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STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF FAYSTON
COUNTY OF WASHINGTON

ROUTE NO. VT 17 (MAJOR COLLECTOR), BRIDGE NO. 36

PROJECT LOCATION: BEGINNING AT A POINT 1.64 km WESTERLY OF THE WAITSFIELD–FAYSTON TOWN LINE AND EXTENDING EASTERLY 0.10 km.

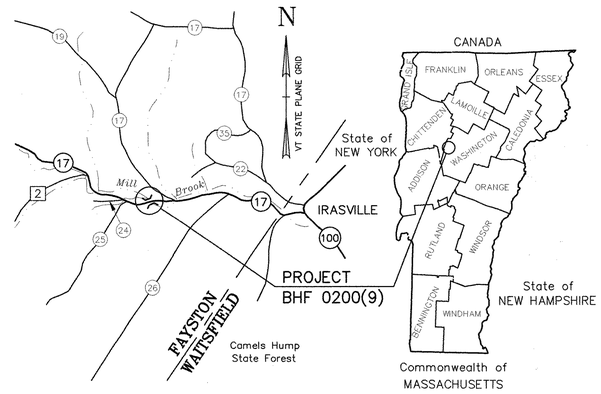
PROJECT DESCRIPTION: REMOVAL OF EXISTING SUPERSTRUCTURE, CONSTRUCTION OF A NEW STEEL BEAM, CONCRETE DECK SUPERSTRUCTURE, REHABILITATION AND WIDENING OF SUBSTRUCTURE WITH RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE: 24.570 m

LENGTH OF ROADWAY: 75.430 m

LENGTH OF PROJECT: 100.000 m

LOCATION MAP



RECORD PLANS

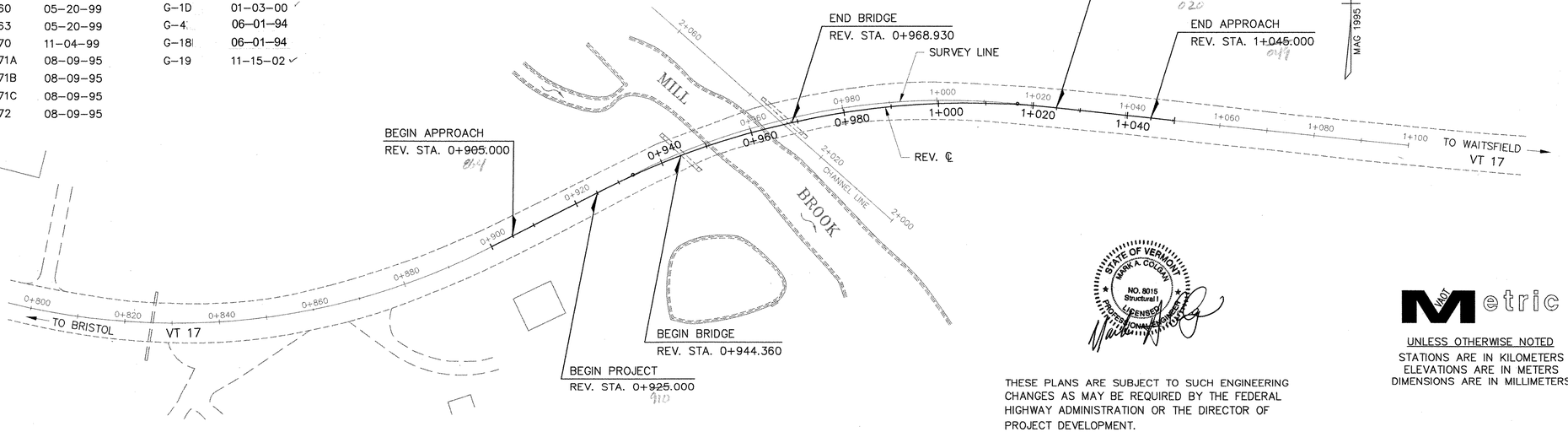
CONTRACTOR:	WINTERSET, INC. – LYNDON, VT
RESIDENT ENGINEER:	RICK HALE
CONSTRUCTION BEGAN:	SEPTEMBER 8, 2006
CONSTRUCTION COMPLETE:	AUGUST 21, 2007
RECORD PLANS BY:	RICK HALE & C. PIERCE

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

BY Rick Hale RESIDENT ENGINEER

DATE 4-10-9

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



CONVENTIONAL SYMBOLS

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

SURVEYED BY :

SURVEYED DATE :

DATUM

VERTICAL NAVD 1988

HORIZONTAL NAD 83–92

GRAPHIC SCALE
(IN METERS)

10 0 5 10 20 30 40 50

1 : 500

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

VAOT Metric

UNLESS OTHERWISE NOTED
STATIONS ARE IN KILOMETERS
ELEVATIONS ARE IN METERS
DIMENSIONS ARE IN MILLIMETERS

for DIRECTOR OF PROGRAM DEVELOPMENT

APPROVED James V. Reid DATE 5-09-2006

PROJECT MANAGER : WAYNE B. SYMONDS

PROJECT NAME : FAYSTON

PROJECT NUMBER : BHF 0200(9) (READVERTISED)

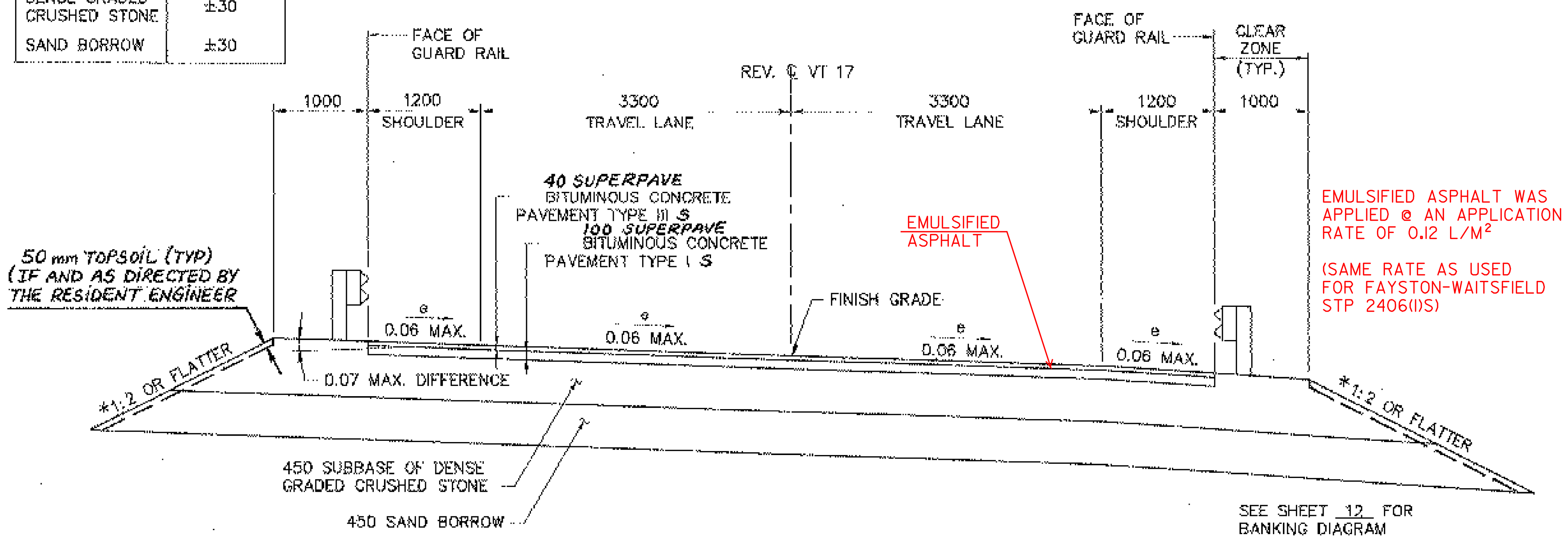
SHEET 1 OF 70 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065TIT

PLOTTED 1-13-06

MATERIAL ITEM	THICKNESS TOLERANCE
PAVEMENT	±5 (TOTAL)
DENSE GRADED CRUSHED STONE	±30
SAND BORROW	±30



EMULSIFIED ASPHALT WAS APPLIED @ AN APPLICATION RATE OF 0.12 L/M²

(SAME RATE AS USED FOR FAYSTON-WAITSFIELD STP 2406(1)S)

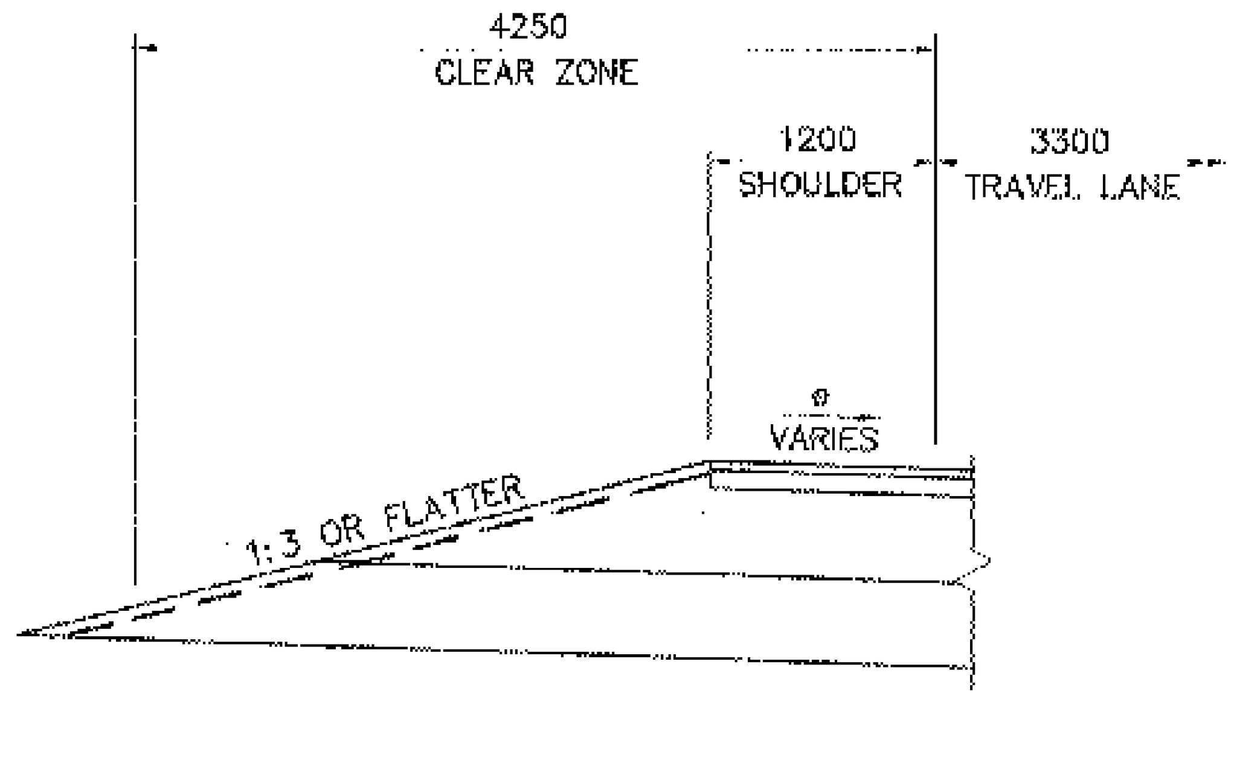
SEE SHEET 12 FOR BANKING DIAGRAM

ROADWAY SECTION WITH GUARD RAIL

SCALE: 1:40

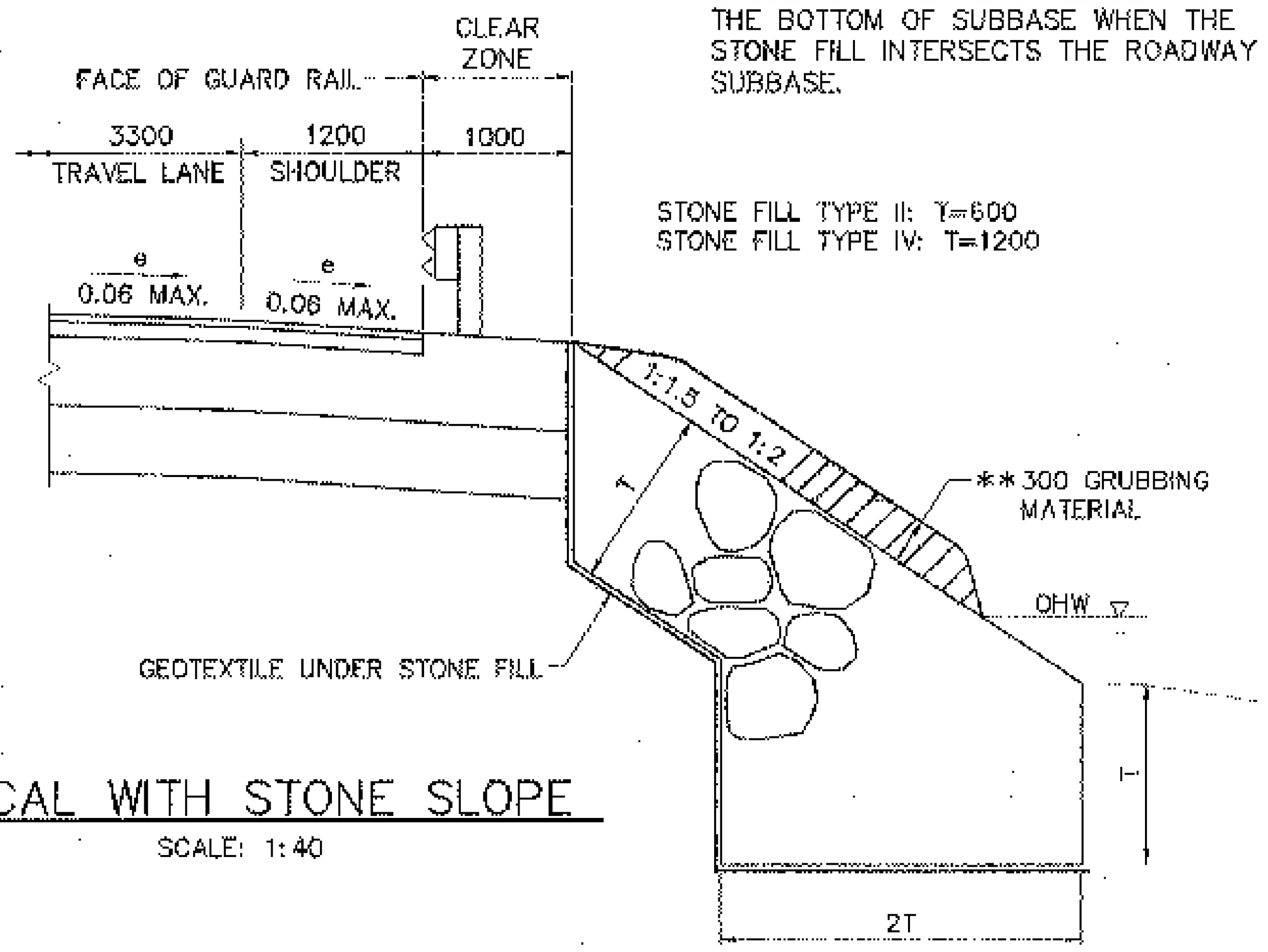
*SEE ROADWAY SECTIONS FOR APPLICABLE SLOPE TREATMENT

**GRUBBING MATERIAL SHALL BEGIN AT THE BOTTOM OF SUBBASE WHEN THE STONE FILL INTERSECTS THE ROADWAY SUBBASE.



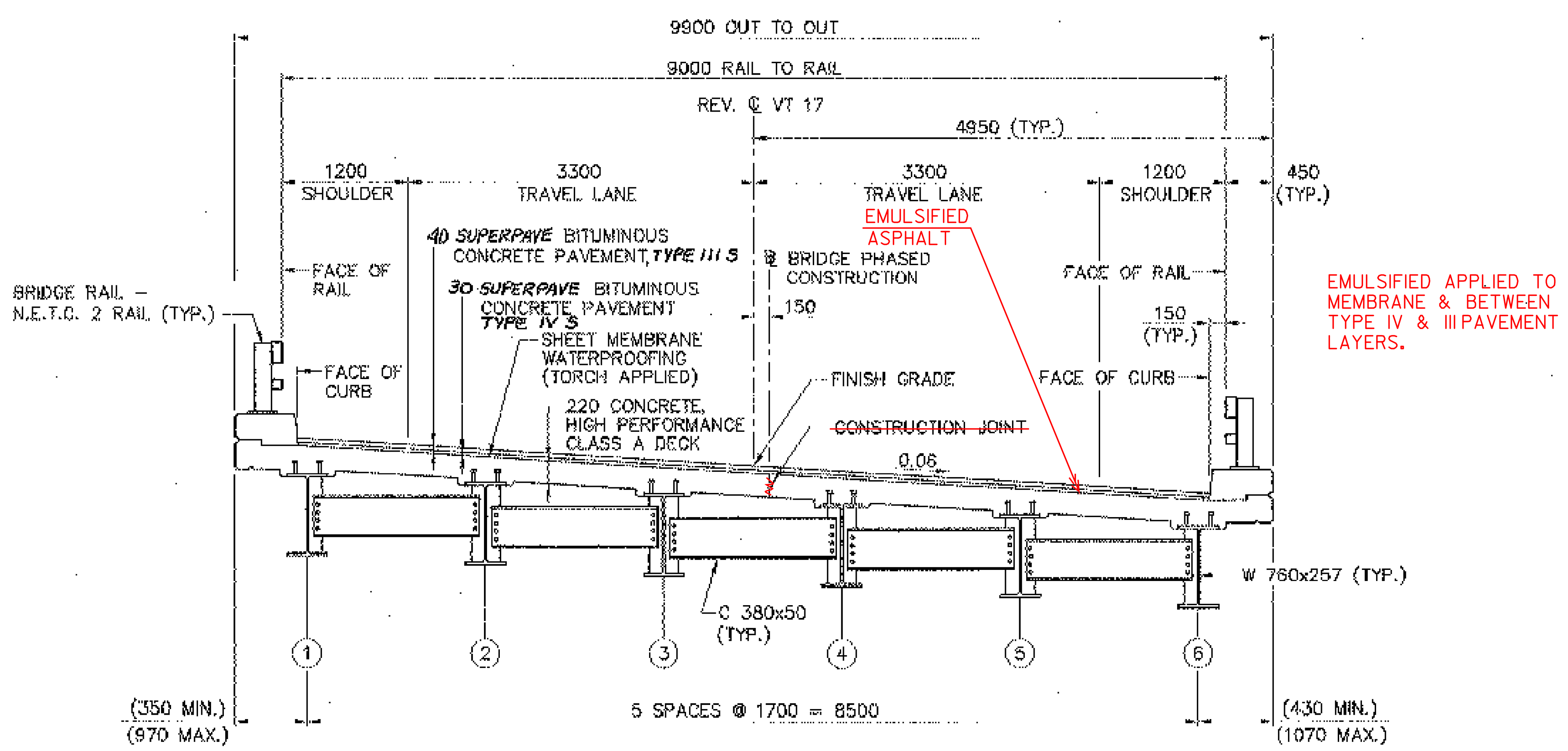
*TYPICAL WITHOUT GUARD RAIL

SCALE: 1:40



*TYPICAL WITH STONE SLOPE

SCALE: 1:40



EMULSIFIED APPLIED TO MEMBRANE & BETWEEN TYPE IV & III PAVEMENT LAYERS.

TYPICAL SECTION

SCALE: 1:40

0 1000 2000 3000
SCALE IN MILLIMETERS

FINAL HYDRAULICS REPORT

Metric

HYDROLOGIC DATA

DRAINAGE AREA= 49 km²
CHARACTER OF TERRAIN: MOUNTAINOUS, MOSTLY FORESTED AND RESIDENTIAL
CHARACTER & TYPE OF STREAM: SMALL, SINUOUS, SEMI-ALLUVIAL, PROBABLY INCISED FLOODPLAIN, WITH PERENNIAL BUT FLASHY FLOW HABIT
NATURE OF STREAMBED: GRAVEL, COBBLES, SMALL BOULDERS

Q2.33= 16 m³/s Q50= 60 m³/s
Q10= 35 m³/s Q100= 72 m³/s
Q25= 48 m³/s Q500= 108 m³/s
SEE NOTE 1

DATE OF FLOOD OF RECORD: 1927, 1938
WATER SURFACE ELEV.: SEE NOTE 3 ESTIMATED DISCHARGE: –
NATURAL STREAM VELOCITY @ Q 50 = 3.1 m/s
ICE CONDITIONS: MODERATE DEBRIS: MODERATE
DOES THE STREAM REACH MAXIMUM HIGHWATER ELEVATION RAPIDLY? YES
IS ORDINARY RISE RAPID? YES
IS STAGE AFFECTED BY UPSTREAM OR DOWNSTREAM CONDITIONS? NO
IF YES, DESCRIBE.

WATERSHED STORAGE <1% HEADWATERS – UNIFORM THROUGHOUT WATERSHED YES
IMMEDIATELY ABOVE SITE –

EXISTING STRUCTURE

STRUCTURE TYPE: SINGLE SPAN STEEL STRINGER WITH CONCRETE DECK AND SPILL THROUGH ABUTMENTS YEAR BUILT: 1939
CLEAR SPAN (NORMAL TO STREAM): 19.7 m
VERTICAL CLEARANCE ABOVE STREAMBED: 4.2 m
WATERWAY OF FULL OPENING: 59.2 m²
DISPOSITION OF STRUCTURE: SUPERSTRUCTURE TO BE REPLACED

TYPE OF MATERIAL UNDER SUBSTRUCTURE: UNKNOWN (SEE NOTE 2)

WATER SURFACE ELEV. @ Q2.33= 262.55 VELOCITY= 1.59 m/s
(SEE NOTE 5) Q10= 263.10 " 2.25 m/s
Q25= 263.41 " 2.68 m/s
Q50= 263.66 " 3.09 m/s
Q100= 263.87 " 3.40 m/s

LONG TERM STREAM BED CHANGES: UNKNOWN

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: >Q500
RELIEF ELEVATION: – DISCHARGE OVER ROAD @ Q100: 0 cms

UPSTREAM STRUCTURE: TOWN: FAYSTON DISTANCE: 671 m
HIGHWAY NO.: VT. 17 STRUCTURE NO.: 35
STRUCTURE TYPE: SINGLE SPAN STEEL STRINGER WITH CONCRETE DECK
CLEAR SPAN: 15.8 m CLEAR HEIGHT: 3.3 m
YEAR BUILT: 1939 FULL WATERWAY: 40.8 m²

DOWNSTREAM STRUCTURE: TOWN: FAYSTON DISTANCE: 402 m
HIGHWAY NO.: VT 17 STRUCTURE NO.:
STRUCTURE TYPE:
CLEAR SPAN: CLEAR HEIGHT:
YEAR BUILT: FULL WATERWAY:

PROPOSED STRUCTURE

(SEE NOTE 4)

STRUCTURE TYPE: SINGLE SPAN STEEL STRINGER WITH CONCRETE DECK
CLEAR SPAN (NORMAL TO STREAM): 19.7 m
VERTICAL CLEARANCE ABOVE STREAMBED: 4.2 m
WATERWAY OF FULL OPENING: 59.2 m²

WATER SURFACE ELEV. @ Q2.33= 262.55 VELOCITY= 1.59 m/s
(SEE NOTE 5) Q10= 263.10 " = 2.25 m/s
Q25= 263.41 " = 2.68 m/s
Q50= 263.66 " = 3.09 m/s
Q100= 263.87 " = 3.40 m/s

IS THE ROADWAY OVERTOPPED BELOW THE Q100? NO FREQUENCY: >Q500
RELIEF ELEVATION: – DISCHARGE OVER ROAD @ Q100: 0 cms

AVERAGE LOW ELEVATION OF SUPERSTRUCTURE: 264.0
VERTICAL CLEARANCE @ Q100 1.1 m
SCOUR:

REQUIRED CHANNEL PROTECTION: STONE FILL, TYPE IV

PERMIT INFORMATION

AVERAGE DAILY FLOW: 1.1 m³/s
ORDINARY LOW WATER: 0.8 m³/s DEPTH: WSEL: 261.36
ORDINARY HIGH WATER: 8.7 m³/s DEPTH: WSEL: 261.81

ADDITIONAL COMMENTS

1. PEAK DISCHARGES FOR 10 YEAR, 50 YEAR, 100 YEAR AND 500 YEAR EVENTS WERE OBTAINED FROM FAYSTON FIS (MARCH 1980) AND 2.33 AND 25 YEAR EVENTS WERE APPROXIMATED USING GRAPHICAL METHODS.
2. THE EXISTING 1939 PLANS DENOTE "GRAVEL" AND "BOULDERS" AT ONE BORING LOCATION. TIMBER PILES WERE ORIGINALLY SPECIFIED AND LATER ELIMINATED PER AS-BUILT NOTES.
3. THE EXISTING 1939 PLANS INDICATE "HIGH WATER LEVEL (SEPT. 1938)" AT AN ELEVATION APPROXIMATELY 0.10 METERS BELOW THE EXISTING STEEL STRINGERS.
4. HYDRAULIC CONDITIONS FOR PROPOSED STRUCTURE ARE COMPARABLE TO EXISTING STRUCTURE.
5. WATER SURFACE ELEVATIONS ARE PROVIDED AT A SECTION 32.6 m UPSTREAM OF THE BRIDGE. VELOCITIES ARE PROVIDED AT THE BRIDGE.

Metric

DESIGN CRITERIA:
1. DESIGN LIVE LOAD AASHTO MS22.5
2. DESIGN SPAN 23.839 m
3. ALLOWABLE LOAD FOR SPREAD FOOTINGS ON SOIL 650 kPa (ABUT. NO 1) ON LEDGE 950 kPa (ABUT. NO. 2)
4. ALLOWABLE LOAD FOR PILING TYPE – ESTIMATED LENGTH –
5. STRUCTURAL STEEL AASHTO M270M GRADE 345W
6. REINFORCING STEEL GRADE 420
7. CONCRETE, HIGH PERFORMANCE CLASS A f'_c 30 MPa
CLASS B f'_c 25 MPa

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

** PHASED CONSTRUCTION WITH TEMPORARY TRAFFIC CONTROL SIGNAL.

LOAD FACTOR LOAD RATING (METRIC TONNES)

LOADING LEVELS (LOAD FACTORS)	TRUCK M	MS	352	6 AXLE	3A STR	4A STR	5A SEMI
INVENTORY A=2.17 B=1.00	35	48					
POSTED A=1.55 B=1.40	48	67	82		61	62	74
OPERATING A=1.30 B=1.67		80	97	115	72	74	

STRENGTH $RF = \frac{\phi M_n - 1.3 M_{DL}}{A \times M_{LL}}$ *SERVICEABILITY $RF = B \frac{0.95 F_y S_{nc} - M_{DL} \frac{S_{nc}}{S_{...}} - M_{SDL} \frac{S_{nc}}{S_{...}}}{1.67 M_{LL}}$

TRAFFIC DATA

2000 ADT = 3900	2020 ADT = 5100	2000-2020 ESAL'S 792,000
2000 DHV = 570	2020 DHV = 740	2000-2040 ESAL'S 1,946,000
2000 ADTT = 100	2020 ADTT = 100	DESIGN SPEED = 65 km/h
2000 % D = 66	2020 % D = 66	
2000 % T = 2.5	2020 % T = 2.0	

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON Bridge No. 36
Highway No. VT 17 Log Sta. Surv. Sta.

VT 17 OVER MILL BROOK

PRELIMINARY INFORMATION SHEET

Designed By S.M. GUNN/R.L.JOY Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06 Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON PROJECT NO. BHF 0200(9)
I.G.C. Info.
Bridge Sheet No. 50543PI Sheet 2 of 70

/str5/93C065/zc065PI PLOTTED 1 13 2006

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

VAOT Metric

SUMMARY OF ESTIMATED QUANTITIES

CHANNEL	SUPER-STRUCTURE	APPROACH SLAB #1	ABUTMENT #1	ABUTMENT #2	APPROACH SLAB #2	BRIDGE SUBTOTAL	ROADWAY	EROSION CONTROL	FULL E & C	TRAINING
							1			
							1550			
							10			
160						160				
							410			
							10			
			6	7		13				
			170	100		270				
			~~230~~ 250	~~140~~ 150		~~370~~ 400				
				~~20~~ 10		~~40~~ 10				
			20							
			1			1				
			1			1				
				1		1				
							310			
							590			
	15	5			5	25	75			
	37	10			10	57	420			
	80					80				
		22	50	35	22	129				
	1					1				
		55			55	110				
	39750					39750				
			2950	2820		5770				
			6	15		21				
	10410	1605			1605	13620				
	328	20			20	368				
	1					1				

TOTALS

ROUND	GRAND TOTAL	FINAL
	1	
	1550	
EST.	10	
	160	
	410	
EST.	10	
	13	
	270	
	~~370~~ 400	
	40 ~~10~~	
	1	
	1	
	1	
	310	
	590	
	100	
	477	
	80	
	129	
	~~1~~	
EST.	110	
	39750	
	5770	
	21	
	13620	
	~~368~~	
	1	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER
LS	CLEARING AND GRUBBING (INCL. INDV. TREES & STUMPS)	201.10
CM	COMMON EXCAVATION	203.15
CM	SOLID ROCK EXCAVATION	203.16
CM	UNCLASSIFIED CHANNEL EXCAVATION	203.27
CM	SAND BORROW	203.31
CM	TRENCH EXCAVATION OF EARTH	204.20
CM	STRUCTURE EXCAVATION	204.25
CM	GRANULAR BACKFILL FOR STRUCTURES	204.30
CM	COFFERDAM EXCAVATION, EARTH	208.30
CM	COFFERDAM EXCAVATION, ROCK	208.35
LS	COFFERDAM (WW NO. 1)	208.40
LS	COFFERDAM (WW NO. 2)	208.40
LS	COFFERDAM (WW NO. 4)	208.40
SM	COLD PLANING – BITUMINOUS PAVEMENT	210.10
CM	SUBBASE OF DENSE GRADED CRUSHED STONE	301.35
KG	EMULSIFIED ASPHALT	404.65
T	SUPERPAVE BITUMINOUS CONCRETE PAVEMENT (PG 58-34)	490.30
CM	CONCRETE, HIGH PERFORMANCE CLASS A	501.33
CM	CONCRETE, HIGH PERFORMANCE CLASS B	501.34
LS	~~SHORING SUPERSTRUCTURE~~	~~502.10~~
SM	TEMPORARY STEEL SHEET PILING	505.36
KG	STRUCTURAL STEEL (ROLLED BEAM)	506.50
KG	REINFORCING STEEL	507.15
M	DRILLING & GROUTING DOWELS	507.16
KG	EPOXY COATED REINFORCING STEEL	507.17
EA	~~MECHANICAL BAR CONNECTOR (EPOXY COATED)~~	~~507.19~~
LS	SHEAR CONNECTORS (1296 – 22 x 180)	508.15

DETAILED SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEMS
		TEMPORARY EROSION CONTROL
		(INCLUDED UNDER EROSION CONTROL COLUMN)
4	CM	STONE FILL, TYPE I
25	CM	STONE FILL, TYPE I (MOD. I – CHECK DAMS)
35	CM	STONE FILL, TYPE I (MOD. II – CONSTRUCTION ENTRANCE)
350	SM	GEOTEXTILE FOR SILT FENCE
5	KG	SEED
640	SM	EROSION MATTING (STRAW MATTING)
		EARTHWORK SUMMARY
		FILL REQUIRED:
179	CM	PLANIMETERED FILL
27	CM	FILL FACTOR (0.15)
206	CM	FACTORED FILL
		MATERIAL AVAILABLE FOR FILL:
1550	CM	COMMON EXCAVATION (x 1.0)
48	CM	UNCLASSIFIED CHANNEL EXCAVATION (x 0.3)
1598	CM	TOTAL MATERIAL AVAILABLE FOR FILL
206	CM	LESS FACTORED FILL
0	CM	BORROW
1392	CM	EXCESS FILL

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
QUANTITY SHEET (1 OF 3)	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543QNT	Sheet 3 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065QS1

PLOTTED 1-15-2006

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

VAOT Metric

SUMMARY OF ESTIMATED QUANTITIES

CHANNEL	SUPER-STRUCTURE	APPROACH SLAB #1	ABUTMENT #1	ABUTMENT #2	APPROACH SLAB #2	BRIDGE SUBTOTAL	ROADWAY	EROSION CONTROL	FULL E & C	TRAINING						ROUND	GRAND TOTAL	FINAL
	26		11	7		44											44	
			11	11		22											22	
	220					220											220	
	60					60											60	
							1										1	
	177					177											177	
	0.8		0.1	0.1		1											1	
			6	6		12											12	
			1	2		3										EST.	3	
			1	2		3										EST.	3	
							4										4	
							10									EST.	10	
							80	4									84	
								10								EST.	10	
								25								EST.	25	
							130										130	
225						225	195										420	
							2										2	
							525										525	
							80										80	
							195										195	
							2										2	
							1										1	
							5										5	
							1										1	
							4										4	
							156										156	
							105										105	
							80										80	
							200									EST.	200	
									1								1	

DESCRIPTIONS

UNIT	ITEMS	ITEM NUMBER
L	WATER REPELLENT (MOD. – SILANE)	514.10
M	BRIDGE EXPANSION JOINT (ASPHALTIC PLUG)	516.10
SM	SHEET MEMBRANE WATERPROOFING (MOD. – TORCH APPLIED)	518.20
M	BRIDGE RAILING – NETC 2 RAIL	525.33
LS	MAINTENANCE OF TRAFFIC FOR BRIDGE PROJECTS (MOD.)	527.10
SM	REMOVAL OF BRIDGE PAVEMENT	529.10
EA	PARTIAL REMOVAL OF STRUCTURE (205 SM-EST.)	529.20
EA	BEARING DEVICE ASSEMBLY (FABRIC)	531.10
SM	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	580.13
SM	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	580.14
M	450 mm CSP 1.63 mm (68 mm x 12 mm)	601.0015
HR	ALL PURPOSE EXCAVATOR RENTAL, TYPE I	608.25
CM	STONE FILL, TYPE I	613.10
CM	STONE FILL, TYPE I (MOD. – CHECK DAM)	613.10
CM	STONE FILL, TYPE I (MOD. – CONSTRUCTION ENTRANCE)	613.10
CM	STONE FILL, TYPE II	613.11
CM	STONE FILL, TYPE IV	613.13
EA	YIELDING MARKER POST	619.17
M	SNOW FENCE (MOD. – PDF)	620.70
M	SNOW FENCE (MOD. – ARCH)	620.70
M	HEAVY DUTY STEEL BEAM GUARD RAIL (GALVANIZED)	621.21
EA	MANUFACTURED TERMINAL SECTION (FLARED)	621.505
EA	MANUFACTURED TERMINAL SECTION (TANGENT)	621.505
~~EA~~	~~ENERGY ABSORPTION ATTENUATOR (SAND-FILLED PLASTIC BARREL)~~	~~621.56~~
EA	ANCHOR FOR STEEL BEAM GUARD RAIL	621.60
EA	GUARD RAIL APPROACH SECTION, NETC 2 RAIL	621.72
M	REMOVAL AND DISPOSAL OF GUARD RAIL	621.80
~~M~~	~~TEMPORARY TRAFFIC BARRIER (MOD.)~~	~~621.90~~
HR	UNIFORMED TRAFFIC OFFICERS	630.10
HR	FLAGGERS	630.15
LS	FIELD OFFICE -- ENGINEERS	631.10

DETAILED SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEMS

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta.
	Surv. Sta.

VT 17 OVER MILL BROOK

QUANTITY SHEET (2 OF 3)

Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 505430NT	Sheet 4 of 70

/str5/93C065/zc065QS2

PLOTTED 1-13-2006

STATE OF VERMONT
AGENCY OF TRANSPORTATION

QUANTITY SHEET

Metric

SUMMARY OF ESTIMATED QUANTITIES

CHANNEL	SUPER-STRUCTURE	APPROACH SLAB #1	ABUTMENT #1	ABUTMENT #2	APPROACH SLAB #2	BRIDGE SUBTOTAL	ROADWAY	EROSION CONTROL	FULL E & C	TRAINING							TOTALS GRAND TOTAL	TOTALS FINAL	UNIT	DESCRIPTIONS ITEMS	ITEM NUMBER
									1								1		LS	TESTING EQUIPMENT – CONCRETE	631.16
									1								1		LS	TESTING EQUIPMENT – BITUMINOUS	631.17
									1								1		LU	FIELD OFFICE – TELEPHONE (N.A.B.I.)	631.25
							1										1		LS	MOBILIZATION / DEMOBILIZATION	635.11
							1										1		LS	TRAFFIC CONTROL	641.10
							360										360		M	DURABLE 100 mm WHITE LINE (THERMOPLASTIC)	646.40
							360										360		M	DURABLE 100 mm YELLOW LINE (THERMOPLASTIC)	646.41
							270										270		M	TEMPORARY 100 mm WHITE LINE (PAINT)	646.60
							8										~~8~~		M	~~TEMPORARY 600 mm STOP BAR (PAINT)~~	~~646.66~~
							80										80		EA	LINE STRIPING TARGETS	646.76
							40										40		SM	REMOVAL OF EXISTING PAVEMENT MARKINGS	646.85
350						350	575										925		SM	GEOTEXTILE UNDER STONE FILL	649.31
								350									350		SM	GEOTEXTILE FOR SILT FENCE	649.51
								25									25		KG	SEED	651.15
								150									150		KG	FERTILIZER	651.18
								1									1		T	AGRICULTURAL LIMESTONE	651.20
								1									1		T	HAY MULCH	651.25
							90										90		CM	TOPSOIL	651.35
							265									EST.	265		SM	GRUBBING MATERIAL	651.40
								1									1		LS	EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.10
								80								EST.	80		HR	MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN	652.20
								1									1		LU	MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN (N.A.B.I.)	652.30
								640									640		SM	EROSION MATTING (STRAW MATTING)	654.10
																				** BEGIN OPTION **	
							14										14		M	FLANGED CHANNEL SIGN POSTS	675.301
							14										14		M	SQUARE TUBE STEEL SIGN POSTS AND ANCHOR	675.341
																				** END OPTION **	
							7										7		EA	REMOVING SIGNS	675.50
							3										3		EA	ERECTING SALVAGED SIGNS	675.60
							1										~~1~~		EA	~~TEMPORARY TRAFFIC SIGNAL SYSTEM~~	~~678.40~~
							2										~~2~~		EA	~~TEMPORARY DETECTOR~~	~~678.42~~

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

			SUPPLEMENTARY AGREEMENT (528.II - TWO-WAY TEMPORARY BRIDGE)	900.545
1		LS		

DETAILED SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEMS

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.

VT 17 OVER MILL BROOK

QUANTITY SHEET (3 OF 3)

Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By J.T. KLEIN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543ONT	Sheet 5 of 70

/str5/93C065/zc065QS3

PLOTTED 1-15-2006

Metric

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

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1	HALL, EVELYN	10,11	0+807.3 CL.	REV. 0+956.2 LT.	0.11HA±		ALL R.T. & I.	WD	06-03-99	FAYSTON	77	88-89	HWY. EASE.
													VT. RTE. 17 (0.27A±)
			0+807.3 LT.	0+836.2 LT.			INSTALL (T)						SILT FENCE
			0+815.0 LT.	0+825.4 LT.			SLOPE (T) 4SM±						(40 S.F.±)
			0+825.4 LT.	0+829.0 LT.			CUL. & DIT. (P)						
			0+827.5 LT.				DRAINAGE (P)						
			0+850.7 LT.	0+898.6 LT.			INSTALL (T)						SILT FENCE
			0+855.5 LT.	0+890.7 LT.			SLOPE (P) 28.6SM±						(307 S.F.±)
			REV. 0+904.0 LT.	REV. 0+905.7 LT.			INSTALL (P)						G.M.P. GUY WIRE
			REV. 0+906.2 LT.	REV. 0+946.2 LT.			CONST. (T) 0.01HA±						(0.03A±)
			REV. 0+913.2 LT.	REV. 0+930.0 LT.			SLOPE (P) 47.2SM±						(508 S.F.±)
			REV. 0+930.0 LT.	REV. 0+946.2 LT.			CHANNEL (P) 72SM±						(775 S.F.±)
2A	DEVEREUX, L. READ & COLVIN, KRIS	10,11	REV. 0+931.9 RT.	1+046.6 RT.	0.05HA±			QCD	12-27-00	FAYSTON	81	330-32	(0.13A±)
			0+889.2 RT.	0+892.2 RT.			SLOPE (P) 0.4SM±						(5 S.F.±)
			REV. 0+917.0 RT.	REV. 0+936.6 RT.			SLOPE (P) 18.5SM±						(199 S.F.±)
			REV. 0+937.0 RT.	REV. 0+938.7 RT.			INSTALL (P)						G.M.P. GUY WIRE
			REV. 1+030.0 RT.	REV. 1+030.4 RT.			INSTALL (P)						G.M.P. GUY WIRE
2B		10,11	0+858.8 RT.	1+080.0 RT.	0.17 HA±		ALL R.T. & I.			FAYSTON			HWY. EASE.
													VT. RTE. 17 (0.42A±)
3	POSLUSZNY, ROBERT F. & PHYLLIS D.	10,11	REV. 0+950.7 LT.	1+080.0 LT.	0.10HA±		ALL R.T. & I.	WD	10-28-99	FAYSTON	78	383-384	HWY. EASE.
													VT. RTE. 17 (0.24A±)
			REV. 0+962.0 LT.	1+041.0 LT.			CONST. (T) 0.01HA±						(0.03A±)
			REV. 0+966.7 LT.	REV. 0+997.5 LT.			DITCH (P) 88.2SM±						(950 S.F.±)
			REV. 1+003.0 LT.	REV. 1+037.5 LT.			SLOPE (P) 96.3SM±						(1036 S.F.±)
4	GREEN MOUNTAIN POWER CORP.												UTILITY
5	CHAMPLAIN VALLEY TELECOM												UTILITY

REVISION NO.	SHEET	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	8,9 10,11	PARCEL NO. 2 COLVIN & DEVEREAUX. REMOVE RIGHTS ASSOCIATED WITH SILT FENCES, ALSO SEDIMENTATION TRAP. REMOVE SLOPES 1+060 RT±. REMOVE SILT FENCES AND MOVE GUARDRAIL LOCATION TO 1+033 RT. ALSO CHANGE NOTES. PER C.O. NO. 9073.	10-01-99	B.A.H.	L.W.B.
2	9	C.O. 9078.			

0200009 200 1805 HP

ACCT. TFrench
\\vaot_cadd\fllngcabinet$\93c065\RightOfWay\rc065d.dgn
DATE PLOTTED 29-MAR-2001
rc065dl.i

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

PRESENT R.O.W.
TAKING WITHOUT ACCESS
TAKING WITHOUT ACCESS ALONG PROPERTY LINE
TAKING WITH ACCESS
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

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

APPROVED: LAWRENCE W. BLISS DATE: 04-08-98
CHIEF, PLANS & TITLES

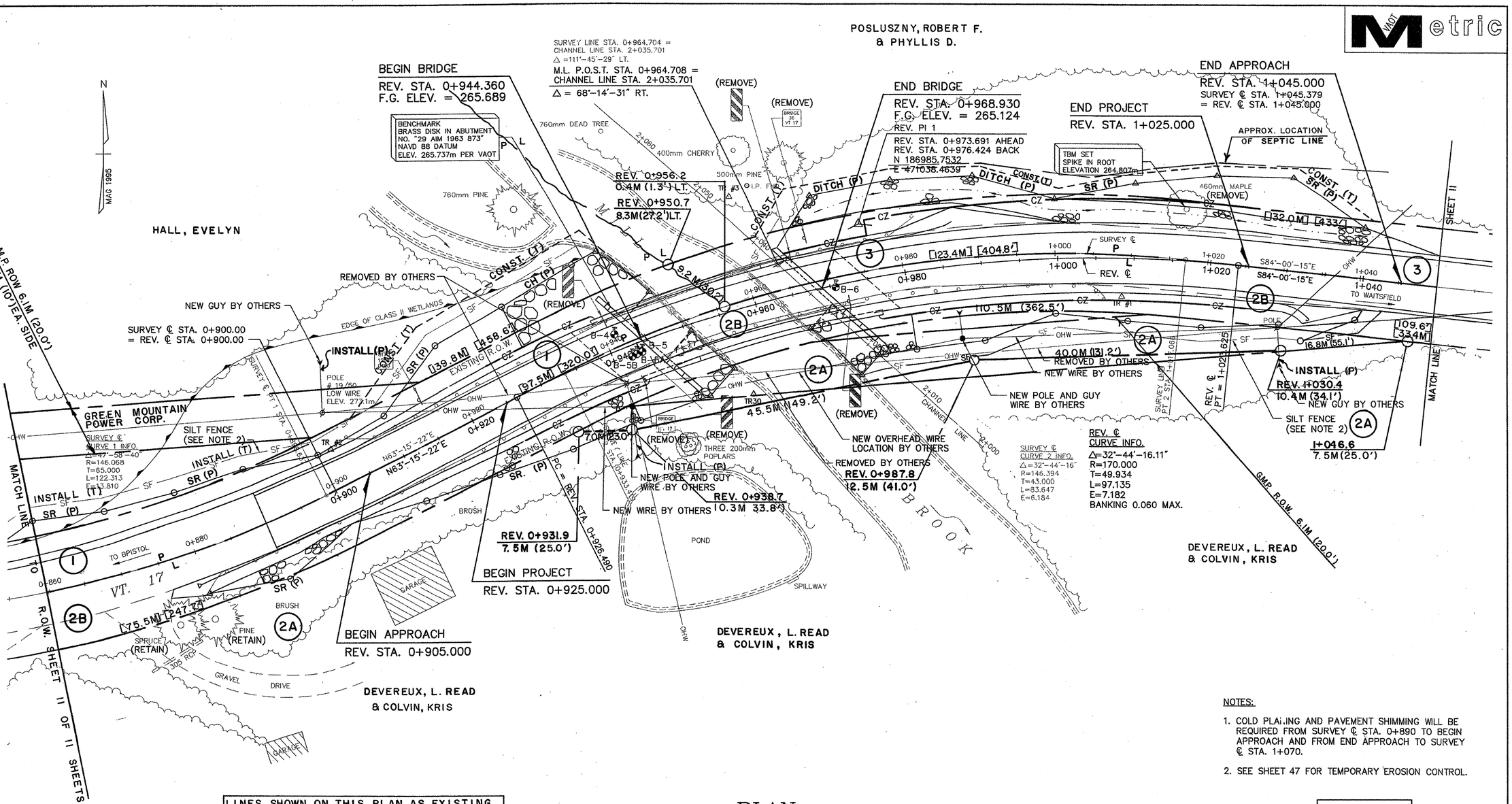
R. O. W. PLANS

FAYSTON
BHF 0200(9)

SHEET 6 OF 70

zc065RW1

VAOT Metric



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

PLAN

SCALE: 1:250

5 0 5 10 15 20 25

GRAPHIC SCALE (IN METERS)

NOTES:

1. COLD PLANING AND PAVEMENT SHIMMING WILL BE REQUIRED FROM SURVEY ℄ STA. 0+890 TO BEGIN APPROACH AND FROM END APPROACH TO SURVEY ℄ STA. 1+070.
2. SEE SHEET 47 FOR TEMPORARY EROSION CONTROL.

FOR ROW USE ONLY

CONSTRUCTION NOTES

REMOVAL AND DISPOSAL OF GUARD RAIL
STA. 0+880.0 – REV. STA. 0+946.0 RT.
REV. STA. 0+970.7 – 1+006.0 RT.
REV. STA. 0+904.3 – 0+942.2 LT.
REV. STA. 0+965.5 – 0+981.8 LT.

HEAVY DUTY STEEL BEAM GUARD RAIL
STA. 0+860.0 – REV. STA. 0+929.2 LT.
STA. 0+894.3, 3.65 m RT. – REV. STA. 0+932.4, 4.50 m RT.
REV. STA. 0+986.6 – STA. 1+033.0 RT.

MODIFIED ECCENTRIC LOADER TERMINAL
REV. STA. 0+975.6 – 0+986.7 LT.

MANUFACTURED TERMINAL SECTION
STA. 0+879.5, 4.44 m RT. – 0+894.3, 3.71 m RT.

GUARD RAIL APPROACH SECTION, TYPE I (MODIFIED)
REV. STA. 0+932.4 – 0+940.3 RT.
REV. STA. 0+978.8 – 0+986.6 RT.
REV. STA. 0+929.2 – 0+936.7 LT.
REV. STA. 0+968.2 – 0+975.6 LT.

BRIDGE RAILING – 2 RAIL GALVANIZED BOX BEAM (MODIFIED)
REV. STA. 0+936.7 – 0+968.2 LT.
REV. STA. 0+940.3 – 0+978.8 RT.

COLD PLANING BIT. CONCRETE PAVEMENT
STA. 0+890.0 – REV. STA. 0+905.0
REV. STA. 1+045.0 – STA. 1+050.0

DURABLE 100 mm WHITE LINE
STA. 0+890.0 – STA. 1+050.0 LT, RT

DURABLE 100 mm YELLOW LINE
STA. 0+890.0 – STA. 1+050.0 (DOUBLE CENTER LINE)

FOR EROSION SHEET SEE R.O.W. SHEET 8 OF II SHEETS.

0+880 RT. ~ 0+950 RT.
NEW SIDESLOPES TO BE CONSTRUCTED WITH STONEFILL, TYPE II AND COVERED WITH 150 mm OF EARTH BORROW. SLOPES ARE TO BE SEEDED AND MULCHED. NO ADDITIONAL CLEARING AND GRUBBING WILL BE ALLOWED BEYOND THE LIMITS OF THE STONE FILL SLOPE.

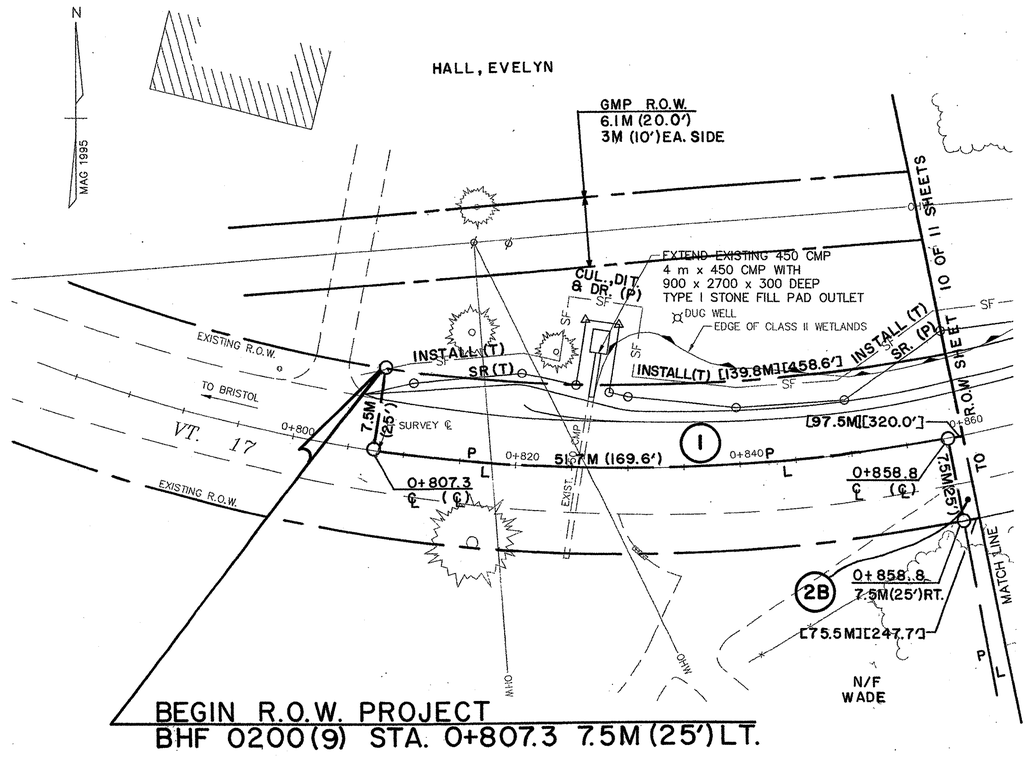
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
PLAN (1 OF 2)	
Designed By S.M. GUNN	Drawn By R.F. CLARK
Checked By Date	Bridge Design Supervisor Date
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
VANASSE HANGEN BRUSTLIN, INC.	I.G.C. Info.
	SHEET 7 OF 70 SHEETS

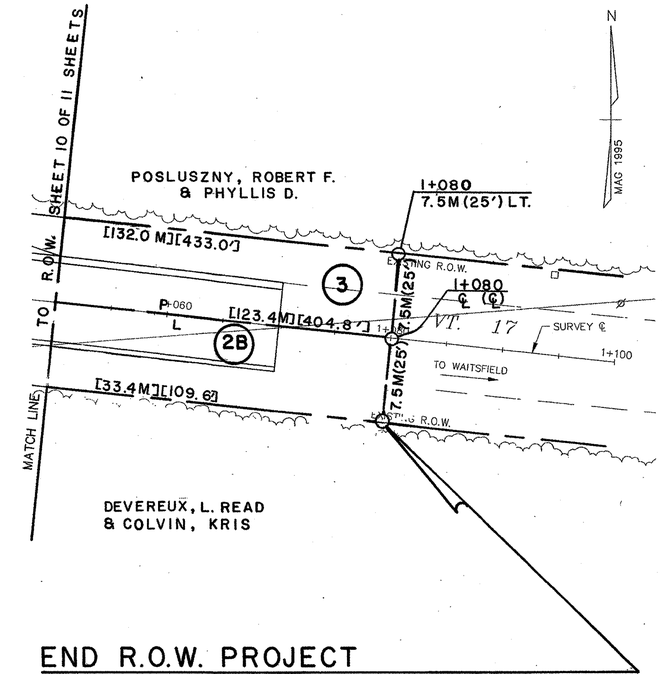
PLOTTED 9-22-98

ZC065RW2

VAOT Metric



BEGIN R.O.W. PROJECT
BHF 0200(9) STA. 0+807.3 7.5M (25') LT.



END R.O.W. PROJECT
BHF 0200(9) STA. 1+080 7.5M (25.0') RT.

FOR ROW USE ONLY

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

NOTES:

1. COLD PLANING AND PAVEMENT SHIMMING WILL BE REQUIRED FROM SURVEY ℄ STA. 0+890 TO BEGIN APPROACH AND FROM END APPROACH TO SURVEY ℄ STA. 1+070.
2. SEE SHEET 47 FOR TEMPORARY EROSION CONTROL.

CONSTRUCTION NOTES

HEAVY DUTY STEEL BEAM GUARD RAIL
STA. 0+831.1 – STA. 0+860.0 LT.

MANUFACTURED TERMINAL SECTION
STA. 0+819.4 – 0+831.1 LT.

COLD PLANING BIT. CONCRETE PAVEMENT
REV. STA. 1+050.0 – STA. 1+070.0

DURABLE 100 mm WHITE LINE
STA. 1+050.0 – STA. 1+070.0 LT, RT

DURABLE 100 mm YELLOW LINE
STA. 1+050.0 – STA. 1+070.0 (DOUBLE CENTER LINE)

PLAN
SCALE: 1:250

5 0 5 10 15 20 25
GRAPHIC SCALE
(IN METERS)

FOR EROSION SHEET
SEE R.O.W. SHEET 8 OF 11 SHEETS

VANASSE HANGEN BRUSTLIN, INC.

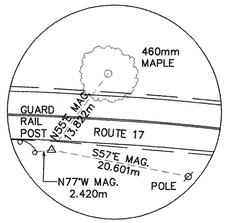
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
PLAN (2 OF 2)	
Designed By S.M. GUNN	Drawn By R.F. CLARK
Checked By Date	Bridge Design Supervisor Date
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
SHEET 8 OF 70 SHEETS	

PLOTTED 12-29-97

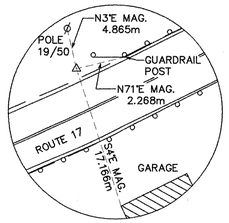
ZC 065RW3

VAOT **Metric**



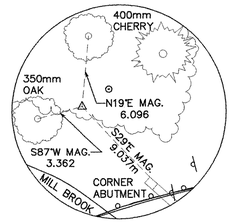
TR #1
REBAR & CAP
NORTHING = 186976.461
EASTING = 471072.922
NAVD 88 DATUM
ELEVATION = 263.923

TR #1
N.T.S.



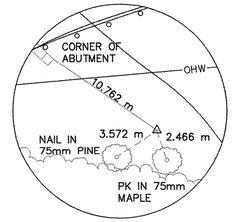
TR #2
REBAR & CAP
NORTHING = 186956.739
EASTING = 470969.574
ELEVATION = 266.483m

TR #2
N.T.S.



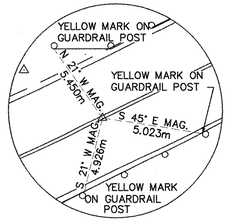
TR #3
REBAR & CAP
NORTHING = 186989.171
EASTING = 471021.535
ELEVATION = 263.960m

TR #3
N.T.S.



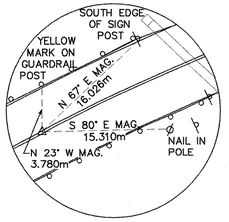
TR #30
REBAR & CAP
NORTHING = 186963.613
EASTING = 471024.806
ELEVATION = 261.880m

TR #30
N.T.S.



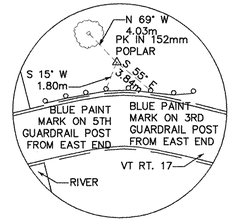
REV. STA 0+905.000
PK SET
NORTHING = 186953.613
EASTING = 470974.685
REV. CENTERLINE P.O.T.

REV. STA 0+905.000
N.T.S.

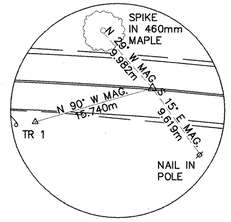


REV. STA 0+926.490
PK SET
NORTHING = 186963.282
EASTING = 470993.872
REV. CENTERLINE P.C.

REV. STA 0+926.490
N.T.S.

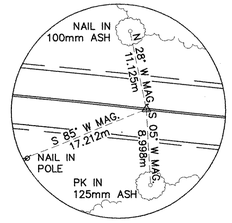


REV PI #1
N.T.S.



REV. STA 1+023.625
PK SET
NORTHING = 186980.538
EASTING = 471088.124
REV. CENTERLINE P.T.

REV. STA 1+023.625
N.T.S.



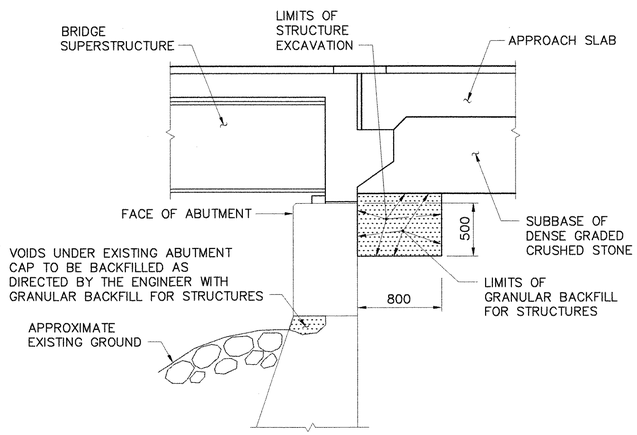
REV. STA 1+045.000
PK SET
NORTHING = 186978.305
EASTING = 471109.387
REV. CENTERLINE P.O.T.

REV. STA 1+045.000
N.T.S.

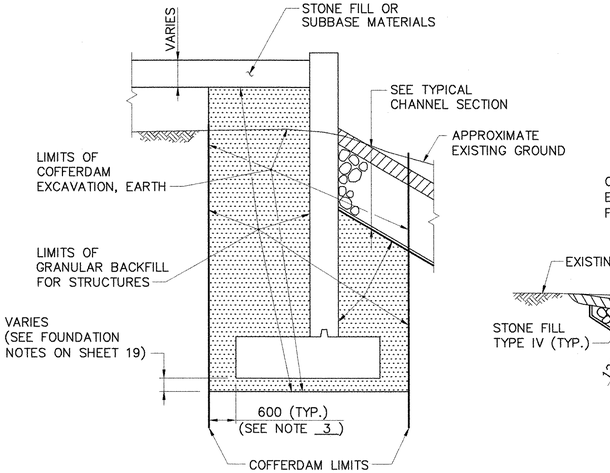
COFFERDAM NOTES:

1. COFFERDAMS SHALL BE USED FOR THE CONSTRUCTION OF WINGWALLS NO. 1, NO. 2, AND NO. 4 AND SHALL BE PAID AS ITEM 208.40, COFFERDAM.
2. COFFERDAM LIMITS SHALL BE DETERMINED BY THE CONTRACTOR, AND APPROVED BY THE RESIDENT ENGINEER.
3. FOR PURPOSES OF ESTIMATING EARTHWORK QUANTITIES, THE LIMITS OF COFFERDAMS HAVE BEEN ASSUMED TO BE 600 MILLIMETERS OUTSIDE THE PERIMETER OF THE FOOTINGS.
4. COFFERDAMS SHALL BE DESIGNED SO AS NOT TO DAMAGE OR UNDERMINE THE EXISTING STRUCTURE TO REMAIN NOR TO CONFLICT WITH THE PROPOSED CONSTRUCTION.
5. NO PORTION OF THE EXISTING STRUCTURE TO REMAIN SHALL BE INCORPORATED INTO THE COFFERDAM.
6. IF THE COFFERDAM IS ENLARGED FOR THE CONTRACTOR'S CONVENIENCE, ANY ADDITIONAL EXCAVATION REQUIRED WILL BE AT THE CONTRACTOR'S EXPENSE. IF IN ENLARGING THE COFFERDAM, THE LIMITS OF THE COFFERDAM ENCROACH ON THE UNCLASSIFIED CHANNEL EXCAVATION REQUIRED BY THE PLANS, THAT EXCAVATION WILL BE PAID FOR AS UNCLASSIFIED CHANNEL EXCAVATION.
7. ALL IN STREAM CHANNEL WORK WILL TAKE PLACE IN A DRY CHANNEL WITH THE EXCEPTION OF CLEAN STONE FILL PLACEMENT. THIS MAY BE ACCOMPLISHED BY DIRECTING THE STREAM FLOW THROUGH A TEMPORARY CHANNEL, THROUGH TEMPORARY CULVERTS, OR BY THE USE OF A COFFERDAM AND PUMPS. ABSOLUTELY NO RAW CONCRETE CAN BE ALLOWED TO MIX WITH THE STREAM FLOW. PUMPING FROM EXCAVATION FOR FOOTINGS WILL BE CLARIFIED USING A SEDIMENTATION TRAP BEFORE BEING ALLOWED TO MIX WITH THE STREAM FLOW.
8. SPECIAL CONSIDERATION MUST BE GIVEN TO THE FIRST PUMP-DOWN OF THE COFFERDAMS. THIS WILL CONTAIN THE GREATEST VOLUME OF WATER WITH A HIGH SEDIMENT LOAD. THE SEDIMENT TRAP(S) SHALL BE DESIGNED BY THE CONTRACTOR WITHIN THE RIGHT OF WAY AND APPROVED BY THE RESIDENT ENGINEER.
9. AFTER COMPLETION OF THE SUBSTRUCTURE, THE SEDIMENT IN THE TRAP SHALL BE REMOVED AND PROPERLY DISPOSED, AND THE GROUND SHALL BE RESTORED TO ITS ORIGINAL SLOPES.

ALIGNMENT TIES

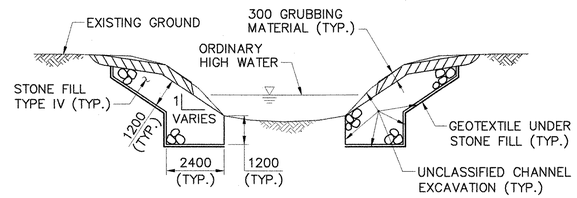


ABUTMENT EARTHWORK TYPICAL
(ABUT. NO. 1, ABUT. NO. 2 AND WW #3)
N.T.S.

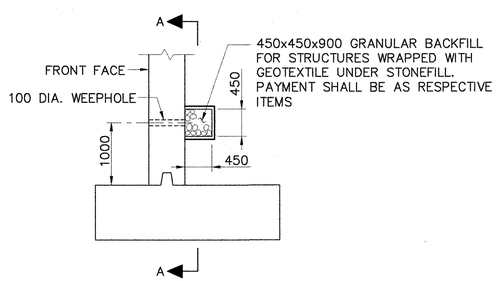


WINGWALL EARTHWORK TYPICAL
(WW#1, WW#2, AND WW#4)
N.T.S.

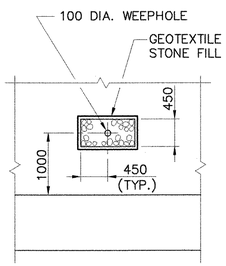
CONTINUE STONE FILL TO 300 MILLIMETERS BELOW EXISTING GROUND OR 600 MILLIMETERS ABOVE DESIGN FLOW ELEVATION (LOWEST ELEVATION).



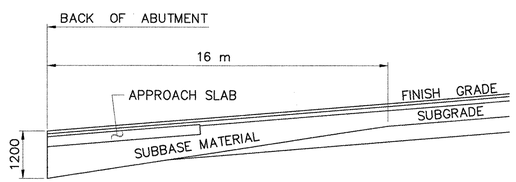
TYPICAL CHANNEL SECTION
N.T.S.



TYPICAL WEEPHOLE DETAIL
N.T.S.



SECTION A-A
N.T.S.



SUBBASE DETAIL AT ABUTMENTS
(ELEVATION IN CUT AND FILL)
N.T.S.

DATUM
VERTICAL NAVD 88
HORIZONTAL NAD 83-92

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	

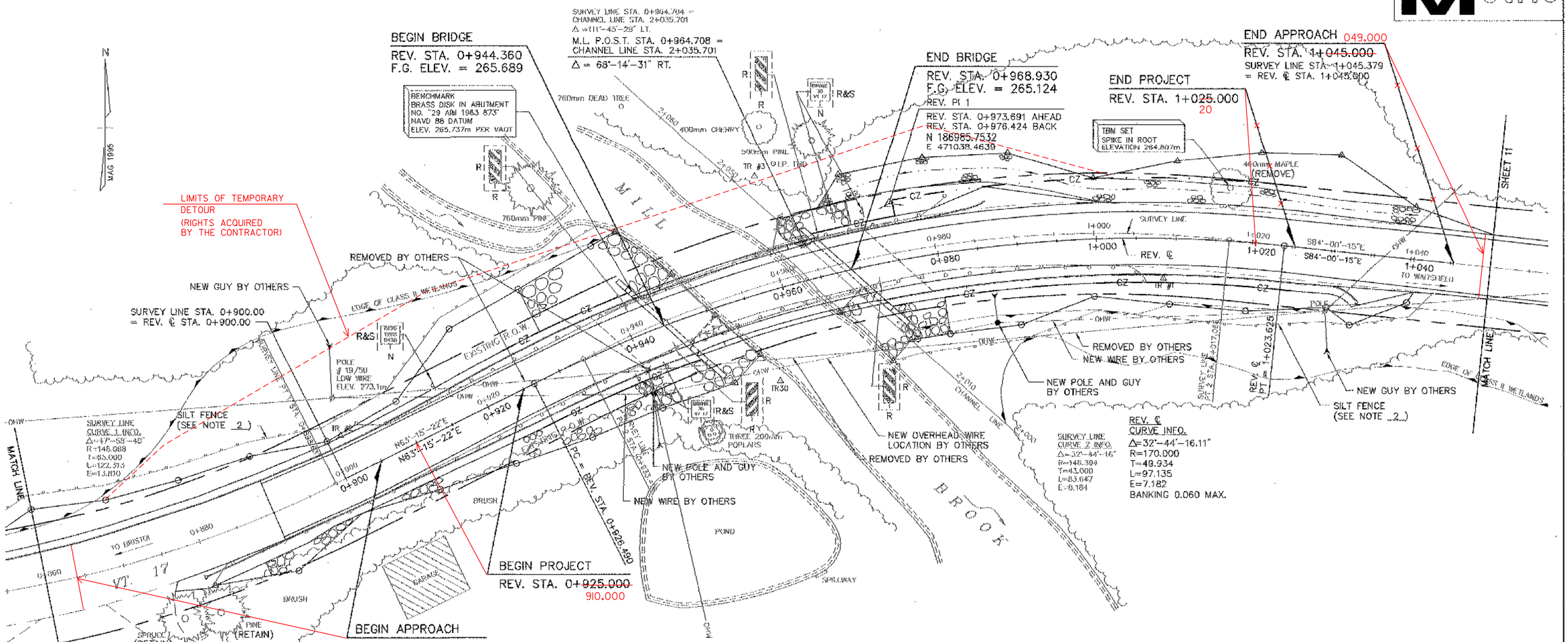
TIE SHEET AND TYPICAL DETAILS

Designed By EIV/S.M. GUNN	Drawn By B.J. MASSE
Checked By EIV/M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543TIE	Sheet 9 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065TYP

PLOTTED 1-13-2006



PROJECT & APPROACHES ADJUSTED IN LENGTH TO ACCOMODATE A TEMPORARY DETOUR & PAVING PROJECT (FAYSTON-WAITSFIELD STP 2406(I)S)

NOTES:

1. COLD PLANING AND PAVEMENT SHIMMING WILL BE REQUIRED FROM SURVEY LINE STA. 0+890 TO BEGIN APPROACH AND FROM END APPROACH TO SURVEY LINE STA. 1+070.
2. SEE SHEETS 45-48 FOR TEMPORARY EROSION CONTROL.
3. NEW SIDESLOPES ARE TO BE CONSTRUCTED WITH STONEFILL, TYPE II AND TYPE IV, STA. 0+880 RT. ~ 0+950 RT. AND COVERED WITH *300 OF GRUBBING MATERIAL*. SLOPES ARE TO BE SEEDED AND MULCHED. NO ADDITIONAL CLEARING AND GRUBBING WILL BE ALLOWED BEYOND THE LIMITS OF THE STONE FILL SLOPE.

PLAN
SCALE: 1:250

5 0 5 10 15 20 25
GRAPHIC SCALE
(IN METERS)

CONSTRUCTION NOTES

REMOVAL AND DISPOSAL OF GUARD RAIL
STA. 0+880.0 – REV. STA. 0+946.0 RT.
REV. STA. 0+970.7 – 1+006.0 RT.
REV. STA. 0+904.3 – 0+942.2 LT.
REV. STA. 0+965.5 – 0+981.8 LT.

HEAVY DUTY STEEL BEAM GUARD RAIL
STA. 0+860.0 – REV. STA. 0+932.0 LT.
STA. 0+894.3 – REV. STA. 0+936.5 RT.
REV. STA. 0+983.0 – REV. STA. 1+033.0 RT.

MANUFACTURED TERMINAL SECTION (FLARED)
REV. STA. 0+975.5 – 0+986.5 LT.

MANUFACTURED TERMINAL SECTION (TANGENT)
STA. 0+879.5, 4.44 m RT. – 0+894.3, 3.71 m RT.

ANCHOR FOR STEEL BEAM RAIL
REV. STA. 1+031.6 RT.

GUARD RAIL APPROACH SECTION, NETC 2 RAIL
REV. STA. 0+932.0 – 0+939.4 LT.
REV. STA. 0+968.0 – 0+975.5 LT.
REV. STA. 0+936.5 – 0+944.4 RT.
REV. STA. 0+975.2 – 0+983.0 RT.

BRIDGE RAILING – NETC 2 RAIL
REV. STA. 0+939.4 – 0+968.0 LT.
REV. STA. 0+944.4 – 0+975.2 RT.

COLD PLANING BIT. CONCRETE PAVEMENT
STA. 0+890.0 – REV. STA. 0+905.0
REV. STA. 1+045.0 – STA. 1+050.0

DURABLE 100 mm WHITE LINE
STA. 0+890.0 – STA. 1+050.0 LT, RT

DURABLE 100 mm YELLOW LINE
STA. 0+890.0 – STA. 1+050.0 (DOUBLE CENTER LINE)

SIGN LEGEND
N = NEW
R = REMOVE
RET. = RETAIN
R&S = REMOVE & SALVAGE
S = SALVAGE

EXISTING STRUCTURE
SINGLE SPAN STEEL BEAM, CONCRETE DECK
OVERALL LENGTH = 24.570 m
CONCRETE SPILL THROUGH ABUTMENTS
BRIDGE WIDTH CURB TO CURB = 7.42 m
BUILT IN 1939

STATE OF VERMONT
AGENCY OF TRANSPORTATION

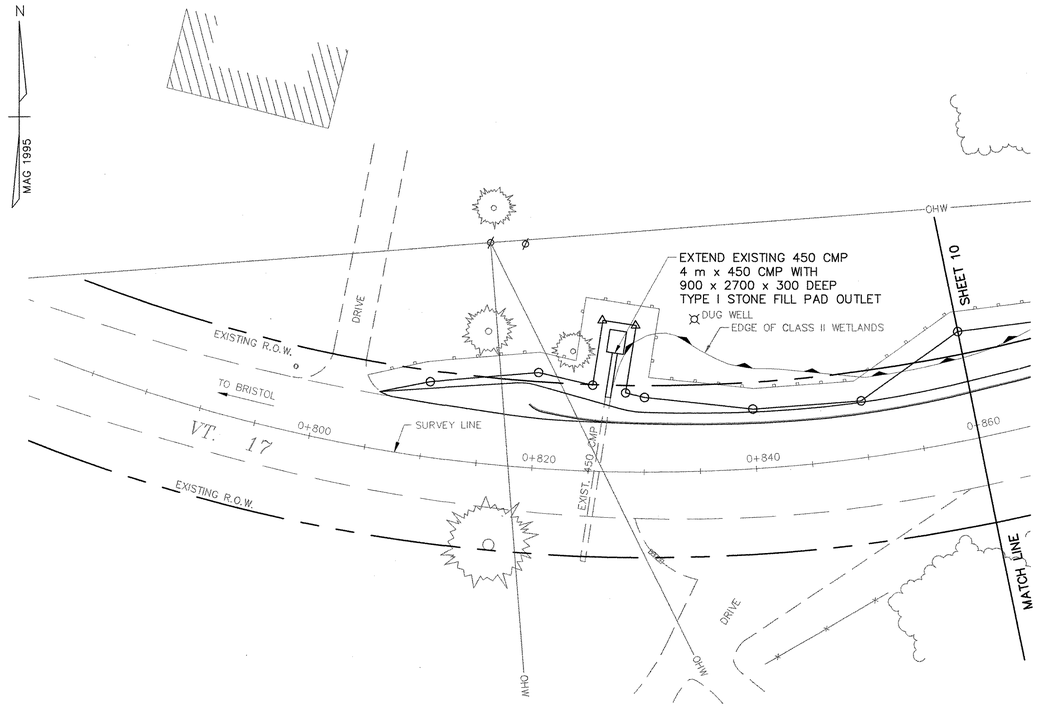
Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
PLAN (1 OF 2)	
Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By S.M. GUNN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
	L.G.C. Info.
Bridge Sheet No. 50543PLN	Sheet 10 of 70

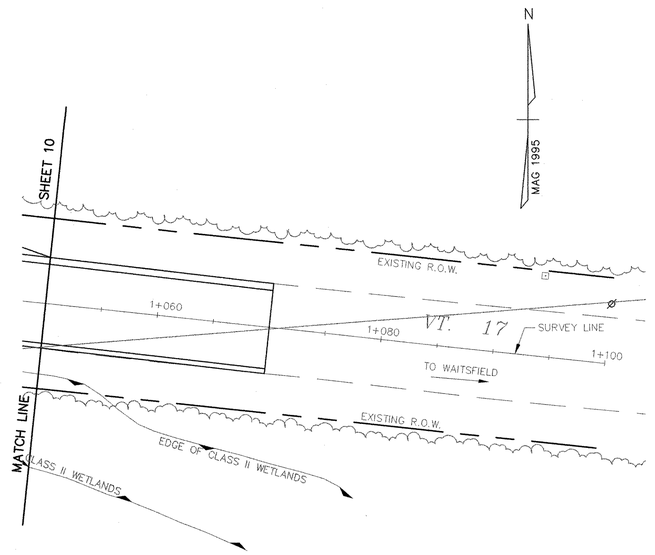
VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065PLN1

PLOTTED 1-13-2006

VAOT Metric





NOTES:

1. COLD PLANING AND PAVEMENT SHIMMING WILL BE REQUIRED FROM SURVEY LINE STA. 0+890 TO BEGIN APPROACH AND FROM END APPROACH TO SURVEY LINE STA. 1+070.
2. SEE SHEETS 45–48 FOR TEMPORARY EROSION CONTROL.

