

Date MAR 26 1987

Blow + Co Inc

Contractor

Michael Cote

Signature

President

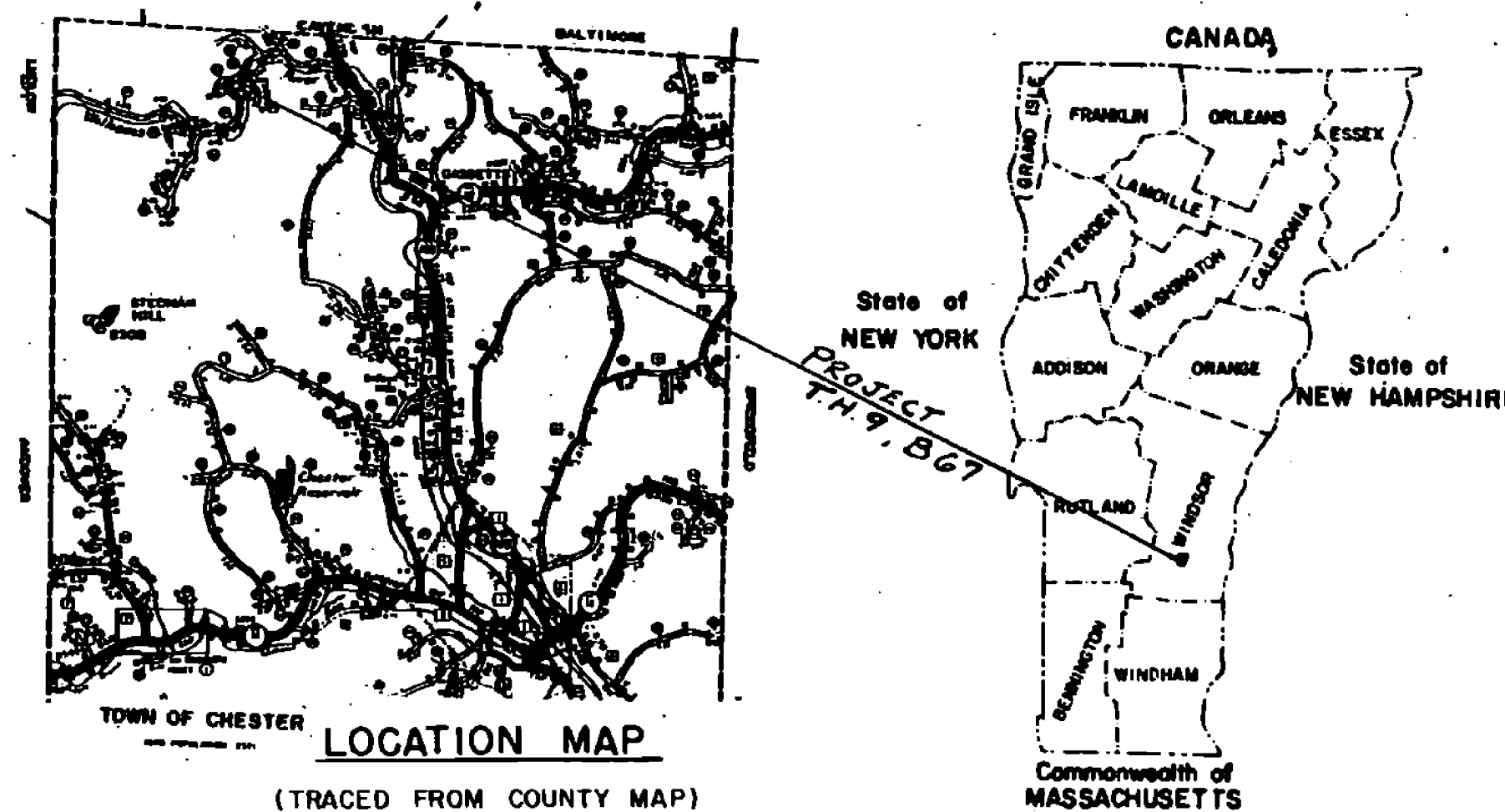
Title

Transportation Secretary's Signature

STATE OF VERMONT AGENCY OF TRANSPORTATION



CONTRACT PLANS THESE PLANS DO NOT REFLECT CHANGES MADE ON THE PROJECT.



INDEX OF SHEETS

- 1. TITLE SHEET
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3. PLAN
4. PROFILE & NOTES
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7. DECK REINFORCING RAILING PLAN
8. FRAMING PLAN
9. BEARING DEVICES
10. PLAN & ELEVATION ABUTMENT #1
11. PLAN & ELEVATION ABUTMENT #2
12. FOOTING REINFORCING PLAN & SECTION
13. WEIRWALL DETAILS
14. REINFORCING SCHEDULE
15-16. R.O.M. SHEETS
17-18. PLAN
19-22. SECTIONS - T.H. #9
23. SECTIONS - T.H. #14
24. SECTIONS - T.H. #29
25-28. CHANNEL SECTIONS

LIST OF STANDARDS

Table listing standards for bridge railing, general information, and details, including reference numbers and dates.

GENERAL NOTES

- 1. THIS PROJECT SHALL BE CONSTRUCTED UNDER THE VERMONT AGENCY OF TRANSPORTATION...
2. TRAFFIC SHALL BE MAINTAINED WITH THE USE OF A "ONE-WAY TEMPORARY BRIDGE"...
3. NOTES ON STANDARD SCB-D1-75 THAT APPLY TO THIS PROJECT ARE NOTES # 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13, 14, 15, AND 16.
4. ITEM 529.15, "REMOVAL OF STRUCTURE" SHALL INCLUDE REMOVAL OF ALL THE EXISTING SUPERSTRUCTURE AND ALL THE EXISTING ABUTMENTS.
5. THE CONTRACTOR SHALL ERECT AND MAINTAIN ALL ON-PROJECT SIGNS AND BARRICADES. COST OF ALL CONSTRUCTION SIGNS AND BARRICADES, AS REQUIRED BY THE ENGINEER, SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS.
6. FOR ADDITIONAL NOTES, SEE SHEET 4 OF 28.

PROPOSED IMPROVEMENT BRIDGE PROJECT

TOWN OF CHESTER COUNTY OF WINDSOR

ROUTE NO: T.H. 9 BRIDGE NO: 67

PROJECT LOCATION: BEGIN 1.16 MILES WEST OF THE INTERSECTION OF T.H. 9 AND VT. RTE. 103 AND EXTEND SOUTHWEST ON T.H. 9 A DISTANCE OF 430 FEET.

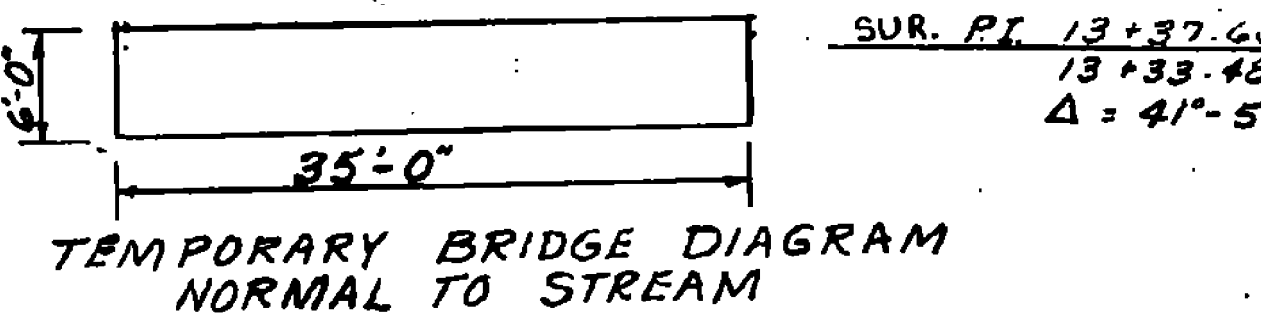
PROJECT DESCRIPTION: CONSTRUCT A NEW SIMPLE SPAN ROLLED BEAM BRIDGE WITH CONCRETE DECK ALONG WITH NECESSARY APPROACHES AND CHANNEL WORK.

LENGTH OF STRUCTURE: 78.54 FEET
LENGTH OF PARTICIPATION ROADWAY: 352.08 FEET
LENGTH OF NON-PARTICIPATION ROADWAY: 0.0 FEET
LENGTH OF PROJECT: 430.62 FEET

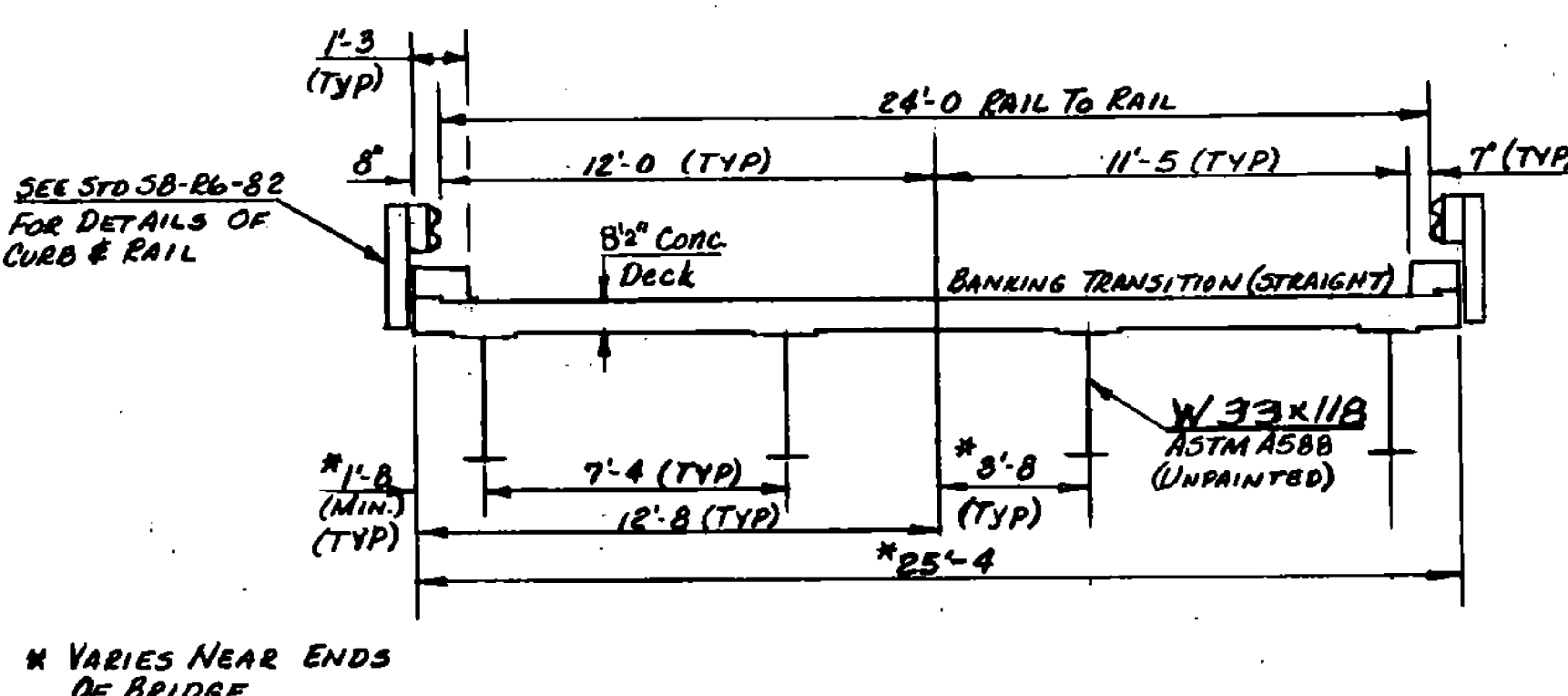
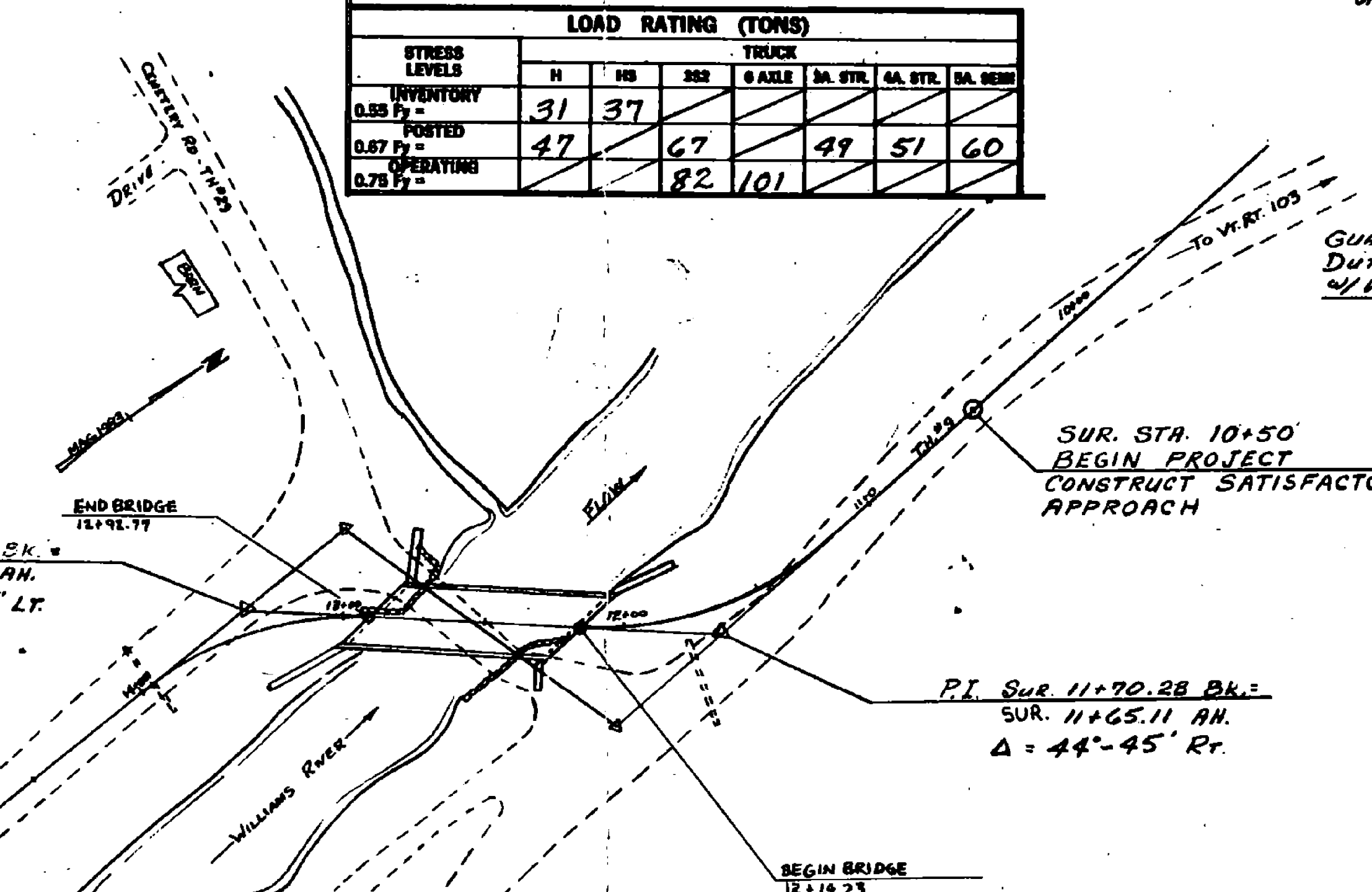
LOAD RATING (TONS) table with columns for stress levels (Inventory, Posted, Operating) and truck configurations (H, HS, SS, 6 AXLE, 3A STR, 4A STR, 5A STR).

HYDRAULICS DATA
Drainage Area = 15.2 sq. mi. (34.2 sq. km.)
Q 2.33 = 900 cfs. (25 cms.); HW Elev. = 945.6
Q 10 = 1800 cfs. (50 cms.); HW Elev. = 946.5
Q 25 = 2500 cfs. (70 cms.); HW Elev. = 947.5
Q 50 = 3000 cfs. (85 cms.); HW Elev. = 948.0
Q 100 = 3500 cfs. (100 cms.); HW Elev. = 948.8
Outlet velocity @ Q 25 = 11.5 fps. (3.5 mps.)
Tailwater @ Q 25 = 5.3' (1.6m.)
Roadway overflow occurs at frequencies greater than Q 100.

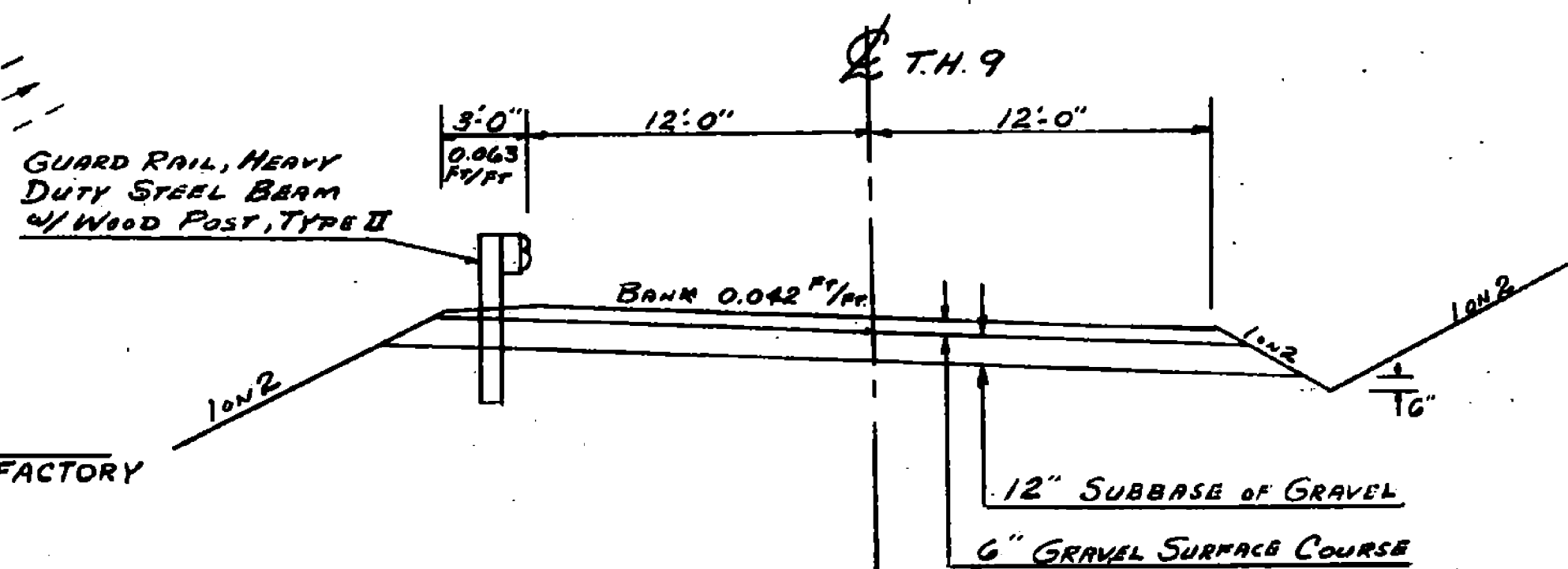
TEMPORARY STRUCTURE DATA
Any temporary structure here should have a clear span of at least 35' (10.7 m.) and a clear height of at least 6' (1.8 m.).



SUR. STA. 15+00 END PROJECT CONSTRUCT SATISFACTORY APPROACH



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



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

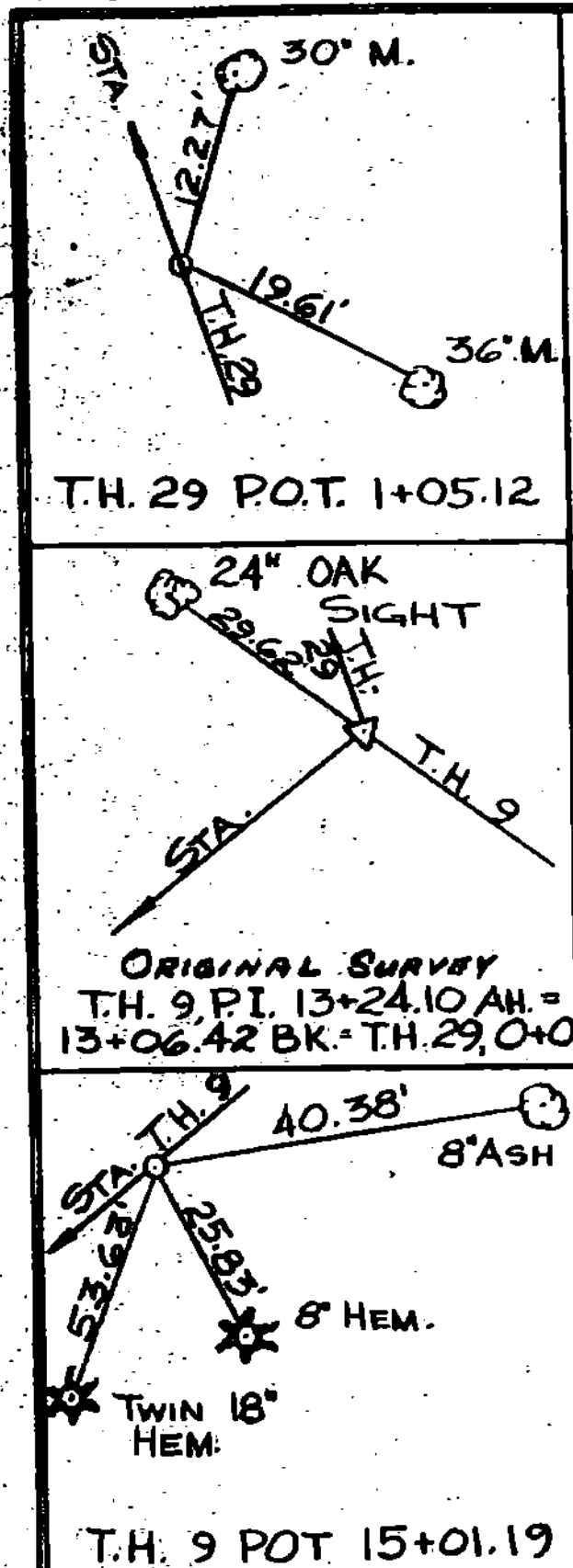
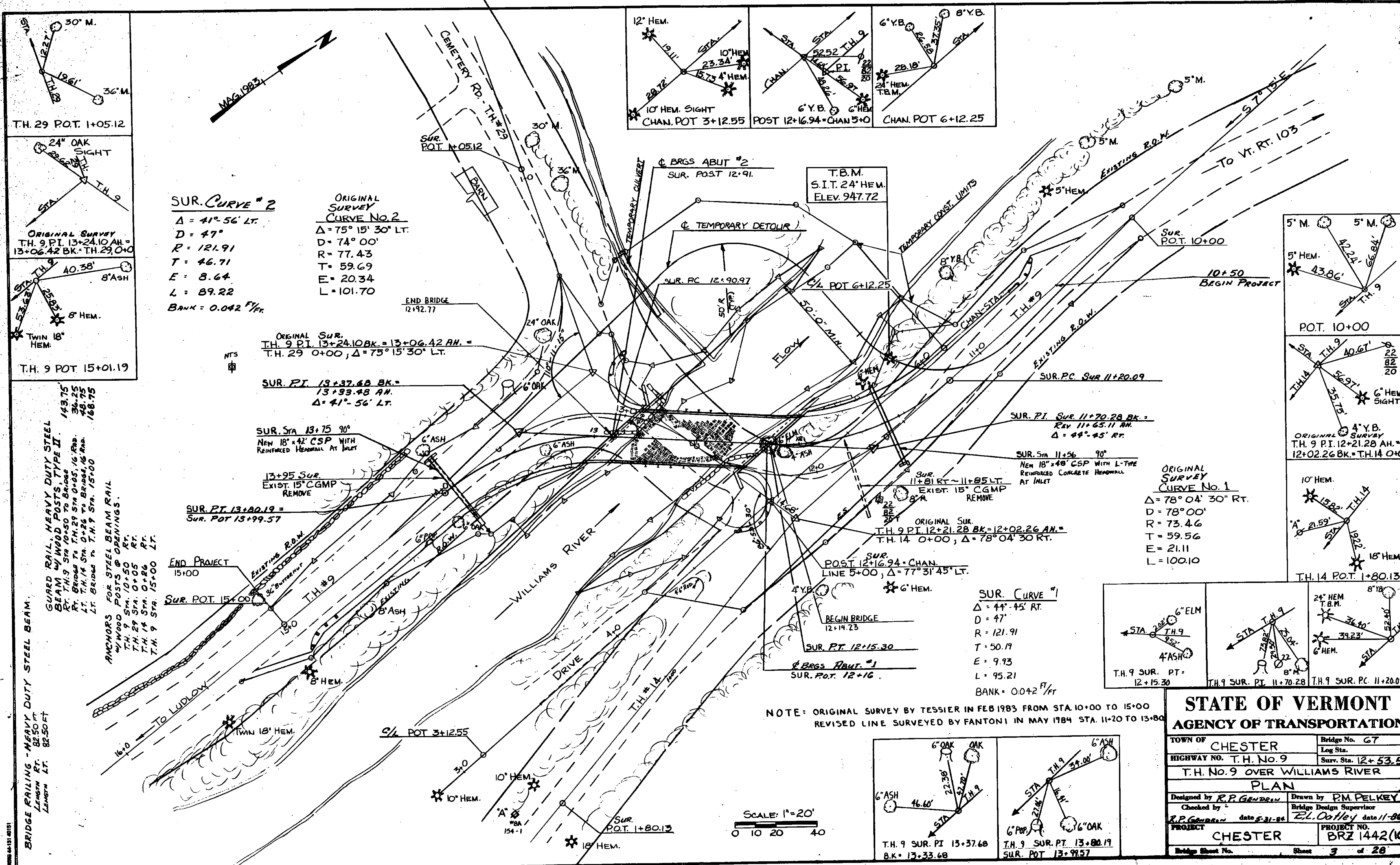
- CONVENTIONAL SIGNS
COUNTY LINE
TOWN LINE
LIMITS OF ACCESS
POINT OF ACCESS
FENCE LINE
STONE WALL
TRAVELED WAY
GUARD RAIL
RAILROAD
SURVEY LINE
CULVERT
POWER POLE
TELEPHONE POLE
TREES
CONTROL OF ACCESS
PROPERTY LINE
R.O.W TAKING LINE
SLOPE RIGHTS
TOP OF CUT
TOE OF SLOPE

DATUM
VERTICAL U.S.G.S
HORIZONTAL

TRAFFIC DATA table showing ADT (Average Daily Traffic) for years 1984, 1994, and DMY (Daily Maximum Yield) for different truck types.

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 Construction dated 1986, as approved by the Federal Highway Administration on Nov. 21, 1985 for use on this project, including all subsequent revisions and such revised specifications and special provisions as are incorporated in these plans.

Approval and title block containing signatures, dates, project title 'T.H. 9, B67 OVER WILLIAMS RIVER', and sheet information 'SHEET 1 OF 28 SHEETS'.



SUR. CURVE # 2
 $\Delta = 41^\circ 56' \text{ LT.}$
 $D = 47'$
 $R = 121.91$
 $T = 46.71$
 $E = 8.64$
 $L = 89.22$
 $\text{BANK} = 0.042 \text{ FT.}$

ORIGINAL SURVEY CURVE No. 2
 $\Delta = 75^\circ 15' 30'' \text{ LT.}$
 $D = 74^\circ 00'$
 $R = 77.43$
 $T = 59.69$
 $E = 20.34$
 $L = 101.70$

ORIGINAL SURVEY
 T.H. 9 P.I. 13+24.10 A.H. = 13+06.42 B.K. T.H. 29, 0+00
 $\Delta = 75^\circ 15' 30'' \text{ LT.}$

SUR. P.I. 13+37.68 B.K. = 13+33.48 A.H.
 $\Delta = 41^\circ 56' \text{ LT.}$

SUR. STA 13+75 90°
 NEW 18" x 42" CSP WITH REINFORCED HEADWALL AT INLET

13+95 SUR.
 EXIST. 15" CGMP REMOVE

SUR. PT. 13+40.19 = SUR. POT. 13+99.57

END PROJECT 15+00

SUR. POT. 15+00

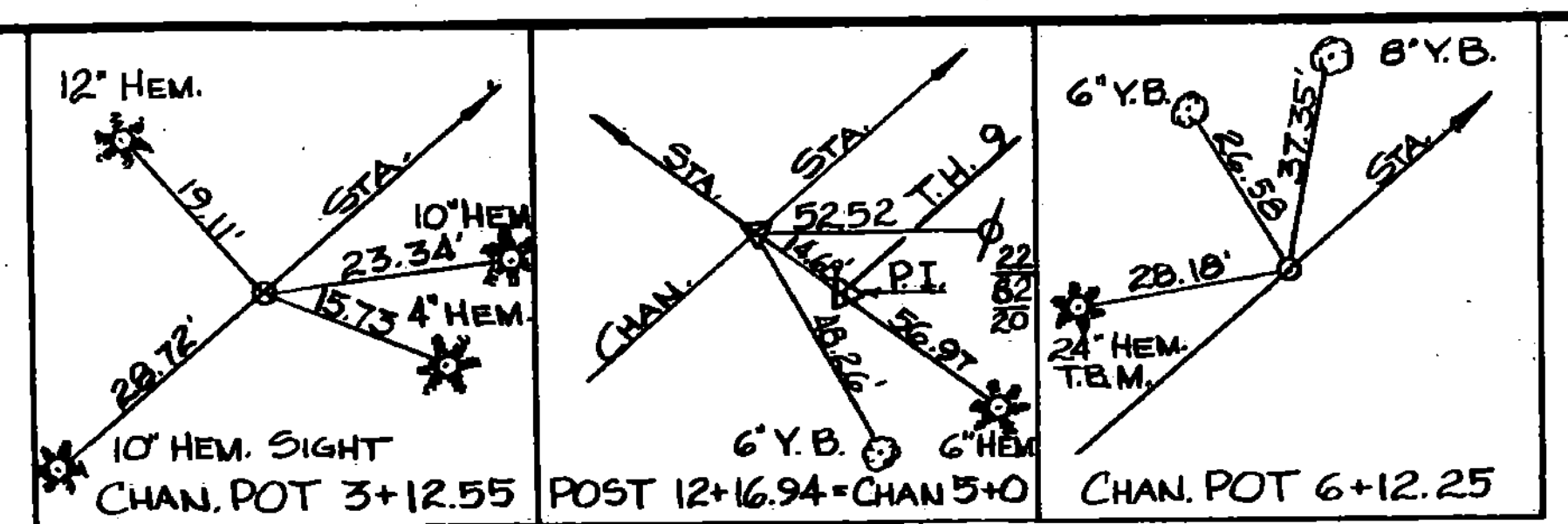
EXISTING R.O.W.

T.H. #9

BRIDGE RAILING - HEAVY DUTY STEEL BEAM
 LENGTH RT. 82.50 FT
 LENGTH LT. 82.50 FT

GUARD RAIL, HEAVY DUTY STEEL BEAM W/ WOOD POSTS, TYPE II.
 RT. BRG. TO STA. 10+50 TO BRIDGE
 LT. BRG. TO STA. 10+50 TO BRIDGE
 T.H. 9 STA. 10+50 RT.
 T.H. 29 STA. 0+05 RT.
 T.H. 14 STA. 0+26 RT.
 T.H. 9 STA. 15+00 LT.

ANCHORS FOR STEEL BEAM RAIL W/ WOOD POSTS @ OPENINGS.
 T.H. 9 STA. 10+50 RT.
 T.H. 29 STA. 0+05 RT.
 T.H. 14 STA. 0+26 RT.
 T.H. 9 STA. 15+00 LT.

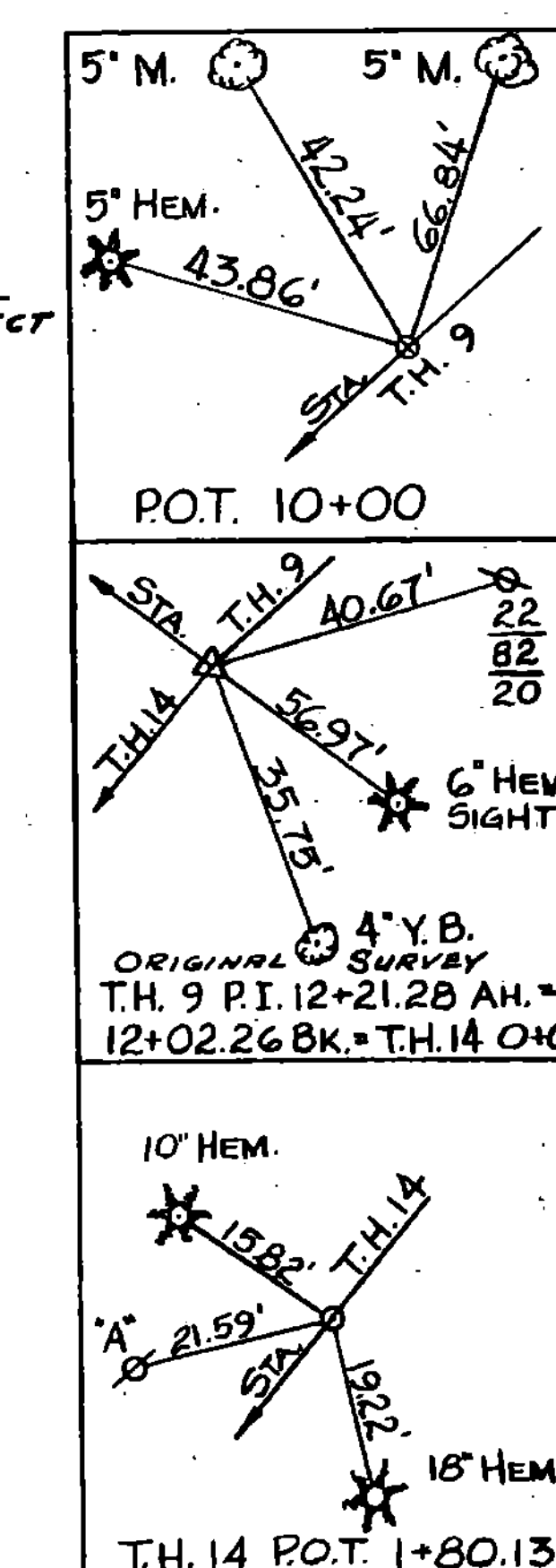
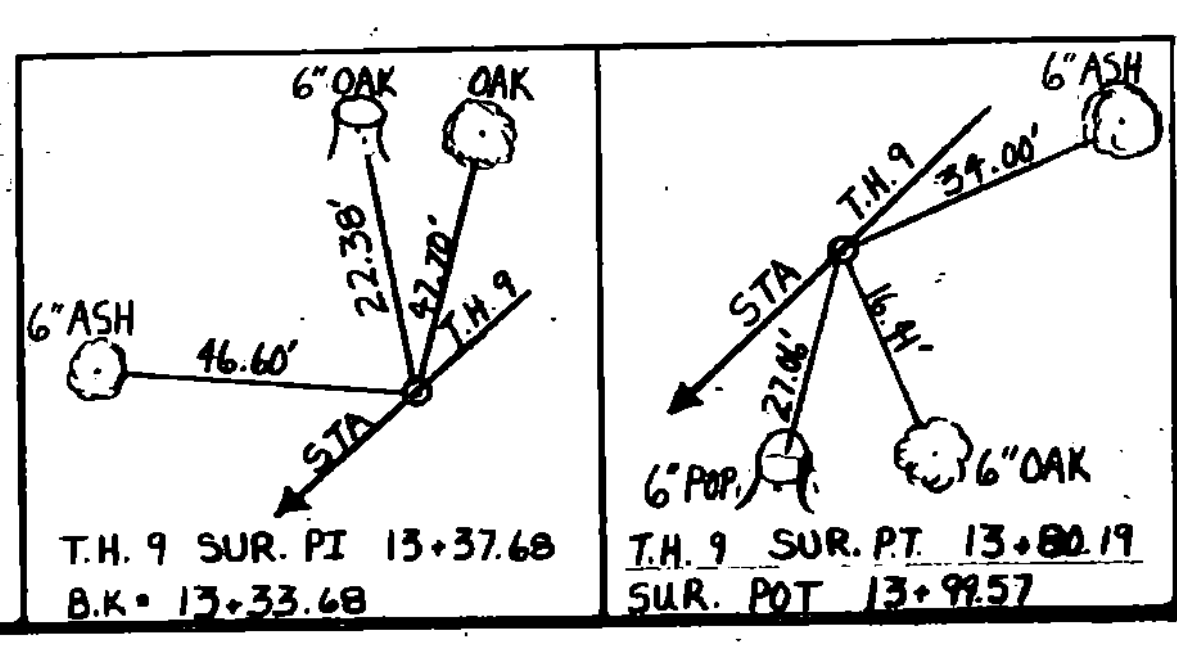
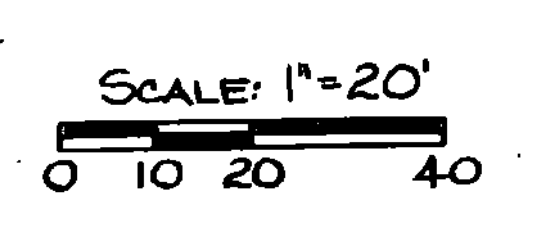


**T.B.M. S.I.T. 24\"/>
 ELEV. 947.72**

SUR. CURVE # 1
 $\Delta = 44^\circ 45' \text{ RT.}$
 $D = 47'$
 $R = 121.91$
 $T = 50.19$
 $E = 9.93$
 $L = 95.21$
 $\text{BANK} = 0.042 \text{ FT.}$

ORIGINAL SURVEY CURVE No. 1
 $\Delta = 78^\circ 04' 30'' \text{ RT.}$
 $D = 78^\circ 00'$
 $R = 73.46$
 $T = 59.56$
 $E = 21.11$
 $L = 100.10$

**NOTE: ORIGINAL SURVEY BY TESSIER IN FEB 1983 FROM STA. 10+00 TO 15+00
 REVISED LINE SURVEYED BY FANTONI IN MAY 1984 STA. 11+20 TO 13+80**



STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF CHESTER	Bridge No. 67
HIGHWAY NO. T.H. No. 9	Log Sta.
T.H. No. 9 OVER WILLIAMS RIVER	
PLAN	
Designed by R.P. Gendron	Drawn by P.M. PELKEY
Checked by R.P. Gendron	Bridge Design Supervisor
date 5-31-84	E.L. Oatley date 11-86
PROJECT CHESTER	PROJECT NO. BRZ 1442(10)
Bridge Sheet No.	Sheet 3 of 28

GENERAL NOTES

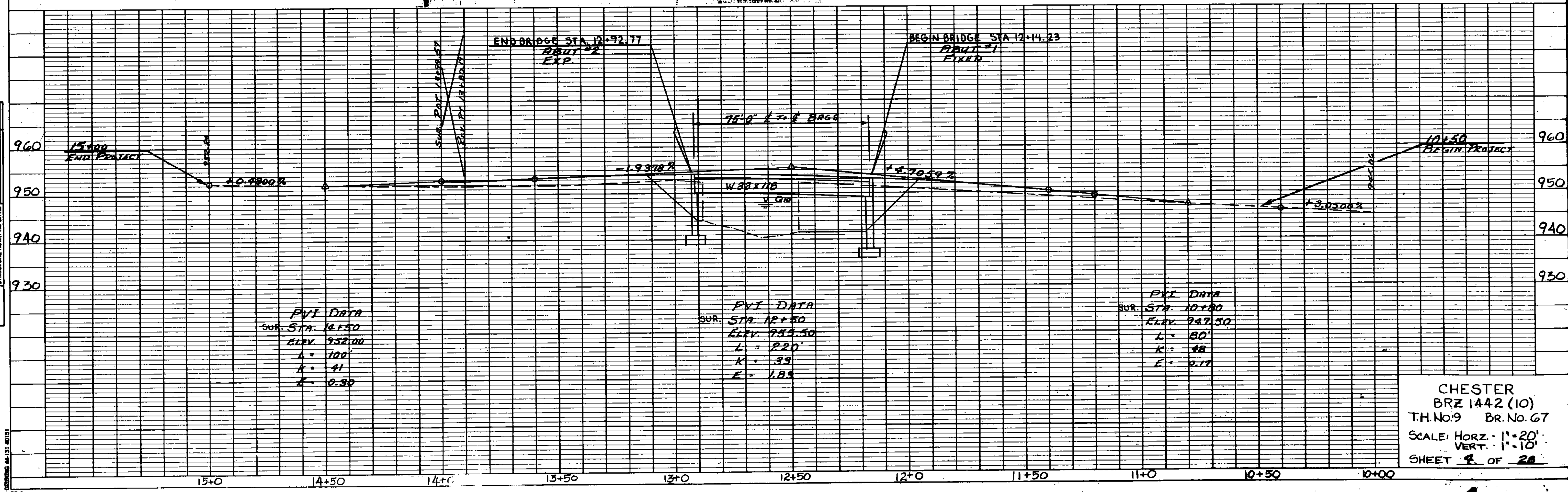
7. FOR DETAILS OF CONSTRUCTION JOINTS, SEE STANDARD SCB-D6-73.
8. ALL CUT AND FILL SLOPES SHALL BE SEEDED, FERTILIZED, LIMESTONED AND MULCHED IN ACCORDANCE WITH SECTION 105.23, "CONTROL OF EROSION AND SILTATION" AND SECTION 651, "TURF ESTABLISHMENT". THIS WORK SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS. ALL MATERIALS USED FOR TURF ESTABLISHMENT SHALL BE APPROVED BY THE ENGINEER.
9. WATER REPELLENT SHALL BE APPLIED AS SPECIFIED TO ALL EXPOSED SURFACES OF CONCRETE, EXCEPT THE UNDERSIDE OF THE DECK BETWEEN THE DRIP NOTCHES.
10. NEW ABUTMENT FOOTINGS SHALL BE PLACED ON SOUND, CLEAN LEDGE. THE RESIDENT ENGINEER SHALL PROFILE THE FINAL LEDGE SURFACE AT THE ABUTMENTS. IF THE TOP OF FOOTING ELEVATION NEEDS TO BE LOWER THAN SHOWN ON THE PLANS, THE RESIDENT ENGINEER SHALL INFORM THE STRUCTURES ENGINEER FOR A DESIGN CHECK. NO LEDGE SHALL PROJECT ABOVE INDICATED BOTTOM OF FOOTING ELEVATION. ALL OVER-BREAKAGE BELOW INDICATED BOTTOM OF FOOTING SHALL BE REPLACED WITH "CONCRETE, CLASS B". A MAXIMUM OF 6" AVERAGE DEPTH SHALL BE PAID FOR AS STRUCTURE EXCAVATION AND "CONCRETE, CLASS B". ANY ADDITIONAL CONCRETE OR EXCAVATION SHALL BE AT THE CONTRACTOR'S EXPENSE.
11. FLASHING BRACKETS OR SIMILAR FALSEWORK SHALL BE SPACED AT A MAXIMUM OF FOUR (4) FEET.
12. ANY IN-STREAM CONSTRUCTION SHALL BE ACCOMPLISHED DURING THE PERIOD OF JUNE 15 TO OCTOBER 1. ANY DEVIATION FROM THIS PERIOD SHALL BE APPROVED BY THE ENVIRONMENTAL AGENCY.
13. DESIGN LIVE LOADING IS FOR HS-20.
14. FOR CULVERT HEADWALL DETAILS, SEE STANDARD D-2. ALL CULVERT HEADWALLS SHALL BE REINFORCED CONCRETE. DIMENSIONS AND DETAILS NOT SHOWN ON THE PLANS SHALL BE TAKEN OFF THE ABOVE STANDARD.
15. "GRANULAR BACKFILL FOR STRUCTURES" HAS BEEN ALLOWED FOR A DEPTH OF 6" BELOW THE CULVERTS FOR COMPACTION AROUND THE BOTTOM OF THE PIPE. THE TRENCH EXCAVATION SHALL BE RETURNED TO THE TRENCH FROM THE BOTTOM OF PIPE TO THE BOTTOM OF SUBBASE, AND COMPACTED IN 4" LAYERS. **UNSUITABLE MATERIAL WILL NOT BE USED.**
16. DESIGN LIVE LOAD FOR THE TEMPORARY BRIDGE SHALL BE HS20.

RURAL SEEDING FORMULA				
LBS./A	LBS./A	NAME	LBS./A	LBS./A
0.25	2	CROWN VETCH	0.25	2
0.25	20	CREEPING RED FESCUE	0.25	20
0.25	5	TIHORN	0.25	5
0.25	3	HIGHLAND BENT GRASS	0.25	3
25.07	20	PENDOLIA RYE GRASS (VARIETY PENNINE)	25.07	20
0.25	5	ALFALFA (VARIETY SAVANNAH)	0.25	5
0.25	5	KINDFOOT TREFOL (VARIETY OPPIE)	0.25	5
250.00	50		250.00	50

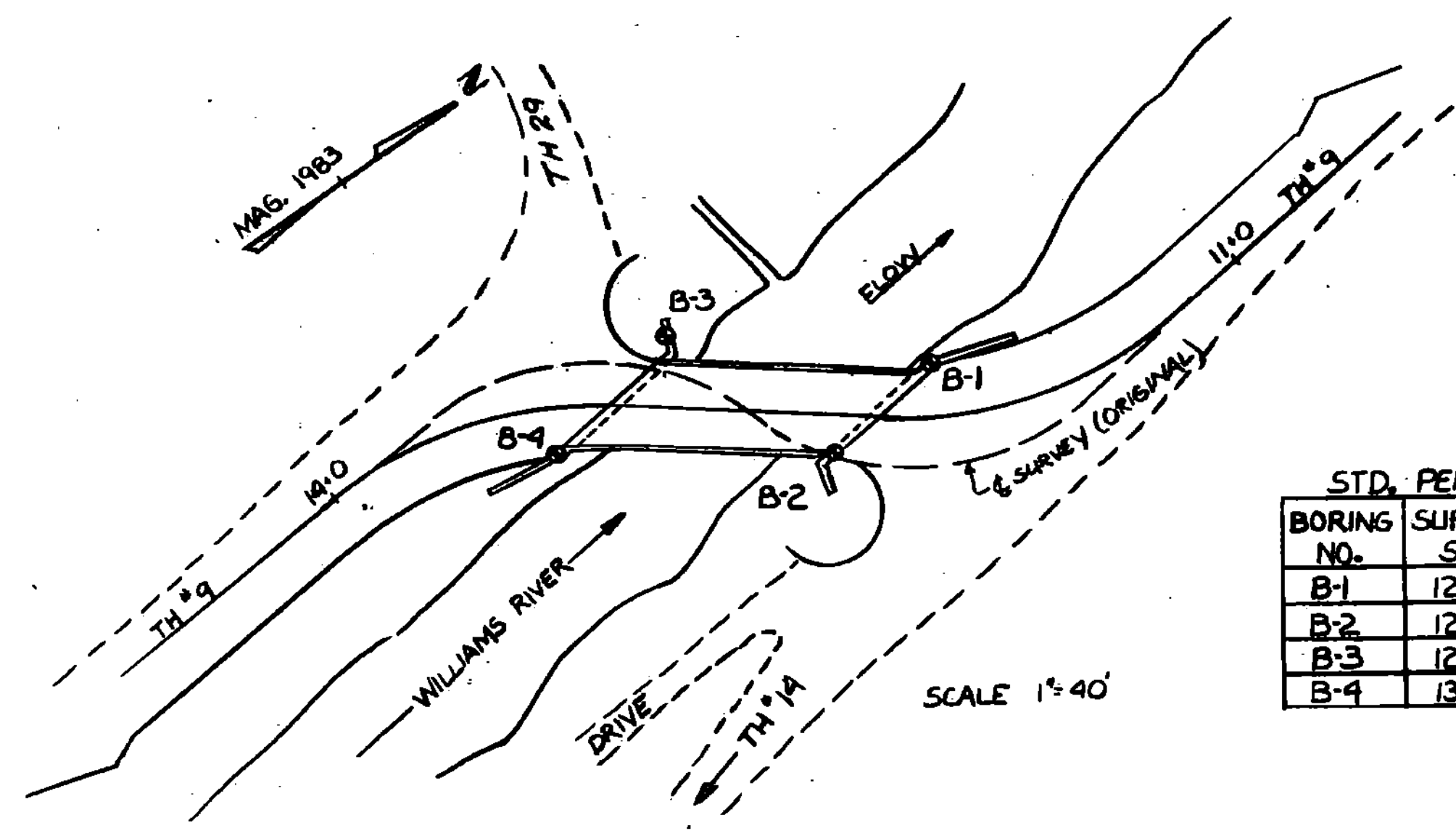
THE SEED MIXTURE SHALL NOT HAVE A NEED CONCENT EXCEEDING 5% AND SHALL BE FREE FROM ALL NOXIOUS SEEDS.

