

INDEX OF SHEETS

- 1 Title Sheet
- 2 Quantity Sheet
- 3 Plan & Profile
- 4 Plan, Elevation, Typical Section & Curb Details
- 5 T Beam & Deck Details
- 6 Abutment #1
- 7 Abutment #2
- 8 Reinforcing Steel Schedule
- 9-15 Roadway Sections
- 16-21 Channel Sections
- 22 Std. Sh. E-3 5-14-74 R
- 23 Std. Sh. E-7 9-19-73 R
- 24 Std. Sh. G-1 6-4-74 R
- 25 SCB-DI-75 4-23-75 R
- 26 SCB-D9-71 Det 5 1-27-75 R

STATE OF VERMONT DEPARTMENT OF HIGHWAYS



Date 13 August 1975
Bridges to
Carl Carson
President
John Gray
COMMISSIONER

PROPOSED IMPROVEMENT

BRIDGE PROJECT
TOWN OF CASTLETON
COUNTY OF BUTLAND
ROUTE NO. TH 3, CI 2 BRIDGE NO. 7

PROJECT LOCATION: CASTLETON TH 2510 TH 3 BR 7 OVER NORTH BRITAIN BROOK
BEGINNING AT A POINT APPROXIMATELY 0.70 MILES NORTHERLY FROM THE INTERSECTION
OF US 4A AND TH 3 AND EXTENDING SOUTHERLY 249 FT.

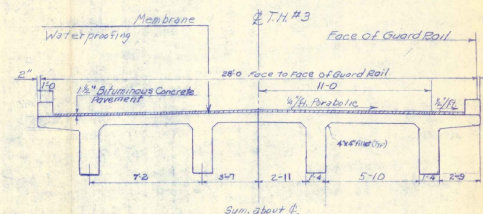
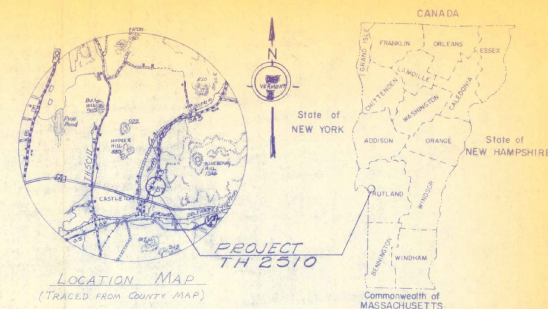
PROJECT DESCRIPTION: THE PROJECT SHALL CONSIST OF THE REMOVAL OF THE EXISTING
SUPERSTRUCTURE, CONSTRUCTION OF A NEW T-BEAM SUPERSTRUCTURE, NECESSARY ABUTMENT,
ROADWAY AND CHANNEL WORK AS SHOWN ON THE PLANS.

LENGTH OF STRUCTURE: 48.5 FEET
LENGTH OF PARTICIPATION ROADWAY: 200.0 FEET
LENGTH OF NON-PARTICIPATION ROADWAY: 5.0 FEET
LENGTH OF PROJECT: 248.5 FEET

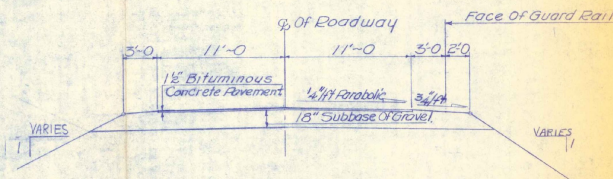
1974 ADT 550

GENERAL NOTES:

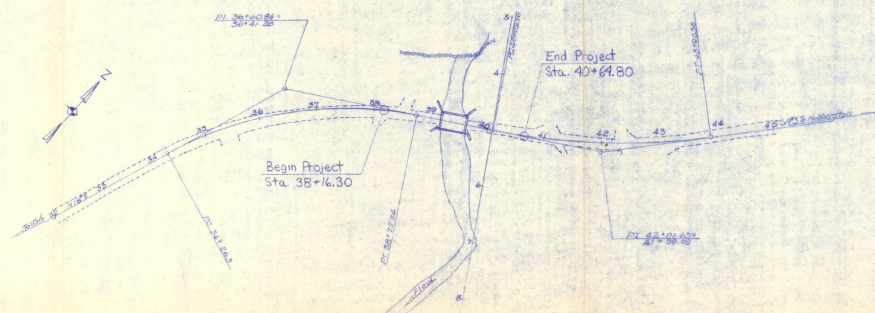
1. For additional General Notes see SCB-DI-75.
2. Cost of Overhaul to be included in Unit Price Bid for applicable Items.
3. The Contractor will be allowed to close the road to traffic. The Selectmen shall be given seven (7) days notice of the Contractor's intent to close the road. Detour routing shall be the responsibility of the Town. The Contractor shall make every effort to coordinate his work so that this inconvenience to the travelling public will be kept to a minimum.
4. Temporary Foot Bridge to be constructed prior to removal of existing Superstructure.



TYPICAL BRIDGE SECTION
N.T.S.



TYPICAL ROADWAY SECTION
SCALE: 1"=5'-0"



CONVENTIONAL SIGNS

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

SUBMITTED BY ORDER OF THE STATE HIGHWAY BOARD
APPROVED: Carl Carson DATE 10/1/75
CHIEF ENGINEER

PROJECT CASTLETON TH 2510
SHEET 1 OF 26 SHEETS

EARTHWORK

GRADES						Earth Borrow		Subbase of Gravel						
V.C.	% GRD	STATION	ELEVATION		CORR. V.C.	DIST.	AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.	AREA	CU. YDS.
			ON TAN.	ON V.C.										
		Town Bridge Fund Participation												

BRIDGE QUANTITY SHEET

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

NO.	ITEM	UNIT	QUANTITY BREAKDOWN												TOTAL	FINAL
			Superstr.	Abut.*1	Abut.*2	Channel	Roadway									
202.20	Removal of Existing Superstructure	Ea.	1												1	
202.35	Removal of Existing Concrete or Masonry	C.Y.		3	3										6	
203.15	Common Excavation	C.Y.					40								40	
203.27	Unclassified Channel Excavation	C.Y.				80									80	
203.30	Earth Borrow	C.Y.					390								390	
204.25	Structure Excavation	C.Y.		65	85										150	
204.30	Granular Backfill for Structures	C.Y.		35	45										80	
301.15	Subbase of Gravel	C.Y.					330								330	
406.25	Bituminous Concrete Pavement	Ton	17				41								58	
501.20	Concrete, Class A	C.Y.	80												80	
501.25	Concrete, Class B	C.Y.		17	20										37	
506.99	Bearing Device Assembly	Ea.	8												8	
507.15	Reinforcing Steel (Grade 60)	L.B.	23,170	1900	2270										27,340	
514.10	Water Repellent	Gal.	7	7	7										21	
517.91	Membrane Waterproofing	S.Y.	143												143	
613.12	Stone Fill, Type III	C.Y.		100	90										190	
614.10	Joint Sealer, Hot Poured	Gal.	2												2	
614.65	Joint Sealer, Polyurethane	Gal.	1												1	
617.34	Bridge Railing, Standard Steel Beam	L.F.	153												153	
624.26	Guard Rail, Standard Steel Beam w/ Steel Posts Type II	L.F.					137								137	
621.72	Anchor for Steel Beam Guard Rail w/ Steel, Light Steel or Wood Posts	L.F.					4								4	
638.12	Temporary Foot Bridge	L.S.	1												1	

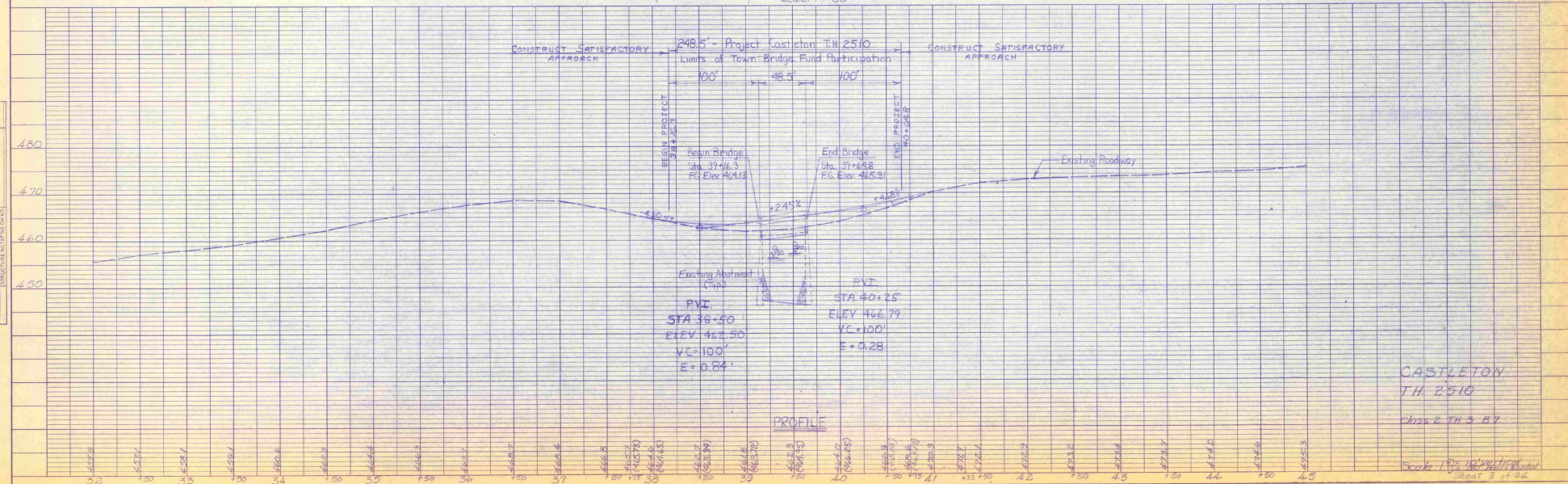
BRIDGE AT STATION
LOCATION 39+40
Castleton (T.H.#3 over North Brittain Brook)