CONSTRUCTION NOTES

HEAVY DUTY STEEL BEAM GUARD RAIL
STA. 0+831.1 – STA. 0+860.0 LT.

MANUFACTURED TERMINAL SECTION (FLARED)
STA. 0+819.4 – 0+831.1 LT.

COLD PLANING BIT. CONCRETE PAVEMENT
REV. STA. 1+050.0 – STA. 1+070.0

DURABLE 100 mm WHITE LINE
STA. 1+050.0 – STA. 1+070.0 LT, RT

DURABLE 100 mm YELLOW LINE
STA. 1+050.0 – STA. 1+070.0 (DOUBLE CENTER LINE)

YIELDING MARKER POSTS
STA. 0+825.0 RT.
STA. 0+827.5 LT.

PLAN
SCALE: 1:250

5 0 5 10 15 20 25
GRAPHIC SCALE
(IN METERS)

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.

VT 17 OVER MILL BROOK

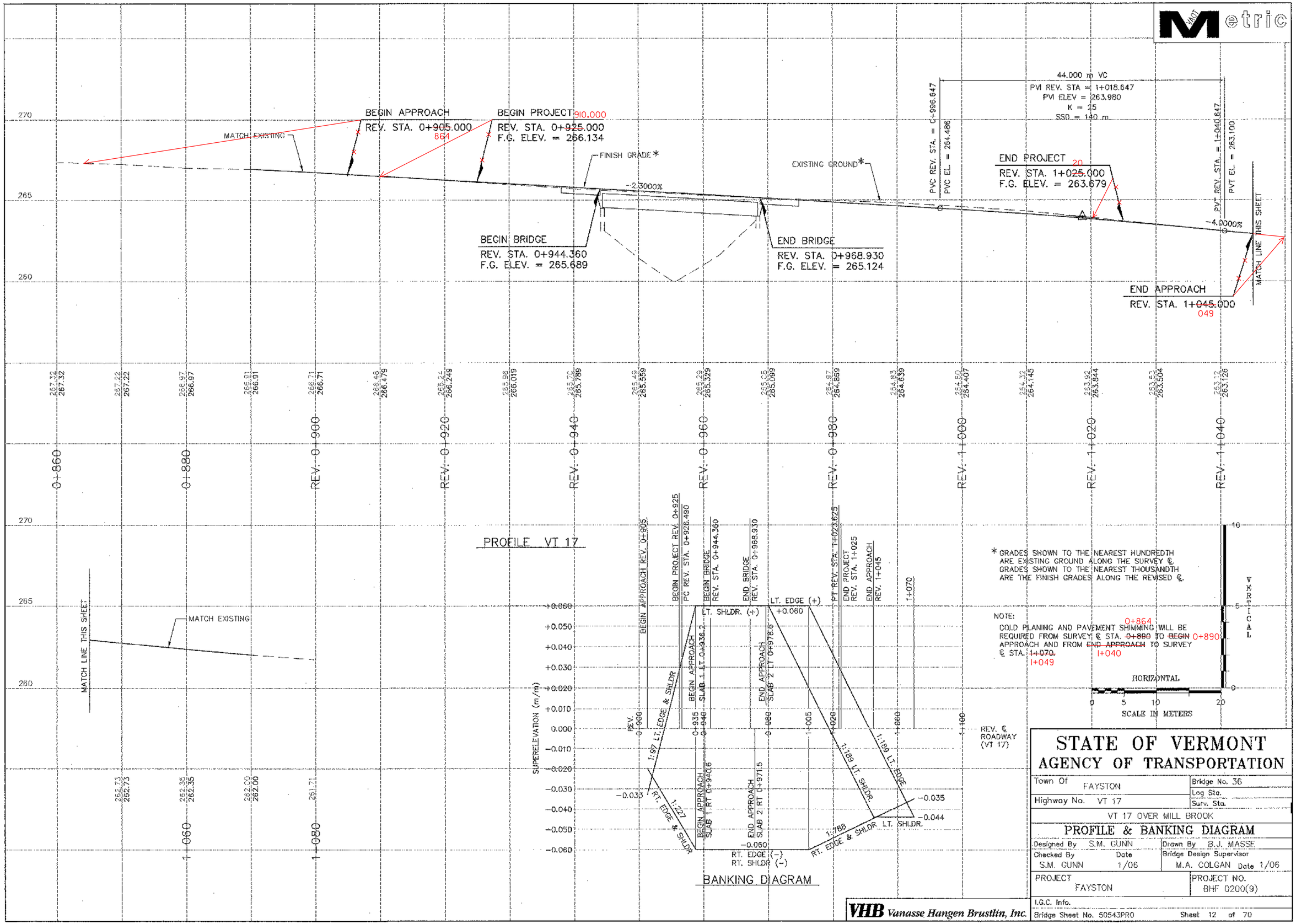
PLAN (2 OF 2)

Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By S.M. GUNN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543PLN	Sheet 11 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065PLN2

PLOTTED 1-13-2006



STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta.
	Surv. Sta.

VT 17 OVER MILL BROOK

PROFILE & BANKING DIAGRAM

Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By S.M. GUNN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543PRO	Sheet 12 of 70

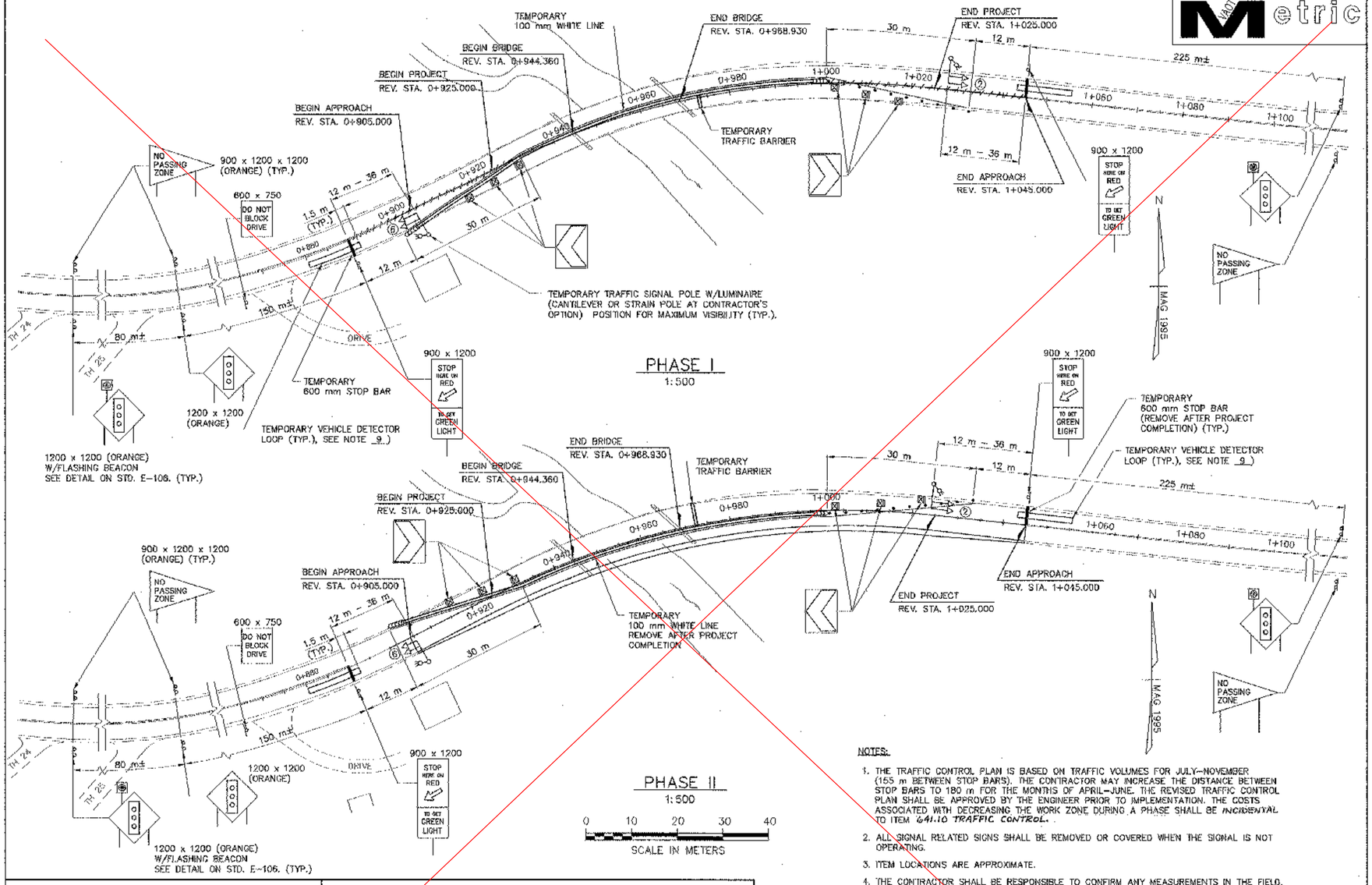
VHB Vanasse Hangen Brustlin, Inc.

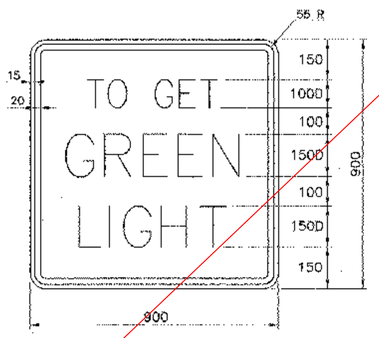
/str5/93C065/zc065PRO

PLOTTED 1-15-2006

GENERAL
TEMPORARY TRAFFIC SIGNAL NOTES

1. DESIGN OF THE SIGNAL SUPPORT(S) AND ANY REQUIRED GUYING IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. SIGNAL TIMING/TIMING ADJUSTMENTS REQUESTED BY THE RESIDENT ENGINEER SHALL BE ACCOMPLISHED WITHIN A 48 HOUR PERIOD AND PAYMENT SHALL BE SUBSIDIARY TO THE TRAFFIC SIGNAL ITEM. THE ALL-RED CLEARANCE INTERVAL IS BASED ON AN ASSUMED SPEED OF 15-30km/h. THE RESIDENT ENGINEER SHALL MAKE SEVERAL TRIAL RUNS TO DETERMINE THE PROPER ALL-RED CLEARANCE INTERVAL.
3. SIGNAL FACES SHALL CONSIST OF 300 mm LENSES. (RED, YELLOW, AND GREEN)
4. THE BOTTOM OF THE HOUSING OF A SIGNAL FACE SUSPENDED OVER A ROADWAY SHALL NOT BE LESS THAN 5.0 m NOR MORE THAN 5.8 m ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF A SIGNAL FACE NOT MOUNTED OVER A ROADWAY, SHALL NOT BE LESS THAN 2.4 m NOR MORE THAN 4.6 m ABOVE THE GROUND. CAUTION SHOULD BE USED TO ENSURE COMPLIANCE WITH THE HEIGHT REQUIREMENTS IN THE EVENT THE NEW APPROACH GRADES DIFFER SIGNIFICANTLY FROM THE OLD ROAD GRADE.
5. SIGNAL FACES FOR ANY ONE APPROACH SHALL NOT BE LESS THAN 2.4 m APART MEASURED HORIZONTALLY BETWEEN CENTER OF FACES.
6. SIGNAL HEADS MAY BE HUNG ON A SPAN WIRE OR ON A CANTILEVER MAST ARM. AT LEAST ONE SIGNAL HEAD SHALL BE UNMISTAKABLY IN LINE WITH THE CENTER OF APPROACHING TRAFFIC AT ALL TIMES. THE SECOND SIGNAL HEAD MAY BE POST MOUNTED, LOCATED AT A DISTANCE NO GREATER THAN 4.4 m FROM THE CENTER OF THE APPROACH LANE WHEN THE STOP BAR IS 12 m FROM THE SIGNAL HEAD. CONSULT THE M.U.T.C.D. FOR ADDITIONAL INFORMATION CONCERNING SIGNAL PLACEMENT.
7. SIGNAL HEAD PLACEMENT IS CRITICAL. HEADS SHALL BE ADJUSTED TO REFLECT LANE LOCATION CHANGES.
8. THE SIGNAL SYSTEM SHALL CONSIST OF POLES, SIGNS AND POSTS, WARNING SIGN, LUMINAIRES, FLASHING BEACONS, AND SIGNAL EQUIPMENT TO PROVIDE FOR AN ADEQUATE DESIGN. IT ALSO INCLUDES PERMITS AND COST ASSOCIATED WITH PROVIDING ELECTRICAL POWER.
9. THE CONTRACTOR SHALL PROVIDE AN ACTUATED CONTROLLER. THE APPROACHES NOTED SHALL HAVE A TEMPORARY VEHICLE DETECTOR. THE TYPE OF DETECTION SHALL BE AT THE OPTION OF THE CONTRACTOR. LOOPS ARE SHOWN FOR PLACEMENT PURPOSES ONLY. THE CONTROLLER, DETECTOR AND ALL OTHER SIGNAL EQUIPMENT SHALL MEET OR EXCEED ALL NEMA STANDARDS.
10. WHEN USED, VEHICLE DETECTOR LOOPS SHALL BE 1.2 m X 12 m FOR PRESENCE DETECTION AT THE STOP BAR WITH THE NEAR PORTION LOCATED 1.5 m BEYOND THE STOP BAR.
11. ON A SEMI-ACTUATED SIGNAL, PARTICULARLY WITH LONG BRIDGES, THE CONTROLLER SHOULD BE LOCATED ON THE SAME SIDE OF THE BRIDGE AS THE DETECTOR.
12. INTERVAL TIMING SHOWN IN SECONDS.
13. INTERCONNECT BETWEEN SIGNAL POLES BY WHATEVER MEANS POSSIBLE OR CONVENIENT TO PROVIDE FOR A SAFE INSTALLATION.
14. PLACE TEMPORARY POLES BEHIND GUARDRAIL WHERE PRACTICAL.
15. POLES SUPPORTING SPAN WIRES AND/OR MAST ARMS SHALL BE ADEQUATELY BRACED OR GUYED AND SHALL NOT BE PLACED SO AS TO CREATE A HAZARD TO THE TRAVELING PUBLIC.
16. ALL TEMPORARY SIGNAL EQUIPMENT, SIGNS, ETC., SHALL BELONG TO THE CONTRACTOR AT THE END OF THE PROJECT AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL, INCLUDING ANY TEMPORARY PAVEMENT MARKINGS, UTILITY POLES, WIRES, ETC.
17. A 250 WATT MER/150 WATT HPS LUMINAIRE AND MAST ARM SHALL BE PROVIDED ON A POLE ON EACH APPROACH AT A MOUNTING HEIGHT OF 9 m ABOVE ROADWAY CENTERLINE. THE INTENT IS TO LIGHT UP THE AREA AROUND THE SIGNAL HEADS AND STOP BAR FOR INCREASED VISIBILITY. THE RESIDENT ENGINEER SHALL DETERMINE THE ADEQUACY OF THE LIGHTING AND DIRECT CHANGES IF THE LIGHTING IS INSUFFICIENT.
18. STOP BARS SHALL BE LOCATED A MINIMUM OF 12 m AND A MAXIMUM OF 38 m FROM THE NEAREST SIGNAL HEAD.
19. PAYMENT FOR THE VEHICLE DETECTORS SHALL BE FOR EACH UNIT INSTALLED.
20. SIGNS AND POSTS AS SHOWN ON THIS SHEET AND NOTED BELOW ARE INCIDENTAL TO THE "TRAFFIC CONTROL" ITEM ("STOP HERE ON RED", "SIGNAL AHEAD", "NO PASSING ZONE", AND "TO GET GREEN LIGHT" ETC.) THE TEMPORARY STOP BARS SHOULD BE PAID UNDER THE TEMPORARY 600 mm STOP BAR ITEM.
21. SEE STD. E-140 FOR "STOP HERE ON RED" SIGN DETAIL AND E-101 FOR "SIGNAL AHEAD" SYMBOL SIGN. SEE STANDARD E-121 FOR SIGN PLACEMENT, SEE STANDARD E-171A AND E-172 FOR ADDITIONAL INFORMATION ON SIGNALS AND DETECTORS.
22. A "SIGNAL AHEAD" SIGN SHALL BE PLACED AT LEAST 225 m FROM THE SIGNAL OR AT A POSITION TO BE DETERMINED BY THE ENGINEER.
23. THE "NO PASSING" SIGN SHALL BE USED TO PREVENT PASSING FOR 225 m IN ADVANCE OF THE STOP BAR. THE SIGN SHALL BE PER STANDARD E-102.
24. ALL ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND STATE INSPECTOR.
25. TWO-WAY TRAFFIC SHALL BE MAINTAINED ON THE DETOUR WHENEVER POSSIBLE. DURING TWO-WAY TRAFFIC, THE SIGNALS SHALL BE SET ON FLASHING YELLOW.
26. APPROACH WIDTHS SHALL BE AS DETAILED IN SECTION 528.04(b)2 TO MINIMIZE VEHICLE DELAY.
27. TRAFFIC CONTROL WARNING SIGNS SHALL BE PROVIDED ON EACH APPROACH PER STANDARD E-107. ADDITIONAL PROJECT CONSTRUCTION SIGNS SHALL BE INSTALLED AS REQUIRED BY THE RESIDENT ENGINEER PER STANDARD E-100, E-101, E-102 & E-102A. PAYMENT FOR THESE SIGNS, THE REFLECTORIZED PLASTIC DRUMS, ETC, SHALL BE PAID AS A PART OF THE "TRAFFIC CONTROL" ITEM.
28. THE "TO GET GREEN LIGHT" SIGN IS TO BE USED ONLY ON APPROACHES WITH VEHICLE DETECTORS.
29. IF BRIDGE WORK REQUIRES LANE CLOSURE ON A ROADWAY UNDERNEATH THE BRIDGE, REFER TO STD. E-110 FOR TRAFFIC CONTROL DETAILS. PAYMENT *INCIDENTAL* TO "TRAFFIC CONTROL".
30. IN SITUATIONS WHERE EXISTING PASSING ZONES EXTEND THROUGH THE AREA BETWEEN THE STOP BAR AND THE "NO PASSING ZONE" SIGN, THEN TEMPORARY DOUBLE YELLOW LINES SHALL BE INSTALLED FROM THE STOP BAR TO THE "NO PASSING ZONE" SIGN. THESE MARKINGS SHALL BE PAID UNDER THE "TEMPORARY 100 mm YELLOW LINE" ITEM.
31. TEMPORARY TRAFFIC BARRIER SHOULD BE SUBSTITUTED FOR THE CHANNELIZING DEVICES SHOWN WHEN ANY OF THE FOLLOWING ARE MET:
    A.) THE BRIDGE DECK IS REMOVED
    B.) THE BRIDGE RAIL IS REMOVED, OR
    C.) IN THE JUDGEMENT OF THE RESIDENT ENGINEER TEMPORARY BARRIER IS NEEDED.
32. WHEN TEMPORARY BARRIER IS USED, BARRIER ENDS FACING ONCOMING TRAFFIC SHALL BE TAPERED BEYOND THE CLEAR ZONE, OR PROTECTED WITH AN APPROVED END TREATMENT DESIGNED FOR THE 85TH PERCENTILE SPEED OR THE POSTED SPEED LIMIT OF THE ROADWAY.
33. PAYMENT FOR TEMPORARY BARRIER USED SHALL BE MADE UNDER THE APPROPRIATE ITEM.





COLORS: BLACK TEXT & BORDER
WHITE REFL. BACKGROUND
MATERIALS: PER STD. E-142

PHASING DIAGRAM AND SPECIAL NOTES FOR EACH LOCATION

APRIL-JUNE (180 m BETWEEN STOP BARS)

PHASE	2			6		
MINIMUM	12			12		
EXTENSION	2			2		
MAXIMUM	28	4	20	28	4	20
HEAD 2	G	Y	R	R	R	R
HEAD 6	R	R	R	G	Y	R

JULY-NOVEMBER (155 m BETWEEN STOP BARS)

PHASE	2			6		
MINIMUM	12			12		
EXTENSION	2			2		
MAXIMUM	32	4	17	32	4	17
HEAD 2	G	Y	R	R	R	R
HEAD 6	R	R	R	G	Y	R

SPECIAL REQUIREMENTS

APPROACH	TEMPORARY VEHICLE DETECTOR	FLASHING BEACON ON ADVANCED WARNING SIGN
2	X	X
6	X	X

ENTER CHECK MARK IN APPROPRIATE BOX WHEN REQUIRED ON THIS PROJECT

NOTES:

1. THE TRAFFIC CONTROL PLAN IS BASED ON TRAFFIC VOLUMES FOR JULY-NOVEMBER (155 m BETWEEN STOP BARS). THE CONTRACTOR MAY INCREASE THE DISTANCE BETWEEN STOP BARS TO 180 m FOR THE MONTHS OF APRIL-JUNE. THE REVISED TRAFFIC CONTROL PLAN SHALL BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION. THE COSTS ASSOCIATED WITH DECREASING THE WORK ZONE DURING A PHASE SHALL BE *INCIDENTAL* TO ITEM *641.10 TRAFFIC CONTROL*.
2. ALL SIGNAL RELATED SIGNS SHALL BE REMOVED OR COVERED WHEN THE SIGNAL IS NOT OPERATING.
3. ITEM LOCATIONS ARE APPROXIMATE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONFIRM ANY MEASUREMENTS IN THE FIELD.
5. SEE TABLE ON STD. E-106 FOR DESIGN CRITERIA.
6. SEE SHEETS 14 AND 15 FOR BRIDGE CONSTRUCTION PHASING.
7. SEE CONSTRUCTION NOTES ON SHEET 19.
8. THE CONTROLLER SHALL BE SET UP TO DWELL ON THE PHASE LAST SIGNALIZED.

STANDARDS REQUIRED:

E-100, E-101, E-102, E-102A, E-106, E-107, E-107A, E-110, E-121, E-140, E-142, E-170, E-171A, E-171B, E-171C, E-172, E-175

LEGEND

- TRAFFIC SIGNAL POLE WITH LUMINAIRE
- REFLECTORIZED PLASTIC DRUM (SEE STD. E-106) DRUM SPACING (IN METERS) IS EQUAL TO DETOUR SPEED DIVIDED BY 5.33 (IN km/h)
- TYPE III BARRICADES (SEE STD. E-107A)
- TYPE III BARRICADES (MOD.) (SEE STD. E-107A)
- PAVEMENT MARKING REMOVAL
- SIGNAL HEAD AND PHASE
- FLASHING BEACON
- TEMPORARY CONCRETE TRAFFIC BARRIER
- ENERGY ABSORPTION ATTENUATOR

VHB *Vanasse Hangen Brustlin, Inc.*

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta.
	Surv. Sta.

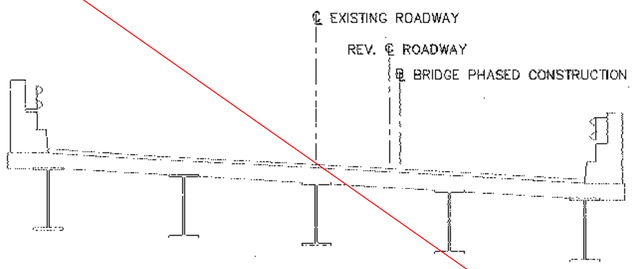
VT 17 OVER MILL BROOK

TRAFFIC CONTROL PLAN (N/A)

Designed By VAOT/CMB/SMG	Drawn By B.J. MASSE
Checked By S.M. GUNN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543TCP	Sheet 13 of 70

/str5/93C065/zc065TRF

PLOTTED 1-13-2006



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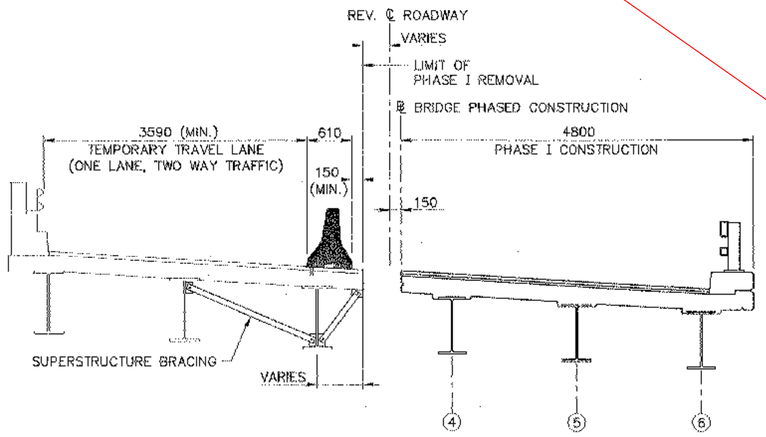

PHASE I CONSTRUCTION
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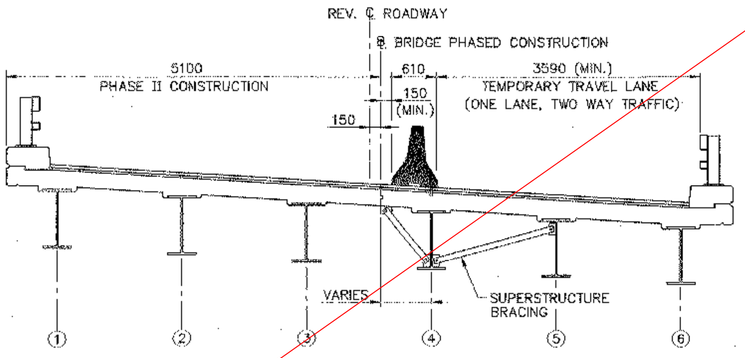

PHASE II CONSTRUCTION
SCALE: 1:40

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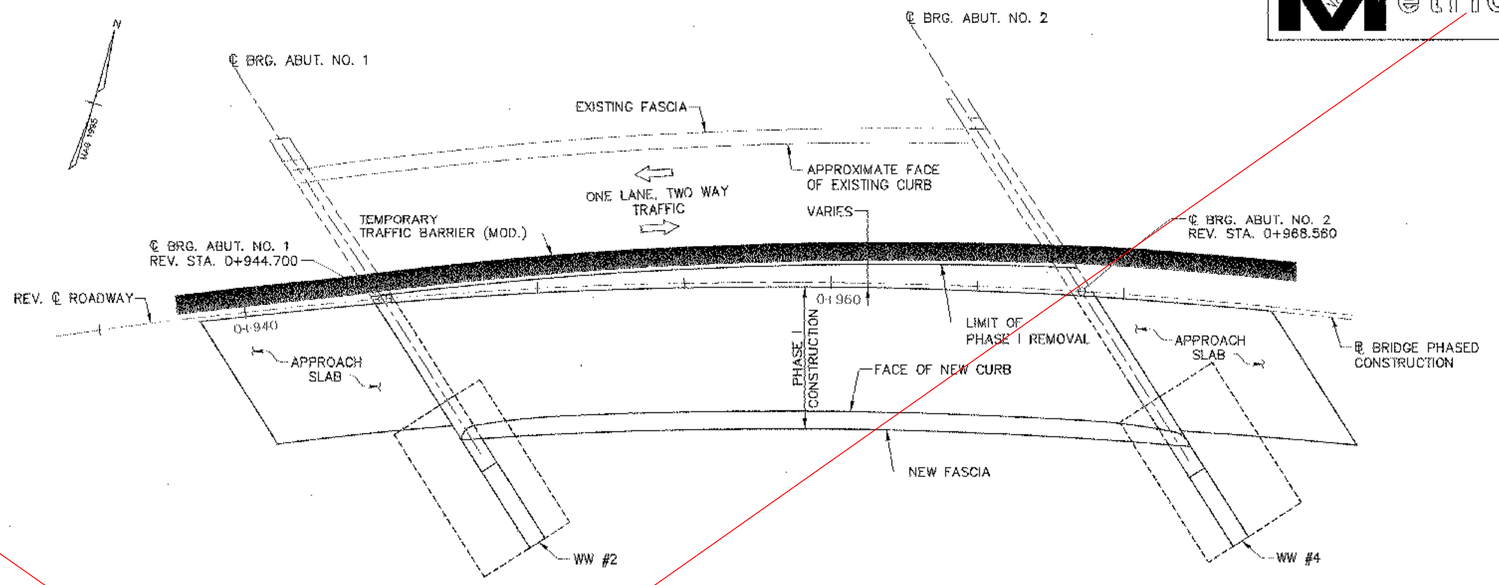
SCALE IN MILLIMETERS



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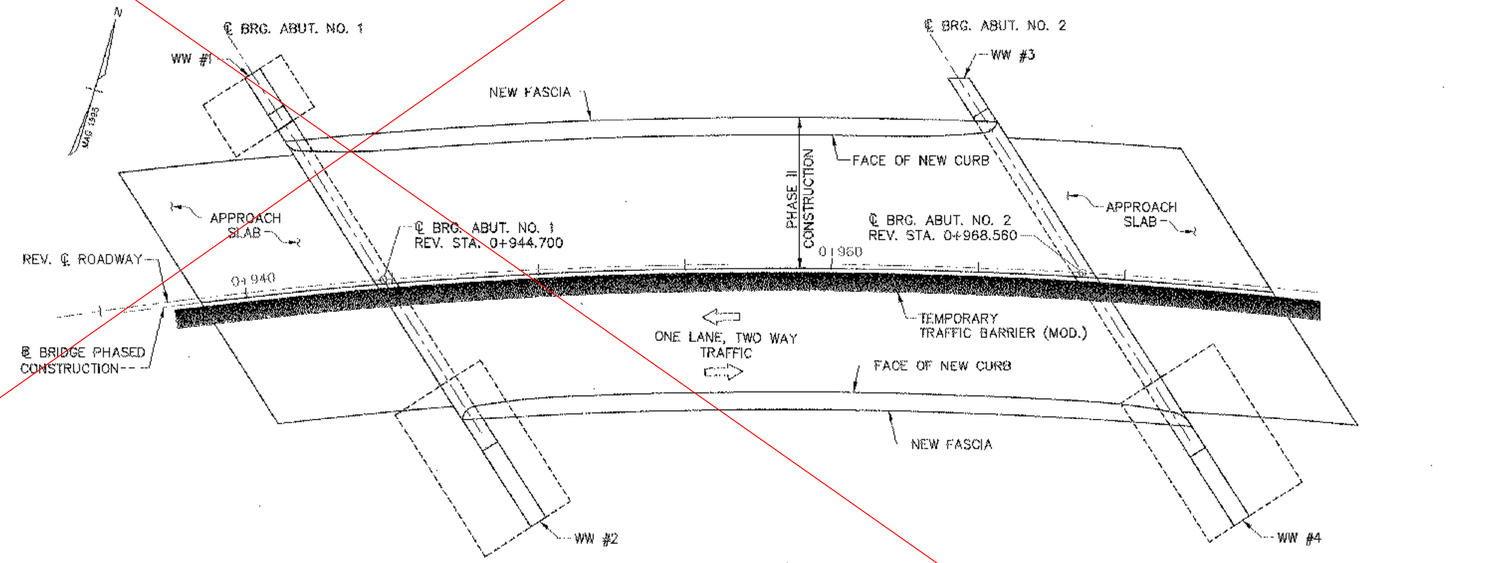

PHASE II CONSTRUCTION
SCALE: 1:100

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SCALE IN MILLIMETERS

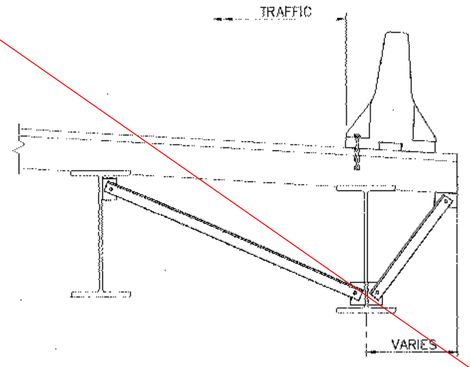
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta.
	Surv. Sta.
VT 17 OVER MILL BROOK	
CONSTRUCTION PHASING (1 OF 2)(N/A)	
Designed By S.M. SAREAULT	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543CP1	Sheet 14 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065CP1

PLOTTED 1-13-2006

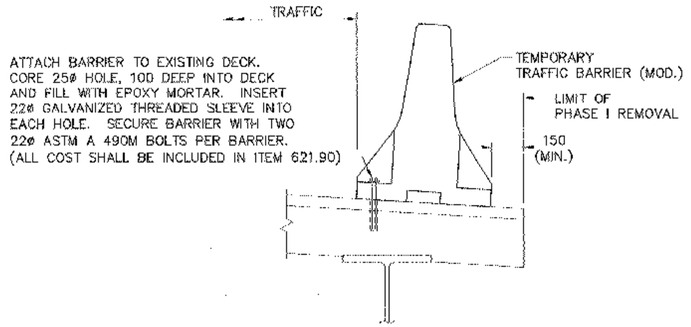


SUPERSTRUCTURE BRACING

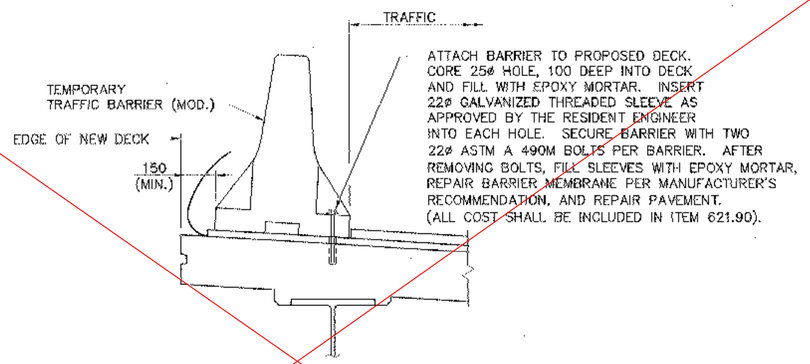
(BRACING OF EXISTING SUPERSTRUCTURE SHOWN, BRACING OF NEW SUPERSTRUCTURE SIMILAR)
N.T.S.

SUPERSTRUCTURE BRACING NOTES:

1. SUPERSTRUCTURE BRACING MAY BE REQUIRED AT THE LOCATIONS SHOWN DUE TO PHASED CONSTRUCTION REQUIREMENTS. THE SUPERSTRUCTURE BRACING SHOWN IS CONCEPTUAL AND SCHEMATIC ONLY AND IS NOT INTENDED TO INDICATE A REQUIRED OR PREFERRED METHOD OF CONSTRUCTION. SUPERSTRUCTURE BRACING DESIGN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE APPROVED BY VAOT IN ACCORDANCE WITH THE SPECIFICATIONS SECTION 105.03.
2. ALL COSTS FOR THE DESIGN, INSTALLATION, MAINTENANCE, AND REMOVAL OF THE SUPERSTRUCTURE BRACING SHALL BE INCLUDED IN ITEM 502.10, SHORING SUPERSTRUCTURE.
3. SUPERSTRUCTURE BRACING SHALL BE DESIGNED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES. THE MINIMUM DESIGN LIVE LOAD SHALL BE AASHTO MS18. THE BRACING SHALL ALSO BE DESIGNED TO PROVIDE ADEQUATE SUPPORT FOR THE PORTABLE CONCRETE BARRIER WHEN THE BARRIER IS SUBJECTED TO THE AASHTO DESIGN RAIL LOAD IN ACCORDANCE WITH AASHTO SECTION 3.14.3.
4. ATTACHMENT OF THE SUPERSTRUCTURE BRACING TO THE EXISTING AND NEW SUPERSTRUCTURES SHALL BE APPROVED BY THE ENGINEER. WELDING TO THE EXISTING OR NEW STEEL WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF THE STRUCTURES ENGINEER.



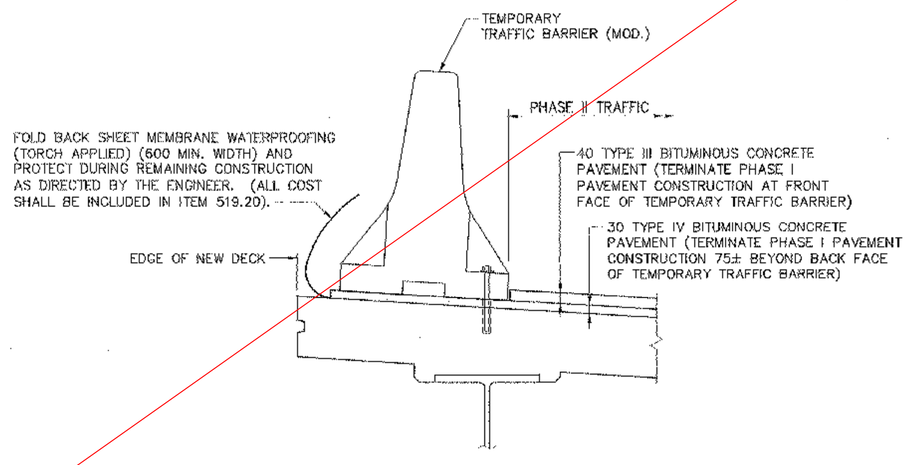
EXISTING DECK DETAIL



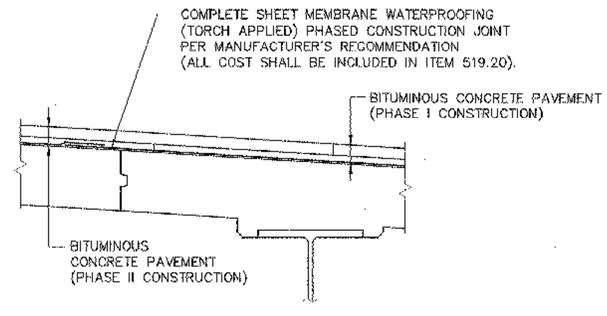
PROPOSED DECK DETAIL

TEMPORARY TRAFFIC BARRIER ANCHORAGE DETAILS

N.T.S.



PHASE I



PHASE II

PHASED CONSTRUCTION JOINT DETAILS

N.T.S.

BRIDGE CONSTRUCTION PHASING NOTES:

GENERAL

1. TRAFFIC WILL BE MAINTAINED DURING CONSTRUCTION UTILIZING A SINGLE TRAFFIC LANE WITH ALTERNATING EASTBOUND AND WESTBOUND TRAFFIC CONTROLLED BY A TEMPORARY TRAFFIC SIGNAL.
2. ALL CONSTRUCTION SHALL BE COMPLETED USING THE TRAFFIC CONTROL PLAN AND APPROVED TRAFFIC CONTROL PROCEDURES.
3. THE EXISTING AND NEW SUPERSTRUCTURE MAY REQUIRE BRACING.
4. TEMPORARY EXCAVATION SUPPORT MAY BE REQUIRED TO SUPPORT THE ROADWAY EMBANKMENTS AND MAINTAIN TRAFFIC DURING PHASED CONSTRUCTION. ALL COSTS SHALL BE PAID AS ITEM 505.36, TEMPORARY STEEL SHEET PILING. SEE STANDARD SPECIFICATIONS SECTION 505.03 FOR SUBMITTAL REQUIREMENTS.

PHASE I CONSTRUCTION

1. MAINTAIN ONE 3590 TRAVEL LANE FOR ALTERNATING EASTBOUND AND WESTBOUND TRAFFIC.
2. INSTALL TRAFFIC CONTROL FOR PHASE I CONSTRUCTION AND INSTALL TEMPORARY SUPERSTRUCTURE BRACING AND TEMPORARY EXCAVATION SUPPORT AS REQUIRED.
3. ROUTE TRAFFIC ONTO THE PHASE I DETOUR.
4. REMOVE PORTIONS OF THE EXISTING BRIDGE AS REQUIRED FOR PHASE I CONSTRUCTION OF THE NEW BRIDGE.
5. CONSTRUCT PHASE I PORTION OF THE NEW SUBSTRUCTURE, SUPERSTRUCTURE, AND APPROACH SLABS.
6. INSTALL TEMPORARY SUPERSTRUCTURE BRACING AND TEMPORARY EXCAVATION SUPPORT FOR PHASE II CONSTRUCTION.

PHASE II CONSTRUCTION

1. MAINTAIN ONE 3590 TRAVEL LANE FOR ALTERNATING EASTBOUND AND WESTBOUND TRAFFIC.
2. INSTALL TRAFFIC CONTROL FOR PHASE II CONSTRUCTION AND ROUTE TRAFFIC ONTO THE PHASE II DETOUR.
3. REMOVE PORTIONS OF THE EXISTING BRIDGE AS REQUIRED FOR PHASE II CONSTRUCTION.
4. CONSTRUCT PHASE II PORTION OF THE NEW SUBSTRUCTURE, SUPERSTRUCTURE, AND APPROACH SLABS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
CONSTRUCTION PHASING (2 OF 2) (N/A)	
Designed By S.M. SAREAULT	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543CP2	Sheet 15 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065CP2

PLOTTED 1-13 2006

CON-TEC, INC. TEST BORING LOG (ENGLISH UNITS)

PROJECT: **BRIDGE NO. 36**
LOCATION: **RT. 17, FAYSTON, VERMONT**

JOB NO.	9811
HOLE NO.	B - 4
SHEET	1 of 1
START DATE	2/17/98
FINISH DATE	3/30/98
DRILLER	R. Bourassa
HELPER	A. Carter
INSPECTOR	

	CASING	SAMPLE	CORE
TYPE	HW NW	SS	NX
SIZE ID	4" 3"	1 3/8"	2"
HAMMER WT.		140	
HAMMER FALL		30"	

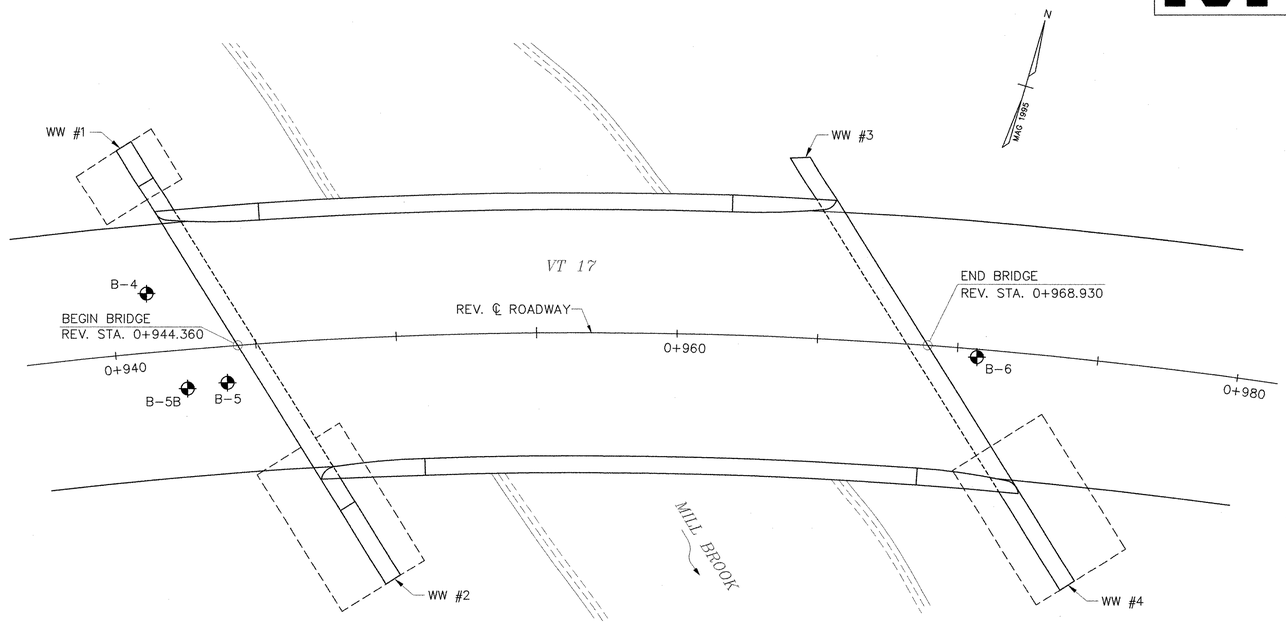
GROUNDWATER DATE	TIME	DEPTH TO WATER	DEPTH TO BOTTOM OF CASING	DEPTH TO BOTTOM OF HOLE

EL. 265.67 (METRIC)

WINGWALL NO. 1 BOTTOM OF FOOTING
EL. 259.45 (METRIC)

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6 INCHES	RECOV.	SOIL DESCRIPTION
	4" CASING		0.5'	50/0	0"	ASPHALT 0.5'
5.0'						SAND, GRAVEL & COBBLES
		1	5' - 7'	18 - 16	9"	Light brown, dry, medium dense f/m/c SAND & f/m/c GRAVEL, trace sil
10.0'				14 - 15		
		2	10' - 12'	12 - 19	16"	Light brown, dry, dense f/m/c SAND & f/m/c GRAVEL, trace sil
15.0'				14 - 11		
	3" SPIN	3	15'-16.5'	21 - 33	18"	Gray-brown, wet, very dense f/m/c SAND & embedded c/m/f GRAVEL, little sill occasional cobbles
20.0'				49 - 50/0		
		4	20'-20.5'	110	6"	Gray-brown, wet, very dense f/m/c SAND & embedded c/m/f GRAVEL, little sill occasional cobbles
25.0'						
			25'	50/0	0"	COBBLES & C/GRAVEL 27.5'
30.0'						Weathered BEDROCK
						NX RUN - 1 29.0' - 34.0'
						REC 5.0' - 100%
						RQD 1.2' - 24%
						Gray, biotite quartz GNEISS 29.0'
35.0'						
						NX RUN - 2 34.0' - 39.0'
						REC 4.2' - 84%
						RQD 2.5' - 50%
40.0'						Gray, biotite quartz GNEISS 39.0'
						BOTTOM OF BORING 39.0'

Note: 1. Coring time in rock averaged 6 Min/LF; no water loss
2. Typed Driller's Field Log



BORING PLAN
SCALE: 1:100

0 2 4 6
SCALE IN METERS

BORING NOTES

1. SOIL AND ROCK CLASSIFICATIONS, PROPERTIES, AND DESCRIPTIONS ARE BASED ON ENGINEERING INTERPRETATION FROM AVAILABLE SUBSURFACE INFORMATION AND MAY NOT NECESSARILY REFLECT ACTUAL VARIATIONS IN SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED BETWEEN INDIVIDUAL BORING OR SAMPLE LOCATIONS.
2. 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.
3. ENGINEERING JUDGEMENT WAS EXERCISED IN PREPARING THE SUBSURFACE INFORMATION PRESENTED HEREIN. ANALYSIS AND INTERPRETATION OF SUBSURFACE DATA WAS PERFORMED AND INTERPRETED BY LAMSON ENGINEERING CORP. FOR DESIGN AND ESTIMATING PURPOSES. PRESENTATION OF THE INFORMATION IN THE CONTRACT IS INTENDED TO PROVIDE THE CONTRACTOR ACCESS TO THE SAME DATA. 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.
4. PICTORIAL STRUCTURE DETAILS SHOWN ON THE BORING PLAN LAYOUT OR SOIL PROFILES ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY NOT ACCURATELY PORTRAY FINAL CONTRACT DETAILS.
5. 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.

BORING CHART

BORING HOLE #	STATION	OFFSET (M)	BEDROCK ELEV.
B-4	0+941.3	2.1 LT.	257.2
B-5	0+942.9	1.3 RT.	N/A
B-5B	0+943.5	1.4 RT.	255.4
B-6	0+970.7	0.3 RT.	259.3

THE SUBSURFACE EXPLORATIONS SHOWN HEREIN ARE IN ENGLISH UNITS AS RECORDED BY CON-TEC INC. BORING PLAN AND CHART INFORMATION IS SHOWN IN METRIC UNITS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
BORING LOGS & INFORMATION (1 OF 2)	
Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543BOR	Sheet 16 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065B01

PLOTTED 1-13-2006

CON-TEC, INC. TEST BORING LOG (ENGLISH UNITS)

PROJECT: **BRIDGE NO. 36**
LOCATION: **RT. 17, FAYSTON, VERMONT**

JOB NO.	9811
HOLE NO.	B - 5
SHEET	1 of 1
START DATE	2/17/98
FINISH DATE	2/17/98
DRILLER	R. Bourassa
HELPER	P. Angelone
INSPECTOR	

	CASING	SAMPLE	CORE
TYPE	HW	SS	
SIZE/ID	4"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
		7'		

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6 INCHES	RECOV.	SOIL DESCRIPTION
						ASPHALT 0.5'
						Frozen m/f SAND & m/f GRAVEL 2.0'
5.0'						
		1	5' - 7'	26 - 16	20"	Brown, dry, medium dense f/m/c SAND & f/m/c GRAVEL, occasional cobble
				14 - 14		
10.0'						
		2	10' - 12'	28 - 19	16"	Brown, moist, dense f/m/c SAND, some f/m/c gravel, trace sil
				12 - 12		
15.0'						
		3	15' - 17'	54 - 48	11"	Brown, wet, very dense c/m/f GRAVEL, COBBLES, some f/m/c sand, little si
				69 - 78		(Possible Weathered Rock) 17.0'
20.0'						NXRUN - 1 17.0' - 19.5'
						REC 1.2' - 40%
						COBBLES 19.5'
25.0'						NXRUN - 2 19.5' - 21.8'
						REC 1.1' - 48%
						COBBLES 21.8'
						NXRUN - 3 21.8' - 24.0'
						REC 1.7' - 77%
						COBBLES & GRAVEL 24.0'
30.0'						NXRUN - 4 24.0' - 27.0'
						REC 1.0' - 33%
						RQD 0.9 - 30%
						QUARTZ BIOTITE SCHIST 27.0'
						BOTTOM OF BORING 27.0'

Note: 1. Left 2' of core in hole Run #4
2. Possible bedrock @ 24'
3. Typed Driller's Field Log

WINGWALL NO. 2 BOTTOM OF FOOTING EL. 259.45 (METRIC)

EL. 265.62 (METRIC)

CON-TEC, INC. TEST BORING LOG (ENGLISH UNITS)

PROJECT: **BRIDGE NO. 36**
LOCATION: **RT. 17, FAYSTON, VERMONT**

JOB NO.	9811
HOLE NO.	B - 5B
SHEET	1 of 1
START DATE	4/3/98
FINISH DATE	4/3/98
DRILLER	R. Bourassa
HELPER	A. Carter
INSPECTOR	

	CASING		SAMPLE	CORE
TYPE	HW	NW		NX
SIZE/ID	4"	3"		2"
HAMMER WT.				
HAMMER FALL				

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6 INCHES	RECOV.	SOIL DESCRIPTION
	4"					Drilled without sampling to bedrock
	CASING					See Boring 5 for Soil Description
10.0'						15.0'
						COBBLES & GRAVEL
						(Very tough drilling)
20.0'	3"					
	SPIN					
30.0'						TOP OF ROCK 33.5'
						NX RUN - 1 34.0' - 39.0'
						REC 4.2' - 84%
						RQD 1.5' - 30%
35.0'						MICA SHIST, occasional quartz veins 39.0'
						NX RUN - 2 39.0' - 44.0'
						REC 4.8' - 96%
						RQD 3.8' - 76%
40.0'						MICA SHIST, occasional quartz veins 44.0'
						BOTTOM OF BORING 44.0'
45.0'						

Note: 1. Coring time in rock averaged 5 Min/LF; no water loss
2. B-5A drilled to 20' and lost bottom 5' section of 3" spin casing in hole
3. Typed Driller's Field Log

WINGWALL NO. 2 BOTTOM OF FOOTING EL. 259.45 (METRIC)

EL. 265.65 (METRIC)

WINGWALL NO. 4 BOTTOM OF FOOTING EL. 259.41 (METRIC)

CON-TEC, INC. TEST BORING LOG (ENGLISH UNITS)

PROJECT: **BRIDGE NO. 36**
LOCATION: **RT. 17, FAYSTON, VERMONT**

JOB NO.	9811
HOLE NO.	B - 6
SHEET	1 of 1
START DATE	2/11/98
FINISH DATE	2/11/98
DRILLER	R. Bourassa
HELPER	P. Angelone
INSPECTOR	

	CASING	SAMPLE	CORE
TYPE	HW	SS	
SIZE/ID	4"	1 3/8"	
HAMMER WT.		140	
HAMMER FALL		30"	

GROUNDWATER		DEPTH TO		
DATE	TIME	WATER	BOTTOM OF CASING	BOTTOM OF HOLE
		6'		

DEPTH IN FEET	CASING BLOWS PER FOOT	SAMP NO.	SAMPLE DEPTH	SAMPLE BLOWS PER 6 INCHES	RECOV.	SOIL DESCRIPTION
			1'	100/0		ASPHALT 0.2'
						Frozen SAND & GRAVEL 2.0'
5.0'						
		1	5' - 5.8'	11 - 100/.3	8"	Gray, stiff to hard CLAY, trace embedded f/g gravel & COBBLES
						(FILL)
10.0'						
		2	10' - 12'	6 - 8	3"	Brown, moist, medium dense SILT, little embedded f/m/c sand, little embedde
				9 - 6		f/gravel, trace c/gravel
						Note: Stone stuck in spoon nose.
15.0'		3	14' - 16'	12 - 14	7"	Brown, wet, dense c/m/f GRAVEL & f/m/c SAND, some silt, occasional cobbl
				19 - 18		
20.0'		4	19' - 19.1'	100/.1	1"	TOP OF ROCK 19.0'
						Drilled into bedrock with 4" roller bil
25.0'						24.0'
						NXRUN - 1 24.0' - 28.5'
						REC 4.5' - 100%
						RQD 0.4' - 8%
30.0'						QUARTZ BIOTITE SCHIST 28.5'
						NXRUN - 2 28.5' - 34.0'
						REC 5.5' - 100%
						RQD 2.9' - 53%
						QUARTZ BIOTITE SCHIST 34.0'
						BOTTOM OF BORING 34.0'
35.0'						

Note: 1. Coring time in rock averaged 6 Min/LF, no water loss
2. Typed Driller's Field Log

EL. 265.07 (METRIC)

THE SUBSURFACE EXPLORATIONS SHOWN HEREIN ARE IN ENGLISH UNITS AS RECORDED BY CON-TEC INC.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	

BORING LOGS & INFORMATION (2 OF 2)

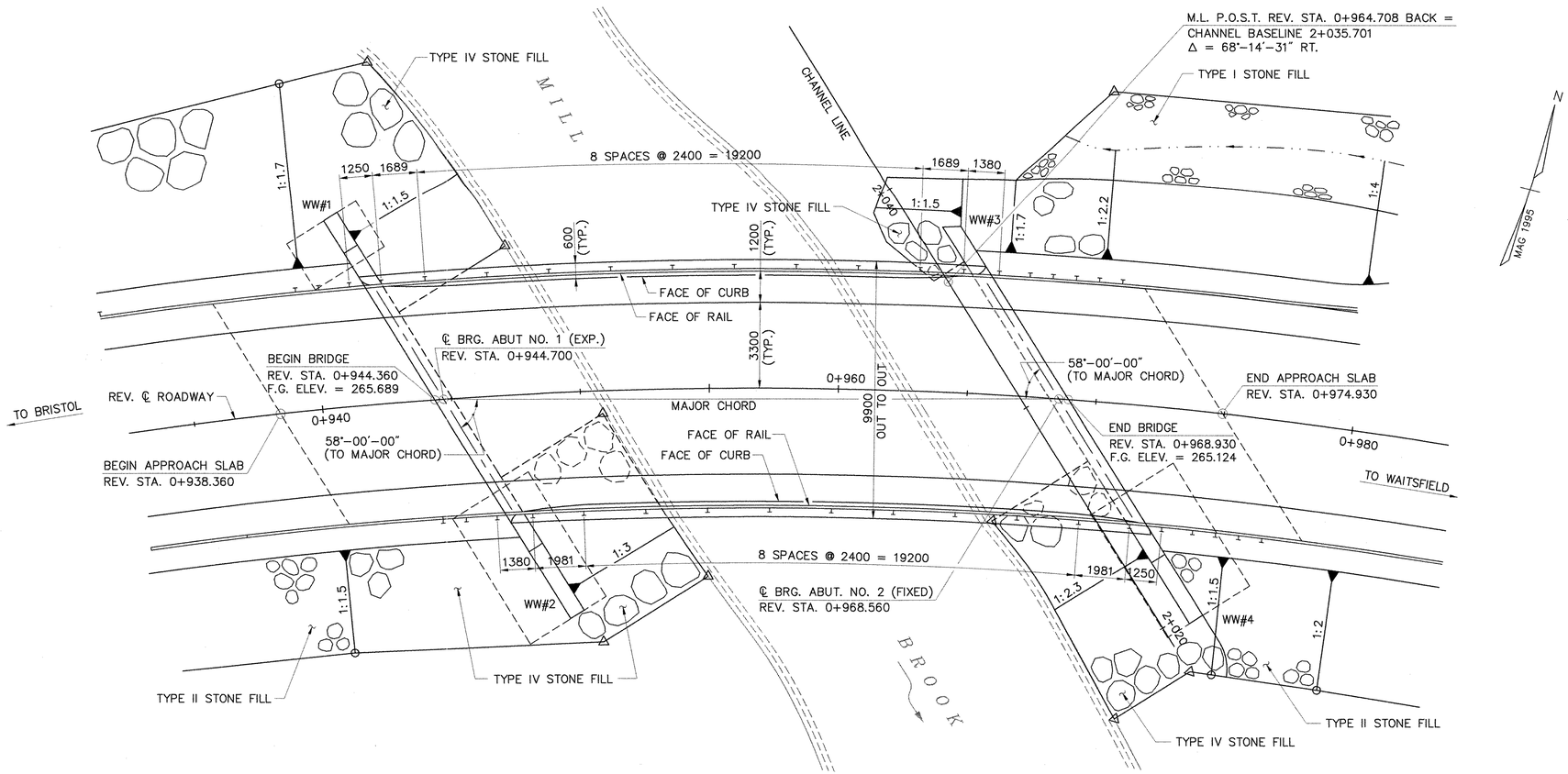
Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543BOR	Sheet 17 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065B02

PLOTTED 1-13-2006

VAOT Metric



PLAN
SCALE: 1:100

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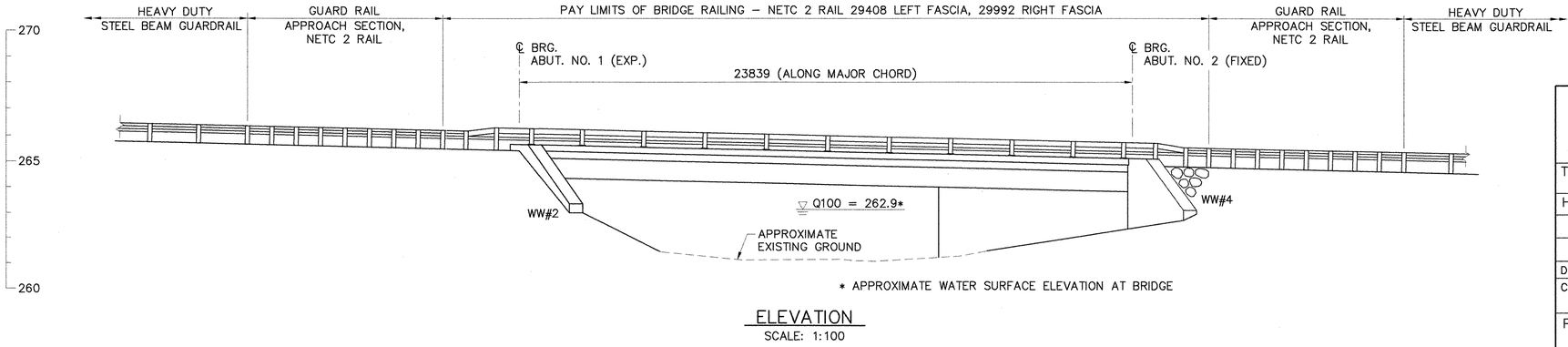
SCALE IN METERS



ELEVATION
SCALE: 1:100

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
PLAN AND ELEVATION	
Designed By S.M. GUNN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543ELV	Sheet 18 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065PE

PLOTTED 1-13-2006

Metric

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.
2. DESIGN CRITIERIA:
   DESIGN LIVE LOAD FOR EXISTING STRUCTURE: M13.5 (H15-44)
   DESIGN LIVE LOAD FOR NEW SUPERSTRUCTURE: MS22.5
   SEISMIC PERFORMANCE CATEGORY: A
3. THE FOLLOWING MATERIAL CRITERIA, DESIGNATIONS AND UNIT WEIGHTS APPLY TO THESE PLANS FOR DESIGN PURPOSES:
   CONCRETE: HIGH PERFORMANCE CLASS "A" f'c = 30 MPa
   HIGH PERFORMANCE CLASS "B" f'c = 25 MPa
   STRUCTURAL STEEL: AASHTO M 270M GRADE 345W
   REINFORCING STEEL: AASHTO M 31M GRADE 420
   UNIT WEIGHT OF SOIL: 2243 kg/m3
   ALLOWABLE SOIL BEARING PRESSURE AT ABUTMENT NO. 1 = 650 kPa
   ALLOWABLE BEDROCK BEARING PRESSURE AT ABUTMENT NO. 2 = 950 kPa
4. DIMENSIONS, ANGLES, BEARINGS, AND ELEVATIONS 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. WORKING DRAWINGS REQUIRED FOR VARIOUS ITEMS OF WORK SHALL INDICATE THE ACTUAL FIELD MEASUREMENTS AND SHALL BE SO NOTED.
6. DIMENSIONS OF THE EXISTING BRIDGE HAVE BEEN CONVERTED TO METRIC UNITS IN ACCORDANCE WITH THE VERMONT AGENCY OF TRANSPORTATION'S METRIC POLICY AND ROUNDED TO THE NEAREST MILLIMETER.
7. ABUTMENT NUMBERING DIFFERS FROM ORIGINAL PLANS.
8. PLANS OF THE EXISTING BRIDGE ARE AVAILABLE FOR REVIEW DURING THE BIDDING PERIOD AT THE CONTRACT ADMINISTRATION OFFICE OF THE AGENCY OF TRANSPORTATION.
9. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL AND ARE GIVEN AT 20 DEGREES CELSIUS, UNLESS NOTED OTHERWISE.
10. SEE SHEET 27 FOR REMOVAL AND REPAIR NOTES.
11. SEE SHEET 9 FOR COFFERDAM NOTES.
12. THE SURVEY LINE DOES NOT NECESSARILY COINCIDE WITH THE EXISTING VT 17 CENTERLINE.

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PREVENT SILTATION, POLLUTION, AND DISCHARGE OF RAW CONCRETE INTO MILL BROOK AS DIRECTED BY THE RESIDENT ENGINEER.
2. ANY CONSTRUCTION WITHIN THE STREAM BANKS SHALL BE CONDUCTED DURING THE PERIOD DESIGNATED IN THE PERMITS. THE AGENCY OF NATURAL RESOURCES MUST APPROVE ANY DEVIATION FROM THIS PERIOD IN WRITING.
3. ~~TRAFFIC WILL BE MAINTAINED DURING CONSTRUCTION BY UTILIZING A SINGLE TRAFFIC LANE WITH ALTERNATING EASTBOUND AND WESTBOUND TRAFFIC CONTROLLED BY A TEMPORARY TRAFFIC SIGNAL. PHASED CONSTRUCTION OF THE BRIDGE WILL BE REQUIRED. ALL WORK REQUIRED TO MAINTAIN TRAFFIC DURING CONSTRUCTION SHALL BE PAID AS ITEM 641.10 TRAFFIC CONTROL, UNLESS OTHERWISE NOTED.~~
4. ~~TEMPORARY TRAFFIC SIGNAL SHALL BE PAID AS ITEM 678.40, TEMPORARY TRAFFIC SIGNAL SYSTEM.~~
5. ITEM 505.36, TEMPORARY STEEL SHEET PILING IS INCLUDED AS TEMPORARY EXCAVATION SUPPORT AND TO SAFELY SEPARATE THE WORK AREA FROM TRAFFIC.
6. ~~ITEM 621.90, TEMPORARY TRAFFIC BARRIER (MOD.), SHALL BE PAID ONLY ONCE.~~
7. ITEM 204.25, STRUCTURE EXCAVATION SHALL BE USED TO EXCAVATE TO THE LIMITS SHOWN ON THE PLANS. SEE EARTHWORK TYPICALS ON SHEET 9.
8. 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 INCLUDED IN ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B.
9. THE CONTRACTOR SHALL ERECT, MAINTAIN, REMOVE, AND/OR RESET AS REQUIRED ALL ON-PROJECT SIGNS AND BARRICADES. THE COST OF ALL CONSTRUCTION SIGNS AND BARRICADES SHALL BE INCLUDED IN ITEM 641.10 TRAFFIC CONTROL.
10. ANY EXISTING SIGNS NOT REUSED SHALL REMAIN THE PROPERTY OF THE STATE. THESE SIGNS SHALL BE REMOVED BY THE CONTRACTOR AND STOCKPILED AS DIRECTED BY THE RESIDENT ENGINEER FOR REMOVAL BY THE STATE AND SHALL BE PAID AS ITEM 675.50, REMOVING SIGNS.
11. GRUBBING MATERIAL SHALL NOT BE PLACED ON THE STONE FILL IN THE AREA UNDER THE BRIDGE.
12. THE DESIGN OF THE FLEMING BRACKET OR SIMILAR FALSEWORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL BE SPACED AT A MAXIMUM OF 1200 MILLIMETERS.

REINFORCING STEEL NOTES:

1. REINFORCING STEEL IN THE DECK, CURTAIN WALLS, APPROACH SLABS, AND BRUSH CURBS SHALL BE EPOXY COATED AND PAID AS ITEM 507.17, EPOXY COATED REINFORCING STEEL. REINFORCING STEEL MECHANICAL CONNECTORS SHALL BE EPOXY COATED AND PAID AS ITEM 507.19, MECHANICAL BAR CONNECTOR. ALL OTHER REINFORCING STEEL SHALL BE PAID AS ITEM 507.15, REINFORCING STEEL.
2. DRILLING AND GROUTING DOWELS SHALL BE PAID AS ITEM 507.16, DRILLING AND GROUTING DOWELS. ALL DRILLED HOLES SHALL HAVE A MINIMUM OF 150 MILLIMETERS CLEAR COVER.
3. MINIMUM CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
   ALONG BACK FACES OF WALLS AGAINST EARTH: FIFTY (50) MILLIMETERS
   ALONG TOP SURFACE OF DECK SLAB: SIXTY-FIVE (65) MILLIMETERS
   ALONG BOTTOM SURFACE OF DECK SLAB: FORTY (40) MILLIMETERS
   ELSEWHERE UNLESS OTHERWISE INDICATED: EIGHTY (80) MILLIMETERS
4. REINFORCING STEEL PLACEMENT TOLERANCES SHALL BE:
   SPACING: ± 25 MILLIMETERS
   CLEARANCE: ± 5 MILLIMETERS

STRUCTURAL STEEL NOTES:

1. ALL NEW STRUCTURAL STEEL SHALL BE AASHTO M 270M, GRADE 345W UNLESS OTHERWISE NOTED.
2. ITEM 506.50, STRUCTURAL STEEL (ROLLED BEAM), SHALL INCLUDE ROLLED BEAMS, CONNECTION PLATES, DIAPHRAGMS, AND ALL REQUIRED FASTENERS.
3. ALL BOLTED FIELD CONNECTIONS SHALL BE MADE WITH 22 MILLIMETER DIAMETER HIGH STRENGTH BOLTS IN 24 MILLIMETER DIAMETER HOLES UNLESS OTHERWISE NOTED.
4. CONNECTIONS NOT DESIGNATED SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE RESIDENT ENGINEER FOR APPROVAL.
5. SHEAR CONNECTORS SHALL BE FIELD WELDED USING AUTOMATICALLY TIMED STUD WELDING EQUIPMENT AND SHALL BE PAID AS ITEM 508.15, SHEAR CONNECTORS.
6. AFTER THE SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF THE BEAM SHALL BE TAKEN BY THE CONTRACTOR, AS DIRECTED BY THE RESIDENT ENGINEER, FOR USE IN DETERMINING THE FINAL GRADE AND HAUNCH DEPTHS.
7. ANY HOLES IN FASCIA BEAM WEBS NOT OTHERWISE FILLED SHALL BE FITTED WITH BUTTON HEAD OR HEX HEAD BOLTS CONFORMING TO AASHTO M 164M, TYPE 3.
8. THE ENDS OF BEAMS SHALL BE VERTICAL UNDER FULL DEAD LOAD DEFLECTION.

BEARING NOTES:

1. PREFORMED FABRIC PAD DESIGN CRITERIA:
   MAXIMUM ALLOWABLE BEARING PRESSURE ON CONCRETE = 6.9 MPa
   MINIMUM ALLOWABLE DESIGN ROTATION = 0.015 RADIANS.
   HORIZONTAL CAPACITY SHALL BE A MINIMUM OF 6% VERTICAL LOAD
   DESIGN LOAD PER BEARING: 476 kN
2. BEARINGS SHALL BE PAID AS ITEM 531.10, BEARING DEVICE ASSEMBLY (FABRIC).
3. ALL STEEL IN BEARING DEVICES (EXCEPT STAINLESS) SHALL BE AASHTO M 270M, GRADE 250.
4. ANCHOR BOLTS SHALL BE DRILLED AND SET WITH A MINIMUM OF 400 MILLIMETERS EMBEDMENT INTO CONCRETE. HOLES SHALL BE SEVENTY (70) MILLIMETERS IN DIAMETER AND BOLTS SHALL BE SET IN TYPE IV MORTAR. ALL COST SHALL BE INCLUDED UNDER ITEM 531.10, BEARING DEVICE ASSEMBLY (FABRIC).
5. ANCHOR BOLTS SHALL BE SWEDGED WITH 125 MILLIMETERS OF THREAD. EXPANSION BEARING NUTS ARE TO BE DRAWN UP FINGER TIGHT AND THEN BACKED OFF FIVE (5) MILLIMETERS. THREADS SHALL BE BURRED ABOVE NUT TO PREVENT NUT REMOVAL.
6. THE CONTRACTOR SHALL TAKE ELEVATIONS OF EACH ABUTMENT NO. 2 BEARING SEAT AND ORDER SHIM PLATES OF SUFFICIENT THICKNESS TO EQUAL THE DIFFERENCE BETWEEN THE EXISTING BEARING SEAT ELEVATION AND THE NEW BOTTOM OF PREFORMED FABRIC PAD ELEVATION. THE BOTTOM OF PREFORMED FABRIC PAD ELEVATIONS ARE AS SHOWN ON SHEET 25. ALL COSTS SHALL BE INCLUDED IN ITEM 531.10, BEARING DEVICE ASSEMBLY (FABRIC). SHIM PLATE DETAILS SHALL BE SUBMITTED FOR REVIEW WITH THE BEARING FABRICATION DRAWINGS.
7. ADJUSTMENT OF THE EXISTING ABUTMENT NO. 2 BEARING SEATS MAY BE REQUIRED TO PROVIDE A LEVEL SURFACE FOR THE NEW BEARINGS. ADJUSTMENT TO THE BEARING SEATS SHALL BE AS DIRECTED BY THE RESIDENT ENGINEER AND ALL COSTS SHALL BE INCLUDED IN ITEM 531.10, BEARING DEVICE ASSEMBLY (FABRIC).
8. AN OUTLET (V-GROOVE) SHALL BE PROVIDED FOR ANY BEARING RECESSED INTO THE BRIDGE SEAT TO PREVENT WATER FROM PONDING NEAR THE BEARING. OUTLETS SHALL BE AS DIRECTED BY THE RESIDENT ENGINEER AND ALL COSTS SHALL BE INCLUDED IN ITEM 531.10, BEARING DEVICE ASSEMBLY (FABRIC).

CONCRETE NOTES:

1. CONCRETE PAYMENT AND CLASSIFICATION SHALL BE AS FOLLOWS:
   ITEM 501.33, CONCRETE, HIGH PERFORMANCE CLASS A: DECK, CURBS, AND CURTAIN WALL
   ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B: ALL OTHER COMPONENTS
2. ITEM 514.10, WATER REPELLENT, SHALL BE APPLIED TO ALL EXPOSED CONCRETE ON BRIDGE SUPERSTRUCTURE EXCEPT THE BOTTOM OF THE DECK BETWEEN THE DRIP NOTCHES. WATER REPELLENT SHALL ALSO BE APPLIED TO THE EXPOSED CONCRETE ON THE NEW AND EXISTING SUBSTRUCTURES.
3. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 25 MILLIMETERS BY 25 MILLIMETERS, UNLESS OTHERWISE NOTED. A 15 MILLIMETER RADIUS SHALL BE USED ON THE TOP INSIDE CORNER OF CURBS.
4. JOINTS AND SCORE MARKS IN CONCRETE SHALL BE CONSTRUCTED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE RESIDENT ENGINEER.
5. SURFACES OF THE ABUTMENT SEATS UNDER THE BEARING DEVICE SHALL BE LEVEL. OTHER BRIDGE SEAT AREAS SHALL BE SLOPED 6 MILLIMETERS PER 300 MILLIMETERS.
6. 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.
7. FOR EACH CONSTRUCTION PHASE, THE CONCRETE DECK SHALL BE PLACED CONTINUOUSLY WITHIN ONE EIGHT HOUR WORKING DAY. IF CIRCUMSTANCES BEYOND THE CONTRACTOR'S CONTROL PREVENT THIS FROM BEING ACCOMPLISHED, A TRANSVERSE CONSTRUCTION JOINT SHALL BE USED AS SHOWN ON SHEET 20. THERE SHALL BE A MINIMUM DELAY PERIOD OF 96 HOURS BETWEEN POURS.