PLAN
 SURVEYED BY: []
 ALIGNED BY: []
 CHECKED BY: []
 DATE: []

PROFILE
 SURVEYED BY: []
 PLOTTED BY: []
 CHECKED BY: []
 DATE: []



CHESTER
 BRZ 1442 (10)
 T.H. No. 9 BR. No. 67
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 10'
 SHEET 4 OF 28



STD. PENETRATION BORINGS

BORING NO.	SURVEY STA.	OFFSET	SURFACE EL.
B-1	12+03	Rt. 30'	945.9
B-2	12+38	Rt. 3'	951.2
B-3	12+96	Rt. 11'	952.6
B-4	13+25	Lt. 24'	943.8

GENERAL NOTES

- THE SUBSURFACE EXPLORATIONS SHOWN HEREON WERE MADE BETWEEN 2-89 AND 2-89 BY THE VERMONT AGENCY OF TRANSPORTATION.
- SOIL AND ROCK (WHERE ENCOUNTERED) CLASSIFICATION, PROPERTIES AND DESCRIPTIONS ARE BASED ON ENGINEERING INTERPRETATION OF AVAILABLE SUBSURFACE INFORMATION BY THE VERMONT AGENCY OF TRANSPORTATION AND MAY NOT NECESSARILY REFLECT ACTUAL VARIATIONS IN SUBSURFACE CONDITIONS THAT MAY BE ENCOUNTERED BETWEEN INDIVIDUAL BORING OR SAMPLE LOCATIONS.
 - OBSERVED WATER LEVELS AND/OR WATER CONDITIONS INDICATED ARE AS RECORDED AT THE TIME OF EXPLORATION AND MAY VARY ACCORDING TO THE PREVAILING RAINFALL, METHODS OF EXPLORATION AND OTHER FACTORS.
 - SOUND ENGINEERING JUDGEMENT WAS EXERCISED IN PREPARING THE SUBSURFACE INFORMATION PRESENTED HEREON. ANALYSIS AND INTERPRETATION OF SUBSURFACE DATA WAS PERFORMED AND INTENDED FOR AGENCY DESIGN AND ESTIMATE PURPOSES ONLY. PRESENTATION OF THE INFORMATION ON THE PLANS OR ELSEWHERE IS FOR THE PURPOSE OF PROVIDING INTENDED USERS WITH ACCESS TO THE SAME DATA AVAILABLE TO THE AGENCY. THE SUBSURFACE INFORMATION IS PRESENTED IN GOOD FAITH AND IS NOT INTENDED AS A SUBSTITUTE FOR PERSONAL INVESTIGATION, INDEPENDENT INTERPRETATIONS, INDEPENDENT ANALYSIS OR JUDGEMENT OF THE CONTRACTOR.
 - PICTORIAL STRUCTURE DETAILS SHOWN HEREON ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY NOT BE INDICATIVE OF THE FINAL DESIGN CONDITIONS SHOWN IN THE CONTRACT PLANS.

BORING NOMENCLATURE

- ⊙ STANDARD PENETRATION BORINGS
SAMPLER OUTSIDE DIAMETER 2"
SAMPLER INSIDE DIAMETER 1 3/8"
WEIGHT OF HAMMER 140 LBS
HAMMER FALL 30"
- ⊕ AUGER BORINGS
- ⊙ ROD SOUNDINGS
- UP UNDISTURBED PISTON SAMPLE
- VS FIELD VANE SHEAR SAMPLE

VT ADT CHESTER BRZ 1442(10)

HOLE NO. B-1 STA. 12+03 OFFSET RT 30'
 DRILLER WILLIS
 LOG APPROVED BY D. G. CARLIZ
 DATE START 2/15/84 FINISH
 SURFACE ELEVATION 945.9'

DEPTH	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
0							NO SAMPLE GR. BO.
10							TOP OF BEDROCK @ 8.0' AADC 8.0' - 13.0' REC-983 RQD-17% AADC 13.0' - 18.0' REC-785 RQD-6%
20							ROCK TYPE - CARBONACEOUS MICA SCHIST AND QUARTZITE HOLE STOPPED @ 18.0' IN BEDROCK

VT ADT CHESTER BRZ 1442(10)

HOLE NO. B-2 STA. 12+38 OFFSET RT 3'
 DRILLER WILLIS
 LOG APPROVED BY D. G. CARLIZ
 DATE START 2/8/84 FINISH
 SURFACE ELEVATION 951.2'

DEPTH	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
0							NO SAMPLE GR. BO.
10							NO SAMPLE GR. BO.
20							TOP OF BEDROCK @ 13.5' AADC 13.5' - 18.0' REC-915 RQD-44% ROCK TYPE - *SEE BELOW
20							HOLE STOPPED @ 18.0' IN BEDROCK BROKEN CORE BARREL *ROCK TYPE - CARBONACEOUS MICA SCHIST AND QUARTZITE.

VT ADT CHESTER BRZ 1442(10)

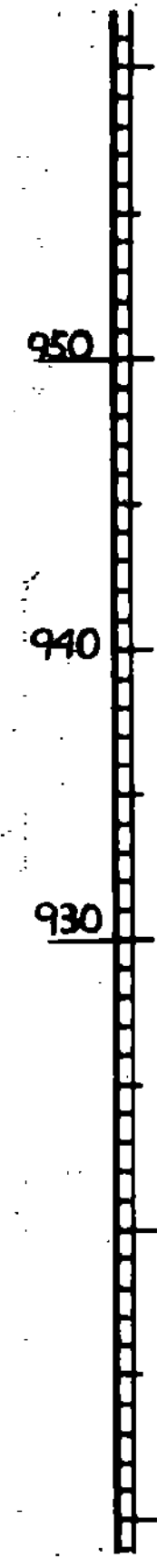
HOLE NO. B-3 STA. 12+96 OFFSET RT 11'
 DRILLER WILLIS
 LOG APPROVED BY D. G. CARLIZ
 DATE START 2/9/84 FINISH
 SURFACE ELEVATION 952.6'

DEPTH	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
0							C. GRAVEL FILL
10							NO SAMPLE BO. TOP OF BEDROCK @ 11.0'
20							AADC 11.0' - 13.0' REC-705 RQD-0 AADC 13.0' - 18.0' REC-728 RQD-0 AADC 18.0' - 23.0' REC-935 RQD-0 ROCK TYPE - CARBONACEOUS MICA SCHIST AND QUARTZITE
20							HOLE STOPPED @ 23.0' IN BEDROCK

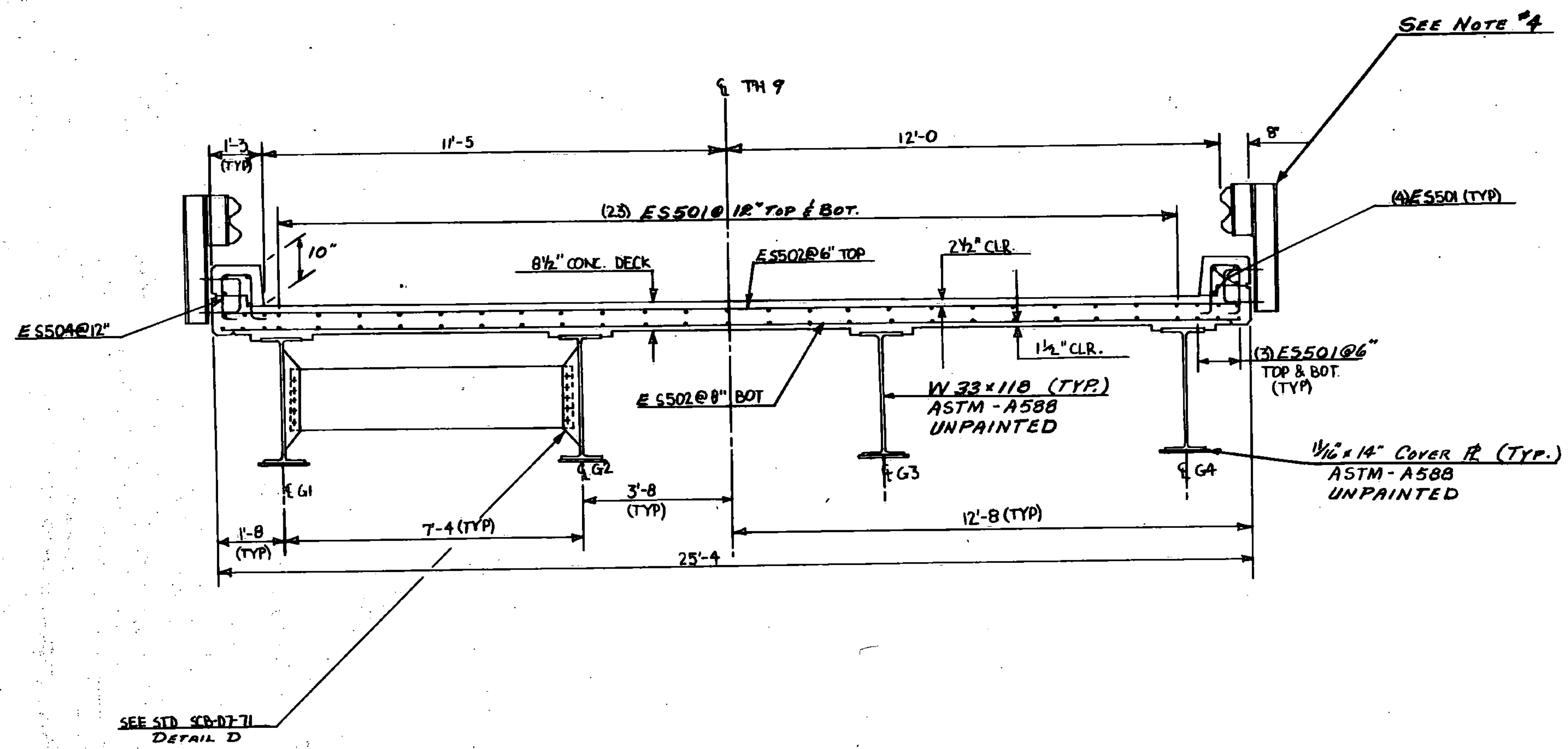
VT ADT CHESTER BRZ 1442(10)

HOLE NO. B-4 STA. 13+25 OFFSET LT 24'
 DRILLER WILLIS
 LOG APPROVED BY D. G. CARLIZ
 DATE START 2/14/84 FINISH
 SURFACE ELEVATION 943.8'

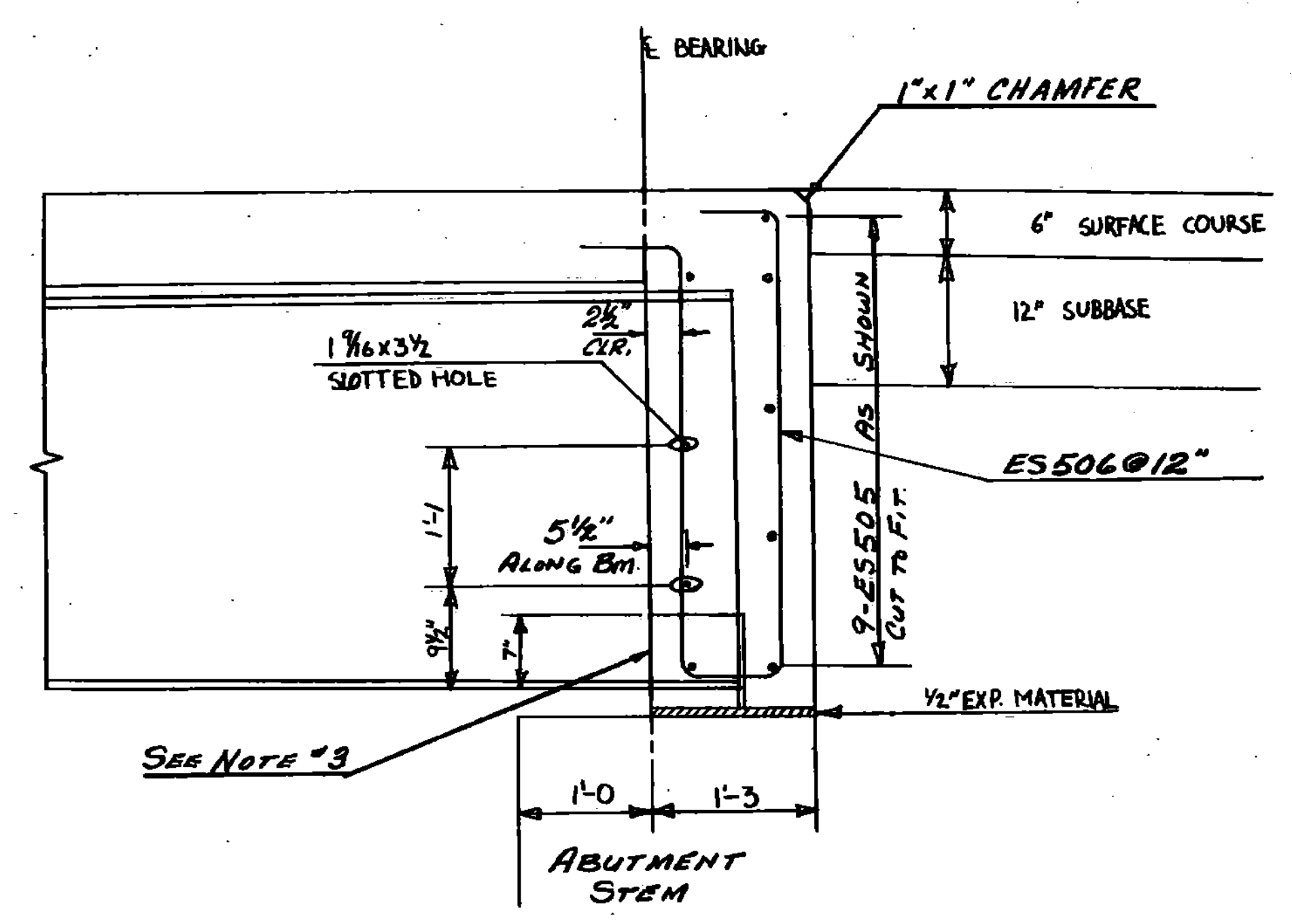
DEPTH	BLOWS ON CASING	STANDARD PENETRATION	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE	COLOR	CLASSIFICATION AND PROPERTIES OF SOIL AND ROCK
0							NO SAMPLE BO.
10							TOP OF BEDROCK @ 4.1' AADC 4.1' - 9.1' REC-665 RQD-20% AADC 9.1' - 16.1' REC-1005 RQD-0% ROCK TYPE - CARBONACEOUS MICA SCHIST AND QUARTZITE
20							HOLE STOPPED @ 14.1' IN BEDROCK



STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF CHESTER	Bridge No. 67
HIGHWAY NO. T.H. No. 9	Log Sta.
T.H. No. 9 OVER WILLIAMS RIVER	
BORING LOG	
Designed by R.P. GANDRAN	Drawn by J. HOLLAR
Checked by R.P. GANDRAN date 5-28-84	Bridge Design Supervisor R.L. O'Neil date 11-86
PROJECT CHESTER	PROJECT NO. BRZ 1442(10)
Bridge Sheet No.	Sheet 5 of 28



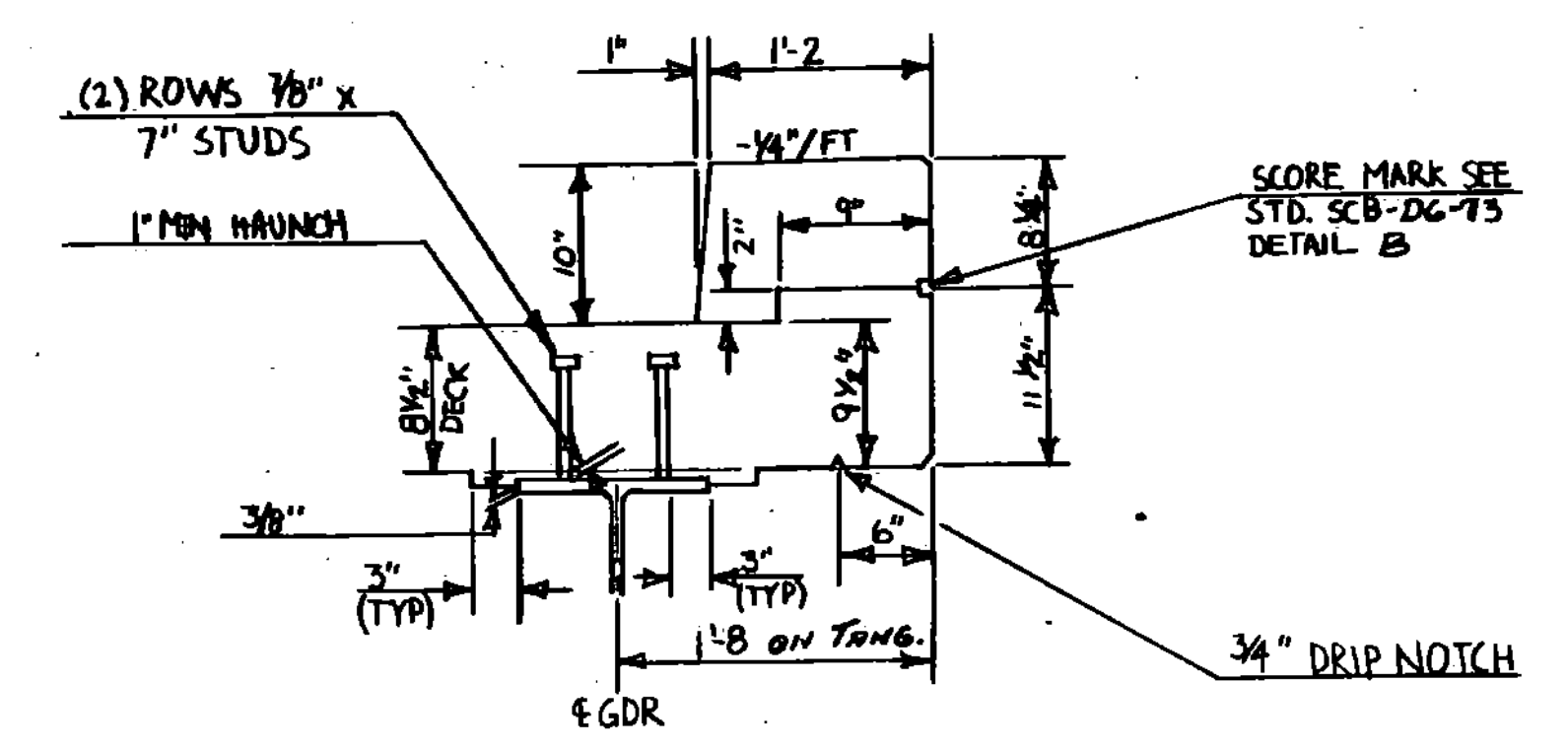
TYPICAL SECTION
SCALE 1/2" = 1'-0"



TYPICAL SECTION NORMAL TO
ABUTMENT SCALE 1" = 1'-0"

NOTES

1. FOR DRIP PLATE DETAILS SEE STANDARD SCB-D7-71, DETAIL 'C'.
2. FOR ADDITIONAL BEAM HAUNCH DETAILS SEE STANDARD SCB-D7-71, DETAIL 'F'.
3. FOR BEARING BLOCKOUT DETAILS SEE STANDARD SCB-D9-71, DETAIL 'A'.
4. ALL REINFORCING IN THE DECK AND CURTAIN WALLS SHALL BE EPOXY COATED.
5. FOR CURB AND RAILING DETAILS SEE STANDARD SB-R6-B2.

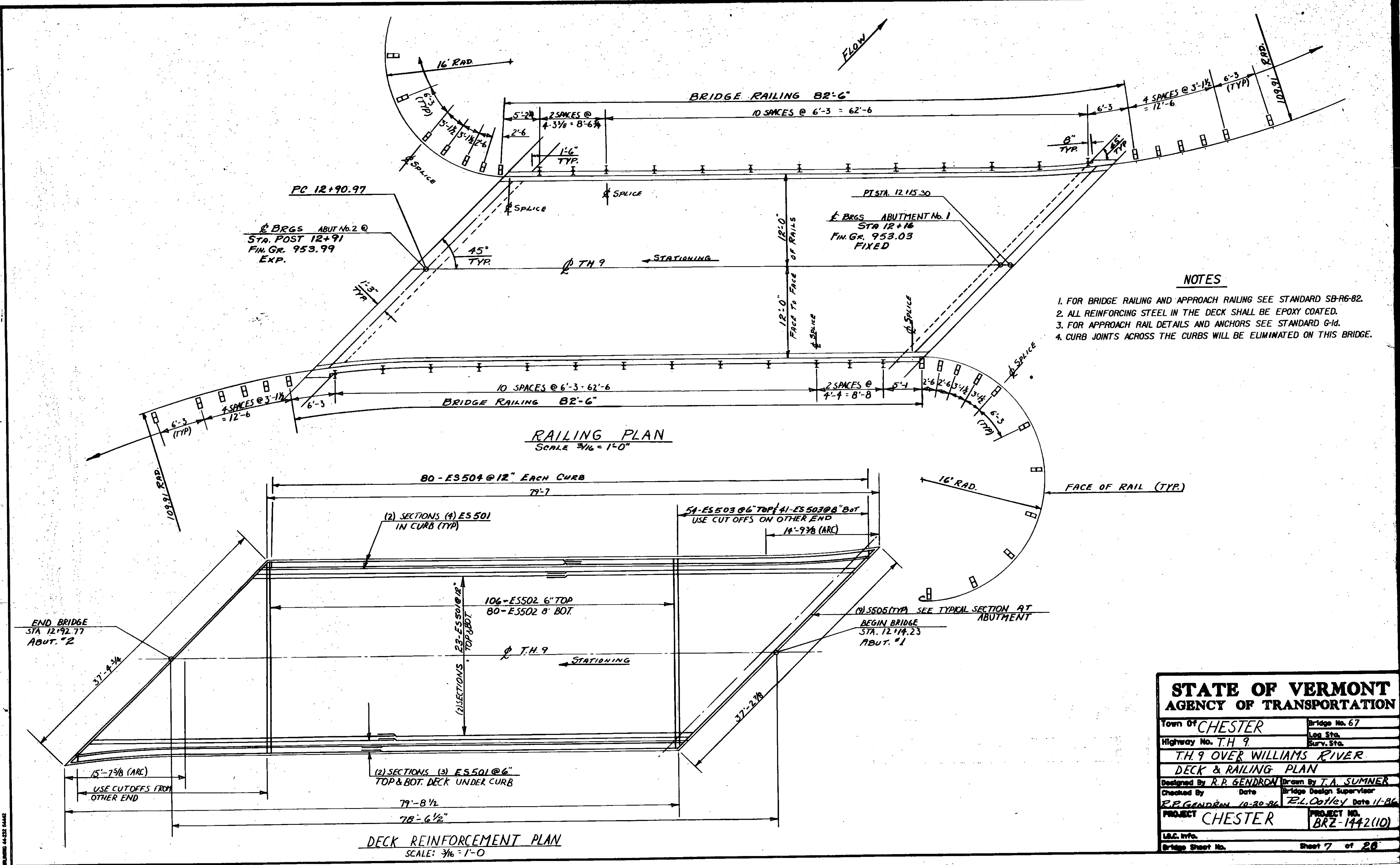


CURB HAUNCH & SHEAR
CONNECTOR DETAIL
SCALE 1" = 1'-0"

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town of CHESTER	Bridge No. 67
Highway No. TH 9	Log Sta. Surv. Sta.
TH 9 OVER WILLIAMS RIVER	
TYPICAL SECTION	
Designed By R.P. GENDRON	Drawn By T. SUMNER
Checked By R.P. GENDRON	Bridge Design Supervisor
Date 10-20-86	Date 11-86
PROJECT CHESTER	PROJECT NO. BRZ 1442(10)
I&C. Info.	
Bridge Sheet No.	Sheet 6 of 28

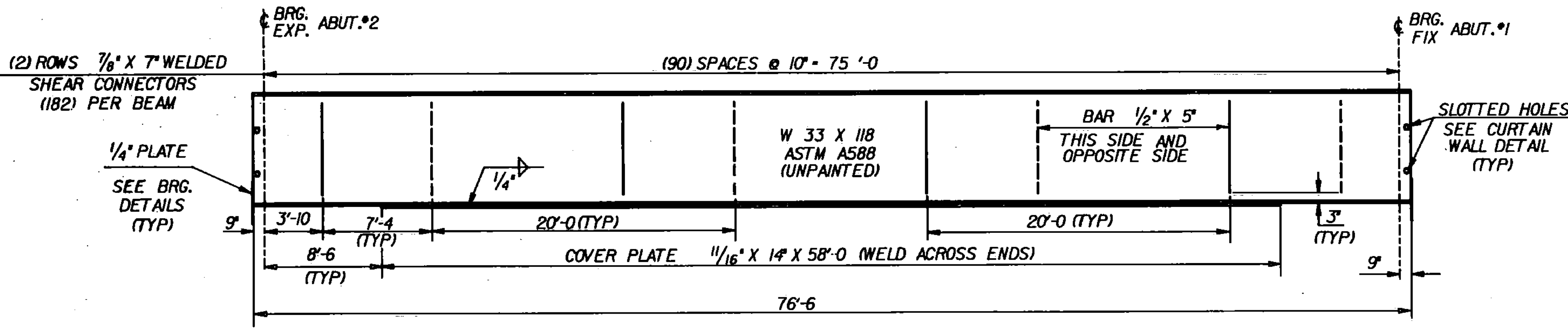
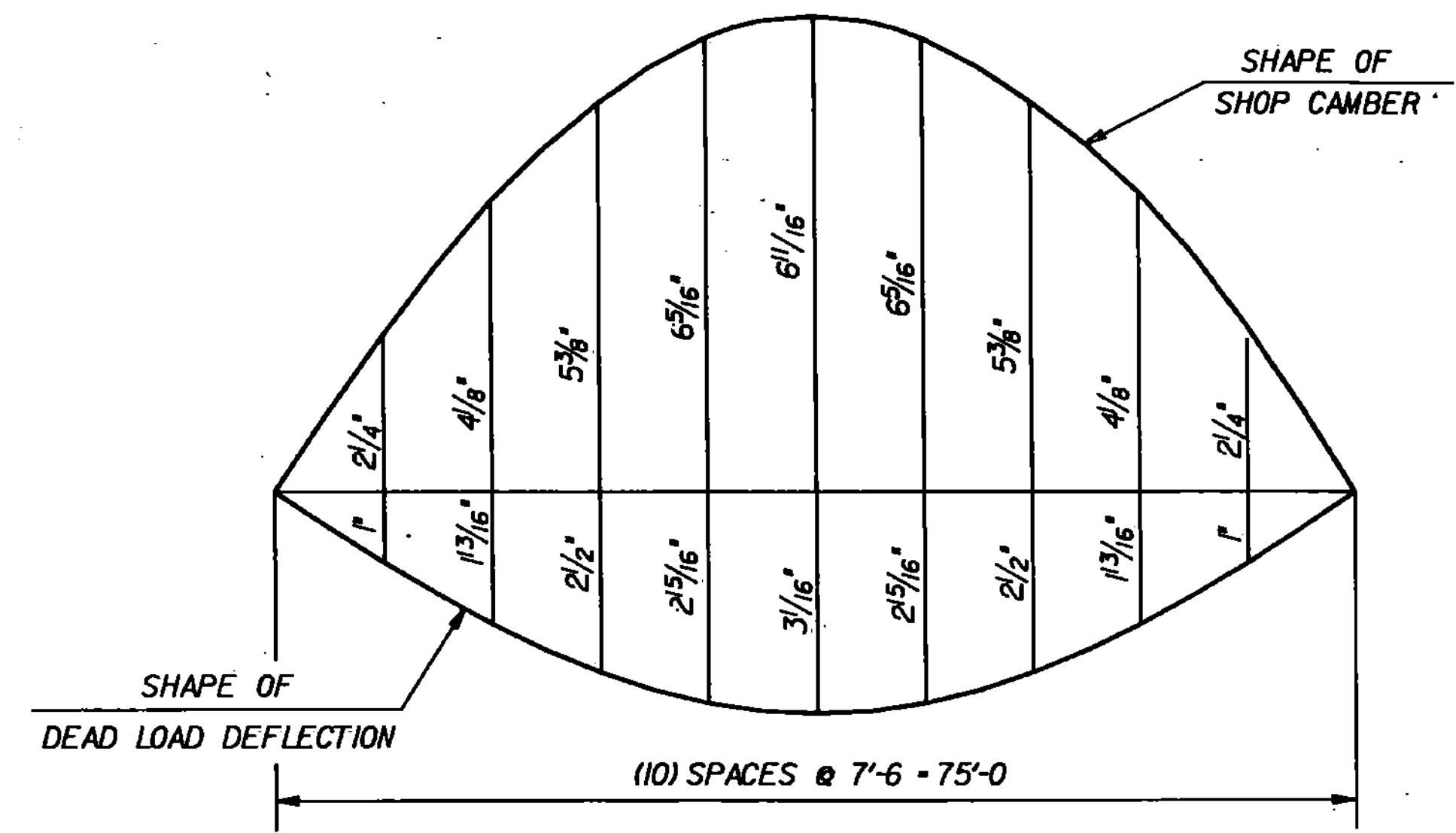
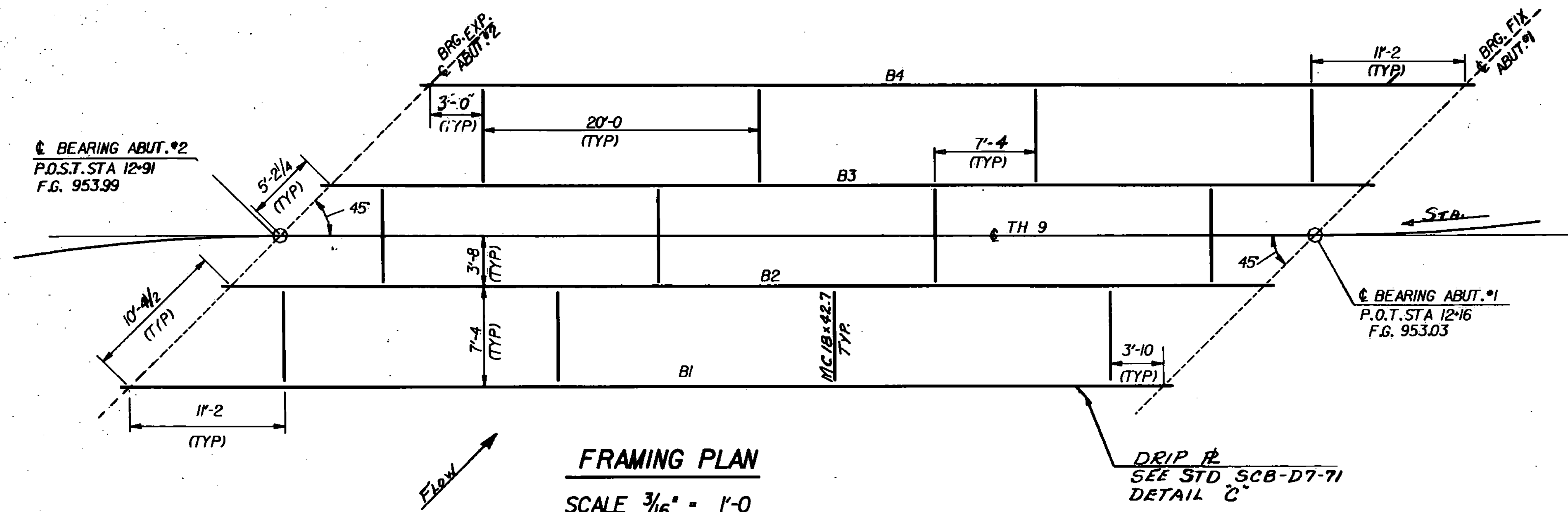
BRIDGE 44-332 6442

BR-6



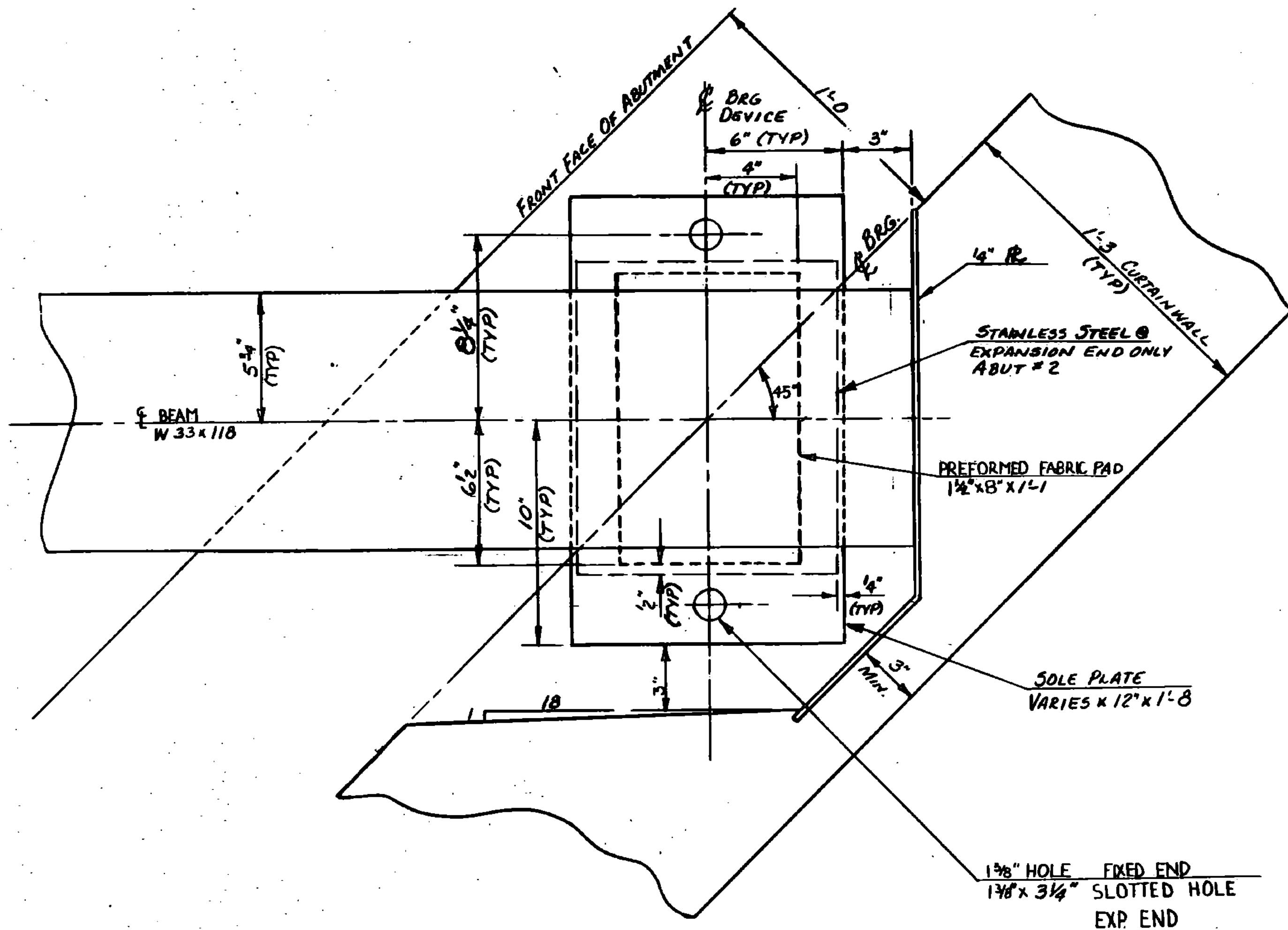
- NOTES**
1. FOR BRIDGE RAILING AND APPROACH RAILING SEE STANDARD SB-R6-82.
 2. ALL REINFORCING STEEL IN THE DECK SHALL BE EPOXY COATED.
 3. FOR APPROACH RAIL DETAILS AND ANCHORS SEE STANDARD G-1d.
 4. CURB JOINTS ACROSS THE CURBS WILL BE ELIMINATED ON THIS BRIDGE.

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town of CHESTER	Bridge No. 67
Highway No. T.H. 9	Log Sta. Surv. Sta.
T.H. 9 OVER WILLIAMS RIVER	
DECK & RAILING PLAN	
Designed By R.P. GENDRON	Drawn By T.A. SUMNER
Checked By R.P. GENDRON	Date 10-30-86
	Bridge Design Supervisor E.L. Doherty Date 11-86
PROJECT CHESTER	PROJECT NO. BRZ-1442(10)
L&C info.	
Bridge Sheet No.	Sheet 7 of 20



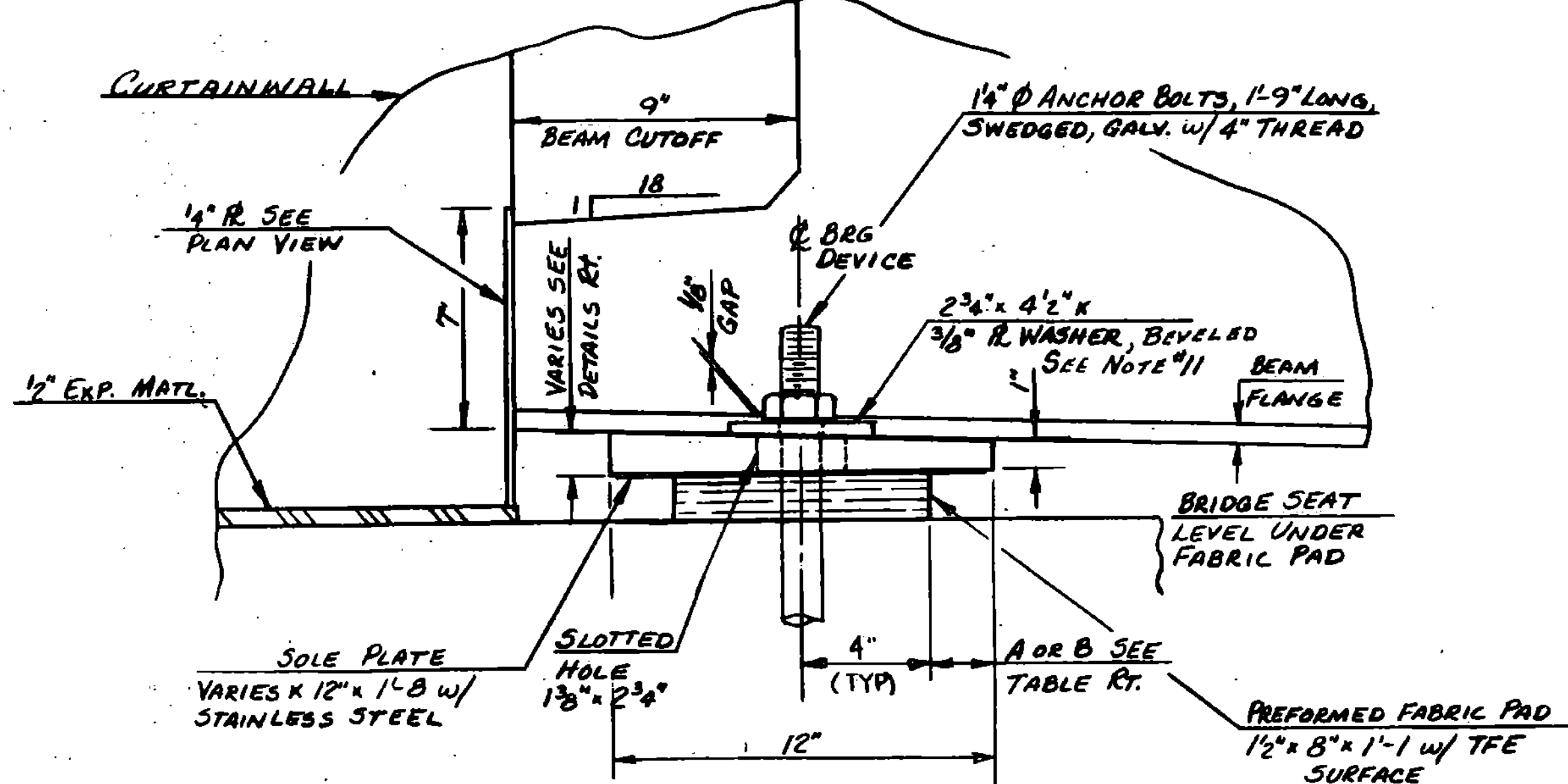
FOR ADDITIONAL DETAILS SEE STD. SCB-D7-71 DETAILS 'C' & 'D'

STATE OF VERMONT		AGENCY OF TRANSPORTATION	
Town of	CHESTER	Bridge No.	67
Highway No.	CLASS 3, TH 9	Loc. Sta.	
		Surv. Sta.	12+50
TH 9 OVER WILLIAMS RIVER			
FRAMING PLAN			
Designed By	B. GENDRON	Drawn By	M. GERUZZI
Checked By		Date	
	R.P. GENDRON	10-18-86	R.L. Ootley Date 11-86
PROJECT	CHESTER	PROJECT NO.	BBZ 1442(10)
L&C. Info.	OSAL3024753CARAEBM.DGN	CHESTER.M.PRE	
Bridge Sheet No.		Sheet	8 of 28



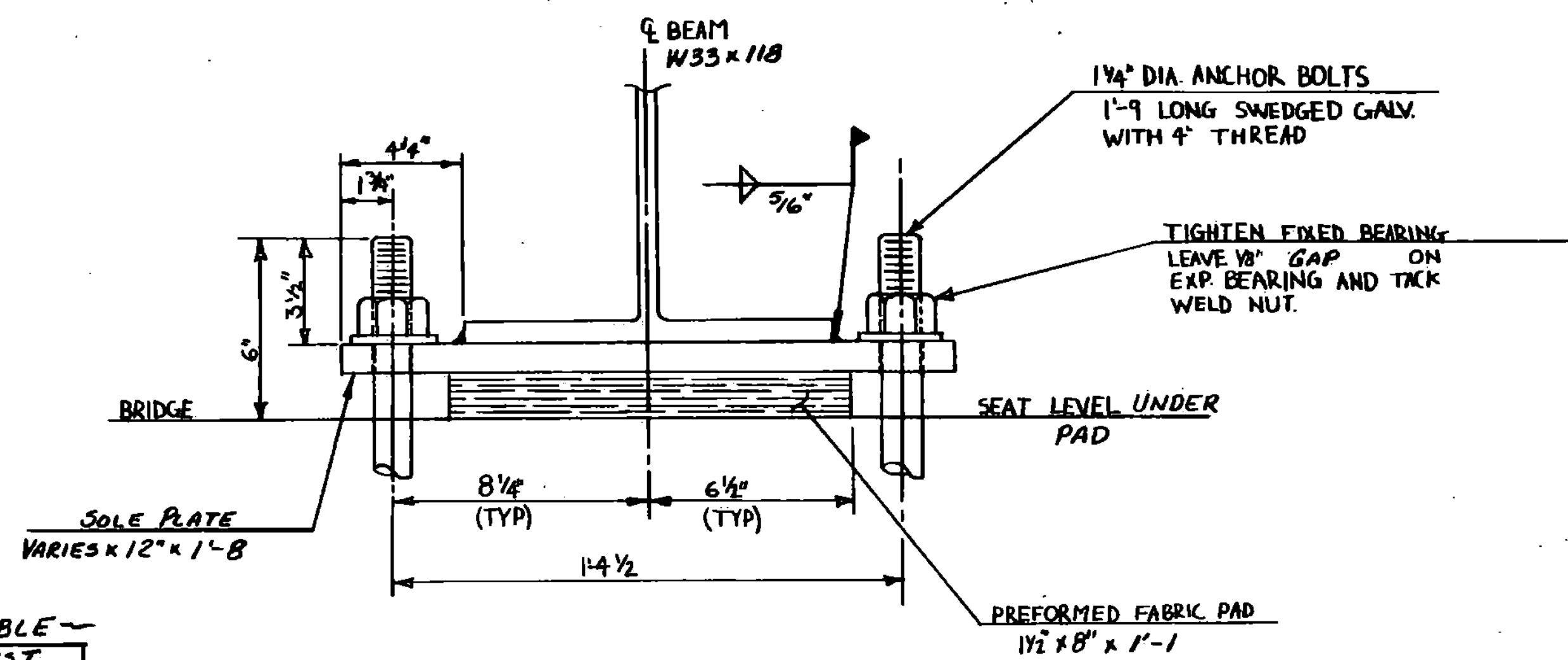
PLAN FIXED BEARINGS AT ABUT #1

EXPANSION BEARINGS AT ABUTMENT #2 SAME EXCEPT OPPOSITE HAND WITH SLOTTED HOLES, STAINLESS STEEL AND TEFLON SURFACE.
SCALE: 3"=1'-0"



SIDE VIEW EXPANSION BEARINGS AT ABUT. #2

FIXED BEARINGS AT ABUTMENT #1 SAME EXCEPT NUTS SHALL BE TIGHT, NO STAINLESS STEEL, TEFLON OR SLOTTED HOLE.
SCALE: 3"=1'-0"



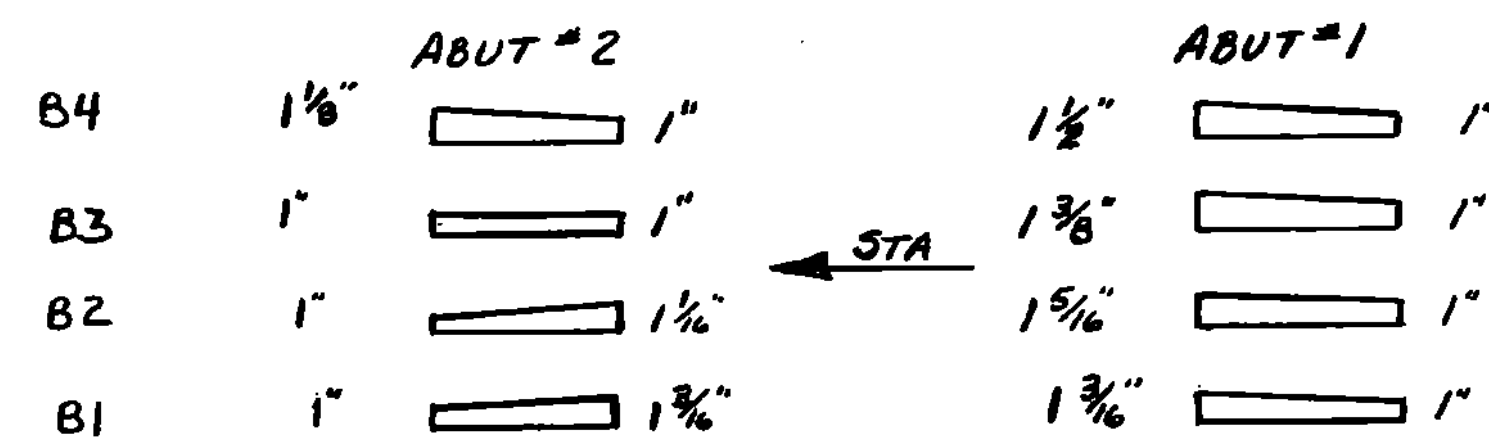
FRONT VIEW SCALE 3"=1'-0"

SOLE PLATE & BEARING DETAIL NOTES

1. TFE EXPANSION BEARINGS SHALL CONFORM TO SUBSECTION 731.
2. FIXED BEARINGS SHALL CONFORM TO ALL APPLICABLE SECTIONS OF SUBSECTION 731 (OMIT TFE & STAINLESS STEEL).
3. BEARINGS SHALL BE PAD FOR UNDER THE ITEM 531J0 "BEARING DEVICE ASSEMBLY".
4. SHOP DRAWINGS CONFORMING TO SUBSECTION 531D3 MUST BE SUBMITTED, AND INCLUDE THE WELDING PROCEDURE IF THE STAINLESS STEEL PLATE IS GOING TO BE WELDED TO THE SOLE PLATE, OR THE BONDING PROCEDURE IF THE STAINLESS STEEL PLATE IS BONDED TO THE SOLE PLATE.
5. SOLE PLATES AND ANCHOR BOLTS ARE TO BE GALVANIZED OR METALLIZED AS PER GENERAL SPECIAL PROVISION 531D2 AND 531D4B FOR THIS PROJECT.
6. THE CONCRETE SURFACE UNDER THE BEARINGS SHALL BE LEVEL.
7. SEE STANDARD DRAWING SCB-D9-71 DETAIL "A" FOR ADDITIONAL DETAILS FOR BLOCKING OUT THE BEARINGS IN THE CURTAIN WALLS.
8. THE "A" DISTANCE IS THE FINAL SETTING FOR THE SOLE PLATE BEFORE WELDING TO THE BEAM, BEFORE PLACING THE DECK.
9. IF A BEARING DEVICE SCHEME OTHER THAN THE ONE SHOWN IS USED, THE BEAM SEAT ELEVATIONS MAY HAVE TO BE ADJUSTED ACCORDINGLY.

~ TEMPERATURE TABLE ~

TEMP. °F.	DIST. A	DIST. B
0°	2 5/8"	2 1/4"
15°	2 7/16"	2 3/16"
30°	2 7/16"	2 1/16"
45°	2 3/8"	2"
60°	2 1/4"	1 15/16"
75°	2 3/16"	1 13/16"
90°	2 1/8"	1 3/4"

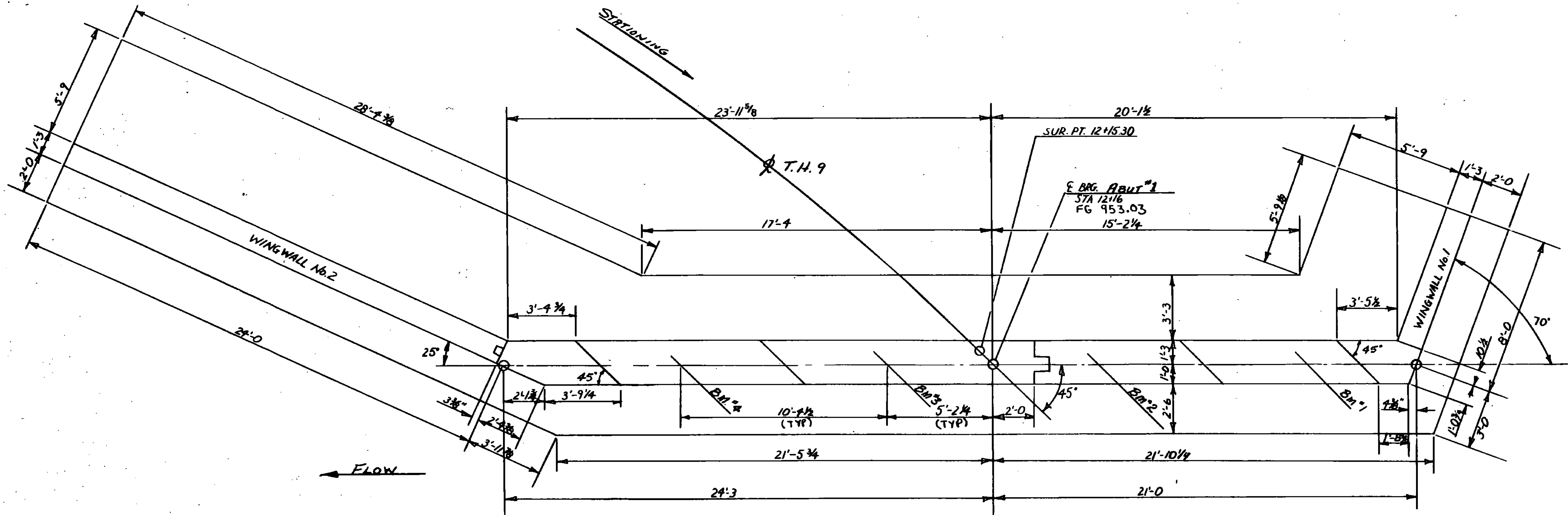


~ SOLE PLATE THICKNESSES ~ N.T.S.

