

1. TITLE SHEET
2. PLAN (20 SCALE)
3. PROFILE & BORING LOG
4. BRIDGE QUANTITY SHEET
5. PLAN & ELEVATION
6. SUPERSTRUCTURE DETAILS
7. ABUTMENT DETAILS
8. REINFORCING STEEL SCHEDULE
9. TH 29 X-SECTIONS
10. CHANNEL X-SECTIONS

13	STD	DWG	SGB-D1-75	REV 23 MAR 75	20	STD	DWG	E-3	REV 12 DEC 75
14	STD	DWG	SGB-D2-71	REV 29 DEC 75	21	STD	DWG	E-6	REV 4 MAR 74
15	STD	DWG	SGB-D6-73	REV 29 DEC 75	22	STD	DWG	E-7	REV 15 SEP 73
16	STD	DWG	SGB-D7-71	REV 22 JAN 75	23	STD	DWG	G-1a	REV 23 MAR 74
17	STD	DWG	SGB-D8-71	REV 27 SEP 72					
18	STD	DWG	SGB-D9-71	REV 27 JAN 75					
19	STD	DWG	SGB-R0-76	APP 8 JAN 76					

1 ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION DATED JANUARY 1972, AND ITS LATEST REVISIONS, AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES DATED 1973, AND ITS LATEST REVISIONS. DESIGN IS FOR H20-44 LIVE LOADING WITH AN ALLOWANCE OF 25 LB PER SQ. FT. MADE FOR FUTURE PAVING.

2 GENERAL NOTES PERTAINING TO SPECIFICATIONS AND CONSTRUCTION NOT SHOWN ON THESE PLANS ARE ON STD. SHEET SCB-DI-75. NOTES SHOWN ON THIS STANDARD WHICH APPLY TO THIS PROJECT ARE: NO.3, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13 & 14.

CONVENTIONAL SIGNS

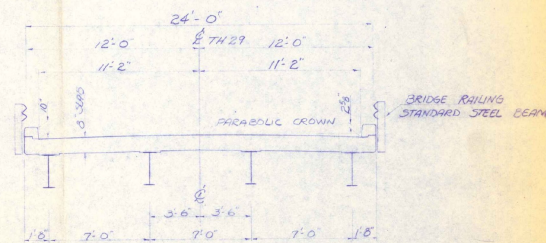
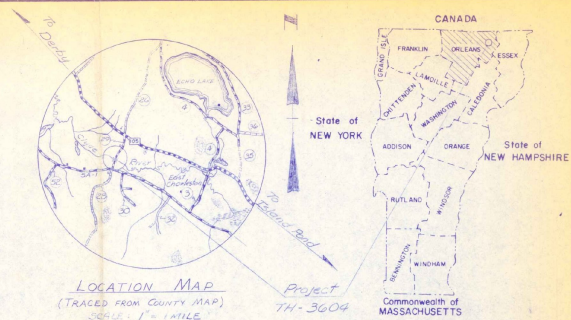
COUNTY LINE	
TOWN LINE	
LIMITS OF ACCESS	
POINT OF ACCESS	
ENCE LINE	
STONE WALL	
TRAVELED WAY	
GUARD RAIL	
RAILROAD	
SURVEY LINE	
CULVERT	
POWER POLE	
TELEPHONE POLE	
TREES	
F.A. CONST. IDENTIFICATION SIGNS	
PROPERTY LINE	
HOW TAKING LINE	
SLOPE RIGHTS	SR
TOP OF CUT	
TOP OF SLOPE	

BRIDGE PROJECT
TOWN OF CHARLESTON
COUNTY OF ORLEANS
ROUTE No: TH #29 C13 BRIDGE No: 20

PROJECT DESCRIPTION: REMOVAL OF THE EXISTING STRUCTURE, CONSTRUCTION OF A NEW COMPOSITE W BEAM BRIDGE WITH RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE: 64.0 FEET
LENGTH OF PARTICIPATION ROADWAY: 200.0 FEET
LENGTH OF NON-PARTICIPATION ROADWAY: 65.0 FEET
LENGTH OF PROJECT: 329.0 FEET

Scale: 1" = 100'



Hand-drawn cross-section diagram of a road with a 2% grade. The diagram shows a 10m wide road with a 2% upward slope. The top surface is labeled 'GRADE' and the bottom surface is labeled '10' GRAVEL'. The vertical height of the gravel base is 20 cm. The top width of the road is 24.0 m, and the bottom width is 26.4 m. The side slopes are 1:2. The diagram is labeled 'FACE OF CUMBO RAIL (TWINING)' on the right side.

* VARIES AT THE APPROACH ENDS
OF THE GUARD RAIL. SEE
STD DWG. G-1a, APPR. END DET.

Date 12 May 1976
Contractor _____
James McDonald
Signature _____
Carter
Title _____
William Carter
ACTING Commissioner's signature

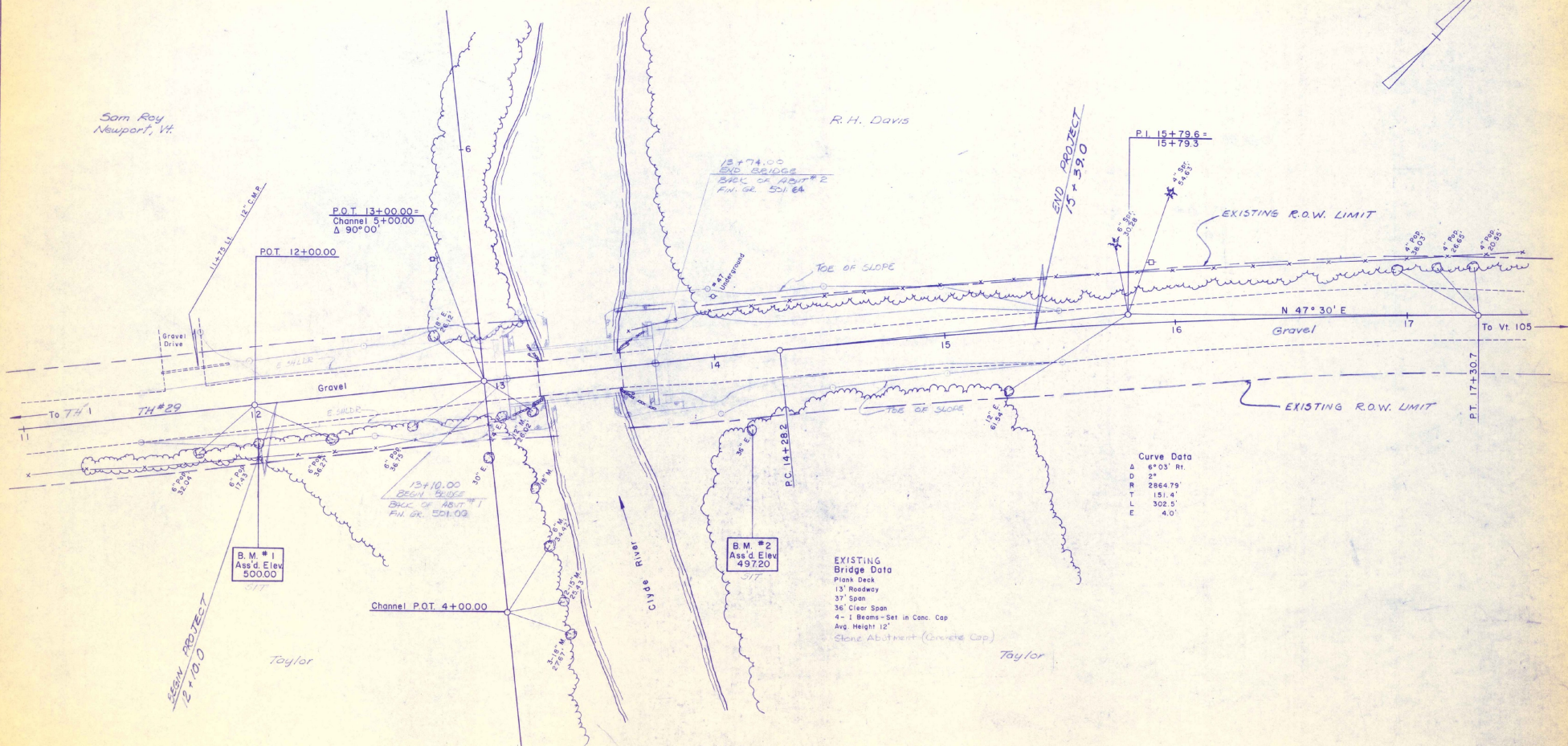
SUBMITTED BY ORDER OF THE STATE HIGHWAY BOARD

APPROVED *E. H. Stickney* DATE *4/6/76*
CHIEF ENGINEER

PROJECT NO. *CHARLESTON TH 3604*
SHEET 1 OF 23 SHEETS

Sam Roy
Newport, Vt.