FOUNDATION NOTES:

1. WINGWALLS #1 AND #2 ARE ON SPREAD FOOTINGS DESIGNED TO BEAR ON SOIL.
2. WINGWALL #4 IS ON A SPREAD FOOTING DESIGNED TO BEAR ON BEDROCK. THE PROPOSED BOTTOM OF FOOTING ELEVATION WAS SET EQUAL TO THE EXISTING BOTTOM OF FOOTING ELEVATION. THIS INFORMATION WAS TAKEN FROM AS-BUILT PLANS OF THE EXISTING BRIDGE. IF BEDROCK IS FOUND TO BE LOWER THAN THE PROPOSED BOTTOM OF FOOTING ELEVATION, UP TO 600 MILLIMETERS SHALL BE REPLACED WITH A CONCRETE, HIGH PERFORMANCE CLASS B SUB-FOOTING AND PAID AS ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B. IF A SUB-FOOTING IS REQUIRED, A 150x200 CONTINUOUS SHEAR KEY SHALL BE FORMED BETWEEN THE SPREAD FOOTING AND THE SUB-FOOTING. IF BEDROCK IS ENCOUNTERED MORE THAN 600 MILLIMETERS ABOVE OR BELOW THE BOTTOM OF FOOTING ELEVATION, THE STRUCTURES ENGINEER SHALL BE CONTACTED. NO FURTHER WORK SHALL BE DONE ON THE WINGWALL UNLESS DIRECTED BY THE RESIDENT ENGINEER.
3. FOR WINGWALLS ON SOIL, UNDERCUT FOOTING 300 MILLIMETERS OR AS DIRECTED BY THE ENGINEER. FOR WINGWALLS ON BEDROCK, OVERBREAKAGE BELOW THE BOTTOM OF FOOTING ELEVATION SHALL BE REPLACED WITH CONCRETE, HIGH PERFORMANCE CLASS B. A MAXIMUM OF 150 MILLIMETERS SHALL BE PAID AS ITEM 501.34, CONCRETE, HIGH PERFORMANCE CLASS B. ANY ADDITIONAL OVERBREAKAGE SHALL ALSO BE REPLACED WITH CONCRETE, HIGH PERFORMANCE CLASS B AT THE CONTRACTOR'S EXPENSE.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	

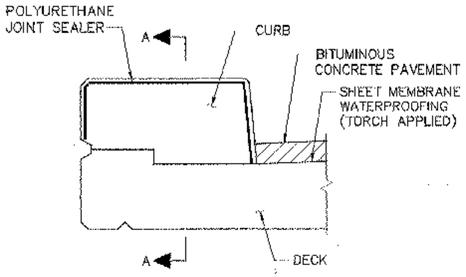
CONSTRUCTION NOTES

Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543NOT	Sheet 19 of 70

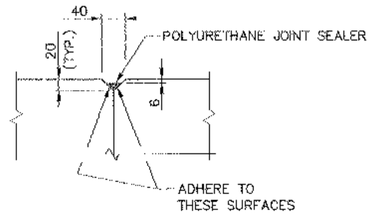
VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065CN

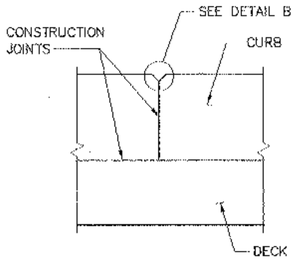
PLOTTED 1-13-2006



TYPICAL SECTION



DETAIL B

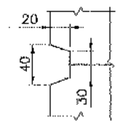


SECTION A–A

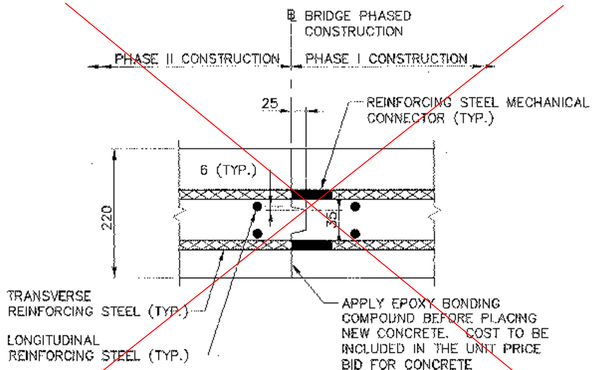
CURB CONSTRUCTION JOINT NOTES:

1. CONCRETE CURB CONSTRUCTION JOINTS SHALL BE SPACED A MAXIMUM OF 4500 mm CENTER TO CENTER AND SHALL BE 550 mm 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.

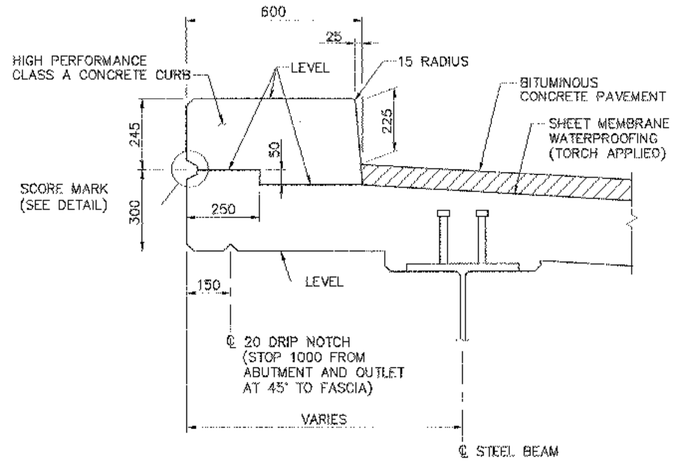
CONCRETE CURB CONSTRUCTION JOINT
N.T.S.



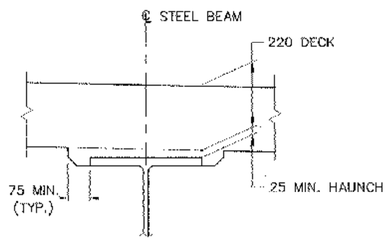
SCORE MARK DETAIL
N.T.S.



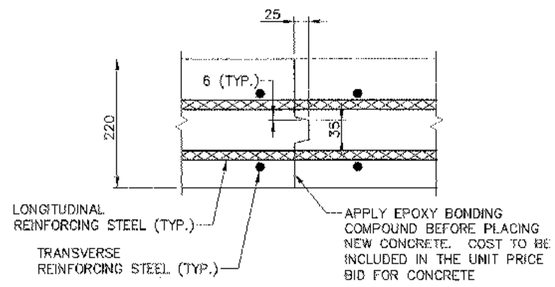
LONGITUDINAL DECK CONSTRUCTION JOINT DETAIL
N.T.S.



TYPICAL CURB DETAIL
(BRIDGE RAIL NOT SHOWN)
SCALE: 1:10



TYPICAL HAUNCH DETAIL
N.T.S.



TRANSVERSE DECK CONSTRUCTION JOINT DETAIL
N.T.S.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
DECK DETAILS	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543TS	Sheet 20 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065DKD

PLOTTED 1-13-2006

Metric

21-ES1602 ▲@ 150 (TOP)
21-ES1602 ▲@ 150 (BOTTOM)
(SEE NOTE 2)

143-ES1602 SPLICE W/ ES1601 @ 150 (TOP)
143-ES1602 SPLICE W/ ES1601 @ 150 (BOTTOM)

82-ES1603 ⊓ @ 300

3 ADDITIONAL PER POST x 11 POSTS = 33-ES1603 ⊓ (SEE NOTE 1)

ES1602 @ 150
(TOP & BOTTOM)
(USE CUTOFFS FROM
OTHER END)

℄ BRG. ABUT NO. 1

℄ BRIDGE RAIL POST

℄ BRG. ABUT. NO. 2

2-ES1612 ▲
(TYP. EXTERIOR BAYS)

ES1604

℄ BEAM (TYP.)

ES1605

2-ES1612
(TYP. INTERIOR BAYS)

4-ES1609

4-ES1606
(TYP. BETWEEN
BLOCKOUTS)

4-ES1611

4500 (TYP.)

ES1602

℄ BRG. ABUT NO. 1
REV. STA. 0+944.700

REV. ℄ ROADWAY

0+940

0+960

℄ BRG. ABUT. NO. 2
REV. STA. 0+968.560

MECHANICAL BAR
CONNECTOR (TYP.)

CONSTRUCTION JOINT

℄ BRIDGE PHASED
CONSTRUCTION

4-ES1610

36-ES1607

ES1601

600 MIN.
LAP (TYP.)

60-ES1604 (30 x 2 LINES) LAP & ALTERNATE WITH
30-ES1605 (TOP)
60-ES1604 (30 x 2 LINES) LAP & ALTERNATE WITH
30-ES1605 (BOTTOM)

36-ES1607 @ 300 (TYP. EACH END)

ES1605

ES1604

FACE OF CURB (TYP.)

600 MIN.
LAP (TYP.)

ES1604

4 -ES1608

4-ES1608

65

ES1605
(CURB TYP.)

ES1604
(CURB TYP.)

ES1604
(CURB TYP.)

SEE SHEET 33 FOR
CURB END TAPER DETAIL

2-ES1606
(TYP. EXTERIOR BAYS)

2-ES1606
(TYP. EXTERIOR BAYS)

3 ADDITIONAL PER POST x 11 POSTS = 33-ES1603 ⊓ (SEE NOTE 1)

82-ES1603 ⊓ @ 300

ES1601 @ 150
(TOP & BOTTOM)
(USE CUTOFFS FROM
OTHER END)

143-ES1601 SPLICE W/ES1602 @ 150 (TOP)
143-ES1601 SPLICE W/ES1602 @ 150 (BOTTOM)

21-ES1601 ▲@ 150 (TOP)
21-ES1601 ▲@ 150 (BOTTOM)
(SEE NOTE 2)

N

MAG 1983

PLAN

SCALE: 1:50

0 1000 2000 3000
SCALE IN MILLIMETERS

REV. ℄ ROADWAY

℄ BEAM

℄ BEAM

℄ BRIDGE PHASED CONSTRUCTION

100

ES1604 OR ES1605
5 SPACES @ 300 = 1500
(TYP. TOP & BOTTOM
INTERIOR BAYS)

100

150

ES1602

MECHANICAL BAR
CONNECTOR (TYP.)

65 COVER

ES1601

10-ES1604 (5 x 2 LINES)
LAP & ALTERNATE
WITH 5-ES1605 (CURB TYP.)

ES1603 (TYP.)

40 COVER

0mm
(TYP.)

16-ES1604 (8 x 2 LINES)
LAP & ALTERNATE WITH
8-ES1605 (TYP. TOP EXT. BAY)

100

7 EQUAL
SPACES

16-ES1604 (8 x 2 LINES)
LAP AND ALTERNATE WITH
8-ES1605 (TYP. BOTTOM EXT. BAY)

① ② ③ ④ ⑤ ⑥

SECTION A-A

SCALE: 1:20

0 500 1000 1500
SCALE IN MILLIMETERS

NOTES:

1. SEE SHEET 32 FOR REINFORCING STEEL DETAIL AT BRIDGE RAIL POSTS.
2. USE CUTOFFS FROM THIS END FOR THE OTHER END OF BRIDGE.

KEY:

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

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

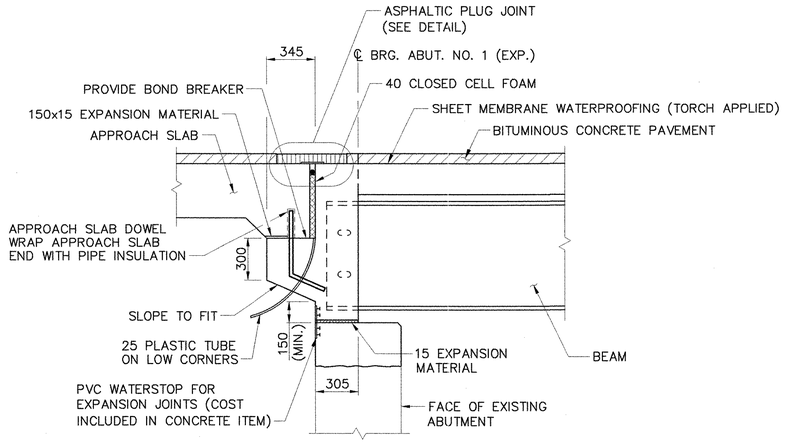
Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	

DECK REINFORCEMENT

Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By S.M. SAREAULT Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543DCK	Sheet 21 of 70

/str5/93C065/zc065DKR

PLOTTED 5-13-2006



CURTAIN WALL DETAIL

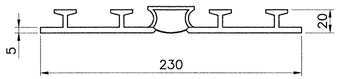
(PERPENDICULAR TO CENTERLINE BEARING)

(ABUTMENT NO. 1 SHOWN, ABUTMENT NO. 2 SIMILAR EXCEPT FOR WATERSTOP – SEE DETAILS BELOW)

SCALE: 1:20

0 500 1000 1500

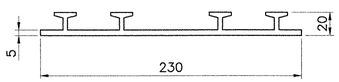
SCALE IN MILLIMETERS



P.V.C. WATERSTOP FOR EXPANSION JOINTS

(ABUTMENT NO. 1) (EXPANSION)

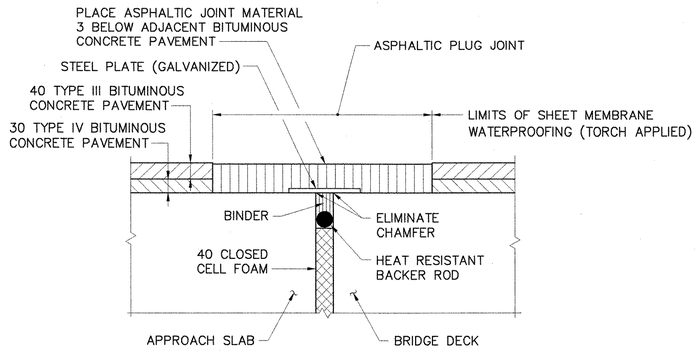
N.T.S.



P.V.C. WATERSTOP

(ABUTMENT NO. 2) (FIXED)

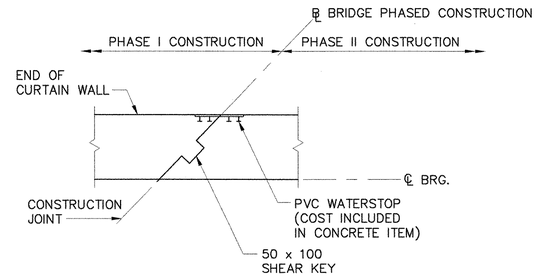
N.T.S.



ASPHALTIC PLUG JOINT DETAIL

(TYPICAL EACH END)

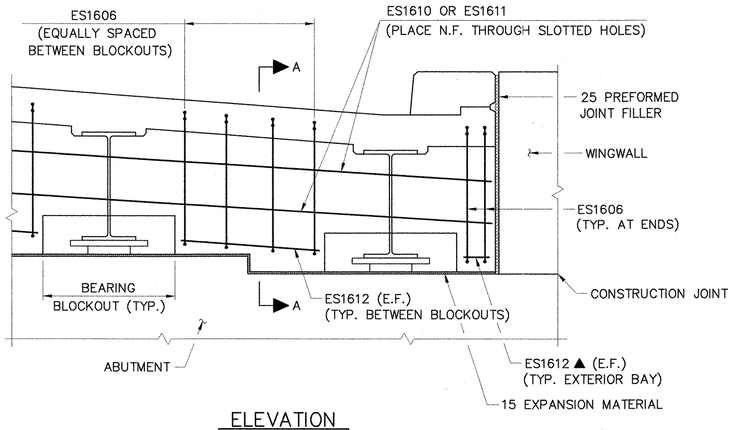
N.T.S.



CURTAIN WALL
CONSTRUCTION JOINT DETAIL

(ABUT. NO. 2 LOCATION SHOWN, ABUT. NO. 1 SIMILAR)

N.T.S.



ELEVATION

(PERPENDICULAR TO CENTERLINE BEAMS)

SCALE: 1:20

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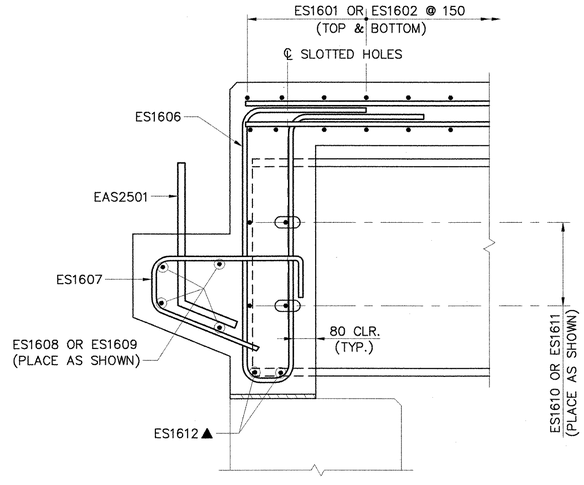
SCALE IN MILLIMETERS



SECTION A–A

(PERPENDICULAR TO CENTERLINE BEARING)

SCALE: 1:10

0 200 400 600

SCALE IN MILLIMETERS

KEY

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

VHB Vanasse Hangen Brustlin, Inc.

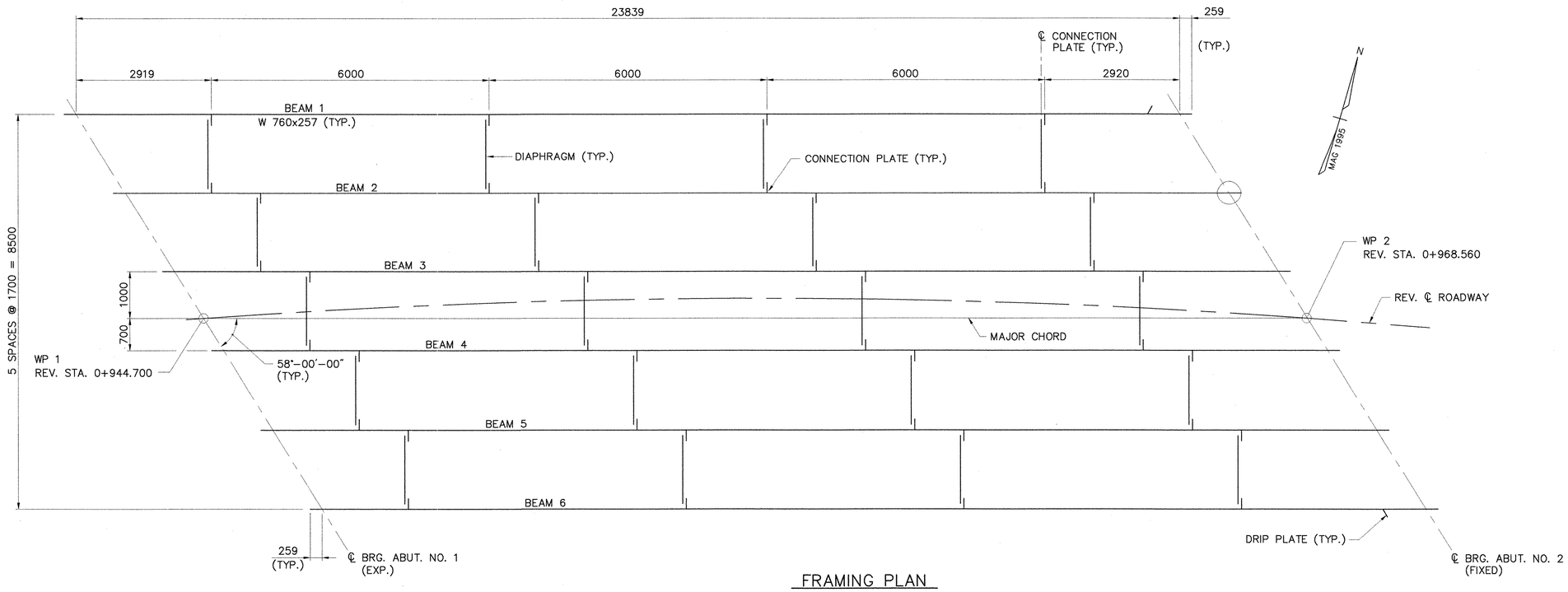
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
CURTAIN WALL	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By Date S.M. SAREAULT 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543DTL	Sheet 22 of 70

/str5/93C065/zc065CTW

PLOTTED 1-13-2006

VAOT Metric



FRAMING PLAN
SCALE: 1:50

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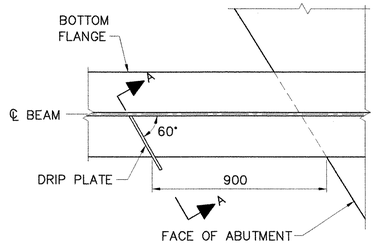
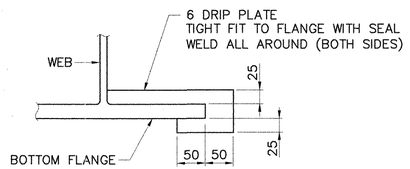
SCALE IN MILLIMETERS

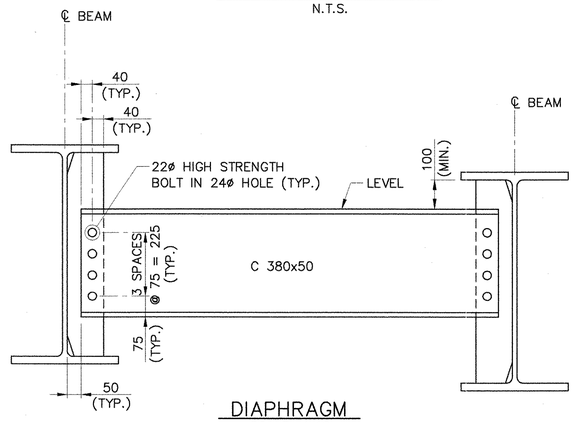


PLAN



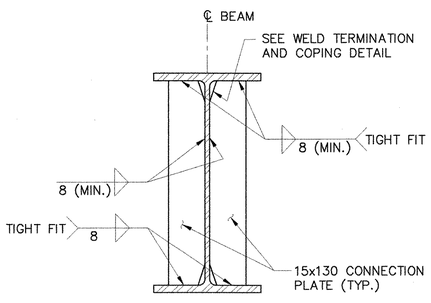
SECTION A–A

DRIP PLATE DETAIL
N.T.S.

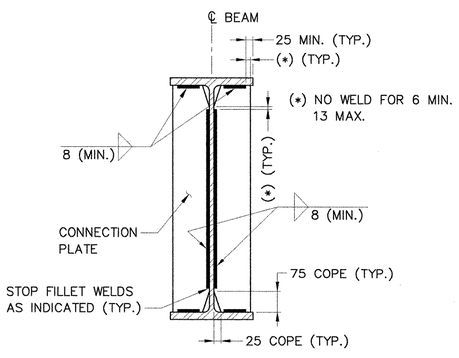


DIAPHRAGM
SCALE: 1:10

0 200 400 600
SCALE IN MILLIMETERS



CONNECTION PLATE DETAIL
N.T.S.



WELD TERMINATION AND COPING DETAIL
N.T.S.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
FRAMING PLAN	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By S.M. SAREAULT Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543FRM	Sheet 23 of 70

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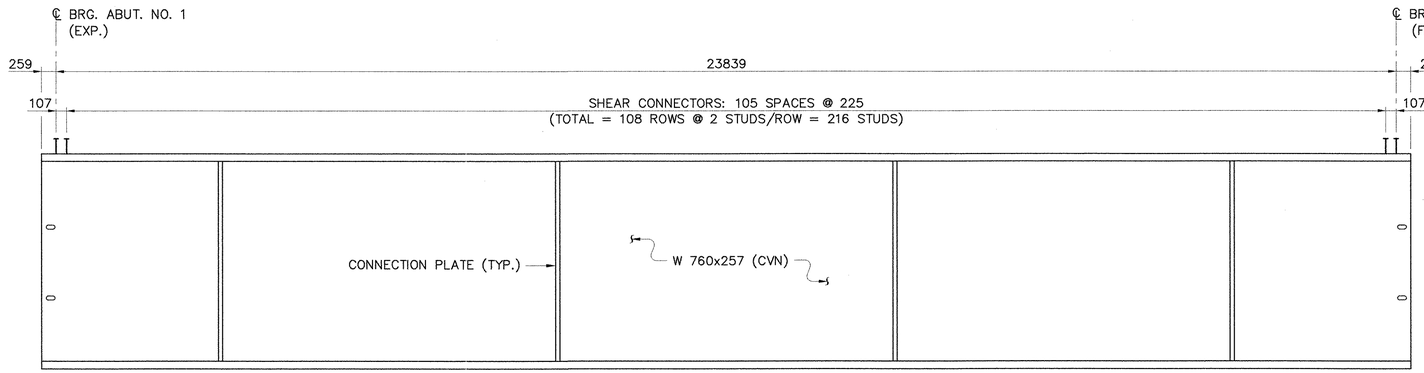
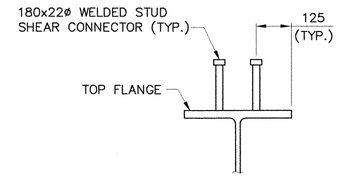
/str5/93C065/zc065FRM

PLOTTED 1-13-2006

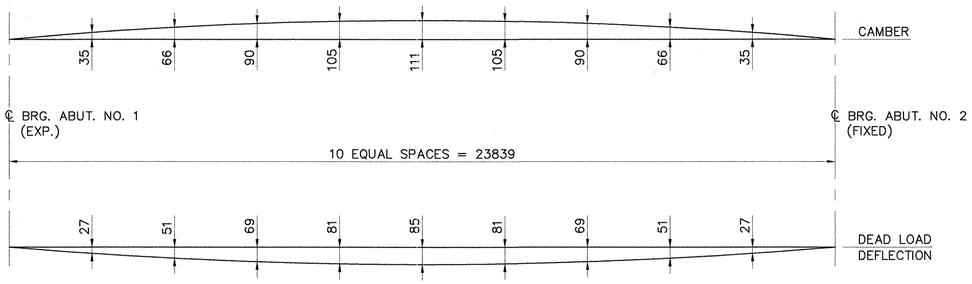


CVN = CHARPY V NOTCH TESTING REQUIRED PER SPECIFICATION

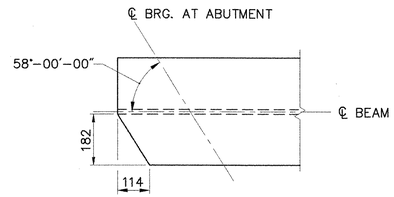
BEAM ELEVATION
N.T.S.



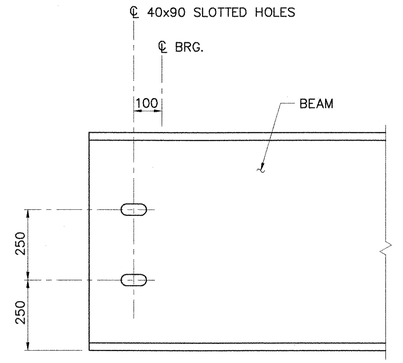
SHEAR CONNECTOR DETAIL
N.T.S.



DEAD LOAD DEFLECTION AND CAMBER DIAGRAM
N.T.S.



TOP & BOTTOM FLANGE CLIP DETAIL
N.T.S.



SLOTTED HOLE DETAIL
N.T.S.

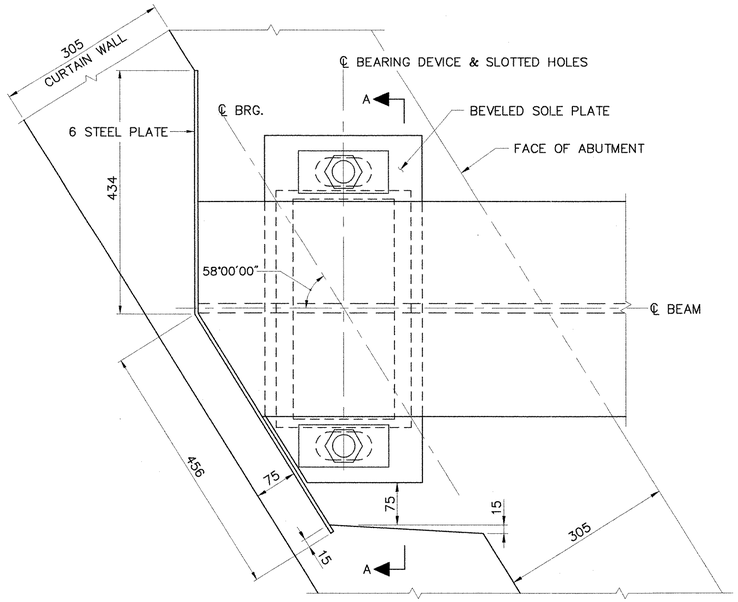
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
BEAM ELEVATION & DETAILS	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By S.M. SAREAULT Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543SD1	Sheet 24 of 70

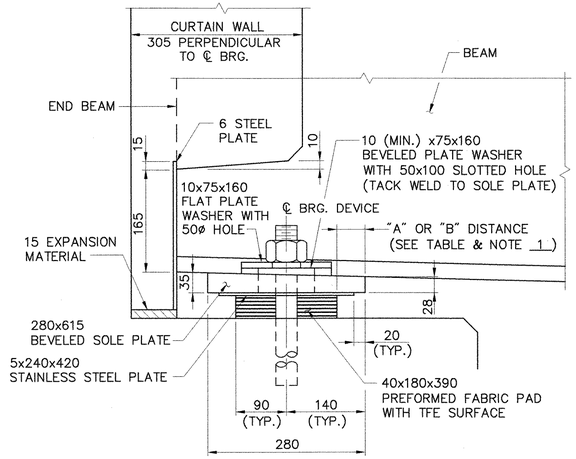
VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065BED

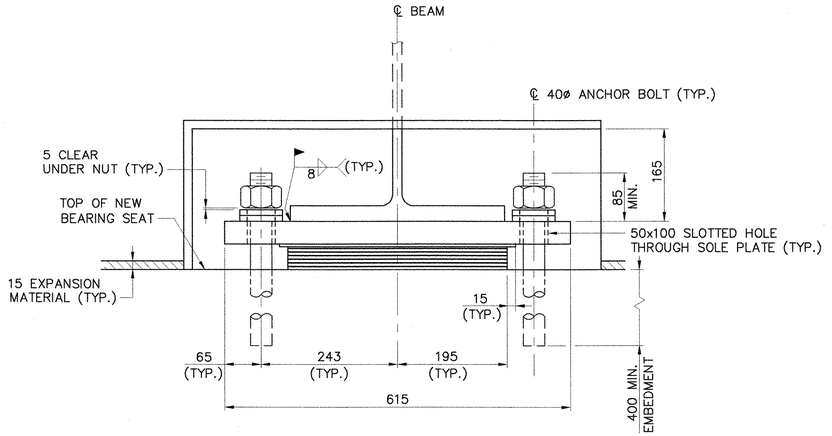
PLOTTED 1-13-2006



PLAN



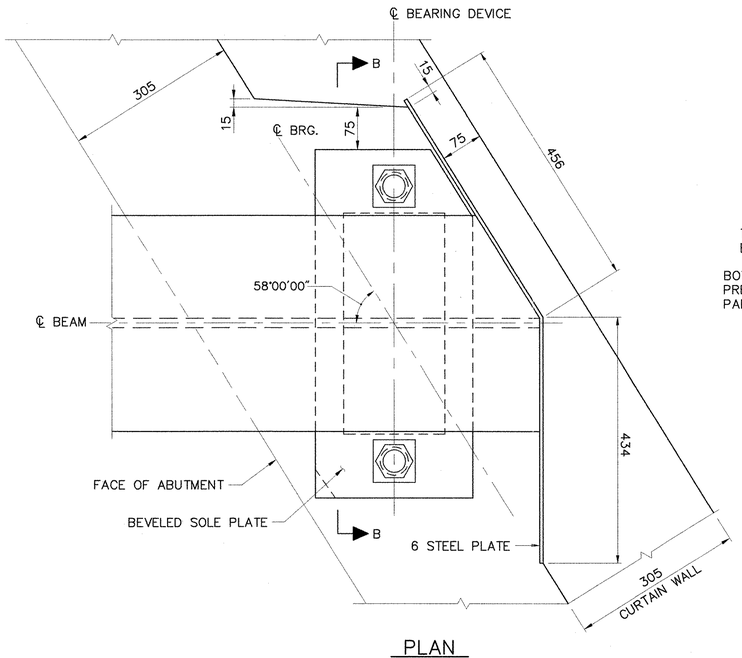
ELEVATION



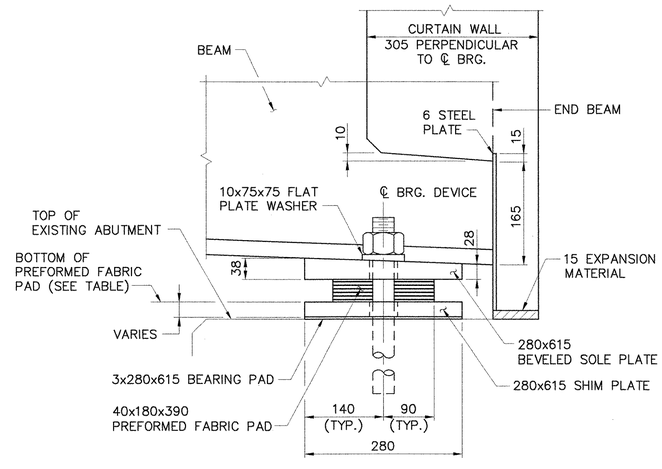
SECTION A–A

EXPANSION BEARING (ABUTMENT NO. 1)

SCALE: 1:5



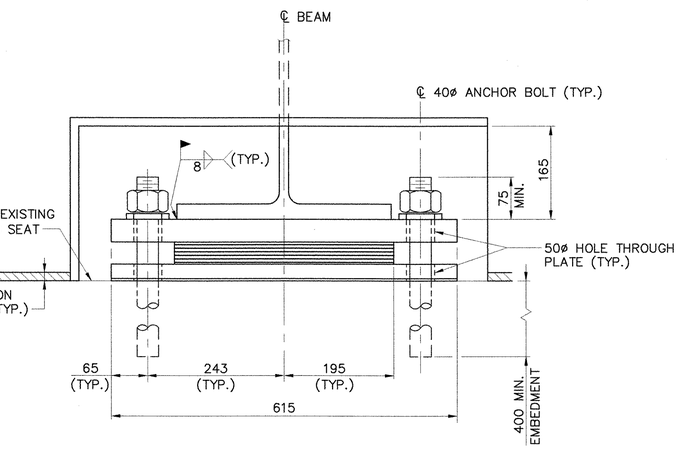
PLAN



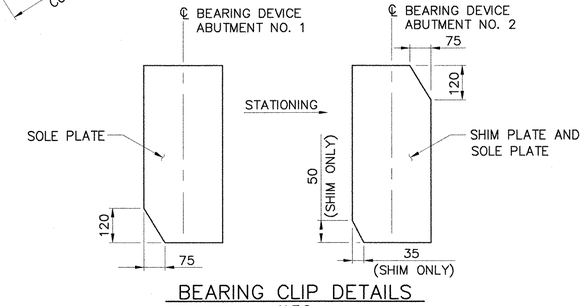
ELEVATION

FIXED BEARING (ABUTMENT NO. 2)

SCALE: 1:5



SECTION B–B



BEARING CLIP DETAILS

N.T.S

TEMPERATURE ADJUSTMENT TABLE		
TEMPERATURE	"A"	"B"
–18° C	58	68
–9° C	55	65
–1° C	53	63
7° C	51	61
16° C	49	59
24° C	46	56
32° C	44	54
41° C	42	52

BOTTOM OF PREFORMED FABRIC PAD ELEVATION TABLE	
BEAM	ELEVATION ABUT. NO. 2
1	264.238
2	264.112
3	263.985
4	263.859
5	263.733
6	*

* SHIM PLATE NOT REQUIRED

0 100 200 300

SCALE IN MILLIMETERS

NOTE:

1. THE "A" DISTANCE IS THE SOLE PLATE ADJUSTMENT TO BE USED AFTER THE DEAD LOAD HAS BEEN APPLIED. THE "B" DISTANCE IS THE SOLE PLATE ADJUSTMENT TO BE USED BEFORE DEAD LOAD IS ADDED TO THE BEAM SELFWEIGHT. THE DIFFERENCE IS THE ELONGATION DUE TO DEAD LOAD DEFLECTION OF THE SLAB, BRUSH CURB, BRIDGE RAIL AND PAVEMENT.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	

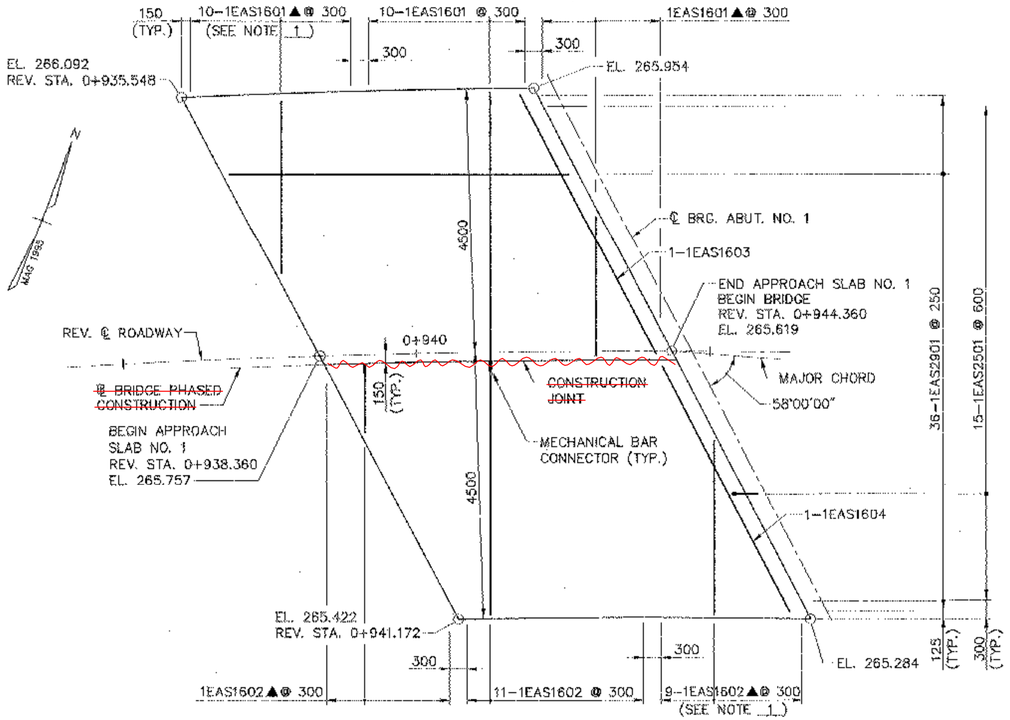
BEARING DETAILS

Designed By S.M. SAREAULT	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543BRG	Sheet 25 of 70

VHB Vanasse Hangen Brustlin, Inc.

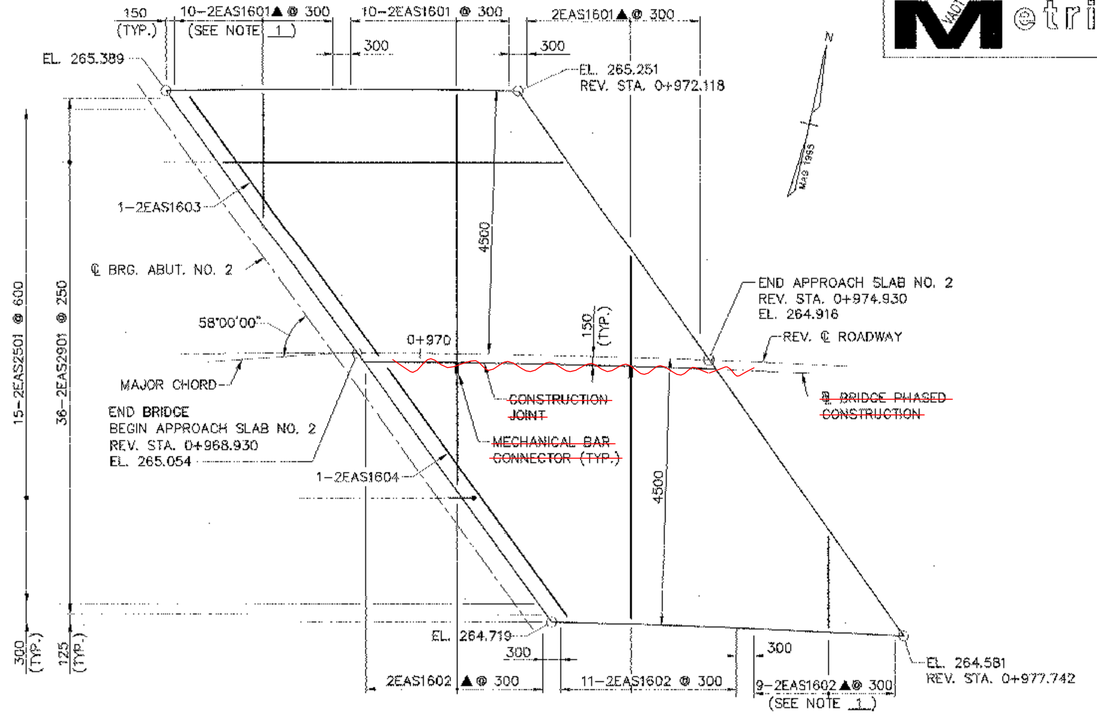
/str5/93C065/zc065BEA

PLOTTED 1-13-2006

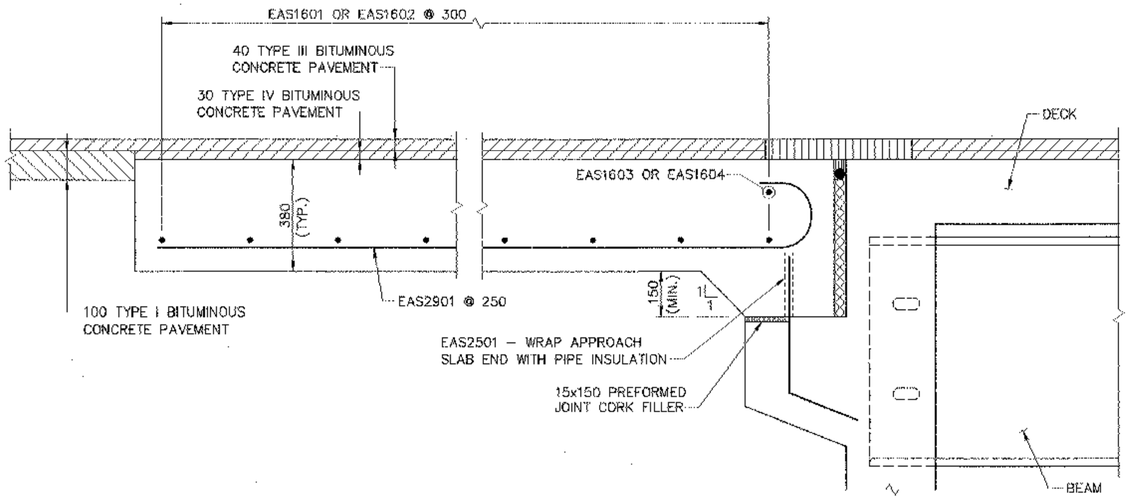


APPROACH SLAB NO. 1
SCALE: 1:50

0 1000 2000 3000
SCALE IN MILLIMETERS



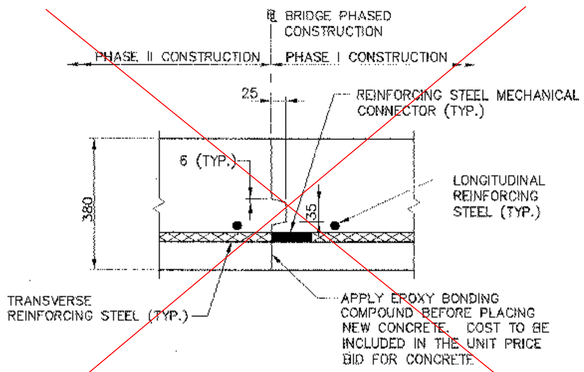
APPROACH SLAB NO. 2
SCALE: 1:50



APPROACH SLAB NO. 1 DETAIL
(APPROACH SLAB NO. 2 SIMILAR)
SCALE: 1:10

0 200 400 600
SCALE IN MILLIMETERS

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



LONGITUDINAL CONSTRUCTION JOINT DETAIL
N.T.S.

NOTE:
1. USE CUTOFFS FROM THIS END FOR THE OTHER END OF APPROACH SLAB.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta.
	Surv. Sta.

VT 17 OVER MILL BROOK

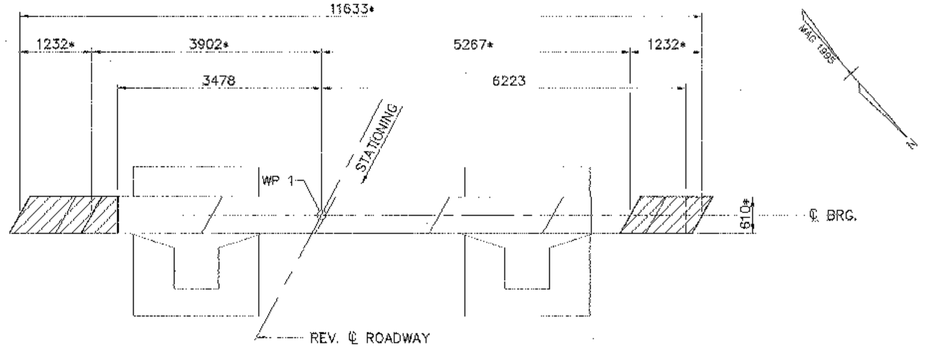
APPROACH SLABS

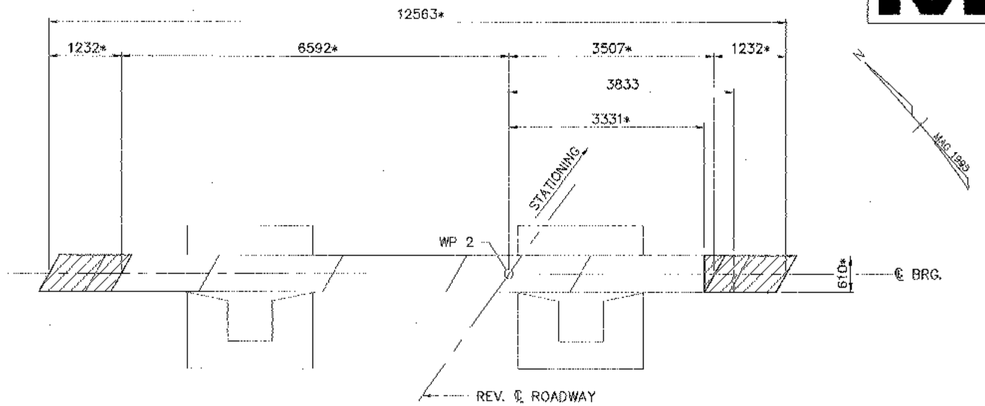
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By S.M. SAREAULT Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543AS	Sheet 26 of 70

VHB Vanasse Hangen Brustlin, Inc.

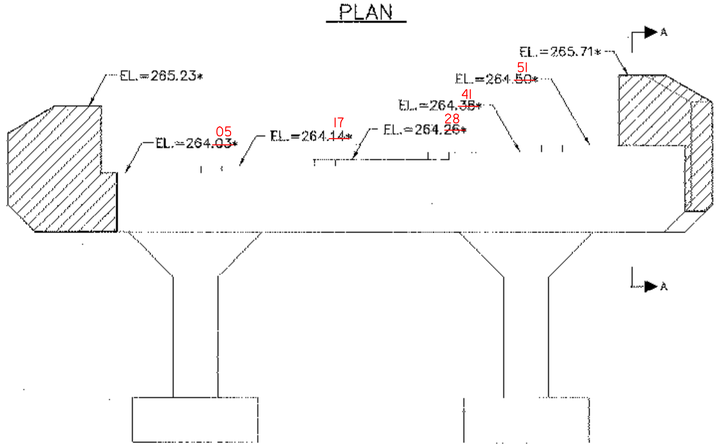
/str5/93C065/zc065AS

PLOTTED 1-13-2006





PLAN



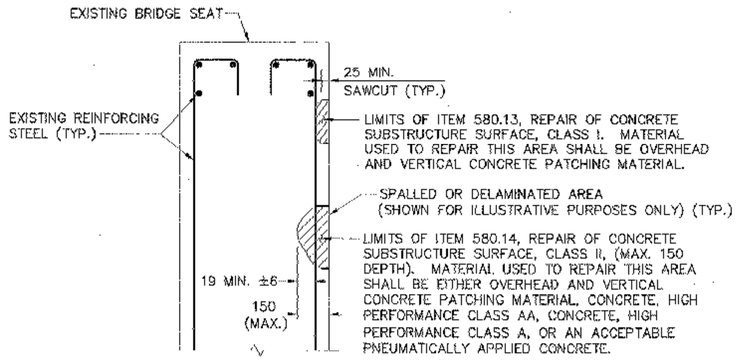
ELEVATION

ABUTMENT NO. 1

SCALE: 1:50

0 1000 2000 3000

SCALE IN MILLIMETERS



REPAIR OF CONCRETE SUBSTRUCTURE SURFACE CLASS I OR CLASS II

N.T.S.

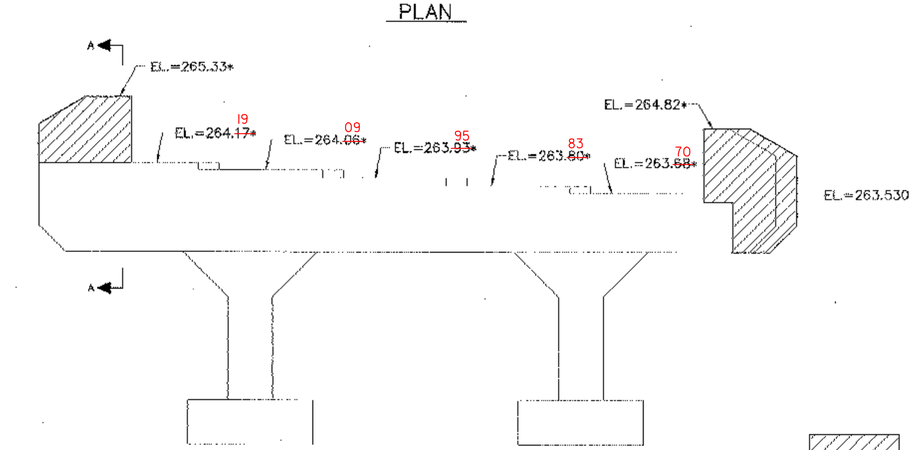
DENOTES LIMIT OF REMOVAL

* APPROXIMATE EXISTING ELEVATION OR DIMENSION

REMOVAL AND REPAIR NOTES:

1. ~~SEE SHEETS 14 AND 15 FOR CONSTRUCTION PHASING.~~
2. REMOVAL OF EXISTING BRIDGE PAVEMENT SHALL BE PAID AS ITEM 529.10, REMOVAL OF BRIDGE PAVEMENT.
3. 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. THE STRUCTURAL STEEL IS PAINTED WITH A MATERIAL THAT MAY CONTAIN LEAD PAINT. THE STRUCTURAL STEEL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND THE CONTRACTOR MAY DISPOSE OF IT OR RETAIN IT FOR FUTURE USE. THE CONTRACTOR SHALL SUBMIT A DISPOSAL OR SALVAGE PLAN TO THE RESIDENT ENGINEER FOR APPROVAL PRIOR TO REMOVAL.
   c. REMOVAL OF ALL THE BEARING DEVICES.
   d. REMOVAL OF PORTIONS OF THE EXISTING ABUTMENTS AND WINGWALLS 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 MILL BROOK.
4. THE CONTRACTOR'S METHODS FOR PARTIAL REMOVAL OF THE EXISTING STRUCTURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY REMOVAL WORK.

PLAN

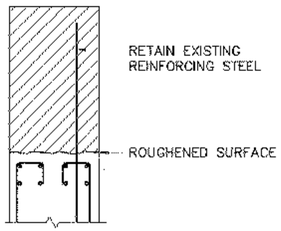


ELEVATION

ABUTMENT NO. 2

SCALE: 1:50

5. LIMITS OF REMOVAL ARE APPROXIMATE. THE ENGINEER SHALL ESTABLISH ACTUAL LIMITS AFTER A COOPERATIVE INSPECTION BY THE CONTRACTOR AND THE RESIDENT ENGINEER. EXISTING ELEVATIONS SHALL BE FIELD VERIFIED TO ENSURE THE REMOVAL LIMITS ARE ADEQUATE TO OBTAIN THE REQUIRED DIMENSIONS AND ELEVATIONS OF THE NEW CONSTRUCTION.
6. SAWCUTS SHALL BE 25 MILLIMETERS DEEP ALONG ALL EXPOSED REMOVAL LINES WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE.
7. EXISTING REINFORCING STEEL EXPOSED DURING REMOVAL OPERATIONS, WITHIN THE LIMITS OF THE NEW MASONRY, SHALL BE RETAINED AND INCORPORATED INTO THE NEW MASONRY. EXISTING REINFORCING STEEL TO BE RETAINED SHALL BE CLEANED OF ALL CONCRETE, DIRT, SCALE, PAINT, OIL, AND OTHER FOREIGN SUBSTANCES. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE.
8. EXISTING REINFORCING STEEL THAT WILL NOT BE INCORPORATED INTO THE NEW MASONRY SHALL BE REMOVED A MINIMUM OF 25 MILLIMETERS BEYOND THE MASONRY SURFACE. CAVITIES PRODUCED BY REMOVAL SHALL BE REPAIRED IN ACCORDANCE WITH REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I. ALL COSTS SHALL BE INCLUDED IN ITEM 529.20, PARTIAL REMOVAL OF STRUCTURE.
9. EXISTING ANCHOR BOLTS SHALL BE PARTIALLY REMOVED OR INCORPORATED INTO THE NEW WORK AS DIRECTED BY THE RESIDENT ENGINEER. PARTIAL REMOVAL DETAILS FOR OR INCORPORATION INTO THE NEW WORK SHALL BE SIMILAR AS THAT REQUIRED FOR REINFORCING STEEL.



SECTION A–A

SCALE: 1:20

0 500 1000 1500

SCALE IN MILLIMETERS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

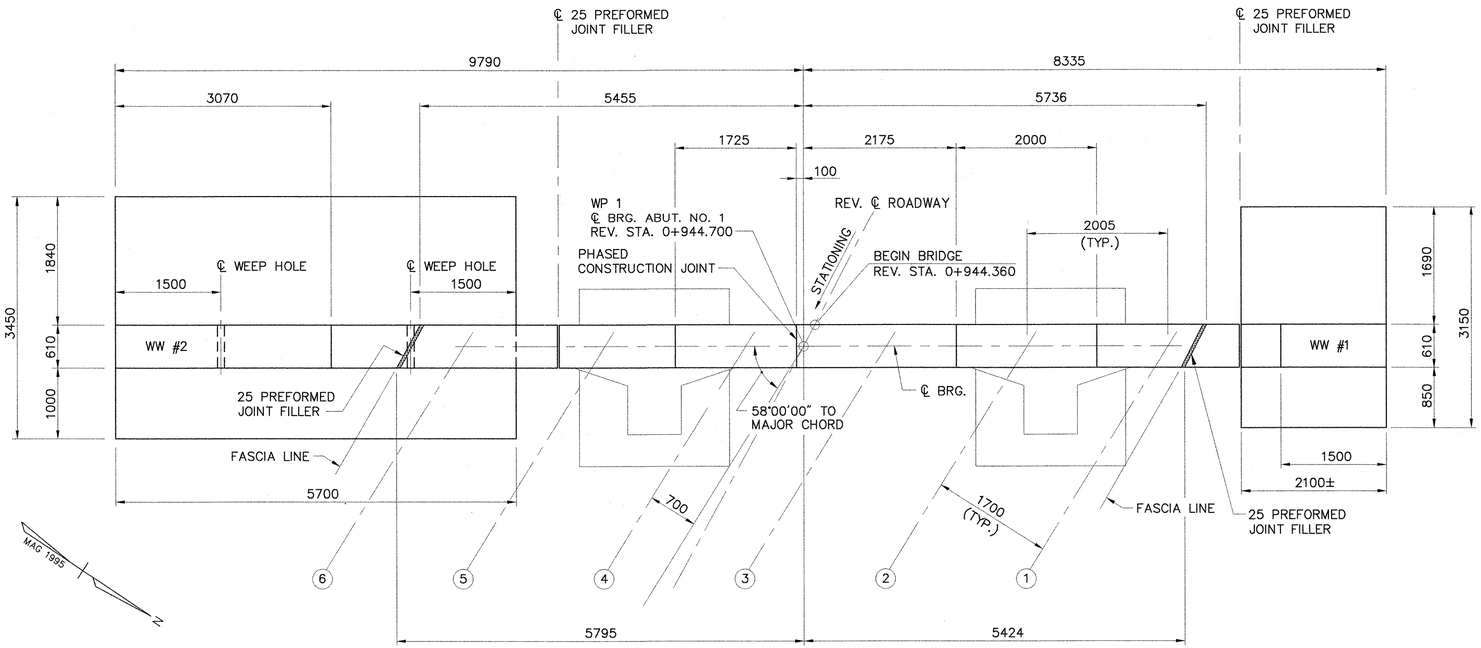
Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta.
	Surv. Sta.
VT 17 OVER MILL BROOK	
ABUTMENT REMOVAL AND REPAIR	
Designed By C.W. COVIELLO	Drawn By B.J. MASSE
Checked By S.M. SAREAULT Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543AR	Sheet 27 of 70

VHB Vanasse Hangen Brustlin, Inc.

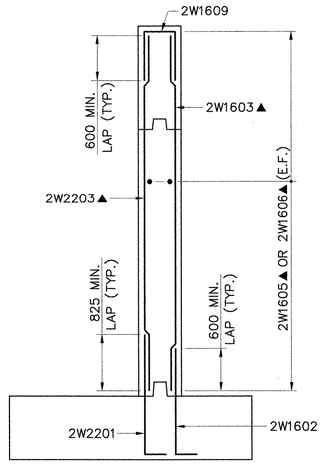
/str5/93C065/zc065ARR

PLOTTED 1-13-2006

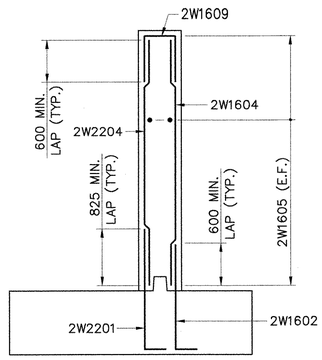
VAOT Metric



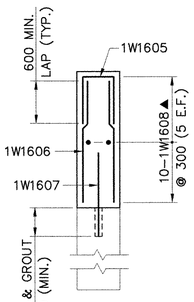
ABUTMENT NO. 1 PLAN
SCALE: 1:40



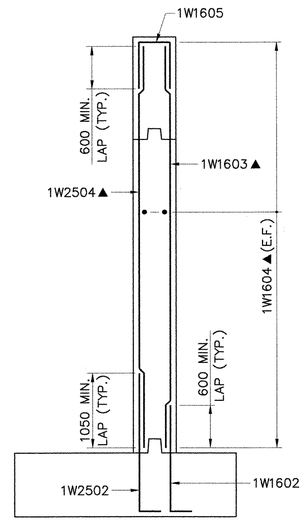
SECTION A–A
SCALE: 1:40



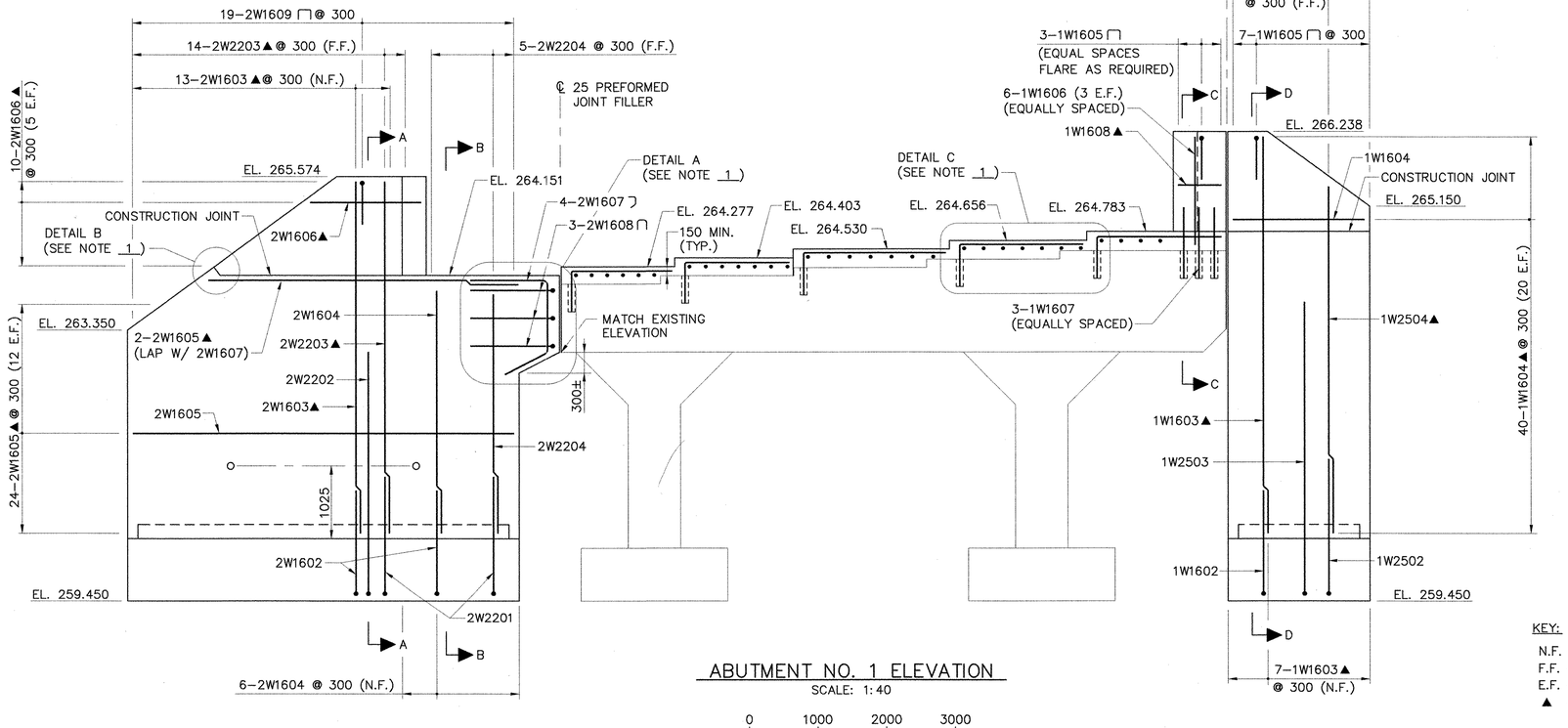
SECTION B–B
SCALE: 1:40



SECTION C–C
SCALE: 1:40



SECTION D–D
SCALE: 1:40



ABUTMENT NO. 1 ELEVATION
SCALE: 1:40

0 1000 2000 3000
SCALE IN MILLIMETERS

KEY:
N.F. – NEAR FACE
F.F. – FAR FACE
E.F. – EACH FACE
▲ – CUT TO FIT IN FIELD

NOTES:
1. SEE SHEET 30 FOR DETAILS A, B, AND C.
2. ALL FOOTING REINFORCING NOT SHOWN FOR CLARITY.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

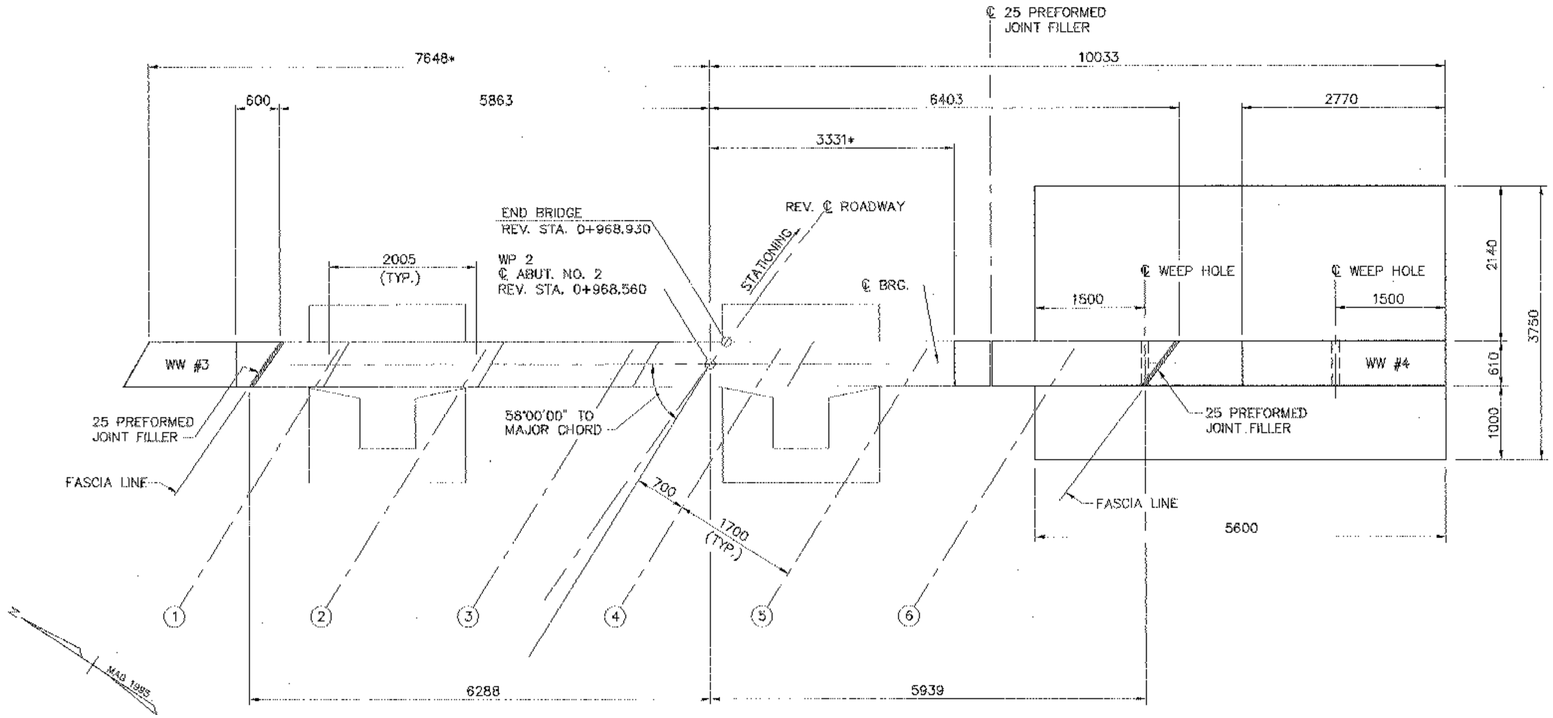
Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
ABUTMENT NO. 1	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By S.M. SAREAULT Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543A1M	Sheet 28 of 70

VHB Vanasse Hangen Brustlin, Inc.

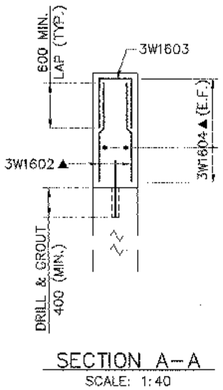
/str5/93C065/zc065AB1

PLOTTED 1-13-2006

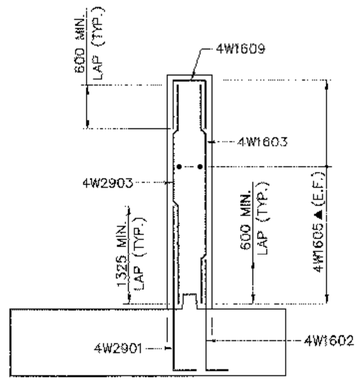
Metric



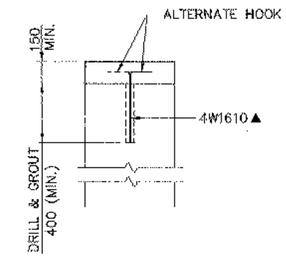
ABUTMENT NO. 2 PLAN
SCALE: 1:40



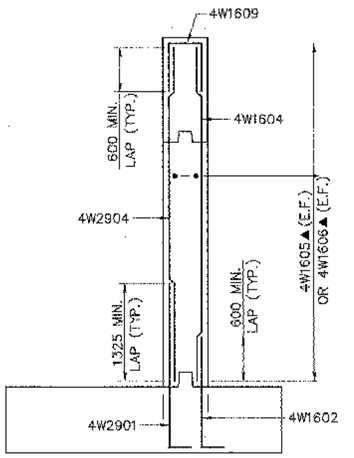
SECTION A–A
SCALE: 1:40



SECTION C–C
SCALE: 1:40



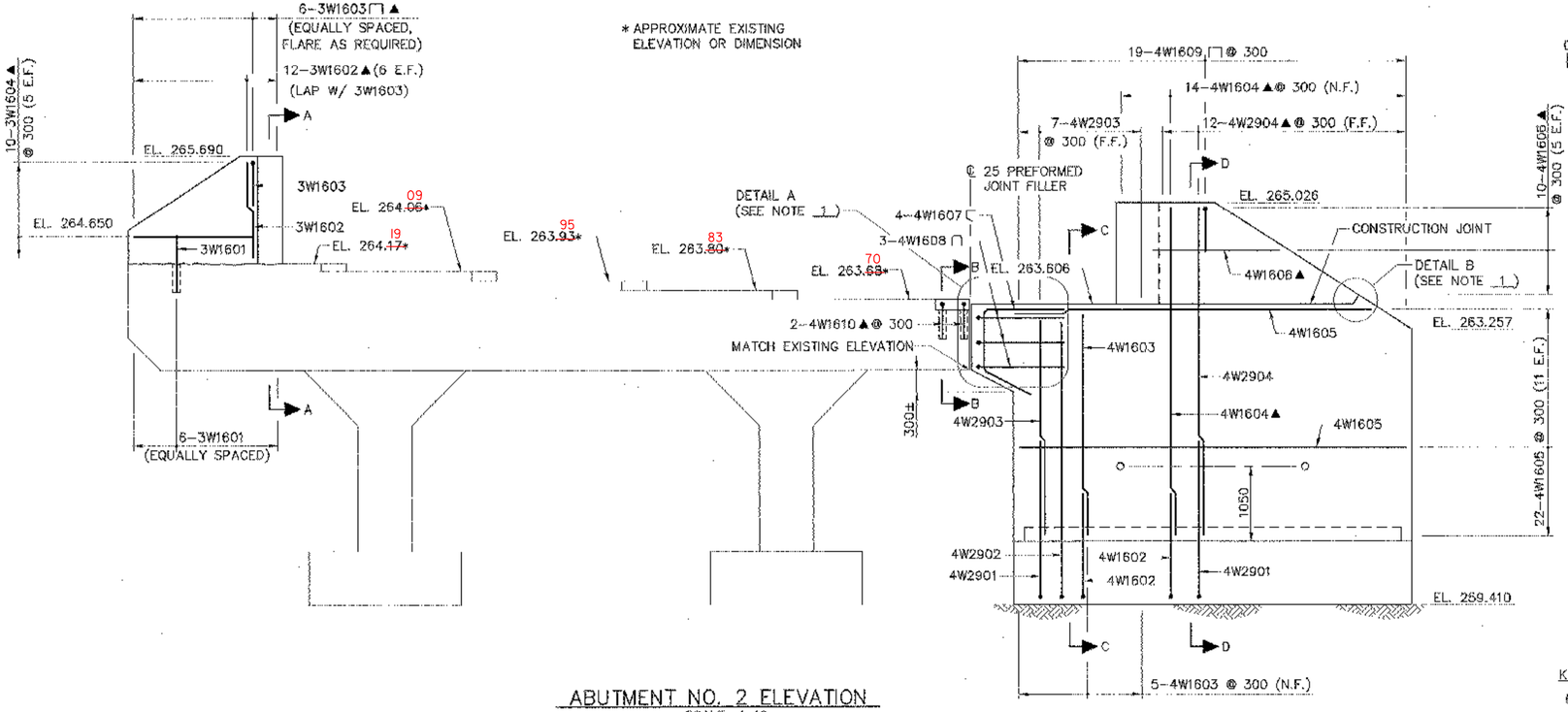
SECTION B–B
SCALE: 1:20



SECTION D–D
SCALE: 1:40

0 500 1000 1500
SCALE IN MILLIMETERS

* APPROXIMATE EXISTING ELEVATION OR DIMENSION



ABUTMENT NO. 2 ELEVATION
SCALE: 1:40

0 1000 2000 3000
SCALE IN MILLIMETERS

KEY:
N.F. – NEAR FACE
F.F. – FAR FACE
E.F. – EACH FACE
▲ – CUT TO FIT IN FIELD

NOTES:
1. SEE SHEET 30 FOR DETAILS A AND B.
2. ALL FOOTING REINFORCING NOT SHOWN FOR CLARITY.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	

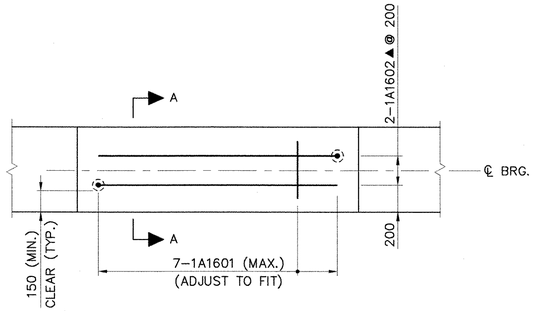
ABUTMENT NO. 2

Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By S.M. SAREAULT Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543A2M	Sheet 29 of 70

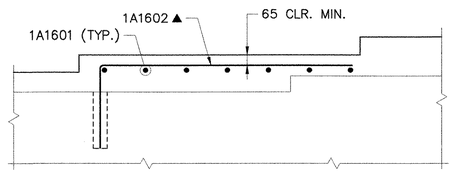
VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065AB2

PLOTTED 1-13-2006

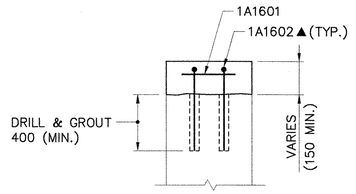


PLAN

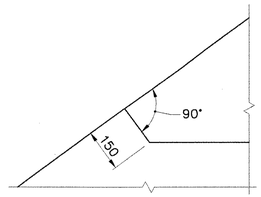


ELEVATION

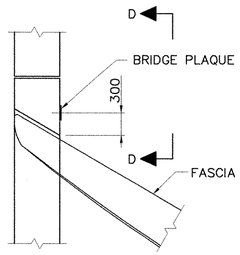
DETAIL C
SCALE: 1:20

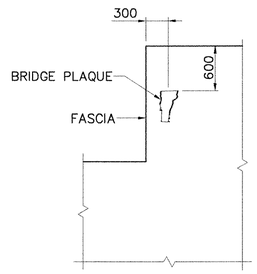


SECTION A–A



DETAIL B
N.T.S.



