INDEX OF SHEETS

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

RECORD PLANS-MATERIALS

WINDSOR TH 3608
CONTRACTOR-BURRINGTON SURVEY & CONSTRUCTION CO. W.BURKE, VT.
CONTRACT DATED- 18 MAY 1976
CONSTRUCTION BEGAN- 24 MAY 1976
CONSTRUCTION COMPLETED- 9 SEPTEMBER 1976
RES. ENGR. WILLIS R. STODDARD
CONSTRUCTION ACCEPTED- 9 SEPTEMBER 1976
GRANULAR BACKFILL FOR STRUCTURES- MILLER PIT-WINDSOR, VT.
SUBASE OF GRAVEL-MILLER PIT- WINDSOR, VT.
CONCRETE CLASS A & B-MILLER READY MIX-W.LEBANON, N.H.
STRUCTURAL STEEL ROLLED BEAM-ERNST STEEL CORPORATION
REINFORCING STEEL-PIONEER STEEL ENGINEERING INC. GREENFIELD, MASS.

PROPOSED IMPROVEMENT
BRIDGE PROJECT

TOWN OF WINDSOR
COUNTY OF WINDSOR

ROUTE NO: T.H.G CL #3 BRIDGE NO: 22

PROJECT LOCATION: Beginning At A Point On T.H. #6 Approximately .117 Mi. East Of The West Windsor-Windsor Town Line And Extending Westerly .098 Mi.

PROJECT DESCRIPTION: Remove Existing Superstructure, Construct New Abutments And New Superstructure. Do Necessary Roadway And Channel Work As Shown On Plans.

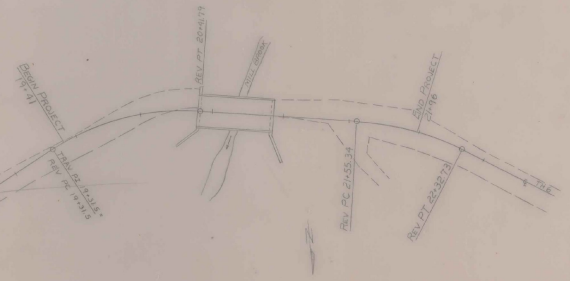
LENGTH OF STRUCTURE:	55.0	FEET
LENGTH OF PARTICIPATION ROADWAY:	200.0	FEET
LENGTH OF NON-PARTICIPATION ROADWAY:	0.0	FEET
LENGTH OF PROJECT	255.0	FEET

GENERAL NOTES:

1. For Additional General Notes See SCB-D1-75
2. Cost Of Overhaul To Be Included In The Unit Price Bid For Applicable Items.
3. For Disposition Of Existing W.F. Beams On Superstructure See Special Provisions.
4. All Roadway Cut And Fill Areas Shall Be Seeded And Mulched As Directed By The Engineer. Cost To Be Included In Unit Price Bid For Earthwork Items.
5. The Contractor Will Be Allowed To Close The Road To Thru-Traffic. The Selectmen Shall Be Given Seven (7) Days Notice Of The Contractors Intent To Close The Road. Detour Routing Shall Be The Responsibility Of The Town.

SHEAR CONNECTORS-ERNST STEEL CORP.-BUFFALO, N.Y.
STONE FILL-FROM PROJECT
BRIDGE RAILING-GRISWOLD FENCE CO. INC. WILLISTON, VT.
GUARD RAIL STANDARD STEEL BEAM W/STEEL POST TYPE 1 GRISWOLD FENCE CO. WILLISTON, VT.
RECORD PLANS-PAUL E. SINGLETON

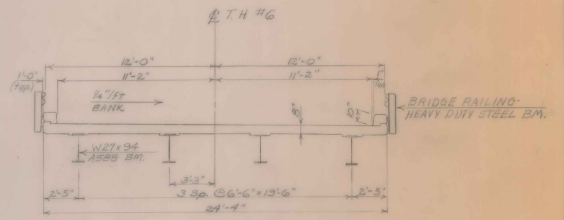
NOTE: ANY FURTHER INFORMATION, CONCERNING FINAL QUANTITIES, AMOUNTS OR OTHER DETAILS RELATIVE TO THIS PROJECT MAY BE OBTAINED WITHIN THE FIELD NOTES OR THE ESTIMATE SHEET.



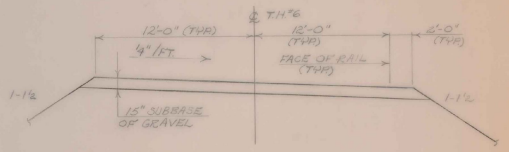
CONVENTIONAL SIGNS

COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
F.A. CONST. IDENTIFICATION SIGNS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

LOCATION MAP
(TRACED FROM COUNTY MAP)



TYPICAL BRIDGE SECTION
SCALE: ¼" = 1'-0"



BUILT AS DESIGNED

TYPICAL ROADWAY SECTION
SCALE: 1" = 5'

These plans are subject to such engineering changes as may be required by the Federal Highway Administration or the Chief Engineer.
Construction is to be carried on in accordance with these plans and the Standard Specifications for Highway and Bridge Construction dated January 3, 1972 as approved by the Federal Highway Administration on December 28, 1971 for use on this project, including all subsequent revisions and such revised specification and special provisions as are incorporated in these plans.

SUBMITTED BY ORDER OF THE STATE HIGHWAY BOARD
APPROVED E.H. Stickney CHIEF ENGINEER DATE 4/1/76

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED N/A DIVISION ENGINEER DATE

PROJECT NO. WINDSOR TH 3608
SHEET 1 OF 19 SHEETS

D10 SRS 12/17/70

EARTHWORK

V.C.	% GRD	STATION	GRADES ELEVATION ON TAN.	GRADES ELEVATION ON V.C.	CORR. V.C.	DIST.	AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.

BRIDGE QUANTITY SHEET

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

NO.	ITEM	UNIT	QUANTITY BREAKDOWN Super-structure	Abut. 1	Abut. 2	Channel	Roadway	TOTAL	FINAL
202.20	Removal of Existing Superstructure	Ea.	1					1	1
202.40	Removal & Disposal of Existing G.R.	L.F.					25	25	122
203.15	Common Excavation	C.Y.					240	240	304
203.27	Unclassified Channel Excavation	C.Y.				50		50	0
203.30	Earth Borrow (Est.)	C.Y.					100	100	137
204.25	Structure Excavation	C.Y.		120	280			400	275.3
204.30	Granular Backfill for Structures	C.Y.		80	220			300	230
301.15	Subbase of Gravel	C.Y.					270	270	270
501.20	Concrete, Class A	C.Y.	43					43	43.28
501.25	Concrete, Class B	C.Y.		60	130			190	194.7
506.90	Structural Steel (Rolled Beam) A588	Lb.	23,250					23,250	23,183
507.15	Reinforcing Steel, Grade 60	Lb.	10,920	4,650	12,930			28,500	29,244
508.15	Shear Connectors (400 Studs-7/8"x7")	L.S.	1					1	1
608.25	All Purpose Excavator Rental	Hr.					10	10	3
613.11	Stone Fill, Type II	C.Y.				100		100	80
617.35	Bridge Railing - Heavy Duty Steel Beam	L.F.	110					110	110
621.25	Std Steel Bm. G.R. with St. Posts, Type I	L.F.					304	304	291

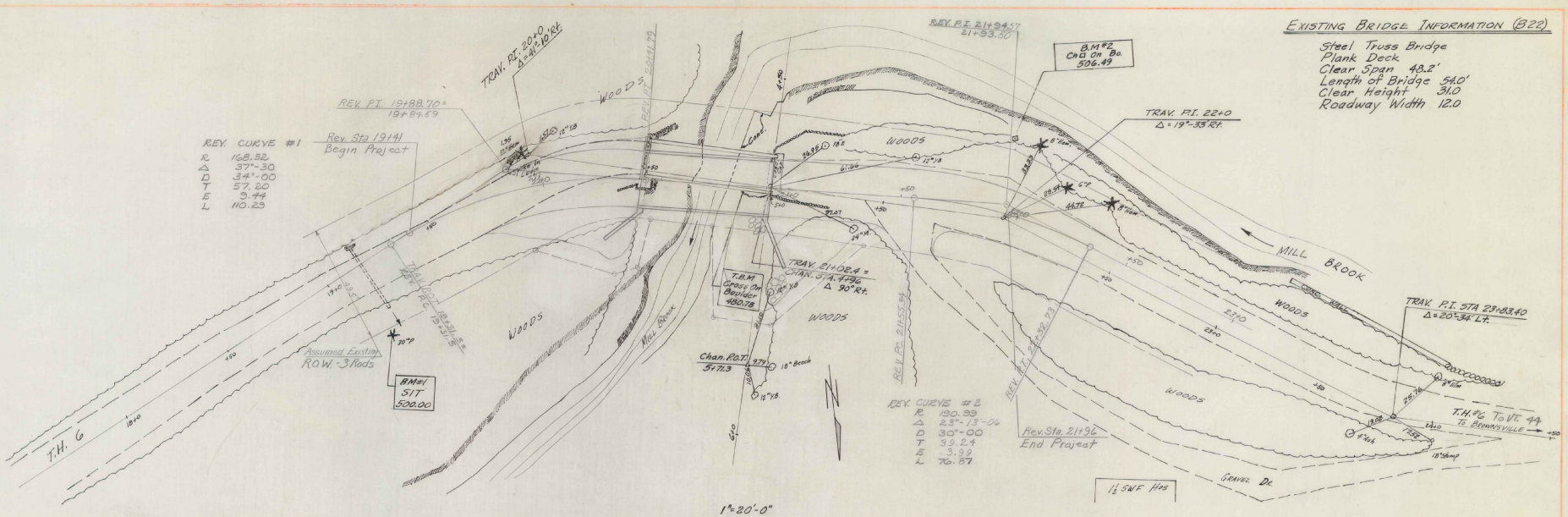
BRIDGE (✓) AT STATION (✓) 20+75
LOCATION (✓) T.H. 6 Cl. III

Prepared by D.E. Lathrop | Checked by J. Couture
SUPERVISOR: W. Tripp

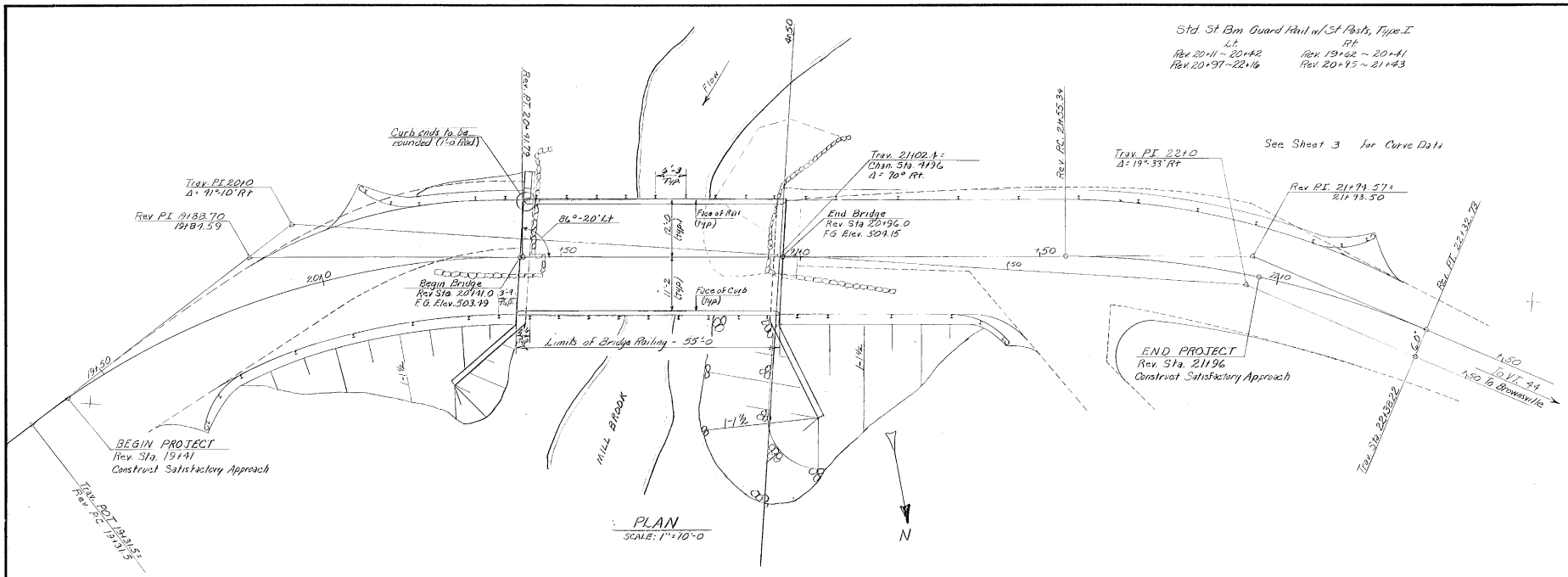
Windsor
BR ___ OF ___

PROJECT NO. TH 3608
SHEET NO. 2 OF 19

BR-1



WINDSOR TH 3608
T.H. #6 / Mill Brk - Br. 22
Plotted by H.L.
Checked by G.K.
Traced by H.L



