB NO. 51298

plot date: 9/14/2006

PLAN

SECTION A-A

Curb Side Similar
See Notes on Plan

Where Concrete Post overlaps into span #1 & #3, place 1 layer of 3 ply tar paper between base of post & top of curb.

Where Concrete Post overlaps into span #1 & #2, place 1 layer of 3 ply tar paper between base of post & top of sidewalk

59'-0" Span #1 — 8 Posts - 7 Spcs. @ 7'-9⅛" = 54'-3⅞"

84'-0" Span #2 — 11 Posts = 10 Spcs @ 7'-11" = 79'-2"

59'-0" Span #3

Wrought Iron Aluminum Bridge Railing — Wrought Iron Aluminum Posts

New Sidewalk & Railing To replace existing sidewalk & conc. balustrade railing

Remove existing structure back to this line

Spacing of wind slots: 8'-7 3/16" — 3'-2⅞" — 10 Spcs. @3'-10⅛" = 38'-9⅝"

16 Spcs @3'-11½" = 63'-4"

3'-3½" — 7'-1¼" — 5'-0⅛" — 3'-2⅞" — 10 Spcs. @3'-10⅛" = 38'-9⅝"

11'-11" — Existing Slab to be left intact — 6'-0" — 7'-0"

℄ of Pier #1 — ℄ of Pier #2

Remove old Curb & Railing to Roadway Slab elevation at bottom of curb.

New Curb & Railing

Center Line Front Anchor Bolts Same both sides

℄ of Posts & Railing Same both sides

Railing & dimensions for Span #3 left same as Span #1 right

Railing & dimensions for Span #3 right similar to Span #1 left

Reinstall present light Standards, 4 on each side.

6 Spc @ 12'-6" = 6'-4½"

6 Spc @ 13'-6" = 6'-8½"

Aluminum Bridge Railing

Pier

Where Concrete Post overlaps into span #1 & #3, place 1 layer of 3 ply tar paper between base of Post & top of curb.

PROJECT NAME & NUMBER ✓	TYPE ✓ — PAVEMENT AREA
WOODSTOCK (Marble Bridge) S.A. B-1954	
RECORD PLANS ✓	
MATERIALS	
CEMENT - Alpha Portland Cement ✓	BRIDGE PAINT - E.F. King Co. Norwood, Mass. ✓
REINFORCING STEEL - Truscon Steel Co. ✓	
CONTRACTOR - Miller Construction Co.	CONTRACT DATED - Dec. 17, 1954 ✓
RESIDENT ENGR. - M.H. Churchill ✓	CONTRACT STARTED - Mar. 21, 1955 ✓
INSPECTOR	CONTRACT COMPLETED - June 21, 1955 ✓
RECORD PLANS - A.B. MacDougall ✓	CONTRACT ACCEPTED - July 13, 1955 ✓

ITEM No.	ITEM	Estimate Quantity	Inst. Agree. Quantity	Final Quantity
101-B	Solid Rock Excavation	80 cy	238 cy	241 cy ✓
109	Maint. of Traffic for Bridge Projects	1-Ls.	1-Ls.	1-Ls. ✓
381	Bit. Conc. Pavt. for Bridge Floors	8 Ton	61 Ton	72 Ton
401-B	Concrete Class "B"	70 cy	194 cy	201 cy
407	Reinforcing Steel	5442 lbs	36472 lbs	38402 lbs
403-A	Structural Steel (Cleaning & Painting only)	1-Ls.	1-Ls.	1-Ls. ✓
407	Asphaltic Asbestos Coating	45 sy	45 sy	98 sy ✓
572	Bridge Railing (Wrought Iron)	376-11	376-11	402-11 ✓
573-A	Lighting System	1-Ls	1-Ls	1-Ls ✓

DATE: 9/17/54
APPROVED: J. F. Perkins, District Engineer
CORRECT: A. D. Bishop, Bridge Engineer
DATE: Sept. 24, 1954
APPROVED: H. E. Laurent, Chief Engineer

NOTE: ANY FURTHER INFORMATION CONCERNING FINAL QUANTITIES, AMOUNTS OR OTHER DETAILS RELATIVE TO THIS PROJECT MAY BE FOUND IN EITHER THE FIELD BOOKS OR THE ESTIMATE FILE.

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WOODSTOCK
ROAD No. U.S.4 BRIDGE No.
MARBLE BRIDGE
NEW SIDEWALK, CURB & RAILINGS
SCALE 1" = 1'-0"
SURVEYED BY
DRAWN BY S.N. CHECKED BY J.L.H.
PROJECT No. SA B-54
SHEET 1 OF 3

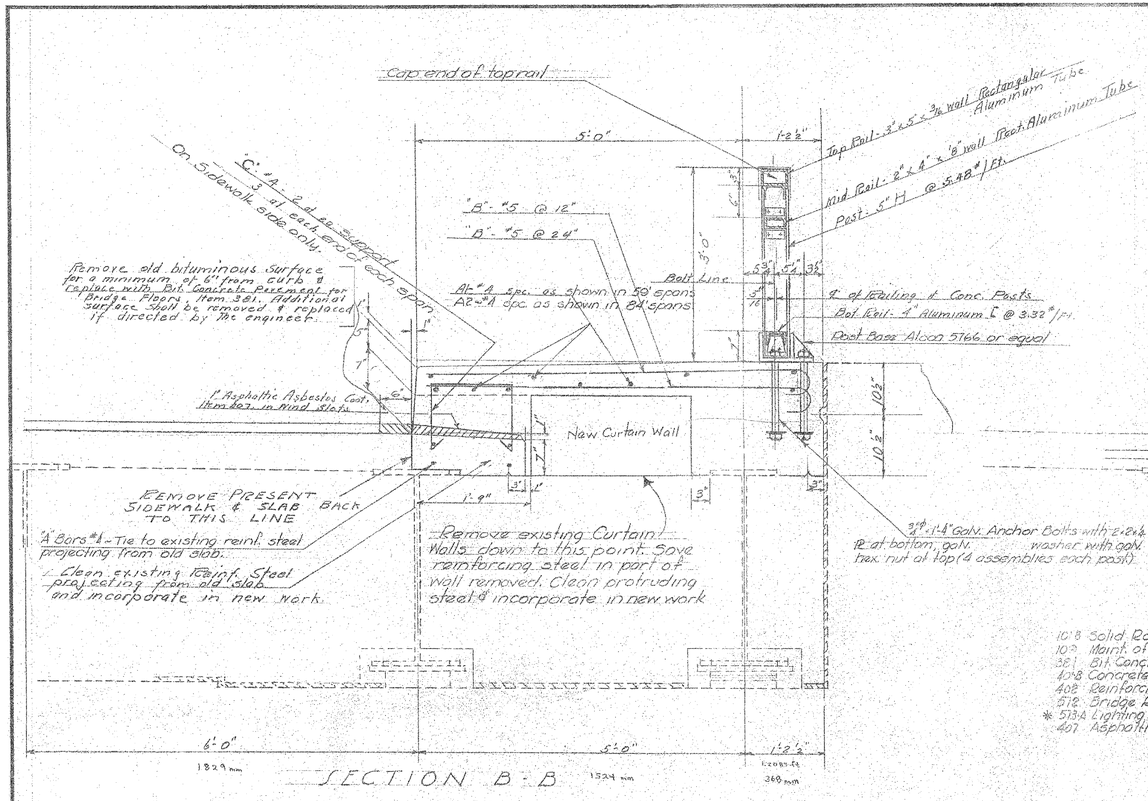
WOODSTOCK
SA B-1054 U.S.4 DR. 50

PROJECT NAME WOODSTOCK
PROJECT NO. BHF 020-2 (32)
SHEET 51 OF 71

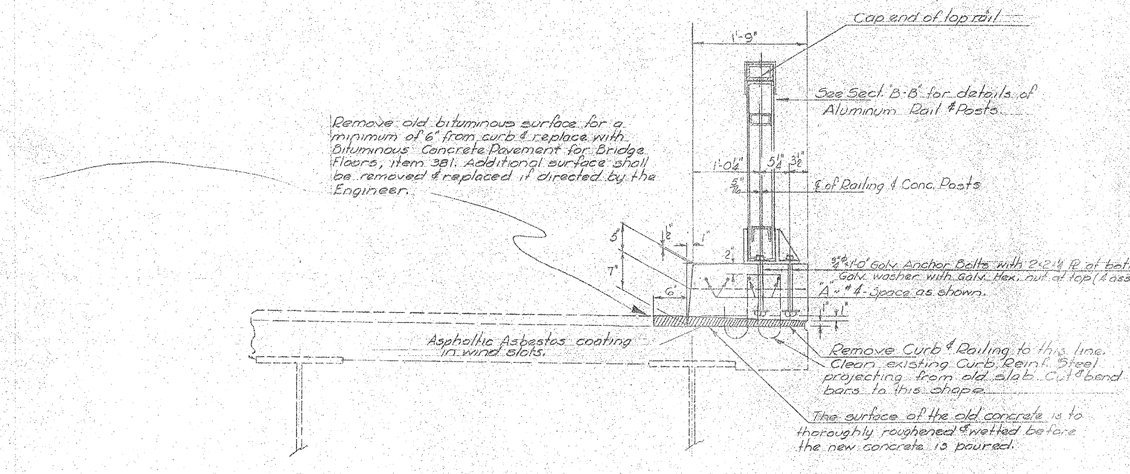
VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

plot date: 9/12/2006



10'8 Solid Rock Excav. — 80 cy.
10'9 Maint. of Traffic for Bridge Proj. — 1 L.S.
381 Bit. Conc. Pavement for Bridge Floors — 8 tons
402 Concrete class "B" — 10 c.y.
408 Reinforcing Steel (see Reinf. Steel Sched.) — 3761 lb.
513 Bridge Railing (Aluminum) — 1 L.S.
* 513A Lighting System — 42 s.y.
407 Asphaltic-Asbestos Coating



NOTE: Aluminum Post & Rails shall be ALCO Bridge Railing - Design B, Dwg. No A61585 or Equal.

Top & middle rails & balusters shall conform to Aluminum Alloy Extruded Tube ASTM Specifications B235-52T alloy G51IA condition T6.

Post cap & rail seats & posts shall conform to Aluminum Alloy Extrusions. ASTM Specification B221-52T Alloy G51IA condition T6.

Bottom rail & angles shall conform to Alluminum Alloy shapes & bars to ASTM Specification B211-52T alloy G51IA condition T6.

Aluminum Alloy Rivets (615-T6) shall conform to Military Specification MIL-R-1150 grade F.

Aluminum Alloy Bolts, nut, & set screws, (245-T4 with No. 205 Alumilite finish).

Aluminum Alloy Washers (245-T4).

Post Base to be Aluminum Alloy Permanent-Mold Castings (356-T6) or Aluminum Alloy Sand Castings (356-T6).

Where aluminum alloys come in contact with concrete, the contacting surfaces shall be coated with an aluminum impregnated caulking compound.

* This item shall include replacement of existing conduit, light standards, wiring, & fixtures.

THIS SHEET SUPERCEEDED SEE SHEET 29 FOR DETAILS OF WROUGHT IRON RAILING.

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

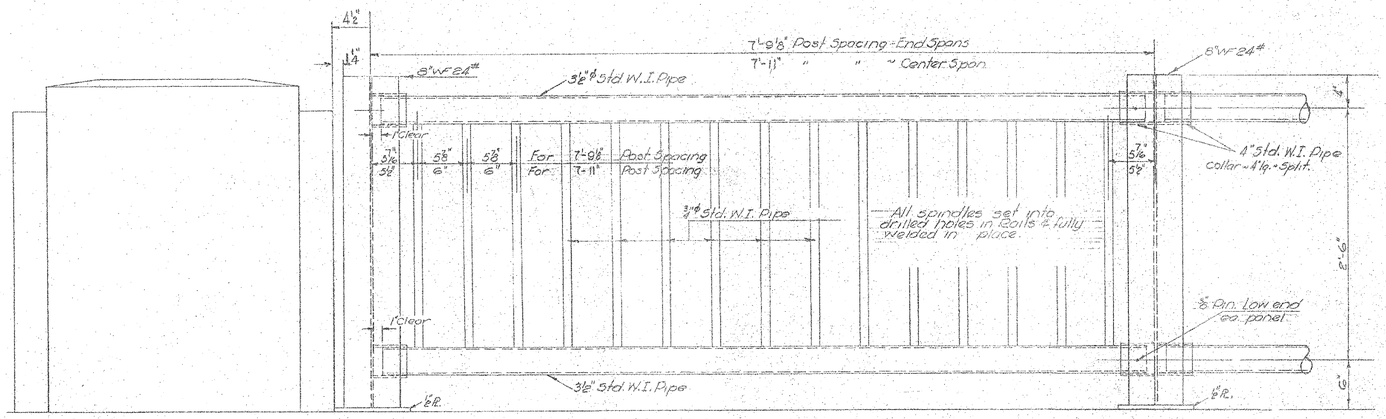
TOWN OF WOODSTOCK
ROAD NO. U.S. "4" BRIDGE NO.
MARBLE BRIDGE
New Sidewalk, Curb & Railings
SCALE 1"=1'-0"
SURVEYED BY
DRAWN BY SN CHECKED BY JLH
PROJECT NO. SA.B-1054
SHEET 2 OF 3

VHB Vanasse Hangen Brustlin, Inc.

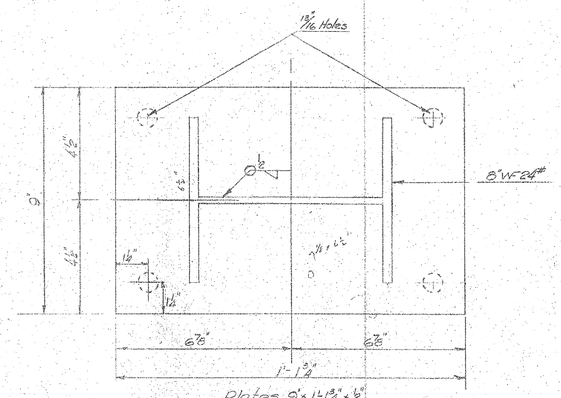
PROJECT NAME WOODSTOCK
PROJECT NO. BHF 020-2 (32)
SHEET 52 OF 71

VHB NO. 51298

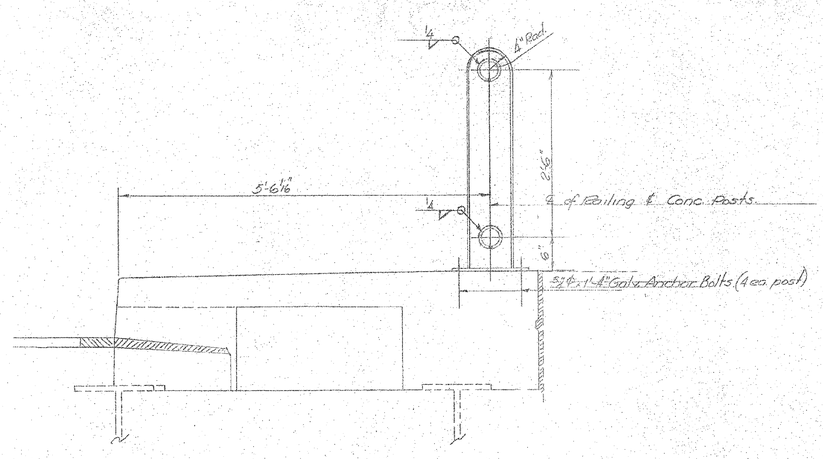
plot date: 9/12/2006



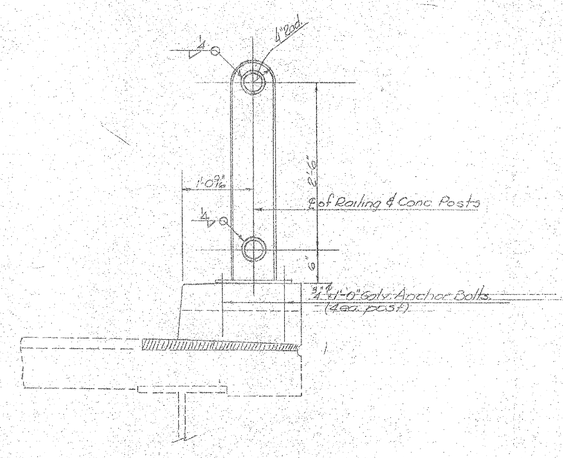
TYPICAL ELEVATION OF RAILING PANELS
not to scale



Plates 9" x 1'-1⅜" x ½"
54 Required
BASE PLATES for RAILING POSTS (Wrought Iron)



POST LOCATION ON SIDEWALK SIDE



POST LOCATION ON OPPOSITE SIDE

Pipe & Spindle Railing —— 15,785 #

NOTES:
Collars to be split and spread to form an inside diameter of 4⅛".
All work & materials shall conform to the State of Vermont Department of Highways, Standard Specifications for Road & Bridge Construction of Nov. 1948.

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WOODSTOCK
ROAD NO. U.S. #4 BRIDGE NO.
Revised Railing Details

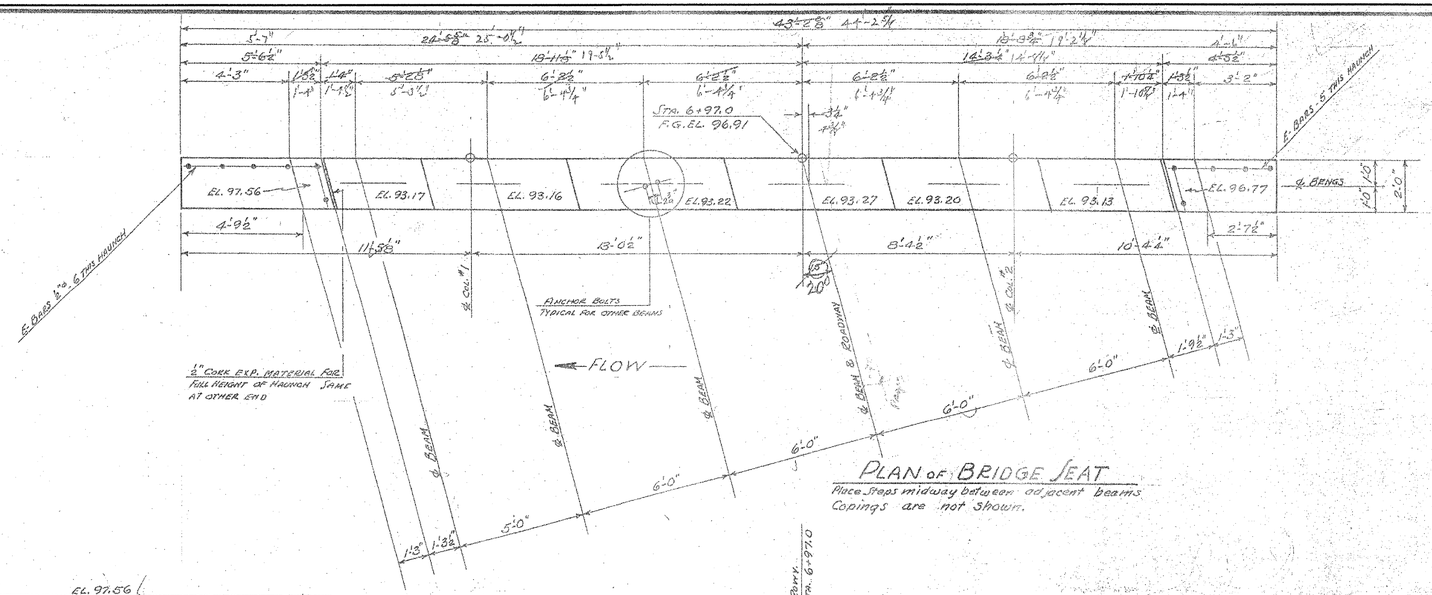
SCALE Not to scale
SURVEYED BY
DRAWN BY H.W.S. CHECKED BY R.T.B.
PROJECT NO. S.A.B-1954
SHEET 2A OF 3

PROJECT NAME WOODSTOCK
PROJECT NO. BHF 020-2 (32)
SHEET 53 OF 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

plot date: 9/12/2006



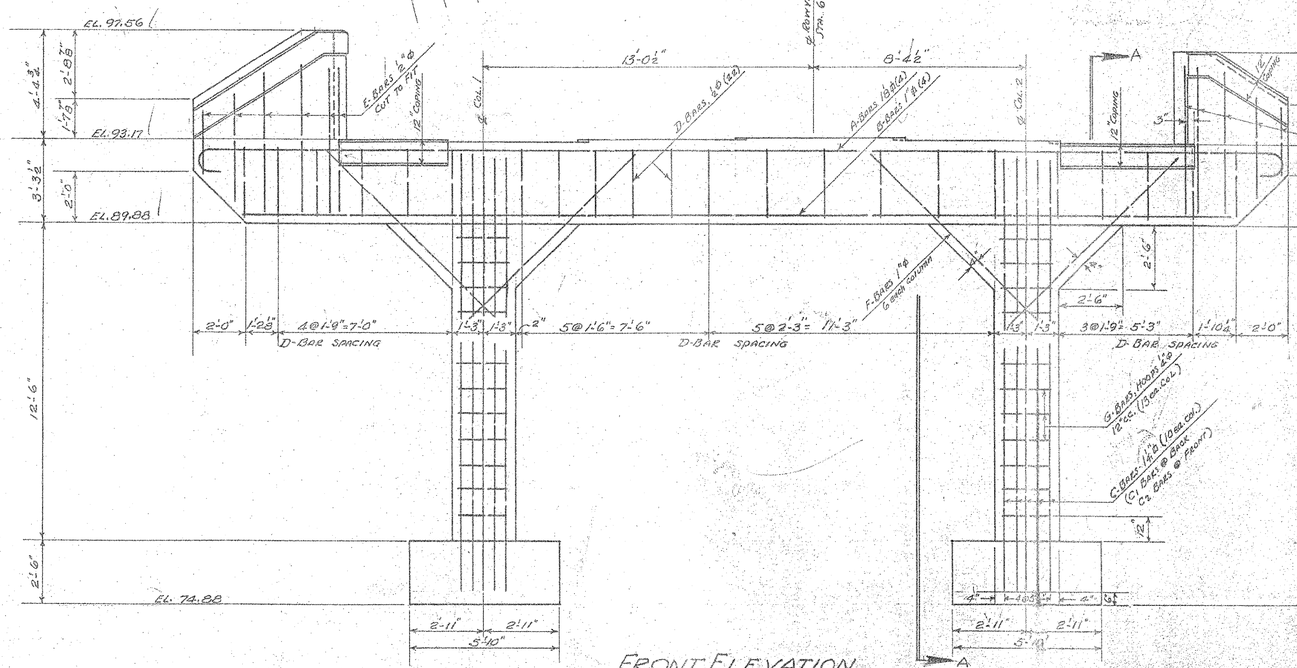
PLAN OF BRIDGE SEAT

Place steps midway between adjacent beams.
Copings are not shown.

REINFORCING STEEL

MARK	REQD.	SIZE	TOTAL LGTH	SHAPE
A	4	1⅜" ℄	45'-4"	41'-10"
B	4	1" ℄	39'-0"	STRAIGHT
C1	10	1½" ℄	18'-9"	18'-0"
C2	10	1½" ℄	19'-9"	18'-0"
D	22	½" ℄	9'-3"	
E	11	½" ℄	6'-0"	STRAIGHT
F	12	1" ℄	10'-0"	STRAIGHT
G	26	½" ℄	312'-0" FOR 26 BARS	VARY FROM 8'-0" TO 16'-0" LONG - STRAIGHT

NOTE: BAR DIMENSIONS ARE TO ℄ BARS.



DETAILS OF ABUTMENT No. 1
WOODSTOCK
(MARBLE BRIDGE)

R.W.A. DOCKET VT. 1049F, S.A. 42-37

SCALE ⅜ inch = 1 FOOT

ESTIMATED QUANTITIES

COMMON EXCAVATION INCL. BORROW	592 C.Y.
STRUCTURE EXCAVATION	35 C.Y.
CHANNEL EXCAVATION	303 C.Y.
CONCRETE CLASS "A"	34 C.Y.
REINFORCING STEEL	3907 LBS.
R.R. RAP FOR BANK PROTEC. (HEAVY TYPE)	310 C.Y.

Surveyed by
Designed by J.G.G.
Drawn by J.G.G.
Traced by D.W.P.
Checked by H.G.H.
Series P.W.A. No. 1049F
S.A. 42-37 Sheet 3 of Filed Sheets

EXISTING PLANS ON THIS SHEET ORIENT THE BRIDGE WITH POSITIVE STATIONING EAST TO WEST. THIS SHEET REPRESENTS THE OLD ABUTMENT #1 DETAILS (EAST ABUTMENT) WHICH IS THE NEW ABUTMENT #2 ON THE 2006 PLANS.

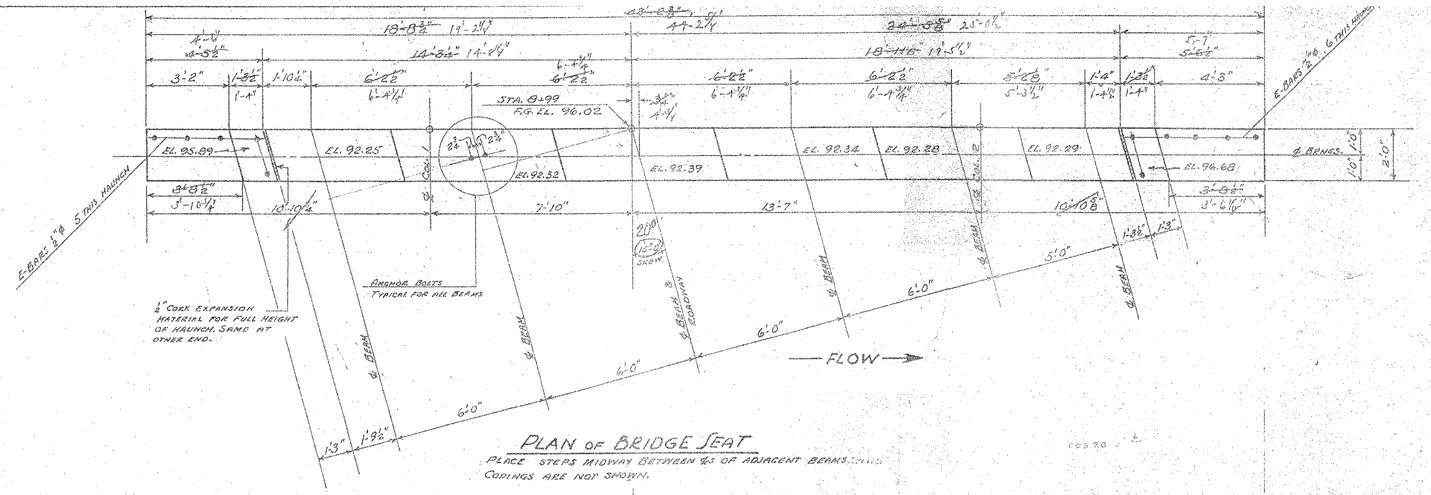
VHB *Vanasse Hangen Brustlin, Inc.*

PROJECT NAME WOODSTOCK
PROJECT NO. BHF 020-2 (32)

SHEET 54 OF 71

VHB NO. 51298

plot date: 9/12/2006



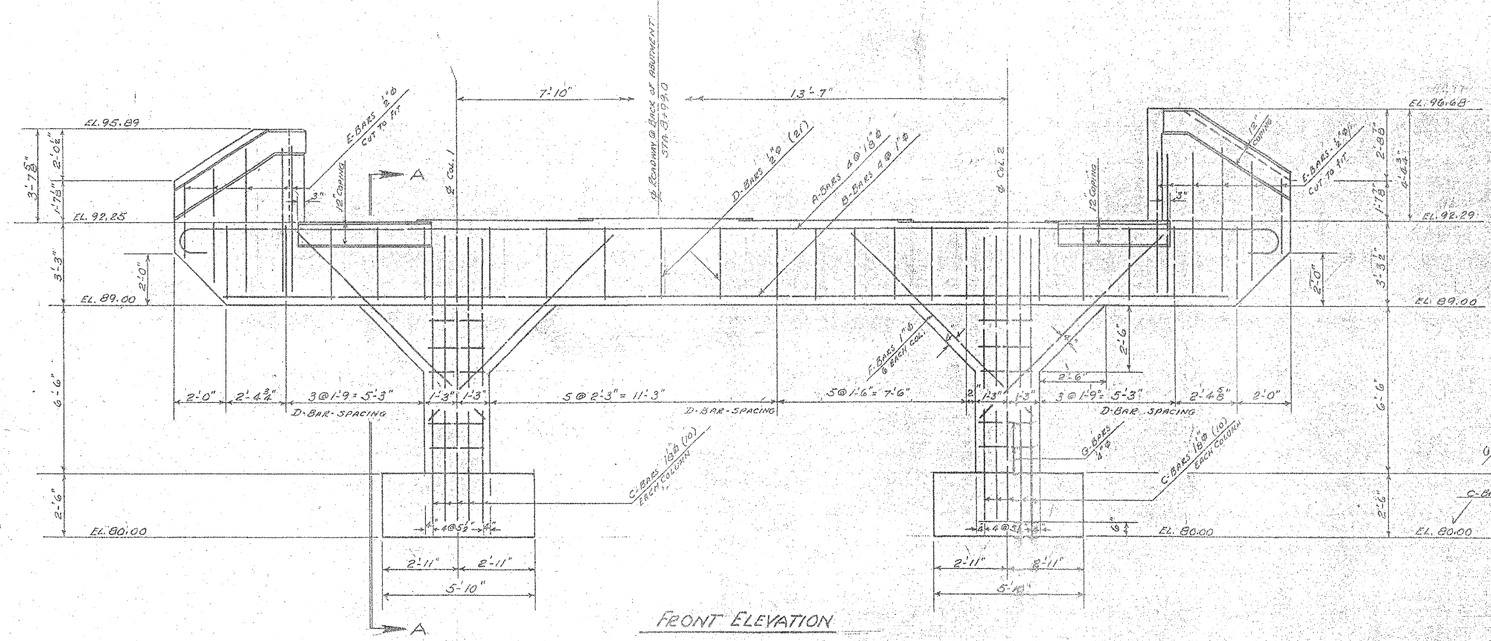
PLAN of BRIDGE SEAT

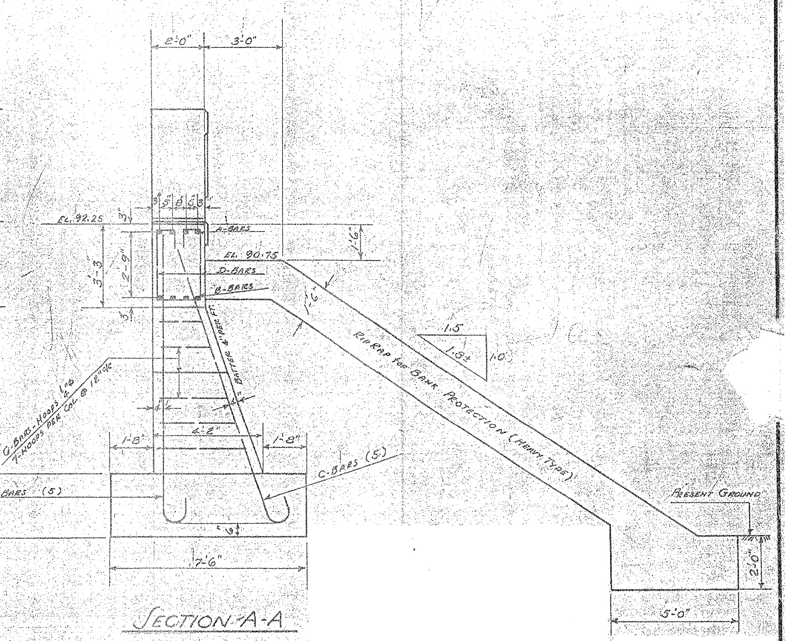
PLACE STEPS MIDWAY BETWEEN ℄s OF ADJACENT BEAMS. COPINGS ARE NOT SHOWN.

REINFORCING STEEL

MARK	REQ'D	SIZE	TOTAL LGTH.	SHAPE
A	4	1⅝"ø	45'-4"	5" R=5" R=5" 5" 41'-10"
B	4	1"ø	39'-0"	STRAIGHT
C	20	1⅛"ø	12'-9"	5" R=5" 11'-0"
D	21	½"ø	9'-3"	7" 7" 4" 2'-10" 1'-7½"
E	11	½"ø	6'-0"	STRAIGHT
F	12	1"ø	10'-0"	STRAIGHT
G	14	¼"ø	18'0"±0" FOR 14 BARS	VARY IN LGTH. FROM: 8'-0" TO 12'-0"

NOTE: BAR DIMENSIONS GIVEN TO ℄ BARS





DETAILS OF ABUT. #2
WOODSTOCK
MARBLE BRIDGE

P.W.A. DOCKET VT. 1049F
S.A. 42-137

SCALE ⅜ inch = 1 foot

ESTIMATED QUANTITIES

STRUCTURE EXCAVATION	82 C.Y.
CHANNEL EXCAVATION	239 C.Y.
CONCRETE CLASS "A"	126 C.Y.
REINFORCING STEEL	2924 LBS.
RIP RAP FOR BANK PROTEC. (HEAVY TYPE)	125 C.Y.

Surveyed by
Designed by J.G.G.
Drawn by J.G.G. 7-18-38
Traced by D.W.P.
Checked by H.G.H.
Series PWA No. 1049F Filed
S.A. 42-137
Sheet 4 of Sheets

EXISTING PLANS ON THIS SHEET ORIENT THE BRIDGE WITH POSITIVE STATIONING EAST TO WEST. THIS SHEET REPRESENTS THE OLD ABUTMENT #2 DETAILS (WEST ABUTMENT) WHICH IS THE NEW ABUTMENT #1 ON THE 2006 PLANS.

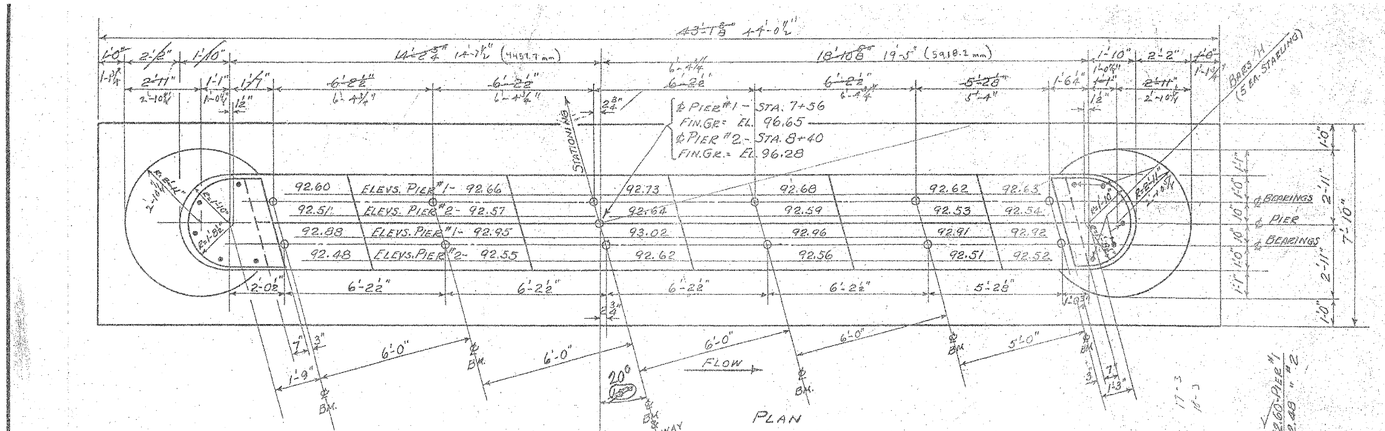
VHB *Vanasse Hangen Brustlin, Inc.*

PROJECT NAME WOODSTOCK
PROJECT NO. BHF 020-2 (32)

SHEET 55 OF 71

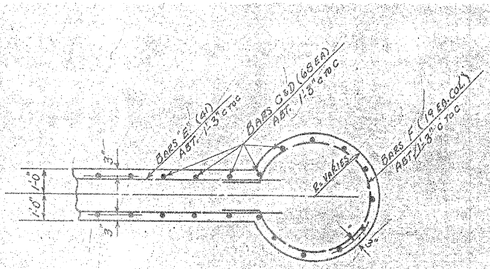
VHB NO. 51298

plot date: 9/12/2006



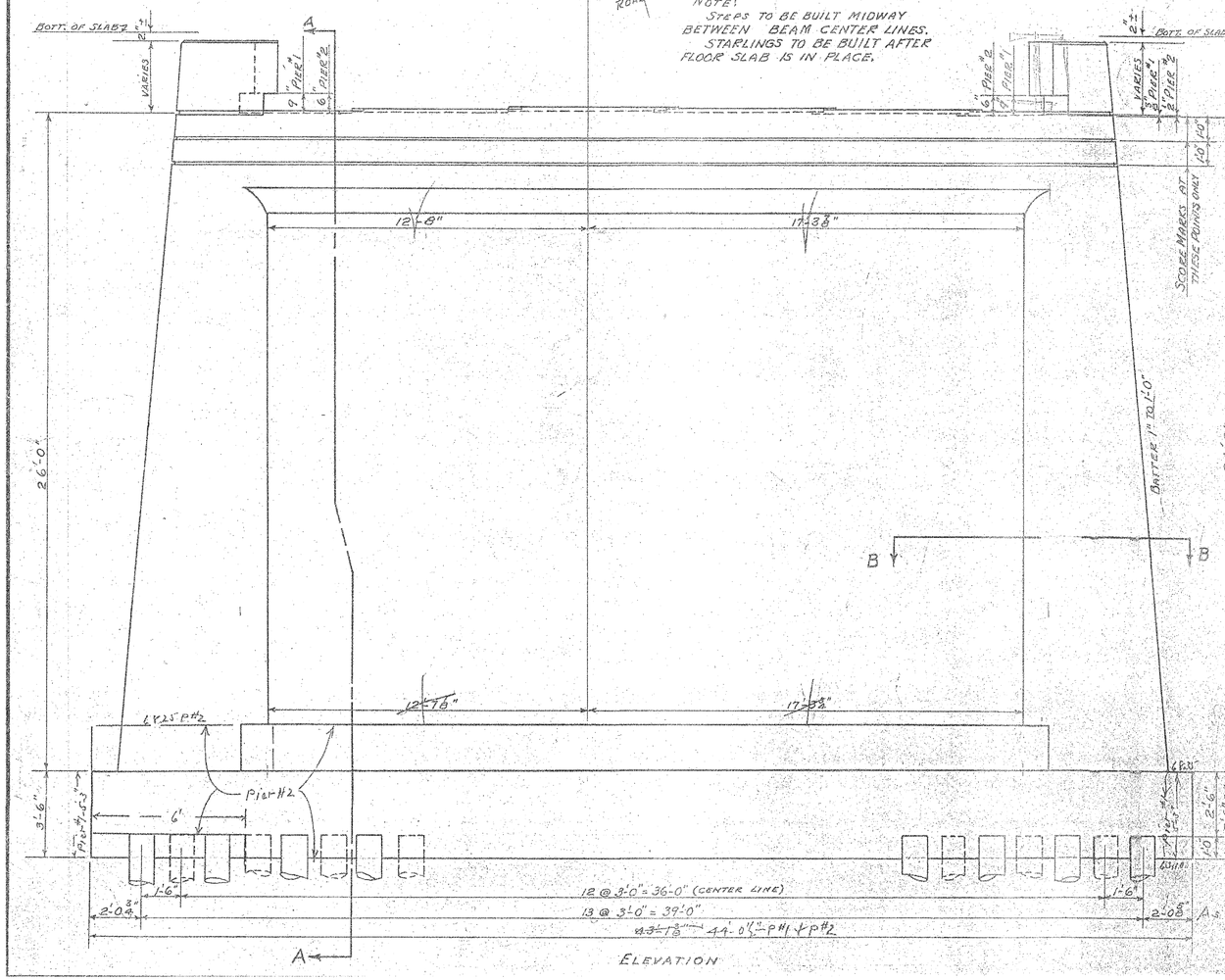
PLAN

NOTE:
STEPS TO BE BUILT MIDWAY BETWEEN BEAM CENTER LINES. STARLINGS TO BE BUILT AFTER FLOOR SLAB IS IN PLACE.

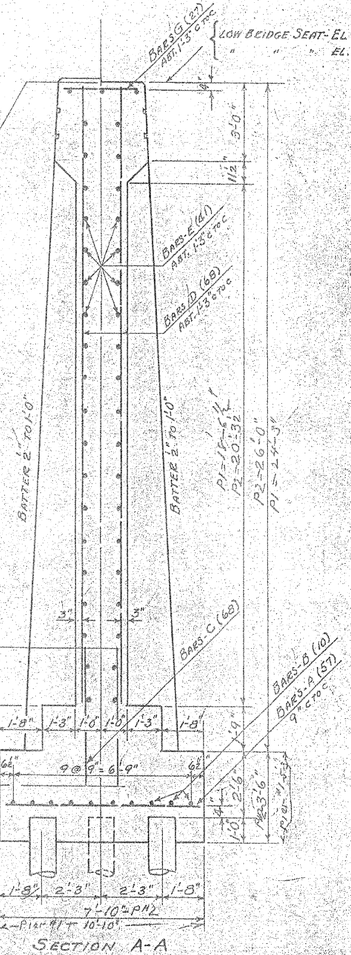


SECTION B-B

REINFORCING STEEL (FOR ONE PIER - 2 REQ'D.)				
BAR	SIZE	NO. REQ'D	TOT. LGTH	DETAIL
A	3/8"ø	57	7'-3"	STRAIGHT
B	"	10	42'-6"	"
C	"	68	5'-3"	"
D	"	68	24'-0"	"
E	1/2"ø	41	33'-6"	"
F	3/8"ø	38	18'-0"	" BEND TO FIT IN FIELD
G	1/2"ø	27	3'-2"	STRAIGHT
H	3/8"ø	10	5'-0"	"



ELEVATION



SECTION A-A

NOTE:
PILES TO BE DRIVEN TO A CAPACITY OF 18 TONS EACH
LENGTH OF PILES FOR ESTIMATING PURPOSES ONLY.
ASSUMED TO BE 20' EACH.

ESTIMATED QUANTITIES

	PIER #1	PIER #2
STRUCTURE EXCAVATION	100 C.Y.	130 C.Y.
CONCRETE CLASS 'B'	151 "	152 "
REINFORCING STEEL	4257 LBS.	4257 LBS.
TIMBER PILING	820 L.F.	820 L.F.

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

Surveyed by
Designed by H.E. SLACK
Drawn by H.E. SLACK
Traced by O.W.P.
Checked by
Series 3A No. 42-1937 Filed
Sheet 5 of Sheets

DETAILS OF PIERS #1 & #2
MARBLE BRIDGE
WOODSTOCK
P.W.A. DOCKET - VT. 1049-F

EXISTING PLANS ON THIS SHEET ORIENT THE BRIDGE WITH POSITIVE STATIONING EAST TO WEST. PIER #1 ON THIS SHEET (EAST PIER) REPRESENTS PIER #2 ON THE 2006 PLANS. SIMILARLY, PIER #2 ON THIS SHEET IS EQUIVALENT TO PIER #1 ON THE 2006 PLANS.

VHB Vanasse Hangen Brustlin, Inc.

PROJECT NAME WOODSTOCK
PROJECT NO. BHF 020-2 (32)

SHEET 56 OF 71

VHB NO. 51298

plot date: 9/12/2006

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EROSION CONTROL NARRATIVE

DESCRIPTION OF PROJECT

This rapid bridge construction project involves the rehabilitation of a three span bridge carrying US Route 4 over the Ottauquechee River in the Town of Woodstock. The existing bridge is approximately 202 feet long and 32 feet wide. The superstructure (steel beams, railings, and concrete deck) will be completely replaced and the abutments and piers will be rehabilitated to support the new superstructure. The roadway centerline for Route 4 will be shifted 0.9 feet to the north along the bridge. The bridge superstructure will be widened approximately 3.13 feet to the north and 2.25 feet to the south to accommodate increased lane widths. Sheet pile retaining walls with a cast-in-place concrete caps will be constructed along approaches to accommodate fills required for the roadway widening. Traffic will be detoured away from the project site during rapid bridge construction using a regional detour. Existing heavy stone fill will be chinked in the channel around the base of Pier 2 to fill voids. It is anticipated that this project will last approximately six to eight weeks. The total length of roadway approach work is approximately 148 feet. The site is located at N 109006.88, E 133662.78 based upon NAD 83/92.

Total disturbed area (excluding waste, borrow and staging areas): 1.00 ac.

No "Threatened & Endangered Species" have been identified in the project area.

Although this project is located in the Woodstock Historic Village District, the proposed project will not adversely effect any historic resources.

SITE INVENTORY & ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS:

The roadway in the project area is generally built up above the surrounding ground with steep slopes along the Ottauquechee River. The bridge itself is on a tangent profile, with a 0.5% slope up towards the Village of Woodstock. The roadway is a typical crowned section. Roadway surface drainage will generally be towards both shoulders.

DRAINAGE, WATERWAYS, BODIES OF WATER:

The Ottauquechee River is located in the project area. There are no other water bodies or wetlands that are located in the area of the project. The drainage basin for the Ottauquechee River is characterized by a narrow river valley within steeply sloped hills. This character also causes the river to rise rapidly and flow swiftly as evidenced by the rocky/cobbly bottom and the bank erosion observed along the river. The contributing drainage area at the bridge crossing is 119.3 sq. miles.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:

The topography of the project site is generally flat along each side of US Route 4, sloping very steeply towards the Ottauquechee River. Beyond the approaches the terrain slopes up hill away from the site. Church Street Ext. forms a Y intersection with US 4 in the southeast quadrant of the project, just to the east of the bridge. River Street forms a Y intersection with US 4 in the northwest quadrant of the project, just to the west of the bridge. Development along this portion of US 4 consists of three permanent residences with manicured lawns and large trees abutting the project in the northeast, southeast, and northwest quadrants. A community center is located at the southwest quadrant of the approach.

Overhead utility service will not need to be relocated. The overhead utilities follow US 4, crossing the river north of the bridge. There is an existing water main south of the bridge that intersects an original main under the roadway along the east approach. The abandoned section of the original main crosses under the existing bridge superstructure. The abandoned section will be removed with the existing superstructure.

VEGETATION:

There are several trees along US Route 4 with both large and small hardwoods located along the river banks. The residences near the bridge site have small areas of lawn adjacent to the roadway. Impacts to vegetation will be limited to that which is affected by the widening of the bridge and roadway, and the construction of the proposed retaining walls along the approaches. Some immature 2-6 inch diameter trees will be removed. Following the construction of the bridge superstructure and substructures, the existing slopes will be stabilized with stone fill and/or vegetation will be reestablished with standard seed & mulch practices.

SOILS:

The Soil Conservation Service has mapped the soils throughout Windsor County. The soil type identified within the project area is Urban Land-Windsor-Agawam complex. "Urban Land is mostly covered by streets, parking lots, buildings and other structures of urban areas. Agawam soils formed in loamy over sandy glaciofluvial deposits and Windsor soils formed in sandy glaciofluvial deposits on outwash plains and terraces. Windsor soils are very deep to bedrock and excessively drained. Permeability is rapid or very rapid. Agawam soils are very deep to bedrock and well-drained. Permeability is moderately rapid in the upper part of the solum and moderately rapid or rapid in the lower part. The substratum has rapid permeability."

The listed soil erodability coefficient (K-value) is 0.28 for Agawam soils and 0.17 for Windsor soils. Generally, K-value indicates the following: 0.0 - 0.23 = low erodability; 0.24 - 0.36 = moderate erodability; 0.37 and higher = higher erodability.

The majority of the approach work is "in a fill typical", meaning the roadway is higher than the surrounding mean ground elevation. Due to engineering requirements for selective fill material for the widening of the roadway, much of this fill material will need to be brought in from an outside source. Since we do not know where this source pit will be, we can not provide erodability properties for the fill. See the roadway cross sections for fill areas.

SENSITIVE RESOURCE AREAS:

No "Threatened & Endangered Species" have been identified within the project limits and there will be no adverse effect to Historic or Archaeological features.

PROXIMITY TO NATURAL OR MAN-MADE WATER FEATURES:

Disturbance of soils near natural or man-made waterways consists of that which is necessary to construct the abutment modifications and retaining walls and place stone fill around Pier 2. Stabilization of disturbances to the river banks will be accomplished by resetting existing stone fill and re-vegetation.

TEMPORARY EROSION PREVENTION & SEDIMENT CONTROL

Temporary erosion prevention measures to be utilized include:

"Project Demarcation Fencing," denoted -PDF- on the plans, to delineate the limits the contractor can access with construction equipment. This measure limits the area that can be disturbed and exposed to erosion.

Seeding, mulching, and biodegradable erosion control matting, or an equivalent product, will be utilized on all slopes steeper than 3:1 that are not lined with stone fill. These slopes shall be stabilized within 48 hours of reaching final grade or during intermittent phases of construction activity.

Tracking of all exposed slopes, combined with temporary mulching, will also be utilized on a regular basis. Any slopes to be exposed for several days prior to final grading shall be tracked and mulched. The forecast of rainfall events shall also trigger protection of exposed slopes.

Temporary measures to control sediment transport include:

Silt fence will be installed to prevent sediment transport to down gradient areas. Each line of silt fence shall be placed along the contour with ends turned slightly uphill to create a ponding effect should water try to run along the fencing and around the ends. Silt fence shall be installed prior to any upslope earthwork.

Measures such as silt fence and sand bags shall be checked regularly for accumulation of sediment. Sediment build-up shall be removed when the level of sediment reaches one-half the height of the control measure. Sediments shall be disposed of in an approved area such that they will not be subject to erosion.

Stabilized construction entrances and staging areas shall be established. The minimum size of a stabilized construction entrance is 12' x 50'. All surface water flowing to or diverted towards a construction entrance shall be piped under the stone. Pipes shall be appropriately sized for the contributing area, however, no pipes smaller than 6 inch diameter shall be used. See typical erosion control detail sheets for materials and construction methods to be utilized when constructing a stabilized entrance.

PERMANENT EROSION CONTROL MEASURES

Several permanent erosion control measures will be utilized:

Stone Fill Type III will be placed around the base of Pier 2 to fill existing voids near the pier foundation and in front of Abutment 1 and Abutment 2.

Stone Fill, Type II will be utilized at the Abutment 1 slope and at culvert outlets to dissipate water velocities and reduce erosion potential.