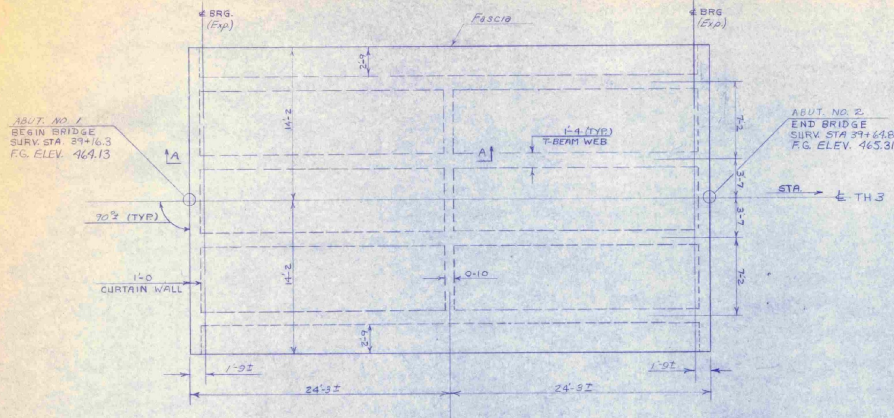
Prepared by: J. Carlinette
Checked by: J. Carlinette
SUPERVISOR: J. Wood

CASTLETON
BR OF

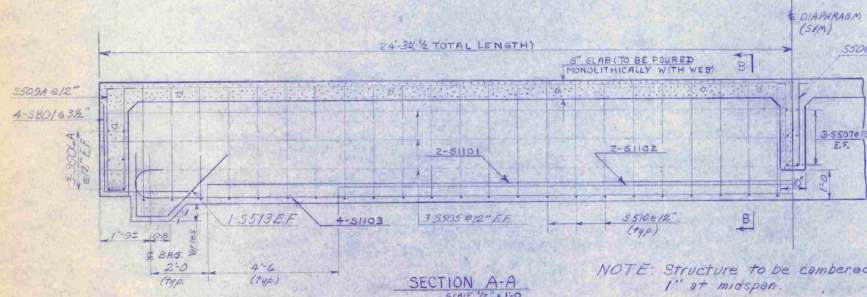
PROJECT NO. TH 2510
SHEET NO. 2 OF 26

NO	SURVEYED	BY	DATE
	GRADES CHECKED	<i>Foster</i>	<i>11/29</i>
	B. M. S. NOTED	<i>Hopkins</i>	<i>11/29</i>
	STRUCTURE NOTATIONS CHD		



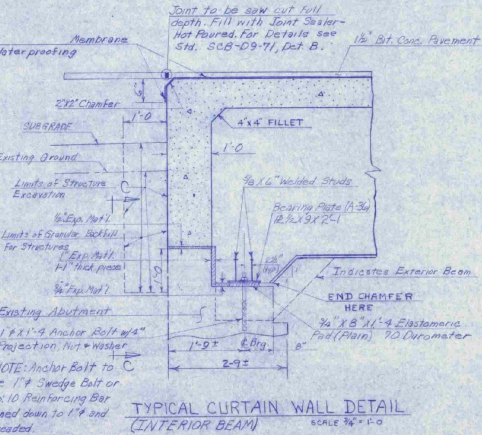


SLAB AND T-BEAM PLAN
SCALE 1/4" = 1'-0"

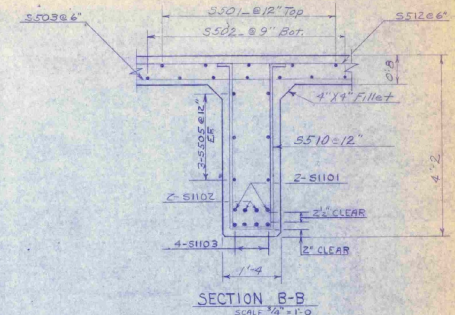
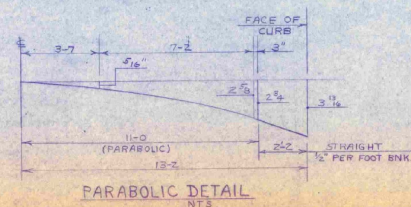


SECTION A-A
SCALE 1/2" = 1'-0"

NOTE: Structure to be cambered 1" at midspan.



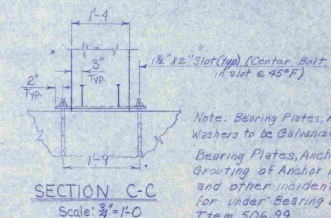
TYPICAL CURTAIN WALL DETAIL
(INTERIOR BEAM)
SCALE 3/4" = 1'-0"



SECTION B-B
SCALE 1/4" = 1'-0"

NOTES

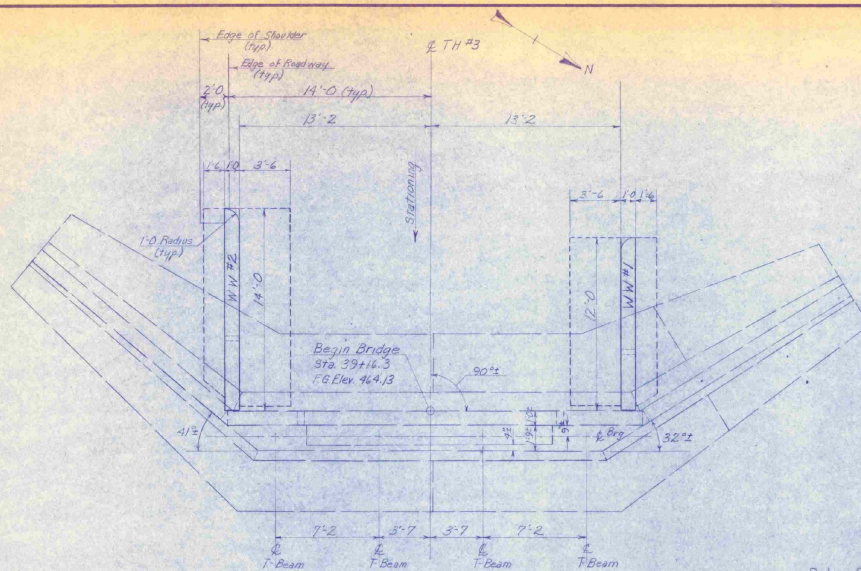
1. FOR ADDITIONAL GENERAL NOTES SEE STD. SCB-DI-75.
2. ALL SUPERSTRUCTURE CONCRETE SHALL BE CONCRETE CLASS A. SUBGRADE AND WINGWALL CONCRETE WILL BE CONCRETE CLASS B.
3. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED SURFACES OF EXISTING ABUTMENTS AND WINGWALLS, NEW WINGWALLS, AND TO SUPERSTRUCTURE CURBS TO BOTTOM OF OUTSIDE BEAMS. SEE TYP. SECT. SH. 4.
4. DESIGN LOAD IS HS-20-44.
5. REINFORCING STEEL DESIGN STRESS f_y 24,000 PSI. CONCRETE DESIGN STRESS f_c 3,500 PSI.
6. UNLESS OTHERWISE NOTED, CLEAR DISTANCE FROM FACE OF CONCRETE TO REINFORCING STEEL SHALL BE 2".



Note: Bearing Plates, Anchor Bolts, Nut and Washers to be furnished after fabrication. Bearing Plates, Anchor Bolts, Drilling and Grouting of Anchor Bolts, Elastomeric Pads, and other incidental items to be paid for under Bearing Device Assembly, Item 506.99.

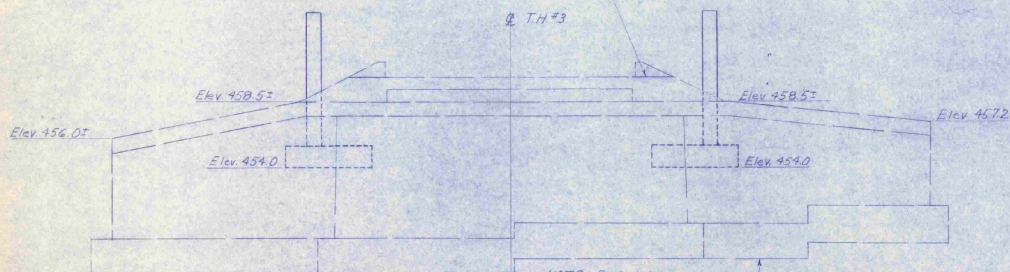
STATE OF VERMONT DEPARTMENT OF HIGHWAYS

TOWN OF	CASTLETON	Bridge No.	7
HIGHWAY NO.	C12 TH.3	Log Sta.	39+40
TOWN HIGHWAY	3 OVER NORTH BRITAIN BROOK	Surv. Sta.	39+40
T-BEAM AND DECK DETAILS			
Designed by	D. PERKINS	Drawn by	D. PERKINS
Checked by	J. COUTURE	Bridge Design Supervisor	J. WOOD
date	6-75	date	6-75
PROJECT	CASTLETON	PROJECT NO.	TH2510
Bridge Sheet No.	Sheet 5	of 26	

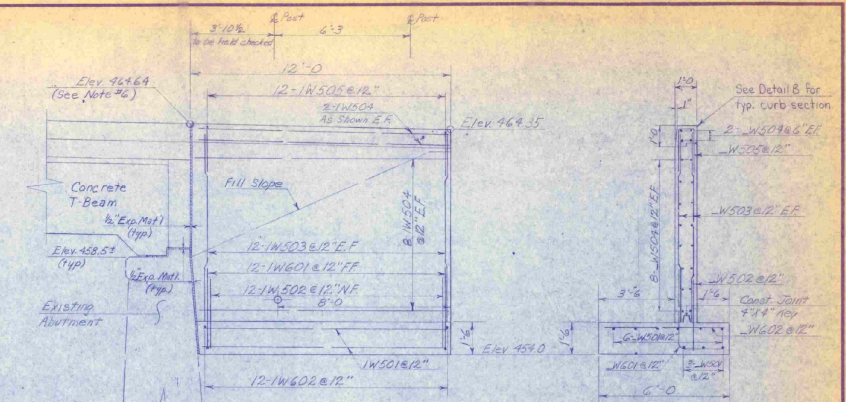


PLAN
SCALE: 1/4" = 1'-0"

Cut Existing Backwall Along This Line (typ).
NOTE: Provide smooth surface using Mortar Type I (Spec. 107.01) Cast to be included in Unit Price Bid for Item 501.60 Concrete Cleanup.