HYDRAULIC DATA

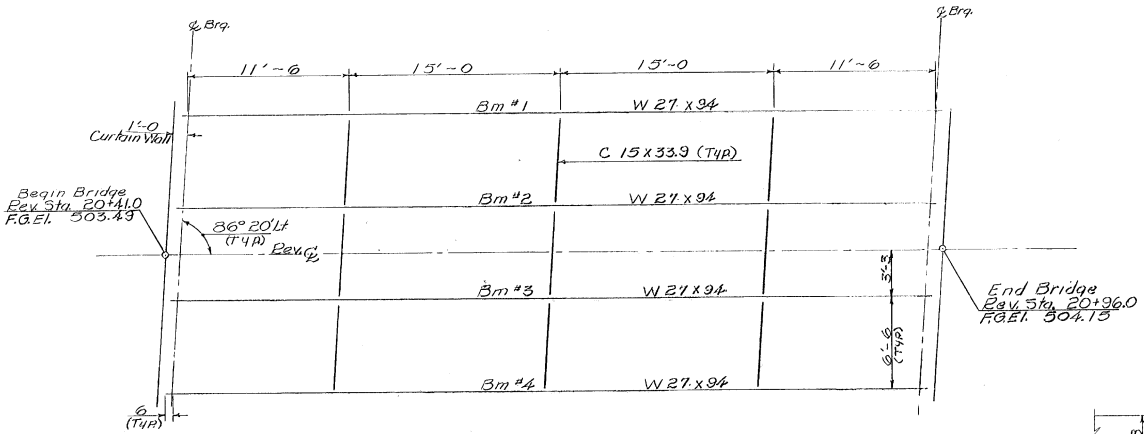
Drainage Area 36.3 Sq. Mi.

Q_{10} = 3000 cfs	Headwater Elev. 182.0
Q_{25} = 4200 cfs	Headwater Elev. 184.0
Q_{50} = 5100 cfs	Headwater Elev. 185.1
Q_{100} = 6100 cfs	Headwater Elev. 186.9
Tailwater Elev. @ Q_{25} = 184.0	
Outlet Velocity @ Q_{25} = 14 fps	

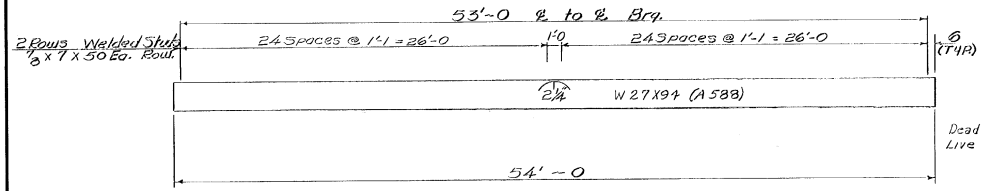
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WINDSOR	Bridge No. 22
	Log Sta.
HIGHWAY NO. T.H. 6 Cl. III	Surv. Sta. 20+75
TOWN HIGHWAY No. 6 OVER MILL BROOK	
PLAN ELEVATION	
Designed by J. COUTURE	Drawn by J. COUTURE
Checked by R. HASKINS date JAN 76	Bridge Design Supervisor W. TRIPP date 3-76
PROJECT WINDSOR	PROJECT NO. TH 3608
Bridge Sheet No.	Sheet 4 of 19

BR-9

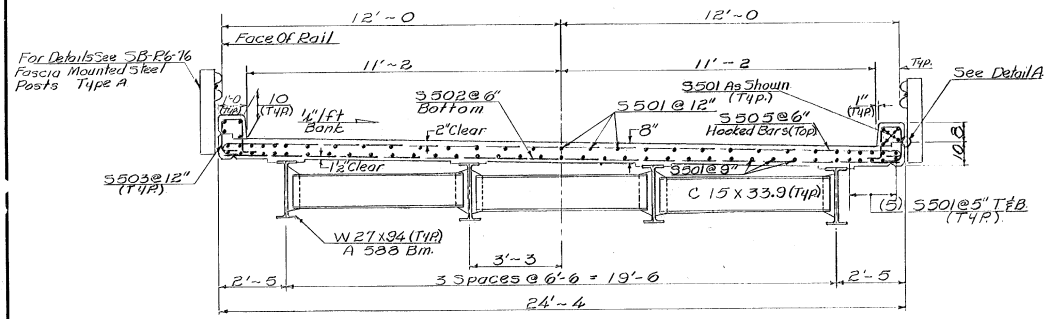


FRAMING PLAN
Scale: 1/4" = 1'-0

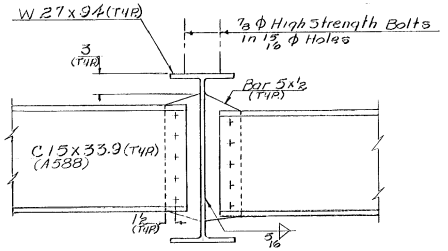


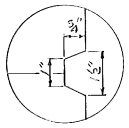
Dead Load Deflection - 1 5/8"
Live Load Deflection - 7/16"

BEAM ELEVATION
N.T.S.



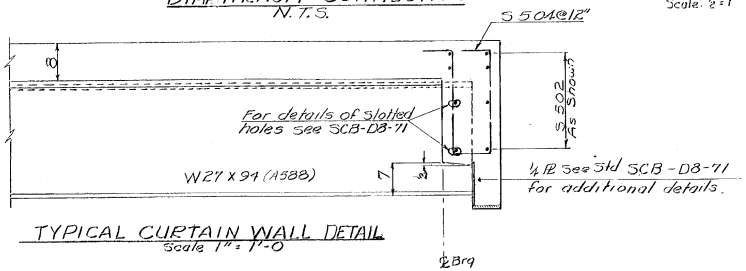
TYPICAL SECTION
Scale: 1/2" = 1'-0





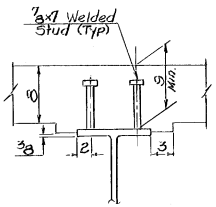
DETAIL A
Scale: 1½" = 1"

DIAPHRAGM CONNECTION
N.T.S.



TYPICAL CURTAIN WALL DETAIL
Scale 1" = 1'-0

NOTES:
1. See Sheet 1 for General Notes.
2. For Bearing Device Details See SCB-D8-71, Detail Ⓐ.



HAUNCH DETAIL
Scale: 1½" = 1'-0

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WINDSOR	Bridge No. 22
HIGHWAY NO. TH 6 Cl III	Log Sta.
TH № 6 OVER MILL BROOK	Surv. Sta. 20+75
Typ. Section, Framing Plan and Beam Details	
Designed by J. Couture	Drawn by G. Hopkins
Checked by S ACHILLES date 3-76	Bridge Design Supervisor W. Tripp date 3-76
PROJECT WINDSOR	PROJECT NO. TH 3608
Bridge Sheet No.	Sheet 5 of 19

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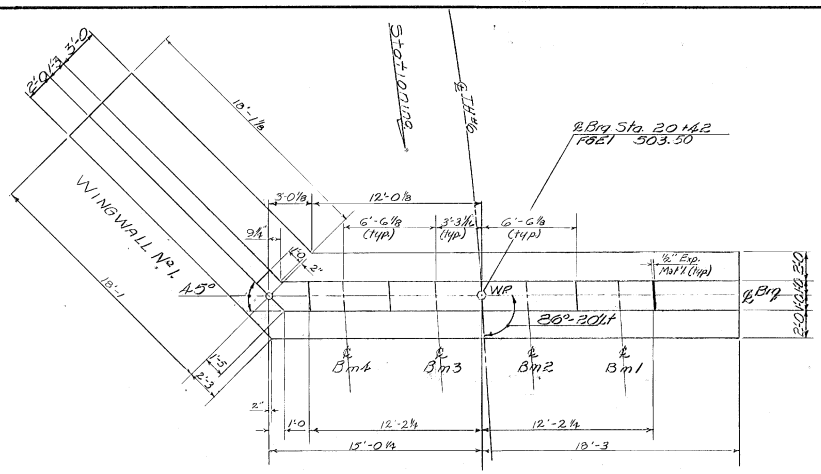
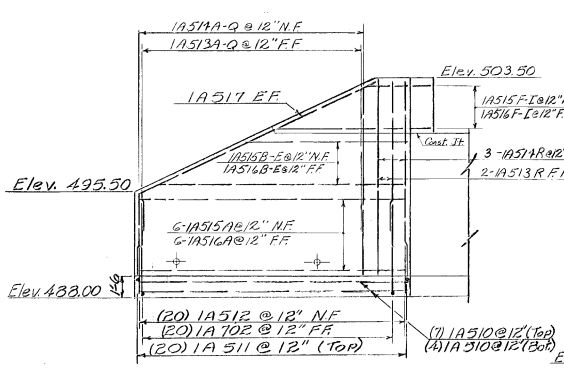
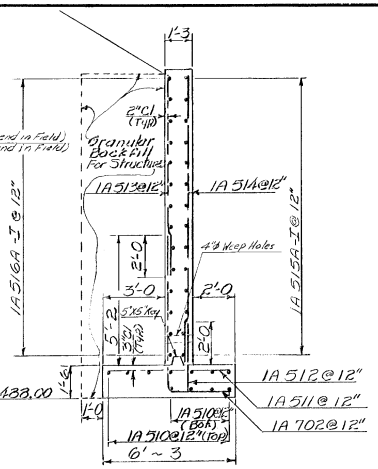


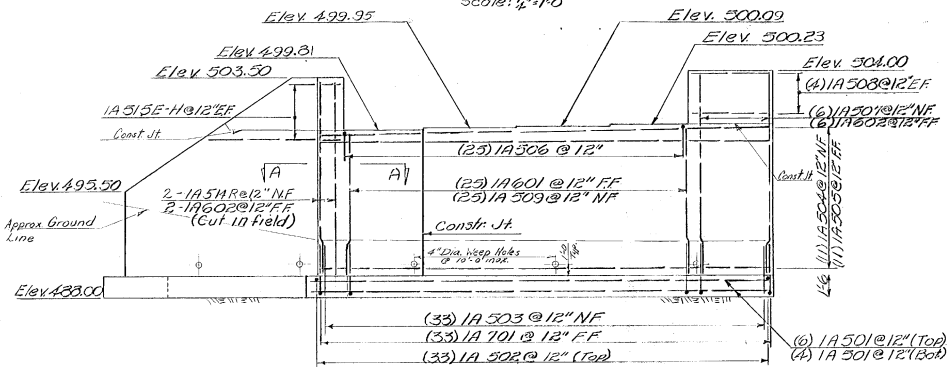
PLAN
Scale: ¼"=1'-0



WINGWALL No1
Scale: ¼"=1'-0



WINGWALL SECTION
Scale: ⅜"=1'-0



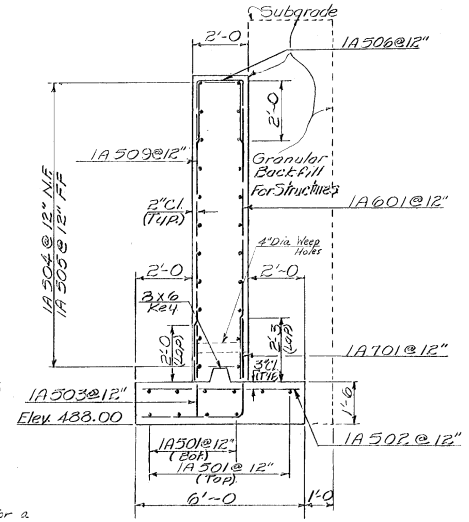
ELEVATION
Scale: ¼"=1'-0

NOTES

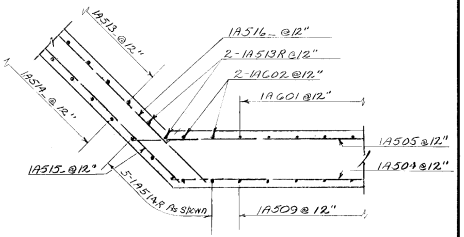
1 For General Notes See Sheet No.1.