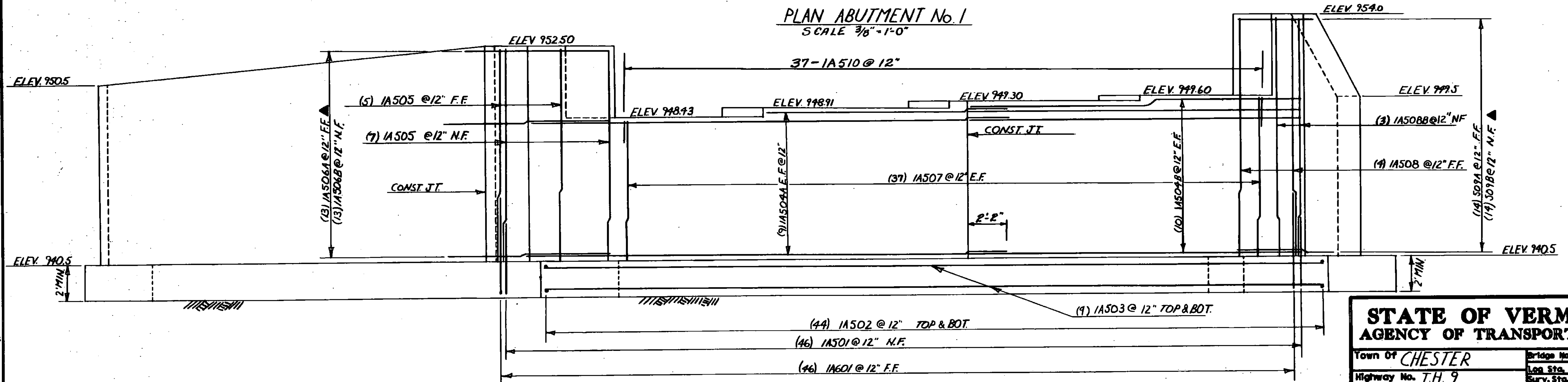
10. DIMENSION "B" IS DIMENSION "A" MINUS MOVEMENT WHEN PLACING THE DECK WITH DIMENSION "B" MEASURED AFTER THE BRIDGE IS COMPLETE.
11. USE STD. BEVEL WASHERS AT ABUT. #1

STATE OF VERMONT AGENCY OF TRANSPORTATION

Town of CHESTER	Bridge No. 67
Highway No. T.H. 9	Loc. Sta. Surv. Sta.
T.H. 9 OVER WILLIAMS RIVER	
BEARING DEVICE DETAILS	
Designed By R.P. GENDRON	Drawn By T. SUMNER
Checked By R.P. GENDRON	Date 10-15-86
Bridge Design Supervisor R.L. Oatley Date 11-86	
PROJECT CHESTER	PROJECT NO. BRZ 1442(10)
L.C. Info.	
Bridge Sheet No.	Sheet 9 of 26



PLAN ABUTMENT No. 1
SCALE: 3/8" = 1'-0"



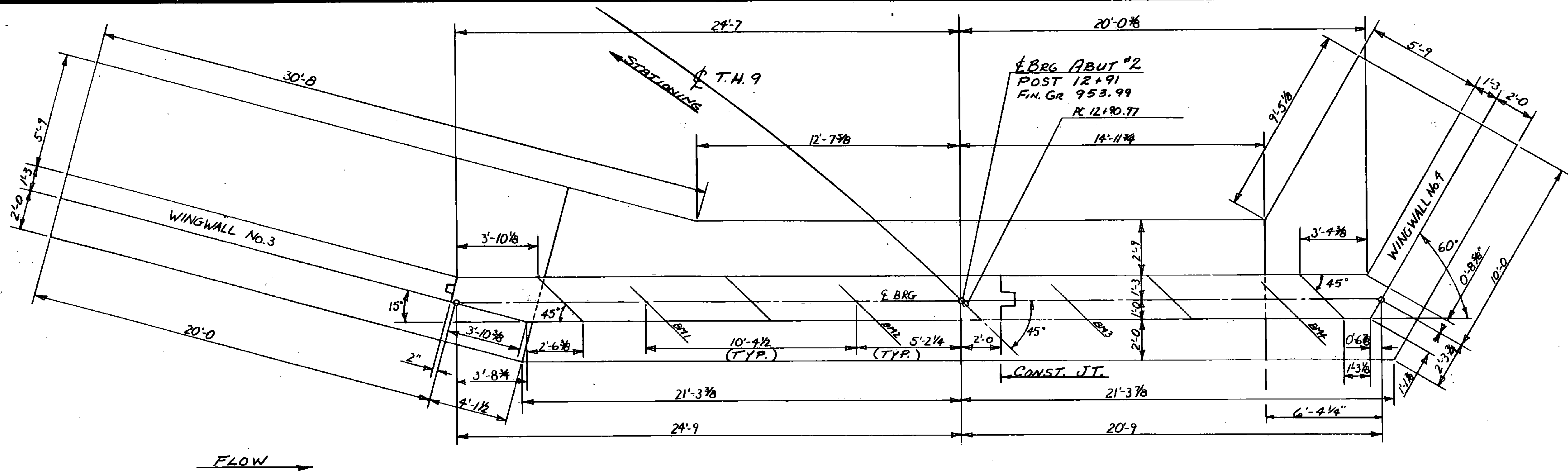
ELEVATION ABUTMENT No. 1
SCALE: 3/8" = 1'-0"

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town of CHESTER	Bridge No. 67
Highway No. T.H. 9	Log Sta. Surv. Sta.
TH. 9 OVER WILLIAMS RIVER	
PLAN & ELEVATION ABUTMENT No. 1	
Designed By R.P. GENDRON	Drawn By T. SUMNER
Checked By R.P. GENDRON	Bridge Design Supervisor
Date 10-20-86	Date 11-86
PROJECT CHESTER	PROJECT NO. BRZ-1442 (10)
I&C Info.	
Bridge Sheet No.	Sheet 10 of 28

DRAWING 44-222-6442

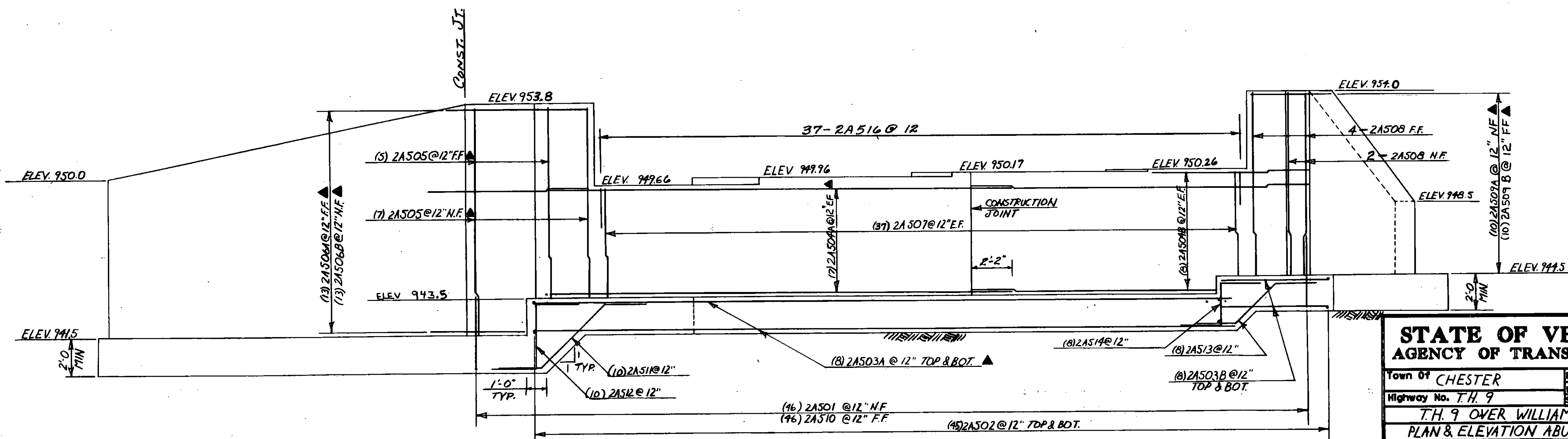
BR-4

10



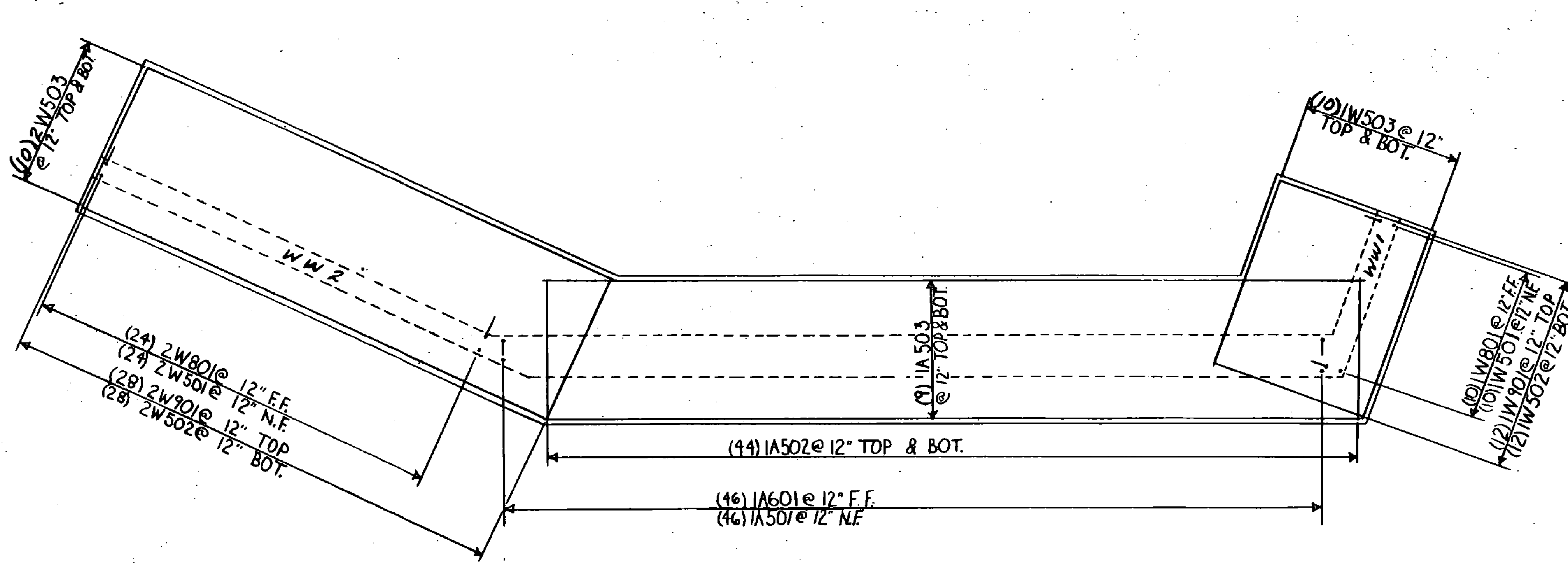
PLAN ABUTMENT No. 2
SCALE: 3/8" = 1'-0"

▲ DENOTES BARS TO BE CUT IN THE FIELD.

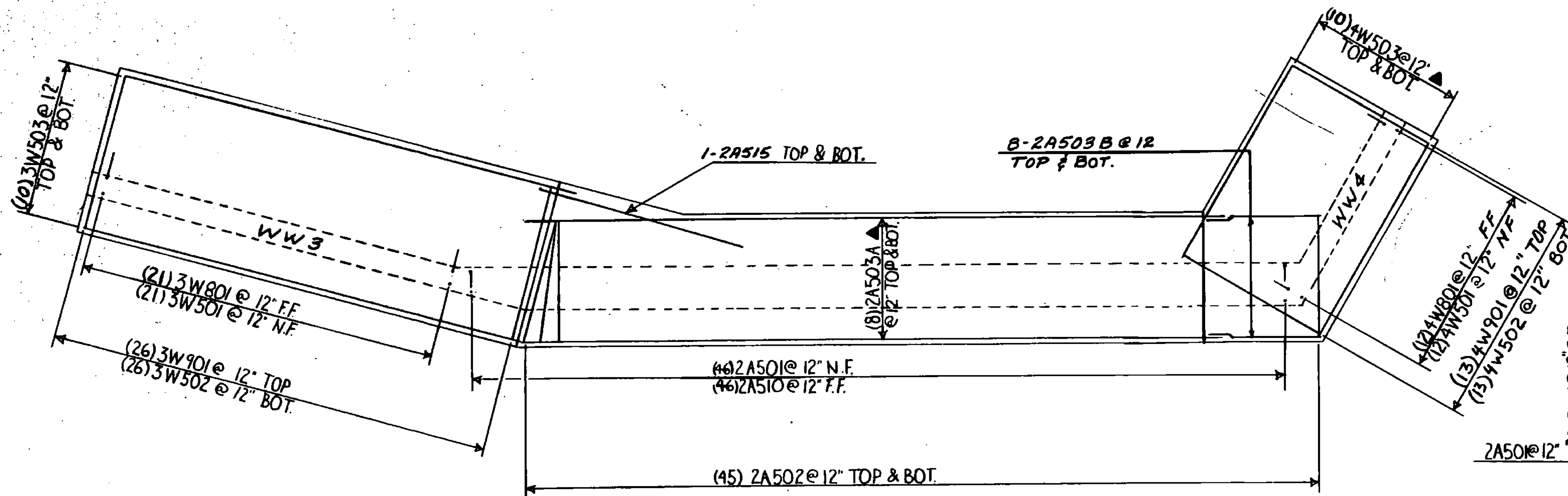
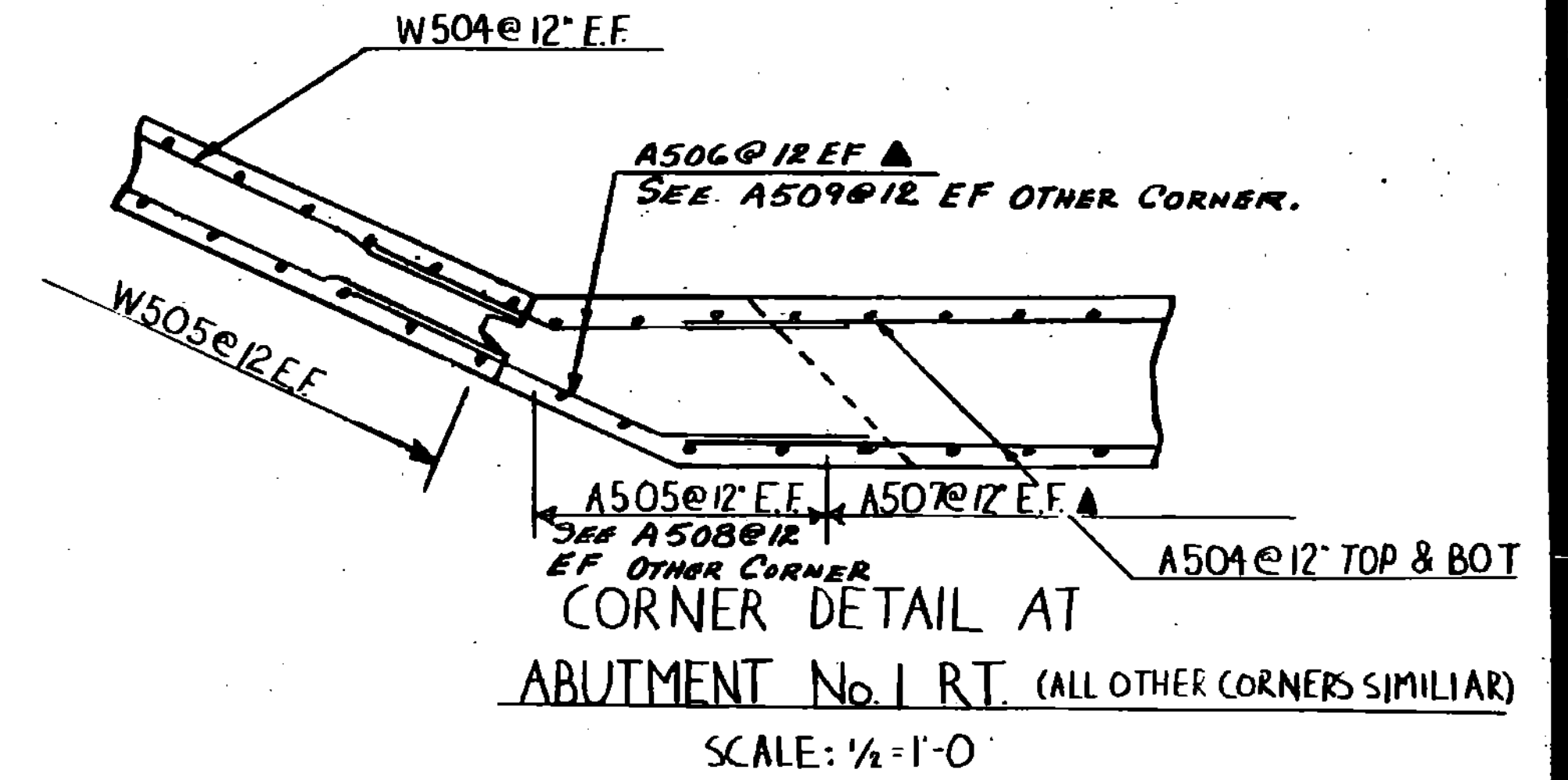


ELEVATION ABUTMENT No. 2
SCALE: 3/8" = 1'-0"

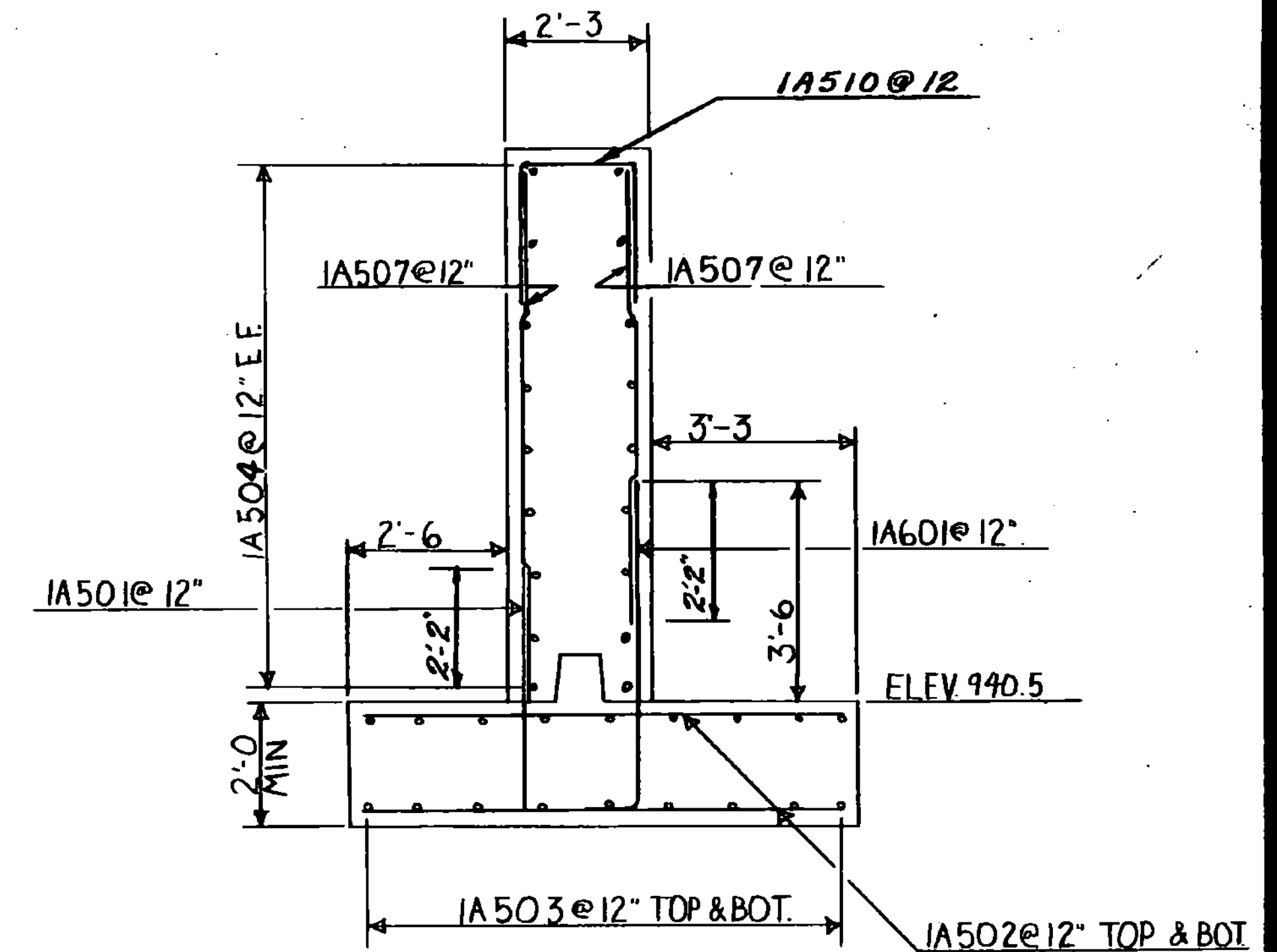
STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town of CHESTER	Bridge No. 67
Highway No. T.H. 9	Log Sta.
	Surv. Sta.
T.H. 9 OVER WILLIAMS RIVER	
PLAN & ELEVATION ABUTMENT No. 2	
Designed By R.P. GENDRON	Drawn By T. SUMNER
Checked By R.P. GENDRON	Bridge Design Supervisor E.L. Colley
Date 10-20-86	Date 11-86
PROJECT CHESTER	PROJECT NO. BRZ-1442(10)
I.S.C. Info.	
Bridge Sheet No.	Sheet 11 of 28



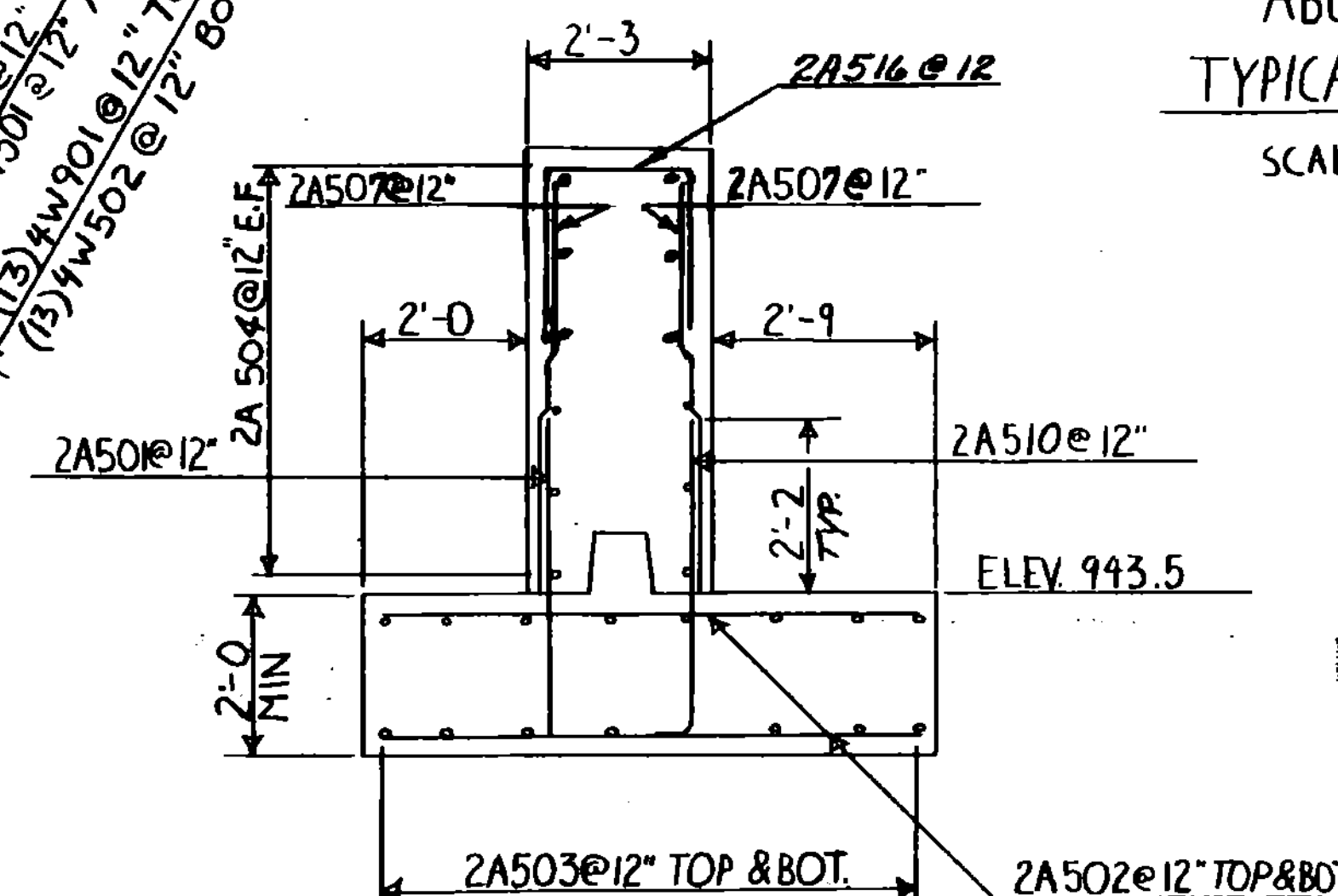
ABUTMENT No. 1
FOOTING REINFORCEMENT PLAN
SCALE: 1/4" = 1'-0"



ABUTMENT No. 2
FOOTING REINFORCEMENT PLAN
SCALE: 1/4" = 1'-0"



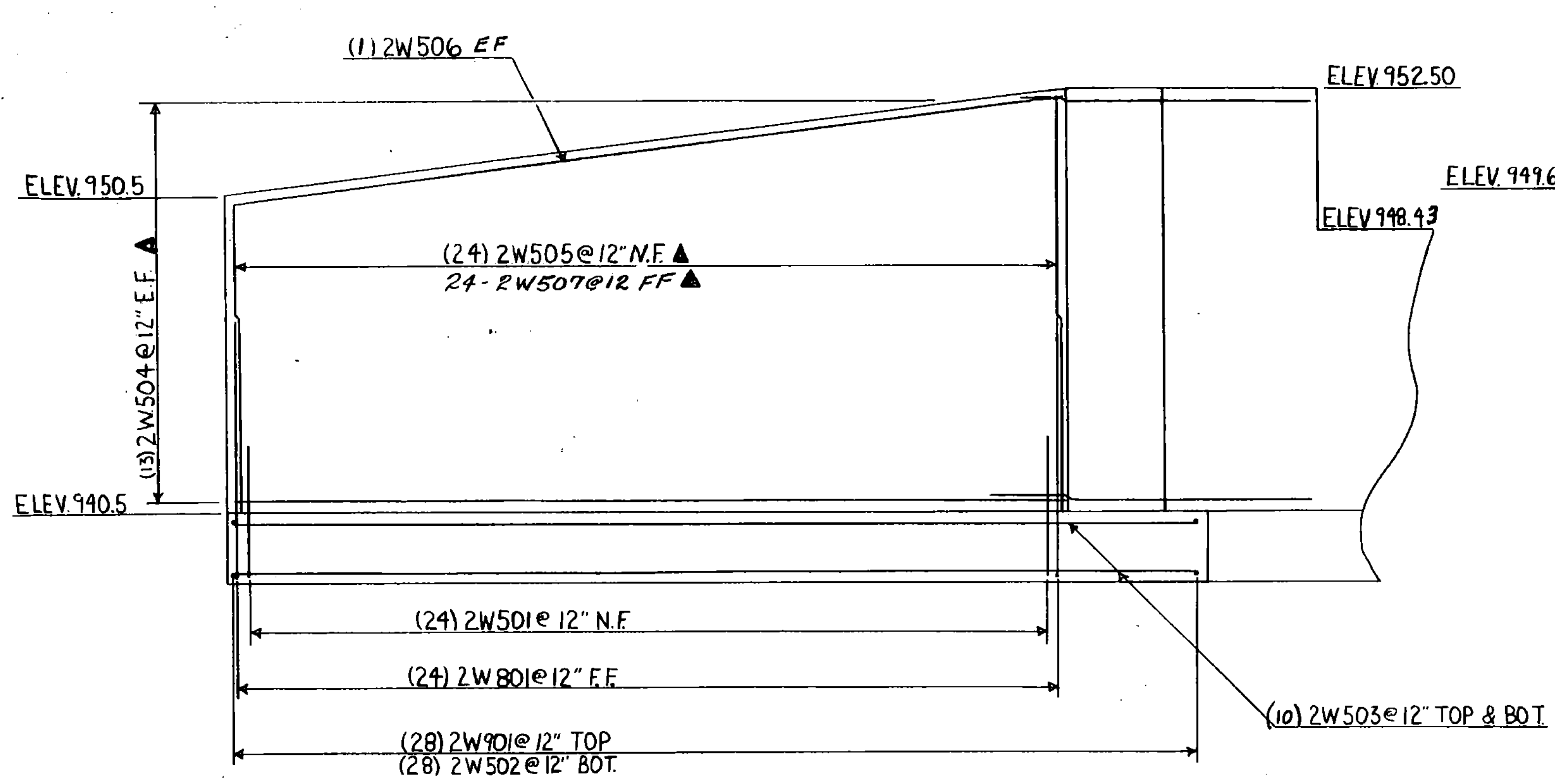
ABUTMENT No. 1
TYPICAL SECTION
SCALE: 1/2" = 1'-0"



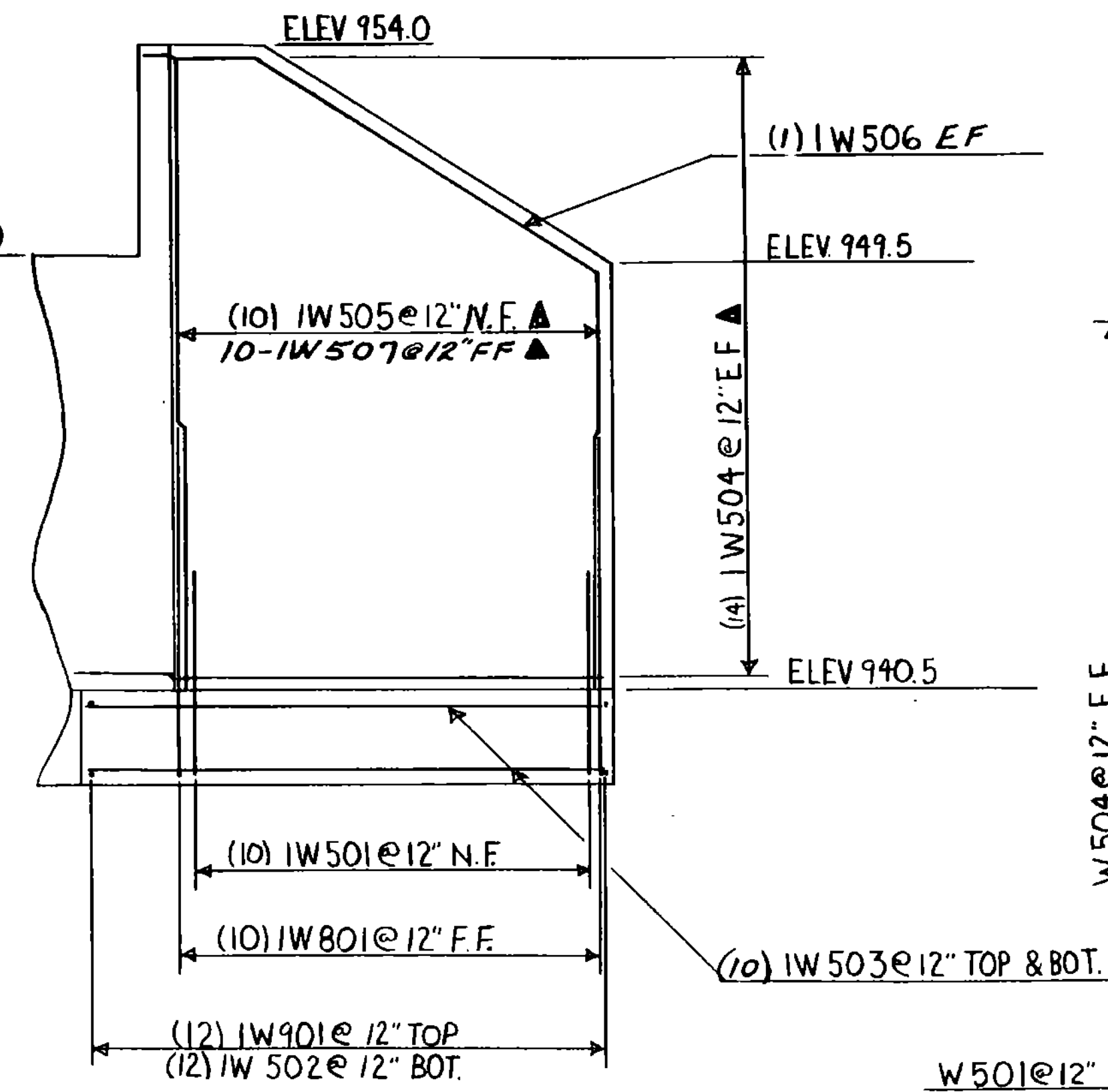
ABUTMENT No. 2
TYPICAL SECTION
SCALE: 1/2" = 1'-0"

STATE OF VERMONT AGENCY OF TRANSPORTATION	
Town Of CHESTER	Bridge No. 67
Highway No. T.H. No. 9	Log Sta.
T.H. No. 9 OVER WILLIAMS RIVER	
FOOTING REINFORCING PLAN & SECTION	
Designed By R.P. GENDRON	Drawn By T. SUMNER
Checked By R.P. GENDRON	Bridge Design Supervisor
Date 10-21-88	Date 11-88
PROJECT CHESTER	PROJECT NO. BRZ 1442(10)
I.O.C. Info.	
Bridge Sheet No.	Sheet 12 of 28.

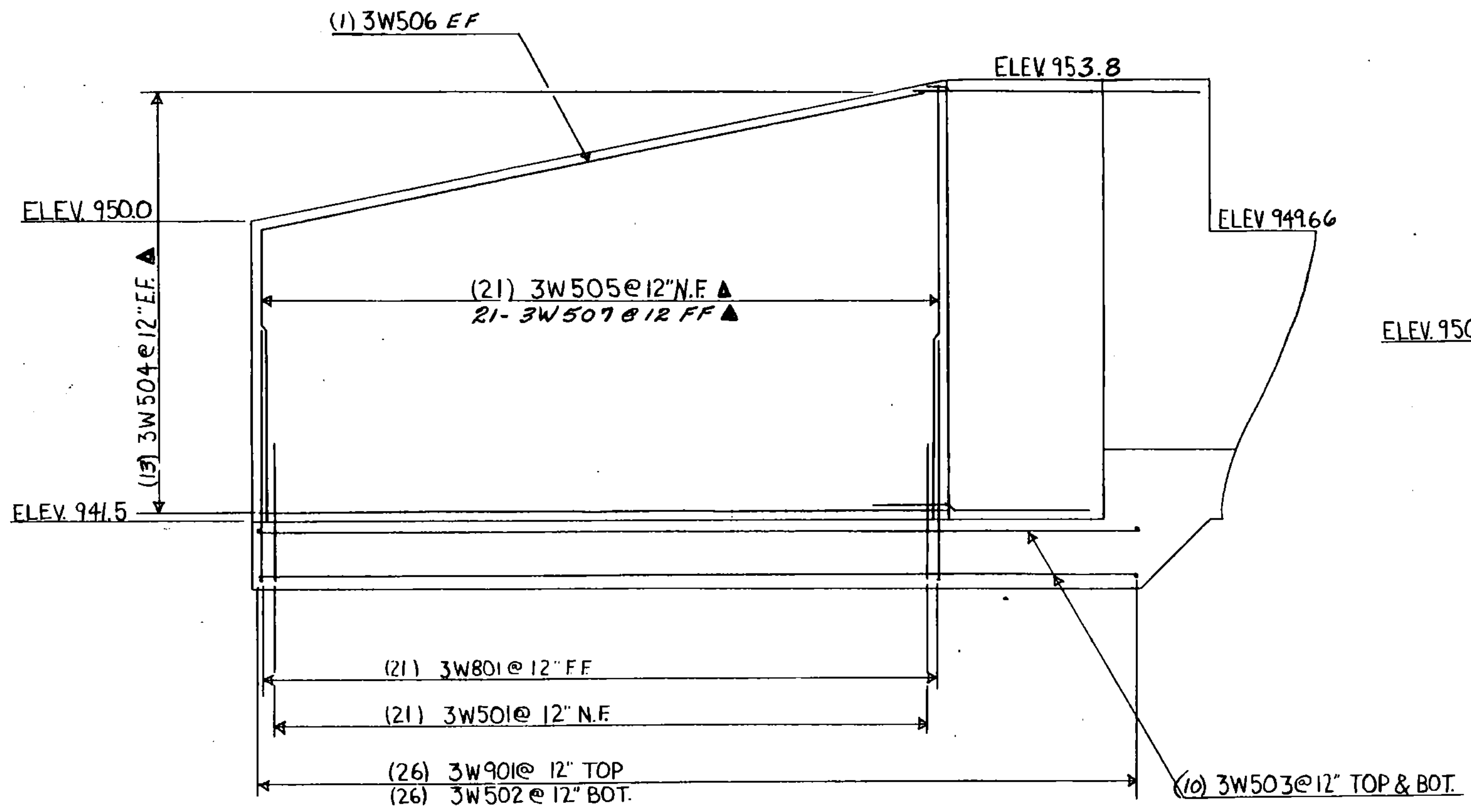
BR-6



WINGWALL NO. 2 ELEVATION

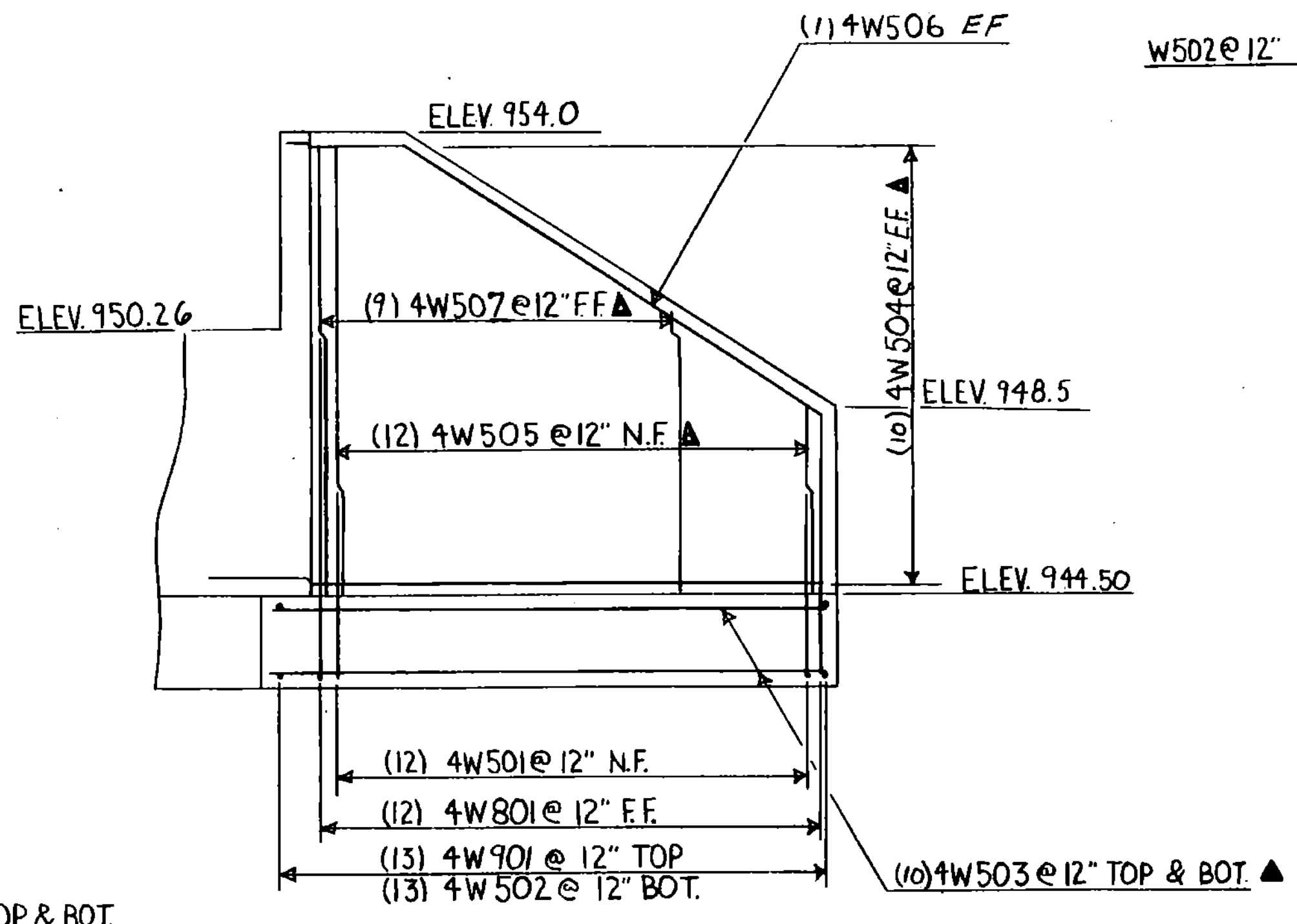


WINGWALL NO. 1 ELEVATION

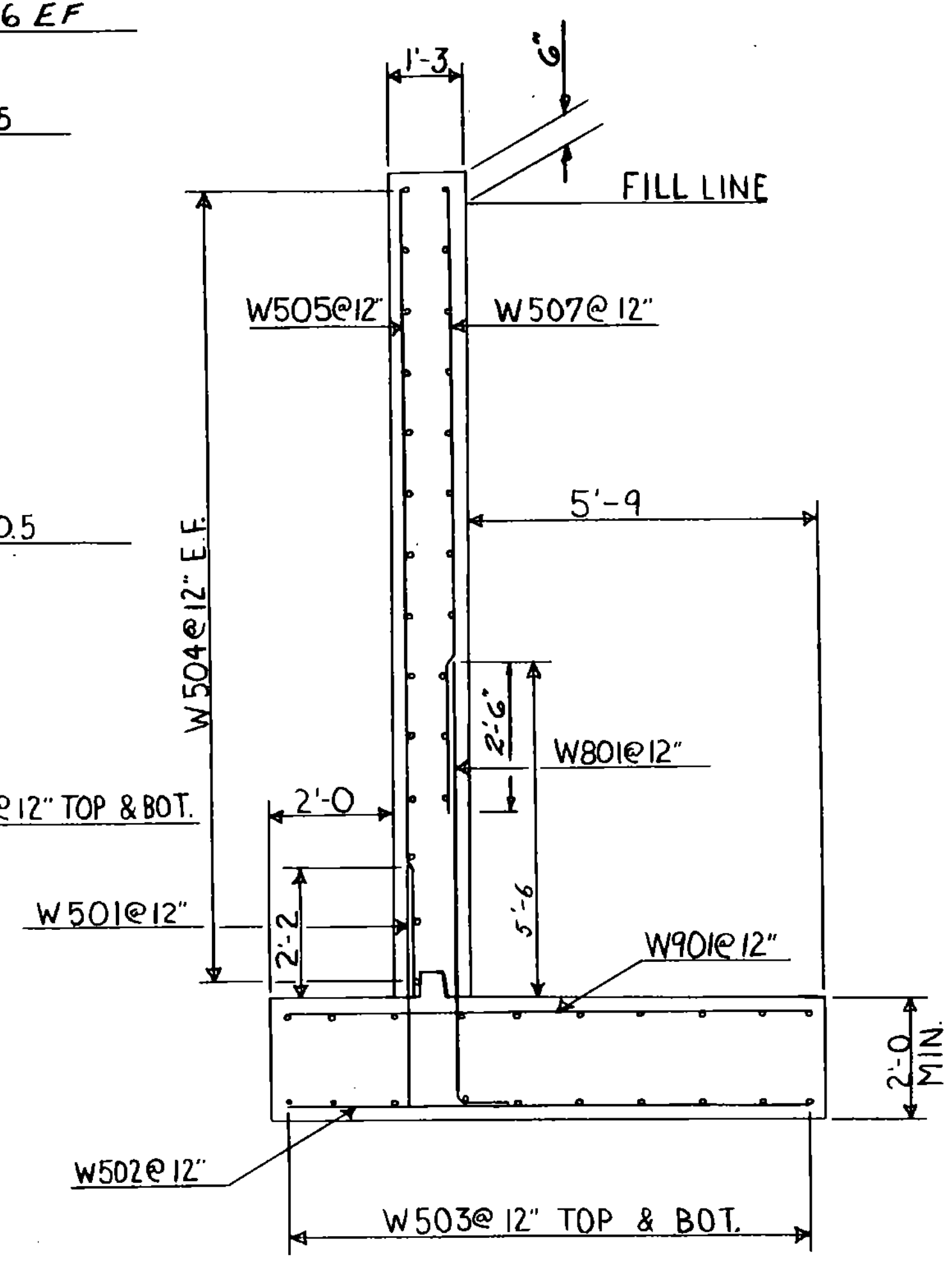


WINGWALL NO. 3 ELEVATION

SCALE: 3/8" = 1'-0"



WINGWALL NO. 4 ELEVATION



WINGWALL TYPICAL SECTION

SCALE: 1/2" = 1'-0"

▲ DENOTES BARS TO BE CUT IN FIELD.

STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
Town Of CHESTER	Bridge No. 67
Highway No. T.H. NO. 9	Log Sta.
	Surv. Sta.
T.H. No. 9 OVER WILLIAMS RIVER	
WINGWALL DETAILS	
Designed By R.P. GENDRON	Drawn By T. SUMNER
Checked By Date	Bridge Design Supervisor
R.P. GENDRON 10-21-86	R.L. Ootley Date 11-86
PROJECT CHESTER	PROJECT NO.
	BRZ 1442 (10)
L&C. Info.	
Bridge Sheet No.	Sheet 13 of 28

BRIDGE 44-232 6442

BR-4

**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
1A	POTTER, JUDITH D.	2,3	12 + 75 LT. 14 + 50 LT.	14 + 50 LT. 15 + 20 LT.	0.11 A ±		CONST. EASE. (T) (375 S.F. ±)	WDOE		CHESTER			
1B			10 + 86 RT. 11 + 04 RT. 12 + 75 RT.	12 + 81 RT. 12 + 93 RT. 12 + 99 RT.	0.14 A ±		EASE. (T) (0.07 A ±) CULVERT (T)						(3250 S.F. ±) TEMPORARY BRIDGE AND LETFOR
2	HANNON, AGNES M.	2,3	12 + 37 LT.	14 + 09 LT.	0.09 A ±			WDOE	8/15/85	CHESTER	84	218-18	(375 S.F. ±)
3	DÉGENER, FREDERICK C. JR., & SYBAM L.	2,3	10 + 82 RT. 10 + 25 RT.	12 + 37 RT. 10 + 83 RT.	0.11 A ±		CONST. EASE. (T) (0.07 A ±)	WDOE		CHESTER			
4	CENTRAL VERMONT PUBLIC SERVICE CORP.												UTILITY
5	CONTINENTAL TELEPHONE CO. VERMONT, INC.												UTILITY

TABLE OF REVISIONS

REVISION NO.	SHEET NO.	DESCRIPTION OF REVISION	DATE	MADE BY	APPROVED BY
1	2,3	PARCEL No. 1 POTTER, DELETED JAMES L. POTTER FROM TITLE PER C.O. No. 6621 MYLARS TO STRUCTURES	9-27-85 12/30/86	D.E.M.	L.W.B. <i>LWB</i>

MADE BY: A.S.J. DATE 3-18-85
CHECKED BY: L.W.B. DATE 3-18-85

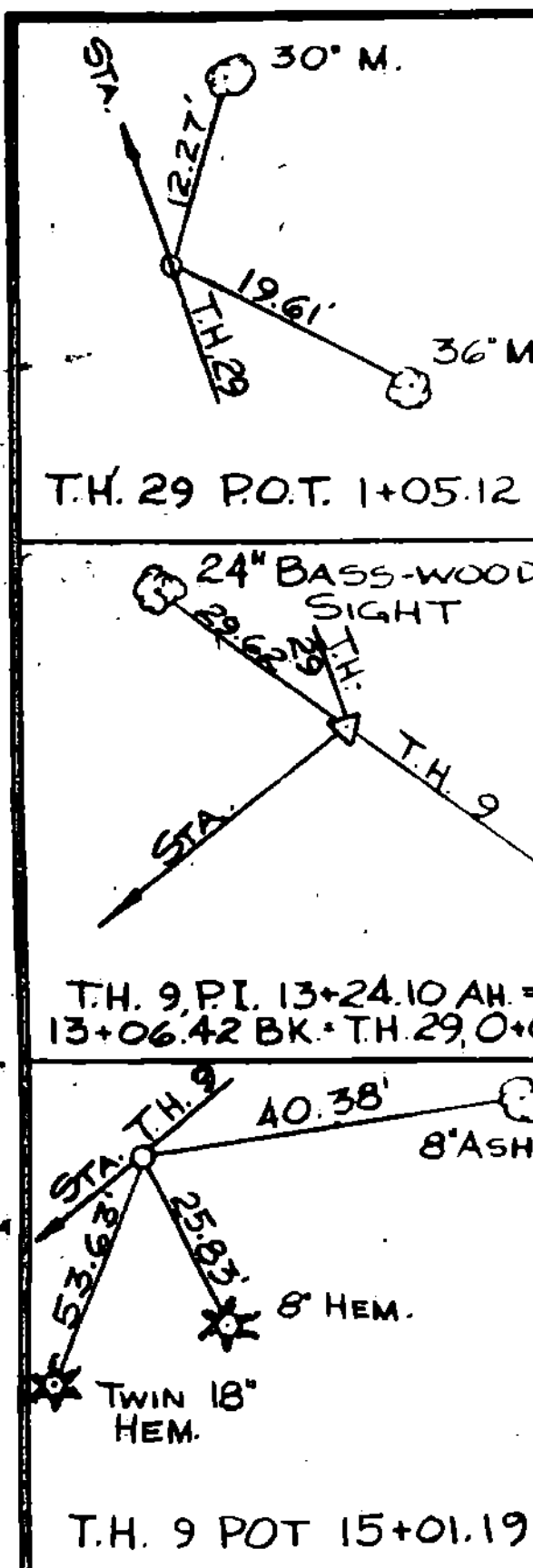
DR. RT. - DRAINAGE RIGHT
DIT. RT. - DITCHING RIGHT
CH. RT. - CHANNEL RIGHT
DRIVE RT. - DRIVE RIGHT
CUL. RT. - CULVERT RIGHT
⊙ - DEMOLITION OR REMOVAL
W - WATER SOURCES

————— PRESENT R.O.W.
- - - - - TAKING WITHOUT ACCESS
- - - P - - - 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 - P - PROPERTY LINE
- Δ - Δ - TOP OF CUT
- ○ - ○ - TOE OF SLOPE

APPROVED *James W. Quinn* DATE 3/20/85
CHIEF OF PLANS & TITLES

PROJECT CHESTER
NO. BRZ 1442(10)
SHEET 15 OF 28



**END R.O.W. PROJECT BRZ 1442(10)
STA. 15+20 @ TH 9**

SUR. CURVE #2
 $\Delta = 41^\circ 56' \text{ LT.}$
 $D = 47'$
 $R = 121.91$
 $T = 46.71$
 $E = 8.64$
 $L = 89.22$
 BANK = 0.042 FT/FT

SURVEY CURVE No. 2
 $\Delta = 75^\circ 15' 30'' \text{ LT.}$
 $D = 74^\circ 00'$
 $R = 77.43$
 $T = 59.69$
 $E = 20.34$
 $L = 101.70$

BRIDGE RAILING - HEAVY DUTY STEEL BEAM.
 LENGTH RT. 77.85'
 LENGTH LT. 77.85'

GUARD RAIL, HEAVY DUTY STEEL BEAM W/ WOOD POSTS, TYPE II.
 RT. TH. 9 STA. 10+50 TO BRIDGE
 LT. BRIDGES TO TH. 29 STA. 0+05.16
 RT. TH. 14 STA. 0+26 TO BRIDGE W/ RAIL
 LT. BRIDGE TO T.H. 9 STA. 15+00

ANCHORS FOR STEEL BEAM RAIL.
 W/ WOOD POSTS @ OPENINGS.
 T.H. 9 STA. 10+50 RT.
 T.H. 29 STA. 0+05 RT.
 T.H. 14 STA. 0+26 RT.
 T.H. 9 STA. 15+00 LT.

SUR. STA. 13+95 90°
 NEW 18" x 42" CGMP WITH REINFORCED HEADWALL AT INLET

13+95 SUR.
 EXIST. 15" CGMP REMOVE

SUR. P.I. 13+37.68 BK. =
 13+33.48 A.H.
 $\Delta = 41^\circ 56' \text{ LT.}$

SUR. STA. 13+95 90°
 NEW 18" x 42" CGMP WITH REINFORCED HEADWALL AT INLET

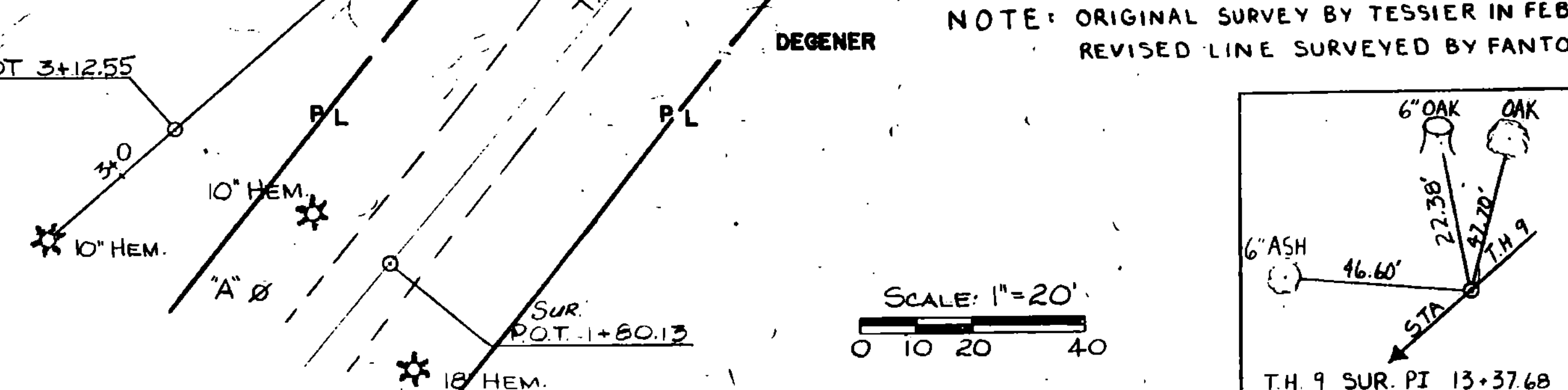
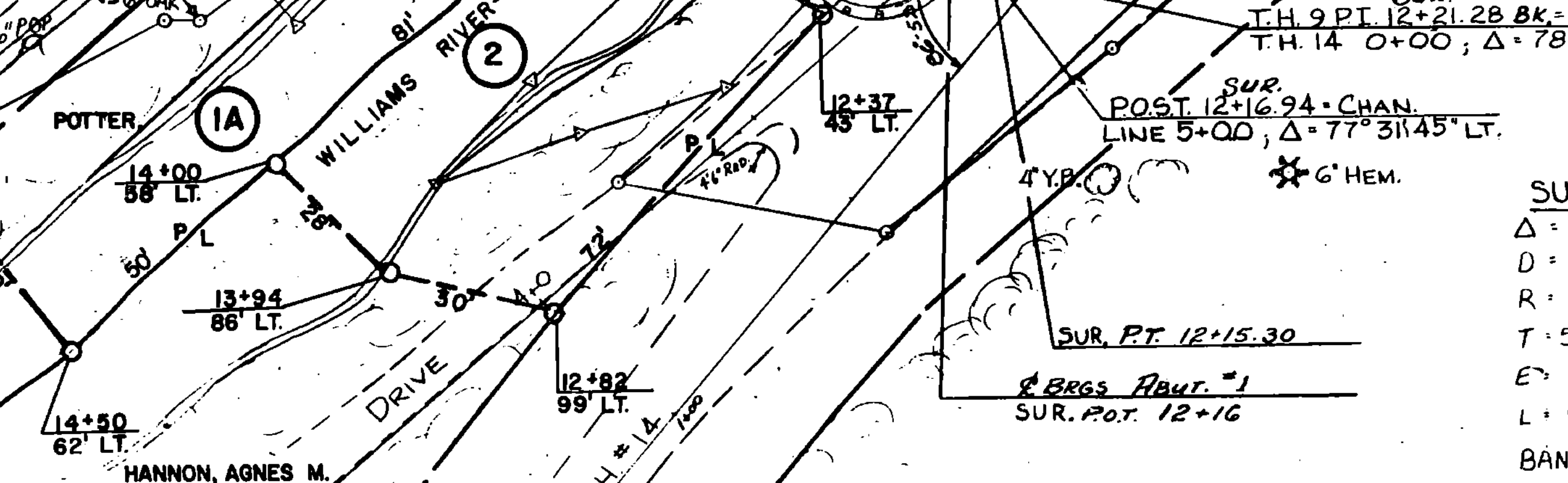
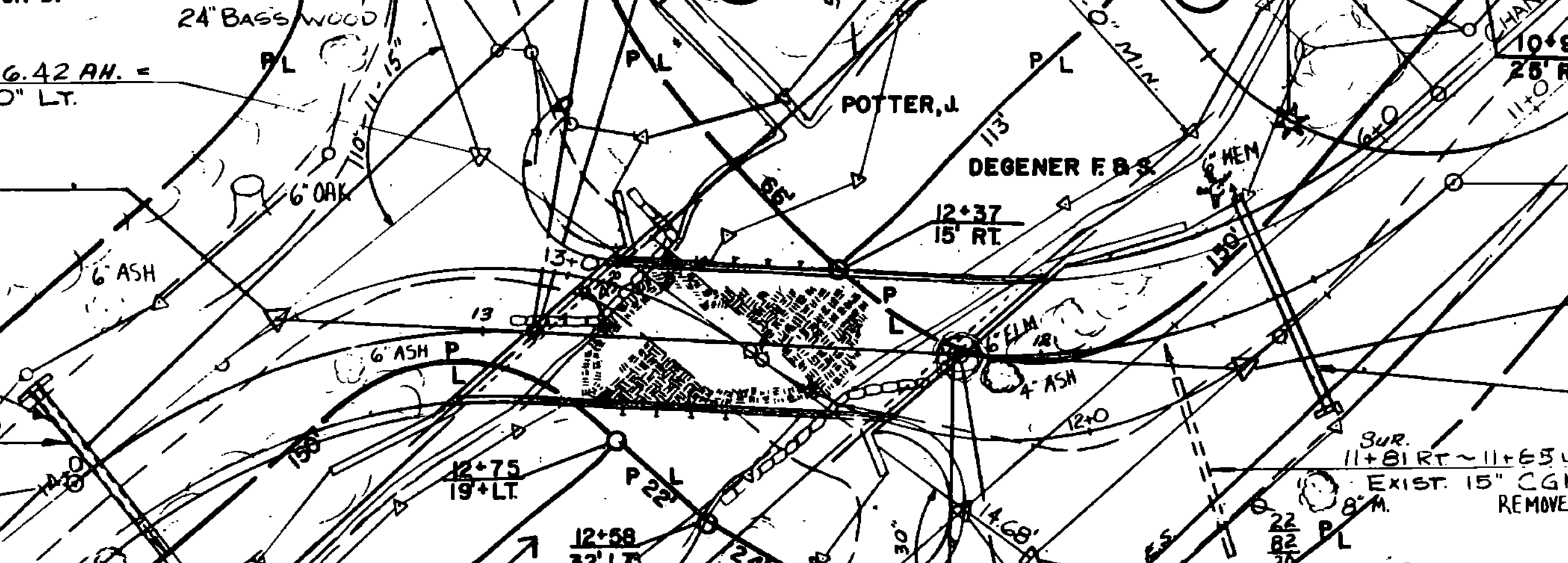
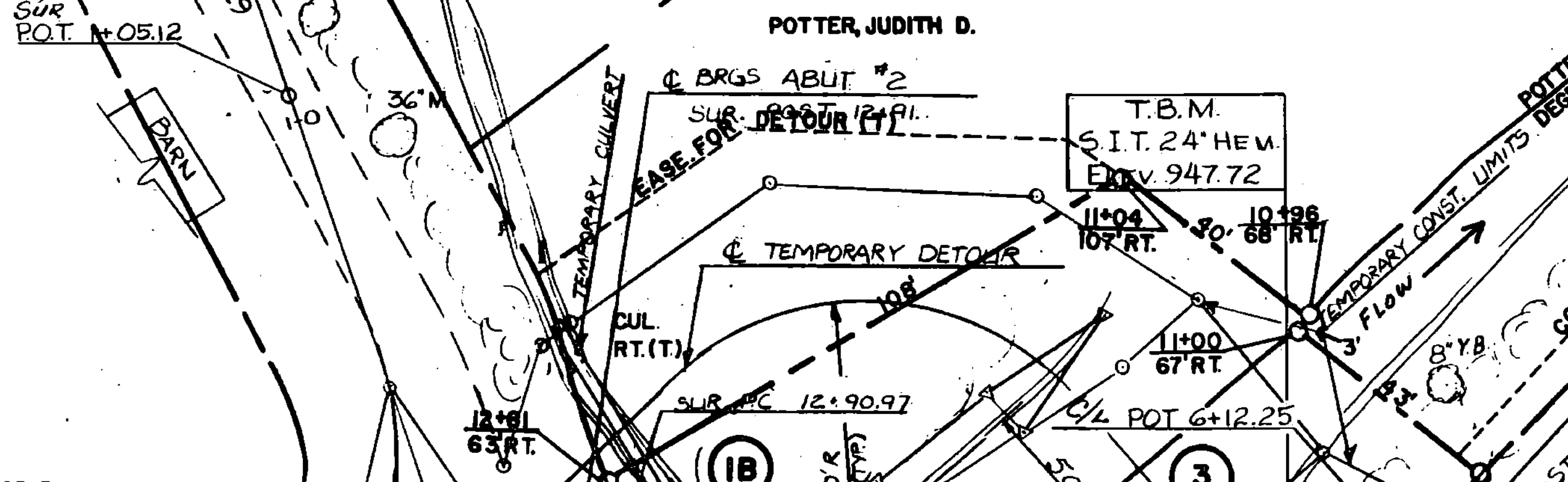
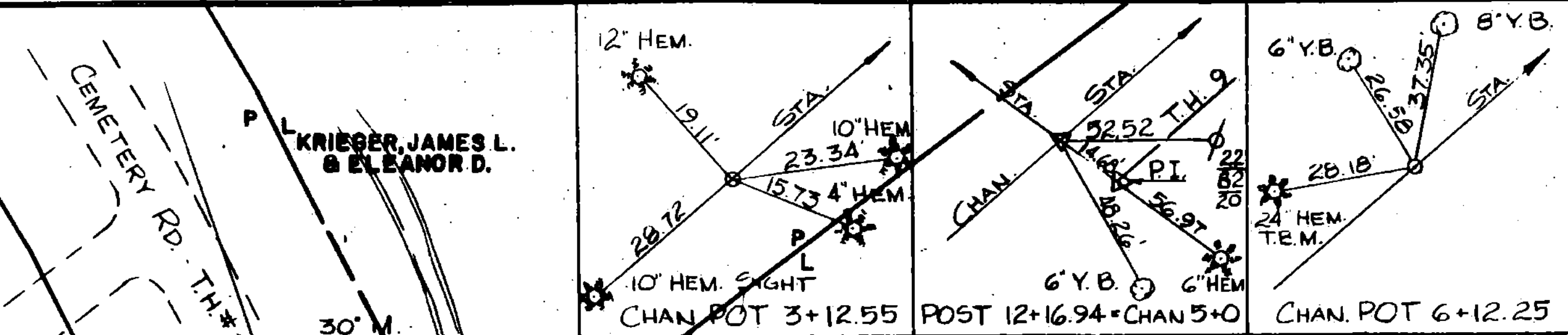
13+95 SUR.
 EXIST. 15" CGMP REMOVE

SUR. P.I. 13+40.19 =
 SUR. POT 13+99.57

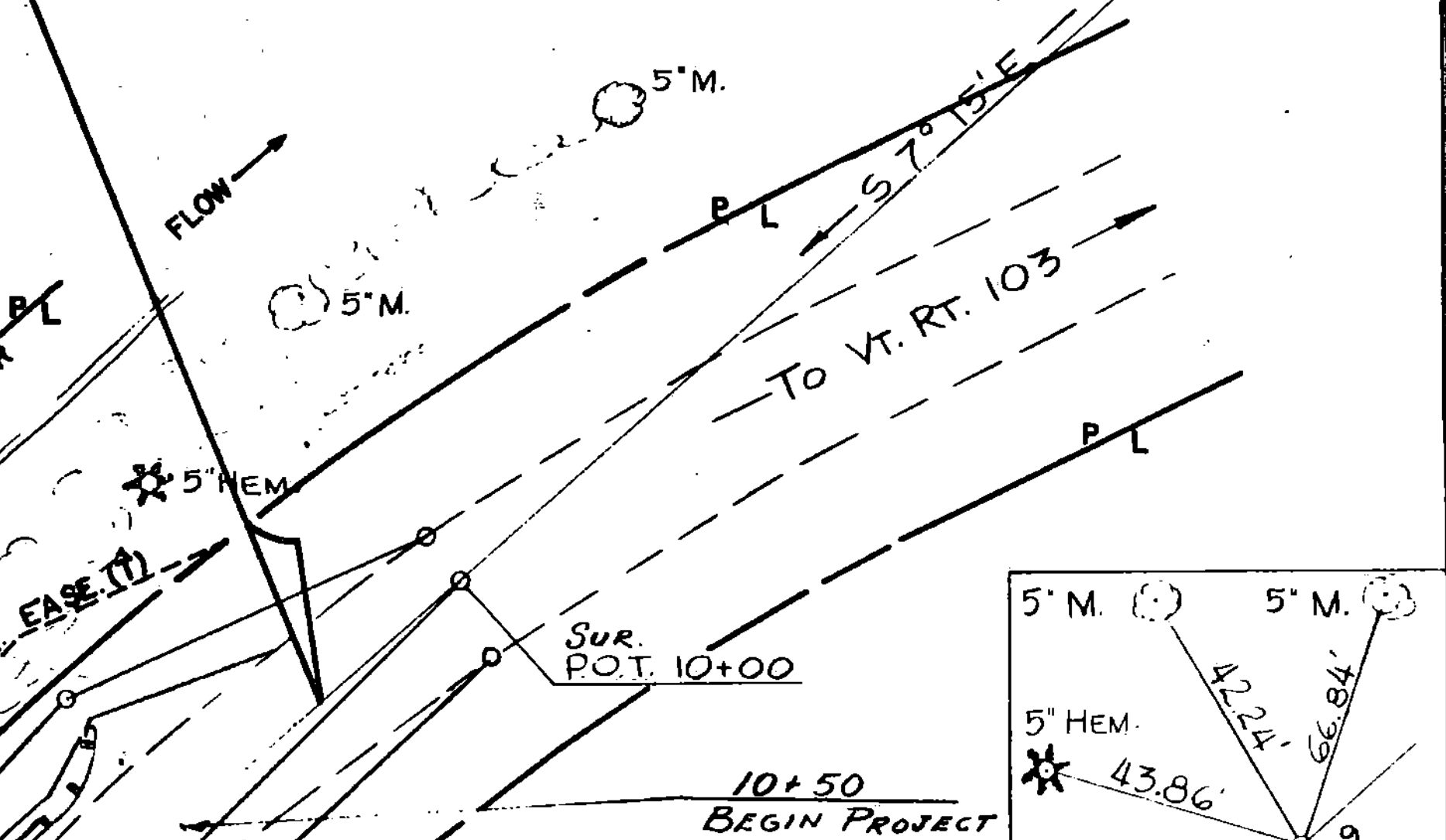
SUR. POT. 15+00
 T.H. 9 V. 14+00
 14+00 58' LT.
 13+94 86' LT.
 14+50 62' LT.
 12+82 99' LT.
 12+58 32' LT.
 12+37 15' RT.
 12+75 19' LT.
 12+81 63' RT.
 11+04 107' RT.
 11+00 67' RT.
 10+92 28' RT.
 10+98 68' RT.
 10+00 5' M.

SUR. POT. 15+00
 T.H. 9 V. 14+00
 14+00 58' LT.
 13+94 86' LT.
 14+50 62' LT.
 12+82 99' LT.
 12+58 32' LT.
 12+37 15' RT.
 12+75 19' LT.
 12+81 63' RT.
 11+04 107' RT.
 11+00 67' RT.
 10+92 28' RT.
 10+98 68' RT.
 10+00 5' M.

SUR. POT. 15+00
 T.H. 9 V. 14+00
 14+00 58' LT.
 13+94 86' LT.
 14+50 62' LT.
 12+82 99' LT.
 12+58 32' LT.
 12+37 15' RT.
 12+75 19' LT.
 12+81 63' RT.
 11+04 107' RT.
 11+00 67' RT.
 10+92 28' RT.
 10+98 68' RT.
 10+00 5' M.

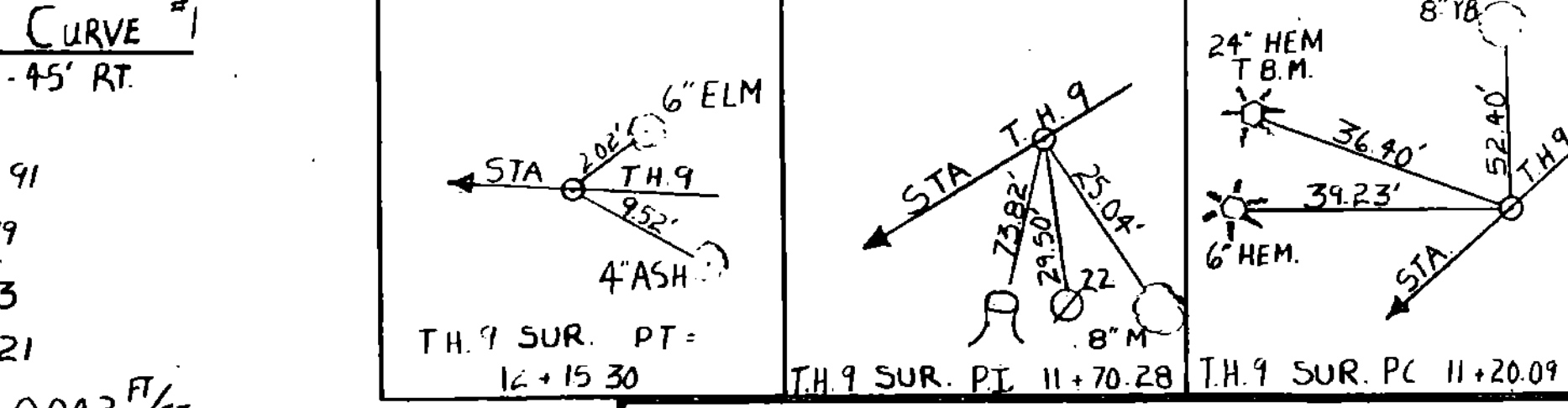
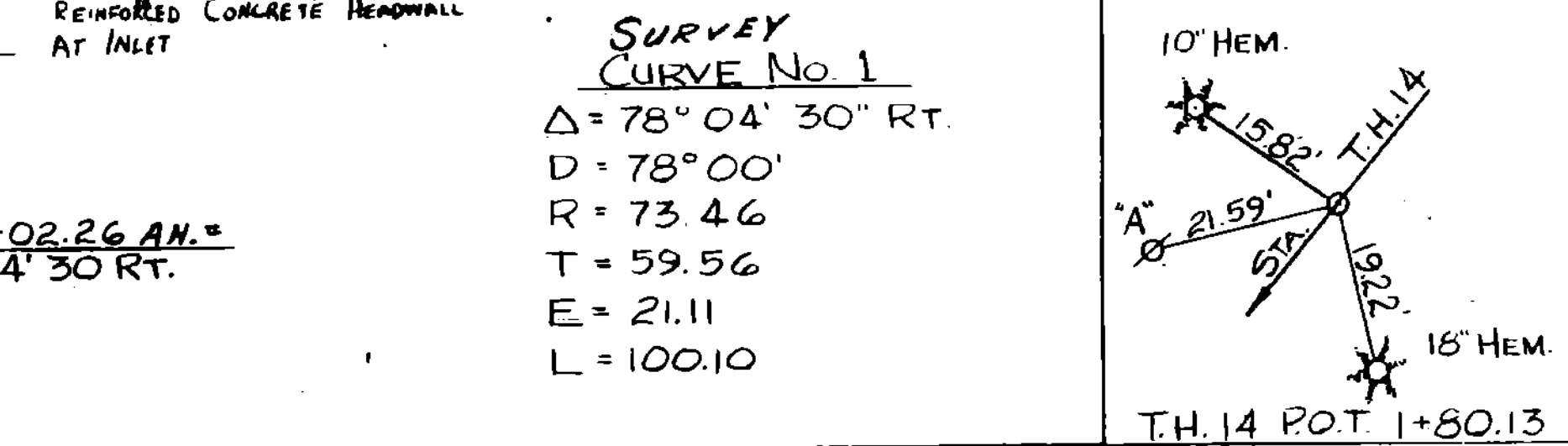


**BEGIN R.O.W. PROJECT BRZ 1442(10)
STA. 10+25 @ TH 9**

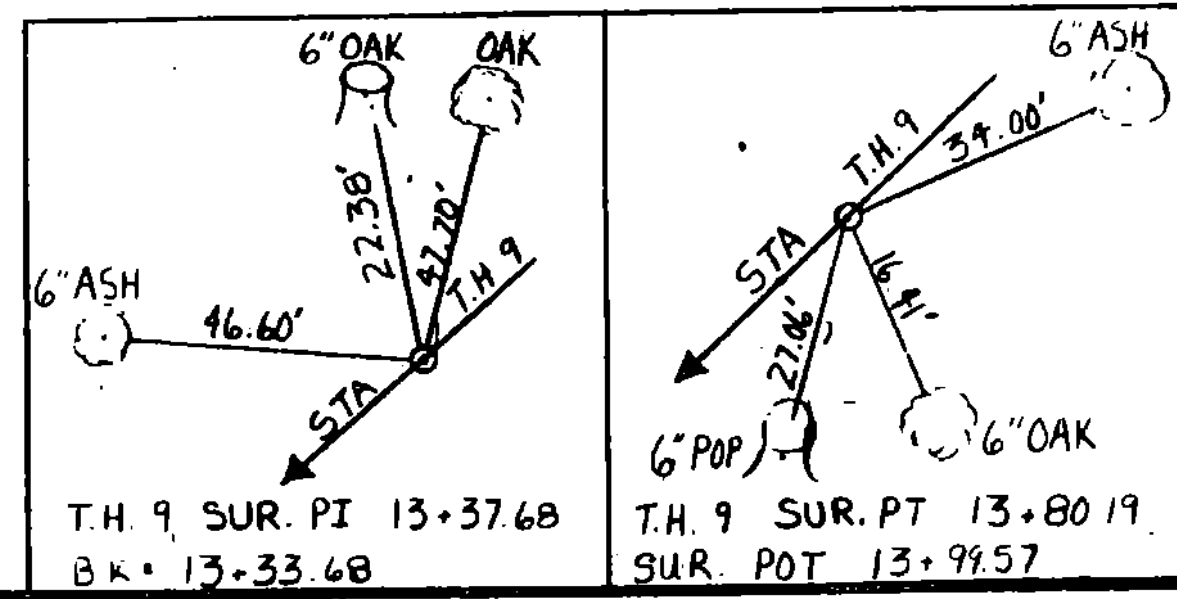
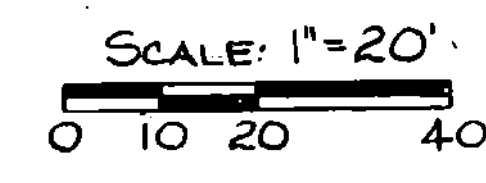


NOTE
 THIS SHEET IS FOR R.O.W. LIMIT DETAILS ONLY. REFER TO THE REMAINING PLAN SHEETS FOR ALL OTHER CONTRACT DETAILS.

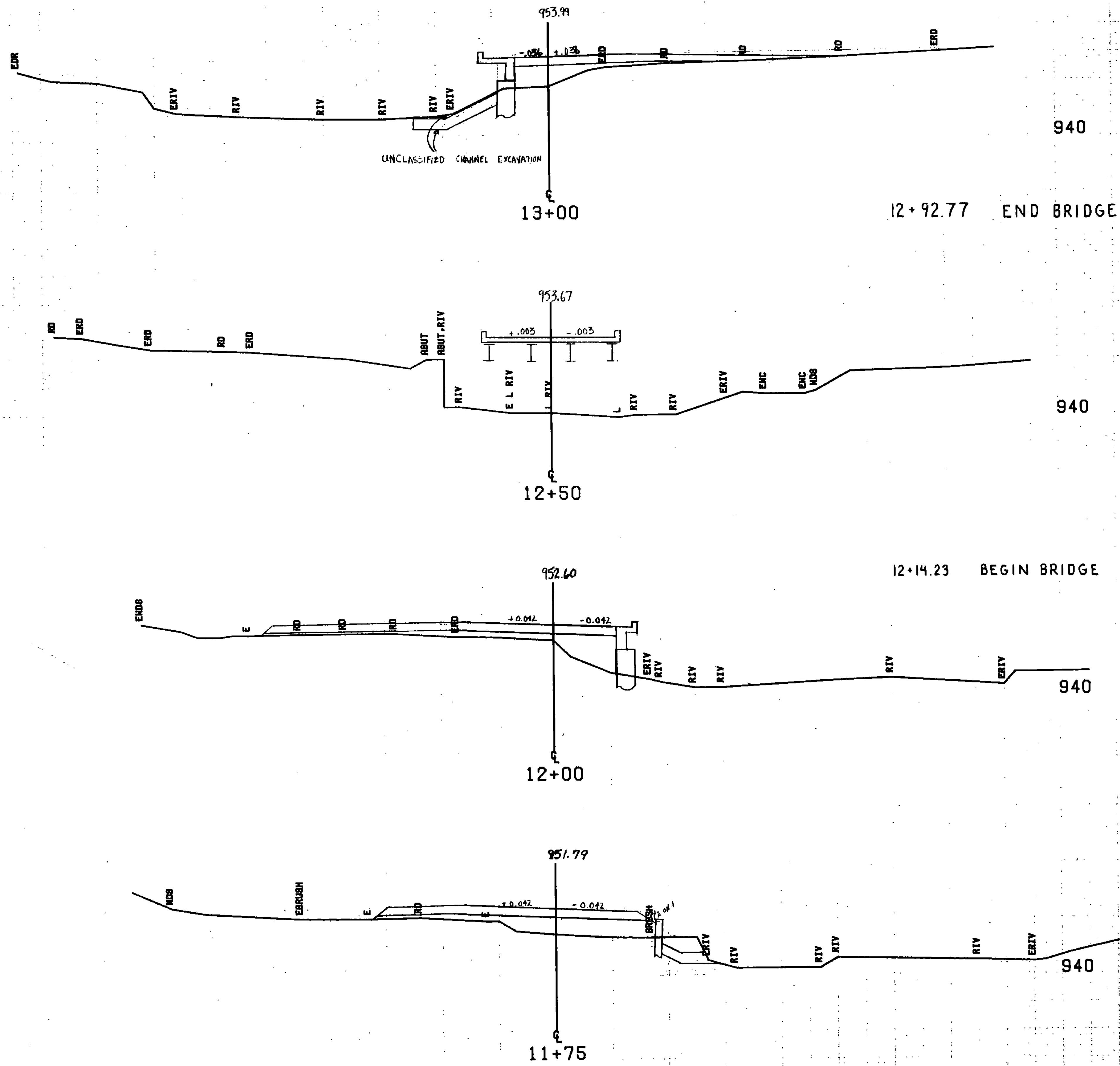
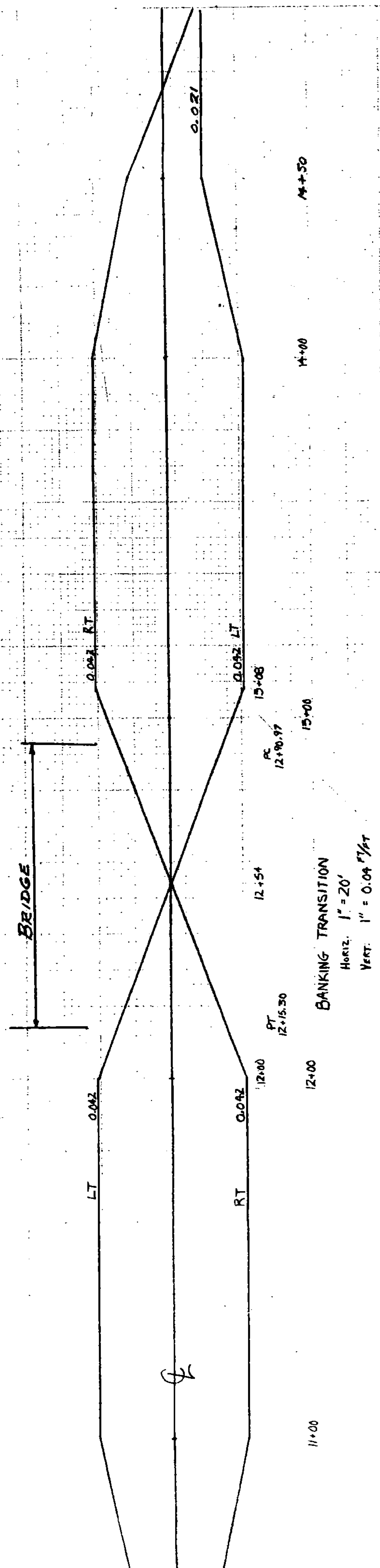
SURVEY CURVE No. 1
 $\Delta = 78^\circ 04' 30'' \text{ RT.}$
 $D = 78^\circ 00'$
 $R = 73.46$
 $T = 59.56$
 $E = 21.11$
 $L = 100.10$



NOTE: ORIGINAL SURVEY BY TESSIER IN FEB 1983 FROM STA. 10+00 TO 15+00
 REVISED LINE SURVEYED BY FANTONI IN MAY 1984 STA. 11+20 TO 13+80



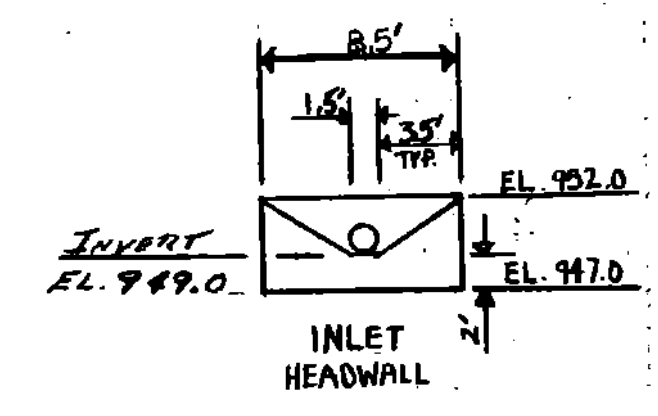
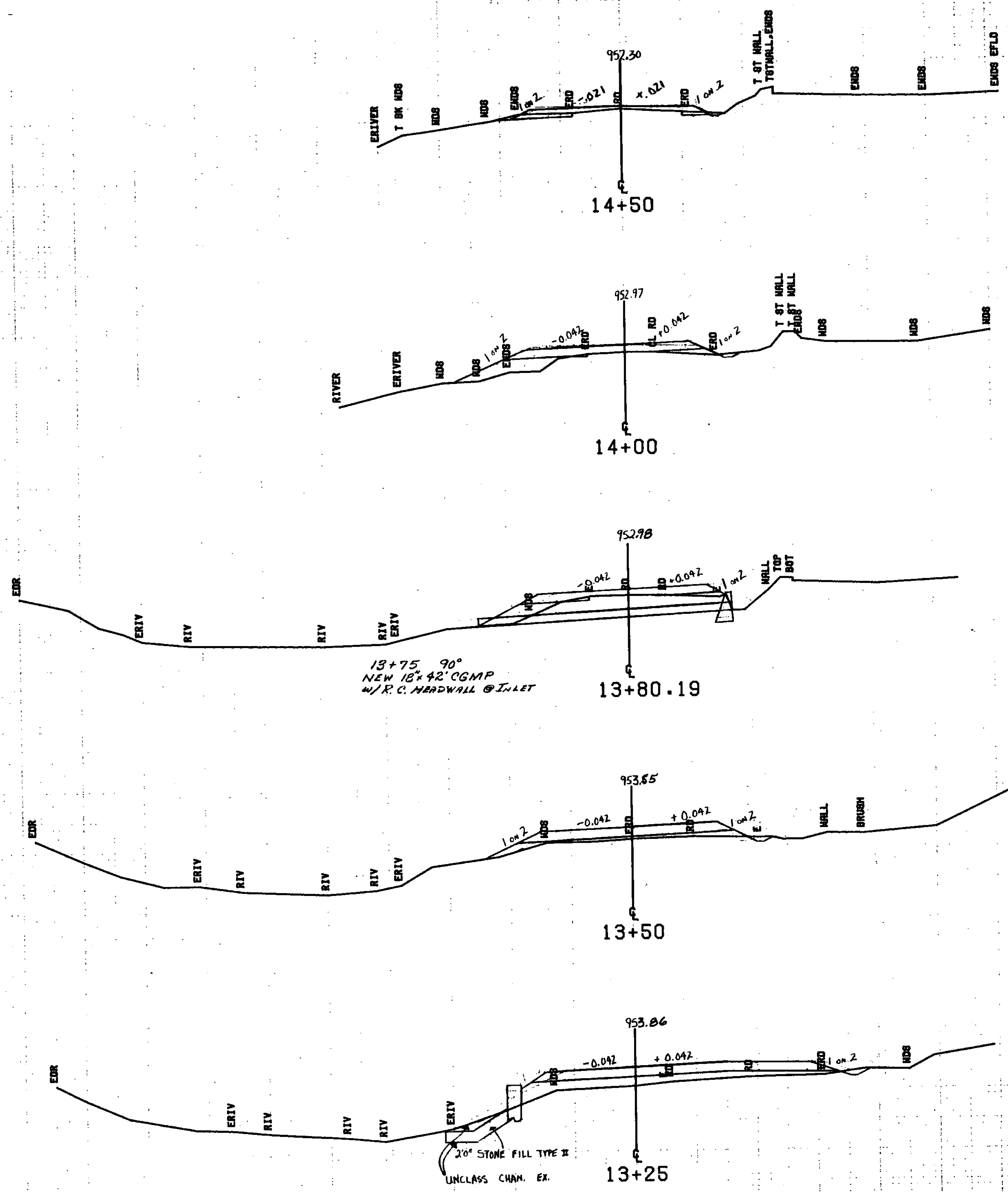
STATE OF VERMONT	
AGENCY OF TRANSPORTATION	
TOWN OF CHESTER	Bridge No. G7
HIGHWAY NO. T.H. No. 9	Log Sta. 12+63.12
T.H. No. 9 OVER WILLIAMS RIVER.	
PLAN	
Designed by R.P. GENDRIN	Drawn by P.M. PELKEY
Checked by R.P. GENDRIN	Bridge Design Supervisor
R.P. GENDRIN - date 5-31-84	date
PROJECT CHESTER	PROJECT NO. BRZ 1442(10)
Bridge Sheet No.	Sheet 16 of 28



TH 9

FROM STA.	11+75	TO STA.	13+00
PROJECT NAME	CHESTER MAIN		
NO.	BR71442(10)		PLOTTED 06/16/84
SURVEYED BY	FANTON MAY '81		
DRAWN BY	D. J. BURTIS		

SCALE: 1" = 10 FEET



950

950

950

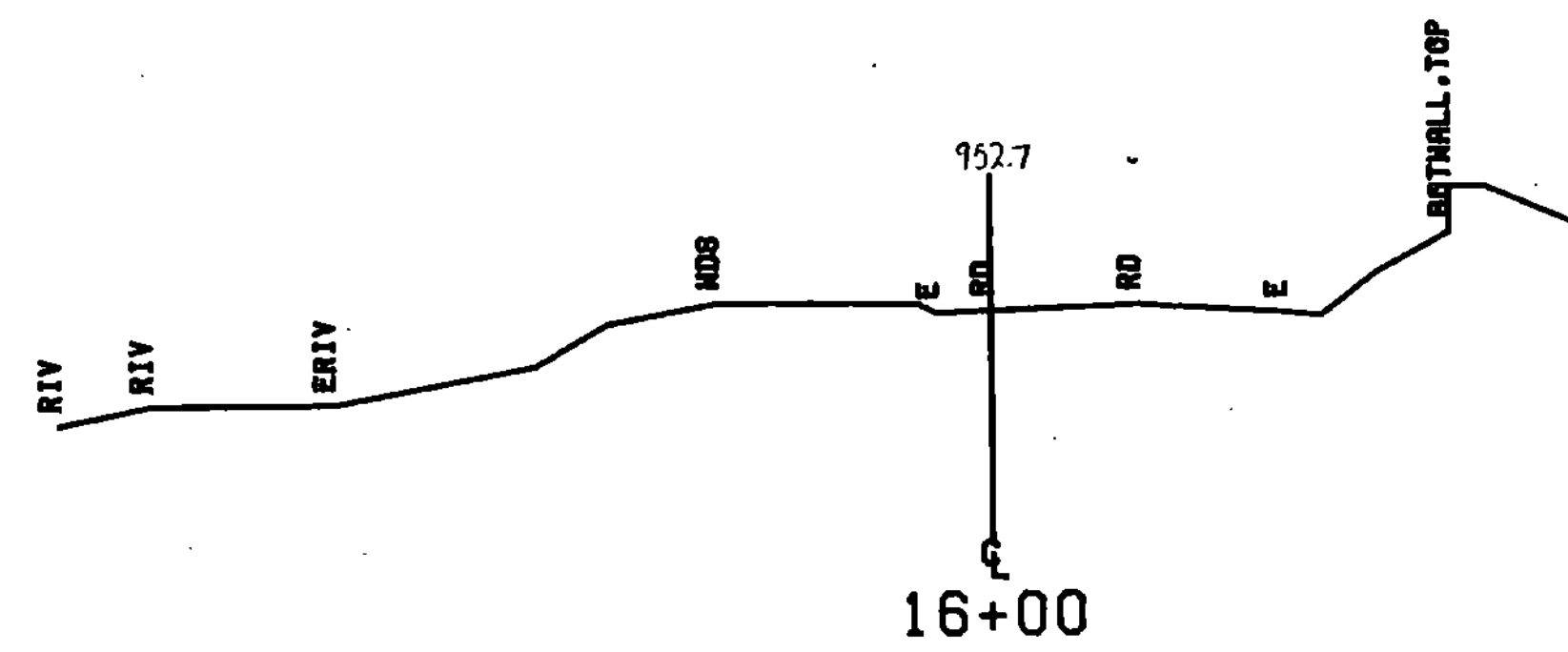
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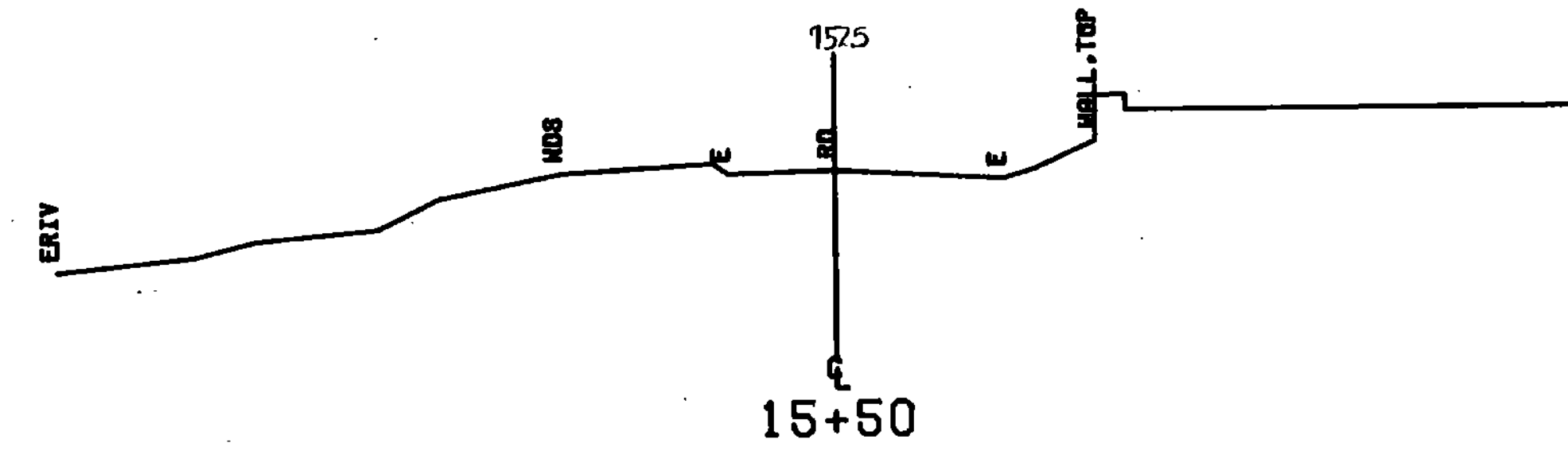
719

FROM STA.	13+25	TO STA.	14+50
PROJECT NAME	CHESTER MAIN		
NO.	BR21442(10)	PLOTTED 05/18/94	
SURVEYED BY		FED. 88: PANTON, MAY 91	
DRAWN BY		M. 28: SHEETS	

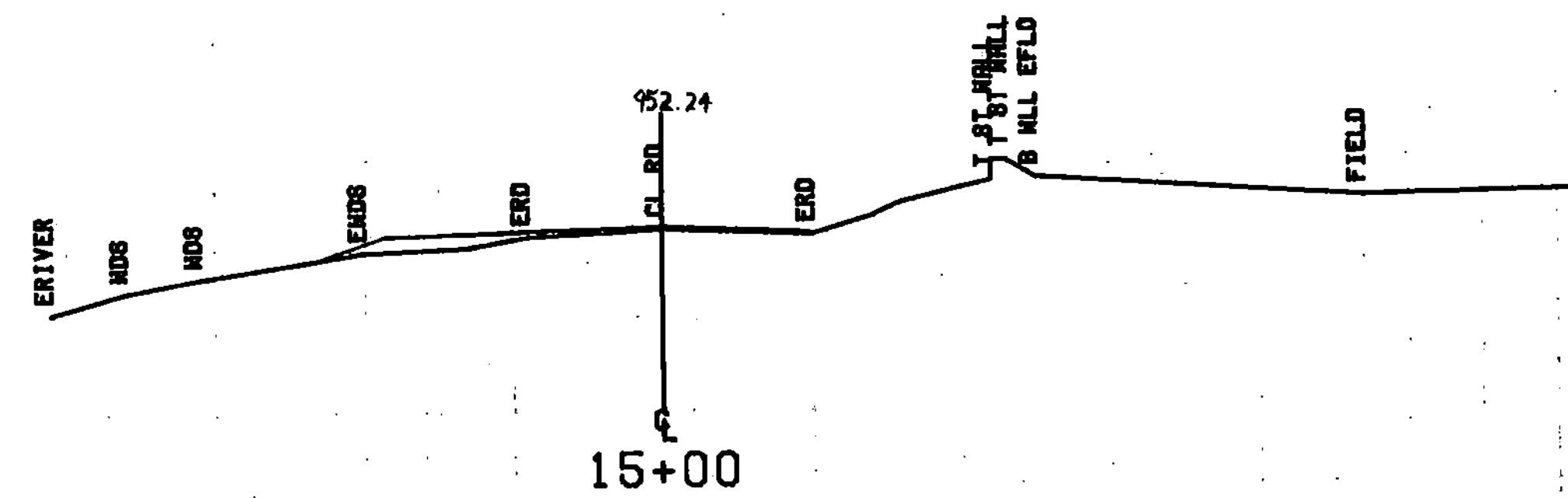
SCALE 1" = 10'



