INDEX OF SHEETS

1. COMPOSITE TITLE SHEET
2. COMPOSITE QUANTITY SHEET

BRZ 1442(2) SHEETS:

3. GENERAL INFORMATION
4. R.O.W. DETAIL SHEET
5. R.O.W. PLAN SHEET
6. PLAN
7. PROFILE
8. PLAN AND ELEVATION
9. SUPERSTRUCTURE DETAILS
10. ABUTMENT NO. 2 DETAILS
11. REINFORCING STEEL SCHEDULE
12 - 14. ROADWAY CROSS-SECTIONS
15-18. CHANNEL CROSS-SECTIONS

BRZ- 1442(8) SHEETS:

19. GENERAL INFORMATION
20. R.O.W. DETAIL SHEET
21. R.O.W. PLAN SHEET
22. ROADWAY PLAN AND PROFILE
23. R.C. BOX PLAN AND ELEVATION
24. R.C. BOX REINFORCING DETAIL
25. WINGWALL DETAILS
26. REINFORCING SCHEDULE
27- 29. ROADWAY CROSS-SECTIONS
30-32. CHANNEL CROSS-SECTIONS

LIST OF STANDARDS

E-3	12-15-78(R)
E-7	2-2-83
E-7a	4-8-82(R)
G-1	12-16-80(R)
G-1d	12-16-80(R)
G-14	1-19-81(R)
SB-R6-82	6-18-82(R)
SCB-D1-75	9-14-81(R)
SCB-D6-73	1-3-79(R)
T-1	12-7-76(R)
T-2	7-5-72

GENERAL NOTES

1. SEE SHEET 3 FOR BRZ 1442(2) GENERAL NOTES.
2. SEE SHEET 19 FOR BRZ 1442(8) GENERAL NOTES.

Dated MAR 29 1984

Miller Construction Inc
Contractor

Roger C. Miller
Signature

Pres
Title

Transportation Secretary's Signature

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECTS

TOWN OF CHESTER
COUNTY OF WINDSOR

ROUTE NO: T.H. 24 & T.H. 57 BRIDGE NO: 60 & 69

BRZ 1442(8), ROUTE NO: T.H. 24, BRIDGE NO: 60

PROJECT LOCATION: BEGINNING APPROXIMATELY 200 FT. WESTERLY OF VT. RT. 10, AND EXTENDING 200 FT. WESTERLY.

PROJECT DESCRIPTION: REMOVAL OF EXISTING STRUCTURE, CONSTRUCT NEW R.C. BOX, AND RELATED ROADWAY AND CHANNEL WORK.

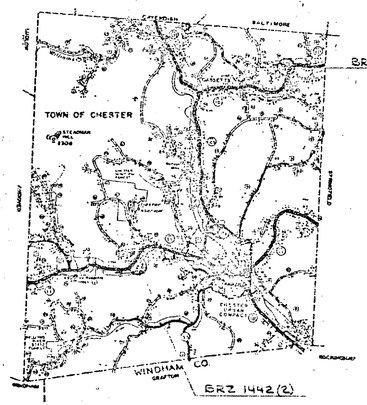
LENGTH OF STRUCTURE:	20.3	FEET
LENGTH OF PARTICIPATION ROADWAY:	179.7	FEET
LENGTH OF NON-PARTICIPATION ROADWAY:	0.0	FEET
LENGTH OF PROJECT:	200.0	FEET

BRZ 1442(2), ROUTE NO.: T.H. 57, BRIDGE NO.: 69

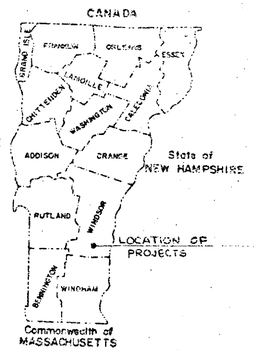
PROJECT LOCATION: BEGINNING AT THE INTERSECTION OF VT. RTE. 11 AND T.H. 57, APPROXIMATELY 2.5 MILES FROM THE CHESTER - ANDOVER TOWN LINE, AND EXTENDING 0.038 MILES ON T.H. 57.

PROJECT DESCRIPTION: REMOVAL OF EXISTING STRUCTURE, CONSTRUCTION OF A NEW PRESTRESSED VOIDED SLAB BRIDGE, AND RELATED ROADWAY AND CHANNEL WORK.

LENGTH OF STRUCTURE:	46.00
LENGTH OF PARTICIPATION ROADWAY:	154.00
LENGTH OF NON-PARTICIPATION ROADWAY:	0.00
LENGTH OF PROJECT:	200.00



State of NEW YORK



LOCATION MAP

TYPICAL BRIDGE SECTION

SEE SHEET 3 FOR BRZ 1442(2) ROADWAY AND BRIDGE TYPICAL SECTIONS.
SEE SHEET 19 FOR BRZ 1442(8) ROADWAY AND BRIDGE TYPICAL SECTIONS.

TYPICAL ROADWAY SECTION

CONTRACT PLANS

THESE PLANS DO NOT REFLECT CHANGES MADE ON THE PROJECT.

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
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

DATUM
VERTICAL
HORIZONTAL

These plans are subject to such engineering changes as may be required by the Federal Highway Administration or the Director of Engineering and Construction.

Construction is to be carried on in accordance with these plans and the Standard Specifications for Highway and Bridge Construction dated March, 1975, as approved by the Federal Highway Administration on October 27, 1976 for use on this project, including all subsequent revisions and such revised specifications and special provisions as are incorporated in these plans.

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD
APPROVED S.J. Greenberg DATE 12-7-83
DIRECTOR OF ENGINEERING AND CONSTRUCTION

PROJECT CHESTER
PROJECT NO. BRZ 1442(2) BRZ 1442(8)
SHEET 1 OF 32 SHEETS
SJB 7/21/81

BRUNING 44-131 40592-1

EARTHWORK

V.C.	% GRD	STATION	ELEVATION ON TAN.	ELEVATION ON V.C.	CORR. V.C.	DIST.	ITEM 203.15 AREA	ITEM 203.15 CU. YDS.	ITEM 301.15 AREA	ITEM 301.15 CU. YDS.	ITEM 401.10 AREA	ITEM 401.10 CU. YDS.	ITEM 203.30 AREA	ITEM 203.30 CU. YDS.
		BRZ 1442 (2)												
	-2.03%	10+00	502.10											
		10+12	502.08				65		30		11			
						13		31.3		14.1		5.3		
		10+25	502.05				65		30		11			
						10		24.1		11.1		4.1		
		10+35	501.85				65		30		11			
		10+50	501.54											
		10+75	501.03											
		10+81	500.91				50							
						19		35.2						
		11+00	500.53				50		30		11			
PVC						50		64.8		47.2		18.5		
100' VC	PVI	11+50	499.52	499.52	0		20		21		9			
						50		21.3		19.4		8.3		
PVT	+1.00%	12+00	498.50	498.88	0.38		3		0		0			
		12+50	499.00	499.00	0	50	0	2.8						
						TOTAL =	179.5			92.1		36.2		
						ROUND TO	180			100		40		
		BRZ 1442 (8)												
PVC	-3.44%	11+00	495.10	495.10	0		33		20		10		0	
50' VC	PVI					50		67.6		64.8		37.0		0.0
PVT		11+50	494.24	494.24	0		40		50		30		0	
						50		57.4		76.9		41.7		18.5
		12+00	494.24				22		33		15		20	
	0.00%	12+07.85	494.24			7.85	0	3.2	30	9.2	15	4.4	0	2.9
PVC		12+28.15	494.24			21.85	38	30.8	30	27.5	15	12.5	0	4.0
50' VC	PVI	12+50	494.24	495.25	0.01		38		38		16		10	
PVT		12+75	495.38	495.39	0.01	25		67.6		56.5		25.0		9.3
	+5.6888%	13+00	496.80			25	35		23		11		0	
						TOTAL =	226.6		234.9		120.6		34.7	
						ROUND TO	230		240		130		40	

BRZ 1442(2) EARTHWORK SUMMARY

EMBANKMENT		0
MATERIAL AVAILABLE FOR FILL:		
COMMON EXCAVATION X 1.00	180	
UNCLASS. CHANNEL EXCAV. X 0.60	60	
STRUCTURE EXCAVATION X 0.60	126	
	366	WASTE

BRZ 1442(8) EARTHWORK SUMMARY

EMBANKMENT	40	
EMBANKMENT X 1.15	46	
MATERIAL AVAILABLE FOR FILL:		
COMMON EXCAVATION X 1.00	150	
UNCLASS. CHANNEL EXCAV. X 0.60	102	
STRUCTURE EXCAVATION X 0.60	96	
EARTH BORROW NEEDED	-46	
	302	WASTE

BRIDGE QUANTITY SHEET

COMPOSITE

STATE OF VERMONT
DEPARTMENT OF HIGHWAYS
BRIDGE DIVISION

NO.	ITEM	UNIT	BRZ 1442(2), T.H. 57, BRIDGE 69 SUPER-STRUCTURE	BRZ 1442(2), T.H. 57, BRIDGE 69 SUB-STRUCTURE	BRZ 1442(2), T.H. 57, BRIDGE 69 ROADWAY	BRZ 1442(2), T.H. 57, BRIDGE 69 CHANNEL	BRZ 1442(8), T.H. 24, BRIDGE 60 R.C. BOX	BRZ 1442(8), T.H. 24, BRIDGE 60 CHANNEL	BRZ 1442(8), T.H. 24, BRIDGE 60 ROADWAY	TOTAL	FINAL
202.20	REMOVAL OF EXISTING SUPERSTRUCTURE	EACH	1							1	
202.25	REMOVAL OF STRUCTURE	EACH							1	1	
203.15	COMMON EXCAVATION	C.Y.			180				230	410	
203.27	UNCLASSIFIED CHANNEL EXCAVATION	C.Y.				100		180		280	
204.25	STRUCTURE EXCAVATION	C.Y.		210			190			400	
204.30	GRANULAR BACKFILL FOR STRUCTURES	C.Y.		100			140			240	
301.15	SUBBASE OF GRAVEL	C.Y.			100				240	340	
401.10	GRAVEL SURFACE COURSE	C.Y.			40				130	170	
501.25	CONCRETE, CLASS B	C.Y.		62			118			180	
507.15	REINFORCING STEEL	LB.		5230			15,170			20,400	
510.20	PRESTRESSED CONCRETE MEMBER SIV-48 (21"x48"x46')	EACH	4							4	
514.10	WATER REPELLENT	GAL.	8	5			26			39	
613.11	STONE FILL, TYPE II	C.Y.				70		130		200	
617.35	BRIDGE RAILING, HEAVY DUTY STEEL BEAM										
	TYPE C (GALVANIZED)	L.F.					50			50	
	TYPE D (A588)	L.F.	100							100	
621.38	GUARD RAIL, HEAVY DUTY STEEL BEAM, W/WOOD POSTS, TYPE II										
	(A588 STEEL)	L.F.			158					158	
	(GALVANIZED)	L.F.							176	176	
621.70	ANCHOR FOR STEEL BEAM GUARD RAIL W/STEEL OR WOOD POSTS AT OPENINGS	EACH			2				4	6	
621.77	BREAKAWAY CABLE TERMINAL FOR GUARD RAIL, STEEL BEAM W/WOOD POSTS, TYPE II	EACH			2					2	
635.10	MOBILIZATION	L.S.			0.5				0.5	1	
638.10	ONE-WAY TEMPORARY BRIDGE	L.S.			1					1	
638.12	TEMPORARY FOOT BRIDGE	L.S.							1	1	

BRIDGE (S) AT STATION (S) _____
LOCATION (S) _____

Prepared by G. SCHELLEY | Checked by W. JANDESS
SUPERVISOR: R.L. Oatley 12-83

CHESTER
BR ___ OF ___

PROJECT NO. BRZ 1442 (2) & (8)
SHEET NO. 2 OF 32

BB-1

INDEX OF SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT

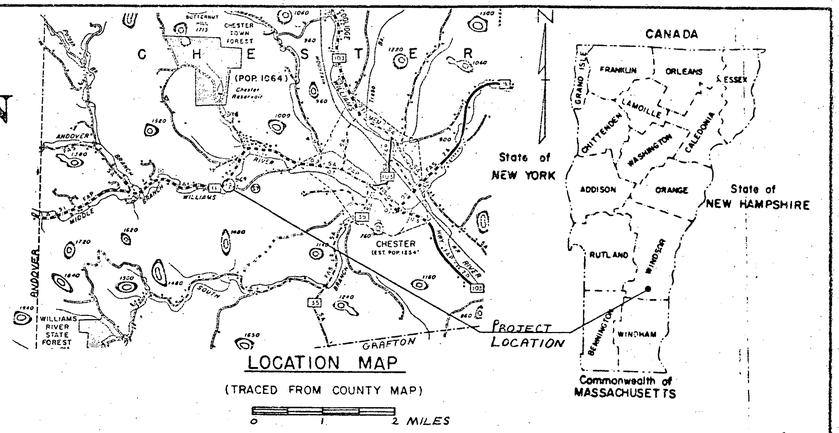
TOWN OF *CHESTER*
COUNTY OF *WINDSOR*

ROUTE NO: *T.H. 57, CLASS 3* BRIDGE NO: *69*

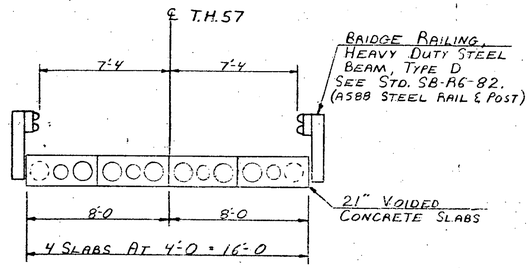
PROJECT LOCATION: *BEGINNING AT THE INTERSECTION OF VT. RTE. 11 AND T.H. 57, APPROXIMATELY 2.5 MILES FROM THE CHESTER - ANDOVER TOWN LINE, & EXTENDING 0.038 MILES ON T.H. 57.*

PROJECT DESCRIPTION: *REMOVAL OF EXISTING STRUCTURE, CONSTRUCTION OF A NEW PRESTRESSED VOIDED SLAB BRIDGE AND RELATED ROADWAY AND CHANNEL WORK.*

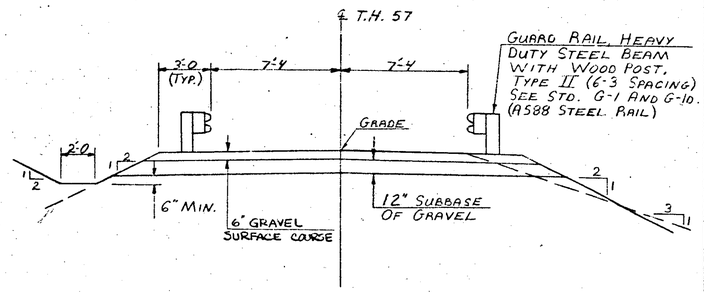
LENGTH OF STRUCTURE:	46.00 FEET
LENGTH OF PARTICIPATION ROADWAY:	154.00 FEET
LENGTH OF NON-PARTICIPATION ROADWAY:	N.A. FEET
LENGTH OF PROJECT:	200.00 FEET



LOCATION MAP
(TRACED FROM COUNTY MAP)
0 1 2 MILES



TYPICAL BRIDGE SECTION
SCALE 1/4" = 1'-0



TYPICAL ROADWAY SECTION
SCALE 1/4" = 1'-0
0 2 4

GENERAL NOTES

1. SEE STD SCB-DI-75 FOR ADDITIONAL GENERAL NOTES.
2. DESIGN LOADING IS HS-20
3. THE ONE-WAY TEMPORARY BRIDGE SHALL MEET THE REQUIREMENTS OF SECTION 635, AND THOSE LISTED BELOW. (SEE SHT. 5 FOR LOCATION)
4. SEEDING, MULCHING, AND OTHER EROSION CONTROL ITEMS SHALL BE SUBSIDIARY TO ALL OTHER CONTRACT ITEMS.
5. THE EXISTING STEEL BEAMS SHALL BE STOCKPILED ON THE PROJECT SITE AND REMAIN THE PROPERTY OF THE AGENCY OF TRANSPORTATION, DISTRICT 2.
6. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED CONCRETE SURFACES EXCEPT BENEATH THE DECK BETWEEN THE DRIP NOTCHES.
7. *THE EXISTING SUPERSTRUCTURE SHALL BE REMOVED UNDER THE ITEM 'REMOVAL OF EXISTING SUPERSTRUCTURE'.*

TEMPORARY BRIDGE REQUIREMENTS

1. 20' x 7' BRIDGE, HW@Q2.33 = 6.7'
2. THE TEMPORARY BRIDGE SHALL HAVE A CLEAR SPAN OF 20' AT STREAM BED.
3. ALL FILL USED FOR CONSTRUCTION OF THE TEMPORARY BRIDGE SHALL BE COARSE, GRANULAR MATERIAL, WITH SLOPES PROTECTED WITH STONE FILL. ALL TEMPORARY BRIDGE FILL SHALL BE REMOVED BY THE COMPLETION OF THE PROJECT.

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
CONTROL OF ACCESS
PROPERTY LINE
R.O.W. TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

DATUM
VERTICAL — ASSUMED
HORIZONTAL — N.A.

TRAFFIC DATA

	ADT
1982	20
1992	25

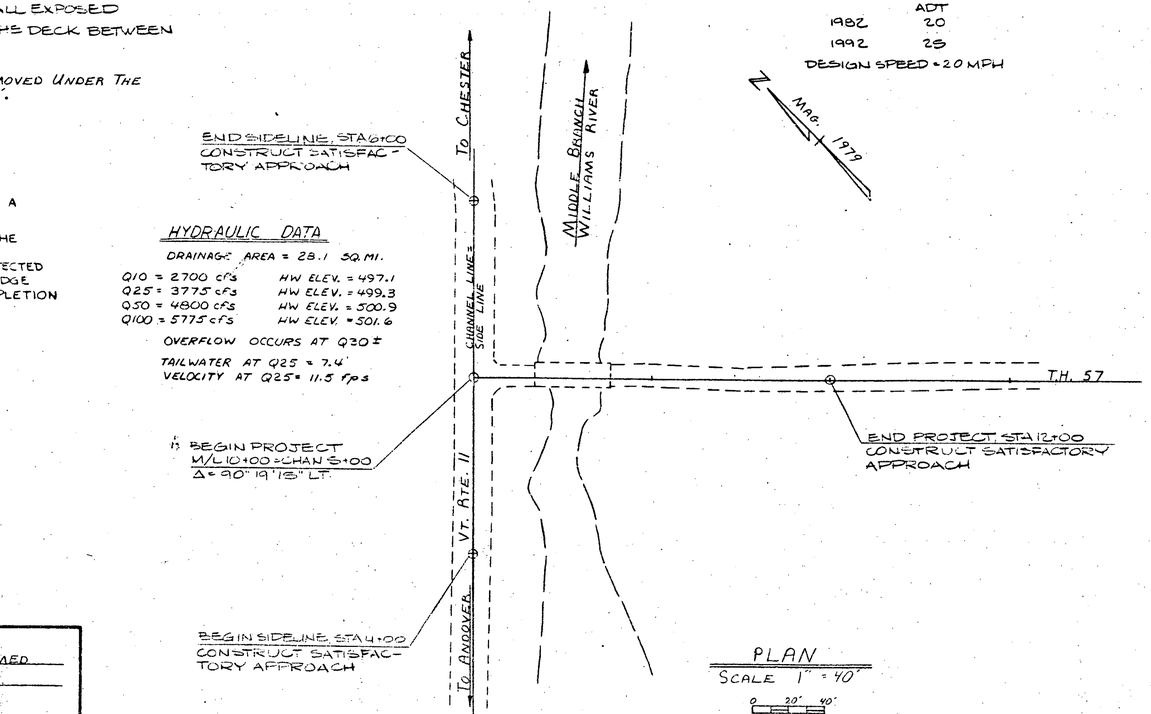
DESIGN SPEED = 20 MPH

HYDRAULIC DATA

DRAINAGE AREA = 28.1 SQ. MI.

Q10 = 2700 cfs	HW ELEV. = 497.1
Q25 = 3775 cfs	HW ELEV. = 499.3
Q50 = 4800 cfs	HW ELEV. = 500.9
Q100 = 5775 cfs	HW ELEV. = 501.6

OVERFLOW OCCURS AT Q30 ±
TAILWATER AT Q25 = 7.4'
VELOCITY AT Q25 = 11.5 fps



PLAN
SCALE 1" = 40'
0 20' 40'

These plans are subject to such engineering changes as may be required by the Federal Highway Administration or the Director of Engineering and Construction.

Construction is to be carried on in accordance with these plans and the Standard Specifications for Highway and Bridge Construction dated March, 1976, as approved by the Federal Highway Administration on October 27, 1976 for use on this project, including all subsequent revisions and such revised specifications and special provisions as are incorporated in these plans.

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD

APPROVED _____ DATE _____
DIRECTOR OF ENGINEERING AND CONSTRUCTION

PROJECT	PROJECT NO.
CHESTER	BRZ 1442(2)

SHEET 3 OF 32 SHEETS

SJB 7/21/81

BRUNING 44-131 40592-1

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

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1	MASON, MARTHA D.	3	10+41 RT 10+71 RT 10+31 LT	11+35 RT 10+86 RT. 11+41 LT.			CONST. EASE. (T) (0.02 Ac±) CHANNEL (P) (80 S.F.±) SLOPE (T) (0.13 Ac±)	W.D.O.E.		CHESTER			(1045 S.F.±) FOR TEMPORARY DETOUR

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	2, 3	Parcel #1 MASON, Revised Const. Ease. (T) @ Sta. 10+36 Rt ~ 11+83 Rt 0.14 Ac± To 10+41 Rt ~ 11+35 Rt. 0.02 Rt Deleted Temp. Detour. Deleted Const. Ease. (T) @ 10+74 Lt ~ 11+48 Lt. Added Slope (T) 10+31 Lt. 11+41 Lt. (0.13 Ac) For Temp Detour Per Revised Design & C.O.# 5964 Plans Given to Struss. 12-6-83	7-25-83	B.A.m.	Lwb

MADE BY: H. DUKE DATE NOV. 29, 1982

CHECKED BY: R.L.S. DATE NOV. 29, 1982

DR. RT. — DRAINAGE RIGHT
DIT. RT. — DITCHING RIGHT
CH. RT. — CHANNEL RIGHT
DRIVE RT. — DRIVE RIGHT
CUL. RT. — CULVERT RIGHT
(D) — DEMOLITION OR REMOVAL
[W] — WATER SOURCES

——— – – ——— PRESENT R.O.W.
———///– – –///——— TAKING WITHOUT ACCESS
———///– P/L –///——— TAKING WITHOUT ACCESS ALONG PROPERTY LINES
——— — — ——— TAKING WITH ACCESS
(P) PERMANENT EASEMENT
(T) TEMPORARY EASEMENT

LEGEND
CONST. EASE. ----- CONST. EASEMENT
SR SR SLOPE RIGHTS
P/L P/L PROPERTY LINE
—△—△—△— TOP OF CUT
—○—○—○— TOE OF SLOPE

APPROVED _____ DATE 11-29-82
CHIEF OF PLANS & TITLES

PROJECT CHESTER
NO. BRZ 1442(2)
SHEET 4 OF 32

BRIDGE RAILING, H.D. STEEL BEAM, TYPE D
T.H.57 STA. 10+35 TO STA. 10+81 RT. & LT.

GUARD RAIL, H.D. STEEL BEAM WITH WOOD POST, TYPE II (A588 STEEL) (6'-3" POST SPACING TYPICAL)
VT. 11 STA 4+14 RT. TO T.H.57 STA. 10+35 RT.
T.H.57 STA. 10+35 LT. TO VT. 11 STA. 5+62 LT.
T.H.57 STA. 10+81 TO STA. 11+08 RT. & LT.

STONE FILL, TYPE II
CHAN. STA. 4+72 TO 5+25 RT.

TEMPORARY BRIDGE NOTES:
1. TEMPORARY BRIDGE IS TO BE LOCATED IN APPROXIMATE LOCATION AS PREVIOUS TEMPORARY CROSSINGS AND APPROXIMATELY AS SHOWN ON THIS DRAWING.
2. EVERY EFFORT SHALL BE MADE TO SAVE AS MANY TREES AS POSSIBLE.
3. FINAL LOCATION OF TEMPORARY BRIDGE, ACCESS ROAD, AND CONSTR. EASEMENTS SHALL MEET THE APPROVAL OF THE PROPERTY OWNER.

MAG. 1979

VT. TEL. CO.
℄ 67-1
95-1

END SIDELINE STA. 6+00
CONSTRUCT SATISFACTORY APPROACH

BEGIN SIDELINE STA. 10+35.00
F.G. EL. 502.10

BEGIN PROJECT
M/L 10+92.00 CHAN. 5+00.00
Δ = 70° 19' 15" LT.

BEGIN R.O.W. PROJECT
BRZ 1442 (2) STA. 10+00 ℄

BEGIN SIDELINE STA. 4+00
CONSTRUCT SATISFACTORY APPROACH

℄ P.O.T. 6+15
Δ = 73° RT

℄ P.O.T. 6+00.00

MIDDLE BRANCH WILLIAMS RIVER

END BRIDGE
RECONSTRUCTED ROADWAY
STA. 10+81.00
F.G.EL. 501.44

T.E.M. #1
TOP OF CONC. LT. & PT. AB-T #1
ASSMD. ELEV.
500.00

T.E.M. #2
11" DIA 12" ELM
ASSMD. ELEV.
502.13

P.O.T. 11+00.00

MASON, MARTHA D.
(1)

END PROJECT, STA. 12+00
CONSTRUCT SATISFACTORY APPROACH

END APPROACH, STA. 13+00

END R.O.W. PROJECT
BRZ 1442 (2) STA. 12+00 ℄

3 LARGE ROCKS, APPROX. 1 C.Y. EACH PLACE AS SHOWN IN TRIANGULAR GROUP, TO BE PAID FOR AT THE UNIT PRICE BID FOR STONE FILL, TYPE II

STONE FILL, TYPE II (TYP.)

CONST EASE (T)
CH. RT. (P)

EXISTING R.O.W.

EXISTING STONE FILL

EXISTING R.R.

EXISTING ST. WALL

EXISTING ASPH.

EXISTING CONC.

EXISTING ST. FILL

EXISTING R.O.W.

CHESTER

RTE. 11

T.H. 57

S 49° 30' E

N 45° 0' 45" E

CHANNEL LINE

SIDE LINE

NAIL IN LEDGE

18" DIA

24" MAPLE

12" ASH

8" ELM

5 CABLE G.R.

TO ANDOVER

12+30 18" CMP (RETAIN)

6+31 RT (RETAIN)

NOTE
THIS SHEET IS FOR R.O.W. LIMIT DETAILS ONLY. REFER TO THE REMAINING PLAN SHEETS FOR ALL OTHER CONTRACT DETAILS.

0 10 20 40
SCALE IN FEET

SURVEYED BY TESSIER DATE 12/79
DRAWN BY CRNIS DATE 2/80
TRACED BY PAGE DATE 2/80
PROJ. CHESTER
NO. BRZ 1442 (2)
SHEET 5 OF 32

BRIDGE RAILING, H.D. STEEL BEAM, TYPE D
T.H.57 STA. 10+33 TO STA. 10+83 RT. & LT.

GUARD RAIL, H.D. STEEL BEAM WITH WOOD POST, TYPE II (A588 STEEL) (6'-3 POST SPACING TYPICAL)
VT. 11 STA. 4+39 RT. TO T.H.57 STA. 10+33 RT.
T.H.57 STA. 10+33 LT. TO VT. 11 STA. 5+35 RT.
T.H.57 STA. 10+83 TO STA. 11+08 RT. & LT.

BREAKAWAY CABLE TERMINAL FOR GUARD RAIL, STEEL BEAM W/ WOOD POSTS, TYPE II
VT. 11 STA. 4+39 RT.
VT. 11 STA. 5+37 RT.

ANCHOR FOR STEEL BEAM GUARD RAIL WITH STEEL OR WOOD POST AT OPENINGS
T.H. 57 STA. 11+00 RT & LT.

STONE FILL, TYPE II
CHAN. STA. 4+72 TO 5+25 RT.

MAG., 1979

TEMPORARY BRIDGE NOTES:
1) TEMPORARY BRIDGE IS TO BE LOCATED IN APPROXIMATE LOCATION AS PREVIOUS TEMPORARY CROSSINGS AND APPROXIMATELY AS SHOWN ON THIS DRAWING.
2. EVERY EFFORT SHALL BE MADE TO SAVE AS MANY TREES AS POSSIBLE.
3. FINAL LOCATION OF TEMPORARY BRIDGE, ACCESS ROAD, AND CONSTR. EASEMENTS SHALL MEET THE APPROVAL OF THE PROPERTY OWNER.

VT. TEL. CO. ℄ 87-1, 95-1

END SIDELINE, STA. 6+00
CONSTRUCT SATISFACTORY APPROACH

STOP ROADWAY BEGIN BRIDGE
STA. 10+35.00
F.G. EL. 501.85

BEGIN PROJECT
M/L 10+00.00 = CHAN. 5+00.00
Δ = 90° 19' 15" LT.

BEGIN SIDELINE, STA. 4+00
CONSTRUCT SATISFACTORY APPROACH

END BRIDGE RESUME ROADWAY
STA. 10+81.00
F.G. EL. 500.91

END PROJECT, STA. 12+00
CONSTRUCT SATISFACTORY APPROACH

℄ P.O.T. 6+55.1
Δ = 91° RT

℄ P.O.T. 6+00.00

℄ TEMPORARY BRIDGE (SEE NOTES)

C.T.C. VT. JCT. 1/87, 2/95

CHESTER

FLOW

N 44° 10' 45" E CHANNEL LINE & SIDE LINE

MIDDLE BRANCH WILLIAMS RIVER

18" OAK T-34.56

T-24.48 24" MAPLE

T-32.73 12" ASH

EXISTING STONE FILL

20" ASH 47.21

EXIST. ST. FILL

T.B.M. #1
TOP OF CONC. LT. & PT. ABUT. #1
ASSMD. ELEV. 500.00

EXISTING R.O.W.

ST. RET. WALL

NAIL IN LEDGE T-20.00

18" OAK T-16.90

S 44° 30' E

12

TH. 57

13

EXISTING R.O.W. (LEFT)

T.B.M. #2
S.I.R. 12 ELM
ASSMD. ELEV. 503.10

T-33.63 12" E.

ST. RET. WALL

T-27.67 ASH

T-21.20 11" ELM

EXISTING R.O.W.

STONE FILL, TYPE II (TYP.)

EXISTING STONE FILL

3 LARGE ROCKS, APPROX. 1 C.Y. EACH PLACE AS SHOWN IN TRIANGULAR GROUP, TO BE PAID FOR AT THE UNIT PRICE BID FOR STONE FILL, TYPE II

P.O.T. 11+00.00

12+30 18" C.G.M.P. (RETAIN)

E. WOODS

EXISTING STONE FILL

EXISTING R.O.W.