2. Abutment No.1 Footing designed for a maximum bearing of 6 K.S.F. on ledge.

3. No ledge shall project above bottom of footing elevation indicated on plans. All overbreakage below indicated bottom of footing shall be replaced with Concrete Class B. A maximum of 0.5' average depth shall be paid for as Structure Excavation and Concrete Class B; any additional concrete required shall be placed at no cost to the State



ABUT. #1 SECTION
Scale: ½"=1'-0

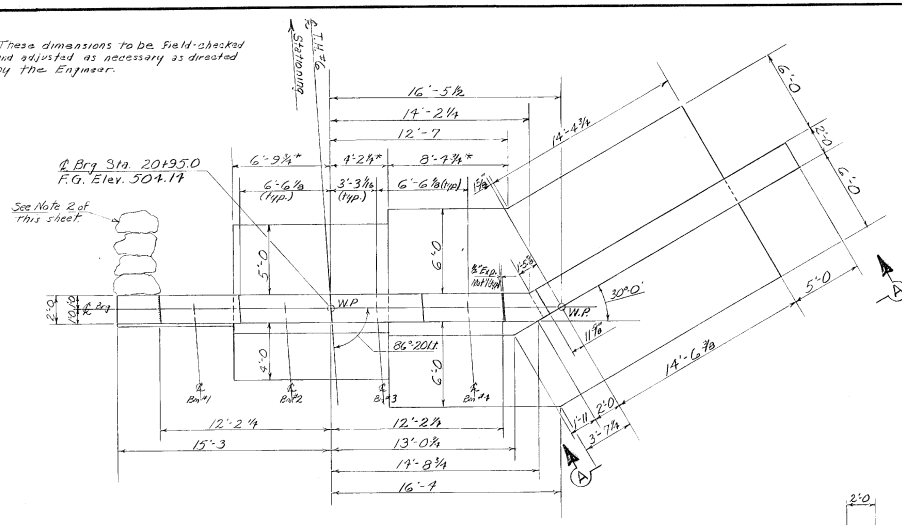


SECTION "AA"
Scale ½"=1'-0

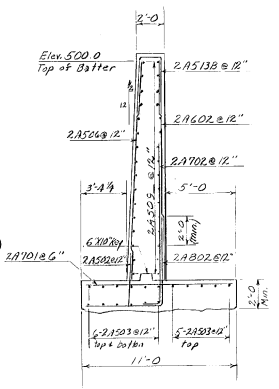
STATE OF VERMONT DEPARTMENT OF HIGHWAYS	
TOWN OF WINDSOR	Bridge No. 22
	Log Sta.
HIGHWAY NO. T.H. #6 Cl. III	Surv. Sta. 20+73
TOWN HIGHWAY No6 OVER MILL BROOK ABUTMENT No1 DETAILS	
Designed by G. Hopkins	Drawn by G. Hopkins
Checked by S ACHILLES date 3-76	Bridge Design Supervisor W Tripp date
PROJECT WINDSOR	PROJECT NO. TH 3608
Bridge Sheet No.	Sheet 6 of 19

ER-9

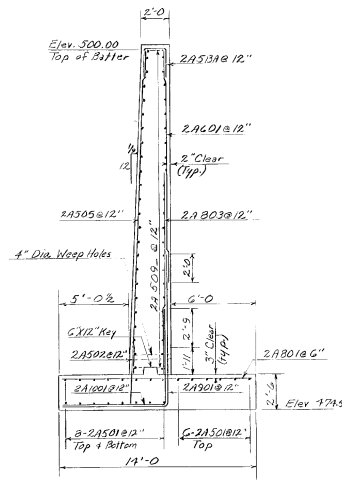
* These dimensions to be field-checked and adjusted as necessary as directed by the Engineer.



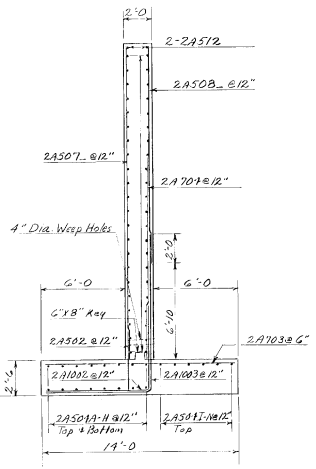
PLAN
SCALE: ¼"=1'-0



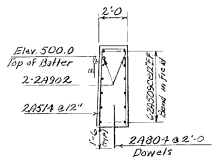
SECTION C-C
SCALE: ¼"=1'-0



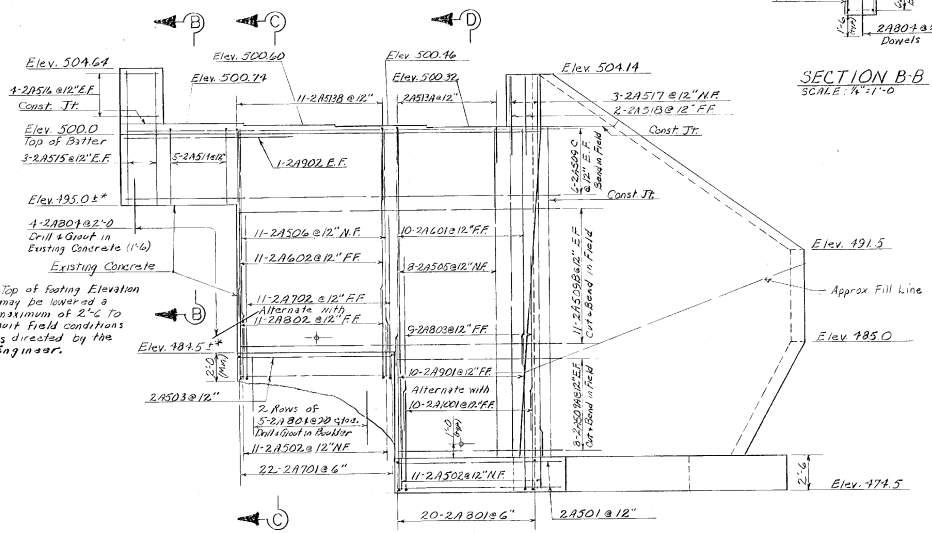
SECTION D-D
SCALE: ¼"=1'-0



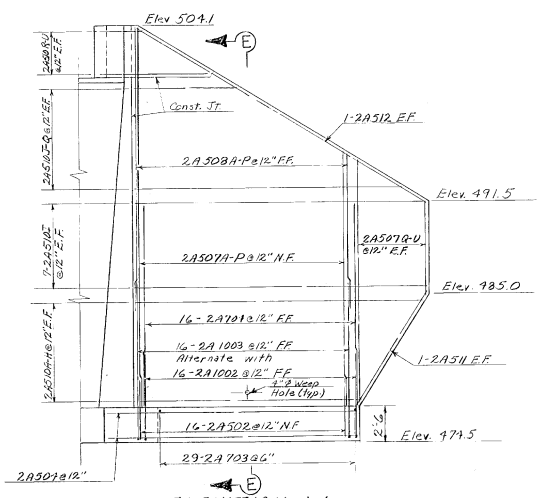
SECTION E-E
SCALE: ¼"=1'-0



SECTION B-B
SCALE: ¼"=1'-0



ELEVATION
SCALE: ¼"=1'-0



ELEVATION A-A
SCALE: ¼"=1'-0

Notes

1. Abutment No. 2 footing is designed for a maximum bearing of 4 KSF.
2. If required a Dry Rubble Masonry wall shall be constructed as directed by the Engineer to support fill behind left wing. Quantity to be measured and paid for as Item 501.25 Concrete Class B.

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WINDSOR	Bridge No. 22
	Log Sta.
HIGHWAY NO. TH #6 CL III	Surv. Sta. 20+75
TH #6 OVER MILL BROOK	
ABUTMENT No. 2 DETAILS	
Designed by J. COUTURE	Drawn by J. COUTURE
Checked by D.E. LATHROP date 3-76	Bridge Design Supervisor W. TRIPP date 3-76
PROJECT WINDSOR	PROJECT NO. T.H. 3608
Bridge Sheet No.	Sheet 7 of 19

BR-9

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
				ABUTMENT No. 1													
1																	
2	10	5	33-0	1A501	Str.												
3	33	↓	5-6	1A502	↓												
4	33		3-3	1A503													
5	11		32-1	1A504													
6	11		33-7	1A505													
7	7		14-2	1A507													
8	8		5-8	1A508													
9	25		9-11	1A509													
10	11		19-0	1A510													
11	20		5-9	1A511													
12	20		3-3	1A512													
13	1		2-9	1A513A													
14	↓		↓	Thru	↓	Vary in 16 equal increments											
15	1		9-3	1A513C													
16	3		9-8	1A513R													
17	1		5-10	1A514A													
18	↓		↓	Thru	↓	Vary in 16 equal increments											
19	1		13-4	1A514Q													
20	3		13-10	1A514R													
21	6		19-4	1A515A													
22	1		18-0	1A515B													
23	↓		↓	Thru	↓	Vary in 3 equal increments											
24	1		11-6	1A515E													
25	1		11-4	1A515F													
26	↓		↓	Thru	↓	Vary in 3 equal increments (Bend in Field)											
27	1		5-0	1A515L													
28	6		20-0	1A516A													
29	1		18-9	1A516B													
30	↓		↓	Thru	↓	Vary in 3 equal increments											
31	1		12-3	1A516E													
32	1		10-0	1A516F													
33	↓	↓	↓	Thru	↓	Vary in 3 equal increments (Bend in Field)											
34	1	5	3-6	1A561	↓												
35	2	5	18-9	1A517	Str.												
36	25	5	5-8	1A526	17		2-0	1-8	2-0								
37																	
38	26	6	9-11	1A601	Str.												
39	*8	6	14-2	1A602	Str.												
40																	
41	*34	7	7-0	1A701	17		3-6	3-6									
42	20	7	10-3	1A702	17		7-5	2-10									
43																	
44																	
45																	
46																	
47																	
48																	
49																	
50																	
51																	
52				ABUTMENT No. 2													
53																	
54	22	5	11-10	2A501	Str.												
55	*39	5	4-6	2A502	↓												
56	17	5	10-6	2A503	↓												
57	2	5	18-0	2A504A	Str.												
58	↓		↓	Thru	↓	Vary in 7 increments of 4"											
59	2	5	16-4	2A504H	Str.												
60	1	5	16-0	2A504I	Str.												
61	↓		↓	Thru	↓	Vary in 5 increments of 4"											
62	1	5	14-4	2A504N	Str.												
63	8	5	23-1	2A505	Str.												
64	11	5	18-9	2A506	Str.												
65	1	5	26-11	2A507A	Str.												
66	↓		↓	Thru	↓	Vary in 15 equal increments											
67	1	5	17-8	2A507P	Str.												
68	2	5	17-0	2A507Q	Str.												
69	↓		↓	Thru	↓	Vary in 4 increments of 2'-7											
70	2	5	6-8	2A507U	Str.												
71	1	5	20-1	2A508A	Str.												
72	↓		↓	Thru	↓	Vary in 15 equal increments											
73	1	5	10-10	2A508P	Str.												
74	16	5	13-6	2A508A	Str.												
75	22	5	24-6	2A508B	Str.												
76	12	5	32-6	2A508C	Str.												
77	2	5	15-8	2A510A	Str.												
78	↓		↓	Thru	↓	Vary in 7 equal increments											
79	2	5	20-4	2A510H	Str.												
80																	