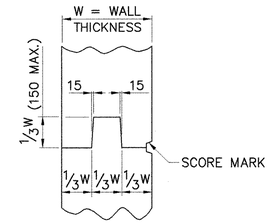


THE BRIDGE PLAQUE SHALL BE INSTALLED BY THE CONTRACTOR AT WINGWALL NO. 1 AS SHOWN OR AS DIRECTED BY THE RESIDENT ENGINEER.

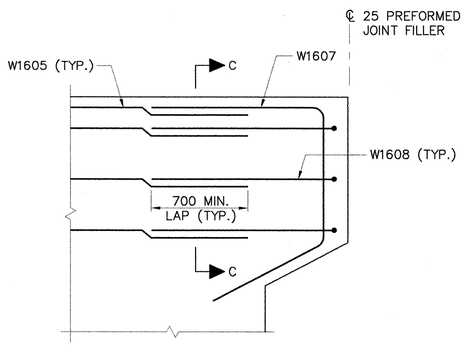
PLAN

VIEW D–D

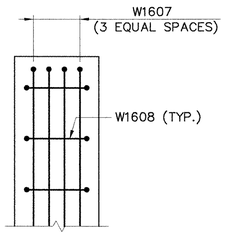
BENCH MARK AND BRIDGE PLAQUE LOCATION
N.T.S.



TYPICAL CONCRETE
CONSTRUCTION JOINT
N.T.S.



DETAIL A
SCALE: 1:20



SECTION C–C
SCALE: 1:20

KEY:
N.F. – NEAR FACE
F.F. – FAR FACE
E.F. – EACH FACE
▲ – CUT TO FIT IN FIELD

0 500 1000 1500
SCALE IN MILLIMETERS

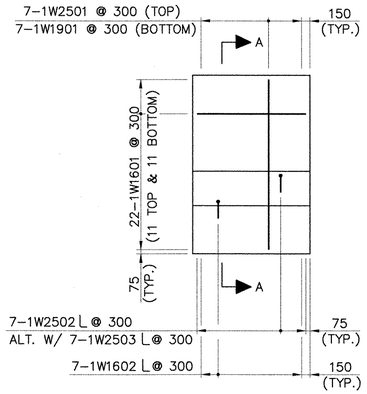
VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

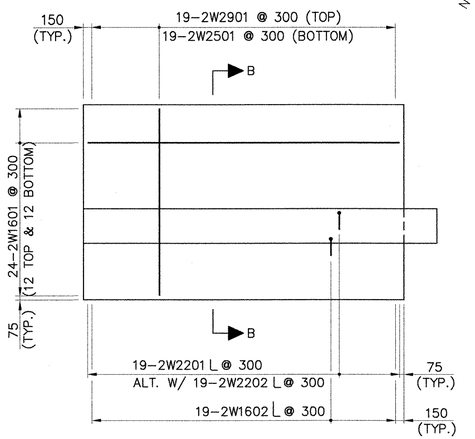
Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
SUBSTRUCTURE DETAILS	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By Date S.M. SAREAULT 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543SD	Sheet 30 of 70

/str5/93C065/zc065SUB

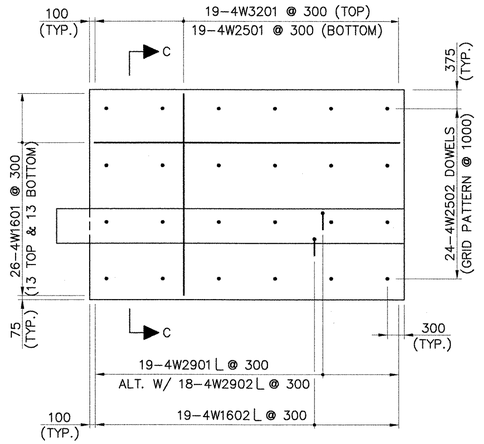
PLOTTED 1-13-2006



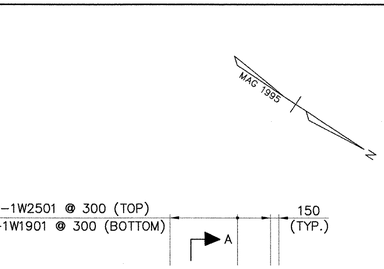
WINGWALL NO. 1
FOOTING REINFORCING
SCALE: 1:50



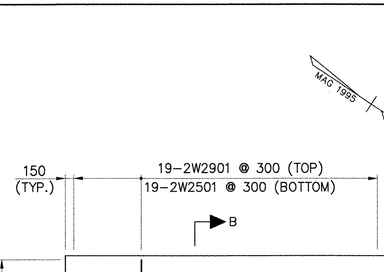
WINGWALL NO. 2
FOOTING REINFORCING
SCALE: 1:50



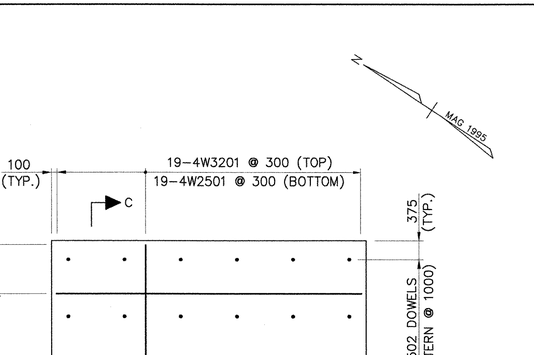
WINGWALL NO. 4
FOOTING REINFORCING
SCALE: 1:50



SECTION A–A
SCALE: 1:40



SECTION B–B
SCALE: 1:40



SECTION C–C
SCALE: 1:40

0 1000 2000 3000
SCALE IN MILLIMETERS
1:40

NOTE:

1. SEE SHEET 19 FOR FOUNDATION NOTES.

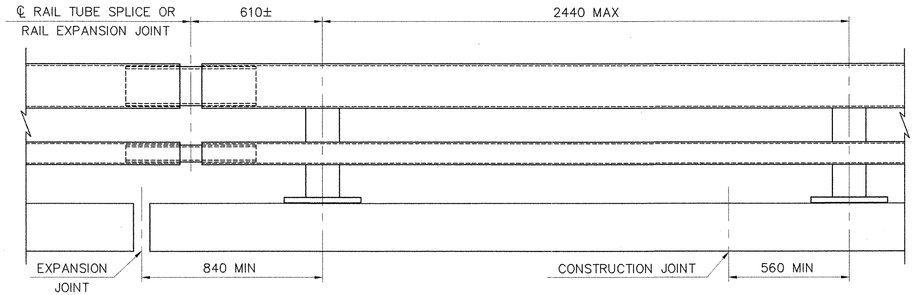
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
WINGWALL FOOTINGS	
Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By S.M. SAREAULT Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543WWR	Sheet 31 of 70

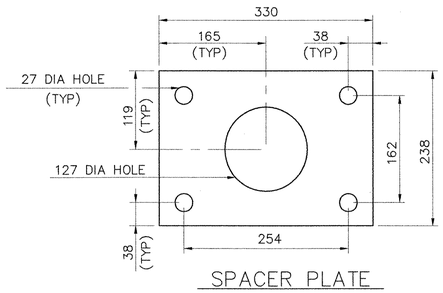
VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065WWF

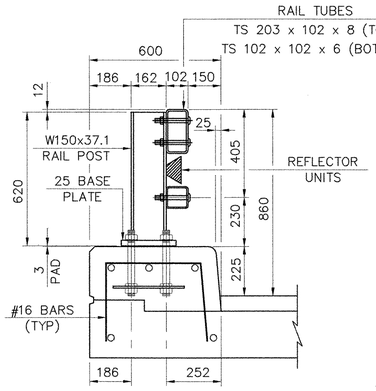
PLOTTED 1-13-2006



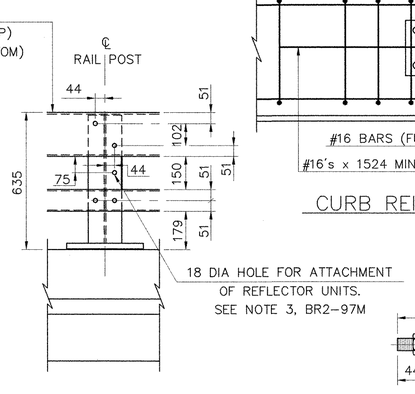
BRIDGE RAILING ELEVATION



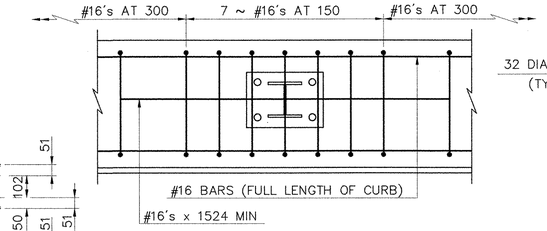
SPACER PLATE



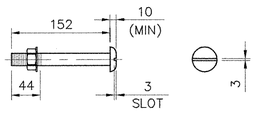
TYPICAL SECTION



ELEVATION

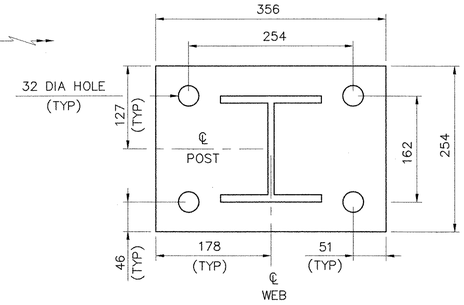


CURB REINFORCING PLAN

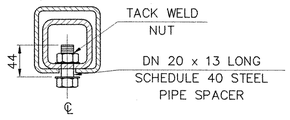


M20 DIA M164 (TYPE I)
ROUND HEAD BOLT

(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT)
(SEE NOTE #9)
ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.



POST AND BASE PLATE



16 DIA TAPPED HOLE IN SPLICE TUBE AND
29 x 'C' SLOT IN RAIL TUBE FOR M16
BOLT AND PLAIN HARDENED WASHER

EXPANSION JOINT SECTION

FOR DETAILS NOT SHOWN
SEE "RAIL TUBE SPLICE SECTION"

NOTES:

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE PROVISIONS OF SECTION 525, "RAILINGS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION."
2. TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILING MATERIALS OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION," EXCEPT THAT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING IN THIS STANDARD.
3. ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 2mm RADIUS AND BE FREE OF BURRS.
4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.
5. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.
6. RAIL TUBE EXPANSION JOINTS SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT. EXPANSION JOINT WIDTH SHALL BE "X" AT 7℃ AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.
7. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT THAT HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M232M.
8. RAIL POSTS ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.
9. RAIL TUBES SHALL BE ATTACHED USING M20 FULL DIAMETER BODY AASHTO M164 (TYPE I) ROUND HEAD BOLTS INSERTED THROUGH THE FACE OF THE TUBE. HOLES HOLES IN POSTS SHALL BE 2mm LARGER THAN THE BOLT SIZE.
10. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.
11. IF THERE IS A CONFLICT BETWEEN THESE DETAILS AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.
12. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.
13. THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.
14. RAIL POST AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMENS.

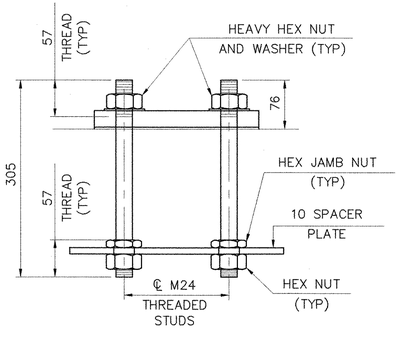
MATERIALS:

RAIL TUBES.....ASTM A500, GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATE.....ASTM A709/A709M, GRADE 50
ALL OTHER SHAPES AND PLATES.....ASTM A709/A709M, GRADE 36
ANCHOR STUDS.....ASTM A449
ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164M, TYPE I

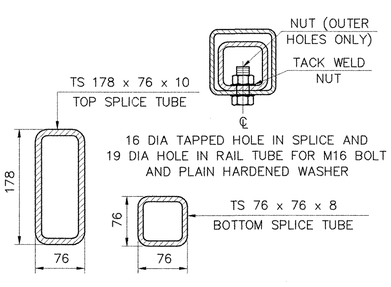
NUTS FOR AASHTO M164 BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASHTO M291M (ASTM A563M).

WASHERS SHALL COMPLY WITH AASHTO M293M (ASTM F436M) SPECIFICATIONS.

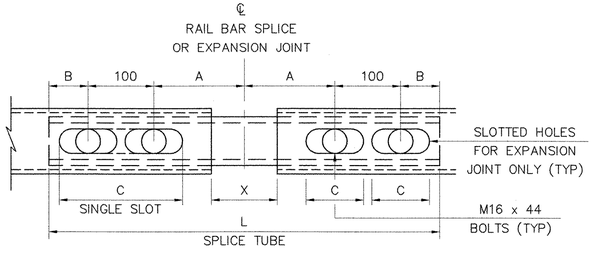
3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.



RAIL POST ANCHORAGE

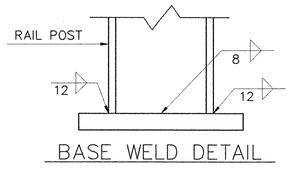


RAIL TUBE SPLICE SECTION



RAIL TUBE SPLICE AND RAIL
EXPANSION JOINT DETAIL

(BOTTOM VIEW)



BASE WELD DETAIL

SPLICE TABLE					
T	A	B	C	L	X
NA	100	50	--	510	20
EXPANSION JOINT TABLE					
<100	100	50	65	510	65
>100 <165	140	60	90	605	105
>165 <230	165	85	230*	705	130
>230 <330	215	110	280*	860	180

T = TOTAL MOVEMENT BETWEEN BRIDGE EXPANSION JOINTS. SEE NOTE 6

* = SINGLE SLOT

STATE OF VERMONT
AGENCY OF TRANSPORTATION

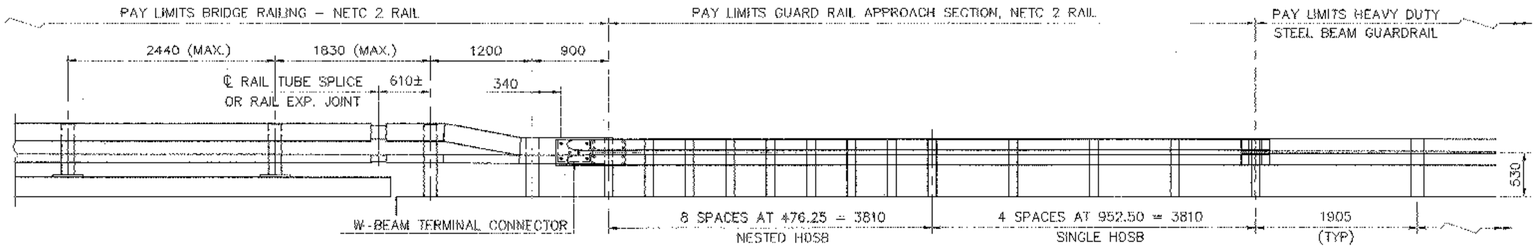
Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
BRIDGE RAILING (1 OF 2)	
Designed By VTRANS	Drawn By VTRANS
Checked By Date VTRANS / J.T.K. 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. BR1-97M	Sheet 32 of 70

VHB Vanasse Hangen Brustlin, Inc.

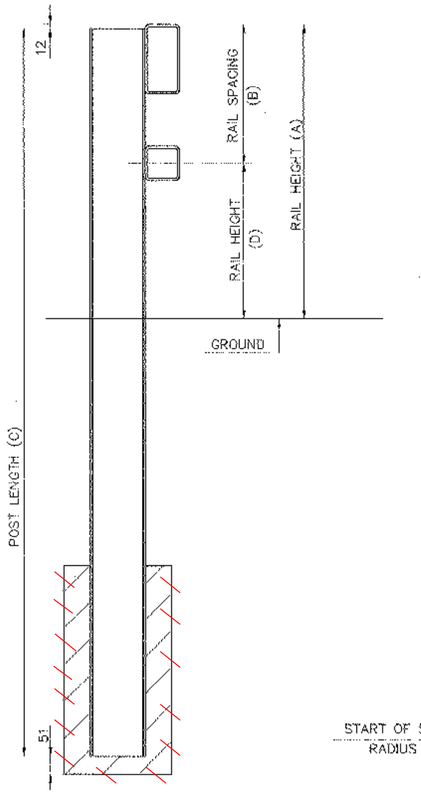
/str5/93C065/zc065BR1

PLOTTED 1-13-2006

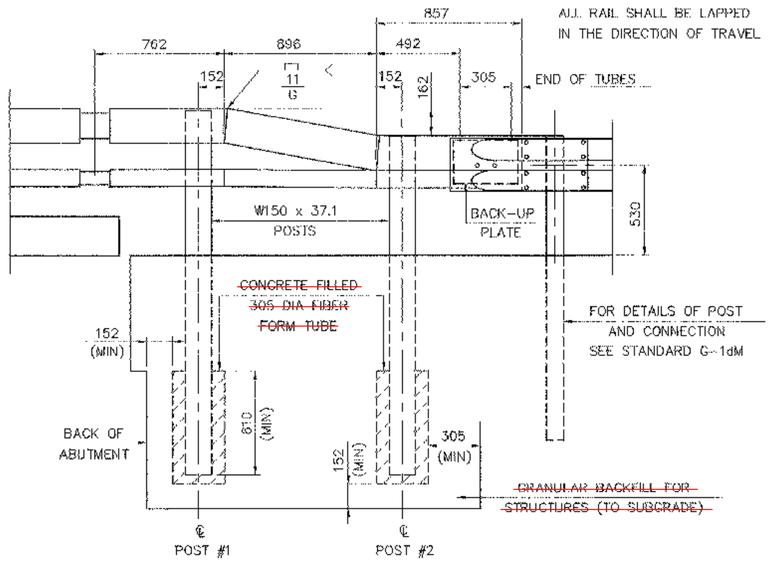
Metric



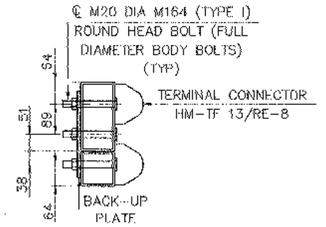
RAILING TRANSITION ELEVATION



TYPICAL SECTION



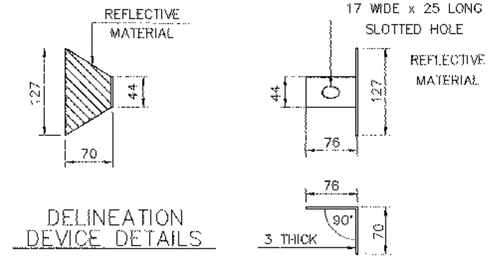
ELEVATION



SECTION THROUGH GUARD RAIL CONNECTION AT TERMINAL CONNECTOR

NOTES:

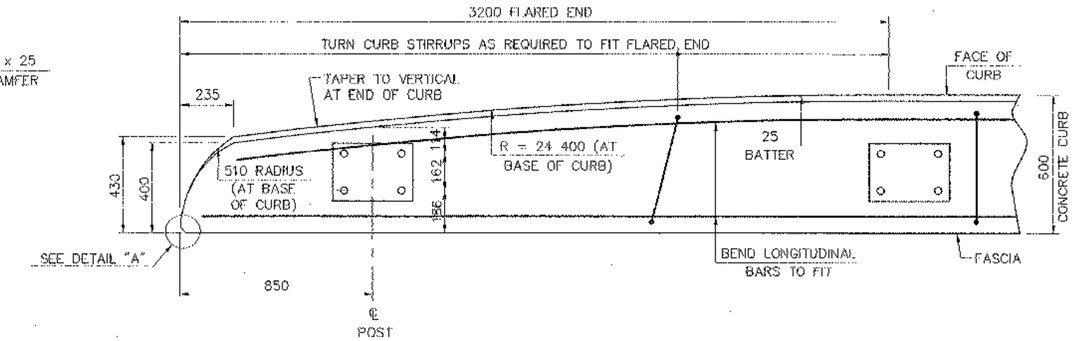
1. REFER TO BRIDGE RAILING (1 OF 2) FOR ADDITIONAL DETAILS, NOTES AND MATERIAL SPECIFICATIONS.
2. ~~TO FACILITATE FIELD FIT – UP OF THE TRANSITION RAILING, POSTS SHALL BE SET LOOSELY INTO FIBER FORM TUBES WHILE TRANSITION PARTS ARE BEING ASSEMBLED. POST HOLES SHALL BE BACKFILLED WITH A CONCRETE MIX APPROVED BY THE ENGINEER. PAYMENT FOR COMPONENTS, INCLUDING BACKUP PLATE AND END TERMINAL CONNECTOR FOR GUARD RAIL, AUGERING, FIBER FORM TUBES AND CONCRETE, AND INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO BRIDGE RAILING, N.E.TC. 2 RAIL.~~
3. THE REFLECTORIZED ALUMINUM DELINEATION IS TO BE ERECTED EVERY 9m (OR CLOSEST POST) WITH A M16 BOLT. DELINEATORS SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052-H32.
4. REFLECTIVE MATERIAL SHALL MEET 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.
5. ALL APPROACH RAIL SPLICES SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC FLOW.
6. SEE STANDARD G-1M AND G-1DM FOR ADDITIONAL INFORMATION.



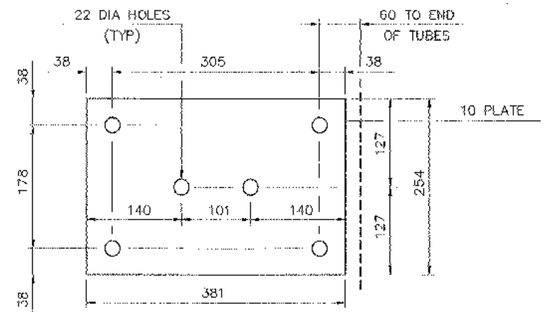
DELINEATION DEVICE DETAILS

DETAIL "A"

POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	860	405	2134	455
2	702	254	1956	448



PLAN VIEW CURB END



BACK-UP PLATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
BRIDGE RAILING (2 OF 2)	
Designed By VTRANS	Drawn By VTRANS
Checked By VTRANS / J.T.K. Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. BR2-97M	Sheet 33 of 70

VHB Vanasse Hangen Brustlin, Inc.

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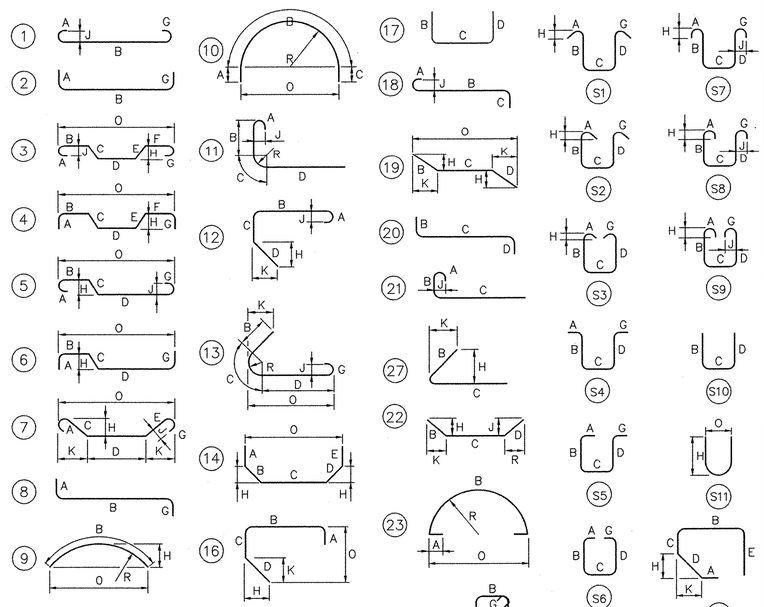
PLOTTED 1-13-2006

	ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
					DECK SLAB													
✳	1	329	16	4700	ES1601	STR	▲											
	2	328	16	5000	ES1602	STR	▲											
	3	204	16	9100	ES1604	STR												
	4	102	16	7500	ES1605	STR												
	5	8	16	4925	ES1608	STR												
	6	8	16	5300	ES1609	STR												
	7	8	16	5475	ES1610	STR												
	8	8	16	5825	ES1611	STR												
✳	9	29	16	850	ES1612	STR	▲											
	10																	
	11	230	16	1700	ES1603	S5	250	400	400	400			250					
✳	12	49	16	2750	ES1606	S5	450	900	125	825			450					
	13																	
	14	72	16	1175	ES1607	16	150	475	150	400				350		200		350
	15				APPROACH SLAB NO. 1													
✳	16	21	16	4550	1EAS1601	STR												
✳	17	21	16	4250	1EAS1602	STR												
	18	1	16	5275	1EAS1603	STR												
	19	1	16	4925	1EAS1604	STR												
	20																	
	21	15	25	1000	1EAS2501	19		500	500					350		350		850
	22																	
△	23	38	29	6450	1EAS2901	1	400	5825							225			
	24				APPROACH SLAB NO. 2													
✳	25	21	16	4550	2EAS1601	STR												
✳	26	21	16	4250	2EAS1602	STR												
	27	1	16	5275	2EAS1603	STR												
	28	1	16	4925	2EAS1604	STR												
	29																	
	30	15	25	1000	2EAS2501	19		500	500					350		350		850
	31																	
△	32	38	29	6450	2EAS2901	1	400	5825							225			
	33				ABUTMENT NO. 1													
	34	35	16	450	1A1601	STR												
	35																	
✳	36	11	16	2700	1A1602	17	▲	600	2100									
	37				WINGWALL NO. 1													
	38	22	16	1950	1W1601	STR												
	39	7	16	5725	1W1603	STR	▲											
	40	40	16	1950	1W1604	STR	▲											
	41	6	16	1575	1W1606	STR												
✳	42	4	16	1000	1W1607	STR												
	43	10	16	650	1W1608	STR	▲											
	44																	
✳	45	8	25	3000	1W2501	STR												
	46	7	25	5725	1W2504	STR	▲											
	47																	
△	48	9	19	3000	1W1901	STR												
	49																	
	50	7	16	1950	1W1602	17		300	1650									
	51	10	16	1650	1W1605	17		600	450	600								
	52																	
✳	53	8	25	2550	1W2502	17		450	2100									
	54	7	25	4950	1W2503	17		450	4500									
	55				WINGWALL NO. 2													
	56	24	16	5550	2W1601	STR												
	57	13	16	5050	2W1603	STR	▲											
	58	6	16	3650	2W1604	STR												
	59	26	16	5550	2W1605	STR	▲											
	60	10	16	3075	2W1606	STR	▲											
	61																	
	62	14	22	5050	2W2203	STR	▲											
✳	63	6	22	3625	2W2204	STR												
	64																	
	65	19	25	3300	2W2501	STR												
	66																	
△	67	21	29	3300	2W2901	STR												
	68																	
	69	4	16	3050	2W1607	16		1250	850	950				850		425		1275
	70																	
✳	71	20	16	1950	2W1602	17		300	1650									
	72	3	16	2950	2W1608	17		1250	450	1250								
	73	19	16	1650	2W1609	17		600	450	600								
	74																	
✳	75	20	22	2125	2W2201	17		400	1725									
	76	19	22	4300	2W2202	17		400	3900									
	77				WINGWALL NO. 3													
	78	6	16	800	3W1601	STR												
	79	12	16	1350	3W1602	STR	▲											
✳	80	11	16	1625	3W1604	STR												
	81																	
	82	6	16	1650	3W1603	17	▲	600	450	600								
	83																	
	84																	
	85																	
	86																	
	87																	

	ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
					WINGWALL NO. 4													
	88	26	16	5425	4W1601	STR												
	89	5	16	3125	4W1603	STR												
	90	14	16	4550	4W1604	STR	▲											
	91	22	16	5425	4W1605	STR												
	92	10	16	3375	4W1606	STR	▲											
	93																	
✳	94	20	25	3575	4W2501	STR												
△	95	26	25	1000	4W2502	STR												
	96																	
✳	97	8	29	3125	4W2903	STR												
	98	12	29	4550	4W2904	STR	▲											
	99																	
△	100	21	32	3575	4W3201	STR												
	101																	
	102	4	16	3025	4W1607	16		1250	825	950						850		425		1250
	103																	
✳	104	20	16	1950	4W1602	17		300	1650									
	105	3	16	2950	4W1608	17		1250	450	1250								
	106	19	16	1650	4W1609	17		600	450	600								
	107	2	16	800	4W1610	17	▲	600	200									
	108																	
✳	109	20	29	2950	4W2901	17		575	2375									
	110	18	29	4900	4W2902	17		575	4025									



NOTES:

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING 55M SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET–STEEL BARS FOR CONCRETE REINFORCEMENT", AASHTO M 31 (ASTM A 615–S1). ALL BARS SHALL BE GRADE 420, 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° AND 135° HOOKS.
5. "J" DIMENSION ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO RESTRICT HOOK SIZE. OTHERWISE, STANDARD HOOKS ARE TO BE USED.
6. "H" DIMENSION ON STIRRUPS TO BE SHOWN ONLY WHEN NECESSARY TO MAINTAIN CLEARANCES.
7. "E" IN PREFIX DENOTES EPOXY COATED REINFORCING STEEL.
8. WHERE SLOPE DIFFERS FROM 45 DEGREES, DIMENSIONS "H" AND "K" MUST BE SHOWN.
9. ✳ DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.
10. △ DENOTES TWO EXTRA BARS ADDED FOR TESTING PURPOSES.
11. ▲ DENOTES BARS TO BE CUT TO FIT IN FIELD.

ASTM STANDARD REINFORCING BARS

BAR SIZE DESIG–NATION	MASS (kg/m)	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER (mm)	CROSS SECTIONAL AREA (mm^2)	PERIMETER (mm)
#10	0.560	9.5	71	29.9
#13	0.994	12.7	129	39.9
#16	1.552	15.9	199	49.9
#19	2.235	19.1	284	59.8
#22	3.042	22.2	387	69.8
#25	3.973	25.4	510	79.9
#29	5.060	28.7	645	90.0
#32	6.404	32.3	819	101.3
#36	7.907	35.8	1006	112.5
#43	11.38	43.0	1452	135.1
#57	20.24	57.3	2581	180.1

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.

VT 17 OVER MILL BROOK

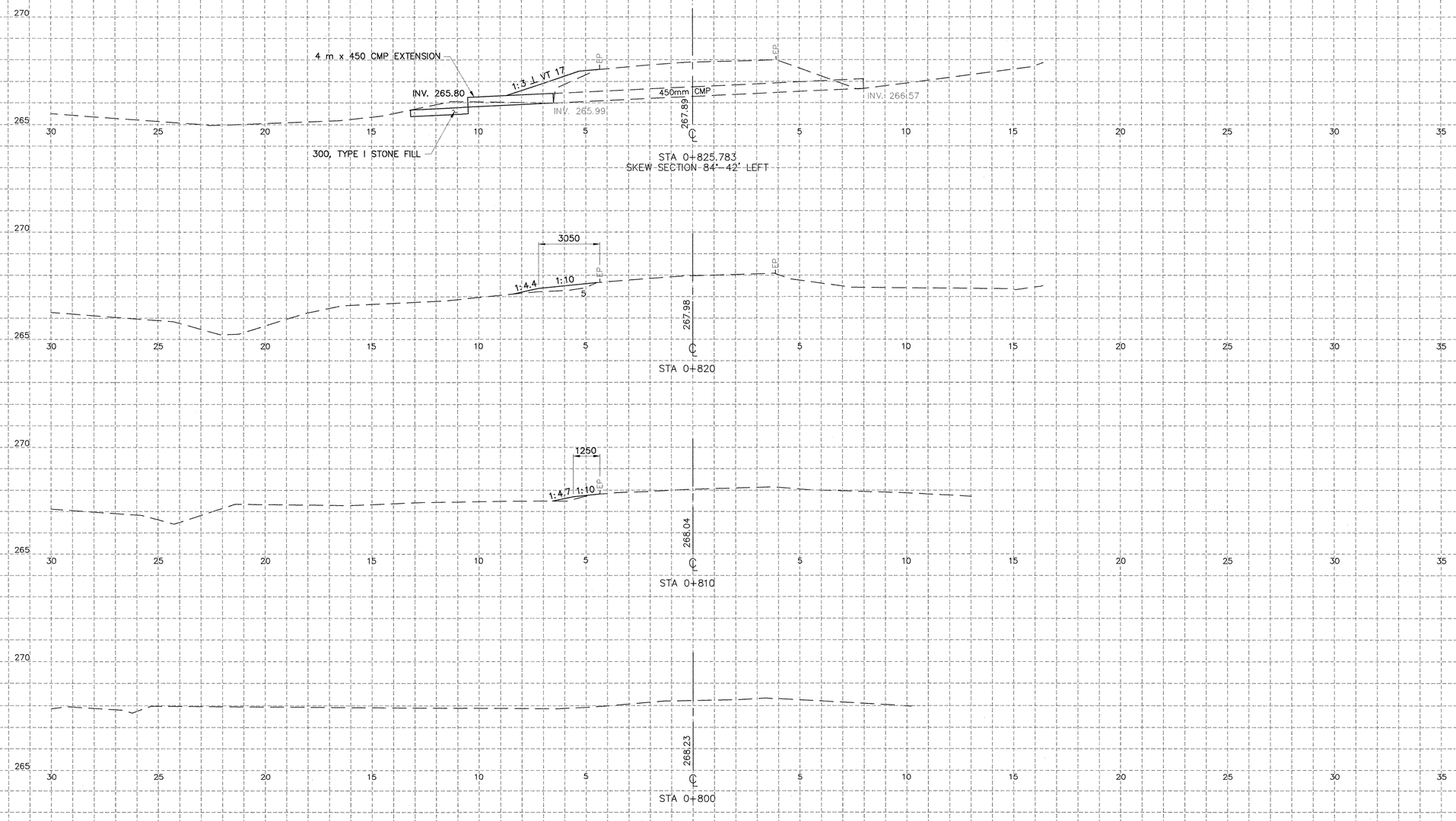
REINFORCING STEEL SCHEDULE

Designed By M.A. COLGAN	Drawn By B.J. MASSE
Checked By C.W. COVIELLO Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543REF	Sheet 34 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065RSS

PLOTTED 1–13–2006



THE "℄" ON THESE CROSS SECTIONS CORRESPONDS TO THE "SURVEY LINE" ON THE PLAN SHEETS. THE "SURVEY LINE" MAY NOT COINCIDE WITH THE EXISTING VT 17 CENTERLINE.

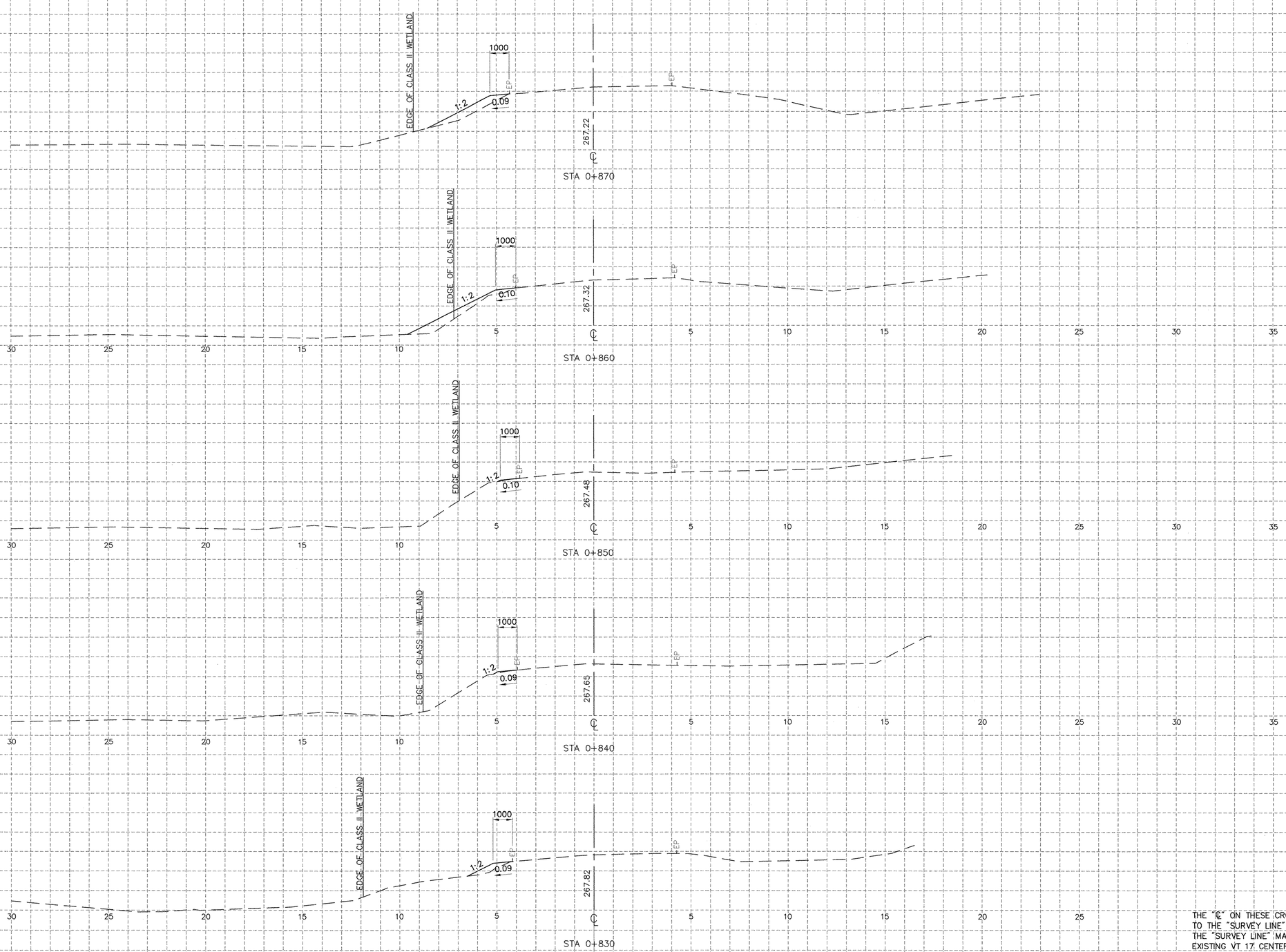
SCALE 5 METERS / HORZ. & VERT.

FROM STA. 0+800	TO STA. 0+825.783 VT 17
PROJECT NAME	FAYSTON 36
NO.	BHF 0200(9)
SURVEYED BY	EIV TECHNICAL SERVICES, LLC 1/96
SHEET 35 OF 70 SHEETS	

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065RX1

50543XS PLOTTED 1-13-2006



THE "℄" ON THESE CROSS SECTIONS CORRESPONDS TO THE "SURVEY LINE" ON THE PLAN SHEETS. THE "SURVEY LINE" MAY NOT COINCIDE WITH THE EXISTING VT 17 CENTERLINE.

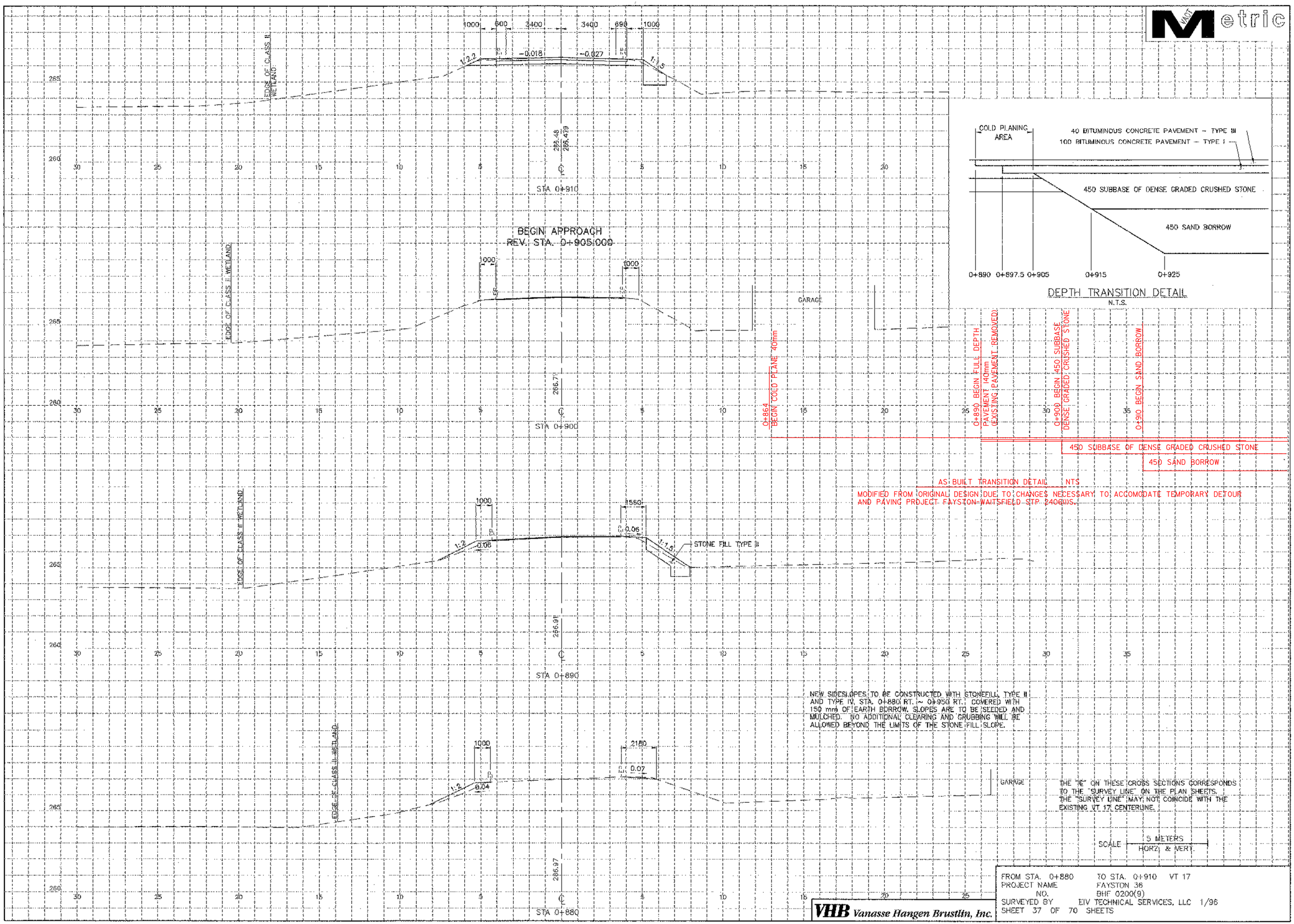
SCALE 5 METERS HORZ. & VERT.

FROM STA. 0+830	TO STA. 0+870	VT 17
PROJECT NAME	FAYSTON 36	
NO.	BHF 0200(9)	
SURVEYED BY	EIV TECHNICAL SERVICES, LLC 1/96	
SHEET 36 OF 70 SHEETS		

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065RX2

50543XS PLOTTED 1-13-2006



COLD PLANING AREA

40 BITUMINOUS CONCRETE PAVEMENT – TYPE III

100 BITUMINOUS CONCRETE PAVEMENT – TYPE I

450 SUBBASE OF DENSE GRADED CRUSHED STONE

450 SAND BORROW

0+890 0+897.5 0+905 0+915 0+925

DEPTH TRANSITION DETAIL

N.T.S.

AS-BUILT TRANSITION DETAIL NTS

MODIFIED FROM ORIGINAL DESIGN DUE TO CHANGES NECESSARY TO ACCOMODATE TEMPORARY DETOUR AND PAVING PROJECT FAYSTON-WAITSFIELD STP 2406(10).

NEW SIDESLOPES TO BE CONSTRUCTED WITH STONEFILL, TYPE II AND TYPE IV, STA. 0+880 RT. ~ 0+950 RT., COVERED WITH 150 mm OF EARTH BORROW. SLOPES ARE TO BE SEEDED AND MULCHED. NO ADDITIONAL CLEARING AND GRUBBING WILL BE ALLOWED BEYOND THE LIMITS OF THE STONE FILL SLOPE.

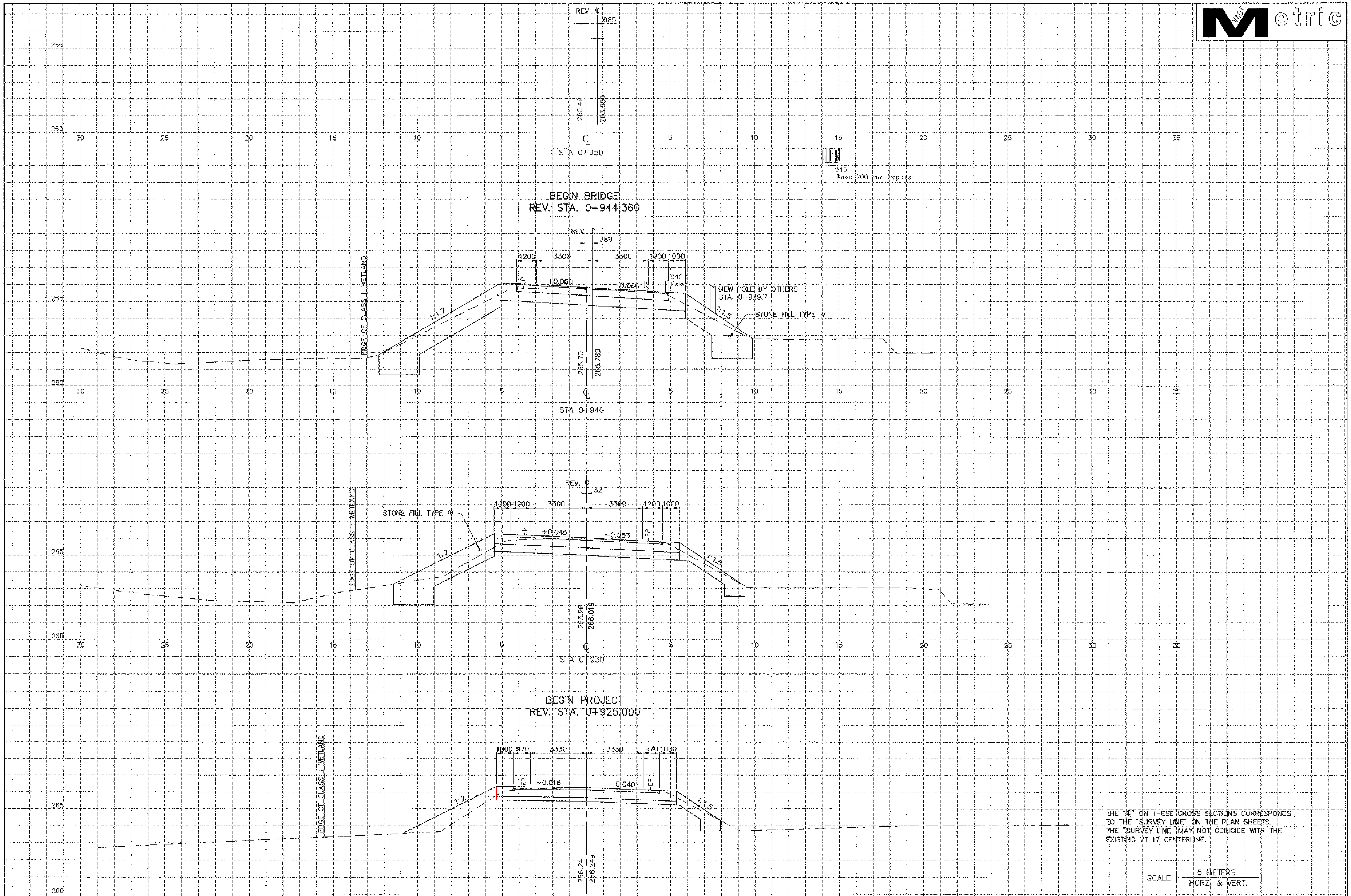
THE "℄" ON THESE CROSS SECTIONS CORRESPONDS TO THE "SURVEY LINE" ON THE PLAN SHEETS. THE "SURVEY LINE" MAY NOT COINCIDE WITH THE EXISTING VT 17 CENTERLINE.

SCALE 5 METERS HORZ. & VERT.

FROM STA. 0+880 TO STA. 0+910 VT 17
PROJECT NAME FAYSTON 36
NO. BHF 0200(9)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 1/96
SHEET 37 OF 70 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065RX3 5054.565 PLOTTED 1-13-2006

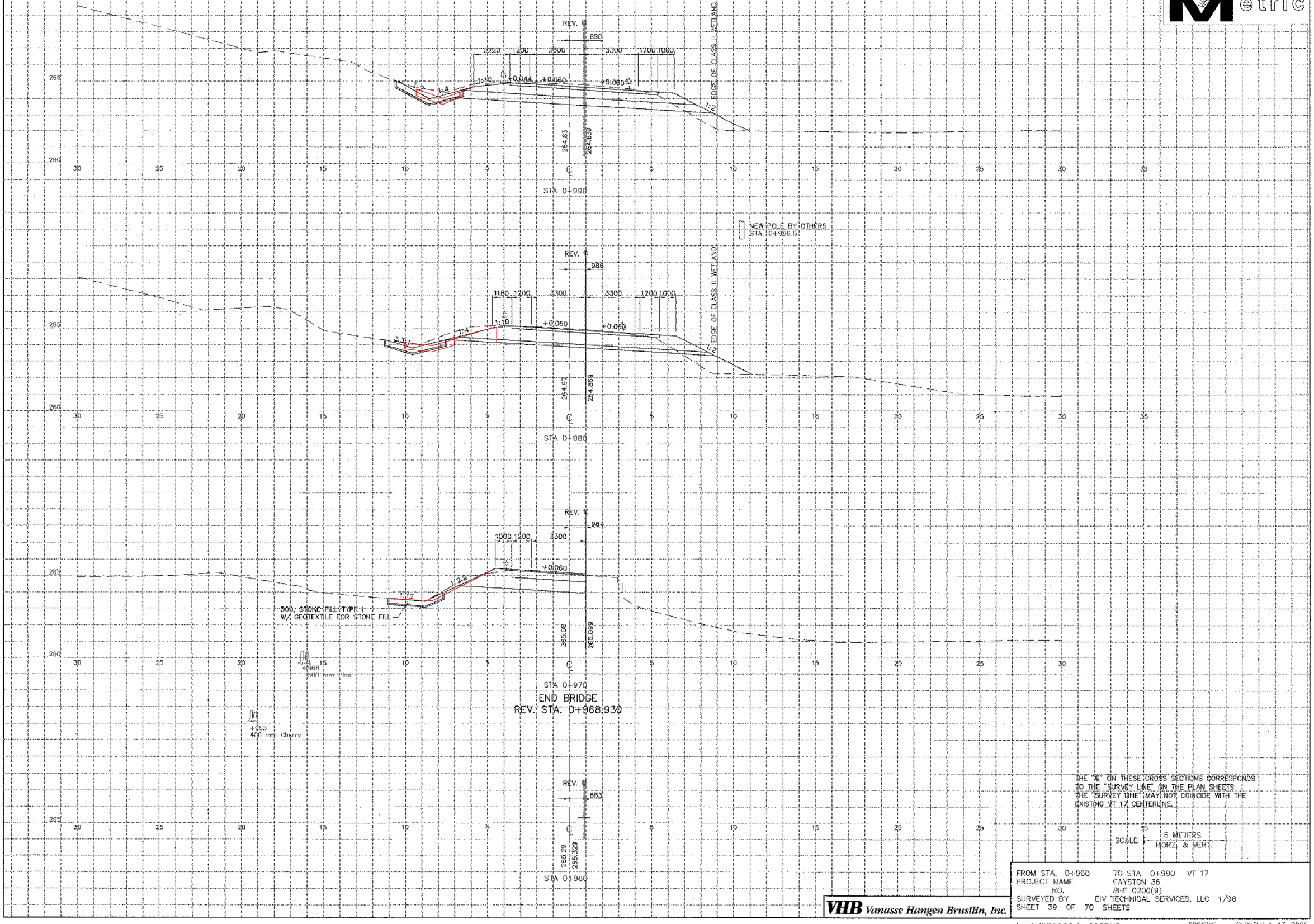


THE "℄" ON THESE CROSS SECTIONS CORRESPONDS TO THE "SURVEY LINE" ON THE PLAN SHEETS. THE "SURVEY LINE" MAY NOT COINCIDE WITH THE EXISTING VT 17 CENTERLINE.

FROM STA. 0+920	TO STA. 0+950 VT 17
PROJECT NAME	FAYSTON 36
NO.	BHF 0200(9)
SURVEYED BY	EIV TECHNICAL SERVICES, LLC 1/96
SHEET 38 OF 70 SHEETS	

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065RX4 — 50543XS — PLOTTED 1-13-2006



THE "℄" ON THESE CROSS SECTIONS CORRESPONDS TO THE "SURVEY LINE" ON THE PLAN SHEETS. THE "SURVEY LINE" MAY NOT COINCIDE WITH THE EXISTING VT 17 CENTERLINE.

SCALE 1" = 5 METERS HORZ. & VERT.

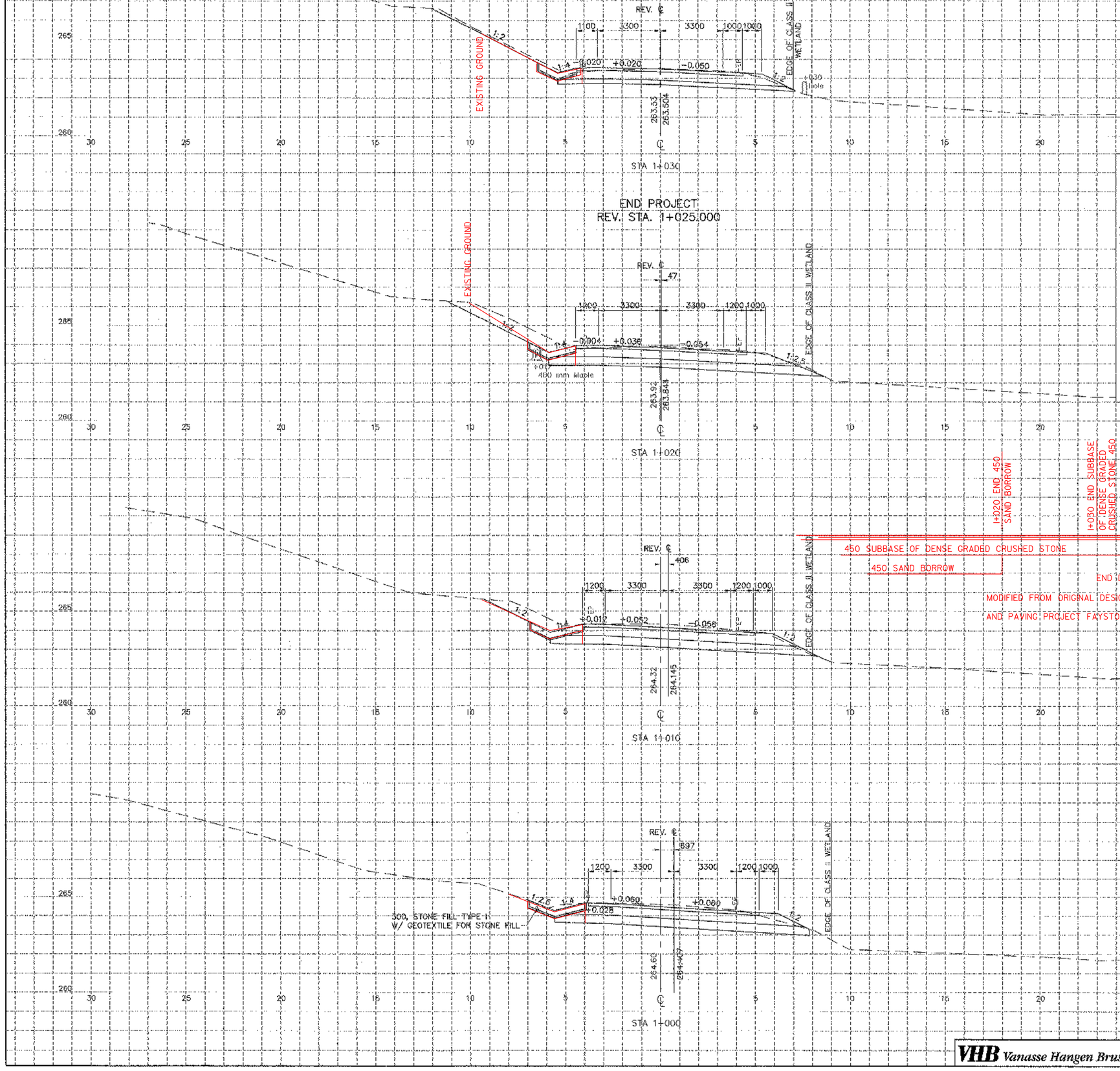
FROM STA. 0+960 TO STA. 0+990 VT 17
PROJECT NAME FAYSTON 36
NO. BHF 0200(9)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 1/96
SHEET 39 OF 70 SHEETS

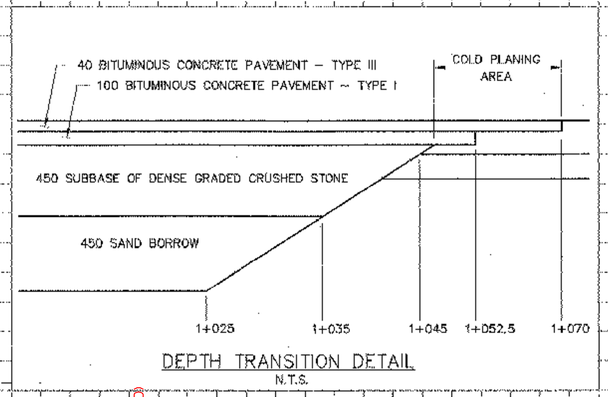
VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065RX5

50543XS PLOTTED 1-13-2006

VAOT Metric





DEPTH TRANSITION DETAIL
N.T.S.

1+020 END 450 SAND BORROW

1+030 END SUBBASE OF DENSE GRADED CRUSHED STONE 450

1+040 EXISTING PAVEMENT REMOVE (SUBBASE REGRADED) BEGIN COLD PLANING

END COLD PLANING 40
STA 1+049.2

450 SUBBASE OF DENSE GRADED CRUSHED STONE

450 SAND BORROW

END DEPTH TRANSITION DETAIL (AS BUILT)

MODIFIED FROM ORIGINAL DESIGN DUE TO CHANGES NECESSARY TO ACCOMODATE TEMPORARY DETOUR AND PAVING PROJECT FAYSTON-WAITFIELD STP 2406(6)S.

THE "℄" ON THESE CROSS SECTIONS CORRESPONDS TO THE "SURVEY LINE" ON THE PLAN SHEETS. THE "SURVEY LINE" MAY NOT COINCIDE WITH THE EXISTING VT 17 CENTERLINE.

SCALE 5 METERS / HORZ. & VERT.

VHB Vanasse Hangen Brustlin, Inc.

FROM STA. 1+000	TO STA. 1+030	VT 17
PROJECT NAME	FAYSTON 36	
NO.	BHF 0200(9)	
SURVEYED BY	EIV TECHNICAL SERVICES, LLC	1/96
SHEET 40 OF 70 SHEETS		

/str5/93C065/zc065RX6 50543XS PLOTTED 1 13 2006

VAOT Metric

STA 1+080

261.71

EP EP

EDGE OF CLASS II WETLAND

STA 1+070

262.00

EP EP

EDGE OF CLASS II WETLAND

STA 1+060

262.35

EP EP

EDGE OF CLASS II WETLAND

STA 1+050

262.73

EP EP

EDGE OF CLASS II WETLAND

END APPROACH
REV. STA. 1+045.000

EXISTING GROUND

760 3450 3440 620 240

1:2 1:4 -0.034 +0.004 -0.045 1:3

300 STONE FILL TYPE I
W/ GEOTEXTILE FOR STONE FILL

263.12
263.126

STA 1+040

THE "C" ON THESE CROSS SECTIONS CORRESPONDS TO THE "SURVEY LINE" ON THE PLAN SHEETS. THE "SURVEY LINE" MAY NOT COINCIDE WITH THE EXISTING VT 17 CENTERLINE.

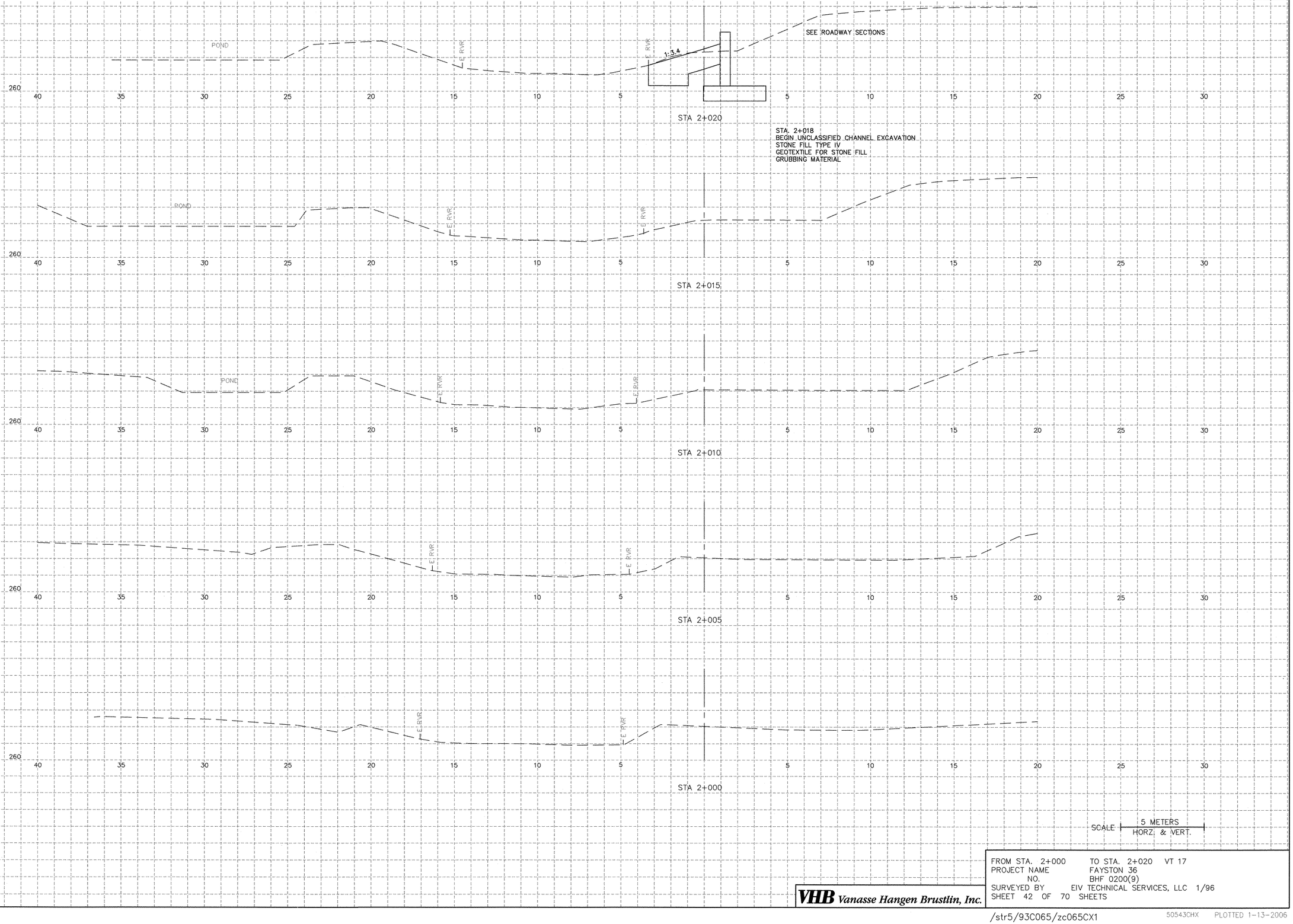
SCALE: 5 METERS HORZ. & VERT.

FROM STA. 1+040 TO STA. 1+080 VT 17
PROJECT NAME FAYSTON 36
NO. BHF 0200(9)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 1/96
SHEET 41 OF 70 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065RX7 50543XS PLOTTED 1-13-2006

VADOT Metric



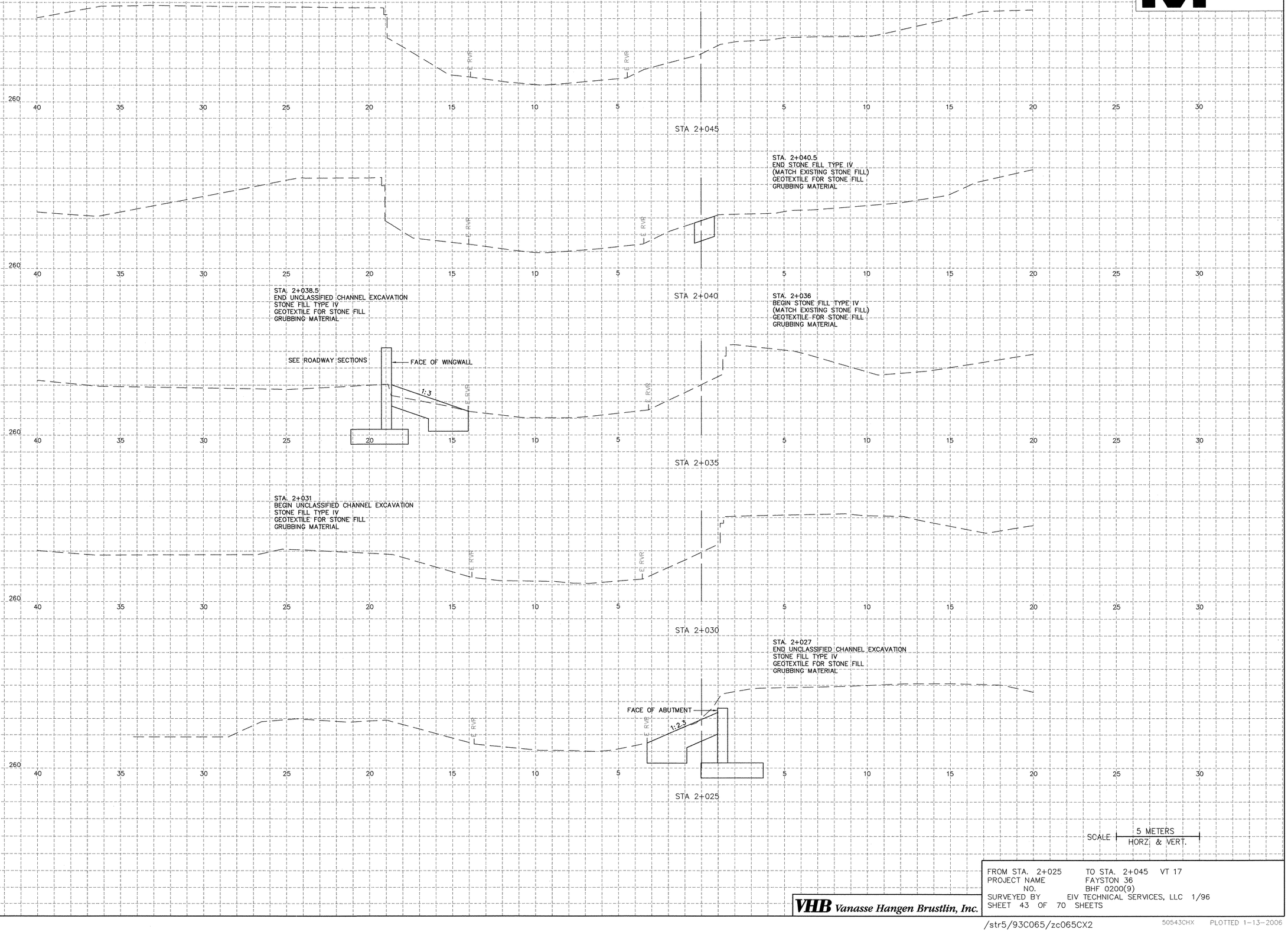
FROM STA. 2+000 TO STA. 2+020 VT 17
PROJECT NAME FAYSTON 36
NO. BHF 0200(9)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 1/96
SHEET 42 OF 70 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065CX1

50543CHX PLOTTED 1-13-2006

VAOT Metric



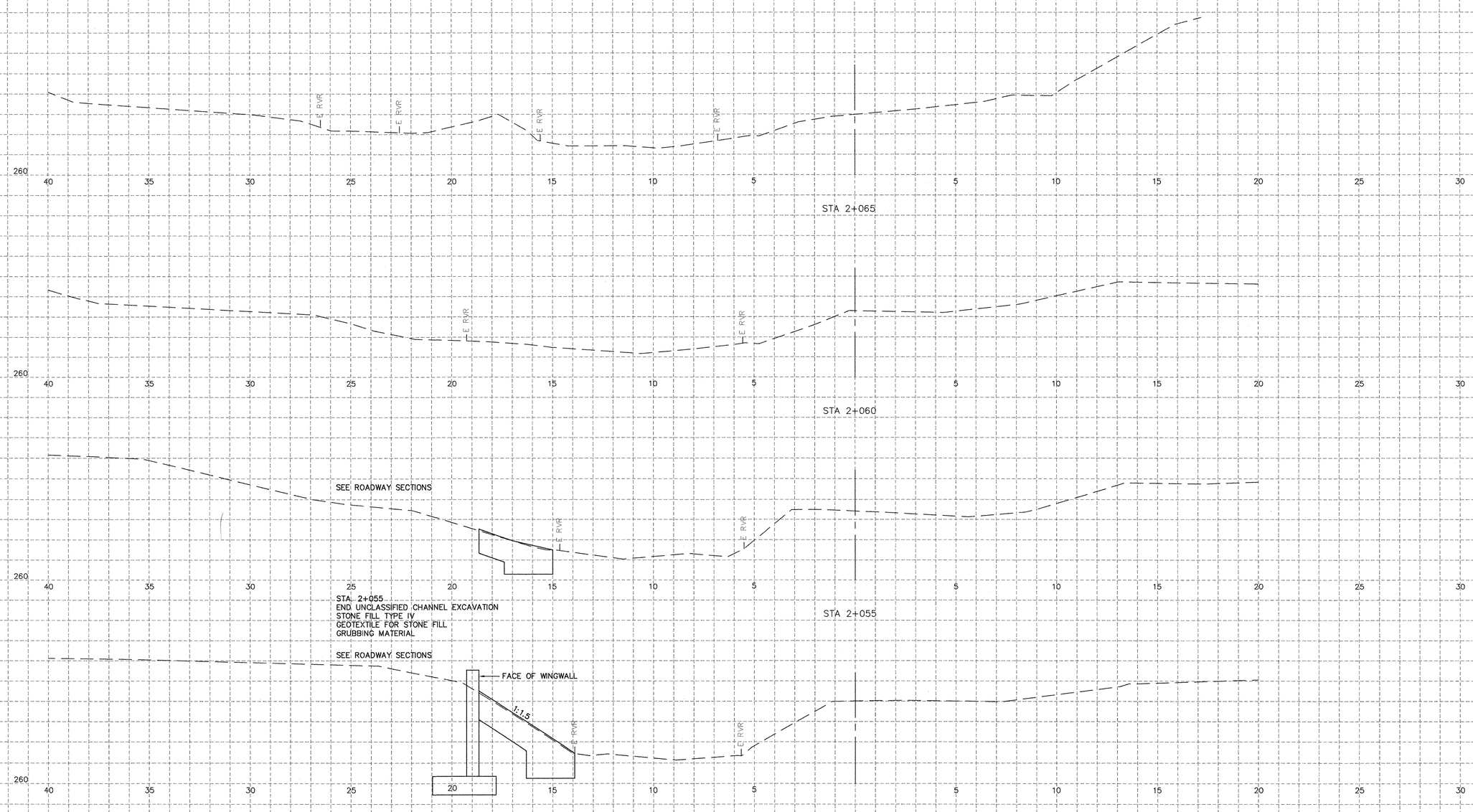
FROM STA. 2+025	TO STA. 2+045 VT 17
PROJECT NAME	FAYSTON 36
NO.	BHF 0200(9)
SURVEYED BY	EIV TECHNICAL SERVICES, LLC 1/96
SHEET 43 OF 70 SHEETS	

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065CX2

50543CHX PLOTTED 1-13-2006

VAOT Metric



FROM STA. 2+050 TO STA. 2+065 VT 17
PROJECT NAME FAYSTON 36
NO. BHF 0200(9)
SURVEYED BY EIV TECHNICAL SERVICES, LLC 1/96
SHEET 44 OF 70 SHEETS

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065CX3

50543CHX PLOTTED 1-13-2006

STATE OF VERMONT
AGENCY OF TRANSPORTATION

EROSION CONTROL NARRATIVE

Metric

PROJECT DESCRIPTION

This project involves the rehabilitation of a single span bridge carrying VT Route 17 over Mill Brook in the Town of Fayston. The existing bridge is approximately 24.6 meters long and 7.3 meters wide. The superstructure (steel beams, railings, and concrete deck) will be completely replaced and the abutments will be widened. The alignment for Route 17 will be shifted approximately 0.80 meters to the south. One lane of traffic will be maintained on the bridge at all times. It is anticipated that this project will last one construction season. The total length of roadway approach work is approximately 75.4 meters. The site is located at 471021.824 N, 186974.389 E based upon NAD 83/92. Total disturbed area (excluding waste, borrow and staging areas): 0.41 ha.

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

SITE INVENTORY & ANALYSIS

OFF SITE DRAINAGE CHARACTERISTICS:
The roadway in the project area is generally built up above the surrounding ground. The terrain includes a steep wooded hill in the northeast quadrant sloping down towards the road and well established fields, lawns, and woods in the other three quadrants. The roadway along VT 17 is on a horizontal curve in the area of the bridge and is superelevated with the high side at the northern shoulder. Roadway surface drainage will generally be towards the southern shoulder.