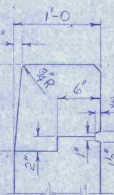


ELEVATION
SCALE: 1/4" = 1'-0"

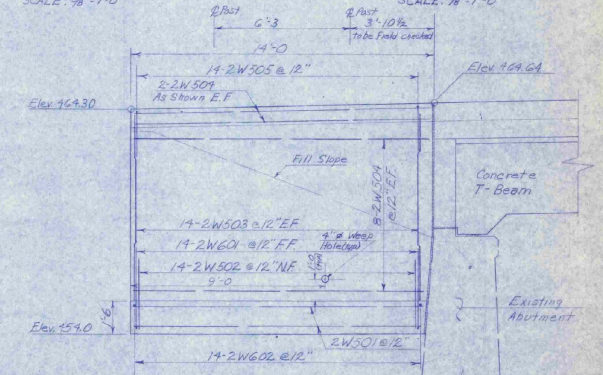


WINGWALL #1 ELEVATION
SCALE: 3/8" = 1'-0"

TYPICAL WINGWALL SECTION
SCALE: 3/8" = 1'-0"



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



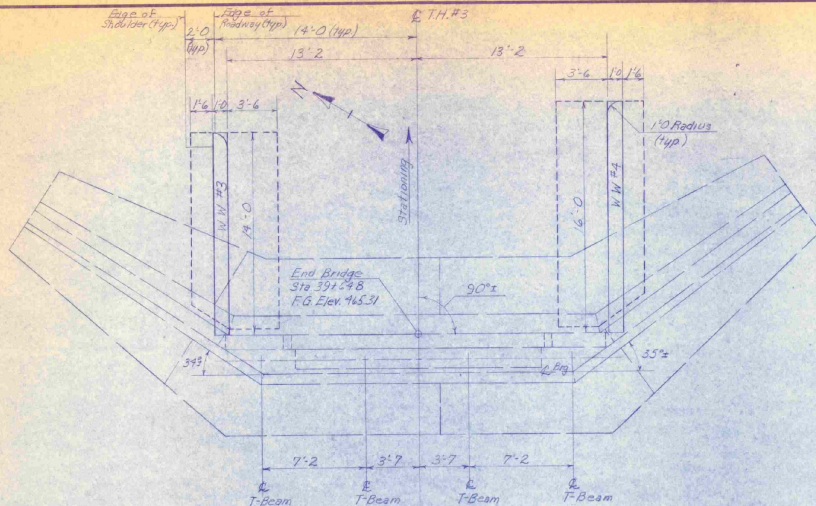
WINGWALL #2 ELEVATION
SCALE: 3/8" = 1'-0"

NOTES:

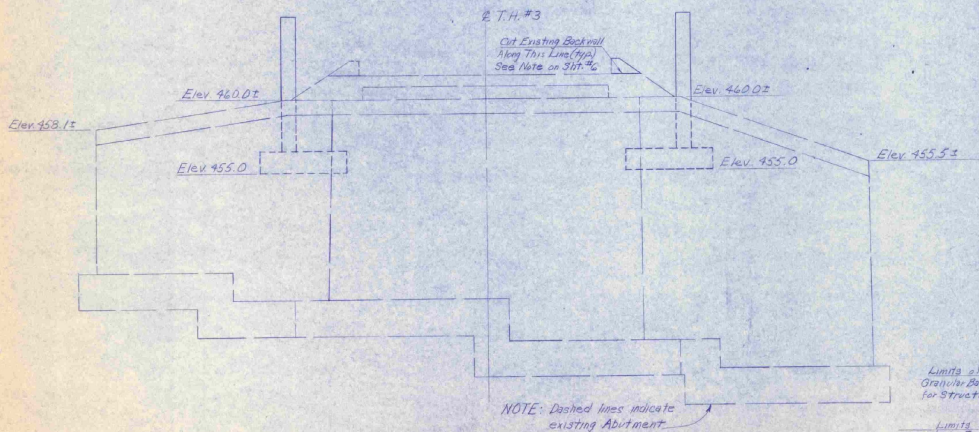
1. Wingwalls are designed for a maximum bearing of 4 ASF.
2. FF = Far Face, NF = Near Face, EF = Each Face.
3. Minimum cover for Abutment reinforcing steel shall be 2" clear except in footings where it shall be 3" clear.
4. Weep Holes shall be placed as shown or as directed by the Engineer.
5. See Sheet #7 for details of Excavation and Backfill.
6. For Details of Curb Joint between Superstructure and Wingwalls see STD SCB-D9-71, Detail B.

STATE OF VERMONT DEPARTMENT OF HIGHWAYS

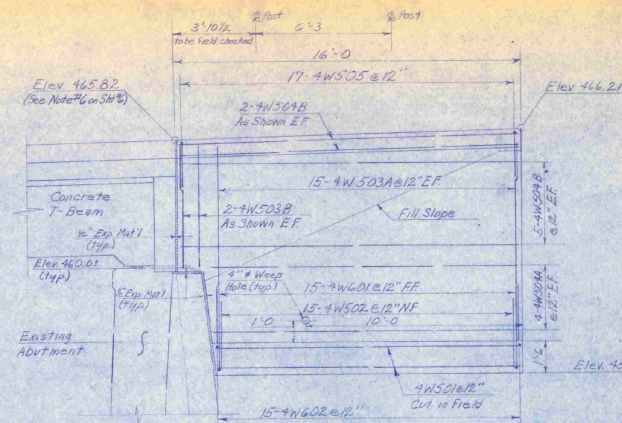
TOWN OF	CASTLETON	Bridge No.	7
HIGHWAY NO.	CL 2 TH #3	Log Sta.	
TH 3 OVER NORTH BRITAIN BROOK		Surv. Sta.	39+4.0
ABUTMENT No. 1			
Designed by	D. PERKINS	Drawn by	J. COFFMAN
Checked by	J.R. GUILMETTE	Bridge Design Supervisor	
PROJECT	CASTLETON	date	6/75
PROJECT	CASTLETON	date	6-75
Bridge Sheet No.		Sheet	6 of 25



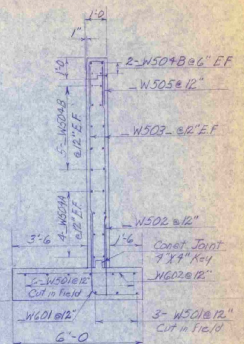
PLAN
SCALE: 1/4" = 1'-0"



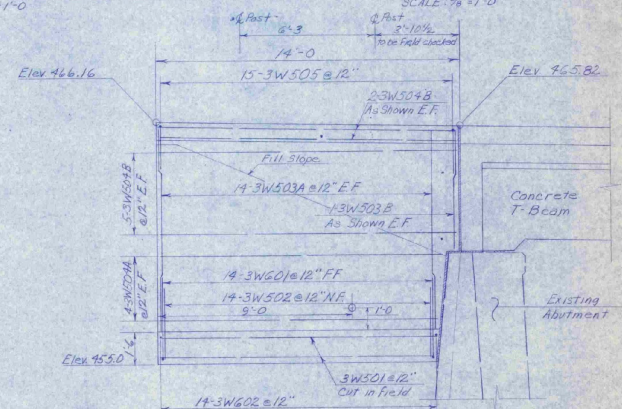
ELEVATION
SCALE: 1/4" = 1'-0"



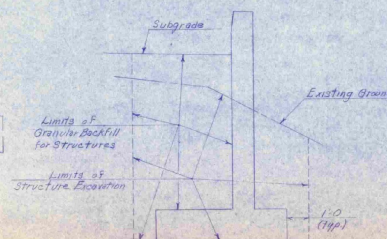
WINGWALL #4 ELEVATION
SCALE: 3/8" = 1'-0"



TYPICAL WINGWALL SECTION
SCALE: 3/8" = 1'-0"



WINGWALL #3 ELEVATION
SCALE: 3/8" = 1'-0"



LIMITS OF STRUCTURE EXCAVATION
AND GRANULAR BACKFILL FOR STRUCTURES

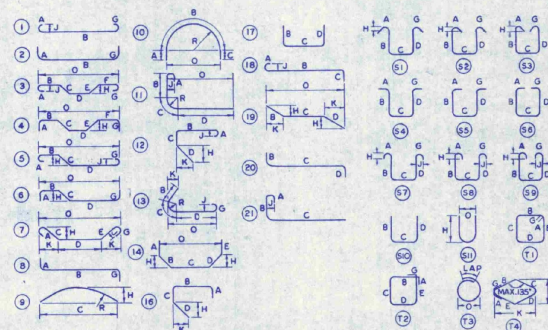
STATE OF VERMONT DEPARTMENT OF HIGHWAYS

TOWN OF	CASTLETON	Bridge No.	7
HIGHWAY NO.	CL2 TH#3	Long Sta.	39+40
TH. 3 OVER NORTH BRITAIN BROOK		Surv. Sta.	39+40
ABUTMENT No. 2			
Designed by	D. FERRIS	Drawn by	J. CAULFIELD
Checked by	J. R. GUILMETTE	Bridge Design Supervisor	
PROJECT	CASTLETON	PROJECT NO.	TH 2510
Bridge Sheet No.		Sheet	7 of 26

[illegible]

ASTM STANDARD REINFORCING BARS				
BAR SIZE DESIGNATION	WEIGHT POUNDS PER FOOT	NOMINAL DIMENSIONS ROUND SECTION		
		DIAMETER INCHES	GROSS 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