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
81	14	5	20-8	2A501I	Str.												
82	2	5	19-0	2A501J	Str.												
83	↓		↓	Thru	↓	Vary in 7 equal increments											
84	2	5	7-0	2A510Q	Str.												
85	2	5	8-0	2A510R	Str.												
86	↓		↓	Thru	↓	Vary in 3 increments of 1'-8											
87	2	5	3-0	2A510U	Str.												
88	2	5	9-3	2A511	Str.												
89	2	5	23-10	2A512	Str.												
90	6	5	9-6	2A515	Str.												
91	8	5	2-8	2A516	Str.												
92	3	5	26-10	2A517	Str.												
93	2	5	5-10	2A518	Str.												
94	9	5	6-8	2A513A	17		2-6	1-8	2-6								
95	11	5	11-8	2A513B	17		5-0	1-8	5-0								
96	5	5	12-8	2A514	17		5-6	1-8	5-6								
97																	
98	10	6	16-7	2A601	Str.												
99	11	6	15-9	2A602	Str.												
100																	
101	22	7	10-6	2A701	Str.												
102	16	7	14-4	2A704	Str.												
103	29	7	13-6	2A703	Str.												
104	11	7	12-8	2A702	2	1-2	14-6										
105																	
106																	
107	20	8	13-6	2A801	Str.												
108	14	8	3-0	2A801	Str.		Dowels										
109	10	8	14-4	2A803	Str.												
110	*12	8	11-10	2A802	17		6-3	5-7									
111																	
112	*3	9	13-0	2A902	Str.												
113	10	9	18-4	2A901	17		10-9	7-7									
114																	
115	10	10	14-6	2A1001	17		6-11	7-7									
116	*17	10	13-8	2A1002	17		6-1	7-7									
117	16	10	18-8	2A1003	17		11-1	7-7									
118																	
119																	
120	5	5	30-0	2A5500	Str.	To be used if necessary as directed by the Engineer.											
121	5	6	30-0	2A600	Str.												
122																	
123																	
124																	
125																	
126				SUPERSTRUCTURE													
127																	
128	152	5	28-4	5501	Str.												
129	114	5	24-0	5502	Str.												
130	110	5	4-4	5503	55	0-10	1-1	0-6	1-1			0-10					
131	25	5	6-4	5504	55	0-10	2-0	0-8	2-0			0-10					
132	111	5	25-2	5505	1	0-7	2'40					0-7					
133																	
134																	
135																	
136																	
137																	
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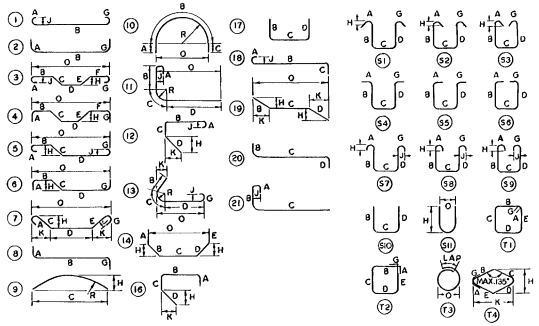
157																	
158																	
159																	
160																	

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
161																	
162																	
163																	
164																	
165																	
166																	
167																	
168																	
169																	
170																	
171																	
172																	
173																	
174																	
175																	
176																	
177																	
178																	
179																	
180																	

ASTM STANDARD REINFORCING BARS

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

TYPICAL BAR BENDS



NOTES

1. UNLESS OTHERWISE DESIGNATED, ALL BAR REINFORCEMENT FOR CONCRETE IN SIZES UP TO AND INCLUDING NO. 18 SHALL CONFORM TO THE REQUIREMENTS OF THE "SPECIFICATIONS FOR DEFORMED BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT," AASHTO M 31 (ASTM A 615), GRADE 60.
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. WHERE SLOPE DIFFERS FROM 45° DIMENSIONS "H" AND "K" MUST BE SHOWN.

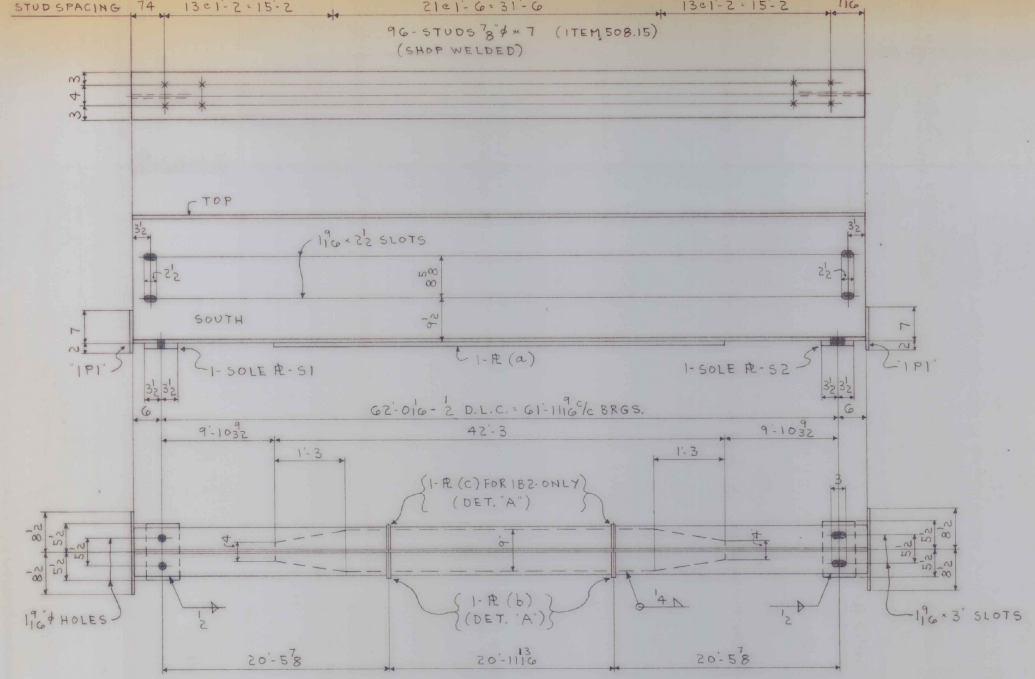
* DENOTES ONE EXTRA BAR ADDED FOR TESTING PURPOSES.

REV. NO.	MADE BY	DATE	DESCRIPTION
1	J. WOOD	8/11/75	AASHO CHANGED TO AASHTO. AND GRADE 40 CHANGED TO GRADE 60.

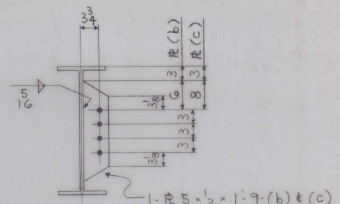
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WINDSOR	BRIDGE NO. 22
	LOG STA.
HIGHWAY NO. TH #6 C/3	SURV. STA. 201+75
TH #6 OVER MILL BROOK	
REINFORCING STEEL SCHEDULE	
DESIGNED BY J. Couture	DRAWN BY D. Lathrop
CHECKED BY J. COUTURE DATE 3-76	BRIDGE DESIGN SUPERVISOR W Tripp DATE 3-76
PROJECT WINDSOR	PROJECT NO. TH 3608
BRIDGE SHEET NO.	SHEET 8 OF 19

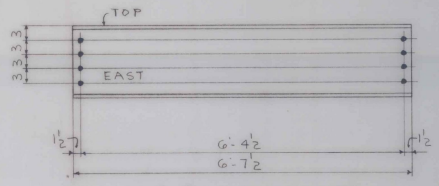
BR 6



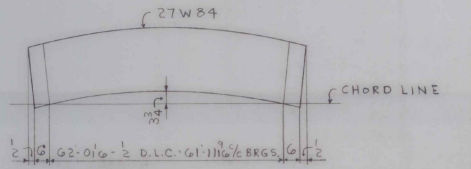
1 - BEAM - 1B1R (AS SHOWN)
1 - Do. - 1B1L (LEFT OF SHOWN)
1 - Do. - 1B2R (AS SHOWN)
1 - Do. - 1B2L (LEFT OF SHOWN)
8 - PLATES - 1PI



DETAIL "A"



6 - DIAPHRAGMS - 1D1



CAMBER DIAGRAM

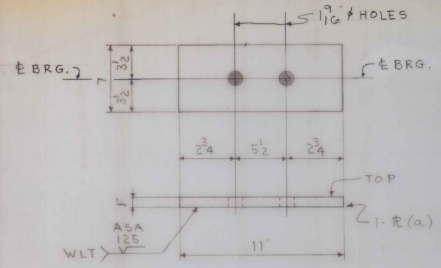
PROJECT NO. TH3604
BRIDGE NO. 20
ORLEANS COUNTY

C6173 SHEET NO. 1 PROJ. NO. TH3604 BR. NO. 20 ORLEANS CO

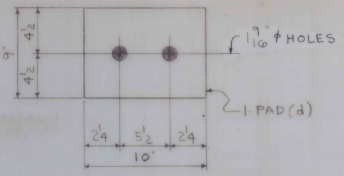
LINE NO.	ITEM	NO. OF PCS.	ABBREV. DESC.	DIMENSIONS	LENGTH Ft. Inches	SHIPPING OR ASSEMBLY MARK	FINISH AND TRIM Dist.	FINISH AND TRIM Inch	SHIPPING LENGTH	REMARKS	MILL BILL REF.	ORDERED LENGTH	CALCULATED WEIGHT FOR ONE SHIPPING PIECE
3		1 -	BEAM -			1B1R			64	(AS SHOWN)			6339.8
4		1 -	Do. -			1B1L			64	(LEFT OF SHOWN)			6339.8
5		1 -	Do. -			1B2R			64	(AS SHOWN)			6369.5
6		1 -	Do. -			1B2L			64	(LEFT OF SHOWN)			6369.5
7		4	W 27	84	63 0 9/16						1/1		
8		4	PL 9	3/4	42 3	a					1/4		
9		8	PL 5	1/2	1 9	b					1/5		
10		4	PL 5	1/2	1 9	c				1B2 SET ON SITE	1		
11		4	SOLE PL			S1							
12		4	"			S2							
14		384	NS	7/8" ϕ	7	TYPE S3L				ITEM 508.15			1.1
19		8	- PLATES -			1PI			2				10.8
20		8	PL 9	1/4	1 5						1/7		
25		6	- DIAPHRAGMS - 1D1						7				272.5
26		6	C 15	33.9	6 7/2						1/3		
31			FIELD BOLTS (NET COUNT)										
33		48	BT 7/8" ϕ		2/4					A325 TYPE 3			
35		48	WR 7/8" ϕ										
63										(ITEM 508.15) TOTAL WGT.			4224
64										(ITEM 506.90) TOTAL WGT.			68520

ERNST CONSTRUCTION DIV.
OF
ERNST STEEL CORPORATION
1280 MAIN STREET BUFFALO, N. Y.