DRAINAGE, WATERWAYS, BODIES OF WATER:
Mill Brook is located in the project area with an unnamed intermittent stream in the northwest quadrant of the bridge. There is also a Class II wetlands located north of VT 17 and west of Mill Brook. There is a small pond in the southwest quadrant of the project. The drainage basin for Mill Brook is characterized by a narrow river valley within steeply mountainous terrain. The streambed consists of cobbles and small boulders. The abutments are protected by large granite blocks. The contributing drainage area at the bridge crossing is 49 sq. km.

TOPOGRAPHY, EXISTING ROADS, BUILDINGS, UTILITIES:
The topography of the project site is generally hilly along each side of VT Route 17, sloping towards Mill Brook. Development along this portion of VT 17 consists of permanent residences with lawns, open fields, and woods abutting the project with several gravel drives.

The overhead utilities follow VT 17, crossing diagonally across the road just to the west of the bridge. The utility poles at the southwest and southeast corner of the bridge will need to be relocated to accommodate bridge widening and construction access.

VEGETATION:
There are numerous small hardwood and softwood trees along VT Route 17 and the river banks. Impacts to vegetation will be limited to that which is affected by the widening of the bridge and roadway approaches. Some immature 2–6 inch diameter trees will be removed. Following the reconstruction of the bridge, 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 Washington County. The soil type identified for the entire project area is Rumney fine sandy loam. This soil type is described as "formed in loamy over sandy alluvial deposits on flood plains that are frequently flooded for brief duration from fall through late spring. They are very deep to bedrock and poorly drained." These soils have a water table at depths of 0 to 0.5 m below the surface. Permeability is moderate or moderately rapid in the solum and rapid or very rapid in the substratum. Flooding is a concern during periods of high rainfall but is of short duration and usually occurs in the spring.

The listed soil erodability coefficient (K–value) for this type is 0.24. 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 roadway 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. Mill Brook and a small portion of Class II wetlands are the only identified resources.

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 new concrete wingwalls to accomodate the bridge widening. Stabilization of disturbances to the river banks will be accomplished with cofferdams and Stone Fill, Type II and Type IV.

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 stone check dams will be placed in ditches to reduce flow velocities and thus reduce the potential for erosion. Check dams will be placed along the ditches such that the elevation of the top of each check dam corresponds with the elevation of the toe of the preceding upslope check dam. See 'Erosion Controls Details' sheet EPSC–2M. The check dams may be removed once the stone lining of the ditches is complete and the surrounding area stabilized.

Temporary measures to control sediment transport include:

Silt fence will be installed a distance of 1800 mm from the toe of slopes 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 temporary stone check dams and silt fence 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 to the project site, staging areas, as well as entrances to waste and borrow 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.

Temporary sediment settling basins will be utilized on this project for dewatering cofferdams.

PERMANENT EROSION CONTROL MEASURES

Several permanent erosion control measures will be utilized:

Stone lining of the river banks with Stone Fill, Type IV as specified by VTrans Hydraulics personnel. This stone will protect from river bank erosion during design storm events.

Stone Fill, Type I will be utilized 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 accepted Erosion Control Plan and Schedule or as directed by the Engineer. The contractor shall 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

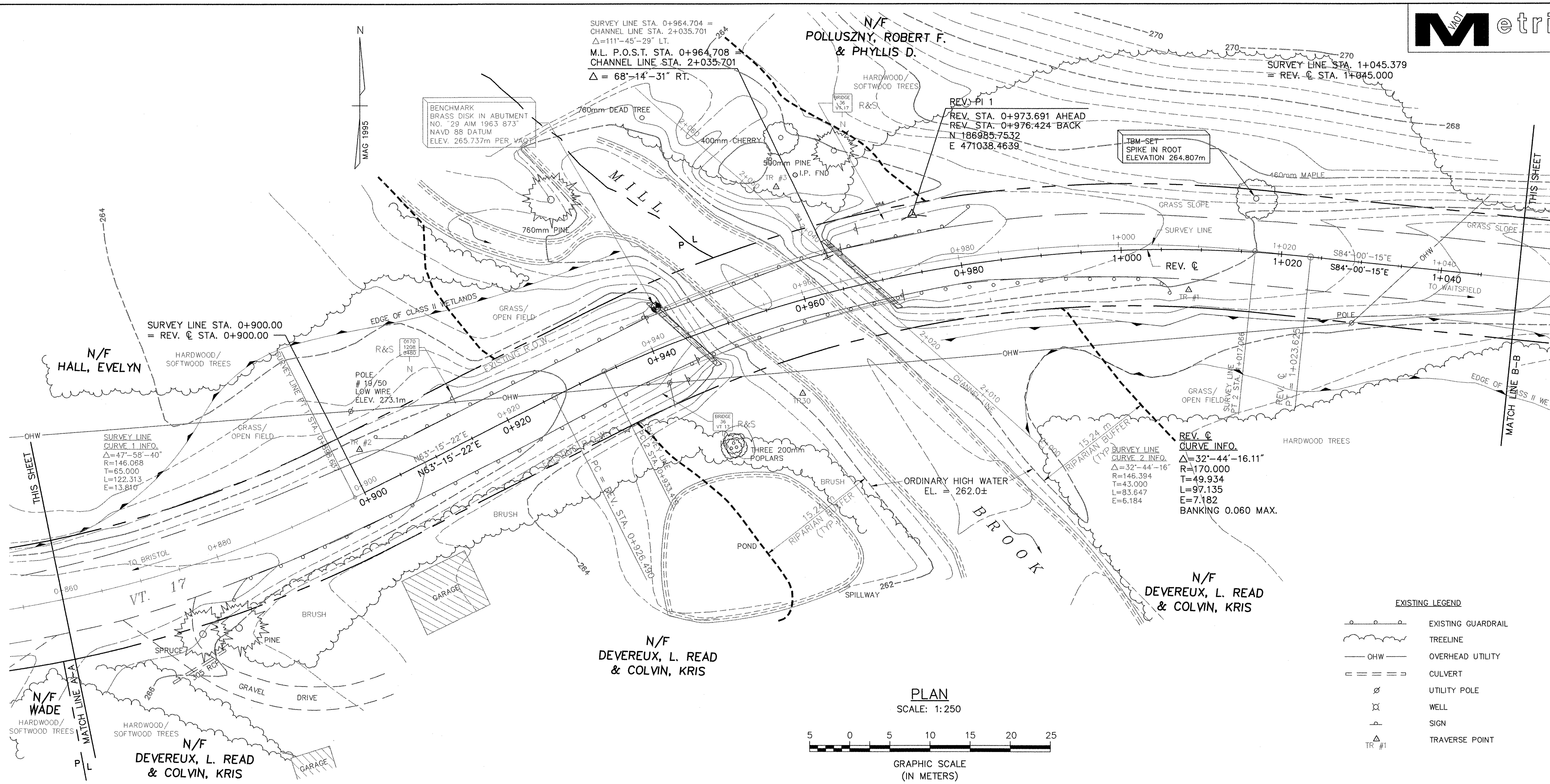
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
EROSION CONTROL NARRATIVE	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543ERN	Sheet 45 of 70

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065ERN

PLOTTED 1–13–2006



N
MAG 1995
SURVEY LINE STA. 0+964.704 = CHANNEL LINE STA. 2+035.701
Δ=111°-45'-29" LT.
M.L. P.O.S.T. STA. 0+964.708 = CHANNEL LINE STA. 2+035.701
Δ = 68°-14'-31" RT.
N/F POLLUSZNY, ROBERT F. & PHYLLIS D.
SURVEY LINE STA. 1+045.379 = REV. ℄ STA. 1+045.000
BENCHMARK BRASS DISK IN ABUTMENT NO. '29 AIM 1963 873' NAVD 88 DATUM ELEV. 265.737m PER VAOT
760mm DEAD TREE
400mm CHERRY
500mm PINE
I.P. FND
REV. PI 1
REV. STA. 0+973.691 AHEAD
REV. STA. 0+976.424 BACK
N 186985.7532
E 471038.4639
TBM SET SPIKE IN ROOT ELEVATION 264.807m
460mm MAPLE
GRASS SLOPE
SURVEY LINE
760mm PINE
MILL
P L
REV. ℄
S84°-00'-15"E
TO WAITSFIELD
EDGE OF CLASS II WETLANDS
GRASS/ OPEN FIELD
SURVEY LINE STA. 0+900.00 = REV. ℄ STA. 0+900.00
N/F HALL, EVELYN
HARDWOOD/ SOFTWOOD TREES
POLE # 19/50 LOW WIRE ELEV. 273.1m
EXISTING R.O.W.
OHW
POLE
EDGE OF CLASS II WETL
MATCH LINE B-B
THIS SHEET
SURVEY LINE CURVE 1 INFO.
Δ=47°-58'-40"
R=146.068
T=65.000
L=122.313
E=13.810
N63°-15'-22"E
THREE 200mm POPLARS
ORDINARY HIGH WATER EL. = 262.0±
15.24 m RIPARIAN BUFFER (TYP.)
SURVEY LINE CURVE 2 INFO.
Δ=32°-44'-16"
R=146.394
T=43.000
L=83.647
E=6.184
REV. ℄ CURVE INFO.
Δ=32°-44'-16.11"
R=170.000
T=49.934
L=97.135
E=7.182
BANKING 0.060 MAX.
HARDWOOD TREES
BROOK
CHANNEL LINE
BRUSH
POND
SPILLWAY
GARAGE
TO BRISTOL
VT. 17
SPRUCE
PINE
GRAVEL DRIVE
N/F DEVEREUX, L. READ & COLVIN, KRIS
N/F WADE
MATCH LINE A-A

PLAN

SCALE: 1:250

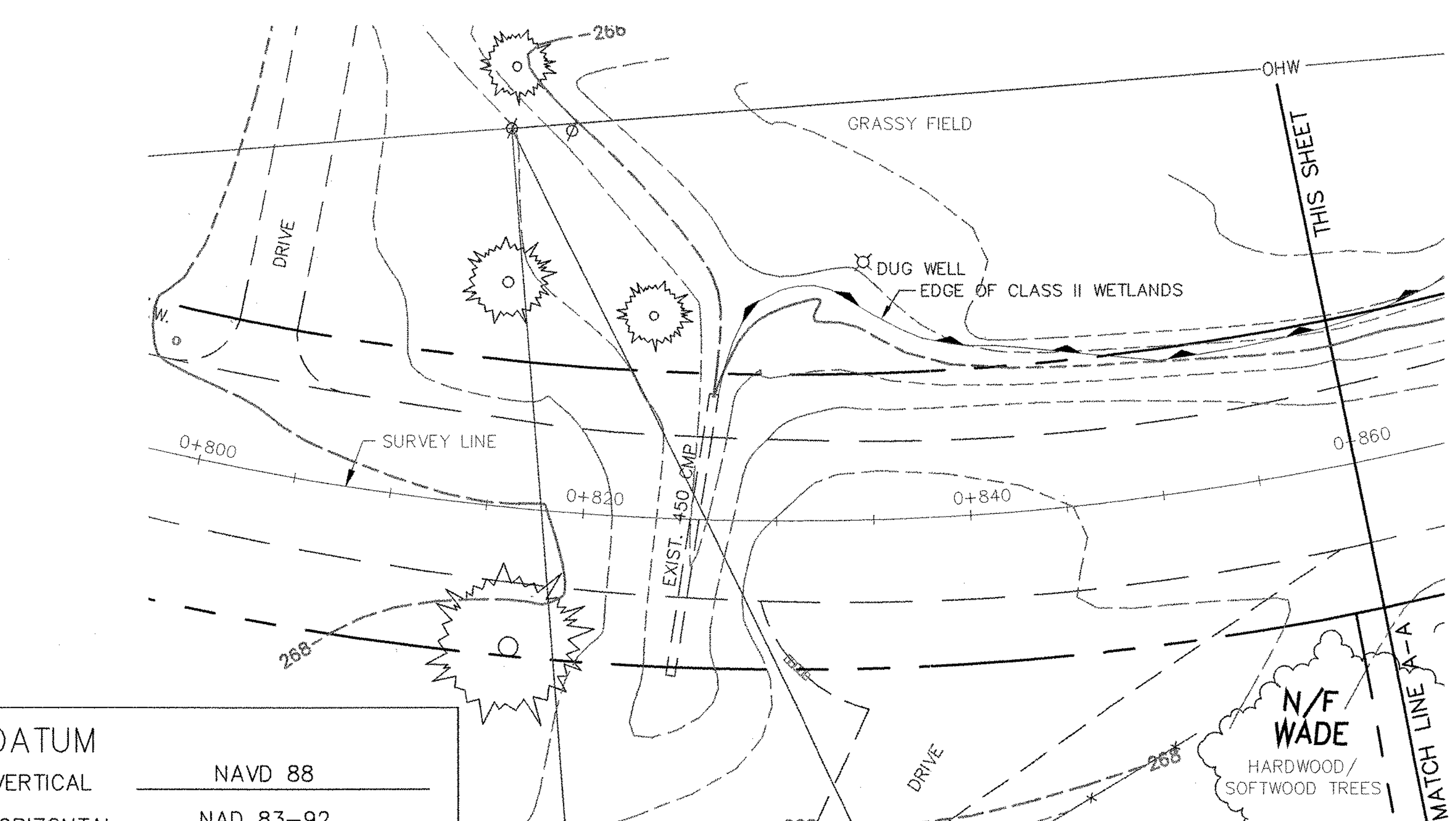
GRAPHIC SCALE (IN METERS)

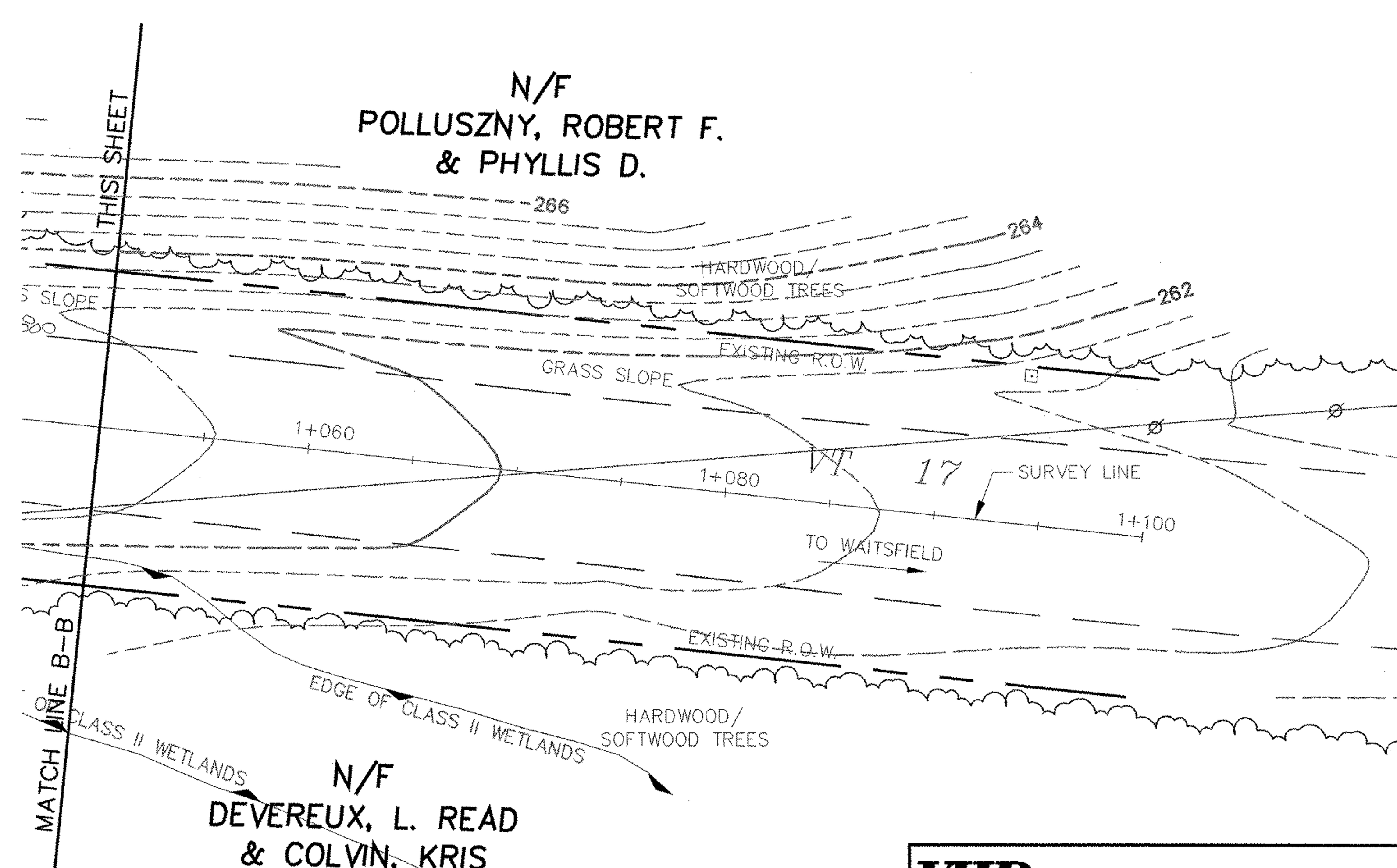
EXISTING LEGEND

- EXISTING GUARDRAIL
- TREELINE
- OHW — OVERHEAD UTILITY
- CULVERT
- UTILITY POLE
- WELL
- SIGN
- TR #1 — TRAVERSE POINT

NOTES:

1. NO "THREATENED & ENDANGERED SPECIES" OR HISTORIC RESOURSES HAVE BEEN IDENTIFIED FOR THIS PROJECT.
2. EXISTING MILL BROOK CHANNEL BANKS ARE ARMORED WITH HEAVY STONE FILL IN THE VICINITY OF THE BRIDGE.





DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83-92

VHB Vanasse Hangen Brustlin, Inc.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

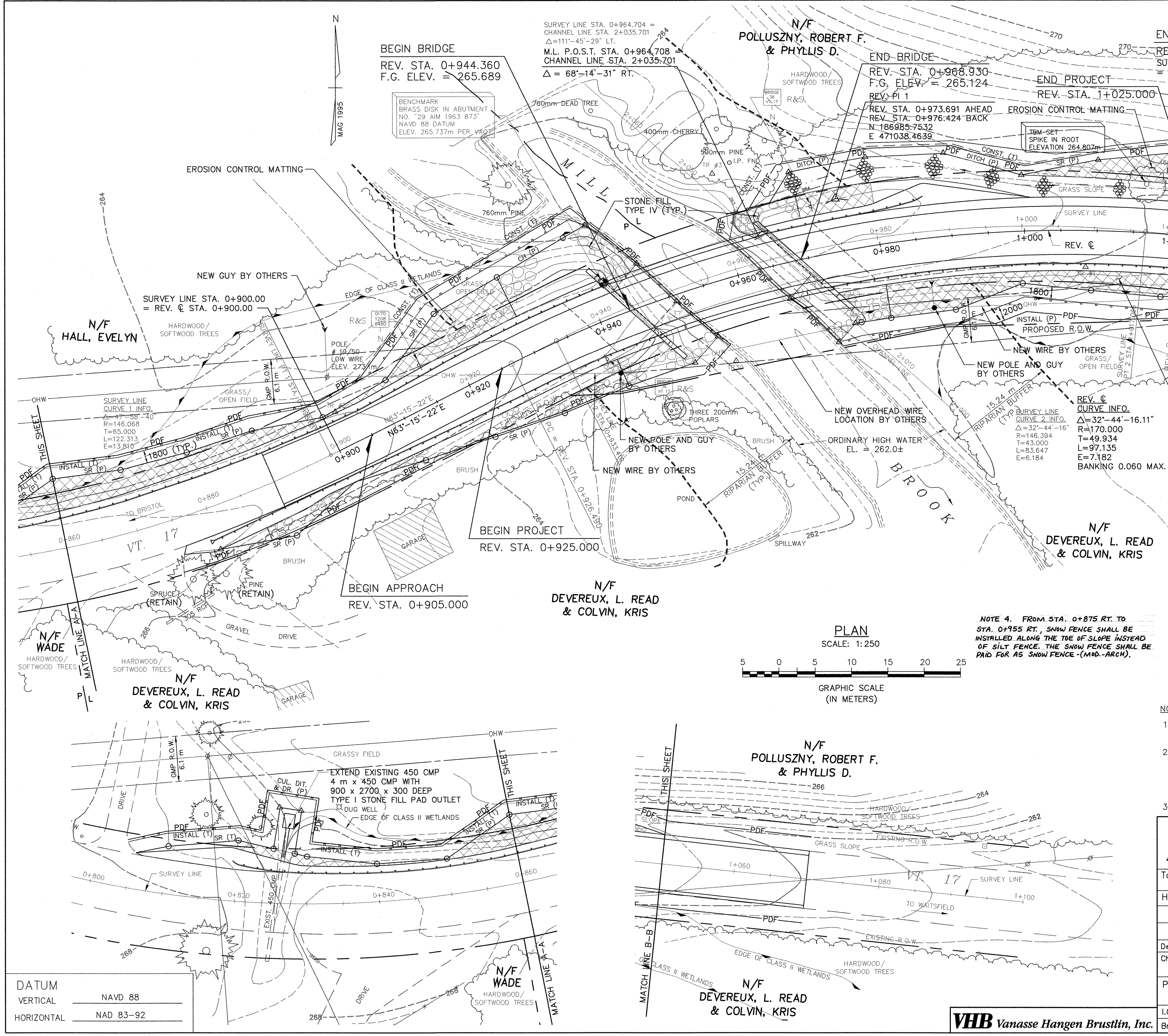
Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.

VT 17 OVER MILL BROOK

EXISTING CONDTIONS SITE PLAN

Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By M.A. COLGAN, Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543ER1	Sheet 46 of 70

/str5/93C065/zc065ER1 PLOTTED 1-13-2006


BEGIN BRIDGE
REV. STA. 0+944.360
F.G. ELEV. = 265.689
SURVEY LINE STA. 0+964.704 = CHANNEL LINE STA. 2+035.701
Δ=111°-45'-29" LT.
M.L. P.O.S.T. STA. 0+964.708 = CHANNEL LINE STA. 2+035.701
Δ = 68°-14'-31" RT.
BENCHMARK
BRASS DISK IN ABUTMENT
NO. "29 AIM 1963 873"
NAVD 88 DATUM
ELEV. 265.737m PER VAOT
N/F
POLLUSZNY, ROBERT F.
& PHYLLIS D.
END BRIDGE
REV. STA. 0+968.930
F.G. ELEV. = 265.124
REV. PI 1
REV. STA. 0+973.691 AHEAD
REV. STA. 0+976.424 BACK
N 186985.7532
E 471038.4639
END PROJECT
REV. STA. 1+025.000
END APPROACH
REV. STA. 1+045.000
SURVEY LINE STA. 1+045.379
= REV. ℄ STA. 1+045.000
EROSION CONTROL MATTING
TBM-SET
SPIKE IN ROOT
ELEVATION 264.807m
APPROX. LOCATION OF SEPTIC LINE
760mm DEAD TREE
400mm CHERRY
500mm PINE
760mm PINE
MILL
BROOK
STONE FILL TYPE IV (TYP.)
NEW GUY BY OTHERS
SURVEY LINE STA. 0+900.00
= REV. ℄ STA. 0+900.00
N/F
HALL, EVELYN
HARDWOOD/
SOFTWOOD TREES
EDGE OF CLASS II WETLANDS
POLE
19/50
LOW WIRE
ELEV. 273.1m
GRASS/
OPEN FIELD
SURVEY LINE
CURVE 1 INFO.
Δ=47°-58'-40"
R=146.068
T=65.000
L=122.313
E=13.810
N63°-15'-22"E
1800 (TYP.)
THREE 200mm POPLARS
NEW POLE AND GUY BY OTHERS
NEW WIRE BY OTHERS
NEW OVERHEAD WIRE LOCATION BY OTHERS
ORDINARY HIGH WATER
EL. = 262.0±
15.24 m RIPARIAN BUFFER (TYP.)
POND
SPILLWAY
BRUSH
GARAGE
BEGIN PROJECT
REV. STA. 0+925.000
BEGIN APPROACH
REV. STA. 0+905.000
SPRUCE (RETAIN)
PINE (RETAIN)
GRAVEL DRIVE
VT. 17
TO BRISTOL
N/F
DEVEREUX, L. READ
& COLVIN, KRIS
N/F
WADE
MATCH LINE A-A
THIS SHEET
SURVEY LINE
CURVE 2 INFO.
Δ=32°-44'-16"
R=146.394
T=43.000
L=83.647
E=6.184
REV. ℄
CURVE INFO.
Δ=32°-44'-16.11"
R=170.000
T=49.934
L=97.135
E=7.182
BANKING 0.060 MAX.
REV. ℄
S84°-00'-15"E
TO WAITSFIELD
NEW WIRE BY OTHERS
NEW POLE AND GUY BY OTHERS
INSTALL (P)
PROPOSED R.O.W.
EDGE OF CLASS II WETL.
MATCH LINE B-B
HARDWOOD TREES
EXTEND EXISTING 450 CMP
4 m x 450 CMP WITH
900 x 2700 x 300 DEEP
TYPE I STONE FILL PAD OUTLET
DUG WELL
EDGE OF CLASS II WETLANDS
GRASSY FIELD
CUL. DIT. & DR. (P)
EXIST. 450 CMP
DRIVE
EXISTING R.O.W.
GRASS SLOPE
HARDWOOD/
SOFTWOOD TREES

Metric

LEGEND

- SILT FENCE (SEE NOTE 4)
- —PDF— PROJECT DEMARCATION FENCE DEFINING LIMITS OF DISTURBANCE (SNOW FENCE (MOD. – PDF))
- EROSION CONTROL MATTING (STRAW MATTING)
- STONE CHECK DAM (TEMP.) (TO BE REMOVED ONCE PERMANENT STONE FILL HAS BEEN PLACED IN DITCHES)

LEGEND

- TREELINE
- OVERHEAD UTILITY
- CULVERT
- UTILITY POLE
- WELL
- PROPOSED GUARDRAIL
- SIGN
- TRAVERSE POINT
- TOP OF CUT TO MATCH EXISTING
- TOE OF SLOPE TO MATCH EXISTING

NOTE 4. FROM STA. 0+875 RT. TO STA. 0+955 RT., SNOW FENCE SHALL BE INSTALLED ALONG THE TOE OF SLOPE INSTEAD OF SILT FENCE. THE SNOW FENCE SHALL BE PAID FOR AS SNOW FENCE -(MOD.-ARCH).

PLAN

SCALE: 1:250

GRAPHIC SCALE (IN METERS)

NOTES:

1. NO "THREATENED & ENDANGERED SPECIES" OR HISTORIC RESOURSES HAVE BEEN IDENTIFIED FOR THIS PROJECT.
2. EXISTING MILL BROOK CHANNEL BANKS ARE ARMORED WITH HEAVY STONE FILL IN THE VICINITY OF THE BRIDGE. THIS WILL BE EXTENDED UPSTREAM AND DOWNSTREAM AND CONTINUED A SHORT DISTANCE ALONG ROADWAY EMBANKMENTS AS PART OF THE PERMANENT EROSION CONTROL MEASURES.
3. SEE SHEET 9 FOR COFFERDAM NOTES.

DATUM	
VERTICAL	NAVD 88
HORIZONTAL	NAD 83-92

STATE OF VERMONT
AGENCY OF TRANSPORTATION

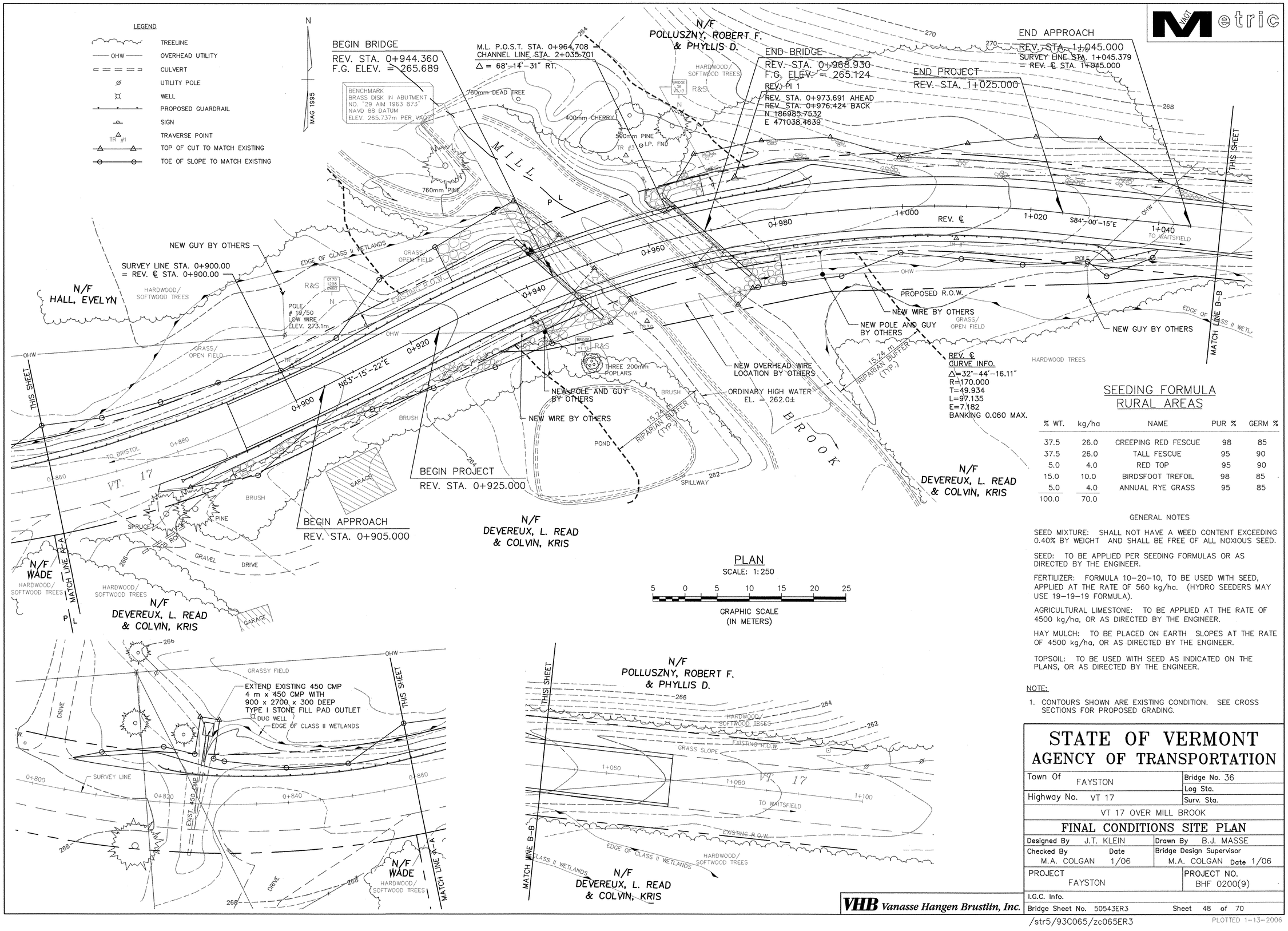
Town Of FAYSTON		Bridge No. 36	
		Log Sta.	
Highway No. VT 17		Surv. Sta.	
VT 17 OVER MILL BROOK			
EPSC PLAN			
Designed By J.T. KLEIN		Drawn By B.J. MASSE	
Checked By M.A. COLGAN	Date 1/06	Bridge Design Supervisor M.A. COLGAN	Date 1/06
PROJECT FAYSTON		PROJECT NO. BHF 0200(9)	
I.G.C. Info.			
Bridge Sheet No. 50543ER2		Sheet 47 of 70	

VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065ER2

PLOTTED 1-13-2006

VAOT Metric



SEEDING FORMULA
RURAL AREAS

% WT.	kg/ha	NAME	PUR %	GERM %
37.5	26.0	CREEPING RED FESCUE	98	85
37.5	26.0	TALL FESCUE	95	90
5.0	4.0	RED TOP	95	90
15.0	10.0	BIRDSFOOT TREFOIL	98	85
5.0	4.0	ANNUAL RYE GRASS	95	85
100.0	70.0			

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 560 kg/ha. (HYDRO SEEDERS MAY USE 19-19-19 FORMULA).

AGRICULTURAL LIMESTONE: TO BE APPLIED AT THE RATE OF 4500 kg/ha, OR AS DIRECTED BY THE ENGINEER.

HAY MULCH: TO BE PLACED ON EARTH SLOPES AT THE RATE OF 4500 kg/ha, OR AS DIRECTED BY THE ENGINEER.

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

NOTE:

1. CONTOURS SHOWN ARE EXISTING CONDITION. SEE CROSS SECTIONS FOR PROPOSED GRADING.

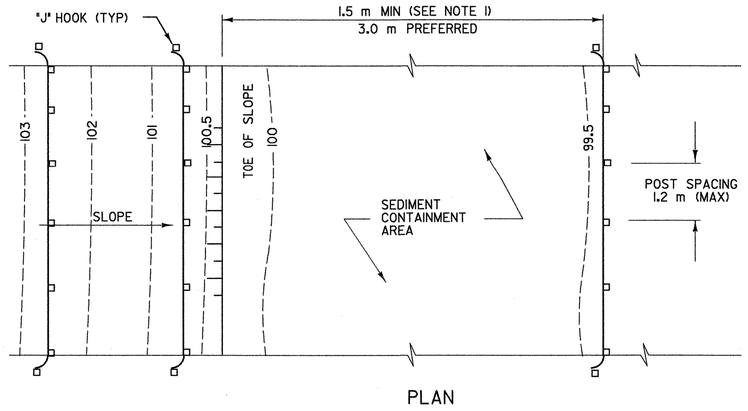
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta.
	Surv. Sta.
VT 17 OVER MILL BROOK	
FINAL CONDITIONS SITE PLAN	
Designed By J.T. KLEIN	Drawn By B.J. MASSE
Checked By M.A. COLGAN Date 1/06	Bridge Design Supervisor M.A. COLGAN Date 1/06
PROJECT FAYSTON	PROJECT NO. BHF 0200(9)
I.G.C. Info.	
Bridge Sheet No. 50543ER3	Sheet 48 of 70

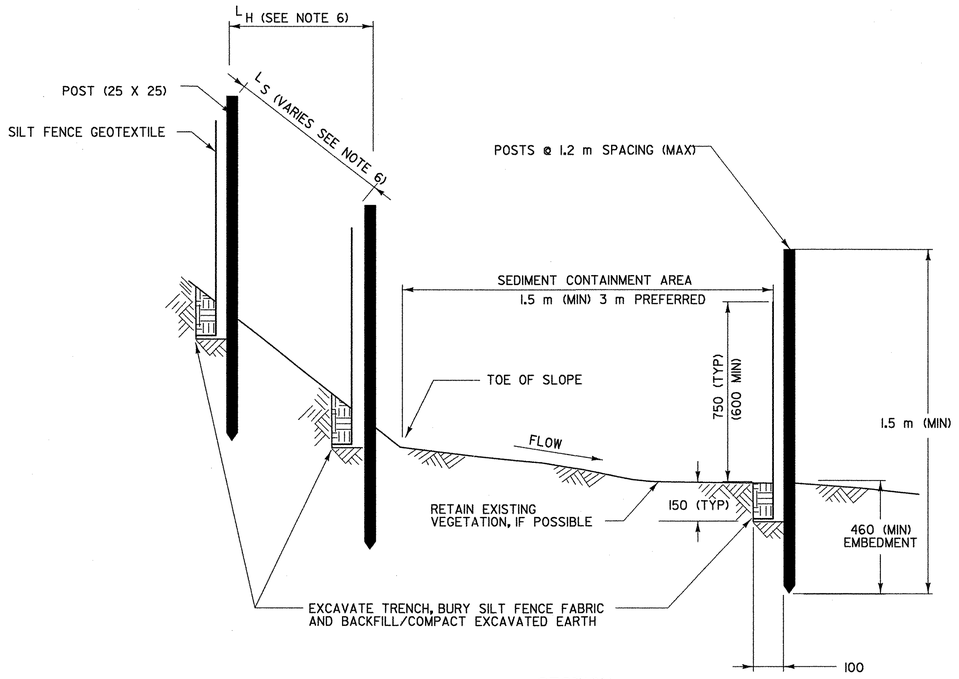
VHB Vanasse Hangen Brustlin, Inc.

/str5/93C065/zc065ER3

PLOTTED 1-13-2006



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.

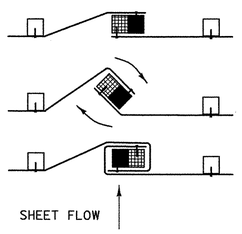
C. SILT FENCE SHALL NOT BE USED ACROSS CONCENTRATED FLOW.

GENERAL NOTES:

1. SILT FENCE SHALL GENERALLY BE PLACED A MINIMUM OF 1.5 m BEYOND TOE OF SLOPE, 3 m 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 150 mm BELOW GROUND, AND KEYED IN 100 mm. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
5. MAXIMUM DRAINAGE AREA TRIBUTARY TO 30 m OF SILT FENCE SHALL BE 0.1 Ha.
6. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS FOR THESE MEASURES:

CONSTRUCTED SLOPE	SLOPE LENGTH (LS) m	HORIZONTAL LENGTH (LH) m
3 : 1	25	24
4 : 1	40	39
5 : 1	60	60
> 5 : 1	80	80

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

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

VTrans Metric DETAIL EPSC-1M

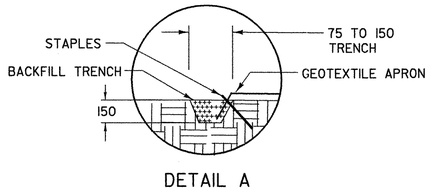
EROSION PREVENTION & SEDIMENT CONTROL DETAILS SILT FENCE

VERMONT AGENCY OF TRANSPORTATION

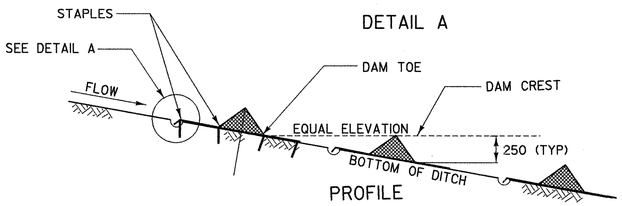
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
EPSC-1M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 12/05
PROJECT FAYSTON	PROJECT NO. BHF 0200 (9)
I.G.C. Info.	
Bridge Sheet No.	Sheet 49 of 70

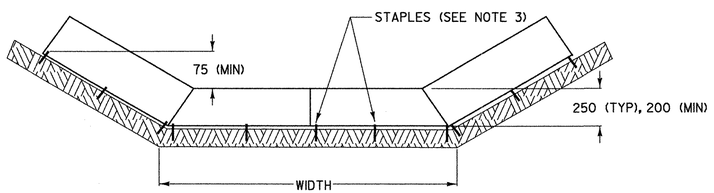
VHB NO. 50543



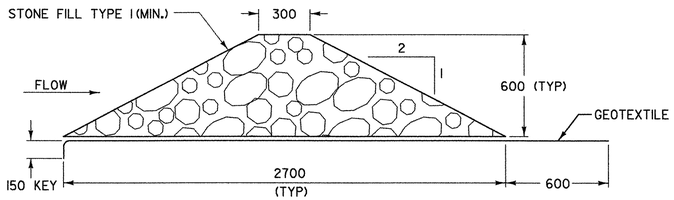
DETAIL A



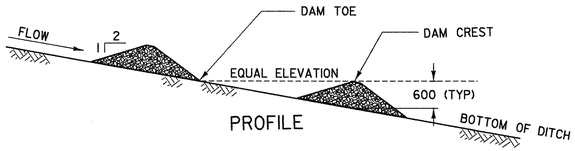
PROFILE



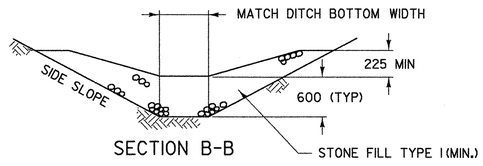
SECTION A-A



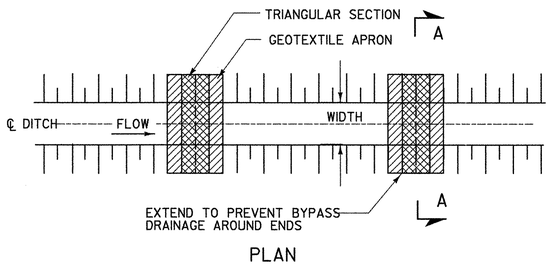
CROSS SECTION



PROFILE

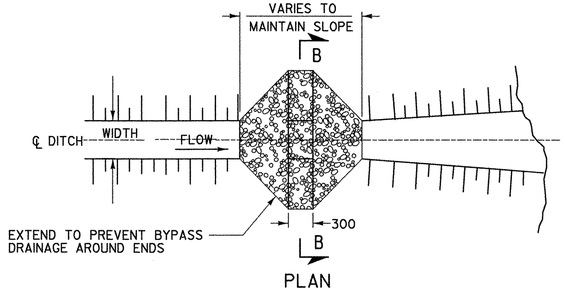


SECTION B-B



PLAN

CHECK DAM - TEMPORARY
(PREFABRICATED)



PLAN

CHECK DAM - TEMPORARY
(STONE)

PREFABRICATED CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL **
1%	15 m
2 %	12 m
3 %	8 m
4 %	6 m
5 %	5 m

** BASED ON 0.25 m TYPICAL HEIGHT

STONE CHECK DAM PLACEMENT INTERVAL	
DITCH SLOPE	PLACEMENT INTERVAL **
1%	60 m
2 %	30 m
3 %	20 m
4 %	15 m
5 %	12 m
6 %	10 m
8 %	7.5 m
10 %	6 m

** BASED ON 0.6 m 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 0.6 m 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.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 15, 2004 N. GARBACIK

VAOT Metric

DETAIL EPSC-2M

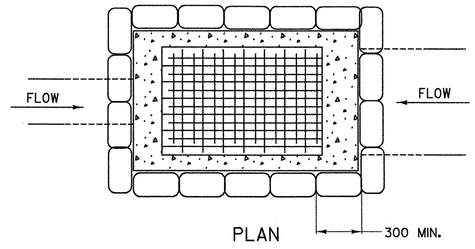
EROSION PREVENTION & SEDIMENT CONTROL DETAILS CHECK DAMS

VERMONT AGENCY OF TRANSPORTATION

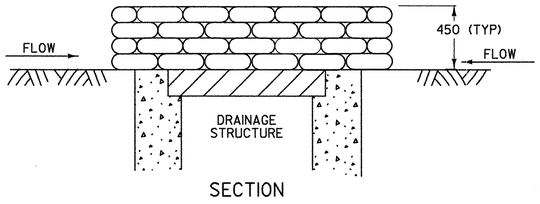
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
EPSC-2M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 12/05
PROJECT FAYSTON	PROJECT NO. BHF 0200 (9)
I.G.C. Info.	
Bridge Sheet No.	Sheet 50 of 70

VHB NO. 50543

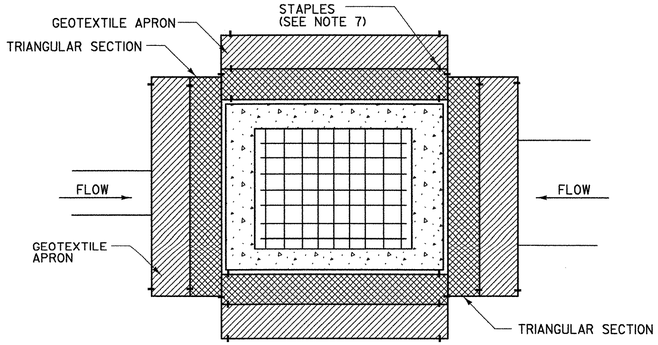


PLAN



SECTION

GRAVEL BAG DROP INLET PROTECTION



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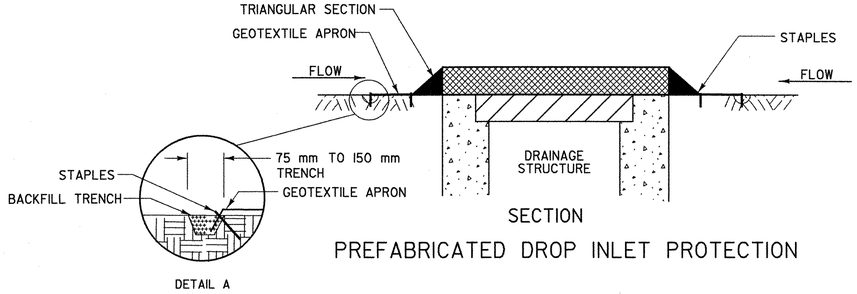
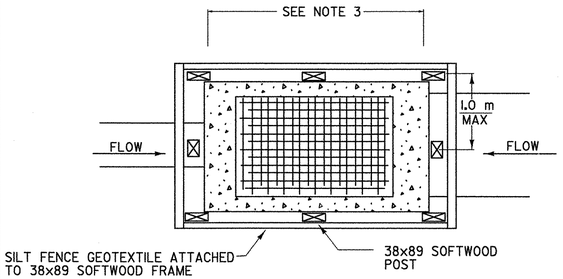


SECTION

DETAIL A

PREFABRICATED DROP INLET PROTECTION



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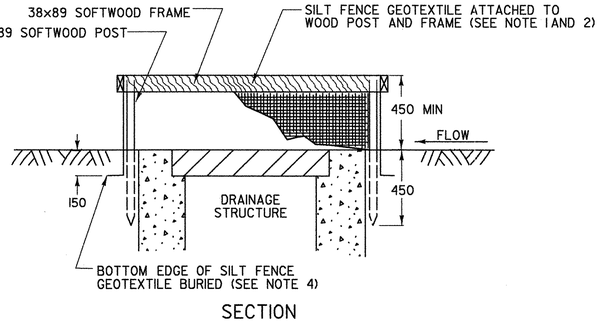
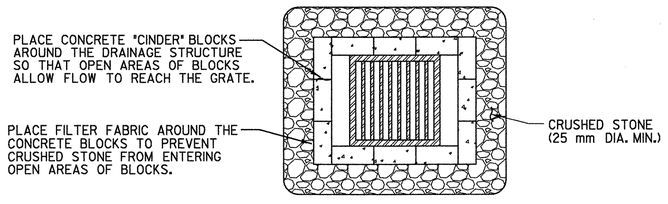


SECTION

SILT FENCE DROP INLET PROTECTION



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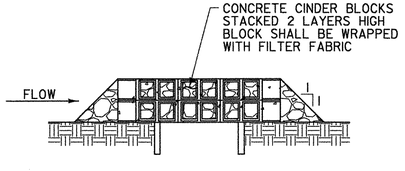
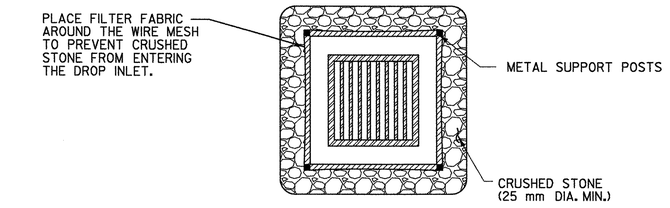
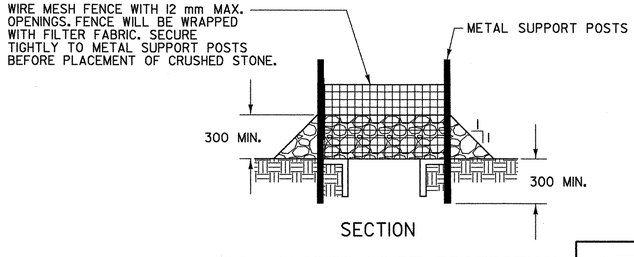


SECTION

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 1.0 m. DRIVE POSTS A MINIMUM OF 450 mm INTO GROUND. WIRE MESH MAY BE REQUIRED BEHIND GEOTEXTILE TO PROVIDE SUPPORT.

4. SILT FENCE GEOTEXTILE SHALL BE EMBEDDED A MINIMUM OF 150 mm 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.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

VAOT Metric DETAIL EPSC-3M

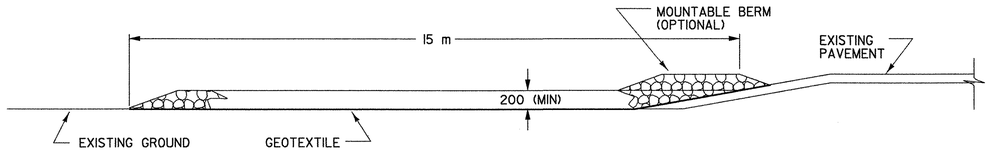
EROSION PREVENTION & SEDIMENT CONTROL DETAILS DROP INLET PROTECTION

VERMONT AGENCY OF TRANSPORTATION

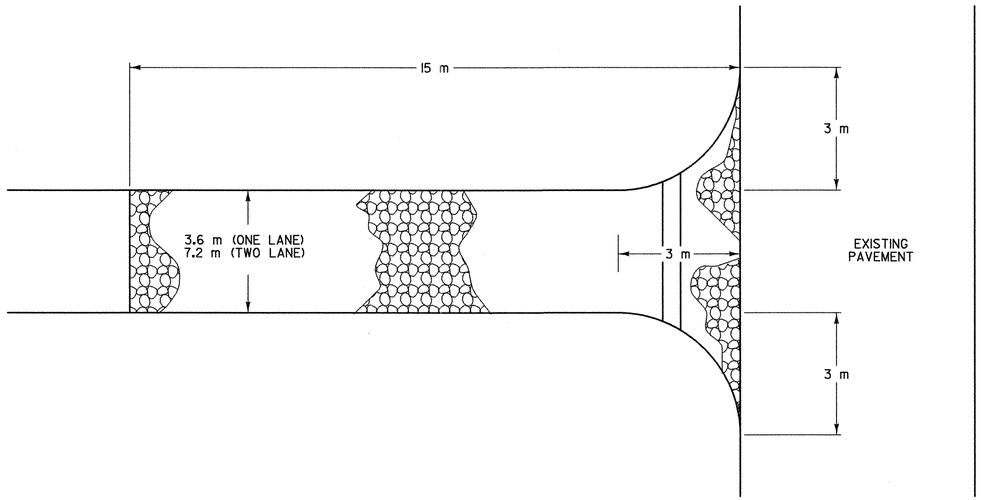
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
	Log Sta.
Highway No. VT 17	Surv. Sta.
VT 17 OVER MILL BROOK	
EPSC-3M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 12/05
PROJECT FAYSTON	PROJECT NO. BHF 0200 (9)
I.G.C. Info.	
Bridge Sheet No.	Sheet 51 of 70

VHB NO. 50543



TYPICAL CONSTRUCTION ENTRANCE PROFILE
(CUT AND DITCH SECTIONS)



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

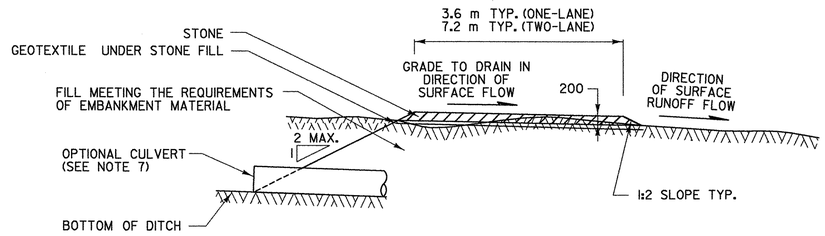
STABILIZED CONSTRUCTION ENTRANCE

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 50 mm AND 100 mm.
2. LENGTH - 15 m (MIN)
3. THICKNESS - 200 mm (MIN)
4. WIDTH - 3.6 m (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 STABILIZED CONSTRUCTION ENTRANCES 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

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

VAOT Metric DETAIL EPSC-4M

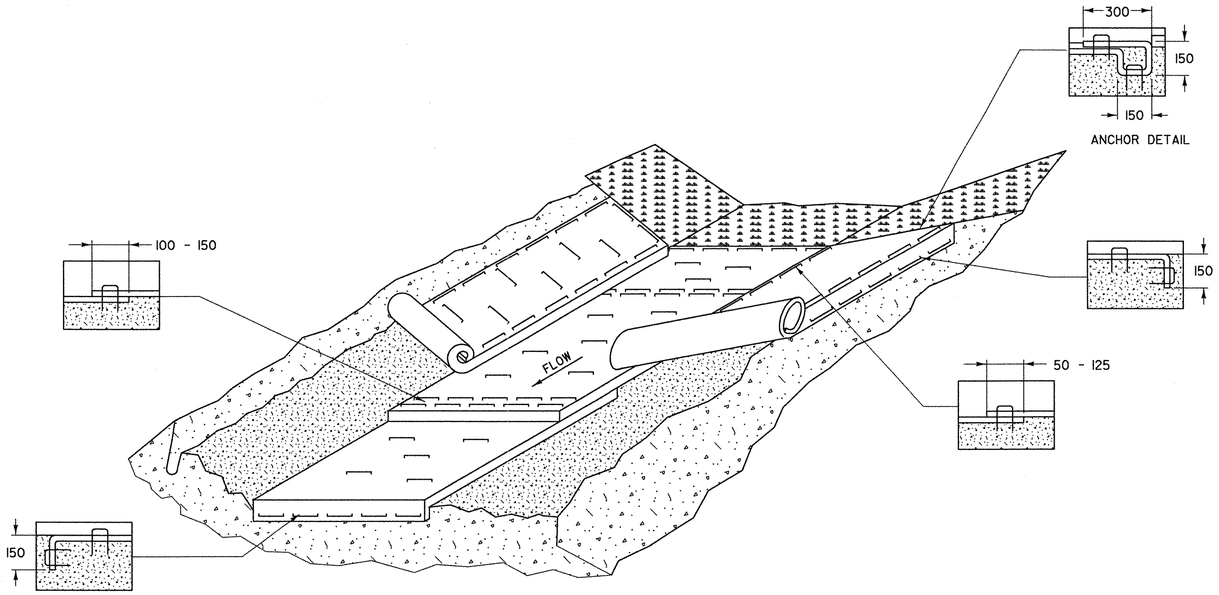
EROSION PREVENTION & SEDIMENT CONTROL DETAILS CONSTRUCTION ENTRANCE

VERMONT AGENCY OF TRANSPORTATION

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
EPSC-4M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 12/05
PROJECT FAYSTON	PROJECT NO. BHF 0200 (9)
I.G.C. Info.	
Bridge Sheet No.	Sheet 52 of 70

VHB NO. 50543



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.

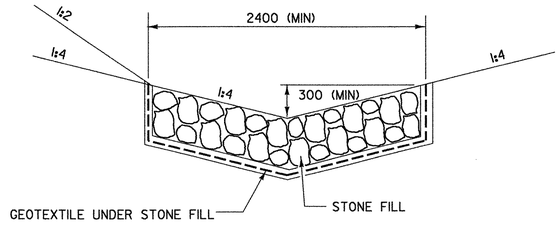
B. THE FOLLOWING CHARTS SHALL BE USED TO DETERMINE THE APPROPRIATE EROSION CONTROL MEASURE:

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

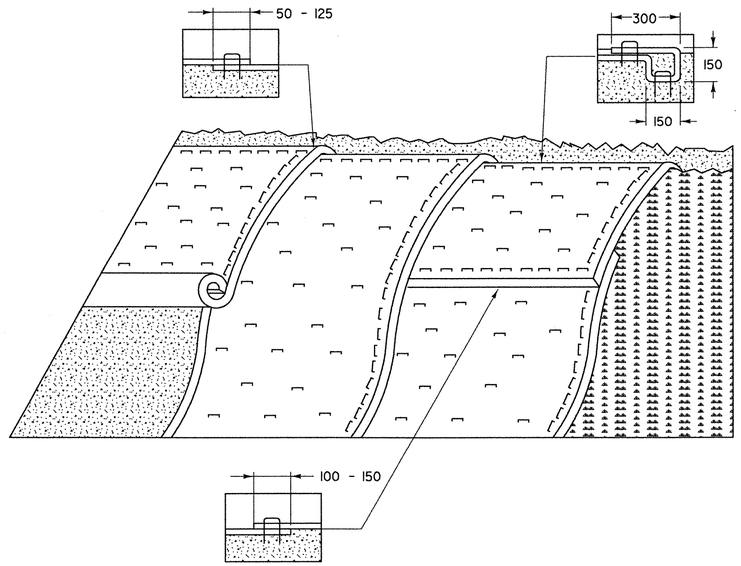
STONE FILL THICKNESS	
STONE FILL TYPE	THICKNESS
TYPE I	0.3 m
TYPE II	0.6 m

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 EROSION CONTROL MATTING 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 ESTABLISHMENT 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.
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REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

VAOT Metric DETAIL EPSC-5M

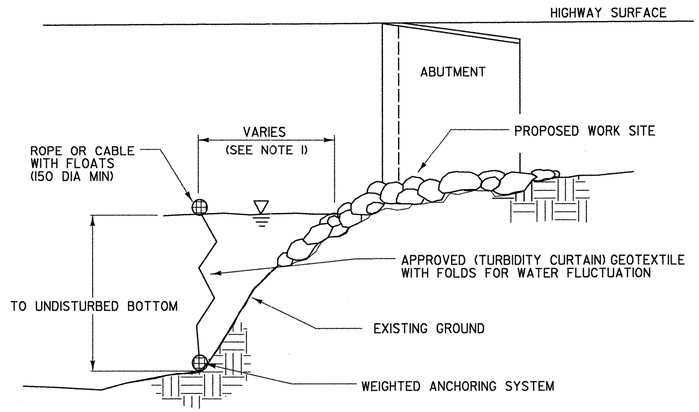
EROSION PREVENTION & SEDIMENT CONTROL DETAILS DITCH & SIDE SLOPE PROTECTION

VERMONT AGENCY OF TRANSPORTATION

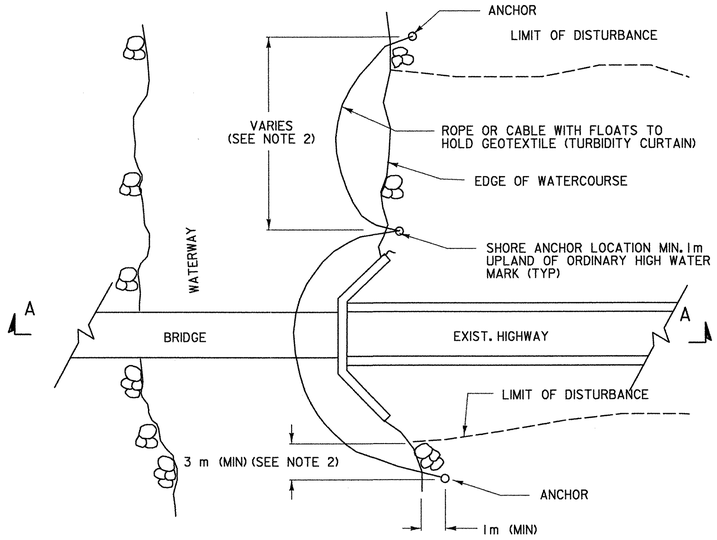
STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
EPSC-5M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 12/05
PROJECT FAYSTON	PROJECT NO. BHF 0200 (9)
I.G.C. Info.	
Bridge Sheet No.	Sheet 53 of 70

VHB NO. 50543



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 0.5m/SEC.

C. TURBIDITY CURTAIN SHALL NOT BE PLACED AT THE OUTLET OF A CULVERT OR DITCH UNLESS THE VELOCITY DOES NOT EXCEED 0.5 m/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 30 m LONG BETWEEN ANCHORS. LAST SECTION SHALL TERMINATE A MINIMUM OF 3 m 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.

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT WHERE NOTED.

REVISIONS AND CORRECTIONS

MAY 18, 2004 N. GARBACIK

VAOT Metric DETAIL

EPSC-6M

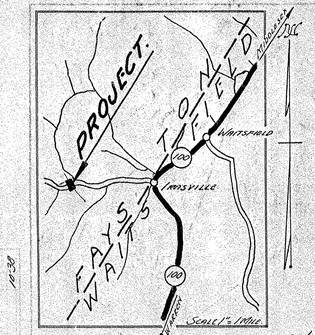
EROSION PREVENTION & SEDIMENT CONTROL DETAILS TURBIDITY CURTAIN

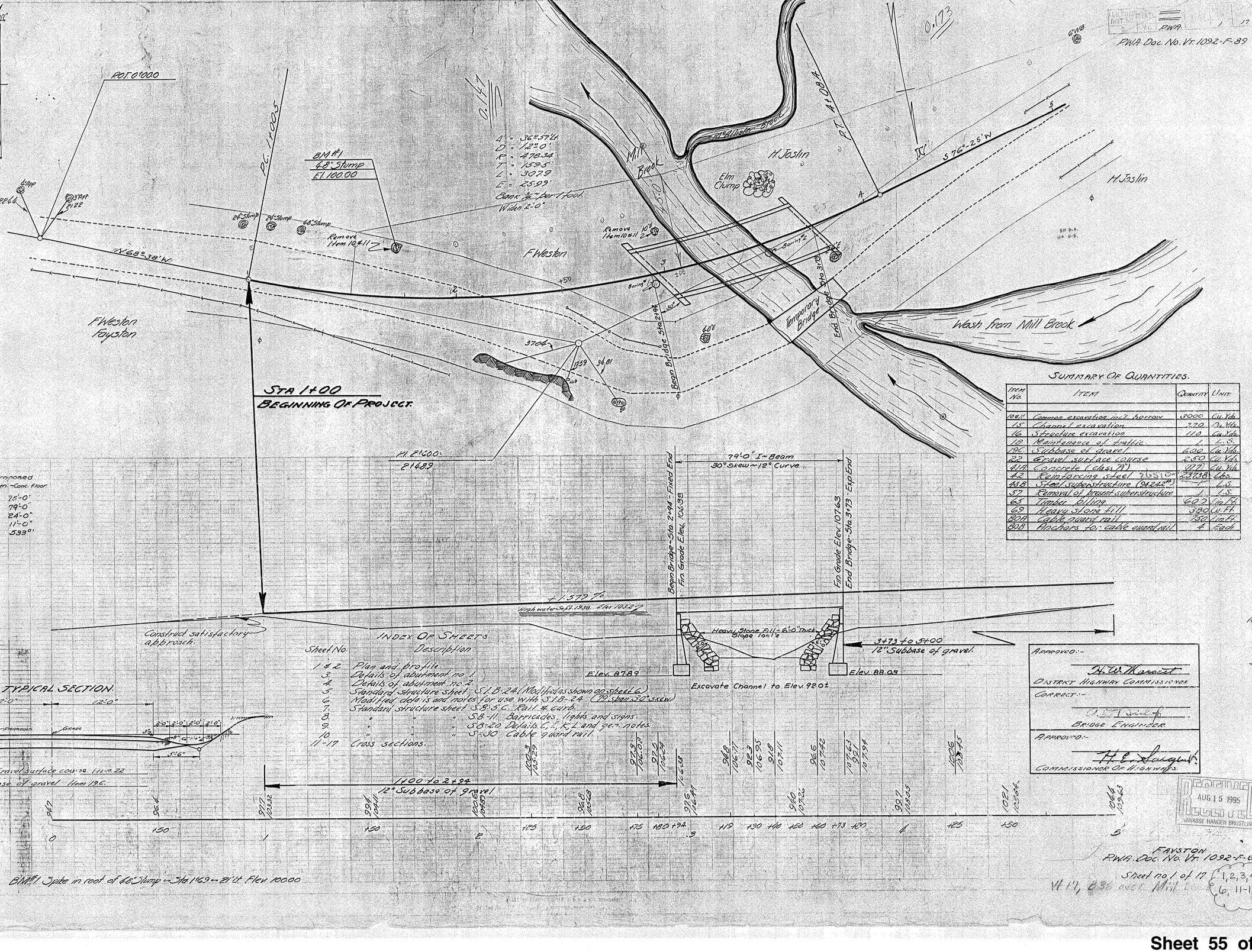
VERMONT AGENCY OF TRANSPORTATION

STATE OF VERMONT
AGENCY OF TRANSPORTATION

Town Of FAYSTON	Bridge No. 36
Highway No. VT 17	Log Sta. / Surv. Sta.
VT 17 OVER MILL BROOK	
EPSC-6M	
Designed By VTRANS	Drawn By B. J. MASSE
Checked By VTRANS Date	Bridge Design Supervisor M. A. COLGAN Date 12/05
PROJECT FAYSTON	PROJECT NO. BHF 0200 (9)
I.G.C. Info.	
Bridge Sheet No.	Sheet 54 of 70

VHB NO. 50543





GUARD RAIL.

STA	STA	PDS.	LENGTH LIN FT.	ANCHORS EACH
1+41	2+85	Lt.	144	1
1+99	3+03	Rt.	104	1
3+64	5+48	Lt.	184	1
3+82	5+42	Rt.	160	1
Roadway total			592	4
Bridge		Lt.	79	0
Bridge		Rt.	79	0
Grand total			750	4

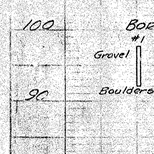
BRIDGE DATA

Type	Present	Proposed I-Bm.-Conc. Floor
Clear Span		75'-0"
Length		79'-0"
Roadway		24'-0"
Height		11'-0"
Waterway		533 sq. ft.

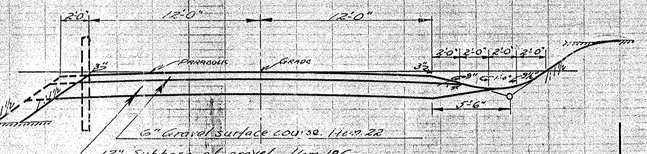
SUMMARY OF QUANTITIES.

Item No.	Item	Quantity	Unit
109 M	Common excavation incl. borrow	3000	Cu. Yds.
15	Channel excavation	770	Cu. Yds.
16	Structure excavation	110	Cu. Yds.
18	Maintenance of traffic	1	L.S.
19C	Subbase of gravel	600	Cu. Yds.
22	Gravel surface course	280	Cu. Yds.
41A	Concrete Class "A"	177	Cu. Yds.
42	Reinforcing steel 20510	23738	Lbs.
48B	Steel superstructure (94242 #)	1	L.S.
52	Removal of bridge superstructure	1	L.S.
65	Timber piling	602	Lin. Ft.
69	Heavy Stone Fill	390	Cu. Yd.
80A	Cable guard rail	130	Lin. Ft.
80B	Anchors for cable guard rail	4	Each

BORING DATA



TYPICAL SECTION



INDEX OF SHEETS

Sheet No.	Description
1 & 2.	Plan and profile.
3.	Details of abutment no. 1
4.	Details of abutment no. 2
5.	Standard structure sheet S.I.B.-24 (Modified as shown on sheet 6.)
6.	Modified details and notes for use with S.I.B.-24 (Two span 30° skew)
7.	Standard structure sheet S.B.S.C. Rail & curb.
8.	" " " S.B.-1, Barricades, lights and signs.
9.	" " " S.B.-20 Details G, J, K, L and gen. notes.
10.	" " " S.-30 Cable guard rail.
11-17.	Cross sections.

BM #1 Spike in root of 60" Stump - Sta 1+69 - 81' Lt. Elev. 100.00

Approved:-
H. W. Massett
District Highway Commissioner
Correct:-
Bridge Engineer
Approved:-
Commissioner of Highways.

RECEIVED AUG 15 1995 VANASSE HANGEN BRUSTLIN

FAYSTON
P.W.S. Doc. No. Vt. 1092-F-89
Sheet no 1 of 17 { 1, 2, 3, 4, 6, 11-17

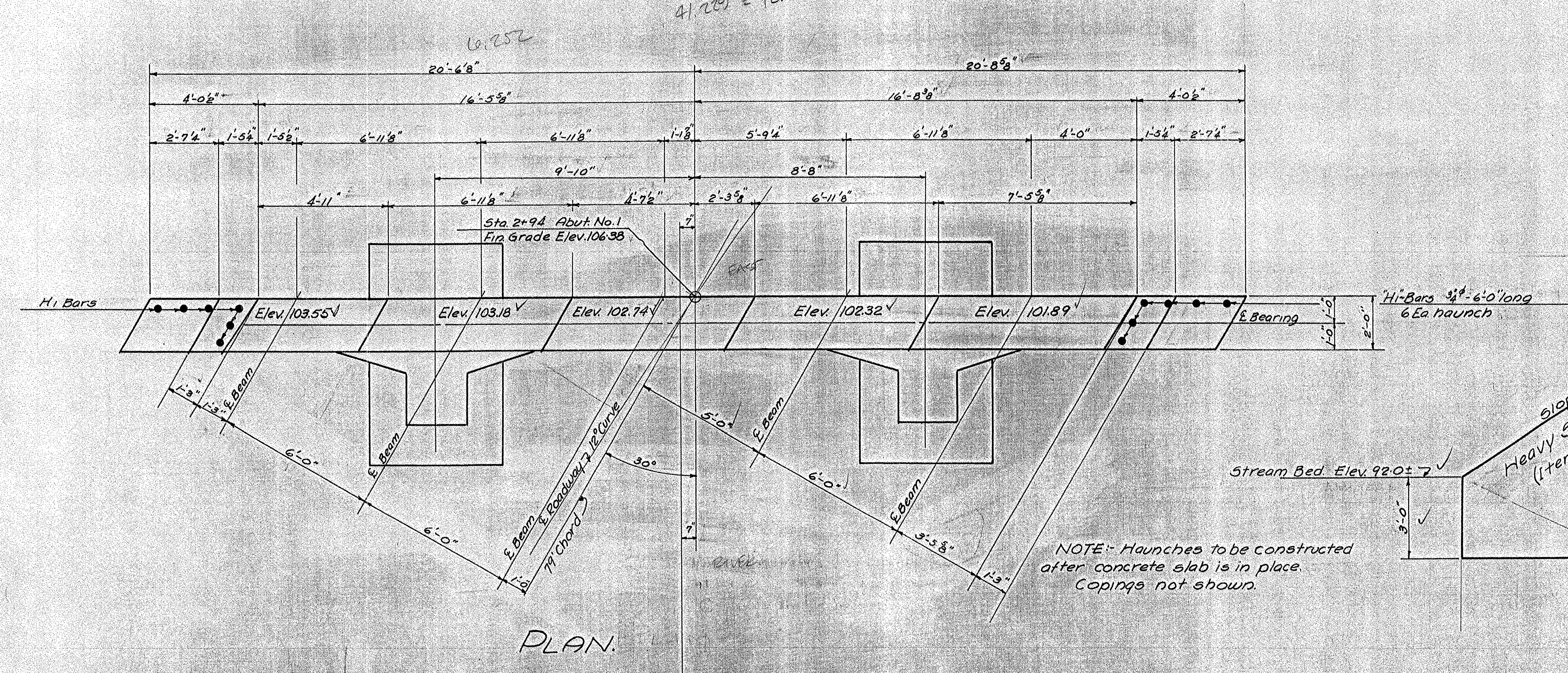
P.W.S. Doc. No. Vt. 1092-F-89

(Be 36 ORIGINALS)

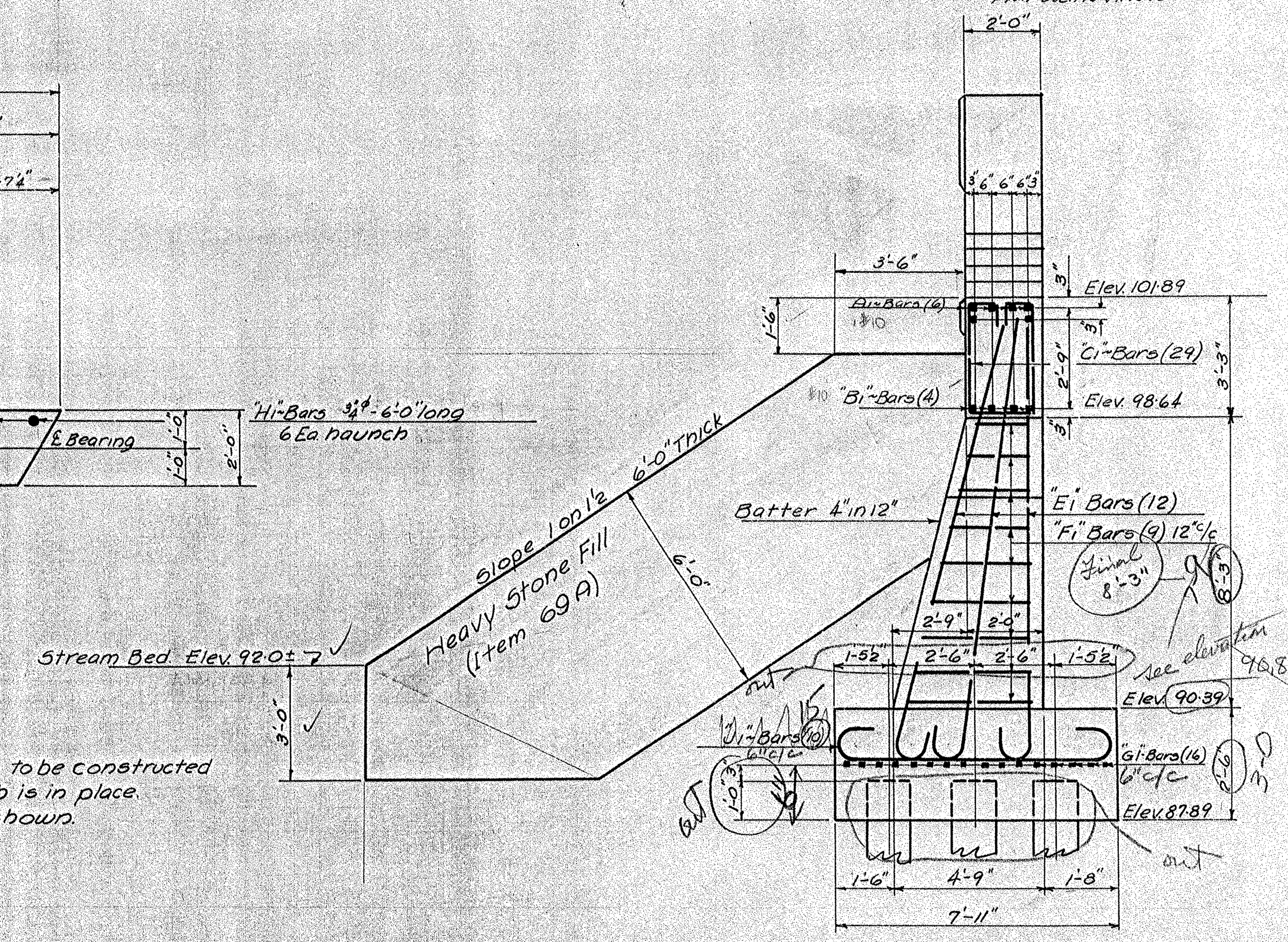

P.W.A. 1939 2 17
P.W.A. Doc. No. Vt. 1092-F-89
P.I. 7+40.3 = 7+14.3
P.O.S.T. 6+46.9 = Random Surv. P.I. 6+72.5
Conc. Hdw. on Lt. inlet 24' Long 12" C.M.P. (Fair)
BM #2 24" Maple El. 114.70
P.O.S.T. 8+25.4
Sugar House
H. Joslin
Remove
N 76°25' W
Δ 48°33' Rt.
D 12°
R 478.34
T 215.3
L 404.6
E 46.3
Bank 3/4" per Lt.
Widen 2'-0"
H. Joslin
H. Joslin Waitsfield
Wash from Mill Brook
P.C. 5+25.0
Sta. 6+50 End of Project
Drive to field
to So. Fayston
P.T. 9+29.6
Construct Satisfactory Approach
+1.579%
+1.300%
6+50
200' V.C.
112.00
120
110
100
5+00 to 6+50
12" Subbase of gravel
5
6
7
8
9
+50
FAYSTON
P.W.A. Doc. No. Vt. 1092-F-89
BM #2 Spike in root of 24" Maple – Sta. 8+43 – 19 Lt. Elev. 114.70
Sheet no 2 of 17

FED. ROAD DIST. NO.	STATE		FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT.	PWA	1939	3	17

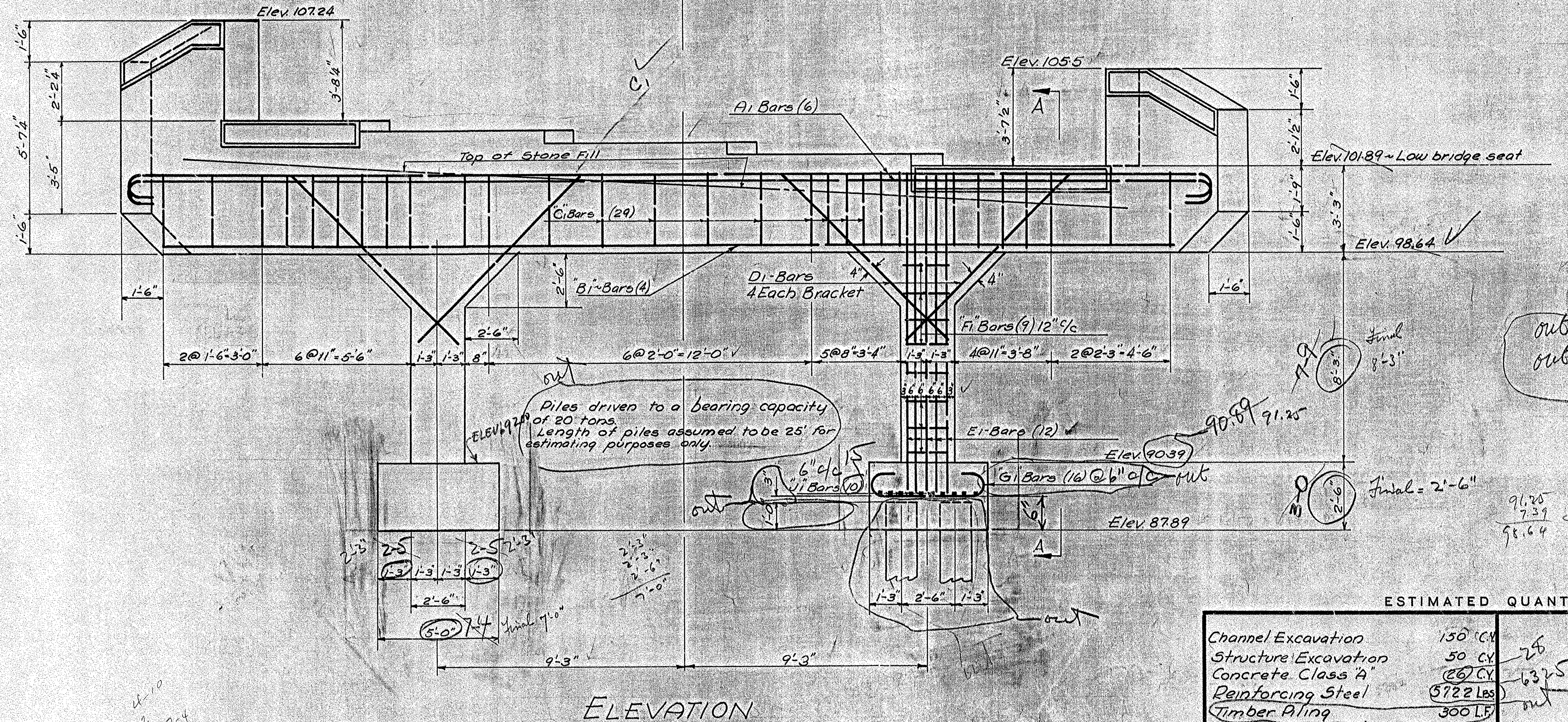
PWA Doc. No. Vt. 1092-F-89



PLAN.