950



950



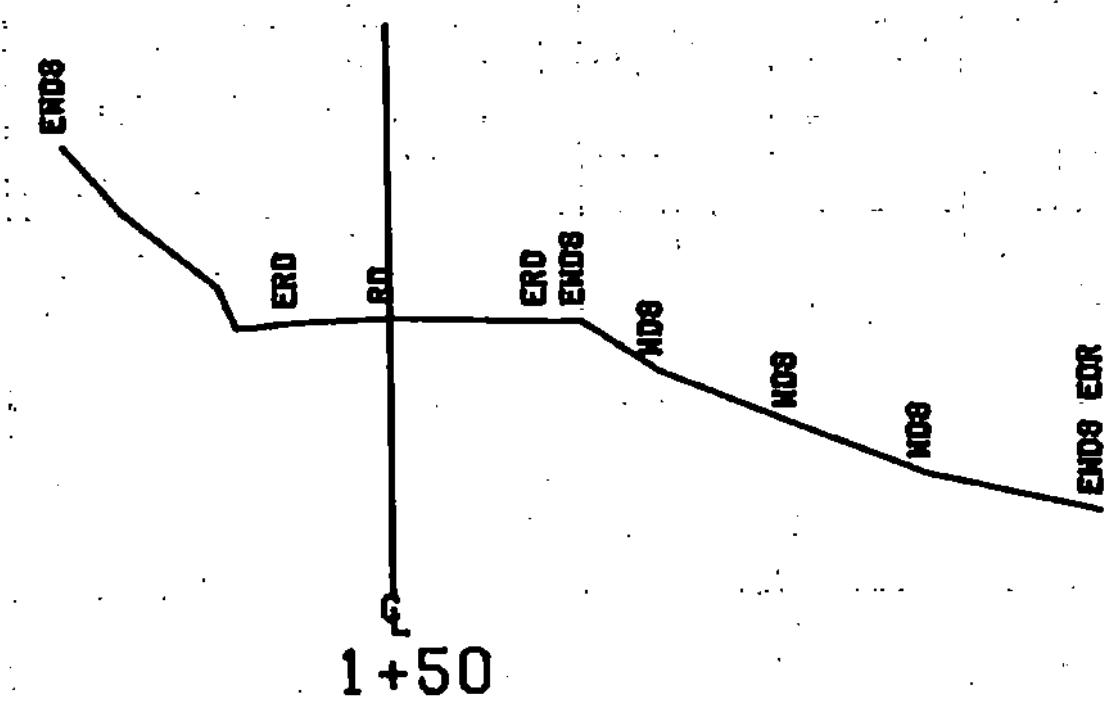
950

15+00 END PROJECT
CONSTRUCT SATISFACTORY APPROACH

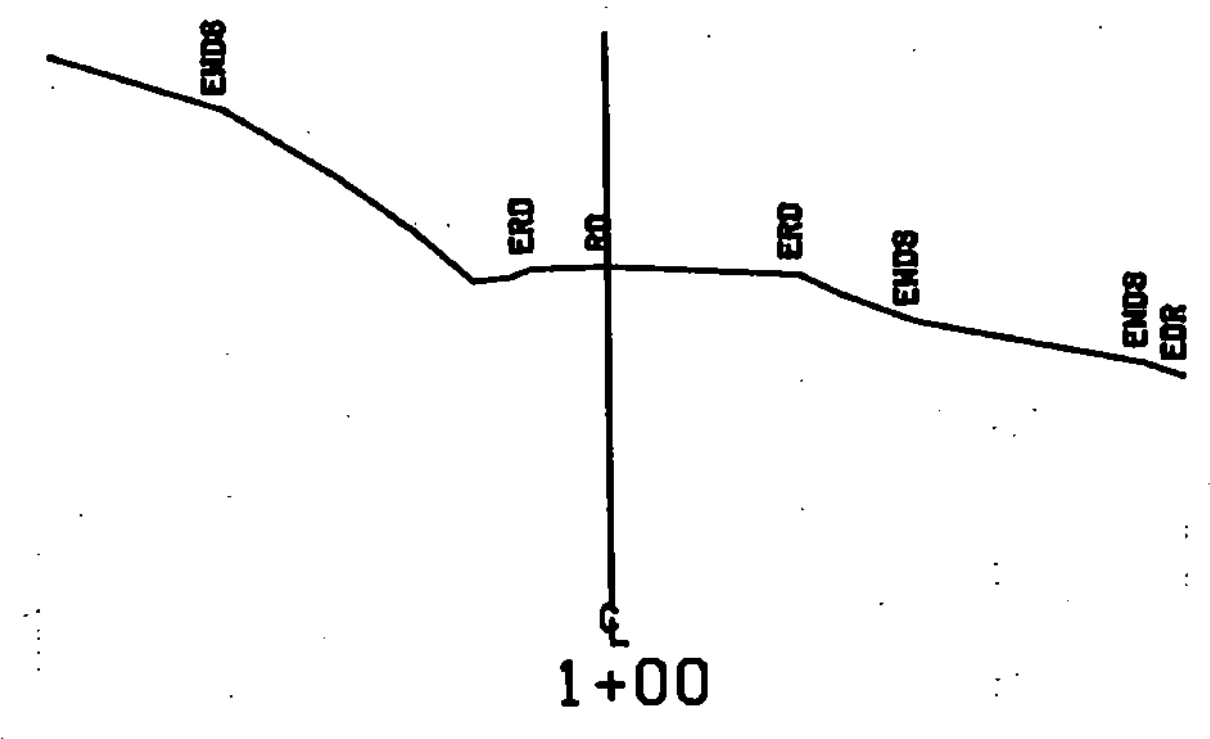
TH9

FROM STA.	18+00	TO STA.	18+00
PROJECT NAME	CHESTER MAIN		
NO.	BR21442(10)	PLOTTED 05/18/64	
SURVEYED BY TESSIEA FEB 65 F. FANTONI MAY 64			
SHEET 22 OF 22 SHEETS			

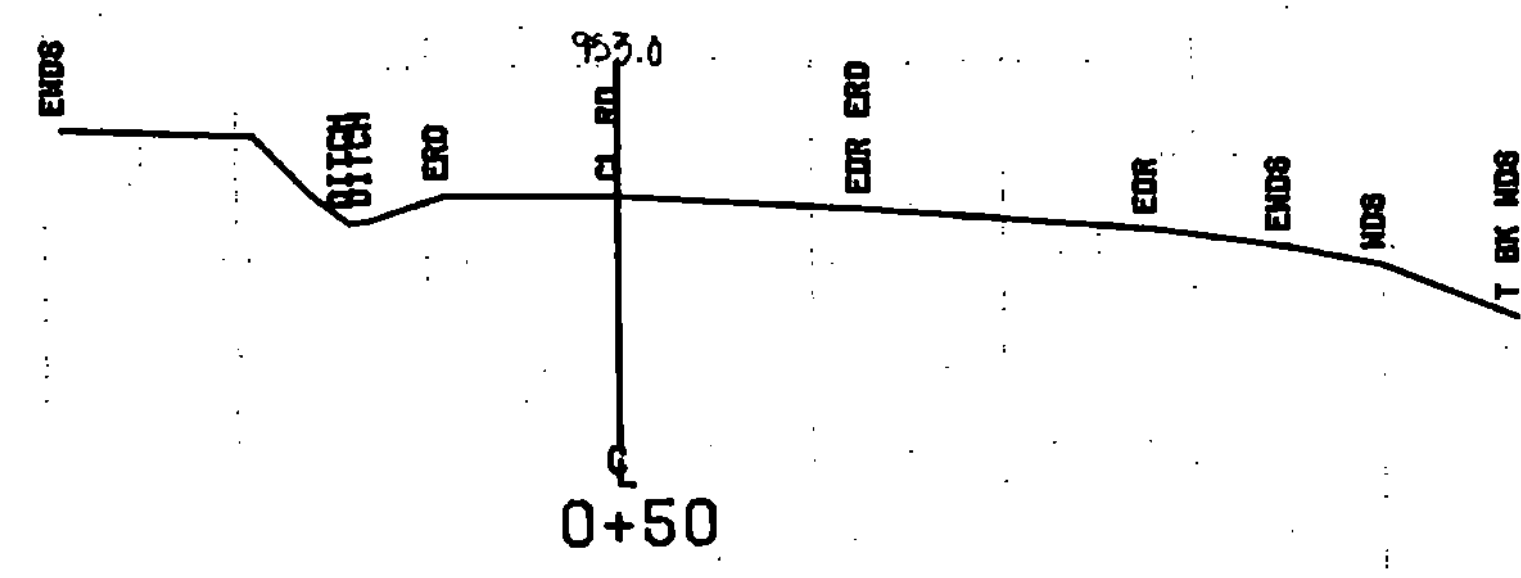
SCALE 1" = 10 FEET



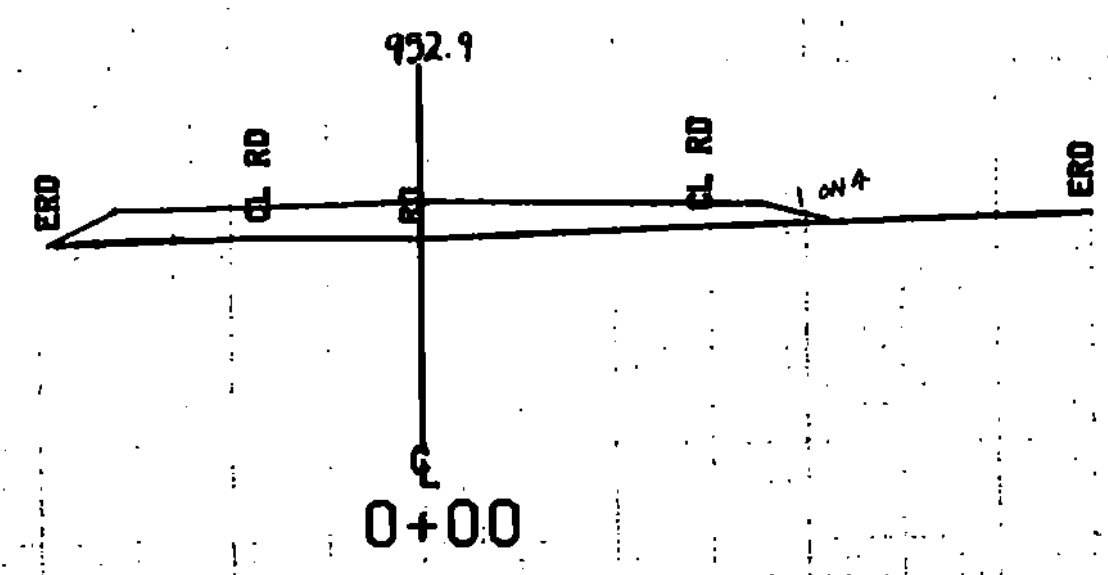
960



950



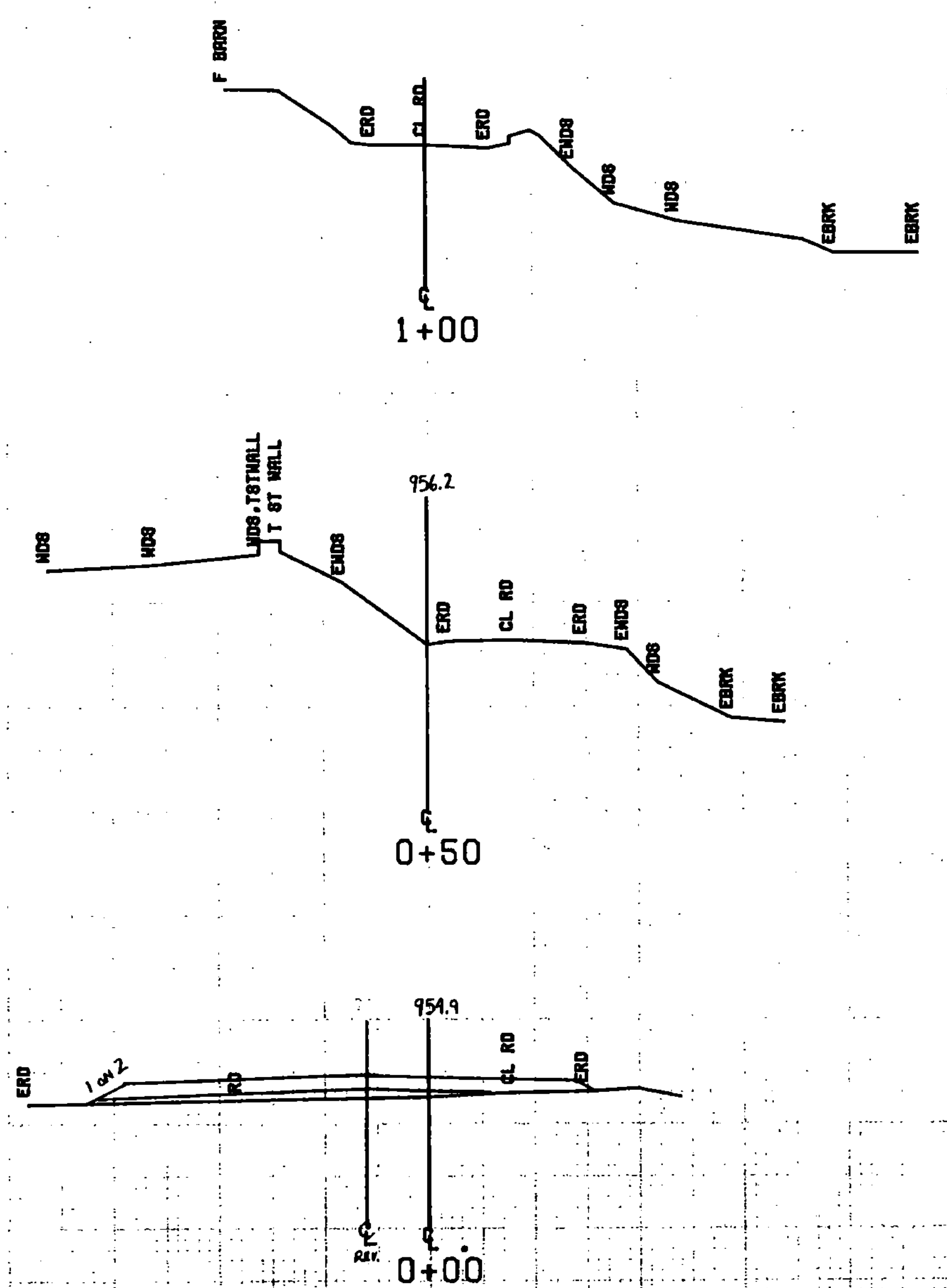
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950

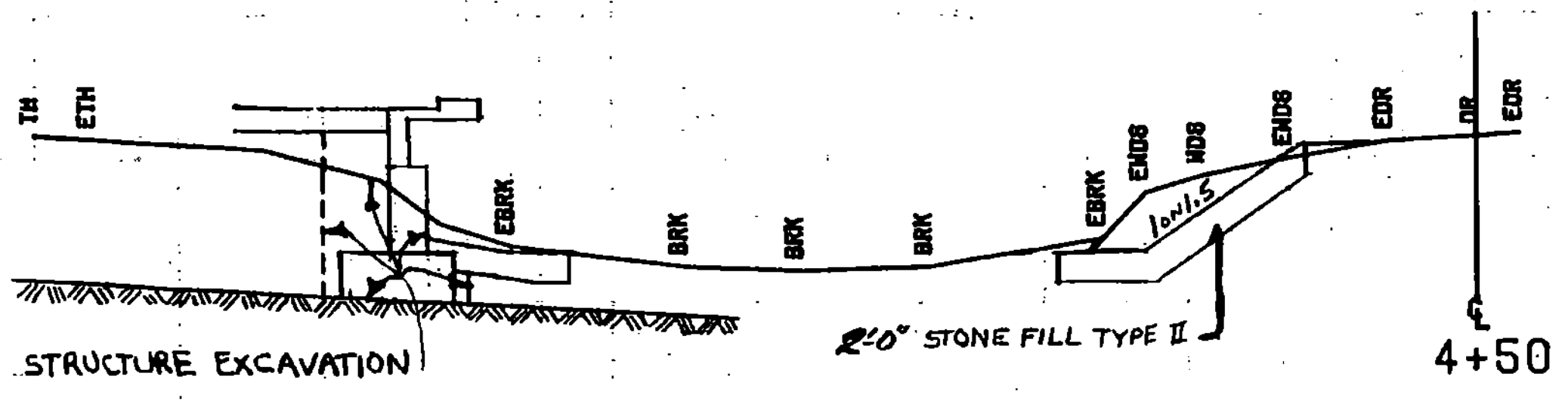
FROM STA.	0+00	TO STA.	1+80
PROJECT NAME	CHESTER TH14		
NO.	BR2142(10)		PLOTTED 04/13/83
SURVEYED BY	JESSIE		FEBRUARY '83
SHEET 59	OF 60 SHEETS		

SCALE 1" = 10 FEET

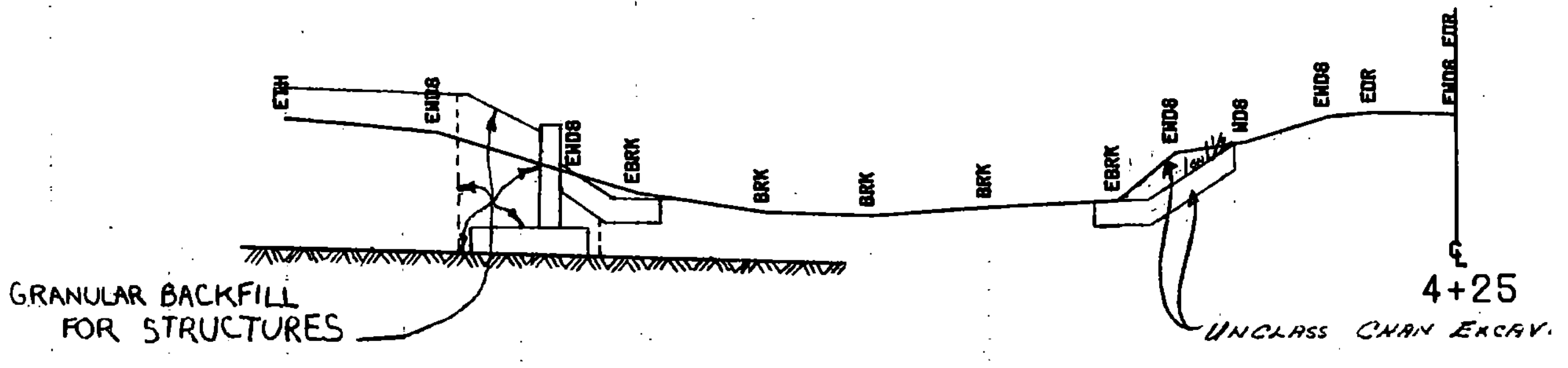


FROM STA.	0+00	TO STA.	1+00
PROJECT NAME	CHESTER TH29		
NO.	BRZ1442(10)	PLOTTED	04/13/69
SURVEYED BY	TESSIER		FEBRUARY '63
SHEET	24	OF	26 SHEETS

SCALE 1" = 10 FEET

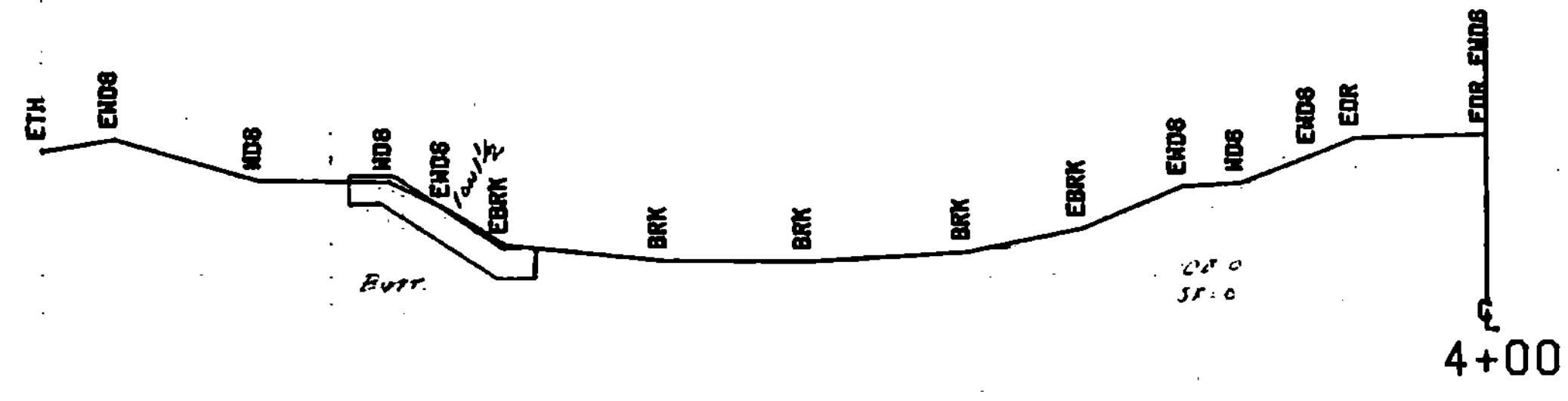


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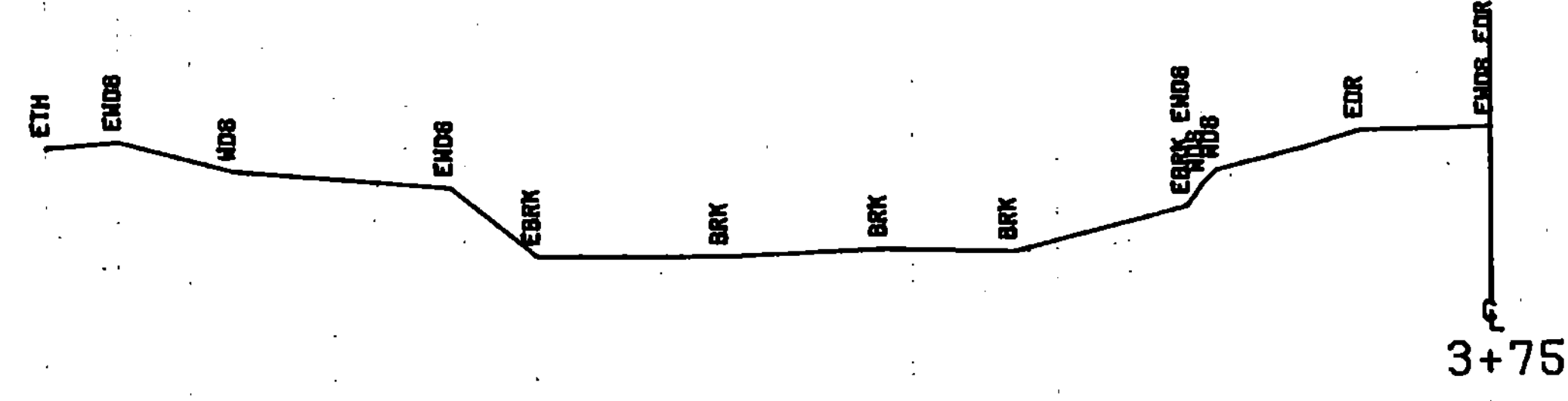
NOTE: LEDGE LINE HAS BEEN DETERMINED BY USING INTERPOLATED AND EXTRAPOLATED VALUES FROM THE BORING DATA.

950

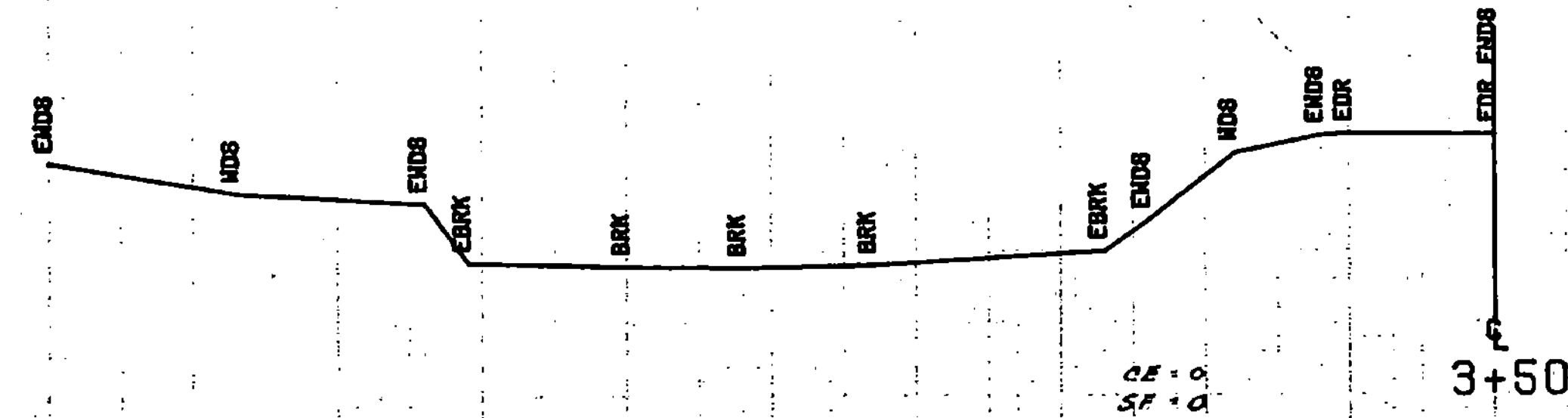


950

STA 4+00
BEGIN STONE FILL TYPE II
BEGIN UNCLASSIFIED CHANNEL EXCAVATION



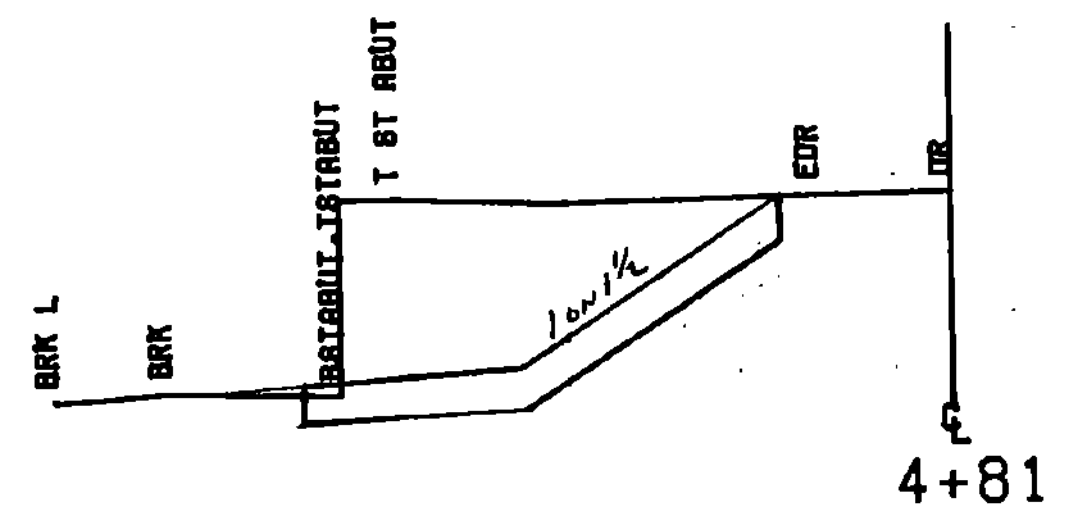
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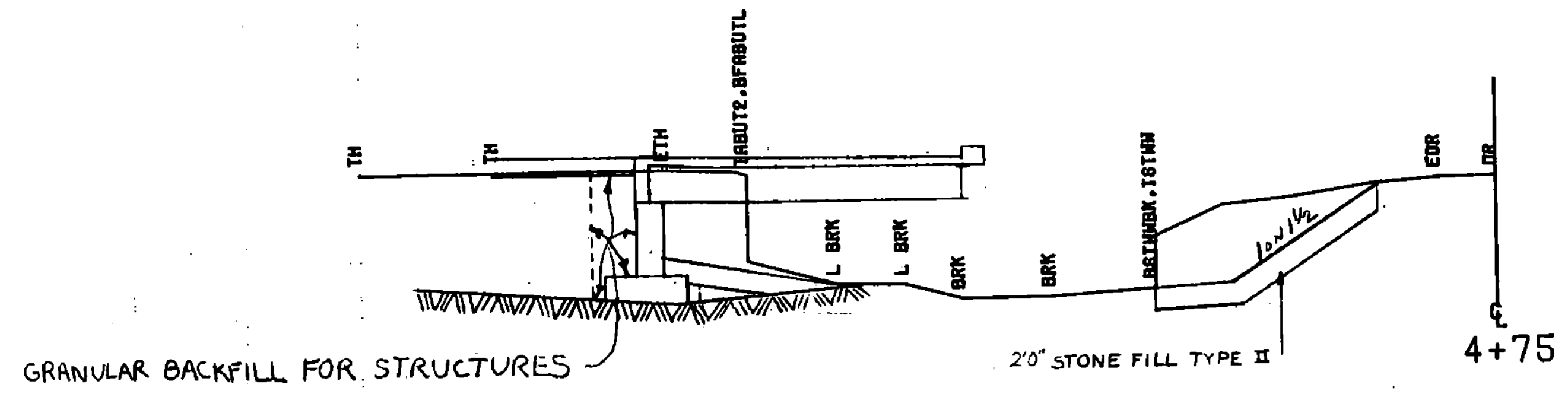
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FROM STA. 3+50	TO STA. 4+50
PROJECT NAME CHESTER CHAN	
NO. BR21442(10)	PLOTTED 04/14/89
SURVEYED BY TEBBER	FEBRUARY '89
SHEET 26 OF 28 SHEETS	

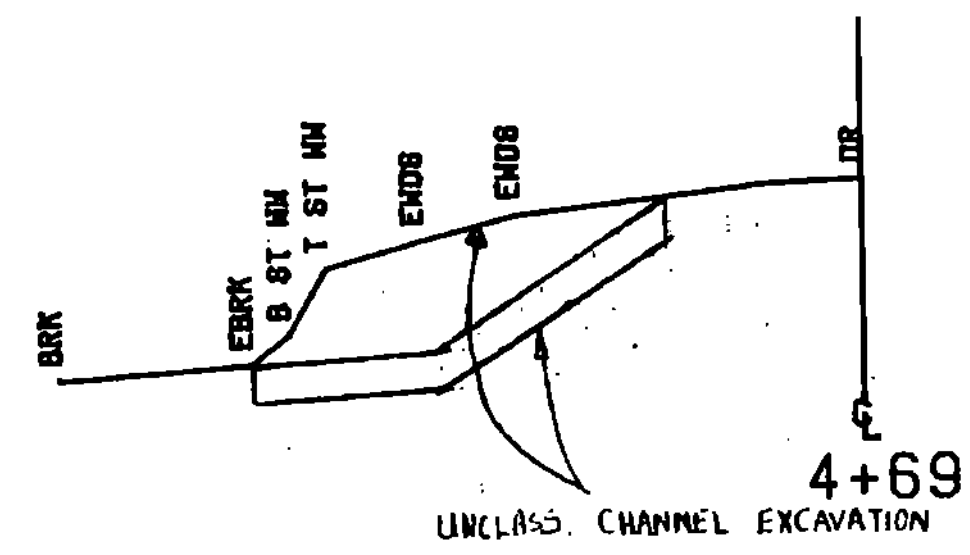
SCALE 1" = 10 FEET



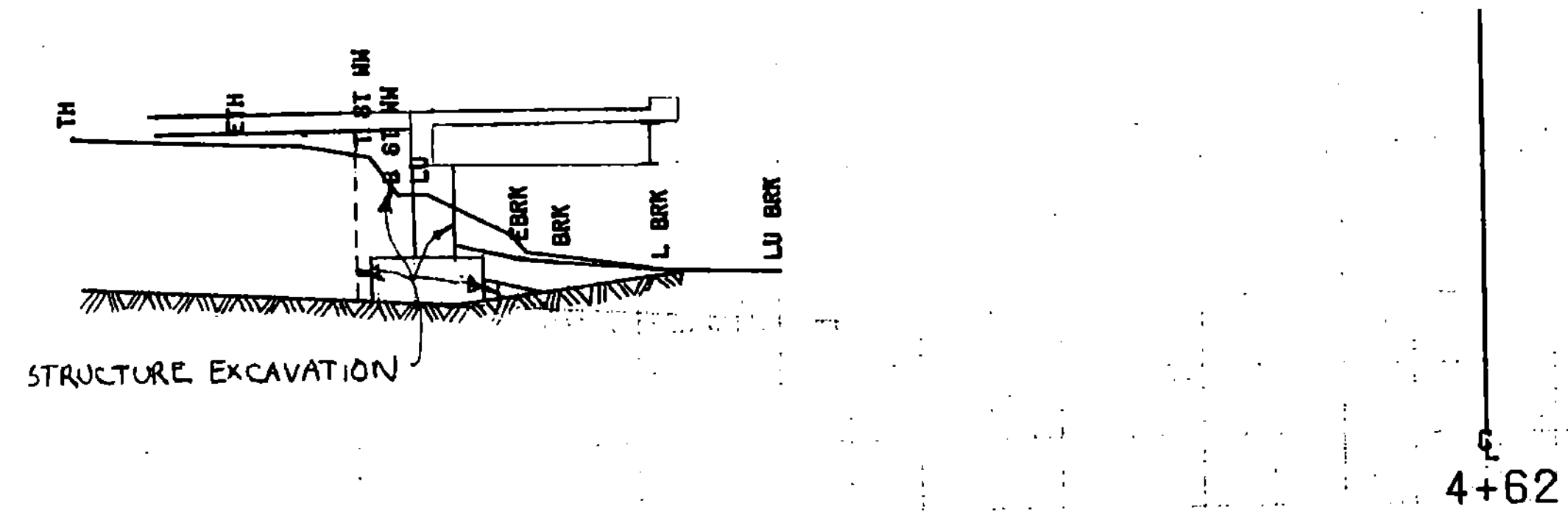
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950



950

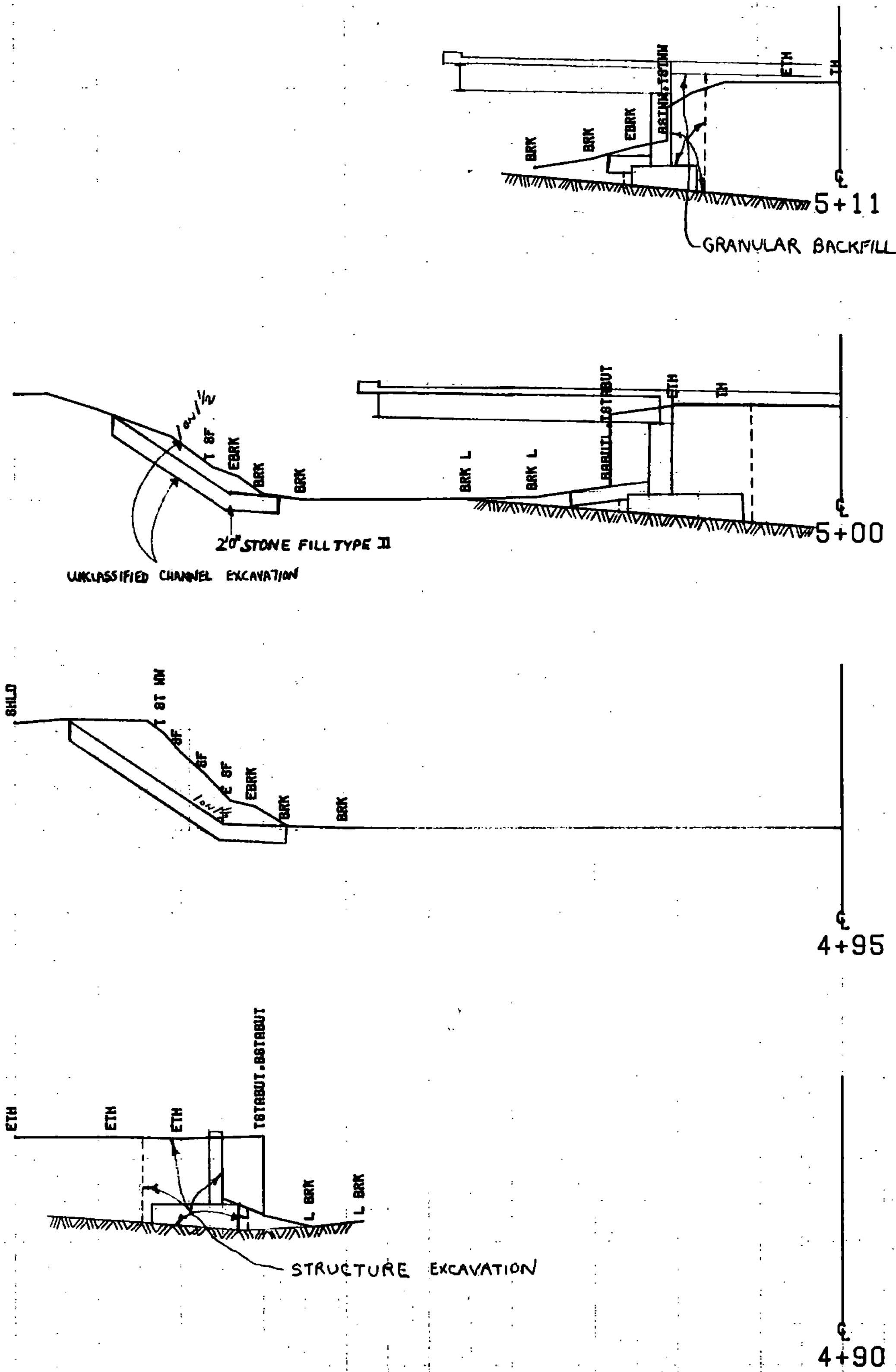


940

FROM STA.	4+62	TO STA.	4+81
PROJECT NAME	CHESTER	CHAN	
NO.	BR21442(10)	PLOTTED	04/14/83
SURVEYED BY	TESBIER	DATE	FEBRUARY '83
SHEET	26	OF	26 SHEETS

SCALE 1" = 10 FEET

26



NOTE: STONE FILL TYPE II SHALL BE PLACED AS SHOWN ON THE PLANS EXCEPT IN AREAS WHERE LEDGE IS ENCOUNTERED OR AS DIRECTED BY THE ENGINEER.

950

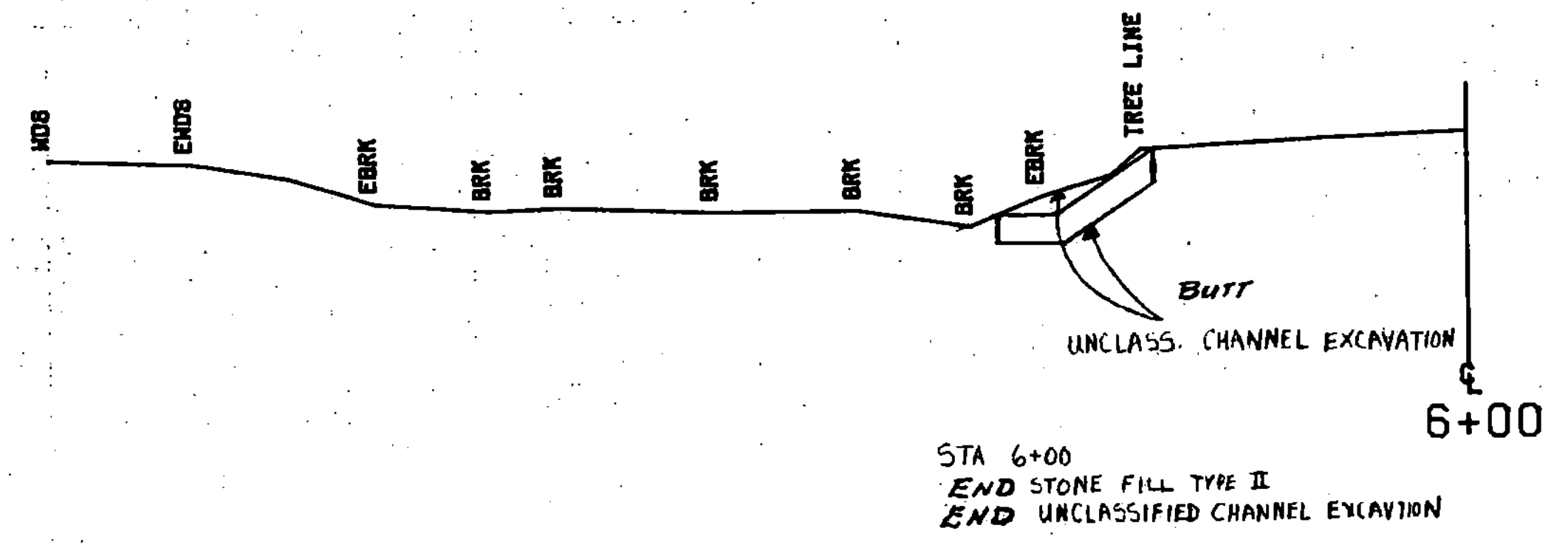
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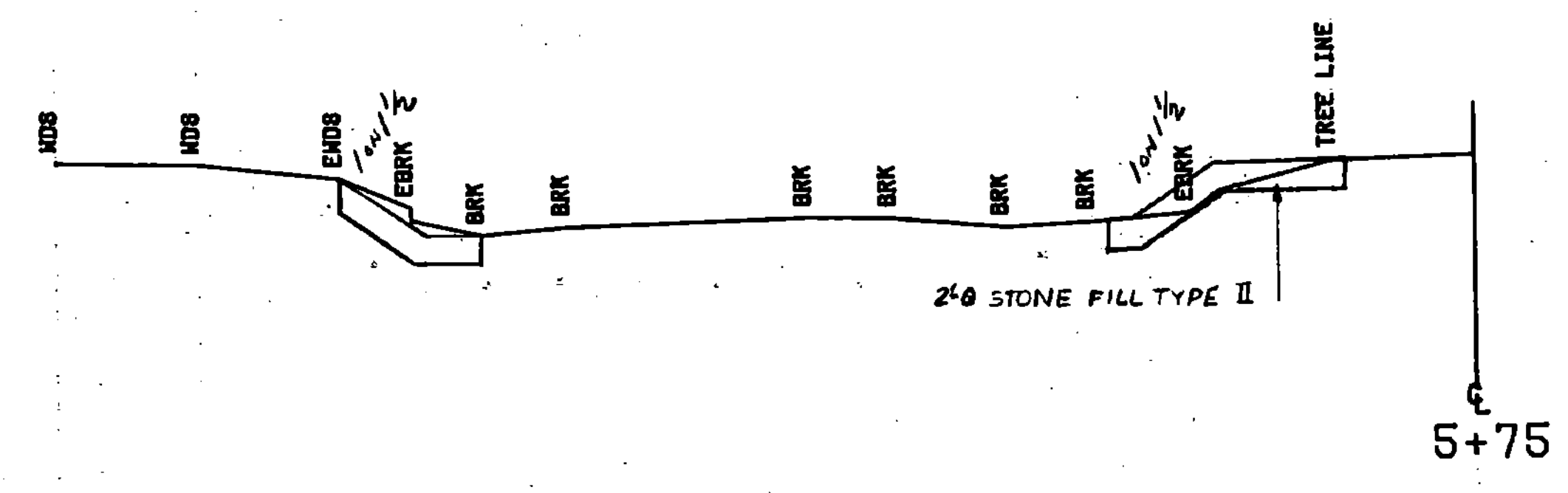
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FROM STA.	4+80	TO STA.	5+11
PROJECT NAME	CHESTER CHAN	NO.	BZ1442(10)
SURVEYED BY	TESSIER	PLOTTED	04/14/89
SHEET 27	OF 29	SHEETS	FEBRUARY '89

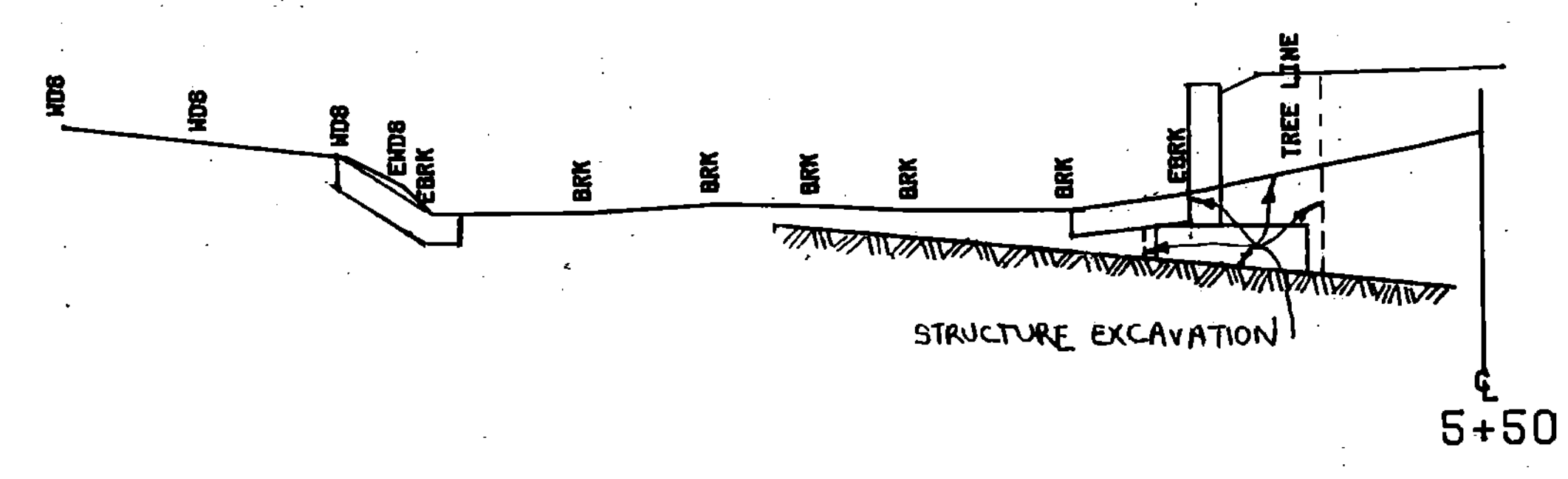
SCALE 1" = 10'-00"



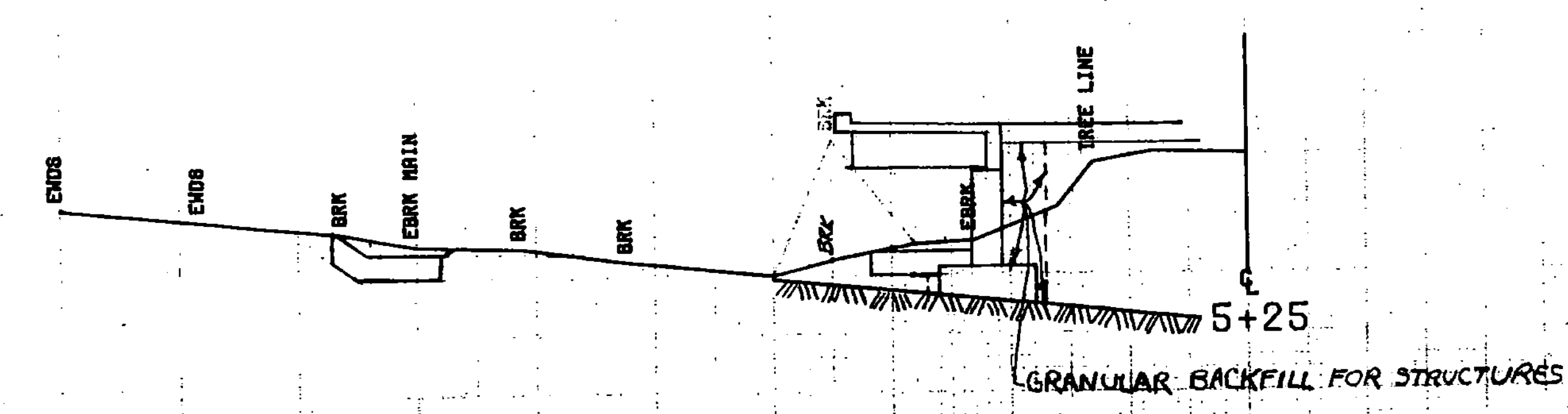
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940



940

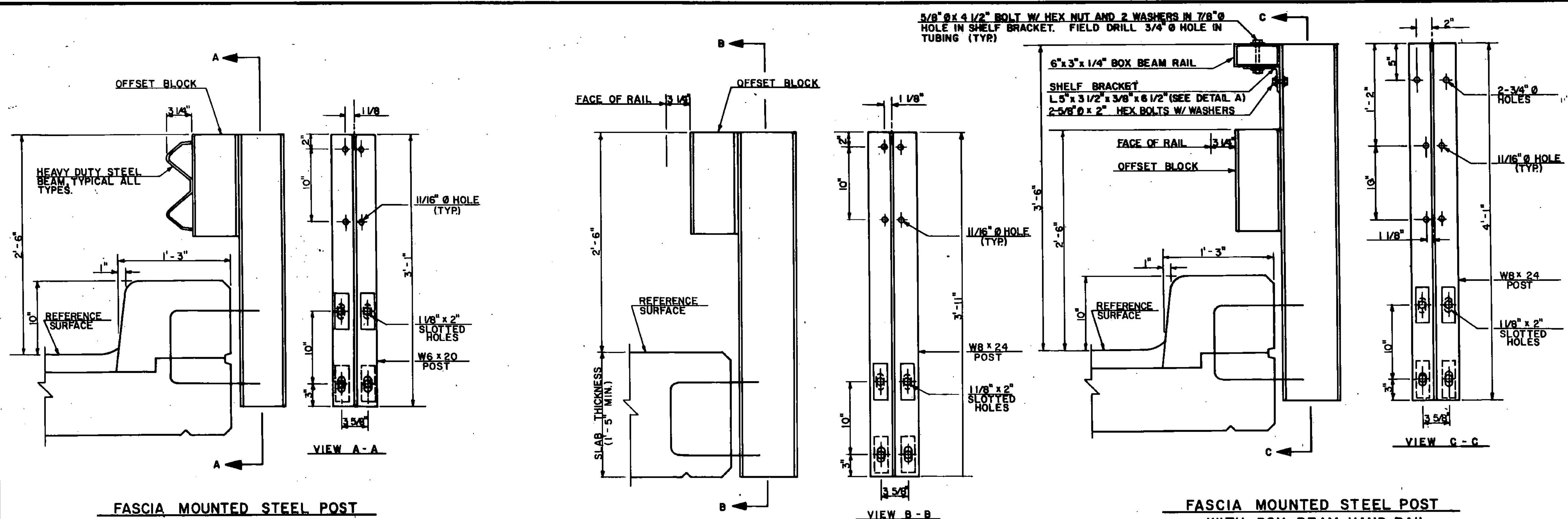


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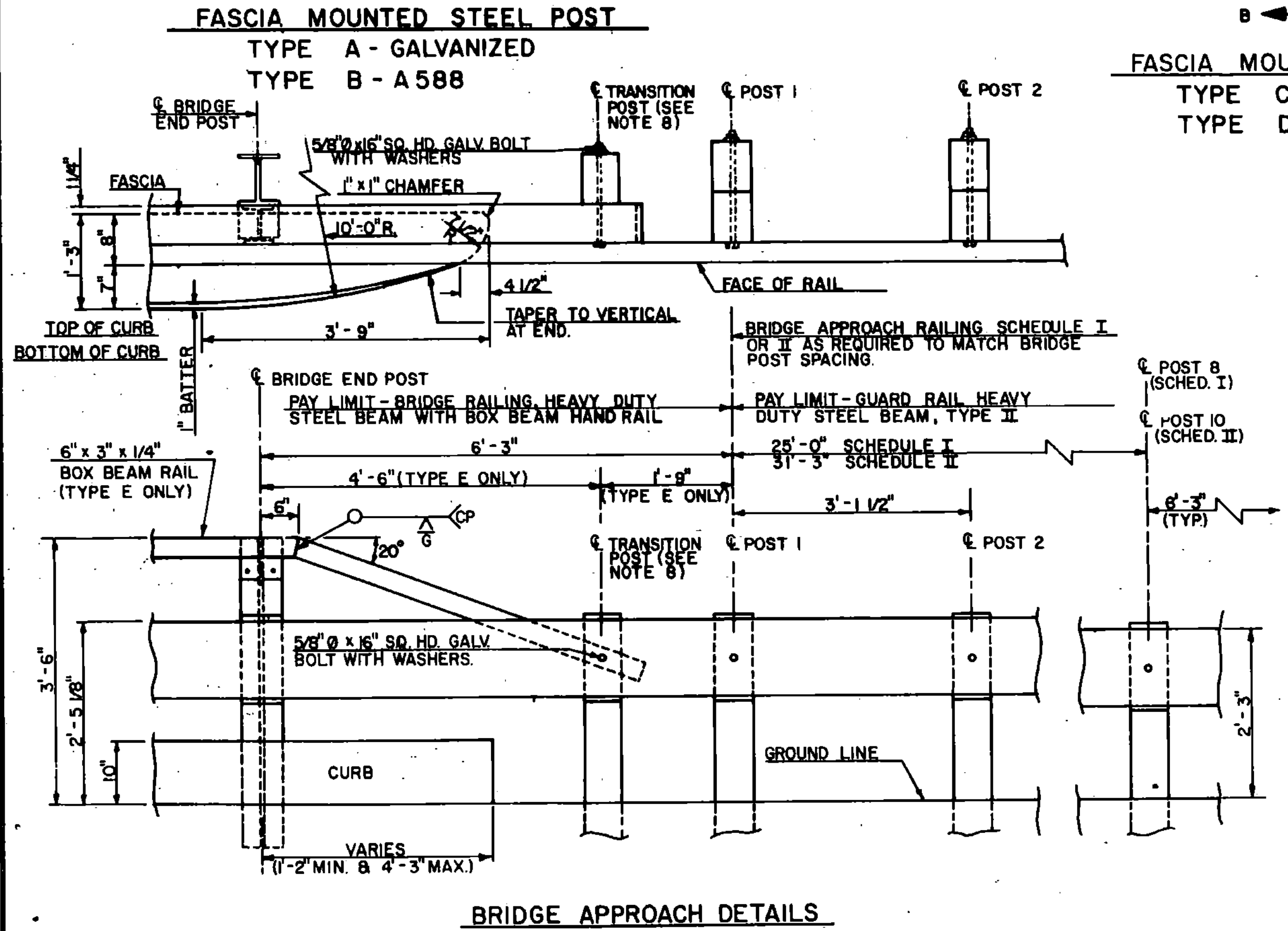
FROM STA.	5+25	TO STA.	6+00
PROJECT NAME	CHESTER CHAN	NO.	BRZ1442(10)
SURVEYED BY	TESBIER	PLOTTED	04/14/93
			FEBRUARY '93
		SHEET 29	OF 26 SHEETS

SCALE 10 FEET

28



- NOTES**
- SEE STANDARD DRAWING G-1 & G-1d FOR ADDITIONAL DETAILS OF STEEL BEAM GUARD RAIL AND STANDARD SB-R46-82 FOR ADDITIONAL DETAILS OF BOX BEAM RAIL.
 - ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AND CONFORM WITH SECTION 714.16.
 - 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 MATERIAL SHALL BE GALVANIZED AFTER FABRICATION TO ASTM A 123.
 - 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.
 - ALL POSTS SHALL BE SET NORMAL TO GRADE.
 - BRIDGE APPROACH RAIL HEIGHT SHALL BE TRANSITIONED TO NORMAL ROADWAY RAIL HEIGHT IN 25 FEET.
 - APPROACH RAILING SHALL BE HEAVY DUTY STEEL BEAM FOR 50 FEET FROM THE END OF THE BRIDGE.
 - 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 I.
 - SPLICES SHALL LAP IN DIRECTION OF TRAFFIC FLOW.
 - SEE STANDARD SHEET G-1 FOR DELINEATOR DETAILS AND PLACEMENT.
 - ERECT DELINEATOR ON EVERY FIFTH POST OR APPROXIMATELY 30 FEET APART. PAYMENT SHALL BE SUBSIDIARY TO OTHER ITEMS.