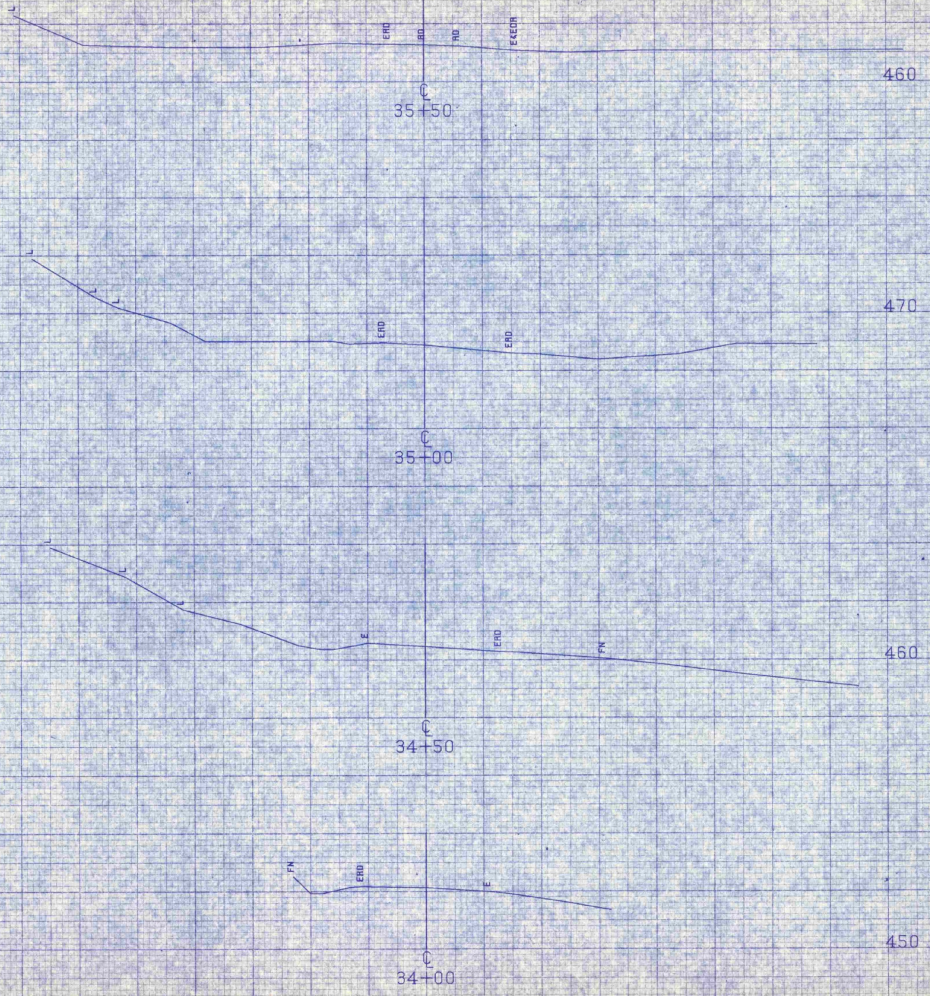
NOTES

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 MIN 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 "K" 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. "M" 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

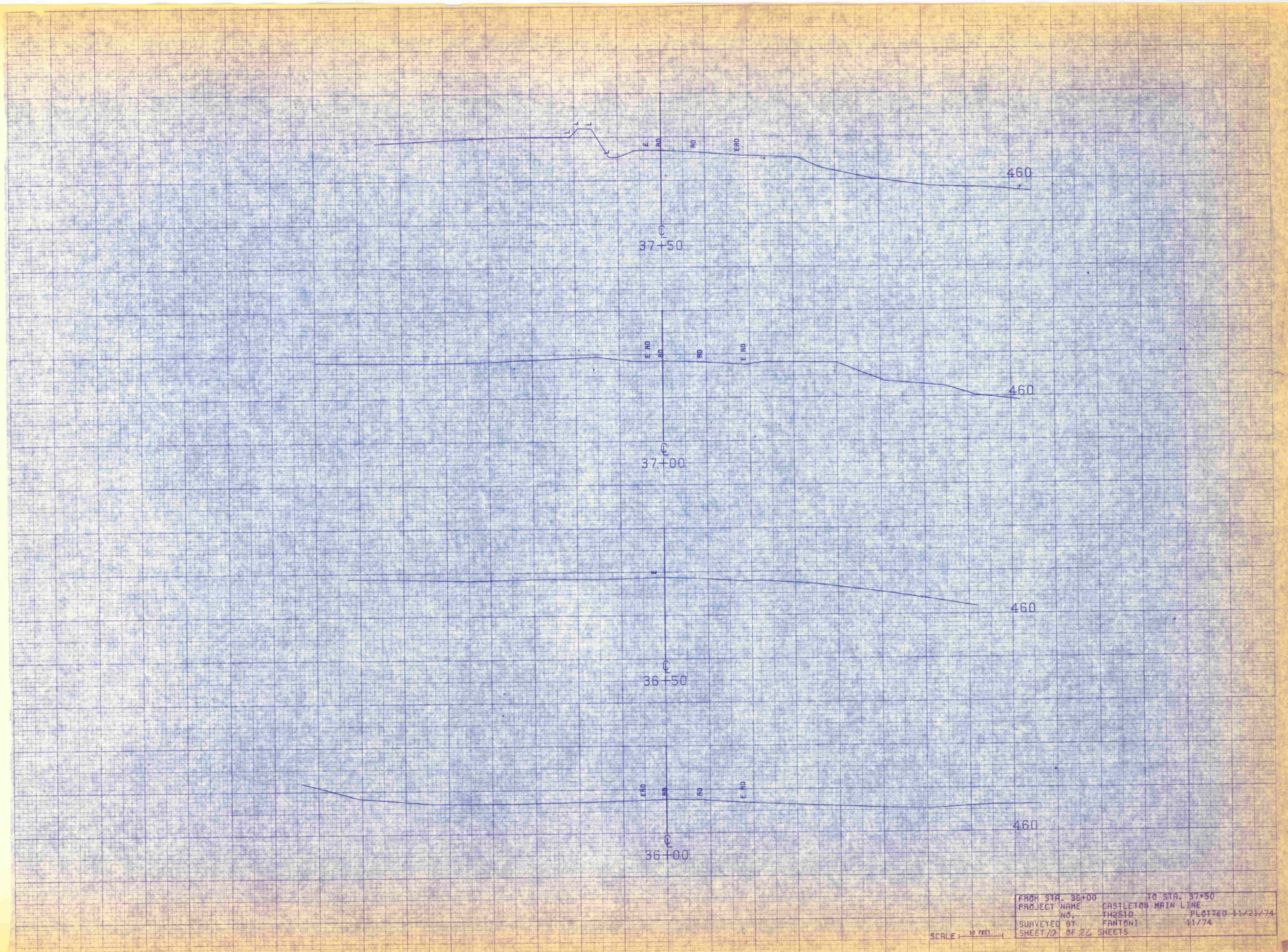
REV. NO.	MADE BY	DATE	DESCRIPTION

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS

TOWN OF	CASTLETON	BRIDGE NO.	7
HIGHWAY NO.	C12 TH #3	LOG STA.	
Town Highway #3 over North Brittain Brook		SURV. STA.	39+40
REINFORCING		STEEL SCHEDULE	
DESIGNED BY J.R. Guilmette		DRAWN BY J.R. Guilmette	
CHECKED BY J. Couture		BRIDGE DESIGN SUPERVISOR	
DATE 6/95		J. Wood	DATE 6-97
PROJECT		PROJECT NO.	
CASTLETON		TH 2510	
BRIDGE SHEET NO.		SHEET	
		R OF 26	



FROM STA. 34+00 TO STA. 35+50
PROJECT NAME: CASTLETON MAIN LINE
NO. 143510
SURVEYED BY: TANTONI
SHEET 9 OF 26 SHEETS
PLOTTED 11/21/74
11/74
SCALE: 1" = 20'





40+75

STA 40+44.9
END PROTECT
CONSTRUCT SATISFACTORY APPROACH

40+50

Rt Sta 40+50 End Guard Rail, Std. St. Beam w/ Steel Posts, Type I

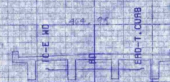
40+50

40+00

Lt Sta 39+94 End Guard Rail, Std. St. Beam w/ Steel Posts, Type I
Lt Sta 39+80 End Structure Excavation
Lt Sta 39+79 Begin Guard Rail, Std. St. Beam w/ Steel Posts, Type I
Lt Sta 39+79 End Bridge Railing, Std. St. Beam
Lt Sta 39+65 Begin Structure Excavation

Rt Sta 39+82 End Structure Excavation
Rt Sta 39+81 Begin Guard Rail, Std. St. Beam w/ Steel Posts, Type I
Rt Sta 39+81 End Bridge Railing, Std. St. Beam
Rt Sta 39+65 Begin Structure Excavation

Sta 39+64.8 End Bridge



39+50

Sta 39+4.8 Begin Bridge

Lt Sta 39+16 End Structure Excavation
Lt Sta 39+04 Begin Bridge Railing, Std. St. Beam
Lt Sta 39+04 End Guard Rail, Std. St. Beam w/ Steel Posts, Type I
Lt Sta 39+03 Begin Structure Excavation

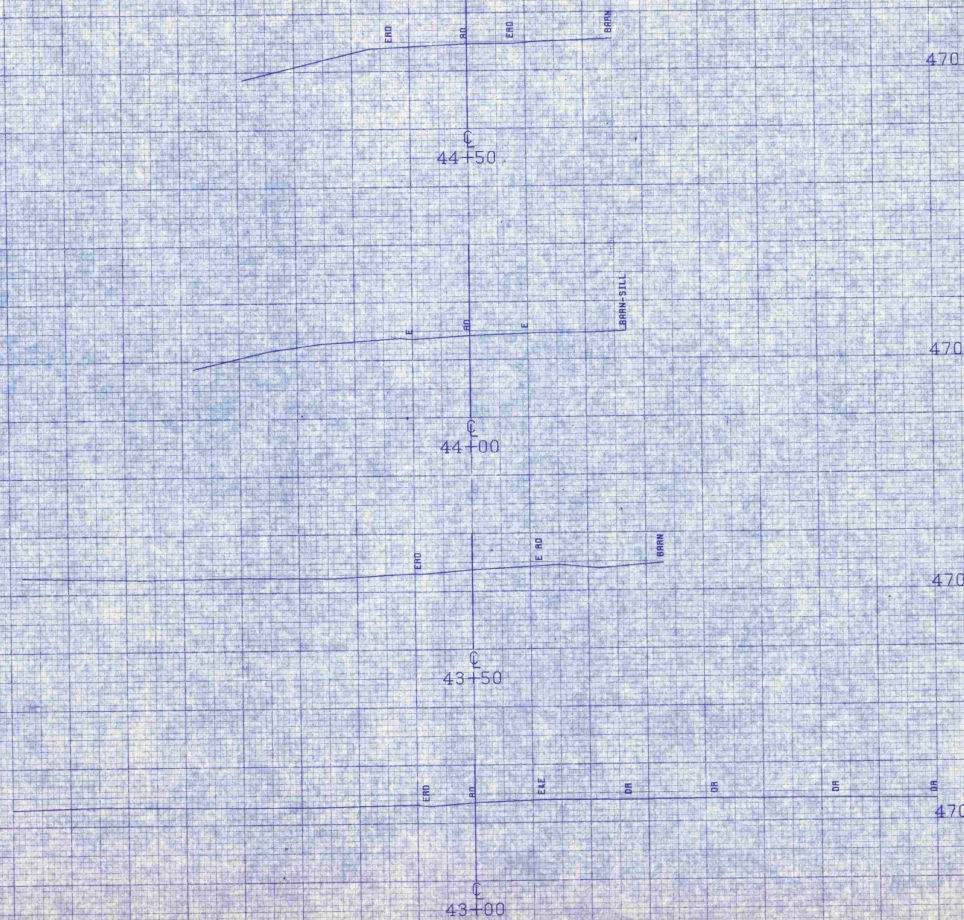
Rt Sta 39+16 End Structure Excavation
Rt Sta 39+02 Begin Bridge Railing, Std. St. Beam
Rt Sta 39+02 End Guard Rail, Std. St. Beam w/ Steel Posts, Type I
Rt Sta 39+01 Begin Structure Excavation