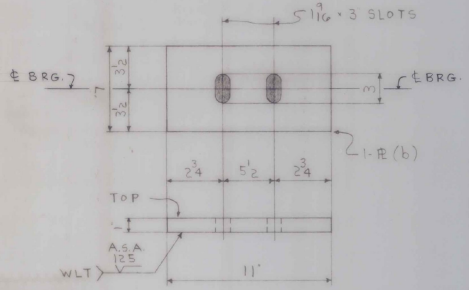
TITLE DETAILS
FOR STATE OF VERMONT - D.O.H.
BRIDGE NO. 20 OVER CLYDE RIVER
MADE BY RB DATE 6-1-76 CHK. BY AWS DATE 6/2/76
OPEN HOLES 18/16" DIA. RIVETS 7/8" DIA. UNLESS NOTED.
SHOP PAINT NONE SHEET NO. 1
FIELD PAINT — CONT. NO. 6173



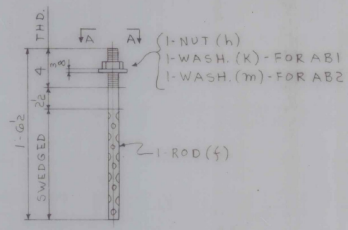
4 - SOLE PLATES - S1



8 - PADS - BP1

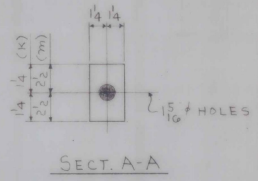


4 - SOLE PLATES - S2

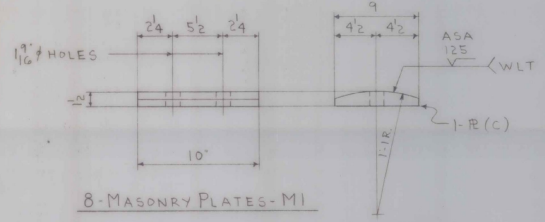


8 - ANCHOR BOLTS - AB1

8 - Do. Do. - AB2



SECT. A-A



8 - MASONRY PLATES - M1

NOTE:
WLT - DENOTES FINISHED SURFACE TO RECEIVE A COATING OF WHITE LEAD & TALLOW.

ALL MAT'L. A.S.T.M. - A588 WEATHERING UNL. NTD.
FOR GENERAL NOTES SEE SHT. K1

PROJECT NO. TH 3604
BRIDGE NO. 20
ORLEANS COUNTY

C6173 SHEET NO. A1 PROJ. NO. TH 3604 BR. NO. 20 ORLEANS CO.

LINE NO.	ITEM	MATERIAL: NO. OF PCS.	MATERIAL: ABBRV. DESC.	MATERIAL: DIMENSIONS	MATERIAL: LENGTH Ft.	MATERIAL: LENGTH Inches	SHIPPING OR ASSEMBLY MARK	FINISH AND TRIM Desc.	FINISH AND TRIM Length	SHIPPING LENGTH	REMARKS	MILL BILL REF.	ORDERED LENGTH	CALCULATED WEIGHT FOR ONE SHIPPING PIECE
1														
2		4	- SOLE PLATES - S1								SHIP W/ BEAM			
3		4	PL	7	1	11	a	FIS				1/9		
4														
5														
6		4	- SOLE PLATES - S2								SHIP W/ BEAM			
7		4	PL	7	1	11	b	FIS				1/9		
8														
9														
10		8	- MASONRY PLATES - M1							1				38.2
11		8	PL	9	1 1/2	10	c	FIS	1/8			1/10		
12														
13														
14		8	- PADS -				BP1			1				
15		8	FABREEKA PADS											
16				9	1/8	10	d							
17														
18														
19		8	- ANCHOR BOLTS - AB1							2				7.8
20		8	RD	1 1/4 ϕ	1	6 1/2	f				SWEDGED AS PER TYPE 3	1/12		
21		8	HN	1 1/4	TAP		h							
22		8	PL	2 1/2	3/8	2 1/2	K					1/19		
23														
24														
25		8	- ANCHOR BOLTS - AB2							2				8.5
26		8	RD	1 1/4 ϕ	1	6 1/2	f				SWEDGED AS PER TYPE 3	1/12		
27		8	HN	1 1/4	TAP		h							
28		8	PL	2 1/2	3/8	5	m					1/17		
29														
30														
31														
32														
33														
34														
35														
36														
37														
38														
39														
40														
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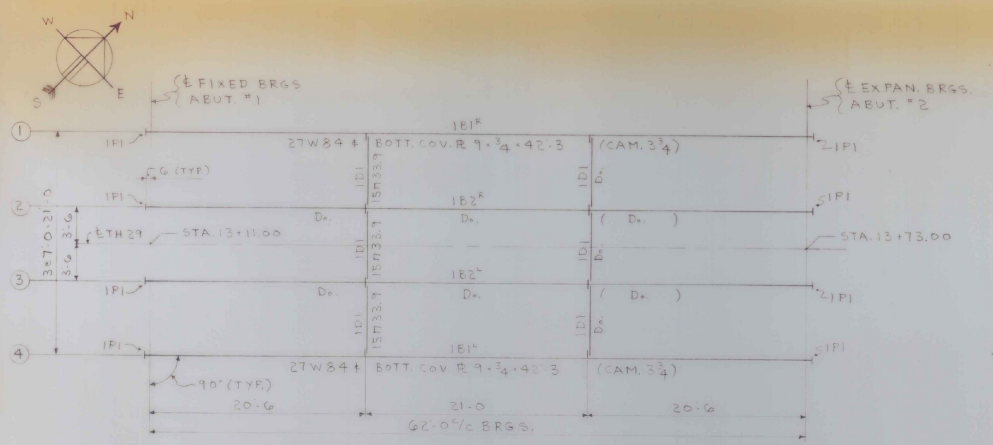
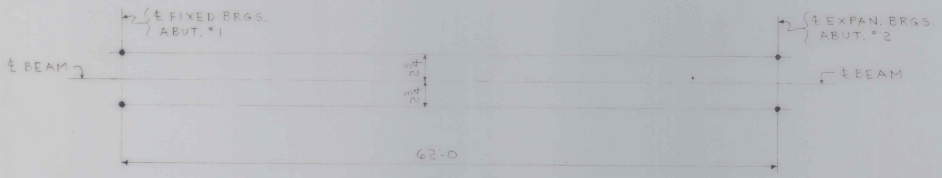
52														
53														
54														
55														
56														
57														
58														
59														
60														
61														
62														
63														
64												TOTAL WGT.		4360.

ERNST CONSTRUCTION DIV.
OF
ERNST STEEL CORPORATION
1280 MAIN STREET BUFFALO, N. Y.

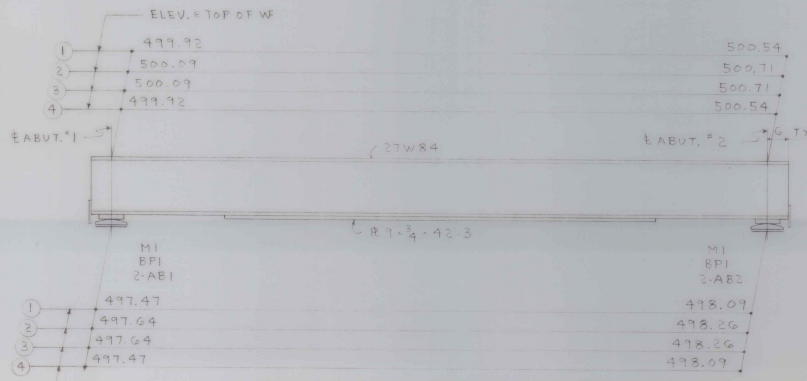
TITLE BEARING DETAILS
FOR STATE OF VERMONT - D.O.H.
BRIDGE No. 20 OVER CLYDE RIVER
MADE BY RB DATE 5-28-76 CHK. BY AWS DATE 6/2/76
OPEN HOLES ⟋ DIA. RIVETS ⟋ DIA. UNLESS NOTED
SHOP PAINT: NONE SHEET NO. A1
FIELD PAINT: — CONT. NO. 6173



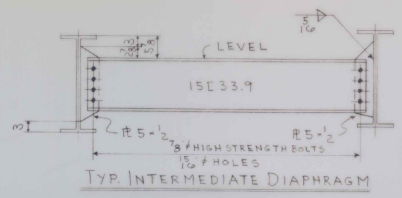
FRAMING PLAN



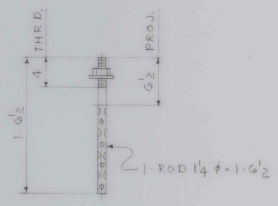
ANCHOR BOLT PLAN



PROFILE



TYP. INTERMEDIATE DIAPHRAGM



8 - ANCHOR BOLTS - AB1

8 - Do. Do. - AB2

FOR GENERAL NOTES SEE SHT. K1

PROJECT NO. TH3604
BRIDGE NO. 20
ORLEANS COUNTY

ERNST CONSTRUCTION DIV.
OF
ERNST STEEL CORPORATION
1280 MAIN STREET BUFFALO, N. Y.

TITLE FRAMING PLAN
FOR STATE OF VERMONT - D.O.H.
BRIDGE No. 20 OVER CLYDE RIVER
MADE BY RB DATE 5-28-76 CHK. BY AWS DATE 6/2/76
OPEN HOLES 15/16" DIA. RIVETS 7/8" DIA. UNLESS NOTED.
SHOP PAINT: NONE SHEET NO. E1
FIELD PAINT: — CONT. NO. 6173

General Notes
State Of Vermont
Department Of Highways
TOWN OF CHARLESTON
COUNTY OF ORLEANS
ROUTE NO. TH 29 BRIDGE NO. 20
PROJECT NO. TH 3604

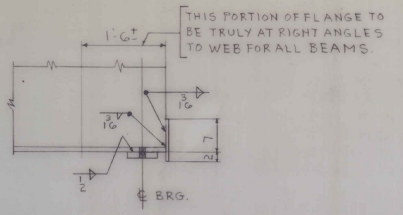
Scope of Work
STRUCTURAL STEEL (ITEM 506.90) FURNISHED BY ERNST AND ERECTED BY OTHERS.
ANCHOR BOLTS FOR BEARING DEVICES FURNISHED BY ERNST BUT SET BY OTHERS.
SHEAR STUDS (ITEM 508.15) FURNISHED & SHOP WELDED BY ERNST.

Field Connections
7/8" HIGH STRENGTH BOLTS ARE TYPICAL (A325 TYPE 3)
OTHER FASTENERS OR FIELD WELDING SHALL BE SHOWN ON THIS SHEET.

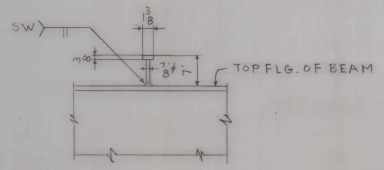
Shop Paint
NO PAINT ASTM-A588 (BLAST CLEAN SPECIFICATION - SSPC-SP6)
(SEE PAGE 5-65 OF VERMONT - D.O.H. SPECIFICATIONS DATED JAN. 1972)
THE CONTACT SURFACES OF ROCKERS SHALL RECEIVE A SHOP COAT OF WHITE LEAD AND TALLOW.

Welding
ALL WELDING AND DIMENSIONAL TOLERANCES OF WELDED MEMBERS SHALL CONFORM TO A.W.S. D1-1-72 "STRUCTURAL WELDING CODE" AND ITS LATEST REVISIONS EXCEPT AS MODIFIED BY THE AASHTO STANDARD SPECIFICATIONS FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES, DATED 1974 AND ITS LATEST REVISIONS.