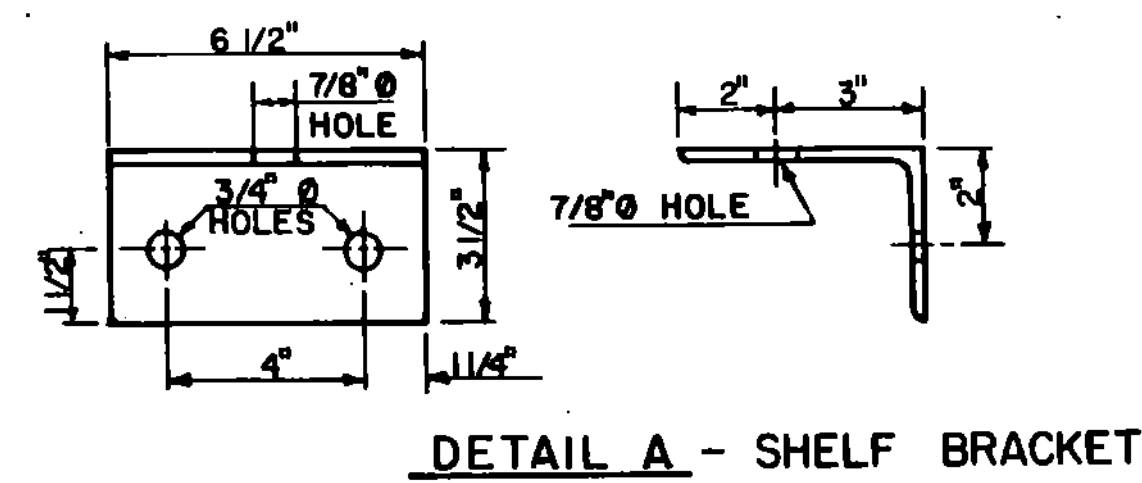
FASCIA MOUNTED STEEL POST
TYPE C - GALVANIZED
TYPE D - A588

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

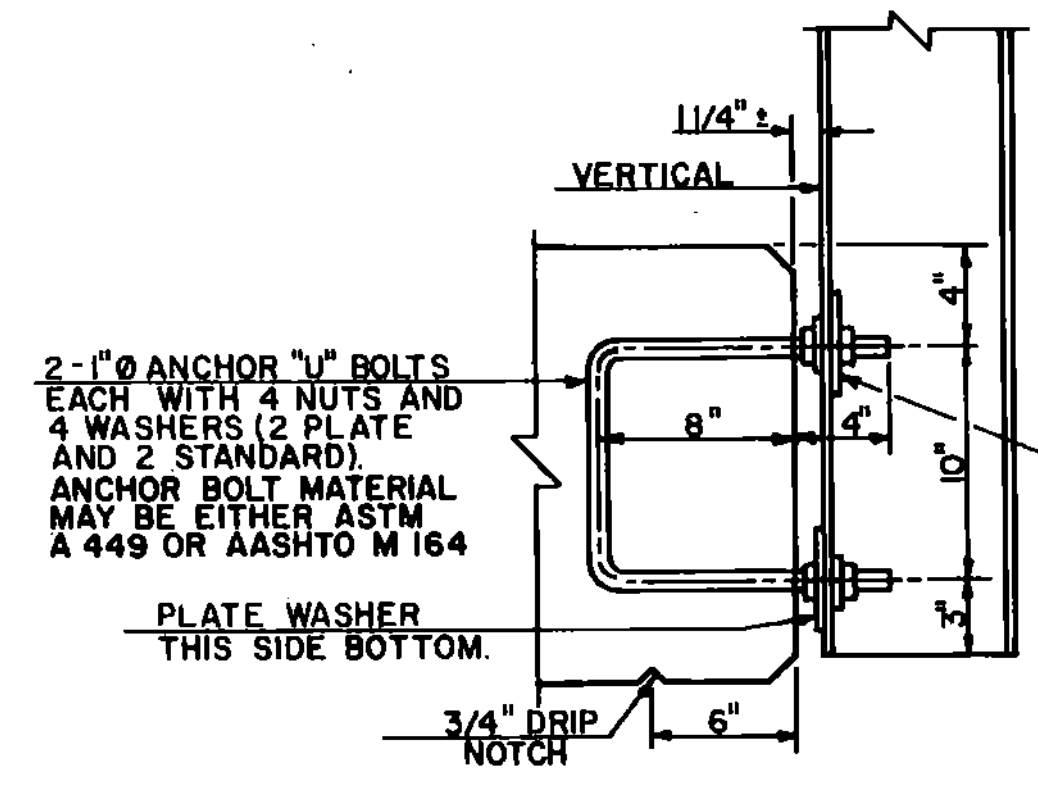
BRIDGE APPROACH RAILING
WHEN A RAIL PANEL SPLICE OCCURS AT POST NO. 1 USE SCHEDULE I FOR APPROACH RAILING. WHEN A RAIL PANEL SPLICE OCCURS AT BRIDGE END POST USE SCHEDULE II FOR APPROACH RAILING.

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

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



DETAIL A - SHELF BRACKET



ANCHORAGE DETAIL

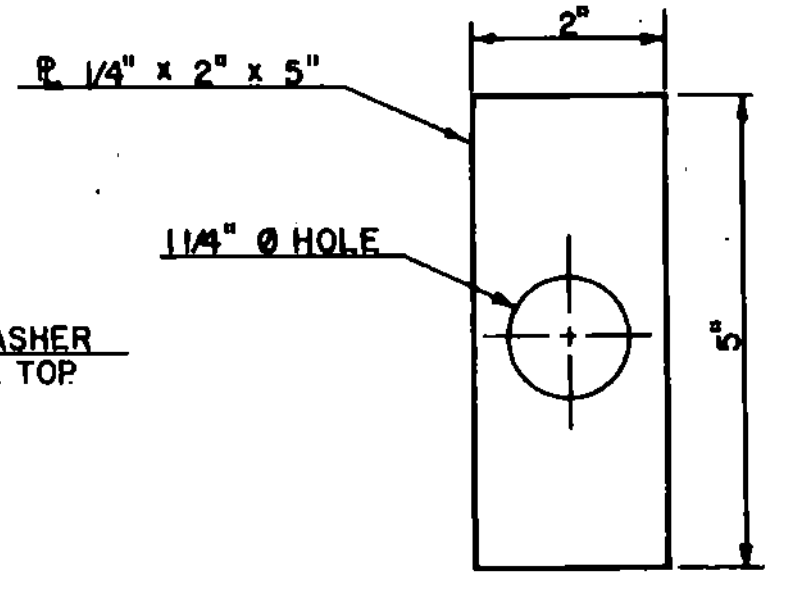


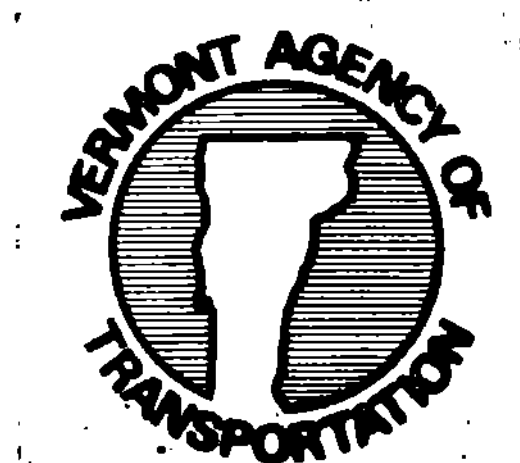
PLATE WASHER DETAIL

BRIDGE APPROACH DETAILS

REVISIONS AND CORRECTIONS
 REVISION DELINEATORS ADDED D.A.R 6-18-82
 REVISION, BOLTS THRU BOX BEAM RAIL R.S.H. 12-13-84
 REVISION, CHANGED BOLT HOLE THROUGH SHELF BRACKET R.S.H. 12-13-84

APPROVED: **DECEMBER 28, 1981**
 DATE
William J. Smith
 CHIEF OF DESIGN
W. M. Smith
 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)**



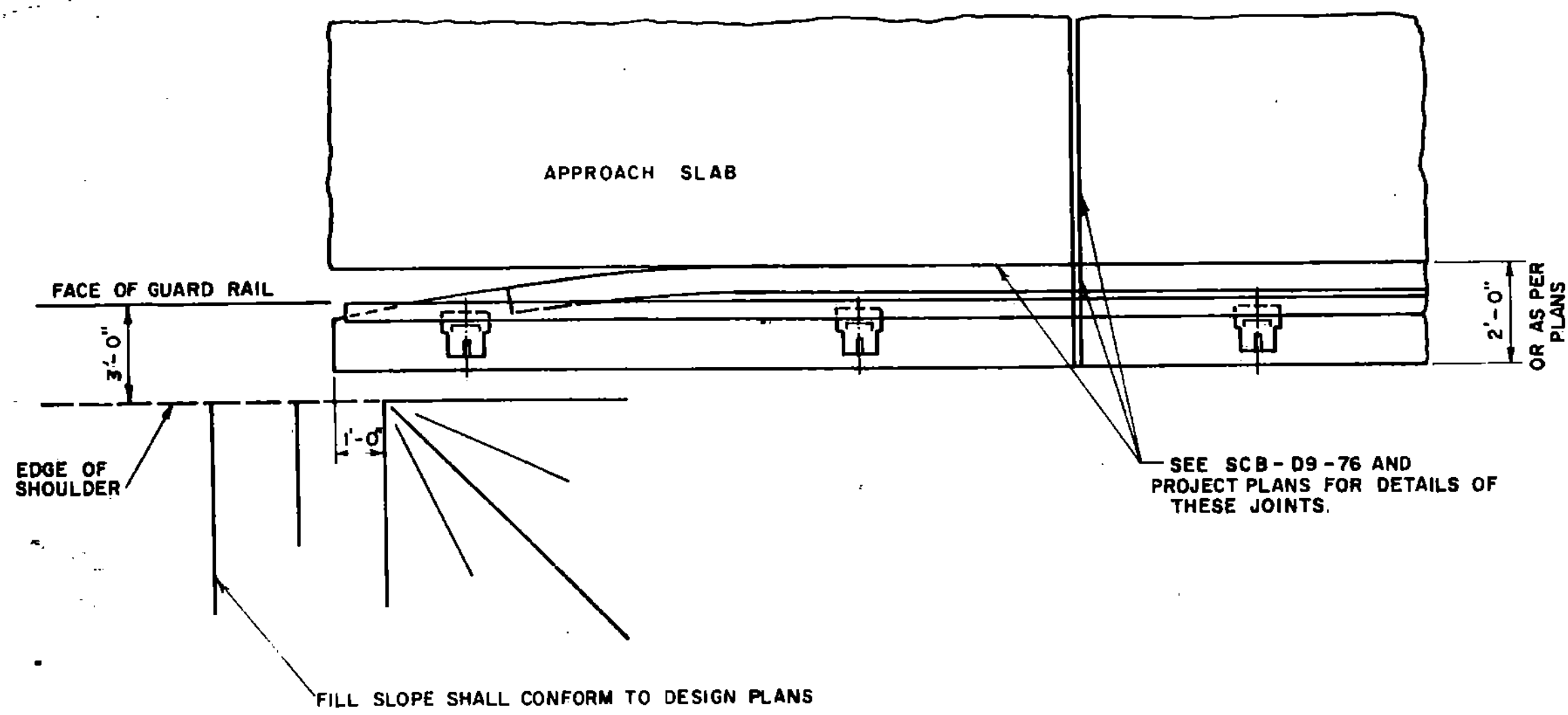
**STANDARD
 SB-R6-82**

GENERAL NOTES

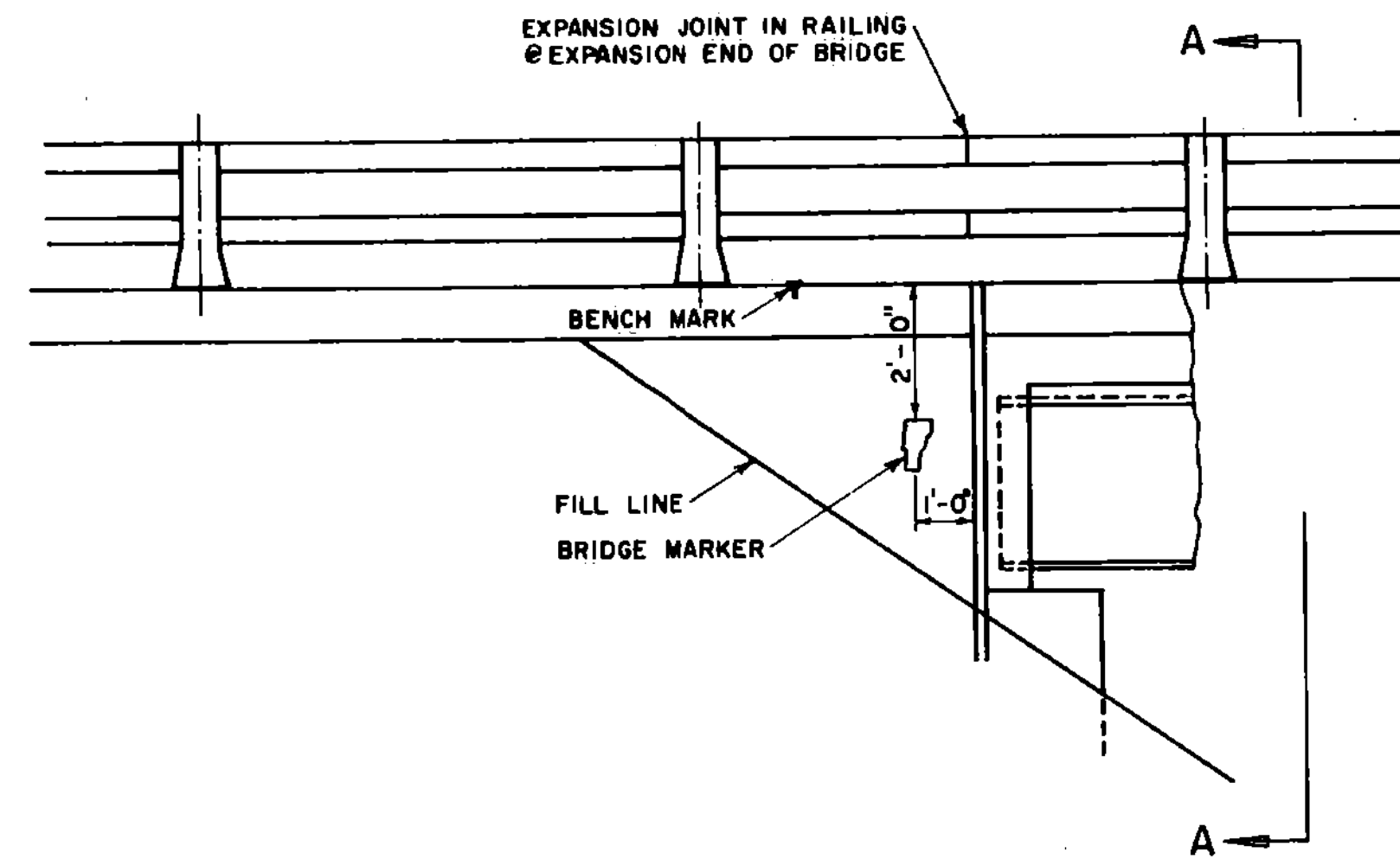
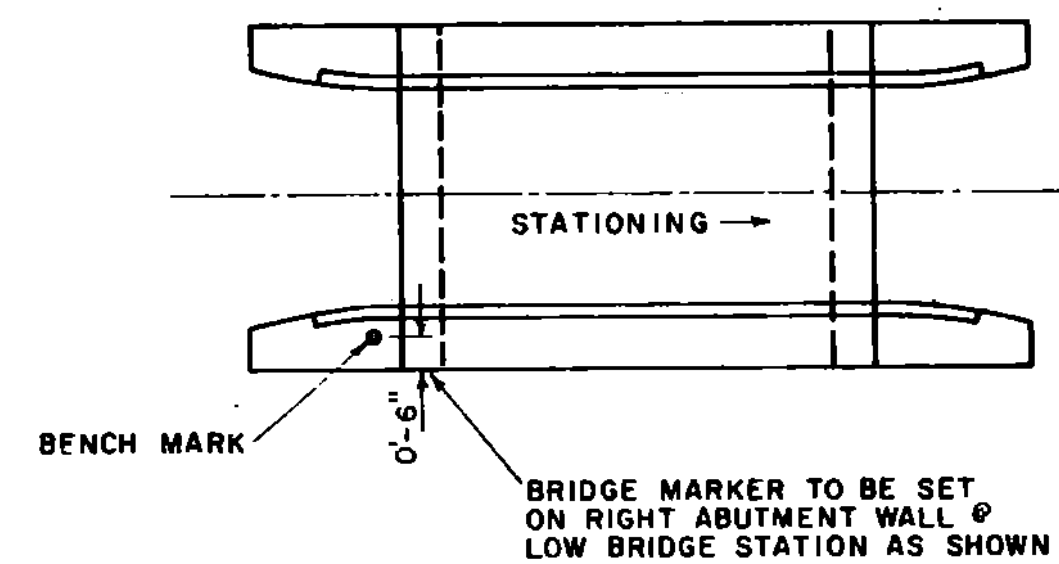
ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO STATE OF VERMONT DEPARTMENT OF HIGHWAYS, STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, DATED MARCH 1976, AND ITS LATEST REVISIONS AND THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, DATED 1977 AND ITS LATEST REVISIONS. DESIGN IS FOR 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.

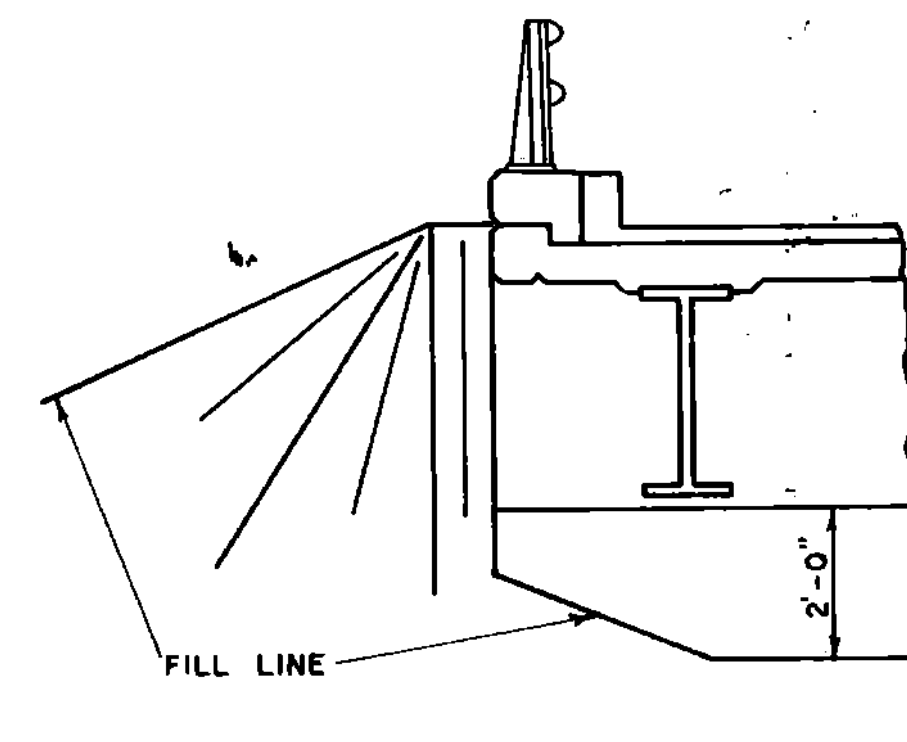
- ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM DESIGNATION A-588 (UNPAINTED). ALL FIELD CONNECTIONS SHALL BE MADE WITH 7/8" Ø ASTM A-325, TYPE III BOLTS IN 15/16" Ø HOLES. WHERE CONNECTIONS ARE NOT DETAILED ON THE PLANS THEY SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STATE FOR APPROVAL.
 - 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 A.I.S.C. HANDBOOK FOR ROLLED BEAMS AND AS INDICATED IN THE AWS SPECIFICATION FOR WELDED GIRDERS.
 - 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.
 - ALLOWABLE DESIGN STRESSES: *
 CONCRETE: CLASS A f'c 3,500 psi f_c 1400 psi
 CLASS B f'c 3,500 psi f_c 1400 psi
 STRUCTURAL STEEL: A-588 MAX. DESIGN STRESS: 27,000 psi (or as per AASHTO Specs)
 REINFORCING STEEL:
 DESIGN STRESS (TENSION) GRADE 40 22,000 psi GRADE 60 24,000 psi
 DESIGN STRESS (COMPRESSION) 16,000 psi 20,000 psi
 - 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.
 - MINIMUM COVER FOR REINFORCING STEEL (EXCEPT IN DECKS) SHALL BE 2" IN BACK FACES OF WALLS AGAINST EARTH AND 3" ELSEWHERE.
 - ALL EXPOSED EDGES OF CONCRETE IN THE SUBSTRUCTURE AND SUPERSTRUCTURE SHALL BE CHAMFERED 1" x 1".
 - DECK CONCRETE SHALL BE CONCRETE CLASS A. ALL OTHER CONCRETE SHALL BE CONCRETE CLASS B.
 - 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.
 - ABUTMENT CONCRETE ABOVE THE ADJACENT BRIDGE SEAT ELEVATIONS SHALL PREFERABLY NOT BE PLACED UNTIL FINAL FINISHED GRADE OF DECK IS ESTABLISHED BY THE ENGINEER.
 - ANY FORM BRACKET HOLES IN FASCIA BEAMS OR GIRDER WEBS SHALL BE FILLED WITH BUTT-HEAD OR HEX-HEAD BOLTS (TYPE III ON A-588 STEEL).
 - GRANULAR BORROW USED IN AREAS THROUGH WHICH PILES ARE TO BE DRIVEN SHALL HAVE A MAXIMUM STONE SIZE OF NINE INCHES.
 - BORINGS INDICATED ON THE DRAWINGS HAVE BEEN MADE FOR DESIGN PURPOSES ONLY AND DO NOT WARRANT ACTUAL SUB-SURFACE CONDITIONS.
 - 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.
- 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.
 - REINFORCING PLACEMENT TOLERANCES SHALL BE AS FOLLOWS:
 SPACING TOLERANCE: ± 1"
 CLEARANCE TOLERANCE: ± 1/4"



PLAN AT ABUTMENT



ELEVATION AT ABUTMENT



SECTION A-A

- REVISIONS AND CORRECTIONS
- Added word seat in line 3 of Note #9 J. WOOD 4-23-75
 - CHANGED VERMONT SPEC. DATE, GEN. NOTE, AND ADDED NOTE NO. 15, W. TRIPP, 4-26-76.
 - REVISED NOTES, W. TRIPP, 12-15-76.
 - REVISED DATES, NOTE NO. 3, W. TRIPP 4-25-77
 - REVISED NOTES W. TRIPP 4-3-78
 - REVISED NOTE NO. 3, DATES W. TRIPP 9-14-81

APPROVED

DATE

J. W. Wood
4-23-75

J. H. Wilson
CHIEF ENGINEER

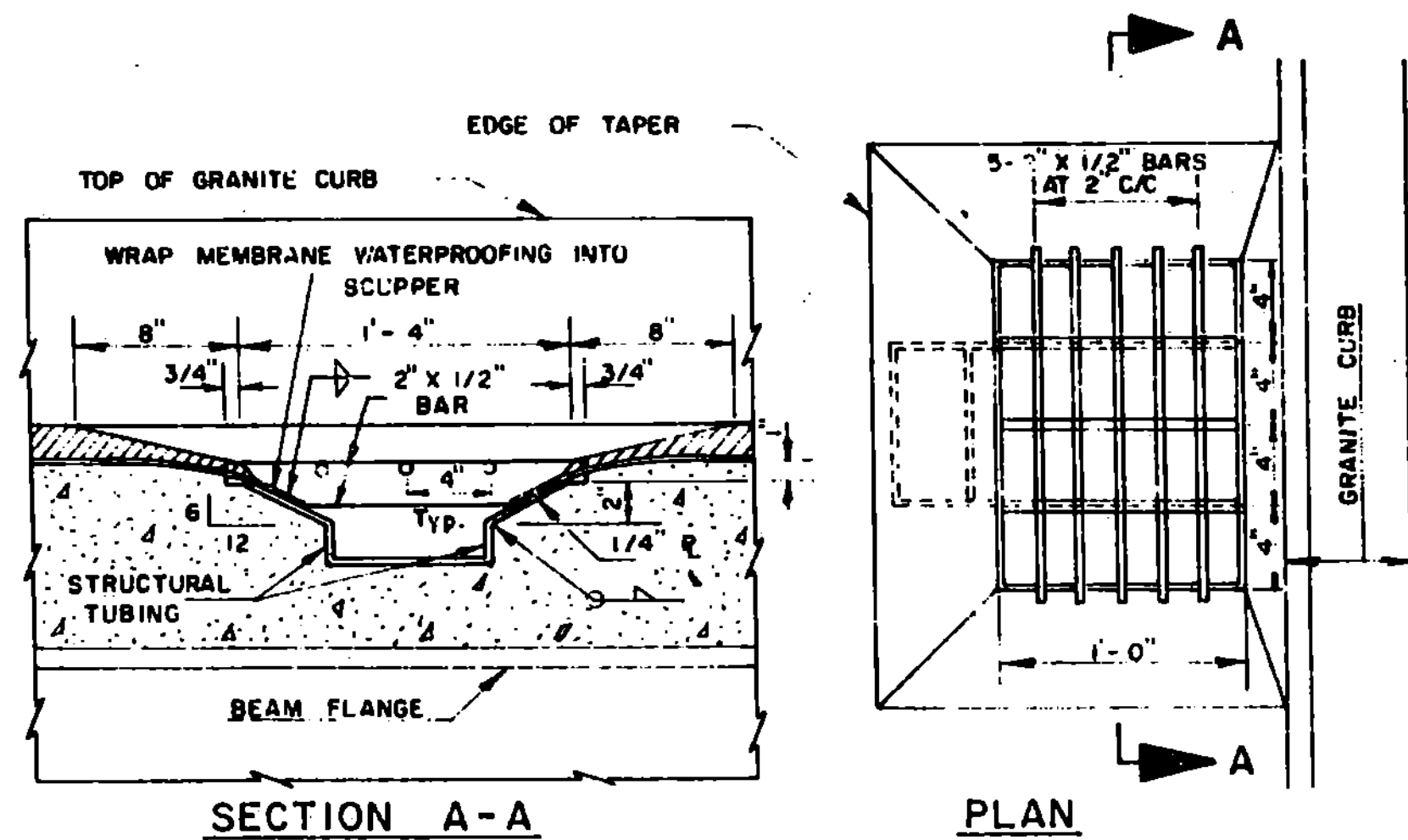
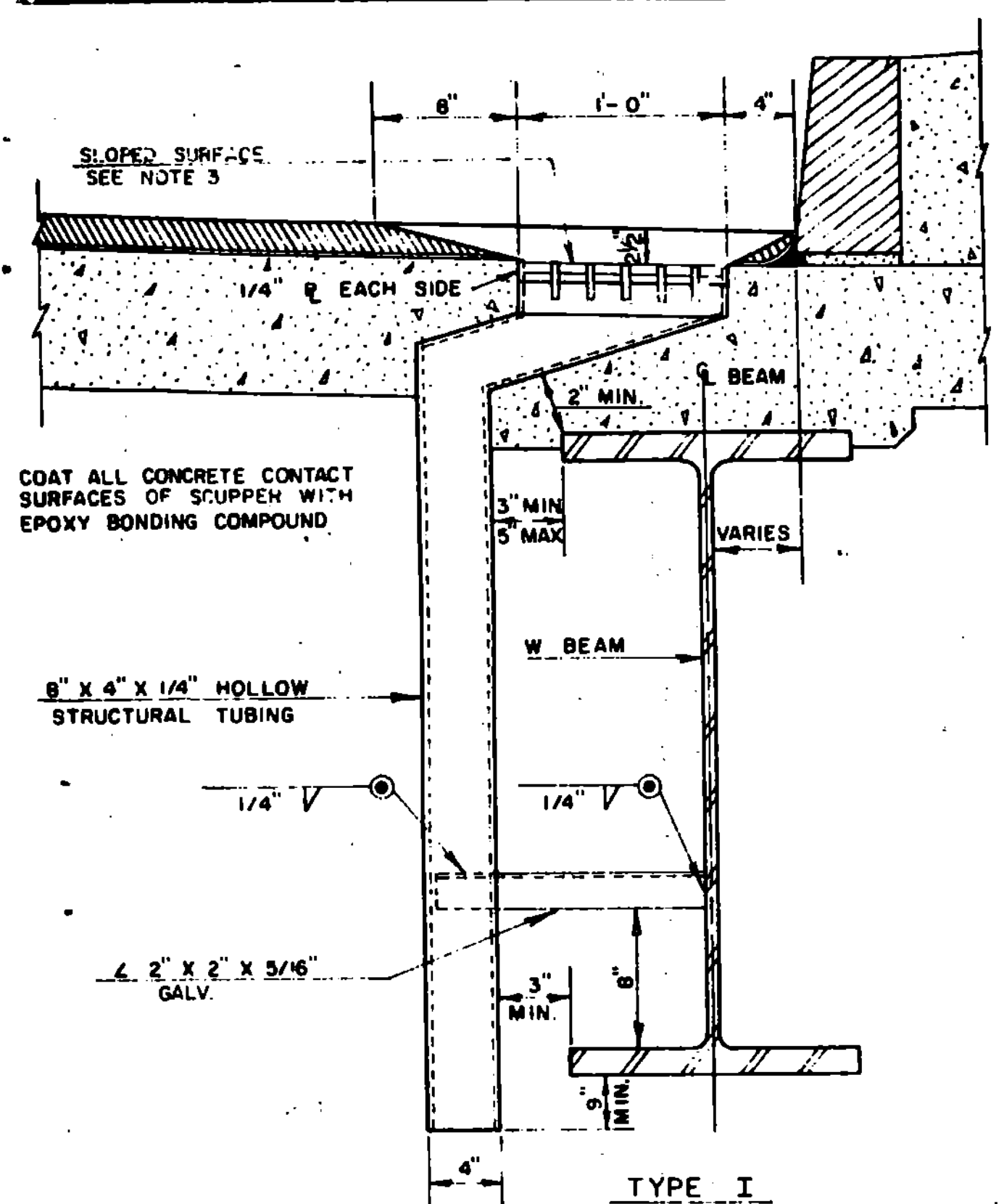
R. O. Murrie
ASST. CHIEF ENGINEER

K. M. Smith
BRIDGE ENGINEER

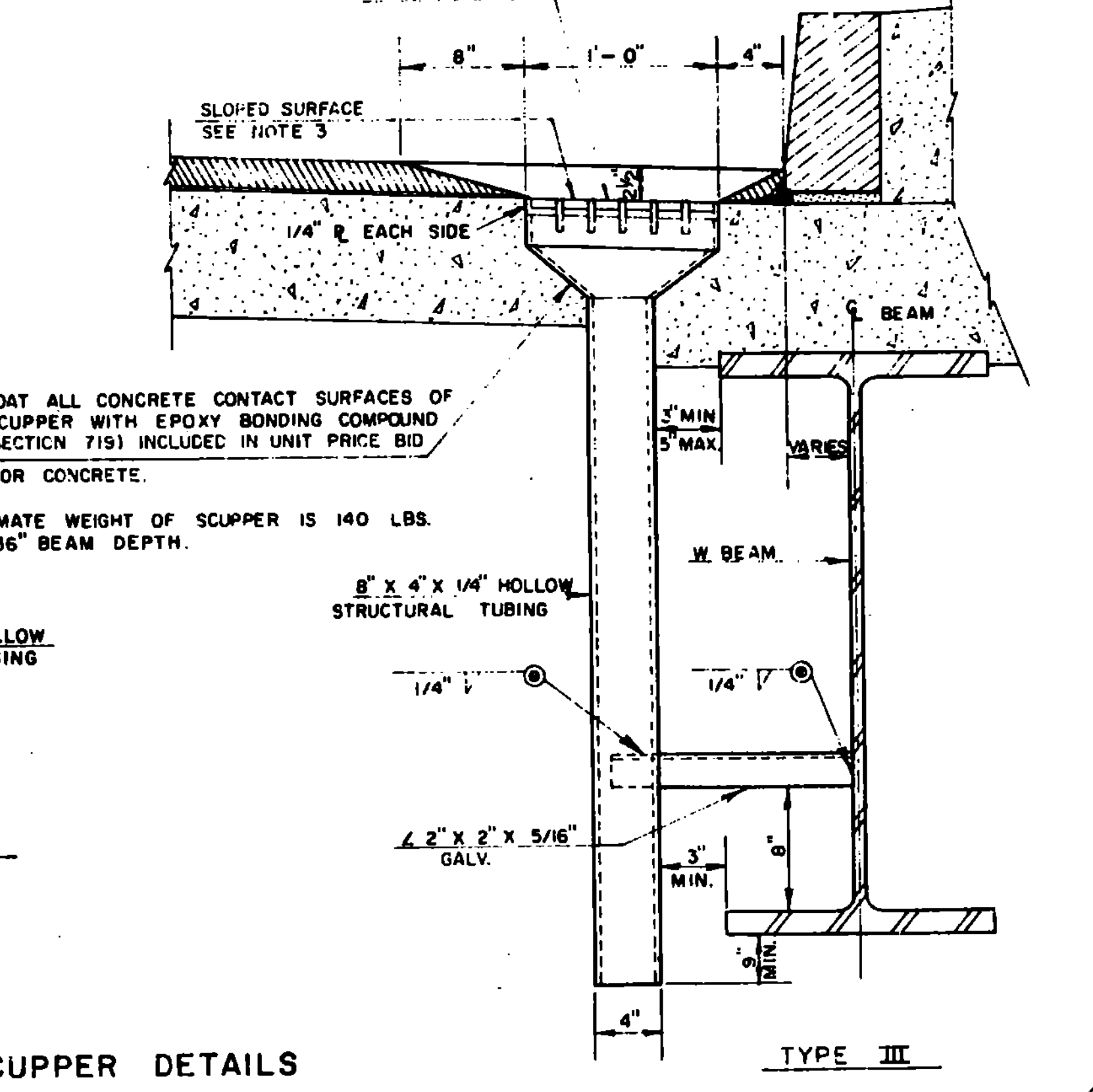
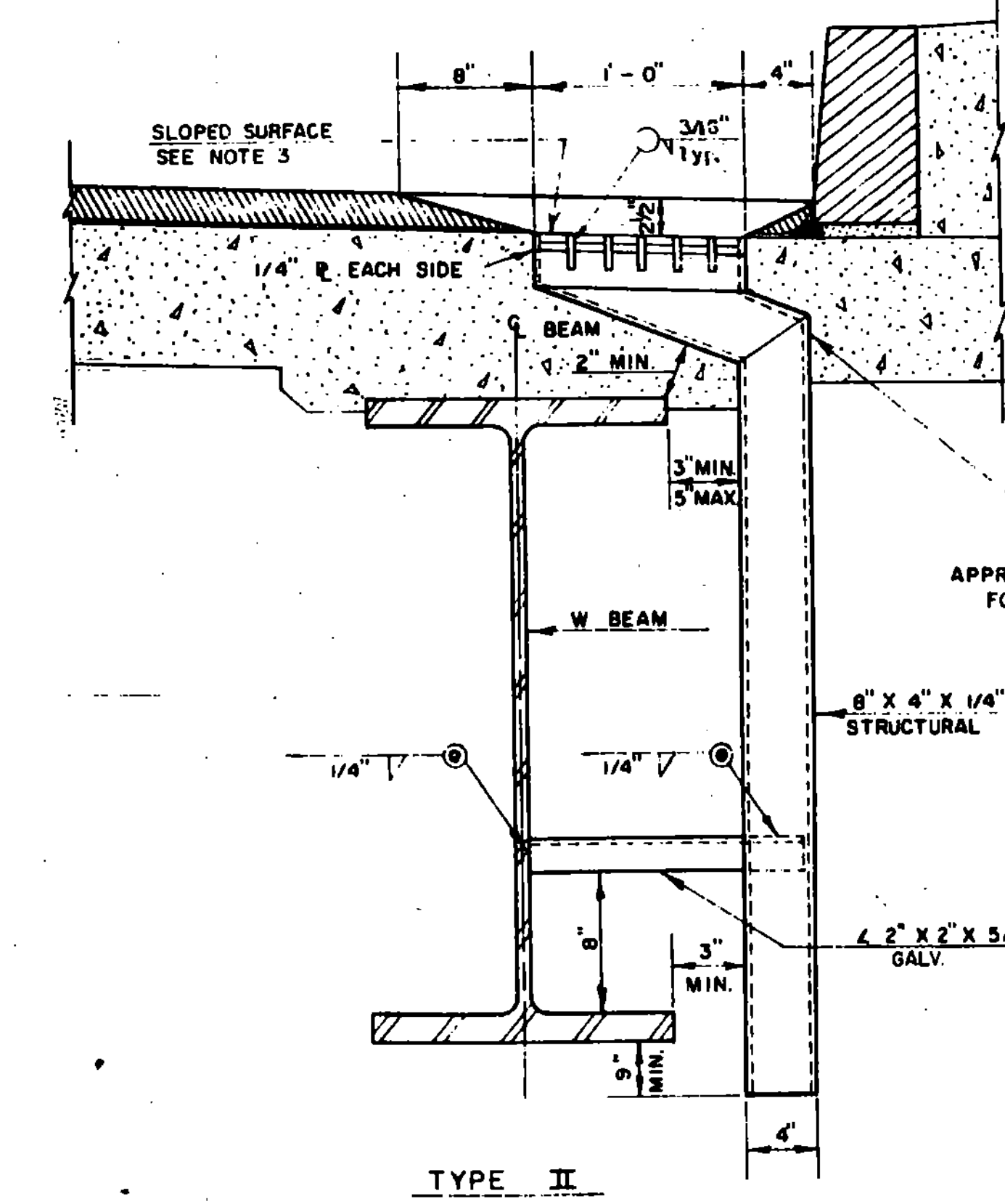
DETAILS OF W BEAM BRIDGES
 GENERAL INFORMATION
 AND
 GENERAL NOTES

VERMONT
 DEPARTMENT
 OF HIGHWAYS
 STANDARD

SCB-01-75

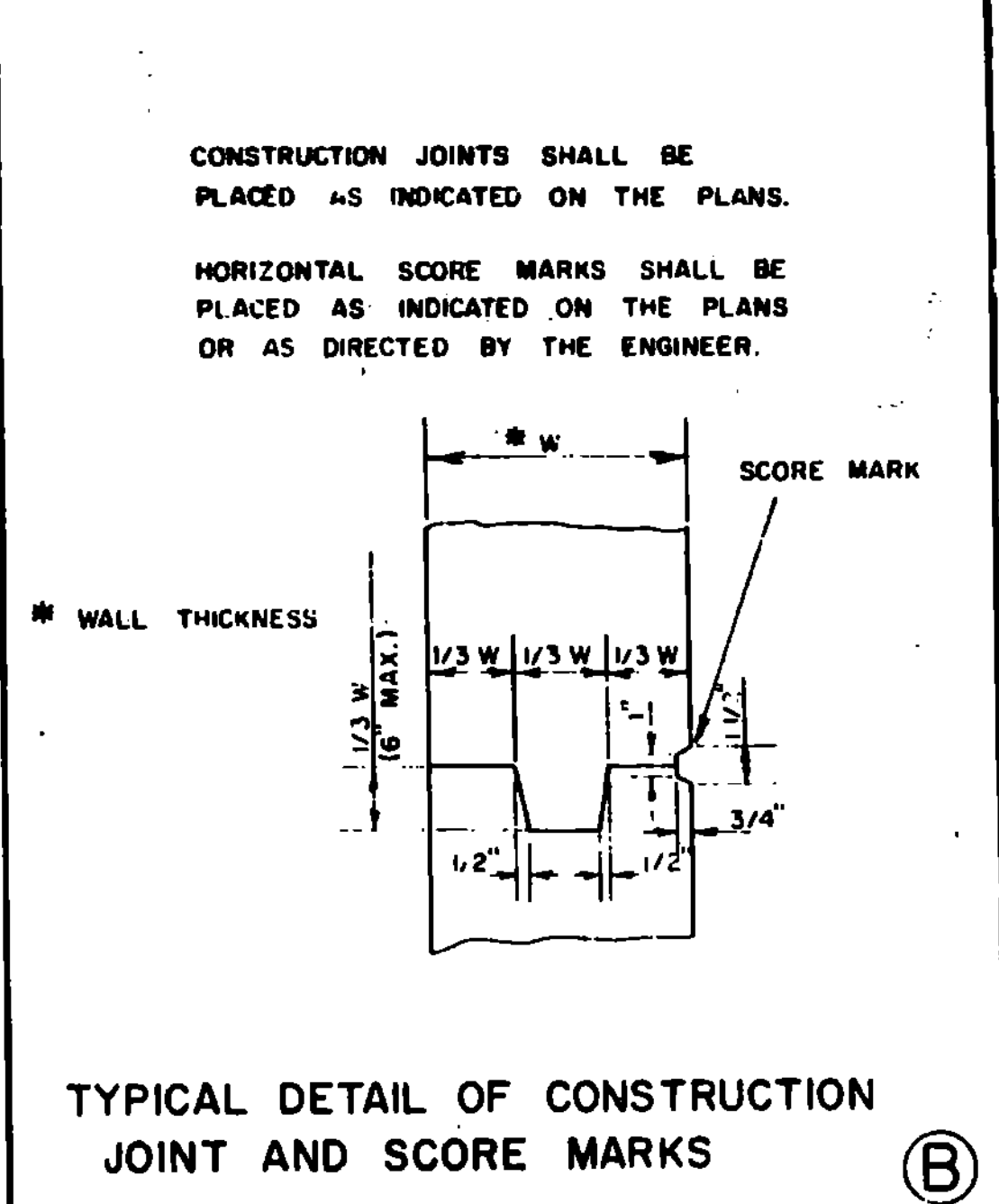


NOTES -
 THE FOLLOWING NOTES APPLY TO ALL SCUPPERS UNLESS OTHERWISE DETAILED ON PROJECT PLANS:
 1. HOLLOW STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A-500 OR A-501.
 ALL PLATES, BARS AND ANGLES SHALL CONFORM TO ASTM A-36
 2. ALL SCUPPERS SHALL BE GALVANIZED ACCORDING TO ASTM A-123 AFTER FABRICATION.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



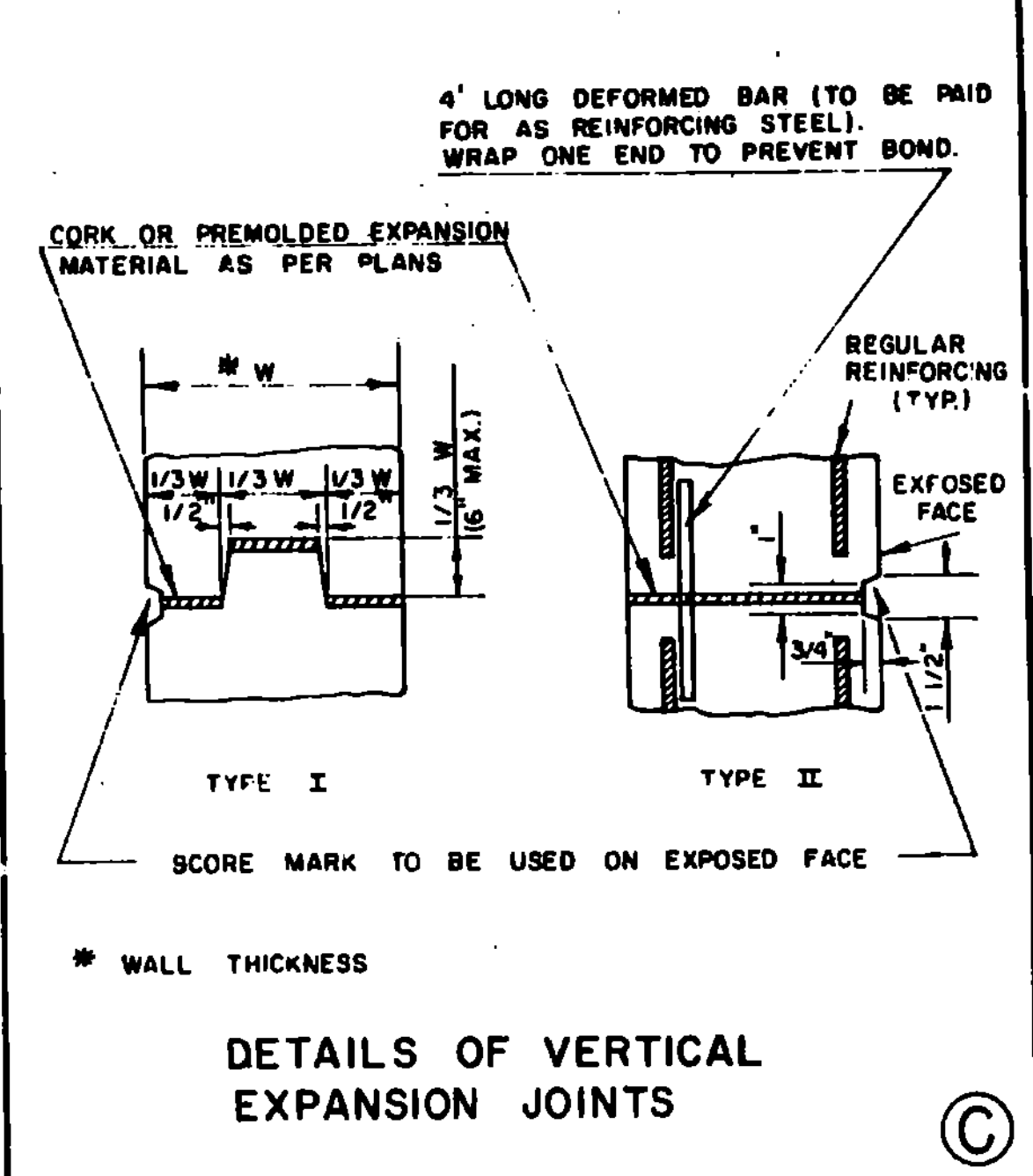
SCUPPER DETAILS

(A)