FROM STA. 38+50 TO STA. 40+75
PROJECT NAME CASTLETON MAIN LINE
NO. 138510
SURVEYED BY FANTONI
SHEET 12 OF 6 SHEETS
PLOTTED 11/21/74
11/74

SCALE 1" = 10'

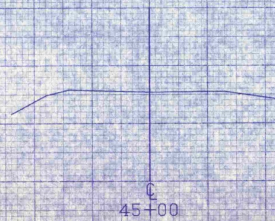


FROM STA. 41+00	TO STA. 42+50
PROJECT NAME	CASTLETON MAIN LINE
NO.	12510
SURVEYED BY	FANTONI
SHEET 13 OF 26 SHEETS	PLOTTED 11/21/74 11/74



FROM STA. 43+00	TO STA. 44+50
PROJECT NAME	CASTLETON HIGH LINE
NO.	142610
SURVEYED BY	FANTONI
SHEET 71	OF 26 SHEETS
11/74	

SCALE 1" = 10 FEET

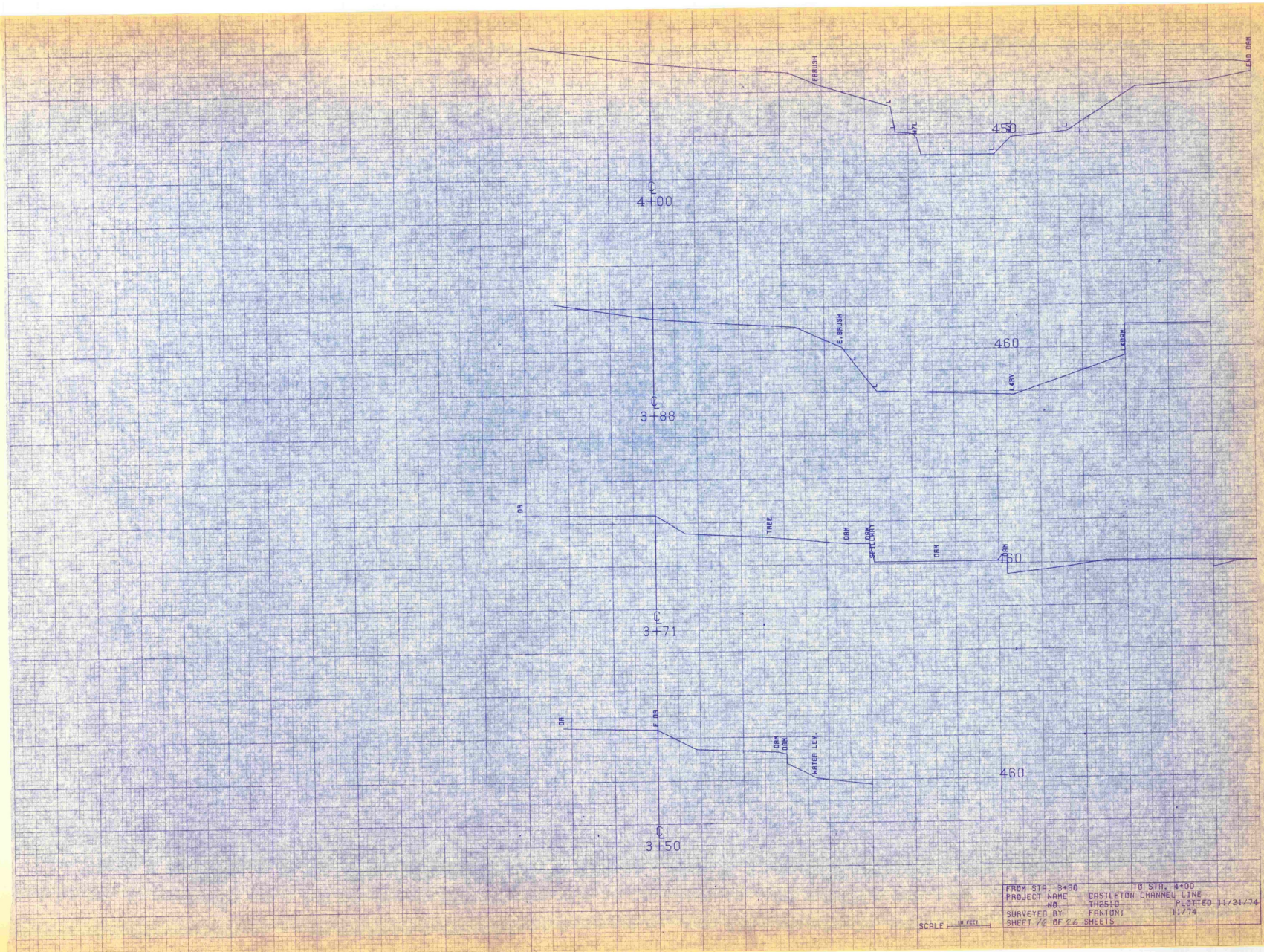


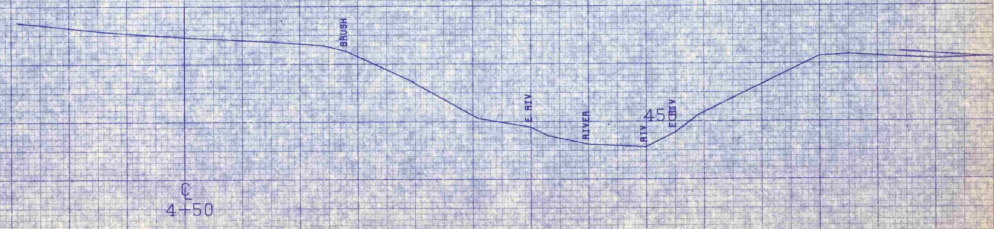
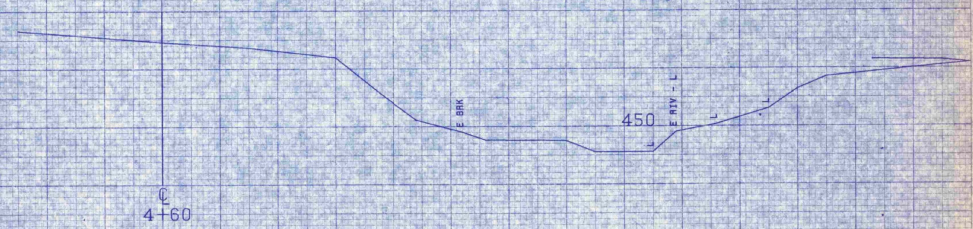
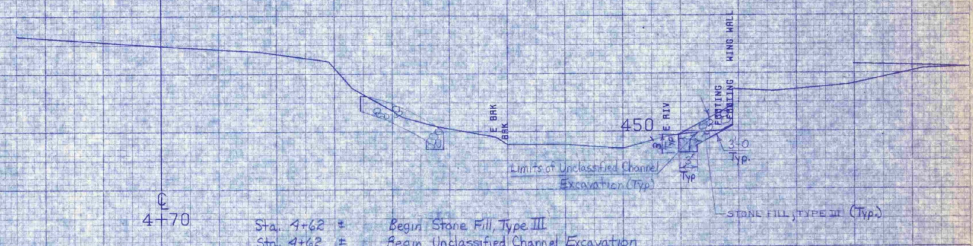
470

C
45+00

FROM STA. 45+00	TO STA. 45+00
PROJECT NAME	CASTLETON MAIN LINE
NO.	TH2510
SURVEYED BY	FANTON
SHEET 3 OF 24	SHEETS

SCALE: 1" = 40' HORIZ

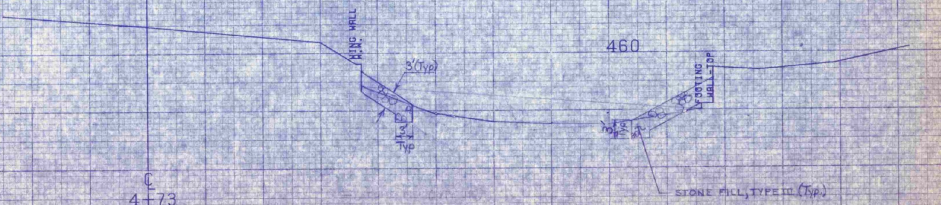
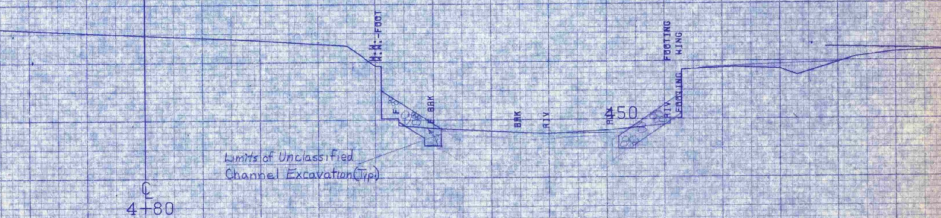
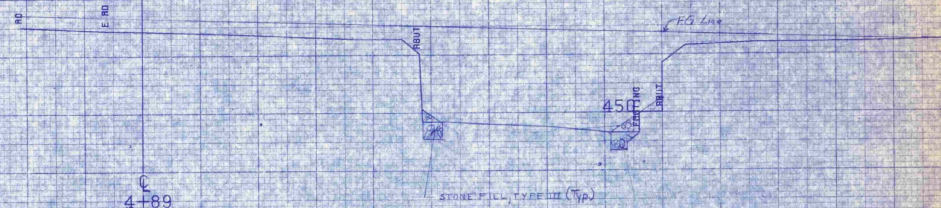




Sta. 4+62 = Begin Stone Fill, Type III
Sta. 4+62 = Begin Unclassified Channel Excavation