R.H. Davis



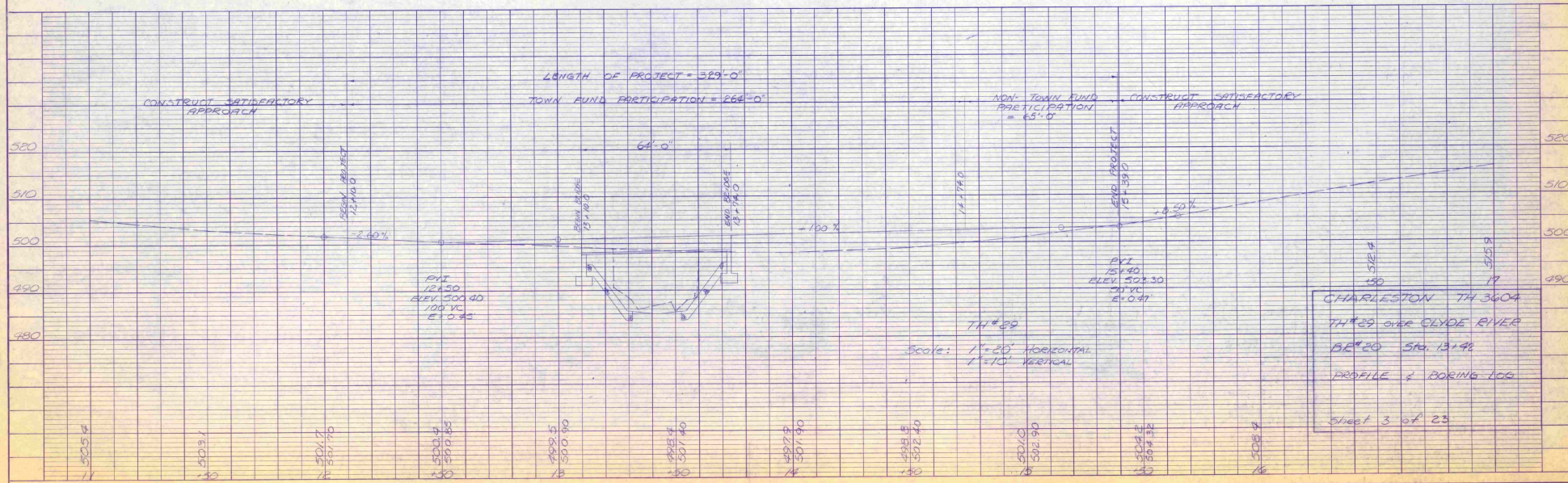
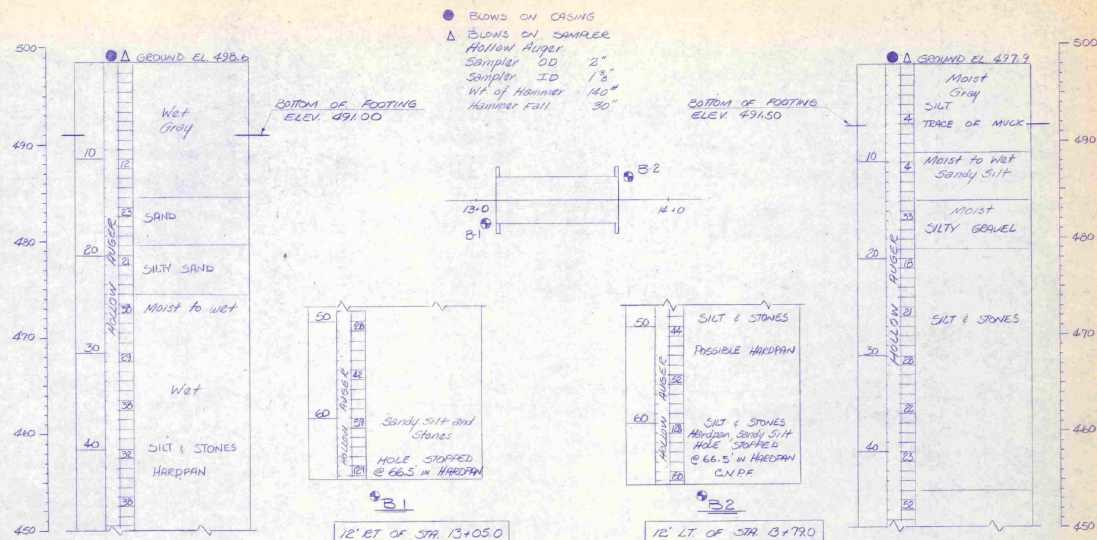
0 20 40
Scale in Feet

CHARLESTON

SURVEYED BY FANTONI DATE 7/75
DRAWN BY TROMBLY DATE 8/75
TRACED BY DUFFY DATE 8/75

PROJ. T.H. NO. 3604
SHEET 2 OF 23

Drainage Area = 95 sq. mi. (246 sq. km)
 $Q_{10} = 2900 \text{ cfs (82 cms)}$ Headwater Elev 494.3
 $Q_{25} = 3500 \text{ cfs (99 cms)}$ Headwater Elev 495.8
 $Q_{50} = 4200 \text{ cfs (119 cms)}$ Headwater Elev 496.9
 $Q_{100} = 4900 \text{ cfs (137 cms)}$ Headwater Elev 497.9
 Tailwater Elevation @ $Q_{25} = 495.5$
 Outlet Velocity @ $Q_{25} = 3.2 \text{ fps (2.5 mps)}$



EARTHWORK

GRADES										EARTH BORROW		SUBBASE OF GRAVEL		
V.C.	% GRD	STATION	ELEVATION ON TAN.	ON V.C.	CORR. V.C.	DIST.	AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.
100 VC	-2.50 %	TOWN FUND PARTICIPATION												
		12+00.00	501.70	501.70	+0.00									
		12+10.00	501.44	501.46	+0.02			8	13			5	22	
		12+50.00	500.40	500.45	+0.45	40.0	10	56			25	72		
		13+00.00	500.90	500.90	+0.00	100	91	12			33	10		
		13+10.00	501.00					13			45			
		13+50.00	501.40											
		13+74.00	501.64					125	140		45	50		
		14+00.00	501.90				86.0	168	285		50	97		
		14+50.00	502.40				50.0	110	82		47	42		
50 VC	+1.00 %	14+74.00	502.64				84.0	75		47				
		SUB-TOTAL ROUNDING				=		355			301			
		TOTAL				=		560			370			
		NON-TOWN FUND PARTICIPATION												
		14+74.00	502.64				86.0	75	55		47	45		
		15+00.00	502.90				39.0	40	29		47	34		
		15+39.00	503.29	503.72	+0.43			0			0			
		15+40.00	503.30	503.77	+0.47									
		SUB-TOTAL ROUNDING				=		84			77			
		TOTAL				=		90			80			
50 VC	+3.50 %													
EARTHWORK SUMMARY														

BRIDGE QUANTITY SHEET

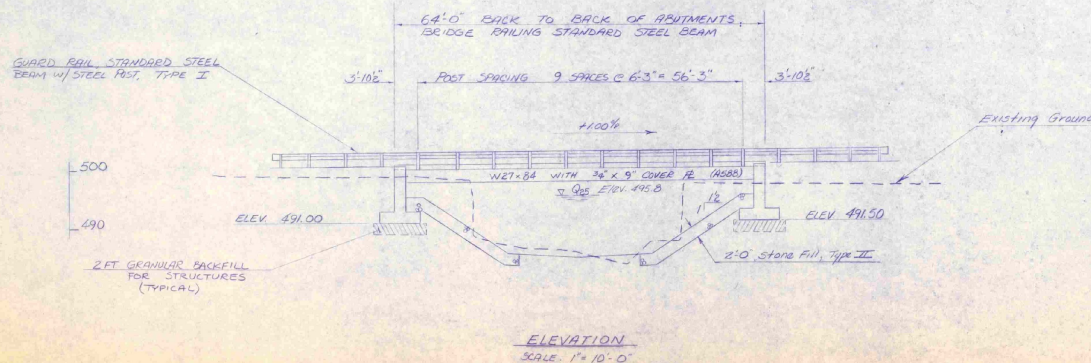
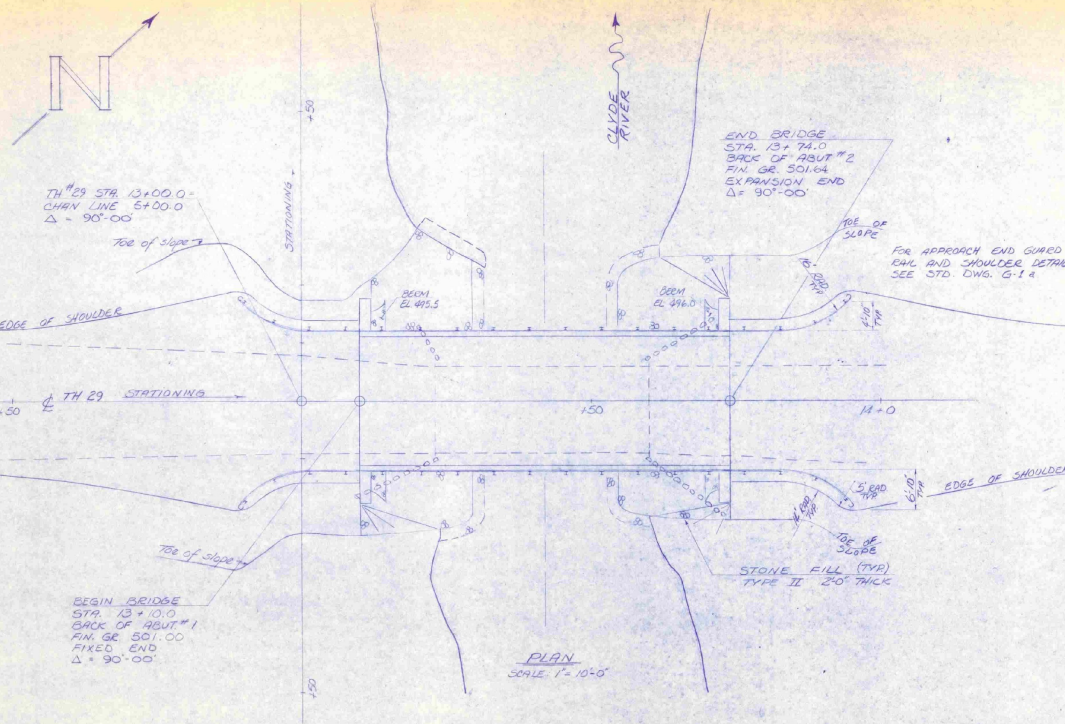
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

NO.	ITEM	UNIT	QUANTITY BREAKDOWN							PARTICIPATION	NON PARTICIPATION	PROJECT TOTAL	FINAL
			SUPER-STRUCTURE	ABUT NO. 1	ABUT NO. 2	CHANNEL	ROADWAY PART	ROADWAY NON-PART					
B02.20	REMOVAL OF EXISTING SUPERSTRUCTURE	EA	1							1		1	
B02.14	COMMON EXCAVATION	CV					50			50		50	
D02.27	UNCLASSIFIED CHANNEL EXCAVATION	CV				340				340		340	
B03.30	EARTH BORROW	CV					370	120		370	120	490	
B04.23	STRUCTURE EXCAVATION	CV		70	70					140		140	
B04.30	GRANULAR BACKFILL FOR STRUCTURES	CV		50	50					100		100	
B04.15	SUBBASE OF GRAVEL	CV					310	80		310	80	390	
B04.10	OVERHAUL (6 MILES)	Q-MI		300	300		1860	480		2460	480	2940	
B01.20	CONCRETE CLASS A	CV	49							49		49	
B01.25	CONCRETE CLASS B	CV		28	28					56		56	
B06.90	STRUCTURAL STEEL (ROLLED BEAM)	LB	27270							27270		27270	
B07.1	REINFORCING STEEL	LB	12340	2040	2020					16400		16400	
B08.15	SHEAR CONNECTORS (3/8"-10 # x 7")	LS	1							1		1	
B12.11	STONE FILL TYPE II	CV				170				170		170	
B17.34	BRIDGE RAILING STANDARD STEEL BEAM	LF	128							128		128	
B21.25	GUARD RAIL STANDARD STEEL BEAM W/STEEL POST TYPE II	LF				110				110		110	

* THIS ESTIMATED QUANTITY IS TO BE USED AS DEEMED NECESSARY BY THE ENGINEER.