Shop Inspection By Vermont Dept. of Hwys.



Shop Welding of Sole Plates to Beam



TYPICAL SHOP WELD DETAIL FOR SHEAR STUDS (ITEM 508.15)

Design & Detailing
AS PER THE STATE OF VERMONT DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY & BRIDGE CONSTRUCTION, DATED JANUARY 1972 & ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 1973 AND ITS LATEST REVISIONS.
LL-H20-44

Materials & Fabrication
AS PER ABOVE SPECIFICATIONS, CONTRACT DRAWINGS & SPECIAL PROVISIONS. UNLESS OTHERWISE NOTED ON DETAILS A.S.T.M.-A588 WEATHERING WILL BE USED FOR ALL STEEL.

Responsibility
THE FABRICATOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF PRINCIPAL CONTROLLING DIMENSIONS GIVEN ON THE ENGINEER'S DESIGN DRAWING.

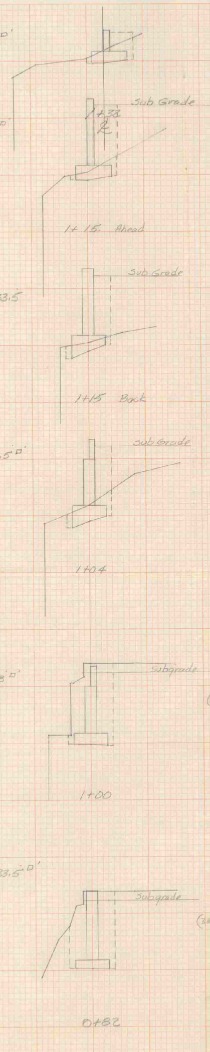
Shop Note
LONGITUDINAL DIMENSIONS ARE TO BE MEASURED ALONG CHORD LINE OF CAMBERED BEAMS. STIFFENERS AND END CUTS ARE TO BE LAID OUT WITH RESPECT TO THE CHORD LINE UNLESS OTHERWISE NOTED. CAMBER IS TO BE MEASURED WITH WEB LYING HORIZONTAL. STIFFENERS ARE TO BE NORMAL TO BOTTOM CHORD UNLESS OTHERWISE SHOWN.

Erector Note
PROCEDURE FOR THE USE OF HIGH STRENGTH BOLTS A.S.T.M.-A325-TYPE 3
THE ERECTOR SHALL INSERT HIGH STRENGTH BOLTS WITH A HARDENED WASHER UNDER THE TURNED ELEMENT AND SHALL TIGHTEN TO A MINIMUM BOLT TENSION OF 39,250 LBS.
ADD (1'4 TO 1 7/16) TO GRIP FOR LENGTH.

PROJECT NO. TH 3604
BRIDGE NO. 20
ORLEANS COUNTY

ERNST CONSTRUCTION DIV.
OF
ERNST STEEL CORPORATION
1280 MAIN STREET BUFFALO, N. Y.

TITLE GENERAL NOTES
FOR STATE OF VERMONT - D.O.H.
BRIDGE No. 20 OVER CLYDE RIVER
MADE BY RB DATE 5-28-76 CHK. BY AWS DATE 6/8/76
OPEN HOLES 15/16" DIA. RIVETS 7/8" DIA. UNLESS NOTED.
SHOP PAINT — SHEET NO. K1
FIELD PAINT — CONT. NO. 6173



(0.8+8.5 / 2 × 3) + (8.5+8.5 / 2 × 5.15) = 20.9

1 + (10.4+8.3 / 2 × 1) + (8.3+8.5 / 2 × 5.15) = 16.3' Butt

(5.3+2.4 / 2 × 1) + (2.4+1.5 / 2 × 3) + (5.5+8.3 / 2 × 3) + (3.3+6.5 / 2 × 1) = 13.8' Butt

(5.1+5.7 / 2 × 1) + (5.7+6.3 / 2 × 3) + (3.9+8.3 / 2 × 3) + (6.3+8.5 / 2 × 1) = 25.6'

(10+10.5) + (10.7+10.5) + (10.7+10.8 / 2 × 1.7) + (14.5+14.5 / 2 × 5.3) = 101.6 − (1.6 × 5.3) = 93.1'

(7.8+11 / 2 × 1) + (11+11.4 / 2 × 1.5) + (13.7+13.7 / 2 × 5.5) = 101.5 − (1.6 × 5.5) = 92.7'

Structure Excavation Granular Back fill

Sta	Dist	Area	Vol	Area	Vol
0+80.75	Butt	92.7'		33.5	
	19.25		1788.3'		648'
1+00		93.1'		33.8	
	4.0		237.4'		135'
1+04		25.6'		33.5	
	11.02		217.1'		369'
1+15.02	Butt	13.8'		33.5	
1+15.02	Butt	16.3'		44.0	~~559~~ 568
	19.08		354.9'		
1+31.10	Butt	20.9'		15.6	

2597.7 ÷ 27 = 96.2'

~~1711~~ ÷ 27 = ~~63.37~~ 63.70

1+0.22
1+10.46
1+31.39

Under footing
5.6+4.1 / 2 × 1.3
2.6+3.5 / 2 × 9.1
1.2+8.6 / 2 × 4.8 = 5.0
5.6+7.1 / 2 × 3 = 2.6
18.0'

3.5+8.8 / 2 × 7 = 24.2
8.8+7.3 / 2 × 5 = 20.2
7.3+8.5 / 2 × 1 = 48.4
94.8

9.5+11.5 / 2 × .5 = 4.5
11.5+8.5 / 2 × 3 = 10.2
8.5+11.5 / 2 × 5 = 32.0
11.5+4.5 / 2 × 3 = 24.4
71.1

11.3+8.5 / 2 × 16 = 90.4

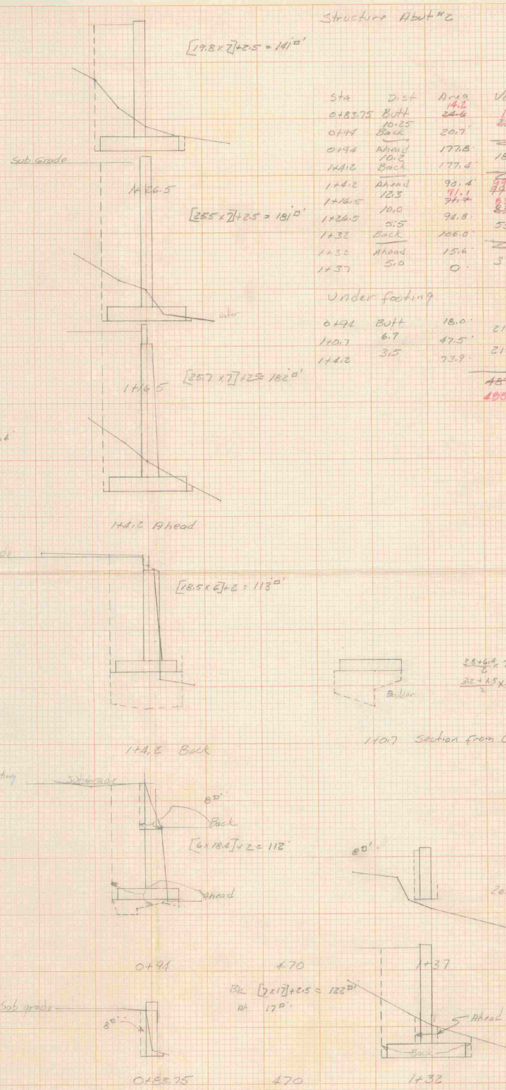
To Bottom of footing
10.1+8.3 / 2 × 3 = 55.0
20.4 × 6 = 122.4
177.4

Under footing
5.6+4.5 / 2 × 1.5 = 39.3
2.5+6.5 / 2 = 16.2
6.5+6.3 / 2 × 4 = 18.4
73.9'

Ahead To Bot. of footing
1.8 × 1 / 2 = 6.0
20.3+12.7 / 2 × 3 = 49.6
20.4+20.3 / 2 × 6 = 121.8
177.8'

Back
8.3 × 2 / 2 = 12.4
1 × 8.3 = 8.3
20.7'

1.5+8.5 / 2 × 2 = 1.5
1.5+8.5 / 2 × 1 = 4.7
1 × 18.4 = 18.4
1 × 5.0 = ~~24.6~~
14.2



Structure Abut #2

Sta	Dist	Area	Vol	Granular Back Area	Vol
0+83.75	Butt	~~24.6~~ 14.2	~~232~~ 179	8	~~164~~ 82
	10.25				
0+94	Back	20.7'		8	
0+94	Ahead	177.8		112	114.8'
	10.2		1812'		
1+4.2	Back	177.4		113	
1+4.2	Ahead	90.4	~~997~~ 993	182	2232'
	12.3				
1+16.5		~~71.7~~ 71.1	~~832~~ 830	181	1610'
	10.0				
1+26.5		94.8		141	723'
	5.5		552'		
1+32	Back	106.0		122	
1+32	Ahead	15.6		17	62'
	5.0		39'		
1+37		0		8	

~~5939/27 = 219.89~~
5857/27 = 216.925

Under footing

Sta	Dist	Area	Vol
0+94	Butt	18.0	
	6.7		219'
1+0.7		47.5	
	3.5		212'
1+4.2		73.9	

~~4895~~ ÷ 27 = 181.3 CY
4836 ÷ 27 = 179.1 C.Y.

2.8+6.5 / 2 × 7 = 35.7
4.2+4.5 / 2 × 5 = 11.8
47.5

1+0.7 Station from Conc Quantities

Back
2.6+5.7 / 2 × 7 = 90.6
5.7+6.5 / 2 × 9 = 73.4
106.0'

Ahead
2.8+3.0 / 2 × 5 = 15.6

Windsor TH 3608

DRIVE: SEE BK 3 PG 65 ✓

$\frac{18+30}{2} \times 14 \times 3.0 = 37.33\ YD^3$ TO BE DEDUCTED FROM BORROW

W.R. 9-30-76

Sta	Dist.	Excavation Area	Excavation Vol	Gravel Area	Gravel Vol	Unauth. Fill Area	Unauth. Fill Vol
19+41	Butt	~~39~~ 51 ✓		31 ✓			
	9		~~13~~ 17 ✓		10 ✓		
19+50		~~39~~ 51		31 ✓		0	
	50		~~69~~ 81 ✓		62 ✓		~~36~~ 48 ✓
20+00		36 ✓		36 ✓		~~39~~ 52 ✓	
	41		~~56~~ 55 ✓		55 ✓		~~30~~ 39 ✓
20+41	Butt	36 ✓		37 ✓		0	
20+96	Butt	9 ✓		37 ✓			
	4		1 ✓		~~6~~ 5		
21+0		9 ✓		37 ✓			
	50		39 ✓		65 ✓		
21+50		33 ✓		33 ✓			
	46		~~60~~ 74		56 ✓		
21+96	Butt	~~38~~ 54 ✓		33 ✓			
			~~235~~ cy		~~254~~ cy		~~66~~ cy
			267 ✓		253		87 ✓
			+ 37 ✓ DRIVE				
			304 ✓				

✓ GJA 9-30-76

304 + 253 + 87 = 644 × 1.15 = 741 C.Y.