SECTION A-A



ELEVATION

Reinforcing Steel				
Bar	Size	No. Req'd.	Total Length	Detail
A1	1 1/4"φ	6	43'-4"	R=5", 5", 39'-10", 5"
B1	1 1/4"φ	4	37'-9"	Straight
C1	5/8"φ	29	9'-10"	8", 8", 6", 1'-8", 2'-11"
D1	1"φ	16	11'-0"	Straight
E1	1"φ	24	13'-9"	R-5", 5", 12'-0"
F1	3/4"φ	18	14'-6"	Straight - Bend in field to fit.
H1	3/4"φ	12	6'-0"	" " " " " "
G1	1"φ	32	7'-4" 9-8	R=5", 5", G=3'-10" 6-2, J=6'-9", 5", R=5"
J1	1"φ	20 30	10'-3"	

DETAILS ~ ABUTMENT NO. 1

FAYSTON

P.W.A. - DOC. NO. VT. 1092-F-89

Scale 3/8" = 1'-0"

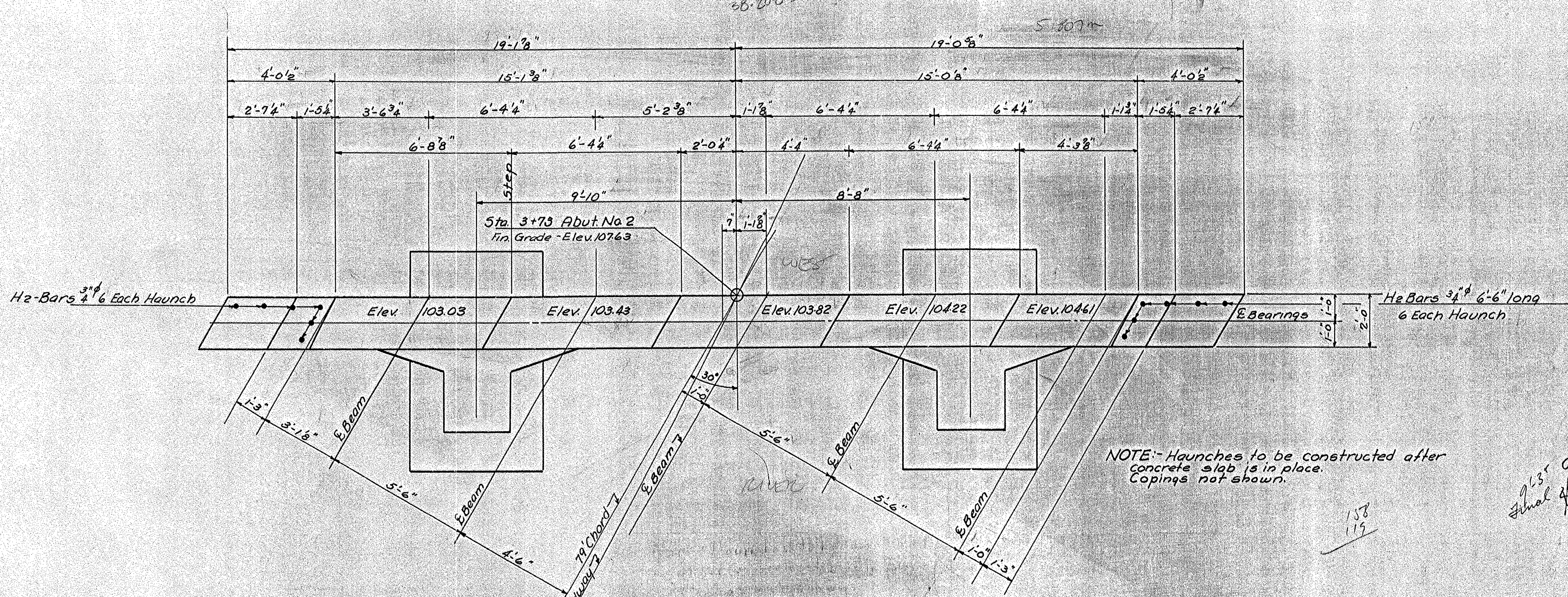
ESTIMATED QUANTITIES

Channel Excavation	150 C.Y.
Structure Excavation	50 C.Y.
Concrete Class "A"	26 C.Y.
Reinforcing Steel	5722 Lbs.
Timber Piling	300 L.F.
Heavy Stone Fill	180 C.Y.

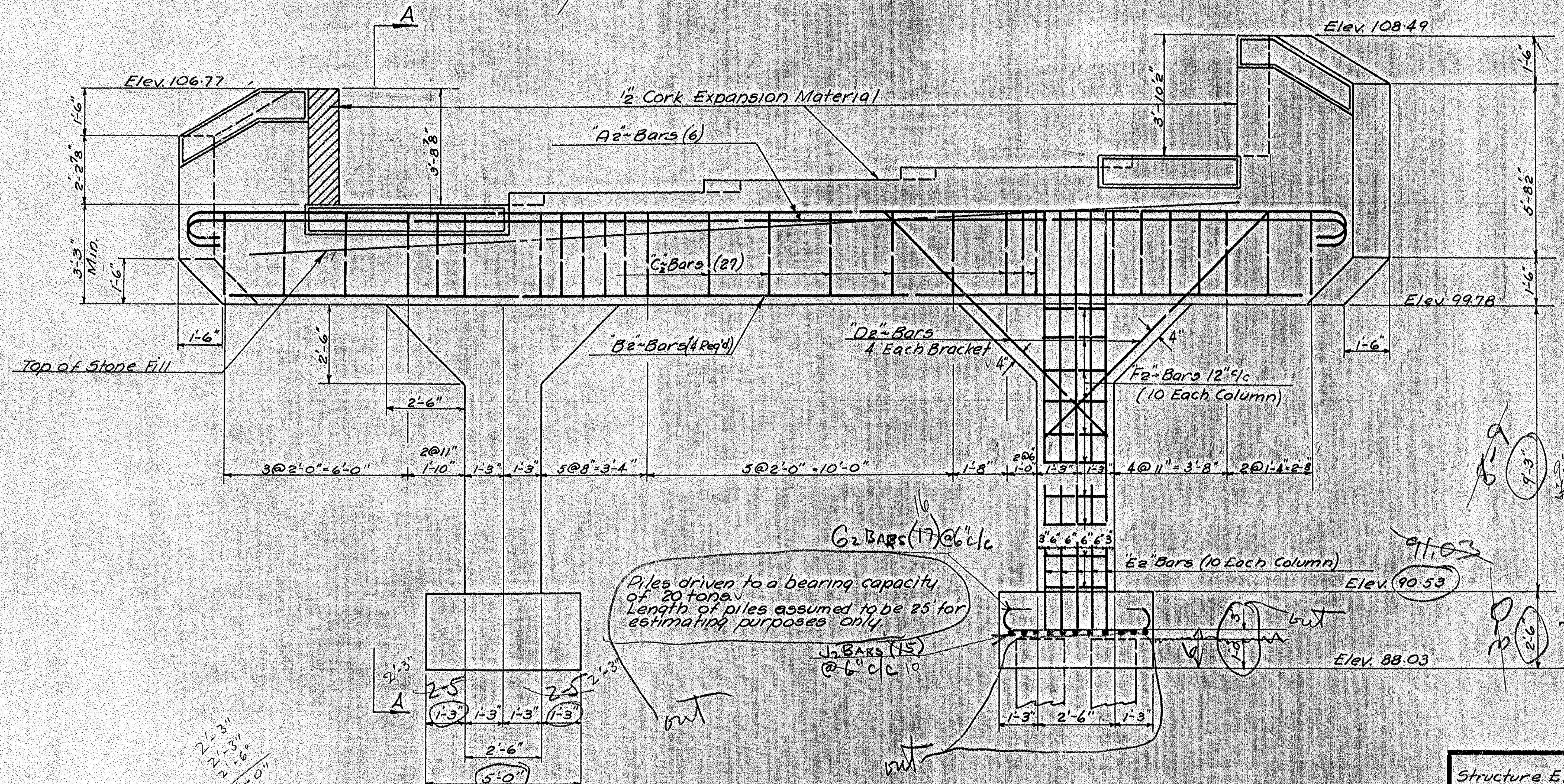
Surveyed by
Designed by H.G.H.
Drawn by H.G.H.
Traced by H.W.S.
Checked by D.R.B.
Series P.W.A. Doc. No. Vt. 1092-F-89 Filed
Sheet 3 of 17 Sheets

Fed. Road Dist. No.	State		Fiscal Year	Sheet No.	Total Sheets
9	Vt.	PWA	1939	4	17

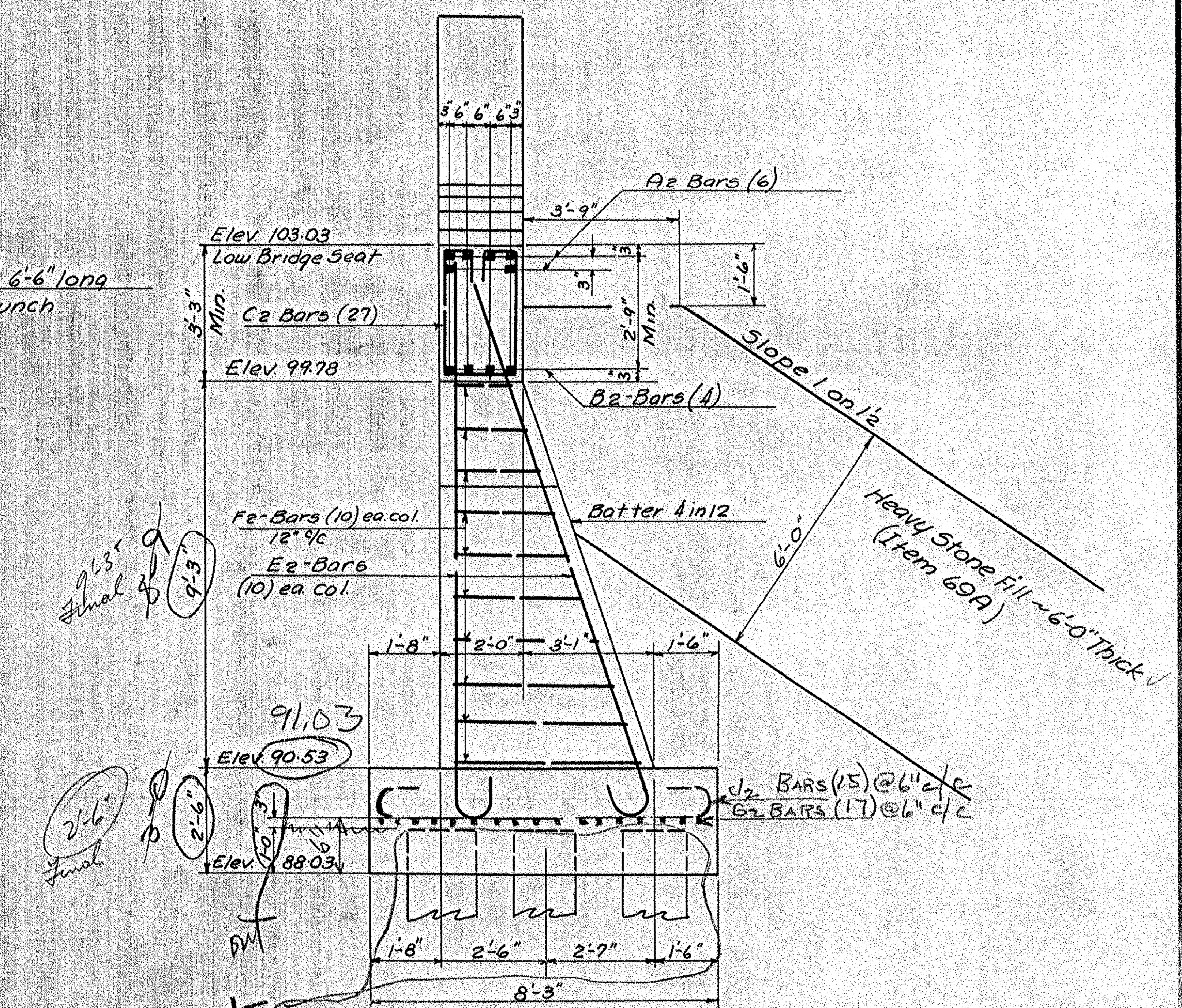
P.W.A. Doc. No. Vt. 1092-F-89



PLAN



ELEVATION



SECTION A~A

REINFORCING STEEL				
Bars	Size	No. Req'd.	Tot. Lnth.	Detail
A2	1 1/4"φ	6	40'-6"	R=5" 37'-0" R=5"
B2	1 1/4"φ	4	35'-0"	Straight
C2	5/8"φ	27	9'-10"	8" 2'-11" 8" 6" 1'-8"
D2	1"φ	16	11'-0"	Straight
E2	1 1/8"φ	20	14'-9"	R=5" 13'-0" 5"
F2	1/4"φ	20	15'-0"	Straight - Bend in field
H2	3/4"φ	12	6'-6"	Straight - Bend in field
G2	1φ	~~34~~ 32	~~9-6~~ 7'-4"	R=5" 5" 5" G = 6-0
J2	1φ	~~30~~ 20	~~10-6~~ 10'-3"	J = 7-0

DETAILS ~ ABUTMENT No. 2
FAYSTON
P.W.A. - Doc. No. Vt. 1092-89

ESTIMATED QUANTITIES

Structure Excav.	60 C.Y.
Channel Excav.	120 C.Y.
Concrete Class A	28 C.Y. — 31
Reinforcing Steel	4206 LB. — 6375
Timber Piling	300 L.F. — out
Heavy Stone Fill (Item 69A)	200 C.Y.

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Traced by H.W.S.
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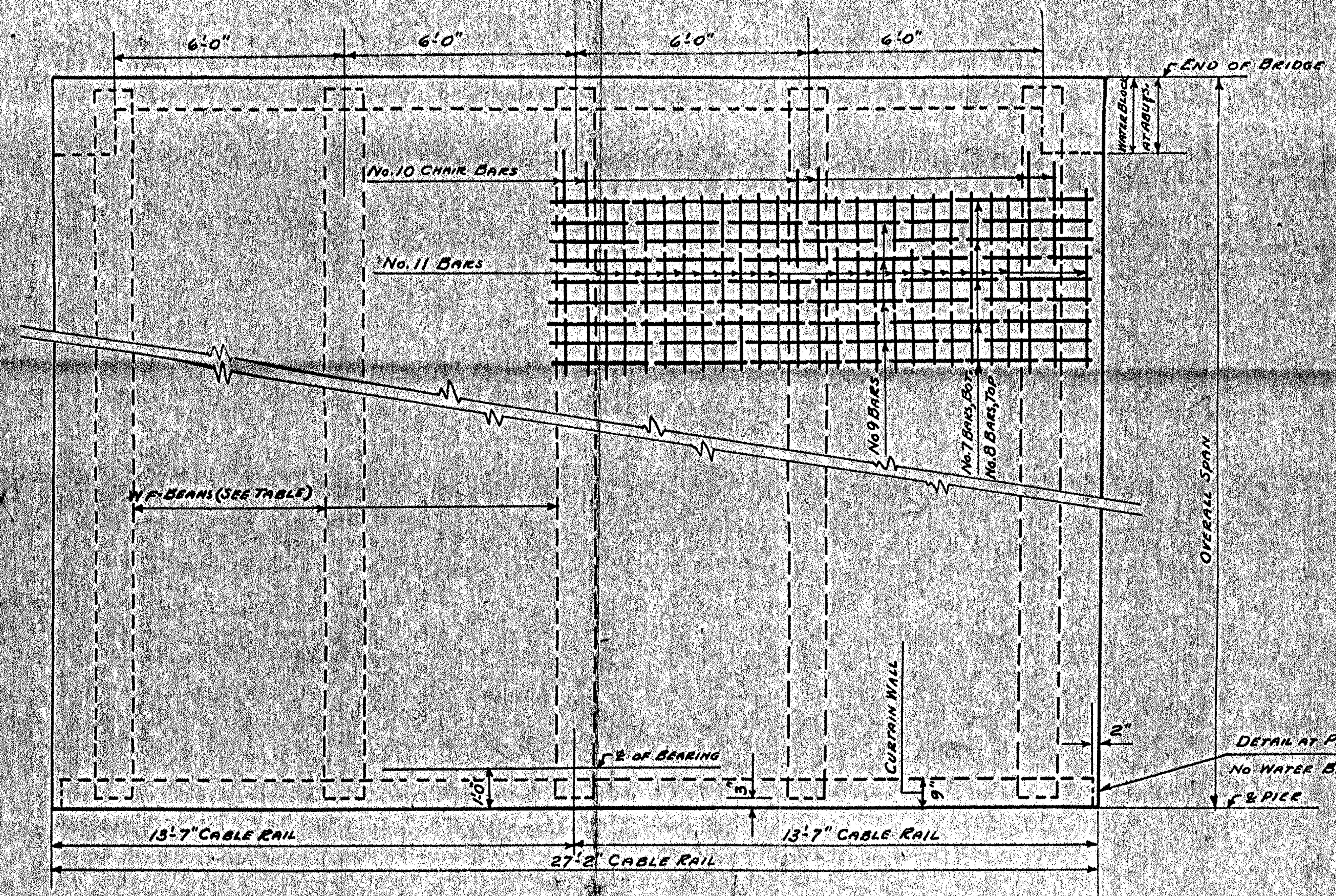
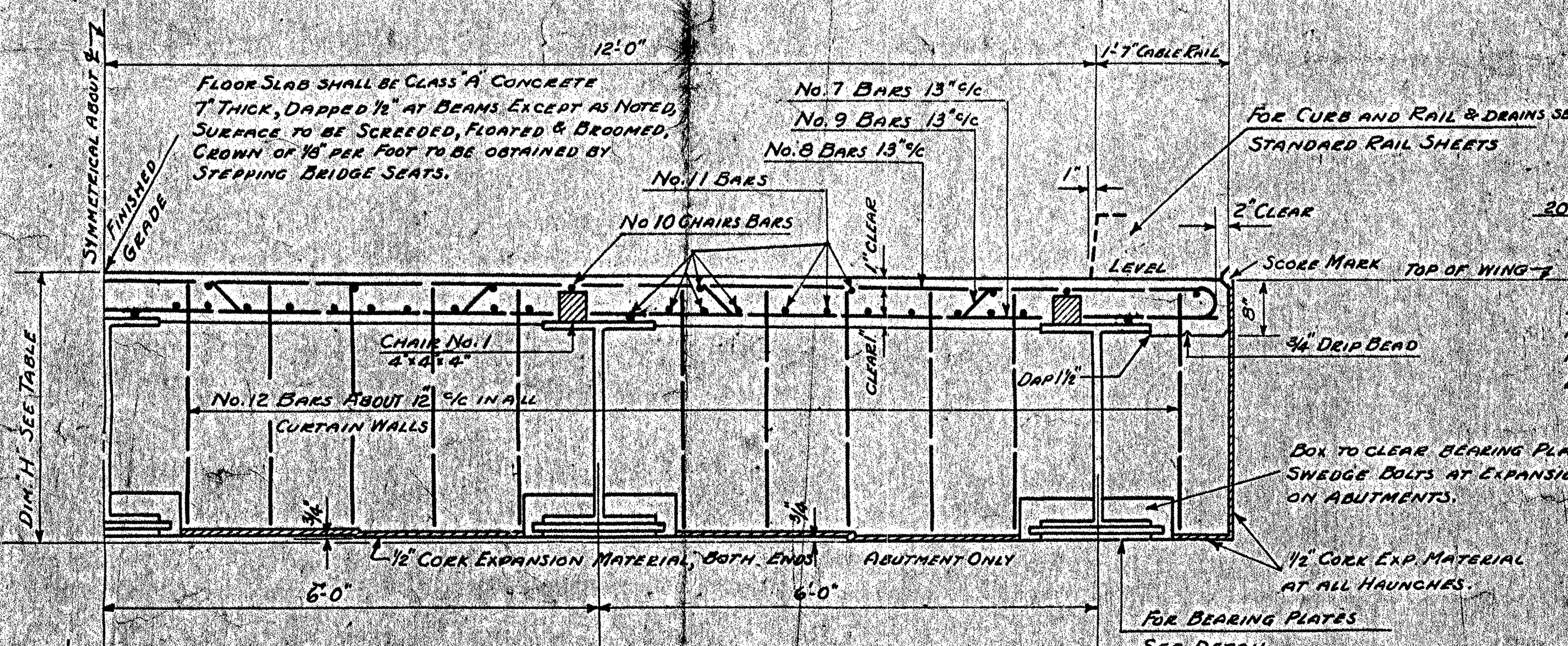
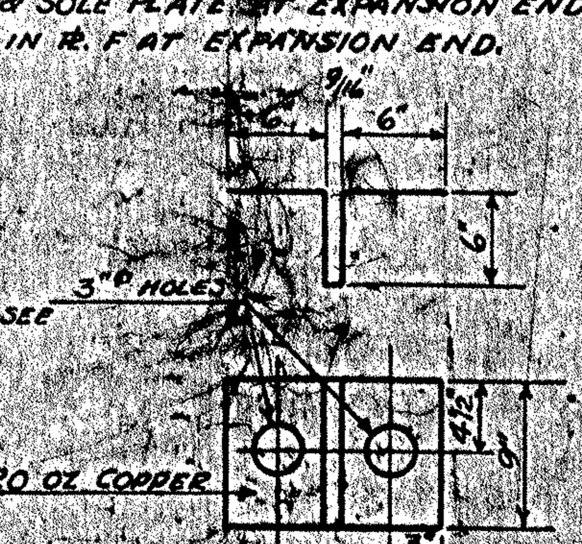
Series P.W.A. Doc. No. Vt. 1092-89 Filed
Sheet 4 of 17 Sheets



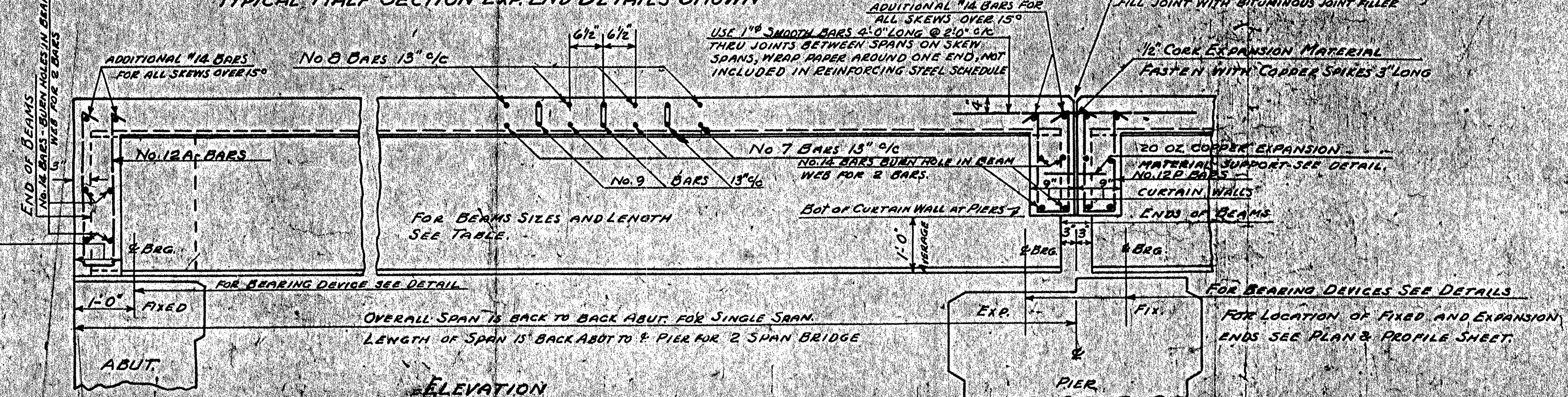
PLAN
SCALE: 1/8"=1'-0"



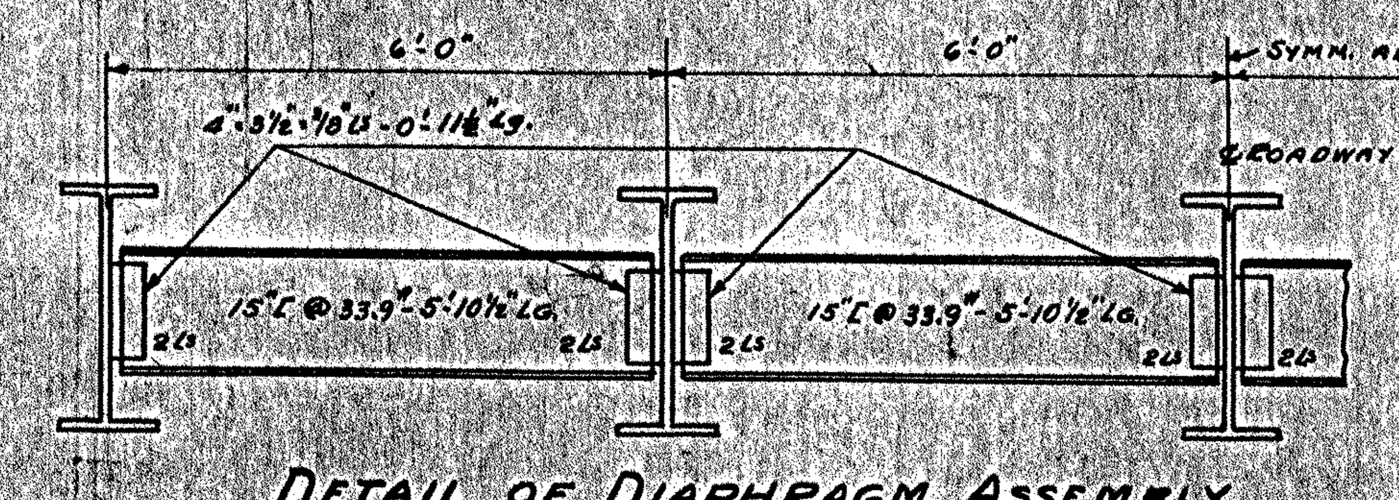
TYPICAL HALF SECTION EXP. END DETAILS SHOWN



DETAIL OF COPPER SUPPORT FOR CORK EXPANSION MATERIAL AT PIERS. SPACED ABOUT 2'-0" c/c PAYMENT TO BE INCLUDED IN UNIT PRICE BID FOR CONCRETE CLASS A.



ELEVATION

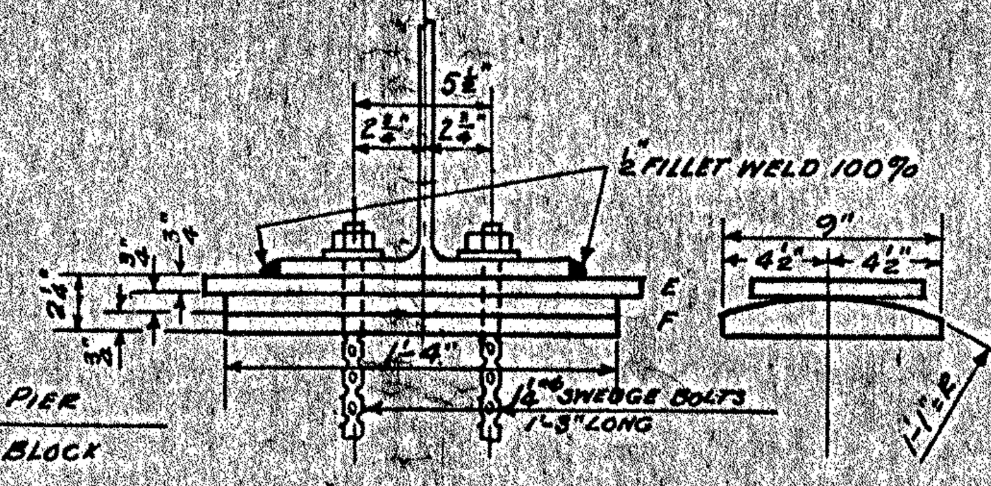


DETAIL OF DIAPHRAGM ASSEMBLY

SHOP CONNECTIONS MAY BE RIVETED OR 100% ELECTRIC WELDED
FIELD CONNECTIONS TO BE 100% ELECTRIC WELDED.
4-1/2" BOLTS MAY BE USED AT ENDS AND THRU BEAMS FOR ERECTION PURPOSES

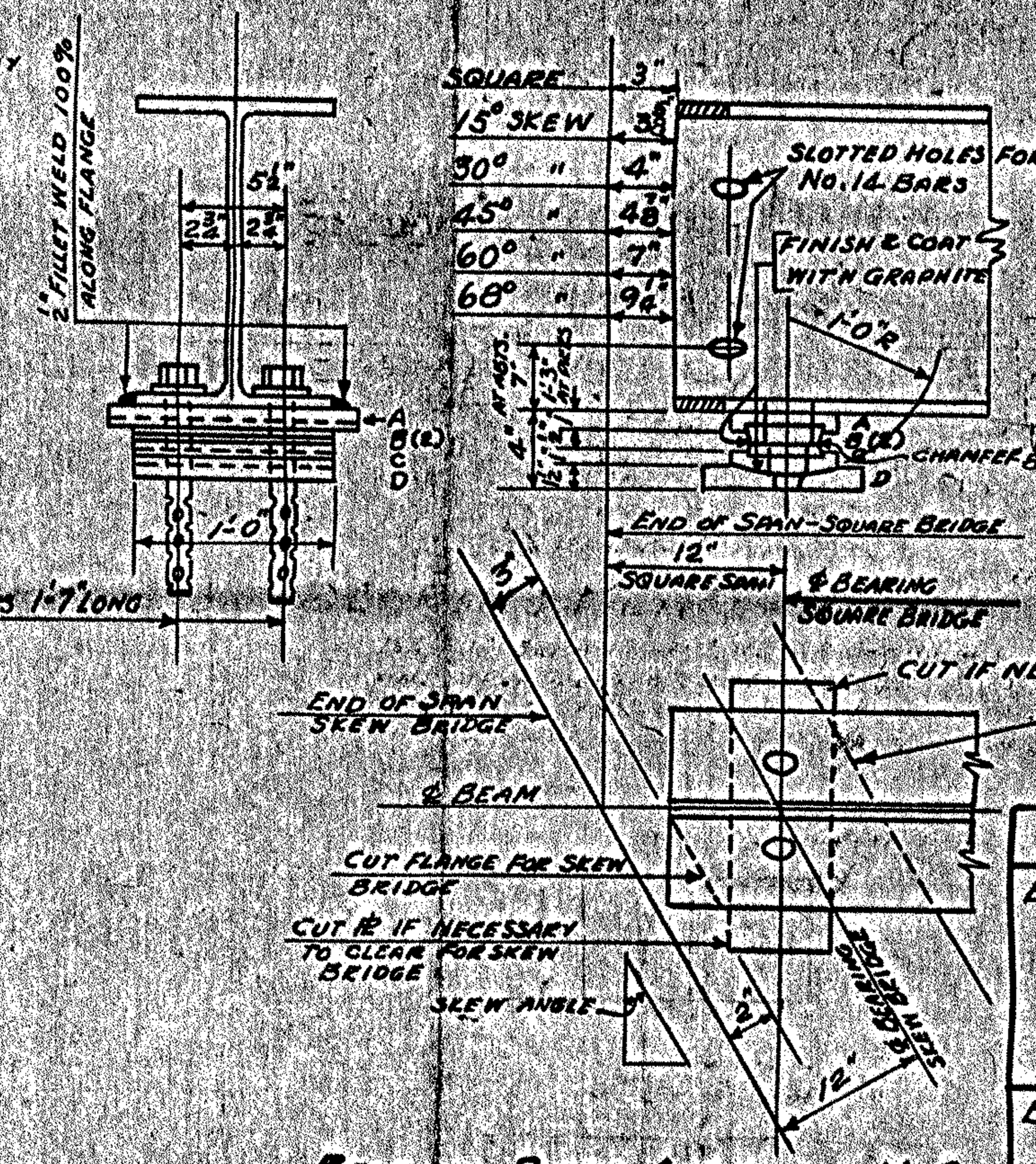
SPANS 28'-0" THRU 43'-0" REQUIRED 1 SET OF DIAPHRAGMS
" 49'-0" " 69'-0" " 2 " (S) "
" 74'-0" " 84'-0" " 3 " (S) "

DIAPHRAGM ASSEMBLIES SHALL BE LOCATED TO PASS THROUGH POINTS MIDWAY BETWEEN REFERENCE POINTS (1/2, 1/3 OR 1/4 POINTS) OF ADJOINING BEAMS, ON ALL SPANS.



BEARING PLATE ASSEMBLY NO. 1
WEIGHT 100#

1 1/4" HOLES IN ALL PLS. & BEAM FLANGES AT FIXED ENDS. 3"×1 1/2" SLOTTED HOLES IN BEAM FLANGES & SOLE PLATE AT EXPANSION END. 1 1/2"Φ HOLES IN PL. F AT EXPANSION END.

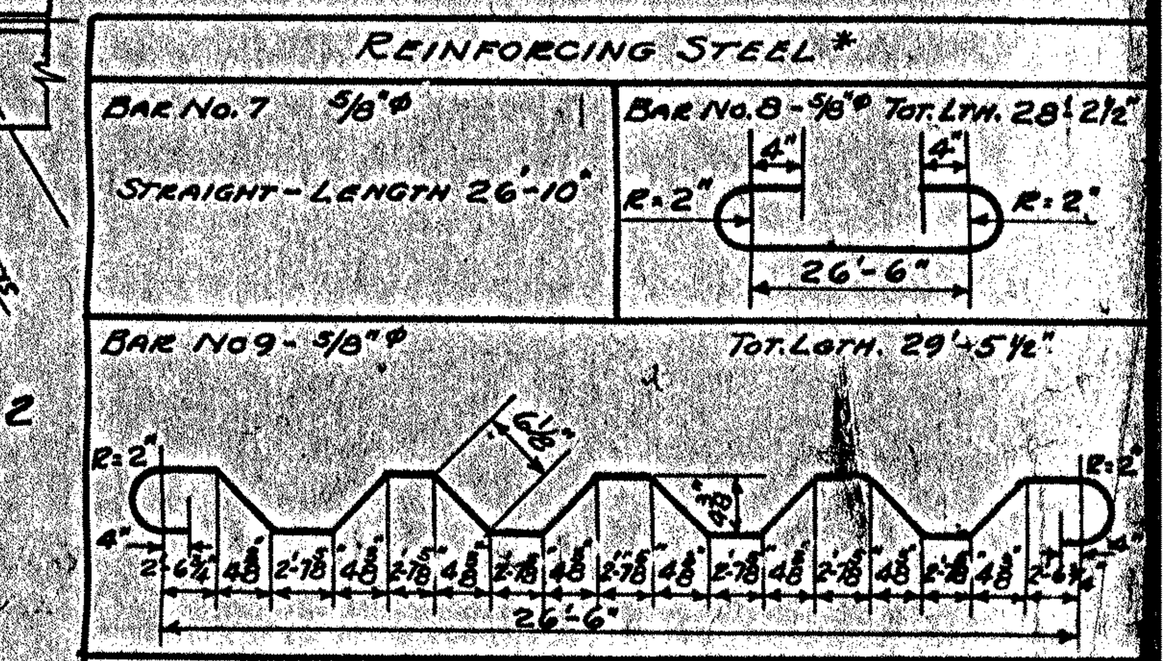


BEARING PLATE ASSEMBLY NO. 2
WEIGHT 135#

NOTES: BEARING PLATE ASSEMBLIES
EDGE OF PLS. "B" TO BE BEVELLED 30° AND TO HAVE A DRIVING FIT IN PLS "A" AND "C".
A- PL 7"×1"×1'-6", 3"×1 1/2" SLOTTED HOLES.
B- PL(2) PHOSPHOR BRONZE, 5"×1/2"×12", SET 1/4" INTO PLS "A" AND "C". UPPER PL WITH 3"×1 1/2" SLOTTED HOLES. LOWER PL WITH 2"×1 1/2" SLOTTED HOLES. SLIDING SURFACES FINISHED.
C- STEEL CASTING OR BILLET, 12"×VARIABLE×7" WITH 2"×1 1/2" SLOTTED HOLES.
D- STEEL CASTING OR BILLET, 12"×VARIABLE×10", 1 1/2"Φ HOLE.
E- PL 7"×3/4"×1'-6"
F- PL 9"×1 1/2"×1'-4"

USE ASSEMBLY NO. 1 FOR BOTH ENDS, SPANS 28' TO 69' INCL.
" " NO. 1 " FIXED END, " 74' AND UP.
" " NO. 2 " EXP. END, " 74' AND UP.

REINFORCING STEEL*



BAR NO. 10 - 3/4"Φ
BAR NO. 11 - 1/2"Φ STRAIGHT

	Bar Lth.
28' Span	27'-6"
33' "	32'-6"
38' "	37'-6"
43' "	42'-6"
49' "	25'-3"
54' "	27'-9"
59' "	30'-3"
64' "	32'-9"
69' "	35'-3"
74' "	37'-9"
79' "	40'-3"
84' "	42'-9"

BAR NO. 12A - 3/8"Φ

Span	A	T.L.
28'	1'-9"	4'-6"
33'	2'-0"	5'-0"
38'	2'-3"	5'-6"
43'	2'-3"	5'-6"
49'	2'-6"	6'-0"
54'	2'-9"	6'-6"
59'	2'-9"	6'-6"
64'	3'-0"	7'-0"
69'	3'-0"	7'-0"
74'	2'-9"	6'-6"
79'	3'-0"	7'-0"
84'	3'-0"	7'-0"

SHORTEN "A" DIMENSION 1'-0" AT PIERS.

BAR NO. 14 - 5/8"Φ - 26'-6" LONG STRAIGHT

* ALL DIMENSIONS ARE GIVEN TO ℄ OF BAR

NOTES:

STEEL SUPERSTRUCTURE TO INCLUDE 5 WF BEAMS, 10 BEARING PLATE ASSEMBLIES AND INDICATED DIAPHRAGMS PER SPAN.

ALL STEEL BEAMS SHALL BE ROLLED TO A TRUE CIRCULAR CAMBER, FULL LENGTH OF THE BEAM AND THE MIDDLE ORDINATE TO BE AS NOTED FOR VARIOUS SPANS IN THE TABLE, UNLESS OTHERWISE NOTED ON PLAN & PROFILE SHEET.

ALL STRUCTURAL STEEL SHALL BE PAINTED AS SPECIFIED UNDER ITEM 43 A-B OF PAMPHLET "E" STANDARD ROAD & BRIDGE SPECIFICATIONS, STATE OF VERMONT-1936 UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THE FINAL COAT OF FIELD PAINT SHALL BE GREEN, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

THIS SHEET DOES NOT INCLUDE QUANTITIES FOR RAILING, CURBS AND POSTS. QUANTITIES ARE FOR A SINGLE SPAN BRIDGE.

WHEN BRIDGE IS BUILT ON SKEW, TRANSVERSE BARS SHALL BE FURNISHED AS FOR SQUARE SPAN. BARS SHALL BE CUT IN FIELD TO FIT ONE SKEW END AND CUT OFF ENDS SHALL BE USED IN OPPOSITE SKEW END. IN SKEW SPANS THE #14 BARS SHALL BE LENGTHENED AND THE NUMBER OF NO. 12 SERIES BARS SHALL BE INCREASED. THE LENGTH OF BEAMS DECREASES ON SKEW SPANS.

ALL MATERIAL AND CONSTRUCTION SHALL CONFORM TO THE STANDARD ROAD AND BRIDGE SPECIFICATION, STATE OF VERMONT 1936, AND THE A.A.S.H.O. SPECIFICATIONS FOR 1935. DESIGN FOR H-15 LIVE LOADING, 25#/□' PAVING ALLOWANCE, DEAD LOAD INCLUDES WEIGHT OF BEAMS, SLAB AND CABLE RAIL.

FOR LOCATION OF FIXED AND EXPANSION BEARINGS, SEE PLAN & PROFILE SHEET.

FOR BRIDGES WITH CABLE GUARD RAIL SEE STD. SHEET SB-50.

TABLE OF QUANTITIES FOR SINGLE SPAN (SQUARE)

Overall Span	Structural Steel - H15 Lane Loading: Size W.F. Beam	Length*	Mid. Ord. for Camber	Sec. Mod. Req'd.	Dim. "H" Fix	Dim. "H" Exp.	Total Wt.	Reinforcing Steel Schedule: Bar No. 7	8	9	10	11	12A		** 14	Total Weight	Conc. Cl. "A" Cable Rail Cy.
28'-0"	21 1/8" @ 68#	27-6	3/4"	138	2.61	2.61	11,281	25	25	25	5	59	44		8	3,789	19.3
33'-0"	24" @ 80#	32-6	7/8"	179	2.85	2.85	14,931	30	30	30	5	59	44		8	4,445	22.6
38'-0"	26 7/8" @ 91#	37-6	1"	222	3.09	3.09	18,994	35	35	35	5	59	44		8	5,156	25.9
43'-0"	27 1/8" @ 106#	42-6	1 1/8"	268	3.11	3.11	24,456	39	39	39	5	59	44		8	5,743	28.9
49'-0"	30" @ 116#	48-6	1 1/4"	328	3.35	3.35	30,992	45	45	45	10	118	44		8	6,655	33.0
54'-0"	33" @ 125#	53-6	1 3/8"	383	3.60	3.60	36,300	49	49	49	10	118	44		8	7,261	36.3
59'-0"	33 1/8" @ 141#	58-6	1 1/2"	445	3.62	3.62	44,105	54	54	54	10	118	44		8	7,926	39.2
64'-0"	36" @ 160#	63-6	1 5/8"	518	3.85	3.85	53,662	59	59	59	10	118	44		8	8,610	42.6
69'-0"	36 7/8" @ 182#	68-6	1 7/8"	601	3.88	3.88	65,197	63	63	63	10	118	44		8	9,197	45.5
74'-0"	33 1/8" @ 210#	73-6	2"	697	3.61	3.76	81,142	68	68	68	10	118	44		8	9,864	48.0
79'-0"	35 7/8" @ 230#	78-6	2 1/4"	792	3.84	3.99	94,242	73	73	73	10	118	44		8	10,547	51.4
84'-0"	36 1/8" @ 250#	83-6	2 1/2"	899	3.86	4.01	108,342	77	77	77	10	118	44		8	11,135	54.3

NOTE: QUANTITIES IN ABOVE TABLE ARE FOR A SINGLE SQUARE SPAN. FOR MULTIPLE AND SKEW SPANS THESE QUANTITIES WILL VARY.

** QUANTITIES FOR SQUARE BRIDGE - ADDITIONAL 14 BARS REQUIRED FOR SKEWS OVER 15°

* LENGTH VARIES FOR SKEW SPANS, SEE BEARING PLATE DETAILS ABOVE.

STANDARD I-BEAM BRIDGE
REINFORCED CONCRETE DECK
24 FT. ROADWAY
SPANS OF 28'-0" TO 84'-0" OVERALL
SQUARE OR SKEW

ESTIMATED QUANTITIES

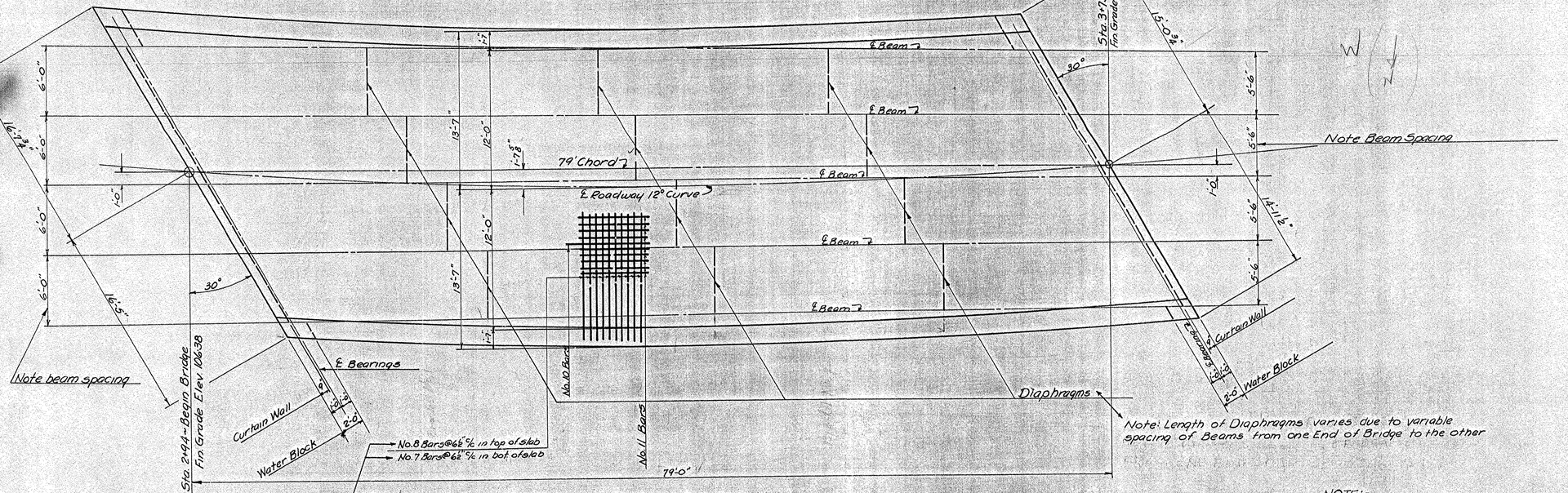
Name	Project No.	Spans
Royalton (Hop Vine Br.)	F.A.P. 164-	1-49 1/2' 1-59'

BEARING PL & NOTE REVISION 10/29/58 W.H.D.

Surveyed by
Designed by W.H.D. 4/3/37
Drawn by W.H.D.
Traced by D.W.P.
Checked by G.G. 4-15-37
Series S18 No. 24 Filed
Sheet of Sheets

FED. ROAD DIST. NO.	STATE		FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	Vt.	PWA	1939	6	17

PWA Doc No. Vt-1092-F-89

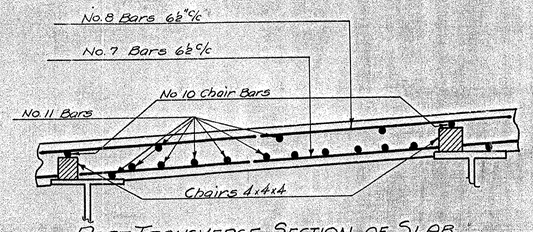


PLAN

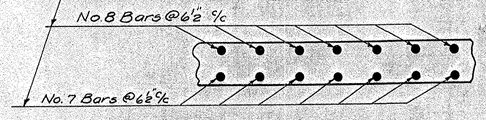
Note: Length of Diaphragms varies due to variable spacing of Beams from one End of Bridge to the other

NOTE:- This sheet to be used with Standard Sheet S.1.B. 24. All details and notes on this sheet which differ from those shown on S.1.B. 24 will be used in place of those shown on S.1.B. 24.

Note change in Transverse Slab Steel from that shown on Standard Sheet S.1.B. 24
Bars No. 7 and No. 8 ~ 146 Reqd.
Bar No. 9 ~ None Reqd.



PART TRANSVERSE SECTION OF SLAB
Showing transverse steel as modified

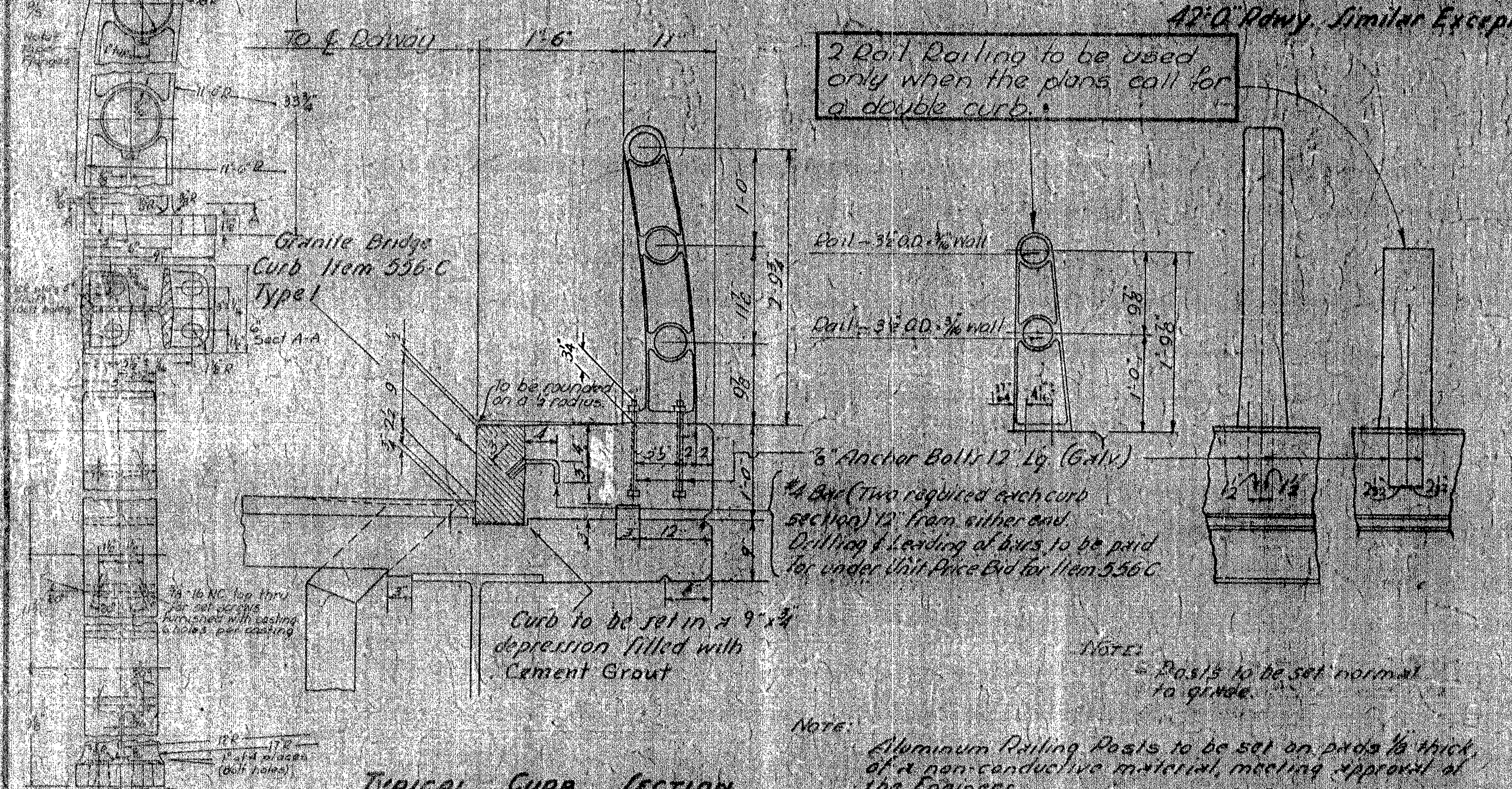


PART LONGITUDINAL SECTION OF SLAB
Showing transverse steel as modified

MODIFIED DETAILS AND NOTES FOR USE WITH STANDARD SHEET S.1.B. 24
BRIDGE No. 89
FAYSTON

ESTIMATED QUANTITIES

Surveyed by
Designed by
Drawn by H.G.H.
Traced by H.W.S.
Checked by D.R.B.
Series PWA. No. 1092-89 Filed
Sheet 6 of 17 Sheets

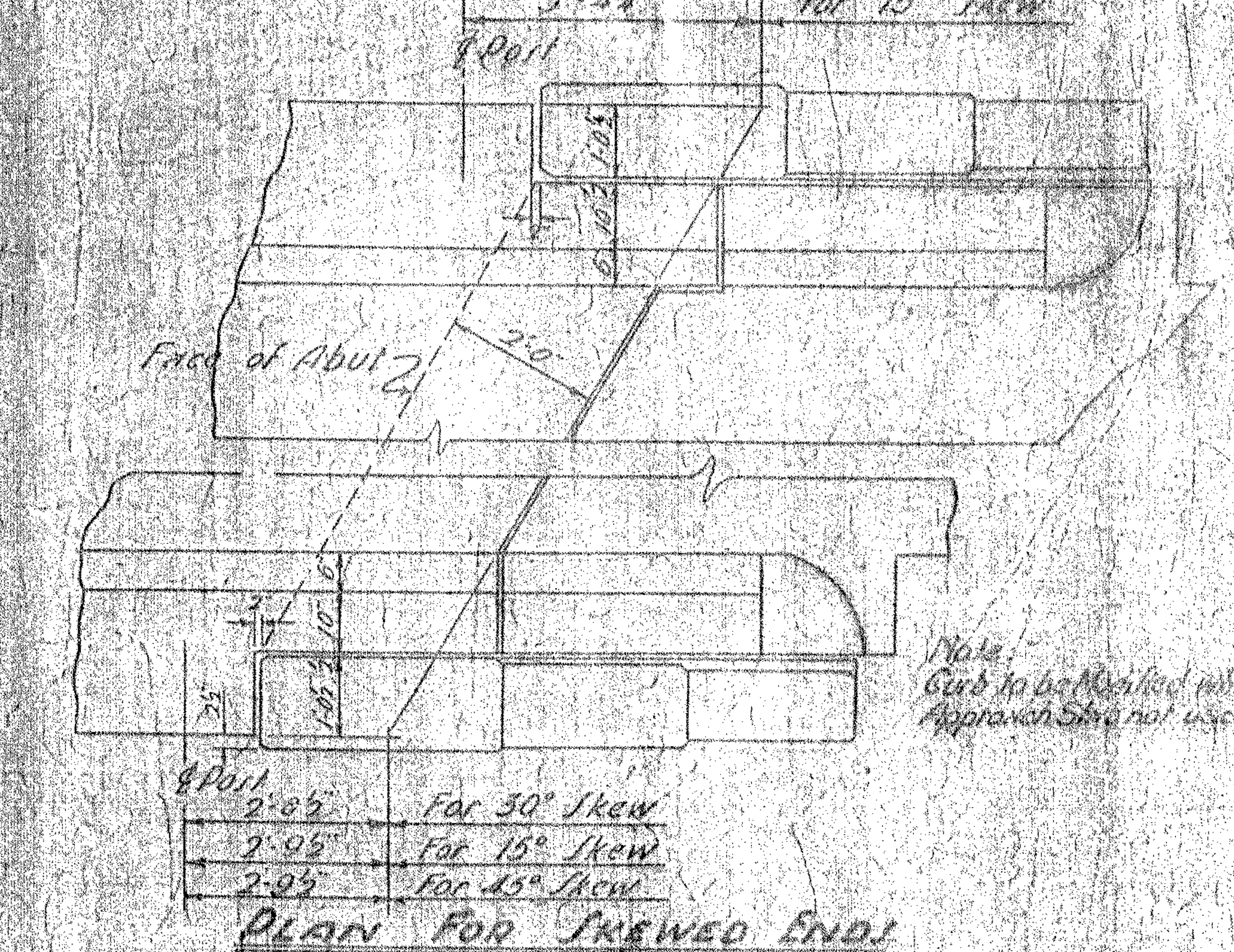


Overall Span	Number of Posts	Post Spacing D Square	Post Spacing D 15° Skew	Post Spacing D 30° Skew	L.F. Bridge Railing Square	L.F. Bridge Railing 15° Skew	L.F. Bridge Railing 30° Skew	L.F. Granite Curb	Post Spacing 45° Skew	L.F. Bridge Railing 45° Skew
39'-0"	12	6'-1 3/16"	6'-6 5/8"	6'-5 3/4"	69'-0"	68'-9"	67'-10"	78'-0"	6'-3 3/16"	65'-8"
44'-0"	14	6'-4"	6'-3 11/16"	6'-2 5/8"	79'-0"	78'-9"	77'-10"	88'-0"	6'-0 1/2"	75'-8"
49'-0"	14	7'-1"	7'-1 1/16"	7'-0 3/8"	89'-0"	88'-9"	87'-10"	98'-0"	6'-10 1/16"	85'-8"
54'-0"	16	6'-10 3/16"	6'-10 1/16"	6'-9 5/8"	99'-0"	98'-9"	97'-10"	108'-0"	6'-7 1/16"	95'-8"
59'-0"	18	6'-7 1/2"	6'-7 1/4"	6'-6 9/16"	109'-0"	108'-9"	107'-10"	118'-0"	6'-5"	105'-8"
64'-0"	20	6'-5 5/16"	6'-5 1/8"	6'-4 1/2"	119'-0"	118'-9"	117'-10"	128'-0"	6'-3 1/8"	115'-8"
69'-0"	20	7'-0"	6'-11 13/16"	6'-11 3/16"	129'-0"	128'-9"	127'-10"	138'-0"	6'-9 3/4"	125'-8"
74'-0"	22	6'-5 3/8"	6'-9 7/16"	6'-8 7/8"	139'-0"	138'-9"	137'-10"	148'-0"	6'-7 5/8"	135'-8"
79'-0"	24	6'-7 3/8"	6'-7 1/2"	6'-7"	149'-0"	148'-9"	147'-10"	158'-0"	6'-5 13/16"	145'-8"
84'-0"	24	7'-1 1/16"	7'-0 15/16"	7'-0 7/16"	159'-0"	158'-9"	157'-10"	168'-0"	6'-11 1/4"	155'-8"
89'-0"	26	6'-11"	6'-10 7/8"	6'-10 3/8"	169'-0"	168'-9"	167'-10"	178'-0"	6'-9 3/8"	165'-8"
94'-0"	28	6'-9 1/2"	6'-9 3/8"	6'-8 3/4"	179'-0"	178'-9"	177'-10"	188'-0"	6'-7 1/2"	175'-8"
99'-0"	28	7'-1 7/8"	7'-1 13/16"	7'-1 5/16"	189'-0"	188'-9"	187'-10"	198'-0"	7'-0 5/16"	185'-8"
34'-0"	10	7'-0"	6'-11 5/8"	6'-10 3/8"	59'-0"	58'-9"	57'-10"	68'-0"	6'-7"	55'-8"

All work and materials shall conform to the State of Vermont, Department of Highways, Standard Specifications for Highway and Bridge Construction dated January 1956.

Details shown are for single span bridges. Post spacing for multiple span bridges should be shown on project plans.

When Aluminum is to come in contact with other materials, it shall be protected as called for in the specifications. The details for Aluminum Bridge Railing on this Sheet are identical with those shown on Sheet SB-5A-56.



Typical Railing Details shown. Similar details may be substituted with written approval of the Engineer.

ALUMINUM BRIDGE RAILING

Revisions & Corrections	
Changed width of Curb depression	6/3/58
Revised width of End Posts	6/3/58
Changed Poured Rubber to Asphalt Joint Filler	9/10/58
Changed Mastic under Curb to Cement Grout	10/2/58
Omitting 2 rail railing. To be used only on certain conditions	11/6/58
Granite Bridge Curbing Revised	1/6/59
Post Bolt clearance revised	6/18/59
Note on End Posts added	5/10/60
Galv. Iron Railing note added	6/6/60

Drawn By L.M.B. 8-15-56
Traced By A.B.M. 8-22-56
Checked By J.L.H. 8-20-56
Correct Aug. 22, 1956 — Bridge Engineer
Approved Aug. 22, 1956 — Chief Engineer

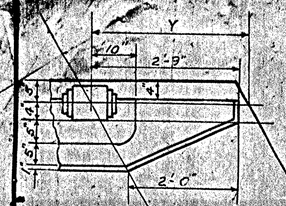
DETAILS of BRIDGE RAILING ITEM #572 AND DETAILS of GRANITE BRIDGE CURB ITEM #556-C

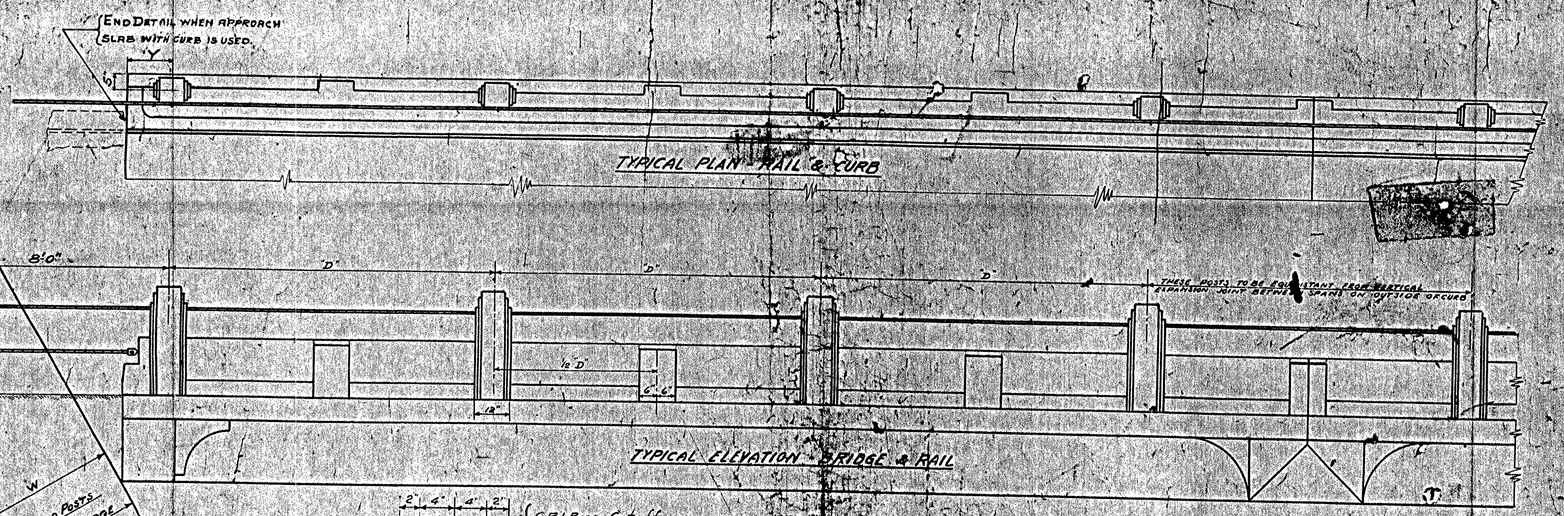
GALVANIZED BRIDGE RAILING AS SHOWN ON SHEET 2 OF 2 MAY BE SUBSTITUTED.

DEPARTMENT OF HIGHWAYS
STANDARD STRUCTURES

SB-5G-57

DRAIN DETAIL FOR T AND I BEAM BRIDGES
PLAN
SECTION
SIDE ELEV.
SLIDING PLATE EXPANSION DEVICE FOR SQ. SPAN T BEAM
ONE STEEL PLATE
SLIDING PLATE EXPANSION DEVICE FOR SKEW SPAN T BEAM
This expansion device is similar to that used for square bridges except as noted.
SCORE MARK & CONST. JNT. FOR PIERS & ABUT.
PLAN AT TOP OF ABUTMENT
SECTIONAL ELEV.
SECTIONAL EDGE OF BEAM
CAST IRON ROCKER
ROCKER EXPANSION DEVICE & POCKET FOR T BEAM SPANS
FOR SPECIAL CASES ONLY
ROCKER EXPANSION DEVICE & POCKET FOR SKEW SPAN T BEAM
BRIDGE SEAT
SKEW ANGLE
BALLAST WALL
CLEAR SPAN OF SQ. BRIDGE LESS C
OVERALL LENGTH OF FLOOR FOR ALL SKEWS
FOR EXPANSION MATERIAL DETAILS SEE TYP. DETAILS
CLEAR SPAN
TYPICAL COPINGS
DETAIL NO. 1
DETAIL NO. 2
DETAIL OF VERTICAL EXPANSION JOINT
CAST STEEL PILE SHOE FOR 6" TO 8" TIPS
EXPANSION JOINT BETWEEN SPANS FOR STANDARD T & I BEAM BRIDGES
DETAIL OF APPROACH SLAB BRACKET
DETAIL OF EXPANSION MATERIAL FOR T BEAM BRIDGES
DETAIL OF EXPANSION MATERIAL FOR I BEAM BRIDGES
LOCATION OF MARKER PANEL
Bridge Markers will be furnished upon application to the State Department of Highways.
1937
BRIDGE MARKER
Top Surface of curb or sidewalk
DETAIL OF EXPANSION MATERIAL FOR SLAB BRIDGES
SECTION C-C
SECTION B-B
DETAIL OF CURB & EXPANSION MATERIAL-STEEL BRIDGES-FIXED END
GENERAL NOTES
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
TYPICAL DETAILS
CORRECT
BRIDGE ENGINEER
DESIGNED
DRAWN D.W.P. 1934
RETRACED R.E.G. OCT. 1936
CHECKED W.G.B. JAN. 1937
SERIES SB
NO. 20
SHEET





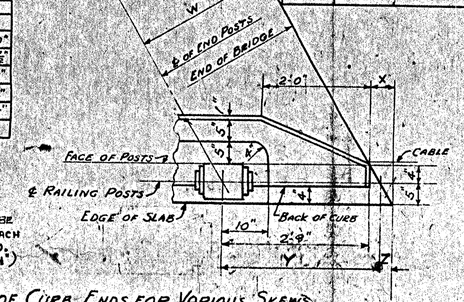
REINFORCING STEEL SCHEDULE

BAR	SIZE	DETAIL
CR1	⅝" ø	2'-6"
CR2	⅝" ø	12" 13" 3½" 6"
CR3	½" ø	6'-4"
CR4	½" ø	See Below

REINFORCING BARS REQUIRED

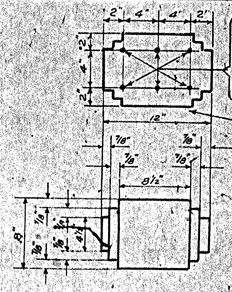
CLEAR SPAN	CR1 LGTH.	CR1 REQ.	CR2 LGTH.	CR2 REQ.	CR3 LGTH.	CR3 REQ.	CR4 LGTH.	CR4 REQ.
25'-0"	2'-6"	48	4'-7"	#2	3'-6"	36	26'-8"	16
30'-0"	"	60	"	54	"	42	17'-0"	32
35'-0"	"	60	"	54	"	48	19'-6"	32
40'-0"	"	72	"	66	"	56	22'-0"	32
45'-0"	"	84	"	78	"	64	25'-3"	32
50'-0"	"	84	"	78	"	70	27'-9"	32
55'-0"	"	96	"	90	"	76	30'-0"	32
60'-0"	"	108	"	102	"	84	23'-9"	48
65'-0"	"	108	"	102	"	90	25'-0"	48
70'-0"	"	120	"	114	"	96	26'-8"	48
75'-0"	"	132	"	126	"	104	28'-0"	48
80'-0"	"	132	"	126	"	110	29'-6"	64

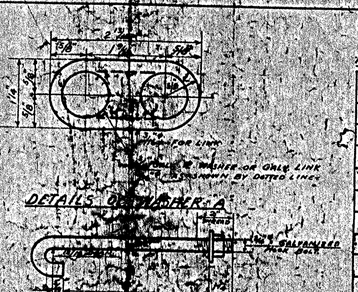
SKEW	DIMENSIONS W	X	Y	Z
68°	1'-4"	1'-10"	3'-7"	1'-0"
60°	1'-8"	1'-3½"	3'-6"	8½"
45°	2'-2"	9"	3'-1"	5"
30°	2'-6½"	5½"	2'-11½"	3"
15°	2'-8⅝"	2½"	2'-10⅝"	1½"
SQRE	2'-9"	0	2'-9"	0



PLAN OF CURB ENDS FOR VARIOUS SKEWS
SCALE ¾"=1'-0"

NOTE:-
THIS DETAIL NOT TO BE FOLLOWED WHEN APPROACH SLAB WITH CURB IS USED. (SEE "TYPICAL PLAN")





POST SPACING & QUANTITIES - SQUARE SPAN

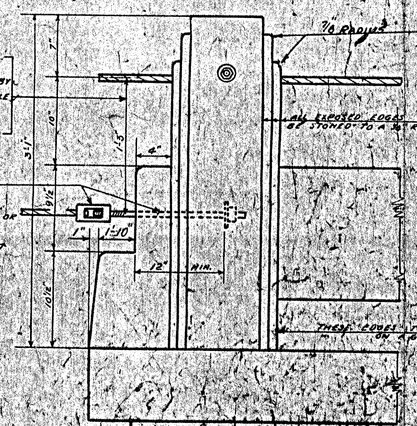
CLEAR SPAN	NUMBER OF POSTS	POST SPACING "D"	CONCRETE CLASS "A" CU. YDS.	REINF. STEEL LBS.
25'-0"	8	7'-6"	3.8	1065
30'-0"	10	6'-10½"	3.9	1348
35'-0"	10	8'-1⅛"	4.3	1483
40'-0"	12	7'-6"	5.0	1715
45'-0"	14	7'-3"	5.7	1982
50'-0"	14	8'-1"	6.1	2119
55'-0"	16	7'-7⅝"	6.8	2351
60'-0"	18	7'-3⅝"	7.5	2614
65'-0"	18	7'-11½"	7.9	2820
70'-0"	20	7'-7¼"	8.6	3046
75'-0"	22	7'-4¼"	9.2	3253
80'-0"	22	7'-10½"	9.7	3414

GENERAL NOTES

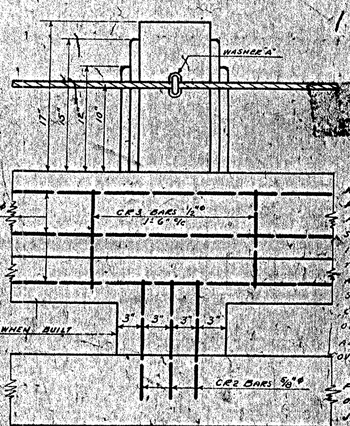
CAMBER - RAIL AND CURB SHALL BE CAMBERED THE SAME AS THE ROADWAY WHICH THEY ARE USED.
CHAMFER - ALL EXPOSED EDGES SHALL BE CHAMFERED ¾" UNLESS NOTED.
POSTS - POSTS AND ALL VERTICAL EDGES SHALL BE BUILT PLUMB WITH THE ROAD FOLLOWING THE GRADE OF THE ROAD.
WORK & MATERIALS - ALL WORK AND MATERIALS SHALL CONFORM TO THE STATE BRIDGE SPECIFICATIONS FOR THE VERMONT STATE HIGHWAY DEPARTMENT.
PAYMENT - CONCRETE AND REINFORCING STEEL IN CURBS AND POSTS SHALL BE PAID AT UNIT PRICE BID FOR THESE ITEMS.
CABLE - INCLUDING HARDWARE SHALL BE PAID FOR AT THE UNIT PRICE BID FOR CABLE RAIL.