BRIDGE (S) AT STATION (S) 13+42.0
LOCATION (S) TH # 29 OVER CLYDE RIVER

Prepared by: ROYCE HAN... Checked by: E. C. GIERA...
SUPERVISOR: E. W. Balkum... BR OF CHARLESTON PROJECT NO. TH 3604 SHEET NO. 4 OF 23

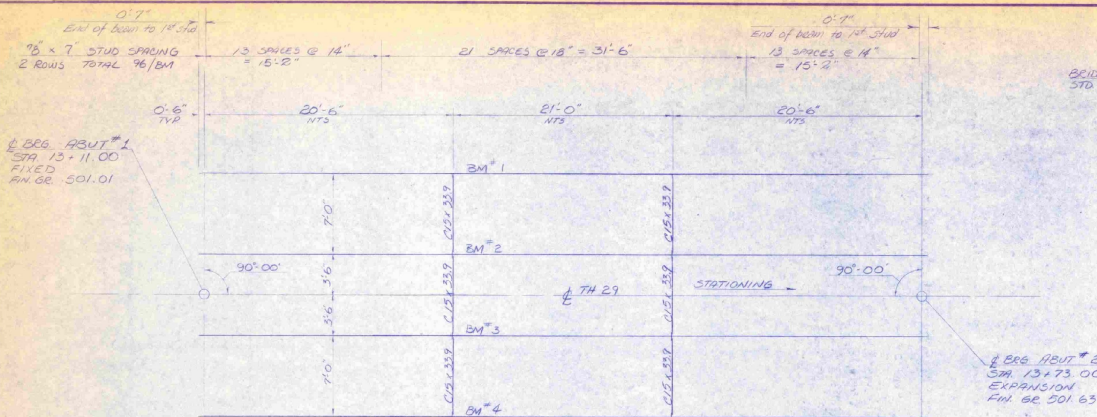


GENERAL NOTES (cont.)

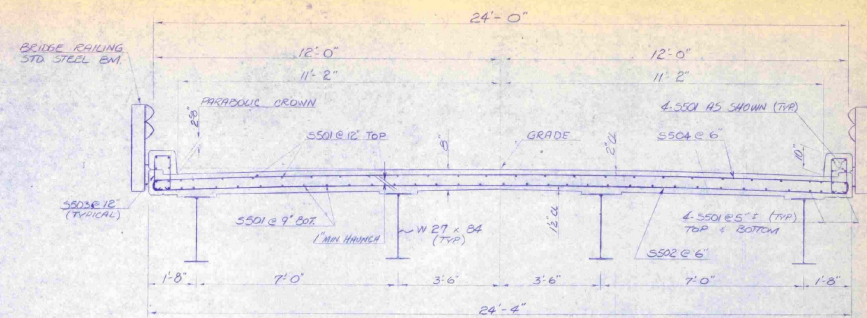
3. THE CONTRACTOR SHALL NOTIFY THE DISTRICT HIGHWAY ENGINEER ONE (1) WEEK PRIOR TO THE START OF CONSTRUCTION SO THAT HE CAN ARRANGE WITH THE TOWN FOR THE PROPER SIGNS TO BE ERECTED AT THE TERMINI OF TOWN HIGHWAY 29 TO INDICATE THAT THE ROAD IS TO BE CLOSED DUE TO BRIDGE CONSTRUCTION. THIS REQUIREMENT SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY FOR MAINTAINING PROPER SIGNS, LIGHTS, AND BARRICADES AT THE PROJECT.
4. THE PRESENT BEAMS, RAIL DECKING AND OTHER MATERIALS DEEMED SALVAGEABLE BY THE TOWN OF CHARLESTON SHALL BE REMOVED BY THE CONTRACTOR AND STOCKPILED ON THE PROJECT FOR REUSE BY THE TOWN. THE EXISTING ABUTMENTS SHALL BE REMOVED UNDER UNCLASSIFIED CHANNEL EXCAVATION. SUITABLE STONE REMOVED FROM THESE ABUTMENTS MAY BE USED AS STONE FILL, TYPE II.
5. ALL STRUCTURAL STEEL, PRIOR TO LEAVING THE FABRICATING SHOP, SHALL BE CLEANED (USING ANY METHOD SPECIFIED IN SECTION 508.03, SURFACE PREPARATION). AFTER ALL CONCRETE ON THE BRIDGE HAS BEEN PLACED, AND PRIOR TO FINAL ACCEPTANCE, THE PASCAL BEAMS SHALL BE CLEANED AS SPECIFIED IN SUB-SECTION 508.50, UNPAINTED STEEL CONSTRUCTION REQUIREMENTS (B) CLEANING OF STEEL, OR AS DIRECTED BY THE ENGINEER.
6. ALL CHANNEL EXCAVATION AND PLACEMENT OF STONE FILL TYPE II MUST BE COMPLETED BY 1 JULY 1976.

STATE OF VERMONT DEPARTMENT OF HIGHWAYS

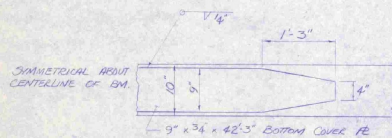
TOWN OF CHARLESTON	Bridge No. 20
Log Sta.	
HIGHWAY NO. TH 29, CL 3	Surv. Sta. 13+420
TOWN HIGHWAY 29 OVER CLYDE RIVER	
PLAN & ELEVATION	
Designed by ROUCHESNEAU	Drawn by ROUCHESNEAU
Checked by G. ROGERS	Bridge Design Supervisor
date MAY 76	F.W. Bolcum date 3/76
PROJECT CHARLESTON	PROJECT NO. TH 3604
Bridge Sheet No.	Sheet 5 of 23



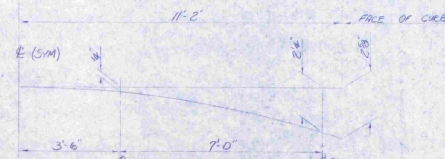
FRAMING PLAN
 SCALE 1" = 5'-0"



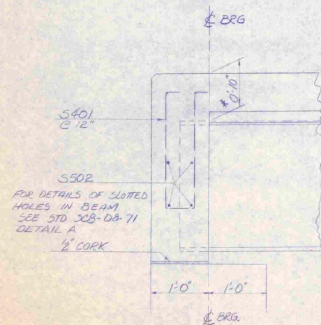
TYPICAL SECTION
 SCALE 1" = 2'-0"



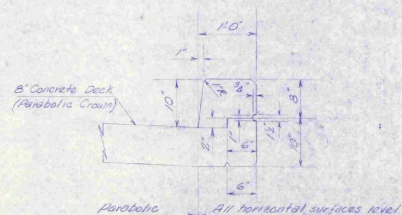
COVER PLATE DETAILS
 SCALE 1" = 1'-0"



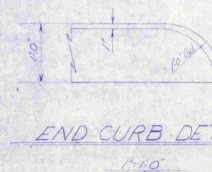
PARABOLIC DETAIL



CURTAIN WALL DETAILS
 SCALE 1" = 1'-0"



FASCIA DETAIL
 SCALE 1" = 1'-0"



END CURB DETAIL
 SCALE 1" = 1'-0"

NOTES

- For shear connector details and beam haunch details, see STD 308-D8-71 details (B) & (C) respectively.
- Diaphragms shown in the Framing Plan shall be connected as shown on 308-D7-71 detail (D).
- For bridge railing details see STD 308-D6-76 Detail Type A. No offset blocks required.
- For details of fixed and expansion end bearing devices see 308-D0-71 detail (A).
- For curtain wall details at bearing devices, see 308-D9-71 detail (A).
- If flanging type brackets are used to support the bridge deck overhang, their maximum spacing shall be 4'-0". If other heavy duty bolts shall be used as per the bolt holes used for the flanging bracket supports. These bolts shall conform to ASTM A-305, Type III. The rest is to be subsidiary to Structural Steel.
- The Charpy V-Notch Test of Structural Steel is not required.

Design Bending Moments, Reactions and Deflections

DL	LL+I	SDL
400	456	104
26	31	7
2.49	0.51	0.25
		MAX. DEFLECTION (INCHES)

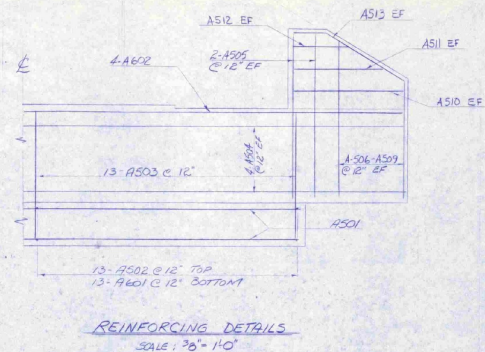
* CALCULATED SUPERSTRUCTURE DEPTH

- 3" Slab
- 1" Min Haunch
- 1" Permanent Camber
- 10" Camber Tolerance
- 0.5" Beam Mill Tolerance
- 20% Beam Depth
- 22" Bearing Device
- 0.5" Bearing Pad

Total Depth = 40 1/2" = 3.35 ft
 = Distance from finish
 grade to bridge
 seat elevations

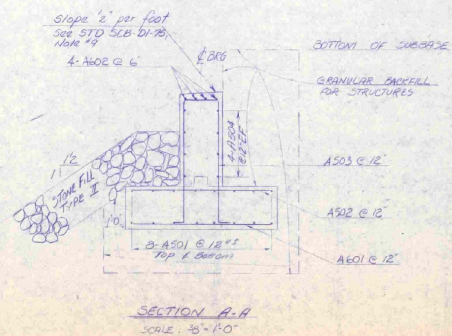
STATE OF VERMONT DEPARTMENT OF HIGHWAYS

TOWN OF	CHARLESTON	Bridge No.	20
HIGHWAY NO.	TH 29, CL 3	Log Sta.	
TOWN HIGHWAY	29 OVER CLYDE RIVER	Surv. Sta.	13+42.0
SUPERSTRUCTURE DETAILS			
Designed by	ROBERTS & NEALE	Drawn by	ROBERTS & NEALE
Checked by	G. Rogers	Bridge Design Supervisor	
	date 3-7-76		
PROJECT	CHARLESTON	PROJECT NO.	74 3604
Bridge Sheet No.		Sheet	6 of 23



NOTES

1. For construction joint details, see SCB-D6-73.

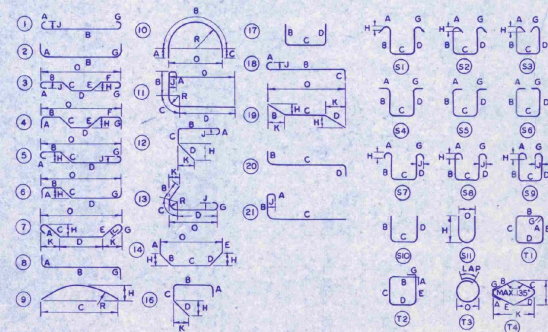
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF	CHARLESTON	Bridge No.	20
HIGHWAY NO.	TH 29, CL 3	Log Sta.	
		Surv. Sta.	13+42.0
TOWN HIGHWAY 29 OVER THE CLYDE RIVER			
ABUTMENT DETAILS			
Designed by	P. DUCHESNEAU	Drawn by	P. DUCHESNEAU
Checked by	G. ROGERS	Bridge Design Supervisor	
	date MAR 78	F.W. Bolkum	date 3/76
PROJECT	CHARLESTON	PROJECT NO.	74 3604
Bridge Sheet No.		Sheet	7 of 23