Total to be deducted to obtain borrow

~~(254 + 66 + 283) × 1.15 = 694 CY~~

Excavation Removed By Town

Pile 42' Long 18' wide at base and 8' High = 112 CY ✓

Structure Excavation wasted against stream bank 30' Long by 4' high by 8' wide (triangle 8 × 4') = 18 CY ✓

Total ~~824~~ CY
871 C.Y. ✓

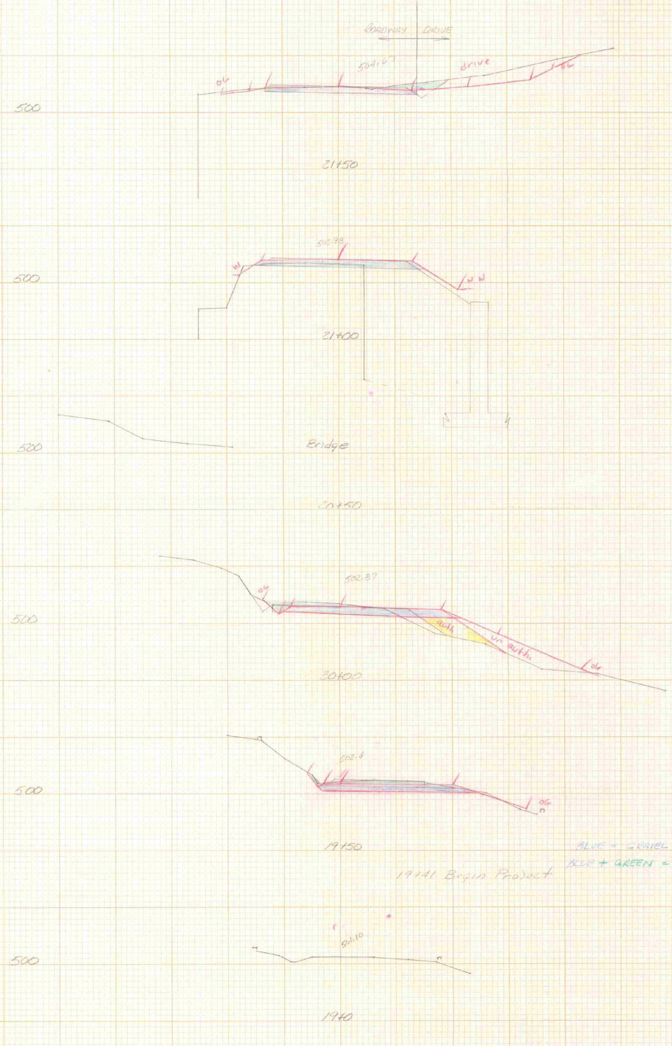
Total Gravel Slips = 444

Total Granular Backfill Slips = 564

Total 1008

Less ~~824~~ 871

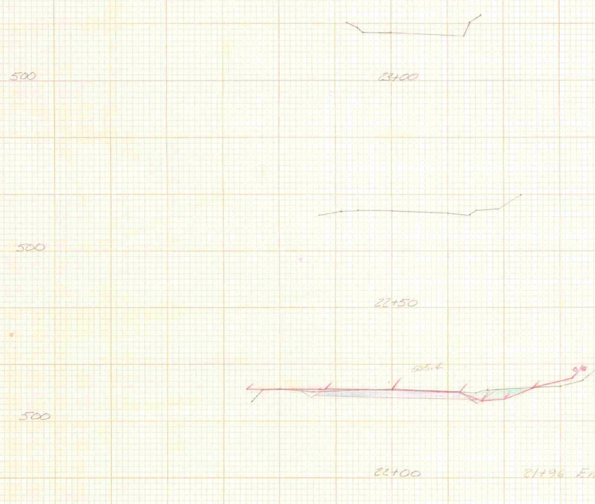
~~184~~ CY
137 C.Y. ✓



BLUE = GRAVEL

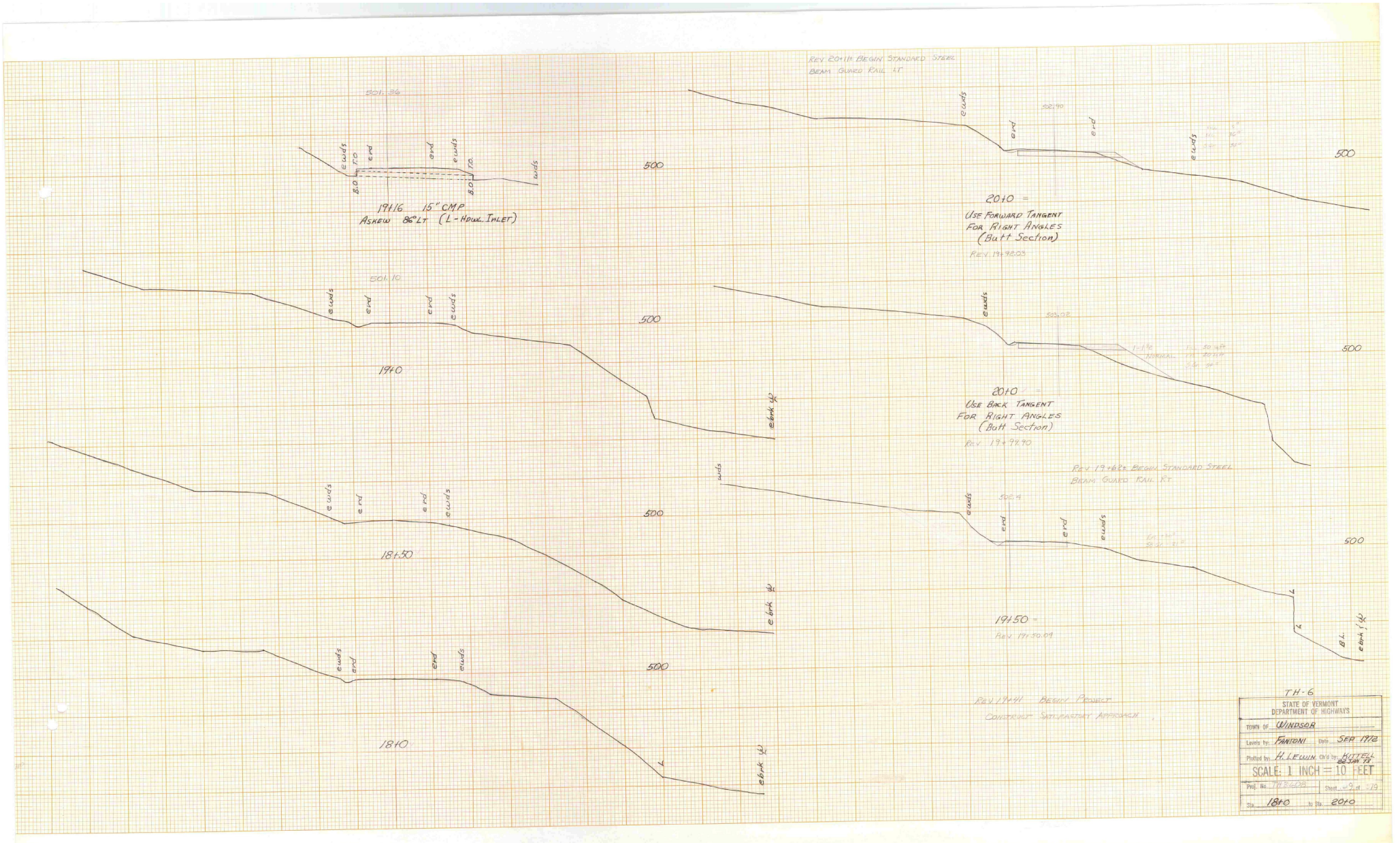
BLUE + GREEN = TOTAL EXCAVATION

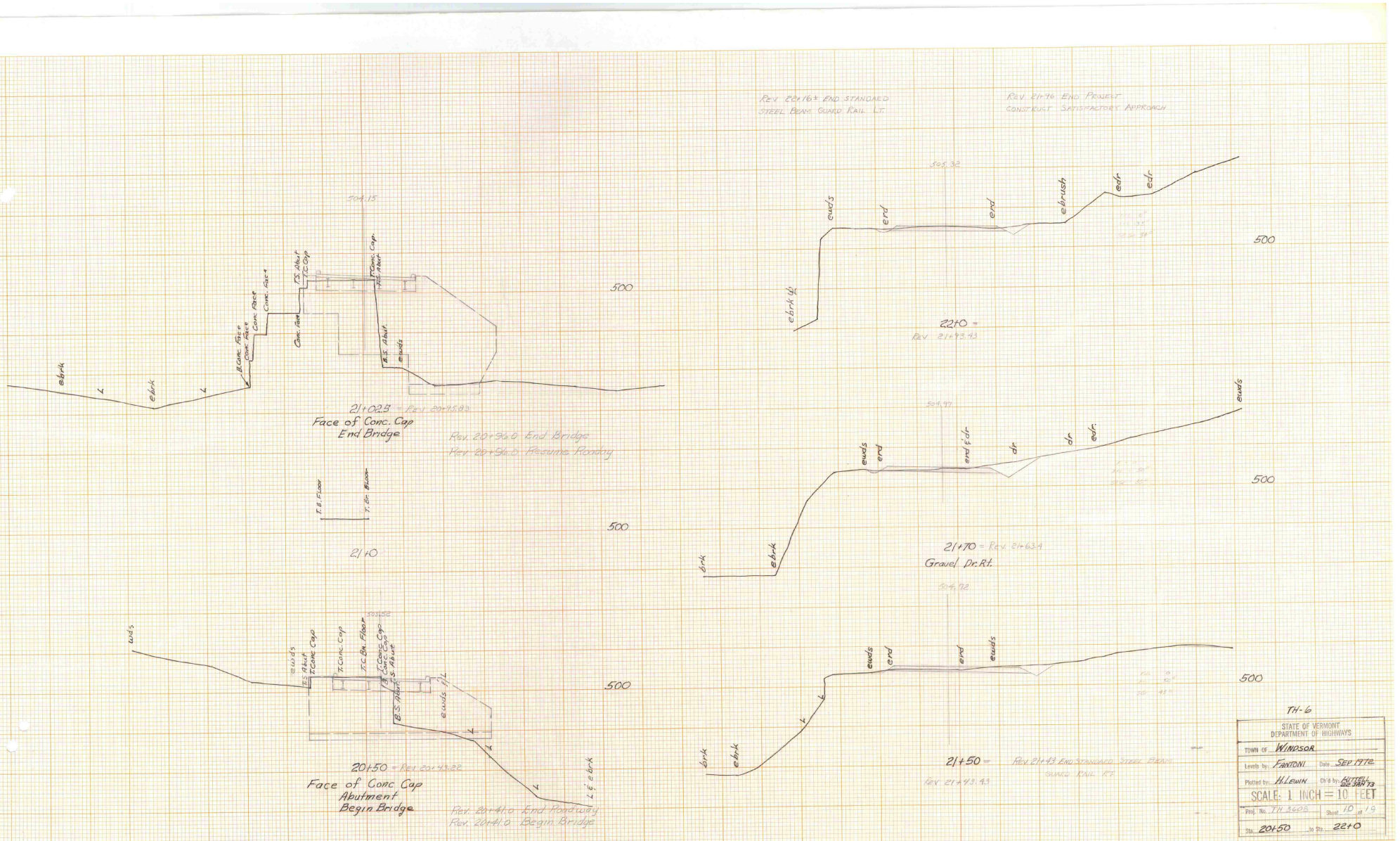
19+41 Begin Project

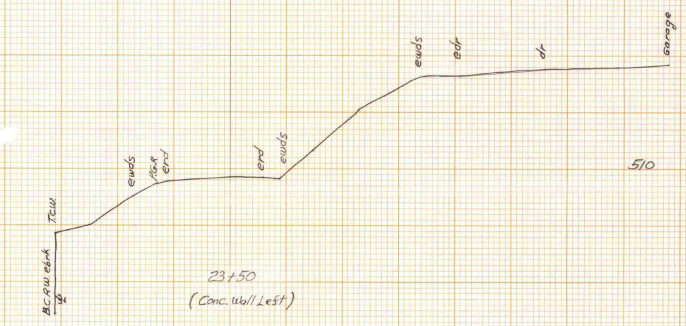


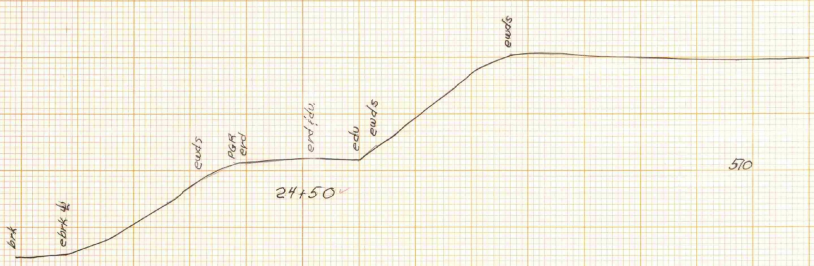
21+96 End Project

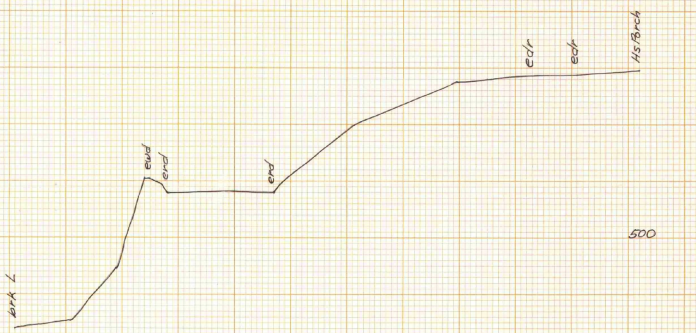
Windsor TH 3608

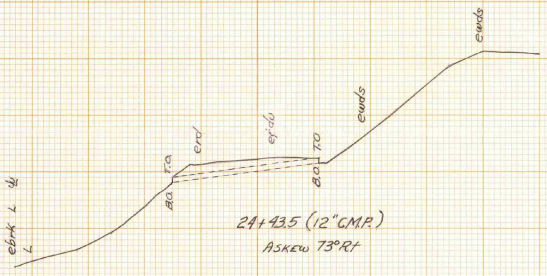

501.36
spms
end
end
spms
10'
10'
1916 15" CMP
Askew 86° Lt (L-Hdwl. Inlet)
500
1910
501.10
end
end
spms
spms
ebrk
500
1850
end
end
spms
spms
ebrk
500
1840
end
end
spms
spms
ebrk
500
Rev 20+18 Begin Standard Steel
Beam Guard Rail Lt
spms
end
end
spms
502.90
2010 =
Use Forward Tangent
For Right Angles
(Butt Section)
Rev. 19+92.03
spms
spms
523.02
1-1/2"
Normal
2010
Use Back Tangent
For Right Angles
(Butt Section)
Rev. 19+99.90
Rev 19+62± Begin Standard Steel
Beam Guard Rail Rt
spms
spms
506.9
end
end
spms
1950 =
Rev. 19+50.09
ebrk
Rev 19+41 Begin Project
Construct Safe Grade Approach
TH-6
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
TOWN OF WINDSOR
Levels by: FANTONI Date SEP 1972
Plotted by: R. LEWIN Ck'd by: HOTTEL 22 JAN 73
SCALE: 1 INCH = 10 FEET
Proj. No. 1778402 Sheet 9 of 13
Sta. 1840 to Sta. 2040

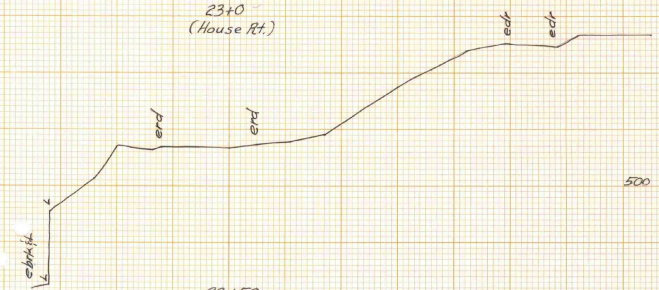

Rev. 22+16± End Standard Steel Beam Guard Rail Lt.
Rev. 21+96 End Present Construct Satisfactory Approach
505.32
ebrk
end
end
ebrush
edr
edr
euds
500
22+0 =
Rev. 21+93.93
504.97
euds
end
end
edr
edr
edr
500
21+70 = Rev. 21+63.9
Gravel Dr. Rt.
504.92
euds
end
end
euds
500
21+50 = Rev. 21+43.93
Rev. 21+43 End Standard Steel Beam Guard Rail Rt.
504.15
B. Conc. Face
Conc. Face
Conc. Face
Conc. Abut
T.S. Abut
T.C. Cap
T. Conc. Cap
B.S. Abut
euds
21+025 = Rev. 20+95.93
Face of Conc. Cap
End Bridge
Rev. 20+96.0 End Bridge
Rev. 20+96.0 Resume Roadway
T.B. Floor
T. Br. Floor
21+0
503.52