Grass or other suitable ground cover will be established outside of the roadway limits where stone lining has not been specified. These areas shall be seeded and mulched promptly upon achieving final grade.

GENERAL EROSION & SEDIMENT CONTROL GUIDELINES

The Erosion Prevention and Sediment Control Plans are meant as a guideline for preventing erosion and controlling sediment transport. The work outlined in this narrative consists of applying measures throughout the life of the project to control erosion and minimize the sedimentation of receiving waters. The measures include stabilization and structural practices, stormwater controls and other pollution prevention controls.

Coordinate the installation, use, and removal of erosion and sediment control measures with construction activities to ensure economical, effective and continuous erosion and sediment control. Employ temporary stabilization practices in incremental stages as construction proceeds. The contractor will use additional erosion control measures as necessitated by the sequence of construction and as directed by the Engineer. See section 105.23 of the Vermont AOT Standard Specifications for Construction, dated 2001.

Install all erosion and sediment control measures as shown in the Erosion Control Plan or as directed by the Engineer. Do not modify the type, size or location of any control or practice without approval of the Engineer. Any changes shall be noted on the plans, in the weekly inspection report, and reported to the appropriate authority in a timely manner. Inspect all control measures weekly and after each rainfall event.

Preventing initial soil erosion is much more effective than treating eroded sediment. Therefore, stabilize all disturbed areas promptly after construction activity has temporarily or permanently ceased. Temporary vegetation shall be established if the area is to be without construction activity for a period of 14 days. Perimeter control measures shall be installed following clearing, but prior to the start of any grubbing or grading activity, install other temporary controls in incremental stages as construction proceeds.

Maintaining vegetated buffers along stream banks, wetlands or other sensitive areas is a crucial erosion and sediment control measure that should be established wherever possible.

Control only sediment-laden runoff generated by the project site. Collect and route clean offsite runoff around or through the project site using diversion berms, diversion to channels, culverts and/or temporary pipes.

Do not allow construction equipment to operate on the down slope side of perimeter control measures.

SEDIMENT SETTLING BASIN SIZING CRITERIA

PUMP FLOW RATE		REQUIRED SURFACE AREA		LENGTH / WIDTH = 2:1			
Q (gpm)	Q (m^3/s)	(ft^2)	(m^2)	L (ft)	W (ft)	L (m)	W (m)
50	0.0032	595	55	35.0	17.0	10.6	5.3
100	0.0063	1200	111	49.0	24.5	15.0	7.5
150	0.0095	1776	165	59.6	29.8	18.2	9.1
200	0.0126	2368	220	68.8	34.4	21.0	10.5
250	0.0158	2970	276	77.0	38.5	23.4	11.7
300	0.0189	3560	330	84.4	42.2	25.8	12.9
350	0.0221	4155	386	91.2	45.6	27.8	13.9

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

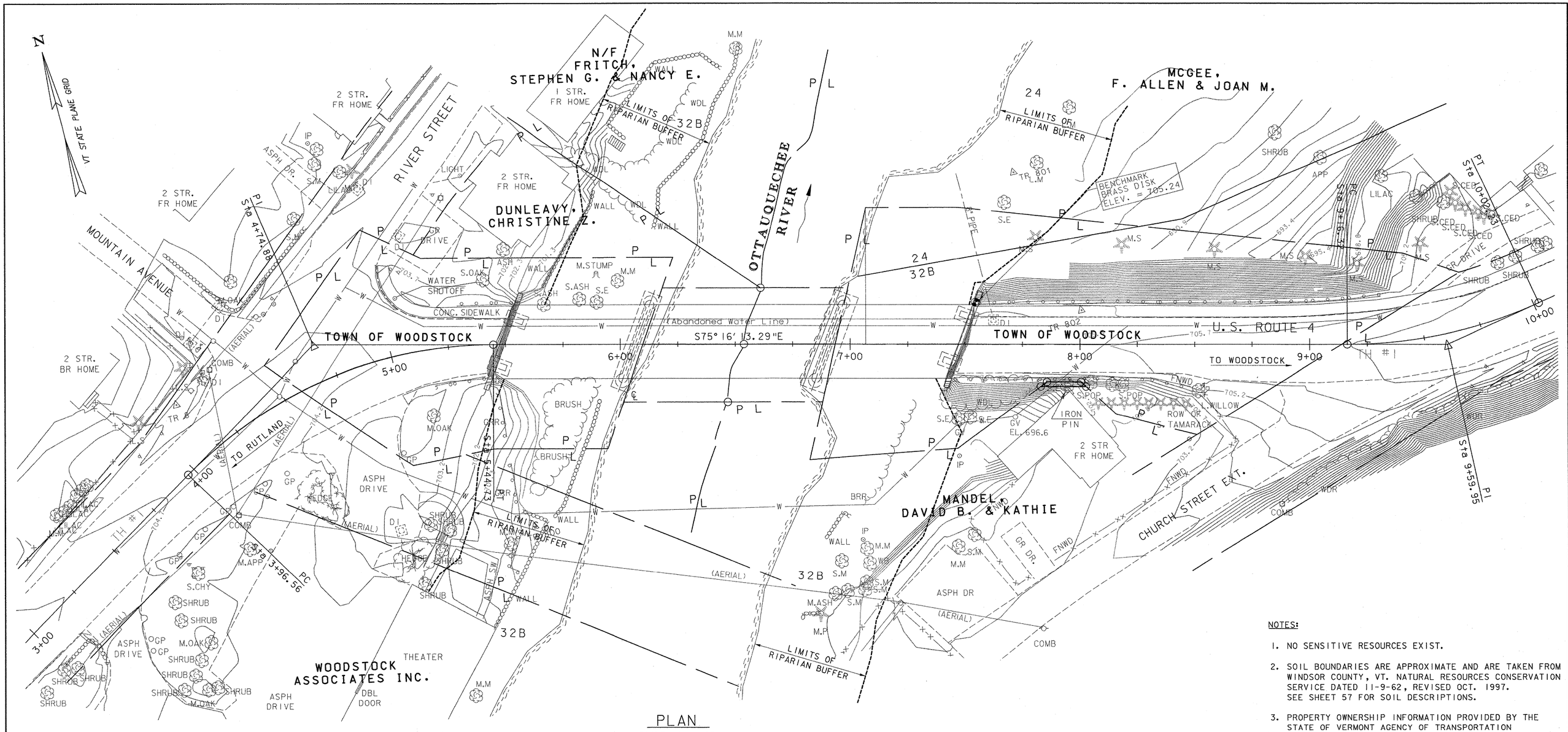
Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta.
	Surv. Sta.

U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

EROSION CONTROL NARRATIVE

Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By Date K.G. KRETSCH 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028ECNAR	Sheet 57 of 71

VHB NO. 51298 plot date: 10/11/2006



PLAN

SCALE: 1" = 20'

NOTES:

1. NO SENSITIVE RESOURCES EXIST.
2. SOIL BOUNDARIES ARE APPROXIMATE AND ARE TAKEN FROM WINDSOR COUNTY, VT. NATURAL RESOURCES CONSERVATION SERVICE DATED 11-9-62, REVISED OCT. 1997. SEE SHEET 57 FOR SOIL DESCRIPTIONS.
3. PROPERTY OWNERSHIP INFORMATION PROVIDED BY THE STATE OF VERMONT AGENCY OF TRANSPORTATION RIGHT-OF-WAY UNIT.

LEGEND

- 24 / 32B — EXISTING SOIL TYPE BOUNDARY (APPROX.)
- — W — · EXISTING UNDERGROUND WATER LINE
- HYD — HYDRANT
- VALVE
- MANHOLE
- MAILBOX
- SIGNS
- UTILITY POLE GUY WIRE
- GAS SHUTOFF
- lp — LIGHT POLE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.

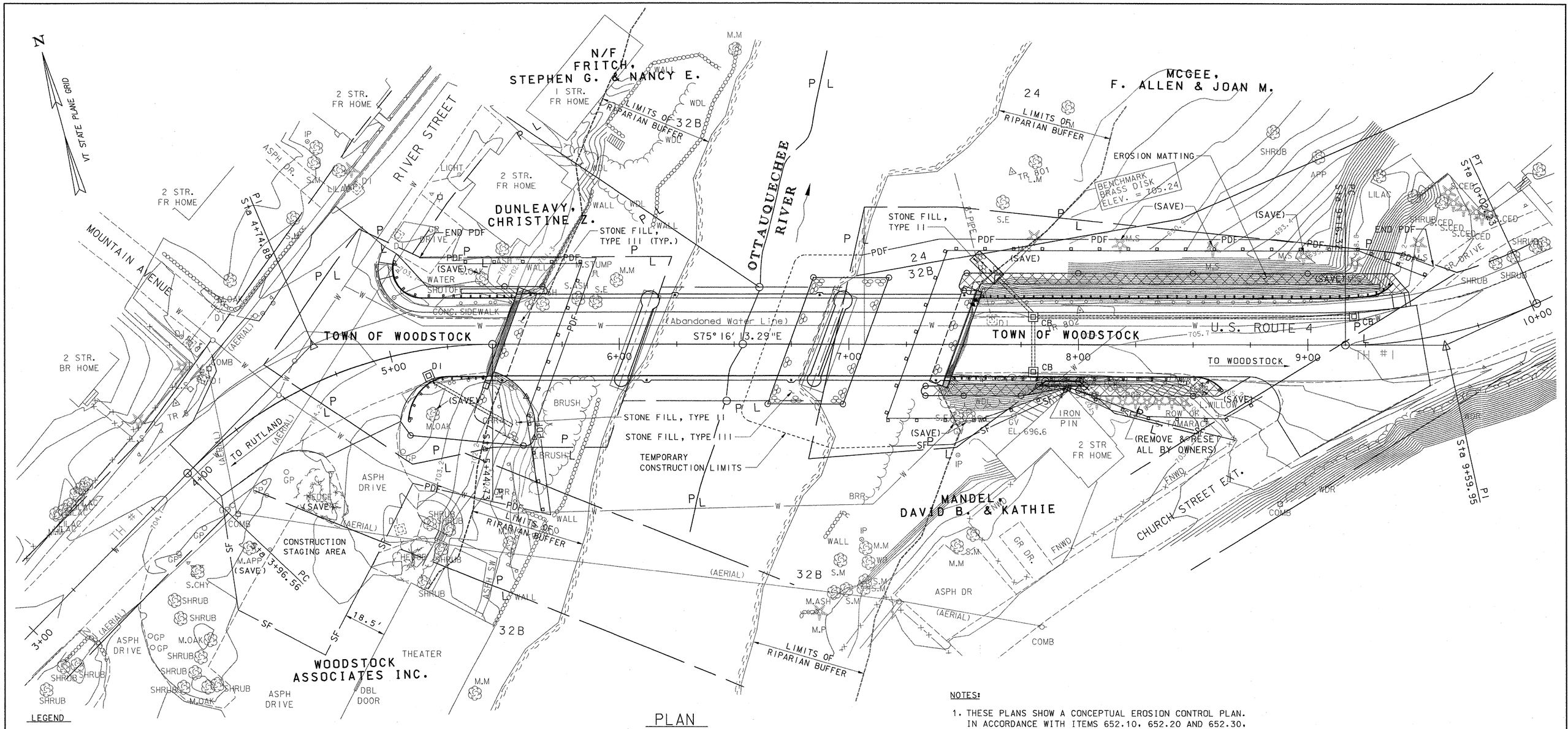
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER

EXISTING CONDITIONS PLAN

Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028EC1	Sheet 58 of 71

VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298 plot date: 10/11/2006



PLAN

SCALE: 1" = 20'

LEGEND

- TOP OF CUT TO MATCH EXISTING
- TOE OF SLOPE TO MATCH EXISTING
- PROPOSED LIGHT POLE
- 24 / 32B — EXISTING SOIL TYPE BOUNDARY (APPROX.)
- W — EXISTING UNDERGROUND WATER LINE
- HYD — HYDRANT
- VALVE
- MANHOLE
- MAILBOX
- SIGNS
- UTILITY POLE GUY WIRE
- GAS SHUTOFF
- lp — LIGHT POLE

LEGEND

- SILT FENCE
- PDF — PROJECT DEMARCATION FENCE DEFINING LIMITS OF DISTURBANCE (SNOW FENCE (MOD. - PDF))
- SF — SNOW FENCE (MOD. - ARCH)
- EROSION MATTING

NOTES:

1. THESE PLANS SHOW A CONCEPTUAL EROSION CONTROL PLAN. IN ACCORDANCE WITH ITEMS 652.10, 652.20 AND 652.30, THE CONTRACTOR MUST SUBMIT A TEMPORARY EROSION CONTROL PLAN FOR APPROVAL.
2. SILT FENCE LOCATIONS ARE CONCEPTUALLY SHOWN. THE CONTRACTOR MAY RELOCATE SILT FENCE TO IMPROVE EROSION CONTROL WITH APPROVAL OF THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SILT FENCE SHALL NOT BE INSTALLED ACROSS CONTOURS.
3. THE CONTRACTOR SHALL USE OTHER TEMPORARY EROSION CONTROL MEASURES AS NECESSITATED BY THE SEQUENCE OF CONSTRUCTION OR AS DIRECTED BY THE RESIDENT ENGINEER AND ON SITE COORDINATOR. SEE SECTION 105.23.
4. REFER TO TEMPORARY EROSION CONTROL DETAIL SHEETS FOR ADDITIONAL DETAILS.
5. THESE PLANS DO NOT SHOW TEMPORARY DRAINAGE.

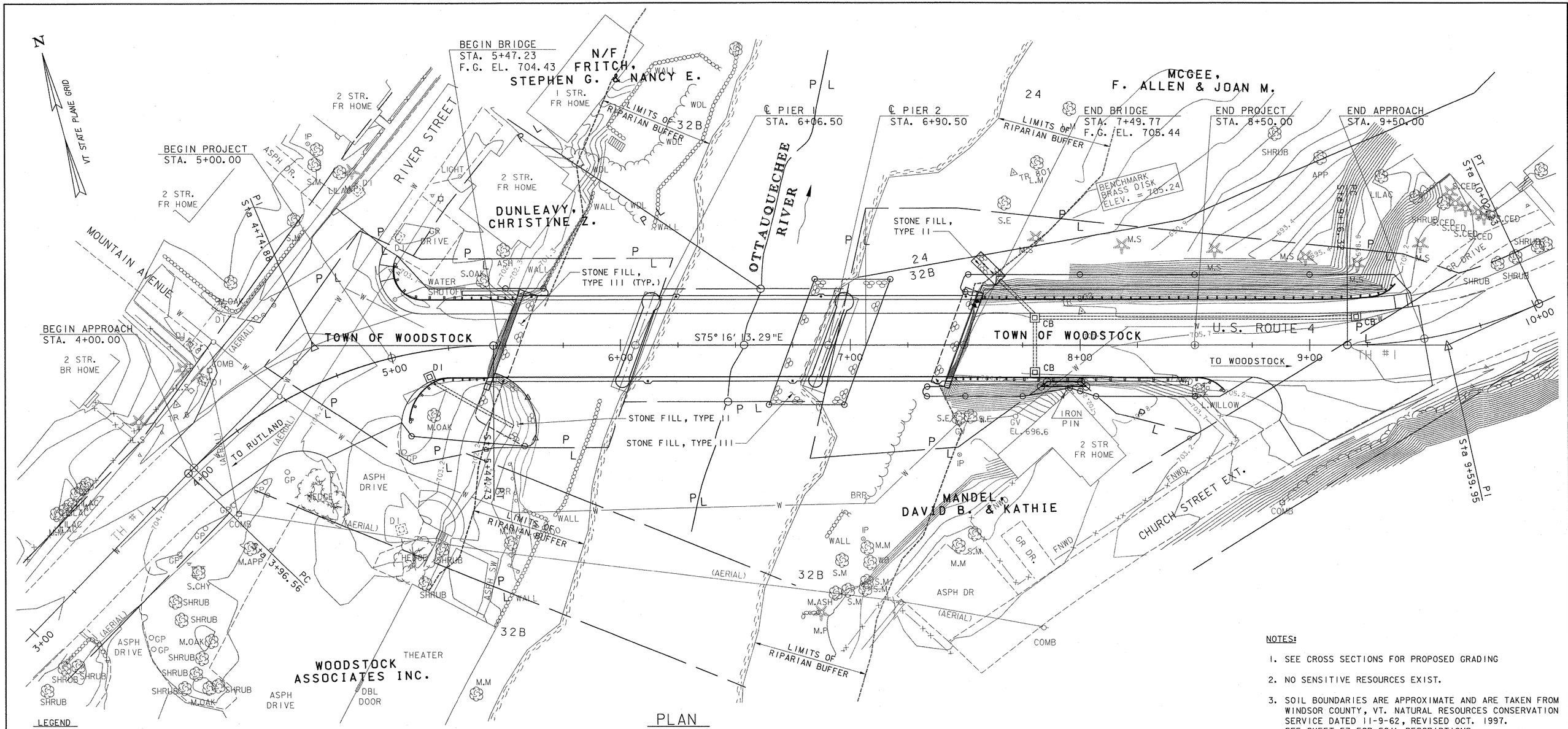
VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
EPSC PLAN	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028EC2	Sheet 59 of 71

VHB NO. 51298

plot date: 10/11/2006



PLAN

SCALE: 1" = 20'

LEGEND

- TOP OF CUT TO MATCH EXISTING
- TOE OF SLOPE TO MATCH EXISTING
- PROPOSED LIGHT POLE
- 24 / 32B — EXISTING SOIL TYPE BOUNDARY (APPROX.)
- — W — - EXISTING UNDERGROUND WATER LINE
- HYD — HYDRANT
- VALVE
- MANHOLE
- MAILBOX
- SIGNS
- UTILITY POLE GUY WIRE
- GAS SHUTOFF
- LIGHT POLE

NOTES:

1. SEE CROSS SECTIONS FOR PROPOSED GRADING
2. NO SENSITIVE RESOURCES EXIST.
3. SOIL BOUNDARIES ARE APPROXIMATE AND ARE TAKEN FROM WINDSOR COUNTY, VT. NATURAL RESOURCES CONSERVATION SERVICE DATED 11-9-62, REVISED OCT. 1997. SEE SHEET 57 FOR SOIL DESCRIPTIONS.

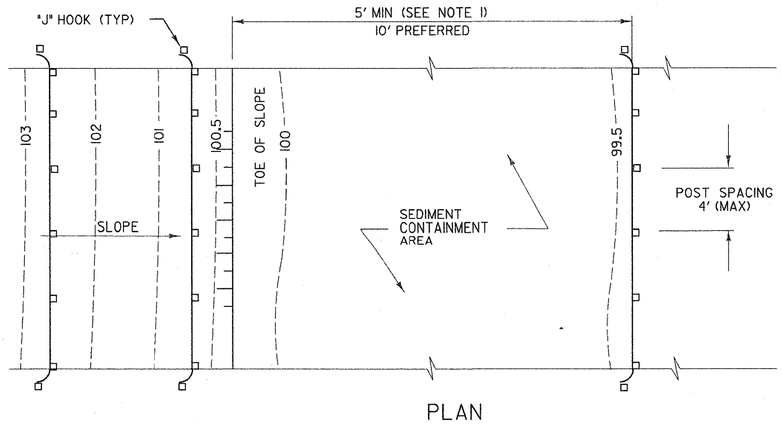
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
FINAL CONDITIONS SITE PLAN	
Designed By K.G. KRETSCH	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 10/06	Bridge Design Supervisor M.A. COLGAN Date 10/06
PROJECT WOODSTOCK	PROJECT NO. BHF 020-2(32)
I.G.C. Info.	
Bridge Sheet No. ZJ028EC3	Sheet 60 of 71

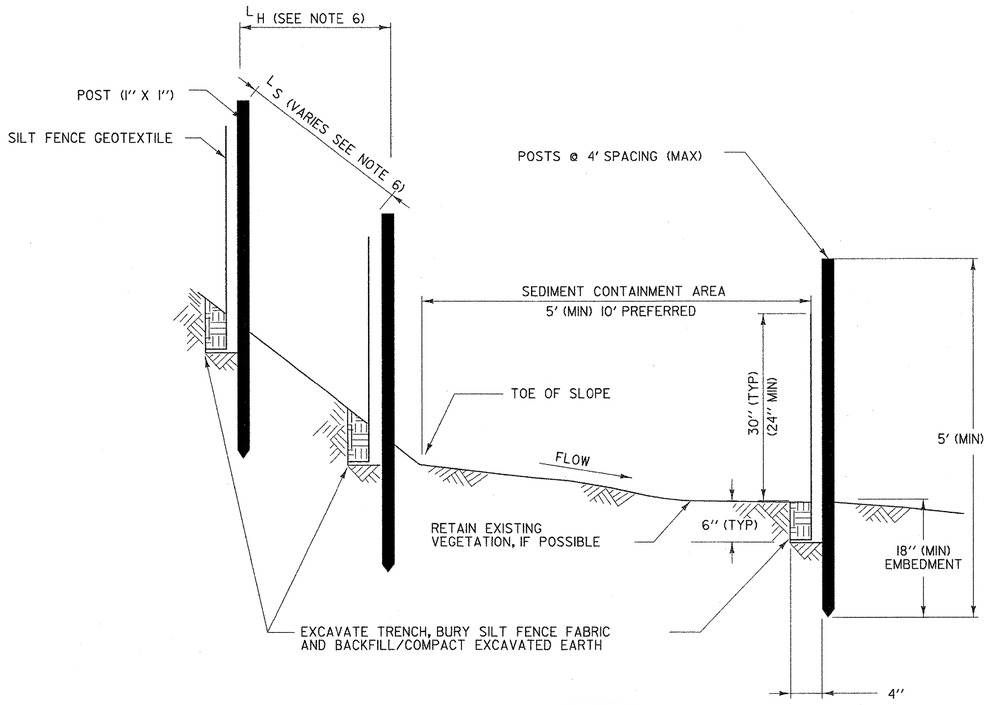
VHB Vanasse Hangen Brustlin, Inc.

VHB NO. 51298

plot date: 10/11/2006



PLAN



SECTION
SILT FENCE - TEMPORARY

SILT FENCE

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.

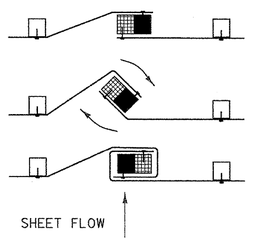
C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

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 ACRES.
6. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

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

7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. 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.
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 INSTALLATION AND REMOVAL OF SILT FENCE SHALL BE MADE UNDER THE GEOTEXTILE FOR SILT FENCE ITEM.
11. PAYMENT FOR MONITORING SILT FENCE SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING SILT FENCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, 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

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

DETAIL

EPSC-1

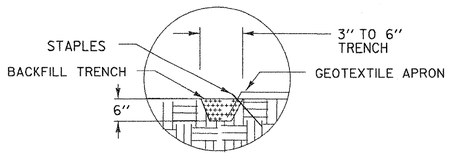
EROSION PREVENTION & SEDIMENT CONTROL DETAILS
SILT FENCE

VERMONT AGENCY OF TRANSPORTATION

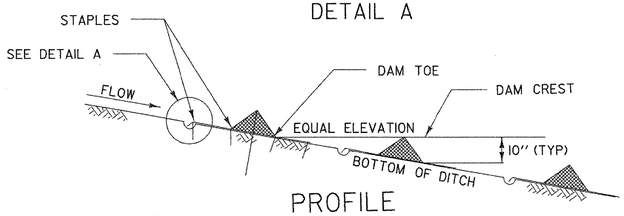
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
EPSC-1	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date 5/04	Bridge Design Supervisor M. A. COLGAN Date 9/05
PROJECT WOODSTOCK	PROJECT NO. BHF-020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028EPSC-1	Sheet 61 of 71

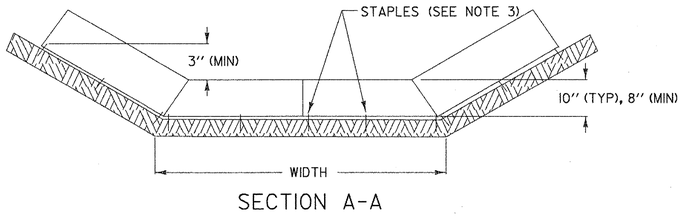
VHB NO. 51298



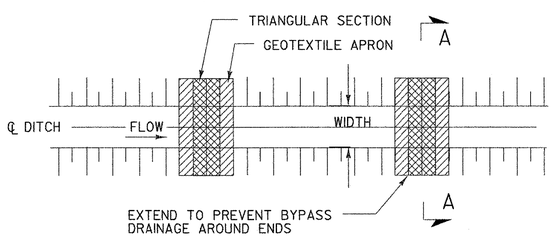
DETAIL A



PROFILE



SECTION A-A

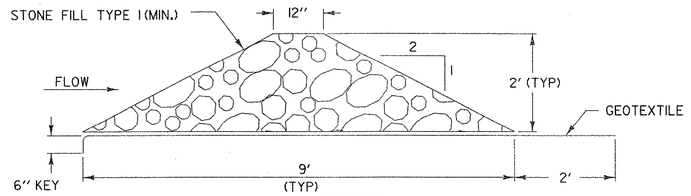


PLAN

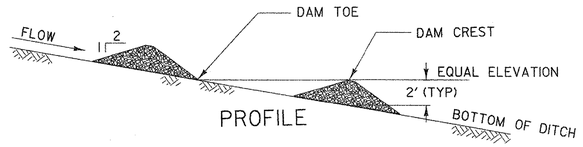
CHECK DAM - TEMPORARY (PREFABRICATED)

PREFABRICATED CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL **
1%	50 FT
2 %	40 FT
3 %	25 FT
4 %	20 FT
5 %	15 FT

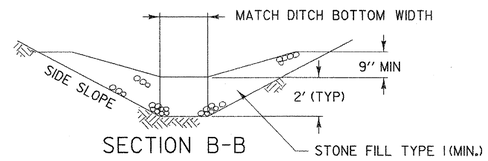
** BASED ON 10" TYPICAL HEIGHT



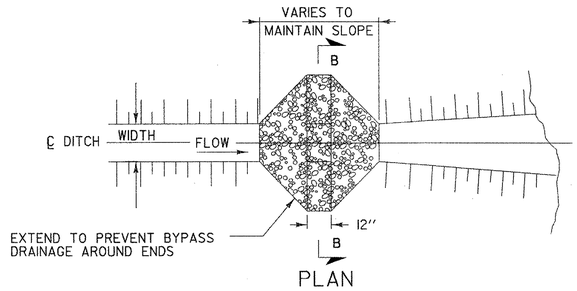
CROSS SECTION



PROFILE



SECTION B-B



PLAN

CHECK DAM - TEMPORARY (STONE)

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

CHECK DAMS

APPLICATION NOTES:

A. THE PRIMARY PURPOSE OF A 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.

E. PREFABRICATED DAMS ARE NOT TO BE USED ON SLOPES GREATER THAN 5% OR PER MANUFACTURER'S SPECIFICATIONS.

F. PREFABRICATED DAM SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

GENERAL NOTES:

1. GEOTEXTILE SHALL BE INSTALLED UNDER STONE FILL. IT SHALL BE KEYED IN ON THE UP HILL END AND SHALL EXTEND 2 FEET BEYOND THE STONE ON THE DOWN HILL END.
2. CORE MATERIAL FOR THE STONE CHECK DAM SHALL MEET THE GRADATION REQUIREMENTS OF STONE FILL TYPE I (MIN.). STONE SIZE SHOULD BE INCREASED WITH INCREASED SLOPE AND VELOCITY.
3. THE UPHILL END OF THE APRON FOR THE PREFABRICATED CHECK DAM SHALL BE STAPLED AND BURIED AS SHOWN IN DETAIL "A" OR AS RECOMMENDED BY THE MANUFACTURERS LITERATURE.
4. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
5. 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.
6. AT TIME OF REMOVAL OF THE CHECK DAMS, THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
7. PAYMENT FOR INSTALLATION AND REMOVAL OF CHECK DAMS SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
8. PAYMENT FOR MONITORING CHECK DAMS SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
9. PAYMENT FOR MAINTAINING CHECK DAMS SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

DETAIL

EPSC-2

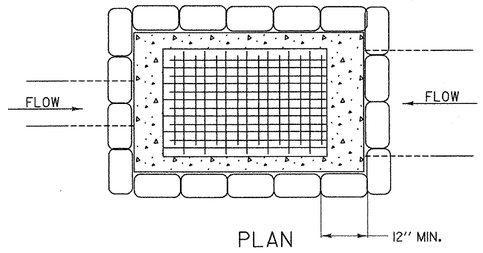
EROSION PREVENTION & SEDIMENT CONTROL DETAILS CHECK DAMS

VERMONT AGENCY OF TRANSPORTATION

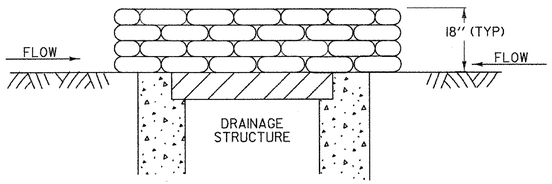
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
EPSC-2	
Designed By VTRANS	Drawn By B.J. MASSE
Checked By Date VTRANS 5/04	Bridge Design Supervisor M.A. COLGAN Date 9/05
PROJECT WOODSTOCK	PROJECT NO. BHF-020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028EPSC-2	Sheet 62 of 71

VHB NO. 51298

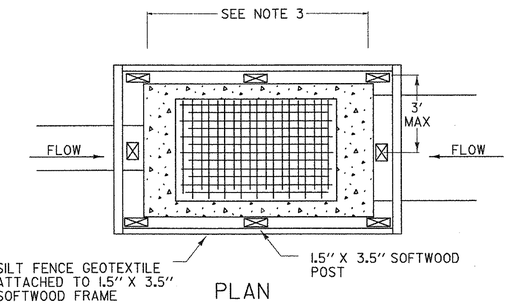


PLAN

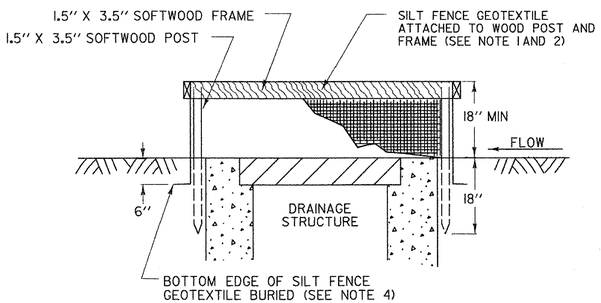


SECTION

GRAVEL BAG DROP INLET PROTECTION

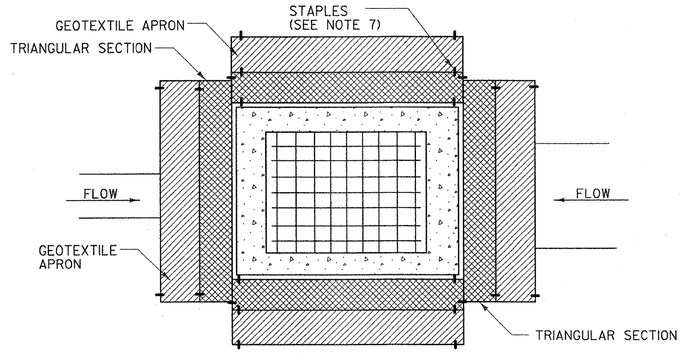


PLAN

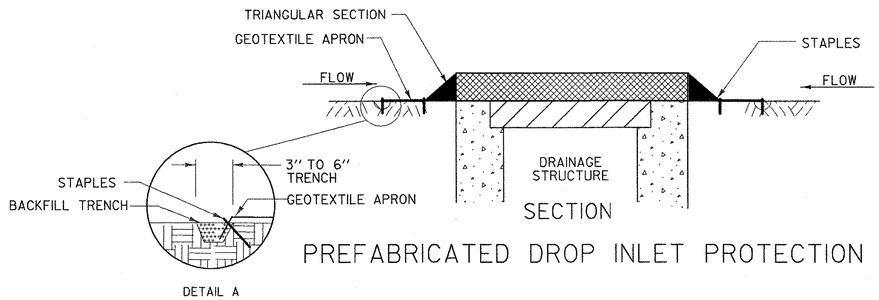


SECTION

SILT FENCE DROP INLET PROTECTION

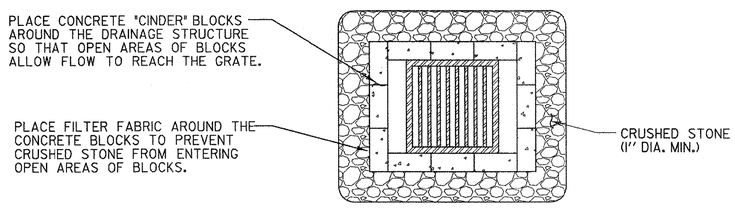


PLAN

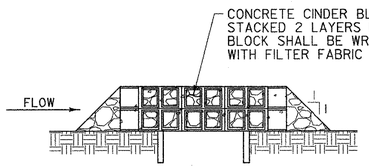


SECTION

PREFABRICATED DROP INLET PROTECTION

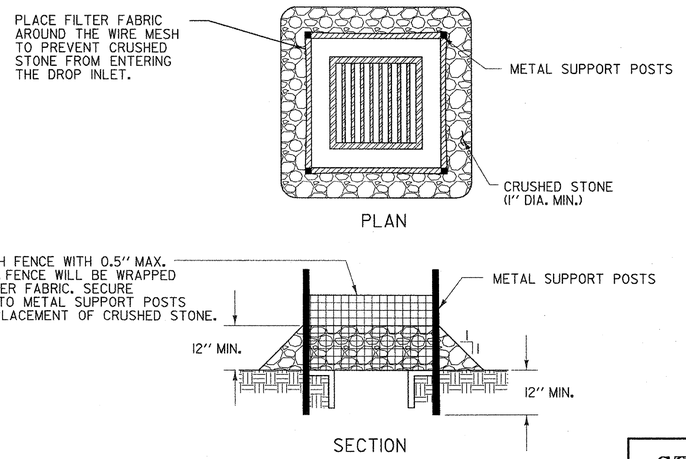


PLAN



SECTION

ROCK BARRIER DROP INLET PROTECTION TEMPORARY PAVED AREAS



PLAN

SECTION

ROCK BARRIER INLET PROTECTION TEMPORARY UNPAVED AREAS

DROP INLET PROTECTION

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.

D. PREFABRICATED DROP INLET PROTECTION SPECIFICATIONS SHALL BE PROVIDED TO THE ENGINEER FOR APPROVAL PRIOR TO USE.

GENERAL NOTES:

1. THE TOP OF THE INLET PROTECTION SHALL BE SET AT THE MAXIMUM DESIRED WATER LEVEL, BASED ON FIELD LOCATION AND CONDITIONS.
2. SILT FENCE GEOTEXTILE SHALL BE A SINGLE CONTINUOUS PIECE TO ELIMINATE JOINTS.
3. SPACE SILT FENCE POSTS EVENLY AROUND INLET WITH A MAXIMUM SPACING OF 3 FEET. DRIVE POSTS A MINIMUM OF 18 INCHES INTO GROUND. WIRE MESH MAY BE REQUIRED BEHIND GEOTEXTILE TO PROVIDE SUPPORT.
4. SILT FENCE GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 6 INCHES AND BACKFILLED. GEOTEXTILE SHALL BE SECURELY FASTENED TO POSTS AND FRAME.
5. GRAVEL BAGS SHALL BE FILLED WITH CLEAN STONE, RATHER THAN SAND, TO PREVENT SEDIMENT FROM ENTERING A DRAINAGE SYSTEM IF BAGS ARE DAMAGED DURING USE.
6. GRAVEL BAGS SHALL BE INDIVIDUALLY TIED, DOUBLE BAGGED AND INVERSELY INSERTED. GRAVEL BAGS SHALL LAP THE JOINTS BETWEEN THE BAGS IN THE LAYER BELOW.
7. SECURE THE ENDS OF THE APRON FOR THE PREFABRICATED DRAINAGE STRUCTURE INLET PROTECTION WITH STAPLES AS DETAILED IN THE PLAN VIEW OR AS RECOMMENDED BY THE MANUFACTURERS LITERATURE.
8. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. 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.
10. PAYMENT OF INLET PROTECTION SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MONITORING INLET PROTECTION SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING INLET PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

DETAIL

EPSC-3

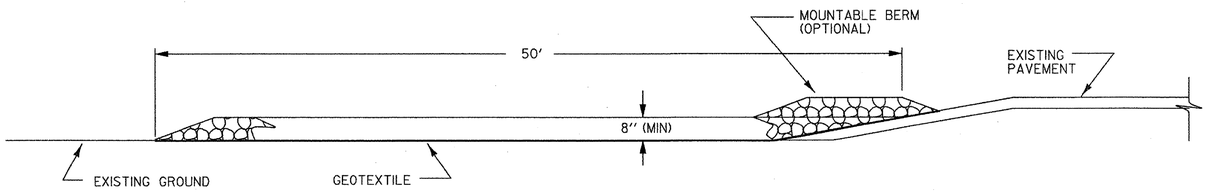
EROSION PREVENTION & SEDIMENT CONTROL DETAILS DROP INLET PROTECTION

VERMONT AGENCY OF TRANSPORTATION

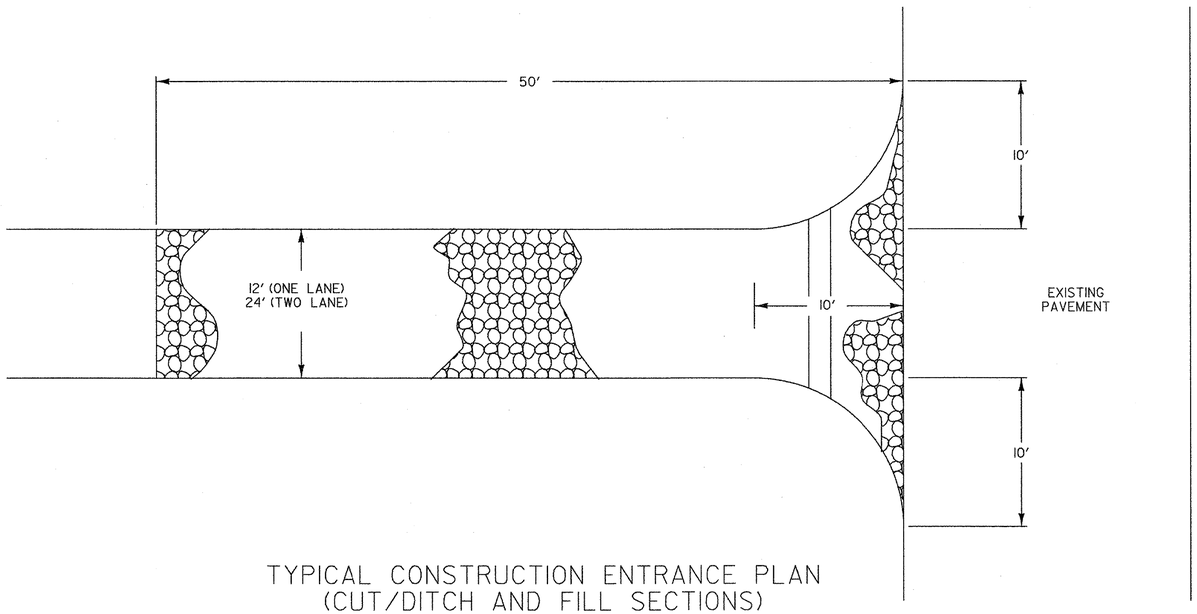
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
EPSC-3	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date 5/04	Bridge Design Supervisor M. A. COLGAN Date 9/05
PROJECT WOODSTOCK	PROJECT NO. BHF-020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028EPSC-3	Sheet 63 of 71

VHB NO. 51298



TYPICAL CONSTRUCTION ENTRANCE PROFILE
(CUT AND DITCH SECTIONS)



TYPICAL CONSTRUCTION ENTRANCE PLAN
(CUT/DITCH AND FILL SECTIONS)

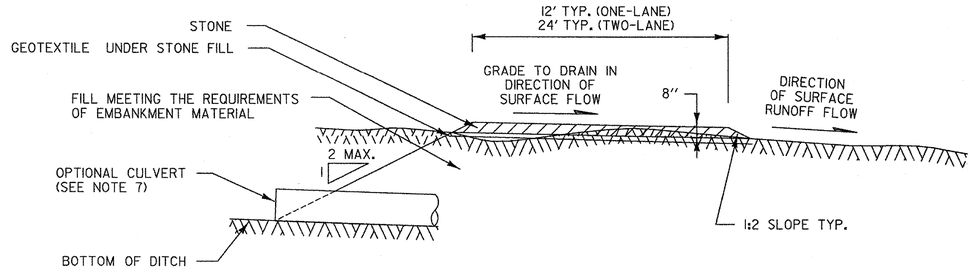
STABILIZED CONSTRUCTION ENTRANCE

APPLICATION NOTES:

A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE IS TO REDUCE OR ELIMINATE THE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.

GENERAL NOTES:

1. STONE SIZE - USE CLEAN STONE WITH GRADATION BETWEEN 2 INCHES AND 4 INCHES .
2. LENGTH - 50 FEET (MIN)
3. THICKNESS - 8 INCHES (MIN)
4. WIDTH - 12 FEET (MIN)
5. GEOTEXTILE UNDER STONE WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE AS DIRECTED BY THE ENGINEER. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS. ALTERNATIVE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCES MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER.
8. WHEN WASHING OF VEHICLE IS NECESSARY, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
10. MAINTENANCE- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
11. AT THE TIME OF REMOVAL OF THE STABILIZED CONSTRUCTION ENTRANCE THE DISTURBED AREA SHALL BE REPAIRED AND STABILIZED.
12. PAYMENT OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MADE UNDER APPLICABLE ITEMS INCLUDED IN THE CONTRACT PLANS OR UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM.
13. PAYMENT FOR MONITORING STABILIZED CONSTRUCTION ENTRANCES SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
14. PAYMENT FOR MAINTAINING THE CONSTRUCTION ENTRANCE SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



TYPICAL CONSTRUCTION ENTRANCE SECTION

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

DETAIL

EPSC-4

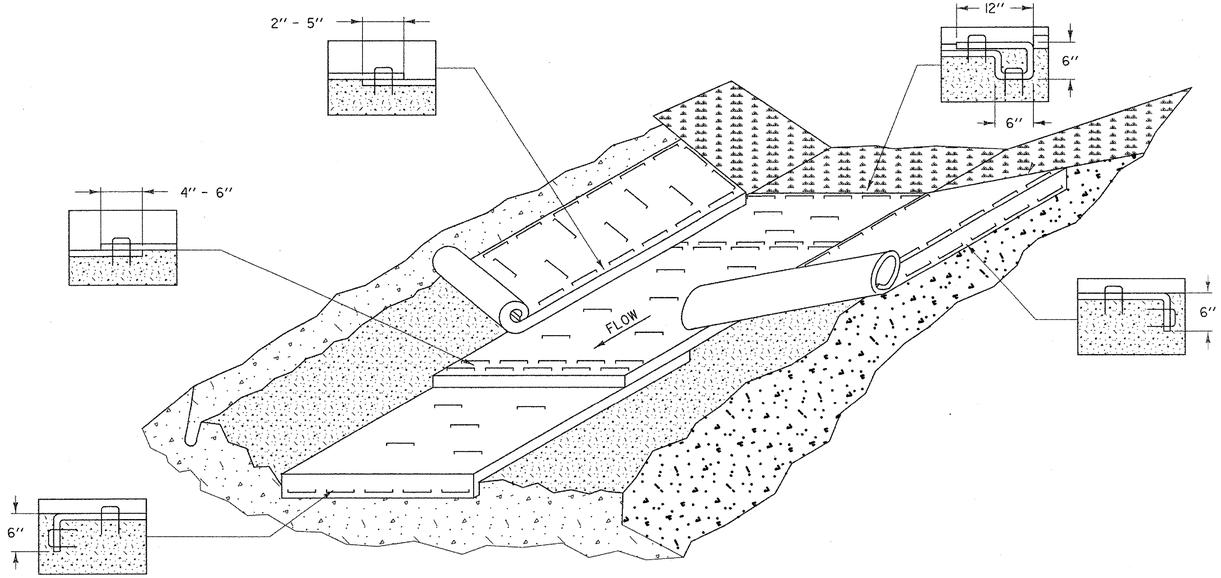
EROSION PREVENTION & SEDIMENT CONTROL DETAILS CONSTRUCTION ENTRANCE

VERMONT AGENCY OF TRANSPORTATION

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
EPSC-4	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By Date VTRANS 5/04	Bridge Design Supervisor M. A. COLGAN Date 9/05
PROJECT WOODSTOCK	PROJECT NO. BHF-020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028EPSC-4	Sheet 64 of 71

VHB NO. 51298



EROSION PROTECTION FOR DITCHES

APPLICATION NOTES:

A. THE PURPOSE OF LINING THE DITCH WITH EROSION MATTING IS TO REDUCE EROSION AND AID THE ESTABLISHMENT OF VEGETATION AT LOW VELOCITIES.

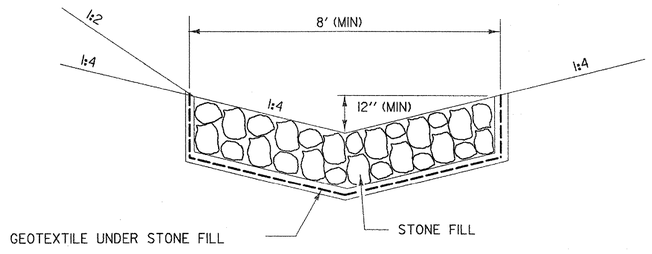
B. THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

DITCH AND CHANNEL PROTECTION	
SLOPE	LINING
< 1%	GRASS
1% TO 4 %	EROSION MATTING
4 % TO 10 %	STONE FILL, TYPE I
> 10 %	STONE FILL, TYPE II

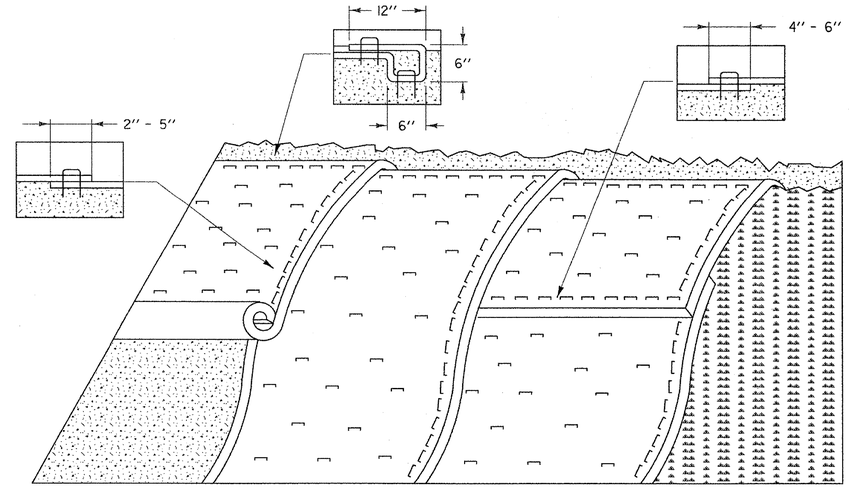
STONE FILL THICKNESS	
STONE FILL TYPE	THICKNESS
TYPE I	1 FT
TYPE II	2 FT

GENERAL NOTES:

1. WATER MAY NEED TO BE DIVERTED TO ALLOW PROPER MATTING INSTALLATION.
2. GRADE AND SMOOTH CHANNEL TO PROVIDE GOOD MATTING TO SOIL SURFACE CONTACT.
3. APPLY FERTILIZER, LIME, AND SEED PRIOR TO PLACING MATTING.
4. INSTALL MATTING IN THE CENTER OF THE CHANNEL, IN THE DIRECTION OF THE WATER FLOW.
5. INSTALL MATTING ON THE SIDE SLOPES OF THE CHANNEL, OVERLAPPING THE CENTER MAT.
6. ANCHOR MATTING AS SHOWN, UTILIZING ANCHOR STAPLES. STAPLE PLACEMENT SHALL BE DETERMINED BY THE MANUFACTURER'S INTALLATION INSTRUCTIONS.
7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
8. MEASURES SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
9. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
10. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
11. PAYMENT FOR MAINTAINING DITCH PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.



TEMPORARY
STONE LINED
DITCH



EROSION PREVENTION FOR SIDE SLOPES

APPLICATION NOTES:

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

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

- SIDE SLOPES > 3:1 (H:V)
- 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 INTALLATION 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) CALENDAR DAYS AND WITHIN 24 HOURS OF A STORM EVENT GREAT ENOUGH TO CAUSE WATER TO LEAVE THE CONSTRUCTION SITE.
9. MATTING SHALL BE REPAIRED AND RESTAPLED AS NECESSARY TO ENSURE PROPER FUNCTION.
10. PAYMENT FOR INSTALLATION OF MATTING SHALL BE MADE UNDER THE EROSION CONTROL WITH MATTING ITEM.
11. PAYMENT FOR MONITORING EROSION CONTROL MATTING SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
12. PAYMENT FOR MAINTAINING SLOPE PROTECTION SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MAINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

DETAIL

EPSC-5

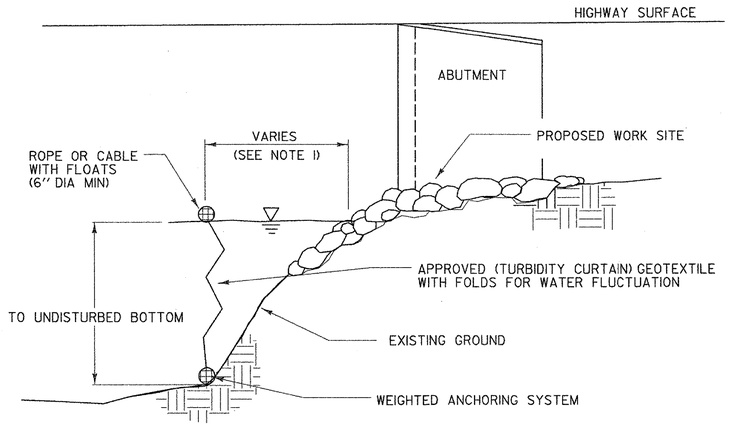
EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH & SLOPE PROTECTION

VERMONT AGENCY OF TRANSPORTATION

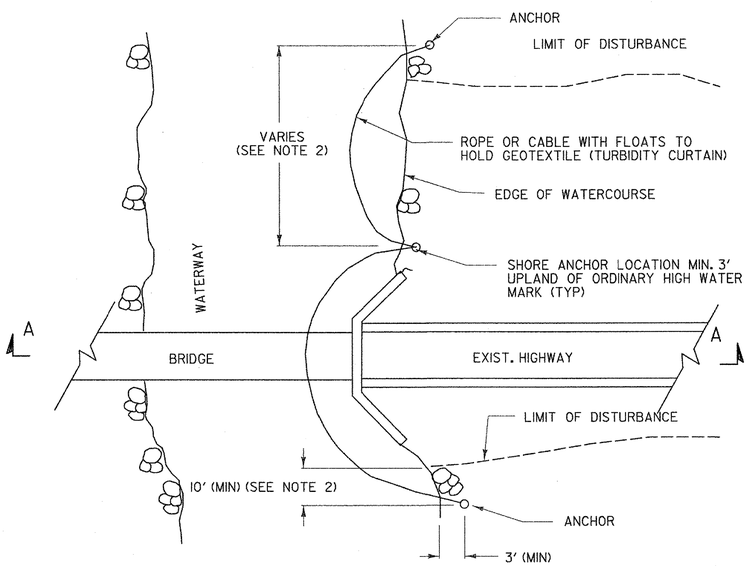
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of WOODSTOCK	Bridge No. 50
Highway No. U.S. ROUTE 4	Log Sta. / Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
EPSC-5	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date 5/04	Bridge Design Supervisor M. A. COLGAN Date 9/05
PROJECT WOODSTOCK	PROJECT NO. BHF-020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028EPSC-5	Sheet 65 of 71

VHB NO. 51298



SECTION A-A



PLAN

TURBIDITY CURTAIN - TEMPORARY

TURBIDITY CURTAIN

APPLICATION NOTES:

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

B. TURBIDITY CURTAIN SHALL NOT BE PLACED ACROSS A FLOWING WATERWAY, OR IN A WATERWAY WITH STREAM VELOCITIES GREATER THAN 1.5 FT/SEC.