ST. RET. WALL

VT. RTE. 11

TO ANDOVER

3 CABLE G.R.

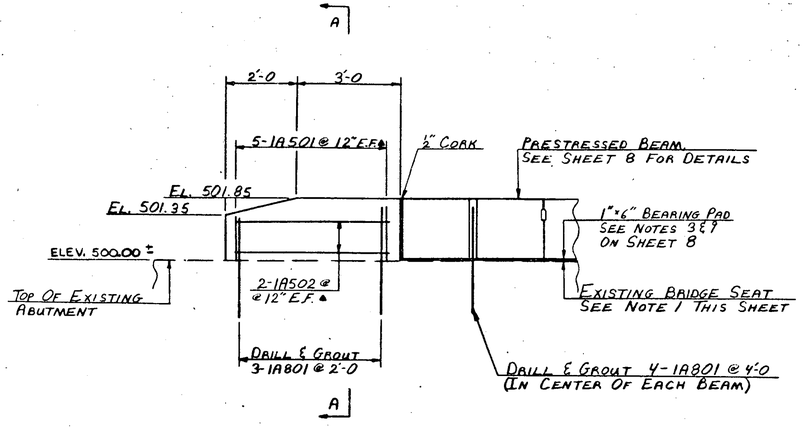
5+41.17 L.T. — 4+21 RT 18" C.G.M.P. (RETAIN)

0 10 20 40
SCALE IN FEET

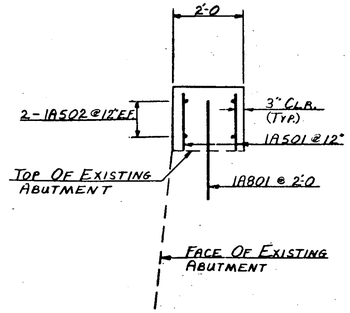
SURVEYED BY TESSIER DATE 12/79
DRAWN BY ORVIS DATE 2/80
TRACED BY PASE DATE 2/80
PROJ. NO. BRZ 1442(2)
SHEET 6 OF 32

D-7

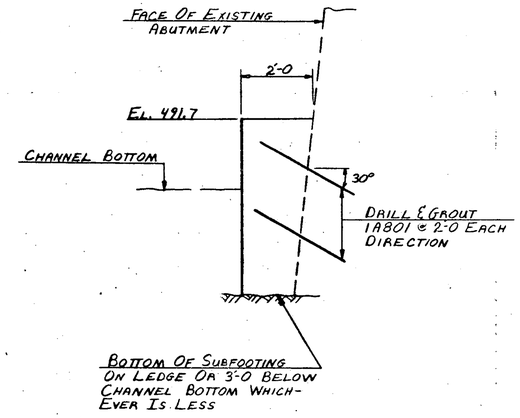
BRUNING 44-131 40592



ELEVATION @ EXISTING ABUTMENT
SCALE: 1/2" = 1'-0



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



SUBFOOTING DETAIL
SCALE 1/2" = 1'-0

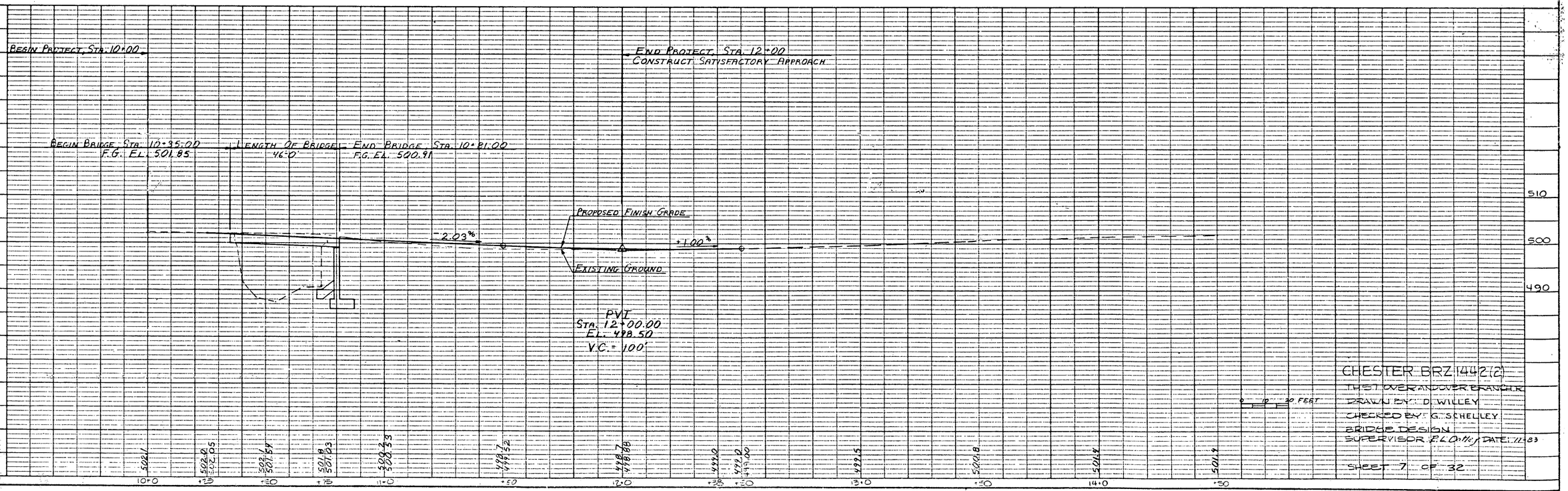
NOTES

1. THE BRIDGE SEAT ON ABUTMENT #1 SHALL BE LEVELED AS DIRECTED BY THE ENGINEER. ANY CONCRETE OR MORTAR REQUIRED TO LEVEL THE BRIDGE SEAT SHALL BE PAID FOR AT THE UNIT PRICE BID FOR CONCRETE, CLASS B.
2. ELEVATION IS TYPICAL FOR BOTH SIDES OF THE NEW DECK ON ABUTMENT #1 AND SHALL BE MODIFIED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
3. A SUBFOOTING SHALL BE POURED IN FRONT OF THE PORTION OF ABUTMENT #1 WHICH IS NOT ON LEDGE.
4. THE 1" FABRIC BEARING PADS AND 1" CORK SHALL BE PLACED ON THE BRIDGE SEAT UNDER THE BEAMS AS SHOWN ON THE ABUTMENT #2 TYPICAL SECTION ON SHEET 9.

ABUTMENT NO. 1 DETAILS

PLAN — SURVYD. — PLOTTED — NOTE BOOK — No. — DATE — BY

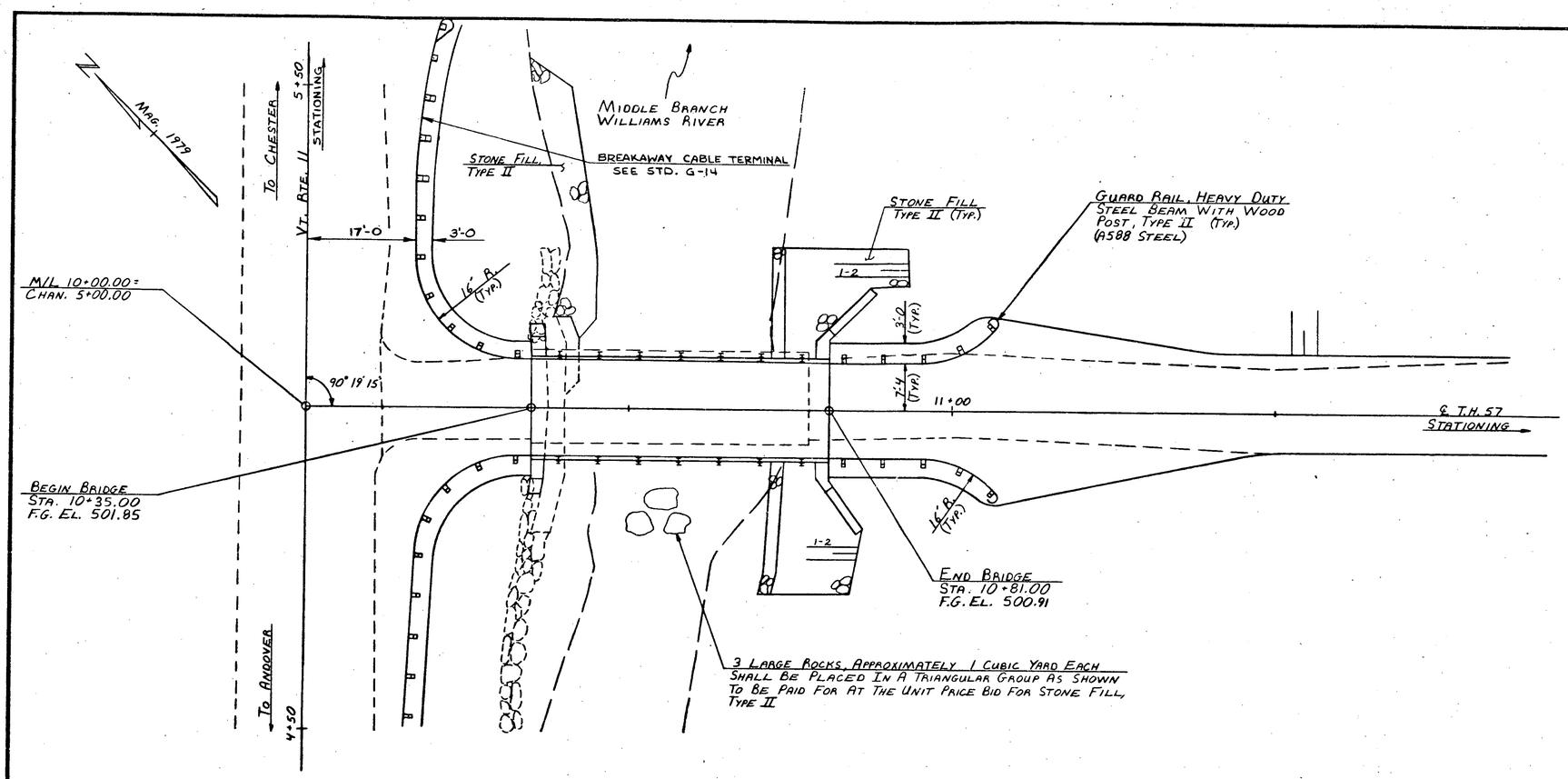
PROFILE — SURVYD. TESSIER — PLOTTED DENDA — NOTE BOOK — GRADES CHECKED — No. — DATE 12/7 4/82 — BY



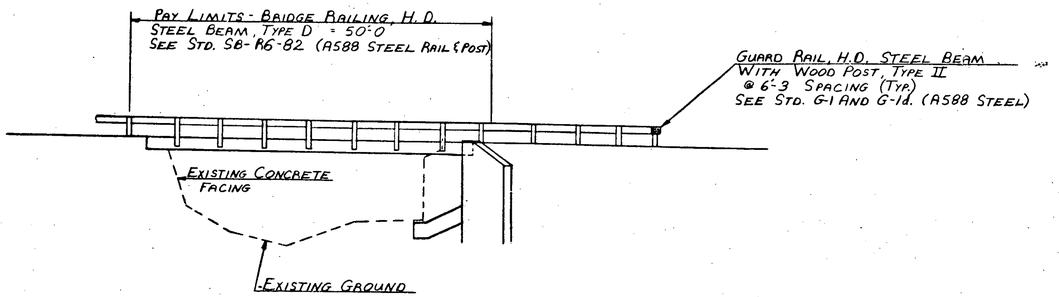
CHESTER BRZ 1442(2)
THST OVER ANDOVER BRANCH R
DRAWN BY: D. WILLEY
CHECKED BY: G. SCHELLEY
BRIDGE DESIGN
SUPERVISOR: [illegible] DATE: 11-83

SHEET 7 OF 32

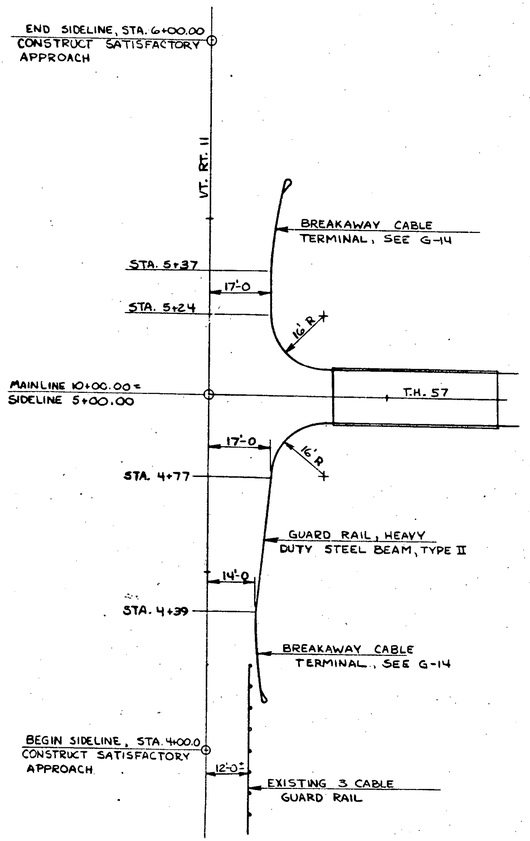
K&E PLATE 1, PLAN-PROFILE
KEUFFEL & ESSER CO.
48 7024 MADE IN U.S.A.



PLAN
SCALE 1" = 10'-0



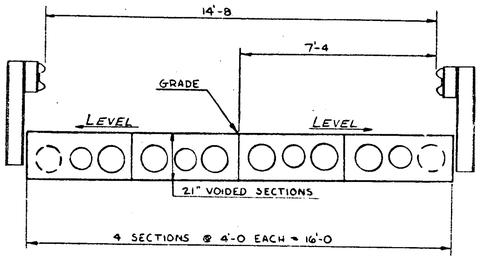
ELEVATION
SCALE 1" = 10'



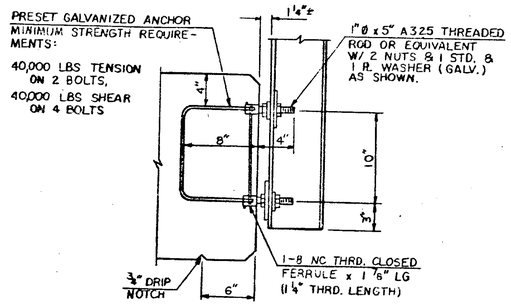
GUARD RAIL DETAIL
SCALE : 1" = 20'

STATE OF VERMONT
AGENCY OF TRANSPORTATION

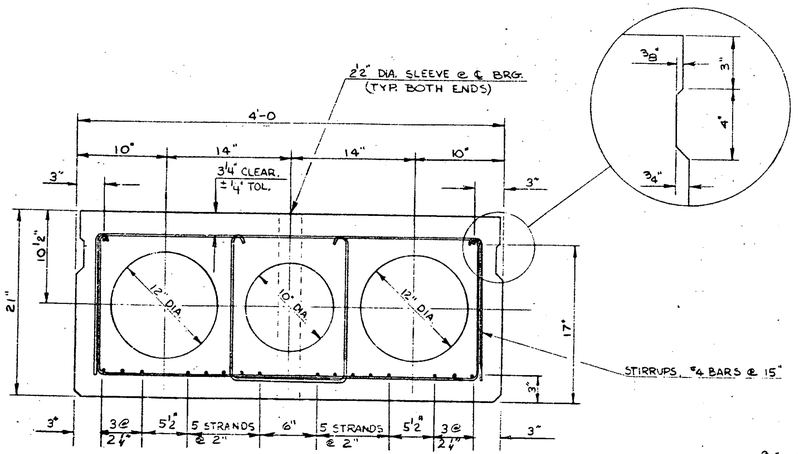
TOWN OF CHESTER	Bridge No. 69
HIGHWAY NO. T.H. 57	Log Sta. / Surv. Sta. 10+50
PLAN AND ELEVATION	
T.H. 57 OVER MIDDLE BRANCH WILLIAMS RIVER	
Designed by C. BENDA	Drawn by D. WILLEY
Checked by G. SCHELLEY date 8/83	Bridge Design Supervisor R.L. Ooffley date 11-83
PROJECT CHESTER	PROJECT NO. BRZ 1442 (2)
Bridge Sheet No.	Sheet 8 of 32



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



BRIDGE RAILING ANCHORAGE DETAIL
SCALE 12" = 1'-0

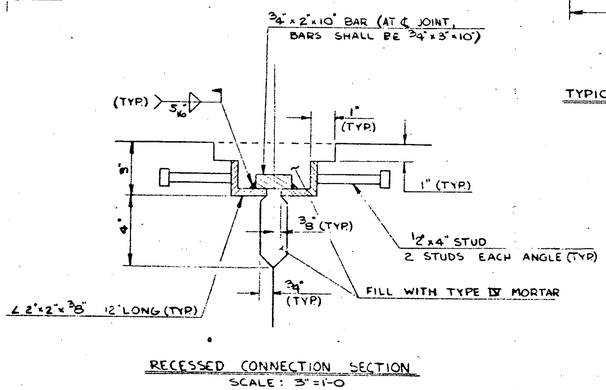


TYPICAL INTERIOR BEAM
SCALE: 1 1/2" = 1'-0

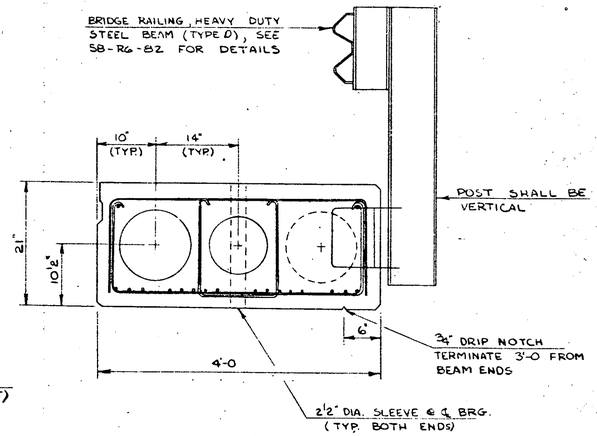
DESIGN DATA: HS-20 LOADING

LL+I MOMENT =	241.7 K-FT.
LL+I REACTION =	26.9 K
DL MOMENT =	177.2 K-FT.
SDL MOMENT =	12.1 K-FT.

TOTAL STRANDS = 18
E = 5.94



RECESSED CONNECTION SECTION
SCALE: 3" = 1'-0



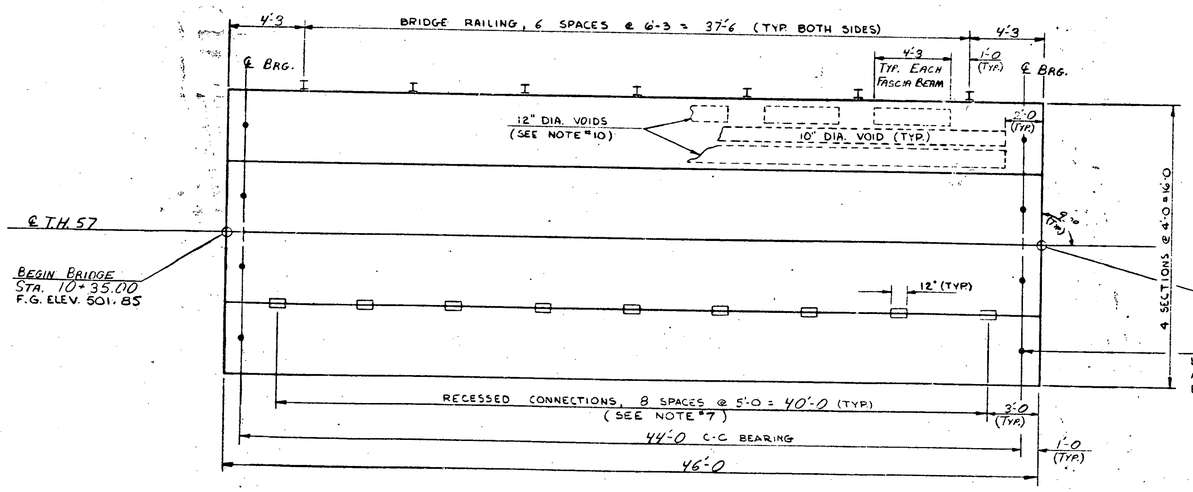
TYPICAL EXTERIOR BEAM WITH FASCIA MOUNTED POST
SCALE: 1" = 1'-0

PRESTRESSED BEAM DATA

MINIMUM CONCRETE STRENGTH: f'_c = 5000 PSI @ 28 DAYS
CONCRETE STRENGTH @ STRESS TRANSFER = f'_{ci} = 4000 PSI
OVERALL LENGTH: 46'-0

THE FABRICATOR MAY AT HIS OPTION, ALTER THE DESIGN SHOWN ABOVE TO MEET HIS PRESTRESSING OPERATION AND MATERIAL REQUIREMENTS.

ALL DESIGN COMPUTATIONS MUST BE FURNISHED TO THE AGENCY IN ACCORDANCE WITH ITEM 510.20, PRESTRESSED CONCRETE MEMBERS (SEC - 48, 2 FEB 83)



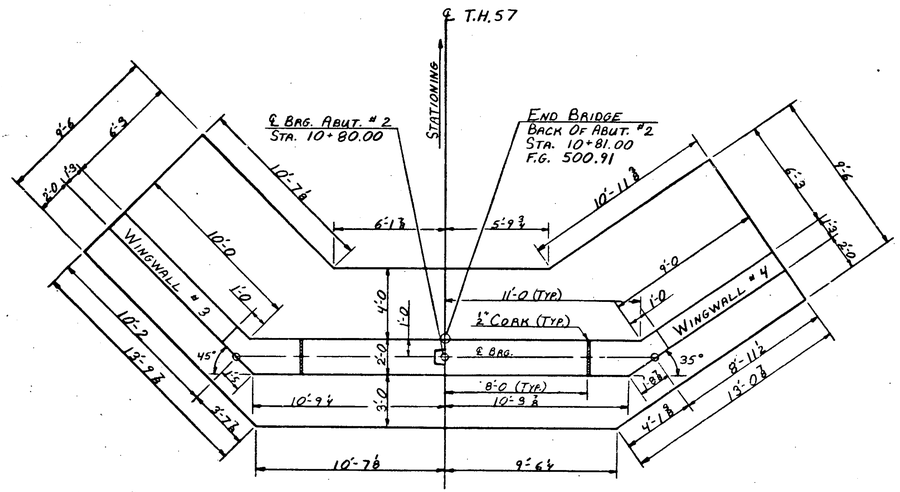
DECK PLAN
SCALE: 1/4" = 1'-0

NOTES

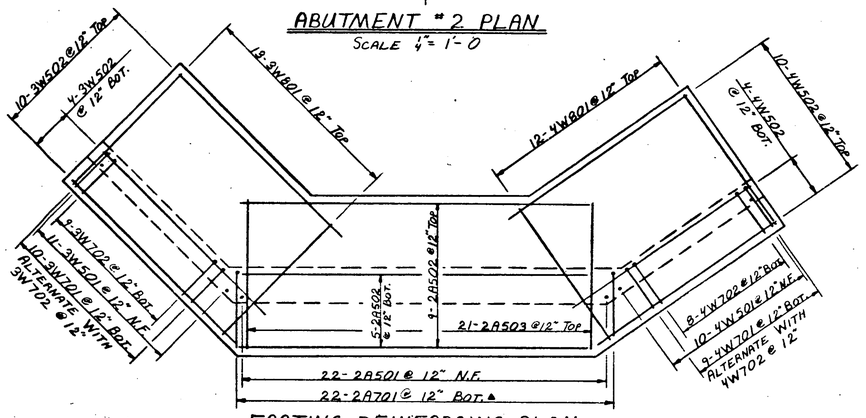
1. THE TOPS OF PRESTRESSED BEAMS SHALL BE SCREED FINISHED.
2. REINFORCING STEEL IN PRESTRESSED UNITS SHALL BE GRADE 60.
3. 1" x 6" x 4'-0 BEARING PADS SHALL MEET REQUIREMENTS OF SECTION 731.
4. PRESTRESSING STEEL SHALL BE 1/2" INCH DIA., 270 KSI, SEVEN WIRE STRAND, AND CONFORM TO ASTM A416.
5. ENDS OF PRESTRESSING STRANDS SHALL BE RECESSED AND GROUTED AS PER STANDARD PRACTICE.
6. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
7. RECESSED CONNECTIONS SHALL BE OMITTED FROM EXTERIOR FACES OF OUTSIDE BEAMS.
8. ADJACENT PRESTRESSED BEAMS SHALL BE BROUGHT INTO AS CLOSE CONTACT AS POSSIBLE PRIOR TO MAKING WELDED CONNECTION. AN ALTERNATE CONNECTION SYSTEM MAY BE SUBMITTED FOR APPROVAL.
9. 1/8" x 6" x 4'-0 BEARING PADS SHALL BE USED AS SHIMS, IF REQUIRED, TO COMPENSATE FOR ANY VARIATION IN CAMBER OF THE BEAMS, AND THEREBY PROVIDE A MORE UNIFORM RIDING SURFACE. SEE VT. STD. SPEC. 731.01 & 731.02.
10. ALL VOIDS SHALL BE CONTINUOUS AND TERMINATE 2'-0 FROM THE ENDS OF THE BEAMS, EXCEPT THE OUTSIDE VOIDS OF THE FASCIA BEAMS WHICH SHALL BE SPACED AS SHOWN TO PROVIDE SUFFICIENT ANCHORAGE FOR THE BRIDGE RAILING.
11. REINFORCING AND PRESTRESSING STEEL SHALL BE IDENTICAL IN INTERIOR AND EXTERIOR BEAMS.
12. NO PAYMENT SHALL BE MADE FOR THE TYPE IV MORTAR GROUT, WHICH SHALL BE CONSIDERED SUBSIDIARY TO ITEM 510.20.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

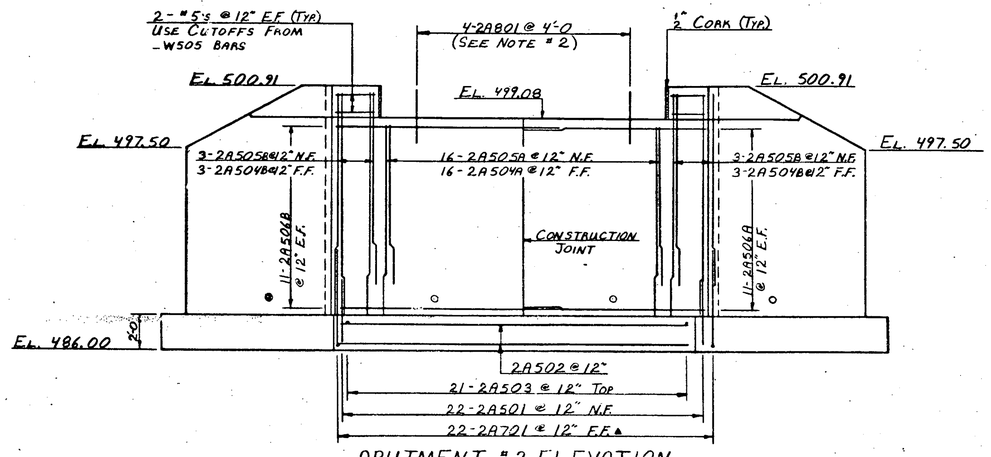
TOWN OF CHESTER	Bridge No. 67
	Log Sta.
HIGHWAY NO. T.H. 57	Surv. Sta. 10+50
T.H. 57 OVER MIDDLE BRANCH WILLIAMS RIVER	
SUPERSTRUCTURE DETAILS	
Designed by C. BENDA	Drawn by D. WILLEY
Checked by G. SCHELLEY date 9/83	Bridge Design Supervisor E.L. Gaffey date 11-83
PROJECT CHESTER	PROJECT NO. BRZ 1442 (2)
Bridge Sheet No.	Sheet 9 of 32



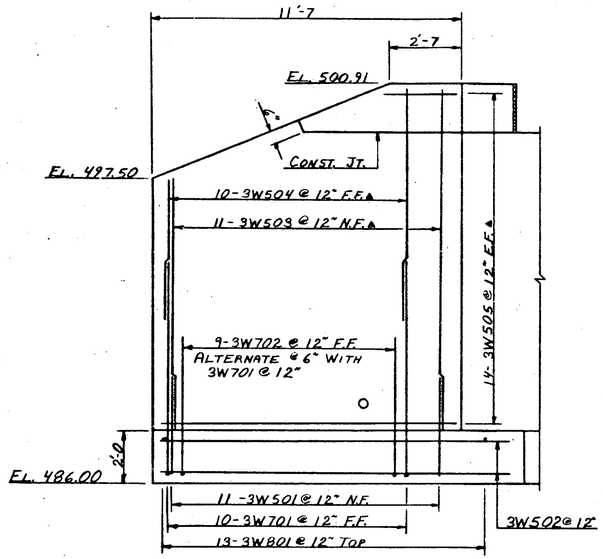
ABUTMENT # 2 PLAN
SCALE 1/4" = 1'-0



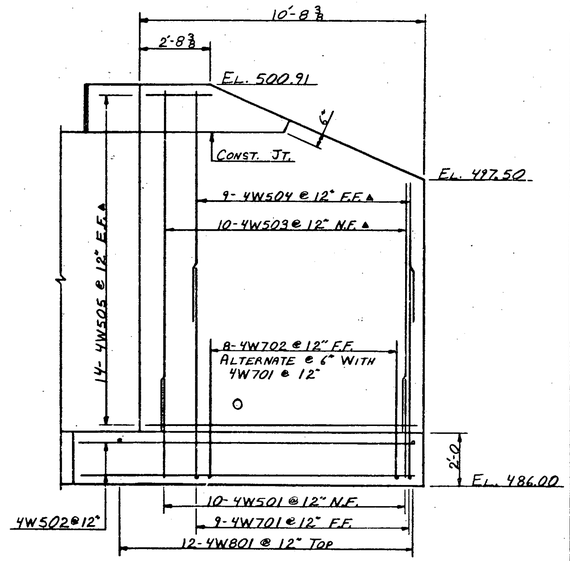
FOOTING REINFORCING PLAN
SCALE 1/4" = 1'-0



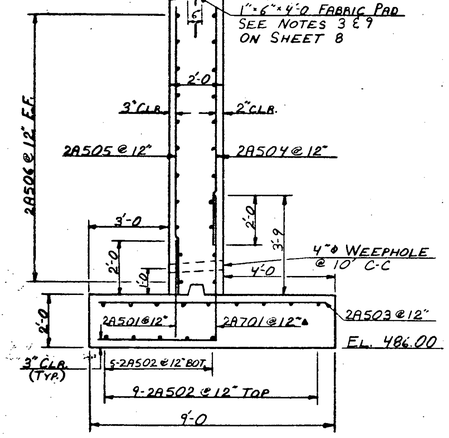
ABUTMENT # 2 ELEVATION
SCALE 1/4" = 1'-0