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O	ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
1																		81																161	
2																		82																162	
3																		83																163	
4																		84																164	
5																		85																165	
6																		86																166	
7	142	5	32.10	5501	STR													87																167	
8	126	5	24.0	5502	STR													88																168	
9																		89																169	
10	50	4	5-5	5401	55	0-42	2-0	0-8	2-0			0-42						90																170	
11																		91																171	
12	150	6	3-11	5503	53	0-52	1-2	0-8	1-2			0-52						92																172	
13	120	5	25-2	5504	1	0-7	24.0					0-7						93																173	
14																		94																	174
15																		95																	175
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18																		98																	178
19																		99																	179
20																		100																	180
21																		101																	
22	16	5	25-6	14501	STR													102																	
23	26	5	6-6	14502	STR													103																	
24	16	5	18-6	14504	STR													104																	
25	0	5	7-7	14505	STR													105																	
26	4	5	7-3	14506	STR													106																	
27	1	1	70	7000	1													107																	
28	4	5	5-5	14507	STR													108																	
29	4	5	5-2	14510	STR													109																	
30	* 5	5	4-2	14511	STR													110																	
31	* 4	5	2-6	14512	STR													111																	
32	* 27	6	6-6	14601	STR													112																	
33	0	6	18-6	14602	STR													113																	
34																		114																	
35	26	5	14-4	14503	34	0-6	5-0	1-8	5-10			0-6						115																	
36	4	5	5-7	14513	12				4-3	1-6				1-4		0-0		116																	
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76																		156																	

ASTM STANDARD REINFORCING BARS				
BAR SIZE DESIG- NATION	WEIGHT POUNDS PER FOOT	NOMINAL 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



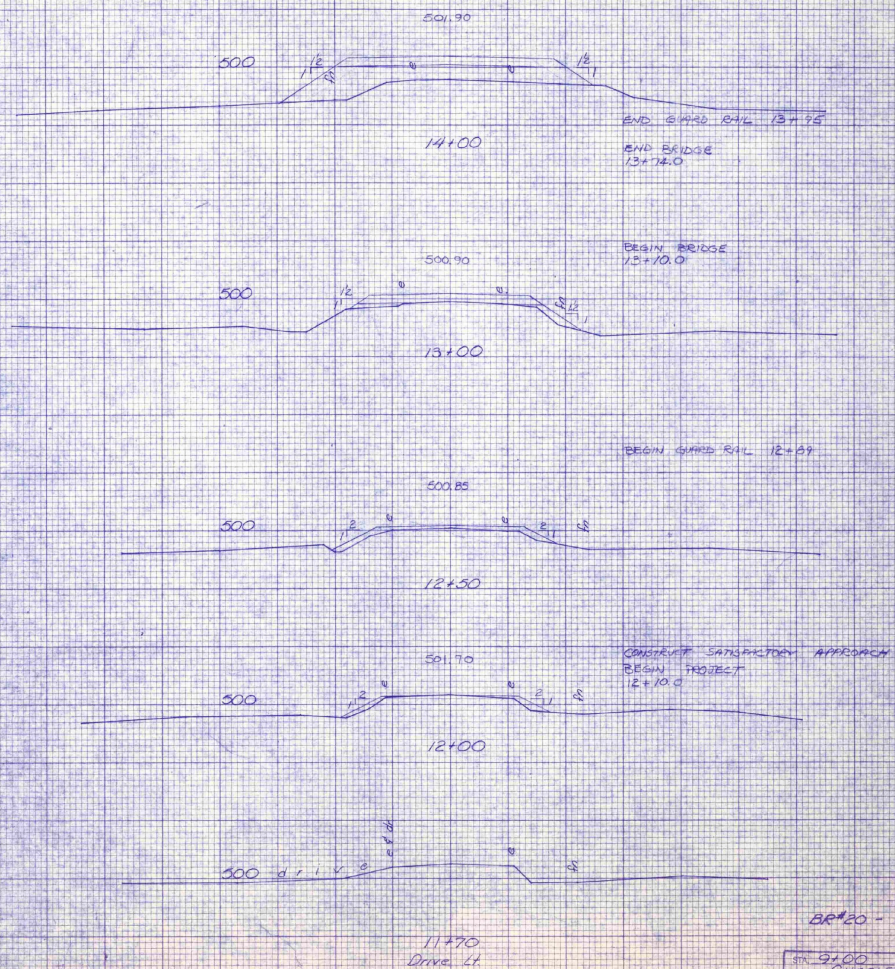
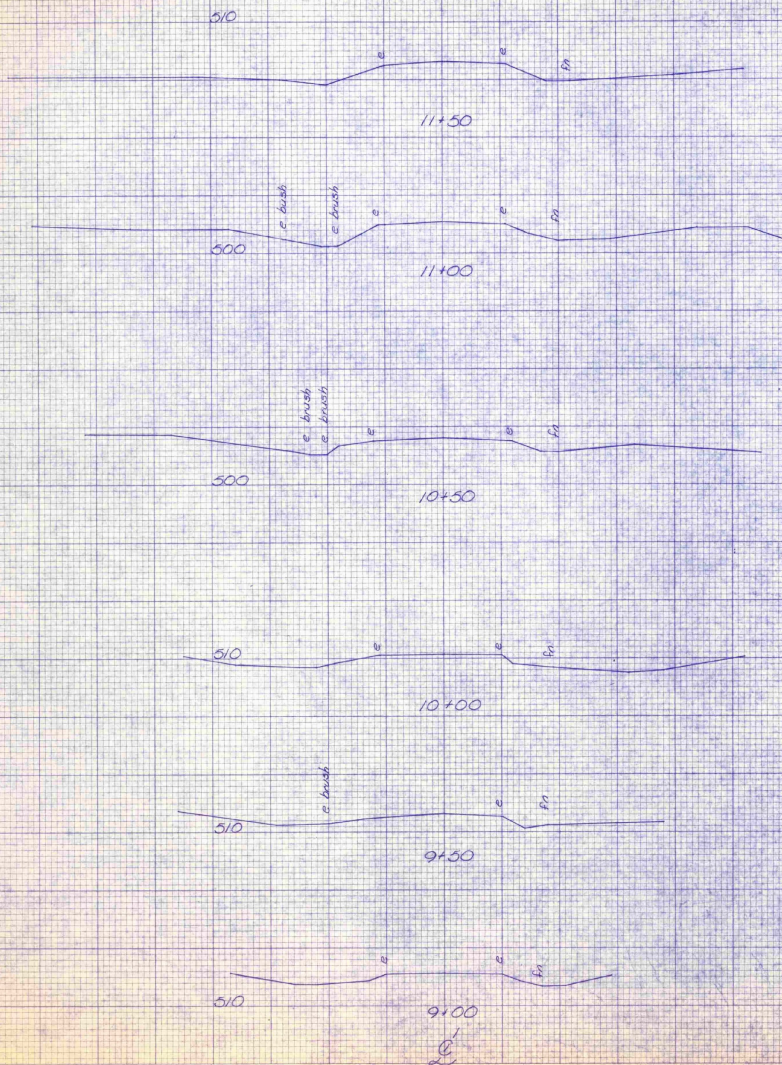
NOTES

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: 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 "X" AND "G" ON STANDARD 180° AND 135° HOOKS.
5. "G" DIMENSION ON 180° HOOKS TO BE SHOWN ONLY WHERE NECESSARY TO DISTINGUISH 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

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

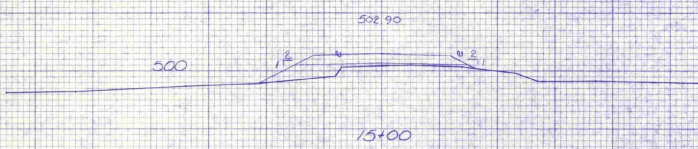
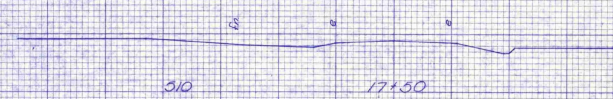
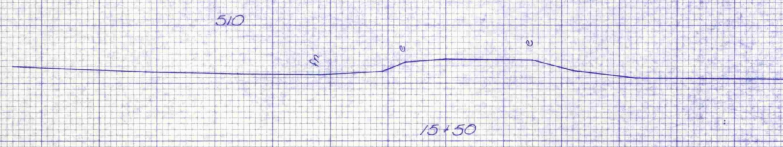
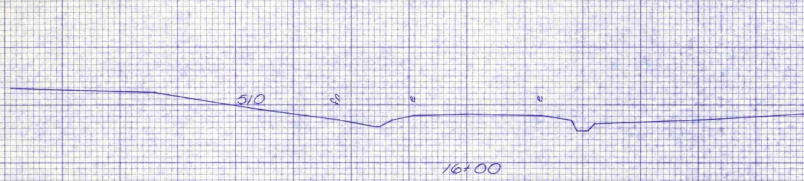
STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF	CHARLESTON	BRIDGE NO.	20
HIGHWAY NO.	TH 29	LOG STA.	
		SURV. STA.	13+42.0
TH 29 OVER THE CLYDE RIVER			
REINFORCING STEEL SCHEDULE			
DESIGNED BY <u>R. DUCHESNEAU</u>		DRAWN BY <u>R. DUCHESNEAU</u>	
CHECKED BY <u>G. ROGERS</u>		BRIDGE DESIGN SUPERVISOR	
DATE <u>MAY 1954</u>		F. W. Borkum DATE 3/76	
PROJECT		PROJECT NO.	
CHARLESTON		3604	
BRIDGE SHEET NO.		SHEET	OF 23

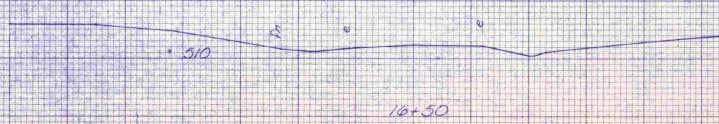
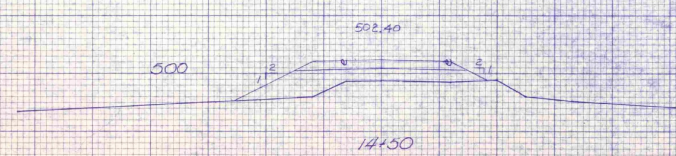


BR#20 - TH#29

STA. 9100	STA. 14100
TOWN: CHARLESTON	
PROJECT: T.H. NO. 3604	
SHEET: 9	23 SHEETS
DRAWN BY: [Signature]	
CHECKED BY: [Signature]	
SURVEYED BY: Fenton DATE 7/79	