C. TURBIDITY 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 TURBIDITY CURTAIN MAY BE APPLIED AT OTHER LOCATIONS.

GENERAL NOTES:

1. THE TURBIDITY CURTAIN SHALL BE PLACED AS CLOSE TO THE WORK AS POSSIBLE WITHOUT INTERFERING WITH CONSTRUCTION OPERATIONS.
2. THE TURBIDITY 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 TURBIDITY CURTAIN, TAKING INTO ACCOUNT WEATHER PATTERNS AND PREVAILING WIND DIRECTIONS THAT MAY AFFECT WATER LEVELS, VELOCITY AND MOVEMENT OF THE TURBIDITY CURTAIN.
4. THE TURBIDITY CURTAIN SHALL BE REMOVED BY SLOWLY PULLING TOWARD THE SHORE TO MINIMIZE ESCAPE OF SEDIMENTS INTO THE WATERWAY.
5. THE WEIGHTED ANCHOR SYSTEM SHALL BE A TYPE THAT ALLOWS THE CURTAIN TO CONFORM TO THE CONTOUR ON THE BOTTOM OF THE WATERWAY.
6. PAYMENT FOR INSTALLATION AND REMOVAL OF THE TURBIDITY CURTAIN SHALL BE MADE UNDER THE GEOTEXTILE FOR FILTER CURTAIN ITEM.
7. PAYMENT FOR MONITORING TURBIDITY CURTAIN SHALL BE MADE UNDER THE MONITORING EROSION & SEDIMENT CONTROL PLAN ITEM.
8. PAYMENT FOR MAINTAINING TURBIDITY CURTAIN SHALL BE MADE UNDER THE FIELD MAINTENANCE OF EROSION & SEDIMENT CONTROL PLAN ITEM, UNLESS MINTENANCE IS REQUIRED DUE TO POOR INSTALLATION PRACTICES.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

DETAIL

EPSC-6

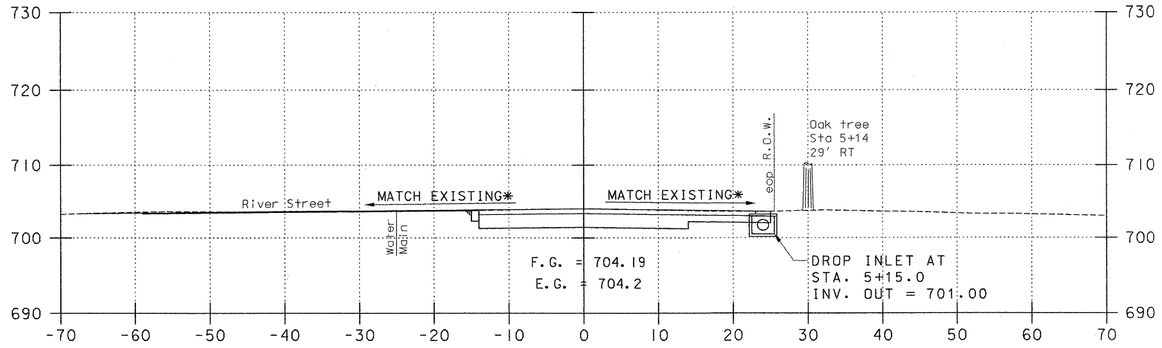
EROSION PREVENTION & SEDIMENT CONTROL DETAILS TURBIDITY CURTAIN

VERMONT AGENCY OF TRANSPORTATION

STATE OF VERMONT
AGENCY OF TRANSPORTATION

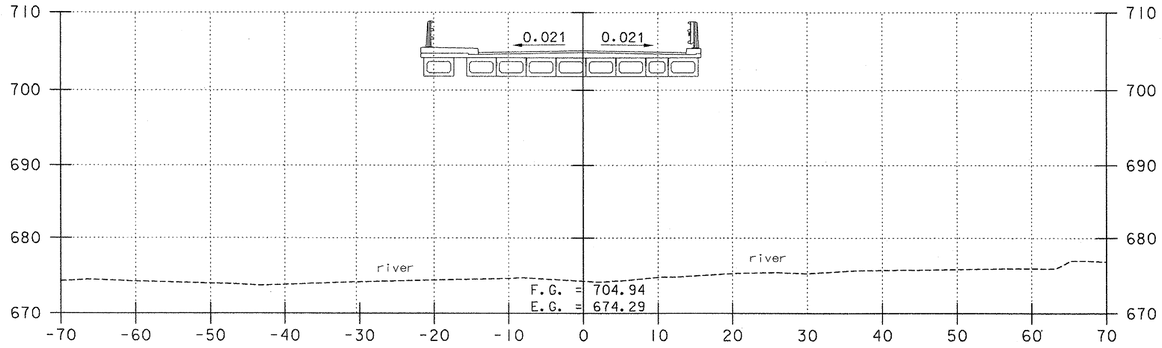
Town Of WOODSTOCK	Bridge No. 50
	Log Sta.
Highway No. U.S. ROUTE 4	Surv. Sta.
U.S. ROUTE 4 OVER OTTAUQUECHEE RIVER	
EPSC-6	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date 5/04	Bridge Design Supervisor M. A. COLGAN Date 9/05
PROJECT WOODSTOCK	PROJECT NO. BHF-020-2 (32)
I.G.C. Info.	
Bridge Sheet No. ZJ028EPSC-6	Sheet 66 of 71

VHB NO. 51298

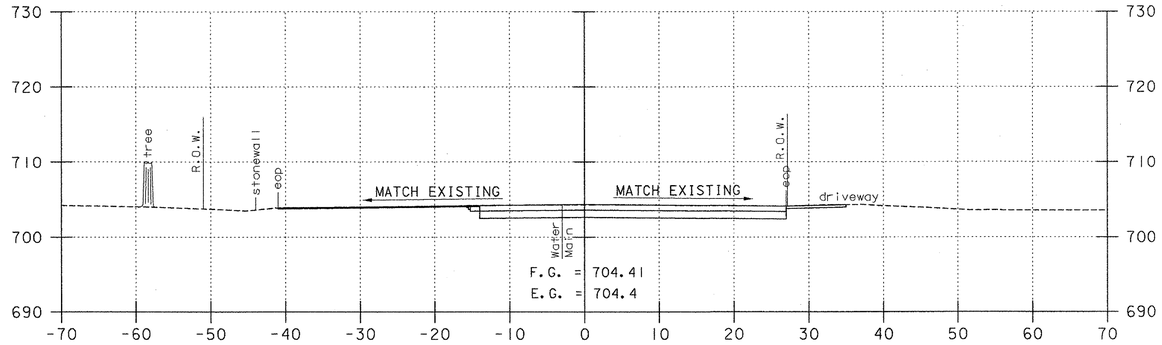


* TRANSITION TO 0.021 CROSS SLOPE FROM STA 5+00 TO BRIDGE

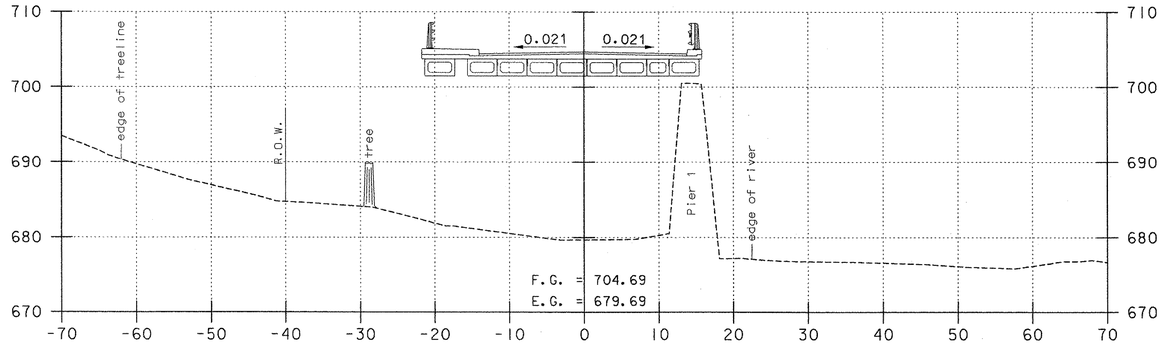
5+00
BEGIN PROJECT



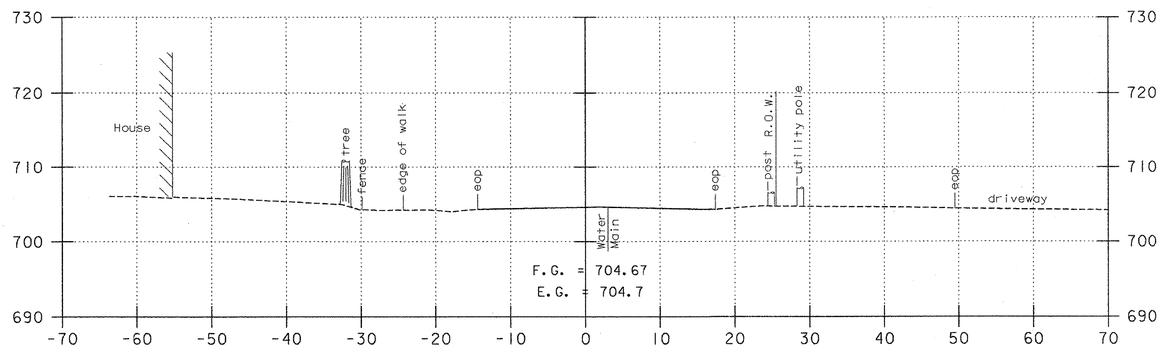
6+50



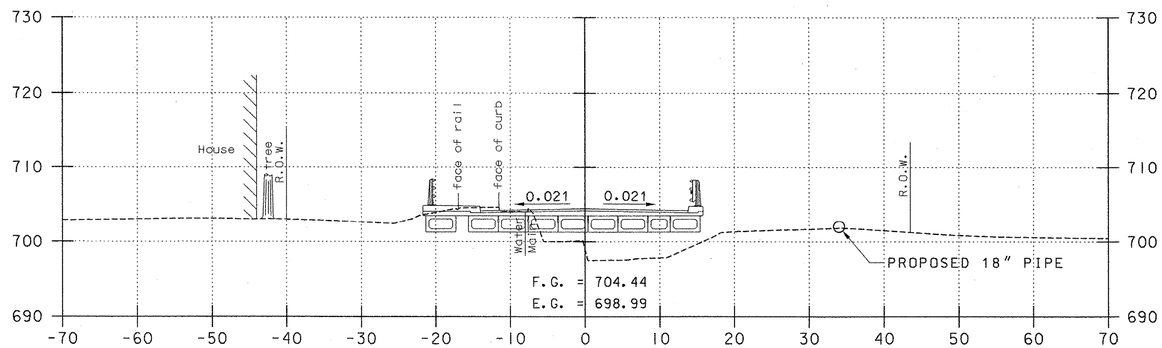
4+50



6+00



4+00
BEGIN APPROACH



5+50
BEGIN BRIDGE
STA 5+47.50

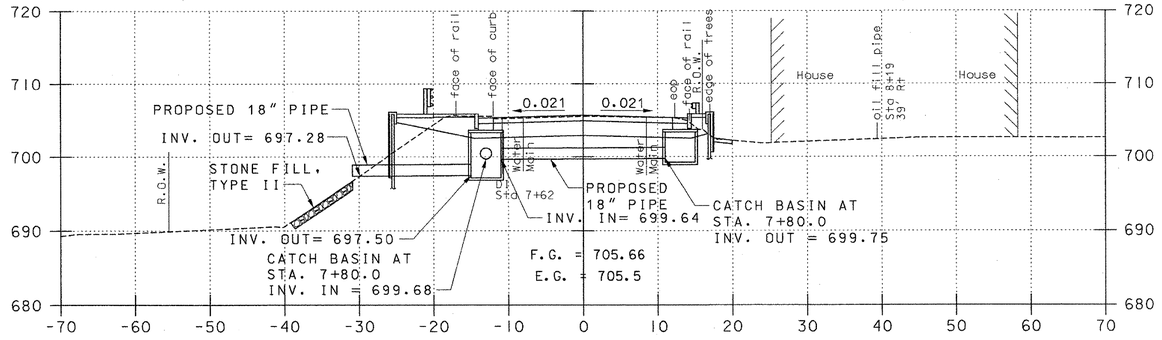
US ROUTE 4 CROSS SECTIONS

FROM STA 4+00	TO STA 6+50
PROJECT NAME	WOODSTOCK
PROJECT NO.	BHF 020-2 (32)
SURVEYED BY	BRUNO AASOCIATES, INC.
SHEET 67 OF 71	

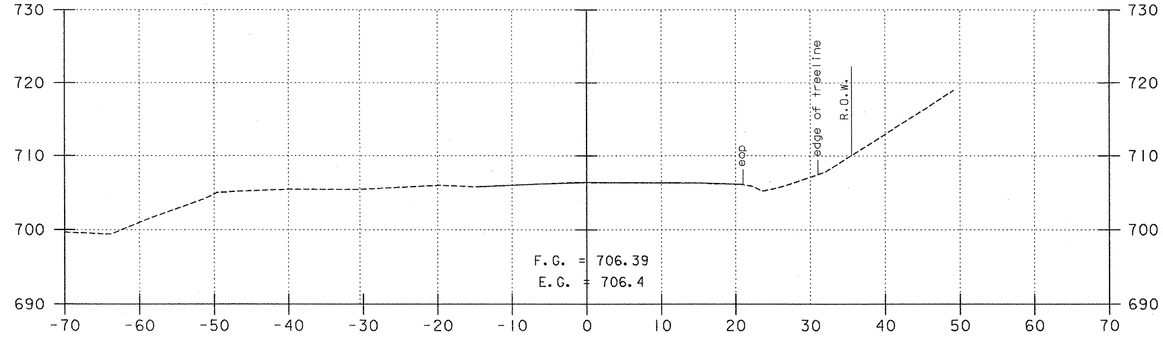
SCALE 1" = 10'

VHB *Vanasse Hangen Brustlin, Inc.*

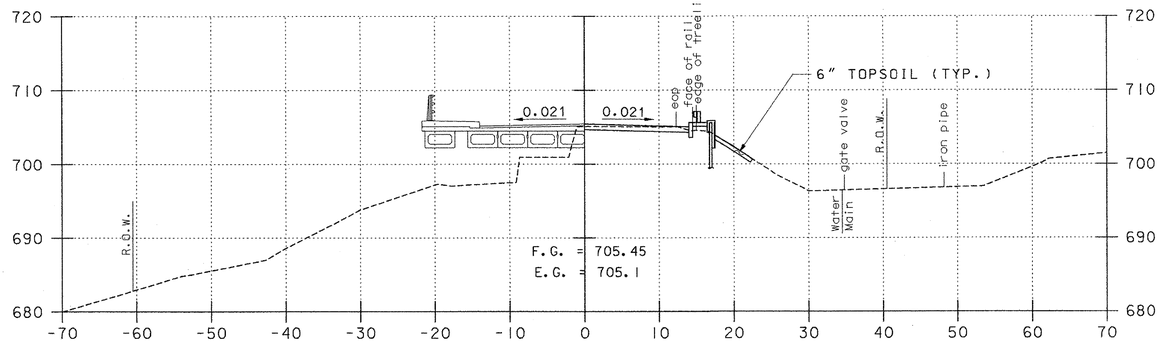
VHB NO. 51298 ZJ028XS plot date: 9/12/2006



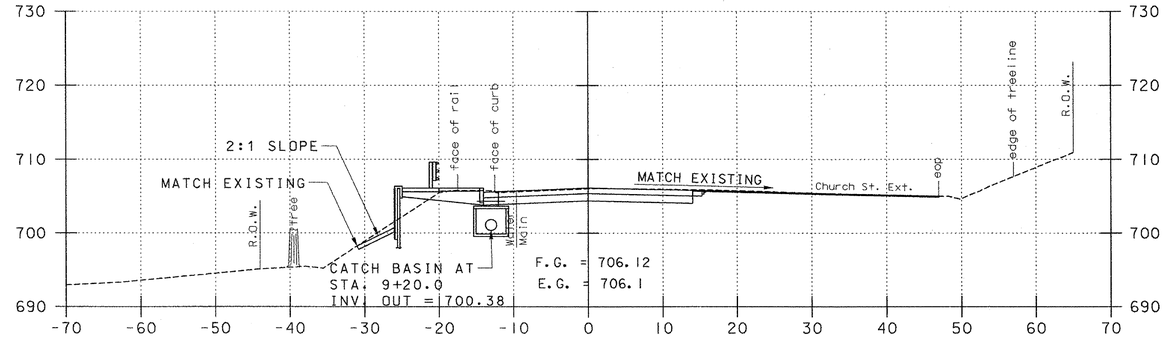
8+00



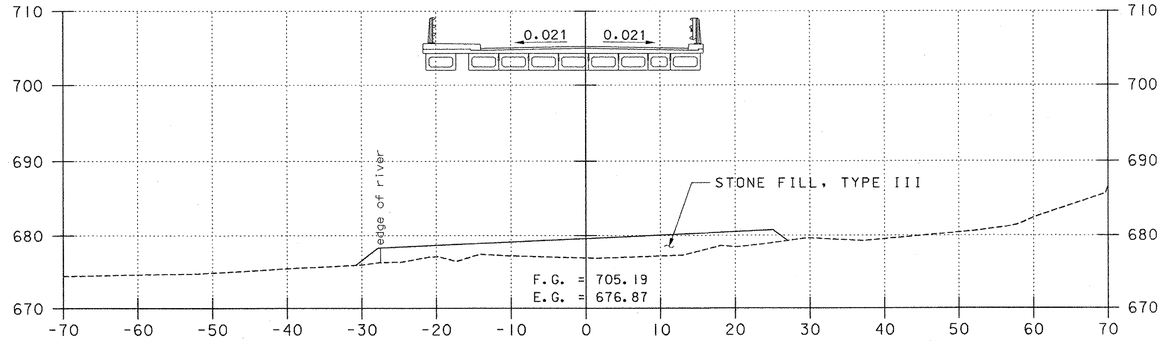
9+50
END APPROACH



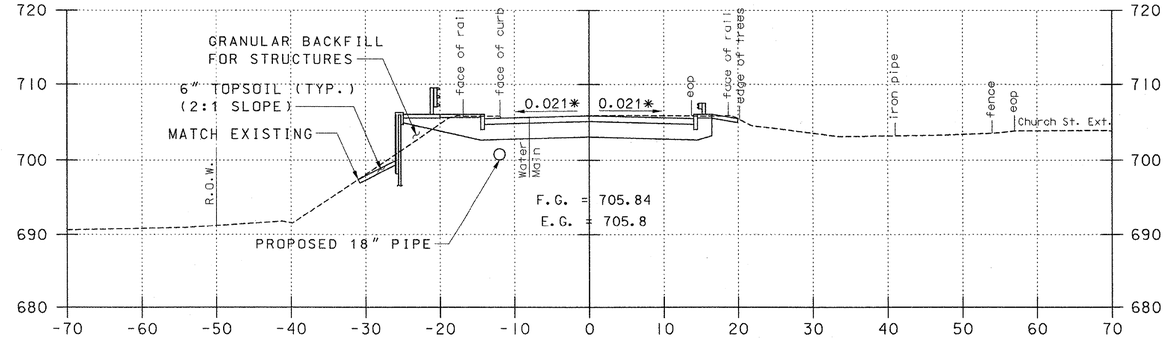
7+50
END BRIDGE
STA 7+49.50



9+00



7+00



* TRANSITION TO MATCH EXISTING CROSS SLOPE AT STA 8+75

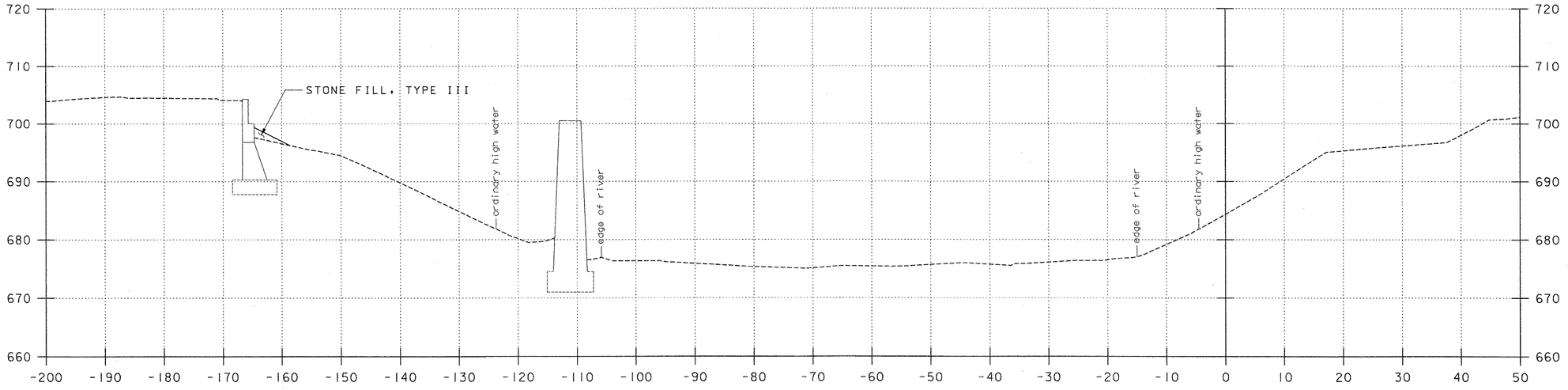
8+50
END PROJECT

US ROUTE 4 CROSS SECTIONS

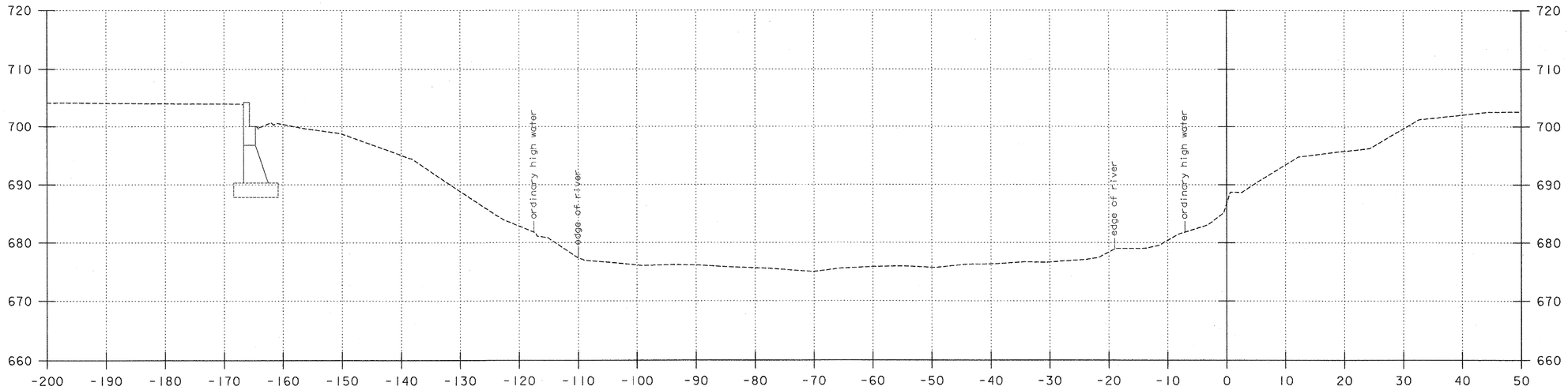
SCALE 1" = 10'

VHB *Vanasse Hangen Brustlin, Inc.*

FROM STA 7+00	TO STA 9+50
PROJECT NAME	WOODSTOCK
PROJECT NO.	BHF 020-2 (32)
SURVEYED BY	BRUNO AASOCIATES, INC.
SHEET 68 OF 71	



50+50



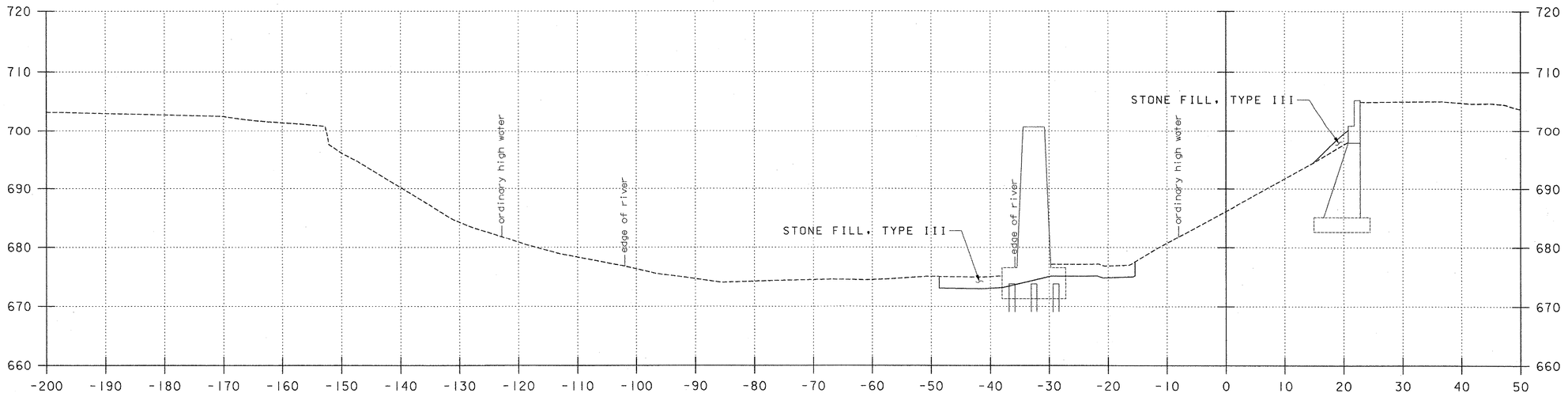
50+25

CHANNEL CROSS SECTIONS

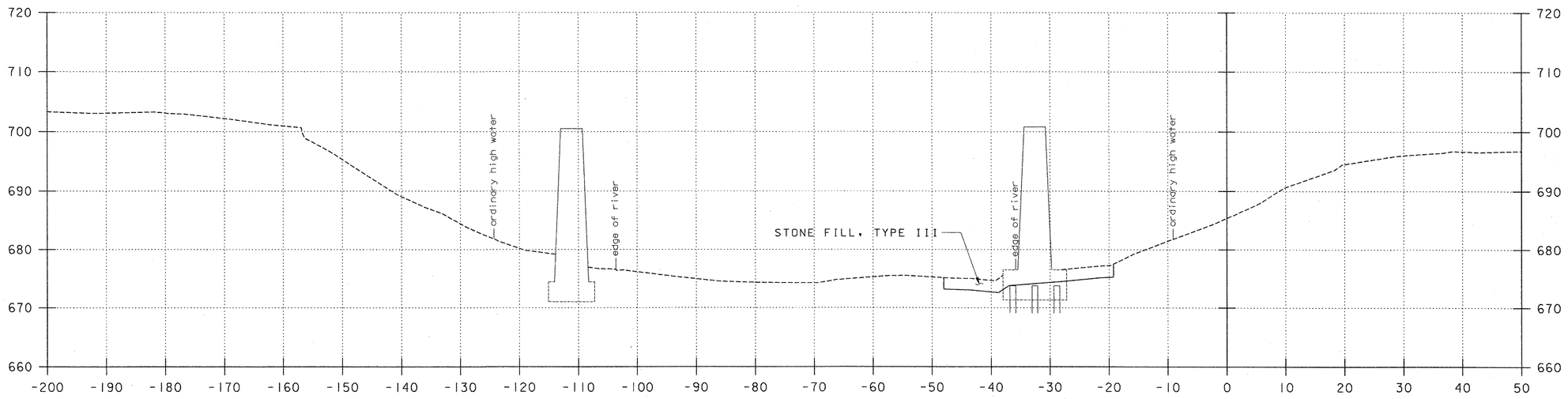
SCALE 1" = 10'

VHB *Vanasse Hangen Brustlin, Inc.*

FROM STA 50+25	TO STA 50+50
PROJECT NAME	WOODSTOCK
PROJECT NO.	BHF 020-2 (32)
SURVEYED BY	BRUNO AASOCIATES, INC.
SHEET 69 OF 71	



51+00



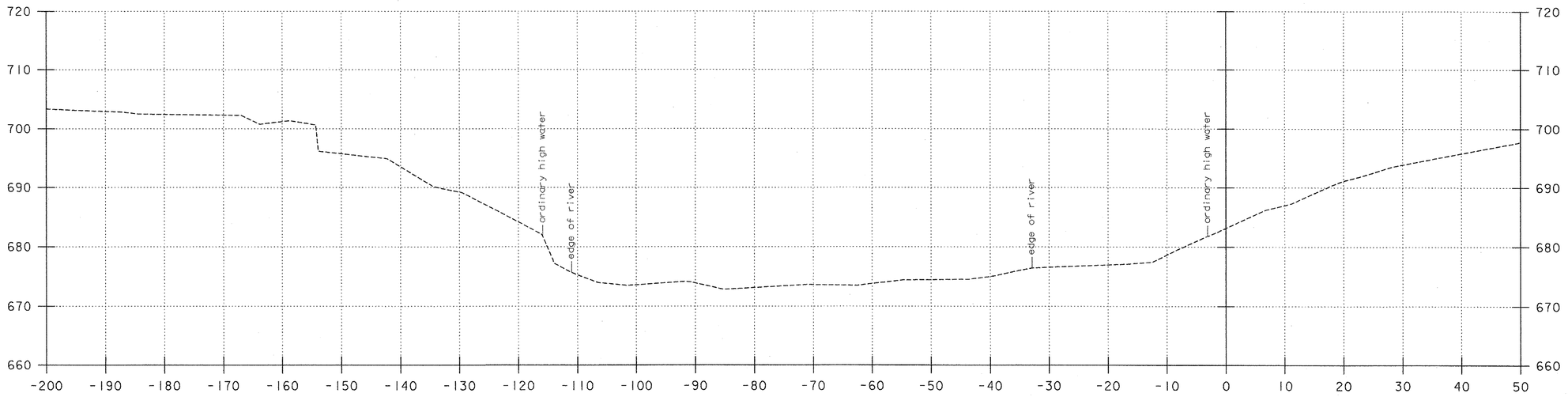
50+75

CHANNEL CROSS SECTIONS

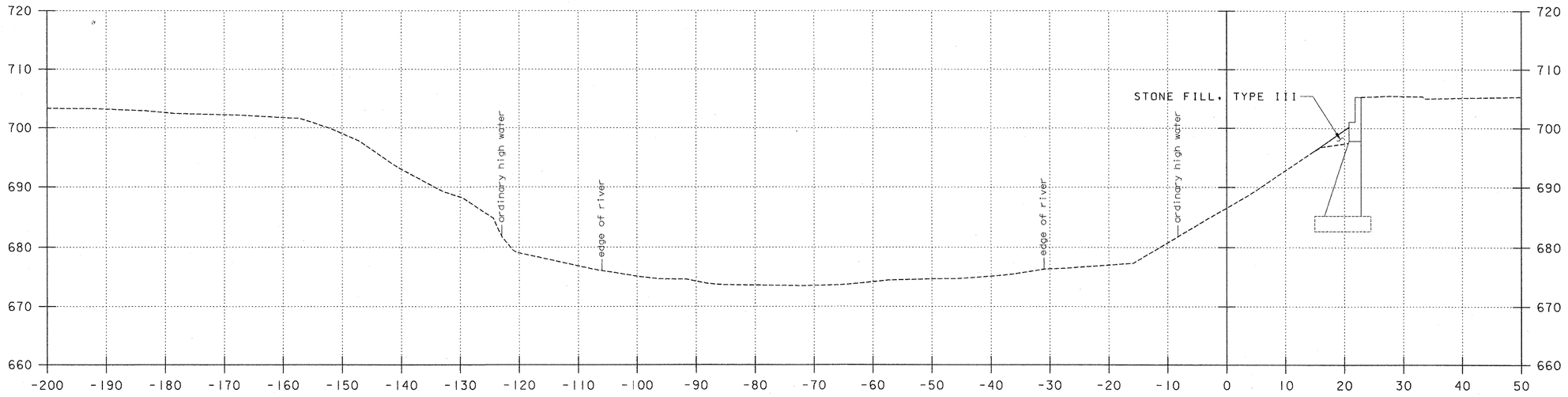
SCALE 1" = 10'

VHB *Vanasse Hangen Brustlin, Inc.*

FROM STA 50+75	TO STA 51+00
PROJECT NAME	WOODSTOCK
PROJECT NO.	BHF 020-2 (32)
SURVEYED BY	BRUNO AASOCIATES, INC.
SHEET 70 OF 71	



51+50



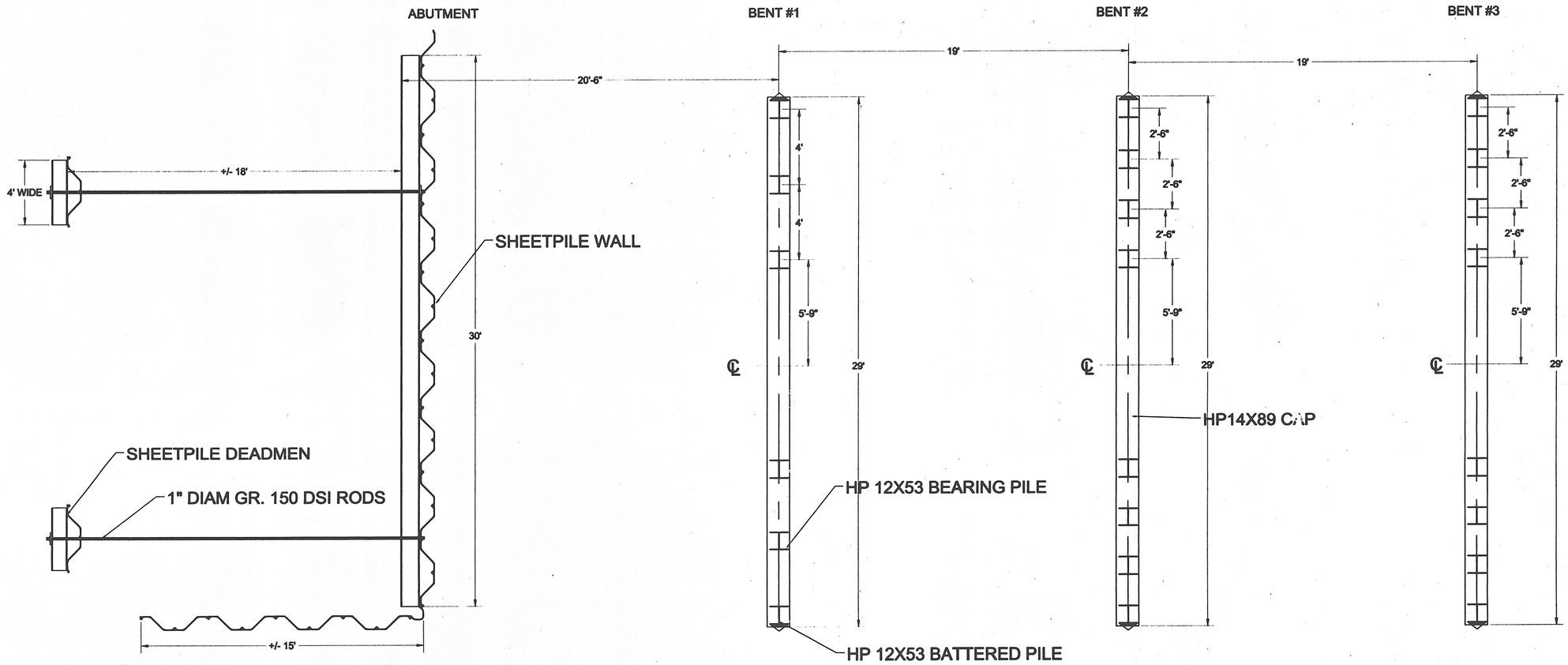
51+25

CHANNEL CROSS SECTIONS

SCALE 1" = 10'

VHB *Vanasse Hangen Brustlin, Inc.*

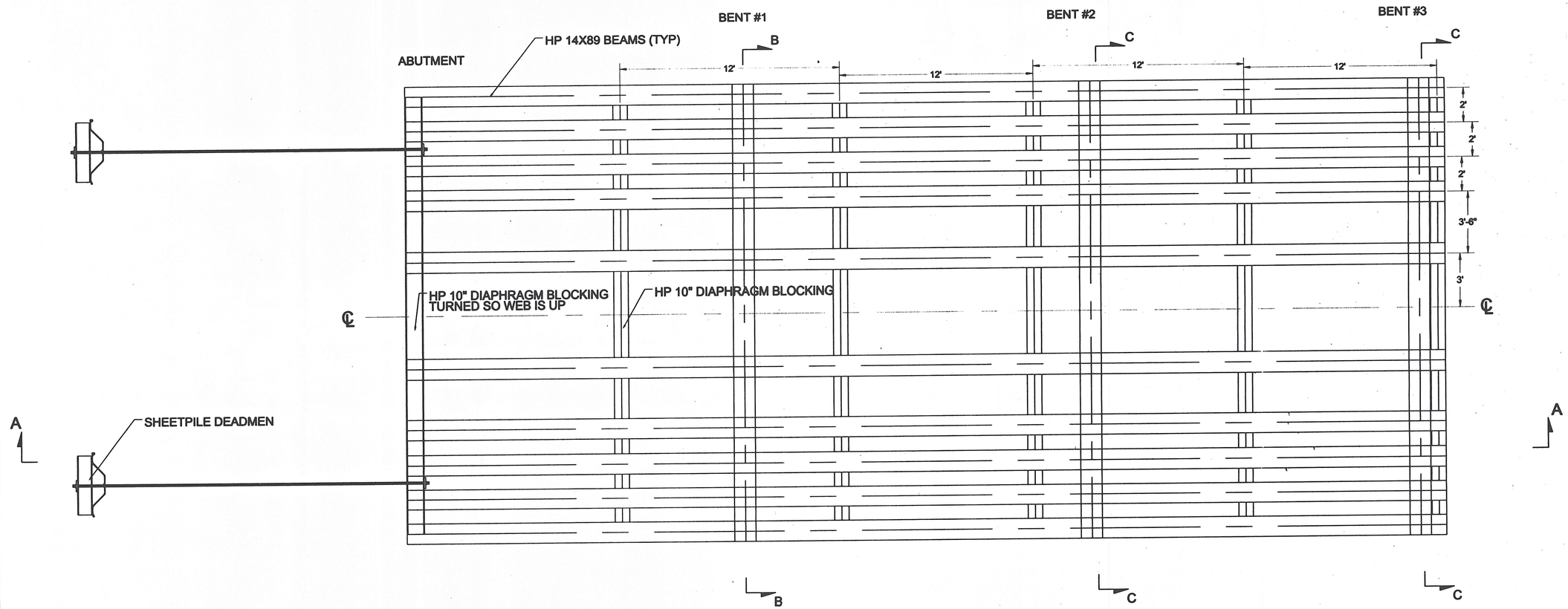
FROM STA 51+25	TO STA 51+50
PROJECT NAME	WOODSTOCK
PROJECT NO.	BHF 020-2 (32)
SURVEYED BY	BRUNO AASOCIATES, INC.
SHEET 71 OF 71	



PILE LOCATION PLAN

H.B. FLEMING
89 PLEASANT AVE.
SOUTH PORTLAND, ME 04106
P: 207-799-8514 F: 207-799-8538
www.hbfleming.com

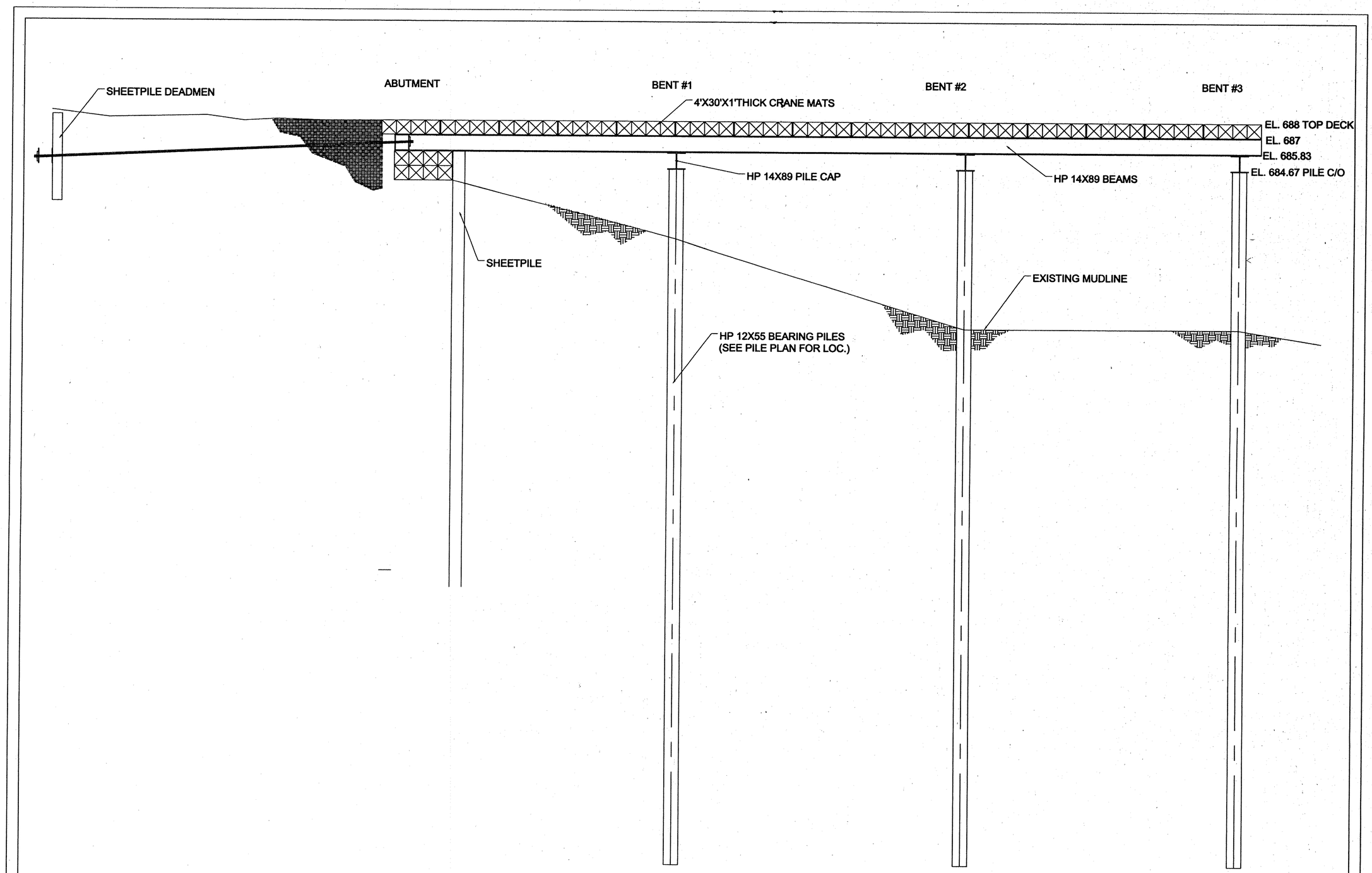
TITLE: PILE LOCATION PLAN
PROJECT: RT. 4 BRIDGE TRESTLE
LOCATION: WOODSTOCK, VT
DATE: 4/16/07
SCALE: 1"=4'



FRAMING PLAN

H.B. FLEMING
89 PLEASANT AVE.
SOUTH PORTLAND, ME 04106
P: 207-799-8514 F: 207-799-8538
www.hbfleming.com

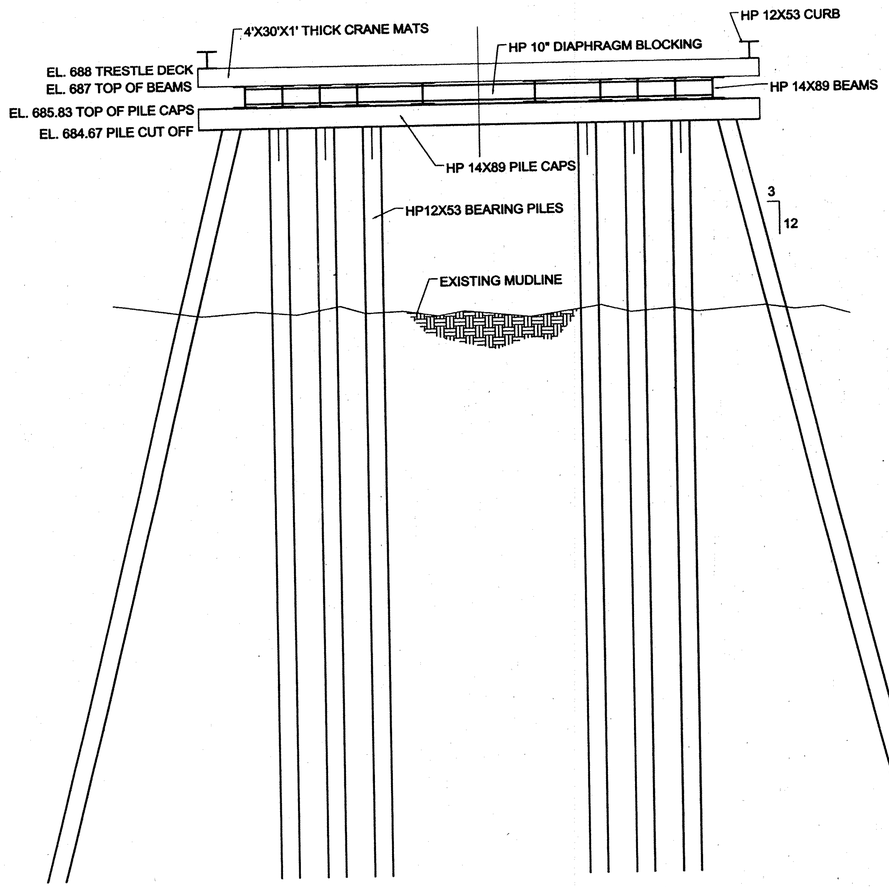
TITLE: FRAMIMG PLAN
PROJECT: RT. 4 BRIDGE TRESTLE
LOCATION: WOODSTOCK, VT
DATE: 4/16/07
SCALE: 1"=4'



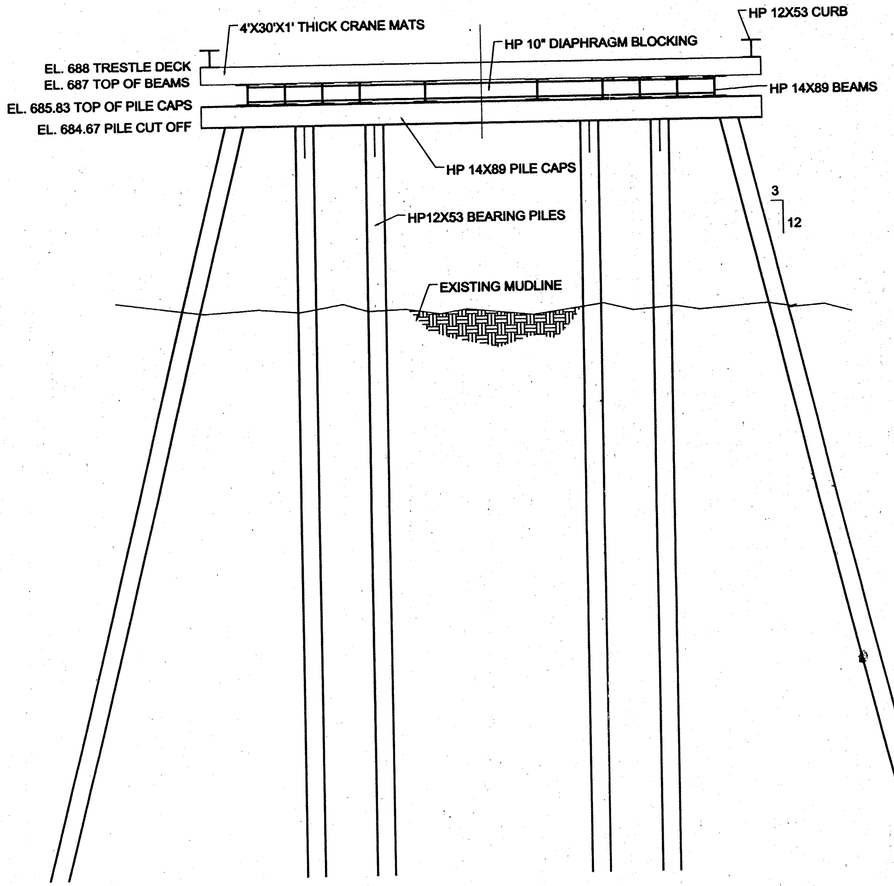
SECTION A-A

H.B. FLEMING
89 PLEASANT AVE.
SOUTH PORTLAND, ME 04106
P: 207-799-8514 F: 207-799-8538
www.hbfleming.com