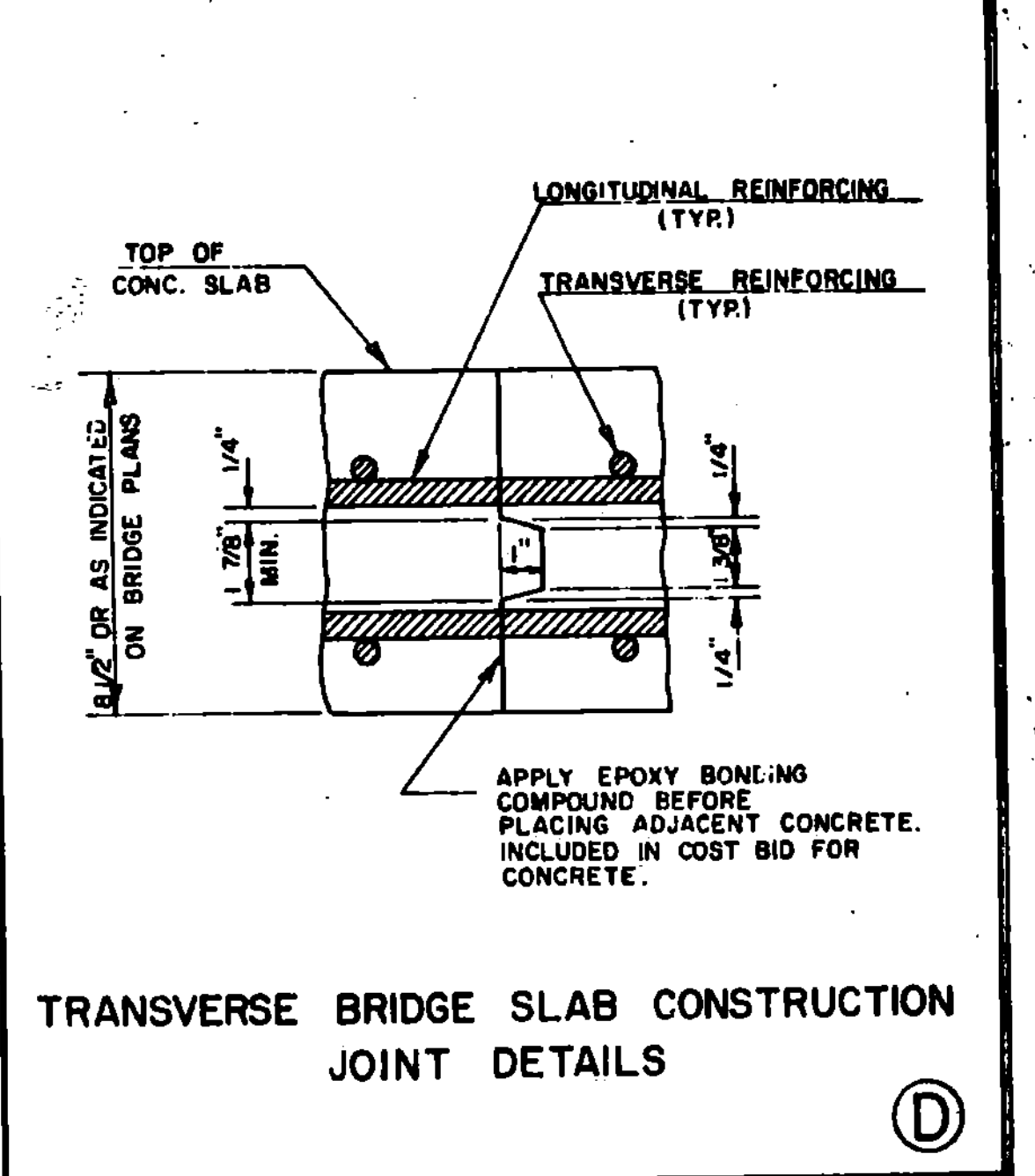
TYPICAL DETAIL OF CONSTRUCTION JOINT AND SCORE MARKS

(B)



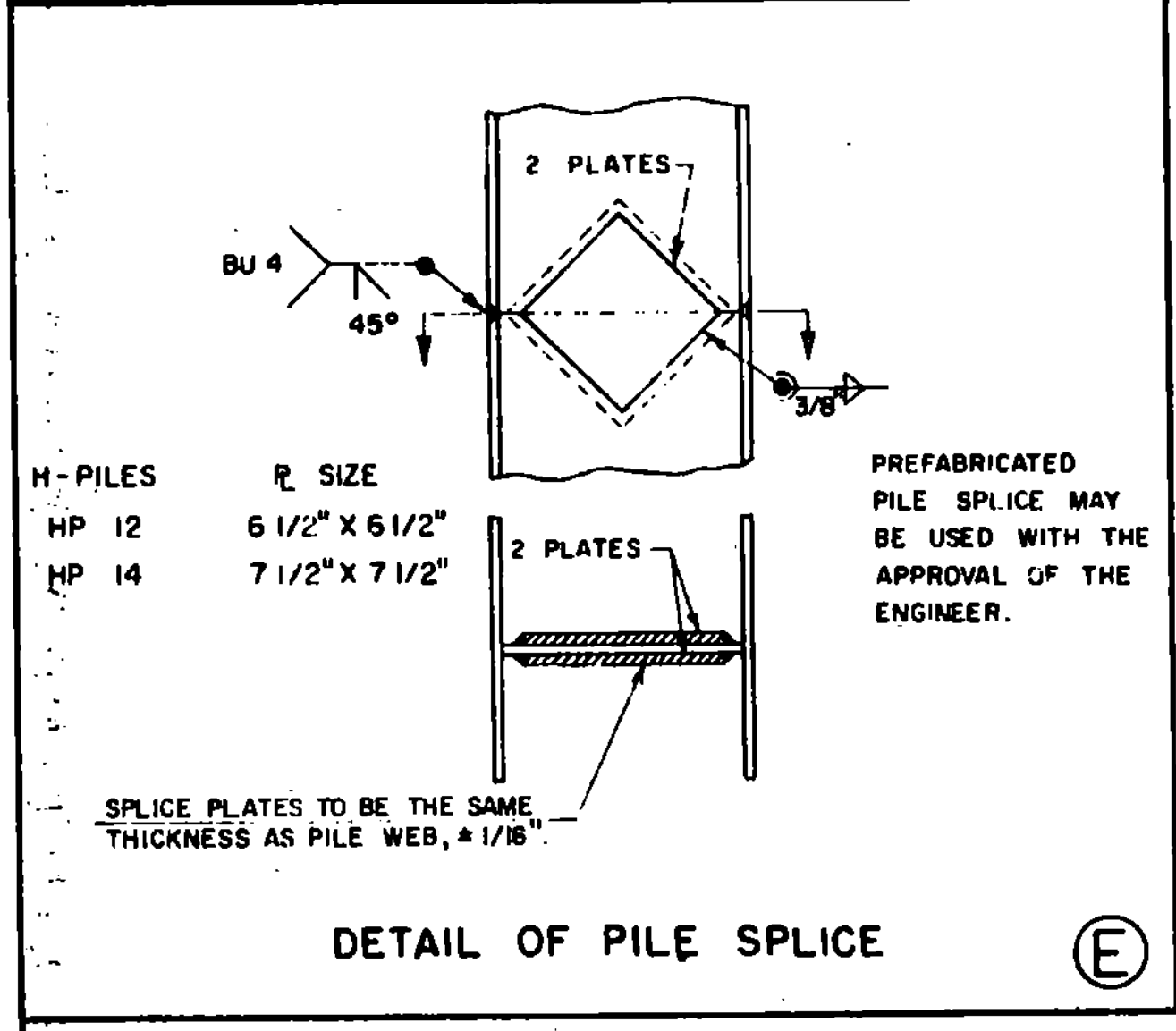
DETAILS OF VERTICAL EXPANSION JOINTS

(C)



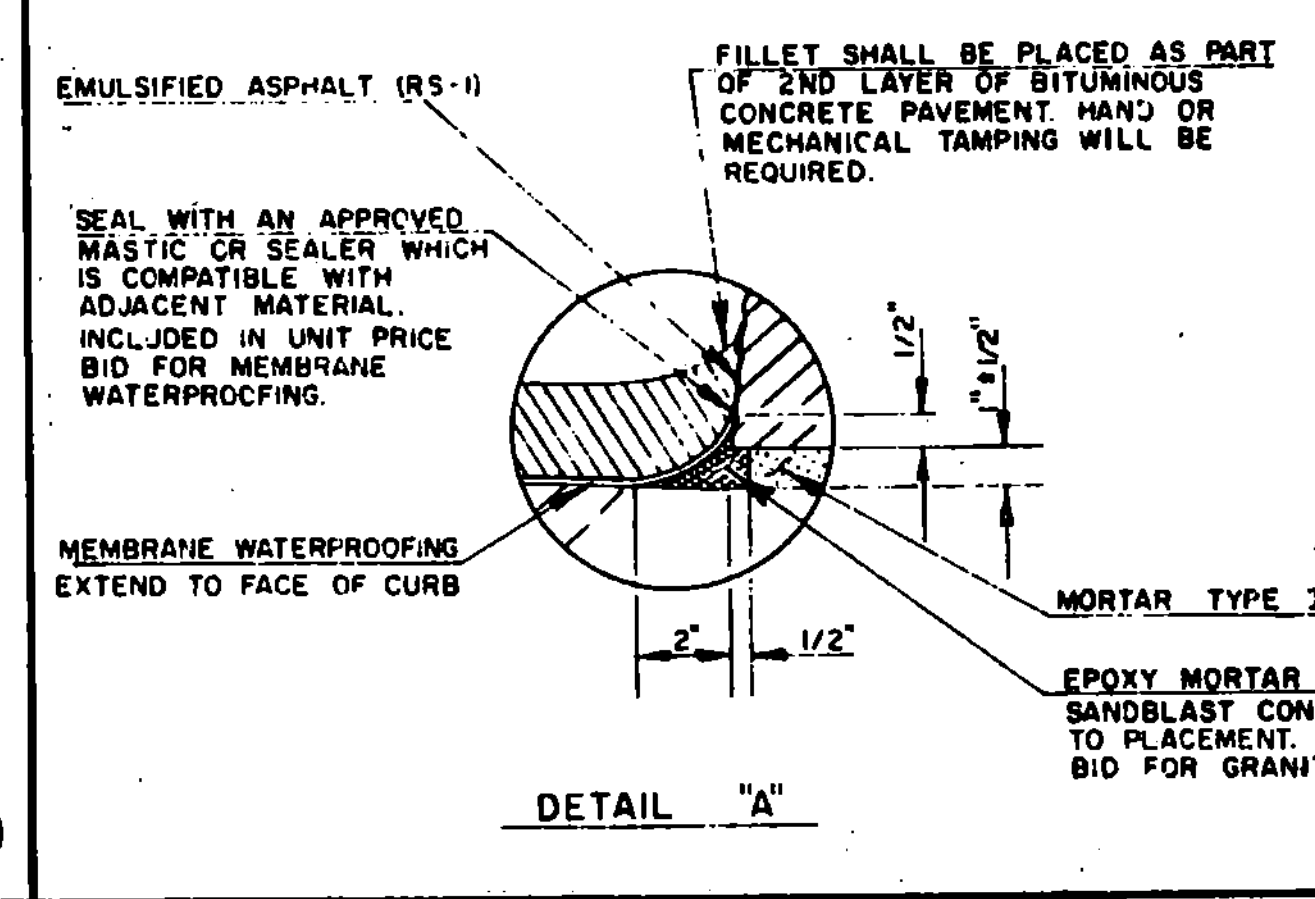
TRANSVERSE BRIDGE SLAB CONSTRUCTION JOINT DETAILS

(D)

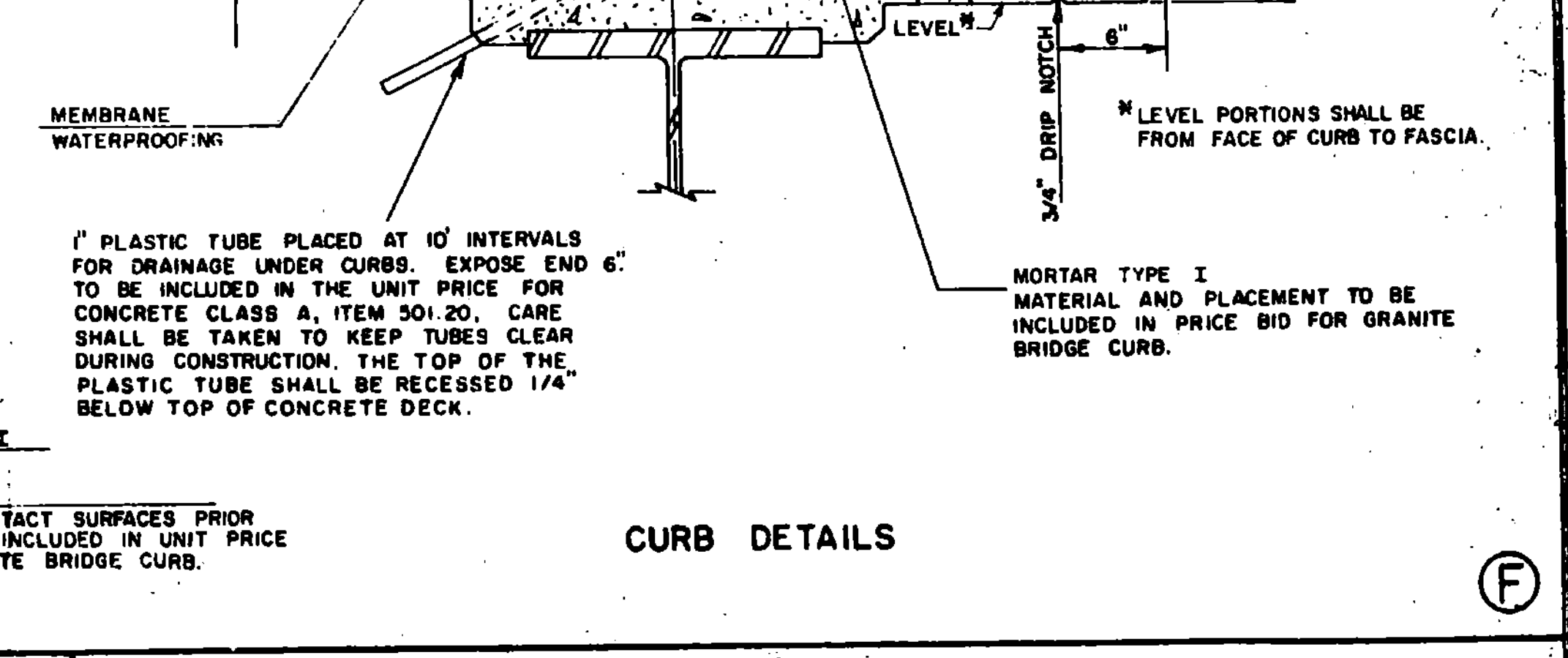


DETAIL OF PILE SPLICE

(E)



DETAIL "A"



CURB DETAILS

(F)

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 12-29-76
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. O. Munn
 ASST. CHIEF ENGINEER

W. M. Smith
 BRIDGE ENGINEER

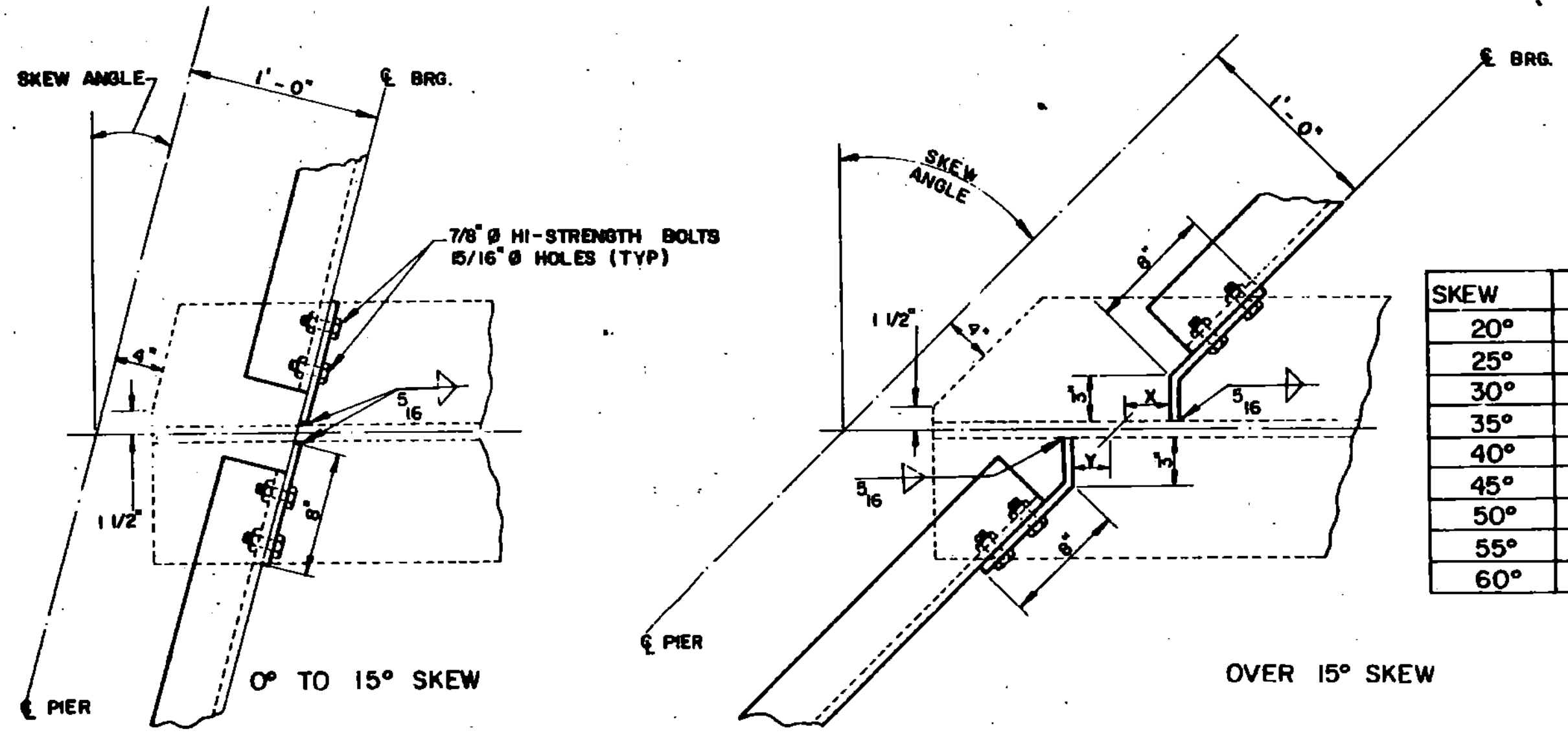
DETAILS OF W BEAM BRIDGES

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

VERMONT AGENCY OF TRANSPORTATION

STANDARD

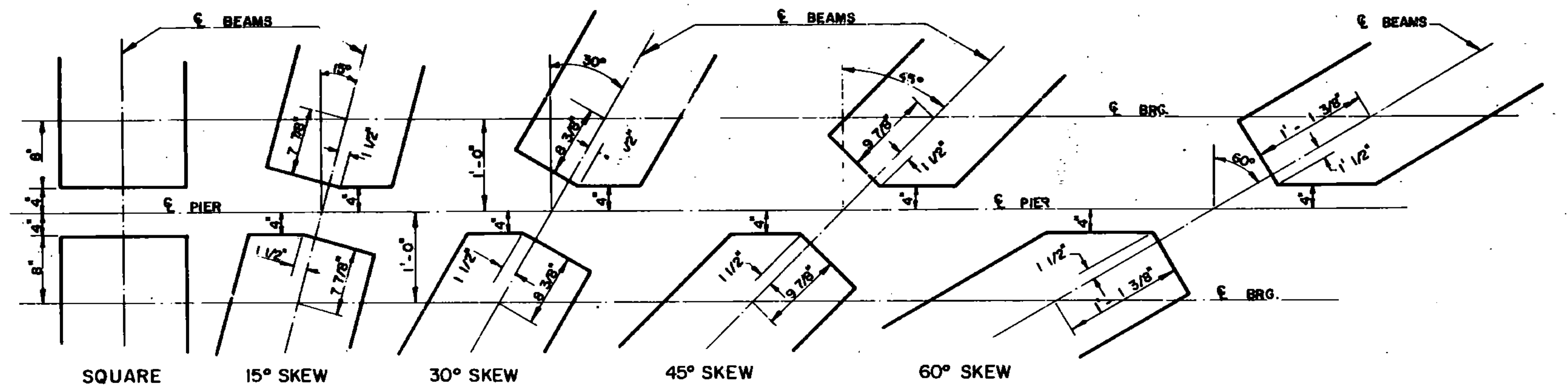
SCB-D6-73



SKEW	X	Y
20°	1"	1/2"
25°	1 1/2"	3/4"
30°	1 3/4"	1 1/4"
35°	2"	1 1/2"
40°	2 1/2"	1 3/4"
45°	3"	2 1/4"
50°	3 1/2"	2 3/4"
55°	4 1/4"	3 1/2"
60°	5 1/4"	4 1/4"

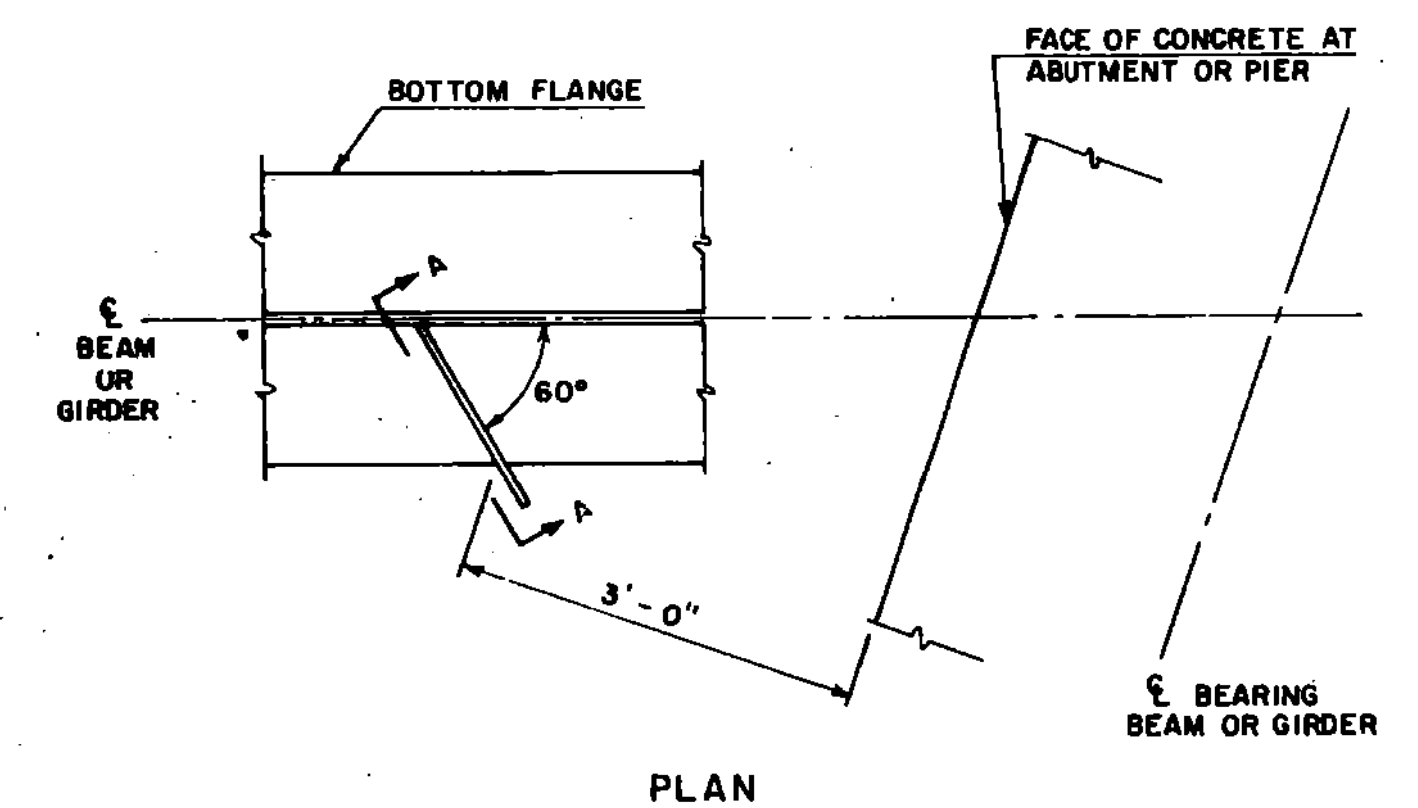
DETAILS OF PIER DIAPHRAGM CONNECTIONS

(A)

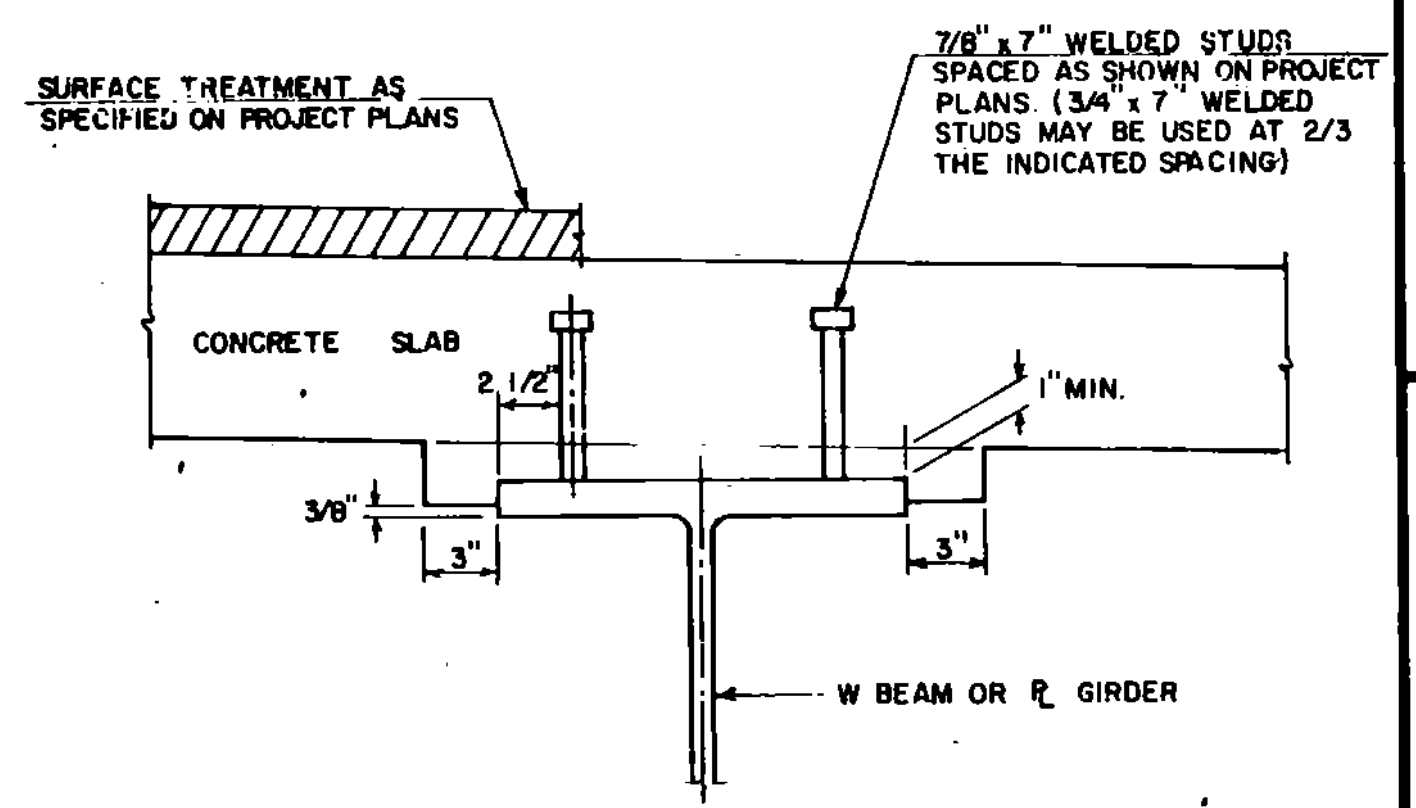


INTERIOR W BEAM CUT-OFFS AT PIER

(B)

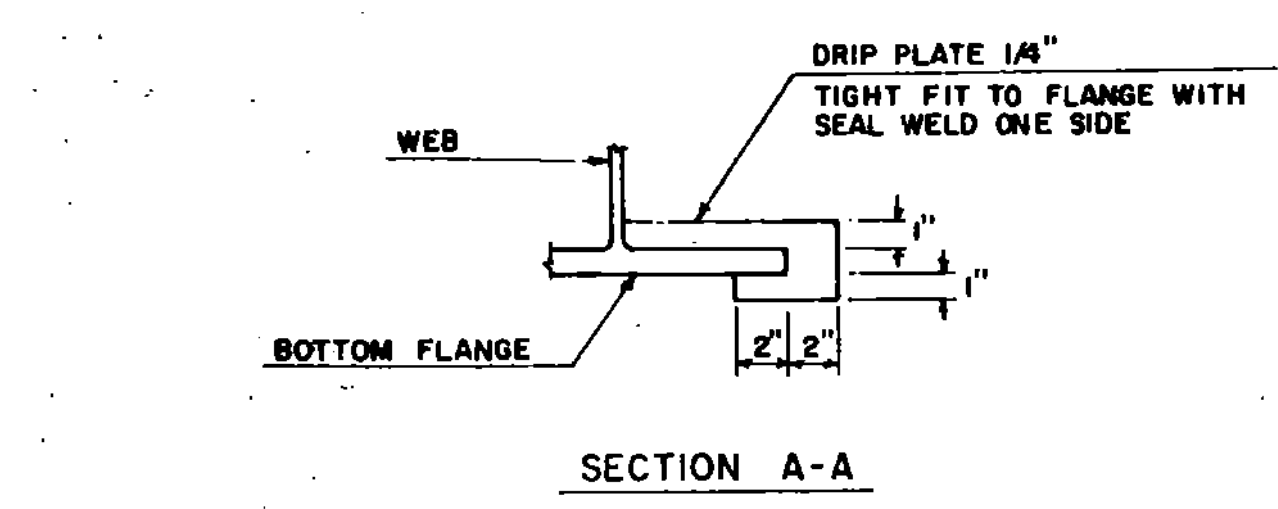


PLAN



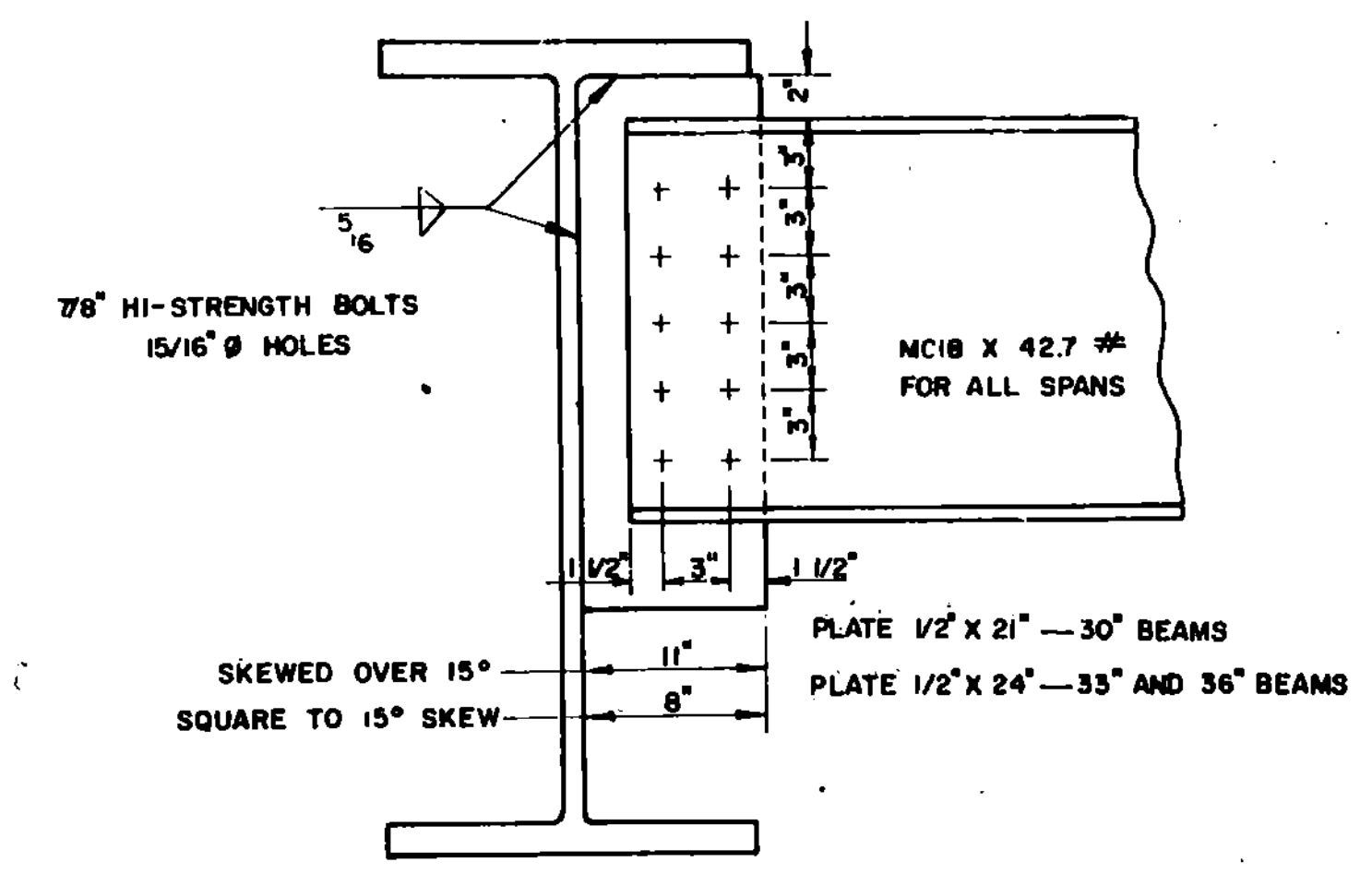
BEAM HAUNCH AND SHEAR CONNECTOR DETAILS

(F)

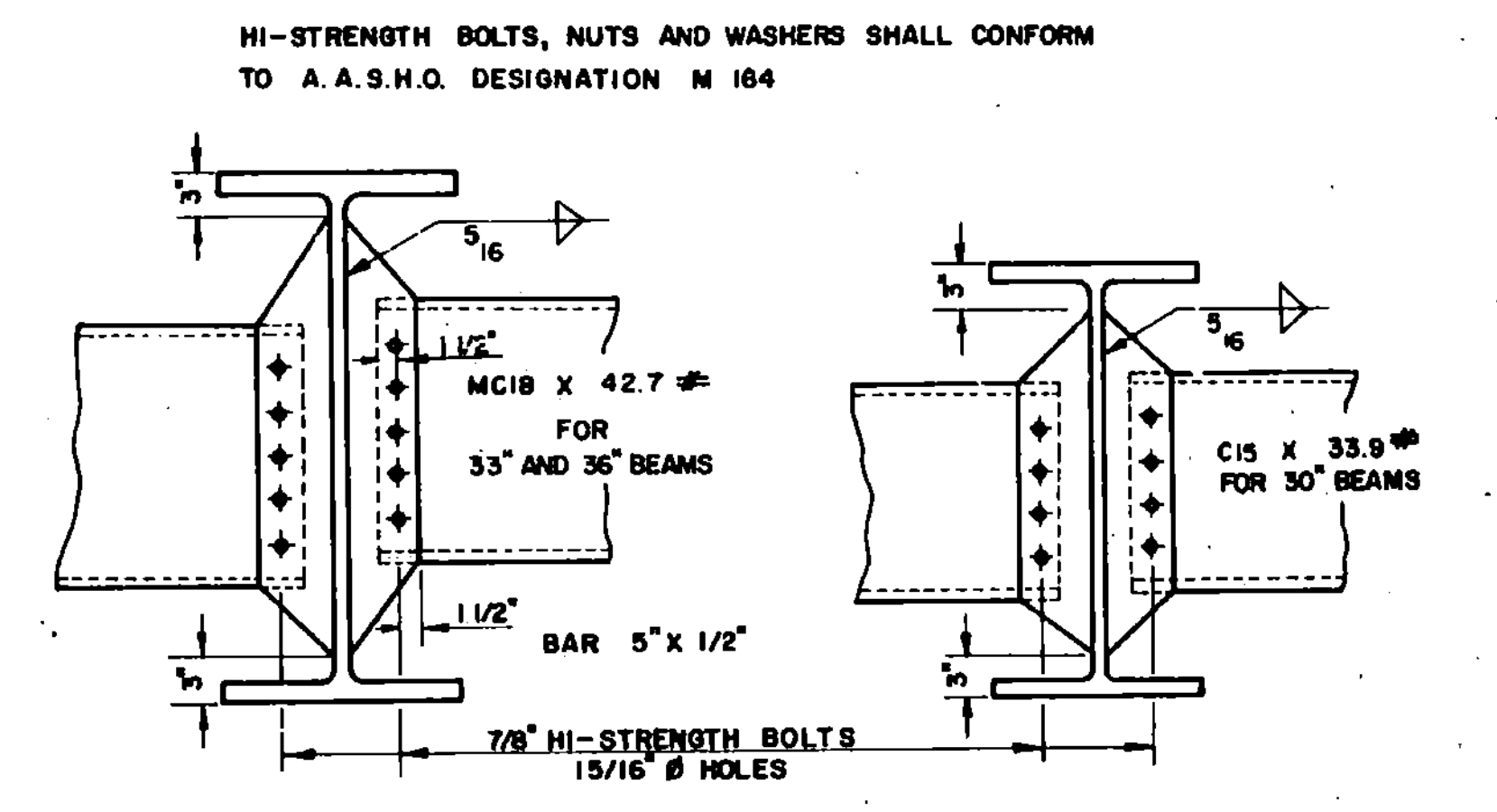


DRIP PLATE DETAILS

(C)

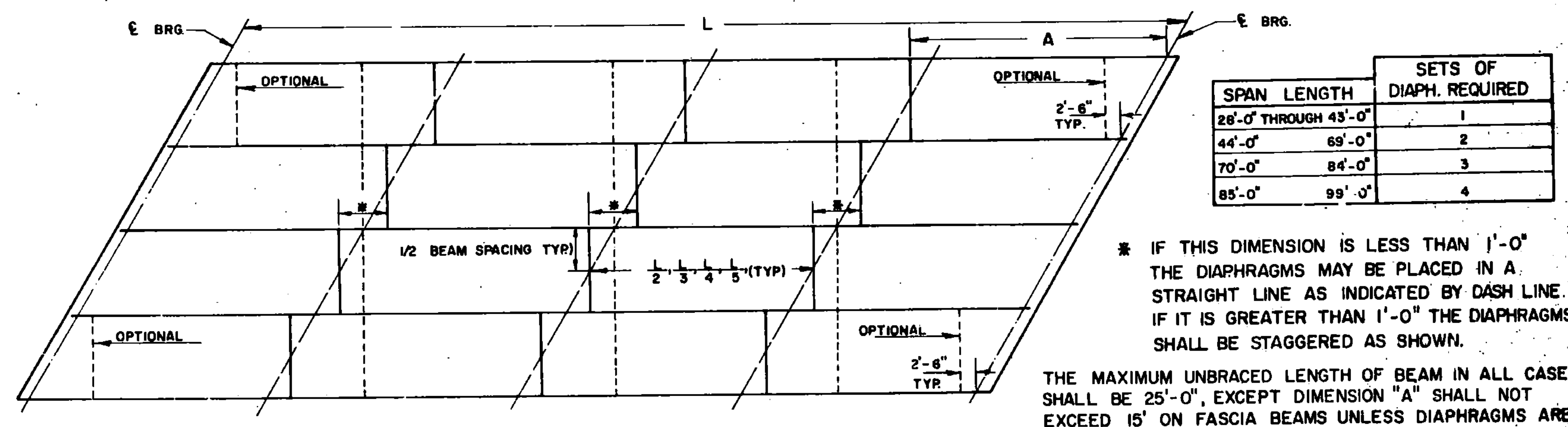


PIER DIAPHRAGMS



INTERMEDIATE DIAPHRAGMS

(D)



DIAPHRAGM LOCATION PLAN

(E)

SPAN LENGTH	SETS OF DIAPH. REQUIRED
28'-0" THROUGH 43'-0"	1
44'-0" 69'-0"	2
70'-0" 84'-0"	3
85'-0" 99'-0"	4

* IF THIS DIMENSION IS LESS THAN 1'-0" THE DIAPHRAGMS MAY BE PLACED IN A STRAIGHT LINE AS INDICATED BY DASH LINE. IF IT IS GREATER THAN 1'-0" THE DIAPHRAGMS SHALL BE STAGGERED AS SHOWN.

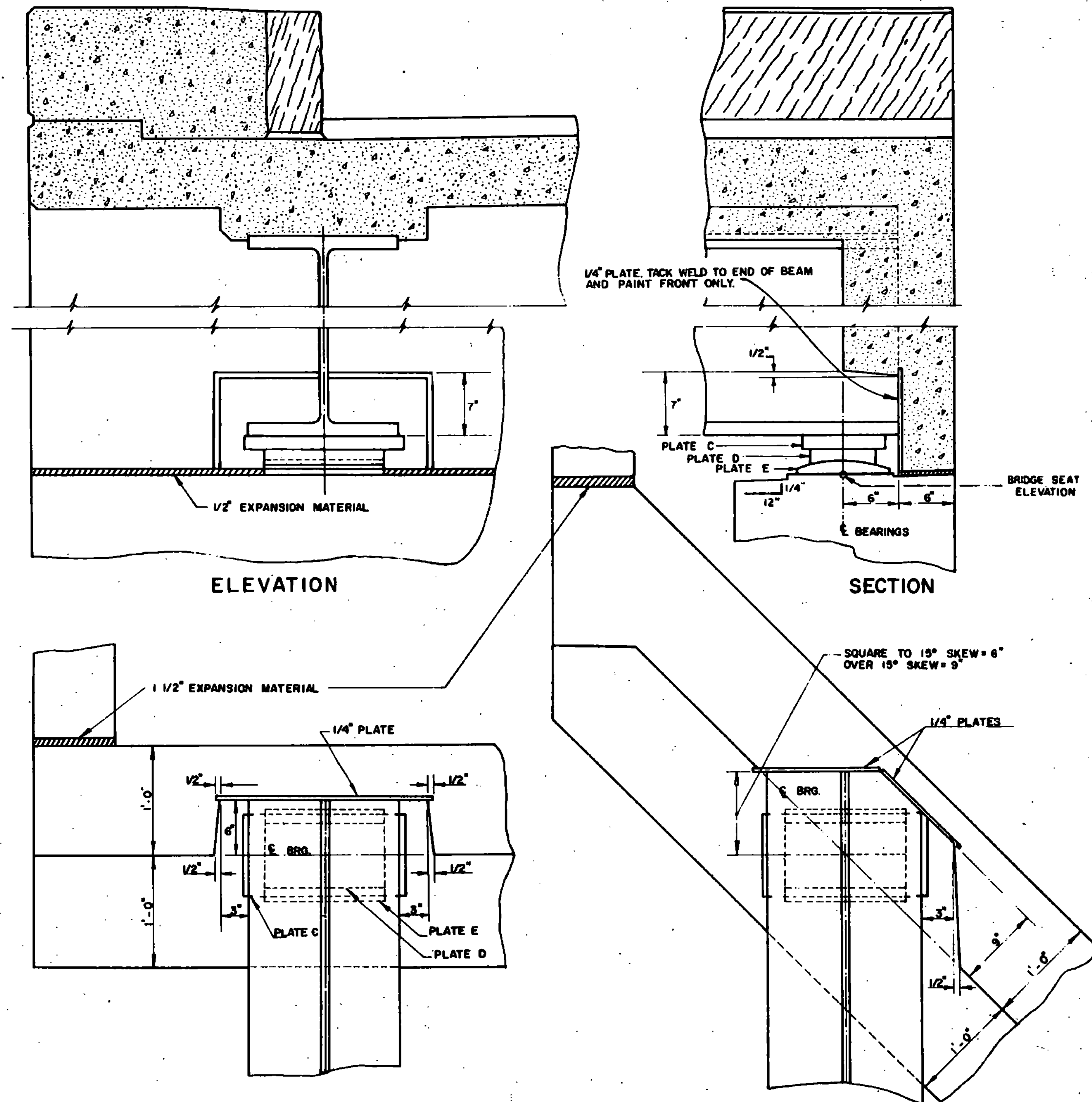
THE MAXIMUM UNBRACED LENGTH OF BEAM IN ALL CASES SHALL BE 25'-0", EXCEPT DIMENSION "A" SHALL NOT EXCEED 15' ON FASCIA BEAMS UNLESS DIAPHRAGMS ARE USED AT C OF BEARINGS, OR UNLESS OPTIONAL DIAPHRAGMS ARE USED AS SHOWN.