euds
T.S. Abut
T. Conc. Cap
T.C. Br. Floor
T. Conc. Cap
T. Conc. Cap
B.S. Abut
B.S. Abut
euds
20+50 = Rev. 20+43.22
Face of Conc. Cap
Abutment
Begin Bridge
Rev. 20+44.0 End Roadway
Rev. 20+41.0 Begin Bridge
TH-6
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
TOWN OF WINDSOR
Levels by: FANTONI Date: SEP 1972
Plotted by: H. LEWIN Ch'd by: CUTLER 3rd JAN 73
SCALE: 1 INCH = 10 FEET
Proj. No. TH 3605 Sheet 10 of 19
Sta. 20+50 to Sta. 22+0

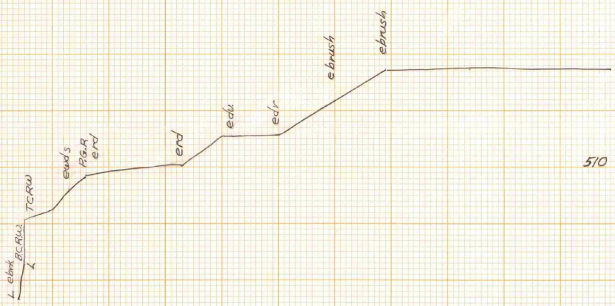












TH-6

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF Windsor

Levels by: Fantoni Date: Sept. 1972

Plotted by: H. Lewin Ck'd by: RS Stahl Events

SCALE: 1 INCH = 10 FEET

Proj. No. TH 3408 Sheet 11 of 19

Sta. 22+50 to Sta. 24+50


C/L
C/L
4+70
490
4+60
480
4+50
480
4+25
480
5+0
480
Limits of Unclass. Channel Exc.
SF = 40□
Str. Exc. 415□
Chan. Exc. = 30□
Gran. Backfill = 225□
Sta. 5+00± Begin Unclassified Channel Excavation
Sta. 5+00± Begin Stone Fill, Type II
4+90
480
Limits of Granular Backfill for Structures
NOTE: If sound ledge is encountered above Elev 488, footing may be raised & reinforcing cut to fit as directed by the Engineer.
Str. Exc. = 295□
Gran. Bkfl. for Str. = 156□
Sta. 4+80± Begin Structure Excavation
Sta. 4+80± Begin Granular Backfill for Structures
4+80
480

CHANNEL SECTIONS

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF WINDSOR

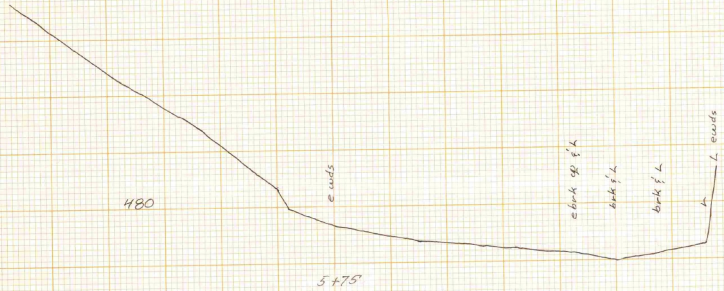
Levels by: FANTONI Date

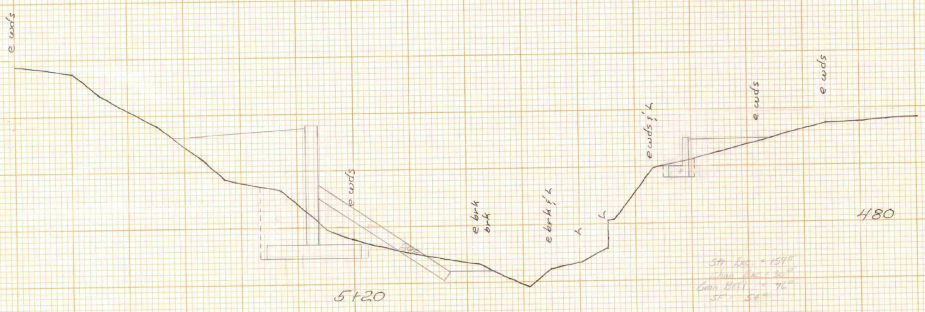
Plotted by: H. LEWIN Ch'd by: KITTELL 19 JAN 73

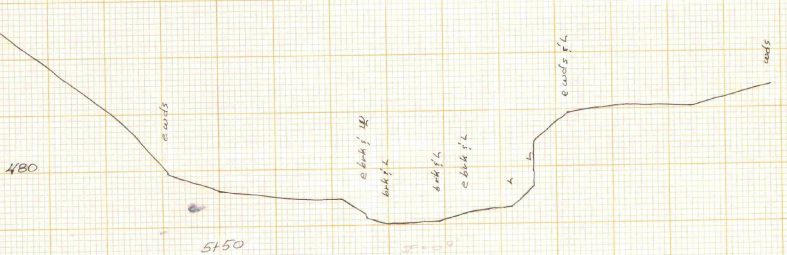
SCALE: 1 INCH = 10 FEET

Proj. No. TH 3606 Sheet 12 of 19

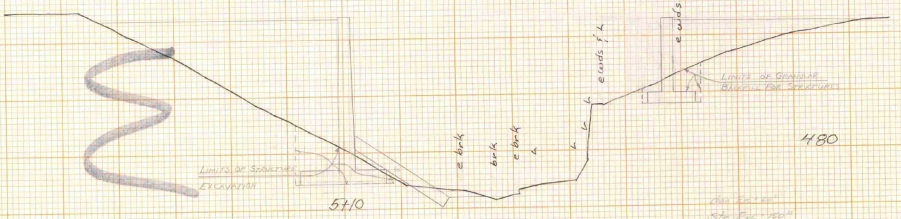
Sta. 4+25 to Sta. 5+0

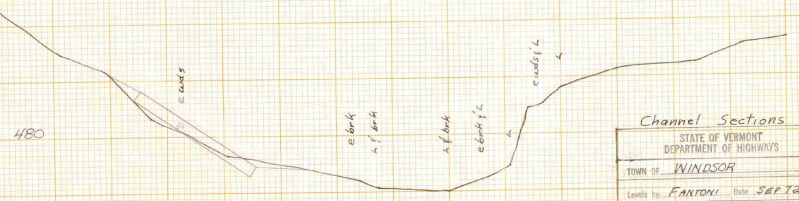






Sta. 5+50 End Undisturbed Channel Excavation
Sta. 5+50 End Stone Fill, Type II





Sta. 5+40 ± End Structure Excavation
Sta. 5+40 ± End Granular Backfill for Structures

Channel Sections
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
TOWN OF WINDSOR
Levels by: FANTONI Date: SEP 72
Plotted by: H. LEWIN Ch'd by: MITCHELL H. JANTS
SCALE: 1 in. CH = 10 FEET
Proj. No. FN3409 Sheet 12 of 10
Sta. 5+10 to Sta. 5+75

Bridge

1976

Windsor

TH 3608

1976

Vermont Agency of
Transportation
Phase III- Interstate
#090303-01

INITIALS

DONE

Hanger 4672