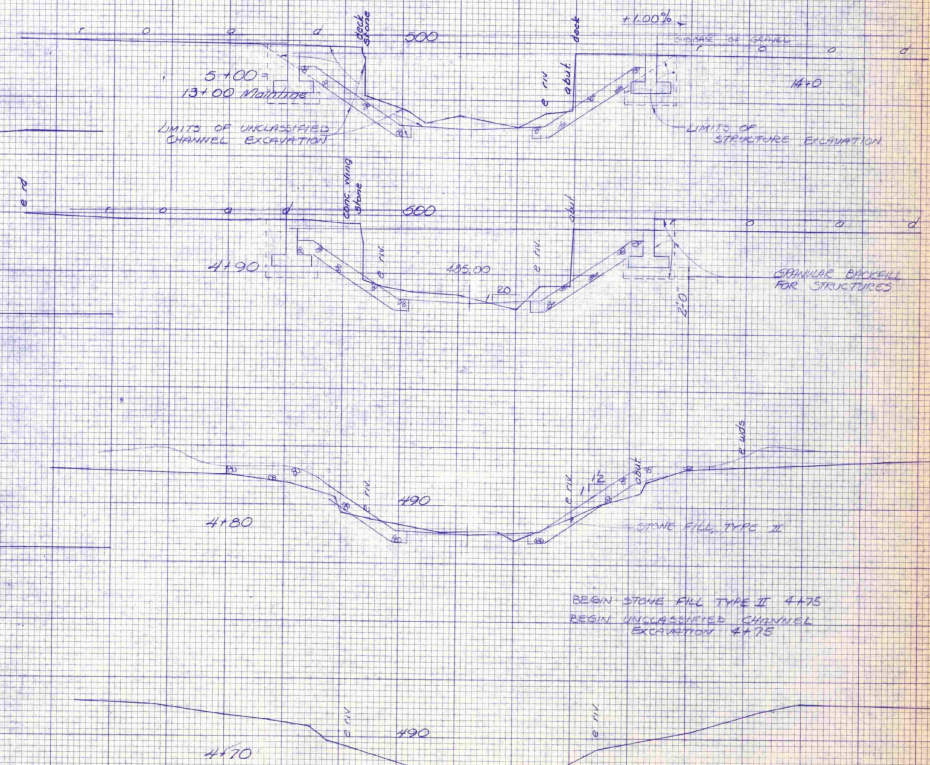
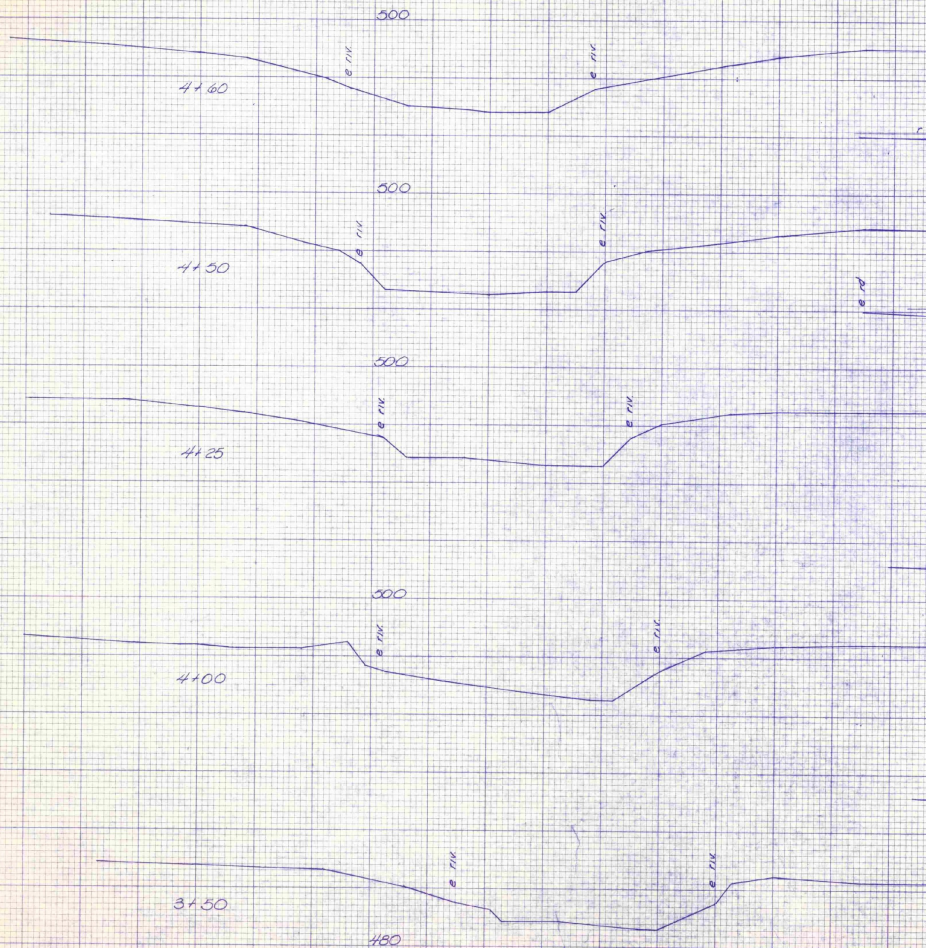


CONSTRUCT SATISFACTORY APPROACH
END PROJECT
15+39.0



BR#20 - TH#29

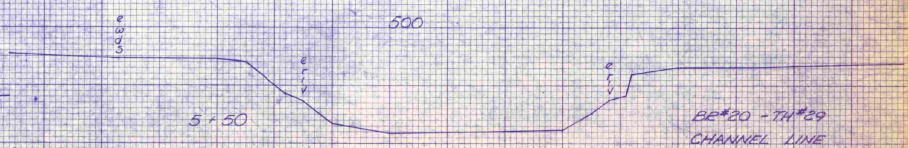
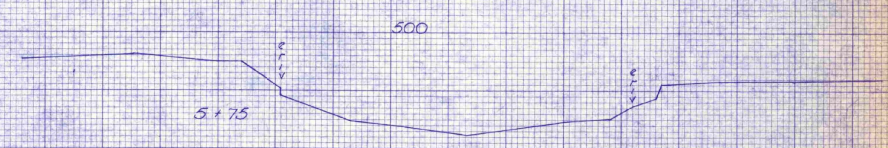
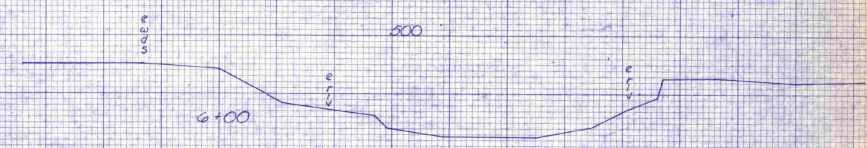
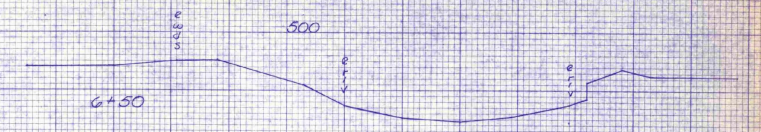
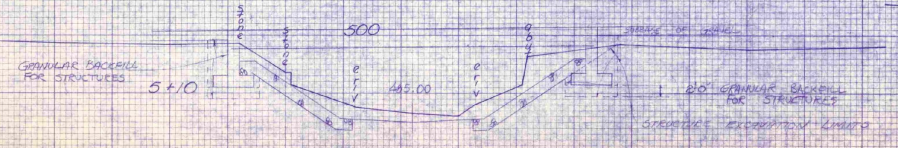
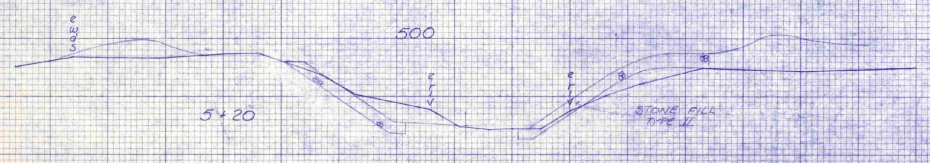
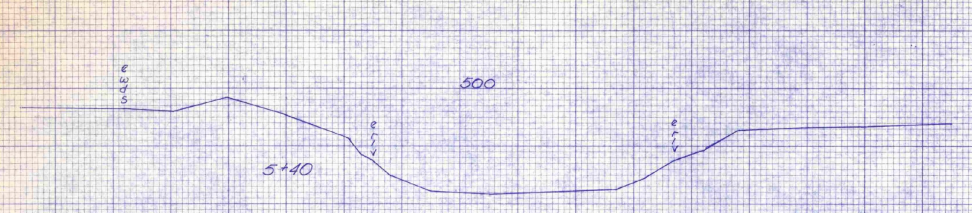
STA	14+50	15+00
TRAIL	CHARLESTON	
PROJ	15	300
SCALE	10	15
DATE	7/73	
DESIGNED BY	Fontana	



BR#20 - TH#29
CHANNEL LINE

STA	3+50	5+00
FROM	CHARLESTON	
TH	TH	8004
SHEET	11	63

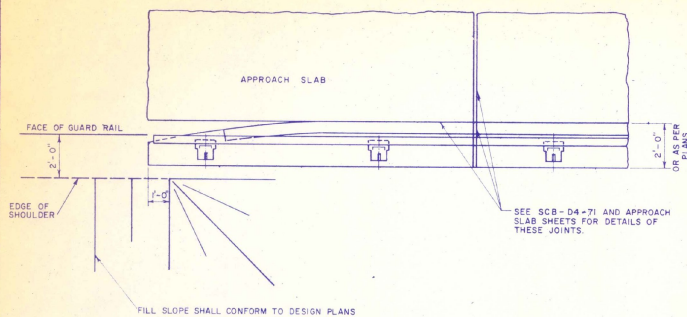
Fontana 7-72



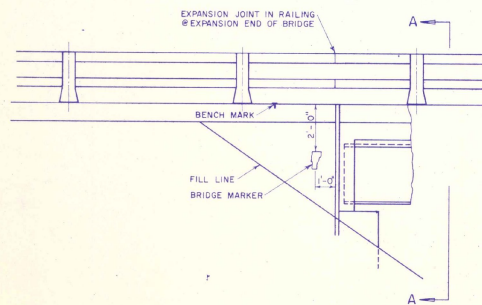
BE#20 - TH#29
CHANNEL LINE

STA.	5+10	6+00
PROJ.	CHARLESTON	
PROJ. NO.	3601	
DATE	7-75	

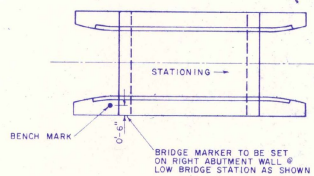
REVISION: Fontana



PLAN AT ABUTMENT



ELEVATION AT ABUTMENT



SECTION A-A

GENERAL NOTES

ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT, DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, DATED JANUARY 1972 AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1973 AND ITS LATEST REVISIONS. DESIGN IS FOR HS-20-44 LOADING MODIFIED FOR THE NATIONAL SYSTEM OF INTERSTATE HIGHWAYS, APPLIED IN ACCORDANCE WITH THE PROVISIONS OF AASHTO STANDARD SPECIFICATIONS.

THE FOLLOWING NOTES SHALL APPLY UNLESS OTHERWISE NOTED ON PROJECT PLANS.

1. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM DESIGNATION A-588 (UNPAINTED). ALL FIELD CONNECTIONS SHALL BE MADE WITH 3/8" Ø ASTM A-325 TYPE III BOLTS IN 15/16" Ø HOLES. WHERE CONNECTIONS ARE NOT DETAILED ON THE PLANS THEY SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STATE FOR APPROVAL.
2. WHEN NOT DETAILED ON THE PLANS, SIMPLE SPAN BEAMS SHALL BE CAMBERED FOR THE DEAD LOAD DEFLECTION PLUS ONE EIGHTH (1/8) INCH FOR EACH TEN FEET OF SPAN OR FRACTION THEREOF. THE CAMBER SHALL APPROXIMATE A SIMPLE CIRCULAR CURVE FROM END TO END OF BEAM. TOLERANCES IN CAMBER SHALL BE AS INDICATED IN THE AISC HANDBOOK FOR ROLLED BEAMS AND AS INDICATED IN THE AWS SPECIFICATION FOR WELDED GIRDERS.
3. ALL WELDING AND DIMENSIONAL TOLERANCES OF WELDED MEMBERS SHALL CONFORM TO AWS 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.
4. ALLOWABLE DESIGN STRESSES:

CONCRETE: CLASS A	f'c	3,500 psi	fc	1400 psi
CLASS B	f'c	3,500 psi	fc	1400 psi
STRUCTURAL STEEL	A-588	MAX. DESIGN STRESS	27,000 psi (or as per AASHTO Specs)	
REINFORCING STEEL		GRADE 40	GRADE 60	
DESIGN STRESS (TENSION)		20,000 psi	24,000 psi	
DESIGN STRESS (COMPRESSION)		16,000 psi	20,000 psi	
5. AFTER SUPERSTRUCTURE STEEL HAS BEEN ERECTED, ELEVATIONS ALONG THE TOP OF ERECTED BEAMS SHALL BE TAKEN UNDER THE DIRECTION OF THE ENGINEER FOR USE IN DETERMINING THE FINAL GRADE.
6. MINIMUM COVER FOR REINFORCEMENT STEEL SHALL BE 2" MEASURED FROM THE CONCRETE SURFACE TO THE FACE OF THE REINFORCEMENT (3" IN ALL FOOTINGS).
7. ALL EXPOSED EDGES OF CONCRETE IN THE SUBSTRUCTURE AND SUPERSTRUCTURE SHALL BE CHAMFERED 1" x 1".
8. DECK CONCRETE SHALL BE CONCRETE CLASS A. ALL OTHER CONCRETE SHALL BE CONCRETE CLASS B.
9. BRIDGE SEATS OF ALL PIERS AND ABUTMENTS SHALL BE SLOPED 1/2" PER FOOT EXCEPT UNDER BEARING PLATES WHERE THE SURFACES SHALL BE LEVEL. ABUTMENTS SHALL BE SLOPED FULL WIDTH. PIERS SHALL BE SLOPED EACH WAY FROM CENTER. THE ENTIRE BRIDGE SEAT SURFACE SHALL BE SMOOTH STEEL TROWEL FINISHED.
10. ABUTMENT CONCRETE ABOVE THE ADJACENT BRIDGE SEAT ELEVATIONS SHALL PREFERABLY NOT BE PLACED UNTIL FINAL FINISHED GRADE OF DECK IS ESTABLISHED BY THE ENGINEER.
11. BRIDGE DECKS AND APPROACH SLABS CALLING FOR BITUMINOUS CONCRETE PAVEMENT SHALL BE PAVED WITH A TYPE III MIX APPLIED IN TWO COURSES.
12. GRANULAR BORROW USED IN AREAS THROUGH WHICH PILES ARE TO BE DRIVEN SHALL HAVE A MAXIMUM STONE SIZE OF NINE INCHES.
13. BORINGS INDICATED ON THE DRAWINGS HAVE BEEN MADE FOR DESIGN PURPOSES ONLY AND DO NOT WARRANT ACTUAL SUB-SURFACE CONDITIONS.
14. ALL DIMENSIONS ARE HORIZONTAL OR VERTICAL.

*NOTE: SPECIFICATIONS CALL FOR A CLASS A CONCRETE WHICH WILL PRODUCE 4000 PSI AT 28 DAYS. HOWEVER, SUPERSTRUCTURE CONCRETE IS DESIGNED ON THE BASIS OF f'c = 3500 THUS PROVIDING AN ADDITIONAL FACTOR OF SAFETY IN BRIDGE SLABS.

REVISIONS AND CORRECTIONS
1- Added word seat in line 3 of Note #9 J.WOOD 4-23-75

APPROVED

DATE

5/24/75
C.H. Thomas
CHIEF ENGINEER
R.O. Mann
ASST. CHIEF ENGINEER
X.M. Smith
BRIDGE ENGINEER

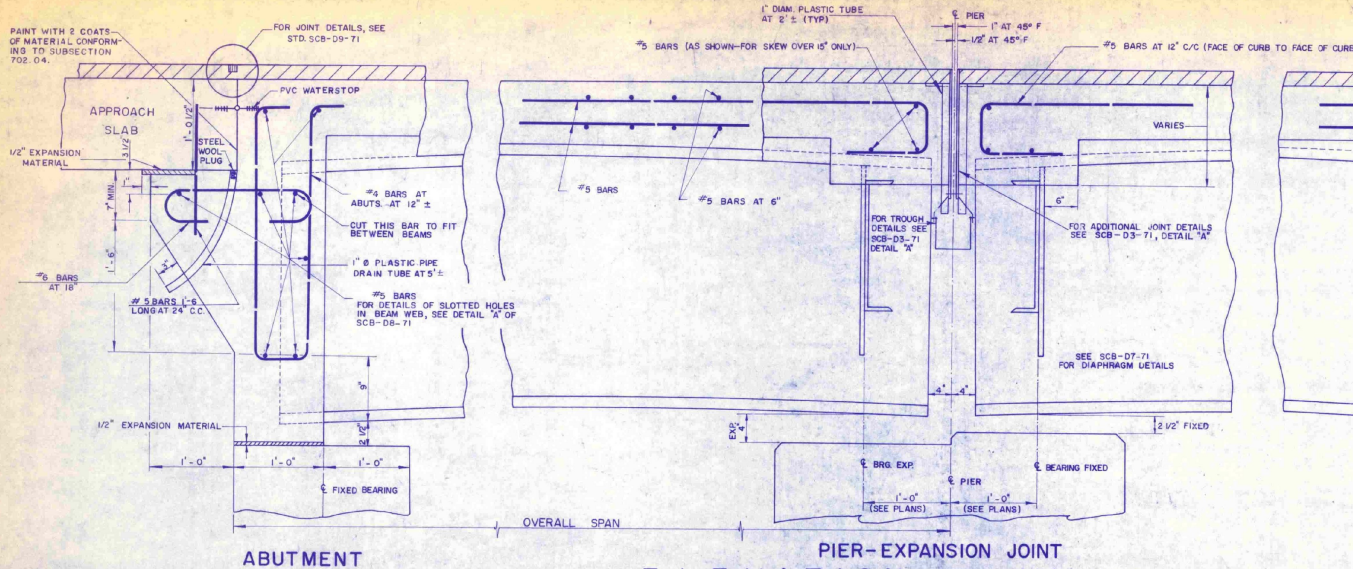
DETAILS OF W BEAM BRIDGES GENERAL INFORMATION AND GENERAL NOTES

VERMONT
DEPARTMENT
OF HIGHWAYS
STANDARD

SCB-DI-75

PAINT WITH 2 COATS
OF MATERIAL CONFORM-
ING TO SUBSECTION
702.04.

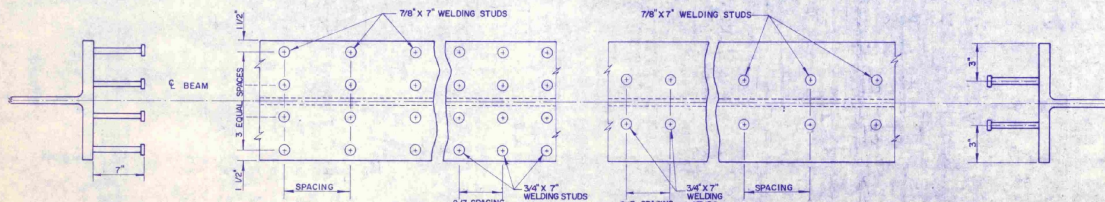
FOR JOINT DETAILS, SEE
STD. SCB-D9-71



ELEVATION VIEWS

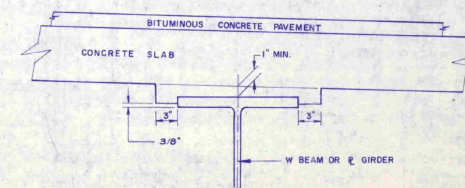
PIER-CONTINUOUS BEAM BRIDGE

(A)



SHEAR CONNECTOR DETAILS

(B)



BEAM HAUNCH

(C)

REVISIONS AND CORRECTIONS

1. REMOVED BAR MARK DESIGNATIONS AND BEAM SIZE
REFERENCE. W. TRIPP 12-29-75

APPROVED: DATE: 12/14/71

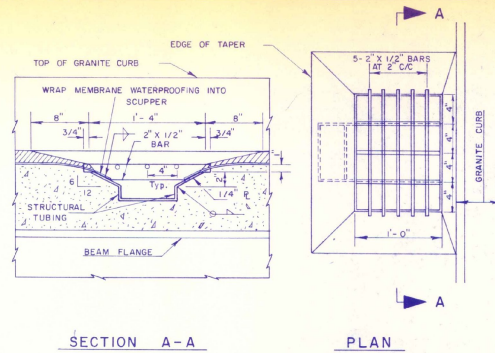
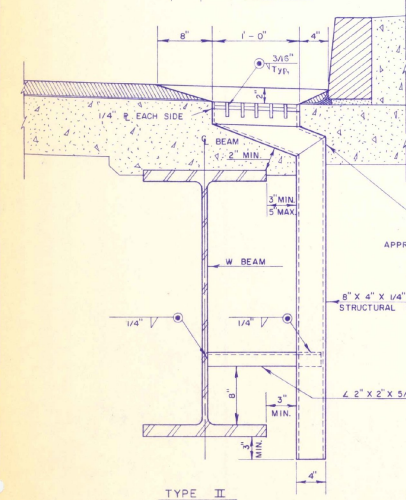
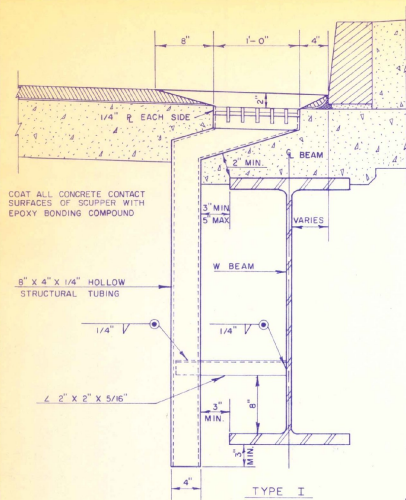
W. Tripp
CHIEF ENGINEER
E. H. Stachurski
ASST. CHIEF ENGINEER
Tom Davis
BRIDGE ENGINEER