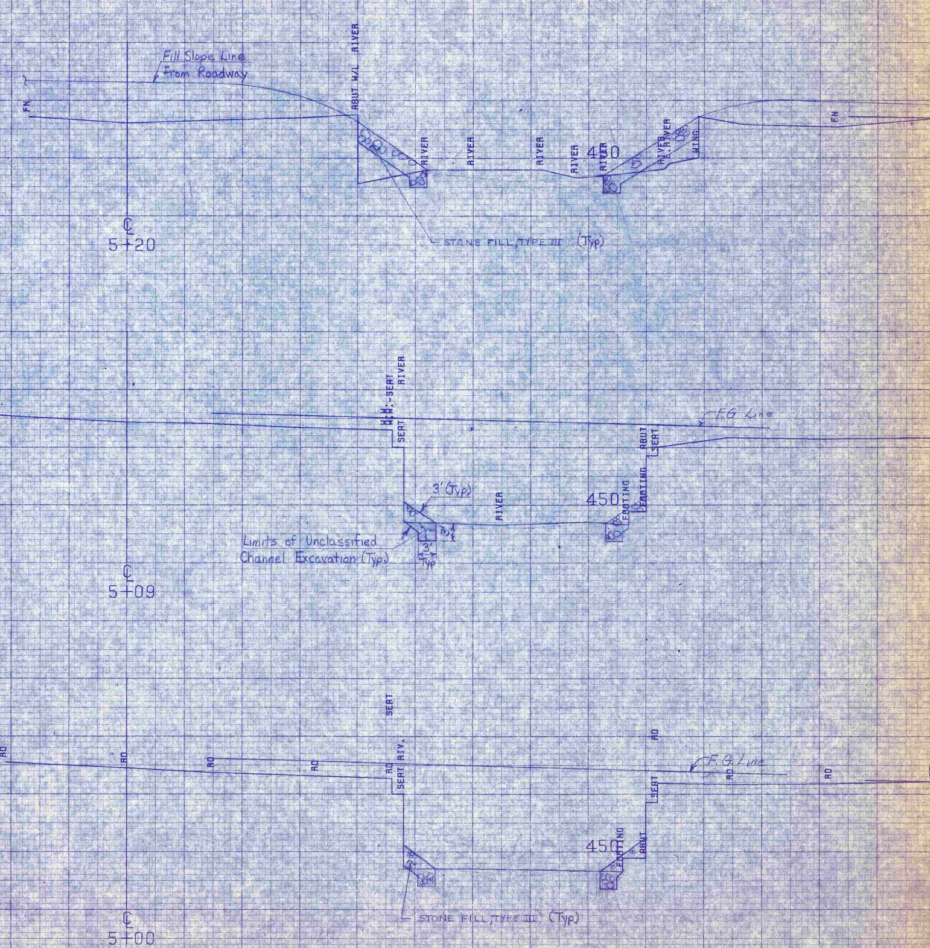
FROM STA. 4+50	TO STA. 4+70
PROJECT NAME	CASTLETON CHANNEL LINE
NO.	TH2510
SURVEYED BY	FANTONI
SHEET 11 OF 21 SHEETS	PLOTTED 11/21/74

SCALE 1" = 10 FEET

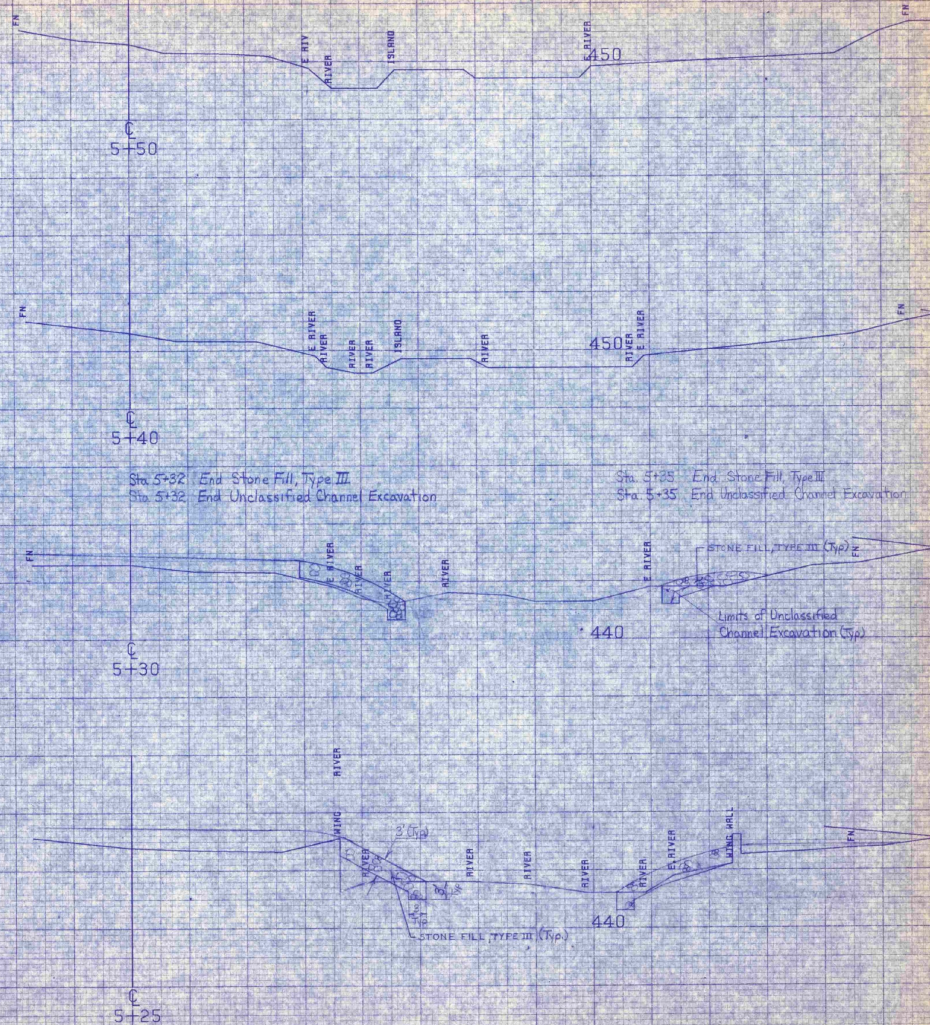


FROM STA. 4+73 TO STA. 4+89
 PROJECT NAME: CASTLETON CHANNEL LINE
 SURVEYED BY: FANTONI
 SHEET 10 OF 20 SHEETS

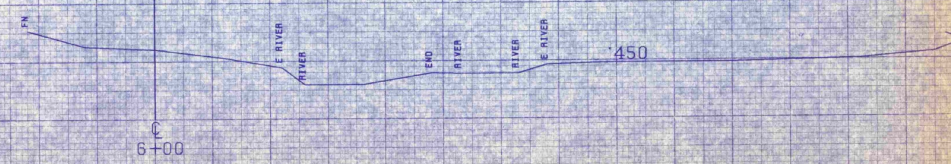
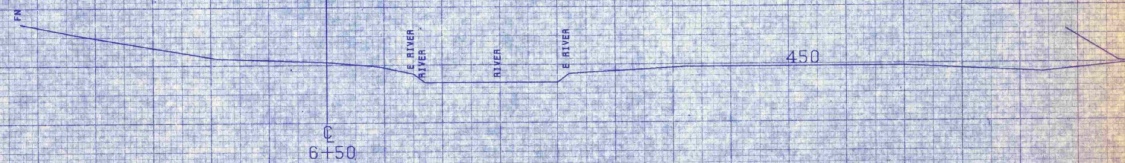
SCALE: 1" = 100'



FROM STA. 5+00 TO STA. 5+20
 PROJECT NAME CASTLETON CHANNEL LINE
 NO. TH3510 PLOTTED 3/23/74
 SURVEYED BY FRANTONI 11/74
 SHEET 19 OF 26 SHEETS
 SCALE 1" = 40'



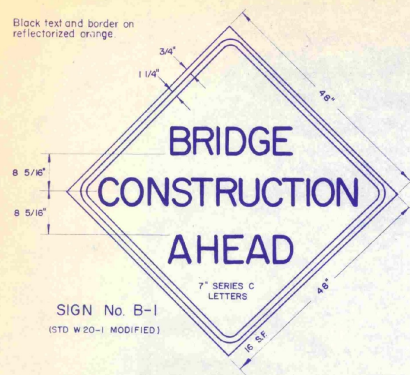
FROM STA. 5+25	TO STA. 5+50
PROJECT NAME	CASTLETON CHANNEL LINE
NO.	112510
SURVEYED BY	FANTONI
SHEET 24 OF 26 SHEETS	11/74



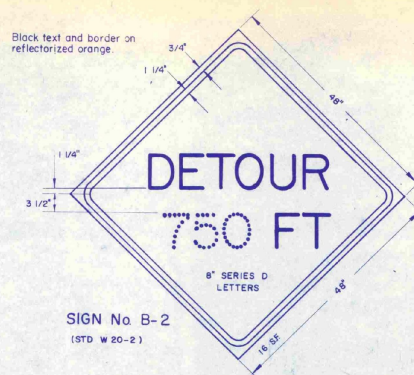
FROM STA. 6+00	TO STA. 6+50
PROJECT NAME	CASTLETON CHANNEL LINE
NO.	11/21/74
SURVEYED BY	FANTONI
SHEET 21	OF 26 SHEETS

SCALE 1" = 10' H. ELEV.

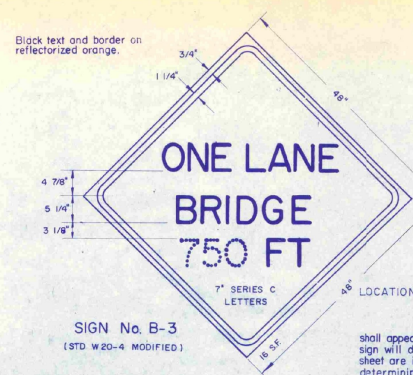
Black text and border on reflectorized orange.



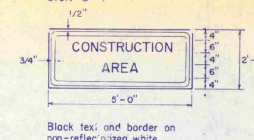
Black text and border on reflectorized orange.



Black text and border on reflectorized orange.