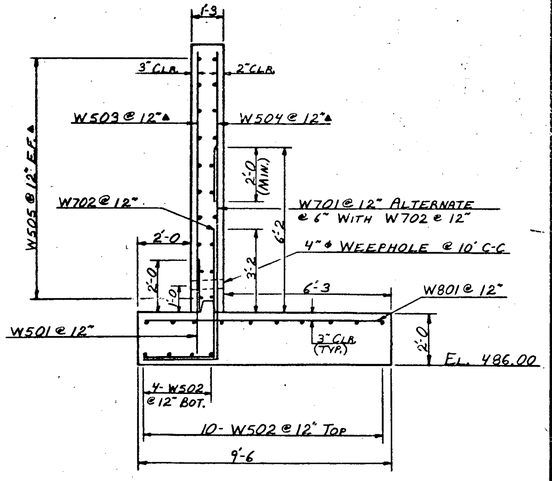
WINGWALL # 3 ELEVATION
SCALE 3/8" = 1'-0



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



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



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

NOTES

1. THE PORTIONS OF THE WINGS ABOVE THE CONSTRUCTION JOINT SHALL NOT BE POURED UNTIL AFTER THE BEAMS ARE SET IN POSITION.
2. DOWELS FOR ANCHORING BEAMS TO ABUTMENT # 2 SHALL BE EITHER POURED IN PLACE OR DRILLED AND GROUTED IN AFTER CONCRETE IS POURED. FOUR DOWELS SHALL BE DRILLED AND GROUTED INTO EXISTING ABUTMENT # 1 IN LOCATIONS SIMILAR TO THOSE SHOWN ON ABUTMENT # 2. EXACT SPACING OF THE DOWELS IS DEPENDENT UPON HOW WELL THE BEAMS FIT TOGETHER.
3. THE EXISTING ABUTMENT # 2 SHALL BE REMOVED UNDER THE ITEMS 'UNCLASSIFIED CHANNEL EXCAVATION' AND 'STRUCTURE EXCAVATION'.
4. ▲- INDICATES CUT TO FIT IN FIELD.
5. FOR ABUTMENT # 1 DETAILS SEE SHEET 6.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF CHESTER	Bridge No. 69
HIGHWAY NO. T.H. 57	Log Sta.
	Surv. Sta. 10+50

ABUTMENT NO.2 DETAILS

T.H. 57 OVER MIDDLE BRANCH WILLIAMS RIVER

Designed by M. EVANS	Drawn by D.C. WILLEY
Checked by G. SCHELLEY date 8/83	Bridge Design Supervisor E.L. Dalley date 11-83
PROJECT CHESTER	PROJECT NO. BRZ 1442 (2)
Bridge Sheet No.	Sheet 10 of 32

BRUNING 44-131 36384

BR-6-83

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
1																	
2				ABUTMENT NO. 1													
3																	
4	20	5	1-6	1A501	STR.												
5	8	5	4-6	1A502	STR.												
6																	
7	20	8	3-0	1AB01	STR.												
8																	
9																	
10				ABUTMENT NO. 2													
11																	
12	22	5	3-9	2A501	STR.												
13	14		20-0	2A502													
14	21		8-6	2A503													
15	16		9-2	2A504A													
16	6		10-11	2A504B													
17	16		10-10	2A505A													
18	6		12-8	2A505B													
19	22		10-2	2A506A													
20	22	5	12-11	2A506B	STR.												
21																	
22																	
23	*23	7	10-1	2A701	17		5-6	4-7									
24																	
25																	
26	4	8	3-0	2AB01	STR.												
27																	
28																	
29																	
30																	
31																	
32				WINGWALL NO. 3													
33																	
34	11	5	3-9	3W501	STR.												
35	14		13-9	3W502													
36	11		12-8	3W503													
37	*11		8-6	3W504													
38	28	5	11-4	3W505	STR.												
39																	
40																	
41	10	7	10-9	3W701	17		7-11	2-10									
42	9	7	7-9	3W702	17		4-11	2-10									
43																	
44																	
45	*14	8	9-0	3W801	STR.												
46																	
47																	
48																	
49																	
50																	
51				WINGWALL NO. 4													
52																	
53	10	5	3-9	4W501	STR.												
54	14		12-8	4W502													
55	10		12-8	4W503													
56	*10		8-6	4W504													
57	28	5	10-4	4W505	STR.												
58																	
59																	
60	9	7	10-9	4W701	17		7-11	2-10									
61	*9	7	7-9	4W702	17		4-11	2-10									
62																	
63																	
64	*13	8	9-0	4W801	STR.												
65																	
66																	
67																	
68																	
69																	
70																	
71																	
72																	
73																	
74																	
75																	
76																	
77																	
78																	
79																	
80																	

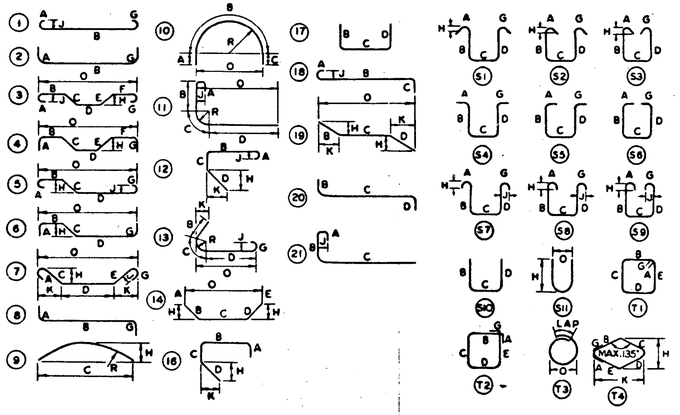
ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
81																	
82																	
83																	
84																	
85																	
86																	
87																	
88																	
89																	
90																	
91																	
92																	
93																	
94																	
95																	
96																	
97																	
98																	
99																	
100																	
101																	
102																	
103																	
104																	
105																	
106																	
107																	
108																	
109																	
110																	
111																	
112																	
113																	
114																	
115																	
116																	
117																	
118																	
119																	
120																	
121																	
122																	
123																	
124																	
125																	
126																	
127																	
128																	
129																	
130																	
131																	
132																	
133																	
134																	
135																	
136																	
137																	
138																	
139																	
140																	
141																	
142																	
143																	
144																	
145																	
146																	
147																	
148																	
149																	
150																	
151																	
152																	
153																	
154																	
155																	
156																	
157																	
158																	
159																	
160																	

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 615-51) *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

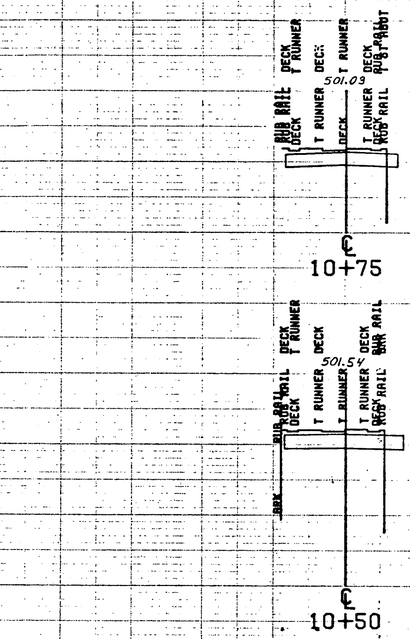
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF CHESTER	BRIDGE NO. 69
HIGHWAY NO. T.H. 57	LOG STA.
	SURV. STA. 10+50
T.H. 57 OVER MIDDLE BRANCH WILLIAMS RIVER	
REINFORCING STEEL SCHEDULE	
DESIGNED BY C. BENDA	DRAWN BY D. WILLEY
CHECKED BY G. SCHELLEY DATE 8/83	BRIDGE DESIGN SUPERVISOR E.L. Dooley DATE 11-83
PROJECT CHESTER	PROJECT NO. BRZ 1442 (2)
BRIDGE SHEET NO.	SHEET 11 OF 32

BRUNING 44 131 40151

BR-5

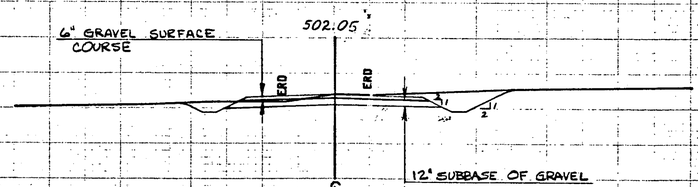
STA. 10+81
END BRIDGE - RESUME ROADWAY



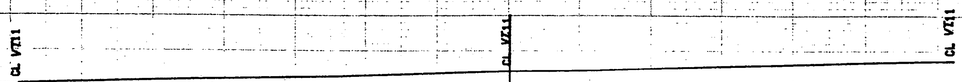
℄ 10+75

℄ 10+50

STA. 10+35
STOP ROADWAY - BEGIN BRIDGE



℄ 10+25



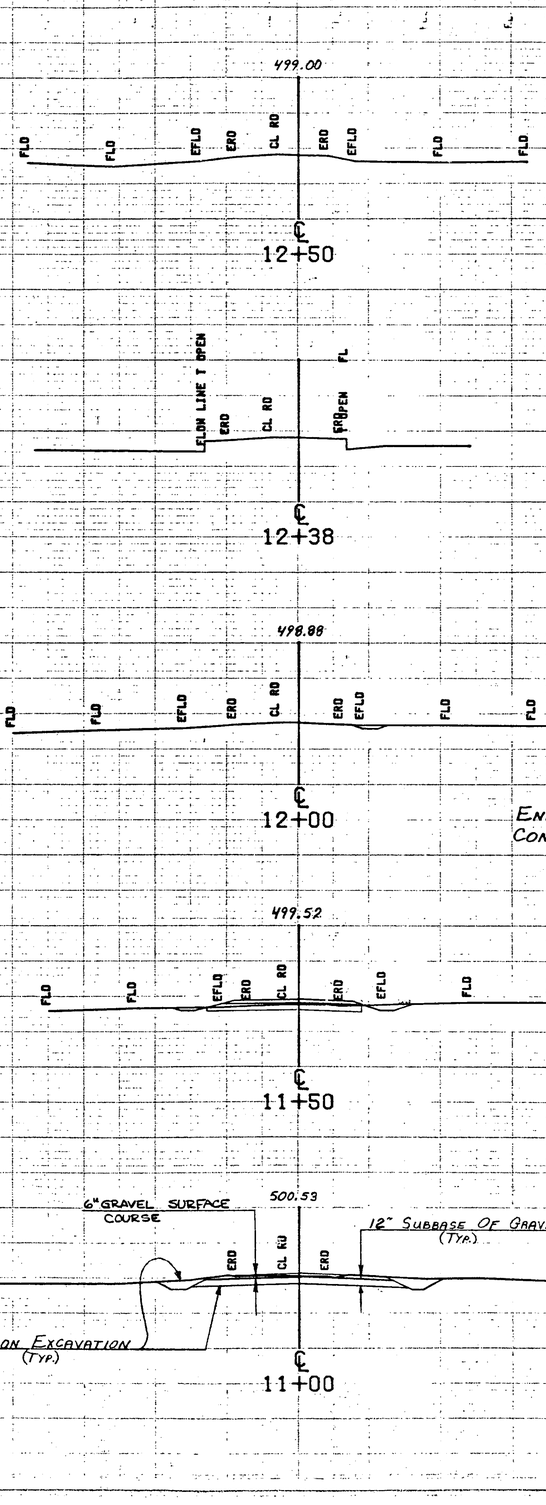
BEGIN PROJECT, STA. 10+00
CONSTRUCT SATISFACTORY APPROACH

℄ 10+00

490
490
490
490

SCALE 10 FEET

FROM STA. 10+00		TO STA. 10+75	
PROJECT NAME	CHESTER	MAIN T.H.57	
NO.	BRZ1442(2)	PLOTTED	02/25/80
SURVEYED BY	TESSIER	DEC. 1979	
SHEET	OF 12 SHEETS	32	



FROM STA. 11+00		TO STA. 12+50
PROJECT NAME	CHESTER MAIN	T.H. 57
NO.	BRZ1442(2)	PLOTTED 02/26/80
SURVEYED BY	TESSIER	DEC. 1979
SHEET OF 13 SHEETS	32	

SCALE 10 FEET

490

490

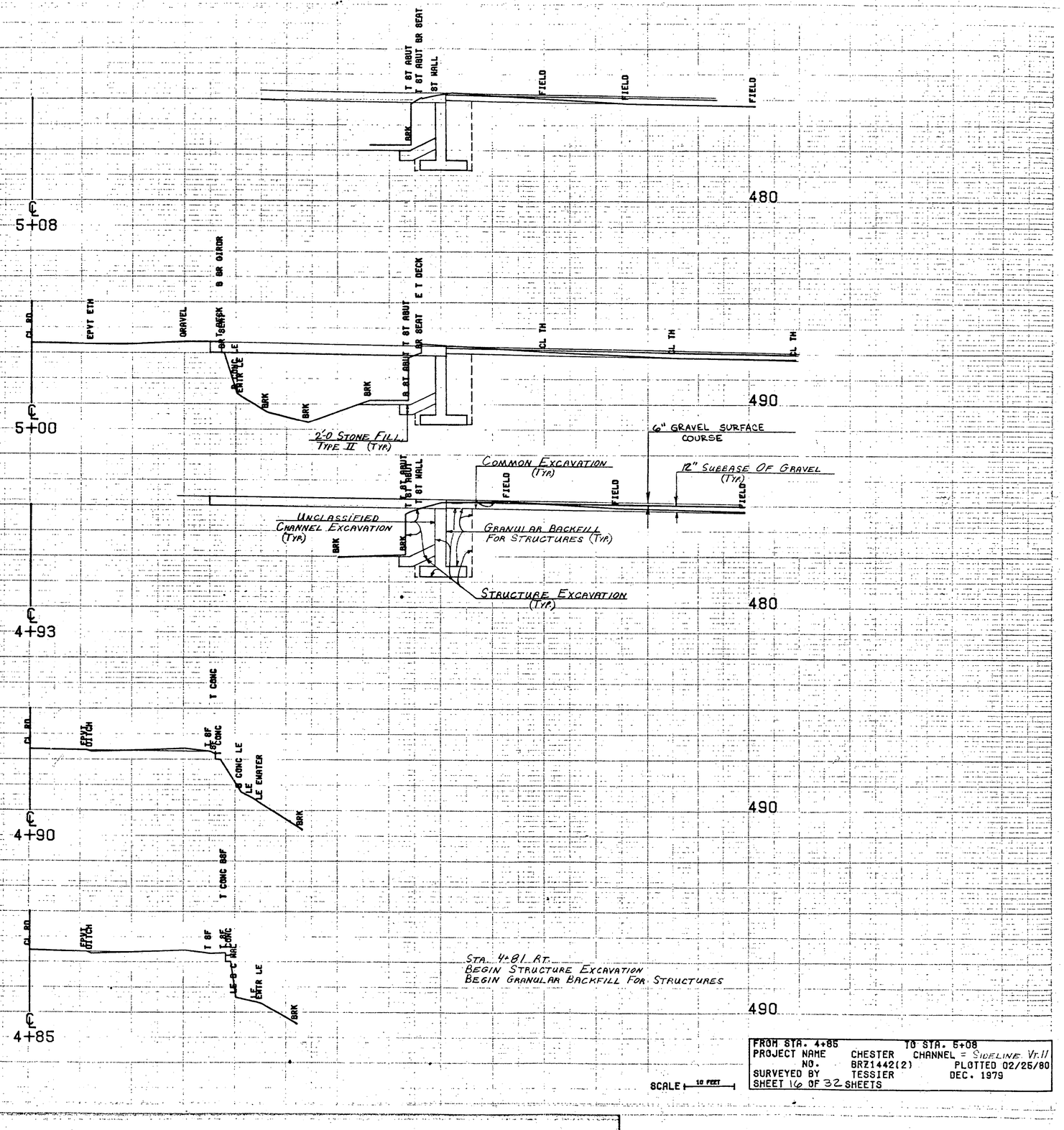
490

490

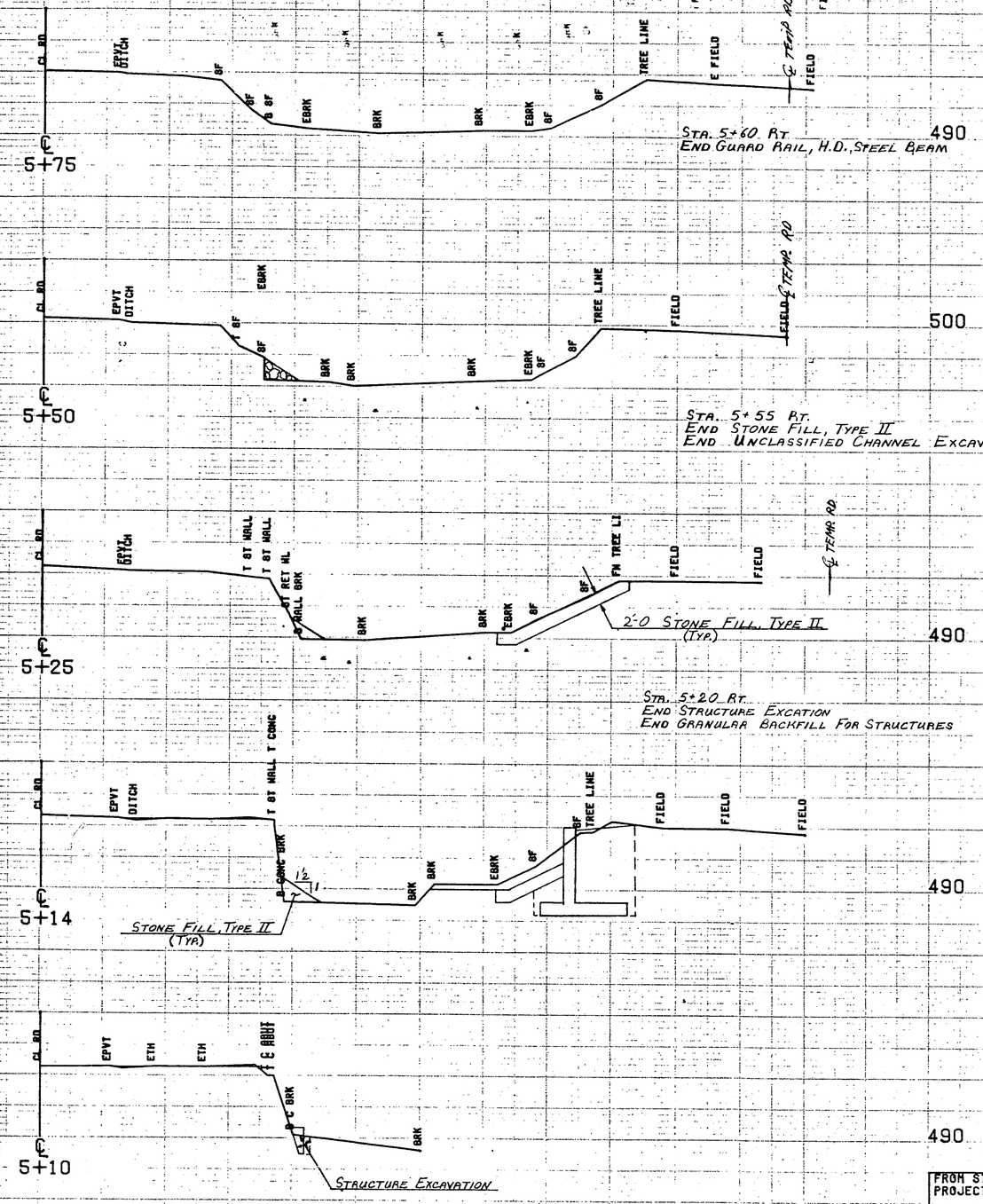
SCALE 10 FEET

FROM STA. 13+00		TO STA. 14+50	
PROJECT NAME	CHESTER	MAIN T.H.57	
NO.	BRZ1442(2)	PLOTTED	02/25/80
SURVEYED BY	TESSIER		DEC. 1979
SHEET OF 14 SHEETS	32		

FROM STA. 4+00 TO STA. 4+81
PROJECT NAME CHESTER CHANNEL = Sideline Vt. II
NO. BRZ1442(2) PLOTTED 02/25/80
SURVEYED BY TESSIER DEC. 1979
SHEET OF 15 SHEETS 32

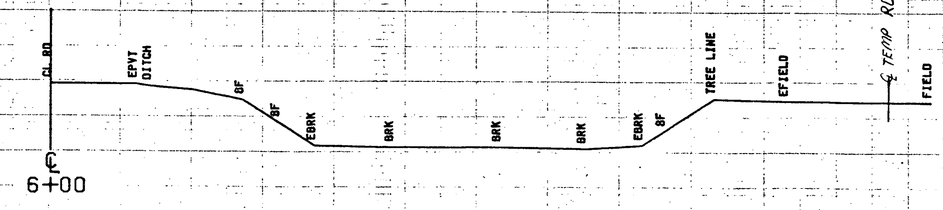


FROM STA. 4+85		TO STA. 5+08	
PROJECT NAME	CHESTER	CHANNEL = SIDELINE Vr.II	
NO.	BRZ1442(2)	PLOTTED 02/25/80	
SURVEYED BY	TESSIER	DEC. 1979	
SHEET 16 OF 32 SHEETS			



FROM STA. 5+10 TO STA. 5+75
PROJECT NAME CHESTER CHANNEL = SIDELINE VT. //
NO. BRZ1442(2) PLOTTED 02/26/80
SURVEYED BY TESSIER DEC. 1979
SHEET 17 OF 32 SHEETS

SCALE 10 FEET



FROM STA. 6+00 TO STA. 6+00

PROJECT NAME CHESTER CHANNEL = SIDELINE Vt. 11

NO. BRZ1442(2) PLOTTED 02/25/80

SURVEYED BY TESSIER DEC. 1979

SHEET 18 OF 32 SHEETS

SCALE 10 FEET

INDEX OF SHEETS

STATE OF VERMONT
AGENCY OF TRANSPORTATION

PROPOSED IMPROVEMENT
BRIDGE PROJECT

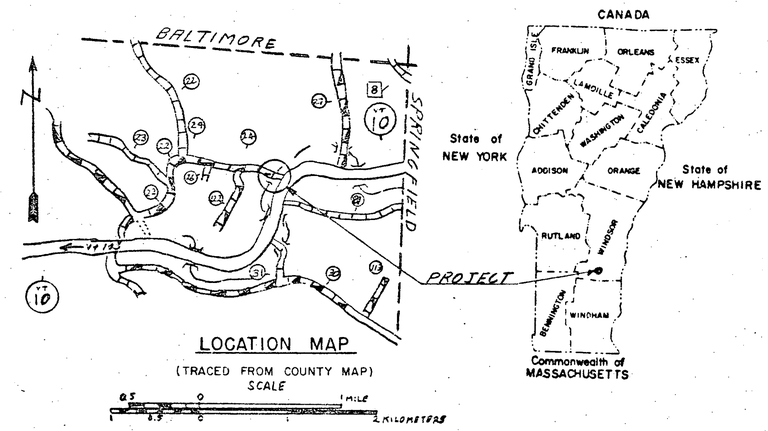
TOWN OF *CHESTER*
COUNTY OF *WINDSOR*

ROUTE NO: *TH 24 - CL 3* BRIDGE NO: *60*

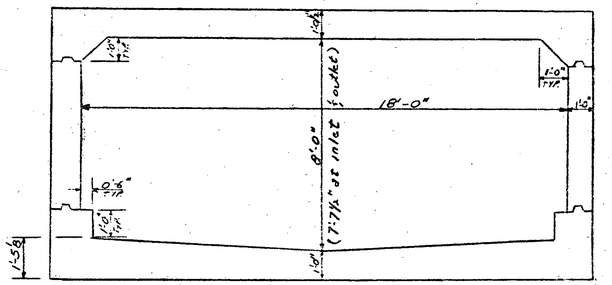
PROJECT LOCATION: *BEGINNING APPROXIMATELY 200 FT. WESTERLY OF VT. RT. 10, AND EXTENDING 200' WESTERLY.*

PROJECT DESCRIPTION: *REMOVAL OF EXISTING STRUCTURE. CONSTRUCT NEW R.C. BOX, RELATED ROADWAY AND CHANNEL WORK*

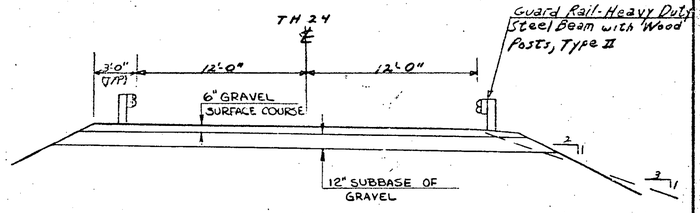
LENGTH OF STRUCTURE:	20.3	FEET
LENGTH OF PARTICIPATION ROADWAY:	179.7	FEET
LENGTH OF NON-PARTICIPATION ROADWAY:	0.0	FEET
LENGTH OF PROJECT:	200.0	FEET



LOCATION MAP
(TRACED FROM COUNTY MAP)
SCALE



TYPICAL BRIDGE SECTION
Scale 3/8" = 1'-0"



TYPICAL ROADWAY SECTION
Scale 1"=5'

GENERAL NOTES

1. *The existing structure shall be removed in its entirety. PAYMENT FOR 'REMOVAL OF STRUCTURE' THE EXISTING DECKING AND BEAMS SHALL REMAIN THE PROPERTY OF THE TOWN.*
2. *Water Repellent shall be applied to all exposed concrete surfaces excepting the interior of the box.*
3. *THE EXISTING STONE WALL TO BE REMOVED FROM ± 11+50 RT. TO ± 11+75 RT. IS TO BE STOCKPILED NEAR ITS PRESENT LOCATION SO IT CAN BE REPLACED BY THE TOWN AFTER COMPLETION OF THE PROJECT. ANY PORTIONS OF OTHER STONE WALLS, WITHIN THE PROJECT LIMITS, WHICH ARE DISTURBED DURING CONSTRUCTION SHALL BE REBUILT BY THE CONTRACTOR TO THE SATISFACTION OF THE PROPERTY OWNER. PAYMENT FOR THIS WORK SHALL BE SUBSIDIARY TO ALL OTHER CONTRACT ITEMS.*
4. *ALL DISTURBED EARTH SURFACES AND NEW EMBANKMENTS SHALL BE FERTILIZED, SEEDED AND MULCHED IN ACCORDANCE WITH SECTION 651, TURF ESTABLISHMENT. PAYMENT WILL BE CONSIDERED TO BE SUBSIDIARY TO ALL OTHER CONTRACT ITEMS.*
5. *Design loading is H-20*
6. *T.H. 24 MAY BE CLOSED TO VEHICULAR TRAFFIC DURING CONSTRUCTION. BUT, PEDESTRIAN TRAFFIC MUST BE MAINTAINED, AT ALL TIMES, FOR THE DURATION OF THE PROJECT. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR ITEM 638.12, 'TEMPORARY FOOT BRIDGE'. THE CONTRACTOR MUST GIVE THE TOWN TWO WEEKS NOTICE PRIOR TO CLOSING T.H. 24. SEE SPECIAL PROVISIONS FOR TIME RESTRICTIONS ON CLOSING T.H. 24.*

TRAFFIC COUNT
1982 ADT 200
1992 ADT 230

CONVENTIONAL SIGNS

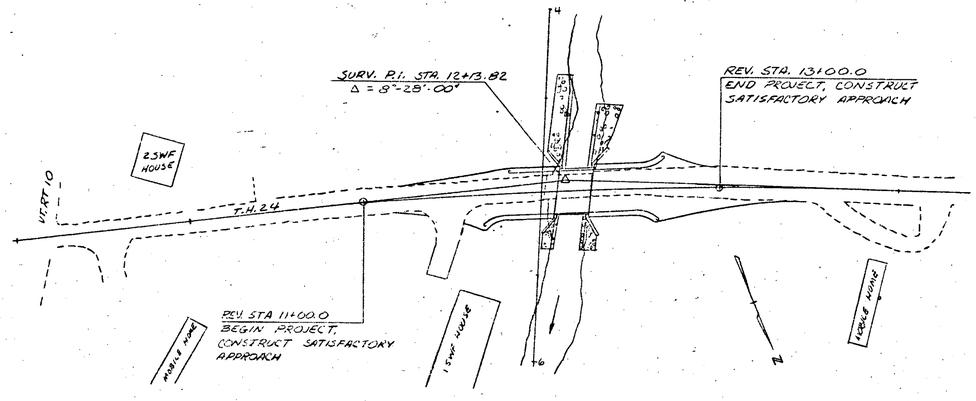
COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W TAKING LINE
SLOPE RIGHTS SR
TOP OF CUT
TOE OF SLOPE

HYDRAULIC DATA

Drainage Area = 8.58 Sq. Mi.

Q_{10} = 850 cfs	HW Elev. = 491.9
Q_{25} = 1100 cfs	HW Elev. = 492.8
Q_{50} = 1300 cfs	HW Elev. = 493.8
Q_{100} = 1500 cfs	HW Elev. = 494.3
Tailwater at Q_{25} =	490.7
Velocity at Q_{25} =	10.8 FPS

DATUM
VERTICAL *Assumed*
HORIZONTAL *N/A*



PLAN
Scale 1"=40'

These plans are subject to such engineering changes as may be required by the Federal Highway Administration or the Director of Engineering and Construction.

Construction is to be carried on in accordance with these plans and the Standard Specifications for Highway and Bridge Construction dated March, 1976, as approved by the Federal Highway Administration on October 27, 1976 for use on this project, including all subsequent revisions and such revised specifications and special provisions as are incorporated in these plans.