DETAILS OF W BEAM BRIDGES

- (A) ELEVATION VIEWS
- (B) SHEAR CONNECTOR DETAILS
- (C) BEAM HAUNCH DETAIL

VERMONT
DEPARTMENT OF HIGHWAYS
STRUCTURE STANDARDS

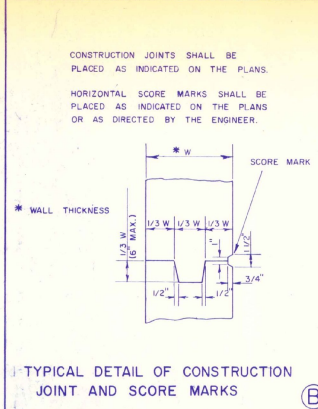
SCB-D2-71



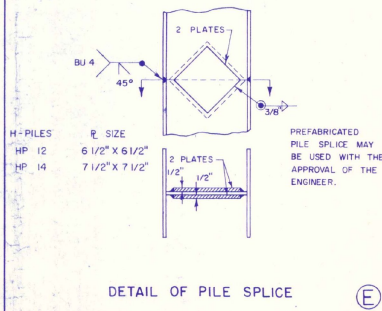
- UNLESS OTHERWISE CALLED FOR ON THE PLANS:
1. END SCUPPERS ARE TO BE PLACED MIDWAY BETWEEN C. BRG. AND FIRST DIAPHRAGM ASSEMBLY.
 2. INTERMEDIATE SCUPPERS ARE TO BE PLACED MIDWAY BETWEEN DIAPHRAGM ASSEMBLIES.
 3. ON PROJECTS WITH NO BITUMINOUS WEARING SURFACE, SET SCUPPERS 3/4" BELOW TOP OF CONCRETE SLAB.

APPROXIMATE WEIGHT OF SCUPPER IS 140 LBS.

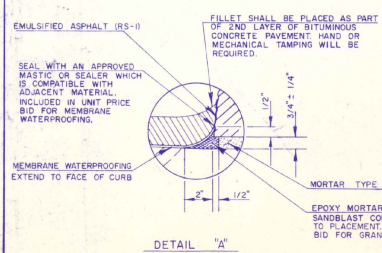
SCUPPER DETAILS



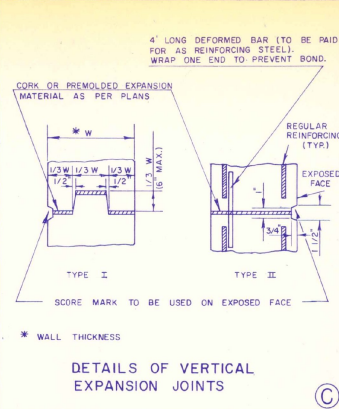
TYPICAL DETAIL OF CONSTRUCTION JOINT AND SCORE MARKS



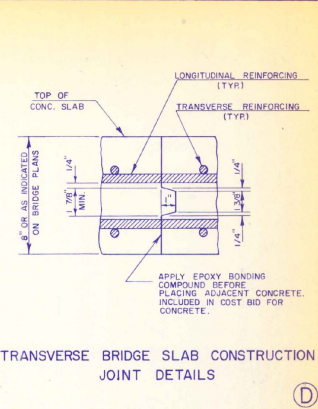
DETAIL OF PILE SPlice



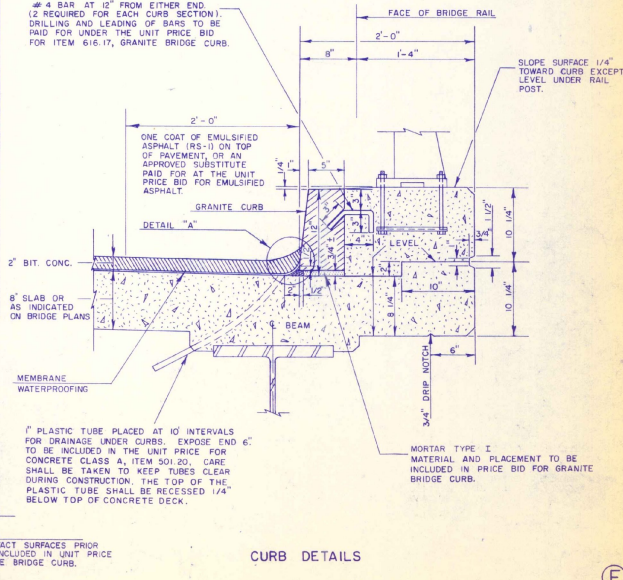
DETAIL "A"



DETAILS OF VERTICAL EXPANSION JOINTS



TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS



CURB DETAILS

REVISIONS AND CORRECTIONS

1. Added 1/2" bars to scupper details
2. Added to note on 1" plastic tubes
3. Revised pile splice weld.

APPROVED DATE: Nov 28 1973

E.H. Stinchey
CHIEF ENGINEER

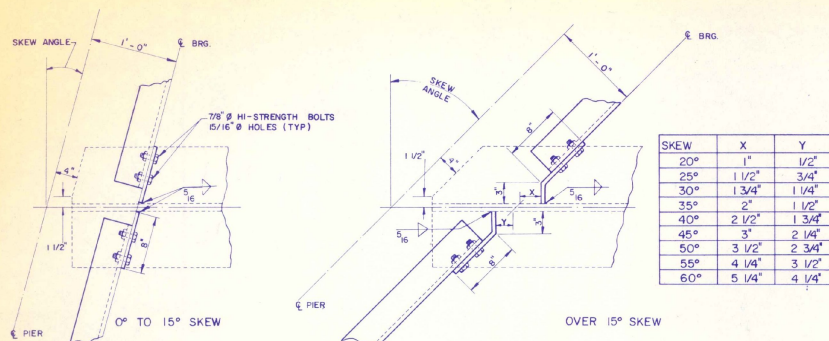
R.O. Munn
ASST. CHIEF ENGINEER

K.M. Smith
BRIDGE ENGINEER

DETAILS OF W BEAM BRIDGES

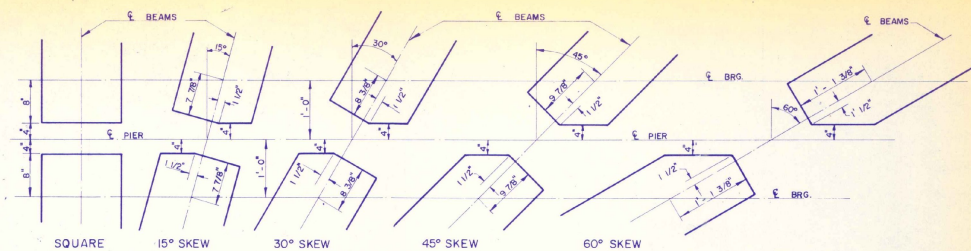
(A) SCUPPER DETAILS
(B,C,D) CONSTRUCTION DETAILS
(E) PILE DETAILS
(F) CURB DETAILS

VERMONT
DEPARTMENT OF HIGHWAYS
STRUCTURE STANDARDS
SCB-D6-73



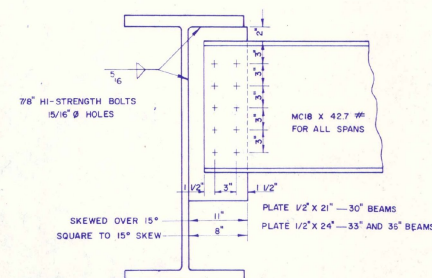
DETAILS OF PIER DIAPHRAGM CONNECTIONS

(A)

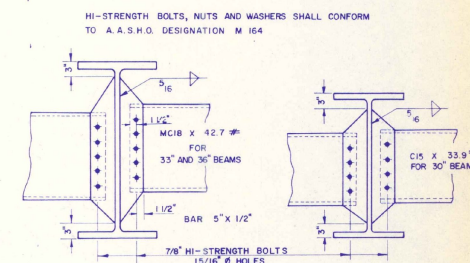


INTERIOR W BEAM CUT-OFFS AT PIER

(B)

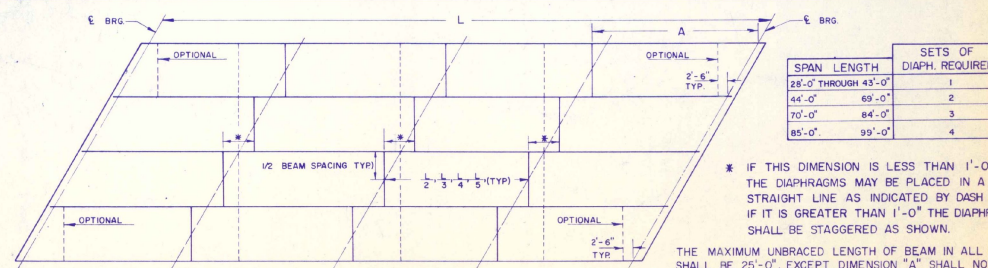


PIER DIAPHRAGMS



INTERMEDIATE DIAPHRAGMS

(D)



DIAPHRAGM LOCATION PLAN

(E)

REVISIONS AND CORRECTIONS

1. REMOVED DETAIL "C". J. WOOD 1-22-73
2. NOTE CONCERNING DIMENSION "A" ADDED TO DETAIL "E". J. WOOD 1-22-73

APPROVED: DATE: 2/14/74

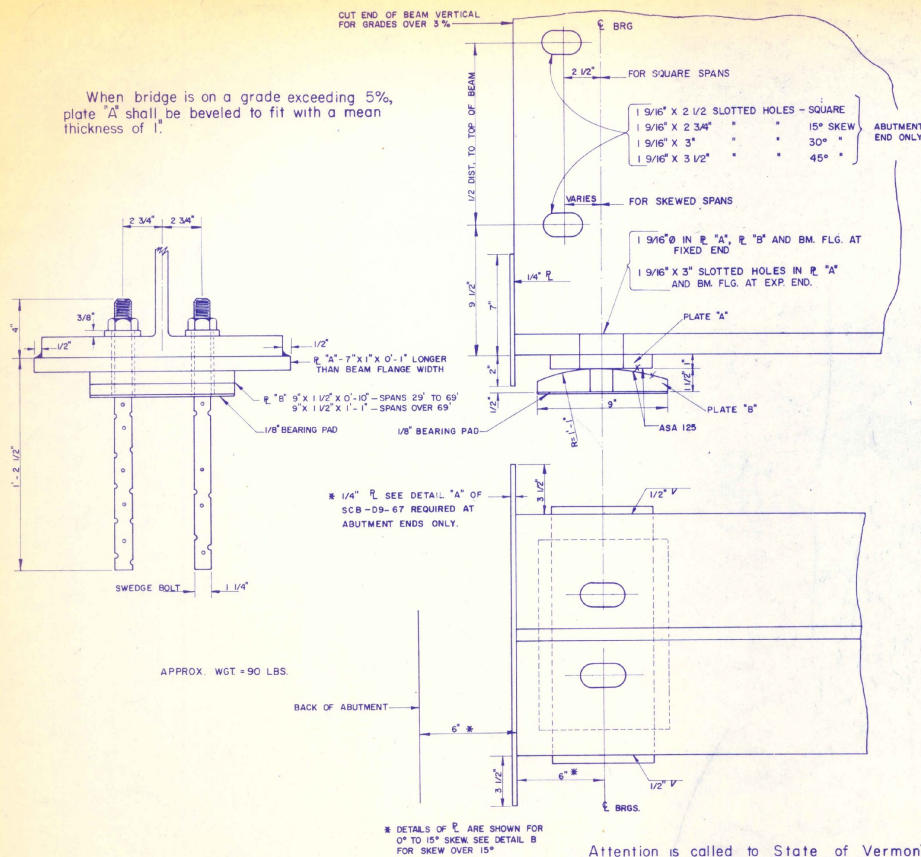
R.M. Coad
CHIEF ENGINEER
E.H. Stickney
ASST. CHIEF ENGINEER
James
BRIDGE ENGINEER