TITLE: ELEVATION VIEW
PROJECT: RT. 4 BRIDGE TRESTLE
LOCATION: WOODSTOCK, VT
DATE: 4/17/07
SCALE: 1"=4'



SECTION B-B



SECTION C-C

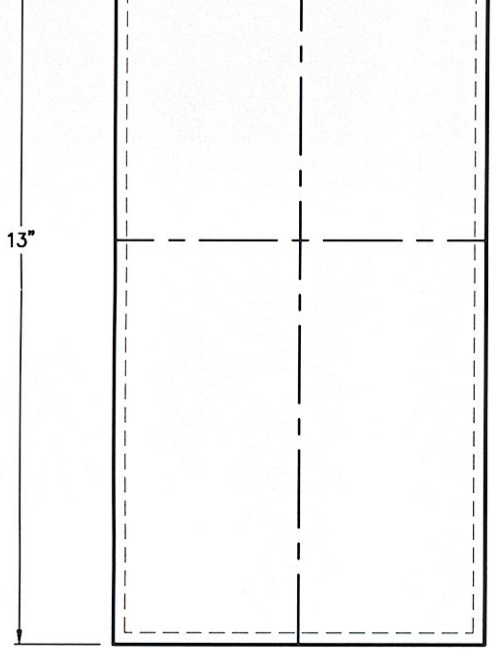
H.B. FLEMING
89 PLEASANT AVE.
SOUTH PORTLAND, ME 04106
P: 207-799-8514 F: 207-799-8538
www.hbfleming.com

TITLE: DETAILS AND SECTIONS
PROJECT: RT. 4 BRIDGE TRESTLE
LOCATION: WOODSTOCK, VT
DATE: 4/16/07
SCALE: 1"=5'

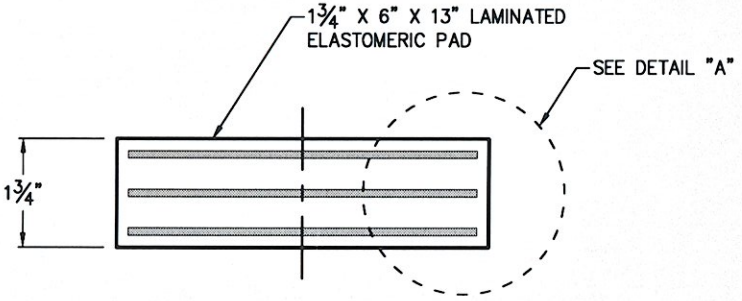
DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMA
IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRM
CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCES
TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTH
AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc.
Engineers, Planners, and Scientists
Six Bedford Farms, Kitton Rd.
Bedford, NH 03110 603 644 0888

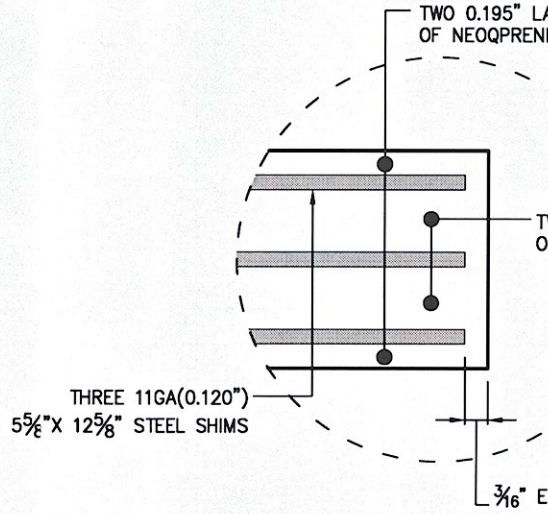
Job Number: 512
Reviewed By: L.S.
Date: 2/26/07



PLAN VIEW



ELEVATION
MK. 01
(108) REQ'D
ITEM# 531.10



DETAIL "B"

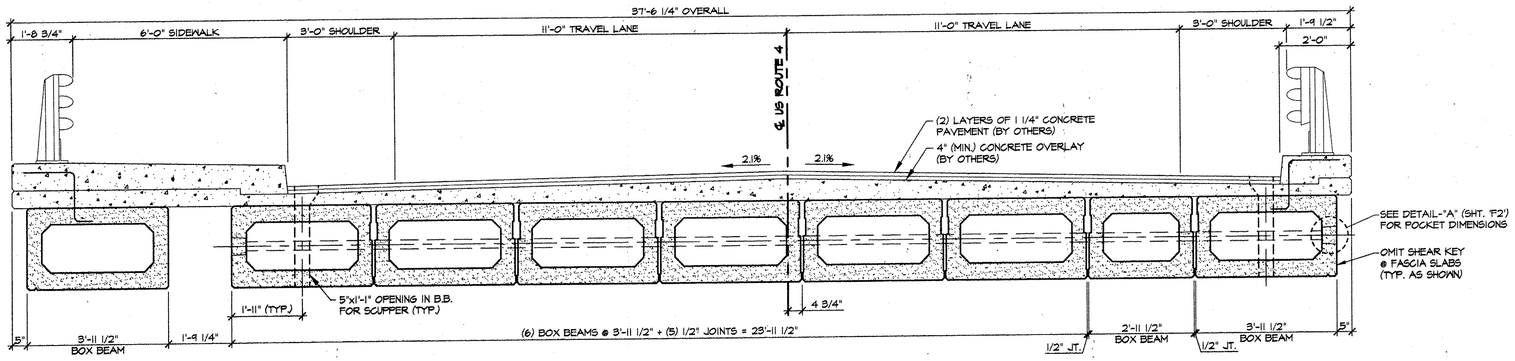
PLEASE PROVIDE DESIGN LOADS

PER CONTR
SHEET 3

DEAD LOAD	LIVE LOAD	TOTAL DESIGN LOAD	SHAPE FACTOR
? 54^K	? 29^K (w/ IMPACT)	? 83^K	4.11

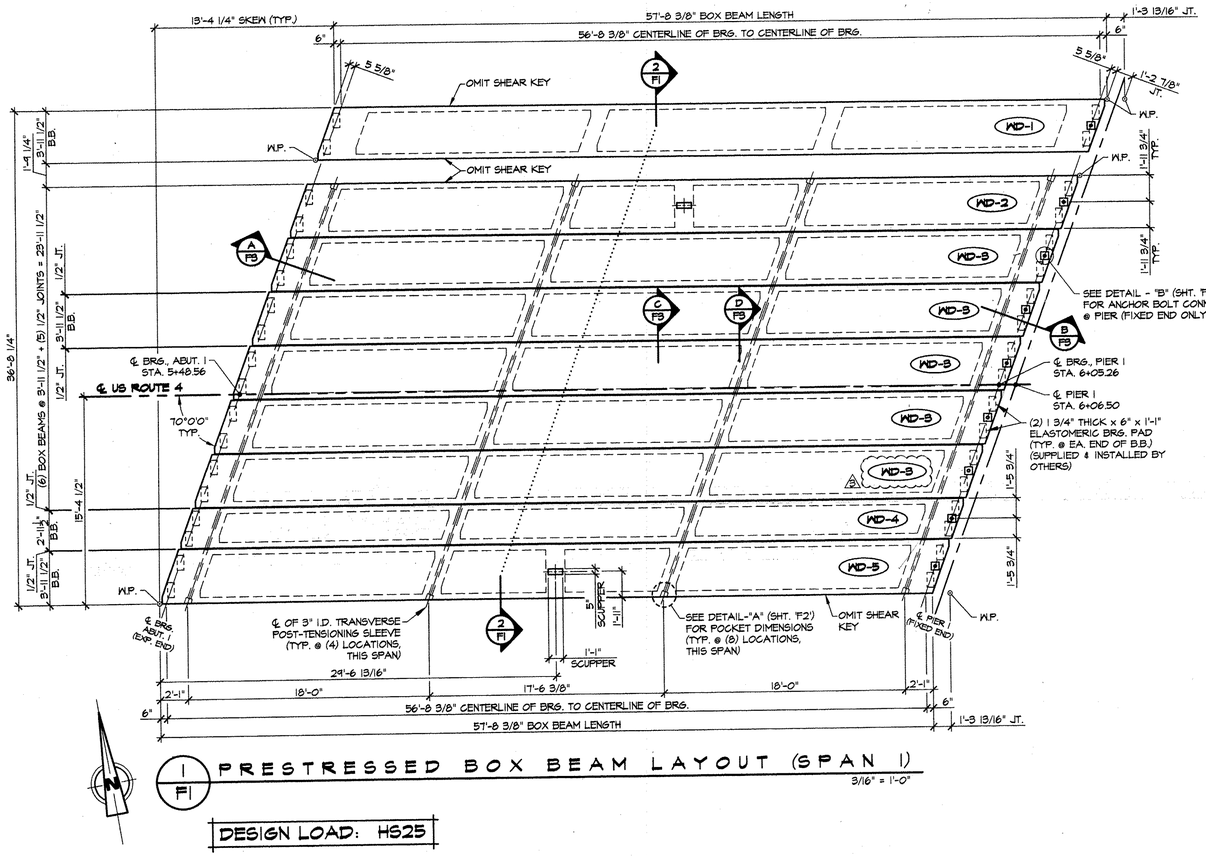
SCALE: NTS

REV	
A	ORI



2/F1 TRANSVERSE SECTION

1/2" = 1'-0"

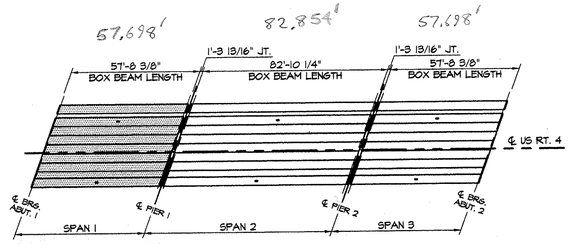


1/F1 PRESTRESSED BOX BEAM LAYOUT (SPAN 1)

3/16" = 1'-0"

DESIGN LOAD: HS25

1387.75' Grouting Keys
198.25' 36" Boxes
1586.00' 48" Boxes



KEY PLAN

N.T.S.

GENERAL NOTES

1. MIN. CONCRETE STRENGTH AT 28 DAYS SHALL BE 6,000 PSI.
2. MIN CONCRETE STRENGTH AT STRESS TRANSFER SHALL BE 5,000 PSI.
3. REINFORCING STEEL SHALL BE GR-60, ASTM A-615 (AASHTO M31) AND SHALL BE EPOXY COATED.
4. PRESTRESSING STRANDS SHALL CONFORM TO ASTM A-416 (AASHTO M203) AND SHALL CONSIST OF 0.60"Ø x 270 KSI 7 WIRE LOW RELAXATION STRANDS.
5. PRESTRESSING STRANDS SHALL EACH BE PULLED TO HAVE A NET TENSION OF 44.0K AFTER ACCOUNTING FOR CHUCK SLIPPAGE. TENSION SHALL BE VERIFIED BY MEASURING STRAND ELONGATION. SEE EXAMPLE ELONGATION CALCULATION AND TENSIONING PROCEDURE, THIS SHEET.
6. ENDS OF PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH END OF BOX BEAMS (UNLESS NOTED OTHERWISE) & EPOXY PAINTED.
7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
8. THE TOPS OF BEAMS SHALL RECEIVE A TRANSVERSE RAKE FINISH ROUGHENED TO 1/4" AMPLITUDE.
9. SHEAR KEY SURFACES SHALL BE BLASTED CLEAN.
10. BEAMS SHALL BE HANDLED AND ERECTED USING THE LIFTING LOOPS ONLY. THE MINIMUM SLING ANGLE FROM THE HORIZONTAL SHALL BE 60°. BEAMS SHALL BE STORED AND TRANSPORTED WITH TIMBER SUPPORTS WITHIN 2'-0" OF THE BEAM ENDS, UNLESS APPROVED BY J.P. CARRARA & SONS INC.
11. MATERIAL SPECIFICATION AND MIX DESIGN SHALL CONFORM TO VERMONT SPEC. P510.02 AND P510.03 RESPECTIVELY.

    DESIGN MIX: J.P.C. BRIDGE MIX #482 MSGC DCI [LIGHT WEIGHT SCC]
12. QUALITY CONTROL PROCEDURES ARE IN ACCORDANCE WITH PCI REQUIREMENTS. J.P. CARRARA & SONS INC. IS A PCI CERTIFIED PLANT.
13. THE VOIDS MUST BE VENTED DURING CURING PERIOD.
14. CURING METHOD: AS SOON AS THE TOP OF THE BEAM IS FINISHED, A COVER OF POLY AND A LAYER OF HOMOSOTE (OR BLUE BOARD) WILL BE PLACED OVER THE BEAM. THE DESIRED CURING TEMPERATURE RANGE SHALL NOT DROP BELOW 70 DEGREES F. THE TEMPERATURE SHALL BE RECORDED BY AUTOMATIC SENSOR INSTRUMENTS ON GRAPH CHARTS, SPACED NOT MORE THAN 100' APART AND WILL CONTINUE UNTIL RELEASE STRENGTH IS ACHIEVED (NATURAL CURE WITH NO EXTERNAL HEAT APPLIED). EACH CHART SHALL BE MARKED.
15. TRANSVERSE POST-TENSIONING SEQUENCE:
    A. ONCE BOX BEAMS ARE ERECTED, POST-TENSION TENDONS TO APPROXIMATELY 5,000 LBS.
    B. GROUT SHEAR KEYS.
    C. ONCE SHEAR KEY GROUT HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI, POST-TENSION TENDONS TO 30,000 LBS.

EXAMPLE PRESTRESSING STRAND ELONGATION CALC. AND TENSIONING

(NOT TO BE USED FOR CONSTRUCTION)

SIZE & GRADE: 0.60"Ø 270 KSI

AREA: 0.217 IN^2

TENSION: 44,000 LB EACH STRAND

GRIP TO GRIP: 192'-4 3/4" = 192.813'

Es = 28,600,000 PSI (ASSUMED FOR THESE CALCULATIONS; VALUE TO BE OBTAINED FOR STRAND SPOOL ACTUALLY USED)

EXAMPLE:

$$\Delta = \frac{PL}{AE} = \frac{(44{,}000 - 3{,}000) \times 192.813 \times 12}{0.217 \times 28{,}600{,}000} = 15.29"$$

TOLERANCES: ± 5%

THEREFORE
- Δ UPPER LIMIT = 1.05 x 15.29" = 16.05" = 16 1/16"
- Δ LOWER LIMIT = 0.95 x 15.29" = 14.53" = 14 1/2"

EXTRA FORCE REQUIRED TO COMPENSATE FOR 1/2" CHUCK SLIPPAGE.

$$\Delta P = \frac{0.5 \times 28{,}000}{15.29} = 1{,}341 \text{ LB}$$

TOTAL TENSIONING FORCE = 44,000 + 1,341 = 45,341 LB

STRAND TENSIONING PROCEDURE:

1. PULL EACH STRAND INITIALLY TO 3,000# LB AND MARK STRAND.
2. THEN PULL EACH STRAND TO A TOTAL TENSION OF 45,341# LB AND MEASURE ELONGATION AFTER SEATING. IT MUST BE BETWEEN 14 1/2" & 16 1/16"

*NOTE : FORCES READ ON STRESSING JACK GAUGES MUST BE MADE TO CORRESPOND TO ABOVE VALUES BASED ON CALIBRATION DATA FOR SPECIFIC JACK USED.

△4 4-11-07 REVISE BOX BEAM MARK NUMBER
△3 3-9-07 REVISE BOX BEAM MARK NUMBER
△1 2-13-07 GENERAL REVISIONS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2484 OSE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

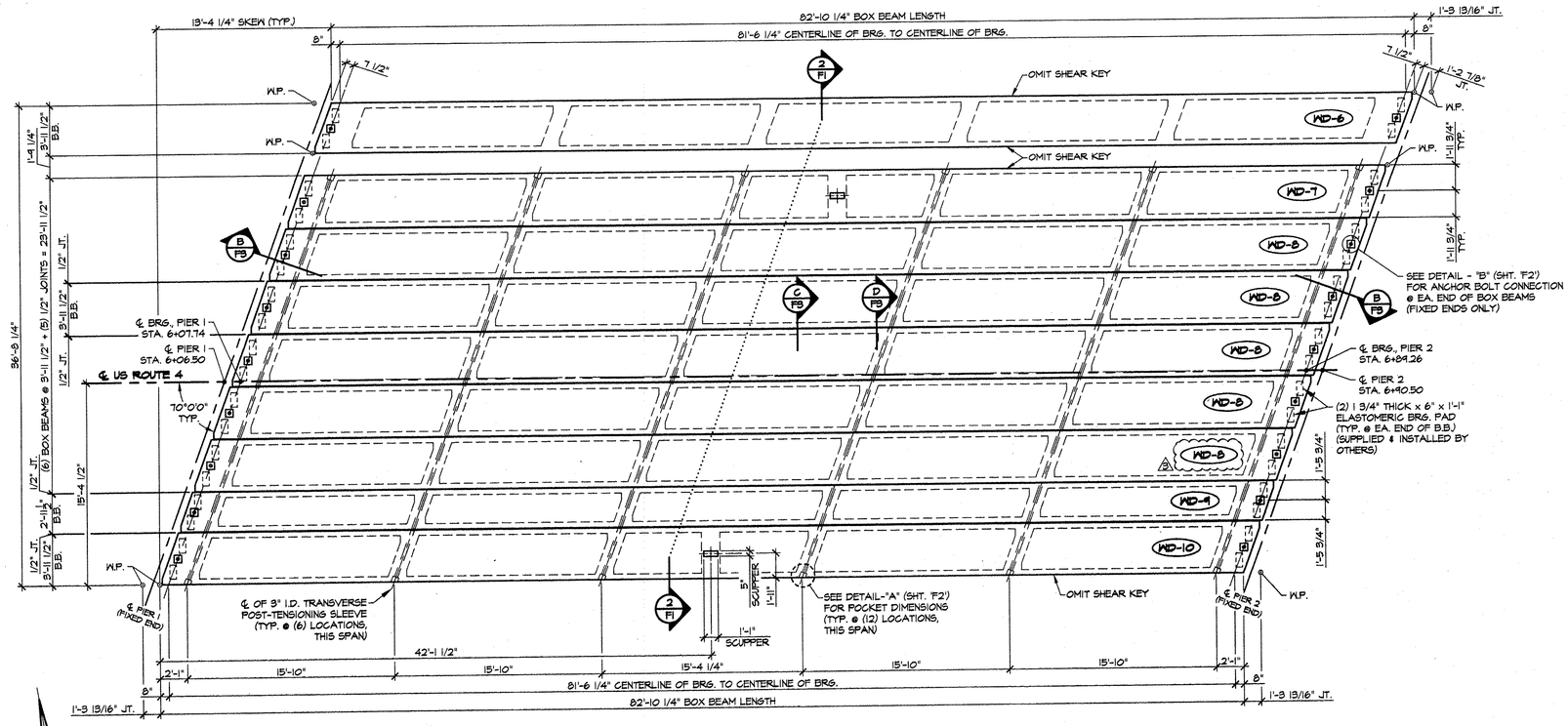
DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

SUPERSTRUCTURE PLAN & SECTION
(SPAN 1)

DWG. NO: F1

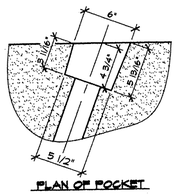
F:\VT-Bridges\23249-06 Woodstock\F1.dwg, 4/11/2007 9:39:12 AM



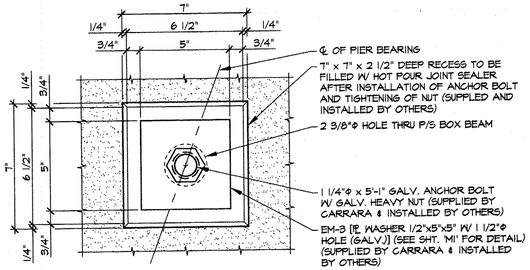
1/F2 PRESTRESSED BOX BEAM LAYOUT (SPAN 2)

3/16" = 1'-0"

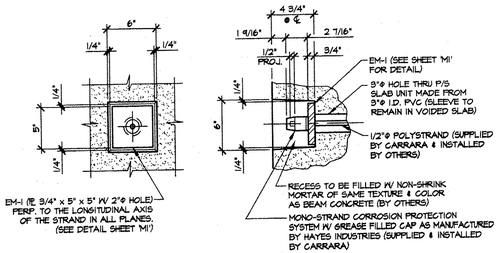
DESIGN LOAD: HS25



PLAN OF POCKET



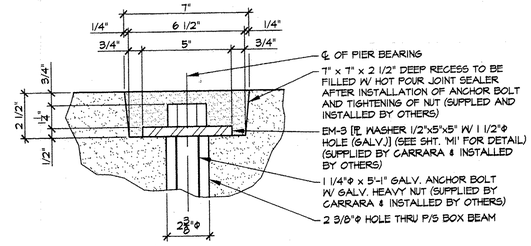
PLAN @ BOX BEAM ℄



FASCIA ELEVATION — SECTION AT CENTERLINE

DETAIL - "A"

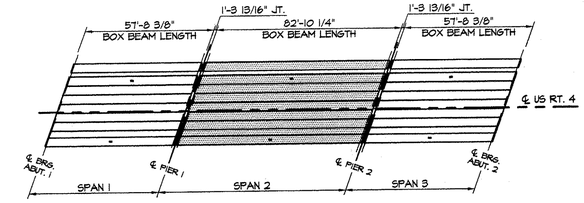
1 1/2" = 1'-0"



SECTION @ BOX BEAM ℄

DETAIL - "B"

3" = 1'-0"



KEY PLAN

N.T.S.

4-11-07	REVISE BOX BEAM MARK NUMBER
3-9-07	REVISE BOX BEAM MARK NUMBER
2-13-07	GENERAL REVISIONS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 OSE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

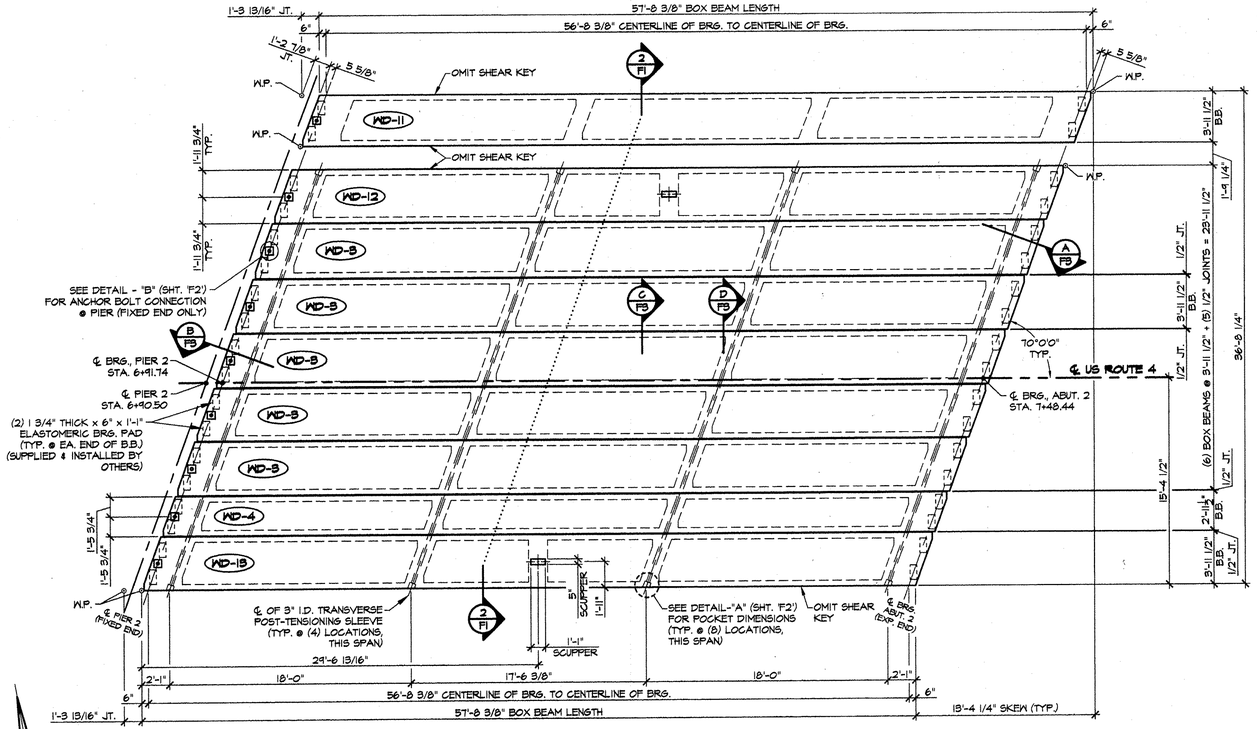
DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

SUPERSTRUCTURE PLAN & DETAILS
(SPAN 2)

DWG. NO: F2

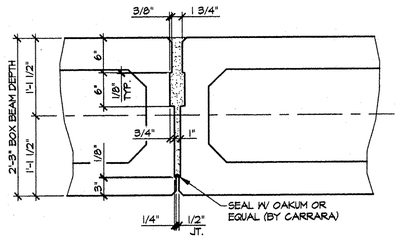
F:\VT-Bridges\23249-06 Woodstock\F2.dwg, 4/11/2007 9:39:17 AM



1 / F3 PRESTRESSED BOX BEAM LAYOUT (SPAN 3)

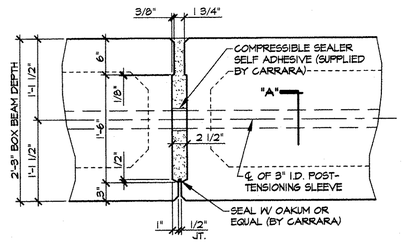
3/16" = 1'-0"

DESIGN LOAD: HS25



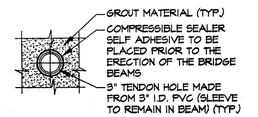
C / F3 TYP. SHEAR KEY SECTION

1" = 1'-0"



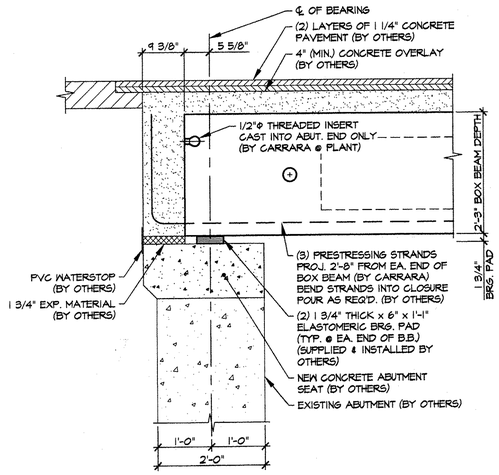
D / F3 SHEAR KEY SECTION @ P.T. SLEEVE

1" = 1'-0"



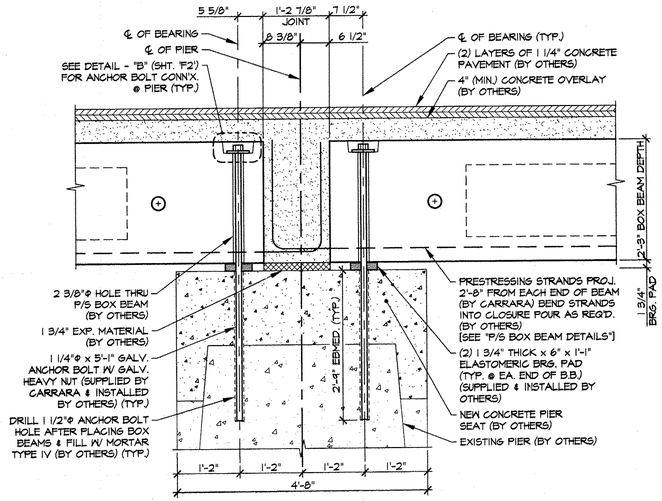
SECTION - "A"

1 1/2" = 1'-0"



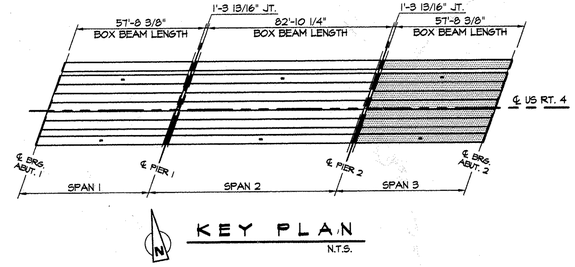
A / F3 SECTION AT ABUTMENT BEARING (EXPANSION END)

3/4" = 1'-0"



B / F3 SECTION AT PIER BEARING (FIXED END)

3/4" = 1'-0"



KEY PLAN

N.T.S.

△ 2-13-07 GENERAL REVISIONS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

DATE: JAN. 9, 2007
SCALE: NOTED

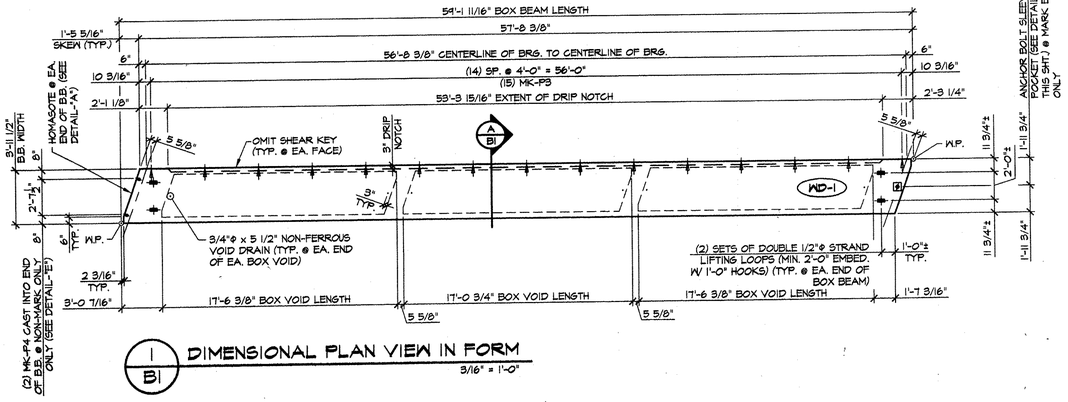
TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06

SUPERSTRUCTURE PLAN & SECTIONS (SPAN 3)

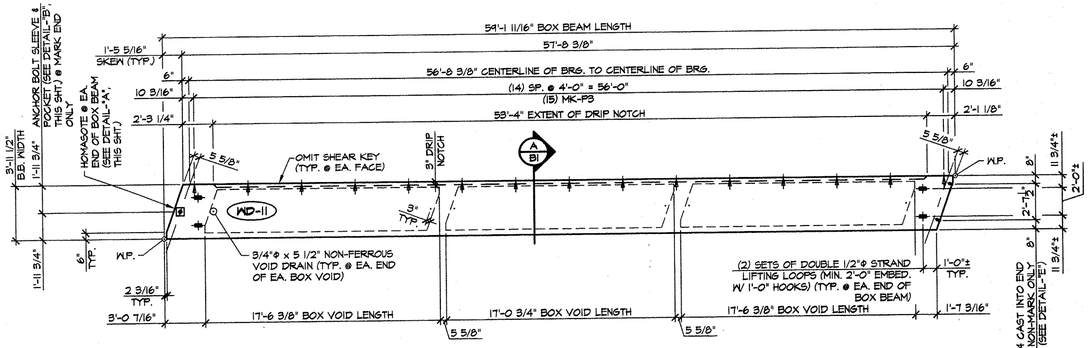
DWG. NO: F3

F:\VT-Bridges\23249-06 Woodstock\F3.dwg, 2/19/2007 2:19:56 PM



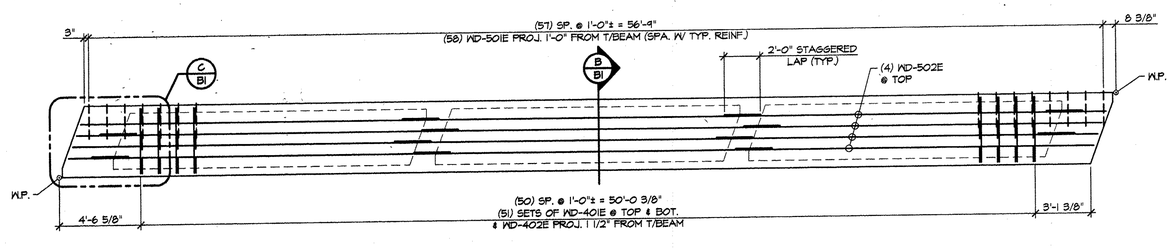
1 / B1 DIMENSIONAL PLAN VIEW IN FORM

3/16" = 1'-0"



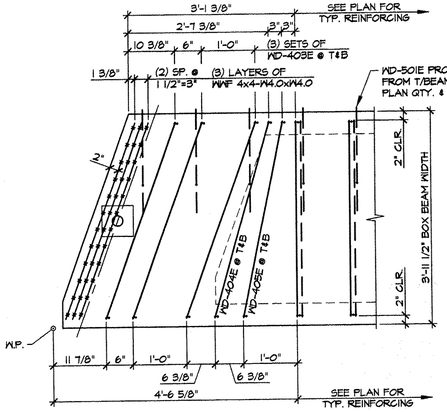
2 / B1 DIMENSIONAL PLAN VIEW IN FORM

3/16" = 1'-0"



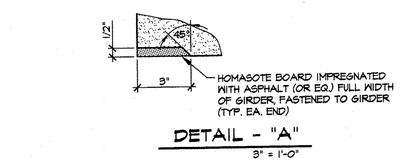
3 / B1 REINFORCING PLAN VIEW IN FORM

1/4" = 1'-0"



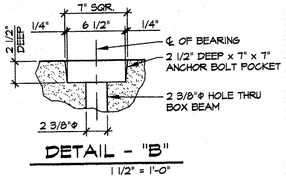
C / B1 END BLOCK REINFORCING PLAN

3/4" = 1'-0"



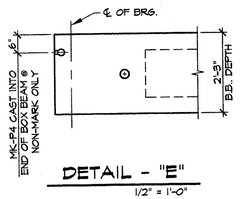
DETAIL - "A"

3" = 1'-0"



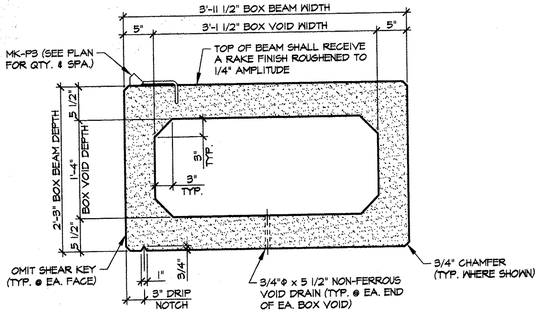
DETAIL - "B"

1 1/2" = 1'-0"



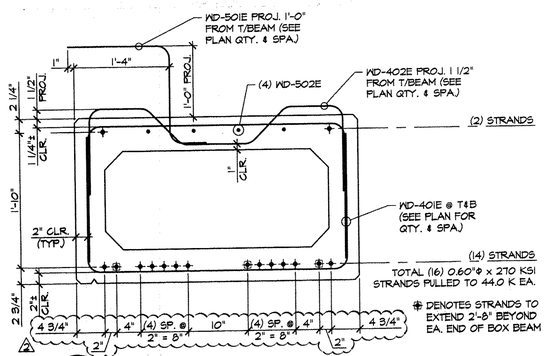
DETAIL - "E"

1/2" = 1'-0"



A / B1 DIMENSIONAL SECTION

1" = 1'-0"



B / B1 REINFORCING SECTION

1" = 1'-0"

① ②

3 5 7 9 11 13 15 — 16 14 12 10 8 6 4

DETENSIONING SCHEDULE

N.T.S.

MARK:	WD-1	QTY.:	1	WT.:	17.86 T	VOL.:	11.50 cy
MARK:	WD-11	QTY.:	1	WT.:	17.86 T	VOL.:	11.50 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY./BEAM WD-1	QTY./BEAM WD-11
1	401E	#4 BENT BAR (EPOXY COATED)	102	102
2	402E	#4 BENT BAR (EPOXY COATED)	51	51
3	403E	#4 BENT BAR (EPOXY COATED)	12	12
4	404E	#4 BENT BAR (EPOXY COATED)	4	4
5	405E	#4 BENT BAR (EPOXY COATED)	4	4
6				
7	501E	#5 BENT BAR (EPOXY COATED)	58	58
8	502E	#5 x 57'-4" (E.C. W/ (3) 2'-0" STAGGERED LAPS)	4	4
9				
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	6	6
11				
12				
13	MK-P4	DAYTON 1/2"ø F-42 LOOP FERRULE INSERT (GALV.)	2	2
14	MK-P3	DAYTON C-24 TYPE 4-APR PRESS-STEEL PRECAST HALF HANGER (GALV.)	15	15
15		3'-1 1/2" x 1'-4" x 17'-0 3/4" BOX VOID	1	1
16		3'-1 1/2" x 1'-4" x 17'-6 3/8" BOX VOID	2	2
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	6	6
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4	4
19				

△3 3-20-07 REVISE STRAND PATTERN

△2 2-13-07 REVISE BOX VOIDS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

DATE: JAN. 9, 2007
SCALE: NOTED

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

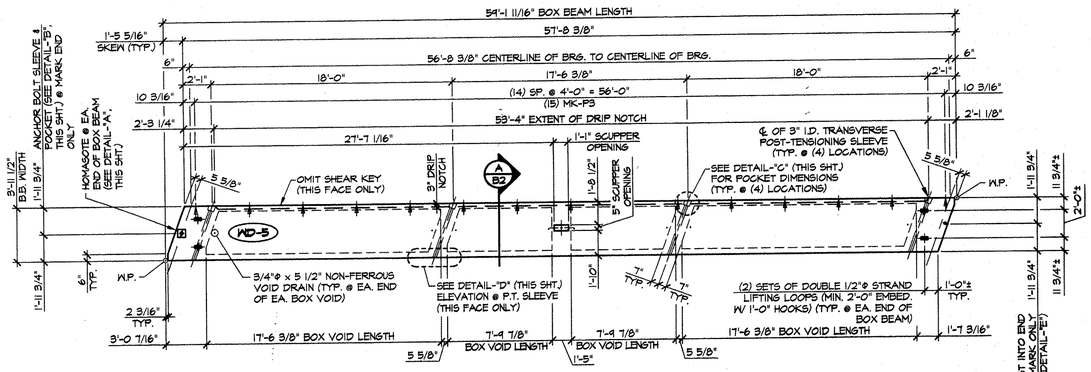
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06

P/S BOX BEAM DETAILS

DWG. NO: B1

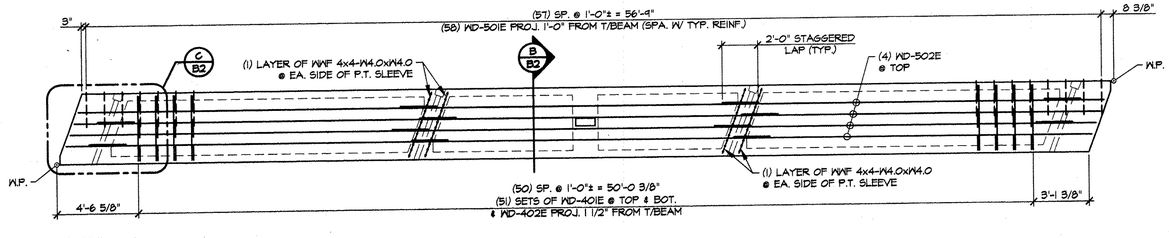
F:\VT-Bridges\23249-06 Woodstock\B1.dwg, 3/20/2007 4:12:30 PM

SEE SHEET 'B2.1' FOR "WD-13" BOX BEAM DETAILS

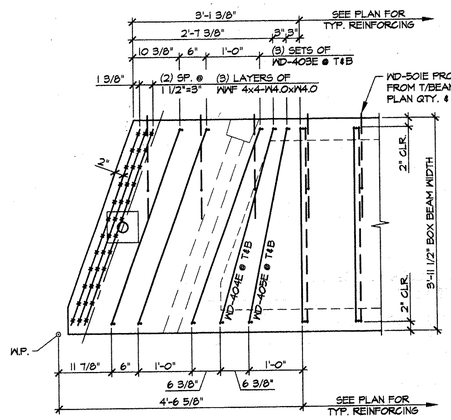


1 B2 DIMENSIONAL PLAN VIEW IN FORM
3/16" = 1'-0"

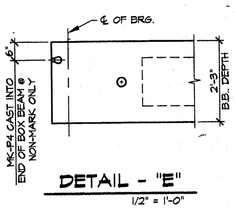
2 B2 DIMENSIONAL PLAN VIEW IN FORM
3/16" = 1'-0"



3 B2 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



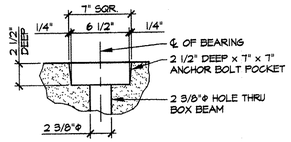
C B2 END BLOCK REINFORCING PLAN
3/4" = 1'-0"



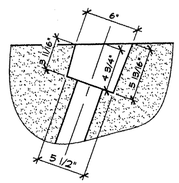
DETAIL - "E"
1/2" = 1'-0"

HOMASOTE BOARD IMPREGNATED WITH ASPHALT (OR EQ.) FULL WIDTH OF GIRDER, FASTENED TO GIRDER (TYP. EA. END)

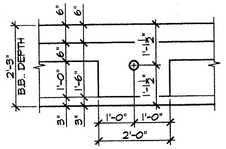
DETAIL - "A"
3" = 1'-0"



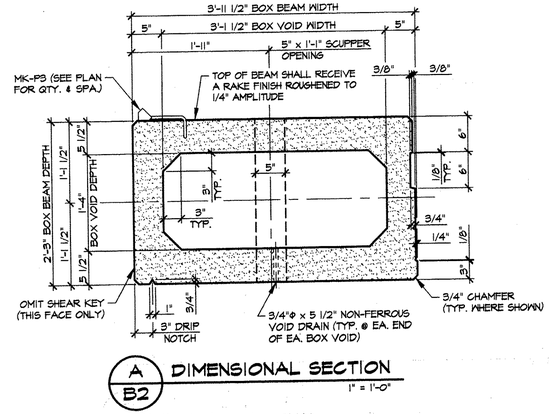
DETAIL - "B"
1 1/2" = 1'-0"



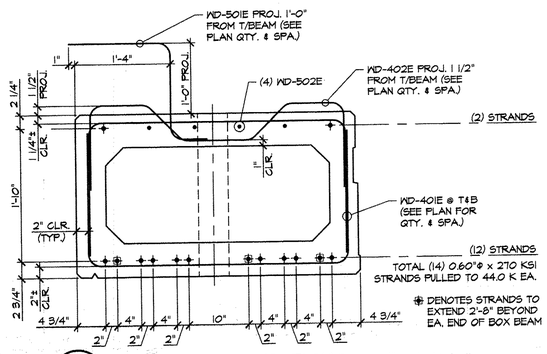
DETAIL - "C"
1 1/2" = 1'-0"



DETAIL - "D"
1/2" = 1'-0"



A B2 DIMENSIONAL SECTION
1" = 1'-0"



B B2 REINFORCING SECTION
1" = 1'-0"

① ②

③⑤ ⑦⑨ ⑪⑱ ⑭⑫ ⑩⑧ ⑥④

DETENSIONING SCHEDULE
N.T.S.

MARK:		QTY.:		WT.:		VOL.:	
MARK:	WD-5	QTY.:	1	WT.:	17.84 T	VOL.:	11.49 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY./BEAM WD-5
1	401E	#4 BENT BAR (EPOXY COATED)	102
2	402E	#4 BENT BAR (EPOXY COATED)	51
3	403E	#4 BENT BAR (EPOXY COATED)	12
4	404E	#4 BENT BAR (EPOXY COATED)	4
5	405E	#4 BENT BAR (EPOXY COATED)	4
6			
7	501E	#5 BENT BAR (EPOXY COATED)	58
8	502E	#5 x 57'-4" (E.C. W/ (3) 2'-0" STAGGERED LAPS)	4
9			
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 9'-10"]	10
11			
12			
13	MK-P4	DAYTON 1/2"ø F-42 LOOP FERRULE INSERT (GALV.)	1
14	MK-P3	DAYTON C-24 TYPE 4-APR PRESS-STEEL PRECAST HALF HANGER (GALV.)	15
15		3'-1 1/2" x 1'-4" x 7'-9 7/8" BOX VOID	2
16		3'-1 1/2" x 1'-4" x 17'-6 3/8" BOX VOID	2
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	8
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4
19			

△3 8-4-07 MOVE "WD-13" DETAILS TO SHEET 'B2.1'
△2 2-13-07 REVISE BOX VOIDS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

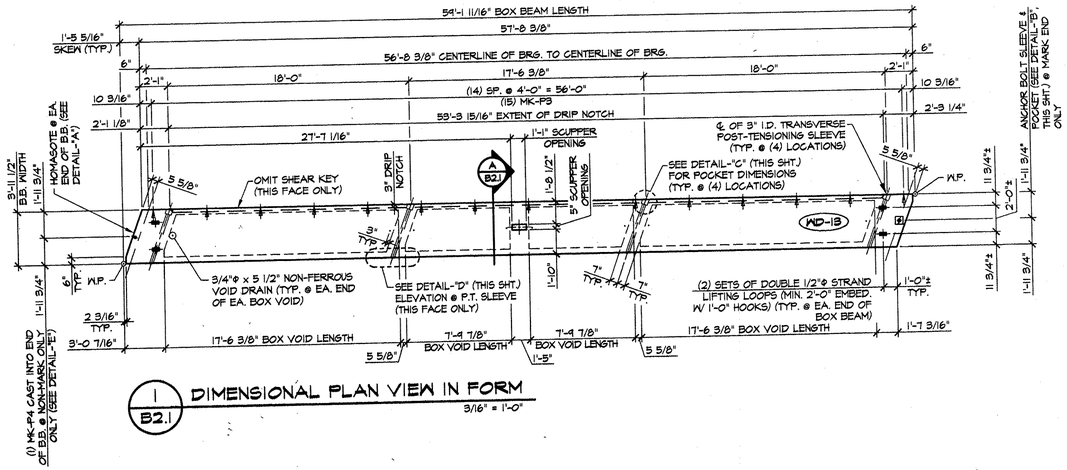
STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

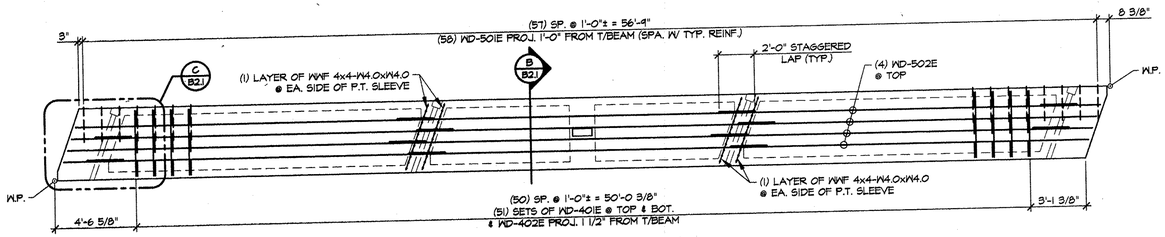
P/S BOX BEAM DETAILS

DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06
DWG. NO: B2

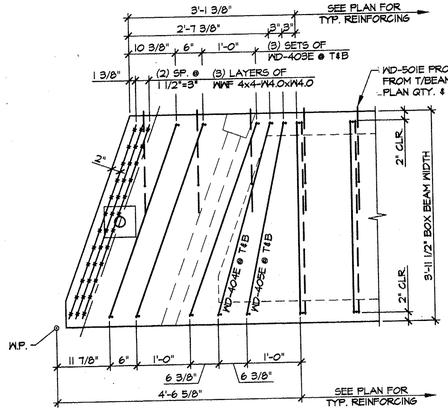
F:\VT-Bridges\23249-06 Woodstock\B2.dwg, 3/9/2007 4:27:50 PM



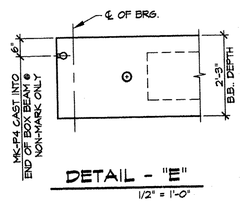
1 / B2.1 DIMENSIONAL PLAN VIEW IN FORM
3/16" = 1'-0"



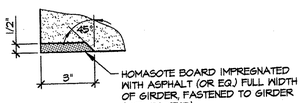
3 / B2.1 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



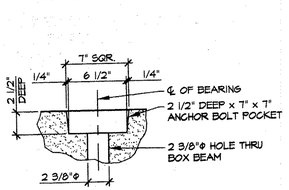
C / B2.1 END BLOCK REINFORCING PLAN
3/4" = 1'-0"



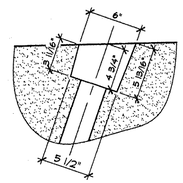
DETAIL - "E"
1/2" = 1'-0"



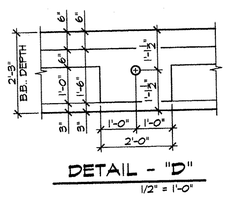
DETAIL - "A"
3" = 1'-0"



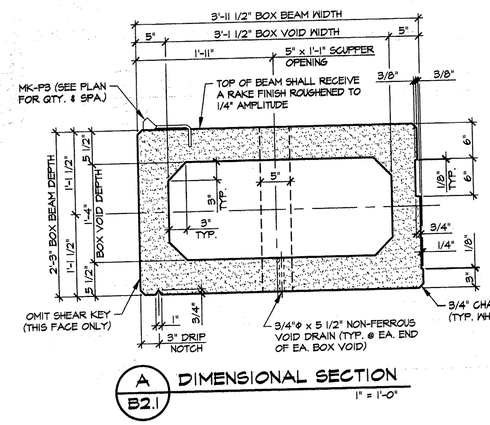
DETAIL - "B"
1 1/2" = 1'-0"



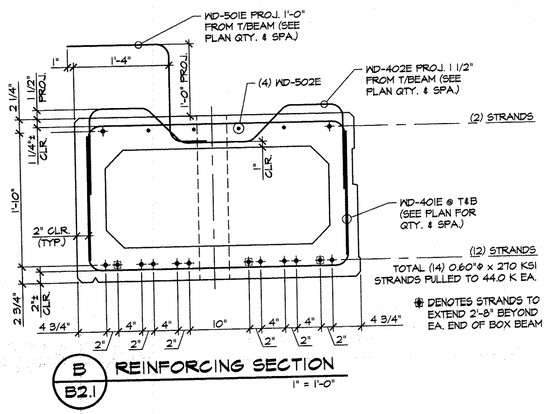
DETAIL - "C"
1 1/2" = 1'-0"



DETAIL - "D"
1/2" = 1'-0"



A / B2.1 DIMENSIONAL SECTION
1" = 1'-0"

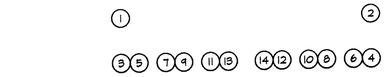


B / B2.1 REINFORCING SECTION
1" = 1'-0"

MARK: WD-1B	QTY.: 1	WT.: 17.84 T	VOL.: 11.49 cy
MARK:	QTY.:	WT.:	VOL.:

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY./BEAM WD-1B	
1	401E	#4 BENT BAR (EPOXY COATED)	102	
2	402E	#4 BENT BAR (EPOXY COATED)	51	
3	403E	#4 BENT BAR (EPOXY COATED)	12	
4	404E	#4 BENT BAR (EPOXY COATED)	4	
5	405E	#4 BENT BAR (EPOXY COATED)	4	
6				
7	501E	#5 BENT BAR (EPOXY COATED)	58	
8	502E	#5 x 57'-4" (E.C. W (3) 2'-0" STAGGERED LAPS)	4	
9				
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	10	
11				
12				
13	MK-P4	DAYTON 1/2"ø F-42 LOOP FERRULE INSERT (GALV.)	1	
14	MK-P3	DAYTON C-24 TYPE 4-APR PRESS-STEEL PRECAST HALF HANGER (GALV.)	15	
15		3'-1 1/2" x 1'-4" x 7'-9 7/8" BOX VOID	2	
16		3'-1 1/2" x 1'-4" x 17'-6 3/8" BOX VOID	2	
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	8	
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4	
19				



DETENSIONING SCHEDULE
N.T.S.