SUBMITTED BY ORDER OF THE STATE TRANSPORTATION BOARD

APPROVED SJC for PE DATE 7-22-82
DIRECTOR OF ENGINEERING AND CONSTRUCTION

PROJECT	PROJECT NO.
CHESTER	BRZ 1442(8)

SHEET 19 OF 32 SHEETS

D-10

SJB 7/21/81

BRUNING 44-131-A0592-1

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

TABLE OF PROJECT PROPERTY ACQUISITION

PARCEL NO.	GRANTOR	SHEET NO.	BEGINNING STATION	ENDING STATION	TAKING	REM.	RIGHTS	TITLE TAKEN	DATE	TOWN OR CITY RECORDED	BK.	PG.	REMARKS
1	BARRABY, MAYNARD E. & ELEANOR E.	3	REV. 11+45 LT REV. 12+05 LT	REV. 12+28 LT. REV. 12+18 LT.			CONST. EASE (T) (0.03 A±) CHANNEL (P) (360 SF±)	WDOE		CHESTER			1123 SF±
2	BAURIES, RICHARD E.	3	REV. 11+90 RT REV. 11+70 RT. REV. 11+45 RT. REV. 11+50 RT. REV. 11+84 RT. REV. 11+92 RT.	REV. 12+16 RT. REV. 12+14 RT. REV. 11+90 RT. REV. 12+08 RT.	0.01 A±		 DRIVE (T) CONST. EASE. (T) (0.01 A±) SLOPE (T) (12 SF±) CHANNEL (P) (48 SF±)	WDOE		CHESTER			147 SF± SPRING 674 SF±
3	NEWTON, WILLIAM V. & PAULINE E	3	REV. 12+22 LT REV. 12+27 LT.	REV. 12+86 LT REV. 12+45 LT.			CONST. EASE. (T) (0.02 A±) CHANNEL (P) (264 SF±)	WDOE		CHESTER			777 SF±
4	STILLWELL, ROBERT L. & DAWN M.	3	REV. 12+14 RT. REV. 12+12 RT. REV. 12+20 RT. REV. 12+33 RT.	REV. 12+40 RT REV. 13+00 RT. REV. 12+30 RT.	0.01 A±		CONST. EASE. (T) (0.02 A±) CHANNEL (P) (40 SF±)	W.D.	8-25-83	CHESTER	62	198-200	192 SF± 810 SF± SPRING
5	CENTRAL VERMONT PUBLIC SERVICE												UTILITY
6	CONTINENTAL TELEPHONE CO.												UTILITY

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	2	PARCEL #2 BAURIES REVISED SLOPE AREA FROM 125 S.F. ± 12 S.F. PER C.O. # 5881 Plans Given To Shmtd. 12-1-83	5-17-83	DEM	

MADE BY: F.J. MALNATI JR. DATE 4/21/83

CHECKED BY: J.D. PATERSON DATE 4/21/83

DR. RT. — DRAINAGE RIGHT
DIT. RT. — DITCHING RIGHT
CH. RT. — CHANNEL RIGHT
DRIVE RT. — DRIVE RIGHT
CUL. RT. — CULVERT RIGHT
(D) — DEMOLITION OR REMOVAL
[W] — WATER SOURCES

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

LEGEND
CONST. EASE. — CONST. EASEMENT
SR — SR — SLOPE RIGHTS
P/L — P/L — PROPERTY LINE
△ — △ — △ — TOP OF CUT
○ — ○ — ○ — TOE OF SLOPE

APPROVED _____ DATE _____
CHIEF OF PLANS & TITLES

PROJECT CHESTER
NO. BRZ 1442(8)
SHEET 20 OF 32

BRUNING 44-1314-0992

ROW

BRIDGE RAILING, HEAVY DUTY STEEL BEAM TYPE C
12+03 RT. TO 12+29 RT.
12+03 LT. TO 12+33 LT.

Construct Drive Sta. 11+45 Rt.

BEGIN R.O.W. PROJECT
BRZ 1442(8) REV. STA. 11+00 ℄

POT 9+09.46 (℄ YT. RT. 10)

POT 10+00.0

POT 10+92.0

REV. STA. 11+00.0, BEGIN PROJECT CONSTRUCT SATISFACTORY APPROACH

M.L. POC 12+00.0 =
CHAN. POT 5+00.0
△ 84°43'-30" LT OF TANG. TO CURVE AT 12+00.0

BARRABY, MAYNARD E. & ELEANOR E.

CONST. EASE (T)

WELL

2 SWF HOUSE

FIELD DRIVE

6" CEDAR

ASH

10" M.

8" ELM

N 75° W

GRAVEL DRIVE

ASH

10" CHY.

5" ASH

24" ELM

12" M.

REV. P.C. 10+44.18

P.C. 11+07.79

IRON PIN

END CONCRETE WALK BEGIN REV. STA. 12 CONST.

EASE (T)

4' CONC. WELL TILE

DRIVE RT. (T)

BAURIES, RICHARD E.

ANCHOR FOR STEEL BEAM GUARD RAIL WITH WOOD POSTS, AT CHAINING

11+78 RT.
12+54 RT.
11+21 LT.
12+58 LT.

MOBILE HOME

1 SWF DUPLEX

REV 11+90 23' RT.

REV 12+40 22' RT.

REV 12+40 30' RT.

REV 12+14 30' RT.

REV 11+90 28' RT.

CURVE #1
△ 8° 28' 00"
D 4° 00' 00"
R 1432.40'
T 106.03'
L 211.67'
E 3.92'

PI 12+13.82 = 12+13.43

CONST. EASE (T)

REV. STA. 13+00 End Project Construct Satisfactory Approach

POT 14+19.61

NEWTON (LOT 21)

12" ASH

N 66° 32' W

EXISTING BRIDGE INFORMATION

ABUTMENTS — LAID UP STONE — 2.5' THICK
5 — 12" X 6" I BEAMS, POOR CONDITION

NEWTON, WILLIAM V. & PAULINE F. — LOT 22

GUARD RAIL, HEAVY DUTY STEEL BEAM WITH WOOD POSTS, TYPE II
11+66 RT. TO 12+03 RT.
12+29 RT. TO 12+65 RT.
11+33 LT. TO 12+14 LT.
12+33 LT. TO 12+70 LT.

END R.O.W. PROJECT
BRZ 1442(8) REV. STA. 13+50 ℄

REV. PT 13+82.65

PT 13+19.46

STILLWELL, ROBERT L. & DAWN M.

SPRING BOX

BM 1
S.I.T. 36" M.
ASMD ELEV. 5.00.00

MOBILE HOME 10' x 50'

REV. CURVE #1
L 8° 28' 00"
D 2° 30' 00"
R 2291.83'
T 169.64'
L 339.07'
E 6.27'

NOTE

THIS SHEET IS FOR R.O.W. LIMIT DETAILS ONLY. REFER TO THE REMAINING PLAN SHEETS FOR ALL OTHER CONTRACT DETAILS.

EXISTING ℄ ROAD PROFILE

-3.44 %

0.000 %

+5.82 %

P.V.I. 111+25 494.24 50.00

P.V.I. 127+55 494.24 50.00

500

490

9+00 10+00 11+00 12+00 13+00 14+00

SCALE IN FEET 0 10 20

PROFILE 9+00 ~ 14+00

SURVEY BY COLBY 12/81

CHESTER BRZ 1442(8)

SHEET 21 OF 32

PLAN — SURVEYED, PLOTTED, DRAWN, CHECKED, AS-BUILT, NOTE BOOK, SHEET CHECKED, No., DETAILS, REVISIONS, CHECKED, BY, DATE

PROFILE — SURVEYED, PLOTTED, DRAWN, CHECKED, AS-BUILT, NOTE BOOK, SHEET CHECKED, No., DETAILS, REVISIONS, CHECKED, BY, DATE

BRIDGE RAILING, HEAVY DUTY STEEL BEAM, TYPE C

12+03 RT. TO 12+28 RT.
12+08 LT. TO 12+33 LT.

Construct Drive
Sta. 11+45 Rt.

M.L. POC 12+00.0 = CHAN. POT 5+00.0

△ 84°-43'-30" LT OF TANG. TO CURVE AT 12+00.0

EXISTING BRIDGE INFORMATION

ABUTMENTS — LAID UP STONE — 2.5' THICK
5-12"X6" I BEAMS, POOR CONDITION

GUARD RAIL, HEAVY DUTY STEEL BEAM WITH WOOD POSTS, TYPE II

11+66 RT. TO 12+03 RT.
12+28 RT. TO 12+65 RT.
11+83 LT. TO 12+08 LT.
12+33 LT. TO 12+70 LT.

POT 9+09.46 (℄ VT. RT. 10)

POT 10+00.0

POT 10+92.0

FIELD

REV. STA. 11+00.0, BEGIN PROJECT CONSTRUCT SATISFACTORY APPROACH

PI 12+13.82 = 12+13.43

REV. PI 12+13.82 = 12+13.21

REV. Sta. 13+00 End Project Construct Satisfactory Approach

POT 14+19.61

2 SWF HOUSE

6" CEDAR

ASH

FIELD DRIVE

10" M.

8" ELM

WOODS

10" BUTT

12" ASH

48 / 64

48 / 2 / 2

4 / 183 / 40-T / 56

N 75° W

N 66° 32' W

REV. ℄

GRAVEL DRIVE

ASH

10" CHY.

5" ASH

15" M.

I.P.

24" ELM

24" M.

END ROADWAY, BEGIN BOX REV. STA. 12+07.85, F.G. ELEV. 494.24

4' CONC. WELL TILE

3'X3' SPRING BOX

END BOX, RESUME ROADWAY REV. STA. 12+28.15, F.G. ELEV. 494.24

APPROXIMATE AERIAL RELOCATION (BY C.V.P.S.)

REV. PC. 10+44.18

PC 11+07.79

PT 13+19.46

REV. PT. 13+62.85

BM 1
S.I.T. 36" M.
ASMD. ELEV. 500.00

MOBILE HOME 10'X 50'

MOBILE HOME

1 SWF HOUSE DUPLEX

12" M.

ANCHOR FOR STEEL BEAM GUARD RAIL WITH WOOD POSTS AT OPENINGS

11+78 RT.
12+53 RT.
11+83 LT.
12+58 LT.

CURVE #1
Δ 8° 28' 00"
D 4° 00' 00"
R 1432.40'
T 106.03'
L 211.67'
E 3.92'

REV. CURVE #1
Δ 8°28' 00"
D 2°30' 00"
R 2291.83'
T 169.64'
L 339.67'
E 6.27'

N

6+0

4+0

PLAN
DRAFTED
TRACED
NOTE BOOK
No.
BY
DATE

PROFILE
QUANTITIES
CHECKED
NOTE BOOK
No.
BY
DATE

EXISTING ℄ ROAD PROFILE

-3.440 %
0.000 %
+5.6888 %

PVI 11+23 494.24 50' VC

PVI 12+53 497.24 50' VC

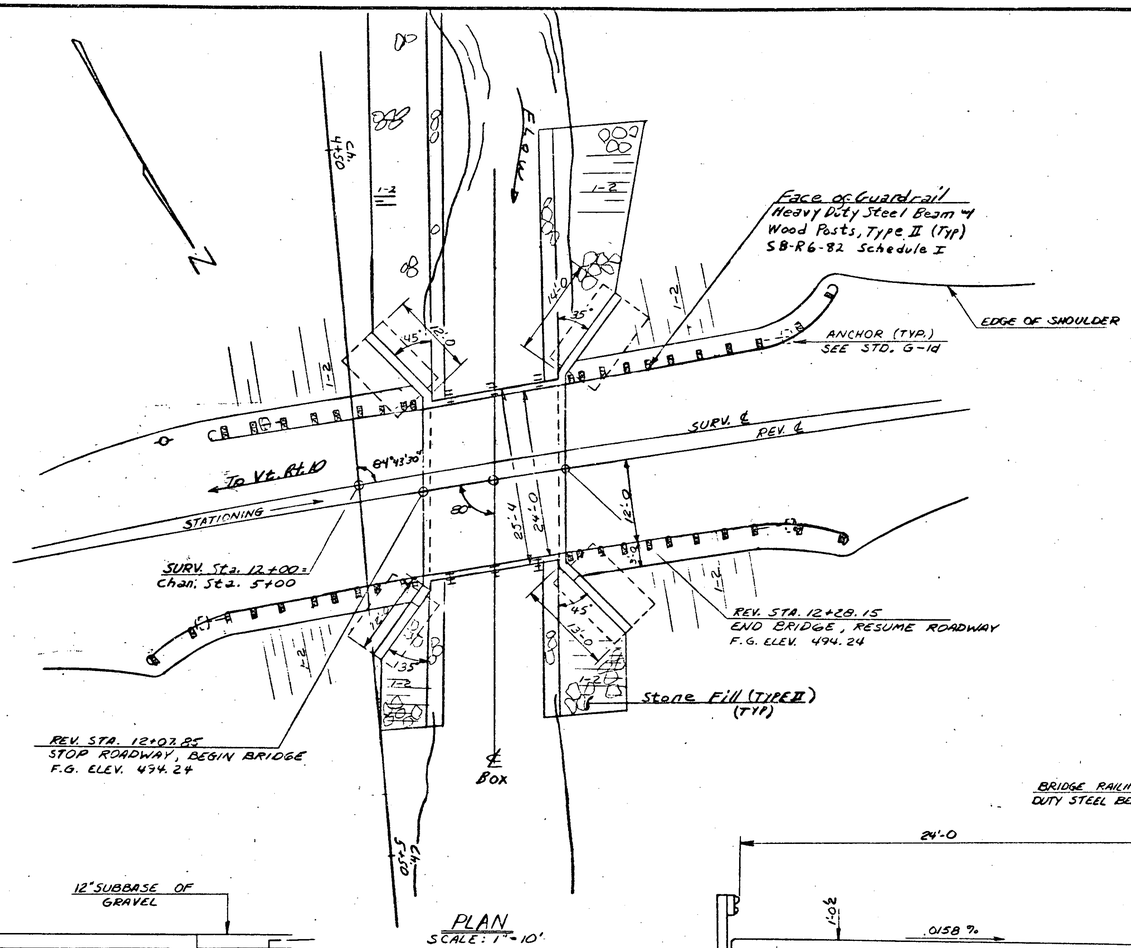
500
490

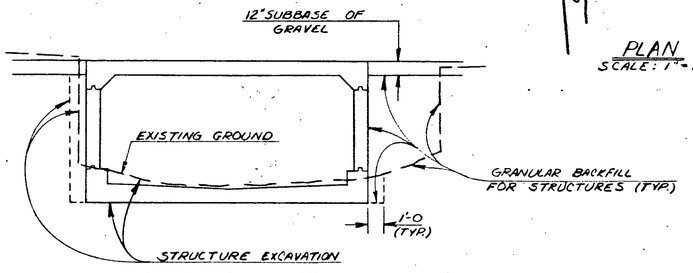
SCALE IN FEET
0 10 20
10
5
0

PROFILE 9+00 ~ 14+00
CHESTER
BRZ 1442(8)
SURVEY BY COLBY 12/81
SHEET NO. 22 OF 32

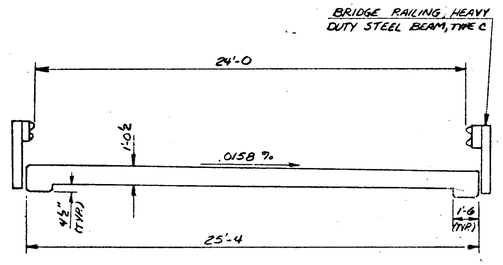
9+00 10+00 11+00 12+00 13+00 14+00

PLATE 1, PLAN & PROFILE
Milford E. Beaver Co.
40 1021 Made in U.S.A.



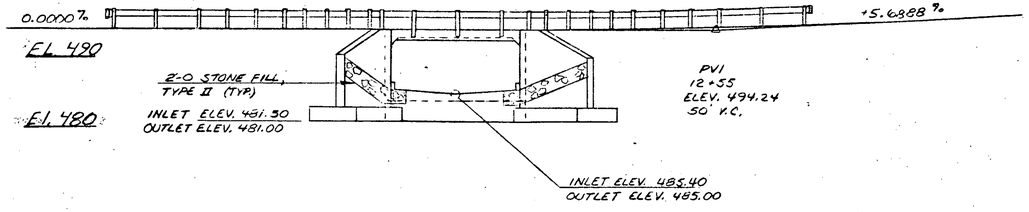


EARTHWORK DETAIL



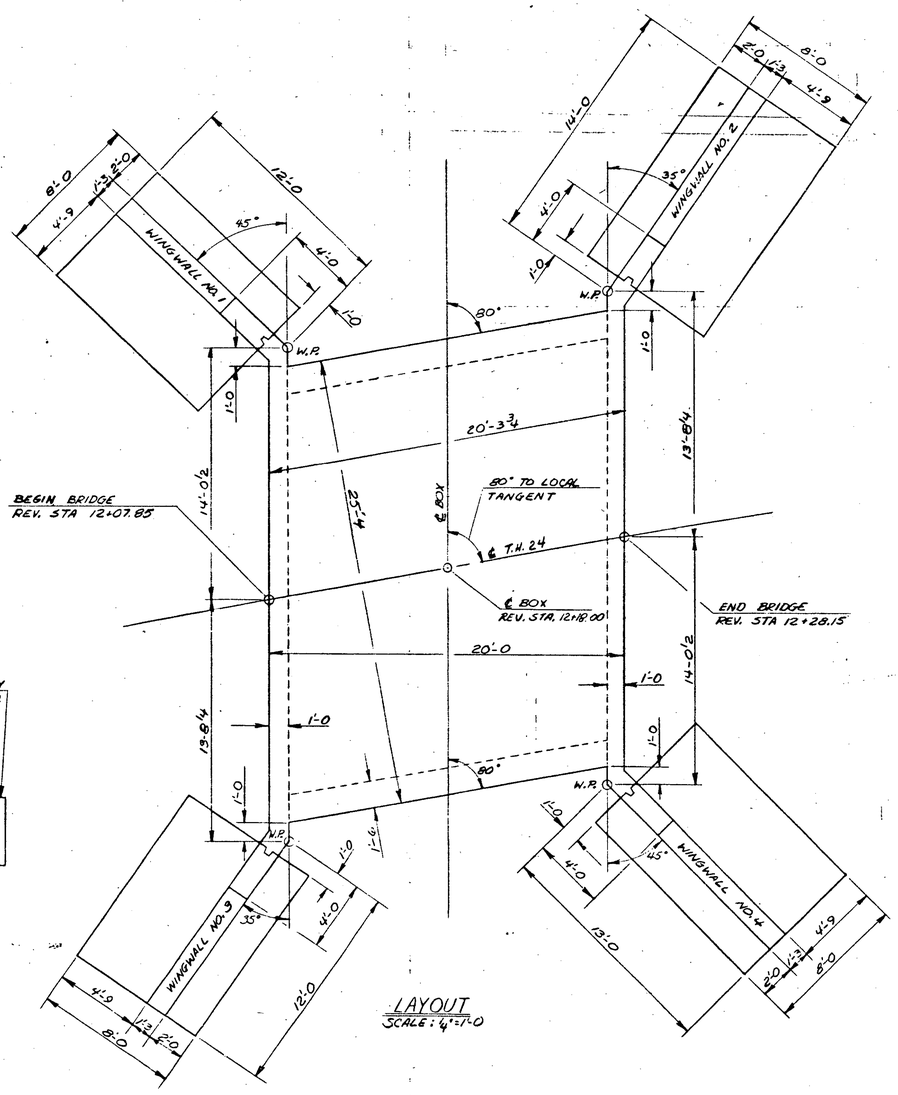
ROADWAY CROSS SECTION AT BOX

SCALE: 1/4"=1'-0



ELEVATION

Scale 1":10'



LAYOUT

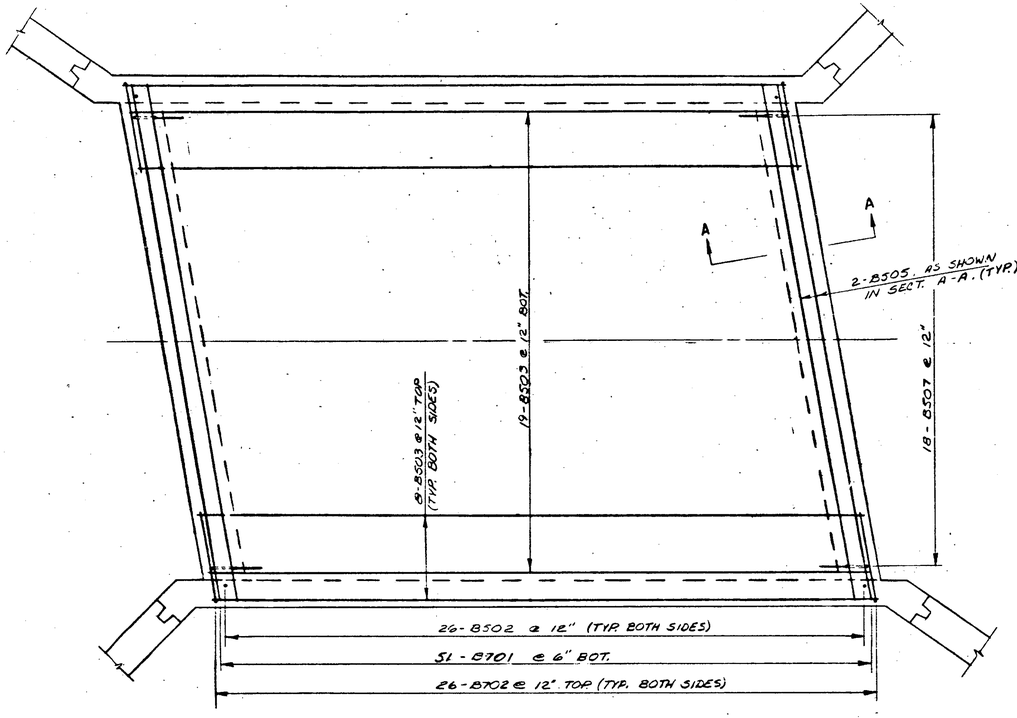
SCALE: 1/4"=1'-0

STATE OF VERMONT
AGENCY OF TRANSPORTATION

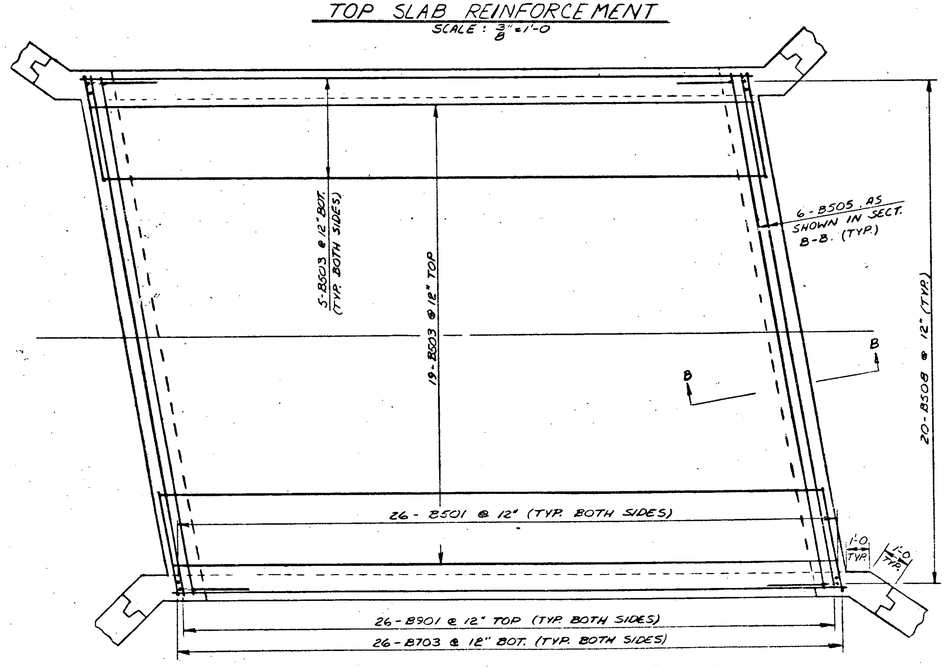
TOWN OF CHESTER	Bridge No. 60
HIGHWAY NO. T.H. 24-C1.3	Log Sta.
	Surv. Sta. 12+19
TH 24 OVER BROOK	
PLAN & ELEVATION	
Designed by W. Tatro	Drawn by G. Schelley, W. Jarvis
Checked by D. Willey date 7-83	Bridge Design Supervisor R.L. Ouellette date 9-83
PROJECT CHESTER	PROJECT NO. BRZ 1442 (8)
Bridge Sheet No.	Sheet 23 of 32

BRUNING 44-131 40151

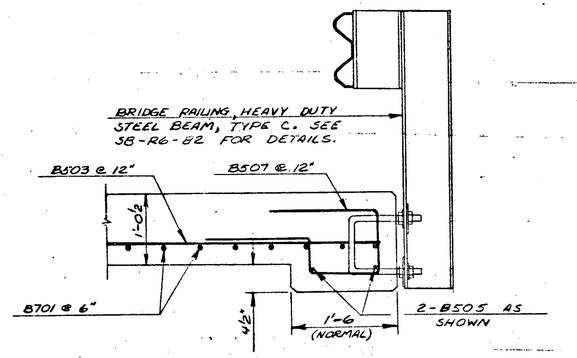
BR-6



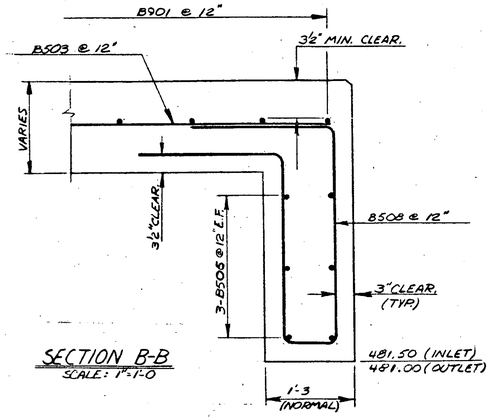
TOP SLAB REINFORCEMENT
SCALE: 3/8"=1'-0



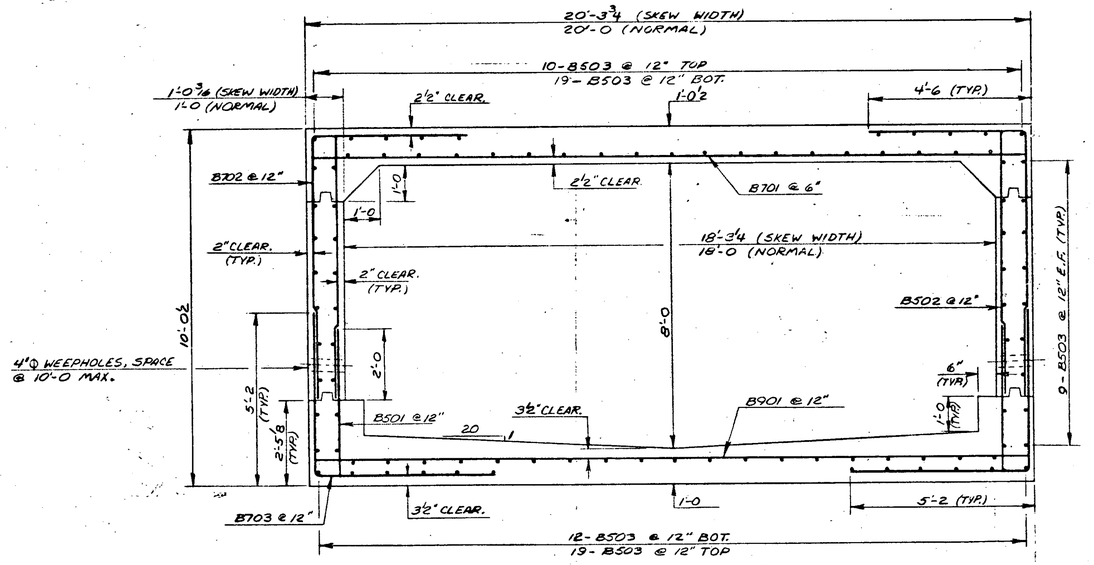
BOTTOM SLAB REINFORCEMENT
SCALE: 3/8"=1'-0



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



SECTION B-B
SCALE: 1"=1'-0



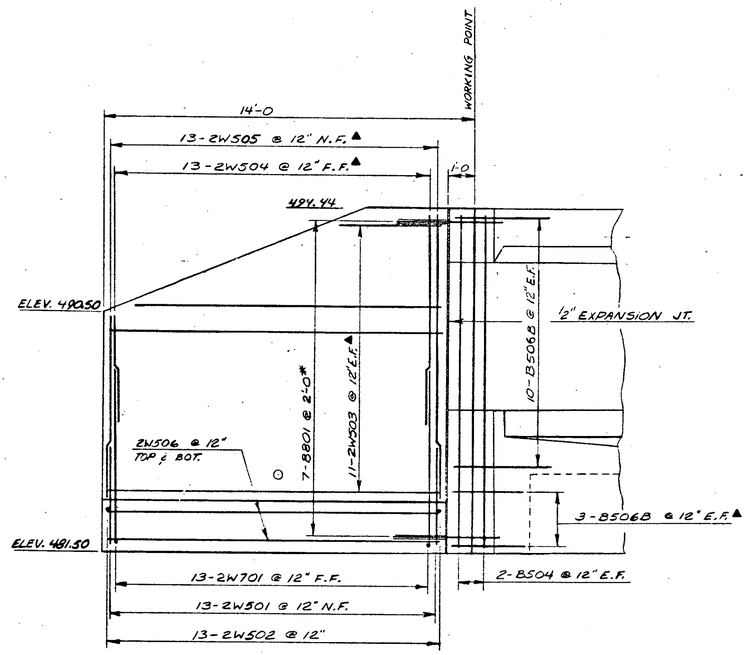
TYPICAL BOX SECTION (SKEWED)
SCALE: ½"=1'-0

NOTES

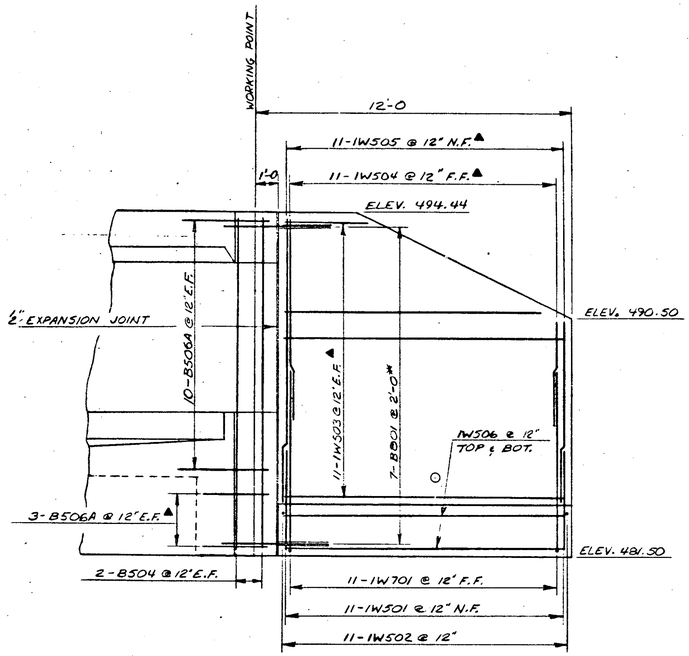
1. FOR ADDITIONAL GENERAL NOTES, SEE STANDARD SCB-D1-75.
2. WATER REPELLENT SHALL BE APPLIED TO ALL EXPOSED AREAS OF THE STRUCTURE, EXCEPT THE BOX INTERIOR.
3. ALL CONCRETE SHALL BE CONCRETE, CLASS B.
4. THERE SHALL BE A 72 HOUR MINIMUM WAITING PERIOD BETWEEN CONCRETE POURS ON OPPOSITE SIDES OF ANY EXPANSION OR CONSTRUCTION JOINT.
5. THE BOTTOM SLAB OF THE BOX SHALL BE SCREEDED AND FLOATED
6. ALL PREFORMED EXPANSION MATERIAL SHALL BE SUBSIDIARY TO CONCRETE, CLASS 'B'.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