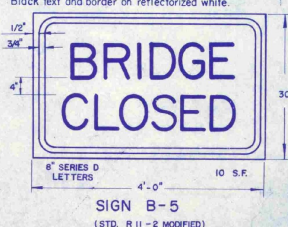
SIGN B-4



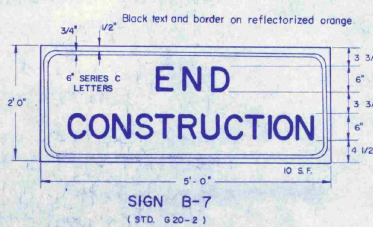
Black text and border on non-reflectorized white.



Black text and border on reflectorized white.



Black text and border on reflectorized orange.



Bridge construction approach signs shall be located as detailed on this sheet or otherwise shown on the plans. They shall appear at each end of the project under construction, and on intersecting public highways. The exact placement of any sign will depend upon the alignment of the highway and the character of the roadsides. The location measurements on this sheet are intended to indicate the sequence to be followed, and the minimum spacing to be observed by the Engineer in determining exact locations.

The designs of the signs shall conform with the details shown on this sheet and with the standards prescribed in the Manual on Uniform Traffic Control Devices prepared by National Joint Committee on Uniform Traffic Control Devices.

MATERIALS The signs shall be of metal, wood, plywood, hardboard or any other material satisfactory to the Engineer. No material shall be approved that will deteriorate by exposure to the weather during the required life of the sign.

REFLECTORIZATION

All new signs requiring an orange background shall have encapsulated lens reflective sheeting material as of January 1, 1975.

ILLUMINATION If desired by the contractor, and approved by the Engineer, a sign may be illuminated instead of reflectorized. The illumination may be provided by incandescent or fluorescent lamps, or by spotlights. Lamps shall be properly shielded to protect drivers from glare. Torches, lanterns, or existing street lighting are not acceptable for sign illumination. If the Engineer considers that a reflectorized sign is not adequate, he may order that it be illuminated.

INSTALLATION

The signs shall be in place at the time the project officially commences. Each sign shall be erected in a neat and workmanlike manner on wood or metal posts set securely in the ground. The bottom of a sign shall be at least 5 feet above road level, and the nearest edge of a sign shall be at least 6 feet outside the shoulder point or 2 feet outside the guard rail, curbing or sidewalk. Posts and signs shall be braced or reinforced in back as necessary. The installation of signs and barricades shall be subject to the approval of the Engineer.

When project is closed down for temporary periods the signs shall be covered in a workmanlike manner.

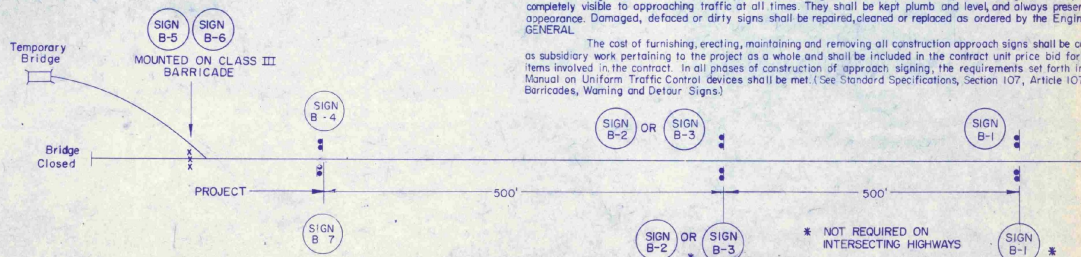
MAINTENANCE

Signs shall be maintained in a clean and legible condition satisfactory to the Engineer. They shall be completely visible to approaching traffic at all times. They shall be kept plumb and level, and always present a neat appearance. Damaged, defaced or dirty signs shall be repaired, cleaned or replaced as ordered by the Engineer.

GENERAL

The cost of furnishing, erecting, maintaining and removing all construction approach signs shall be considered as subsidiary work pertaining to the project as a whole and shall be included in the contract unit price bid for various items involved in the contract. In all phases of construction of approach signing, the requirements set forth in the Manual on Uniform Traffic Control Devices shall be met. (See Standard Specifications, Section 107, Article 107.09 Barricades, Warning and Detour Signs.)

The bridge construction approach signs shown on this sheet are intended for use in providing warning and information at isolated bridge projects, although they may be ordered by the Engineer at bridge work on a road construction project. When additional approach signs or other types of signing or control are necessary, the plans and/or the Special Provisions for that project will give the details of the signs and controls required.



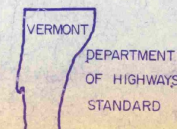
REVISIONS AND CORRECTIONS
SEPT. 11, 1973 - REVISED PER ORDER OF FHWA, SEPT. 11, 1973.
NOV. 7, 1973 - REVISED PER ORDER OF FHWA.
MAY 14, 1974 - EXPIRATIVE MATERIAL. 17-40P2

APPROVED
Dec 14, 1971
DATE

R. H. Connolly
CHIEF ENGINEER
E. J. McKinney
ASST. CHIEF ENGINEER
G. M. Lann
HIGHWAY ENGINEER

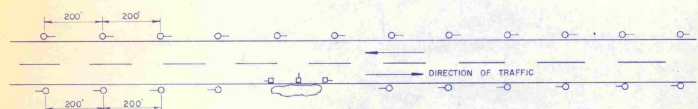
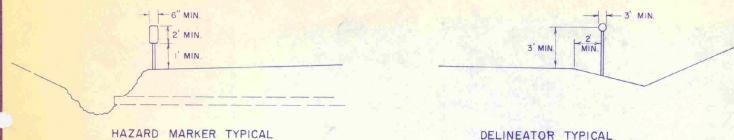
TRAFFIC SIGNS

BRIDGE CONSTRUCTION APPROACH SIGNS

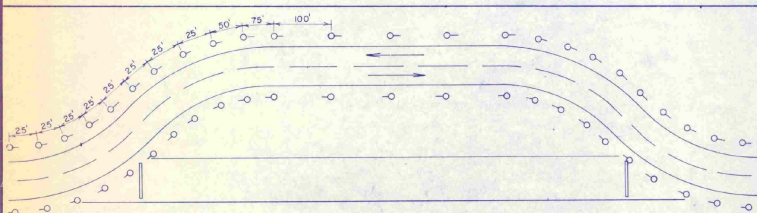


E-3

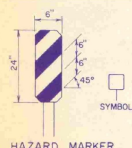
DELINEATOR AND HAZARD MARKER DETAILS FOR CONSTRUCTION AREAS WHERE TRAFFIC IS MAINTAINED



DELINEATOR AND HAZARD MARKER LOCATION DETAIL FOR TWO WAY TRAFFIC
(FOR INTERSTATE TYPE HIGHWAYS
200' SPACING ON RT.
AND 400' SPACING ON MEDIAN EDGE)



DELINEATOR LOCATION DETAIL FOR CONSTRUCTION DETOUR



HAZARD MARKER

HAZARD MARKER
TO BE USED AROUND EXCAVATION DURING NON-WORKING HOURS
OR WHEN AN OPERATION IS NOT BEING CARRIED ON

HAZARD MARKERS SHALL HAVE ALTERNATING ORANGE AND WHITE
REFLECTORIZED STRIPES (SLOPING DOWNWARD IN THE DIRECTION
TRAFFIC IS TO PASS)

POSTS
POSTS SHALL BE OF SUITABLE MATERIAL TO SUPPORT DELINEATORS
OR HAZARD MARKERS, SHARPENED TO DRIVE



SYMBOL

DELINEATORS SHALL BE OF A REFLECTORIZED SILVER OR
WHITE COLOR. THEY SHALL HAVE A MINIMUM OF 7 SQUARE
INCHES. THEY MAY BE ROUND, SQUARE, OR OBLONG. THEY
SHALL BE OF THE FOLLOWING:
1- REFLECTORIZED TAPE WITH METAL BACKING
2- REFLECTIVE TAPE APPLIED DIRECTLY TO POSTS
3- REFLECTORIZED PAINT APPLIED DIRECTLY TO POSTS
WHEN PAINT OR TAPE IS APPLIED DIRECTLY TO POST, A
SURFACE OF 3\"/>

MATERIALS

The barricades shown on this sheet normally will be of wood or wood and metal construction
and type II barricades may be of metal construction.

DESIGN

The design of the barricades shall conform with the details shown on this sheet and the markings
on the barricades shall be alternate orange and white stripes (sloping downward at an angle of
45 degrees in the direction traffic is to pass).

COLORS

The barricades shown on this sheet shall have alternating reflectORIZED white and orange stripes.
The orange shall conform with the standard color adopted by the American Association of State Highway
Officials and approved by the U.S. Department of Transportation Federal Highway Administration.

REFLECTORIZATION

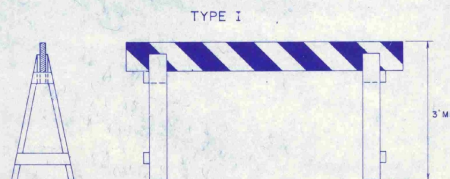
The barricades shall be reflectORIZED with reflective sheeting.

LOCATION

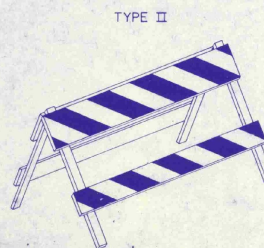
The barricades shown on this sheet will be located by the Engineer in the field or as shown on the
plans. The locations of the barricades shall follow the procedures set forth in the Manual on Uniform
Traffic Control Devices.

MAINTENANCE

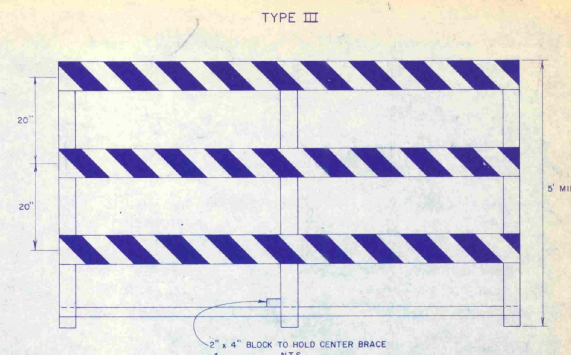
Barricades shall be maintained in a clean and legible condition satisfactory to the Engineer.
They shall be completely visible to approaching traffic at all times. Damaged, detached, or dirty barricades
shall be repaired, cleaned, or replaced as ordered by the Engineer.