3 3-20-07 REVISE TO ORIGINAL STRAND PATTERN
2 3-4-07 REVISE STRAND PATTERN
1 2-13-07 REVISE BOX VOIDS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

DATE: JAN. 9, 2007
SCALE: NOTED

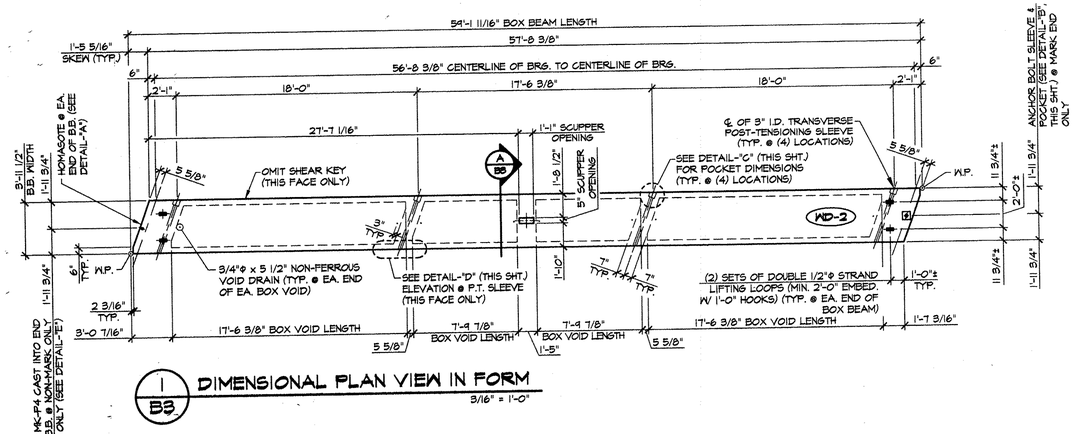
TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06

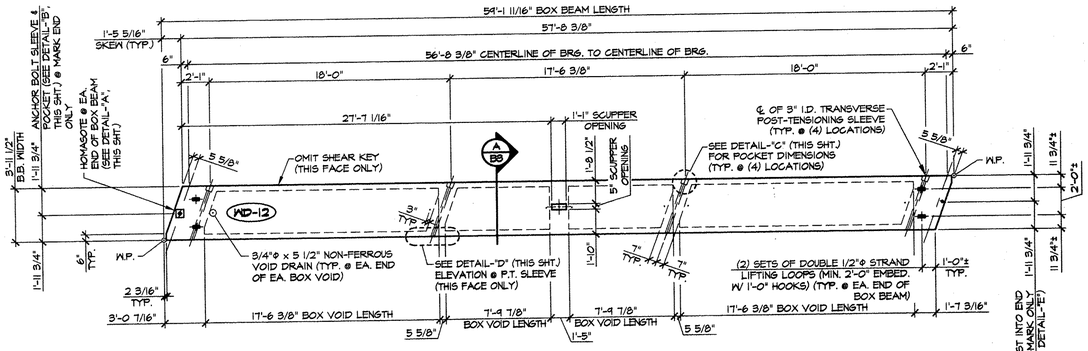
P/S BOX BEAM DETAILS

DWG. NO: B2.1

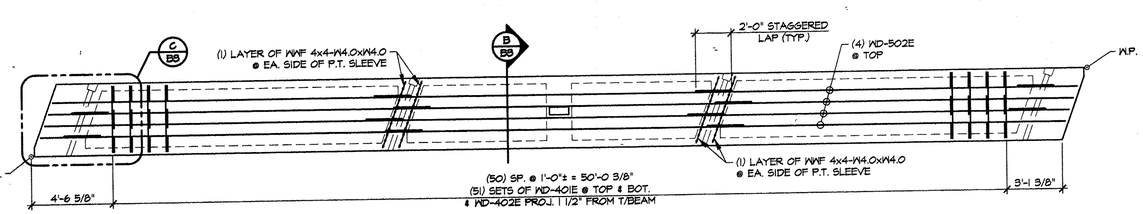
F:\VT-Bridges\23249-06 Woodstock\B2_1.dwg, 3/20/2007 4:16:06 PM



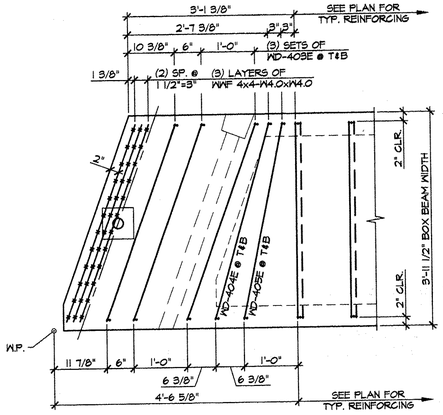
1 B3 DIMENSIONAL PLAN VIEW IN FORM
3/16" = 1'-0"



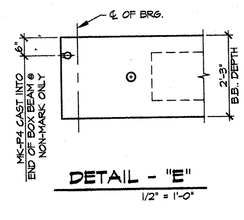
2 B3 DIMENSIONAL PLAN VIEW IN FORM
3/16" = 1'-0"



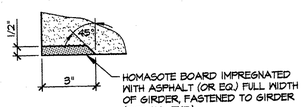
3 B3 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



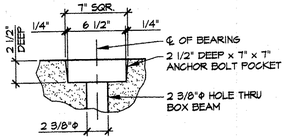
C B3 END BLOCK REINFORCING PLAN
3/4" = 1'-0"



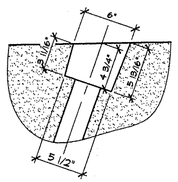
DETAIL - "E"
1/2" = 1'-0"



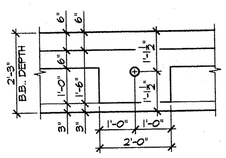
DETAIL - "A"
3" = 1'-0"



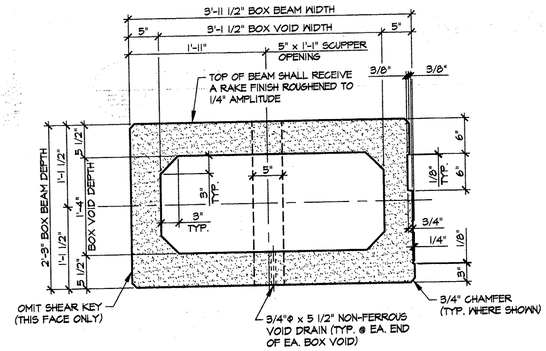
DETAIL - "B"
1 1/2" = 1'-0"



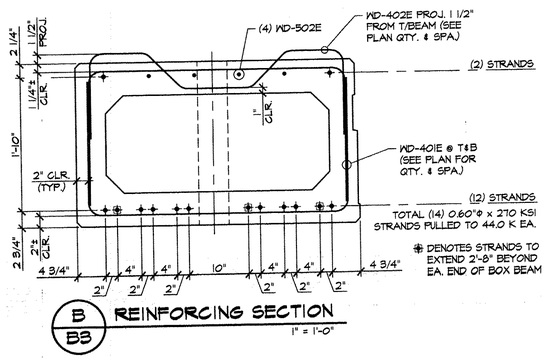
DETAIL - "C"
1 1/2" = 1'-0"



DETAIL - "D"
1/2" = 1'-0"



A B3 DIMENSIONAL SECTION
1" = 1'-0"



B B3 REINFORCING SECTION
1" = 1'-0"

① ②

③ ⑤ ⑦ ⑨ ⑪ ⑬ ⑭ ⑫ ⑩ ⑧ ⑥ ④

DETENSIONING SCHEDULE
N.T.S.

4	4-11-07	RETURN "WD-2" DETAILS TO THIS SHEET
3	3-20-07	MOVE "WD-2" DETAILS TO SHEET "B3.1"
2	2-13-07	REVISE BOX VOIDS
1		

MARK: WD-2	QTY.: 1	WT.:	17.84 T	VOL.:	11.49 cy
MARK: WD-12	QTY.: 1	WT.:	17.84 T	VOL.:	11.49 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY./BEAM WD-2	QTY./BEAM WD-12
1	401E	#4 BENT BAR (EPOXY COATED)	102	102
2	402E	#4 BENT BAR (EPOXY COATED)	51	51
3	403E	#4 BENT BAR (EPOXY COATED)	12	12
4	404E	#4 BENT BAR (EPOXY COATED)	4	4
5	405E	#4 BENT BAR (EPOXY COATED)	4	4
6				
7				
8	502E	#5 x 57'-4" (E.C. W/ (3) 2'-0" STAGGERED LAPS)	4	4
9				
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	10	10
11				
12				
13	MK-P4	DAYTON 1/2"ø F-42 LOOP FERRULE INSERT (GALV.)	1	1
14				
15		3'-1 1/2" x 1'-4" x 7'-9 7/8" BOX VOID	2	2
16		3'-1 1/2" x 1'-4" x 17'-6 3/8" BOX VOID	2	2
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	8	8
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4	4
19				

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

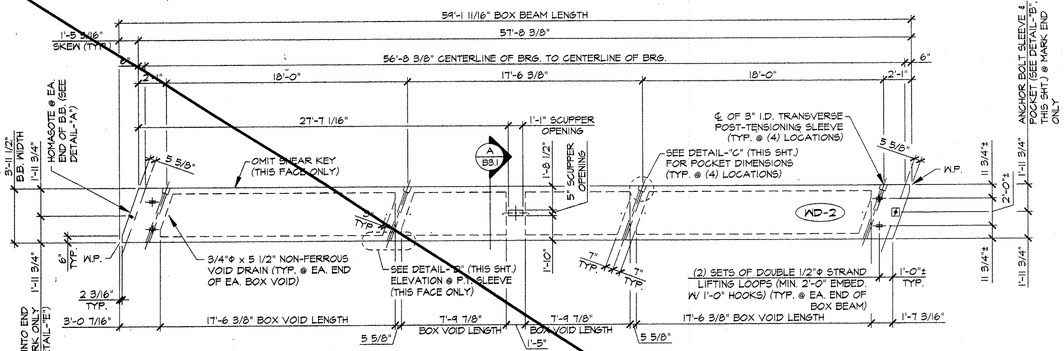
STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

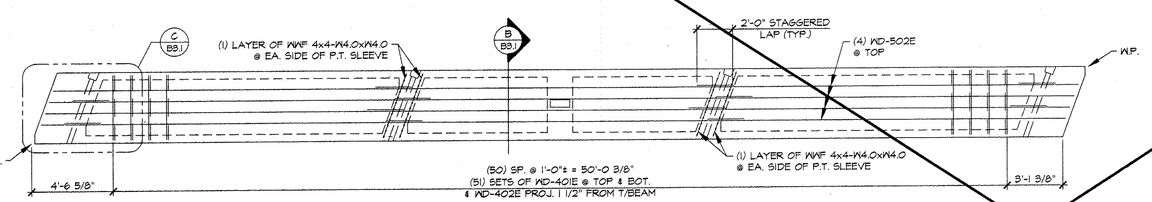
P/S BOX BEAM DETAILS

DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06
DWG. NO: B3

F:\VT-Bridges\23249-06 Woodstock\B3.dwg, 4/11/2007 8:39:22 AM

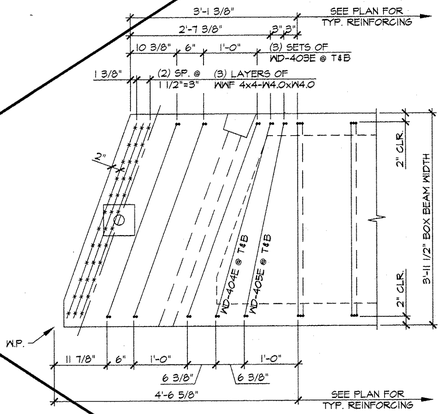


1 / B3.1 DIMENSIONAL PLAN VIEW IN FORM
3/16" = 1'-0"

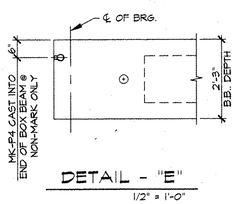


2 / B3.1 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"

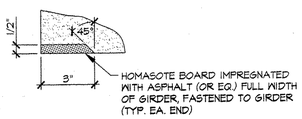
THIS SHEET HAS BEEN OMITTED ⚠5



C / B3.1 END BLOCK REINFORCING PLAN
3/4" = 1'-0"

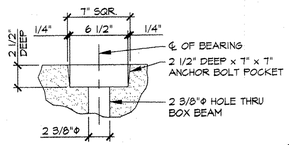


DETAIL - "E"
1/2" = 1'-0"

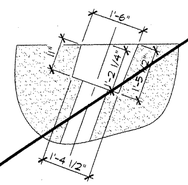


HOMASOTE BOARD IMPREGNATED WITH ASPHALT (OR EQ.) FULL WIDTH OF GIRDER, FASTENED TO GIRDER (TYP. EA. END)

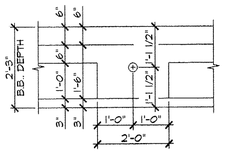
DETAIL - "A"
3" = 1'-0"



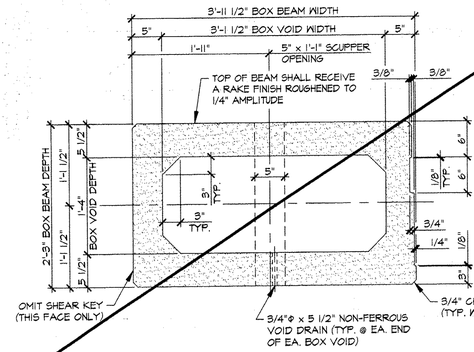
DETAIL - "B"
1 1/2" = 1'-0"



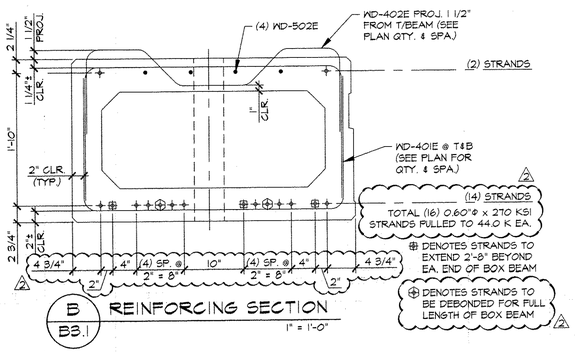
DETAIL - "C"
1 1/2" = 1'-0"



DETAIL - "D"
1/2" = 1'-0"



A / B3.1 DIMENSIONAL SECTION
1" = 1'-0"



B / B3.1 REINFORCING SECTION
1" = 1'-0"

DETENSIONING SCHEDULE
N.T.S.

①						②					
3	5	7	9	11	13	15	16	14	12	10	8	6	4

⚠5 4-11-07 THIS SHEET HAS BEEN OMITTED
⚠4 3-20-07 REVISE STRAND PATTERN
⚠3 2-13-07 REVISE BOX VOIDS

MARK: WD-2	QTY.: 1	WT.: 17.84 T	VOL.: 11.49 cy
MARK:	QTY.:	WT.:	VOL.:

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY./BEAM WD-2	
1	401E	#4 BENT BAR (EPOXY COATED)	102	
2	402E	#4 BENT BAR (EPOXY COATED)	51	
3	403E	#4 BENT BAR (EPOXY COATED)	12	
4	404E	#4 BENT BAR (EPOXY COATED)	4	
5	405E	#4 BENT BAR (EPOXY COATED)	4	
6				
7				
8	502E	#5 x 57'-4" (E.C. W/ (3) 2'-0" STAGGERED LAPS)	4	
9				
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	10	
11				
12				
13	MK-P4	DAYTON 1/2"ø F-42 LOOP FERRULE INSERT (GALV.)	1	
14				
15		3'-1 1/2" x 1'-4" x 7'-9 7/8" BOX VOID	2	
16		3'-1 1/2" x 1'-4" x 17'-6 3/8" BOX VOID	2	
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	8	
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4	
19				

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

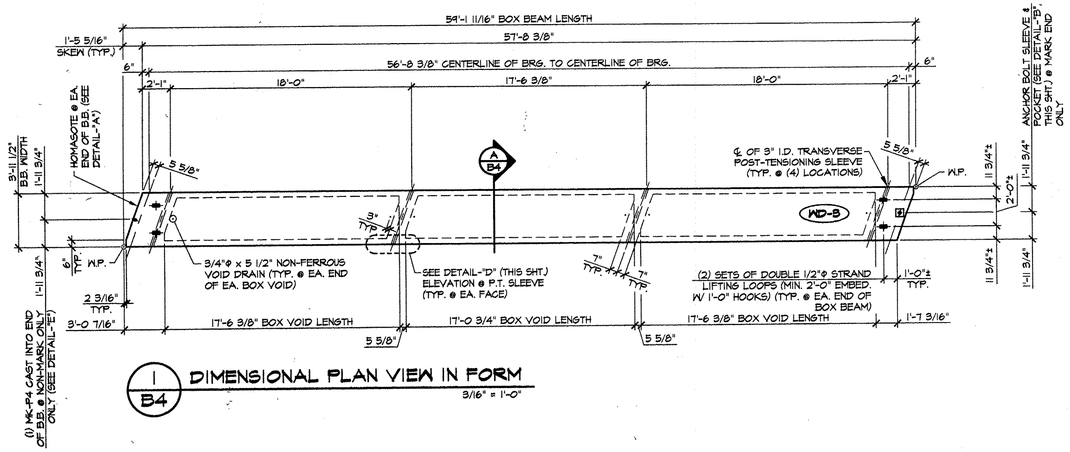
DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

P/S BOX BEAM DETAILS

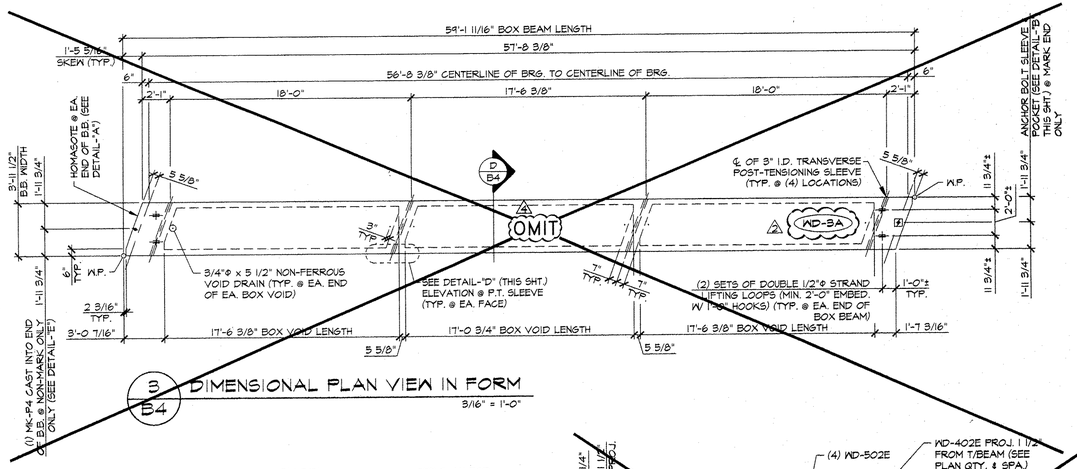
DWG. NO: B3.1

F:\VT-Bridges\23249-06 Woodstock\B3_1.dwg, 4/11/2007 8:39:27 AM



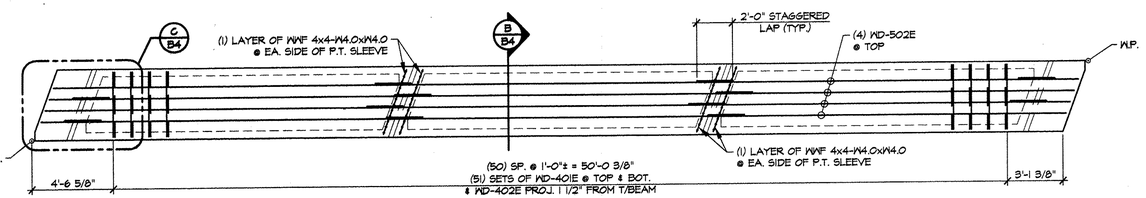
1 B4 DIMENSIONAL PLAN VIEW IN FORM

3/16" = 1'-0"



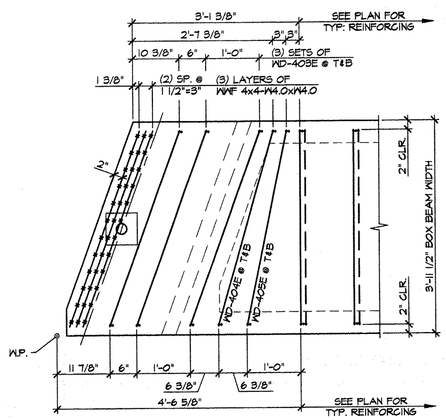
3 B4 DIMENSIONAL PLAN VIEW IN FORM

3/16" = 1'-0"



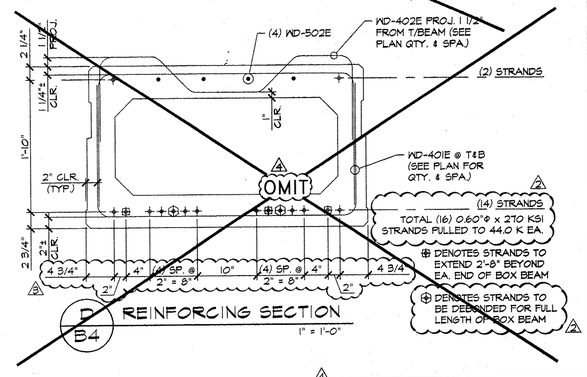
2 B4 REINFORCING PLAN VIEW IN FORM

1/4" = 1'-0"



C B4 END BLOCK REINFORCING PLAN

3/4" = 1'-0"



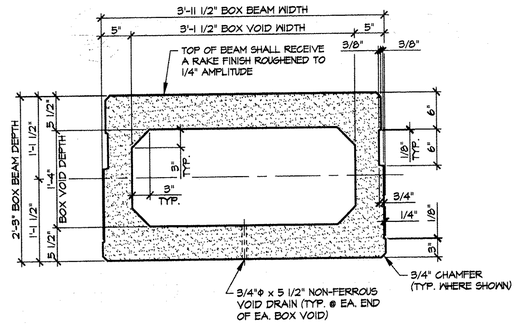
D B4 REINFORCING SECTION

1" = 1'-0"

DETENSIONING SCHEDULE

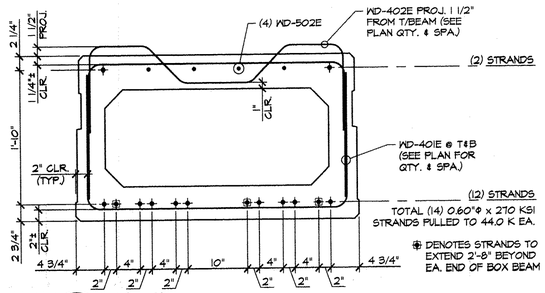
(14) STRANDS N.T.S.

①							②						
③	⑤	⑦	⑨	⑪	⑬		⑭	⑫	⑩	⑧	⑥	④	



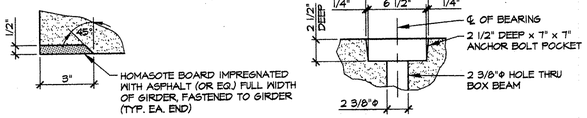
A B4 DIMENSIONAL SECTION

1" = 1'-0"



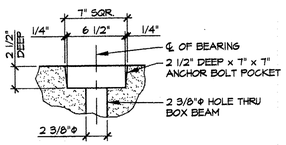
B B4 REINFORCING SECTION

1" = 1'-0"



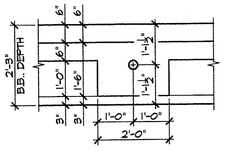
DETAIL - "A"

3" = 1'-0"



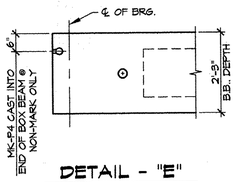
DETAIL - "B"

1 1/2" = 1'-0"



DETAIL - "D"

1/2" = 1'-0"



DETAIL - "E"

1/2" = 1'-0"

MARK:	WD-3	QTY.: 10	WT.:	17.28 T	VOL.:	11.13 cy
MARK:		QTY.:	WT.:		VOL.:	

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY./BEAM WD-3	
1	401E	#4 BENT BAR (EPOXY COATED)	102	
2	402E	#4 BENT BAR (EPOXY COATED)	51	
3	403E	#4 BENT BAR (EPOXY COATED)	12	
4	404E	#4 BENT BAR (EPOXY COATED)	4	
5	405E	#4 BENT BAR (EPOXY COATED)	4	
6				
7				
8	502E	#5 x 57'-4" (E.C. W/ (3) 2'-0" STAGGERED LAPS)	4	
9				
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	10	
11				
12				
13	MK-P4	DAYTON 1/2"ø F-42 LOOP FERRULE INSERT (GALV.)	1	
14				
15		3'-1 1/2" x 1'-4" x 17'-0 3/4" BOX VOID	1	
16		3'-1 1/2" x 1'-4" x 17'-6 3/8" BOX VOID	2	
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	6	
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4	
19				

4 4-11-07 REVISE BEAM QUANTITIES & OMIT BEAM "WD-3A"
3 3-20-07 REVISE STRAND PATTERN
2 3-9-07 ADD "WD-3A" DETAILS
1 2-13-07 REVISE BOX VOIDS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

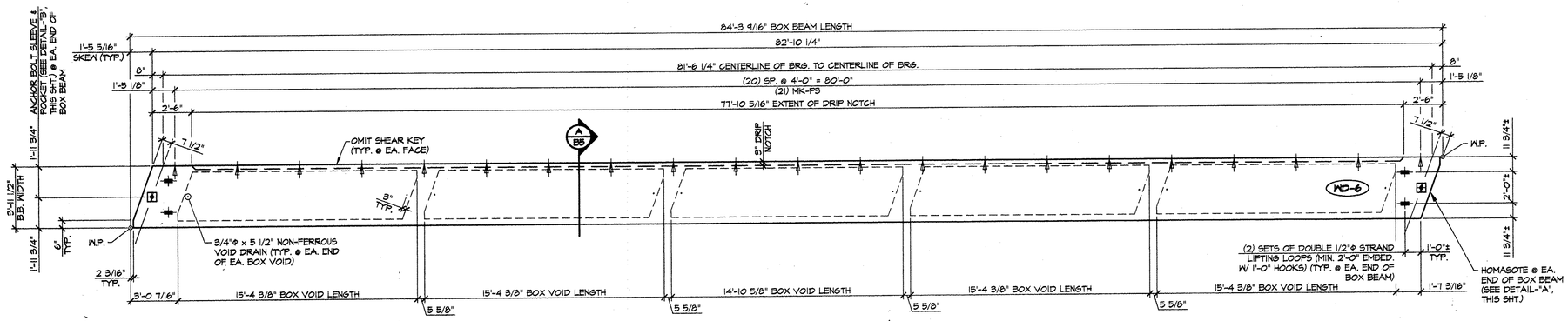
STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHP 020-2(32)

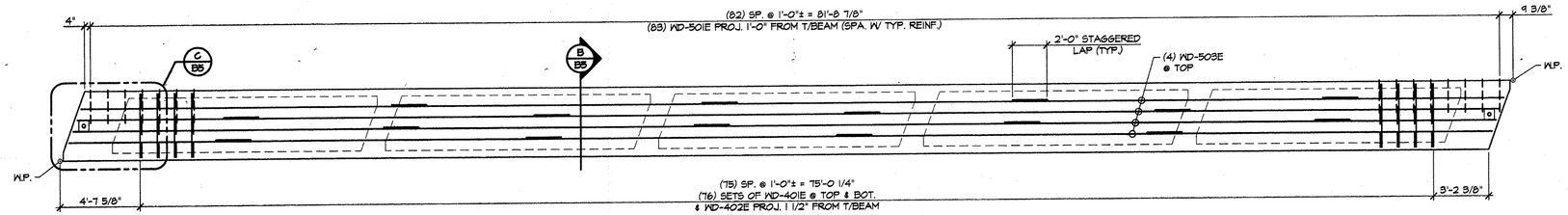
P/S BOX BEAM DETAILS

DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06
DWG. NO: B4

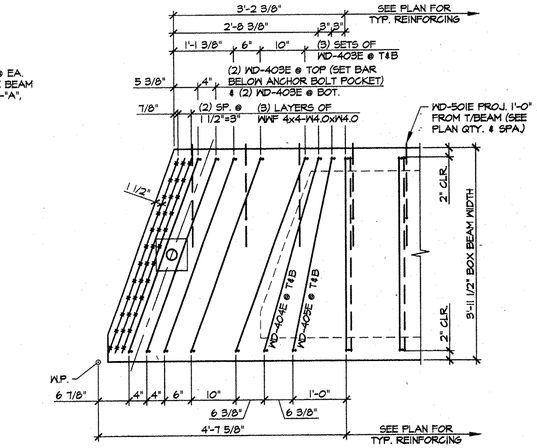
F:\VT-Bridges\23249-06 Woodstock\B4.dwg, 4/11/2007 9:39:32 AM



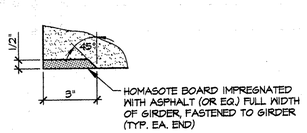
1 / B5 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"



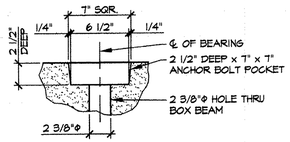
2 / B5 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



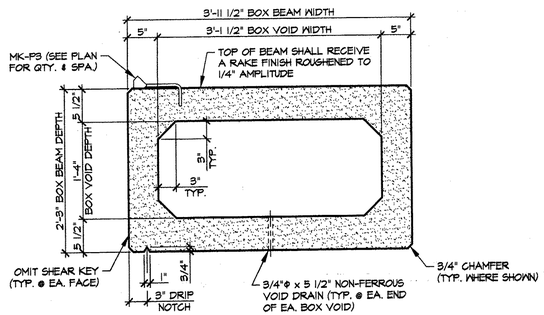
C / B5 END BLOCK REINFORCING PLAN
3/4" = 1'-0"



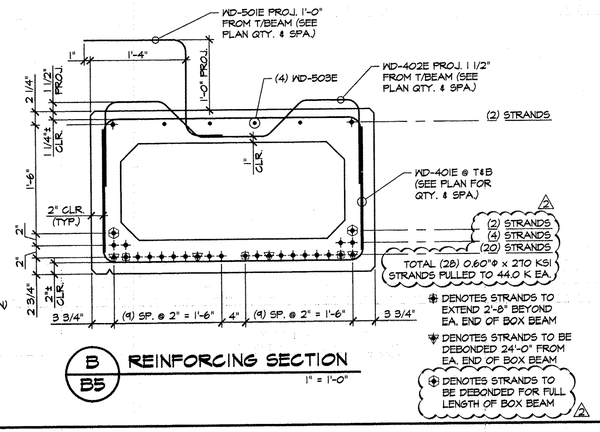
DETAIL - "A"
3" = 1'-0"



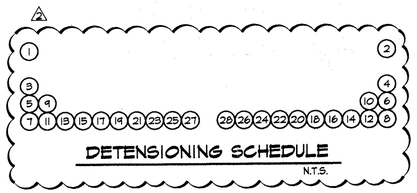
DETAIL - "B"
1 1/2" = 1'-0"



A / B5 DIMENSIONAL SECTION
1" = 1'-0"



B / B5 REINFORCING SECTION
1" = 1'-0"



DETENSIONING SCHEDULE
N.T.S.

MARK: WD-6	QTY.: 1	WT.: 25.76 T	VOL.: 16.59 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	401E	#4 BENT BAR (EPOXY COATED)	152
2	402E	#4 BENT BAR (EPOXY COATED)	76
3	403E	#4 BENT BAR (EPOXY COATED)	20
4	404E	#4 BENT BAR (EPOXY COATED)	4
5	405E	#4 BENT BAR (EPOXY COATED)	4
6			
7	501E	#5 BENT BAR (EPOXY COATED)	83
8			
9	503E	#5 x 82'-6" (E.C. W/ (4) 2'-0" STAGGERED LAPS)	4
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	6
11			
12			
13			
14	MK-P3	DAYTON G-24 TYPE 4-APR PRESS-STEEL PRECAST HALF HANGER (GALV.)	21
15		3'-1 1/2" x 1'-4" x 14'-10 5/8" BOX VOID	1
16		3'-1 1/2" x 1'-4" x 15'-4 3/8" BOX VOID	4
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	10
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4
19			

△2 3-9-07 REVISE STRAND PATTERN
△1 2-18-07 REVISE BOX VOIDS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 DAIE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

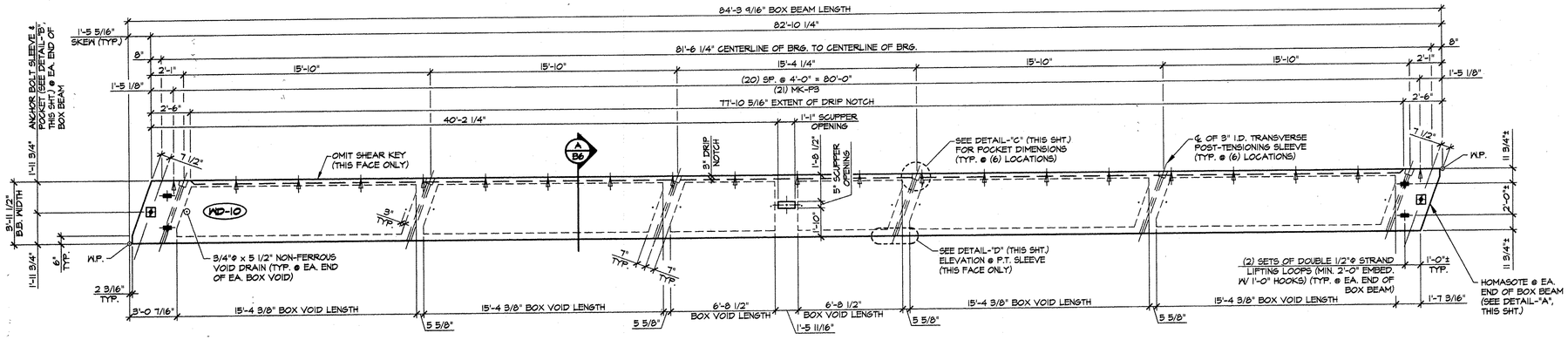
STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(52)

P/S BOX BEAM DETAILS

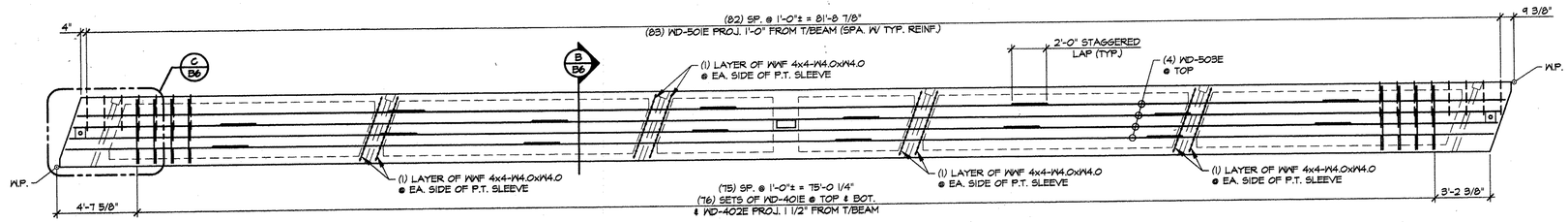
DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06
DWG. NO: B5

F:\VT-Bridges\23249-06 Woodstock\B5.dwg, 3/9/2007 4:26:05 PM



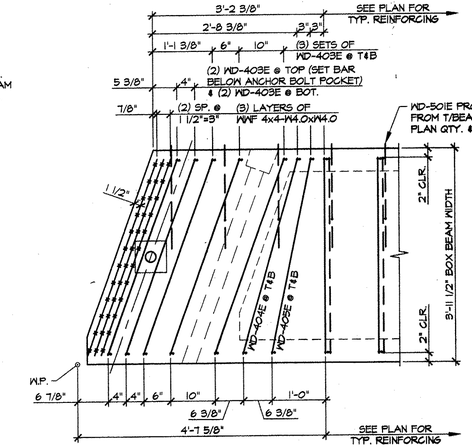
1 / B6 DIMENSIONAL PLAN VIEW IN FORM

1/4" = 1'-0"



2 / B6 REINFORCING PLAN VIEW IN FORM

1/4" = 1'-0"

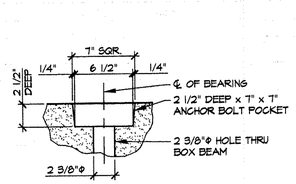


C / B6 END BLOCK REINFORCING PLAN

3/4" = 1'-0"

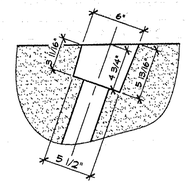
DETAIL - "A"

3" = 1'-0"



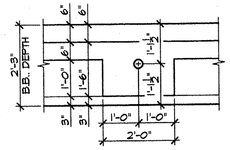
DETAIL - "B"

1 1/2" = 1'-0"



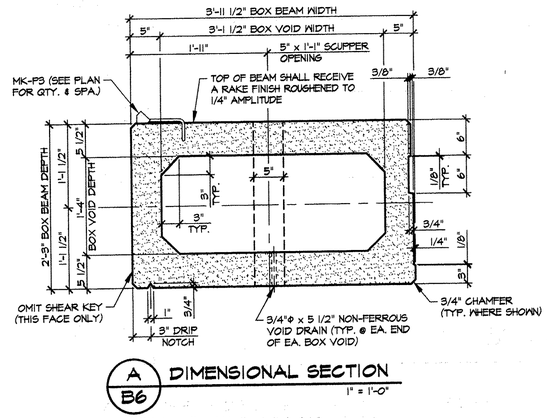
DETAIL - "C"

1 1/2" = 1'-0"



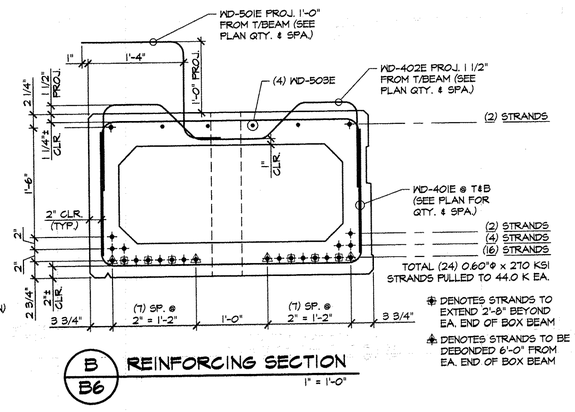
DETAIL - "D"

1/2" = 1'-0"



A / B6 DIMENSIONAL SECTION

1" = 1'-0"



B / B6 REINFORCING SECTION

1" = 1'-0"

MARK: WD-10	QTY.: 1	WT.: 25.62 T	VOL.: 16.50 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	401E	#4 BENT BAR (EPOXY COATED)	152
2	402E	#4 BENT BAR (EPOXY COATED)	76
3	403E	#4 BENT BAR (EPOXY COATED)	20
4	404E	#4 BENT BAR (EPOXY COATED)	4
5	405E	#4 BENT BAR (EPOXY COATED)	4
6			
7	501E	#5 BENT BAR (EPOXY COATED)	88
8			
9	503E	#5 x 82'-6" (E.C. W/ (4) 2'-0" STAGGERED LAPS)	4
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	14
11			
12			
13			
14	MK-P3	DAYTON C-24 TYPE 4-APR PRESS-STEEL PRECAST HALF HANGER (GALV.)	21
15		3'-1 1/2" x 1'-4" x 6'-8 1/2" BOX VOID	2
16		3'-1 1/2" x 1'-4" x 15'-4 3/8" BOX VOID	4
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	12
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4
19			

DETENSIONING SCHEDULE

N.T.S.

△ 2-13-07 REVISE BOX VOIDS & STRAND PATTERN

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

DATE: JAN. 9, 2007
SCALE: NOTED

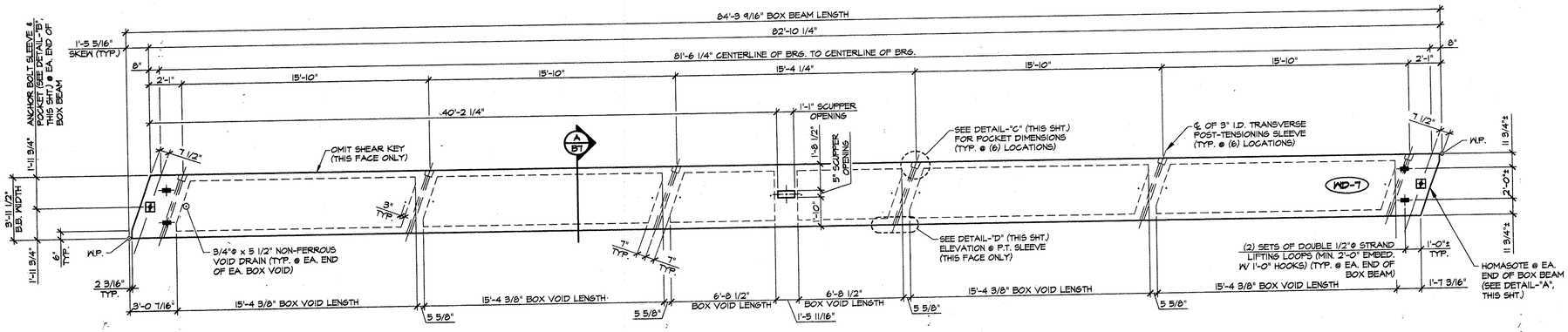
TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

CHKD: D.F. | DFTM: B.L.
JOB NO: 23249-06

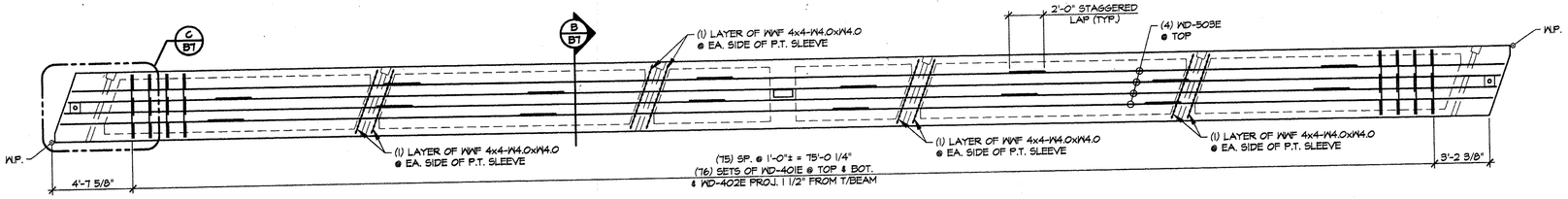
P/S BOX BEAM DETAILS

DWG. NO: B6

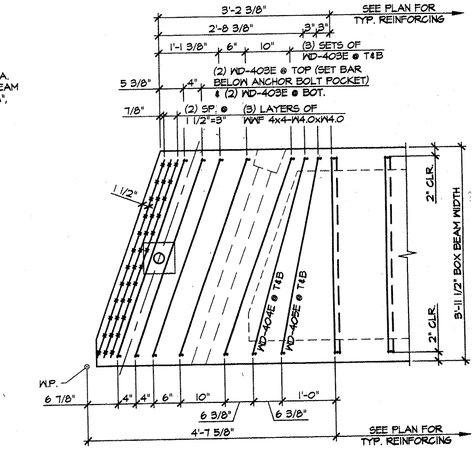
F:\VT-Bridges\23249-06 Woodstock\B6.dwg, 2/19/2007 2:20:26 PM



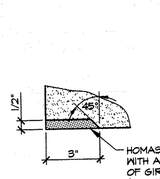
1/B7 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"



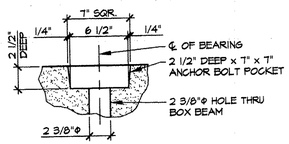
2/B7 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



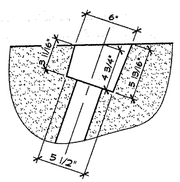
C/B7 END BLOCK REINFORCING PLAN
3/4" = 1'-0"



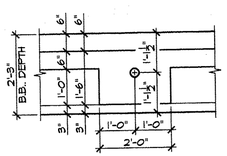
DETAIL - "A"
3" = 1'-0"



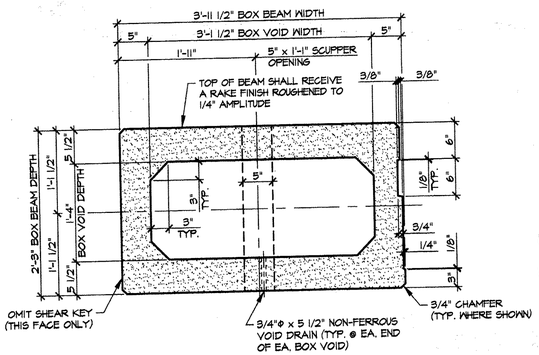
DETAIL - "B"
1 1/2" = 1'-0"



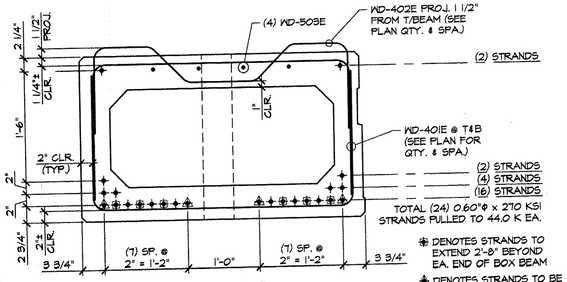
DETAIL - "C"
1 1/2" = 1'-0"



DETAIL - "D"
1/2" = 1'-0"



A/B7 DIMENSIONAL SECTION
1" = 1'-0"



B/B7 REINFORCING SECTION
1" = 1'-0"

DETENSIONING SCHEDULE
N.T.S.