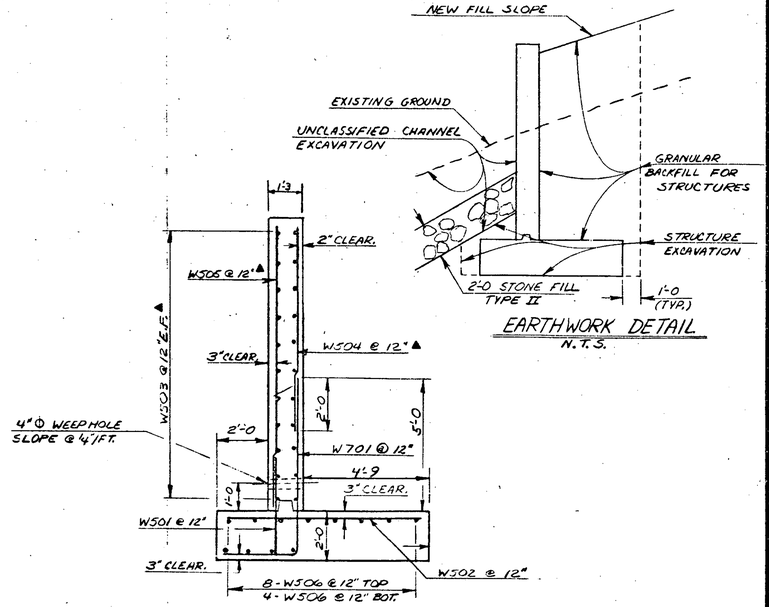
TOWN OF CHESTER	Bridge No. 60
HIGHWAY NO. TH 24 61.3	Log Sta. Surv. Sta. 12+19
TOWN HWY. 24 OVER BROOK	
R.C. BOX REINFORCING DETAILS	
Designed by W. Jarvis	Drawn by G. SCHELLEY
Checked by D.C. WILLEY date 7-83	Bridge Design Supervisor R.L. Dalley date 9-83
PROJECT CHESTER	PROJECT NO. BRZ 1442 (8)
Bridge Sheet No.	Sheet 24 of 32



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



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

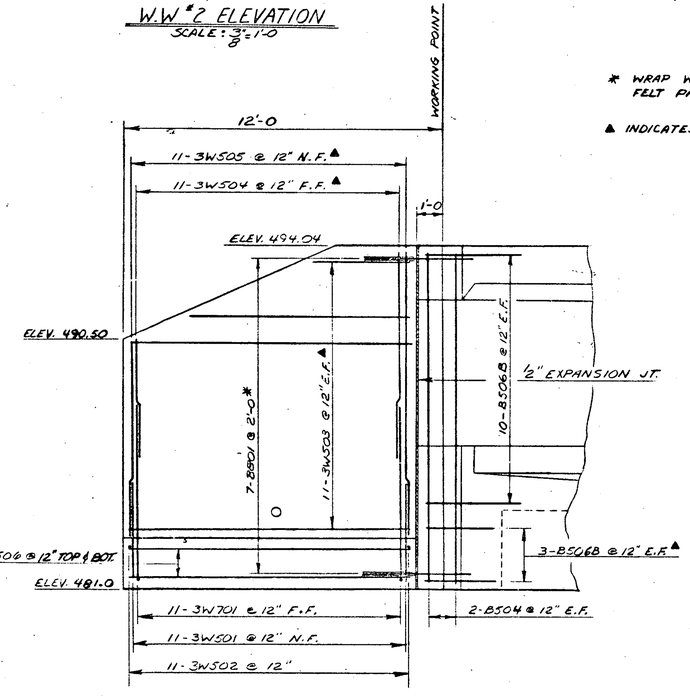


WINGWALL TYPICAL SECTION
SCALE: 3/8"=1'-0

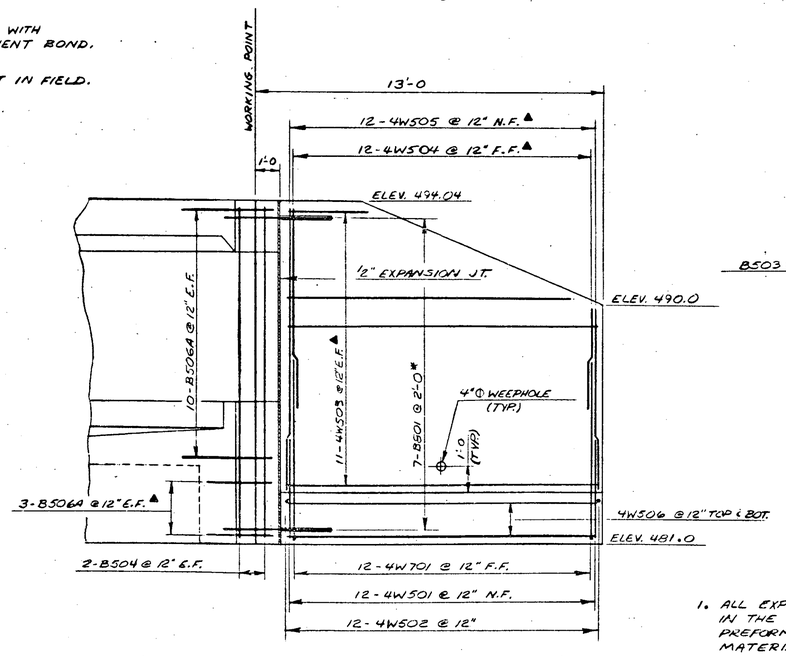
EARTHWORK DETAIL
N.T.S.

* WRAP WINGWALL END WITH FELT PAPER TO PREVENT BOND.

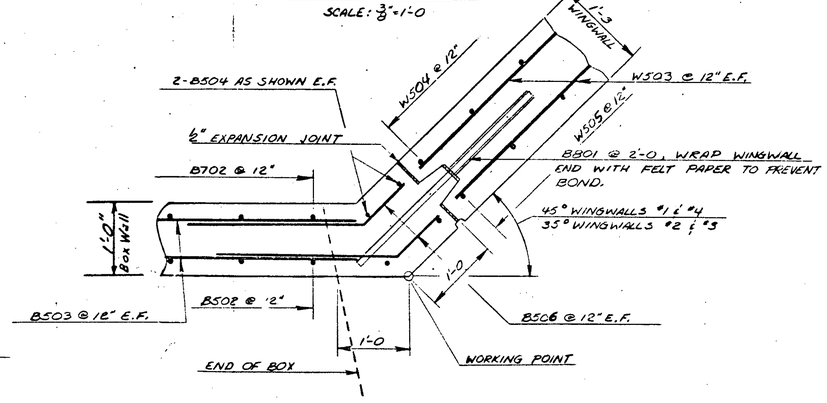
▲ INDICATES CUT TO FIT IN FIELD.



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



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



CORNER TYPICAL
Scale 1"=1'-0"

NOTES

1. ALL EXPANSION MATERIAL TO BE USED IN THE EXPANSION JOINTS SHALL BE PREFORMED, CLOSED CELL FOAM EXPANSION MATERIAL.
2. SEE SCB-DG-73 FOR DETAILS OF CONSTRUCTION JOINTS AND VERTICAL EXPANSION JOINTS.

STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF CHESTER	Bridge No. 60
HIGHWAY NO. TH 24	Log Sta.
	Surv. Sta. 12+19
TH 24 OVER BROOK	
WING DETAIL & REINFORCEMENT	
Designed by W. JARVIS	Drawn by G. SHELLEY
Checked by D.C. WILLEY date 7-83	Bridge Design Supervisor R.L. Dorley date 5-83
PROJECT CHESTER	PROJECT NO. BRZ 1442(8)
Bridge Sheet No.	Sheet 25 of 32

BRUNING 44-131 40151

BR-6

ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
1																	
2						BOX											
3																	
4	*53	5	4-2	B501	STR												
5	52		7-4	B502													
6	96		25-2	B503													
7	16		12-5	B504	↓												
8	16		19-9	B505	STR												
9	52		3-4	B506A	19		0-10	2-6	⟋				0-7		0-7		
10	52		3-4	B506B	19		0-10	2-6	⟋				0-5¾		0-8¼		
11	36	↓	5-3	B507	65		1-6	0-9	1-0	0-6		1-6		GRADE	40		
12	*41	5	11-0	B508	65		2-0	3-4	0-9	2-11		2-0		GRADE	40		
13																	
14	51	7	19-9	B701	STR												
15	52	7	11-8	B702	17		7-4	4-4	⟋								
16	*53	7	9-11	B703	17		4-11	5-0	⟋								
17																	
18	*29	8	3-6	B801	STR												
19																	
20	*27	9	19-9	B901	STR												
21																	
22																	
23																	
24						WINGWALL NO. 1											
25																	
26	11	5	3-9	1W501	STR												
27	*12		7-6	1W502													
28	22		10-6	1W503													
29	11		7-7	1W504													
30	11	↓	10-7	1W505	↓												
31	12	5	10-6	1W506	STR												
32																	
33	11	7	9-7	1W701	17		6-9	2-10	⟋								
34																	
35																	
36																	
37						WINGWALL NO. 2											
38																	
39	13	5	3-9	2W501	STR												
40	13		7-6	2W502													
41	22		12-6	2W503													
42	13		7-7	2W504													
43	13	↓	10-7	2W505	↓												
44	12	5	12-6	2W506	STR												
45																	
46	13	7	9-7	2W701	17		6-9	2-10	⟋								
47																	
48																	
49																	
50						WINGWALL NO. 3											
51																	
52	11	5	3-9	3W501	STR												
53	11		7-6	3W502													
54	22		10-6	3W503													
55	11		7-8	3W504													
56	11	↓	10-8	3W505	↓												
57	12	5	10-6	3W506	STR												
58																	
59	11	7	9-7	3W701	17		6-9	2-10	⟋								
60																	
61																	
62																	
63						WINGWALL NO. 4											
64																	
65	12	5	3-9	4W501	STR												
66	12		7-6	4W502													
67	22		11-6	4W503													
68	12		7-8	4W504													
69	12	↓	10-8	4W505	↓												
70	12	5	11-6	4W506	STR												
71																	
72	*13	7	9-7	4W701	17		6-9	2-10	⟋								
73																	
74																	
75																	
76																	
77																	
78																	
79																	
80																	

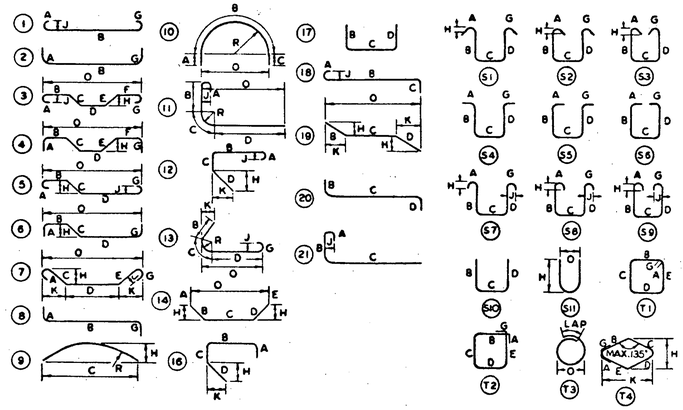
ITEM	NO. PIECES	SIZE	LENGTH	MARK	TYPE	A	B	C	D	E	F	G	H	J	K	R	O
81																	
82																	
83																	
84																	
85																	
86																	
87																	
88																	
89																	
90																	
91																	
92																	
93																	
94																	
95																	
96																	
97																	
98																	
99																	
100																	
101																	
102																	
103																	
104																	
105																	
106																	
107																	
108																	
109																	
110																	
111																	
112																	
113																	
114																	
115																	
116																	
117																	
118																	
119																	
120																	
121																	
122																	
123																	
124																	
125																	
126																	
127																	
128																	
129																	
130																	
131																	
132																	
133																	
134																	
135																	
136																	
137																	
138																	
139																	
140																	
141																	
142																	
143																	
144																	
145																	
146																	
147																	
148																	
149																	
150																	
151																	
152																	
153																	
154																	
155																	
156																	
157																	
158																	
159																	
160																	

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 615-91), 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

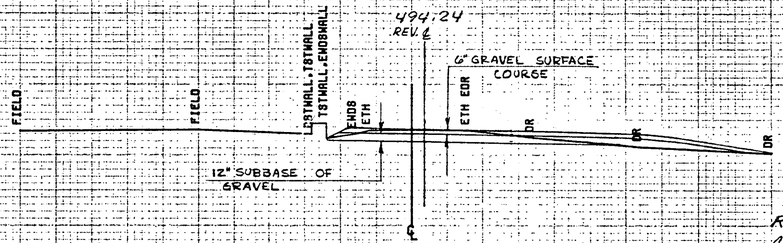
STATE OF VERMONT
AGENCY OF TRANSPORTATION

TOWN OF CHESTER	BRIDGE NO. 60
	LOG STA.
HIGHWAY NO. T.H. 24, CL. 3	SURV. STA. 12+19
TOWN HWY. 24 OVER BROOK	
REINFORCING STEEL SCHEDULE	
DESIGNED BY W. JARVIS	DRAWN BY G. SCHELLEY
CHECKED BY W. FLANDERS DATE 12-93	BRIDGE DESIGN SUPERVISOR R.L. Darby DATE 12-93
PROJECT CHESTER	PROJECT NO. BRZ 1442(8)
BRIDGE SHEET NO. 26	SHEET 32 OF

BRUNING 44-131-40151

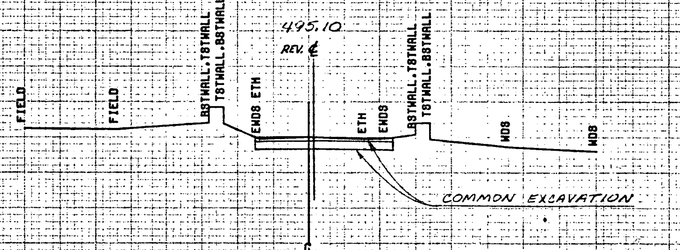
BR-5

REV. Sta. 11+66 Rt. & Sta. 11+83 Lt.
BEGIN GUARD RAIL, HEAVY DUTY
STEEL BEAM WITH WOOD POSTS



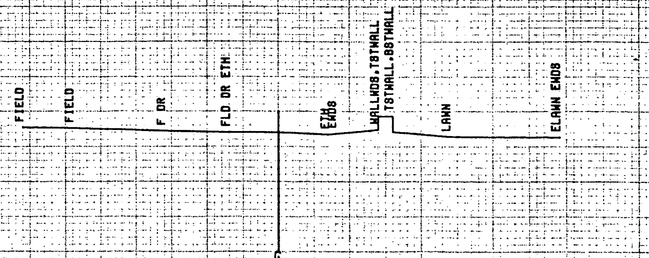
490

REV. STA. 11+45 RT.
CONSTRUCT DRIVE



490

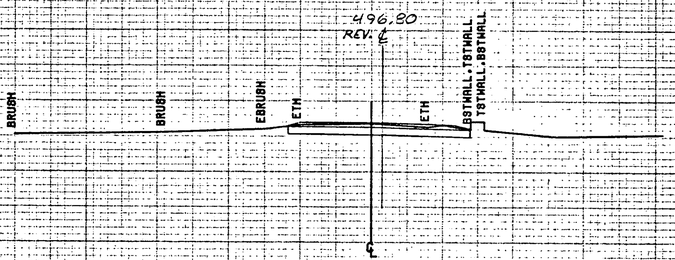
BEGIN PROJECT REV. STA. 11+00.0
CONSTRUCT SATISFACTORY APPROACH



490

SCALE 10 FEET

FROM STA. 10+50		TO STA. 11+50	
PROJECT NAME	CHESTER MAIN		
NO.	BRZ1442(8)		PLOTTED 01/29/82
SURVEYED BY	G COLBY		12/04/81
SHEET 27 OF 32 SHEETS			

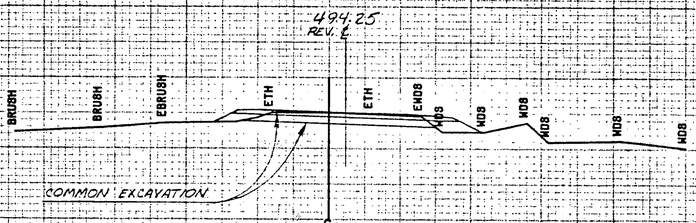


490

℄
13+00

REV. STA. 13100.0 END PROJECT
CONSTRUCT SATISFACTORY APPROACH

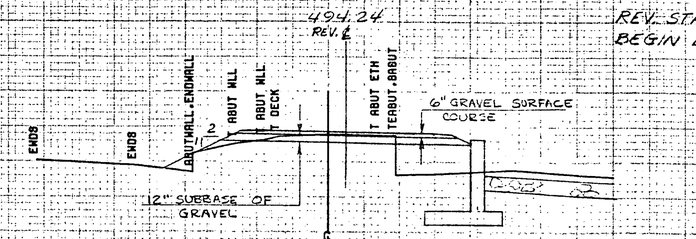
REV. STA. 12165 RT. & 12170 LT.
END GUARD RAIL, HEAVY DUTY
STEEL BEAM WITH WOOD POSTS



490

℄
12+50

REV. STA. 12+28.15
END BRIDGE



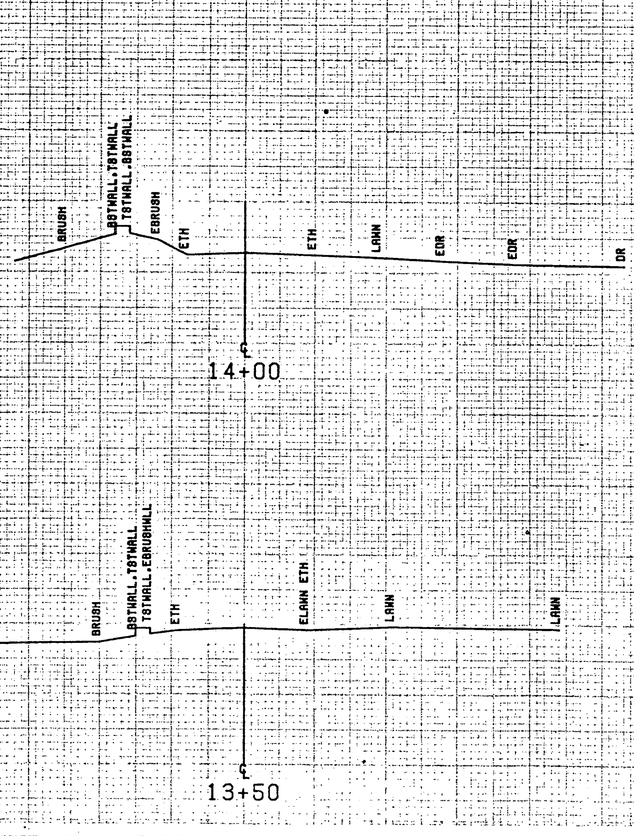
490

℄
12+00

REV. STA. 12+07.85
BEGIN BRIDGE

SCALE 10 FEET

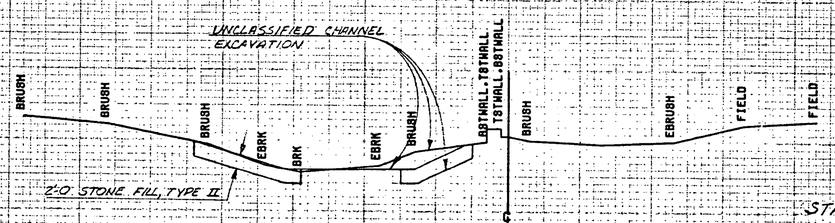
FROM STA. 12+00 TO STA. 13+00
PROJECT NAME CHESTER MAIN
NO. BRZ1442(8) PLOTTED 01/29/82
SURVEYED BY G COLBY 12/04/81
SHEET 28 OF 32 SHEETS



SCALE 10 FEET

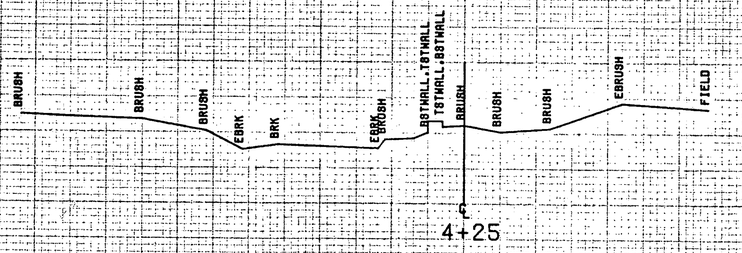
FROM STA. 13+50 TO STA. 14+00
PROJECT NAME CHESTER MAIN
NO. BRZ1442(8) PLOTTED 01/29/82
SURVEYED BY O COLBY 12/04/81
SHEET 29 OF 32 SHEETS

STA. 4+75
Begin Structure Excav.
STA. 4+77
BEGIN GRANULAR BACKFILL FOR STRUCTURES

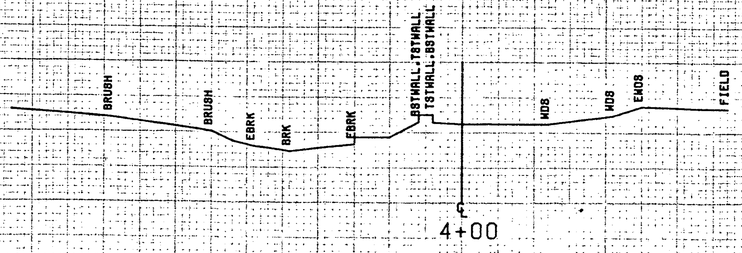


490

STA. 4+33
BEGIN UNCLASSIFIED CHANNEL EXCAVATION
BEGIN STONE FILL, TYPE II



490



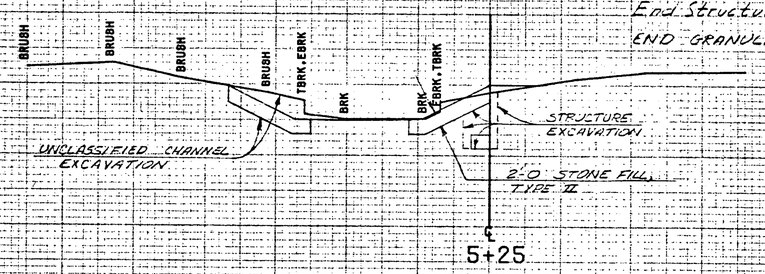
490

SCALE 10 FEET

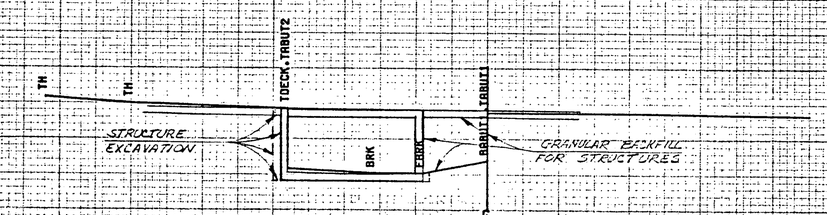
FROM STA. 4+00 TO STA. 4+50
PROJECT NAME CHESTER CHAN
NO. BRZ1442(8) PLOTTED 01/29/82
SURVEYED BY G COLBY 12/04/81
SHEET 30 OF 32 SHEETS

End Stone Fill Sta 5+42
End Channel Excav. Sta 5+43

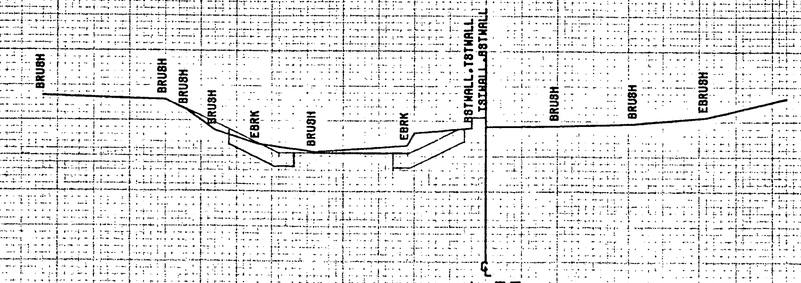
End Structure Excav. Sta 5+27
END GRANULAR BACKFILL FOR STRUCTURES, STA 5+24



480



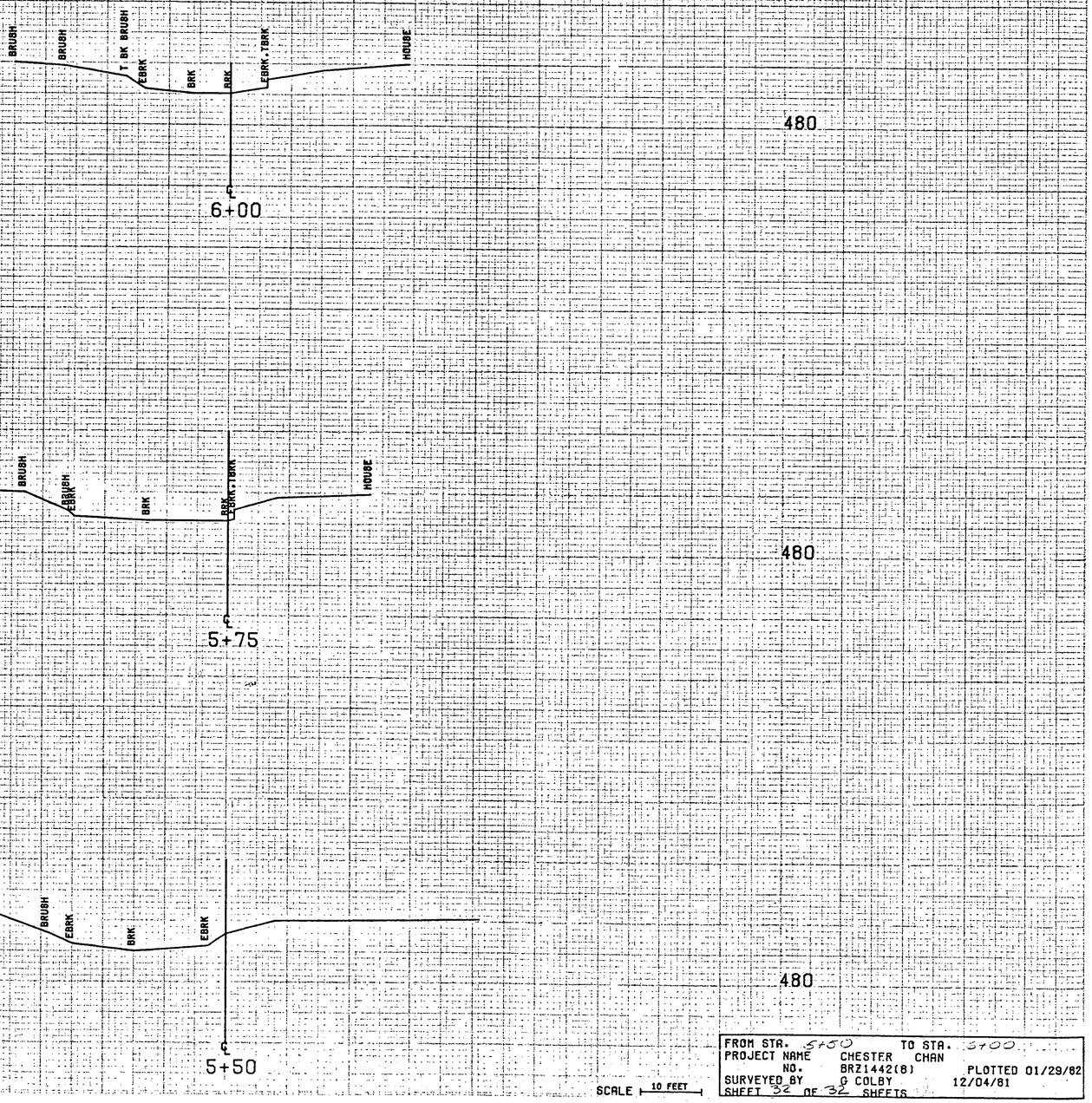
490



480

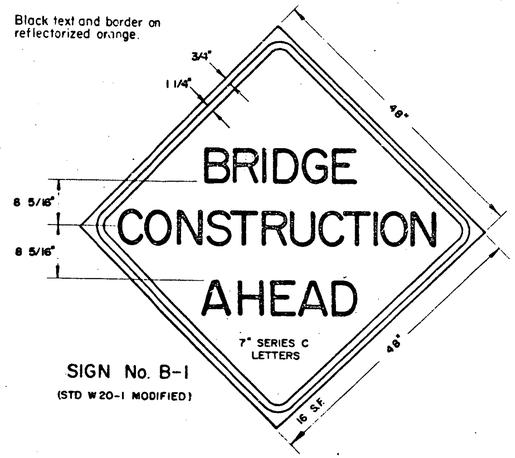
SCALE 10 FEET

FROM STA. 4+75 TO STA. 5+25
PROJECT NAME CHESTER CHAN
NO. BRZ1442(8) PLOTTED 01/29/82
SURVEYED BY G COLBY 12/04/81
SHEET 31 OF 32 SHEETS

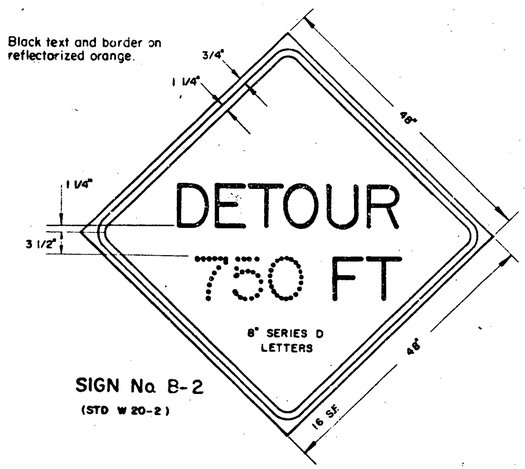


SCALE 10 FEET

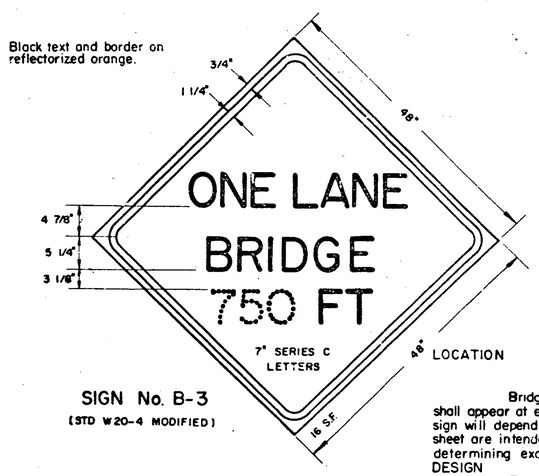
FROM STA. 5+50 TO STA. 6+00
PROJECT NAME CHESTER CHAN
NO. BRZ1442(8) PLOTTED 01/29/82
SURVEYED BY G COLBY 12/04/81
SHEET 32 OF 32 SHEETS



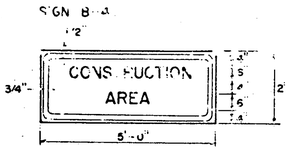
SIGN No. B-1
(STD W20-1 MODIFIED)



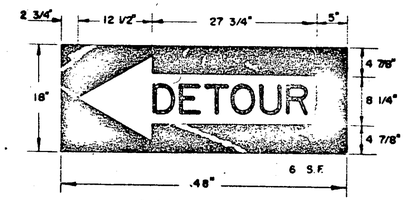
SIGN No. B-2
(STD W 20-2)



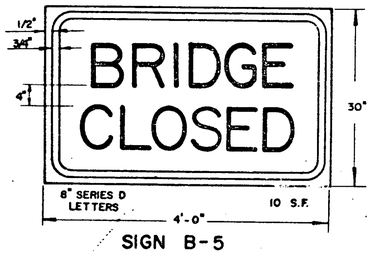
SIGN No. B-3
(STD W20-4 MODIFIED)



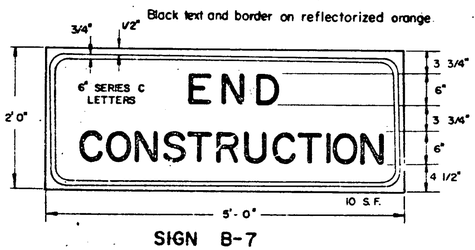
Black text and border on reflectorized orange background.