MULTIPLE SPAN BRIDGES

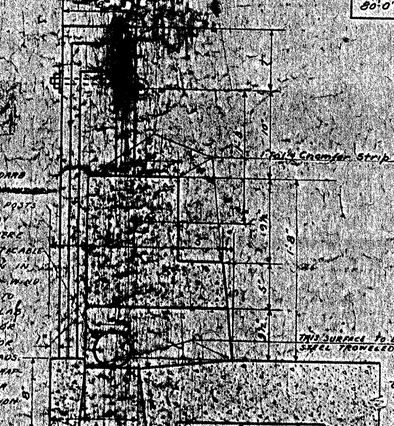
QUANTITIES - AS SHOWN ABOVE MAY BE USED FOR INDIVIDUAL SPANS. "D" MUST BE FIGURED FOR EACH INDIVIDUAL CASE.



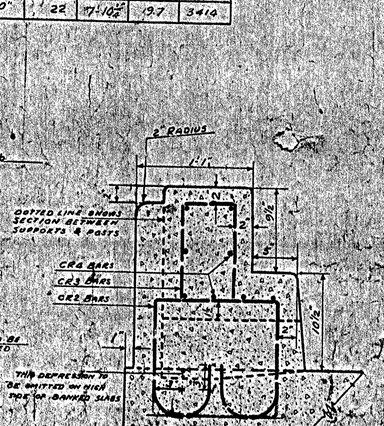
ELEVATION - BACK OF POST @ SQUARE END



ELEVATION - FRONT OF POST



SIDE ELEV. POST & SECTION CURB & DRAIN

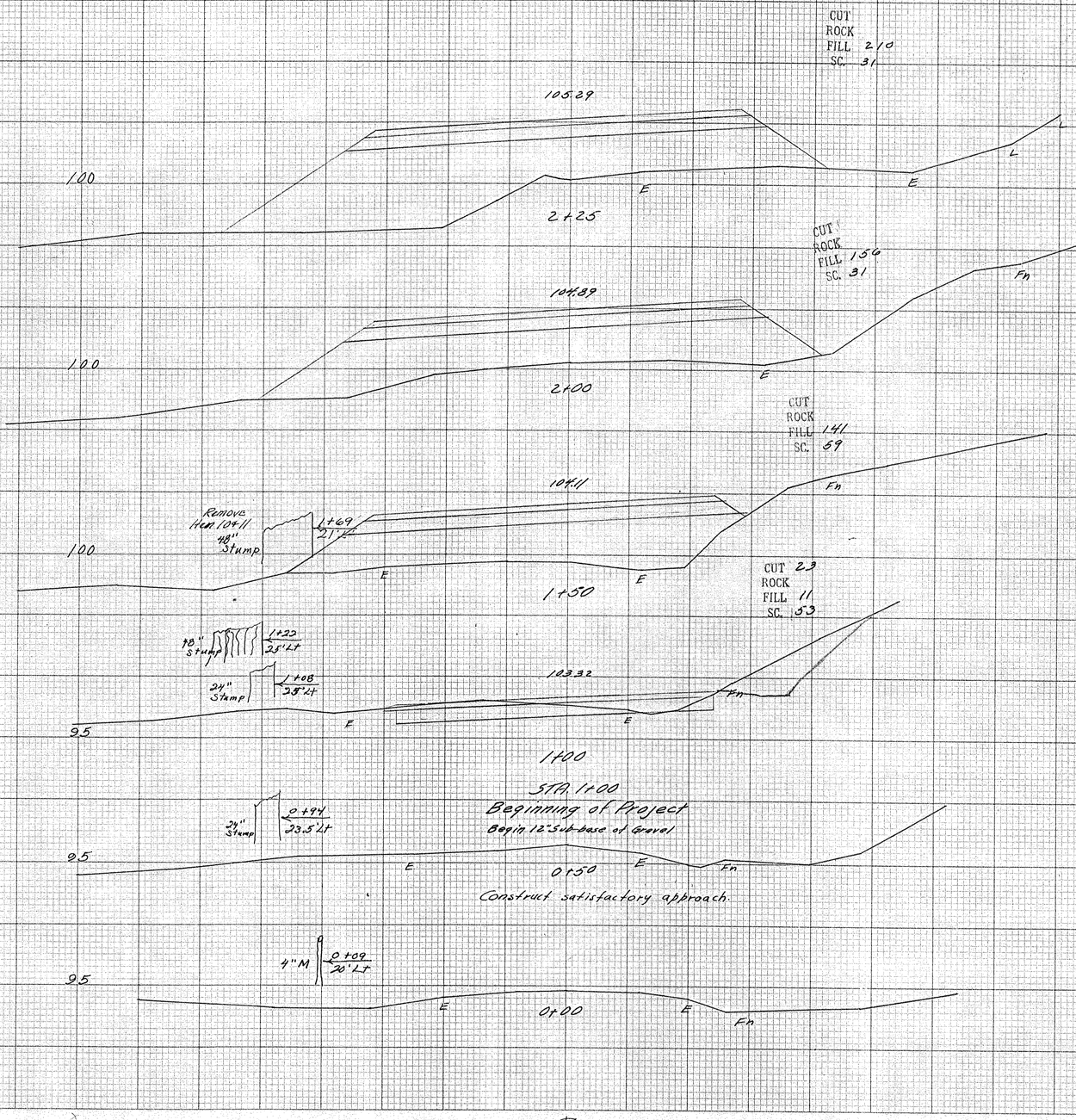


SECTION AT RUNWAY SUPPORTS

STANDARD CABLE RAIL FOR T BEAM BRIDGES

FED. ROAD DIST. NO.	STATE	~~FED. AID PROJ.~~	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	V.	1092 F-89	1939	11	17

P.W.A. Doc. No. VI



No. VI. 1092-F-89

Fayston PWA Docket [redacted]

LEVELS BY Colby
SECTIONS PLOTTED BY McAvay CKD. BY MP/LP
PLANIMETERED BY CKD. BY
EXAMINED BY
SERIES F NO. FILED
SHEET 11 OF 17

P.W.A. Doc. No. Vt.

FED. ROAD DIST. NO.	STATE	~~FED. AID PROJ. NO.~~	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	Vt.	1092 F-89	1939	12	17

No. Vt. 1092-F-89
Fayston PWA Docket [redacted]

LEVELS BY Colby
SECTIONS PLOTTED BY Peck CKD. BY MR/LP
PLANIMETERED BY ______ CKD. BY ______
EXAMINED BY ______
SERIES F ______ NO. ______ FILED
SHEET 12 OF 17

KEUFFEL & ESSER CO. NEW YORK

TRADE STANDARD MARK REG. U.S. PAT. OFF. CROSS SECTION 10 X 10 100% RAG PAPER MADE IN U.S.A.

KEUFFEL & ESSER CO. NEW YORK

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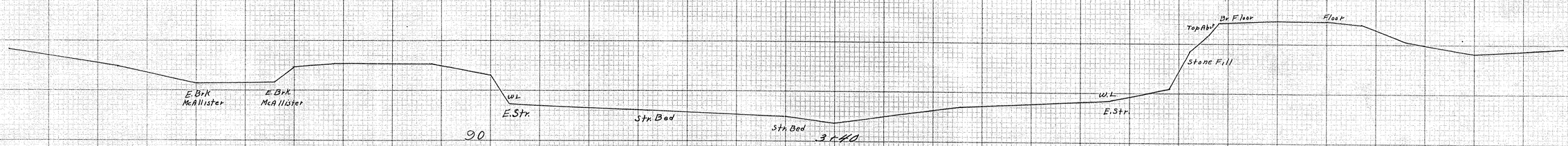
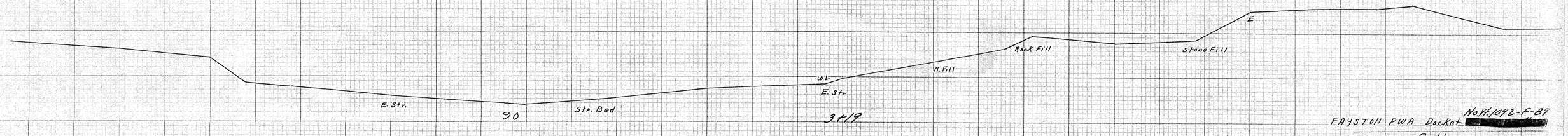
TRADE STANDARD MARK REG. U.S. PAT. OFF. CROSS SECTION 10 X 10 100% RAG PAPER MADE IN U.S.A.

FWA. Docket No. VT

FED. ROAD DIST. NO.	STATE	FED. AID	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT	1092 F-89	1939	13	17





FAYSTON PWA Docket No. VT. 1092-F-89

LEVELS BY Colby Peck MRP
SECTIONS PLOTTED BY ... AND BY ...
PLANIMETERED BY ... AND BY ...
EXAMINED BY ...
SERIES F NO. ... FILED
SHEET 13 OF 17

KEUFFEL & ESSER CO. NEW YORK

TRADE STANDARD MARK REG. U.S. PAT. OFF. CROSS SECTION 10 X 10 100% RAG PAPER MADE IN U.S.A.

KEUFFEL & ESSER CO. NEW YORK

TRADE STANDARD MARK REG. U.S. PAT. OFF. CROSS SECTION 10 X 10 100% RAG PAPER MADE IN U.S.A.

K

P.W.A. Dock. No. Vt.

FED. ROAD DIST. NO.	STATE	~~FED. AID~~ SECONDARY	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	Vt.	1092 F-89	1939	14	17

CUT
ROCK
FILL 200
SC. 24

10774

E.Str. | E.Str. | E.Str. McAllister | 95 | 3+80 | E | E | E.Str. | Str. Bed | E.Str W.L.

CUT
ROCK
FILL 73
SC. 9

STA. 3+73
End of Bridge
Begin 12" Sub-base of Gravel

Flood Level 1024

3+79
16' Rt.

24" E

E. Brk McAllister | E. Brk. McAllister | 95 | 3+60 | W.L. E.Str. | Str. Bed | W.L. E.Str.

Elm Clump | 3+51 | 22' Lt

E. Brk. McAllister | E. Brk McAllister | 95 | W.L. E.STR. | Str. Bed | Str. Bed | E. Str.

3+50

No. Vt. 1092-F-89
Fayston P.W.A. Docket [redacted]

LEVELS BY Colby
SECTIONS BY Peck
PLANIMETERED BY
EXAMINED BY
SERIES F NO. FILED
SHEET 14 OF 17

TRADE STANDARD MARK REG. U.S. PAT. OFF. CROSS SECTION 10 X 10 100% RAG PAPER MADE IN U.S.A.

KEUFFEL & ESSER CO. NEW YORK

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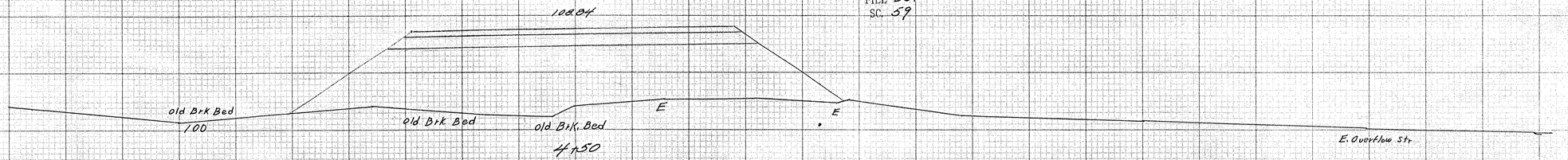
TRADE STANDARD MARK REG. U.S. PAT. OFF. CROSS SECTION 10 X 10 100% RAG PAPER MADE IN U.S.A.

KEUFFEL & ESSER CO. NEW YORK

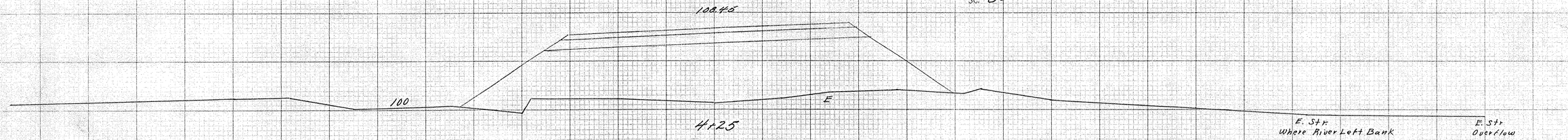
RWA Doc. No. VI.

FED. ROAD DIST. NO.	STATE	~~PROJ. NO.~~	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT.	1092 F-89	1939	15	17

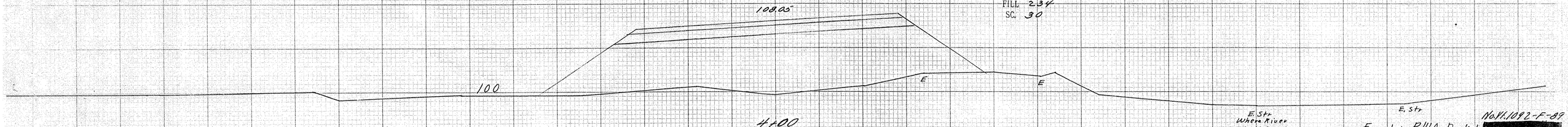
CUT
ROCK
FILL 351
SC. 59



CUT
ROCK
FILL 214
SC. 30



CUT
ROCK
FILL 234
SC. 30



No. VT. 1092-F-89

Fayston P.W.A. Docket [redacted]

LEVELS BY Colby
SECTIONS PLOTTED BY Peck — CKD. BY MR/LP
PLANIMETERED BY — CKD. BY
EXAMINED BY
SERIES E NO. FILED
SHEET 15 OF 17

P.W.A. Docket No. VT.

FED. ROAD DIST. NO.	STATE	[redacted] NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	VT.	1092	1939	16	17

F-89

CUT 4
ROCK
FILL 60
SC. 54

110.42

105

OLD BRK BED

FN. E 5+50 E FN

E. OVERFLOW

CUT
ROCK
FILL 200
SC. 56

TWIN 12'E 5+46 52'Lt

Remove Item 10411 6"WB 5+25 23'Lt

109.63

OLD BRK. BED

100

FN E 5+00 E FN

E. OVERFLOW

No. VT. 1092-F-89

FAYSTON P.W.A. DOCKET [redacted]

LEVELS BY Colby
SECTIONS PLOTTED BY Rock CKD. BY M.R.
PLANIMETERED BY CKD. BY L.P.
EXAMINED BY
SERIES F NO. FILED
SHEET 16 OF 17

KEUFFEL & ESSER CO. NEW YORK

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KEUFFEL & ESSER CO. NEW YORK

TRADE STANDARD MARK REG. U.S. PAT. OFF. CROSS SECTION 10 X 10 100% RAG PAPER MADE IN U.S.A.


P.W.A. Doc. No. Vt.
FED. ROAD DIST. NO. 9
STATE VT.
1092 F-89
FISCAL YEAR 1939
SHEET NO. 17
TOTAL SHEETS 17
E.Dr.
E.Dr.
24" Pnc
7+93
18' Lt
Fn
E
7+50
E
Fn
110
Fn
E
7+0
E
Fn
7+15
32' Rt
10" A
110
E. Overflow
STA. 6+50
End of Project
End 12" Sub-base of Gravel
Construct Satisfactory Approach
111.93
110
Fn
E
E
6+50
Fn
E. Overflow
CUT 16
ROCK
FILL 15
SC. 55
111.19
110
Fn
E
E
Fn
1:4
6+00
E. Overflow
No. Vt. 1092: F-89
Fayston PWA Docket [redacted]
LEVELS BY Colby
SECTIONS PLOTTED BY Rock
EXAMINED BY
SERIES F NO. FILED
SHEET 17 OF 17
KEUFFEL & ESSER CO. NEW YORK
CROSS SECTION 10 X 10

FAYSTON BHF C-000(1)

11-16-5
DF HALL

SHIM PLATE THICKNESSES

ABUT. # 2

B-1

BOTTOM FABRIC PAD ELEV. 264.236
EXIST. B.S. ELEV. - 264.190
0.046
BEARING BAR THICKNESS - 0.003
0.045 = 45 mm

B-2

264.112
- 264.090
0.022
- 0.003
0.019 = 19 mm

B-3

263.985
- 263.950
0.035
- 0.003
0.032 = 32 mm

B-4

263.859
- 263.830
0.029
- 0.003
0.026 = 26 mm

B-5

263.733
- 263.700
0.033
- 0.003
0.030 = 30 mm

TO: WAYNE
SYMONDS
AND
TODD
SUMNER

FROM:
Rick Hall

P.S. - WINTERSET
VERIFIED [illegible]

STATE OF VERMONT
AGENCY OF TRANSPORTATION
PROJECT BHF-0200(9)
ROUTE NO. VT 17 (MAJOR COLLECTOR)
BRG. NO. 36
TOWN OF FAIRFIELD

COSMEC, INC.
70 SOUTH STREET
WALPOLE, MA 02081
PH# 508-668-6600
FAX# 508-660-1022

EMS-QC-110 VTRANS
RECEIVED
CKD BY _____ CKD BY JWC
OCT 19 2006
RESUBMIT _____ APPROVED ✓
BY _____ DATE 10-31-06

ENGINEERING AND MANUFACTURING STANDARD
PTFE FACING AND STEEL
OR PREFORMED FABRIC SUBSTRATE
SURFACE PREPARATION AND ADHESIVE PROCEDURE

The PTFE facing shall be prepared for bonding to a substrate material by chemically etching the face to be bonded using the sodium ammonia process.

The mating surface of the substrate shall be prepared for bonding using a three-step process as follows:

1. preliminary degrease using methyl ethyl ketone.
2. mechanically roughen to approx. 125 RMS and thoroughly brush and clean for final degreasing.
3. final degrease using methyl ethyl ketone

The PTFE and substrate mating surfaces shall be clean and dry with final degreasing performed within 30 minutes of bonding. Adhesive shall consist of a two-part epoxy adhesive system conforming to Military Specification MMM-A-134

The adhesive shall be applied to the full area of the contact surface in an even manner so as to establish a glue line not less than .002 inch nor more than .010 inch thick. Surfaces being bonded are to be assembled immediately with open assembly time not to exceed 20 minutes.

The PTFE material shall be greater in width and length than the substrate material by at least ½ inch when bonded. The PTFE shall be applied with contact starting at one edge and with contact progressing across entire bonded surface to eliminate air entrapment. The PTFE is to be in full contact with the steel or preformed fabric substrate. Curing of the bond shall be done under pressure of approx. 2-100 psi for 10-12 hours at approx. 70°F or other schedules as established by the manufacturer of the adhesive.

The PTFE shall be carefully trimmed to the same size as the substrate after bond curing and all bonds shall be visually inspected for bond retention.

07266

STATE OF VERMONT
AGENCY OF TRANSPORTATION
PROJECT BHF-0200(9)
ROUTE NO. VT 17 (MAJOR COLLECTOR)
BRG. NO. 36
TOWN OF FAIRFIELD

COSMEC INC.

WELDING PROCEDURE SPECIFICATION

SPECIFICATIONS AND CODE: D1.6
MATERIAL SPECIFICATION ASTM A240 TYPE 304 TO ASTM A709 GR 50W
WELDING PROCESS---------- GTAW
MANUAL OR MACHINE-------- MANUAL
POSITION OF WELDING----- 1F & 2F
FILLER METAL SPECIFICATION ER309L — CLASSIFICATION: A5.9
MANUFACTURER: HARRIS WELCO — TRADENAME:
FLUX------ INTERNAL
SHIELDING GAS---------- ARGON — FLOW RATE 45 CFH
SINGLE OR MULTIPLE PAS S SINGLE
SINGLE OR MULTIPLE ARC SINGLE
WELDING CURRENT---------- DC
POLARITY: REVERSE (EN)
WELDING PROGRESSION----------
ROOT TREATMENT---------- CLEANED & PREPARED BRIGHT METAL
PREHEAT AND INTERPASS TEMPERATURE---------- SEE BELOW
POSTHEAT TEMPERATURE N/A
HEAT IMPUT MIN.---------- MAX.----

VTRANS RECEIVED OCT 18 2006
CK'D BY _____ DATE BY JWC
RESUBMIT _____ APPROVED ✓
BY _____ DATE 10-31-06

WELDING PROCEDURE

PASS NO.	ELECTRODE SIZE	WELDING CURRENT AMPERES	VOLTS	TRAVEL SPEED	JOINT DETAIL
ALL	3/32"	130--155	14-17	6.75--8.5	LAP JOINT
		16 GA THRU 10 GA BM THICKNESS			

PREHEAT TEMPS. ***PREHEAT UNTIL NO MOSITURE PRESENT

THICKNESS	TEMP.
UP TO 3/4"	100 DEG.
OVER 3/4" TO 1 1/2"	100 DEG.
OVER 1 1/2" TO 2 1/2"	100 DEG.
OVER 2 1/2"	100 DEG.

THIS PROCEURE MAY VARY DUE TO FABRICATION SEQUENCE, FIT-UP, PASS SIZE, ETC.
WITHIN THE LIMITATION OF VARIABLES GIVEN IN SECTION 5.
SUPPORTING PQR: GTAW-WF-05
PROCEDURE NO. GTAW-WF

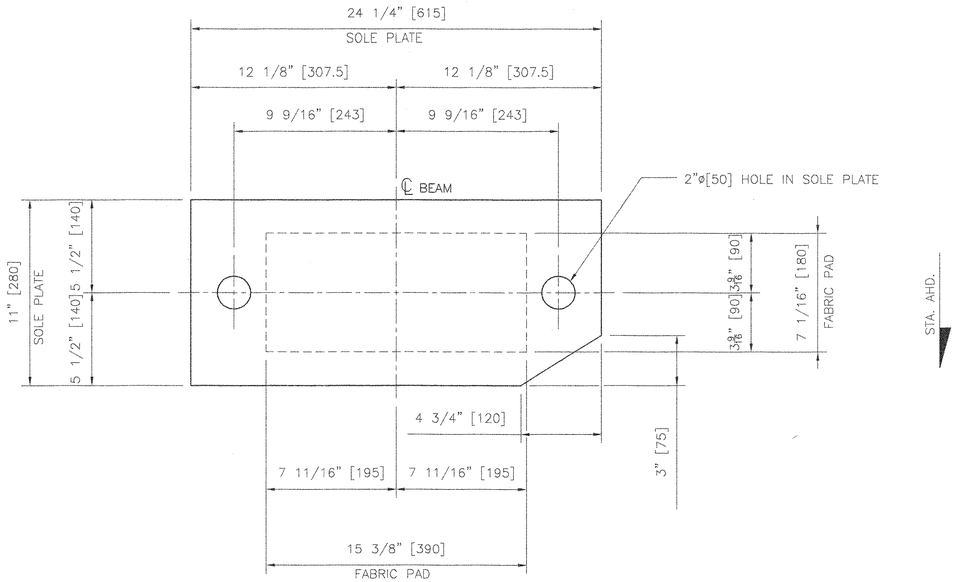
CONTRACTOR: COSMEC INC.
AUTHORIZED BY: DONALD VOSE
CWI#:01100651 Donald Vose

REVISION NO. 1

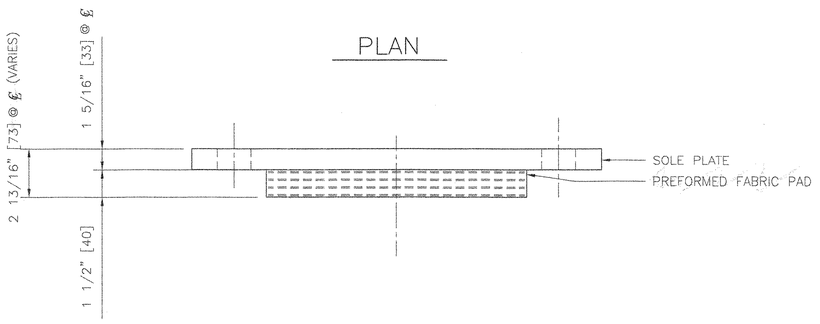
DATE:--- 2/1/2005

AWS QC 1 DONALD E VOSE 01100651 CWI

073



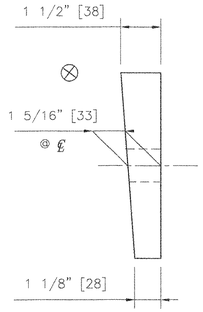
PLAN

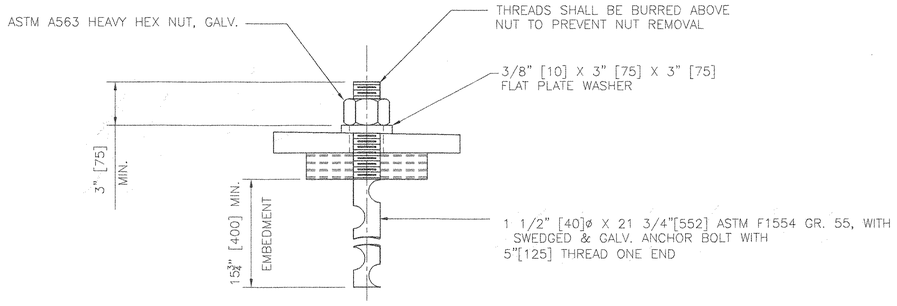


FRONT ELEVATION

COSMEC FIXED ELASTOMERIC BEARING

LOCATION:
ABUTMENT NO.2 BEAM 6
TOTAL QUANTITY – 1





ANCHOR BOLT DETAIL
(SIDE VIEW)

BEARING NOTES:

1. ANCHOR BOLTS AND ASSOCIATED HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 OR A123 AS APPLICABLE.

2. LOCATION OF FABRICATION – 70 SOUTH STREET
WALPOLE, MA 02081

3. COSMEC, INC. REPRESENTATIVE: MR. MATT McANDREWS
(508-668-6600)

4. ⊗ MARKS THE THICK END OF SOLE PLATE.

5. MAXIMUM ALLOWABLE BEARING PRESSURE ON CONCRETE= 6.9 MPa
MINIMUM ALLOWABLE DESIGN ROTATION= 0.015 RADIANS
HORIZONTAL CAPACITY SHALL BE A MINIMUM OF 6% VERTICAL LOAD
DESIGN LOAD PER BEARING: 476 kN [107 KIPS]

6. ALL EDGES OF STEEL PLATES SHALL HAVE 1/16" MINIMUM RADIUS

7. UNITS= INCHES [MM]

MATERIALS:

STEEL – AASHTO M-270 GR 36 ZINC METALIZED

PREFORMED FABRIC PAD – AASHTO 18.4.9.1 DIV.II

ANCHOR BOLTS – ASTM F1554 GR 55 GALVANIZED

ALL BEARING DEVICES SHALL BE ZINC METALIZED AS PER SUBSECTION 531.04(b) AND 506.15(b). BEARINGS SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN STANDARD SPEC. SUBSECTION 506.15(b). AREAS OF METALIZING DAMAGED BY FIELD WELDING OR HANDLING SHALL BE PAINTED WITH AN APPROVED SEALANT.

RECEIVED
CK'D BY VHG CK'D BY
NOV 16 2006
RESUBMIT APPROVED ✓
BY Sigd DATE 11/16/06

REV.		BY:	DATE	CK'D BY:	DATE
1	REVISED AS NOTED PER REVIEWERS COMMEMTS	MAE	11/06	MCM	11/06

STATE OF VERMONT
AGENCY OF TRANSPORTATION

ROUTE NO. VT 17 (MAJOR COLLECTOR),
BRIDGE NO. 36
TOWN OF FAYSTON
WASHINGTON COUNTY
PROJECT BHF-0200(9)

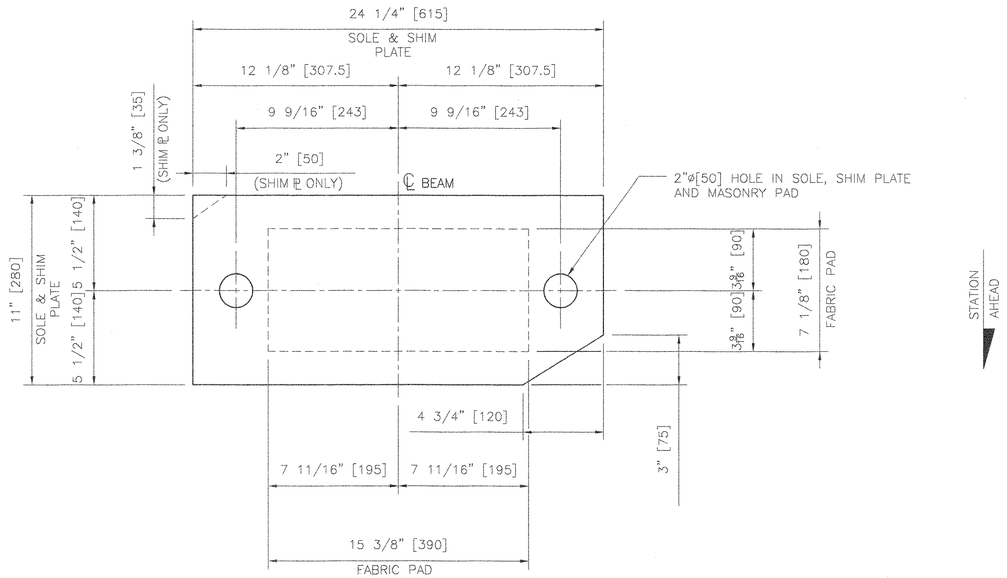
COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: 1/4"=1"	DRAWN BY: MAE	CHECKED BY: MRR
	DATE: 8/15/06	DATE 8/22/06

COSMEC ELASTOMERTIC BEARINGS

CUSTOMER	S.O. NUMBER	DRAWING NUMBER	REV.
WINTERSET, INC.	60642	4880	1

074bb



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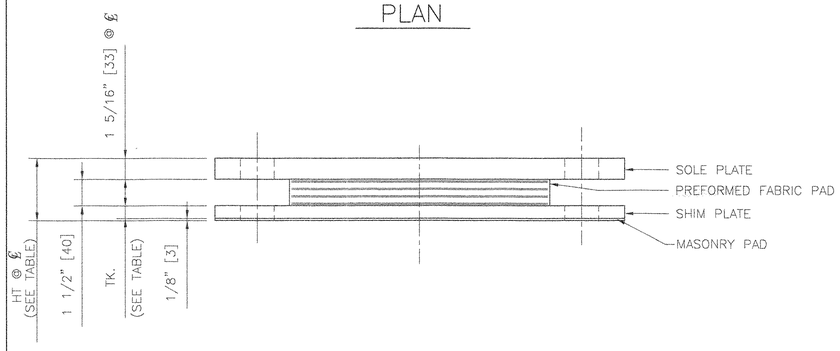
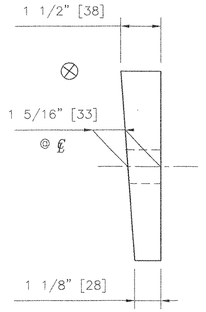


FRONT ELEVATION

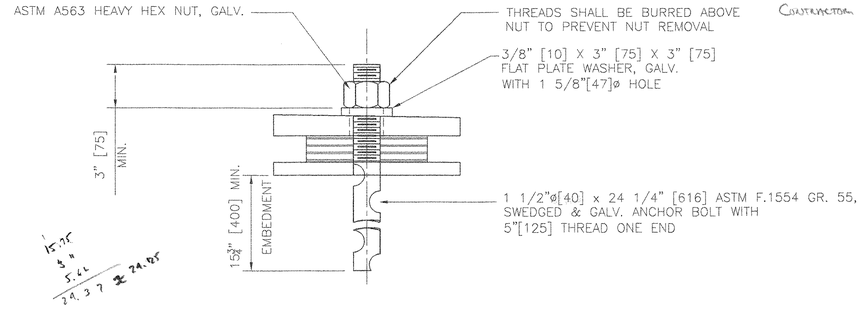
COSMEC FIXED ELASTOMERIC BEARING

LOCATION:
ABUTMENT NO.2 BEAMS 1-5
TOTAL QUANTITY = 5

STATION AHEAD



SIDE ELEVATION
BEVELED SOLE PLATE ONLY



ANCHOR BOLT DETAIL
(SIDE VIEW)

BEARING NOTES:

1. ANCHOR BOLTS AND ASSOCIATED HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 OR A123 AS APPLICABLE.
2. LOCATION OF FABRICATION – 70 SOUTH STREET WALPOLE, MA 02081
3. COSMEC, INC. REPRESENTATIVE: MR. MATT McANDREWS (508-668-6600)
4. ⊗ MARKS THE THICK END OF SOLE PLATE.
5. MAXIMUM ALLOWABLE BEARING PRESSURE ON CONCRETE= 6.9 MPa
   MINIMUM ALLOWABLE DESIGN ROTATION= 0.015 RADIANS
   HORIZONTAL CAPACITY SHALL BE A MINIMUM OF 6% VERTICAL LOAD
   DESIGN LOAD PER BEARING: 476 kN [107 KIPS]
6. ALL EDGES OF STEEL PLATES SHALL HAVE 1/16" MINIMUM RADIUS
7. UNITS= INCHES [MM]

MATERIALS:

STEEL – AASHTO M-270 GR 36 ZINC METALIZED

PREFORMED FABRIC PAD – AASHTO 18.4.9.1 DIV.II

ANCHOR BOLTS – ASTM F1554 GR 55 GALVANIZED

ALL BEARING DEVICES SHALL BE ZINC METALIZED AS PER SUBSECTION 531.04(b) AND 506.15(b). BEARINGS SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN STANDARD SPEC. SUBSECTION 506.15(b). AREAS OF METALIZING DAMAGED BY FIELD WELDING OR HANDLING SHALL BE PAINTED WITH AN APPROVED SEALANT.

NOTE: PER CONTRACT SHEET NO.19 BEARING NOTE 6 THE CONTRACTOR MUST FIELD VERIFY EXISTING BRG. SEAT ELEVATIONS TO ACCURATELY DETERMINE SHIM PLATE THICKNESSES.

#'s Provided By Contractor

PLEASE VERIFY #'s FROM CONTRACTOR

SHIM PLATE THICKNESS & BEARING HEIGHT		
BEAM	TK.	HT ℄
1	~~2.68~~"[~~68~~][45]	~~5.62~~"[143] [121]
2	~~2.05~~"[~~52~~][19]	~~4.99~~"[127] [~~95~~]
3	~~2.17~~"[~~55~~][31]	~~5.11~~"[130] [105]
4	~~2.32~~"[~~59~~][26]	~~5.26~~"[134] [102]
5	~~2.09~~"[~~53~~][30]	~~5.03~~"[128] [106]
6	SHIM PLATE NOT REQUIRED	

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NOV 16 2006
RESUBMIT APPROVED As Noted
BY MF DATE 11/16/06

STATE OF VERMONT
AGENCY OF TRANSPORTATION

ROUTE NO. VT 17 (MAJOR COLLECTOR),
BRIDGE NO. 36
TOWN OF FAYSTON
WASHINGTON COUNTY
PROJECT BHF-0200(9)

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: 1/4"=1"	DRAWN BY: MAE	CHECKED BY: MRR
	DATE: 8/15/06	DATE 8/22/06

COSMEC ELASTOMERTIC BEARINGS

REV.		BY:	DATE	CK'D BY:	DATE	CUSTOMER	S.O. NUMBER	DRAWING NUMBER	REV.
1	REVISED AS NOTED PER REVIEWERS COMMEMTS	MAE	11/06	MCM	11/06	WINTERSET, INC.	60642	4876	1

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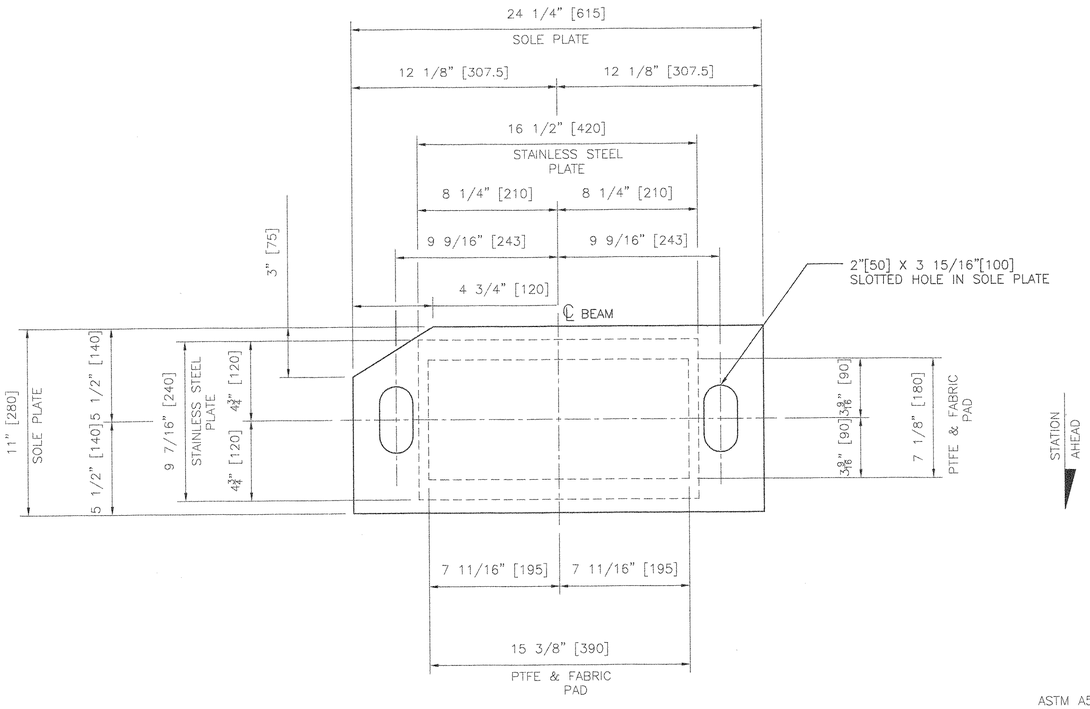

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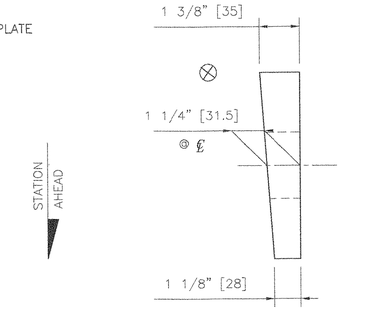
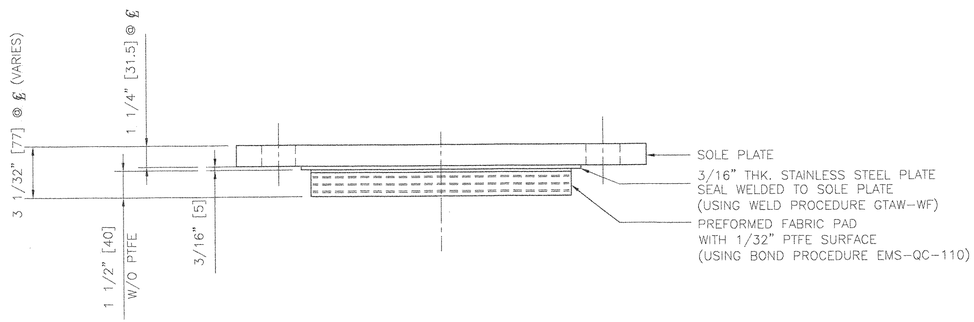
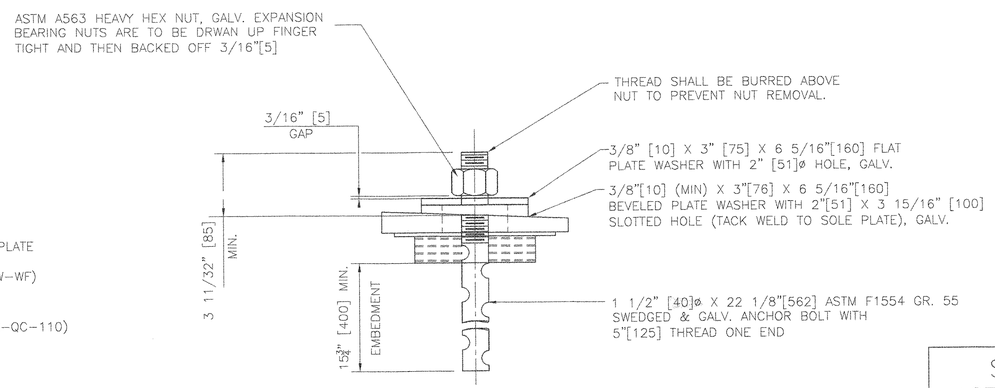


SIDE ELEVATION

BEVELED SOLE PLATE ONLY



FRONT ELEVATION



ANCHOR BOLT DETAIL

(SIDE VIEW)

COSMEC EXPANSION ELASTOMERIC BEARING

LOCATION:
ABUTMENT NO.1
TOTAL QUANTITY - 6

BEARING NOTES:

1. ANCHOR BOLTS AND ASSOCIATED HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 OR A123 AS APPLICABLE.
2. LOCATION OF FABRICATION - 70 SOUTH STREET WALPOLE, MA 02081
3. COSMEC, INC. REPRESENTATIVE: MR. MATT McANDREWS (508-668-6600)
4. ⊗ MARKS THE THICK END OF SOLE PLATE.
5. MAXIMUM ALLOWABLE BEARING PRESSURE ON CONCRETE= 6.9 MPa
MINIMUM ALLOWABLE DESIGN ROTATION= 0.015 RADIANS
HORIZONTAL CAPACITY SHALL BE A MINIMUM OF 6% VERTICAL LOAD
DESIGN LOAD PER BEARING: 476 kN [107 KIPS]
6. ALL EDGES OF STEEL PLATES SHALL HAVE 1/16" MINIMUM RADIUS
7. UNITS= INCHES [MM]

MATERIALS:

STEEL - AASHTO M-270 GR 36 ZINC METALIZED

PREFORMED FABRIC PAD - AASHTO 18.4.9.1 DIV.II

ANCHOR BOLTS - ASTM F1554 GR 55 GALVANIZED

ALL BEARING DEVICES SHALL BE ZINC METALIZED AS PER SUBSECTION 531.04(b) AND 506.15(b). BEARINGS SHALL BE SEALED WITH AN APPROVED SEALER AS SPECIFIED IN STANDARD SPEC. SUBSECTION 506.15(b). AREAS OF METALIZING DAMAGED BY FIELD WELDING OR HANDLING SHALL BE PAINTED WITH AN APPROVED SEALANT.

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NOV 16 2006
RESUBMIT APPROVED ✓
BY MF SV DATE 11/16/06

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CK'D BY OK'D BY
NOV 12 2006
RESUBMIT APPROVED
BY DATE

STATE OF VERMONT
AGENCY OF TRANSPORTATION

ROUTE NO. VT 17 (MAJOR COLLECTOR),
BRIDGE NO. 36
TOWN OF FAYSTON
WASHINGTON COUNTY
PROJECT BHF-0200(9)

COSMEC, INC. 70 SOUTH STREET WALPOLE, MA. 02081

SCALE: 1/4"=1"	DRAWN BY: MAE	CHECKED BY: MRR
	DATE: 8/15/06	DATE 8/22/06

COSMEC ELASTOMERTIC BEARINGS

CUSTOMER	S.O. NUMBER	DRAWING NUMBER	REV.
WINTERSET, INC.	60642	4875	1

REV.		BY:	DATE	CK'D BY:	DATE
1	REVISED AS NOTED PER REVIEWERS COMMEMTS	MAE	11/06	MCM	11/06

07666

VTRANS
RECEIVED
OK'D BY ______ OK'D BY JCK
SEP 13 2006
RESUBMIT ______ APPROVED ✓
BY ______ DATE 9-14-06

Route VT 17 over Mill Brook
Bridge Number 36 Improvement
Project Number: BHF 0200 (9)
Washington County, Vermont
High Steel Structures Shop Number: VT-06062

HEAT STRAIGHTENING/CAMBER ADJUSTMENT PROCEDURE

ALL HEATING OPERATIONS MUST BE WITNESSED BY THE VERMONT AGENCY OF TRANSPORTATION SHOP INSPECTOR

Heating Process and Equipment

- Heating shall be performed using large, approximately one inch diameter, multi-orifice heating torches.
- Our torch handle selected is the Victor HD 310C. Torch tip is type 5515n (1-132 inch diameter).
- The heating pattern will be brought to a temperature range of 800 - 1125° F as rapidly as possible without overheating.
- Steel temperatures greater than 1125° F shall be considered destructive heating.
- Temperature indicating crayons shall be used to insure the metal is not heated more than 1125° F. Heat measurements shall be made after the heating flame had been removed from the steel.

Heating Patterns for Minor Sweep Adjustments

- When small adjustments are required to correct sweep, the application of heat to a continuous strip along the appropriate flange edge for short lengths not to exceed twelve inches may be used. When flange thickness exceeds 1-1/4 inches, both flange surfaces shall be heated concurrently.

Heating Procedure for Camber Adjustment

- Heating to increase or decrease camber may be done with the girder web in the vertical position at any time after the web to flange welds are completed.
- If the girder is to be heated with the web in a vertical position:
  a. Support the girder at each end.
  b. Supply a catch block to prevent too much downward vertical movement.
  c. Secure the girder to prevent lateral movement.
- For minor camber adjustments, a strip along the outside surface of the flange where it intersects the web shall be heated at predetermined locations.
- V type heats shall be used to increase/decrease camber when the required correction exceeds ¼ inch. V type heat patters shall have a base not exceeding ten inches in length and the tip shall not exceed 75% of the web depth.

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VT-06062 Contract #BHF 0200 (9), Bridge #36 Improvement

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W2 - METRIC

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION	ASTM A709 GRADES: 250, 345, 345W
WELDING PROCESS	SHIELDED METAL ARC WELDING
MANUAL OR MACHINE	MANUAL
POSITION OF WELDING	ALL (EXCEPT AS NOTED BELOW)
FILLER METAL SPECIFICATION	AWS A5.1 AND A5.5
WELD METAL CLASSIFICATION	E7018/E7028 (TACKING ONLY) AND E8018-C3
WIRE/FLUX	D.N.A.
POLARITY	DC+ OR AC
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART
ELECTRICAL STICK-OUT	D.N.A.
SHIELDING GAS	D.N.A.

REVISED: 7/27/98

ORIGINAL ISSUE: 4/9/96

WELDING PROCEDURE

PASS NO.	WIRE SIZE (mm)	CURRENT RANGE E7018		TRAVEL SPEED (mm/min)	JOINT DETAIL
		DC+	AC		
1	3.2	90-150	110-170	152-228	TACK WELDS
1	4.0	120-190	135-225	203-330	GROOVE ROOT PASSES AND TACK WELDS

PASS NO.	WIRE SIZE (mm)	CURRENT RANGE E7028		TRAVEL SPEED (mm/min)	JOINT DETAIL (LIMITED TO FLAT AND HORIZONTAL TACK WELDS AND FLAT POSITION GROOVE ROOT PASSES)
		DC+	AC		
1	4.0	170-240	180-270	203-330	GROOVE ROOT PASSES AND TACK WELDS

PASS NO.	WIRE SIZE (mm)	CURRENT RANGE E8018-C3		TRAVEL SPEED (mm/min)	JOINT DETAIL
		DC+	AC		
1	4.0	130-190	140-225	203-330	GROOVE ROOT PASSES, REPAIR WELDS AND TACKS
ALL	4.0	130-190	140-225	203-330	FILLET WELDS
ALL	4.8	180-270	210-290	228-381	FILLET WELDS (FLAT AND HORIZONTAL WELDS ONLY)
ALL	4.8	250-330	270-370	228-406	FILLET WELDS (FLAT AND HORIZONTAL WELDS ONLY)

• WELD SIZE DETERMINED BY TRAVEL SPEED

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9-12-06

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VT-06062 Contract #BHF 0200 (9), Bridge #36 Improvement

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W6-METRIC

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION	ASTM A709 GRADES: 250, 345, 345W
WELDING PROCESS	FLUX CORE ARC WELDING
MANUAL OR MACHINE	SEMIAUTOMATIC OR MACHINE
POSITION OF WELDING	1F, 2F, 3F, 4F
FILLER METAL SPECIFICATION	AWS A5.20
WELD METAL CLASSIFICATION	E71T-1
WIRE/FLUX	HOBART FORMULA XL 550 (H4)
WIRE DIAMETER	1.4 mm
SINGLE OR MULTIPLE ARC	SINGLE ARC
POLARITY	DC+
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART*
ELECTRICAL STICK-OUT	19.1 mm
SHIELDING GAS	100% CO2

REVISED:

ORIGINAL ISSUE: 5/3/06

WELDING PROCEDURE

PASS NO.	AMPS	VOLTS	TRAVEL SPEED (mm/MIN.)	GAS FLOW (l/MIN.)	JOINT DETAIL
ALL	225-250	25.0-27.0	375-419	19-24	ALL POSITION TACK WELDS

VTRANS RECEIVED SEP 12 2006 BY

USED FOR:

ALL POSITION TACK WELDS

RESUBMIT APPROVED BY DATE 9-13-06

PREHEAT NOT REQUIRED FOR TACK WELDS REMELTED BY THE SAW PROCESS

PROCEDURE QUALIFICATION RECORD AWS-06-02 (EXPIRES 4/27/11)

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VT-06062 Contract #BHF 0200 (9), Bridge #36 Improvement

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W34X - METRIC

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION ________ ASTM A709 GRADES: 250, 345, 345W
WELDING PROCESS ________ SUBMERGED ARC WELDING
MANUAL OR MACHINE ________ SEMIAUTOMATIC OR MACHINE
POSITION OF WELDING ________ 2F
FILLER METAL SPECIFICATION ________ AWS A5.17
WELD METAL CLASSIFICATION ________ F7A2-EM12K
WIRE/FLUX ________ LINCOLN L61/761
WIRE DIAMETER ________ 2.4mm
SINGLE OR MULTIPLE ARC ________ SINGLE ARC
POLARITY ________ DC-
ROOT TREATMENT ________ MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE ________ SEE PREHEAT CHART
ELECTRICAL STICK-OUT ________ 25.4mm
SHIELDING GAS ________ D.N.A.

VTRANS
RECEIVED
CK'D BY ____ RVW'D BY JWC
SEP 1? 2006 ✓
RESUBMIT ____ APPROVED ✓
BY ____ DATE 9-13-06

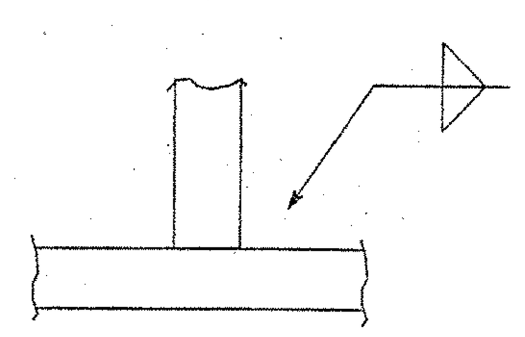
REVISED: 5/5/03

ORIGINAL ISSUE: 3/4/96

WELDING PROCEDURE

PASS NO.	WELDING CURRENT			TRAVEL SPEED (mm/m)	JOINT DETAIL
	AMPS	WIRE FEED SPEED	VOLTS		
1	360-440	2.9-3.7	29.0-36.0	279-686	8mm FILLET WELD

PRIMARY USE:
STIFFENER TO WEB
(AND OTHER APPLICATIONS AS NEEDED)



AWS D1.5 FWST T-TEST-10
PROCEDURE QUALIFICATION RECORD AWS-FCM-02-4 (EXPIRES 6/27/07)
PROCEDURE QUALIFICATION RECORD AWS-FCM-02-5A (EXPIRES 7/16/07)

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VT-06062 Contract #BHF 0200 (9), Bridge #36 Improvement

WELDING PROCEDURE FOR AWS PREQUALIFIED JOINTS

W44X - METRIC

PROCEDURE SPECIFICATIONS

MATERIAL SPECIFICATION	ASTM A709 GRADES: 250, 345, 345W
WELDING PROCESS	SUBMERGED ARC WELDING
MANUAL OR MACHINE	SEMIAUTOMATIC OR MACHINE
POSITION OF WELDING	2F
FILLER METAL SPECIFICATION	AWS A5.17
WELD METAL CLASSIFICATION	F7A2-EM12K
WIRE/FLUX	LINCOLN L61/761
WIRE DIAMETER	2.4mm
SINGLE OR MULTIPLE ARC	SINGLE ARC
POLARITY	DC-
ROOT TREATMENT	MANUAL CLEANING
PREHEAT AND INTERPASS TEMPERATURE	SEE PREHEAT CHART
ELECTRICAL STICK-OUT	25.4mm
SHIELDING GAS	D.N.A.

VTRANS RECEIVED SEP 12 2006 CKD BY JWC RESUBMIT APPROVED ✓ BY DATE 9-13-06

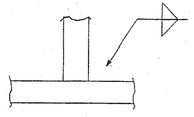
REVISED: 5/5/03

ORIGINAL ISSUE: 3/4/96

WELDING PROCEDURE

PASS NO.	WELDING CURRENT			TRAVEL SPEED (mm/m)	JOINT DETAIL
	AMPS	WIRE FEED SPEED	VOLTS		
1	360-440	2.9-3.7	29.0-36.0	279-686	8mm FILLET WELD

PRIMARY USE:
STIFFENER TO FLANGE
(AND OTHER APPLICATIONS AS NEEDED)



AWS D1.5 FWST T-TEST-10
PROCEDURE QUALIFICATION RECORD AWS-FCM-02-4 (EXPIRES 6/27/07)
PROCEDURE QUALIFICATION RECORD AWS-FCM-02-5A (EXPIRES 7/16/07)

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MINIMUM PREHEAT AND INTERPASS TEMPERATURE

SHIELDED METAL-ARC WELDING WITH LOW HYDROGEN ELECTRODES, OR SUBMERGED ARC WELDING, OR FLUX CORED ARC WELDING

THICKNESS OF THICKEST PART AT POINT OF WELDING - (mm)	ASTM A-36, A-572, AND A-588 M183, M223, AND M222 ASTM A709, GRADE 36 (250) ASTM A709, GRADE 50 (345) ASTM A709, GRADE 50W (345W)
TO 19.1, INCL.	10°C
OVER 19.1 TO 38.1, INCL.	20°C
OVER 38.1 TO 63.5, INCL.	65°C
OVER 63.5	110°C

THE MAXIMUM PREHEAT TEMPERATURE SHALL NOT EXCEED 232°C.
THE MAXIMUM INTERPASS TEMPERATURE SHALL NOT EXCEED 288°C.

REFER TO THE FOLLOWING CHART FOR EQUIVALENT STEEL TYPES.

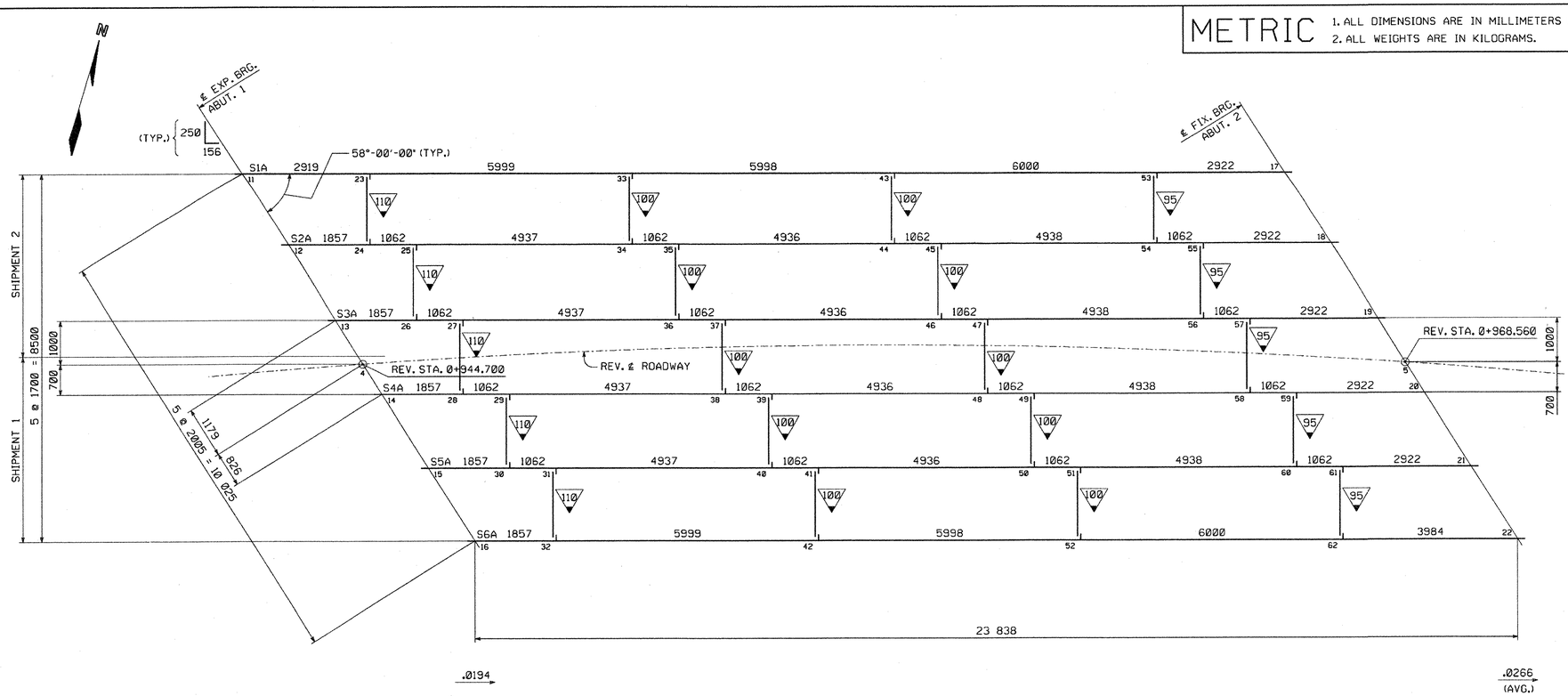
ASTM A-36 AND A-709 GRADE 36 AND AASHTO M183
ASTM A-572 AND A-709 GRADE 50 AND AASHTO M223
ASTM A-588 AND A-709 GRADE 50W AND AASHTO M222

CONTACT QUALITY CONTROL FOR PREHEAT REQUIREMENTS ON ANY STEEL NOT SPECIFICALLY NOTED ABOVE

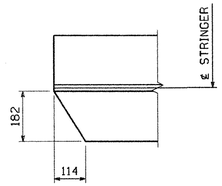
REVISED:
ORIGINAL ISSUE: 3/4/96

METRIC

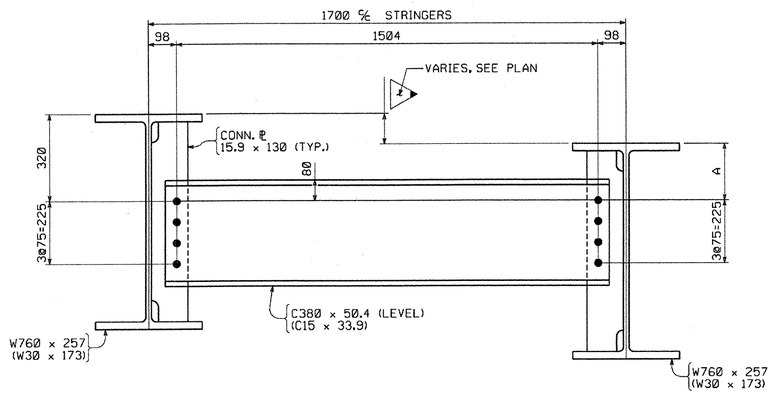
METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE VT	FED. AID PROJ. NO.



CALCULATION PLAN



TOP & BOTT. FLG. CLIP
(ABUT. 1 SHOWN, ROTATE 180° FOR ABUT. 2)



INTERMEDIATE DIAPHRAGM LAYOUT
(LOOKING STATIONS AHEAD)

▷	A
110	210
100	220
95	225

NOTES:

DIMENSIONS ON PLAN ALONG STRINGERS ARE GIVEN TO THE CHORD AT THE BOTTOM OF STRINGER IN FULLY CAMBERED POSITION. ALL OTHER DIMENSIONS ARE GIVEN HORIZONTALLY.
DIMENSIONS PLACED ON THE STRINGER LINES REPRESENT DIAPHRAGM SPACING.
FIGURES GIVEN THUS: .0194 ARE THE GRADES OF THE STRINGERS AT THE BEARINGS IN FINAL POSITION; ARROW POINTS DOWNGRADE.
ALL STIFFENER AND CONNECTION PLATE SPACINGS ARE GIVEN TO ℄ PLATE.
ENDS OF STRINGERS TO BE VERTICAL IN FINAL POSITION.
ALL STEEL TO BE AASHTO M270M GRADE 345W (U.N.).
ALL FIELD CONNECTIONS TO BE MADE WITH ⅞"ø H.S. (AASHTO M164 TYPE 3) BOLTS IN $^{15}/_{16}$"ø HOLES (U.N.).
FIGURES GIVEN THUS: 110 ARE THE DIFFERENCES IN ELEVATIONS OF STRINGERS (IN THE PLANE OF THE DIAPHRAGM IN ERECTED POSITION) AT DIAPHRAGMS; ARROW POINTS TOWARD LOW STRINGER.
ALL STATIONS ARE GIVEN IN METERS.

NOTE
THE PURPOSE OF THIS DRAWING IS TO COORDINATE GEOMETRIC CONTROL INFORMATION. THIS DRAWING IS SUBMITTED FOR INFORMATION ONLY AND IS NOT INTENDED FOR SHOP FABRICATION. THIS DRAWING IS FOR REFERENCE ONLY, APPROVAL IS NOT REQUIRED.

RECEIVED
CK'D BY VHB CK'D BY
AUG 2 1 2006
RESUBMIT APPROVED As Noted
BY DATE 9/19/06

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FAYSTON

WORKSHEET - CALCULATION PLAN & LAYOUTS
VT 17 OVER MILL BROOK
VT 17 STA. 0+944.700 TO STA. 0+968.560
TOWN OF FALSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D BY: MGK DATE: 8-4-06
CONTRACT NUMBER: VT-06062-1&2 DRAWING NUMBER: WS1 OF WS1

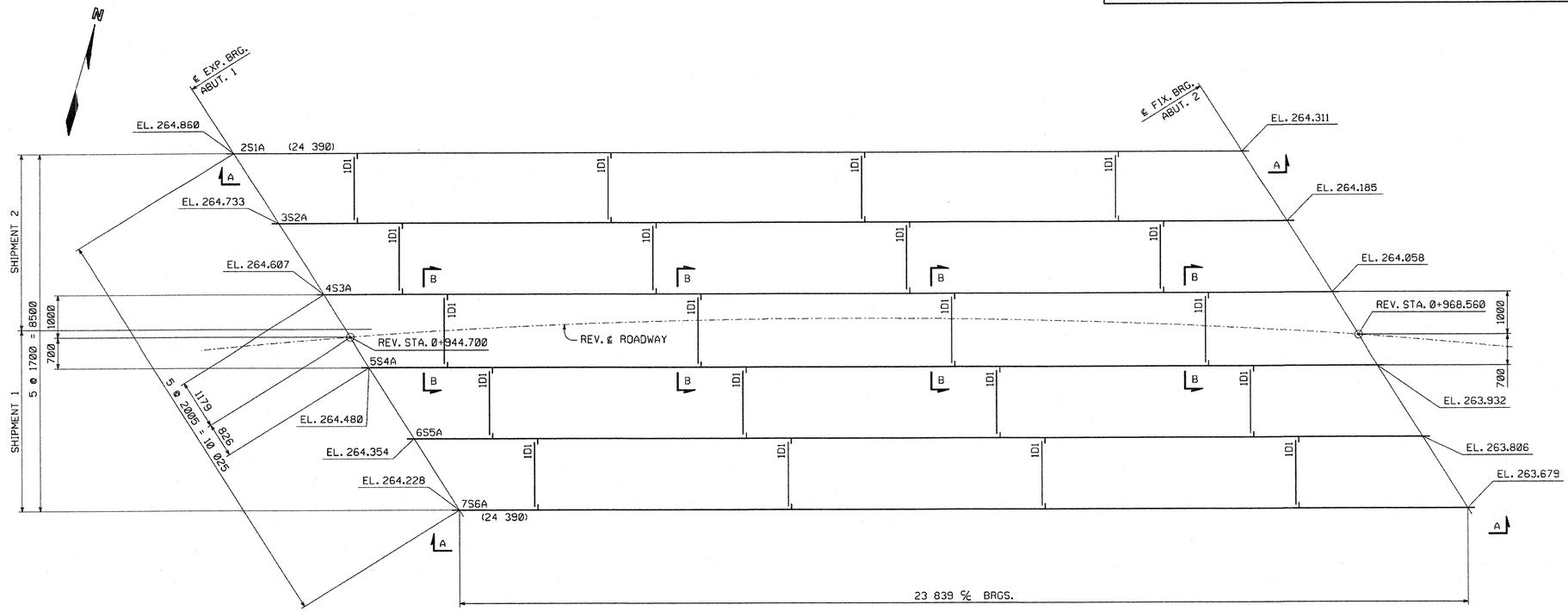
08355

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

Scale = 0.017500 of full size.
BY: McKendel
PLOTTED: 08/10/06 10:35:48 AM

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	



FIELD BOLT SUMMARY - SHIP. #1

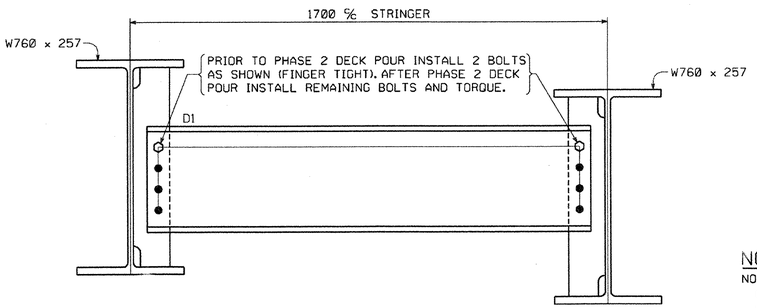
(2% ADDITIONAL BOLTS ADDED + 3 EA. FOR TESTING)

AASHTO M164 TYPE 3 (RCT); W/HVY HEX HD & AASHTO M291 GRADE DH3 HEX NUT
69 - 7/8"ø HIGH STRENGTH BOLTS x 0'-2 1/4
AASHTO M293 WEATHERING (RCT); ROUND & FLAT
69 - STD WASHERS FOR 7/8"ø BOLT

FIELD BOLT SUMMARY - SHIP. #2

(2% ADDITIONAL BOLTS ADDED + 3 EA. FOR TESTING)

AASHTO M164 TYPE 3 (RCT); W/HVY HEX HD & AASHTO M291 GRADE DH3 HEX NUT
101 - 7/8"ø HIGH STRENGTH BOLTS x 0'-2 1/4
AASHTO M293 WEATHERING (RCT); ROUND & FLAT
101 - STD WASHERS FOR 7/8"ø BOLT

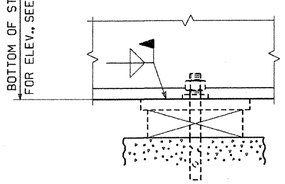


SECTION B-B

ERECTION FRAMING PLAN

SHIPPING WEIGHTS	
SHIPPING PIECE MARK	WEIGHT EA. (KG)
S1A	6,314
S2A	6,360
S3A	6,360
S4A	6,360
S5A	6,360
S6A	6,314

CONTRACTOR NOTE:
ELEVATIONS ARE GIVEN TO BOTTOM OF STEEL - DO NOT POUR TO FINAL ELEVATIONS WITHOUT VERIFICATION OF BEARING HEIGHTS AND BRIDGE SEATS.



SECTION A

RECEIVED
CK'D BY VHB OK'D BY
AUG 2 1 2006
RESUBMIT APPROVED As Noted
BY WJ SH DATE 9/18/06

LIST OF FIELD CONNECTIONS ~ SHIP. 1

ONE WASHER PER BOLT UNLESS NOTED OTHERWISE

LINE	ACTUAL NUMBER REQ'D	BOLT DIAM.	BOLT LENGTH	BOLTS PER CONN.	NO. OF CONN	GRIP	THICKNESS OF PIECES JOINED					PIECES CONNECTED AND REMARKS
1	64	7/8	2 1/4	4	16	25.9	10.0	15.9				DIAPHRAGM TO CONN. PLATE
2												

LIST OF FIELD CONNECTIONS ~ SHIP. 2

ONE WASHER PER BOLT UNLESS NOTED OTHERWISE

LINE	ACTUAL NUMBER REQ'D	BOLT DIAM.	BOLT LENGTH	BOLTS PER CONN.	NO. OF CONN	GRIP	THICKNESS OF PIECES JOINED					PIECES CONNECTED AND REMARKS
1	96	7/8	2 1/4	4	24	25.9	10.0	15.9				DIAPHRAGM TO CONN. PLATE
2												

SHOP DRAWING REVIEW

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☐ 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, Kilton Rd. Bedford, NH 03110 603 644 0888

Job Number: 50543
Reviewed By: L.S. GARDNER
Date: 9/6/06

NOTES:

NO CREDIT WILL BE ALLOWED FOR WORK PERFORMED BY OTHERS IN REPLACING OR CORRECTING MATERIALS OR WORKMANSHIP COVERED BY THIS DRAWING UNLESS EXPRESSLY AUTHORIZED BY HIGH STEEL STRUCTURES, INC.
HIGH STEEL STRUCTURES, INC. DOES NOT SUPPLY SHEAR STUDS, EXPANSION DAM MATERIAL, BEARING ASSEMBLIES INCLUDING PADS AND ANCHOR BOLTS, HOLES OR BOLTS FOR FLEMING BRACKETS
WORK THIS DRAWING WITH DRAWING E2.
NOTICE: WEIGHTS OF MEMBERS LISTED ON THESE DRAWINGS ARE ESTIMATED WEIGHTS AND ACTUAL WEIGHTS WILL VARY. HIGH STEEL STRUCTURES, INC. WILL NOT BE RESPONSIBLE FOR ANY ERECTION PROCEDURES, SHIPPING PROCEDURES, ETC. DEVELOPED USING ESTIMATED WEIGHTS AS SHOWN.
ALL DIMENSIONS ARE GIVEN HORIZONTALLY (U.N.).
ALL ELEVATIONS AND STATIONS ARE GIVEN IN METERS.
DIMENSIONS GIVEN THUS: (24 390) ARE THE SHIPPING LENGTHS OUT TO OUT OF FASCIA STRINGERS.
THE SHIPPING MARKS SHOWN CONSIST OF THE PREFIX INDICATING THE SHEET NUMBER UPON WHICH THE PIECE IS DETAILED ALONG WITH THE SHIPPING PIECE MARK.
ALL FIELD CONNECTIONS TO BE MADE IN ACCORDANCE WITH THE FIELD BOLT SUMMARY AND LIST OF FIELD CONNECTIONS.
(RCT) INDICATES ROTATIONAL CAPACITY TESTED BOLTS. DO NOT MIX NUTS, BOLTS AND WASHERS FROM DIFFERENT CONTAINERS UNLESS ALL NUTS, BOLTS AND WASHERS HAVE THE SAME LOT NUMBER.

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FAYSTON

ERECTION FRAMING PLAN
VT 17 OVER MILL BROOK
VT 17 STA. 0+944.700 TO STA. 0+968.560
TOWN OF FAIRSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D. BY: MGK DATE: 8-9-06
CONTRACT NUMBER: VT-06062-1&2 DRAWING NUMBER: E1 OF E2

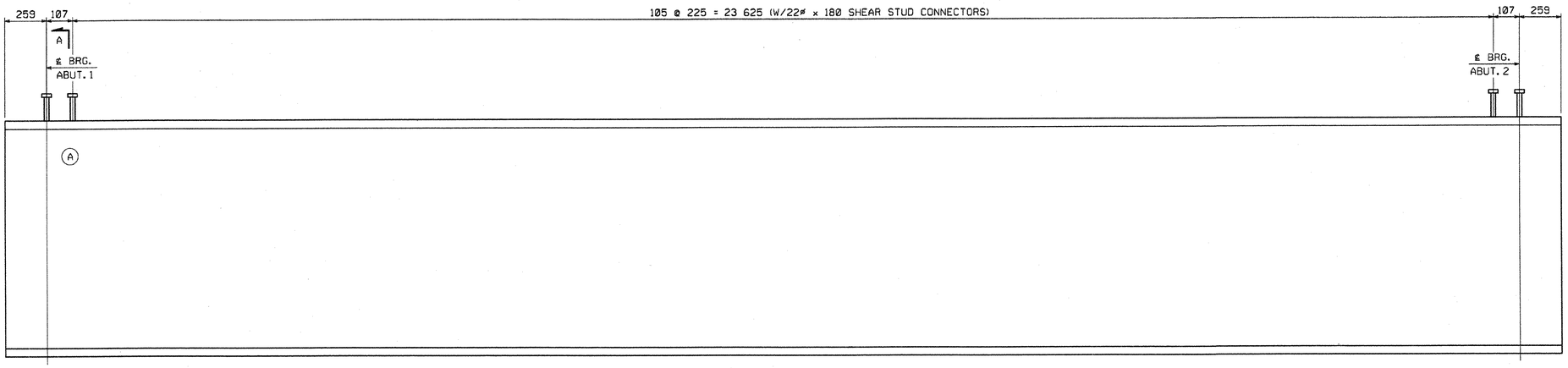
08433

PLOTTED: 08/18/06 10:36:08 AM
BY: Mc-reidel

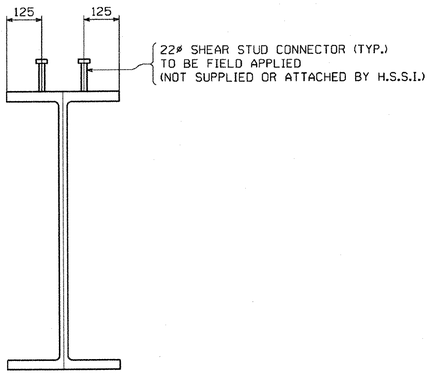
06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

METRIC

METRIC	1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED. 2. ALL WEIGHTS ARE IN KILOGRAMS.	FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
			VT	



SHEAR STUD CONNECTOR LOCATION LAYOUT



SECTION A

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

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 54 Bedford Farms, Kilton Rd. Bedford, NH 03110 603 644 0888

Job Number: 50543
Reviewed By: L.S. GARDNER
Date: 9/6/06

RECEIVED
CK'D BY VHB OK'D BY
AUG 21 2006
RESUBMIT APPROVED As Noted
BY WKA DATE 9/19/06

NOTES:
FOR NOTES, SEE DRAWING E1.
WORK THIS DRAWING WITH DRAWING E1.
(A) INDICATES SUFFIX MARK OF SHIPPING PIECE.