MARK: WD-7	QTY.: 1	WT.: 25.62 T	VOL.: 16.50 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	401E	#4 BENT BAR (EPOXY COATED)	152
2	402E	#4 BENT BAR (EPOXY COATED)	76
3	403E	#4 BENT BAR (EPOXY COATED)	20
4	404E	#4 BENT BAR (EPOXY COATED)	4
5	405E	#4 BENT BAR (EPOXY COATED)	4
6			
7			
8			
9	503E	#5 x 82'-6" (E.C. W/ (4) 2'-0" STAGGERED LAPS)	4
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	14
11			
12			
13			
14			
15		3'-11 1/2" x 1'-4" x 6'-8 1/2" BOX VOID	2
16		3'-11 1/2" x 1'-4" x 15'-4 3/8" BOX VOID	4
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	12
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4
19			

△ 2-13-07 REVISE BOX VOIDS & STRAND PATTERN

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2484 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

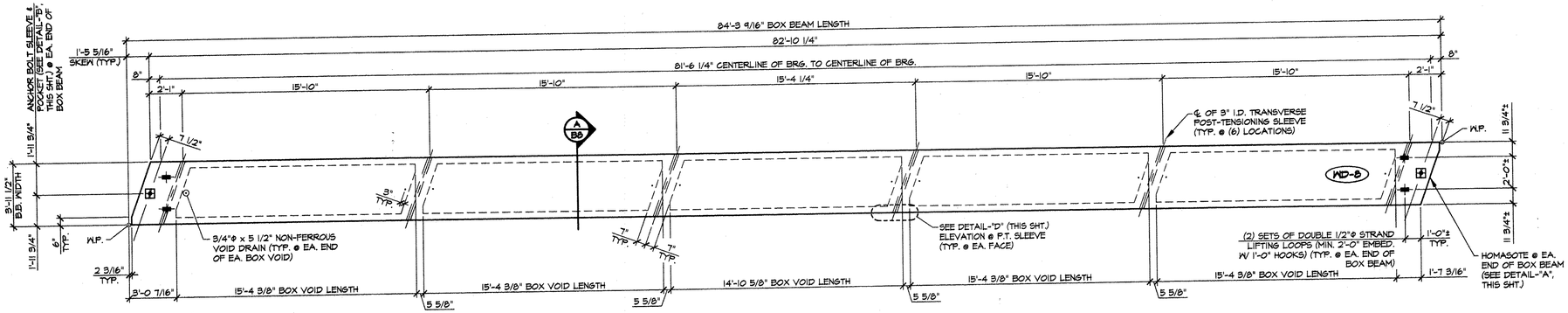
DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

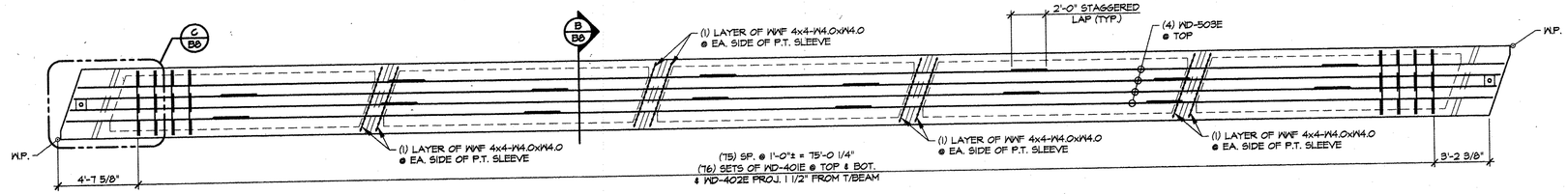
P/S BOX BEAM DETAILS

DWG. NO: B7

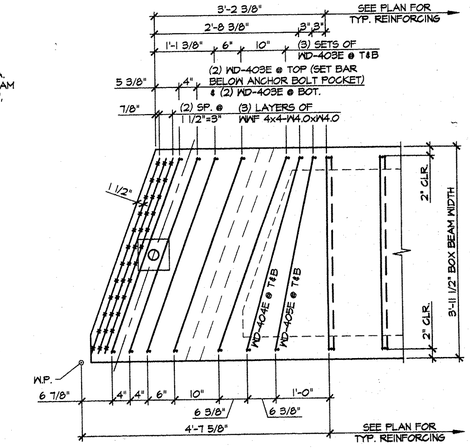
F:\VT-Bridges\23249-06 Woodstock\B7.dwg, 2/16/2007 2:20:31 PM



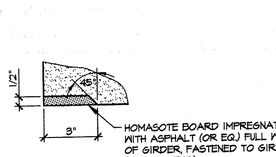
1/B8 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"



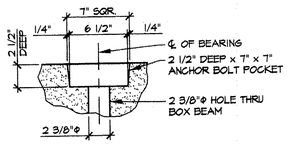
2/B8 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



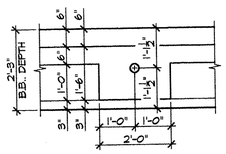
C/B8 END BLOCK REINFORCING PLAN
3/4" = 1'-0"



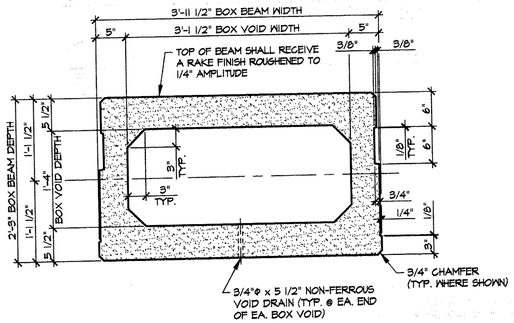
DETAIL - "A"
3" = 1'-0"



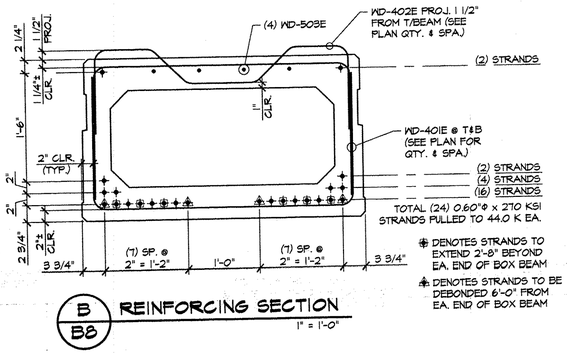
DETAIL - "B"
1 1/2" = 1'-0"



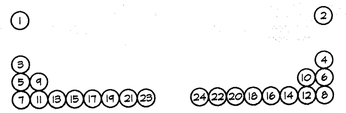
DETAIL - "D"
1/2" = 1'-0"



A/B8 DIMENSIONAL SECTION
1" = 1'-0"



B/B8 REINFORCING SECTION
1" = 1'-0"



DETENSIONING SCHEDULE
N.T.S.

A	3-9-07	REVISE QUANTITY OF BOX BEAMS
A	3-9-07	REVISE QUANTITY OF BOX BEAMS
1	2-13-07	REVISE BOX VOIDS & STRAND PATTERN

MARK: WD-8 | QTY.: 5 | WT.: 24.92 T | VOL.: 16.05 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	401E	#4 BENT BAR (EPOXY COATED)	152
2	402E	#4 BENT BAR (EPOXY COATED)	76
3	403E	#4 BENT BAR (EPOXY COATED)	20
4	404E	#4 BENT BAR (EPOXY COATED)	4
5	405E	#4 BENT BAR (EPOXY COATED)	4
6			
7			
8			
9	503E	#5 x 82'-6" (E.C. W/ (4) 2'-0" STAGGERED LAPS)	4
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	14
11			
12			
13			
14			
15		3'-1 1/2" x 1'-4" x 14'-10 5/8" BOX VOID	1
16		3'-1 1/2" x 1'-4" x 15'-4 3/8" BOX VOID	4
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	10
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4
19			

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

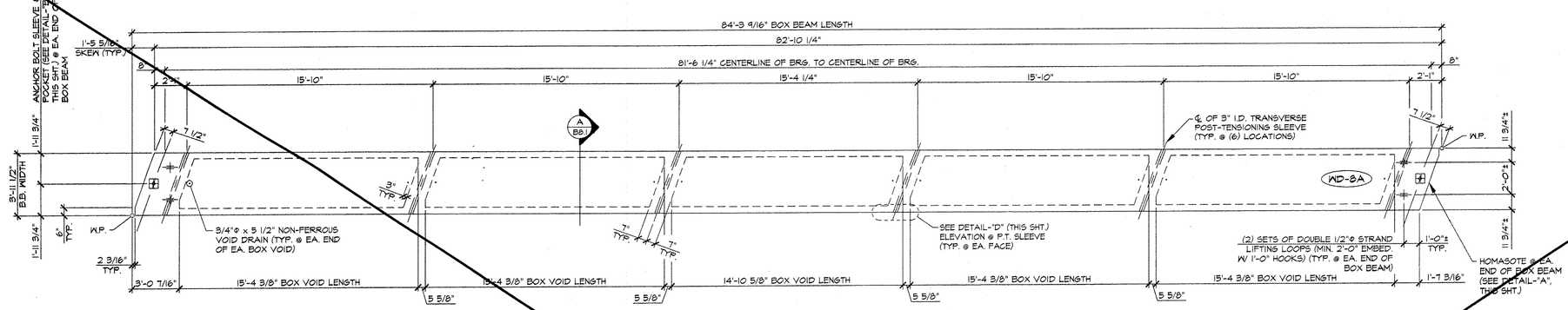
STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

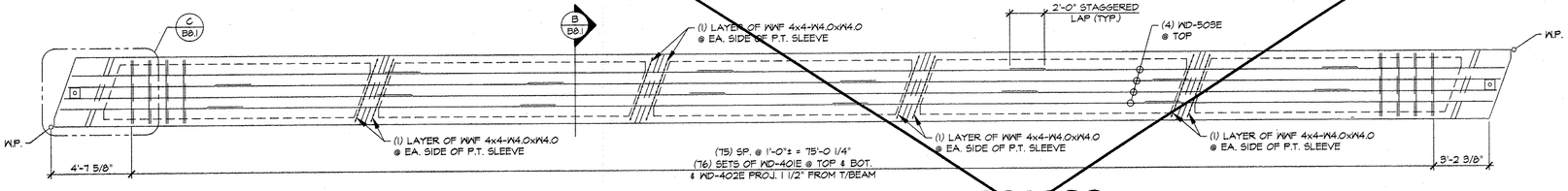
P/S BOX BEAM DETAILS

DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. | DFTM: B.L.
JOB NO: 23249-06
DWG. NO: B8

F:\VT-Bridges\23249-06 Woodstock\B8.dwg, 4/11/2007 8:39:37 AM

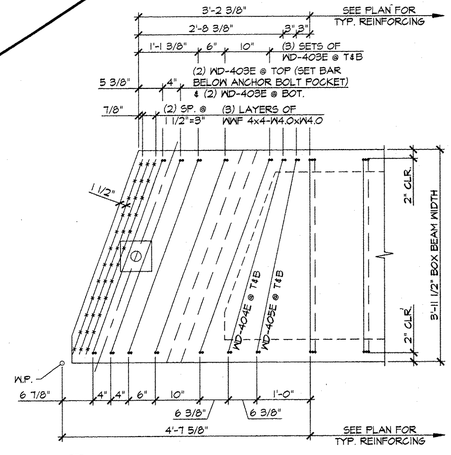


1 / B8.1 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"

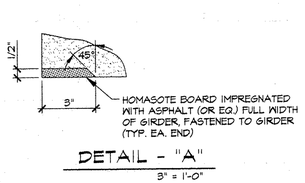


2 / B8.1 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"

THIS SHEET HAS BEEN OMITTED △4

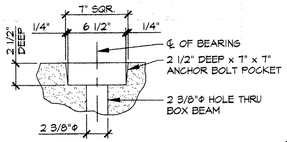


C / B8.1 END BLOCK REINFORCING PLAN
3/4" = 1'-0"

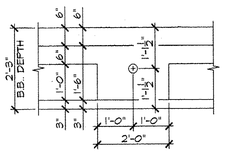


HOMASOTE BOARD IMPREGNATED WITH ASPHALT (OR EQ.) FULL WIDTH OF GIRDER, FASTENED TO GIRDER (TYP. EA. END)

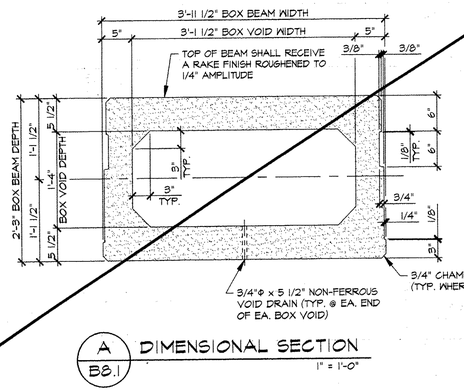
DETAIL - "A"
3" = 1'-0"



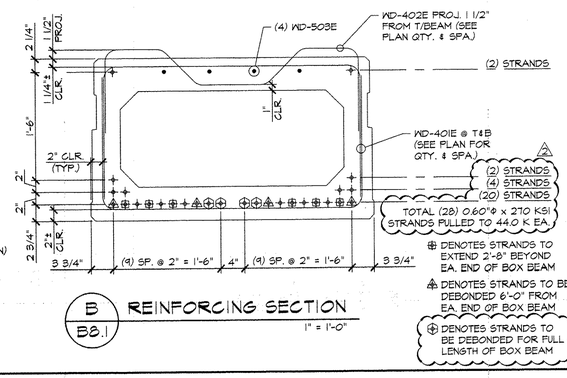
DETAIL - "B"
1 1/2" = 1'-0"



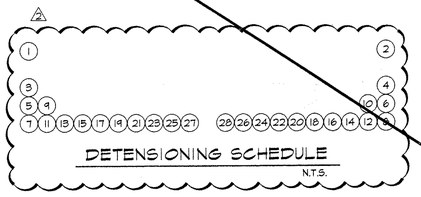
DETAIL - "D"
1/2" = 1'-0"



A / B8.1 DIMENSIONAL SECTION
1" = 1'-0"



B / B8.1 REINFORCING SECTION
1" = 1'-0"



DETENSIONING SCHEDULE
N.T.S.

MARK: WD-8A	QTY.: 1	WT.: 24.92 T	VOL.: 16.05 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	401E	#4 BENT BAR (EPOXY COATED)	152
2	402E	#4 BENT BAR (EPOXY COATED)	76
3	403E	#4 BENT BAR (EPOXY COATED)	20
4	404E	#4 BENT BAR (EPOXY COATED)	4
5	405E	#4 BENT BAR (EPOXY COATED)	4
6			
7			
8			
9	503E	#5 x 82'-6" (E.C. W/ (4) 2'-0" STAGGERED LAPS)	4
10		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	14
11			
12			
13			
14			
15		3'-1 1/2" x 1'-4" x 14'-10 5/8" BOX VOID	1
16		3'-1 1/2" x 1'-4" x 15'-4 3/8" BOX VOID	4
17		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	10
18		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4
19			

△4 4-11-07 THIS SHEET HAS BEEN OMITTED
△3 3-9-07 REVISE STRAND PATTERN
△2 2-13-07 REVISE BOX VOIDS & STRAND PATTERN
△1 2-12-07 REVISE BOX VOIDS & STRAND PATTERN

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

DATE: JAN. 9, 2007
SCALE: NOTED

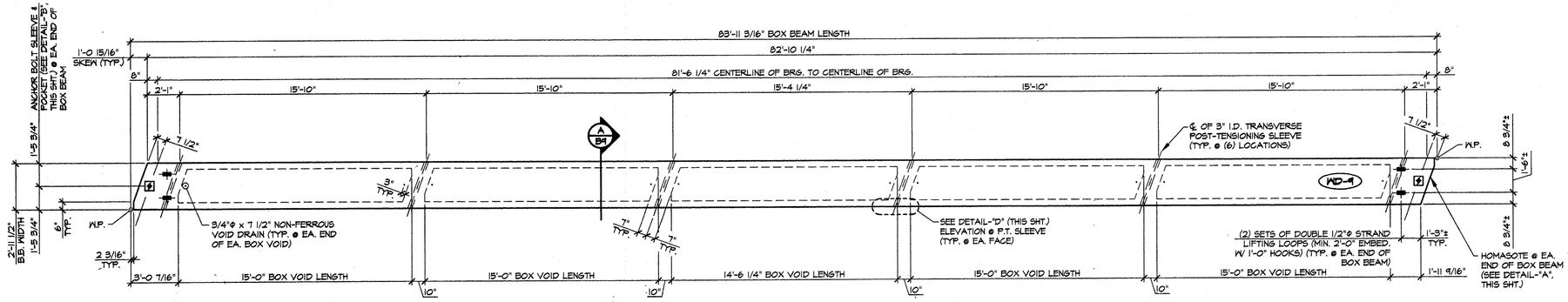
TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06

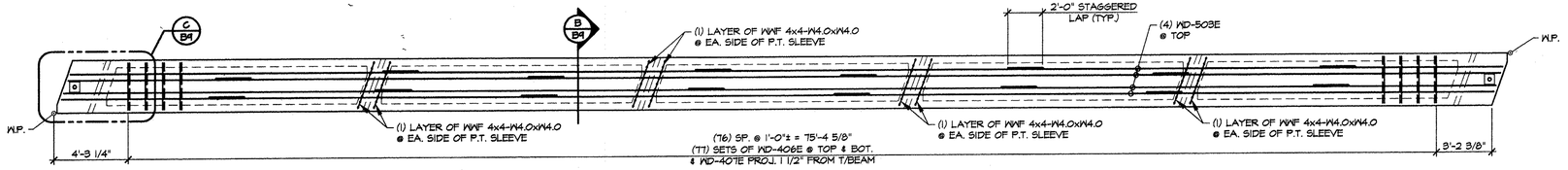
P/S BOX BEAM DETAILS

DWG. NO: B8.1

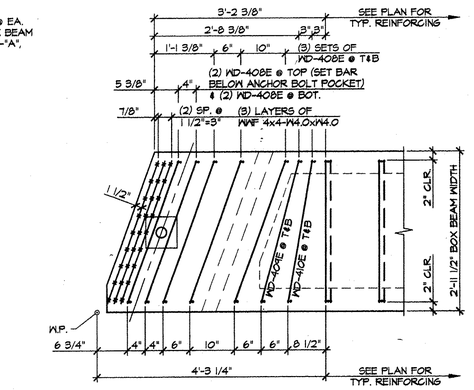
F:\VT-Bridges\23249-06 Woodstock\B8_1.dwg, 4/11/2007 9:39:42 AM



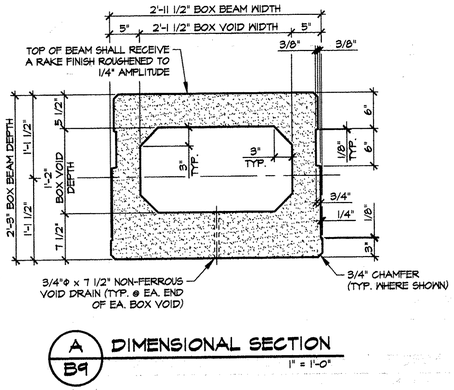
1 B9 DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"



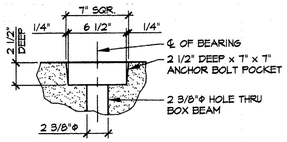
2 B9 REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



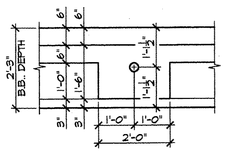
C B9 END BLOCK REINFORCING PLAN
3/4" = 1'-0"



DETAIL - "A"
3" = 1'-0"

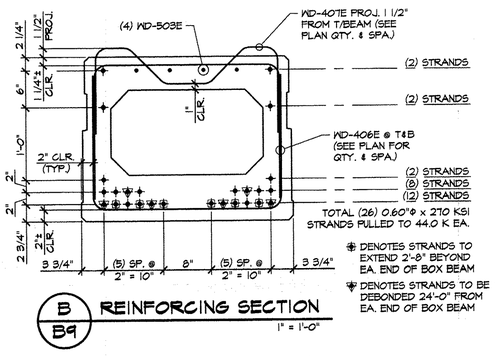


DETAIL - "B"
1 1/2" = 1'-0"



DETAIL - "D"
1/2" = 1'-0"

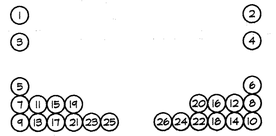
A B9 DIMENSIONAL SECTION
1" = 1'-0"



B B9 REINFORCING SECTION
1" = 1'-0"

⊕ DENOTES STRANDS TO EXTEND 2'-8" BEYOND EA. END OF BOX BEAM

⊗ DENOTES STRANDS TO BE DEBONDED 24'-0" FROM EA. END OF BOX BEAM



DETENSIONING SCHEDULE
N.T.S.

MARK: WD-9	QTY.: 1	WT.: 21.15 T	VOL.: 13.62 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	406E	#4 BENT BAR (EPOXY COATED)	154
2	407E	#4 BENT BAR (EPOXY COATED)	77
3	408E	#4 BENT BAR (EPOXY COATED)	20
4	409E	#4 BENT BAR (EPOXY COATED)	4
5	410E	#4 BENT BAR (EPOXY COATED)	4
6			
7			
8			
9	503E	#5 x 82'-6" (E.C. W/ (4) 2'-0" STAGGERED LAPS)	4
10			
11		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 2'-9 1/2"]	14
12			
13			
14			
15			
16		2'-1 1/2" x 1'-2" x 14'-6 1/4" BOX VOID	1
17		2'-1 1/2" x 1'-2" x 15'-0" BOX VOID	4
18		3/4"Ø x 7 1/2" NON-FERROUS VOID DRAIN	10
19		DOUBLE 1/2"Ø STRAND LIFTING LOOPS	4
20			

⚠ 2-13-07 REVISE BOX VOIDS & STRAND PATTERN

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

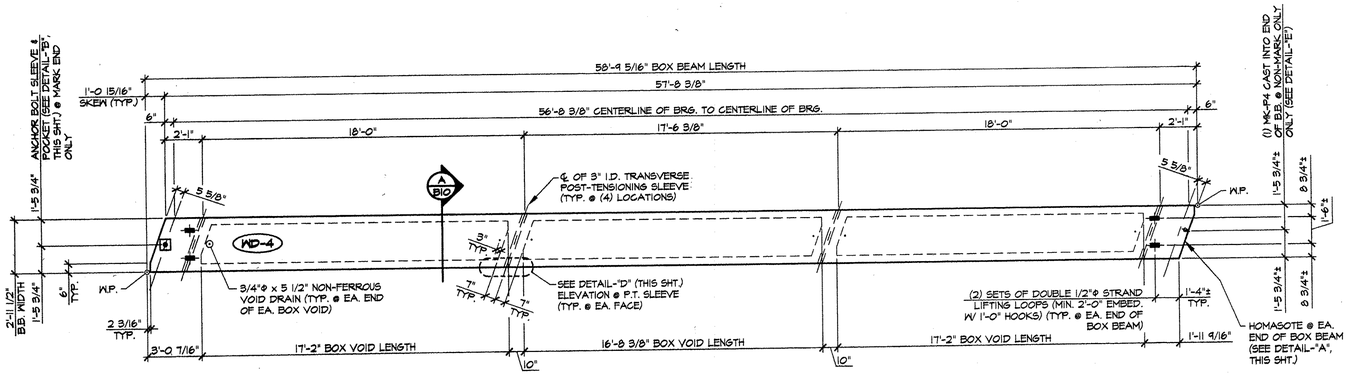
STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

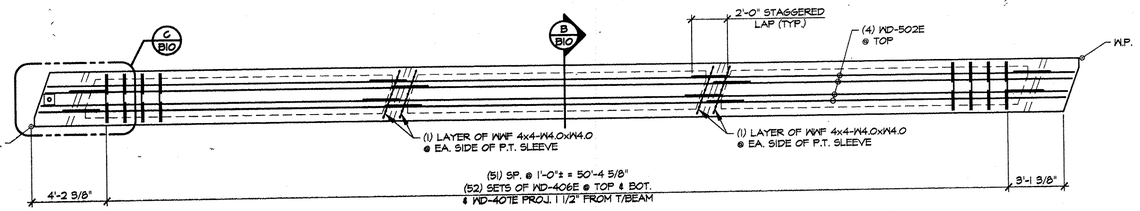
P/S BOX BEAM DETAILS

DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06
DWG. NO: B9

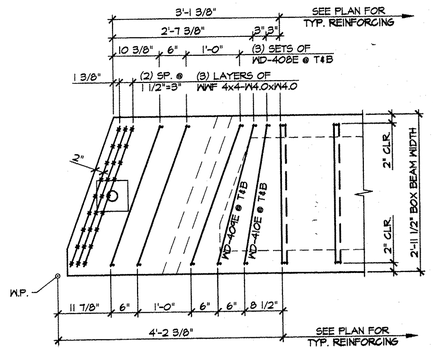
F:\VT-Bridges\23249-06 Woodstock\B9.dwg, 2/19/2007 2:20:41 PM



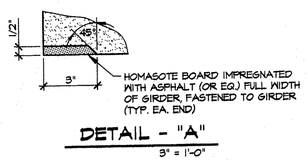
1/BIO DIMENSIONAL PLAN VIEW IN FORM
1/4" = 1'-0"



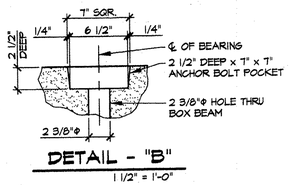
2/BIO REINFORCING PLAN VIEW IN FORM
1/4" = 1'-0"



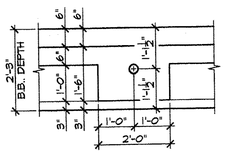
C/BIO END BLOCK REINFORCING PLAN
3/4" = 1'-0"



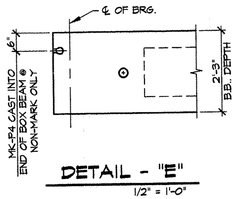
DETAIL - "A"
3" = 1'-0"



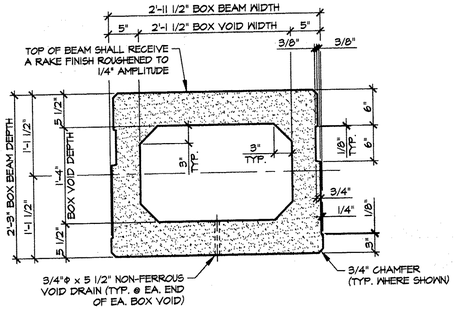
DETAIL - "B"
1 1/2" = 1'-0"



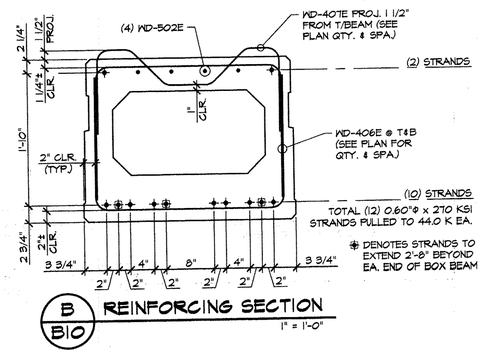
DETAIL - "D"
1/2" = 1'-0"



DETAIL - "E"
1/2" = 1'-0"



A/BIO DIMENSIONAL SECTION
1" = 1'-0"



B/BIO REINFORCING SECTION
1" = 1'-0"

① ②

③ ⑤ ⑦ ⑨ ⑪ ⑫ ⑩ ⑧ ⑥ ④

DETENSIONING SCHEDULE
N.T.S.

MARK: WD-4	QTY.: 2	WT.: 13.80 T	VOL.: 8.89 cy

MATERIAL LIST / BEAM

ITEM	MARK	DESCRIPTION	QTY.
1	406E	#4 BENT BAR (EPOXY COATED)	104
2	407E	#4 BENT BAR (EPOXY COATED)	52
3	408E	#4 BENT BAR (EPOXY COATED)	12
4	409E	#4 BENT BAR (EPOXY COATED)	4
5	410E	#4 BENT BAR (EPOXY COATED)	4
6			
7			
8	502E	#5 x 57'-4" (E.C. W/ (3) 2'-0" STAGGERED LAPS)	4
9			
10			
11		WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 2'-9 1/2"]	10
12			
13			
14			
15	MK-P4	DAYTON 1/2"ø F-42 LOOP FERRULE INSERT (GALV.)	1
16		2'-1 1/2" x 1'-4" x 16'-8 3/8" BOX VOID	1
17		2'-1 1/2" x 1'-4" x 17'-2" BOX VOID	2
18		3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	6
19		DOUBLE 1/2"ø STRAND LIFTING LOOPS	4
20			

⚠ 2-18-07 REVISE BOX VOIDS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

DATE: JAN. 9, 2007
SCALE: NOTED

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHP 020-2(32)

CHKD: D.F. DFTM: B.L.
JOB NO: 23249-06

P/S BOX BEAM DETAILS

DWG. NO: B10

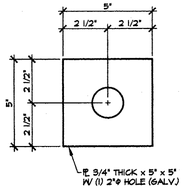
F:\VT-Bridges\23249-06 Woodstock\B10.dwg, 2/19/2007 2:20:46 PM

BENT BARS, TIES, & STIRRUPS

ITEM	MARK	QTY.	SIZE	LENGTH	TYPE	A	B	C	D	E	F/R	G	H	J	K	O	GRADE	REMARKS
1	401E	2,848	#4	7'-1 1/2"	S10		1'-10"	3'-7 1/2"	1'-10"								60	EPOXY COATED
2	402E	1,424	#4	6'-0 1/2"	L4	1'-2"	10"	8 1/2"	11 1/2"	8 1/2"	10"	1'-2"	6"		6"	3'-7 1/2"	60	EPOXY COATED
3	403E	352	#4	7'-4 1/4"	S10		1'-10"	3'-10 1/4"	1'-10"								60	EPOXY COATED
4	404E	96	#4	7'-3 1/4"	S10		1'-10"	3'-9 1/4"	1'-10"								60	EPOXY COATED
5	405E	96	#4	7'-2 1/2"	S10		1'-10"	3'-8 1/2"	1'-10"								60	EPOXY COATED
6	406E	362	#4	6'-1 1/2"	S10		1'-10"	2'-7 1/2"	1'-10"								60	EPOXY COATED
7	407E	181	#4	5'-0 1/2"	L4	1'-2"	6"	8 1/2"	7 1/2"	8 1/2"	6"	1'-2"	6"		6"	3'-7 1/2"	60	EPOXY COATED
8	408E	44	#4	6'-3 1/2"	S10		1'-10"	2'-9 1/2"	1'-10"								60	EPOXY COATED
9	409E	12	#4	6'-2 5/8"	S10		1'-10"	2'-8 5/8"	1'-10"								60	EPOXY COATED
10	410E	12	#4	6'-2"	S10		1'-10"	2'-8"	1'-10"								60	EPOXY COATED
11																		
12	501E	398	#5	3'-1 1/4"	L8	1'-5"	1'-4 1/2"	6"									60	EPOXY COATED
13	502E	72	#5	51'-4"	STR.												60	E.C. W/ (3) 2'-0" STAGGERED LAPS
14	503E	36	#5	82'-6"	STR.												60	E.C. W/ (4) 2'-0" STAGGERED LAPS
15																		
16																		
17																		
18																		
19																		
20																		
21																		
22																		
23																		
24																		
25																		
26																		
27																		
28																		
29																		
30																		

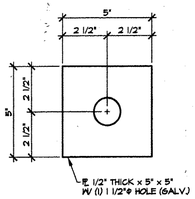
MISCELLANEOUS MATERIALS

ITEM	MARK	QTY.	DESCRIPTION	REMARKS
1	EM-1	28	PL 3/4" x 5" x 5" W/ (1) 2"ø HOLE (GALV.)	FOR ERECTION, SEE DETAIL THIS SHEET
2		28	SINGLE USE STRESSING CHUCK	FOR ERECTION
3		14	1/2"ø x 35'-4" POLYSTRAND	FOR ERECTION
4	EM-3	32	PL 1/2" x 5" x 5" W/ (1) 1 1/2"ø HOLE (GALV.)	FOR ERECTION, SEE DETAIL THIS SHEET
5		32	1 1/4"ø x 5'-1" THREADED ROD (GALV.) (A36)	FOR ERECTION
6		32	1 1/4"ø HEAVY HEX NUT (GALV.) (A36)	FOR ERECTION
7				
8	MK-P3	87	DAYTON C-24 TYPE 4-APR PRESS-STEEL HALF HANGER	GALVANIZE
9	MK-P4	20	DAYTON 1/2"ø F-42 LOOP FERRULE INSERT (GALV.)	GALVANIZE
10		256	WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 3'-10"]	
11		34	WWF 4x4-W4.0xW4.0 [1'-11 1/2" x 2'-9 1/2"]	
12		108	DOUBLE 1/2"ø STRAND LIFTING LOOP	
13		200	3/4"ø x 5 1/2" NON-FERROUS VOID DRAIN	
14		10	3/4"ø x 7 1/2" NON-FERROUS VOID DRAIN	
15		4	3'-1 1/2" x 1'-4" x 6'-8 1/2" BOX VOID	SEE VOID DETAIL 'B'
16		8	3'-1 1/2" x 1'-4" x 7'-9 7/8" BOX VOID	SEE VOID DETAIL 'B'
17		6	3'-1 1/2" x 1'-4" x 14'-10 5/8" BOX VOID	SEE VOID DETAIL 'A'
18		32	3'-1 1/2" x 1'-4" x 15'-4 3/8" BOX VOID	SEE VOID DETAIL 'A'
19		12	3'-1 1/2" x 1'-4" x 17'-0 3/4" BOX VOID	SEE VOID DETAIL 'A'
20		32	3'-1 1/2" x 1'-4" x 17'-6 3/8" BOX VOID	SEE VOID DETAIL 'A'
21		1	2'-1 1/2" x 1'-2" x 14'-6 1/4" BOX VOID	SEE VOID DETAIL 'D'
22		4	2'-1 1/2" x 1'-2" x 15'-0" BOX VOID	SEE VOID DETAIL 'D'
23		2	2'-1 1/2" x 1'-4" x 16'-8 3/8" BOX VOID	SEE VOID DETAIL 'C'
24		4	2'-1 1/2" x 1'-4" x 17'-2" BOX VOID	SEE VOID DETAIL 'C'
25				
26				
27				
28				
29				
30				



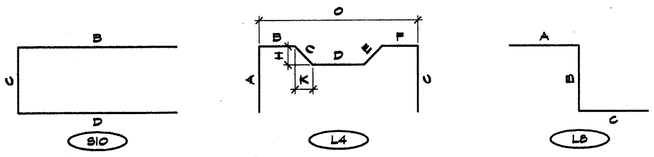
EM - 1

3" = 1'-0"

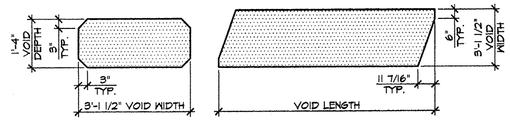


EM - 3

3" = 1'-0"

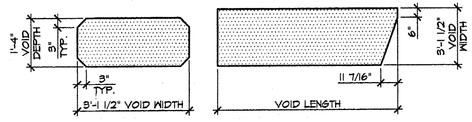


B10 L4 L8



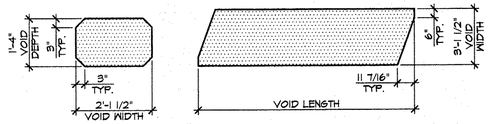
VOID DETAIL 'A'

N.T.S.



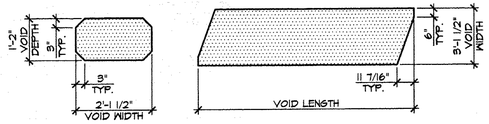
VOID DETAIL 'B'

N.T.S.



VOID DETAIL 'C'

N.T.S.



VOID DETAIL 'D'

N.T.S.

△ 2-13-07 REVISE BOX VOIDS

APPROVAL STAMP:

J.P. CARRARA & SONS INC.
Precast & Prestress Manufacturer
2464 CASE STR., MIDDLEBURY, VERMONT 05753 Phone:(802)388-6361 Fax:(802)388-9010

T. BUCK CONSTRUCTION, INC.
CONTRACTOR
AUBURN, MAINE

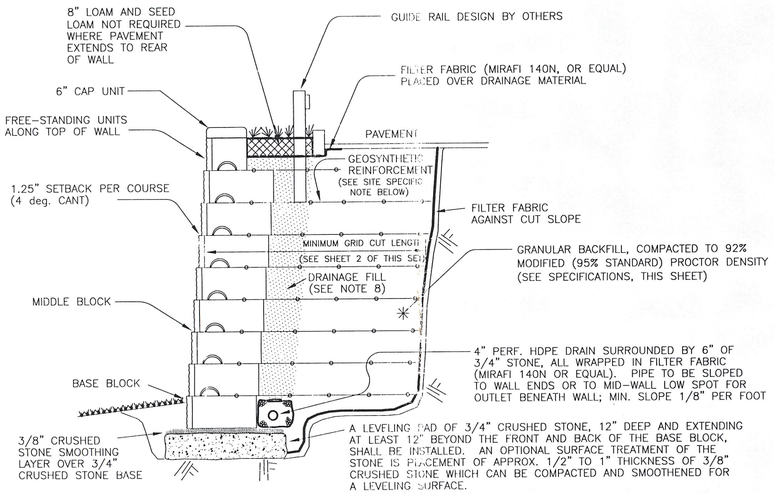
STATE OF VERMONT A.O.T.
COUNTY OF WINDSOR

TOWN OF WOODSTOCK
US ROUTE 4 OVER OTTAUQUECHEE RIVER
BRIDGE NO. 50 PROJECT NO. BHF 020-2(32)

MATERIALS LIST

DATE: JAN. 9, 2007
SCALE: NOTED
CHKD: D.F. DFTM: B.L.
JOB NO: 23244-06
DWG. NO: M1

F:\VT-Bridges\23249-06 Woodstock\M1.dwg, 2/19/2007 2:20:51 PM



THE REQUIRED SOIL BEARING CAPACITY OF THE SOIL BENEATH THE BLOCK AND GRID AREA SHALL BE GREATER THAN OR EQUAL TO: WALL #1 – 1300 psf WALL #2 – 1600 psf WALL #3 – 800 psf

TYPICAL SECTION – REDI ROCK WALL – REINFORCED (TYPICAL DETAIL ONLY – SEE WALL FACE DRAWING FOR SPECIFIC BLOCK AND GEOGRID CONFIGURATIONS)

"REDIROCK" SEGMENTAL RETAINING WALL
(NOT TO SCALE)

GENERAL NOTES:

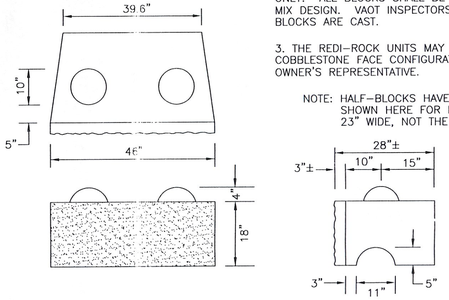
1. STRIP ALL VEGETATION, ORGANIC SOILS AND UNSUITABLE FILL SOILS FROM THE WALL ALIGNMENT AREA.
2. BENCH CUT ALL EXCAVATED SLOPES.
3. DO NOT OVER EXCAVATE UNLESS DIRECTED TO DO SO BY THE OWNER'S SITE REPRESENTATIVE IN ORDER TO REMOVE UNSUITABLE SOIL.
4. THE OWNER'S SITE REPRESENTATIVE SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN STANDARDS AND PARAMETERS.
5. LEVELING PAD SHALL CONSIST OF COMPACTED, 3/4" CRUSHED GRAVEL, 12" THICK AND EXTENDING AT LEAST 12" TO EITHER SIDE OF THE BASE BLOCK. A SMOOTHING SURFACE LAYER OF 3/8" CRUSHED STONE MAY BE UTILIZED.
6. MINIMUM EMBEDMENT OF WALL BELOW FINISH GRADE SHALL BE AS INDICATED ON THE WALL FACE DRAWING.
7. FOLLOW APPLICABLE PROVISIONS OF THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS, ESPECIALLY WITH REGARDS TO LEVELING OF BLOCKS AND BASE.
8. DRAINAGE FILL SHALL CONSIST OF 3/4" TO 3/8" SIZE CRUSHED STONE, LESS THAN 5% MINUS #200 SIEVE, PLACED BEHIND THE WALL FOR A DEPTH OF AT LEAST 12" BEHIND THE WALL. A FILTER FABRIC SHALL BE PLACED OVER THE CUT OR FILL FACE BEHIND THE WALL AREA TO PREVENT SOIL MIGRATION INTO THE DRAINAGE MATERIAL. 3/4" CONCRETE AGGREGATE IS AN ACCEPTABLE MATERIAL FOR THIS USE.
9. WHERE PERFORATED HDPE DRAINS ARE USED, PROVIDE OUTLETS AT THE ENDS OF THE WALL OR AT A LOW COLLECTION POINT ALONG THE WALL. (ALTERNATE OUTLET METHODS MAY BE APPROVED BY THE DESIGN ENGINEER.)
10. BACKFILL AND COMPACT THE FILL MATERIAL BEHIND THE WALL AS THE WALL IS INSTALLED.
11. COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF TESTS SHALL BE DETERMINED BY THE OWNER'S SITE REPRESENTATIVE.
12. PLACE A FILTER FABRIC (MIRAFI 140N, OR EQUAL) OVER THE DRAINAGE MATERIAL TO MINIMIZE SOIL MIGRATION FROM THE SURFACE MATERIAL INTO THE DRAINAGE MATERIAL.
13. COMPACTION SHALL BE TO 92% (MODIFIED PROCTOR) OR 95% (STANDARD PROCTOR).
14. PROVIDE LATERAL DRAINAGE SWALES TO DIRECT FLOWS AROUND THE ENDS OF THE WALL AND AWAY FROM THE WALL DURING CONSTRUCTION. DO NOT CONSTRUCT A SWALE BEHIND THE WALL AS PART OF THE FINISHED WALL. GRADE ABOVE THE WALL SO THAT WATER FLOWS OVER THE WALL FACE OR TO A POINT AT LEAST AS FAR BEHIND THE WALL AS THE WALL HEIGHT.
15. TURF, OR SOME ACCEPTABLE FORM OF SOIL EROSION PROTECTION, SHOULD BE ESTABLISHED AT THE TOP OF THE WALL (WHERE REQUIRED) BY THE LANDSCAPE CONTRACTOR AS SOON AS THE WALL IS COMPLETED.
16. FINAL WALL ALIGNMENT SHALL BE LOCATED IN THE FIELD BY THE OWNER'S SITE REPRESENTATIVE.
17. RECOMMENDED COMPACTION EQUIPMENT WITHIN 15 FEET OF THE BACK OF THE WALL IS AS FOLLOWS:
    0 – 4 FEET HAND TAMP OR VIBRATORY PLATE COMPACTOR
    4 – 15 FEET NOTHING LARGER THAN TWO-DRUM, WALK-BEHIND VIBRATORY ROLLER
    (LARGER ROLLERS CAN BE USED STATICALLY, PROVIDED LIFT SIZE DOES NOT COMPROMISE ACHIEVEMENT OF NECESSARY COMPACTION RATES.)
18. THESE WALLS HAVE BEEN DESIGNED WITH CONSIDERATION OF SEISMIC LOADINGS.

IF CONDITIONS ARE DIFFERENT THAN THOSE STATED IN THESE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR MUST CONTACT THE DESIGN ENGINEER PRIOR TO PROCEEDING WITH THE CONSTRUCTION OF THE WALL.

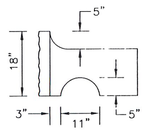
BLOCK SPECIFICATION NOTES:

1. ALL BLOCKS SHALL BE MANUFACTURED BY A LICENSED REDI-ROCK (TM) MANUFACTURER.
2. BLOCKS SHALL BE CAST WITH CONCRETE MEETING HPC-B REQUIREMENTS ONLY. ALL BLOCKS SHALL BE MADE AT THE SAME PLANT WITH THE SAME MIX DESIGN. VAOT INSPECTORS MUST PROVIDE OVERSIGHT WHEN THE BLOCKS ARE CAST.
3. THE REDI-ROCK UNITS MAY UTILIZE EITHER THE SPLIT LIMESTONE OR COBBLESTONE FACE CONFIGURATION AS CHOSEN BY THE OWNER OR OWNER'S REPRESENTATIVE.

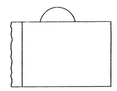
NOTE: HALF-BLOCKS HAVE THE SAME FEATURES AS SHOWN HERE FOR FULL BLOCKS BUT THEY ARE 23" WIDE, NOT THE FULL 46" WIDE.



28" UNIT-MIDDLE BLOCK
UNIT DIMENSIONS
(NOT TO SCALE)



TOP BLOCK



BOTTOM BLOCK

REINFORCED ZONE BACKFILL SPECIFICATIONS	
GRANULAR BACKFILL VAOT TABLE 704.08A	
SIEVE SIZE	% PASSING
3"	100%
#4	45–75%
#100	0–12%
#200	0–6%

NOTE: MATERIAL THAT DOES NOT MEET THIS SPECIFICATION SHALL NOT BE USED.

SITE SPECIFIC NOTE: THE WALL HEIGHTS AT THIS SITE VARY AND ARE SHOWN ON THE WALL FACE DRAWINGS ON SHEET 2 OF 2. THE GEOGRID SHALL BE SYNTEEN PRODUCTS AS DETAILED ON THE WALL FACE DRAWINGS. THE CUT LENGTHS OF THE GEOGRID LAYERS, AND THE PLACEMENT ELEVATIONS OF THE GEOGRID LAYERS ARE SHOWN ON THE WALL FACE DRAWINGS. THE GEOGRID SHALL PROVIDE 100% COVERAGE.

THE CONTRACTOR SHOULD CONTACT THE DESIGN ENGINEER WITH ANY QUESTIONS.

COMPACTION NOTE: WHERE THE RETAINING WALL PASSES OVER ANY UTILITY LINES, COMPACTION OF THE SOIL WITHIN THE UTILITY TRENCH IS CRITICAL IN ORDER TO PREVENT SETTLEMENT OF THE WALL. COMPACTION OF ALL FILL MATERIAL IN UTILITY TRENCHES WHICH PASS UNDER THIS RETAINING WALL MUST BE AT LEAST 95% OF THE MAXIMUM DENSITY OF THE FILL MATERIAL.

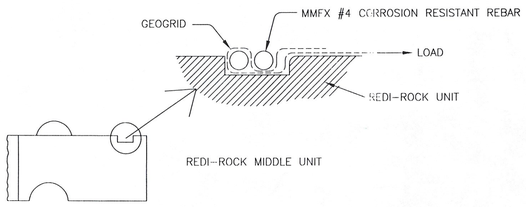
IMPERVIOUS MATERIAL GENERAL REQUIREMENTS	
SIEVE SIZE	% PASSING
3"	100%
#4	80–100%
#40	50–90%
#100	40–80%
#200	30–80%

8" OF TOPSOIL IS AN ACCEPTABLE ALTERNATE FOR IMPERVIOUS FILL ALONG THE TOP OF THE WALL.

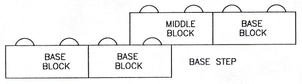
DESIGN ASSUMPTIONS		
SOIL	SOIL UNIT WEIGHT	ϕ
SELECT FILL/BACKFILL	135	32
RETAINED EARTH	135	30
FOUNDATION SOIL	120	30

APPLIED SURCHARGE LOADING = 250 psf
SEISMIC ACCELERATION = 0.08

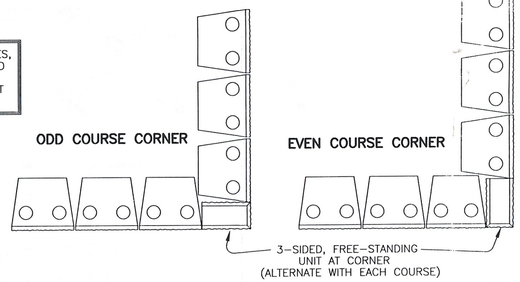
MINIMUM FACTORS OF SAFETY	
OVERTURNING	2.0
SLIDING	1.5
BEARING CAPACITY	2.5
GEOGRID PULLOUT	1.5



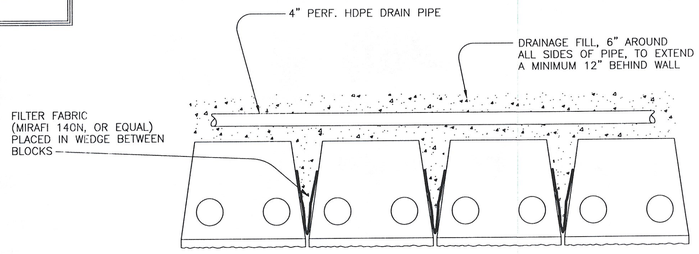
REDI-ROCK GEOGRID CONNECTION DETAIL
NOT-TO-SCALE



BASE STEP DETAIL
(NOT TO SCALE)

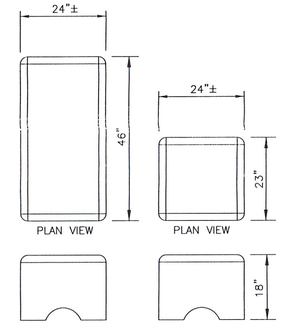


TYPICAL CORNER INSTALLATION
(NOT TO SCALE)



1. SLOPE DRAIN TO WALL ENDS, MIN. 1/8" PER FOOT, OR SLOPE TO LOW POINT AND DROP THE DRAIN UNDER THE WALL
2. WALL DRAIN MAY TIE TO NEARBY CLOSED DRAINAGE SYSTEM, IF AVAILABLE

DRAIN & FABRIC DETAIL
(NOT TO SCALE)



FREE-STANDING TOP BLOCKS THREE-SIDED, FULL & HALF UNITS SHOWN

PLAN VIEW

GRID OVERLAP AT CORNERS: AT INSIDE CORNERS WHERE GRID WILL OVERLAP, THE INSTALLER SHALL PLACE 2"–3" OF FILL MATERIAL BETWEEN THE LAYERS OF OVERLAPPING GEOGRID. GRID-ON-GRID CONTACT SHALL BE MINIMIZED.

RECEIVED
JUN 07 2007
BY: DGB

STATE OF VERMONT
RANDALL H. BRAGDON
#6788
CIVIL
LICENSED PROFESSIONAL ENGINEER

New England's SVE Retaining Wall Designers

NOTE: THIS DRAWING WAS PREPARED FOR USE WITH REDI-ROCK (TM) RETAINING WALL SYSTEMS. CONTACT REDI-ROCK WALLS OF NEW ENGLAND AT (603) 863-1000.