SIGN No. B-6
(STD. M 4-10)

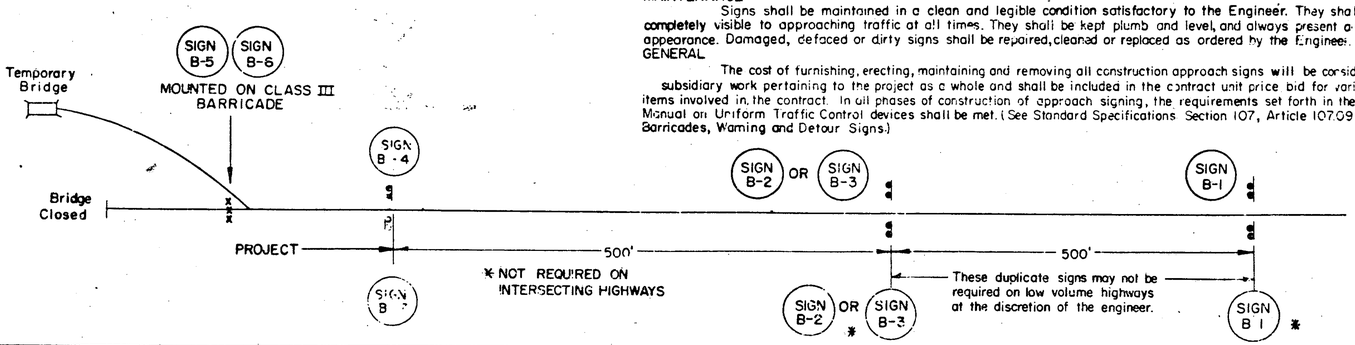


SIGN B-5
(STD. R 11-2 MODIFIED)



SIGN B-7
(STD. G 20-2)

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.



LOCATION

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.

DESIGN

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 will be approved that will deteriorate by exposure to the weather during the required life of the sign.

REFLECTORIZATION

All reflectorized material shall consist of encapsolated lens reflective sheeting.

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 will be considered 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.)

REVISIONS AND CORRECTIONS

SEPT. 11, 1973 – REVISED PER ORDER OF FHWA, SEPT. 11, 1973.
NOV. 7, 1973 – REVISED PER ORDER OF FHWA.
MAY 14, 197_ – REVISED MATERIAL CHARGE.
DEC. 12, 1975 – REVISED TO CONFORM TO STANDARD E-2.
JULY 20, 1976 – REVISED PER ORDER OF FHWA.
JUNE 7, 1977 – REFLECTIVE MATERIAL NOTE CHANGED.
DEC. 15, 1978 – ILLUMINATION DELETED.

APPROVED Dec. 14, 1971 DATE

R. H. Arnold, CHIEF ENGINEER
E. H. Stickney, ASST. CHIEF ENGINEER
G. M. Lane, HIGHWAY ENGINEER

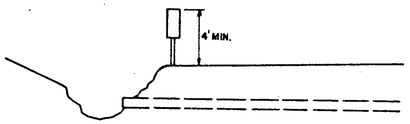
TRAFFIC SIGNS

BRIDGE CONSTRUCTION APPROACH SIGNS

VERMONT DEPARTMENT OF HIGHWAYS STANDARD

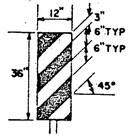
E-3

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



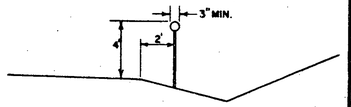
HAZARD MARKER TYPICAL

OBJECTS ADJACENT TO THE ROADWAY SHALL REQUIRE A HAZARD MARKER TO MARK THE OBSTRUCTION. IN SOME CASES THERE MAY NOT BE A PHYSICAL OBJECT INVOLVED BUT OTHER ROADSIDE CONDITONS SUCH AS NARROW SHOULDER DROP-OFFS, GORES, D.I. EXCAVATIONS OR ABRUPT CHANGE IN THE ROADWAY ALIGNMENT MAY MAKE IT UNDESIRABLE FOR A DRIVER TO LEAVE THE ROADWAY. THE INSIDE EDGE OF THE HAZARD MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION, WHENEVER POSSIBLE.



VERTICAL PANEL

VERTICAL PANELS SHALL HAVE ALTERNATING ORANGE AND WHITE REFLECTORIZED STRIPS (SLOPING DOWNWARD IN THE DIRECTION TRAFFIC IS TO PASS). THESE DEVICES MAY BE USED FOR TRAFFIC SEPARATION OR SHOULDER BARRICADING WHERE SPACE IS AT A MINIMUM.



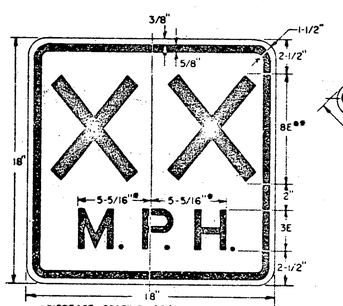
SYMBOL

DELINEATOR TYPICAL

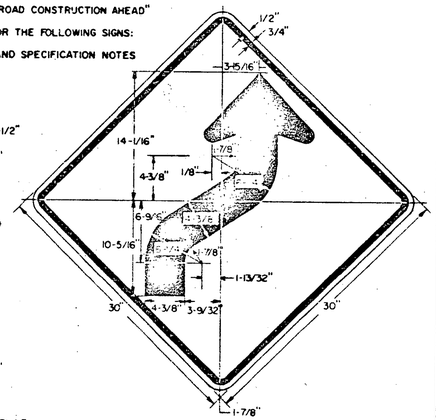
DELINEATORS SHALL BE OF A REFLECTORIZED WHITE COLOR. THEY SHALL HAVE A MINIMUM OF 7 SQUARE INCHES. THEY MAY BE ROUND, SQUARE, OR OBLONG. THEY SHALL BE OF THE FOLLOWING:

1- REFLECTORIZED TAPE WITH METAL BACKING.
2- REFLECTORIZED 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' MINIMUM WIDTH FACING TRAFFIC IS REQUIRED.

SEE STANDARD SHEET E-2 FOR SIGN DETAILS FOR "ROAD CONSTRUCTION AHEAD" AND "END CONSTRUCTION" SIGNS.
SEE STANDARD SHEET E-6 FOR SIGN DETAILS FOR THE FOLLOWING SIGNS: "DETOUR AHEAD, ROAD CLOSED, DETOUR" ARROW.
SEE STANDARD SHEET E-6 FOR SIGN MATERIAL AND SPECIFICATION NOTES FOR ALL SIGNS DETAILED ON THIS SHEET.



*INCREASE SPACING 100%
**OPTICALLY SPACE NUMERALS ABOUT VERT. CENTERLINE.



BARRICADES

APPLICATION NOTES

TYPE I BARRICADES ARE TO BE USED ON CONVENTIONAL ROADS OR URBAN STREET AND ARTERIALS TO MARK A SPECIFIC HAZARD TO CHANNELIZE TRAFFIC.

TYPE II BARRICADES ARE TO BE USED ON EXPRESSWAYS AND FREEWAYS, SERVING THE SAME FUNCTIONS AS THE TYPE I BARRICADES.

TYPE III (SEE STANDARD E-7A) SHALL ONLY BE USED WHEN A ROAD SECTION IS CLOSED TO TRAFFIC TO BE ERECTED AT THE POINT OF CLOSURE.

MATERIALS

THE BARRICADES SHOWN ON THIS SHEET NORMALLY WILL BE OF LIGHTWEIGHT MATERIAL. IF WOOD IS USED THE FOLLOWING CONDITIONS SHALL APPLY.

1. WOODEN BARRICADES (TYPES I AND II)
   - A. SHALL NOT BE USED TO CHANNELIZE OR DELINEATE WORK AREAS WITHIN THE CLEAR ZONE OF ANY HIGHWAY WHERE OPERATING SPEEDS IN EXCESS OF 20 MILES PER HOUR ARE EXPECTED UNLESS INSTALLED FOR PEDESTRIAN CONTROL BEHIND APPROVED POSITIVE BARRIERS.
   - B. MAY BE USED IF OPERATING SPEEDS OF 20 M.P.H. OR LESS ARE EXPECTED.
2. TYPE III WOODEN BARRICADES SHALL NOT BE USED WITHIN THE CLEAR ZONE OF ANY HIGHWAY REGARDLESS OF THE TRAFFIC OPERATING SPEED.

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° IN THE DIRECTION TRAFFIC IS TO PASS.

COLORS

THE BARRICADES PANELS SHOWN ON THIS SHEET SHALL HAVE ALTERNATING REFLECTORIZED WHITE AND ORANGE STRIPES. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS AND APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION. THE BARRICADE COMPONENTS SHALL BE WHITE EXCEPT THAT UNPAINTED METAL OR ALUMINUM MAY BE USED.

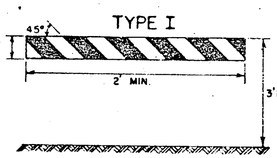
REFLECTORIZATION

THE BARRICADES SHALL BE REFLECTORIZED WITH REFLECTIVE SHEETING.

LOCATION

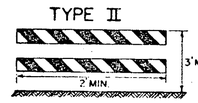
THE BARRICADES SHOWN ON THIS SHEET WILL BE LOCATED BY THE ENGINEER IN THE FIELD OR AS SHOWN ON THE PLANS. THE LOCATION OF THE BARRICADES SHALL FOLLOW THE PROCEDURES SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, OR AS OTHERWISE NOTED.

TYPE I

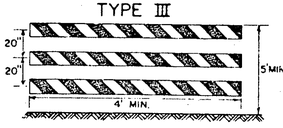


STRIPPING IS SHOWN WITH TRAFFIC PASSING TO THE RIGHT.

TYPE II



TYPE III



BARRICADE	CHARACTERISTICS	
	I	II
WIDTH OF RAIL	8" MIN. 12" MAX	8" MIN. 12" MAX.
LENGTH OF RAIL	2' MIN.	2' MIN.
WIDTH OF STRIPS*	6"	6"
HEIGHT	3' MIN.	3' MIN.
TYPE OF FRAME	DEMOUNTABLE OR 'A' FRAME	LIGHT 'A' FRAME NO STAY BRACE
FLEXIBILITY	ESSENTIALLY MOVEABLE	PORTABLE
ANGLE OF STRIPE	45°	45°
COLOR OF STRIPS	ORANGE AND WHITE	ORANGE AND WHITE

* FOR RAILS LESS THAN 3 FEET LONG, 4" WIDE STRIPS SHALL BE USED.

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, DEFACED, OR DIRTY BARRICADES SHALL BE REPAIRED, CLEANED, OR RE-PLACED AS ORDERED BY THE ENGINEER.

LIGHTING

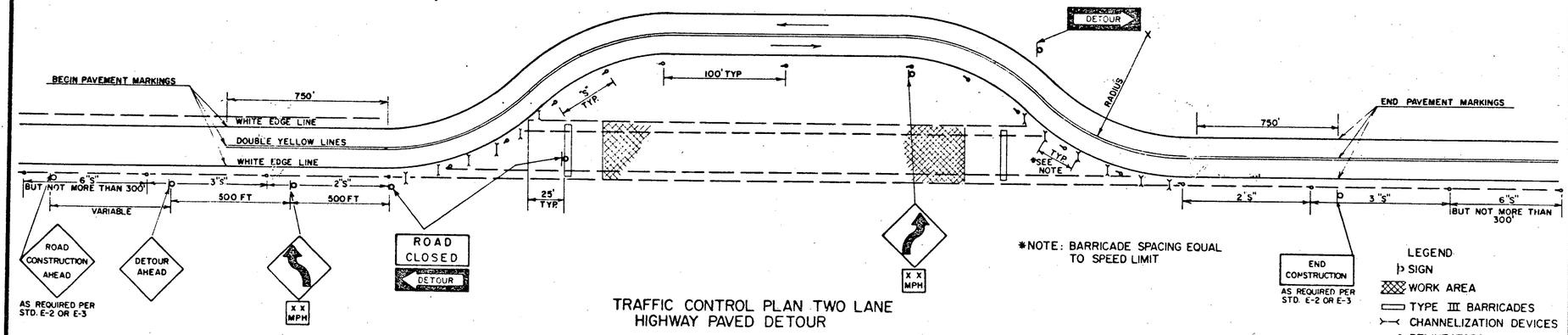
FOR NIGHTTIME USE ADD FLASHING WARNING LIGHTS WHEN BARRICADES ARE USED SINGLY AND STEADY BURN LIGHTS WHEN BARRICADES ARE USED IN A SERIES FOR CHANNELIZATION. THE LIGHTING DEVICES SHALL CONFORM TO THOSE SPECIFIED IN THE MUTCD.

DELINEATOR SPACING

DESIGN SPEED MPH	REQUIRED RADIUS FT	SPACING - "S" FT
25	150	30
30	250	40
40	460	60
50	760	75

NOTES

1. SIGNS & DELINEATION SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
2. CHANNELIZING DEVICES SHALL CONSIST OF TYPE II BARRICADES WITH STEADY BURN LIGHTS EXCEPT ON THE FIRST AND LAST BARRICADES WHICH SHALL HAVE A FLASHING LIGHT.
3. FLASHING WARNING LIGHTS MAY BE USED TO CALL ATTENTION TO THE EARLY WARNING SIGNS.
4. CONTRACTOR IS RESPONSIBLE FOR PAVEMENT MARKING AND SHALL REMOVE ANY CONFLICTING OR CONFUSING EXISTING MARKINGS.
5. ADDITIONAL SIGNING MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
6. UNPAVED DETOURS REQUIRE PAVEMENT MARKINGS FOR TRANSITIONS ON EXISTING PAVEMENT.



AS REQUIRED PER STD. E-2 OR E-3

AS REQUIRED PER STD. E-2 OR E-3

*NOTE: BARRICADE SPACING EQUAL TO SPEED LIMIT

LEGEND
- SIGN
- WORK AREA
- TYPE III BARRICADES
- CHANNELIZATION DEVICES
- DELINEATORS

TRAFFIC CONTROL PLAN TWO LANE HIGHWAY PAVED DETOUR

REVISIONS AND CORRECTIONS

FEB. 12, 1982 MATERIALS NOTE CLARIFIED, SIGN ADDITIONS.
FEB. 2, 1983 NOTE # 6 RE: UNPAVED DETOURS ADDED.

APPROVED:

SEPT. 22, 1981
DATE

DIRECTOR OF ENGINEERING AND CONSTRUCTION

CHIEF OF DESIGN

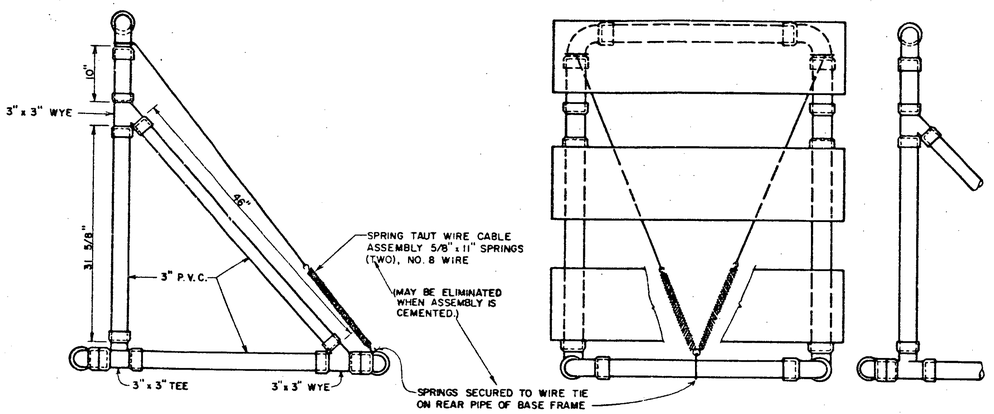
TRANSPORTATION DESIGN ENGINEER

DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS

VERMONT AGENCY OF TRANSPORTATION

STANDARD

E-7

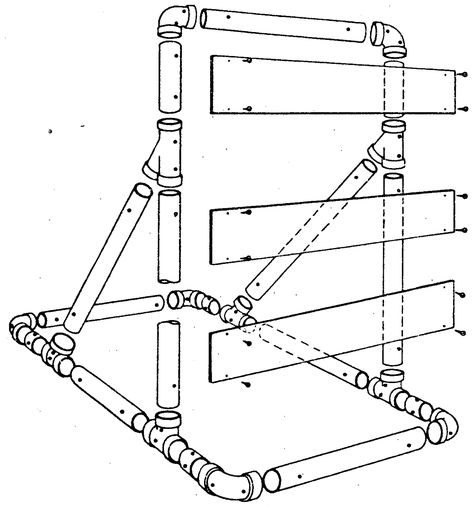


SIDE VIEW

BARRICADES SHALL BE STABILIZED WITH SAND BAGS OR FLEXIBLE CONTAINERS OF SAND WHICH WILL NOT CONSTITUTE A HAZARD WHEN BARRICADE IS HIT.

STABILIZERS SHALL BE SO PLACED AS NOT TO BE A HAZARD TO VEHICLES PASSING ON EITHER SIDE.

IF BARRICADE REPLACEMENT COSTS CAN BE CONSIDERED NEGLIGIBLE, GLUED JOINTS MAY PROVIDE ADDITIONAL STABILITY TO THE INSTALLATION.



BARRICADE ASSEMBLY

MATERIALS LIST
FOR ONE BARRICADE

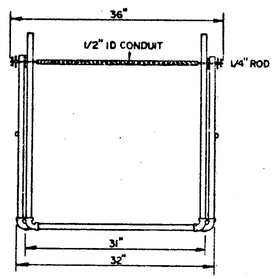
3" Diameter Pipe	30 LF
3" 1/4 Bend Elbow	6 EA
3" Tees	2 EA
3" Wyes	4 EA
9" x 48" x.0.25 Barricade Panels	3 EA
5/8" x 11" No. 8 Spring	2 EA
1" No. 14 Pan Head Metal Screws	12 EA
No. 18 Black Annealed Tie Wire	15 LF

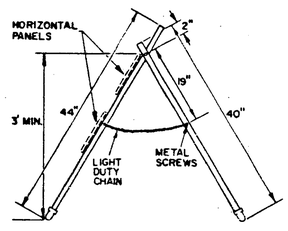
TOP VIEW OF BASE

NOTE - 9" x 48" BARRICADE HAZARD PANELS ORANGE AND WHITE RIGHT OR LEFT. (.025 ANODIZED ALUMINUM).

PANELS ATTACHED WITH 1" NO. 14 PAN HEAD METAL SCREW.

FRONT VIEW





MATERIALS

The pipe, wyes, tees and elbows used to construct Barricades shall conform to the requirements of ASTM designation D 2241 for P.V.C. 1120 or 1220 SDR-21, pressure rating 200 p.s.i. The Wyes, tees and elbows shall conform to the requirements of ASTM Designation D 2466, Type II, Grade 1. All joints shall be slip-fit and may be lightly cemented.

The 9" x 48" barricade rails shall be fabricated from 0.025" anodized aluminum and shall have reflectorized alternating, orange and white stripes (sloping downward at an angle of 45 degrees in the direction traffic is to pass).

COLORS

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

LOCATION

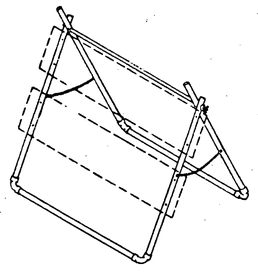
The barricades shown on this sheet will be located by the Engineer in the field or as shown on the plans. The locations of the barricades shall follow the procedures set forth in the Manual on Uniform Traffic Control Devices.

MAINTENANCE

Barricades shall be maintained in clean and legible conditions satisfactory to the Engineer.
They shall be completely visible to approaching traffic at all times. Damages, defaced, or dirty barricades shall be repaired cleaned or replaced as ordered by the Engineer.
The P.V.C.Pipe and fittings shall be white in color If the fittings are not available, other colors may be substituded
At least two (2) holes shall be drilled (3/16" to 1/4") in each section of pipe and fittings if the assembly is not cemented.

MATERIALS FOR TYPE I & II BARRICADES

20'-1" PVC
4-1" PVC 90° ELBOWS
30"-1/2" ID THINWALL CONDUIT
36"-1/4" STEEL ROD
4-1" WASHERS
24"- LIGHT DUTY CHAIN
4-METAL SCREWS
2-3/4" COTTER PINS



TYPE I & II BARRICADE DETAILS

TYPE I BARRICADES SHALL CONSIST OF ONE HORIZONTAL PANEL.

TYPE II BARRICADES SHALL CONSIST OF AN ADDITIONAL HORIZONTAL PANEL MOUNTED BELOW THE OTHER.

SEE STD E-7 FOR USE REQUIREMENTS.

REVISIONS & CORRECTIONS

JAN. 11, 1977 - REVISED ACCORDING TO FHWA REQUIREMENTS.
JUNE 8, 1977 - MATERIALS LIST ADDED.
APR. 8, 1982 - CEMENTING NOTE AND BARRICADES TYPE I & II ADDED.

APPROVED

Dec 30, 1976
DATE

E. H. Dickney
CHIEF ENGINEER

R O Munn
ASST. CHIEF ENGINEER

Leon C Jones
HIGHWAY ENGINEER

TRAFFIC SIGNS

BREAKAWAY BARRICADE DETAILS

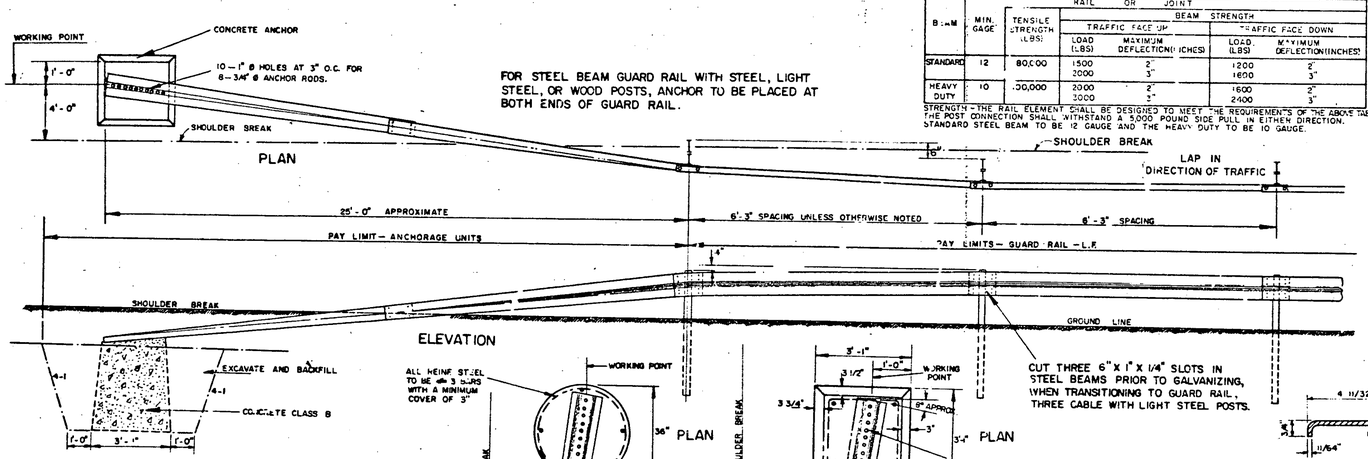
VERMONT AGENCY OF TRANSPORTATION

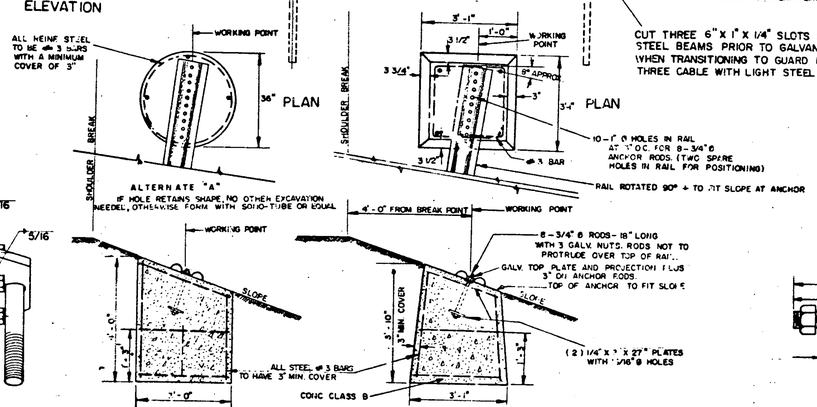
STANDARD E-7A

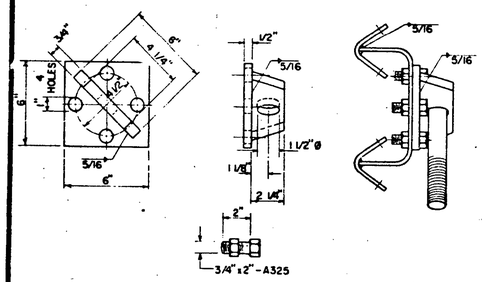
BEAM	MIN. GAGE	TENSILE STRENGTH (LBS)	RAIL OR JOINT BEAM STRENGTH			
			TRAFFIC FACE UP		TRAFFIC FACE DOWN	
			LOAD (LBS)	MAXIMUM DEFLECTION (INCHES)	LOAD (LBS)	MAXIMUM DEFLECTION (INCHES)
STANDARD	12	80,000	1500	2"	1200	2"
			2000	3"	1600	3"
HEAVY DUTY	10	100,000	2000	2"	1600	2"
			3000	3"	2400	3"

STRENGTH - THE RAIL ELEMENT SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF THE ABOVE TABLE. THE POST CONNECTION SHALL WITHSTAND A 5,000 POUND SIDE PULL IN EITHER DIRECTION. STANDARD STEEL BEAM TO BE 12 GAUGE AND THE HEAVY DUTY TO BE 10 GAUGE.

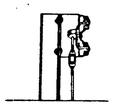
FOR STEEL BEAM GUARD RAIL WITH STEEL, LIGHT STEEL, OR WOOD POSTS, ANCHOR TO BE PLACED AT BOTH ENDS OF GUARD RAIL.

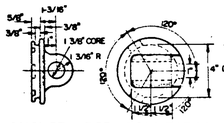




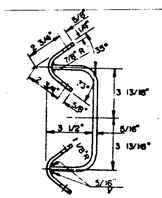


ALTERNATE ANCHOR ROD CONNECTOR

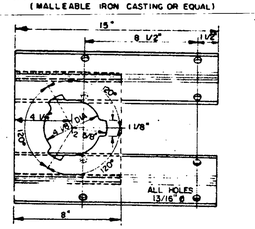


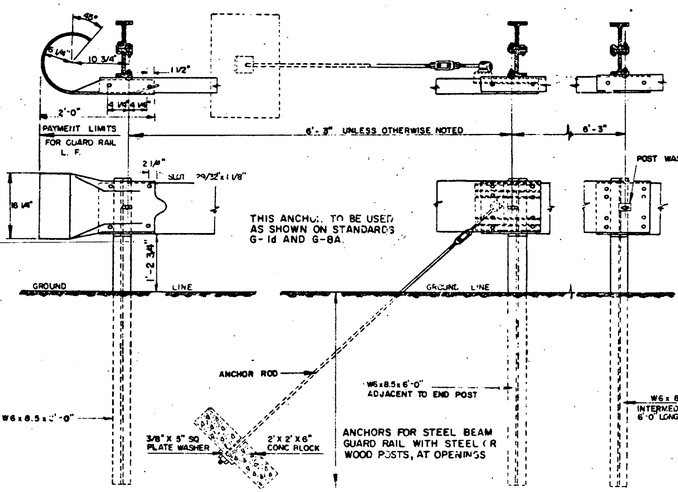


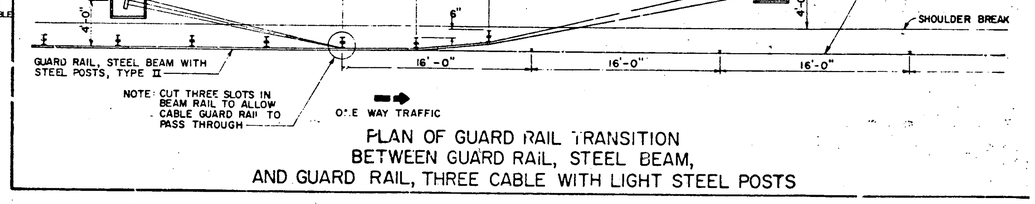
ANCHOR ROD CONNECTOR
(MALLEABLE IRON CASTING OR EQUAL)



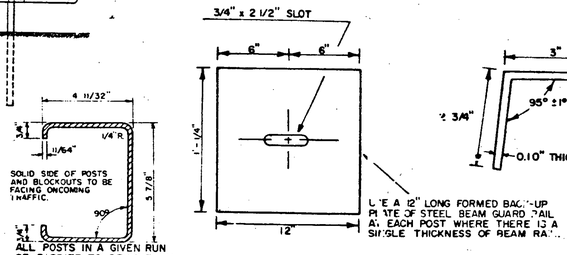
ANCHOR SPIDER
(WELDMET)





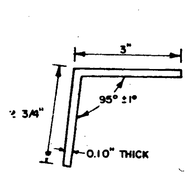


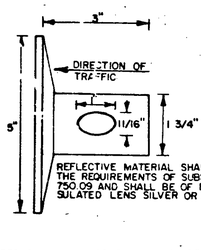
PLAN OF GUARD RAIL TRANSITION
BETWEEN GUARD RAIL, STEEL BEAM,
AND GUARD RAIL, THREE CABLE WITH LIGHT STEEL POSTS

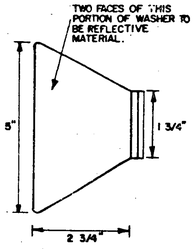


ALTERNATE POST

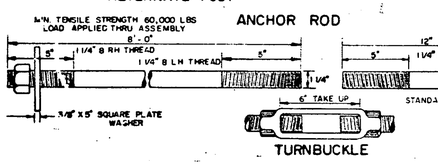
USE A 12" LONG FORMED BACK-UP PLATE OF STEEL BEAM GUARD RAIL AT EACH POST WHERE THERE IS A SINGLE THICKNESS OF BEAM RAIL.





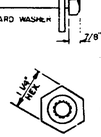


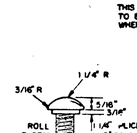
THIS REFLECTORIZED ALUMINUM WASHER IS TO BE PLACED IN VALLEY OF BEAM WHEN MOUNTING BEAM ONTO EACH FIFTH POST. WASHER SHALL MEET SPECIFICATION REQUIREMENTS FOR ASTM B209 ALLOY 5052 - H32.