DETAILS OF W BEAM BRIDGES
STRUCTURAL STEEL DETAILS

(A) (D) (E) DIAPHRAGM DETAILS
(B) WF BEAM CUT-OFFS
(C)

VERMONT
DEPARTMENT OF HIGHWAYS
STRUCTURE STANDARDS

SCB-D7-71

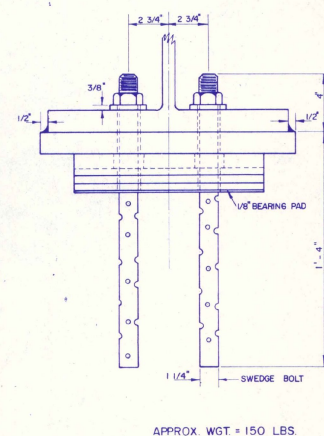


FIXED END BEARING DEVICE
USE FOR EXPANSION END ON SPANS UP TO AND INCLUDING 69'

Plate "C" - 9'x 1 1/2'x 1" longer than the beam flange width. When the bridge is on a grade exceeding 5%, plate "C" shall be beveled to fit the grade with a mean thickness of 1 1/2".

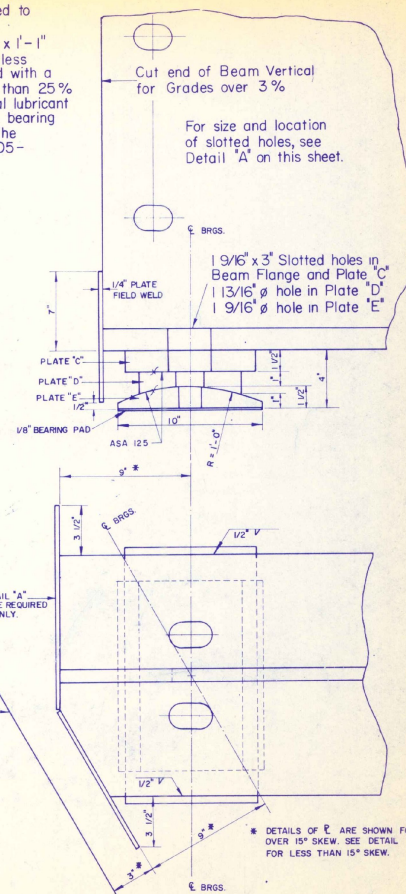
Plate 1/2" (outer edge thickness 1/2", center thickness 1/4") x 1' - 1" to be Cast Bronze ASTM - B 22 Copper Alloy 905 or 911 unless otherwise specified. This plate shall have reprinted recesses filled with a lubricating compound. The lubricating area shall comprise not less than 25% of the total bearing area. The manufacturer shall supply additional lubricant in liquid form with which the Contractor shall thoroughly coat the bearing surfaces and the lubricant shall be applied to the bearing surface of the bronze alloy. The coefficient of friction shall not exceed 0.10. (*Copper Alloy 905 - maximum lead content allowed is 2.5%.)

Plate "E." - 10" x 1 1/2" x 1'-1".



APPROX. WGT. = 150 LBS

EXPANSION END BEARING DEVICE FOR SPANS OVER 69'



* DETAILS OF $\bar{P}$ ARE SHOWN FOR
OVER 15° SKEW. SEE DETAIL A
FOR LESS THAN 15° SKEW.

DETAILS OF W BEAM BRIDGES

- (A) FIXED END BEARING DEVICE
(B) EXPANSION END BEARING DEVICE

REVISIONS AND CORRECTIONS

I. CHANGE IN COPPER ALLOY FOR BRONZE CASTING. J. WOOD

9/27/72

APPROVED: _____ DATE: 12/14/11

K. H. Arnold

CHIEF ENGINEER

E. H. Hickney

ASST. CHIEF ENGINEER

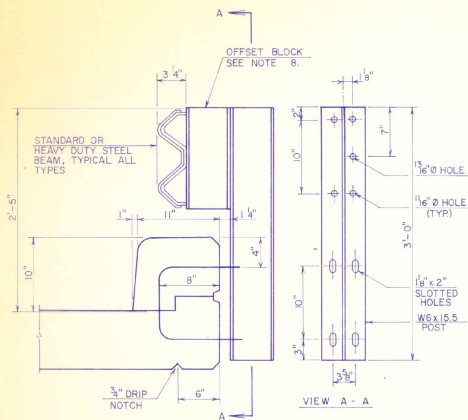
Frank Jones

BRIDGE ENGINEER

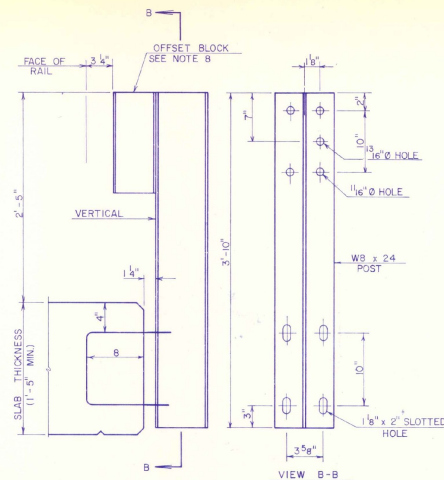
VERMONT
DEPARTMENT OF HIGHWAYS
STRUCTURE STANDARDS

SCB-D8-71

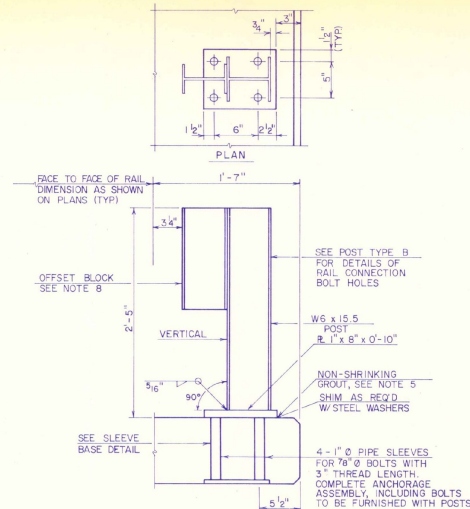
VERMONT
DEPARTMENT OF HIGHWAYS
STRUCTURE STANDARDS
SCB-D9-71



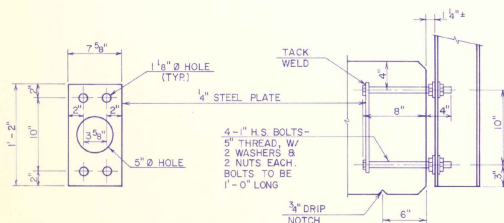
FASCIA MOUNTED
STEEL POST
TYPE A



FASCIA MOUNTED STEEL
POST
TYPE B

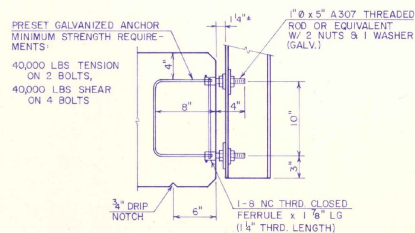


PEDESTAL MOUNTED STEEL POST
TYPE C

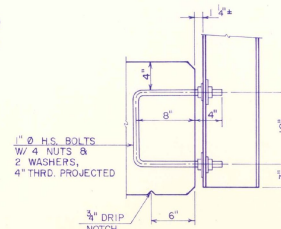


TEMPLATE DETAIL

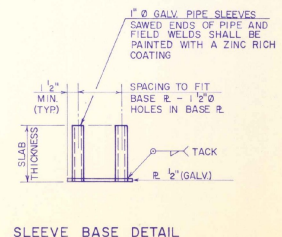
ANCHORAGE TYPE I



ANCHORAGE TYPE 2



ANCHORAGE TYPE 3



SLEEVE BASE DETAIL

NOTES

1. SEE STANDARD DRAWINGS G-1 AND G-10 FOR ADDITIONAL DETAILS.
2. FASCIA MOUNTED POSTS (TYPE A & B) MAY BE USED WITH EITHER ANCHORAGE TYPE 1, 2 OR 3 UNLESS OTHERWISE SPECIFIED ON PROJECT PLANS.
3. ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF STD. SPEC. SUBSECTION 714.16, "ANCHOR BOLTS".
4. DESIGN STRESSES:
ULTIMATE STRENGTH DESIGN USED IN SELECTION OF POSTS
F_y = 29,000 PSI STEEL POSTS
5. NON-SHRINKING GROUT SHALL CONFORM WITH SUBSECTION 707.04, MORTAR TYPE IV. PACK UNDER BASE PLATE.
6. ALL STEEL POSTS AND FIXTURES SHALL BE ASTM A-36 EXCEPT AS OTHERWISE NOTED, AND SHALL BE GALVANIZED AFTER FABRICATION TO CONFORM WITH ASTM A-123.
7. ALL RAIL POSTS SHALL BE SET NORMAL TO GRADE UNLESS OTHERWISE NOTED.
8. OFFSET BLOCKS ARE TO BE USED UNLESS OTHERWISE DESIGNATED ON PROJECT PLANS. SEE STANDARD DRAWING G-1 FOR OFFSET BLOCK DETAIL.

REVISIONS AND CORRECTIONS

APPROVED:

JAN. 8 1976
DATE

E. H. Stebbins
CHIEF ENGINEER

R. O. Munn
ASST. CHIEF ENGINEER

J. M. Smith
BRIDGE ENGINEER

STANDARD STEEL BRIDGE RAILING MOUNTINGS

VERMONT
DEPARTMENT
OF HIGHWAYS
STANDARD

SB-R6-76