SOUHEGAN VALLEY ENGINEERING, INC.
CIVIL ENGINEERING CONSULTANTS — SITE DESIGN SPECIALISTS
434 LEAR HILL ROAD NEWPORT(UNITY), NEW HAMPSHIRE 03773
TEL: (603) 863-5454 FAX: (603) 863-3629
Est. 1990 Available On The Web At www.SVEngineering.com

CLIENT: REDI-ROCK WALLS OF NEW ENGLAND
8 REEDS MILL ROAD, NEWPORT, NH 03773

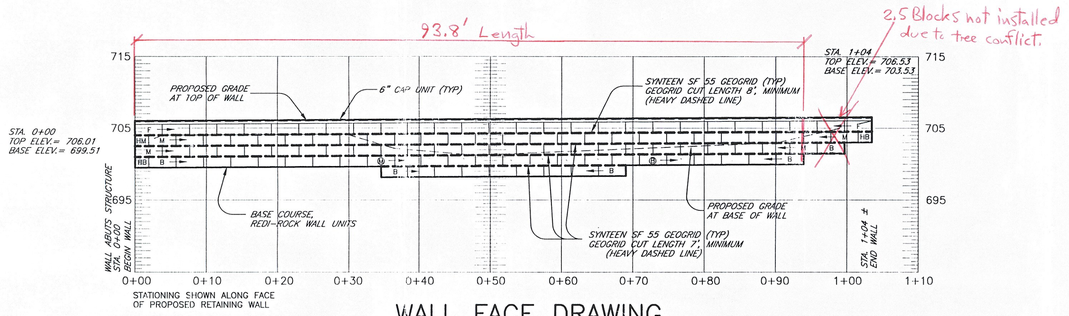
PROJECT: RT. 4 BRIDGE OVER THE OTTAUQUECHEE RIVER
WOODSTOCK, VT

SHEET TITLE: RETAINING WALL DESIGN SHEET 1

DATE: MAY 9, 2007 SCALE: AS SHOWN PROJECT No.: 07-277

SHEET 1 OF 2

REVISION SET NUMBER	REVISION	DATE	DESCRIPTION	BY
3	#2	6/4/07	REVISE PER 5/31/07 VAOT COMMENTS	EL
	#1	5/24/07	REVISE PER VAOT COMMENTS	EL



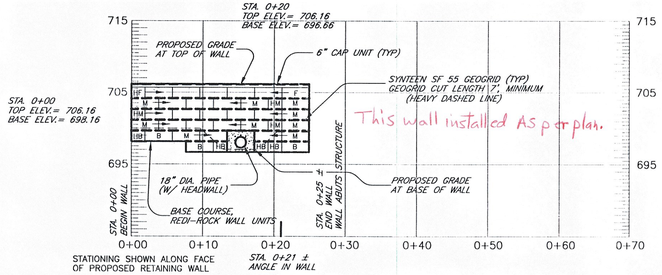
STATIONING SHOWN ALONG FACE OF PROPOSED RETAINING WALL

WALL FACE DRAWING
WALL #1 – SOUTHEAST WALL

SCALE: 1" = 10'

NOTE: THIS WALL SHALL BE SUPERELEVATED .292 DEGREES

NOTE: THE TWO (2) UPPERMOST LAYERS OF GEOGRID SHALL BE AT LEAST 2' LONGER THAN THE LENGTH SHOWN BELOW



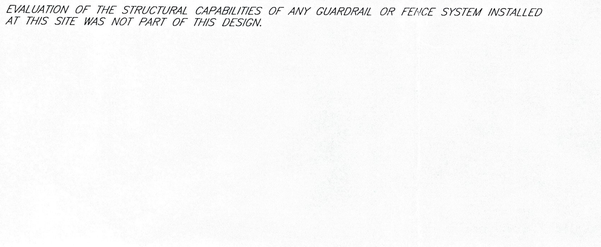
STATIONING SHOWN ALONG FACE OF PROPOSED RETAINING WALL

WALL FACE DRAWING
WALL #2 – NORTHEAST WALL

SCALE: 1" = 10'

LEGEND

F	FREESTANDING BLOCK
HF	HALF FREESTANDING BLOCK
M	MIDDLE BLOCK
HM	HALF MIDDLE BLOCK
B	BOTTOM BLOCK
HB	HALF BOTTOM BLOCK
○	DENOTES CHANGE IN BLOCK TYPE

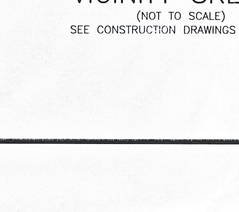


STATIONING SHOWN ALONG FACE OF PROPOSED RETAINING WALL

WALL FACE DRAWING
WALL #3 – NORTHWEST WALL

SCALE: 1" = 10'

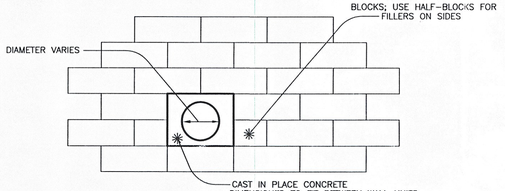
WHERE THE WALL ABUTS A STRUCTURE, A FILTER FABRIC (MIRAFI 140N, OR EQUAL) SHALL BE PLACED VERTICALLY ALONG THE SEAM TO PREVENT MIGRATION OF SOILS BETWEEN THE WALL BLOCK AND THE STRUCTURE. THE FABRIC SHOULD EXTEND AT LEAST 18" ALONG THE STRUCTURE AND 18" ALONG THE REAR OF THE WALL BLOCK.



NOTE: WHERE THE REDI-ROCK WALL ABUTS A STRUCTURE AT AN ANGLE, THE REDI-ROCK UNIT SHALL BE FIELD-TRIMMED TO MATCH THIS ANGLE AS NEAR AS PRACTICABLE. IF POSSIBLE, DO NOT TRIM THE FACE OF THE BLOCK.

DETAIL
WALL ABUTTING STRUCTURE

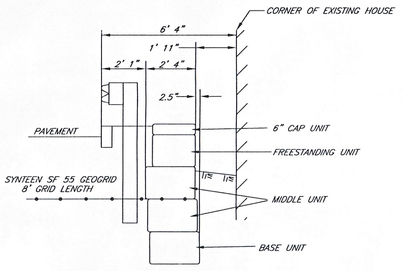
(NOT TO SCALE)



EROSION PROTECTION (RIP-RAP,CONCRETE SPLASH PLATE, ETC) SHALL BE PLACED BELOW PIPE OUTLET; EROSION PROTECTION DESIGNED BY OTHERS

PIPE OUTLET THROUGH WALL FACE
TYPICAL DETAIL

(NOT TO SCALE)



SOUTHEAST RETAINING WALL SECTION
STA. 0+26 ±

NOT TO SCALE

NOTES:

1. CARE SHOULD BE TAKEN TO REMOVE ALL ORGANIC MATERIAL FROM THE BASE EXCAVATION FOR THE RETAINING WALL.

2. ENDS OF THE RETAINING WALLS SHALL BE BLENDED INTO THE PROPOSED/EXISTING GRADE IN A MANNER SATISFACTORY TO THE OWNER'S SITE REPRESENTATIVE. AT THE ENDS OF A WALL WHERE BLENDING TAKES PLACE, THE ISSUE IS NOT A STRUCTURAL FACTOR BUT AN AESTHETIC FACTOR AND THE OWNER'S SITE REPRESENTATIVE IS QUALIFIED TO MAKE THIS JUDGEMENT.

3. IF THE PERFORATED WALL DRAIN IS TO BE CARRIED UNDER THE WALL TO OUTLET, IT SHALL BE CARRIED DOWNSLOPE ENOUGH DISTANCE TO ALLOW FOR A PROPER DRAINING SLOPE (MIN. 1/4" PER FOOT FROM WALL TO DAYLIGHT) OR TIED TO A CLOSED DRAINAGE SYSTEM.

DRAIN LINES (4" HDPE) WHICH PASS UNDER THE WALL BASE SHOULD BE CENTERED UNDER THE BASE BLOCK. THE PIPE TRENCH SHALL BE MINIMIZED SO THAT THE BASE BLOCK ACTS AS A LINTEL OVER THE PIPE AND TRENCH.

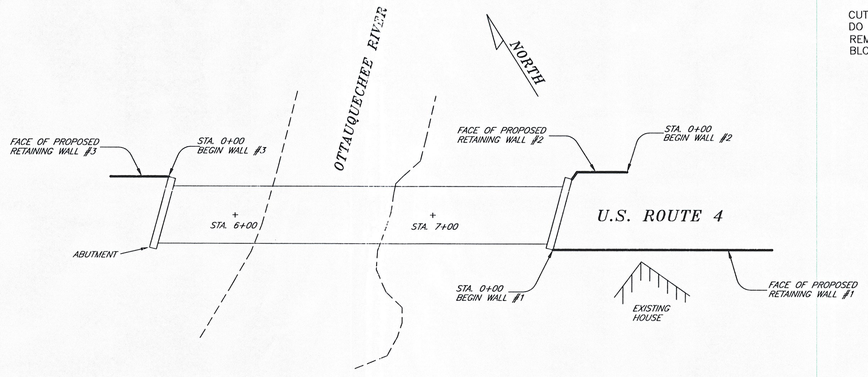
4. GEOGRID CUT LENGTHS ARE MEASURED FROM THE FRONT FACE OF THE RETAINING WALL. ALL GEOGRID IS TO BE PLACED PERPENDICULAR TO THE WALL FACE, i.e. THE GRID ROLL IS PLACED ON THE WALL, ROLLED OUT BEHIND THE WALL, AND CUT TO LENGTH.

5. GUARDRAIL POST INSTALLATION:

A. FOR GUARDRAILS/FENCES INSTALLED WHERE GEOGRID IS LESS THAN 19" FROM THE SURFACE, THE SOIL ABOVE THE GEOGRID IS TO BE EXCAVATED AND THE GEOGRID HAND-CUT. THE HOLE CUT IN THE GRID IS TO BE JUST LARGE ENOUGH FOR THE POST INSTALLATION. IF AUGERING POST HOLES THROUGH GRID LAYERS, THE LAYERS LESS THAN 19" FROM THE SURFACE SHALL BE HAND CUT AS NOTED ABOVE. AUGERING THROUGH GEOGRID LAYERS GREATER THAN 19" FROM THE GROUND SURFACE IS ACCEPTABLE.

B. IF THE POSTS ARE TO BE SLEEVED AND SET IN CONCRETE, ALL GRID LAYERS MUST BE HAND CUT, WITH THE CUT HOLES JUST LARGE ENOUGH TO PROVIDE ROOM FOR THE SLEEVE. USE OF A HAND-OPERATED POST-HOLE SHOVEL TO CUT THROUGH GEOGRID IS ACCEPTABLE FOR GRID LAYERS DEEPER THAN 15" FROM THE SURFACE.

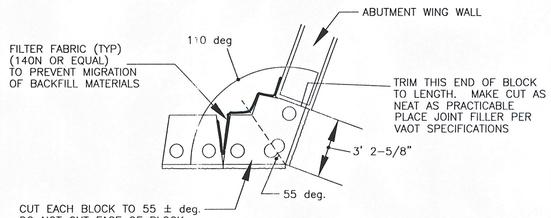
EVALUATION OF THE STRUCTURAL CAPABILITIES OF ANY GUARDRAIL OR FENCE SYSTEM INSTALLED AT THIS SITE WAS NOT PART OF THIS DESIGN.



VICINITY SKETCH

(NOT TO SCALE)

SEE CONSTRUCTION DRAWINGS BY OTHERS



CORNER DETAIL
NORTHEAST WALL, STA. 0+21

(NOT TO SCALE)

STATE OF VERMONT
RANDALL H. BRAGDON
#6788
CIVIL
LICENSED PROFESSIONAL ENGINEER

RECEIVED
JUN 07 2007
BY: DGB

New England's SVE Retaining Wall Designers

NOTE: THIS DRAWING WAS PREPARED FOR USE WITH REDI-ROCK (TM) RETAINING WALL SYSTEMS. CONTACT REDI-ROCK WALLS OF NEW ENGLAND AT (603) 863-1000.

REVISION		
#3	6/4/07 REVISED PER 5/31/07 VAOT COMMENTS	EM
#2	5/24/07 REVISED PER VAOT COMMENTS	EM
#1	5/15/07 ADD SECTION AT EXISTING HOUSE AND HEADWALL PER CONTRACTOR'S REQUEST	EM

REVISION SET NUMBER 3

SOUHEGAN VALLEY ENGINEERING, INC.
CIVIL ENGINEERING CONSULTANTS — SITE DESIGN SPECIALISTS
434 LEAR HILL ROAD NEWPORT(UNITY), NEW HAMPSHIRE 03773
TEL: (603) 863-5454 FAX: (603) 863-3629
Est. 1990 Available On The Web At www.SVEngineering.com

CLIENT: REDI-ROCK WALLS OF NEW ENGLAND
8 REEDS MILL ROAD, NEWPORT, NH 03773

PROJECT: RT. 4 BRIDGE OVER THE OTTAUQUECHEE RIVER
WOODSTOCK, VT

SHEET TITLE: RETAINING WALL DESIGN SHEET 2

DATE: MAY 9, 2007 SCALE: AS SHOWN PROJECT No.: 07-277

SHEET 2 OF 2

PROJECT NAME

QUALIFIED JOINT WELDING PROCEDURE PROJECT NUMBER
PROCEDURE SPECIFICATION

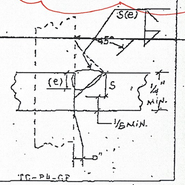
Material specification A36;A572;A588
Welding process FCAW
Manual or machine SEMI-AUTOMATIC
Position of welding FLAT for groove welds; Horizontal for fillet welds 1G; 2F
Filler metal specification AWS 5.20
Filler metal classification ALLOY RODS DUAL SHIELD 71 71 ULTRA (E71T-1)
Flux N/A
Shielding gas CO2 Flow rate 35 CFH
Single or multiple pass SINGLE AND MULTIPLE
Single or multiple arc SINGLE ELECTRICAL STICK-OUT 3/8"-3/8"
Welding current DC
Polarity REVERSE
Welding progression N/A
Root treatment NONE
Preheat and interpass temperature 50 to 3/8"THCK; 70 to 1"THCK; 150 to 2" THCK
Postheat treatment NONE
Supported by PQR 007 and 008

WELDING PROCEDURE

VTRANS RECEIVED FEB 23 2007 OK'D BY JLK

Pass no.	Electrode size	Welding current Amperes	Welding current Volts	Travel speed (I.P.M.)	Weld Size (S)
		GROOVE WELDS			
1	.045	220-240	26-28	16-18	3/16"
1	.045	220-240	26-28	10-12	1/4"
all	.045	220-240	26-28	14-16	5/16"
		FILLET WELDS			
FILLET WELDS SHALL EQUAL 1/4 OF t BUT NOT MORE THAN 3/8"					
SEE PROCEDURE DS-16 FOR PARAMETERS OF FILLET WELDS					

Joint detail: APPROVED BY DATE 3-9-07



This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

Procedure no. DS-13
Revision no.
Form E-2

Contractor Merrimack Sheet Metal, Inc.
Authorized by Scott Blanchette
Date 1/26/01

PROJECT NAME

QUALIFIED JOINT WELDING PROCEDURE PROJECT NUMBER
PROCEDURE SPECIFICATION

Material specification A36;A572;A588
Welding process FCAW
Manual or machine SEMI-AUTOMATIC
Position of welding FLAT for groove welds; Horizontal for fillet welds 1G; 2F
Filler metal specification AWS 5.20
Filler metal classification ALLOY RODS DUAL SHIELD 71 71 ULTRA (E71T-1)
Flux N/A
Shielding gas CO2 Flow rate 35 CFH
Single or multiple pass SINGLE AND MULTIPLE
Single or multiple arc SINGLE ELECTRICAL STICK-OUT 3/8"-3/8"
Welding current DC
Polarity REVERSE
Welding progression N/A
Root treatment NONE
Preheat and interpass temperature 50 to 3/8"THCK; 70 to 1"THCK; 150 to 2" THCK
Posheat treatment NONE
Supported by WPQR 007 and 008

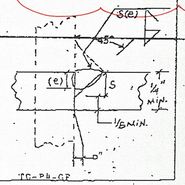
VARIOUS
RECEIVED
FEB 2 3 2007
BY DATE 3-7-07

WELDING PROCEDURE

OK'D BY JCK OK'D BY
APPROVED

Pass no.	Electrode size	Welding current Amperes	Volts	Travel speed (I.P.M.)	Weld Size (S)
		GROOVE WELDS			
1	.045	220-240	26-28	16-18	3/16"
1	.045	220-240	26-28	10-12	1/4"
all	.045	220-240	26-28	14-16	5/16"
		FILLET WELDS			
FILLET WELDS SHALL EQUAL 1/4 OF t BUT NOT MORE THAN 3/8"					
SEE PROCEDURE DS-16 FOR PARAMETERS OF FILLET WELDS					

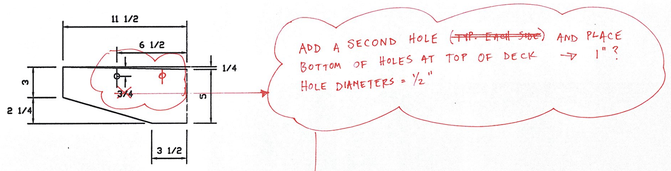
Joint detail



This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

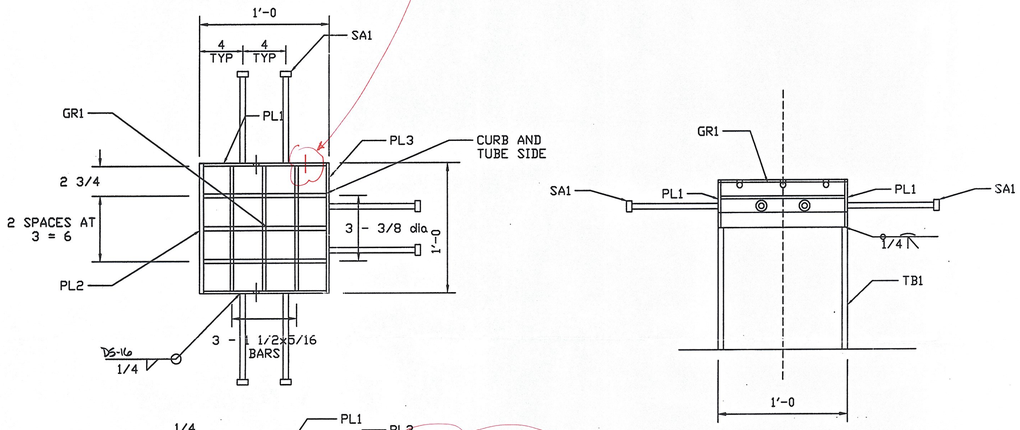
Procedure no. DS-13
Revision no.
Form E-2

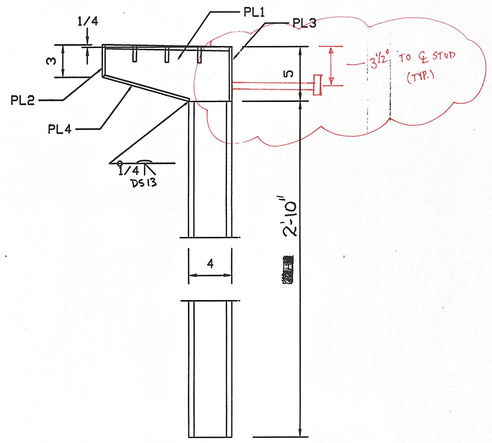
Contractor Merrimack Sheet Metal, Inc.
Authorized by Scott Blanchette
Date 1/26/01



ADD A SECOND HOLE ~~(TYP. EACH SIDE)~~ AND PLACE BOTTOM OF HOLES AT TOP OF DECK → 1"?
HOLE DIAMETERS = 1/2"

PL1 DETAIL





SCUPPER DETAIL

BILL OF MATERIALS

QTY	MARK	SHAPE	LENGTH	REMARKS
6		SCUPPER		
6	GR1	Grate 3/8 dia bars and 1 1/2 x 5/16 11 3/4 x 11 3/4		
12	PL1	Plate 1/4 x 5 1/4	0'-11 1/2	
6	PL2	Plate 1/4 x 3	1'-0	
6	PL3	Plate 1/4 x 5	1'-0	
6	PL4	Plate 1/4 x 8 5/16	1'-0	
6	TB1	Tube 12 x 4 x 1/2	~~2'-10~~ 2'-10	
36	SA1	Studs 1/2 dia	0'-8	

NOTES
1. All downspout steel tubing shall be ASTM A-500.
2. All plates, bars and angles shall be AASHTO M183 (ASTM A36).
3. Scuppers shall be galvanized according to AASHTO M111 (ASTM A123) after fabrication.
4. Grating shall be a commercial heavy-duty grating with 1 1/2" x 5/16" bearing bars and 3/8" dia cross bars.
5. SEAL WELD ALL CONNECTIONS WHERE POSSIBLE

SHOP DRAWING REVIEW

☐ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.
☐ REJECTED ☐ REVISE AND RESUBMIT ☒ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists Six Bedford Farms, Kitton Rd. Bedford, NH 03110 603 644 0888

Job Number: 51298
Reviewed By: L. GARANER
Date: 3/20/07

REV NO.	DATE	DESCRIPTION
		DATE SUBMITTED
0	2-7-2007	SUBMITTED FOR APPROVAL

HOLES AS NOTED
MATERIAL: AASHTO M183 (ASTM A36)
FINISHING: GALVANIZED, AASHTO M111 (ASTM A123)

DRAWING COVERS
SCUPPER DETAILS

	PROJECT	WOODSTOCK BHF 020-2(32)
	LOCATION	US ROUTE 4 OVER OTTAUQUECHEE RIVER
	ENGINEER	STATE OF VERMONT AGENCY OF TRANSPORTATION and VHB
	CUSTOMER	T BUCK CONSTRUCTION

MERRIMACK SHEET METAL
119 HALL STREET
CONCORD NH 03301
Tel. 603.224.7766
Fax 603.224.7925

DRAWN BY: RL
CHECKED BY: JD
JOB NO: #1350
DWG NO: F1

L.B. Foster Co.

WELDING PROCEDURE SPECIFICATION

2F AL (AWS 56)

Material Spec. 6061-T6 or 5061-T6

Welding Process(es) GMAW

Position of Welding Horizontal

Manual ☐ Machine ☐ Semi-Automatic ☒ Automatic ☐

Filler Metal Specification AWS A5.10

Filler Metal Classification ER5356 F22

Flux N/A

Shielding Gas 100% Argon Gas Flow Rate 35 CFH

Single or Multiple Pass Single

Single or Multiple Arc Single

Welding Current Direct Current

Polarity: AC ☐ DCEP ☒ DCEN ☐ Pulsed ☐

Welding Progression Up ☐ Down ☐

Root Treatment Wire Brush

Preheat Temperature 80 Deg. F min. Interpass Temperature N/A

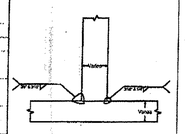
Postheat Treatment None

Heat Input Min N/A Max N/A

WELDING PROCEDURE

Pass No.	Electrode Size	Amperes	Volts	Travel Speed/ Other
3/16"	0.035"	160	23	20 IPM
1/4"	0.035"	160	23	20 IPM
5/16"	0.035"	160	23	20 IPM
3/8"	0.035"	160	23	20 IPM
	Min.	123	20	18 IPM
	Max.	192	26	22 IPM

Joint Detail



This procedure may vary due to fabrication sequence, fit-up, pass size, etc., within the limitation of variables given in Section 5.

Procedure No. 2F AL (AWS 56) Contractor L. B. Foster Co.

Revision No. 0 Authorized By Julian M. Pedrazzani Date 2/21/2005

Per AWS D1.5

L.B. Foster Co.

WELDING PROCEDURE SPECIFICATION

2F AL (AWS 5B)

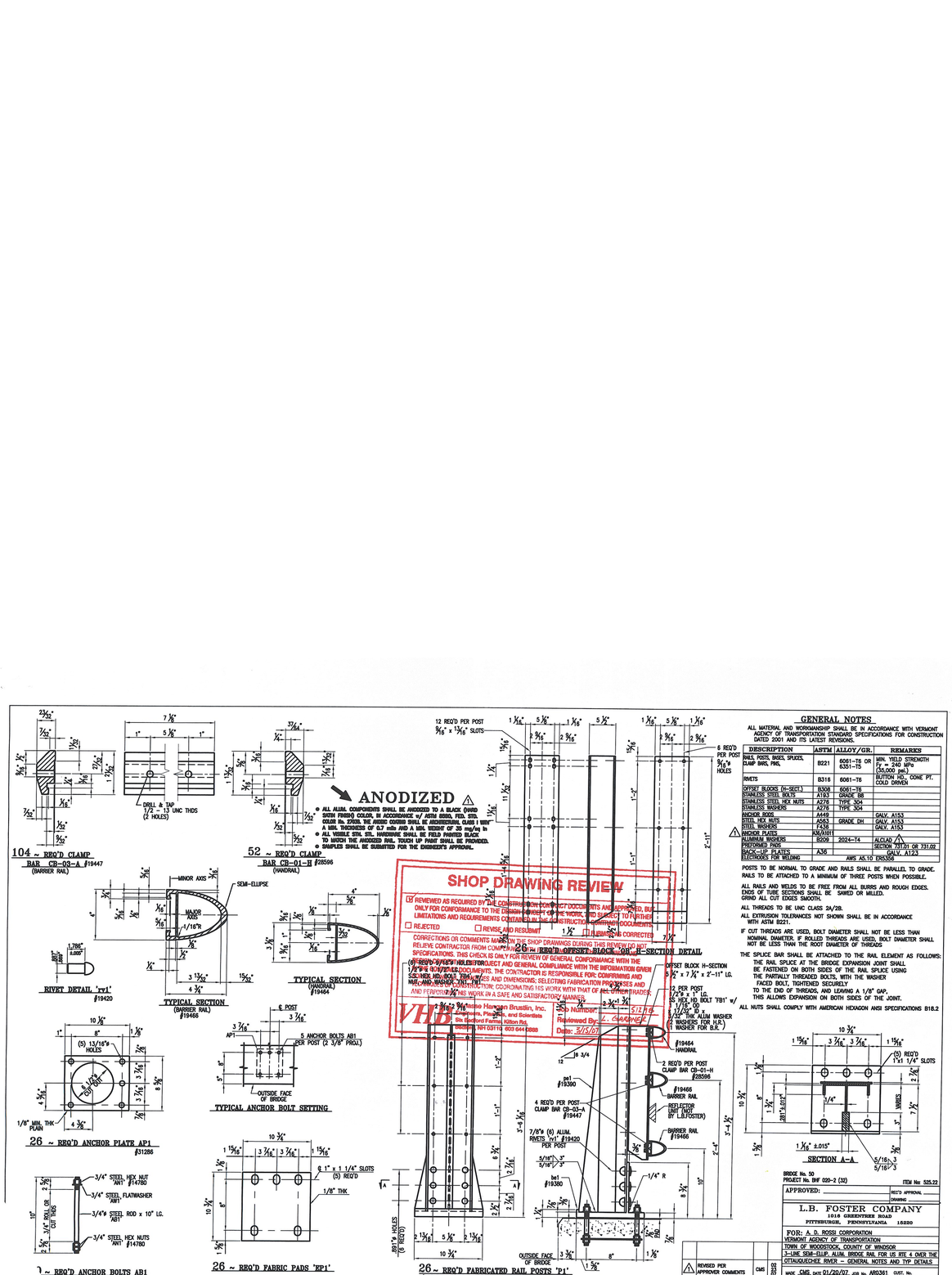
Joint Detail

MEMO

Supporting PQR's: PQR AL122; AL-100

VTRANS
RECEIVED
CK'D BY _____ OK'D BY JWK
FEB 08 2007
RESUBMIT _____ APPROVED ✓
BY DATE 2-16-07

Per AWS D1.5



GENERAL NOTES

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

DESCRIPTION	ASTM	ALLOY/GR.	REMARKS
RAILS, POSTS, ANGEL SPLICES, CLAMP BARS, PNG.	B221	6061-T6 OR 6351-T5	MIN. YIELD STRENGTH Fy = 240 MPa (35,000 psi.)
RIVETS	B316	6061-T6	BUTTON HD., CONE PT., COLD DRIVEN
OFFSET BLOCKS (H-SECT.)	B308	6061-T6	
STAINLESS STEEL BOLTS	A193	GRADE B8	
STAINLESS STEEL HEX NUTS	A275	TYPE 304	
STAINLESS WASHERS	A276	TYPE 304	
ANCHOR BOLTS	A449		GALV. A153
STEEL HEX NUTS	A563	GRADE DH	GALV. A153
STEEL WASHERS	F436		GALV. A153
⚠1 ANCHOR PLATES	A36/A501		GALV. A123
ALUMINUM WASHERS	B209	2024-T4	ALCLAD ⚠1
PREFORMED PADS			SECTION 707.01 OR 731.02
BACK-UP PLATES	A36		GALV. A123
ELECTRODES FOR WELDING		AWS A5.10 ER5356	

POSTS TO BE NORMAL TO GRADE AND RAILS SHALL BE PARALLEL TO GRADE. RAILS TO BE ATTACHED TO A MINIMUM OF THREE POSTS WHEN POSSIBLE.

ALL RAILS AND WELDS TO BE FREE FROM ALL BURRS AND ROUGH EDGES. ENDS OF TUBE SECTIONS SHALL BE SAWED OR MILLED. GRIND ALL CUT EDGES SMOOTH.

ALL THREADS TO BE UNC CLASS 2A/2B.

ALL EXTRUSION TOLERANCES NOT SHOWN SHALL BE IN ACCORDANCE WITH ASTM B221.

IF CUT THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN THE ROOT DIAMETER OF THREADS

THE SPLICE BAR SHALL BE ATTACHED TO THE RAIL ELEMENT AS FOLLOWS:
THE RAIL SPLICE AT THE BRIDGE EXPANSION JOINT SHALL BE FASTENED ON BOTH SIDES OF THE RAIL SPLICE USING THE PARTIALLY THREADED BOLTS, WITH THE WASHER FACED BOLT, TIGHTENED SECURELY TO THE END OF THREADS, AND LEAVING A 1/8" GAP. THIS ALLOWS EXPANSION ON BOTH SIDES OF THE JOINT.

ALL NUTS SHALL COMPLY WITH AMERICAN HEXAGON ANSI SPECIFICATIONS B18.2

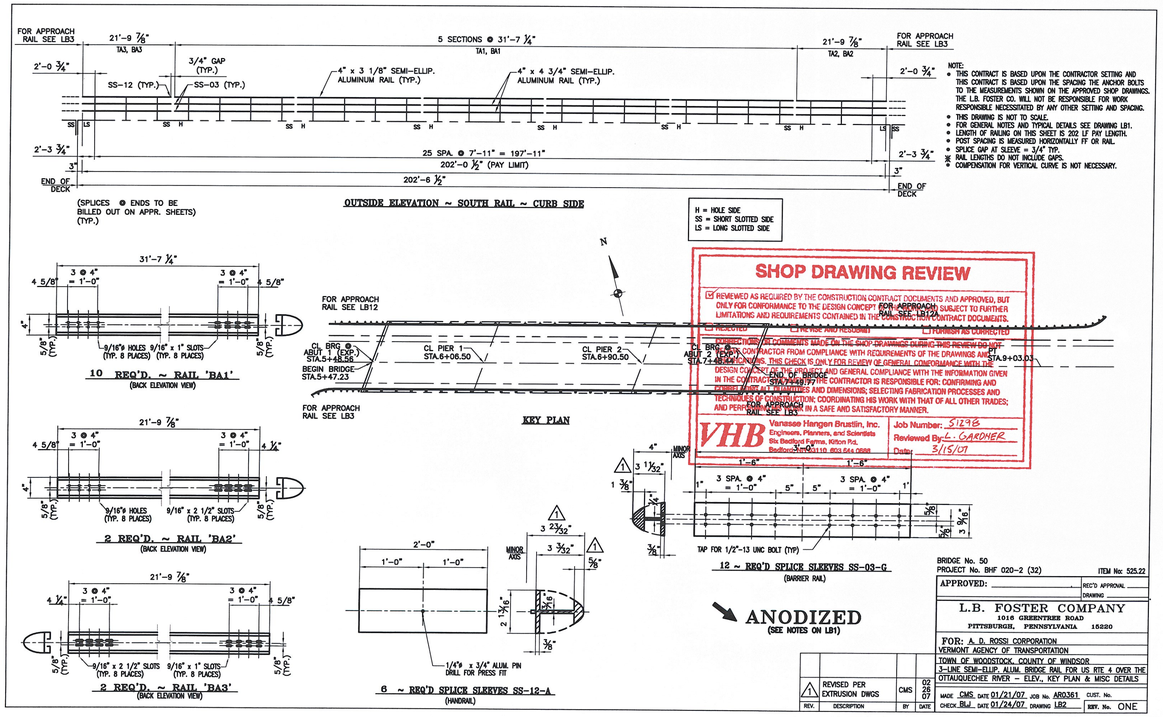
NO.	REVISED PER APPROVER COMMENTS	CMS	05/15/07
REV.	DESCRIPTION	BY	DATE

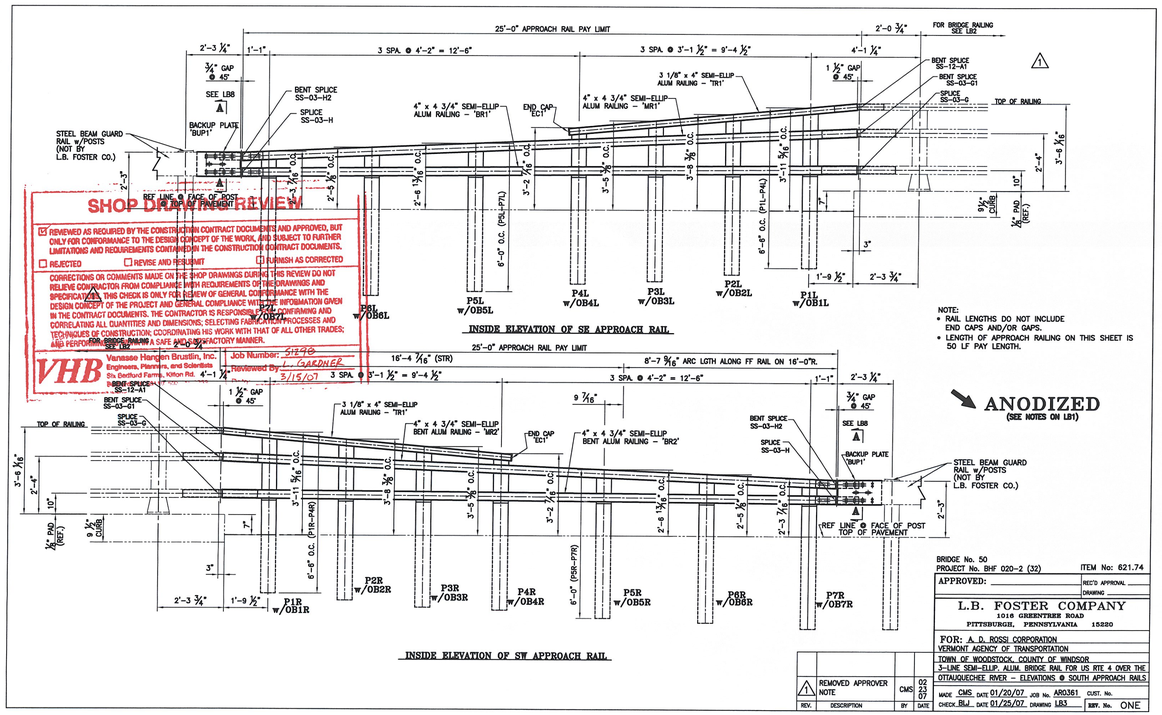
BRIDGE No. 50
PROJECT No. BRF 020-2 (32) ITEM No: 525.22
APPROVED: _____ RSCT'S APPROVAL
DRAWING

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER -- GENERAL NOTES AND TYP. DETAILS

MADE CMS DATE 01/20/07 JOB No. AR0361 CUST. No.
CHECK RJ DATE 01/29/07 DRAWING 1R1 REV. No. ONE


FOR APPROACH RAIL SEE LB3
21'-9 7/8"
TA3, BA3
5 SECTIONS @ 31'-7 1/4"
TA1, BA1
21'-9 7/8"
TA2, BA2
FOR APPROACH RAIL SEE LB3
2'-0 3/4"
3/4" GAP (TYP.)
SS-12 (TYP.)
SS-03 (TYP.)
4" x 3 1/8" SEMI-ELLIP. ALUMINUM RAIL (TYP.)
4" x 4 3/4" SEMI-ELLIP. ALUMINUM RAIL (TYP.)
2'-3 3/4"
25 SPA. @ 7'-11" = 197'-11"
202'-0 1/2" (PAY LIMIT)
3"
END OF DECK
202'-6 1/2"
(SPLICES @ ENDS TO BE BILLED OUT ON APPR. SHEETS) (TYP.)
OUTSIDE ELEVATION ~ SOUTH RAIL ~ CURB SIDE
H = HOLE SIDE
SS = SHORT SLOTTED SIDE
LS = LONG SLOTTED SIDE
NOTE:
THIS CONTRACT IS BASED UPON THE CONTRACTOR SETTING AND THIS CONTRACT IS BASED UPON THE SPACING THE ANCHOR BOLTS TO THE MEASUREMENTS SHOWN ON THE APPROVED SHOP DRAWINGS. THE L.B. FOSTER CO. WILL NOT BE RESPONSIBLE FOR WORK RESPONSIBLE NECESSITATED BY ANY OTHER SETTING AND SPACING.
THIS DRAWING IS NOT TO SCALE.
FOR GENERAL NOTES AND TYPICAL DETAILS SEE DRAWING LB1.
LENGTH OF RAILING ON THIS SHEET IS 202 LF PAY LENGTH.
POST SPACING IS MEASURED HORIZONTALLY FF OR RAIL.
SPLICE GAP AT SLEEVE = 3/4" TYP.
RAIL LENGTHS DO NOT INCLUDE GAPS.
COMPENSATION FOR VERTICAL CURVE IS NOT NECESSARY.
31'-7 1/4"
3 @ 4" = 1'-0"
4 5/8"
5/8" (TYP.)
9/16"ø HOLES (TYP. 8 PLACES)
9/16" x 1" SLOTS (TYP. 8 PLACES)
10 REQ'D. ~ RAIL 'BA1'
(BACK ELEVATION VIEW)
FOR APPROACH RAIL SEE LB12
CL BRG @ ABUT 1 (EXP.) STA.5+48.56
BEGIN BRIDGE STA.5+47.23
CL PIER 1 ~ STA.6+06.50
CL PIER 2 STA.6+90.50
CL BRG @ ABUT 2 (EXP.) STA.7+49.44
END BRIDGE STA.7+49.77
FOR APPROACH RAIL SEE LB3
KEY PLAN
21'-9 7/8"
4 1/4"
9/16" x 2 1/2" SLOTS (TYP. 8 PLACES)
2 REQ'D. ~ RAIL 'BA2'
(BACK ELEVATION VIEW)
2 REQ'D. ~ RAIL 'BA3'
(BACK ELEVATION VIEW)
2'-0"
1'-0"
MINOR AXIS
2 15/16"
1/4"ø x 3/4" ALUM. PIN DRILL FOR PRESS FIT
6 ~ REQ'D SPLICE SLEEVES SS-12-A
(HANDRAIL)
3'-0"
1'-6"
3 SPA. @ 4" = 1'-0"
5"
1'
1 3/4"
3 9/16"
TAP FOR 1/2"-13 UNC BOLT (TYP)
12 ~ REQ'D SPLICE SLEEVES SS-03-G
(BARRIER RAIL)
ANODIZED
(SEE NOTES ON LB1)
SHOP DRAWING REVIEW
REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.
RECEIVED
APPROVED AS NOTED
CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.
VHB
Vanasse Hangen Brustlin, Inc.
Engineers, Planners, and Scientists
Six Bedford Farms, Witton Rd.
Bedford, NH 03110. 603.644.2888
Job Number: 51293
Reviewed By: L. GARDNER
Date: 3/15/07
REVISED PER EXTRUSION DWGS
CMS
02 26 07
REV. DESCRIPTION BY DATE
BRIDGE No. 50
PROJECT No. BHF 020-2 (32)
ITEM No: 525.22
APPROVED:
REQ'D APPROVAL
DRAWING
L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220
FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE. 4 OVER THE OTTAUQUECHEE RIVER ~ ELEV., KEY PLAN & MISC DETAILS
MADE CMS DATE 01/21/07 JOB No. ARD361 CUST. No.
CHECK BJJ DATE 01/24/07 DRAWING LB2 REV. No. ONE



SHOP DRAWING REVIEW
☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.
☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED
CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.
VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Dartford Farms, Iolton Rd. Job Number: 51790
Reviewed By L. GARDNER 3/15/07

REV.	DESCRIPTION	BY	DATE
1	REMOVED APPROVER NOTE	CMS	02 23 07

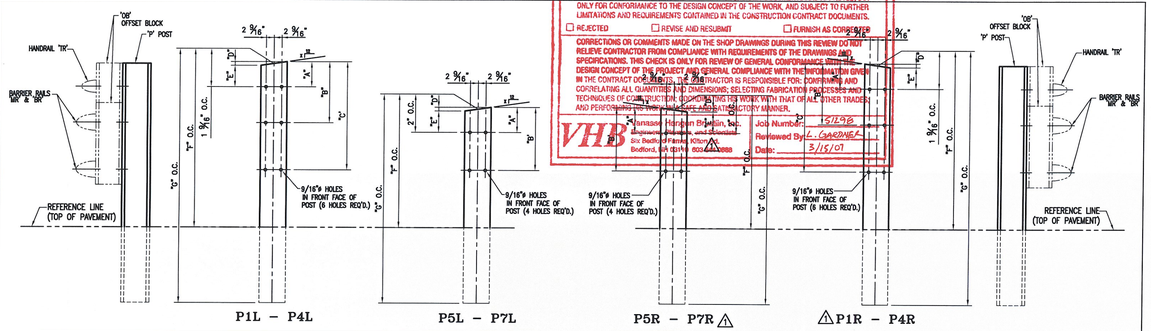
BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 621.74

APPROVED: _____ REC'D APPROVAL _____ DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER – ELEVATIONS @ SOUTH APPROACH RAILS

MADE CMS DATE 01/20/07 JOB No. ARQ361 CUST. No.
CHECK BJJ DATE 01/25/07 DRAWING LB3 REV. No. ONE



P1L – P4L P5L – P7L

P5R – P7R ⚠ ⚠P1R – P4R

SHOP DRAWING REVIEW

☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHD Vanasse Hangen Brustlin, Inc. Engineers Planners Scientists 352 Bedford Farms, Bedford, MA 01730-1093 (781) 275-9000

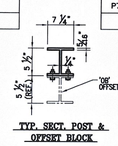
Job Number: 15298
Reviewed By: L. GARDNER
Date: 3/15/07

POST DETAIL CHART FOR SE APPROACH CURB CONDITION

POST No.	QTY.	OFFSET BLOCK MTG. DIMENSIONS A	B	C	D	E	F (O.C.)	G (O.C.)	BEV X
P1L	1	1 7/8"	1'-1 5/16"	2'-6 7/16"	9/16"	1 1/4"	3'-11 5/16"	6'-6"	15/16
P2L	1	1 7/8"	11 9/16"	2'-3 7/16"	9/16"	1 1/4"	3'-8 3/8"	6'-6"	15/16
P3L	1	1 7/8"	9 7/8"	2'-0 1/2"	9/16"	1 1/4"	3'-5 3/8"	6'-6"	15/16
P4L	1	1 7/8"	8 3/16"	1'-9 1/2"	9/16"	1 1/4"	3'-2 7/16"	6'-6"	15/16
P5L	1	2 1/8"	1'-1 11/16"		1/4"	1 7/8"	2'-6 13/16"	6'-0"	3/8
P6L	1	2 1/8"	11 15/16"		1/4"	1 7/8"	2'-5 1/8"	6'-0"	3/8
P7L	1	2 1/8"	10 3/16"		1/4"	1 7/8"	2'-3 7/16"	6'-0"	3/8

NOTE:
2 CLAMPING BARS CB-01-H (#28596) PER POSTS P1-P4
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P1-P4 w/ 1/2"ø-13 UNC S.S. BOLT x 1" LG. 'FB1', 1 1/16" O.D. x 17/32" I.D. x 3/32" THK. ALUM WASHER 'FW1'
⚠ (#15280 & # 19404) (16 PER POST)

NOTE:
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P5-P7 w/ 13 (1/2"ø-13 UNC) S.S. BOLT x 25 (1") LG. 'FB1', 27 (1 1/16") O.D. x 13 (17/32") I.D. x 2 (3/32") THK. ALUM WASHER 'FW1'
⚠ (#15280 & # 19404) (8 PER POST)



TYP. SECT. POST & OFFSET BLOCK

ANODIZED (SEE LB1 FOR SPECIFICATIONS)

POST DETAIL CHART FOR SW APPROACH CURB CONDITION

POST No.	QTY.	OFFSET BLOCK MTG. DIMENSIONS A	B	C	D	E	F (O.C.)	G (O.C.)	BEV X
P1R	1	1 7/8"	1'-1 5/16"	2'-6 7/16"	9/16"	1 1/4"	3'-11 5/16"	6'-6"	15/16
P2R	1	1 7/8"	11 9/16"	2'-3 7/16"	9/16"	1 1/4"	3'-8 3/8"	6'-6"	15/16
P3R	1	1 7/8"	9 7/8"	2'-0 1/2"	9/16"	1 1/4"	3'-5 3/8"	6'-6"	15/16
P4R	1	1 7/8"	8 3/16"	1'-9 1/2"	9/16"	1 1/4"	3'-2 7/16"	6'-6"	15/16
P5R	1	2 1/8"	1'-1 11/16"		1/4"	1 7/8"	2'-6 13/16"	6'-0"	3/8
P6R	1	2 1/8"	11 15/16"		1/4"	1 7/8"	2'-5 1/8"	6'-0"	3/8
P7R	1	2 1/8"	10 3/16"		1/4"	1 7/8"	2'-3 7/16"	6'-0"	3/8

REV.	DESCRIPTION	BY	DATE
⚠	GENERAL REVISIONS PER APPROVER COMMENTS	CMS	03/15/07

BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 621.74
APPROVED: REC'D APPROVAL
DRAWING

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER – POST DETAILS

MADE CMS DATE 01/20/07 JOB No. AR0361 CUST. No.
CHECK BLJ DATE 01/25/07 DRAWING LB4 REV. No. ONE

OFFSET BLOCK CHART FOR BRIDGE SE APPROACH
@ CURB CONDITION – POSTS P1L – P4L

POST No.	OFFSET BLOCK	QTY.	OFFSET BLOCK ~ POST MTG. DIMENSIONS A	B	C	D	E	F (O.C.)	G	REV X
P1L	OB1L	1	2'-9 7/16"	2'-6 7/16"	1'-1 5/16"	1 7/8"	9/16"	2'-9 1/8"	1 1/4"	15/16
P2L	OB2L	1	2'-6 1/2"	2'-3 7/16"	11 9/16"	1 7/8"	9/16"	2'-6 3/16"	1 1/4"	15/16
P3L	OB3L	1	2'-3 1/2"	2'-0 1/2"	9 7/8"	1 7/8"	9/16"	2'-3 3/16"	1 1/4"	15/16
P4L	OB4L	1	2'-0 9/16"	1'-9 1/2"	8 3/16"	1 7/8"	9/16"	2'-0 1/4"	1 1/4"	15/16

OFFSET BLOCK ~ RAIL MTG. DIMENSIONS

POST No.	OFFSET BLOCK	H	J	K	L	M	N
P1L	OB1L	1"	1'-0 3/8"	2'-5 5/8"	7/8"	11 15/16"	2'-5 1/16"
P2L	OB2L	1"	10 11/16"	2'-2 5/8"	7/8"	10 1/4"	2'-2 1/16"
P3L	OB3L	1"	8 15/16"	1'-11 5/8"	7/8"	8 9/16"	1'-11 1/16"
P4L	OB4L	1"	7 1/4"	1'-8 5/8"	7/8"	6 7/8"	1'-8 1/16"

OFFSET BLOCK CHART FOR BRIDGE SW APPROACH
@ CURB CONDITION – POSTS P1R – P4R

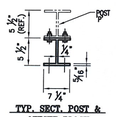
POST No.	OFFSET BLOCK	QTY.	OFFSET BLOCK ~ POST MTG. DIMENSIONS A	B	C	D	E	F (O.C.)	G	REV X
P1R	OB1R	1	2'-9 7/16"	2'-6 7/16"	1'-1 5/16"	1 7/8"	9/16"	2'-9 1/8"	1 1/4"	15/16
P2R	OB2R	1	2'-6 1/2"	2'-3 7/16"	11 9/16"	1 7/8"	9/16"	2'-6 3/16"	1 1/4"	15/16
P3R	OB3R	1	2'-3 1/2"	2'-0 1/2"	9 7/8"	1 7/8"	9/16"	2'-3 3/16"	1 1/4"	15/16
P4R	OB4R	1	2'-0 9/16"	1'-9 1/2"	8 3/16"	1 7/8"	9/16"	2'-0 1/4"	1 1/4"	15/16

OFFSET BLOCK ~ RAIL MTG. DIMENSIONS

POST No.	OFFSET BLOCK	H	J	K	L	M	N
P1R	OB1R	1"	1'-0 3/8"	2'-5 5/8"	7/8"	11 15/16"	2'-5 1/16"
P2R	OB2R	1"	10 11/16"	2'-2 5/8"	7/8"	10 1/4"	2'-2 1/16"
P3R	OB3R	1"	8 15/16"	1'-11 5/8"	7/8"	8 9/16"	1'-11 1/16"
P4R	OB4R	1"	7 1/4"	1'-8 5/8"	7/8"	6 7/8"	1'-8 1/16"

NOTE:
2 CLAMPING BARS CB-01-H (#19447) PER POSTS P1- P4
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P1- P4 w/ 1/2"ø-13 UNC S.S. BOLT x 1" LG. 'FB1', 1 1/16" O.D. x 17/32" I.D. x 3/32" THK. ALUM WASHER 'FW1' (#15280 & # 19404) (16 PER POST)

NOTE:
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P1 – P4 w/ 1/2"ø-13 UNC S.S. BOLT x 1" LG. 'FB1', 1 1/16" O.D. x 17/32" I.D. x 3/32" THK. ALUM WASHER 'FW1' (#15280 & # 19404) (8 PER POST)



TYP. SECT. POST & OFFSET BLOCK

ANODIZED
(SEE LBI FOR SPECIFICATIONS)

REV.	DESCRIPTION	BY	DATE

BRIDGE #50
PROJECT No. BHF 020-2 (32) ITEM No: 821.74

APPROVED: _____ REC'D APPROVAL _____ DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER – POST-OFFSET DETAILS

MADE CMS DATE 01/20/07 JOB No. AR0361 CUST. No.
CHECK BLJ DATE 01/25/07 DRAWING LB5 REV. No.