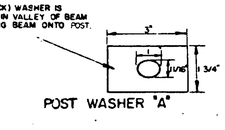


TURNBUCKLE

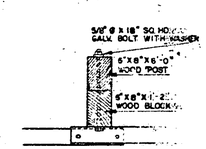
ANCHOR ROD



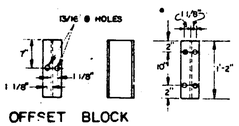




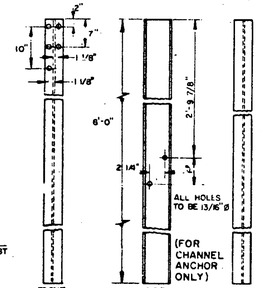
POST WASHER "A"

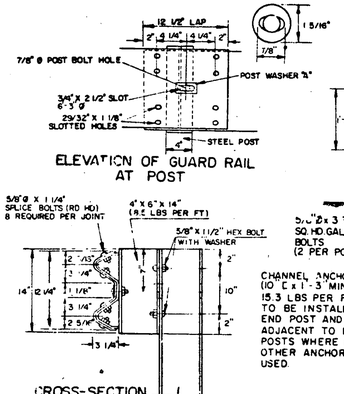


WITH 6"x8" WOOD POST



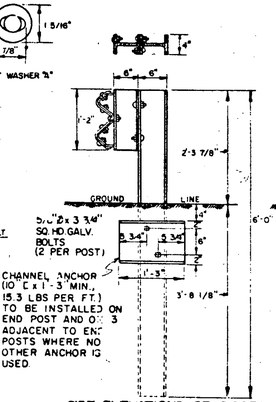
OFFSET BLOCK

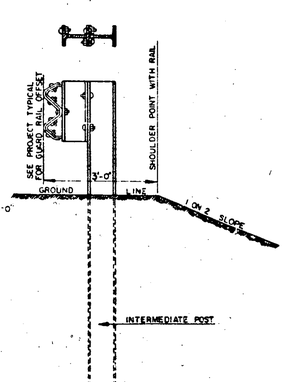




ELEVATION OF GUARD RAIL AT POST

CROSS-SECTION THRU GUARD RAIL SPLICE





SIDE ELEVATIONS OF POSTS FOR SHOULDER INSTALLATION

REVISIONS AND CORRECTIONS

APR. 10, 1972	POST HEIGHT INCREASED.
JULY 9, 1973	NEW TRANSITION DETAIL ADDED.
JUNE 4, 1974	TRANSITION REVISED. ALTERNATE ANCHOR ROD CONNECTOR AND ALTERNATE POST ADDED.
NOV. 29, 1977	ANCHOR DETAIL FOR STEEL BEAM GUARD RAIL WITH STEEL OR WOOD POSTS REMOVED.
JAN. 17, 1978	REVISED ANCHOR DETAIL.
JUNE 1, 1978	CHANNEL ANCHOR DETAILS CHANGED.
MAY 28, 1979	NOTE ON REFLECTIVE MATERIAL CHANGED.
DEC. 16, 1980	INCREASED SHOULDER WIDENING FOR GUARD RAIL.

APPROVED:

DATE: Dec. 8, 1971

R. N. Arnold
CHIEF ENGINEER

E. H. Stickney
ASST. CHIEF ENGINEER

A. M. Lane
HIGHWAY ENGINEER

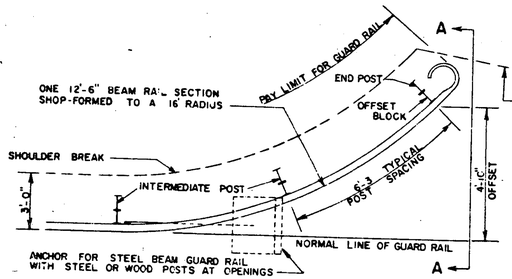
GUARD RAIL, STANDARD STEEL BEAM, WITH STEEL POSTS, TYPE II
GUARD RAIL, STANDARD STEEL BEAM, WITH WOOD POSTS, TYPE II
GUARD RAIL, HEAVY DUTY STEEL BEAM, WITH STEEL POSTS, TYPE II
GUARD RAIL, HEAVY DUTY STEEL BEAM, WITH WOOD POSTS, TYPE II
ANCHOR FOR STEEL BEAM GUARD RAIL, WITH STEEL OR WOOD POSTS AT OPENINGS
ANCHOR FOR STEEL BEAM GUARD RAIL, WITH STEEL, LIGHT STEEL, OR WOOD POSTS

VERMONT AGENCY OF TRANSPORTATION

STANDARD

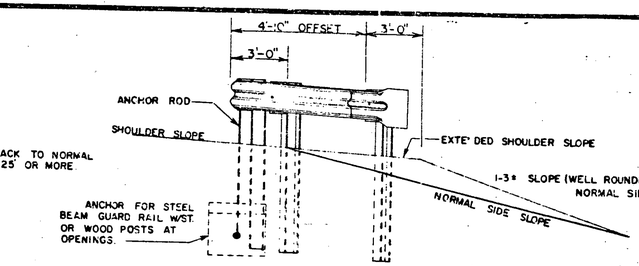
G-1

D-8

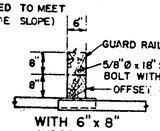


APPROACH END DETAIL

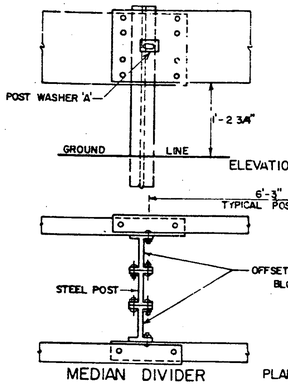
(NOT APPROVED FOR USE WHERE V > 40 MPH)

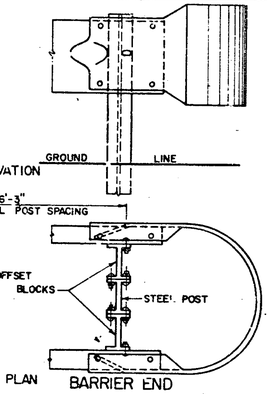


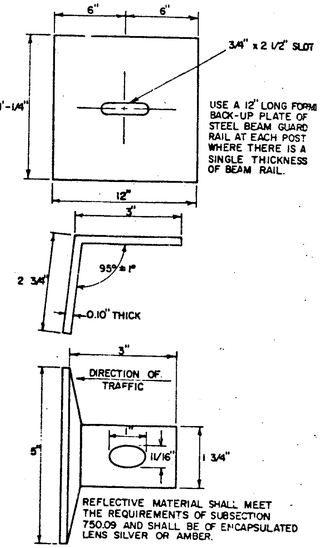
SECTION A-A

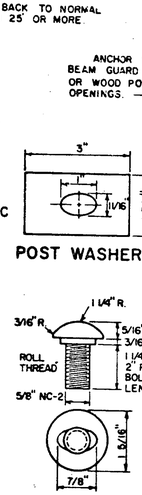


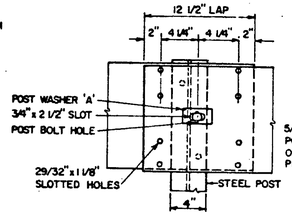
WITH 6" x 8" WOOD POST



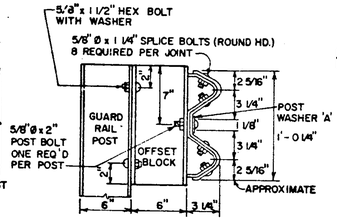




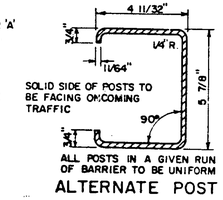




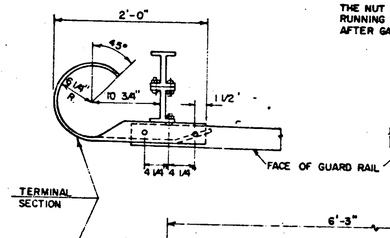
ELEVATION OF GUARD RAIL SPLICE AT POST

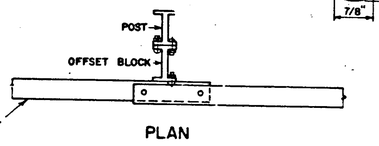


CROSS SECTION THROUGH GUARD RAIL SPLICE

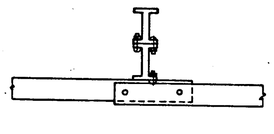


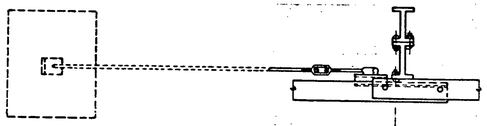
ALTERNATE POST

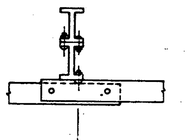


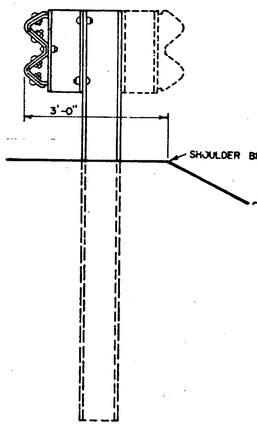


PLAN

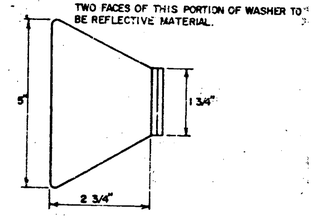


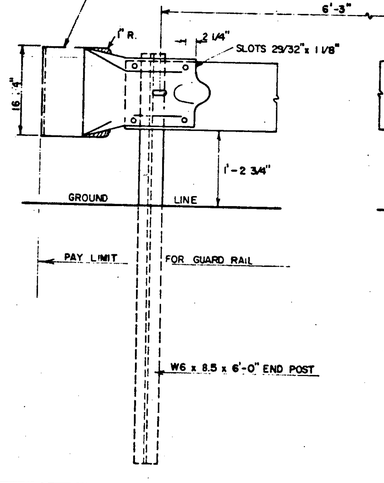






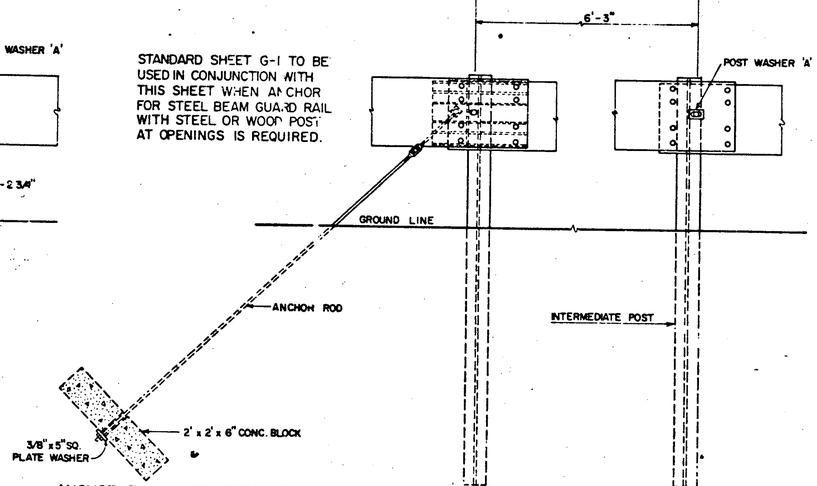
SIDE ELEVATION OF POST FOR SHOULDER OR MEDIAN INSTALLATION





ASSEMBLY ELEVATION

STANDARD SHEET G-1 TO BE USED IN CONJUNCTION WITH THIS SHEET WHEN ANCHOR FOR STEEL BEAM GUARD RAIL WITH STEEL OR WOOD POST AT OPENINGS IS REQUIRED.



ANCHOR FOR STEEL BEAM GUARD RAIL WITH STEEL OR WOOD POSTS, AT OPENINGS

BEAM	MIN. GAGE	TENSILE STRENGTH LBS)	RAIL OR JOINT BEAM STRENGTH			
			TRAFFIC FACE UP		TRAFFIC FACE DOWN	
			LOAD (LBS)	MAXIMUM DEFLECTION (INCHES)	LOAD (LBS)	MAXIMUM DEFLECTION (INCHES)
STANDARD	12	80,000	1,500	2"	1,200	2"
			2,000	3"	1,600	3"
HEAVY DUTY	10	100,000	2,000	2"	1,600	2"
			3,000	3"	2,400	3"

STRENGTH - THE RAIL ELEMENT SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF THE ABOVE TABLE

THE POST CONNECTION SHALL WITHSTAND A 5,000 POUND SIDE PULL IN EITHER DIRECTION.

ALL METAL PARTS SHALL BE GALVANIZED.

ALL WOOD POSTS SHALL BE GIVEN A PRESERVATIVE TREATMENT.

STANDARD STEEL BEAM TO BE 12 GAGE AND THE HEAVY DUTY TO BE 10 GAGE.

REVISIONS & CORRECTIONS

SEPT. 10, 1976 - MINIMUM LENGTH & ADVANCE OF NEED NOTES REMOVED.
MAR. 2, 1977 - ROUND WOOD POSTS REMOVED.
SEPT. 12, 1977 - REFERENCE TO ROUND WOOD POSTS REMOVED.
MAY 29, 1979 NOTE ON REFLECTIVE MATERIAL CHANGED
APRIL 28, 1980 - APPROACH END DETAILS REDRAWN
DEC. 16, 1980 - INCREASED SHOULDER WIDENING FOR GUARD RAIL.

APPROVED:

May 6, 1976
DATE

E H Stickney by RCM
CHIEF ENGINEER

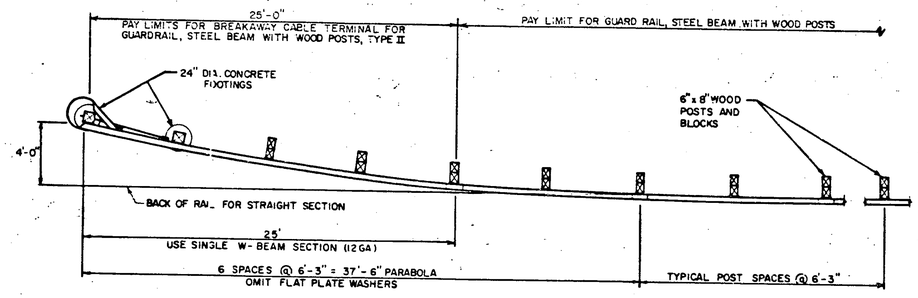
RO Munn
ASST. CHIEF ENGINEER

Loren C Jones
HIGHWAY ENGINEER

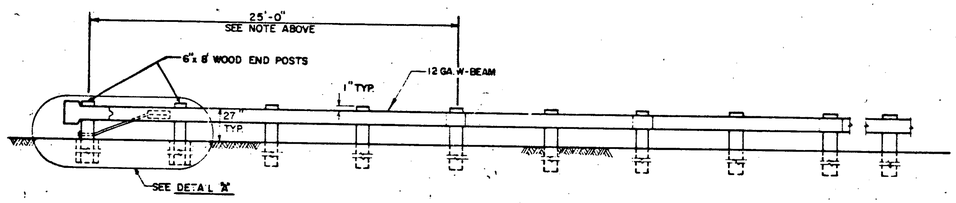
GUARD RAIL, STANDARD STEEL BEAM WITH STEEL POSTS, TYPE II
GUARD RAIL, STANDARD STEEL BEAM WITH WOOD POSTS, TYPE II
GUARD RAIL, HEAVY DUTY STEEL BEAM WITH STEEL POSTS, TYPE II
GUARD RAIL, HEAVY DUTY STEEL BEAM WITH WOOD POSTS, TYPE II

VERMONT AGENCY OF TRANSPORTATION

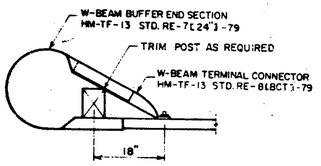
STANDARD
G-1d



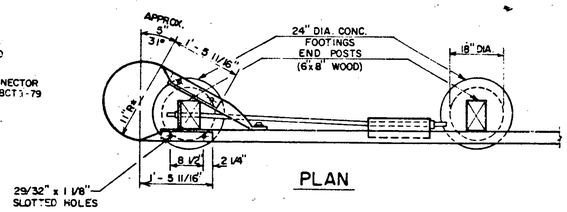
PLAN



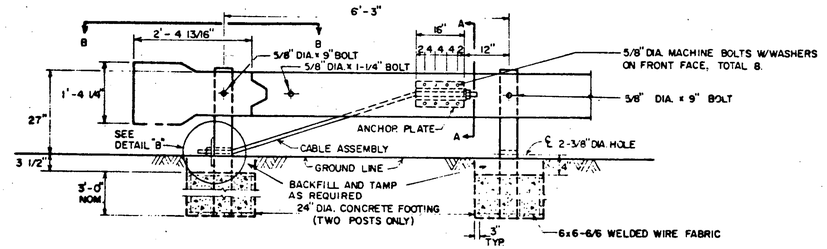
ELEVATION



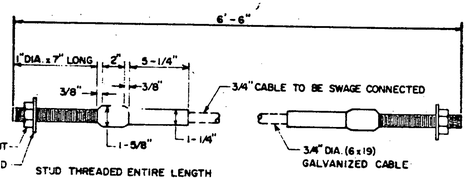
VIEW B-B



PLAN



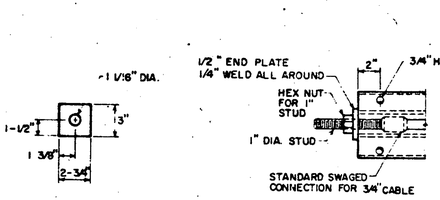
ELEVATION
DETAIL "A"



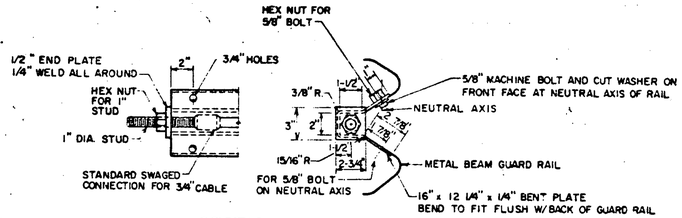
CABLE ASSEMBLY

NOTES:

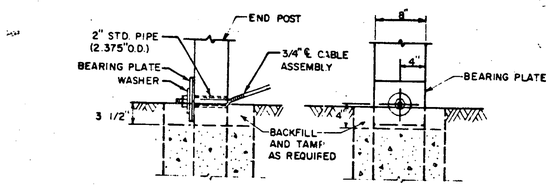
1. OTHER ANCHOR CABLE ASSEMBLIES MAY BE USED. MINIMUM BREAKING STRENGTH OF ASSEMBLY SHOULD BE 40,000 LBS.
2. CONCRETE FOOTINGS ARE CLASS B. IN SANDY FILL AREAS, CONSIDERATION TO INCREASING SIZE OF END FOOTING IS SUGGESTED.
3. A DOUBLE WRAP OF ASPHALT TREATED FELT AROUND END POSTS BEFORE CONCRETE PLACEMENT WILL FACILITATE REPLACEMENT OF DAMAGED POSTS.
4. STANDARD SHEET G-1 WILL BE USED IN CONJUNCTION WITH THIS STANDARD.
5. USE 12" LONG W-BEAM BACK-UP PLATE AT POSTS WHERE W-BEAM SPLICE DOES NOT OCCUR.



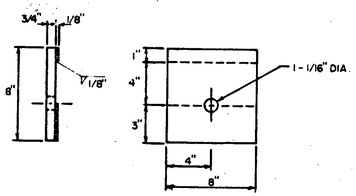
END PLATE



SECTION A-A

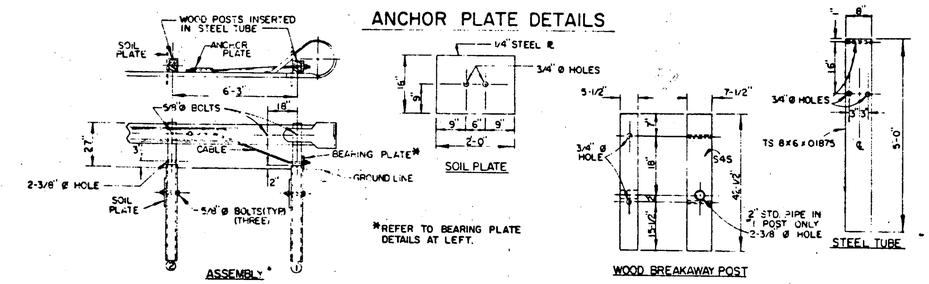


DETAIL "B"



BEARING PLATE DETAILS

ANCHOR PLATE DETAILS



ALTERNATE FOUNDATION DETAILS

REVISIONS AND CORRECTIONS

APR 21, 1977 – BREAKAWAY DETAIL LOWERED TO GROUND LINE.

JAN 19 1981 – ALTERNATE FOUNDATION DETAILS ADDED, MISCELLANEOUS CLARIFICATION OF NOTES AND DETAILS.

AUG 12, 1981 – REMOVED BEARING PLATE DETAIL FROM ALTERNATE FOUNDATION DETAILS.

APPROVED: July 21, 1976
DATE

E.H. Stickney
CHIEF ENGINEER

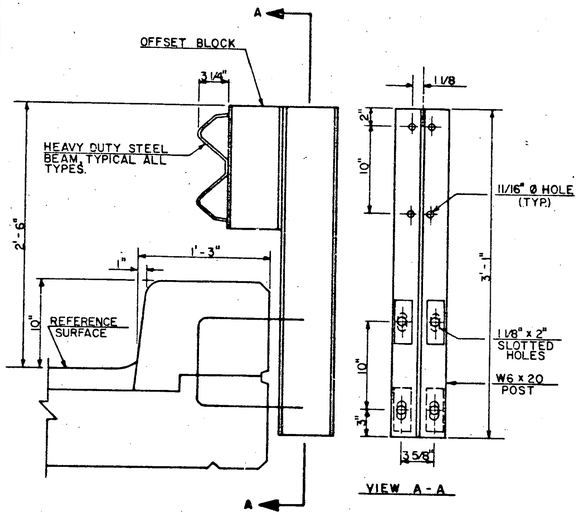
R.O. Munn
ASST. CHIEF ENGINEER

Louis C. Jones
HIGHWAY ENGINEER

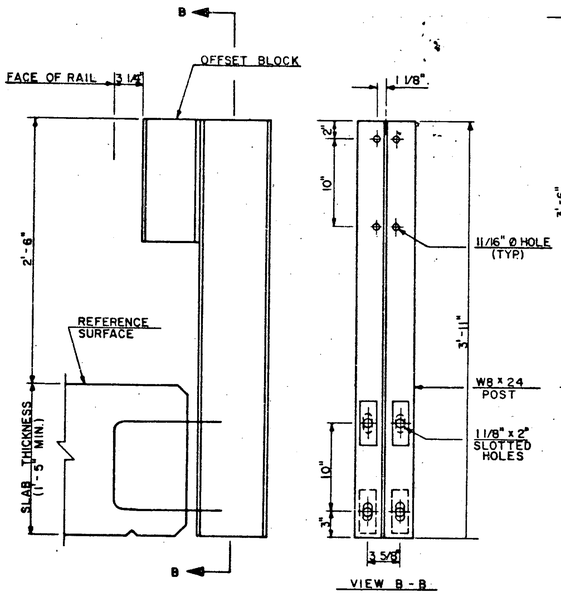
BREAKAWAY CABLE TERMINAL FOR GUARDRAIL, STEEL BEAM WITH WOOD POSTS, TYPE II

VERMONT AGENCY OF TRANSPORTATION

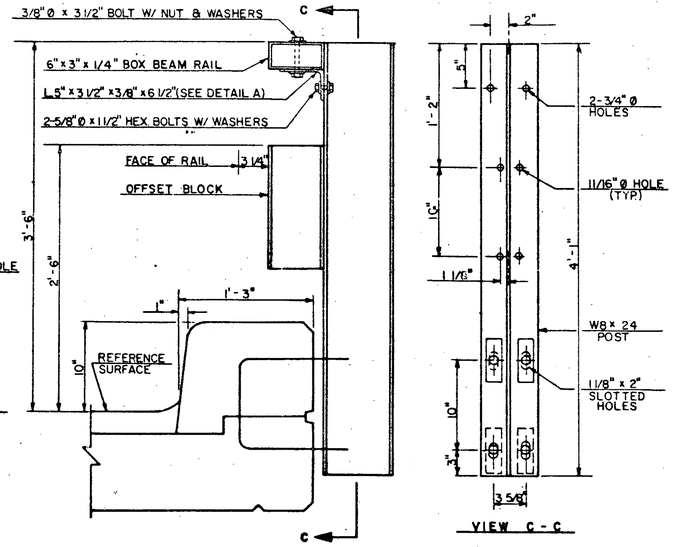
STANDARD
G-14



FASCIA MOUNTED STEEL POST
TYPE A - GALVANIZED
TYPE B - A588



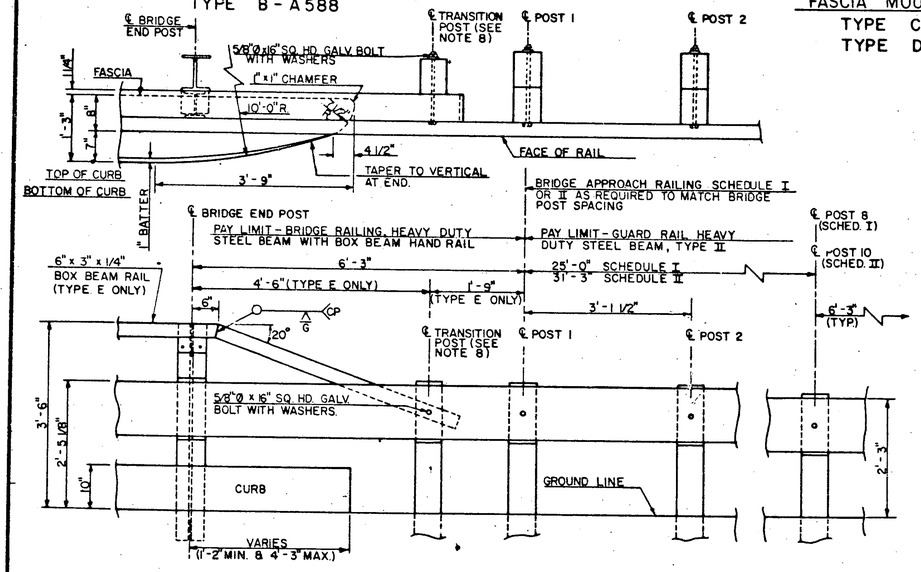
FASCIA MOUNTED STEEL POST
TYPE C - GALVANIZED
TYPE D - A588



FASCIA MOUNTED STEEL POST
WITH BOX BEAM HAND RAIL
TYPE E - GALVANIZED

NOTES

1. SEE STANDARD DRAWING G-1 & G-1d FOR ADDITIONAL DETAILS OF STEEL BEAM GUARD RAIL AND STANDARD SB-R4a-82 FOR ADDITIONAL DETAILS OF BOX BEAM RAIL.
2. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND CONFORM WITH SECTION 714.16.
3. BRIDGE RAIL TYPES A, C, & E: HEAVY DUTY STEEL BEAM RAIL SHALL BE AASHTO M 180, CLASS B-TYPE 2. POSTS, BRACKETS AND PLATE WASHER SHALL BE ASTM A 36 STEEL. BOLTS SHALL BE ASTM A 307. ALL MATERAL SHALL BE GALVANIZED AFTER FABRICATION TO ASTM A 123.
4. BRIDGE RAIL TYPE B & D: HEAVY DUTY STEEL BEAM RAIL SHALL BE AASHTO M 180, CLASS B-TYPE 4. POSTS, BRACKETS & PLATE WASHER SHALL BE ASTM A 588 STEEL. BOLTS SHALL BE ASTM A 325 TYPE III.
5. ALL POSTS SHALL BE SET NORMAL TO GRADE.
6. BRIDGE APPROACH RAIL HEIGHT SHALL BE TRANSITIONED TO NORMAL ROADWAY RAIL HEIGHT IN 25 FEET.
7. APPROACH RAILING SHALL BE HEAVY DUTY STEEL BEAM FOR 50 FEET FROM THE END OF THE BRIDGE.
8. FOR THE TYPE A, B, C, OR D BRIDGE RAILING, THE TRANSITION POST SHALL HAVE AN OFFSET BLOCK AND BE LOCATED AS CLOSE AS PRACTICAL TO THE MID-POINT BETWEEN THE BRIDGE END POST AND APPROACH RAIL POST 1.
9. SPLICES SHALL LAP IN DIRECTION OF TRAFFIC FLOW.
10. SEE STANDARD SHEET G-1 FOR DELINEATOR DETAILS AND PLACEMENT.
11. ERECT DELINEATOR ON EVERY FIFTH POST OR APPROXIMATETLY 30 FEET APART. PAYMENT SHALL BE SUBSIDIARY TO OTHER ITEMS.



BRIDGE APPROACH DETAILS

BRIDGE APPROACH RAILING

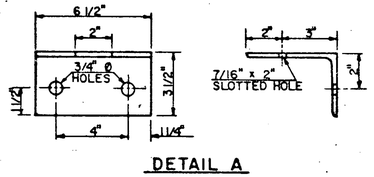
WHEN A RAIL PANEL SPLICE OCCURS AT POST NO.1 USE SCHEDULE I FOR APPROACH RAILING. WHEN A RAIL PANEL SPLICE OCCURS AT BRIDGE END POST USE SCHEDULE II FOR APPROACH RAILING.