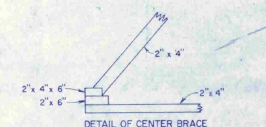
TYPE I



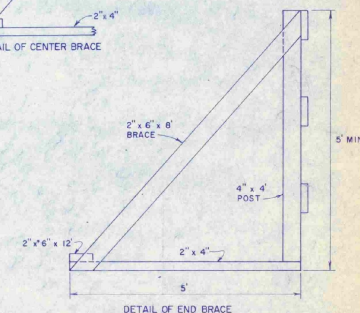
TYPE II



TYPE III



DETAIL OF CENTER BRACE



DETAIL OF END BRACE

	I	II	III
WIDTH OF RAIL	8" min. 12" max.	8" min. 12" max.	8" min. 12" mc
LENGTH OF RAIL	6' - 8'	3' min. 4' max.	12'
WIDTH OF STRIPES	6"	6"	6"
HEIGHT	3' min.	3' min.	5' min.
TYPE OF FRAME	Demountable or Heavy 'A' Frame	Light 'A' Frame	Skids or Posts
FLEXIBILITY	Essentially Movable	Portable	Essentially Permanent
ANGLE OF STRUT	45°	45°	45°
COLOR OF STRIPES	Orange and White	Orange and White	Orange and White

REVISIONS AND CORRECTIONS
MAR 12 1973 - DELINEATOR SPACING REVISED
SEPT 19, 1973 - DELINEATOR SPACING REVISED

APPROVED

Feb 15, 1973
DATE

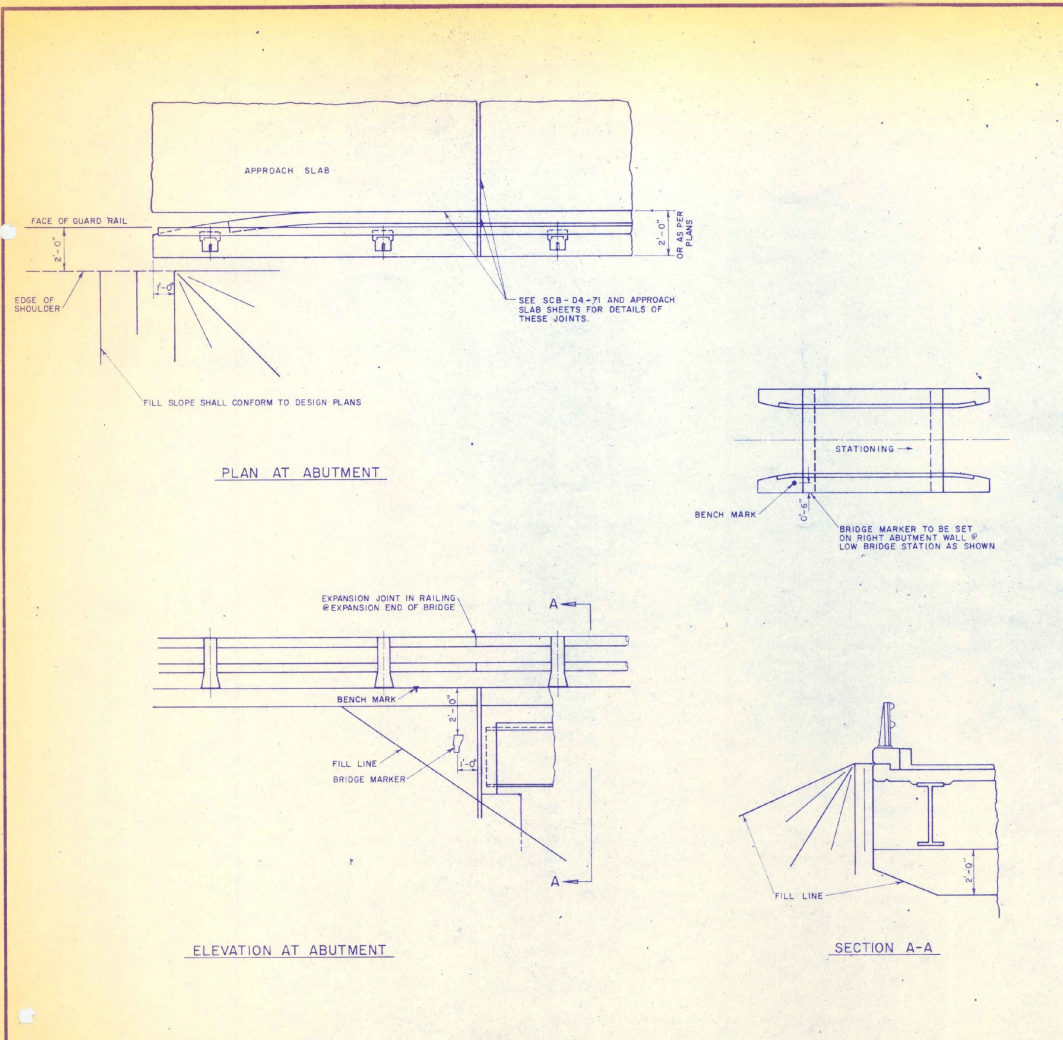
[Signature]
CHIEF ENGINEER
[Signature]
ASST. CHIEF ENGINEER
[Signature]
HIGHWAY ENGINEER

TRAFFIC SIGNS

DELINEATION AND BARRICADES FOR CONSTRUCTION AREAS

VERMONT
DEPARTMENT
OF HIGHWAYS
STANDARD

E-7



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 1972 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 7/8" 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 1972 AND ITS LATEST REVISIONS.
4. ALLOWABLE DESIGN STRESSES: *
 CONCRETE: CLASS A 1'c 3,500 psi 1'c 1,400 psi
 CLASS B 1'c 3,500 psi 1'c 1,400 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 1'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

1975. 30. 1975
C.H. Conway
CHIEF ENGINEER
R.O. Mann
ASST. CHIEF ENGINEER
K.W. Smith
BRIDGE ENGINEER

DETAILS OF W BEAM BRIDGES GENERAL INFORMATION AND GENERAL NOTES

VERMONT
DEPARTMENT
OF HIGHWAYS
STANDARD

SCB-DI-75

PLAN FOR SKEWED BRIDGES

(DETAILS SHOWN FOR EXP. END; FIXED END SIMILAR EXCEPT P_s A AND B IN LIEU OF P_s C, D AND E; SEE SCB-D8-71)

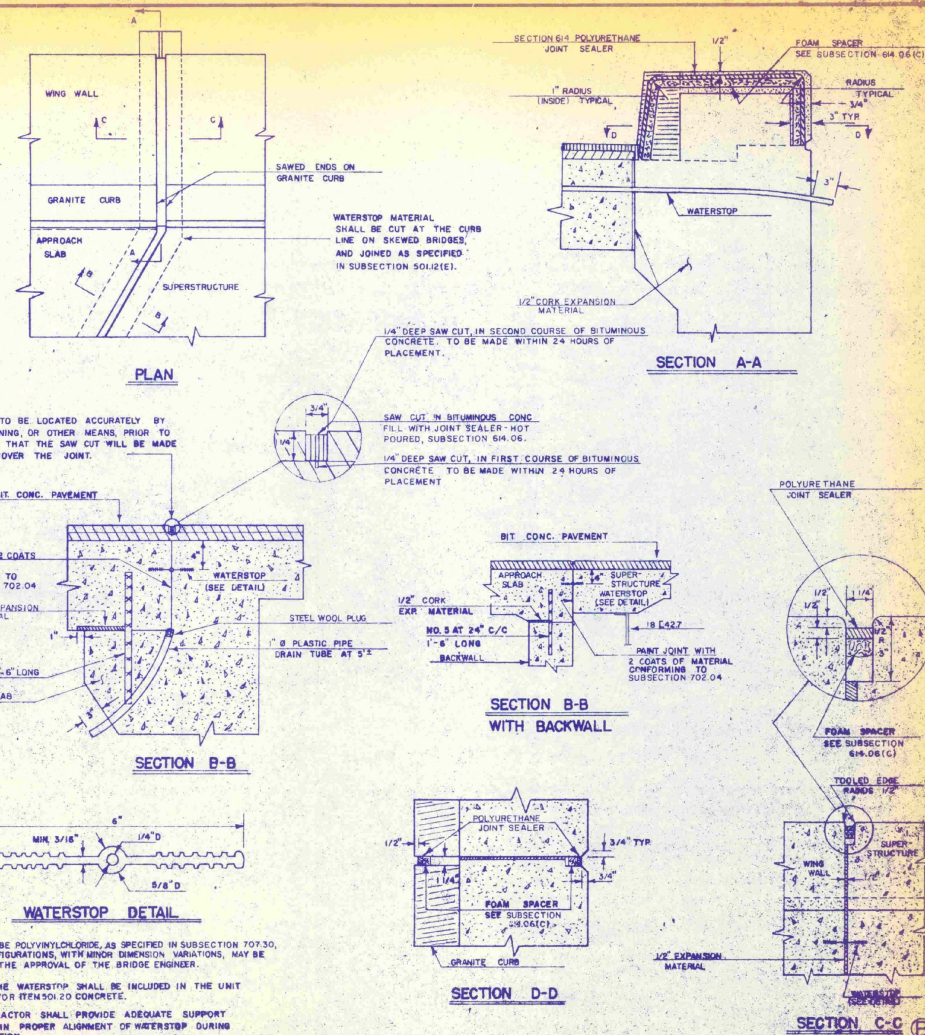
REVISIONS AND CORRECTIONS

APPROVED: _____ DATE: 12/14/21

R.H. Cunniff
CHIEF ENGINEER
E.H. Stebbins
ASST. CHIEF ENGINEER
Leif Bjorn
BRIDGE ENGINEER

DETAILS OF W BEAM BRIDGES

- ① CURTAIN WALL AT BEARING DEVICES
② FIXED END JOINT DETAILS



MATERIAL TO BE POLYVINYLCHLORIDE, AS SPECIFIED IN SUBSECTION 707.30. OTHER CONFIGURATIONS, WITH MINOR DIMENSION VARIATIONS, MAY BE USED WITH THE APPROVAL OF THE BRIDGE ENGINEER.

COST OF THE WATERSTOP SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 501.20 CONCRETE.

THE CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT TO MAINTAIN PROPER ALIGNMENT OF WATERSTOP DURING CONSTRUCTION.

VERMONT
DEPARTMENT OF HIGHWAYS
STRUCTURE STANDARDS

SCB-D9-7