SHOP DRAWING REVIEW

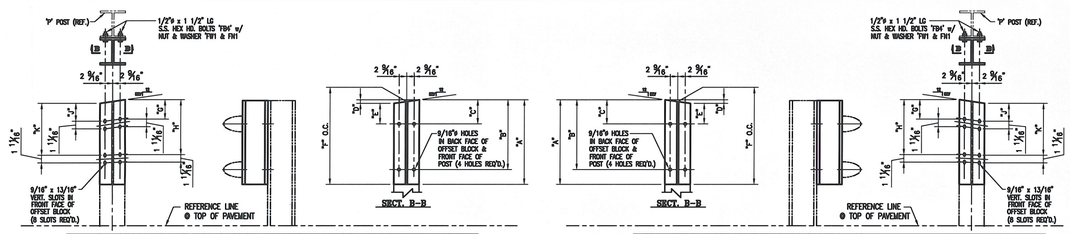
☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists Six Bedford Farms, Kitton Rd. Bedford, MA 01730 603 644 2800

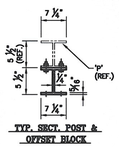
Job Number: 51295
Reviewed By: L. GARDNER
Date: 3/15/07



OFFSET BLOCK CHART FOR BRIDGE SE APPROACH
CURB CONDITION – POSTS P5L – P7L

POST No.	OFFSET BLOCK	QTY.	OFFSET BLOCK ~ POST MTG. DIMENSIONS A	B	C	D	E	F (O.C.)	REV X
P5L	OB5L	1	1'-4 11/16"	1'-1 11/16"	2 1/8"	1/4"	1 7/8"	1'-4 9/16"	3/8
P6L	OB6L	1	1'-2 15/16"	11 15/16"	2 1/8"	1/4"	1 7/8"	1'-2 13/16"	3/8
P7L	OB7L	1	1'-1 3/16"	10 3/16"	2 1/8"	1/4"	1 7/8"	1'-1 1/16"	3/8

POST No.	OFFSET BLOCK	OFFSET BLOCK ~ RAIL MTG. DIMENSIONS G	H	J	K
P5L	OB5L	1 3/16"	1'-0 13/16"	1 1/8"	1'-0 9/16"
P6L	OB6L	1 3/16"	11 1/8"	1 1/8"	10 7/8"
P7L	OB5L	1 3/16"	9 3/8"	1 1/8"	9 1/8"



TYP. SECT. POST & OFFSET BLOCK

OFFSET BLOCK CHART FOR BRIDGE SW APPROACH
@ CURB CONDITION – POSTS P5R – P7R

POST No.	OFFSET BLOCK	QTY.	OFFSET BLOCK ~ POST MTG. DIMENSIONS A	B	C	D	E	F (O.C.)	REV X
P5R	OB5R	1	1'-4 11/16"	1'-1 11/16"	2 1/8"	1/4"	1 7/8"	1'-4 9/16"	3/8
P6R	OB6R	1	1'-2 15/16"	11 15/16"	2 1/8"	1/4"	1 7/8"	1'-2 13/16"	3/8
P7R	OB7R	1	1'-1 3/16"	10 3/16"	2 1/8"	1/4"	1 7/8"	1'-1 1/16"	3/8

POST No.	OFFSET BLOCK	OFFSET BLOCK ~ RAIL MTG. DIMENSIONS G	H	J	K
P5R	OB5R	1 3/16"	1'-0 13/16"	1 1/8"	1'-0 9/16"
P6R	OB6R	1 3/16"	11 1/8"	1 1/8"	10 7/8"
P7R	OB7R	1 3/16"	9 3/8"	1 1/8"	9 1/8"

SHOP DRAWING REVIEW

☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Bedford Farms, Kitson Rd. Bedford, NH 03110 603 644 2800

Job Number: 51296
Reviewed By: L. GARDNER
Date: 3/15/07

NOTE:
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P5 – P7 w/ 1/2"ø-13 UNC S.S. BOLT x 1" LG. 'FB1', 1 1/16" O.D. x 17/32" I.D. x 3/32" THK. ALUM WASHER 'FW1' (#15280 & # 19404) (6 PER POST)

ANODIZED
(SEE LBR FOR SPECIFICATIONS)

REV.	DESCRIPTION	BY	DATE

BRIDGE No. 50
PROJ. No. BHF 020-2 (32) ITEM No: 621.74

APPROVED: _____ REC'D APPROVAL _____ DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER – OFFSET DETAILS

MADE CMS DATE 01/20/06 JOB No. AR0361 CUST. No.
CHECK BIJ DATE 01/25/07 DRAWING LB6 REV. No.

SECTION B–B

HANDRAIL SPLICES				
MK.	X	QTY.	OFFSET	LOCATION
SS-12-A1	15/16	2	15/16	SE, SW

SECTION C–C

BARRIER RAIL SPLICES				
MK.	X	QTY.	OFFSET	LOCATION
SS-03-H	SQ	2	–	SE, SW
SS-03-H2	3/8	2	3/8"	SE, SW

BARRIER RAIL SPLICES				
MK.	X	QTY.	OFFSET	LOCATION
SS-03-G	SQ	2	–	SE, SW
SS-03-G1	3/8	2	5/8"	SE, SW

ANODIZED
(SEE NOTES ON LB1)

SHOP DRAWING REVIEW

☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc.
Engineers, Planners, and Scientists
Six Bedford Farms, Kitton Rd.
Bedford, NH 03110 603 644 0888

Job Number: 51496
Reviewed By: L. GARDNER
Date: 3/15/07

BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 621.74

APPROVED: _____ REG'S APPROVAL _____
DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER – SPLICE DETAILS

REV.	DESCRIPTION	BY	DATE
1	REVISED ALL POST HGHTS. PER APPROVED NEW INFO.	CMS	01/25/07

MADE CMS DATE 01/21/07 JOB No. AR0361 CUST. No.
CHECK BWJ DATE 01/25/07 DRAWING LB7 REV. No. ONE

SECTION A–A
(SEE LB3)

PLAN VIEW

2 REQ'D. ~ RAIL 'TR1'
(BACK ELEVATION VIEW)

ONE REQ'D. ~ RAIL 'MR2'
(BACK ELEVATION VIEW)
ONE REQ'D. ~ RAIL 'BR2'
(BACK ELEVATION VIEW)

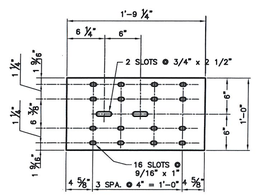
ONE REQ'D. ~ RAIL 'BR1'
(BACK ELEVATION VIEW)

2 ~ REQ'D END CAPS (3 1/8" x 4") 'EC1'
#19344

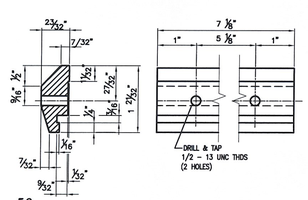
SPLICE BOLT DETAILS

ANODIZED
(SEE NOTES ON LB1)

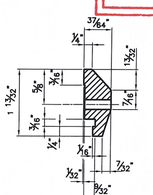
DETAIL "B"



2 REQ'D. ~ BACK-UP PLATE BUP1
(1/4" THK. PLATE ~ A36 – GALV.)



56 ~ REQ'D CLAMP
BAR CB-03-A
(BARRIER RAIL ~ 4 PER POST)
(#19447)



16 ~ REQ'D CLAMP
BAR CB-01-H
(HANDRAIL ~ 2 PER POST)
(#28586)

REV.	DESCRIPTION	BY	DATE
1	REVISED PER APPROVAL MARKUP	CMS	03/27/07

BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 621.74
APPROVED: REG'D APPROVAL
DRAWING

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE
OTTAUQUECHEE RIVER – MISC. APPROACH DETAILS

DRWN: CMS DATE: 01/21/07 JOB No.: ARO3061 CUST. No.:
CHECK: BWJ DATE: 01/25/07 DRAWING: LB8 REF. No.: ONE

104 ~ REQ'D CLAMP BAR CB-03-A #19447 (BARRIER RAIL)

52 ~ REQ'D CLAMP BAR CB-01-W #20596 (HANDRAIL)

TYPICAL SECTION (HANDRAIL) #19464

TYPICAL SECTION (BARRIER RAIL) #19466

RIVET DETAIL 'rv1' #19420

26 ~ REQ'D ANCHOR PLATE AP1 #31286

130 ~ REQ'D ANCHOR BOLTS AB1

26 ~ REQ'D FABRIC PADS 'EP1'

26 ~ REQ'D FABRICATED RAIL POSTS P-301-K (SIDEWALK)

SECTION A-A

GENERAL NOTES

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

DESCRIPTION	ASTM	ALLOY/GR.	REMARKS
RAIL POSTS, BASES SPLICES, CLAMP BARS, PINS, & BALUSTER FRAMES	B221	6061-T6 OR 6351-T5	MIN. YIELD STRENGTH Fy = 35,000 psi.
BALUSTERS	B221	6061 OR 6351	T4 - USED FOR SUPERIOR EXPANDING QUALITIES
RIVETS	B316	6061-T6	BUTTON HD., 02NE PT.
HEX SCREWS FOR BALUSTERS	F880	TYPE 303	
STAINLESS STEEL BOLTS	A193	GRADE B8	
ANCHOR BODS	A449		GALV. A153
STEEL HEX NUTS	A563	GRADE DH	GALV. A153
STEEL WASHERS	F436		GALV. A153
⚠ ANCHOR PLATES	A36/A572		
⚠ ALUMINUM WASHERS	B209	2024-T4	ALCLAD
PREFORMED PADS			SECTION 731.01 OR 731.02
ELECTRODES FOR WELDING		AWS A5.10	ER5356

POSTS TO BE NORMAL TO GRADE AND RAILS SHALL BE PARALLEL TO GRADE. RAILS TO BE ATTACHED TO A MINIMUM OF THREE POSTS WHEN POSSIBLE.

ALL RAILS AND WELDS TO BE FREE FROM ALL BURRS AND ROUGH EDGES. ENDS OF TUBE SECTIONS SHALL BE SAWED OR MILLED. GRIND ALL CUT EDGES SMOOTH.

ALL THREADS TO BE UNC CLASS 2A/2B.

ALL EXTRUSION TOLERANCES NOT SHOWN SHALL BE IN ACCORDANCE WITH ASTM B221.

IF CUT THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN NOMINAL DIAMETER. IF ROLLED THREADS ARE USED, BOLT DIAMETER SHALL NOT BE LESS THAN THE ROOT DIAMETER OF THREADS

THE SPLICE BAR SHALL BE ATTACHED TO THE RAIL ELEMENT AS FOLLOWS:
THE RAIL SPLICE AT THE BRIDGE EXPANSION JOINT SHALL BE FASTENED ON BOTH SIDES OF THE RAIL SPLICE USING THE PARTIALLY THREADED BOLTS, WITH THE WASHER FACED BOLT, TIGHTENED SECURELY TO THE END OF THREADS, AND LEAVING A 1/8" GAP. THIS ALLOWS EXPANSION ON BOTH SIDES OF THE JOINT.

ALL NUTS SHALL COMPLY WITH AMERICAN HEXAGON ANSI SPECIFICATIONS B18.2

ANODIZED

ALL ALUM. COMPONENTS SHALL BE ANODIZED TO A BLACK SATIN FINISH COLOR, IN ACCORDANCE WITH ASTM B580, FED. STD. COLOR No. 27038. THE ANODIC COATING SHALL BE ARCHITECTURAL CLASS 1 WITH MIN. THICKNESS OF 0.7 mils AND A MIN. WEIGHT OF 35 mg/sq in.

ALL MIDDLE RAIL STL. HANDRAIL SHALL BE FIELD PAINTED BLACK TO MATCH THE ANODIZED RAIL. TOUCH UP PAINT SHALL BE PROVIDED.

3 SAMPLES SHALL BE SUBMITTED FOR THE ENGINEER'S APPROVAL.

SHOP DRAWING REVIEW

☑ REVIEWED AS REQUIRED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED ☐ REJECTED

REVIEWED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND APPROVED ONLY FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO THE LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Reviewed by: Vanasse Hangen Brustlin, Inc. Job Number: 51210
Reviewed By: L. Cahill
Date: 3/5/07
Address: 40 Lake Bellevue Drive, Suite 100, Bedford, NH 03110 Phone: 603 644 0888
Address: 99 High St., Boston, MA 02110 Phone: 617 924 1770
Address: 1 Corporate Place South, Piscataway, NJ 08854 Phone: 732 469 8700
Address: 340 Main St., Worcester, MA 01608 Phone: 508 799 4406
Address: 54 Tuttle Place, Middlebury, VT 05753 Phone: 802 388 1900
Address: 10 Dorrance St., Providence, RI 02903 Phone: 401 421 4140
Address: 900 Chelmsford St., Lowell, MA 01851 Phone: 978 970 5600
Address: 1 Winners Circle, Albany, NY 12205 Phone: 518 453 4500
Address: 225 Foulk Rd., Wilmington, DE 19803 Phone: 302 791 0500
Address: 8300 Boone Blvd., Vienna, VA 22182 Phone: 703 924 0888

REV.	DESCRIPTION	BY	DATE
⚠1	REVISED PER APPROVED COMMENTS	CMS	3/5/07

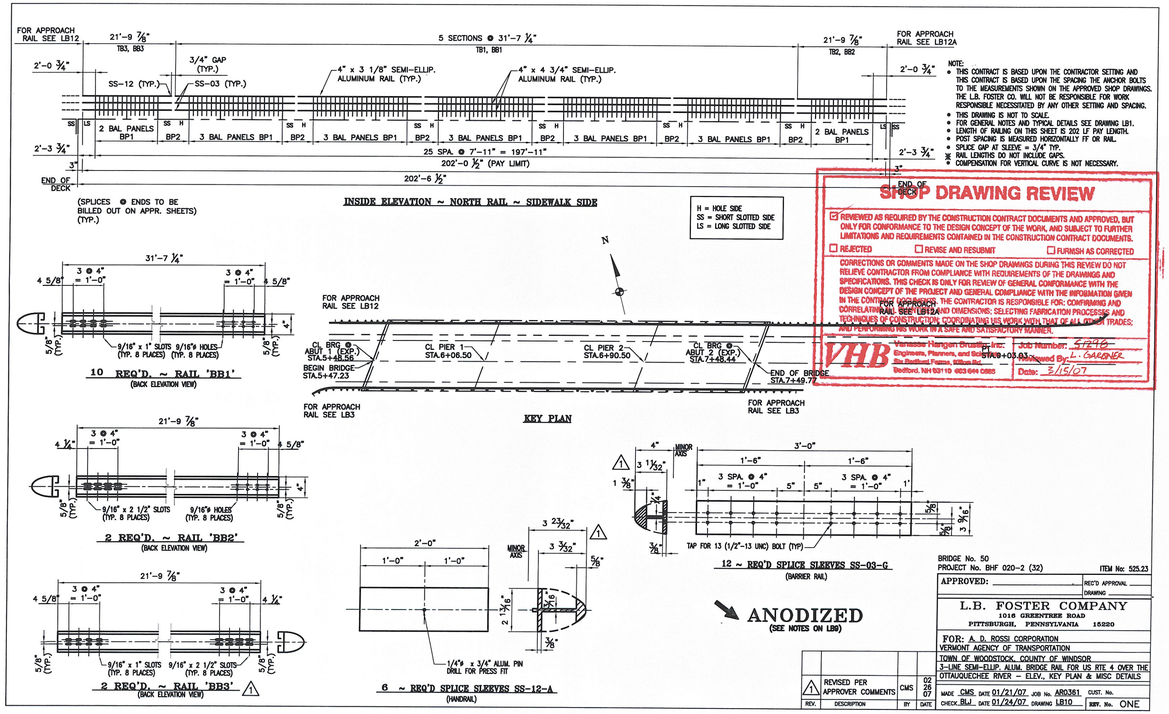
BRIDGE No. 50
PROJECT No. BRF 020-2 (32) ITEM Nos 525.23

APPROVED: _____ REC'D APPROVAL _____ DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER — GENERAL NOTES AND TYP. DETAILS

WDCK: CMS DATE: 01/20/07 JOB No. A03361 CUST. No.
CHECK: BLd DATE: 01/24/07 DRAWING No. 1.00 REV. No. ONE



NOTE:
- THIS CONTRACT IS BASED UPON THE CONTRACTOR SETTING AND THIS CONTRACT IS BASED UPON THE SPACING THE ANCHOR BOLTS TO THE MEASUREMENTS SHOWN ON THE APPROVED SHOP DRAWINGS. THE L.B. FOSTER CO. WILL NOT BE RESPONSIBLE FOR WORK RESPONSIBLE NECESSITATED BY ANY OTHER SETTING AND SPACING.
- THIS DRAWING IS NOT TO SCALE.
- FOR GENERAL NOTES AND TYPICAL DETAILS SEE DRAWING LB1.
- LENGTH OF RAILING ON THIS SHEET IS 202 LF PAY LENGTH.
- POST SPACING IS MEASURED HORIZONTALLY FF OR RAIL.
- SPLICE GAP AT SLEEVE = 3/4" TYP.
- RAIL LENGTHS DO NOT INCLUDE GAPS.
- COMPENSATION FOR VERTICAL CURVE IS NOT NECESSARY.

SHOP DRAWING REVIEW

☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 20 Bedford Farms, Bilton Rd. Bedford, NH 03110-5410 603-644-0888

Job Number: 51746
Reviewed By: L. GARDNER
Date: 3/15/07

REV.	DESCRIPTION	BY	DATE
1	REVISED PER APPROVER COMMENTS	CMS	02 26 07

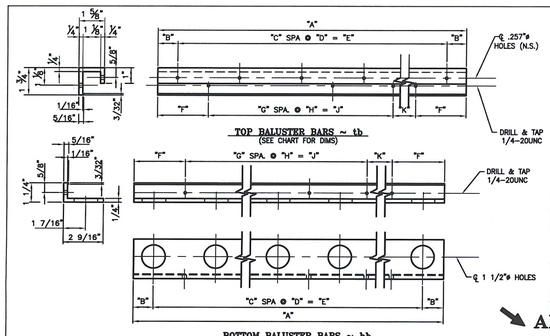
BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 525.23

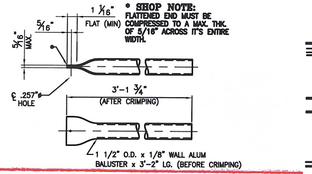
APPROVED: _____ REC'D APPROVAL _____ DRAWING _____

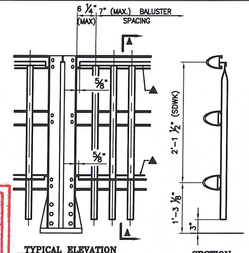
L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
1-UNC SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER ~ ELEV., KEY PLAN & MISC DETAILS

MADE CMS DATE 01/21/07 JOB No. AR0361 CUST. No.
CHECK BJJ DATE 01/24/07 DRAWING LB10 REV. No. ONE







▲ 1/4"-20UNC S.S. SOCKET SET SCREW x 1/2" ~ "SS1" (#22079) EVERY OTHER SPACE BETWEEN BALUSTERS IF POSSIBLE

SHOP DRAWING REVIEW

REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

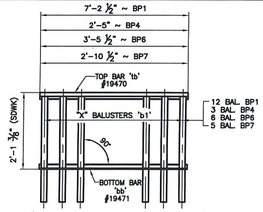
☐ REVISE AND RESUBMIT ☐ RETURN AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

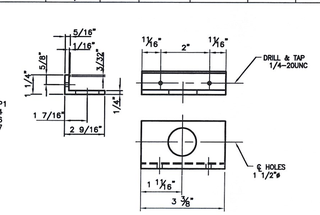
Job Number: 21235
Reviewed By: C. GARDNER
Date: 3/15/07

MARK	QTY	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	PANEL ASS'Y
tb1 / bb1	19	7'-2 1/2"	4 3/4"	11	7"	6'-5"	8 1/4"	5	1'-2"	5'-10"	—	BP1
tb4 / bb4	3	2'-5"	4 5/8"	3	7"	1'-9"	7 1/2"	1	1'-2"	1'-2"	—	BP4
tb6 / bb6	30	3'-5 1/2"	3 1/4"	5	7"	2'-11"	6 3/4"	2	1'-2"	2'-4"	—	BP6
tb7 / bb7	1	2'-10 1/2"	3 1/4"	4	7"	2'-4"	6 3/4"	1	1'-2"	1'-2"	7"	BP7

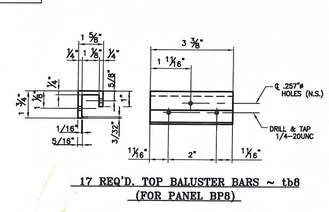
17 REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP6'



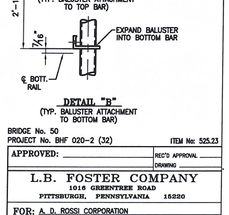
19 REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP1'
3 REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP4'
30 REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP6'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP7'



17 REQ'D. BOTTOM BALUSTER BARS ~ bb8
(FOR PANEL BP8)



17 REQ'D. TOP BALUSTER BARS ~ tb8
(FOR PANEL BP8)



BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 525.23

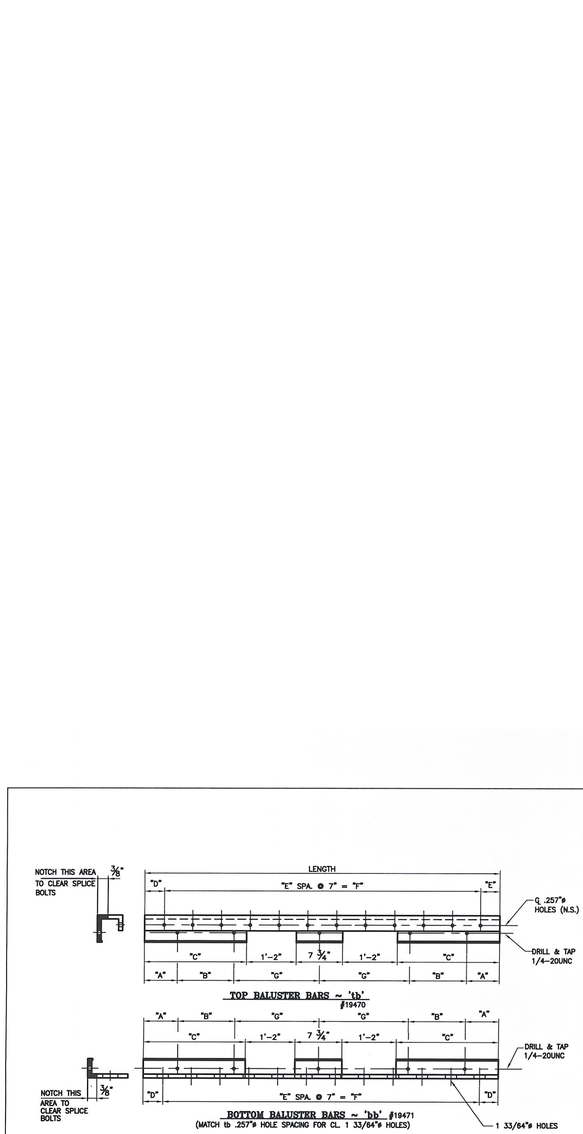
APPROVED: _____ REC'D APPROVAL _____ DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

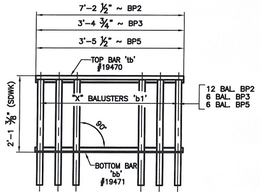
FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SSW-ELIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER ~ BALUSTER PANEL DETAILS

REV.	DESCRIPTION	BY	DATE

MADE CMS DATE 01/21/07 JOB No. AR0361 CUST. No.
CHECK BLJ DATE 01/26/07 DRAWING LB11 REV. No.



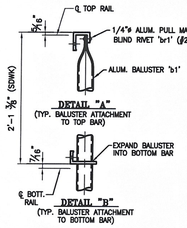
PANEL	MARK	QTY	LENGTH	"A"	"B"	"C"	"D"	"E"	"F"	"G"
BP2	tb2 bb2	6	7'-2 1/2"	8 1/4"	1'-2"	2'-1 3/8"	4 3/4"	11	6"-5"	1'-9"
BP3	tb3 bb3	1	3'-4 3/4"	1 1/4"	1'-7 1/8"	2 1/2"	3 1/2"	5	2'-11"	–
BP5	tb5 bb5	7	3'-5 1/2"	1 7/16"	1'-7 5/16"	2 7/8"	3 1/4"	5	2'-11"	–

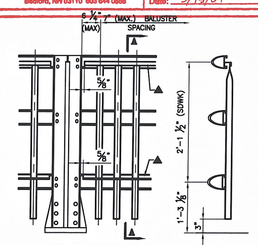


6 REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP2'
ONE REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP3'
7 REQ'D. ~ BALUSTER PANEL ASSEMBLY 'BP5'

* SHOP NOTE: FLATTENED END MUST BE COMPRESSED TO A MAX. THICK OF 5/16" ACROSS IT'S ENTIRE WIDTH.

120 ~ REQ'D BALUSTERS 'b1' #19451





ANODIZED
(SEE NOTES ON LB8)

SHOP DRAWING REVIEW

☒ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 99 Bedford Farms, Kitton Rd. Bedford, NH 03110 603 644 0888

Job Number: 51298
Reviewed By: L. GARNER
Date: 3/15/07

REV.	DESCRIPTION	BY	DATE

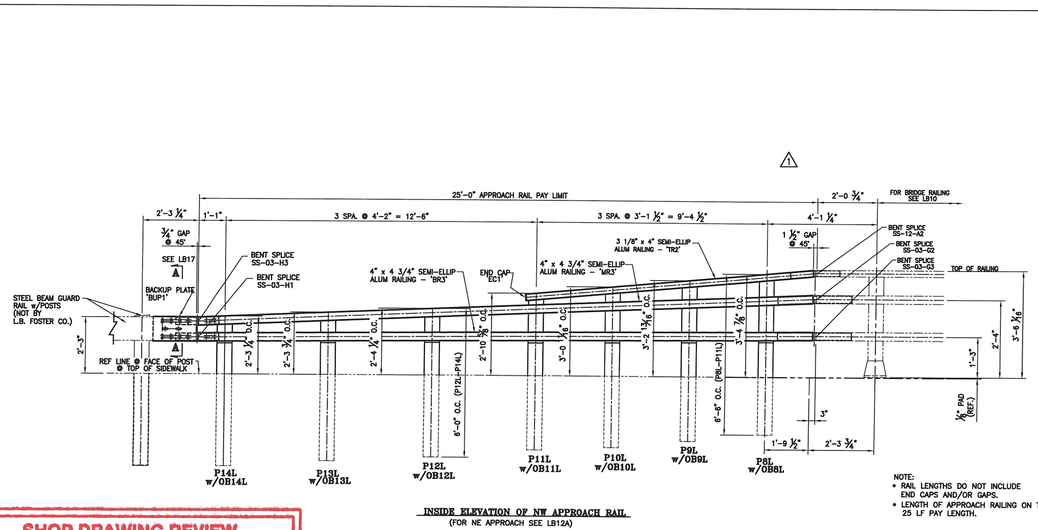
BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 525.23

APPROVED: _____ REQ'D APPROVAL _____
DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SGW-ELIP ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER - BALUSTER PANEL DETAILS

MADE CMS DATE 01/21/07 JOB No. AR0361 CUST. No.
CHECK BLJ DATE 01/26/07 DRAWING LB11A EST. No.



INSIDE ELEVATION OF NW APPROACH RAIL
(FOR NE APPROACH SEE LB12A)

NOTE:
- RAIL LENGTHS DO NOT INCLUDE END CAPS AND/OR GAPS.
- LENGTH OF APPROACH RAILING ON THIS SHEET IS 25 LF PAY LENGTH.

ANODIZED
(SEE NOTES ON LB9)

SHOP DRAWING REVIEW

☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 99 Bedford Farms, Kilton Rd. Bedford, NH 03110 603 644 2800

Job Number: 51290
Reviewed By: L. GARDNER
Date: 5/15/07

REV.	DESCRIPTION	BY	DATE
1	GEN. REVISIONS PER APPROVAL PRINT	CMS	02 23 07

BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 621.74

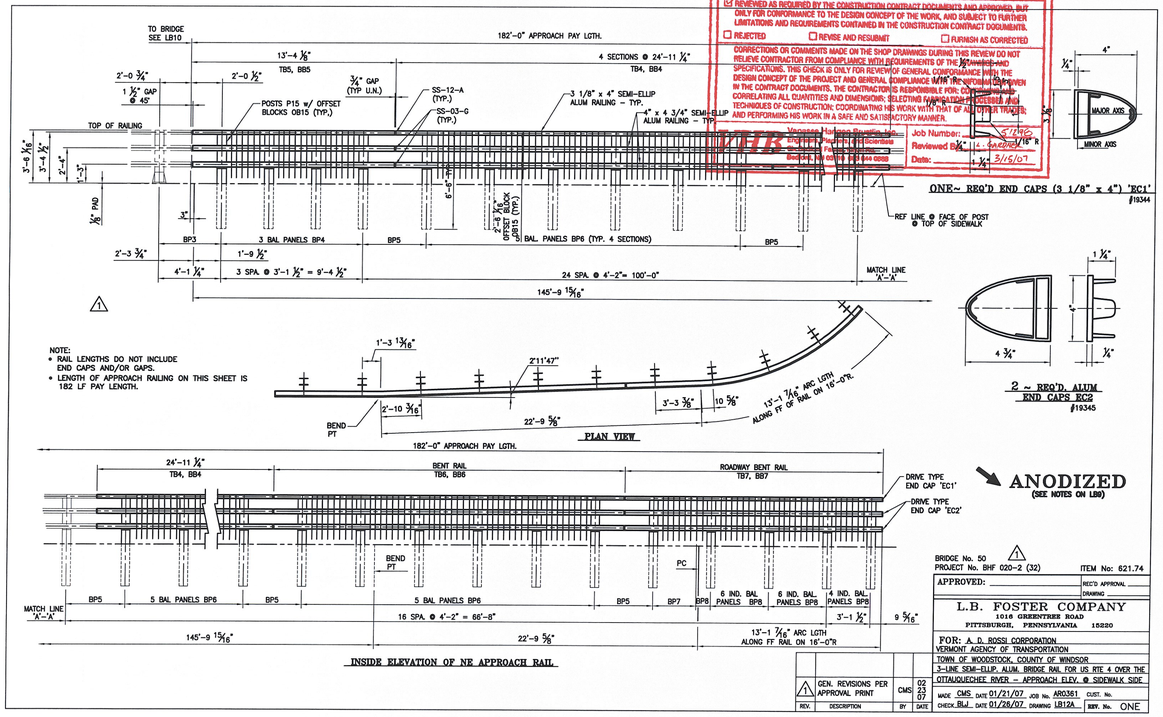
APPROVED: _____ REC'D APPROVAL ____ DRAWING ____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 16220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR

3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER - ELEVATIONS @ SOUTH RAIL

MADE CMS DATE 01/21/07 JOB No. AR0361 CUST. No.
CHECK RJJ DATE 01/26/07 DRAWING LB12 REF. No. ONE



ONE~ REQ'D END CAPS (3 1/8" x 4") 'EC1'
#19344

2 ~ REQ'D. ALUM END CAPS EC2
#19345

ANODIZED
(SEE NOTES ON LB9)

SHOP DRAWING REVIEW
☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.
☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED
CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE CONTRACT DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.
KTR
Vanasse Hangen Brustlin, Inc.
Engineers | Planners | Landscape Architects
Boston, MA 02116 617 924 1770
Job Number: 5719.0
Reviewed By: [illegible]
Date: 3/16/07

REV.	DESCRIPTION	BY	DATE
1	GEN. REVISIONS PER APPROVAL PRINT	CMS	02 23 07

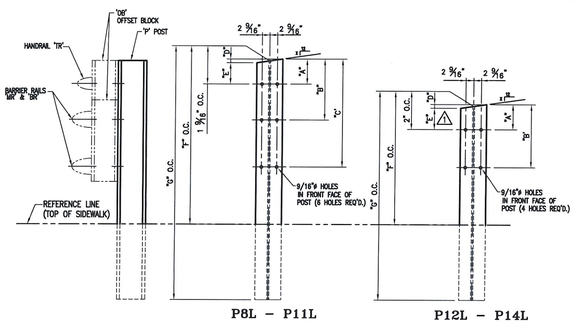
BRIDGE No. 50
PROJECT No. BHF 020-2 (32)
ITEM No: 621.74

APPROVED: _____ REC'D APPROVAL _____ DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE. 4 OVER THE OTTAUQUECHEE RIVER ~ APPROACH ELEV. @ SIDEWALK SIDE

MADE CMS DATE 01/21/07 JOB No. AR0361 CUST. No.
CHECK BJJ DATE 01/26/07 DRAWING LB12A REV. No. ONE



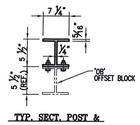
P8L – P11L P12L – P14L

POST DETAIL CHART FOR NW APPROACH @ SIDEWALK CONDITION

		OFFSET BLOCK MTG. DIMENSIONS							BEV
POST No.	QTY.	A	B	C	D	E	F (O.C.)	G (O.C.)	X
P8L	1	1 3/4"	1'-1 3/16"	2'-1 3/4"	3/8"	1 3/8"	3'-4 7/8"	6'-6"	11/16
P9L	1	1 3/4"	11 1/2"	1'-11 7/16"	3/8"	1 3/8"	3'-2 13/16"	6'-6"	11/16
P10L	1	1 3/4"	9 3/4"	1'-9 1/16"	3/8"	1 3/8"	3'-0 11/16"	6'-6"	11/16
P11L	1	1 3/4"	8 1/16"	1'-6 3/4"	3/8"	1 3/8"	2'-10 5/8"	6'-6"	11/16
P12L	1	2 1/16"	11 7/8"		1/16"	1 15/16"	2'-4 1/4"	6'-0"	1/8
P13L	1	2 1/16"	11"		1/16"	1 15/16"	2'-3 3/4"	6'-0"	1/8
P14L	1	2 1/16"	10 1/8"		1/16"	1 15/16"	2'-3 1/4"	6'-0"	1/8

NOTE:
2 CLAMPING BARS CB-01-H (#28596) PER POSTS P8-P11
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P8-P11 w/ 1/2"ø-13 UNC S.S. BOLT x 1" LG. 'FB1', 1 1/16" O.D. x 17/32" I.D. x 3/32" THK. ALUM WASHER 'FW1' (#15280 & # 19404) (16 PER POST)

NOTE:
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P12-P14 w/ 13 (1/2"ø-13 UNC) S.S. BOLT x 25 (1") LG. 'FB1', 27 (1 1/16") O.D. x 13 (17/32") I.D. x 2 (3/32") THK. ALUM WASHER 'FW1' (#15280 & # 19404) (8 PER POST)



TYP. SECT. POST & OFFSET BLOCK

SHOP DRAWING REVIEW

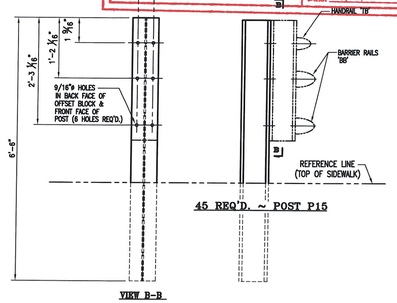
☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ~~ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT~~ OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 99 Bedford Farms, Kitton Rd. Bedford, NH 03110 603 644 0888

Job Number: 51796
Reviewed By: L. GARDNER
Date: 3/15/07



45 REQ'D. ~ POST P15

VIEW B-B

ANODIZED (SEE NOTES ON LBB)

BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 621.74

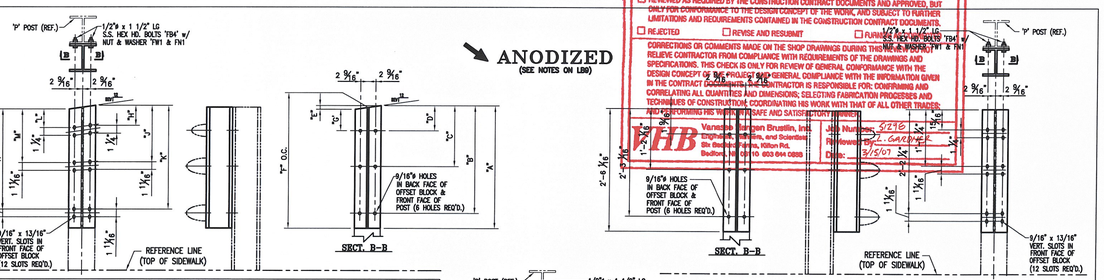
APPROVED: _____ REG'D APPROVAL ___ DRAWING ___

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER – POST DETAILS

REV.	DESCRIPTION	BY	DATE
1	GENERAL REVISION PER APPROVER COMMENTS	CMS	03/15/07

MADE CMS DATE 01/20/07 JOB No. ARO361 CUST. No.
CHECK BJJ DATE 01/26/07 DRAWING LB13 REV. No. ONE



ANODIZED
(SEE NOTES ON LB6)

SHOP DRAWING REVIEW

☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, Scientists Six Bedford Farms, Kilton Rd. Bedford, NH 03110 603 644 0888

Job Number: 51276
Reviewed By: C. GARDNER
Date: 3/5/07

OFFSET BLOCK CHART FOR NW BRIDGE APPROACHES
@ SIDEWALK CONDITION – POSTS P8L – P11L

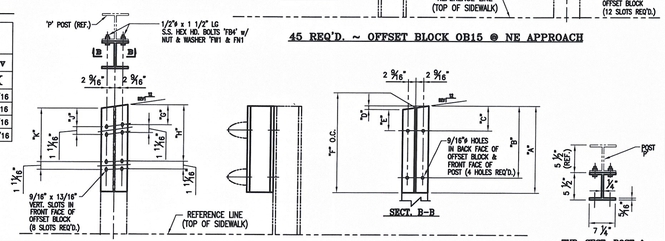
POST No.	OFFSET BLOCK	QTY.	OFFSET BLOCK ~ POST MTG. DIMENSIONS A	B	C	D	E	F (O.C.)	G	REV X
P8L	OB8L	1	2'-4 3/4"	2'-1 3/16"	1'-1 3/16"	1 3/4"	3/8"	2'-4 9/16"	1 3/8"	11/16
P9L	OB9L	1	2'-2 3/8"	1'-11 7/16"	11 1/2"	1 3/4"	3/8"	2'-2 3/16"	1 3/8"	11/16
P10L	OB10L	1	2'-0 1/16"	1'-9 1/16"	9 3/4"	1 3/4"	3/8"	1'-11 7/8"	1 3/8"	11/16
P11L	OB11L	1	1'-9 3/4"	1'-6 3/4"	8 1/16"	1 3/4"	3/8"	1'-9 9/16"	1 3/8"	11/16

OFFSET BLOCK ~ RAIL MTG. DIMENSIONS

POST No.	OFFSET BLOCK	H	J	K	L	M	N
P8L	OB8L	1"	1'-0 5/16"	2'-0 15/16"	7/8"	11 15/16"	2'-0 1/2"
P9L	OB9L	1"	10 5/8"	1'-10 5/8"	7/8"	10 1/4"	1'-10 1/8"
P10L	OB10L	1"	8 7/8"	1'-8 1/4"	7/8"	8 9/16"	1'-7 13/16"
P11L	OB11L	1"	7 3/16"	1'-5 15/16"	7/8"	6 7/8"	1'-5 1/2"

NOTE:
2 CLAMPING BARS CB-01-H (#19447) PER POSTS P8- P11, P15
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P8- P11, P15
w/ 1/2"ø-13 UNC S.S. BOLT x 1" LG. 'FB1', 1 1/16" O.D. x 17/32" I.D. x 3/32" THK. ALUM WASHER 'FW1' (#15280 & # 19404) (16 PER POST)

NOTE:
4 CLAMPING BARS CB-03-A (#19447) PER POSTS P12 – P14, w/ 1/2"ø-13 UNC S.S. BOLT x 1" LG. 'FB1', 1 1/16" O.D. x 17/32" I.D. x 3/32" THK. ALUM WASHER 'FW1' (#15280 & # 19404) (8 PER POST)



45 REQ'D. ~ OFFSET BLOCK OB15 @ NE APPROACH

TYP. SECT. POST & OFFSET BLOCK

OFFSET BLOCK CHART FOR BRIDGE NW APPROACH
@ SIDEWALK CONDITION – POSTS P12L – P14L

POST No.	OFFSET BLOCK	QTY.	OFFSET BLOCK ~ POST MTG. DIMENSIONS A	B	C	D	E	F (O.C.)	REV X
P12L	OB12L	1	1'-2 11/16"	11 7/8"	2 1/16"	1/16"	1 15/16"	1'-2 5/8"	1/8
P13L	OB13L	1	1'-1 13/16"	11"	2 1/16"	1/16"	1 15/16"	1'-1 3/4"	1/8
P14L	OB14L	1	1'-0 15/16"	10 1/8"	2 1/16"	1/16"	1 15/16"	1'-0 7/8"	1/8

OFFSET BLOCK ~ RAIL MTG. DIMENSIONS

POST No.	OFFSET BLOCK	G	H	J	K
P12L	OB12L	1 3/16"	11"	1 1/8"	10 15/16"
P13L	OB13L	1 3/16"	10 3/16"	1 1/8"	10 1/16"
P14L	OB14L	1 3/16"	9 5/16"	1 1/8"	9 3/16"

REV.	DESCRIPTION	BY	DATE

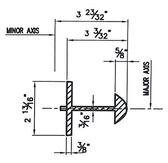
BRIDGE 50
PROJECT No. BHF 020-2 (32) ITEM No. 621.74

APPROVED: _____ REC'D APPROVAL _____ DRAWING _____

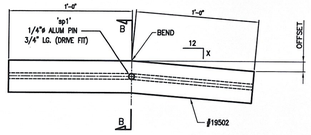
L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELLIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER – POST-OFFSET DETAILS

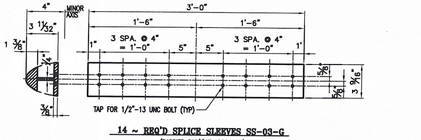
MADE CMS DATE 01/20/07 JOB No. AR0361 CUST. No.
CHECK BLJ DATE 01/26/07 DRAWING LB14 REV. No.



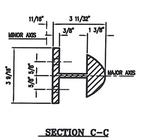
SECTION B–B



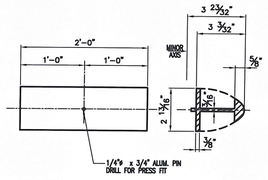
HANDRAIL SPLICES				
MK.	X	QTY.	OFFSET	LOCATION
SS-12-A2	11/16	1	11/16"	NW



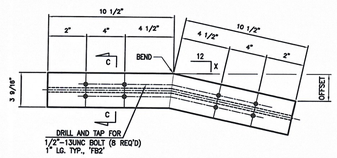
14 ~ REQ'D SPLICE SLEEVES SS-03-G
(BARRIER RAIL)(NE APPROACH)



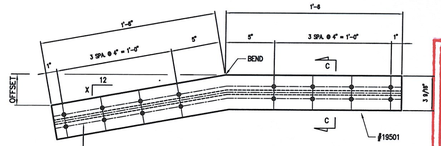
SECTION C–C



7 ~ REQ'D SPLICE SLEEVES SS-12-A
(HANDRAIL)(NE APPROACH)



BARRIER RAIL SPLICES				
MK.	X	QTY.	OFFSET	LOCATION
SS-03-H1	1/16	1	1/16"	NW
SS-03-H3	1/8	1	1/8"	NW



BARRIER RAIL SPLICES				
MK.	X	QTY.	OFFSET	LOCATION
SS-03-G2	1/8	1	3/16	NW
SS-03-G3	1/16	1	1/8	NW

SHOP DRAWING REVIEW

☑ REVIEWED AS REQUIRED BY THE CONSTRUCTION CONTRACT DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE AND RESUBMIT ☐ FURNISH AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON THE SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE CONTRACT DOCUMENTS SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION (SEE NOTES ON LBG) IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR: CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES; AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 99 Bedford Farms, Wilton Rd. Bedford, NH 03110 603 644 2800

Job Number: 51798
Reviewed By: L. GARDNER
Date: 3/15/07

ANODIZED

REV.	DESCRIPTION	BY	DATE
1	REVISED PER EXTRUSION DWGS	CMS	02 28 07

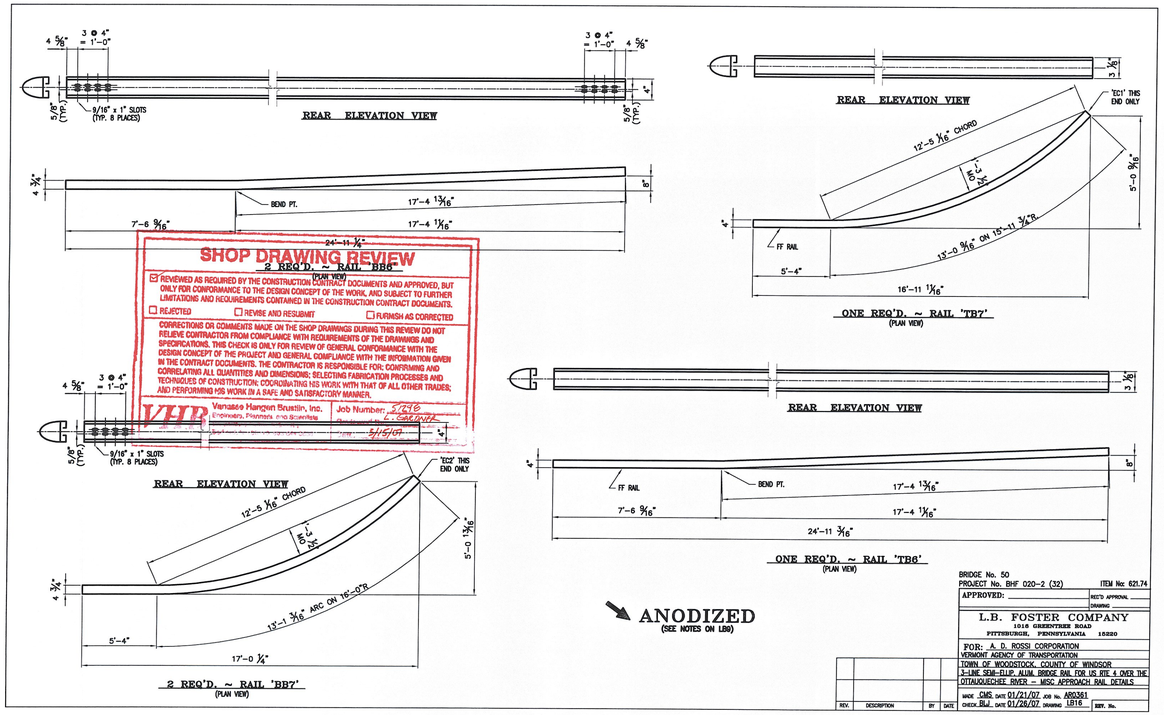
BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 621.74

APPROVED: _____ REG'D APPROVAL _____ DRAWING _____

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-FLUP, ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER – SPLICE DETAILS

MADE CMS DATE 01/21/07 JOB No. A80361 CUST. No.
CHECK BLd. DATE 01/28/07 DRAWING LB15 REV. No. ONE

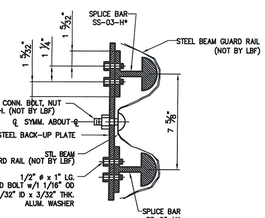


BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No: 621.74
APPROVED: _____ REQ'D APPROVAL _____
DRAWING _____

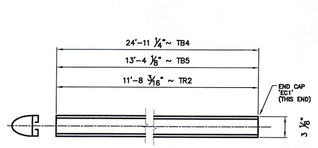
L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-ELIP. ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER -- MISC APPROACH RAIL DETAILS

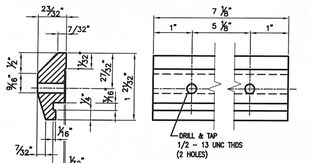
WDE CMD. DATE 01/21/07 JOB No. A80361
CHECK BLJ DATE 01/26/07 DRAWING LB16 REV. No.



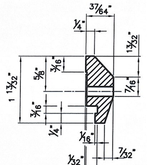
SECTION A–A
(SEE LB8)



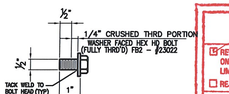
ONE REQ'D. ~ RAIL 'TR2'
(BACK ELEVATION VIEW)
ONE REQ'D. ~ RAIL 'TB5'
(BACK ELEVATION VIEW)
5 REQ'D. ~ RAIL 'TB4'
(BACK ELEVATION VIEW)



208 ~ REQ'D CLAMP BAR CB-03-A
(BARRIER RAIL ~ 1 PER POST)
(#19447)

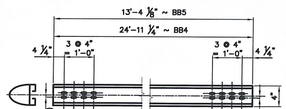


98 ~ REQ'D CLAMP BAR CB-01-H
(HANDRAIL ~ 2 PER POST)
(#28596)

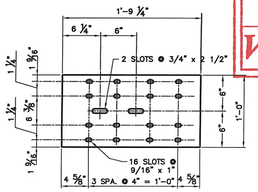


SPLICE BOLT DETAILS

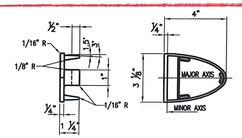
ONE REQ'D. ~ RAIL 'MR3'
(BACK ELEVATION VIEW)
ONE REQ'D. ~ RAIL 'BR3'
(BACK ELEVATION VIEW)



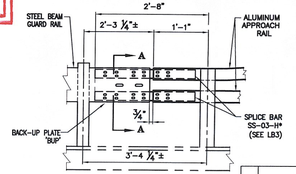
10 REQ'D. ~ RAIL 'BB4'
(BACK ELEVATION VIEW)
2 REQ'D. ~ RAIL 'BB5'
(BACK ELEVATION VIEW)



ONE REQ'D. ~ BACK-UP PLATE BUP1
(1/4" THK. PLATE ~ A36 – GALV.)



ONE~ REQ'D END CAPS (3 1/8" x 4") 'EC1'
(#19344



DETAIL "B"

ANODIZED
(SEE NOTES ON LB9)

SHOP DRAWING REVIEW

☒ REVIEWED AS REQUIRED BY THE CONTRACT CONSTRUCTION DOCUMENTS AND APPROVED, BUT ONLY FOR CONFORMANCE TO THE DESIGN CONCEPT OF THE WORK, AND SUBJECT TO FURTHER LIMITATIONS AND REQUIREMENTS CONTAINED IN THE CONSTRUCTION CONTRACT DOCUMENTS.

☐ REJECTED ☐ REVISE & RESUBMIT ☐ SUBMIT AS CORRECTED

CORRECTIONS OR COMMENTS MADE ON SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE CONTRACTOR FROM COMPLIANCE WITH REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THIS CHECK IS ONLY FOR REVIEW OF GENERAL CONFORMANCE WITH DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATING HIS WORK WITH THAT OF ALL OTHER TRADES, AND PERFORMING HIS WORK IN A SAFE AND SATISFACTORY MANNER.

VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists Six Bedford Farms, Kitton Rd. Bedford, NH 03110 603-644-6888

Job Number: 21298
Reviewed By: L. GARDNER
Date: 3/15/07

REV.	DESCRIPTION	BY	DATE

BRIDGE No. 50
PROJECT No. BHF 020-2 (32) ITEM No. 621.74
APPROVED: RECT APPROVAL
DRAWING

L.B. FOSTER COMPANY
1016 GREENTREE ROAD
PITTSBURGH, PENNSYLVANIA 15220

FOR: A. D. ROSSI CORPORATION
VERMONT AGENCY OF TRANSPORTATION
TOWN OF WOODSTOCK, COUNTY OF WINDSOR
3-LINE SEMI-CURB ALUM. BRIDGE RAIL FOR US RTE 4 OVER THE OTTAUQUECHEE RIVER – MISC. APPROACH DETAILS

MADE CMS DATE 01/21/07 JOB No. AB03B1
CHECK BJJ DATE 01/28/07 DRAWING LB17.DWG REV. No.