SCHEDULE I

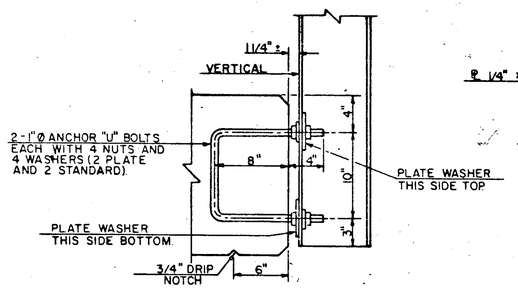
POST NO.	SPACING	PAYMENT FACTOR
1	3'-11/2"	
2	3'-11/2"	
3	3'-1 1/2"	1.4 x 12'-6"
4	3'-1 1/2"	
5	4'-2"	
6	4'-2"	1.2 x 12'-6"
7	4'-2"	
8	6'-3" (TYP)	1.0 (TYP)
9		

SCHEDULE II

POST NO.	SPACING	PAYMENT FACTOR
1		
2	3'-11/2"	
3	3'-11/2"	
4	3'-11/2"	
5	3'-11/2"	1.4 x 18'-9"
6	3'-11/2"	
7	3'-11/2"	
8	4'-2"	
9	4'-2"	1.2 x 12'-6"
10	4'-2"	
11	6'-3" (TYP)	1.0 (TYP)



DETAIL A



ANCHORAGE DETAIL

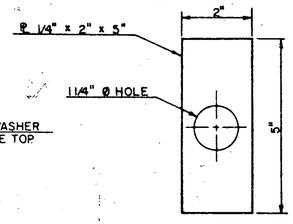


PLATE WASHER DETAIL

REVISIONS AND CORRECTIONS
REVISION DELINEATORS ADDED D.A.R 6-18-82

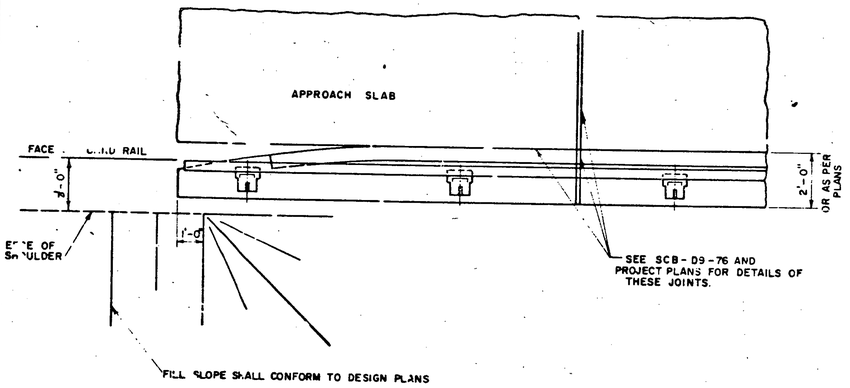
APPROVED:
DECEMBER 28, 1981
DATE
CHIEF OF DESIGN
STRUCTURES ENGINEER
DIRECTOR OF ENGINEERING AND CONSTRUCTION

BRIDGE RAILING HEAVY DUTY STEEL BEAM (TYPE A, TYPE B, TYPE C, AND TYPE D) BRIDGE RAILING HEAVY DUTY STEEL BEAM WITH BOX BEAM HAND RAIL (TYPE E)

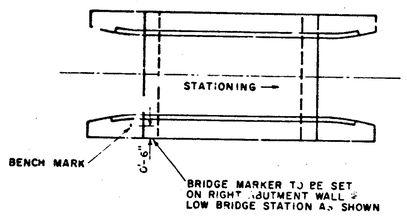
VERMONT AGENCY OF TRANSPORTATION

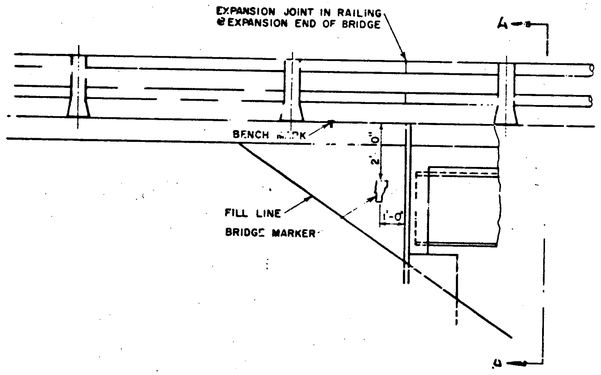
STANDARD
SB-R6-82

wa/specs p-1632

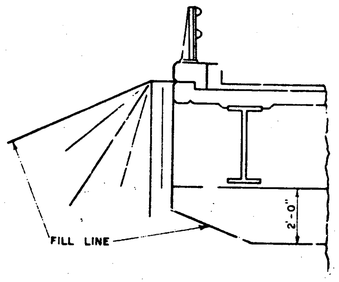


PLAN AT ABUTMENT





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 MARCH 1976 AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1977 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-709 (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 D1.1-80 "STRUCTURAL WELDING CODE" AND ITS LATEST REVISIONS EXCEPT AS MODIFIED BY THE AASHTO STANDARD SPECIFICATIONS FOR WELDING OF STRUCTURAL STEEL HIGHWAY BRIDGES, DATED 1981 AND ITS LATEST REVISIONS.
4. ALLOWABLE DESIGN STRESSES *

CONCRETE	CLASS A	f'c 3,000 psi	fc 1400 psi
	CLASS B	f'c 2500 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 REINFORCING STEEL (EXCEPT IN DECKS) SHALL BE 2" IN BACK FACES OF WALLS AGAINST EARTH AND 3" ELSEWHERE.
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. ANY FORM BRACKET HOLES IN FASCIA BEAMS OR GIRDER WEBS SHALL BE FILLED WITH BUTTON-HEAD OR HEX-HEAD BOLTS (TYPE III ON A-588 STEEL).
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, AND ARE GIVEN AT 68° F.

* 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.

15. IF ALL DECK CONCRETE IS NOT PLACED IN ONE WORKING DAY, A MINIMUM DELAY PERIOD OF 96 HOURS (FOLLOWING END OF PLACEMENT OF THE PREVIOUS CONCRETE) WILL BE REQUIRED BEFORE PLACING ADDITIONAL CONCRETE. THE MINIMUM DELAY PERIOD SHALL BE INCREASED WHEN SO ORDERED BY THE ENGINEER. IN ALL CASES THE PLACEMENT SEQUENCE INDICATED ON THE PLANS SHALL BE FOLLOWED.
16. REINFORCING PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:
    SPACING TOLERANCE: ±1"
    CLEARANCE TOLERANCE ± 1/4"

REVISIONS AND CORRECTIONS
1- Added word seat in line 3 of Note #9 J.WOOD 4-23-75
2. CHANGED VERMONT SPEC. DATE, GEN. NOTE, AND ADDED NOTE NO. 15, W. TRIPP 4-26-76.
3. REVISED NOTES, W. TRIPP, 11-15-76.
4. REVISED DATES, NOTE NO. 3. W. TRIPP 4-25-77
5. REVISED NOTES W. TRIPP 3-1-78
6. REVISED NOTE NO. 3, DATES W. TRIPP 9-14-81

APPROVED

DATE

CHIEF ENGINEER

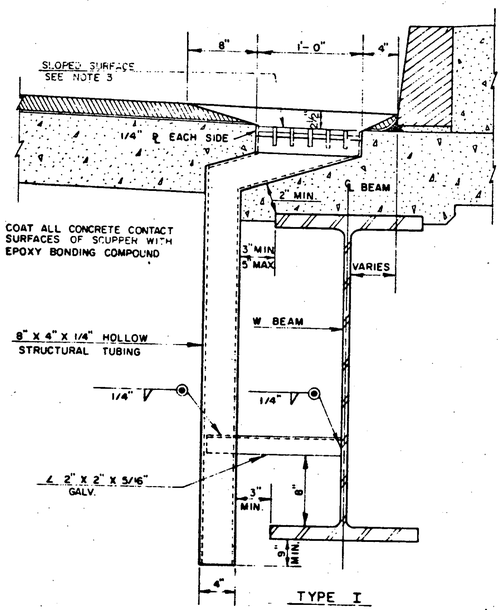
ASST. CHIEF ENGINEER

BRIDGE ENGINEER

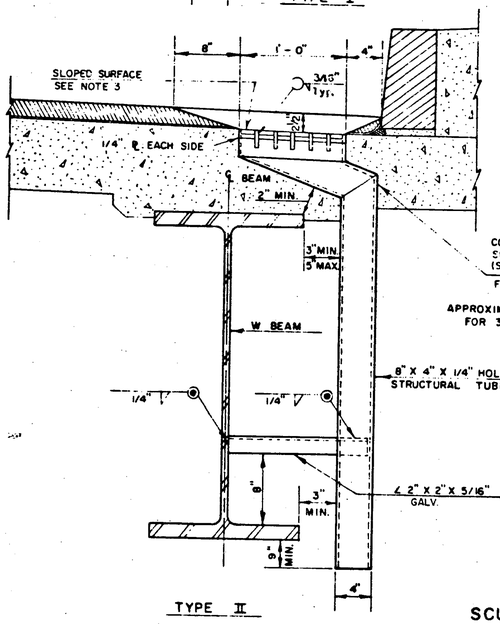
DETAILS OF W BEAM BRIDGES GENERAL INFORMATION AND GENERAL NOTES

VERMONT DEPARTMENT OF HIGHWAYS STANDARD

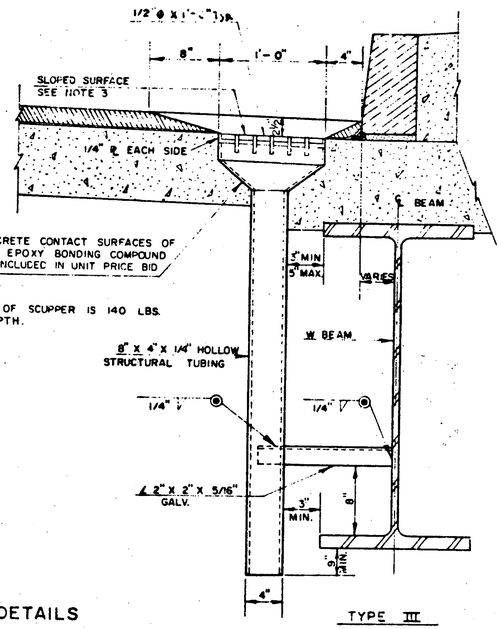
SCB-D1-75



TYPE I



TYPE II



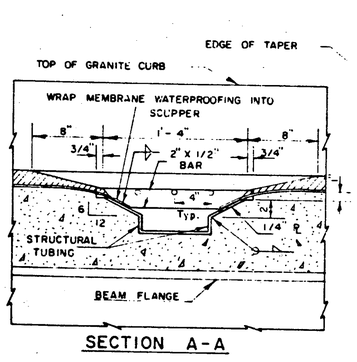
TYPE III

COAT ALL CONCRETE CONTACT SURFACES OF SCUPPER WITH EPOXY BONDING COMPOUND (SECTION 719) INCLUDED IN UNIT PRICE BID FOR CONCRETE.

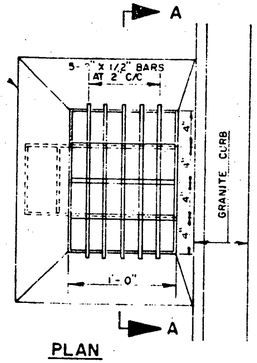
APPROXIMATE WEIGHT OF SCUPPER IS 140 LBS. FOR 36" BEAM DEPTH.

SCUPPER DETAILS

Ⓐ



SECTION A-A



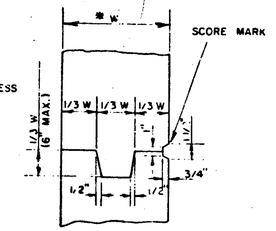
PLAN

NOTES -
THE FOLLOWING NOTES APPLY TO ALL SCUPPERS UNLESS OTHERWISE DETAILED ON PROJECT PLANS:

1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 OR A-501. ALL PLATES, BARS AND ANGLES SHALL CONFORM TO ASTM A-36
2. ALL SCUPPERS SHALL BE GALVANIZED ACCORDING TO ASTM A-123 AFTER FABRICATION.
3. TOP SURFACE OF SCUPPERS MUST BE SLOPED TO MATCH ROADWAY CROSS SLOPE AND GRADE.
4. END SCUPPERS ARE TO BE PLACED MIDWAY BETWEEN ℄ BRG. AND FIRST DIAPHRAGM ASSEMBLY.
5. INTERMEDIATE SCUPPERS ARE TO BE PLACED MIDWAY BETWEEN DIAPHRAGM ASSEMBLIES.
6. ON PROJECTS WITH NO BITUMINOUS WEARING SURFACE, SET SCUPPERS 3/4" BELOW TOP OF CONCRETE SLAB.

CONSTRUCTION JOINTS SHALL BE PLACED AS INDICATED ON THE PLANS.

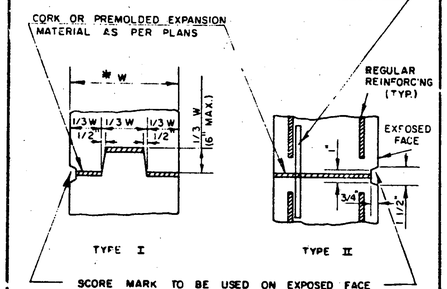
HORIZONTAL SCORE MARKS SHALL BE PLACED AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.



TYPICAL DETAIL OF CONSTRUCTION JOINT AND SCORE MARKS

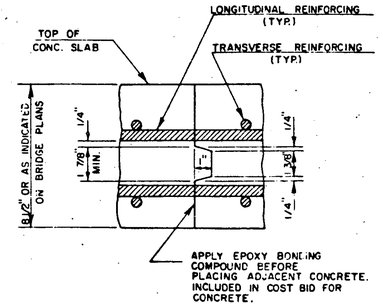
Ⓑ

4' LONG DEFORMED BAR (TO BE PAID FOR AS REINFORCING STEEL). WRAP ONE END TO PREVENT BOND.



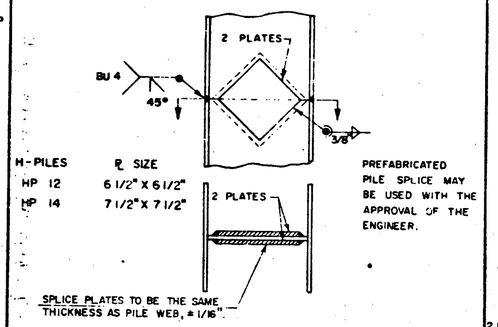
DETAILS OF VERTICAL EXPANSION JOINTS

Ⓒ



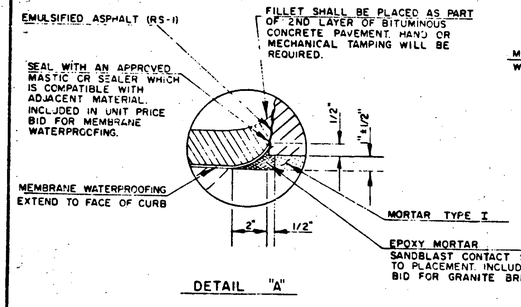
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

Ⓓ



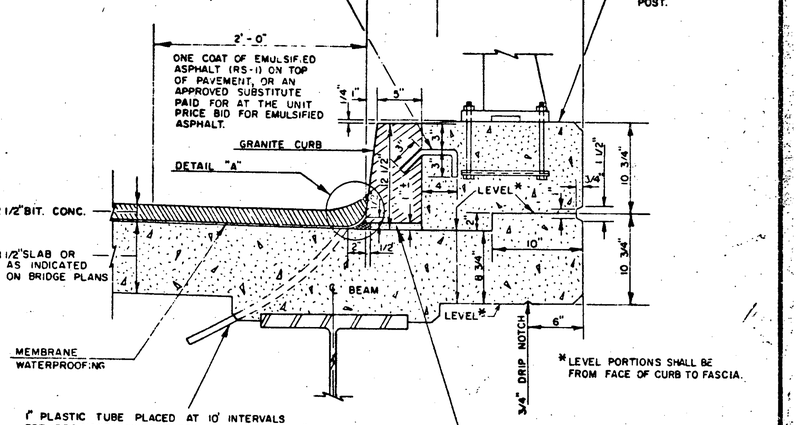
DETAIL OF PILE SPLICE

Ⓔ



DETAIL "A"

4 BAR AT 12" FROM EITHER END. (2 REQUIRED FOR EACH CURB SECTION). DRILLING AND LEADING OF BARS TO BE PAID FOR UNDER THE UNIT PRICE BID FOR ITEM 616.17, GRANITE BRIDGE CURB.



CURB DETAILS

Ⓕ

REVISIONS AND CORRECTIONS

1.-Added 1/2" ϕ bars to scupper details	J. WOOD 1-27-75
2.-Added to note on 1" plastic tubes	J. WOOD 1-27-75
3.-Revised pile splice weld.	W. Tripp 12-29-75
4.-Revised scupper length and pile splice detail	W. Tripp 12-15-76
5.-Revised slab and pavement thicknesses	W. Tripp 4-3-78
6.-Revised scupper notes.	W. Tripp 1-3-79

APPROVED DATE: Nov 28 1973

E. H. Stickney
CHIEF ENGINEER

R. C. Nunn
ASST. CHIEF ENGINEER

K. M. Smith
BRIDGE ENGINEER

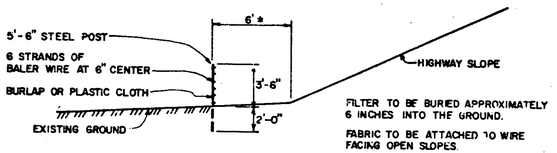
DETAILS OF W BEAM BRIDGES

Ⓐ SCUPPER DETAILS
ⒷⒸⒹ CONSTRUCTION DETAILS
Ⓔ PILE DETAILS
Ⓕ CURB DETAILS

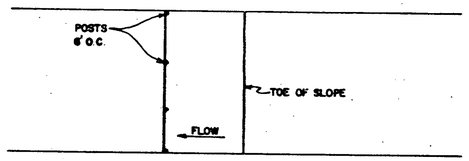
VERMONT AGENCY OF TRANSPORTATION

STANDARD

SCB-D6-73

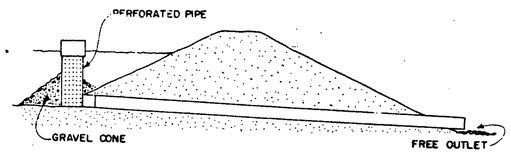


ELEVATION

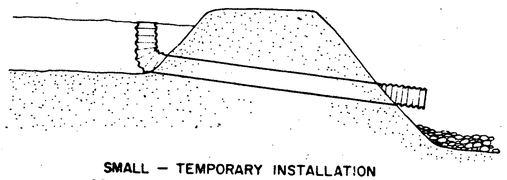


PLAN

SILT FENCE

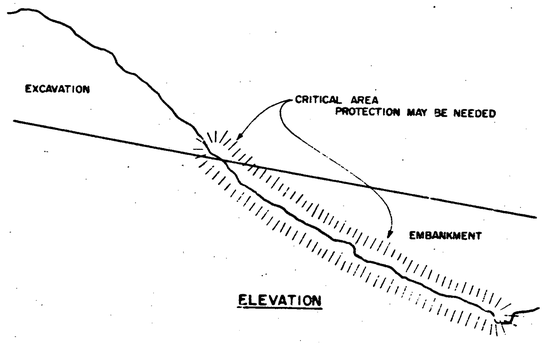


LARGE – PERMANENT INSTALLATION
PIPE RISER – STONE CUTLET

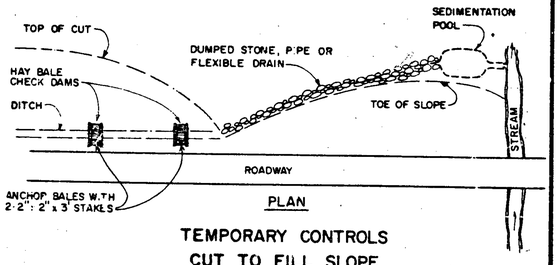


SMALL – TEMPORARY INSTALLATION
ACCM PIPE WITH RISER – STONE OUTLET

SEDIMENT DAMS

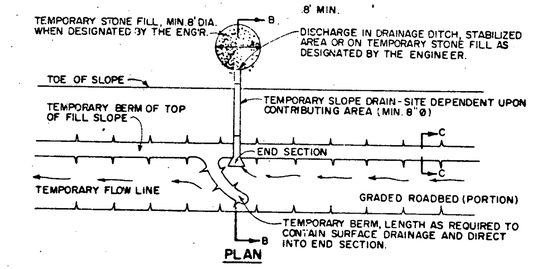


ELEVATION

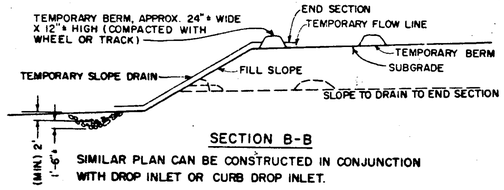


PLAN

TEMPORARY CONTROLS
CUT TO FILL SLOPE

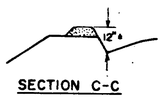


PLAN



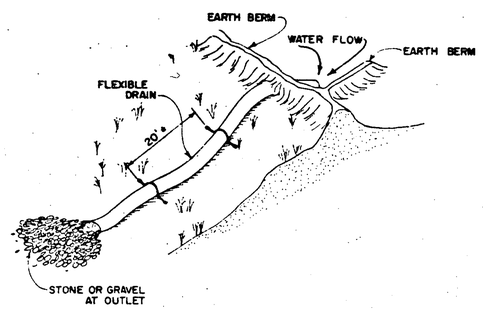
SECTION B-B

SIMILAR PLAN CAN BE CONSTRUCTED IN CONJUNCTION WITH DROP INLET OR CURB DROP INLET.

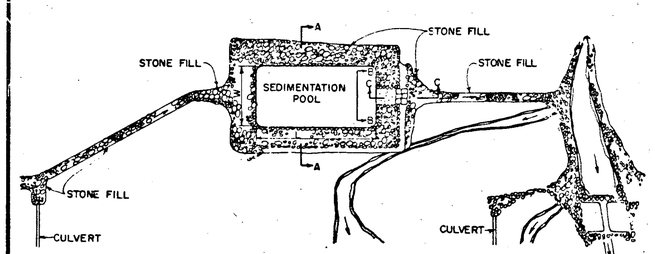


SECTION C-C

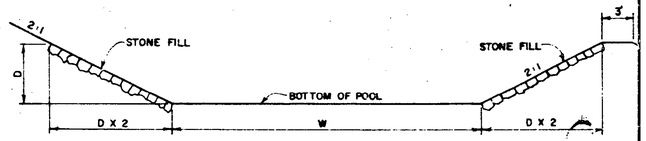
TEMPORARY BERMS AND SLOPE DRAINS
FOR FILL SLOPES



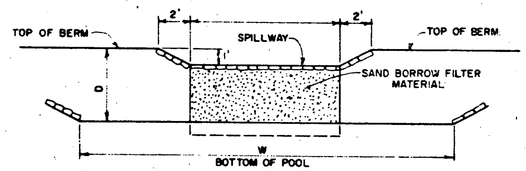
TEMPORARY FLEXIBLE SLOPE DRAIN



SEDIMENTATION POOL

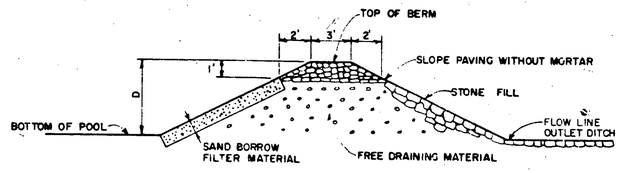


SECTION A-A



DETAILS OF SPILLWAY TO BE DETERMINED BY HYDRAULIC SECTION

SECTION B-B



SECTION C-C

CORRECTIONS & REVISIONS

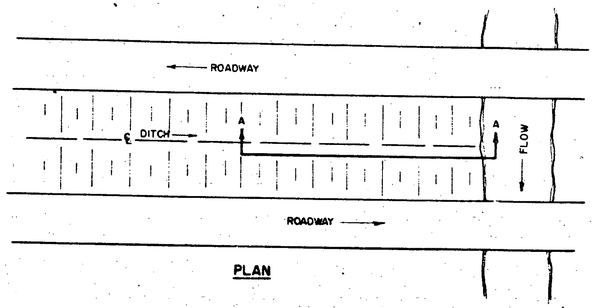
JUNE 14, 1973 – SEDIMENT TRAPS REMOVED FROM TEMPORARY BERMS AND SLOPE DRAINS FOR FILL SLOPES
FEB. 26, 1976 – SILT FENCE ADDED.
DEC. ?, 1976 – HAY BALE ANCHOR NOTE ADDED.

APPROVED: July 5, 1972
DATE
R. H. Arnold
CHIEF ENGINEER
E. H. Pichney
ASST. CHIEF ENGINEER
G. M. Lane
HIGHWAY ENGINEER

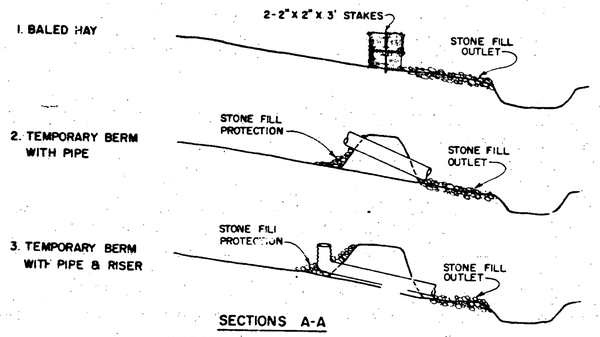
TEMPORARY EROSION CONTROL DETAILS

VERMONT DEPARTMENT OF HIGHWAYS STANDARD

T-1

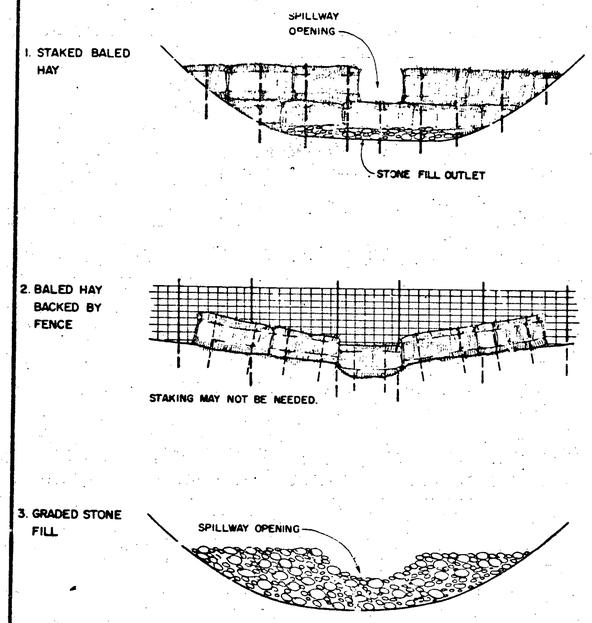


PLAN



SECTIONS A-A

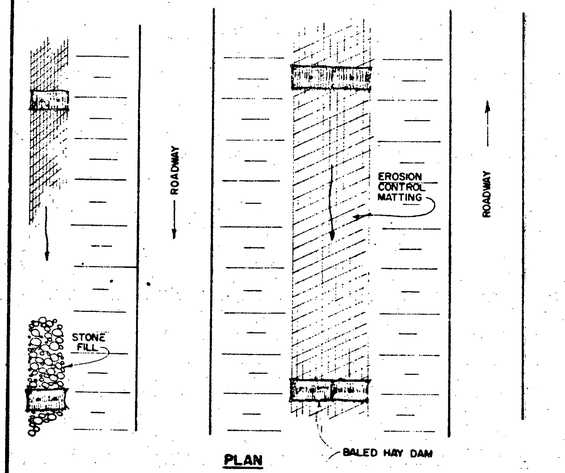
PROTECTION AT STREAM CROSSING
MEDIAN AND SIDE DITCHES



ELEVATIONS

TYPES OF TEMPORARY DAMS

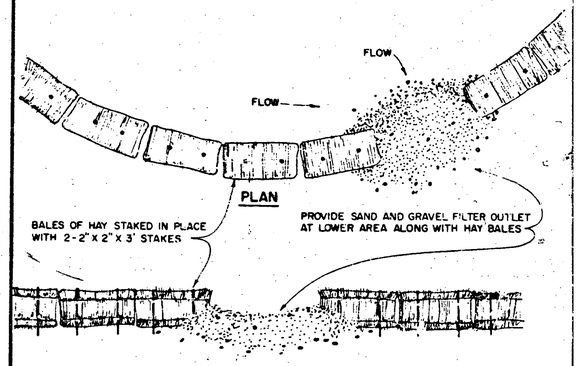
DAM SHOULD EXTEND FAR ENOUGH UP DITCH SIDE SLOPES TO EFFECTIVELY POND THE RUNOFF AND PREVENT EROSION AND WASHOUT.



PLAN

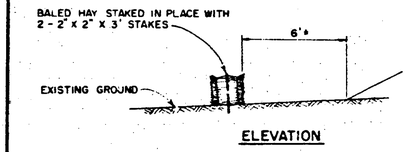
ELEVATION

BALED HAY DAMS USED IN DITCHES

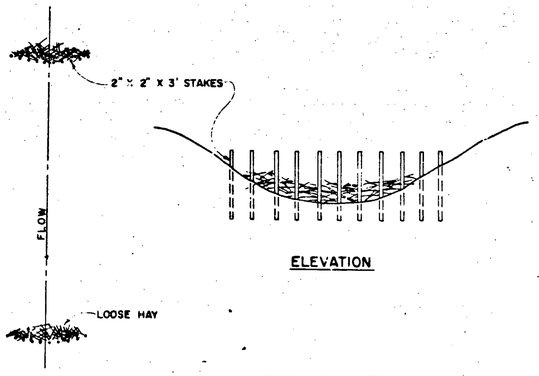


ELEVATION

BALED HAY DAMS ALONG TOE OF SLOPE



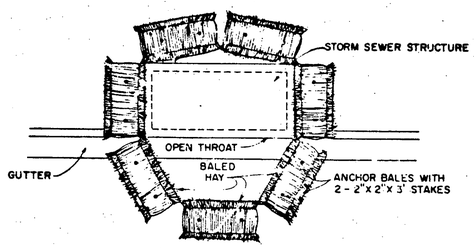
ELEVATION



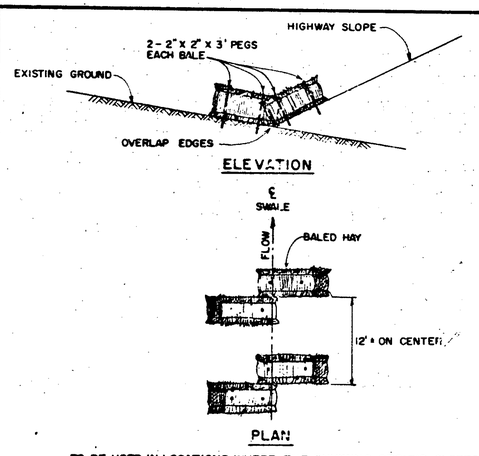
ELEVATION

PLAN

SEDIMENT TRAP
LOOSE HAY BACKED BY STAKES

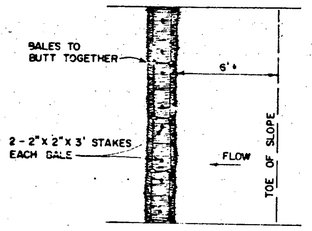


INLET PROTECTION
TEMPORARY BARRIER - HAY BALES



TO BE USED IN LOCATIONS WHERE THE EXISTING GROUND SLOPES IN TOWARD THE EMBANKMENT.
BALES WILL BE ALLOWED TO ROT IN PLACE.

BALED HAY EROSION CHECKS



PLAN

TO BE USED WHERE THE EXISTING GROUND SLOPES AWAY FROM THE HIGHWAY EMBANKMENT.

BALED HAY EROSION CHECKS

CORRECTIONS & REVISIONS

APPROVED: July 5, 1972
DATE
R.J. Conrad
CHIEF ENGINEER
ASST. CHIEF ENGINEER
G. W. Lane
HIGHWAY ENGINEER

TEMPORARY EROSION CONTROL DETAILS

VERMONT DEPARTMENT OF HIGHWAYS STANDARD

T-2