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FAYSTON

ERECTION PLAN - STUD LAYOUTS
VT 17 OVER MILL BROOK
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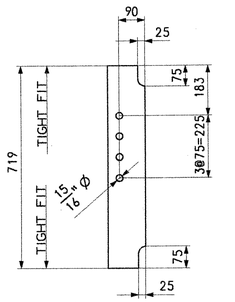
TOWN OF FALSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D BY: MGK DATE: 8-9-06
CONTRACT NUMBER: VT-06062-1&2 DRAWING NUMBER: E2 OF E2

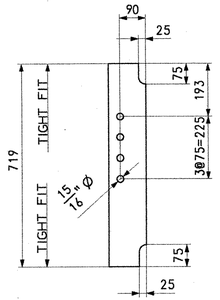
08535

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

PLOTTED: 09/19/06 10:36:11 AM BY: Mkrandol



CONN. PLATE MK. z1a



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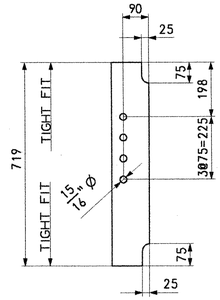
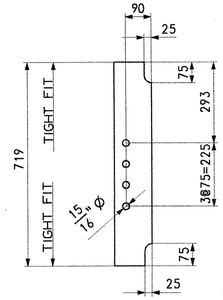


CONN. PLATE MK. z1c



CONN. PLATE MK. z1d

FED.ROAD DIV.NO.	STATE	FED.AID PROJ.NO.
	VT	

BILL OF MATERIAL

SHIP.	QTY. EA.	MARK	COMM.	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA. (KG)
1	3	z1a	PL	15.9 x 130	719	M270M	345W			8	1	11.67
2	2	z1a	PL	15.9 x 130	719	M270M	345W			8	1	11.67
1	6	z1b	PL	15.9 x 130	719	M270M	345W			8	1	11.67
2	4	z1b	PL	15.9 x 130	719	M270M	345W			8	1	11.67
1	3	z1c	PL	15.9 x 130	719	M270M	345W			8	1	11.67
2	2	z1c	PL	15.9 x 130	719	M270M	345W			8	1	11.67
1	8	z1d	PL	15.9 x 130	719	M270M	345W			8	1	11.67
2	12	z1d	PL	15.9 x 130	719	M270M	345W			8	1	11.67

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CK'D BY VHB OK'D BY
AUG 21 2006
RESUBMIT APPROVED As Noted
BY DATE 8/18/06

SHOP DRAWING REVIEW

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

Job Number: 50543
Reviewed By: L. S. GARDNER
Date: 9/6/06

NOTES:

HOLES: 15/16" ø
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE: 50

NO.	REVISION	BY	DATE
1			
2			
3			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FAYSTON

STRINGER JOB STANDARDS
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TOWN OF FALSTON, WASHINGTON COUNTY, VT
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STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D BY: MGK DATE: 8-7-06
CONTRACT NUMBER: VT-06062-1&2 DRAWING NUMBER: Z1 OF Z2

08655

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

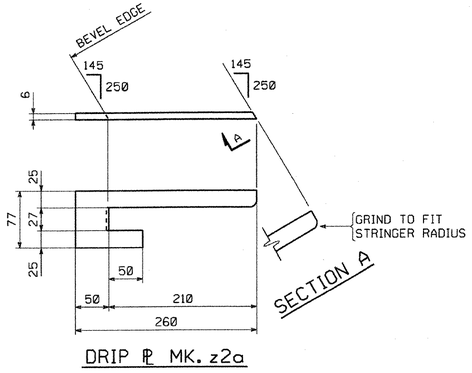
PLOTTED: DATE5678901234567 BY: USERNAME

METRIC

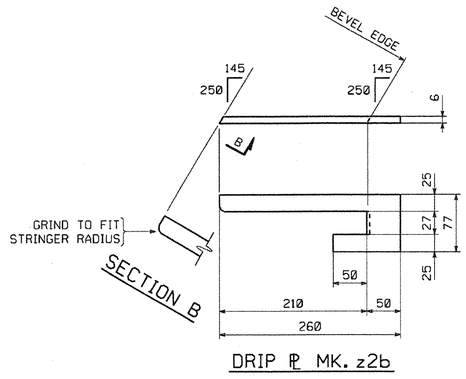
METRIC

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	



DRIP PL MK. z2a



DRIP PL MK. z2b

BILL OF MATERIAL

SHIP.	QTY	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	WEIGHT EA. (KG)
2	1	z2a	PL	6.4 x 77	260	M270M	345W			8	2	1.01
1	1	z2b	PL	6.4 x 77	260	M270M	345W			8	2	1.01

RECEIVED
CK'D BY VHB OK'D BY
AUG 2 1 2006
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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists Six Bedford Farms, Kitson Rd. Bedford, NH 03110 603 644 0888

Job Number: 50543
Reviewed By: L.S. GARDNER
Date: 9/6/06

SHOP NOTE

HOLES: NONE
BOLTS: NONE
PAINT: NONE

FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:50

NO.	REVISION	BY	DATE

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries Inc.

FAYSTON

STRINGER JOB STANDARDS
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IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D. BY: MGK DATE: 8-7-06
CONTRACT NUMBER: VT-06062-1&2 DRAWING NUMBER: Z2 OF Z2

08755

PLOTTED: 08/19/06 10:36:26 AM BY: Mkreidel

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

METRIC

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			VT	

GENERAL SHOP NOTES

SPECIFICATIONS:
STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES
DESIGN SPECIFICATIONS: THE LATEST EDITION OF THE AASHTO ~~LRFD BRIDGE DESIGN SPECIFICATIONS.~~
CONSTRUCTION SPECIFICATIONS: ALL MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH THE STATE OF VERMONT, AGENCY OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR CONSTRUCTION DATED 2001, WITH CURRENT MODIFICATIONS AND ADDITIONS.

MATERIAL:
UNLESS NOTED OTHERWISE, ALL STEEL TO BE AASHTO M270M GRADE 345W.
(T) INDICATES ZONE 2 CHARPY V-NOTCH TESTING REQUIRED.

SHOP PROCEDURE:
CAMBER TOLERANCE: -0 mm TO +19 mm
ALL RE-ENTRANT CUTS TO HAVE 25 MIN. RADIUS.
BEARING AREA, AS NOTED ON GIRDER DETAILS, INDICATES AREA THAT MUST BE FLAT AND TRUE TO RECEIVE SOLE PLATE.
ALL SHARP CORNERS AND EDGES THAT ARE MARRED, CUT OR ROUGHENED IN HANDLING SHALL BE GROUND TO 1.6 mm RADIUS.
ONLY LOW STRESS DIE STAMPS MAY BE USED FOR MARKING IN AREAS NOT EXPOSED ON THE FINISHED STRUCTURE.

INSPECTION:
SHOP INSPECTION BY THE VERMONT AGENCY OF TRANSPORTATION

WELDING:
ALL WELDING IS TO CONFORM TO AWS D1.5-02.
WELDING METHODS, PROCEDURES, AND MATERIALS SHALL COMPLY WITH THE SPECIFIC PROCEDURE DESIGNATED IN THE WELD SYMBOL TAIL.
FOR WELDING STIFFENERS AND CONNECTION PLATES TO STRINGERS, SEE TYPICAL WELDING DETAIL.

IDENTIFICATION OF HOLE PLACEMENT:
UNLESS NOTED OTHERWISE, BOLT HOLES IN MATERIAL 16mm OR LESS IN THICKNESS MAY BE CNC (COMPUTER NUMERICALLY CONTROLLED) PUNCHED OR CNC DRILLED FULL SIZE UNASSEMBLED. ALL MATERIAL THICKER THAN 16mm IS TO BE DRILLED.

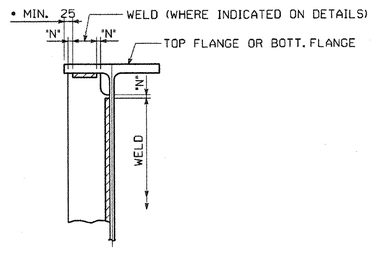
NON-DESTRUCTIVE TESTING:

MAGNETIC PARTICLE INSPECTION IS REQUIRED ON AT LEAST 300 mm OF EVERY 3000 mm LENGTH OF FILLET WELDS AND 300 mm OF SUCH WELDS LESS THAN 3000 mm IN LENGTH ON CONNECTION PLATES TO WEB AND FLANGE WELDS. TESTING PER THE YOKE METHOD, USING DC.

CLEANING:
ALL STEEL TO BE BLAST CLEANED TO SSPC-SP10 (NEAR WHITE), AFTER FABRICATION.

PAINTING:
NO PAINT

DRAWING REFERENCE:
STRINGER JOB STANDARDS -PREFIXED "Z"
WELDING PROCEDURE -PREFIXED "WP"



STIFFENER WELDING DETAIL
• WELDS MUST STOP 25 MINIMUM FROM EDGE OF FLANGE

RECEIVED
CK'D BY VHB OK'D BY
AUG 2 1 2006
RESUBMIT APPROVED As Noted
BY WJS DATE 9/18/06

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.
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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists Six Bedford Farms, Kilton Rd. Bedford, NH 03110 603 644 0308
Job Number: 55545
Reviewed By: L-S. GARDNER
Date: 9/6/06

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1170 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FAYSTON

GENERAL SHOP NOTES
VT 17 OVER MILL BROOK
VT 17 STA. 0+944.700 TO STA. 0+968.560
TOWN OF FALSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

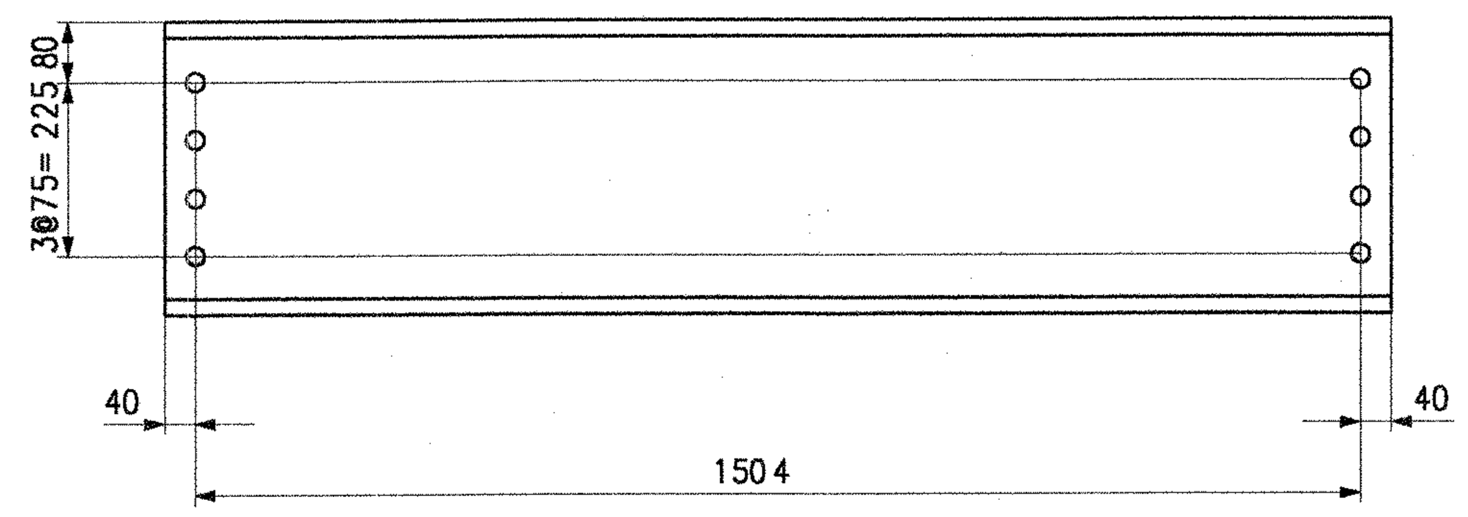
STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: KMA CHK'D BY: SJA DATE: 7-27-06
CONTRACT NUMBER: VT-06062-1&2 DRAWING NUMBER: GN1 OF GN1

008 55

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

PLOTTED: 09/19/06 10:36:29 AM BY: Mcreadel

FED.ROAD DIV.NO.	STATE	FED.AID PROJ.NO.
	VT	



DIAPHRAGM MK.D1

BILL OF MATERIAL

SHIP.	QTY. EA.	MARK	COMM.	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA. (KG)
				DIAPHRAGMS								
1	8	D1	C	380 x 50.4	1584	M270M	345W		(C15x33.9)	10	1	79.83
2	12	D1	C	380 x 50.4	1584	M270M	345W		(C15x33.9)	10	1	79.83

TOTAL WEIGHT THIS SHEET: 1596.67 kg

RECEIVED
CK'D BY VHB OK'D BY
AUG 21 2006
RESUBMIT ____ APPROVED As Noted
BY WGH DATE 9/19/06

SHOP DRAWING REVIEW

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

Job Number: 50543
Reviewed By: L.S. GARDNER
Date: 9/6/06

NOTES:

HOLES: 15/16" Ø
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE: 56

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

DIAPHRAGM D1
VT 17 OVER MILL BROOK
VT 17 STA. 0+944.700 TO STA. 0+968.560
TOWN OF FALSTON, WASHINGTON COUNTY, VT
FAYSTON
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D. BY: MGK DATE: 8-7-06
CONTRACT NUMBER: VT-06062-1&2 DRAWING NUMBER: 1 OF 7

08955

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

METRIC

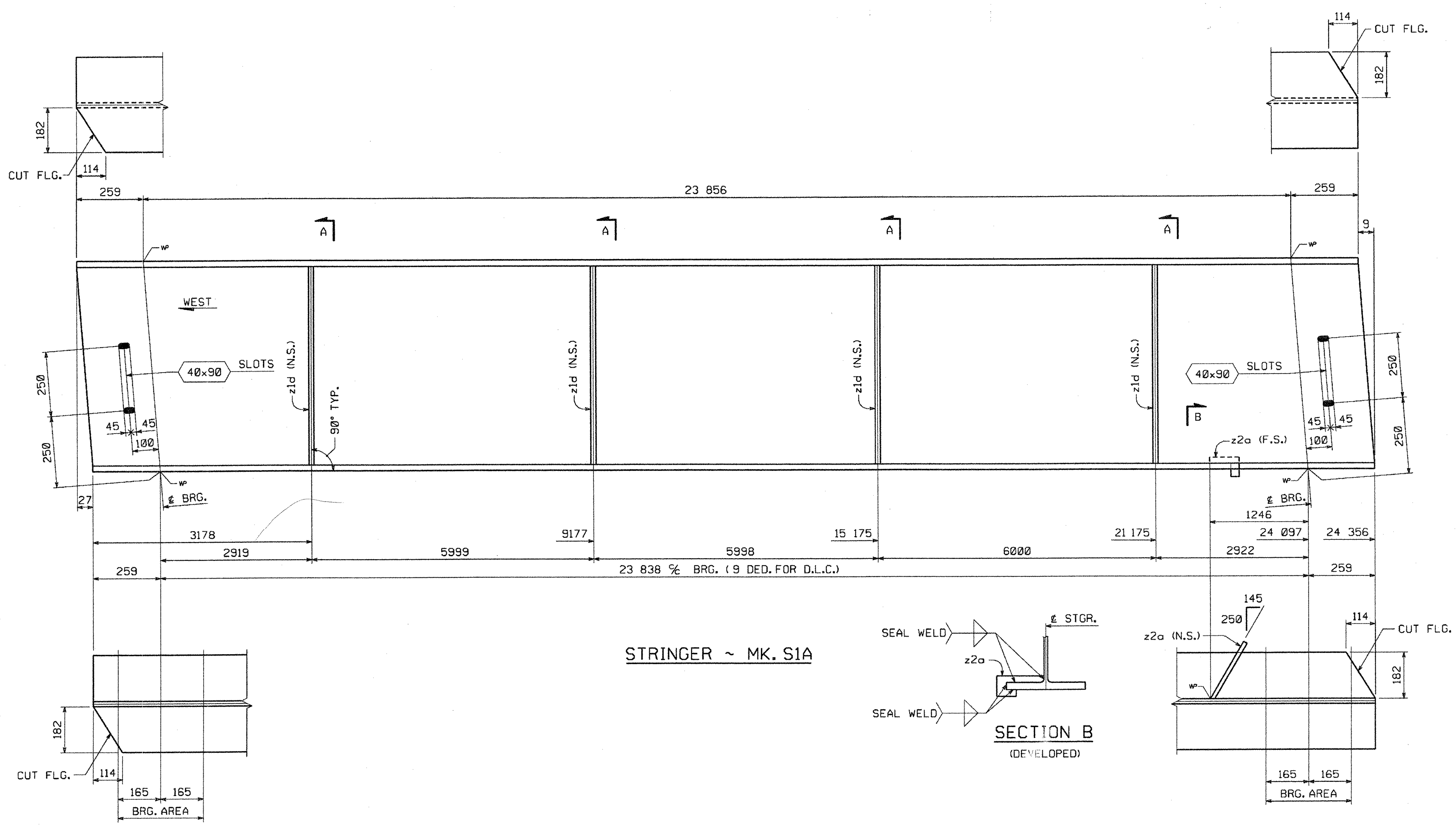
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

BILL OF MATERIAL

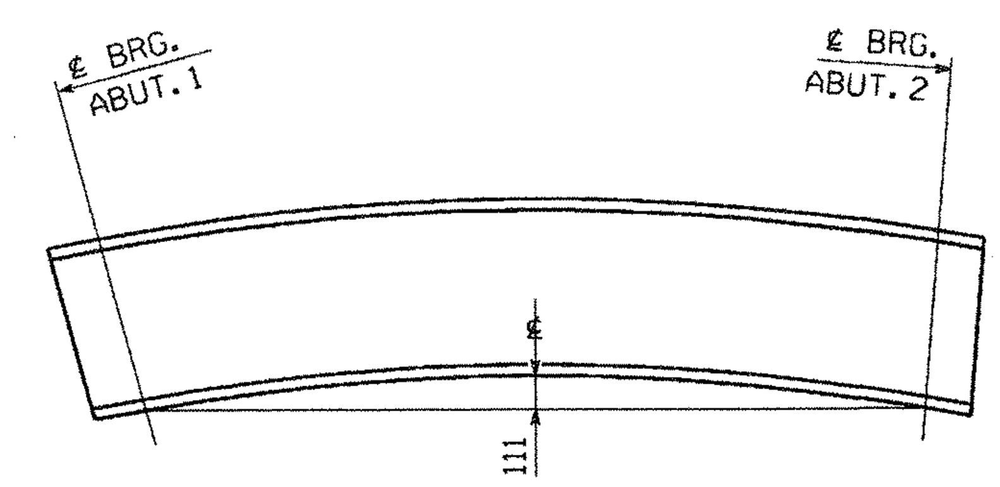
QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
1	S1A	STRINGER									6314.10
1		W	760 x 257	24 383	M270M	345W	T	(W30 x 173)	5	2	6266.43
4	z1d	PL	15.9 x 130	719	M270M	345W			8	1	46.66
1	z2a	PL	6.4 x 77	260	M270M	345W			8	2	1.01

TOTAL WEIGHT THIS SHEET: 6314.10 kg

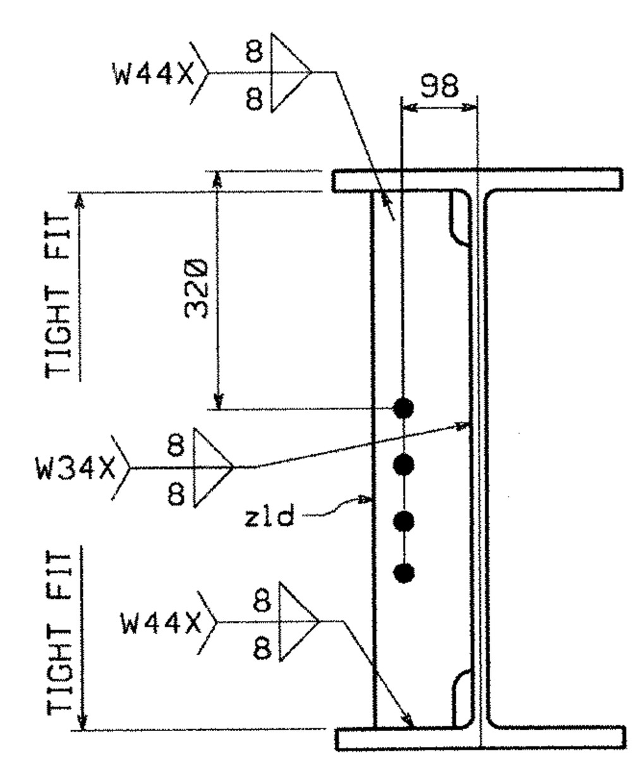


STRINGER ~ MK. S1A

SECTION B
(DEVELOPED)



CAMBER DIAGRAM



SECTION A

RECEIVED
CK'D BY VHB CK'D BY
AUG 21 2006
RESUBMIT ___ APPROVED As Noted
BY WY DATE 9/14/06

SHOP DRAWING REVIEW

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

Job Number: 50543
Reviewed By: L.S. GARDNER
Date: 9/6/06

SHOP NOTE

HOLES: 15/16"⌀ (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FAYSTON

STRINGER S1A
VT 17 OVER MILL BROOK
VT 17 STA. 0+944.700 TO STA. 0+968.560
TOWN OF FALSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D. BY: MGK DATE: 8-9-06
CONTRACT NUMBER: VT-06062-2 DRAWING NUMBER: 2 OF 7

CODE:50

09055

PLOTTED: 08/10/06 10:36:36 AM
BY: Mreidel

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

METRIC

METRIC

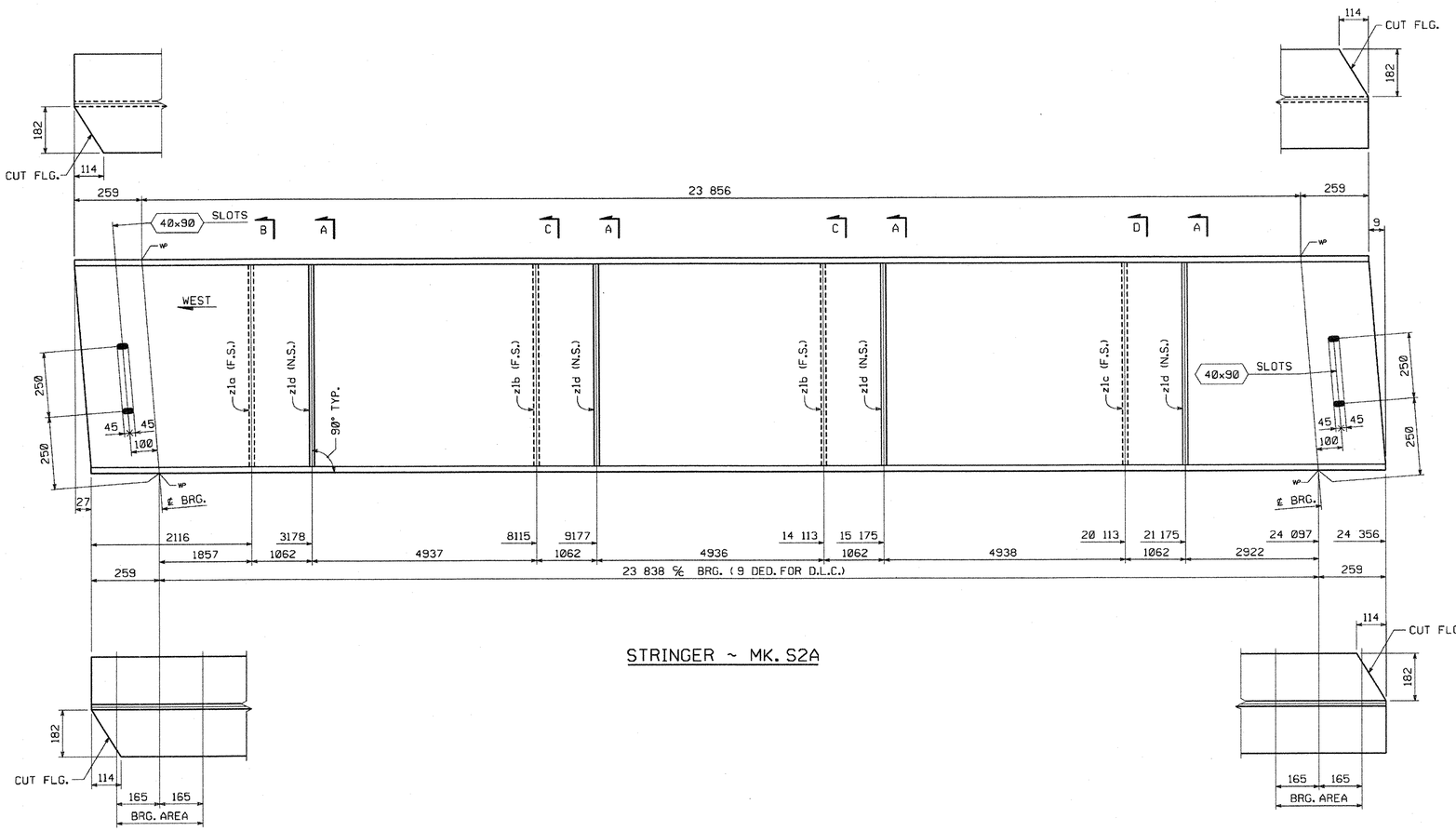
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

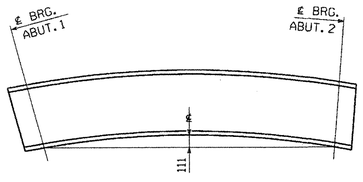
BILL OF MATERIAL

QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
1	S2A	STRINGER									6359.75
1		W	760 x 257	24 383	M270M	345W	T	(W30 x 173)	5	2	6266.43
1	z1a	PL	15.9 x 130	719	M270M	345W			8	1	11.67
2	z1b	PL	15.9 x 130	719	M270M	345W			8	1	23.33
1	z1c	PL	15.9 x 130	719	M270M	345W			8	1	11.67
4	z1d	PL	15.9 x 130	719	M270M	345W			8	1	46.66

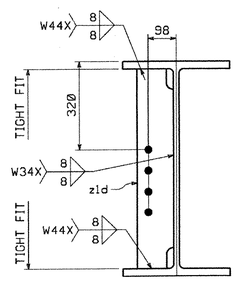
TOTAL WEIGHT THIS SHEET: 6359.75 kg



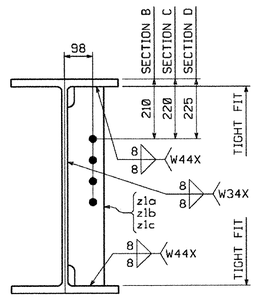
STRINGER ~ MK. S2A



CAMBER DIAGRAM



SECTION A



SECTIONS B, C & D

RECEIVED
CK'D BY VHB OK'D BY
AUG 2 1 2006
RESUBMIT APPROVED
BY DATE 8/18/06

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

Job Number: 50542
Reviewed By: L.S. GARDNER
Date: 8/9/06

SHOP NOTE

HOLES: 15/16"ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:50

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FAYSTON

STRINGER S2A
VT 17 OVER MILL BROOK
VT 17 STA. 0+944.700 TO STA. 0+968.560
TOWN OF FALSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D. BY: MGK DATE: 8-9-06
CONTRACT NUMBER: VT-06062-2 DRAWING NUMBER: 3 OF 7

09155

PLOTTED: 08/10/06 10:36:44 AM BY: Mcreidel

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

METRIC

METRIC

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

BILL OF MATERIAL

QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA
1	S3A	STRINGER									6359.75
1		W	760 x 257	24 383	M270M	345W	T	(W30 x 173)	5	2	6266.43
1	z1a	PL	15.9 x 130	719	M270M	345W			8	1	11.67
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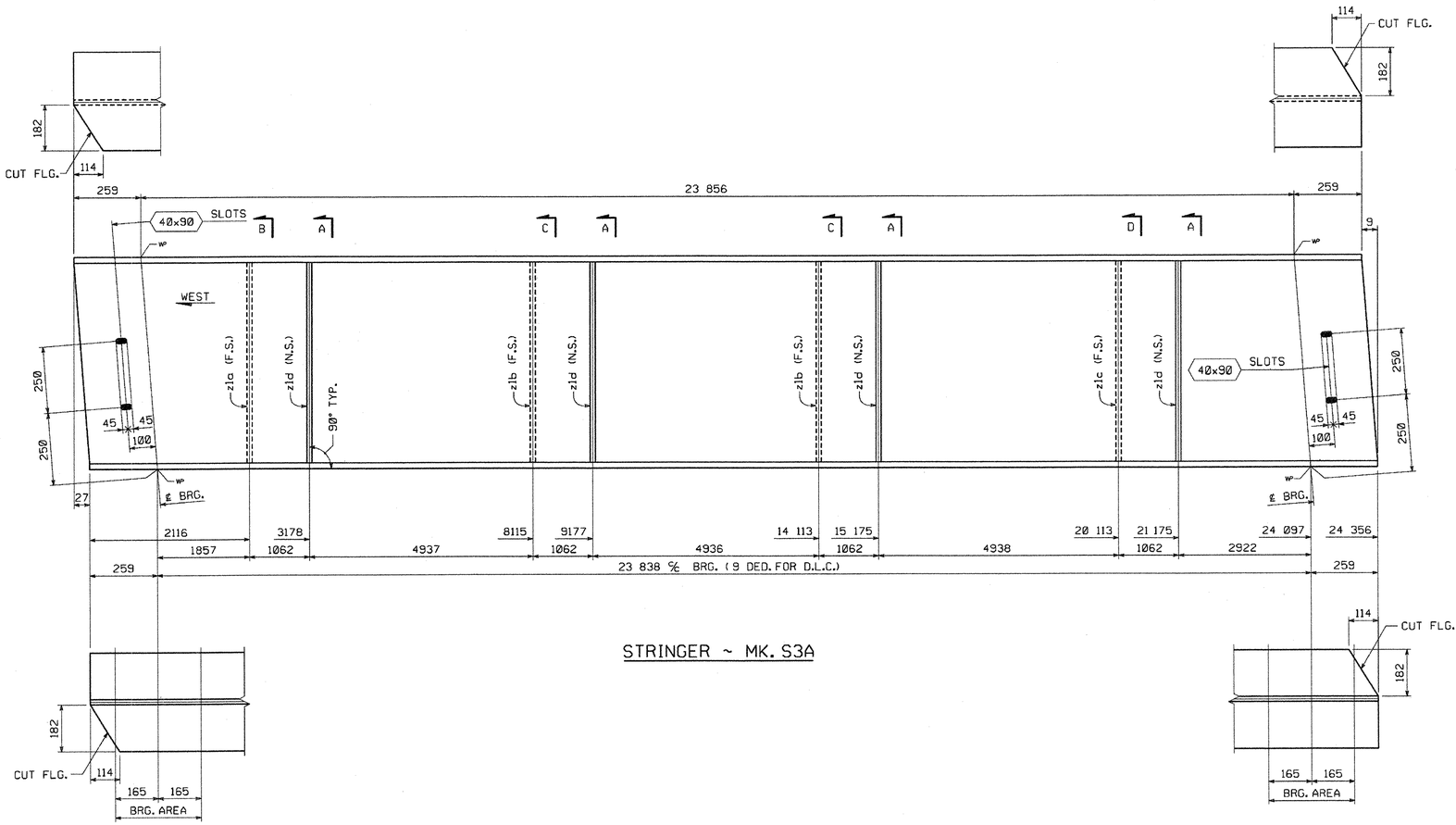
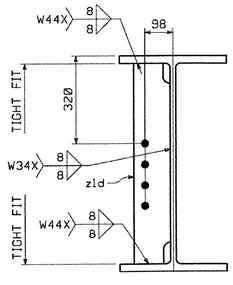
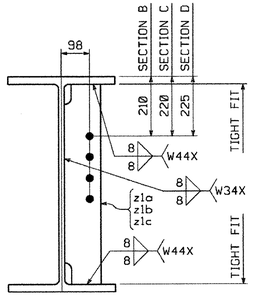
4	z1d	PL	15.9 x 130	719	M270M	345W			8	1	46.66
TOTAL WEIGHT THIS SHEET:								6359.75 kg			



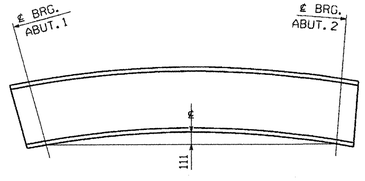
STRINGER ~ MK. S3A



SECTION A



SECTIONS B, C & D



CAMBER DIAGRAM

RECEIVED
CK'D BY VHB CK'D BY
AUG 21 2006
RESUBMIT APPROVED As Noted
BY WJ Y DATE 9/19/06

SHOP DRAWING REVIEW

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

Job Number: 50545
Reviewed By: L.S. GARDNER
Date: 9/6/06

SHOP NOTE

HOLES: 15/16"ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:50

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
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FAYSTON

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TOWN OF FALSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D. BY: MGK DATE: 8-9-06
CONTRACT NUMBER: VT-06062-2 DRAWING NUMBER: 4 OF 7

092 55

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

PLOTTED: 08/10/06 10:36:52 AM BY: Mcreadel

METRIC

METRIC

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2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

BILL OF MATERIAL

QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
1	S4A	STRINGER									6359.75
1		W	760 x 257	24 383	M270M	345W	T	(W30 x 173)	5	1	6266.43
1	z1a	PL	15.9 x 130	719	M270M	345W			8	1	11.67
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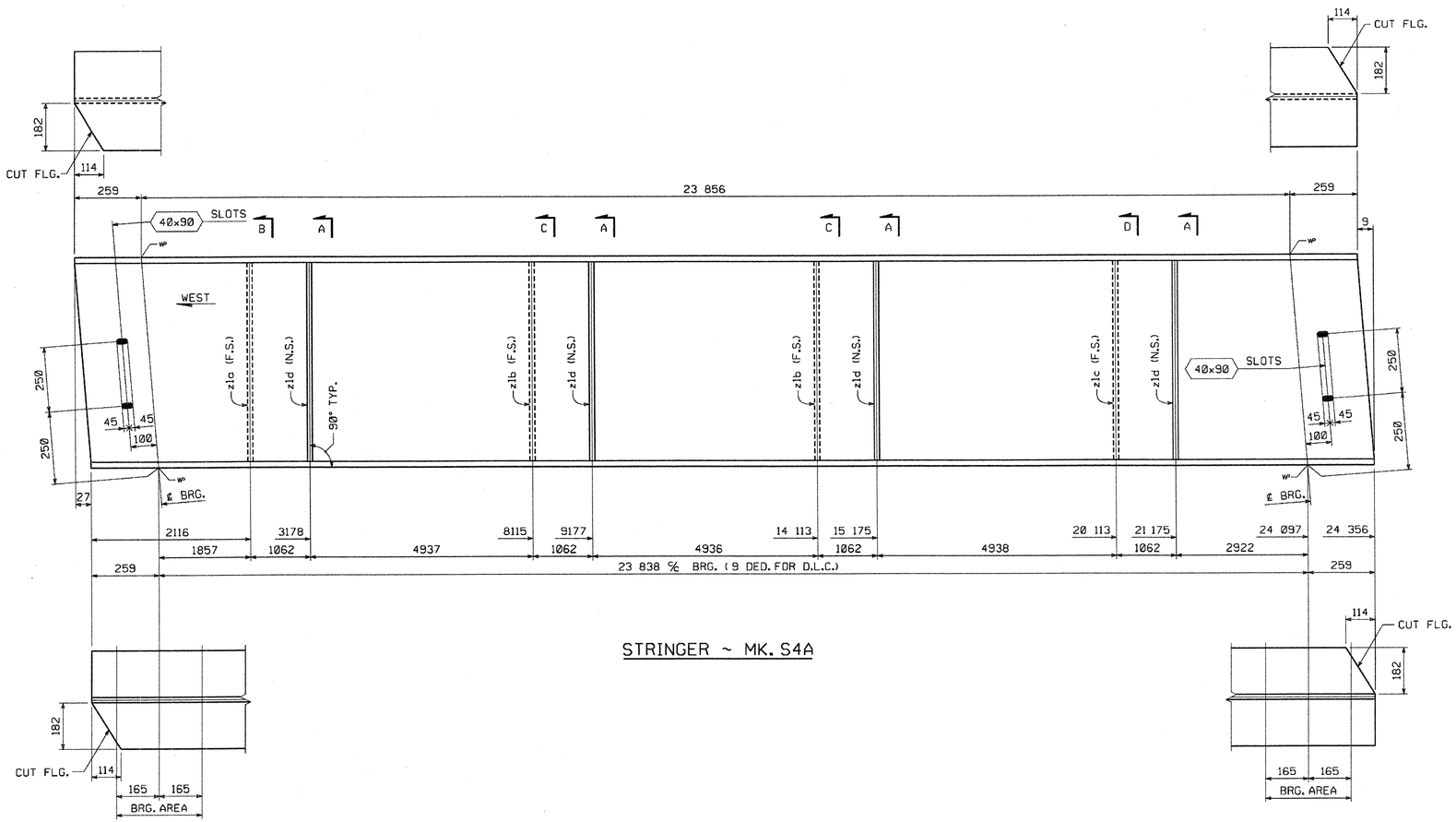
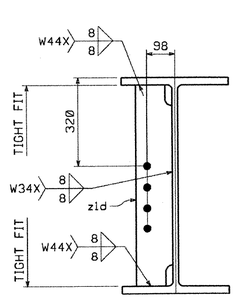
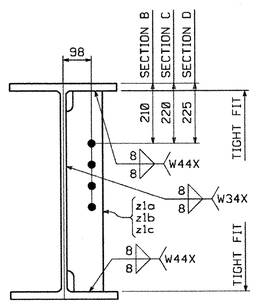
TOTAL WEIGHT THIS SHEET: 6359.75 kg



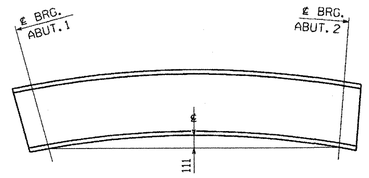
STRINGER ~ MK. S4A



SECTION A



SECTIONS B, C & D



CAMBER DIAGRAM

RECEIVED
CK'D BY VHB OK'D BY
AUG 2 1 2006
RESUBMIT APPROVED As Noted
BY WJM DATE 8/18/06

SHOP DRAWING REVIEW

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☐ REJECTED ☐ REVISE AND RESUBMIT ☒ FURNISH AS CORRECTED

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

Job Number: 50543
Reviewed By: L.S. GARDNER
Date: 9/6/06

SHOP NOTE

HOLES: 15/16"ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:50

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FAYSTON

STRINGER S4A
VT 17 OVER MILL BROOK
VT 17 STA. 0+944.700 TO STA. 0+968.560
TOWN OF FALSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D BY: MGK DATE: 8-9-06
CONTRACT NUMBER: VT-06062-1 DRAWING NUMBER: 5 OF 7

09358

PLOTTED: 08/10/06 10:36:59 AM BY: Mcreidel

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

METRIC

METRIC

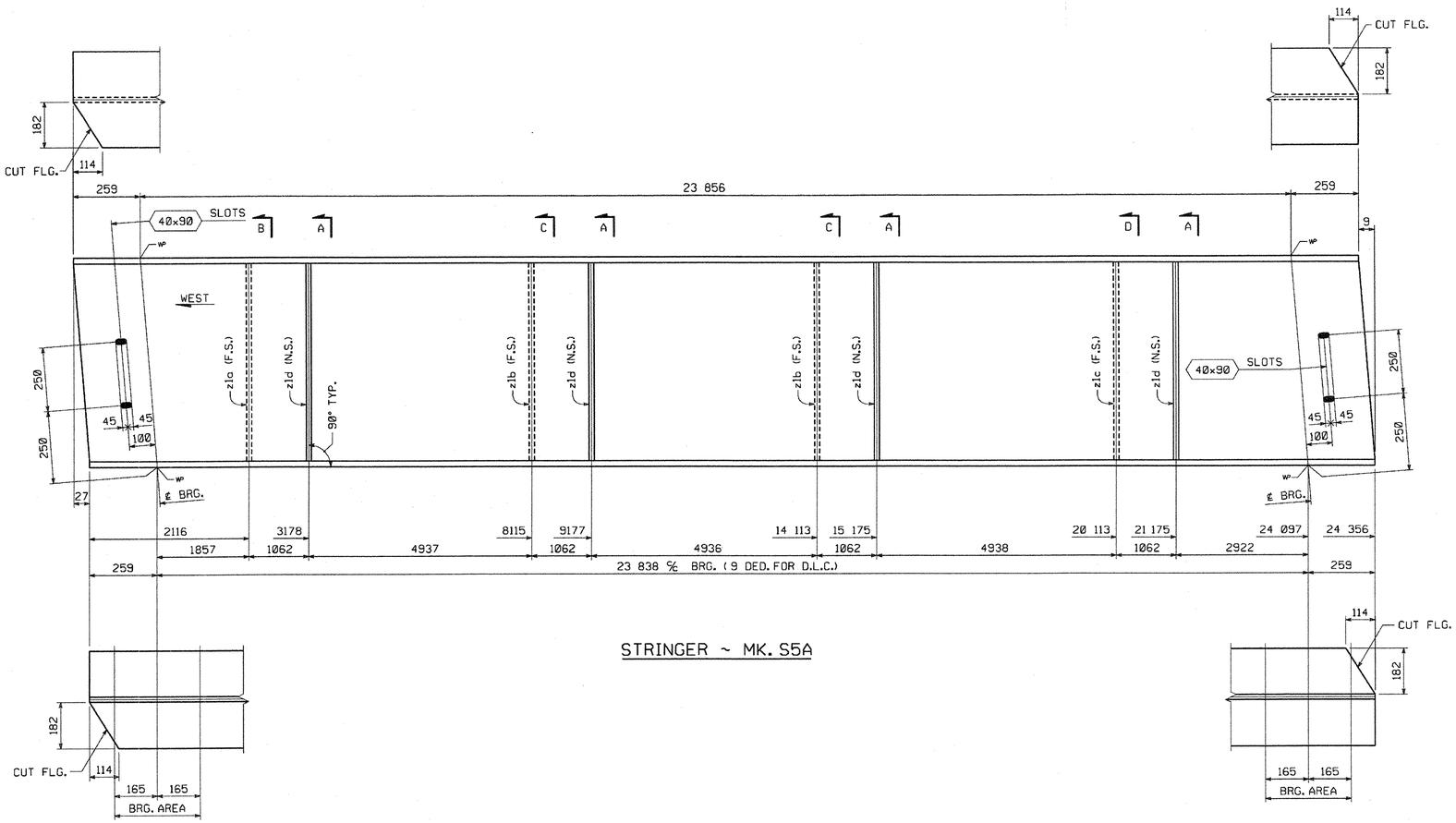
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

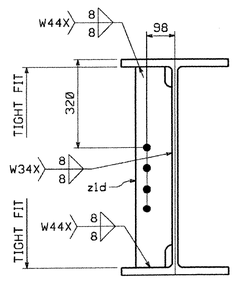
BILL OF MATERIAL

QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
1	S5A	STRINGER									6359.75
1		W	760 x 257	24 383	M270M	345W	T	(W30 x 173)	5	1	6266.43
1	z1a	PL	15.9 x 130	719	M270M	345W			8	1	11.67
2	z1b	PL	15.9 x 130	719	M270M	345W			8	1	23.33
1	z1c	PL	15.9 x 130	719	M270M	345W			8	1	11.67
4	z1d	PL	15.9 x 130	719	M270M	345W			8	1	46.66

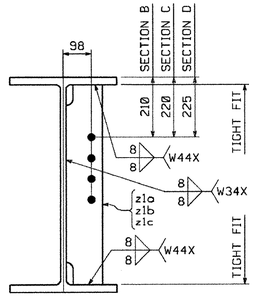
TOTAL WEIGHT THIS SHEET: 6359.75 kg



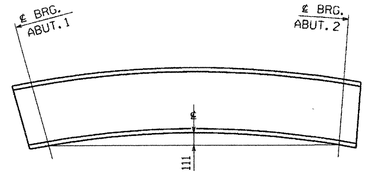
STRINGER ~ MK. S5A



SECTION A



SECTIONS B, C & D



CAMBER DIAGRAM

RECEIVED
OK'D BY VHB OK'D BY
AUG 2 1 2006
RESUBMIT APPROVED As noted
BY DATE 9/19/06

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/299-5211
A Division of High Industries, Inc.

FAYSTON

STRINGER S5A
VT 17 OVER MILL BROOK
VT 17 STA. 0+944.700 TO STA. 0+968.560
TOWN OF FALSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D BY: MGK DATE: 8-9-06
CONTRACT NUMBER: VT-06062-1 DRAWING NUMBER: 6 OF 7

09455

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

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VHB Vanasse Hangen Brustlin, Inc. Engineers, Planners, and Scientists 8 Bedford Farms, Kitton Rd. Bedford, NH 03110 603 644 0886
Job Number: 50553
Reviewed By: L.S. GARDNER
Date: 9/6/06

SHOP NOTE

HOLES: 15/16"ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:50

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.

PLOTTED: 09/18/06 10:37:07 AM BY: MKreidel

METRIC

METRIC

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. ALL WEIGHTS ARE IN KILOGRAMS.

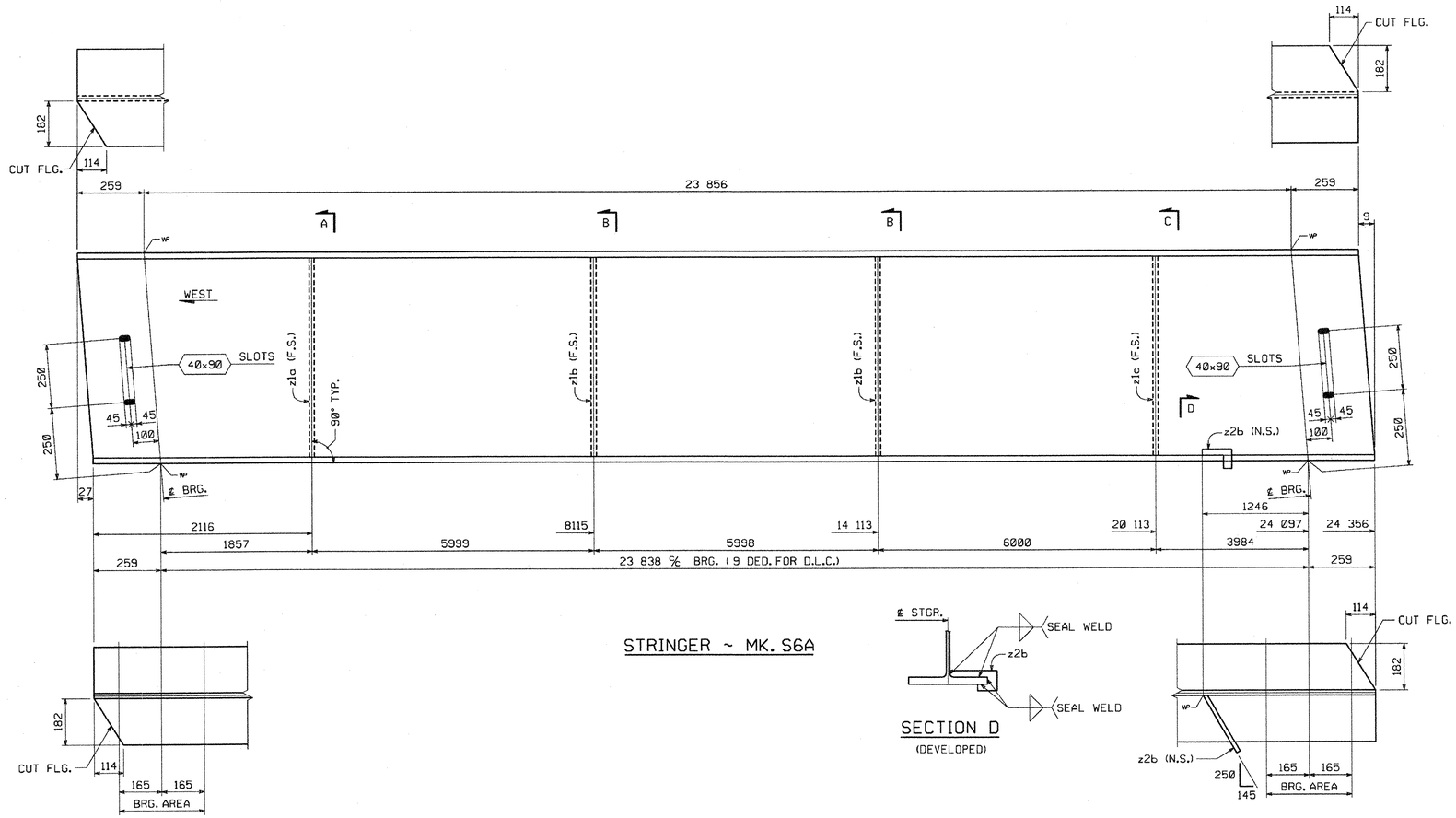
FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.
	VT	

BILL OF MATERIAL

QTY EA.	MARK	COMMODITY	DESCRIPTION	LENGTH	SPEC	GRADE	TEST	REMARKS	GRP.	ITEM	SHIP WEIGHT EA.
1	S6A	STRINGER									6314.10
1		W	760 x 257	24 383	M270M	345W	T	(W30 x 173)	5	1	6266.43
1	z1a	PL	15.9 x 130	719	M270M	345W			8	1	11.67
2	z1b	PL	15.9 x 130	719	M270M	345W			8	1	23.33
1	z1c	PL	15.9 x 130	719	M270M	345W			8	1	11.67
1	z2b	PL	6.4 x 77	260	M270M	345W			8	2	1.01

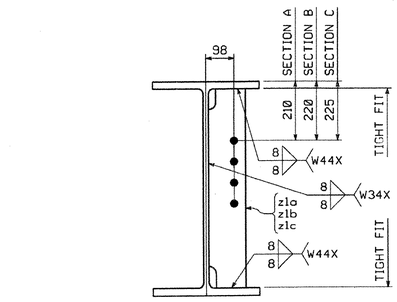
TOTAL WEIGHT THIS SHEET: 6314.10 kg

TOTAL WEIGHT FOR BID ITEM #506.55: 39663.87 kg

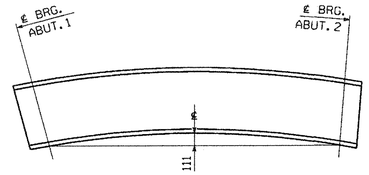


STRINGER ~ MK. S6A

SECTION D
(DEVELOPED)



SECTIONS A, B & C



CAMBER DIAGRAM

RECEIVED
CK'D BY: VHB OK'D BY:
AUG 2 1 2006
RESUBMIT: APPROVED As Noted
BY: WJ S DATE 8/11/06

SHOP DRAWING REVIEW

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

Job Number: 50545
Reviewed By: L.S. GARDNER
Date: 8/8/06

SHOP NOTE

HOLES: 15/16"ø (U.N.)
BOLTS: NONE
PAINT: NONE
FOR GENERAL SHOP NOTES, SEE DWG. GN1.

CODE:50

NO.	REVISION	BY	DATE
△			
△			
△			

HIGH STEEL STRUCTURES, INC.
1770 Hempstead Road
Lancaster, PA 17605-0008
Phone 717/293-5211
A Division of High Industries, Inc.

PAYSTON

STRINGER S6A
VT 17 OVER MILL BROOK
VT 17 STA. 0+944.700 TO STA. 0+968.560
TOWN OF FALSTON, WASHINGTON COUNTY, VT
STATE OF VERMONT
AGENCY OF TRANSPORTATION

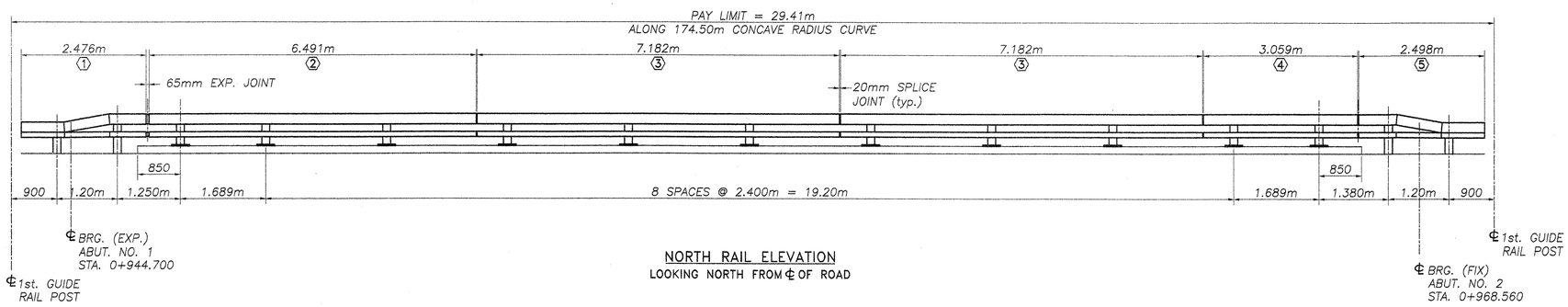
STATE CONTRACT OR REF. NO. BRIDGE NO. 36
CONTRACTOR WINTERSET, INC.
IN CHARGE: CHRISTMAN (IH) MADE BY: ERS CHK'D BY: MGK DATE: 8-9-06
CONTRACT NUMBER: VT-06062-1 DRAWING NUMBER: 7 OF 7

01555

PLOTTED: 08/10/06 10:37:14 AM BY: Mcreudel

60

06062 X1 8/11/06 8/11/06Approval TO:Winterset, Inc.



NORTH RAIL ELEVATION
LOOKING NORTH FROM ℄ OF ROAD

RAILS TO BE SHOP CURVED TO 174.35m CONCAVE RADIUS.

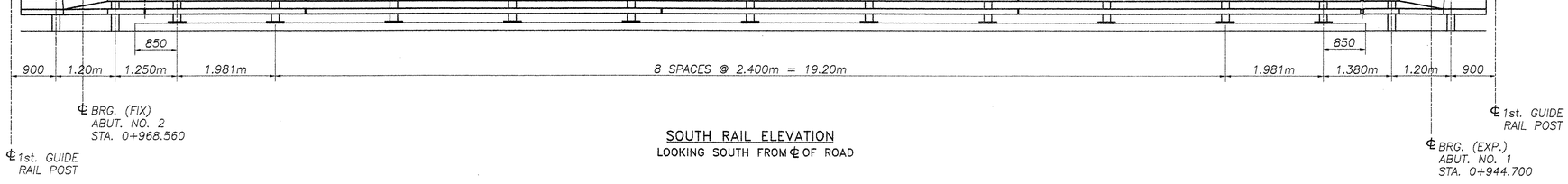
RAILS TO BE SHOP CURVED TO 165.65m CONVEX RADIUS.

BILL OF MATERIAL (BOTH SIDES OF BRIDGE)

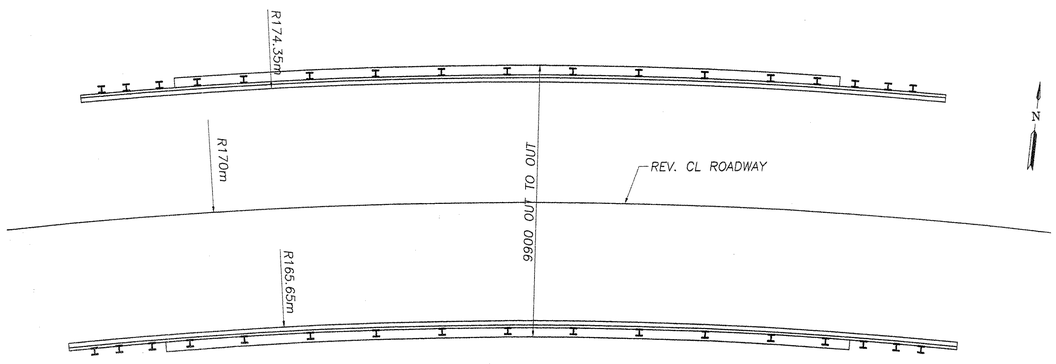
Mark #	Qty.	Description	Length	Material
	22	W150x37.1 POST W/BASEPLATE	820	A709M Gr. 50
	4	W150x37.1 DRIVEN POST	2.134m	A709M Gr. 50
	4	W150x37.1 DRIVEN POST	1.956m	A709M Gr. 50
①	1	TS 203 x 102 x 8 UPPER DROP END TUBE	2.476m	A500 Gr. B
	1	TS 102 x 102 x 6 LOWER DROP END TUBE	2.476m	A500 Gr. B
②	1	TS 203 x 102 x 8	6.491m	A500 Gr. B
	1	TS 102 x 102 x 6	6.491m	A500 Gr. B
③	2	TS 203 x 102 x 8	7.182m	A500 Gr. B
	2	TS 102 x 102 x 6	7.182m	A500 Gr. B
④	1	TS 203 x 102 x 8	3.059m	A500 Gr. B
	1	TS 102 x 102 x 6	3.059m	A500 Gr. B
⑤	1	TS 203 x 102 x 8 UPPER DROP END TUBE	2.498m	A500 Gr. B
	1	TS 102 x 102 x 6 LOWER DROP END TUBE	2.498m	A500 Gr. B
⑥	1	TS 203 x 102 x 8 UPPER DROP END TUBE	2.498m	A500 Gr. B
	1	TS 102 x 102 x 6 LOWER DROP END TUBE	2.498m	A500 Gr. B
⑦	1	TS 203 x 102 x 8	3.221m	A500 Gr. B
	1	TS 102 x 102 x 6	3.221m	A500 Gr. B
⑧	2	TS 203 x 102 x 8	7.182m	A500 Gr. B
	2	TS 102 x 102 x 6	7.182m	A500 Gr. B
⑨	1	TS 203 x 102 x 8	6.913m	A500 Gr. B
	1	TS 102 x 102 x 6	6.913m	A500 Gr. B
⑩	1	TS 203 x 102 x 8 UPPER DROP END TUBE	2.476m	A500 Gr. B
	1	TS 102 x 102 x 6 LOWER DROP END TUBE	2.476m	A500 Gr. B
	10	TS 178 x 76 x 10 SPLICE TUBE	510	A500 Gr. B
	10	TS 76 x 76 x 8 SPLICE TUBE	510	A500 Gr. B
	22	3mm BEARING PAD		NEOPRENE
	4	BACK UP PLATE		A709M Gr. 36
	4	TERMINAL CONNECTOR		M180 B2
	144	M20 ROUND HEAD BOLT	152	M164M
	144	M20 HEX NUT		A563 DH
	144	M20 WASHER		F436M
	80	M16 SPLICE BOLT	50	M164M
	80	M16 PLAIN HARDENED WASHER		F436M
	60	M16 HEX NUT		A563A
	20	M16 HEX NUT WELDED TO SPLICE TUBE		A563A
	16	M20 SCH. 40 PIPE SPACER	15	A53 Gr. B
*	88	M24 ANCHOR STUD	300	A449
*	88	M24 WASHER		F436M
*	88	M24 JAMB NUT		A563 DH
*	176	M24 HEX NUT		A563 DH
*	22	SPACER PLATE		A709M Gr. 36

NOTE:
ITEMS MARKED "*" ARE NOT SUPPLIED BY HIGHWAY SAFETY CORPORATION, AND THEY ARE SHOWN ONLY FOR REFERENCE.

TOTAL PAY LIMIT ITEM 525.33 = 60m



SOUTH RAIL ELEVATION
LOOKING SOUTH FROM ℄ OF ROAD



PLAN

STRUCTURES COPY

RECEIVED
OK'D BY VHB OK'D BY
OCT 23 2006
RESUBMIT APPROVED
BY WJ DATE 10/23/06

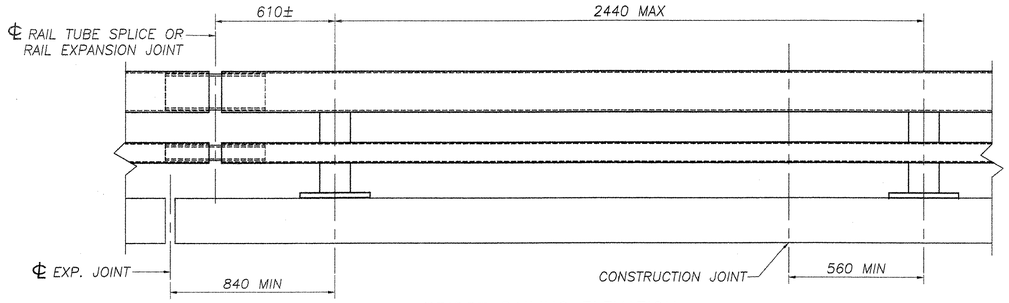
REVISIONS		
No.	Remarks	Date
0	Initial submittal	9-22-06
0	Secondsubmittal	10-16-06

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

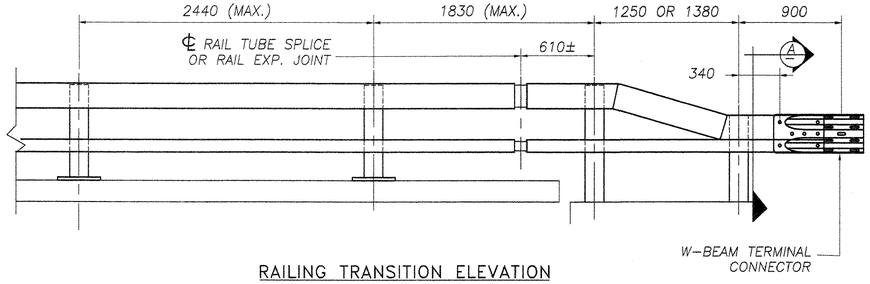
ITEM 525.33 – BRIDGE RAILING–NETC 2 RAIL
PROJECT No. bhf 0200(9)
TOWN OF FAYSTON, VT Br. No. 36
WASHINGTON COUNTY, ROUTE VT 17

GENERAL CONTRACTOR 056BR
SUB CONTRACTOR F.R. LAFAYETTE, INC.

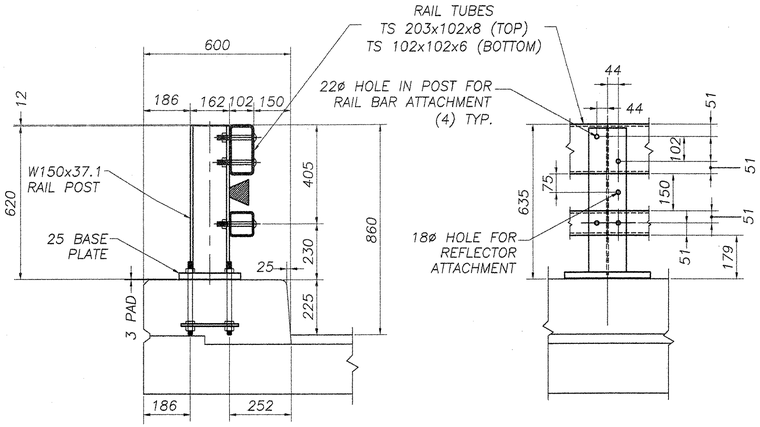
DRAWN MHM
CHECKED
DATE 9-6-06
SCALE NONE
HSC REFERENCE NO. 1574
SIZE D REVISION 0
SHEET NO. 1 of 2



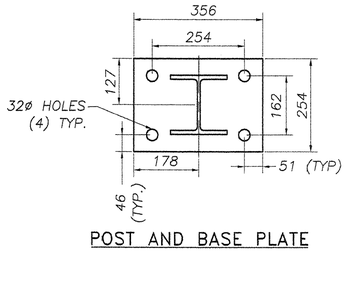
BRIDGE RAILING ELEVATION



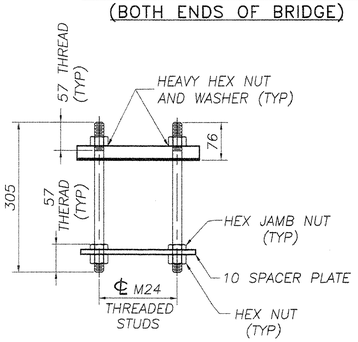
RAILING TRANSITION ELEVATION
(BOTH ENDS OF BRIDGE)



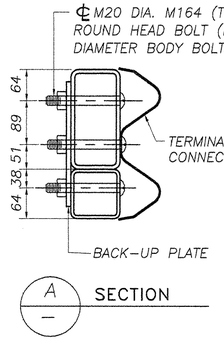
TYPICAL SECTION ELEVATION



POST AND BASE PLATE



RAIL POST ANCHORAGE
(BY OTHERS)



A — SECTION

NOTES:

1. ALL RAILINGS AND MATERIALS SHALL CONFORM TO THE PROVISION OF SECTION 525, "RAILINGS OF THE STANDARD SPECIFICATION FOR CONSTRUCTION".

2. TUBING AND POSTS SHALL MEET THE REQUIREMENTS OF SECTION 732, "RAILING MATERIALS OR THE STANDARD SPECIFICATION FOR CONSTRUCTION," EXCEPT THAT THE DROP-WEIGHT TEAR TEST IN SECTION 732 SHALL NOT APPLY TO THE STRUCTURAL TUBING SHOWN ON THIS SHEET.

3. PRIOR TO GALVANIZING, ALL EXPOSED CUT OR SHEARED EDGES SHALL BE ROUNDED TO A 2mm RADIUS AND BE FREE OF BURRS.

4. RAIL POSTS SHALL BE SET NORMAL TO GRADE.

5. SECTIONS OF RAIL TUBE SHALL BE ATTACHED TO A MINIMUM OF TWO (2) RAIL POSTS AND PREFERABLY TO AT LEAST FOUR (4) POSTS.

6. RAIL TUBE EXPANSION JOINT SHALL BE PROVIDED IN ANY RAIL BAY SPANNING A SUPERSTRUCTURE EXPANSION JOINT. EXPANSION JOINT WIDTH SHALL BE "X" AT 7°C AND WILL BE ADJUSTED IN THE FIELD BY THE ENGINEER FOR OTHER TEMPERATURES.

7. ALL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH AASHTO M111, EXCEPT HARDWARE, WHICH SHALL MEET THE REQUIREMENTS OF AASHTO M232M.

8. RAIL POST ANCHORING NUTS SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL ONE-EIGHTH TURN.

9. RAIL TUBES SHALL BE ATTACHED USING M20 FULL DIAMETER BODY AASHTO M164M (TYPE 1) ROUND HEAD BOLT INSERTED THOUGH THE FACE OF THE TUBE. HOLES IN POSTS SHALL BE 2mm LARGER THAN THE BOLT SIZE.

10. HOLES IN RAILS FOR RAIL TUBE ATTACHMENT MAY BE FIELD-DRILLED. HOLES SHALL BE COATED WITH AN APPROVED ZINC-RICH PAINT PRIOR TO ERECTION.

11. IF THERE IS A CONFLICT BETWEEN THE DETAILS SHOWN ON THIS SHEET AND THE DESIGN, THE REQUIREMENTS OF THE DESIGN DRAWINGS SHALL BE FOLLOWED.

12. ANY BENDING OF RAIL SHALL BE BY SHOP PROCEDURE ONLY.

13. THE FABICATOR SHALL SUBMIT SHOP DRAWINGS, INCLUDING WELDING PROCEDURES TO THE STRUCTURES SECTION FOR APPROVAL IN ACCORDANCE WITH THE PROVISION OF 506.04, SHOP DRAWINGS. ALL WELDING SHALL CONFORM WITH SECTION 506.10.

14. RAIL POSTS AND BASE PLATES SHALL BE TESTED FOR IMPACT PROPERTIES IN ACCORDANCE WITH ASTM A370 CHARPY IMPACT TESTING USING TYPE A SPECIMENS.

15. TO FACILITATE FIELD FIT – UP OF THE TRANSITION RAILING, POSTS SHALL BE SET LOOSELY INTO FIBER FORM TUBES WHILE TRANSITION PARTS ARE BEING ASSEMBLED. POST HOLES SHALL BE BACKED FILLED WITH A CONCRETE MIX APPROVED BY THE ENGINEER. PAYMENT FOR COMPONENTS, INCLUDING BACKUP PLATE AND END TERMINAL CONNECTOR FOR GUARD RAIL, AUGERING, FIBER FORM TUBES AND CONCRETE , AND INSTALLATION SHALL BE CONSIDERED INCIDENTAL TO ITEM 525.33, "BRIDGE RAILING – NETC 2 RAILING".

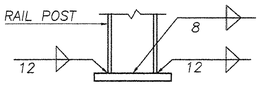
16. ALL APPROACH RAIL SPLICES SHALL BE LAPPED ON THE DIRECTION OF TRAFFIC FLOW.

MATERIALS
RAIL TUBES.....ASTM A500, GRADE B OR ASTM A501
RAIL POSTS AND BASE PLATES.....ASTM A709/A709M, GRADE 50
ALL OTHER SHAPES AND PLATES.....ASTM A709/A709M, GRADE 36
ANCHOR STUDS.....ASTM A449
ALL OTHER BOLTS (UNLESS NOTED).....AASHTO M164M, TYPE1

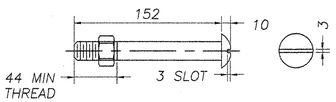
NUTS FOR AASHTO M164M (ASTM A325M) BOLTS AND ANCHOR STUDS SHALL COMPLY WITH AASTHO M291M (ASTM A563M).

WASHERS SHALL COMPLY WITH AASHTO M293M (ASTM F436M) SPECIFCATIONS.

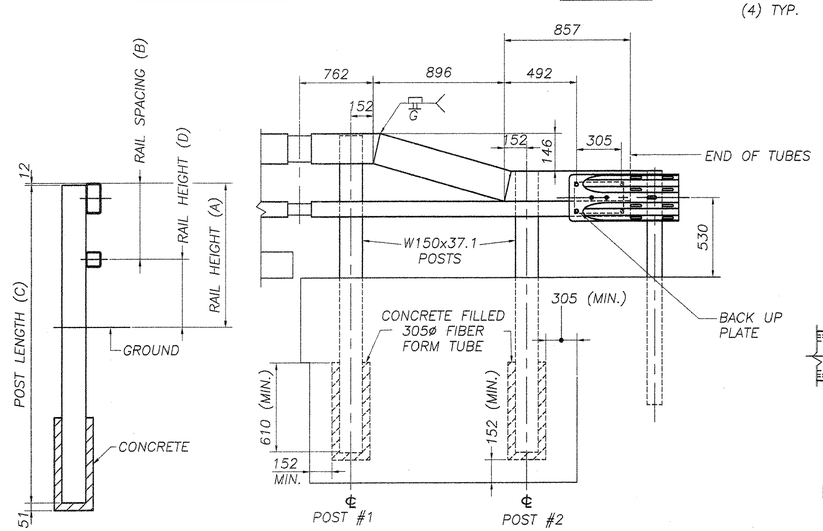
3mm PAD SHALL COMPLY WITH STANDARD SPECIFICATION SUBSECTION 731.01 OR 731.02.



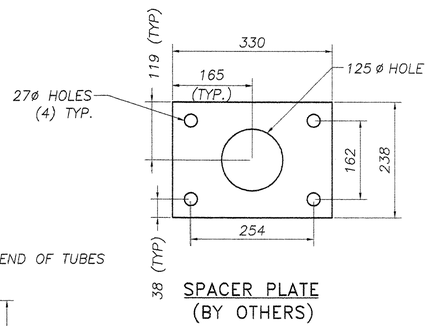
BASE WELD DETAIL



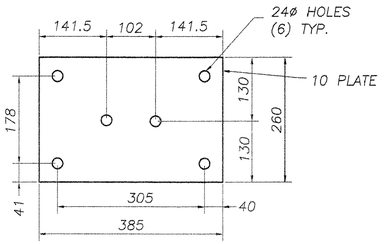
M20 DIA. M164M (TYPE I)
ROUND HEAD BOLT
(WITH WASHER AND PREVAILING TORQUE TYPE LOCK NUT)
(SEE NOTE #9)
ONLY FULL DIAMETER BODY BOLTS WILL BE ALLOWED.



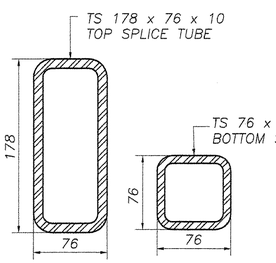
TYPICAL SECTION ELEVATION



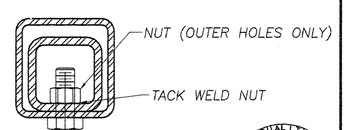
SPACER PLATE
(BY OTHERS)

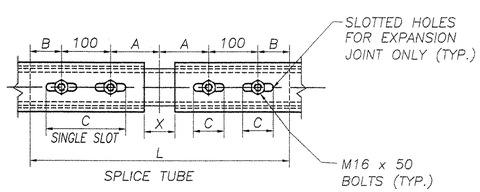


BACK-UP PLATE

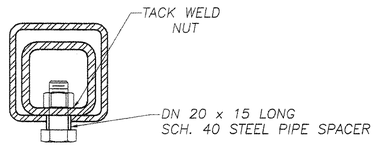


RAIL TUBE SPLICE SECTION





RAIL TUBE SPLICE AND RAIL
EXPANSION JOINT DETAIL



16ø TAPPED HOLE IN SPLICE TUBE
AND 29 x 'C' SLOT IN RAIL TUBE FOR
M16 BOLT AND PLAIN HARDENED WASHER

EXPANSION JOINT SECTION
FOR DETAILS NOT SHOWN,
SEE "RAIL TUBE SPLICE SECTION."

POST NUMBER	RAIL HEIGHT (A)	RAIL SPACING (B)	POST LENGTH (C)	RAIL HEIGHT (D)
1	860	405	2134	455
2	702	254	1956	448

SPLICE TABLE					
T	A	B	C	L	X
N/A	100	50	--	510	20
EXPANSION JOINT TABLE					
<100	100	50	65	510	65

T = TOTAL MOVEMENT BETWEEN BRIDGE EXPANSION JOINTS. SEE NOTE 6

* = SINGLE SLOT

REVISIONS		
No.	Remarks	Date
0	Initial submittal	9-22-06
0	Second submittal	10-16-06

RECEIVED
CK'D BY VHB CK'D BY
OCT 23 2006
RESUBMIT APPROVED ✓
BY WY SJS DATE 10/23/06

HIGHWAY SAFETY CORP.
GLASTONBURY, CT

ITEM 525.33 – BRIDGE RAILING-NETC 2 RAIL
PROJECT No. bhf 0200(9)
TOWN OF FAYSTON, VT Br. No. 36
WASHINGTON COUNTY, ROUTE VT 17

GENERAL CONTRACTOR
SUB CONTRACTOR F.R. LAFAYETTE, INC.

DRAWN MHM
CHECKED
DATE 9-6-06
SCALE NONE
HSC REFERENCE NO. 1574
SIZE D REVISION 0
SHEET NO. 2 of 2