REVISIONS AND CORRECTIONS
 1. REMOVED DETAIL "C". J. WOOD 1-22-73
 2. NOTE CONCERNING DIMENSION "A" ADDED TO DETAIL "E". J. WOOD 1-22-73
 3. ADDED DETAILS "C" AND "F". W. TRIPP 12-15-76

APPROVED: DATE: 12/14/71
 R.M. Connel
 CHIEF ENGINEER
 E.H. Stickney
 ASST. CHIEF ENGINEER
 G.M. Brown
 BRIDGE ENGINEER

DETAILS OF W BEAM BRIDGES
 STRUCTURAL STEEL DETAILS
 (A)(D)(E) DIAPHRAGM DETAILS
 (B) WF BEAM CUT-OFFS
 (C) DRIP PLATE DETAILS
 (F) BEAM HAUNCH & SHEAR CONNECTOR DETAILS

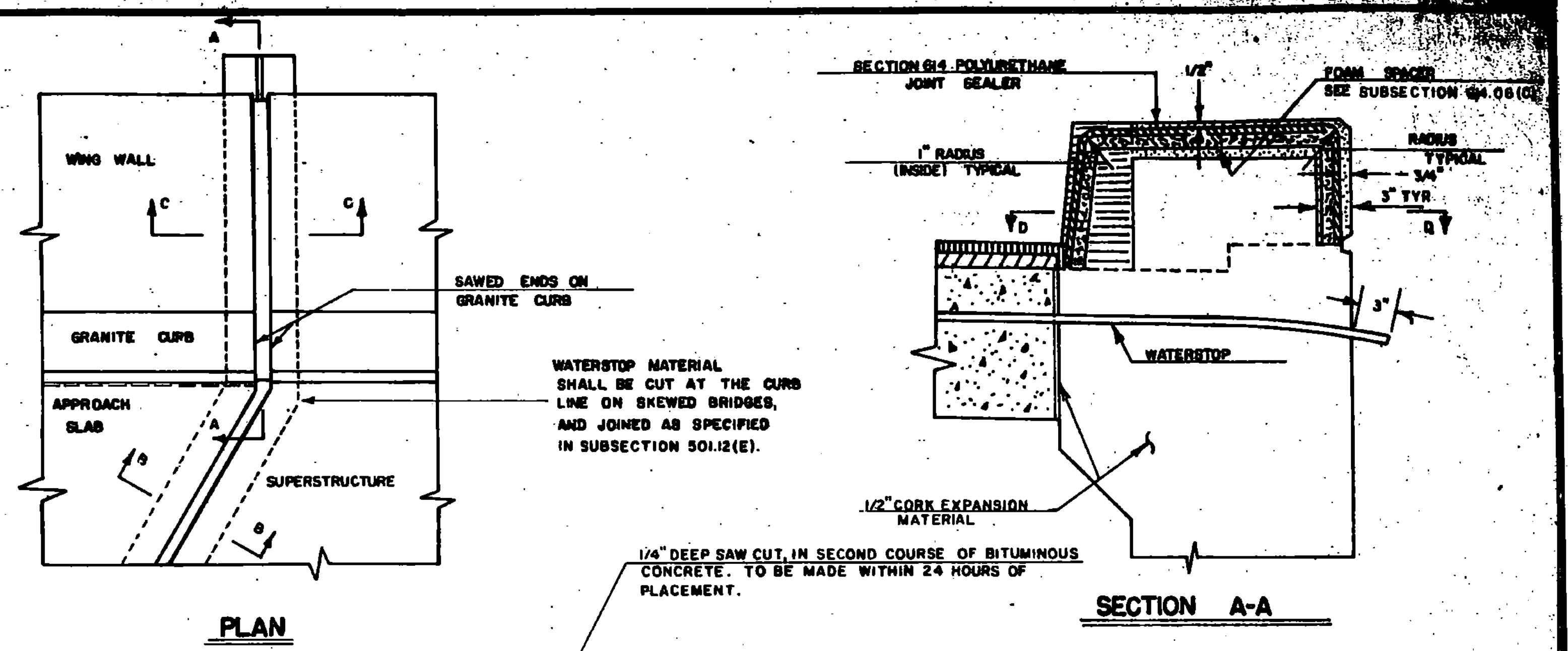
VERMONT
 DEPARTMENT OF HIGHWAYS
 STRUCTURE STANDARDS
 SCB-D7-71



PLAN FOR SQUARE BRIDGES

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

PLAN FOR SKEWED BRIDGES



PLAN

SECTION A-A

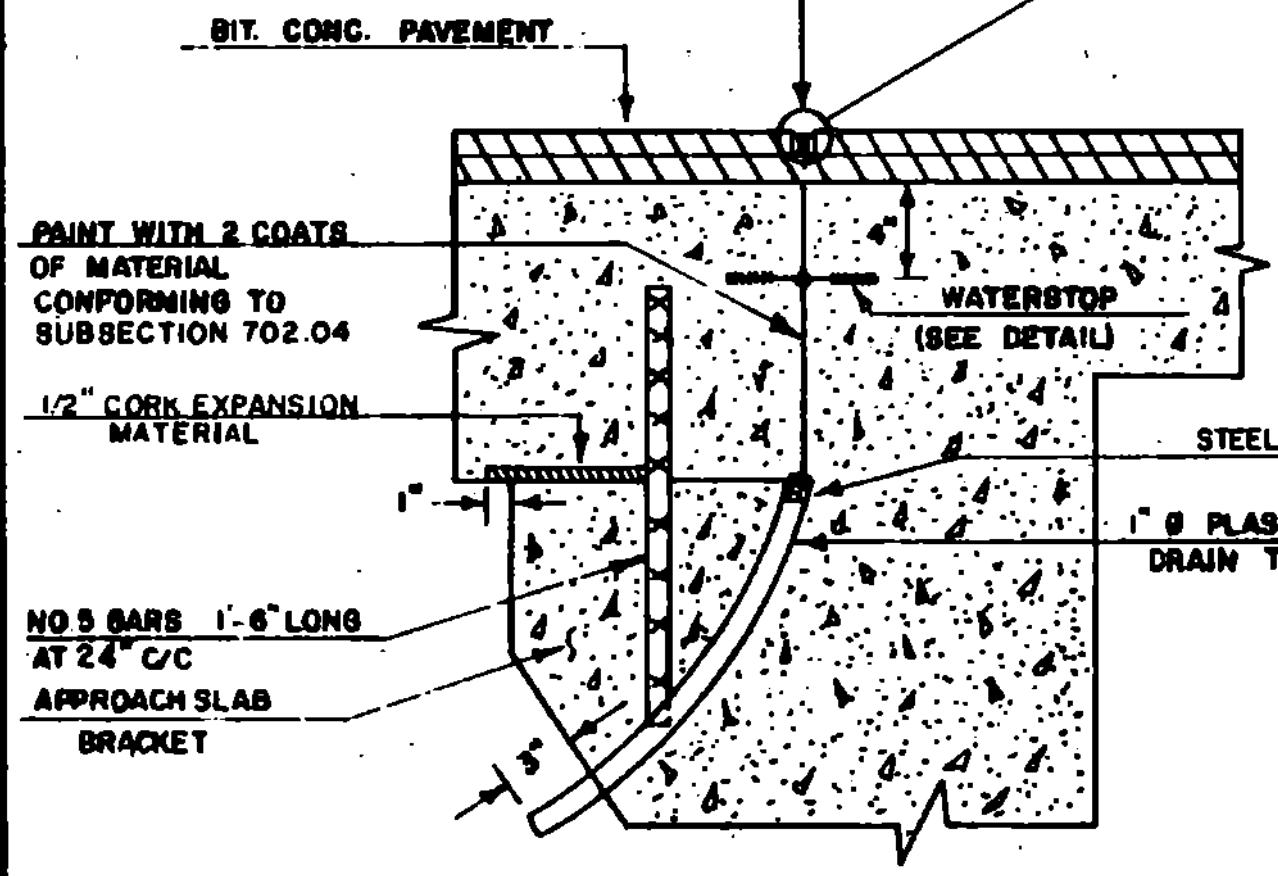
JOINT IS TO BE LOCATED ACCURATELY BY STRING LING, OR OTHER MEANS, PRIOR TO PAVING, SO THAT THE SAW CUT WILL BE MADE DIRECTLY OVER THE JOINT.

WATERSTOP MATERIAL SHALL BE CUT AT THE CURB LINE ON SKEWED BRIDGES, AND JOINED AS SPECIFIED IN SUBSECTION 501.12(E).

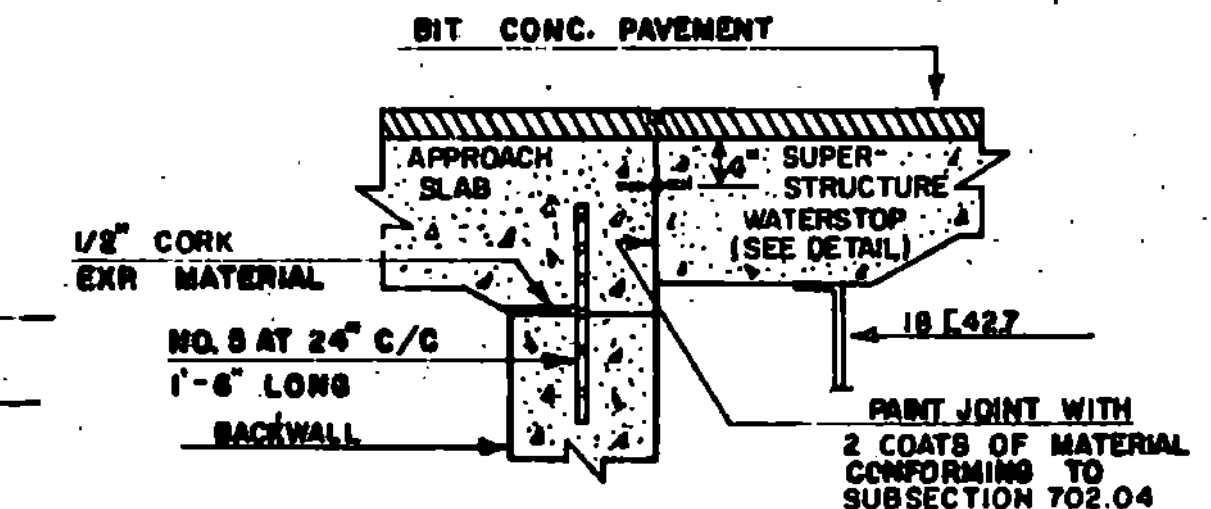
1/4\"/>

SAW CUT IN BITUMINOUS CONG. FILL WITH JOINT SEALER - HOT POURED, SUBSECTION 614.06.

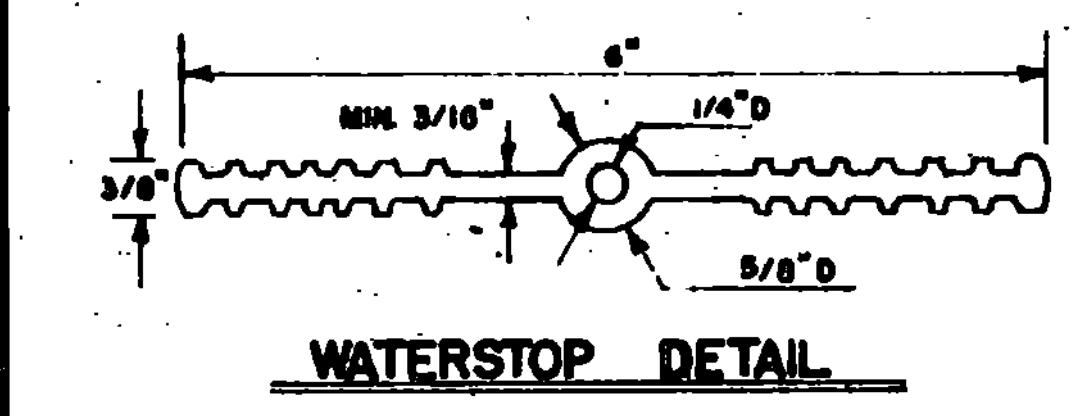
1/4\"/>



SECTION B-B



SECTION B-B WITH BACKWALL

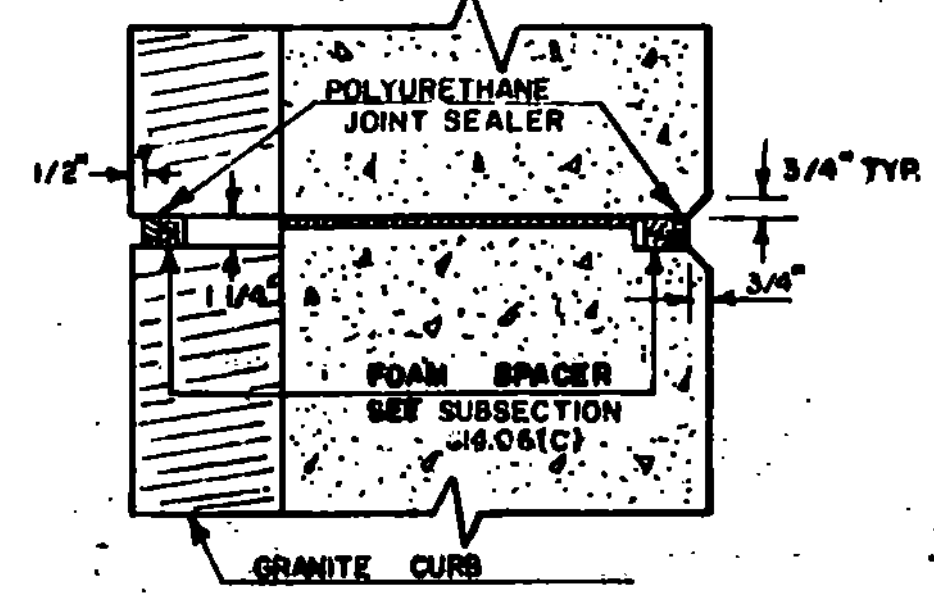


WATERSTOP DETAIL

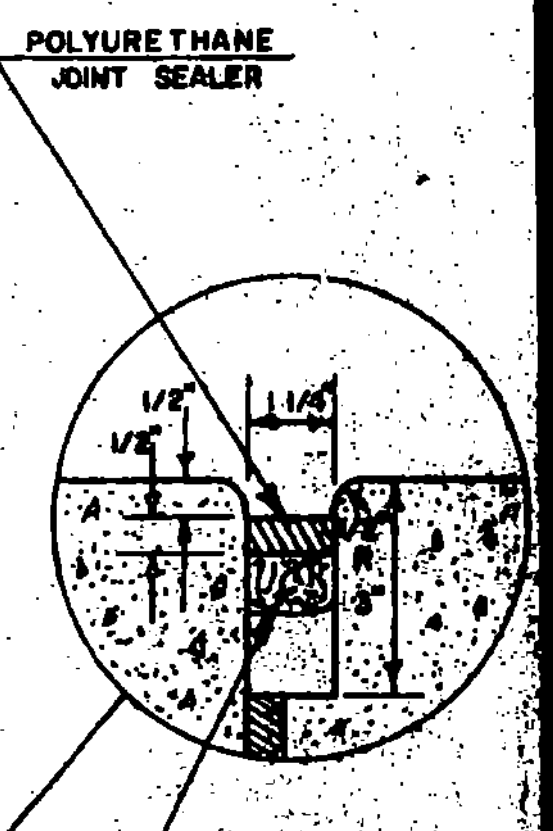
MATERIAL TO BE POLYVINYLCHLORIDE, AS SPECIFIED IN SUBSECTION 707.30. OTHER CONFIGURATIONS, WITH MINOR DIMENSION VARIATIONS, MAY BE USED WITH THE APPROVAL OF THE BRIDGE ENGINEER.

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

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



SECTION D-D



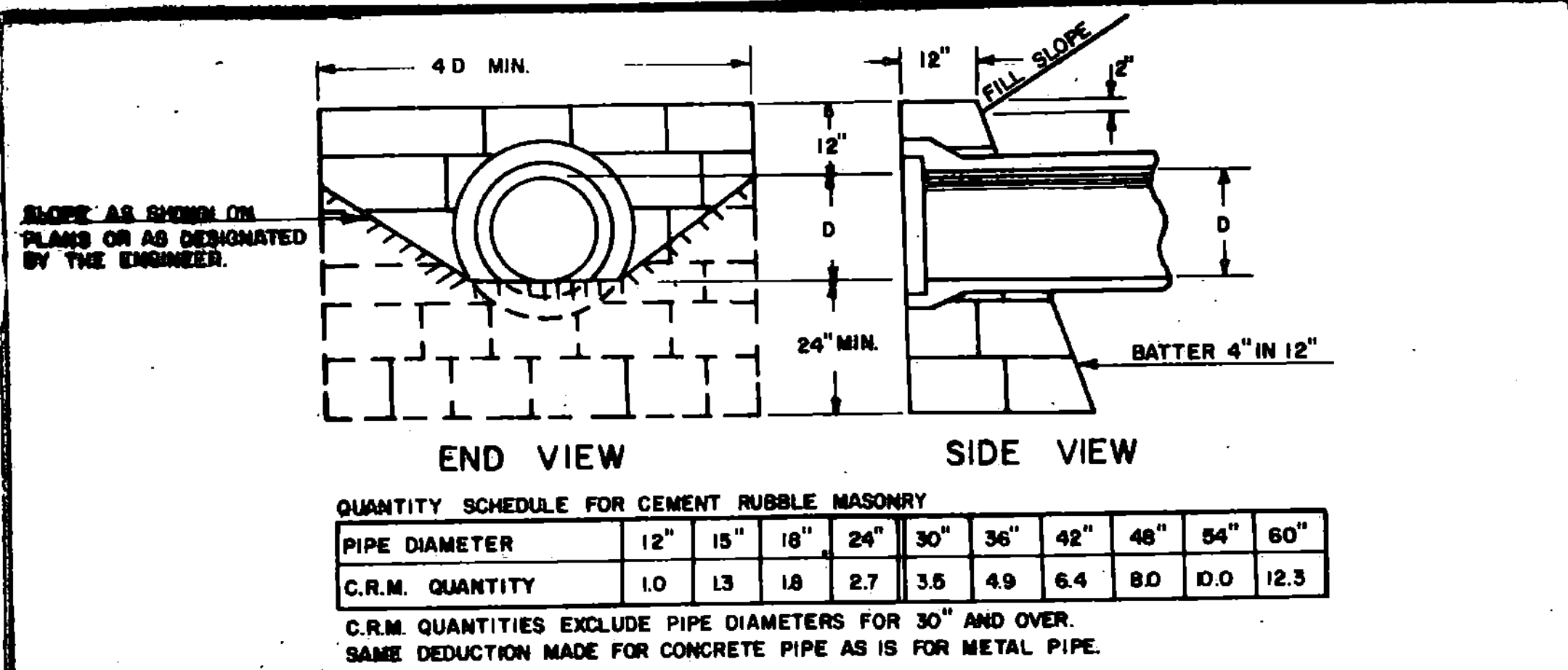
SECTION C-C

REVISIONS AND CORRECTIONS
1. Added notes to saw cut 1st & 2nd. courses of Bit. Conc. - J.WOOD 1-27-75

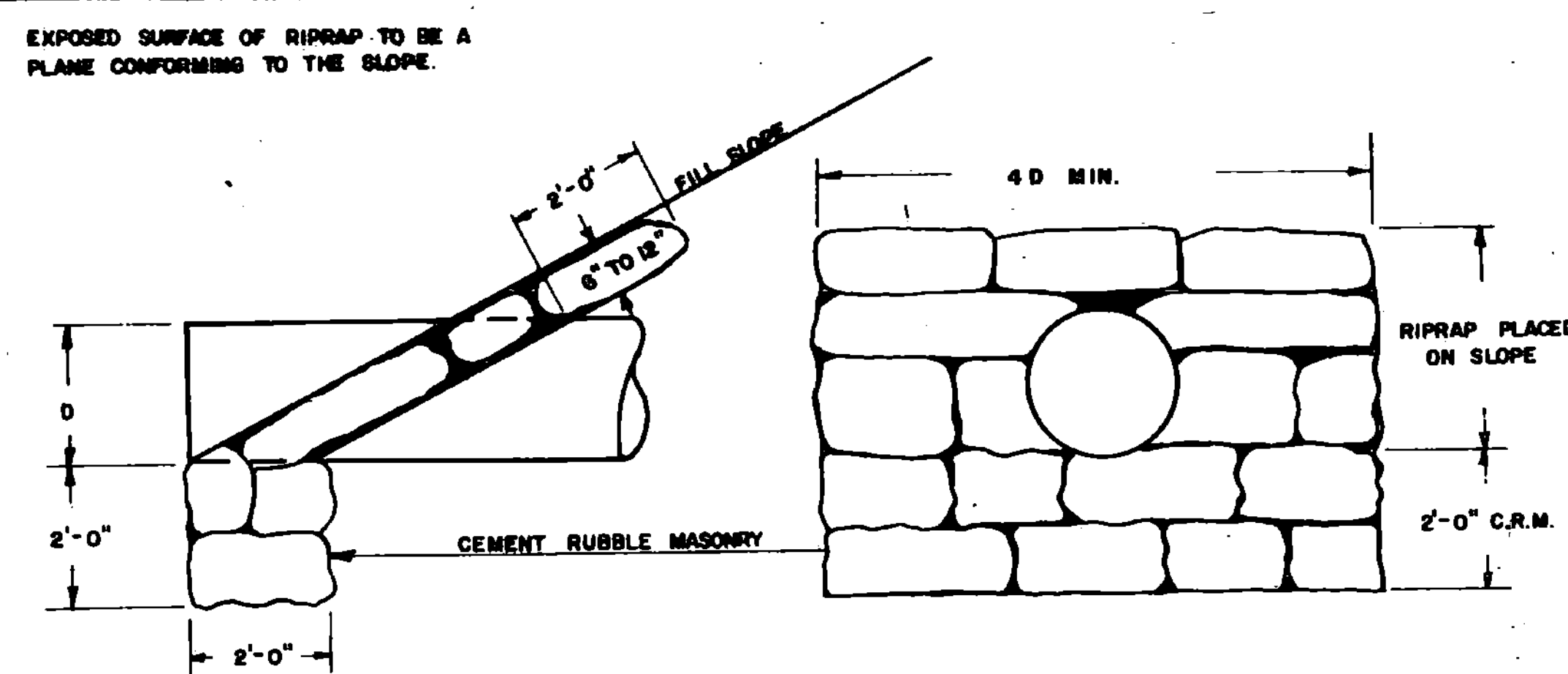
APPROVED: DATE: 12/14/71
R.A. Arnold
 CHIEF ENGINEER
E.H. Stebbins
 ASST. CHIEF ENGINEER
Frank Spain
 BRIDGE ENGINEER

DETAILS OF W BEAM BRIDGES
 (A) CURTAIN WALL AT BEARING DEVICES
 (B) FIXED END JOINT DETAILS

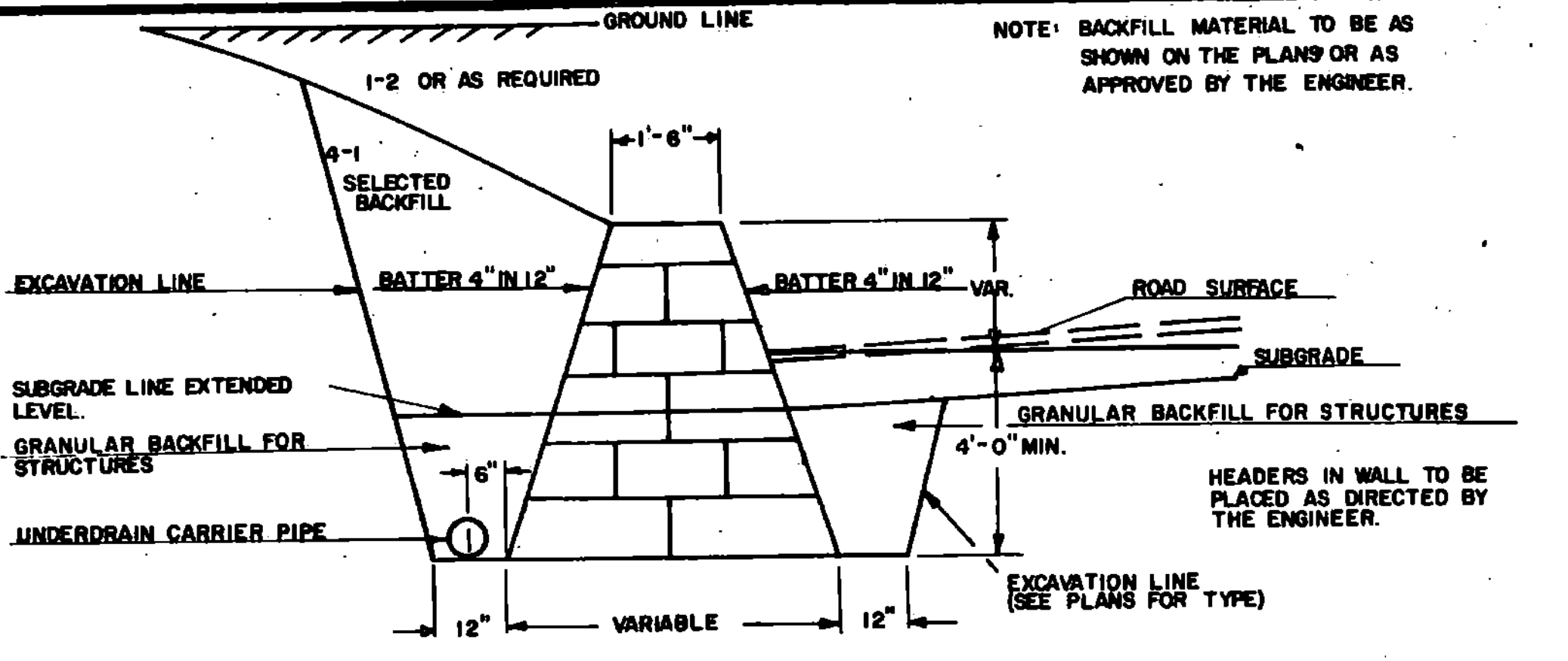
VERMONT DEPARTMENT OF HIGHWAYS
 STRUCTURE STANDARDS
 SCB-D9-71



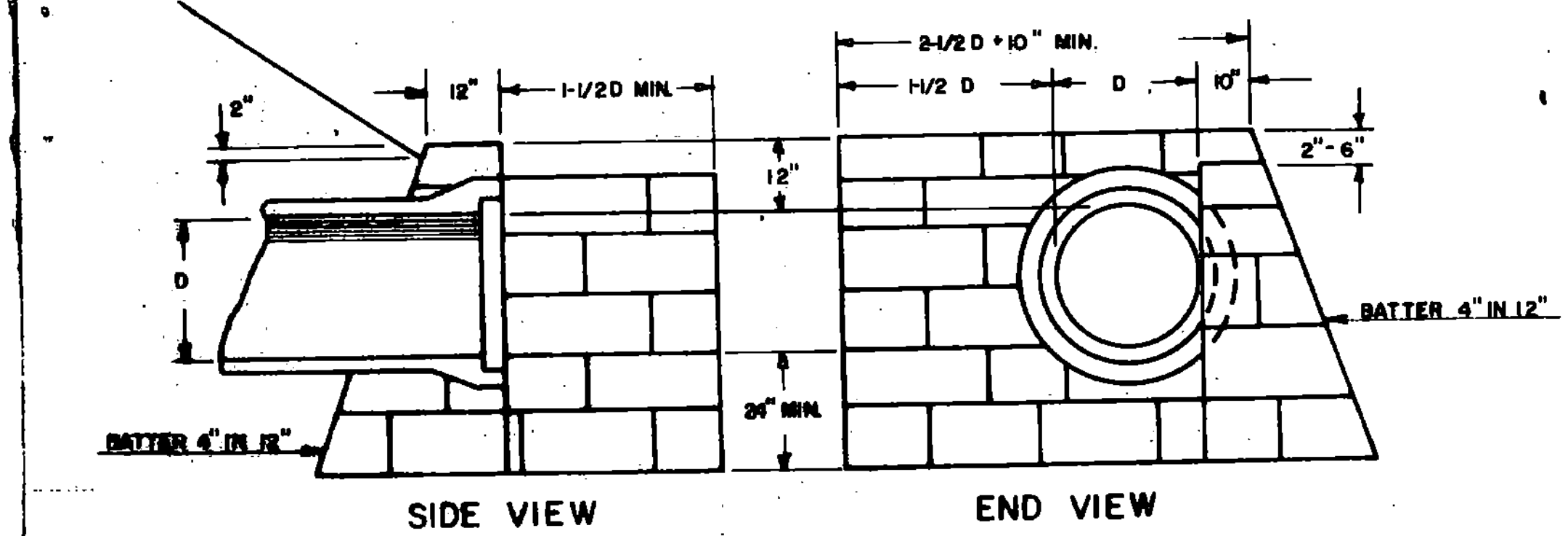
CEMENT RUBBLE MASONRY STRAIGHT HEADWALL



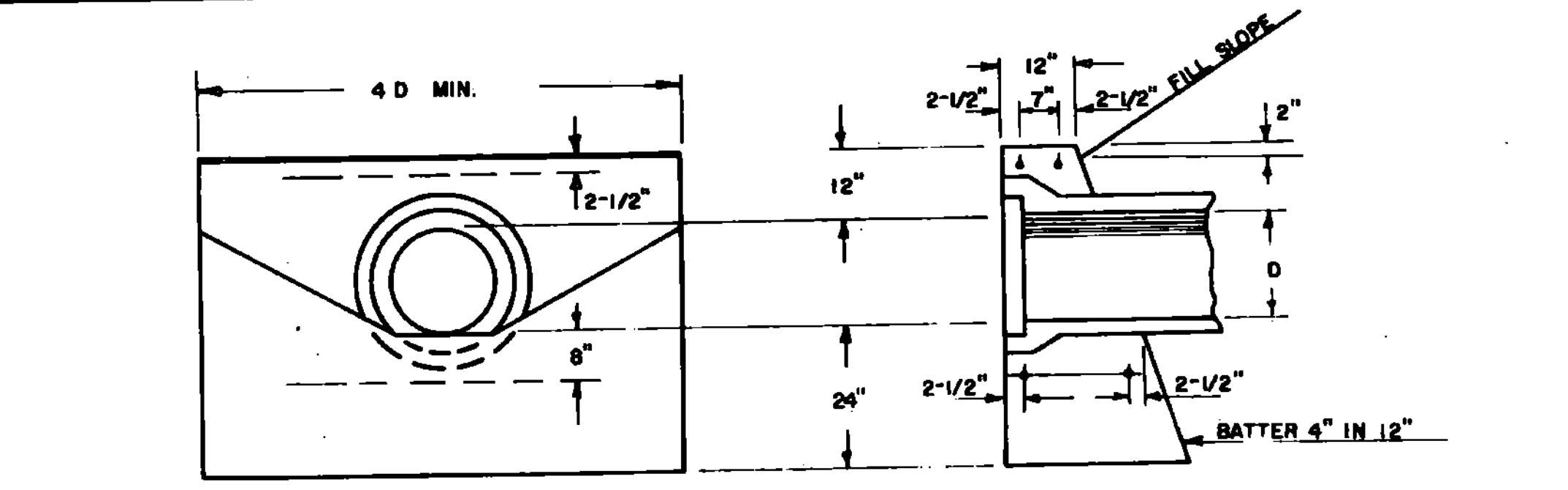
RIPRAP LIGHT TYPE SLOPE HEADWALL WITH CEMENT RUBBLE MASONRY FOOTING



CEMENT RUBBLE MASONRY RETAINING WALL



CEMENT RUBBLE MASONRY "L" TYPE HEADWALL



QUANTITY SCHEDULE FOR REINFORCED CONCRETE HEADWALL, CLASS B

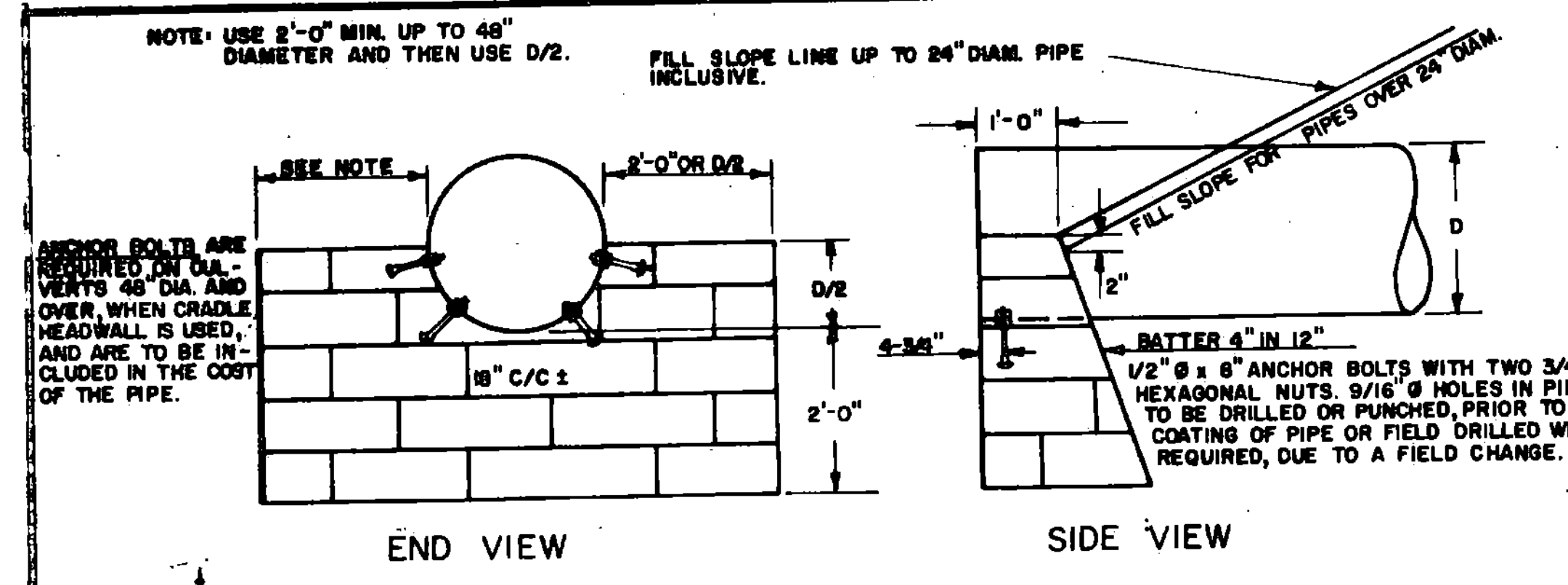
PIPE DIAMETER	12"	15"	18"	24"	30"	36"	42"	48"	54"	60"
CONCRETE QUANTITY	1.0	1.3	1.8	2.7	3.5	4.9	6.4	8.0	10.0	12.3

STEEL SCHEDULE FOR REINFORCED CONCRETE HEADWALL

PIPE DIAMETER	12"	15"	18"	24"	30"	36"	42"	48"	54"	60"
NUMBER	4	4	4	4	4	4	4	4	4	4
LENGTH OF BARS	3'-0"	3'-0"	3'-0"	3'-0"	4'-0"	4'-0"	5'-0"	5'-0"	6'-0"	6'-0"

REINFORCED CONCRETE STRAIGHT HEADWALL

- GENERAL NOTES - HEADWALLS:
1. THE HEIGHT OF HEADWALLS ON DRIVEWAY PIPES IS TO BE REDUCED TO 6" ABOVE THE TOP OF PIPE.
 2. BELL AND SPIGOT PIPE IS TO BE LAID WITH THE BELL UPSTREAM.
 3. HEADWALL QUANTITIES, FOR THE SAME TYPE HEADWALLS ON PIPES OF EQUAL DIAMETER, ARE THE SAME FOR BOTH CONCRETE AND METAL PIPE. LENGTH OF HEADWALLS ARE BASED ON INSIDE DIAMETER OF PIPES.
 4. THE NECESSITY OF CONSTRUCTING A FLOOR AT THE ENTRANCE TO AN L TYPE HEADWALL SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER AND ANY INSTALLATION THEREOF SHALL BE AT HIS DIRECTION.



CEMENT RUBBLE MASONRY CRADLE HEADWALL

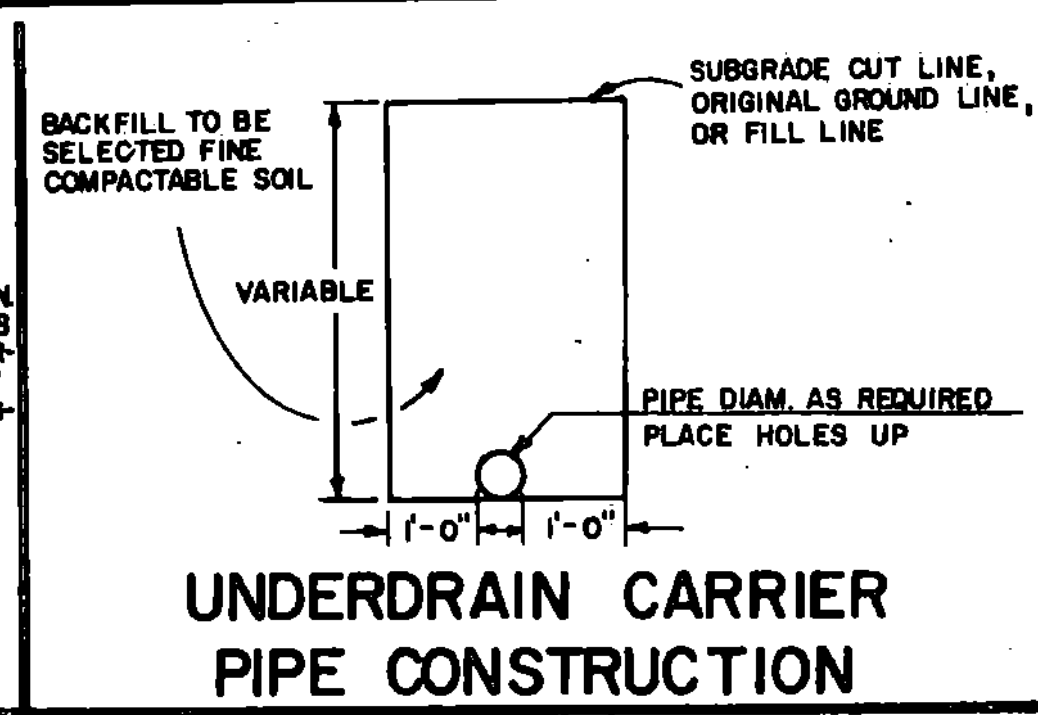
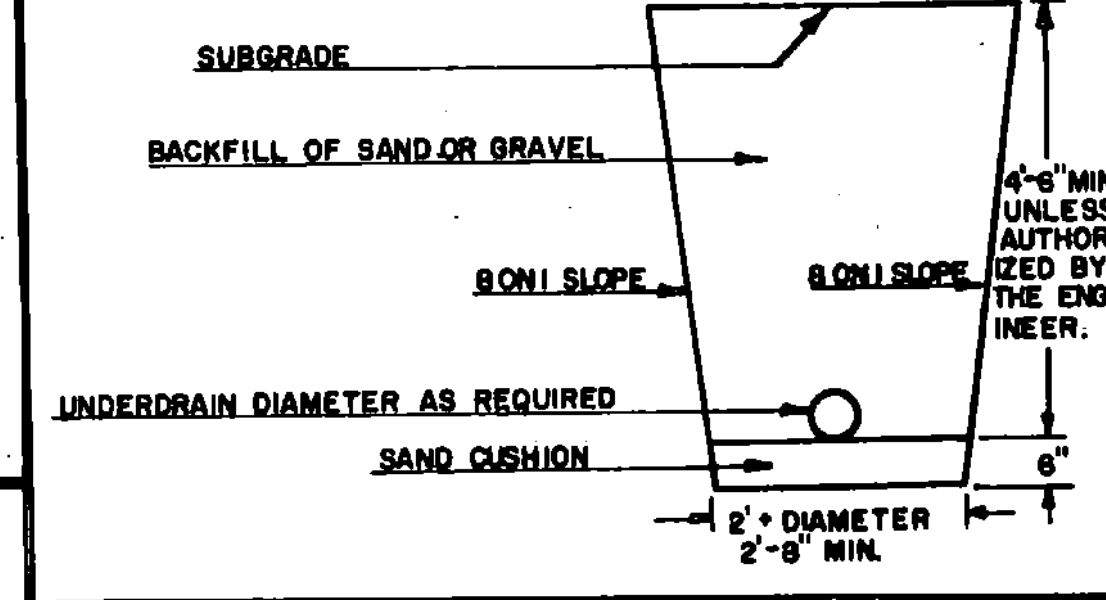
QUANTITY SCHEDULE FOR CEMENT RUBBLE MASONRY

PIPE DIAMETER	18"	24"	30"	36"	42"	48"	54"	60"	66"	72"
C.R.M. QUANTITY	0.8	1.0	1.2	1.4	1.5	1.7	2.0	2.4	2.8	3.3

C.R.M. QUANTITIES ARE DEDUCTED WHEN PIPE DIAMETER 42" OR LARGER
SAME DEDUCTION MADE FOR CONCRETE PIPE AS FOR METAL PIPE.

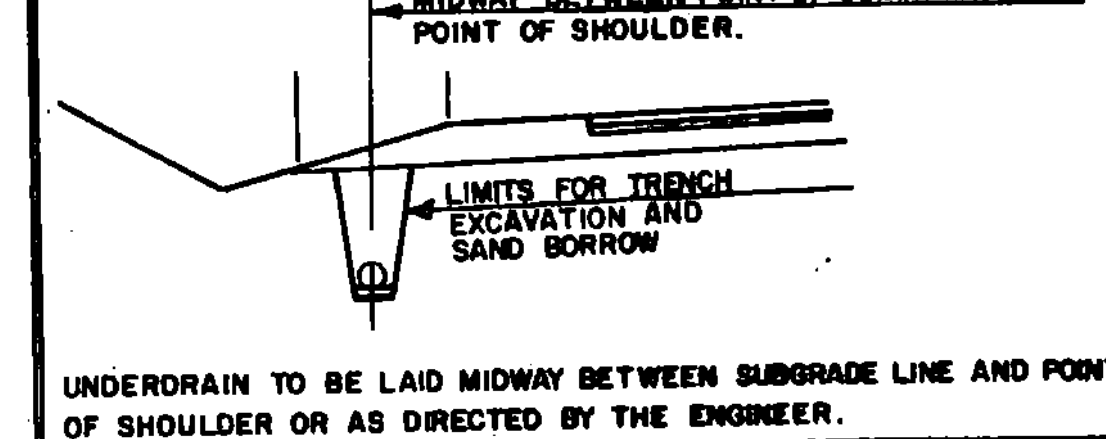
WHEN CONCRETE CLASS B IS USED, TWO PIECES OF REINFORCING STEEL WILL BE PLACED BELOW THE CULVERT SIMILAR TO THOSE SHOWN ON REINFORCED CONCRETE STRAIGHT HEADWALL.

UNDERDRAIN CONSTRUCTION



- GENERAL NOTES - UNDERDRAIN:
1. GRADE FOR UNDERDRAIN PIPE SHALL BE PARALLEL WITH THE GRADE OF THE ROAD UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 2. A FLUSHING BASH IS TO BE INSTALLED AT INLET WHEN LESS THAN 3% GRADE IS USED OR AS ORDERED BY THE ENGINEER.
 3. THE UNDERDRAIN SHALL BE TAKEN TO A PROPER OUTLET AND PROTECTED WITH A HEADWALL OF CEMENT RUBBLE MASONRY IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.
 4. ELBOWS, TEES, AND OTHER JUNCTION UNITS NECESSARY FOR PROPER INSTALLATION OF UNDERDRAIN, AS DIRECTED BY THE ENGINEER, ARE TO BE INCLUDED IN THE UNIT BID PRICE FOR UNDERDRAIN OR CARRIER PIPE.

UNDERDRAIN LOCATION



REVISIONS AND CORRECTIONS

MAR. 8, 1972: CHANGED ANCHOR BOLTS FROM 10" L TO 8" CARRIAGE BOLTS.

DEC. 16, 1976: NOTE ADDED ON REINFORCING STEEL FOR CRADLE HEADWALLS

OCT. 30, 1985: REVISED TO CONFORM TO 1986 SPECIFICATIONS.

APPROVED: DATE: Dec. 6, 1971

R.H. Crandall
CHIEF ENGINEER

E.H. Stinchney
ASST. CHIEF ENGINEER

L.M. Lane
HIGHWAY ENGINEER

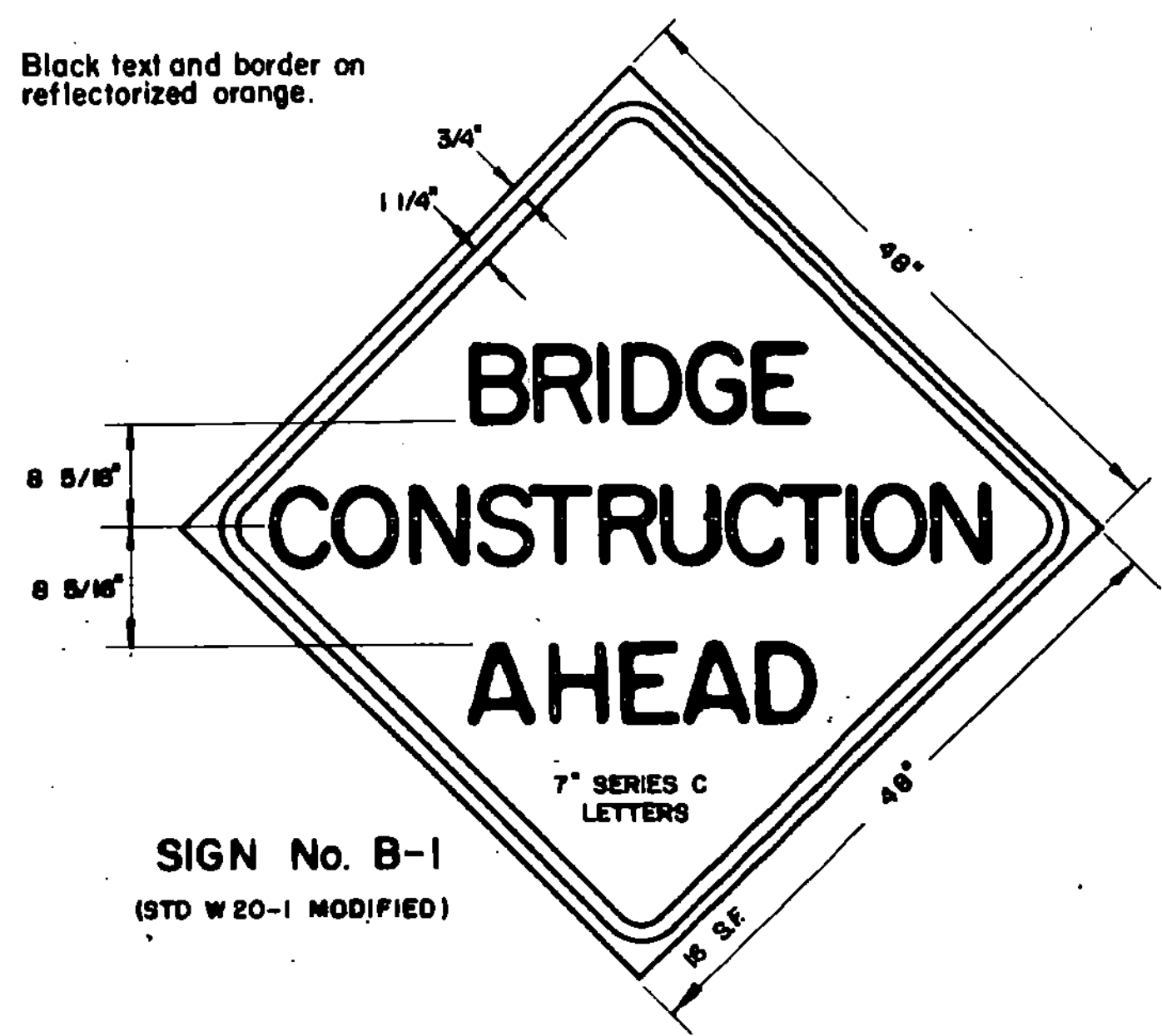
**CEMENT RUBBLE MASONRY HEADWALLS & RETAINING WALL
RIPRAP LIGHT TYPE SLOPE HEADWALL
REINFORCED CONCRETE HEADWALL
UNDERDRAIN & CARRIER PIPE CONSTRUCTION DETAILS**



STANDARD

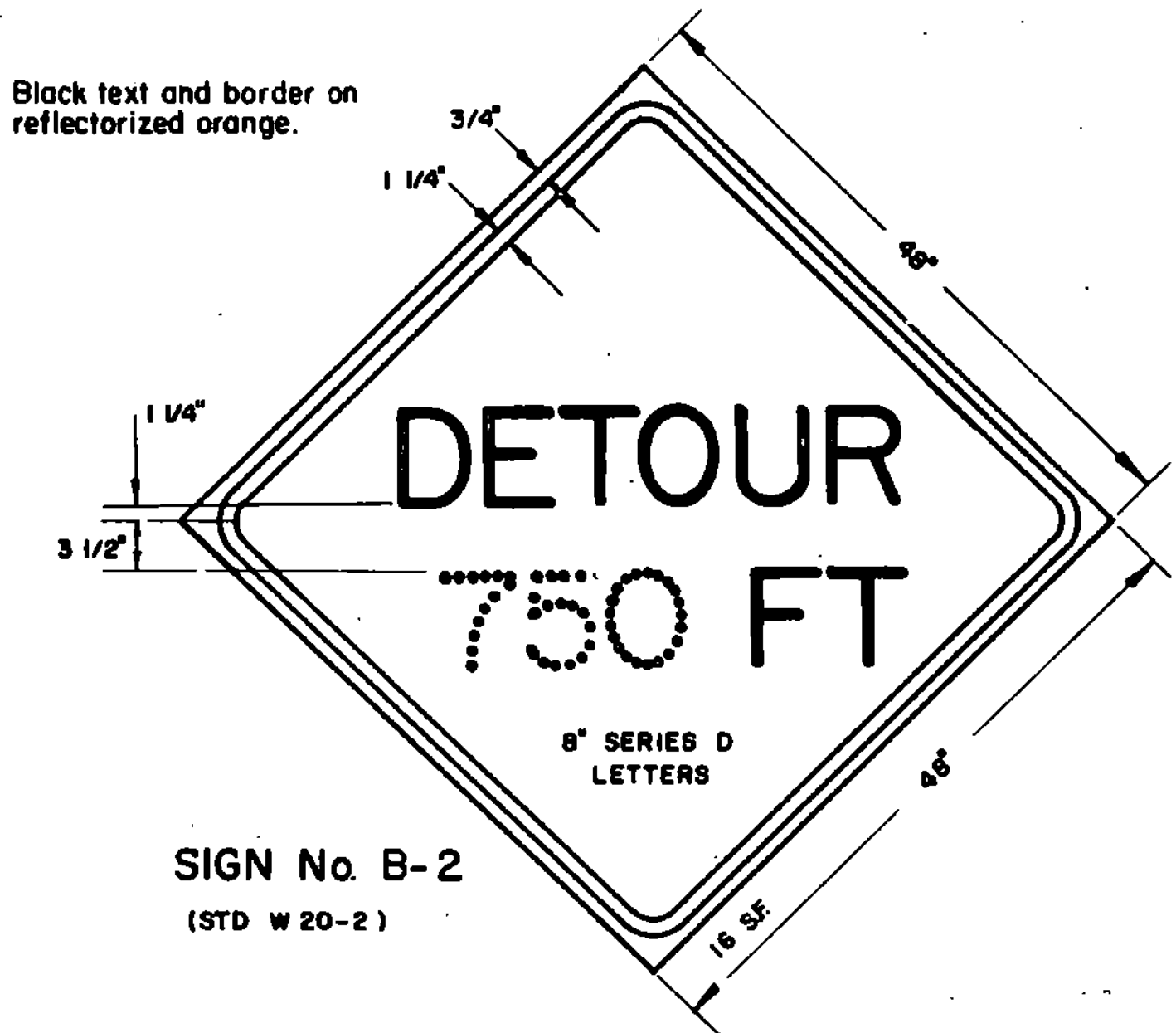
D-2

Black text and border on reflectorized orange.



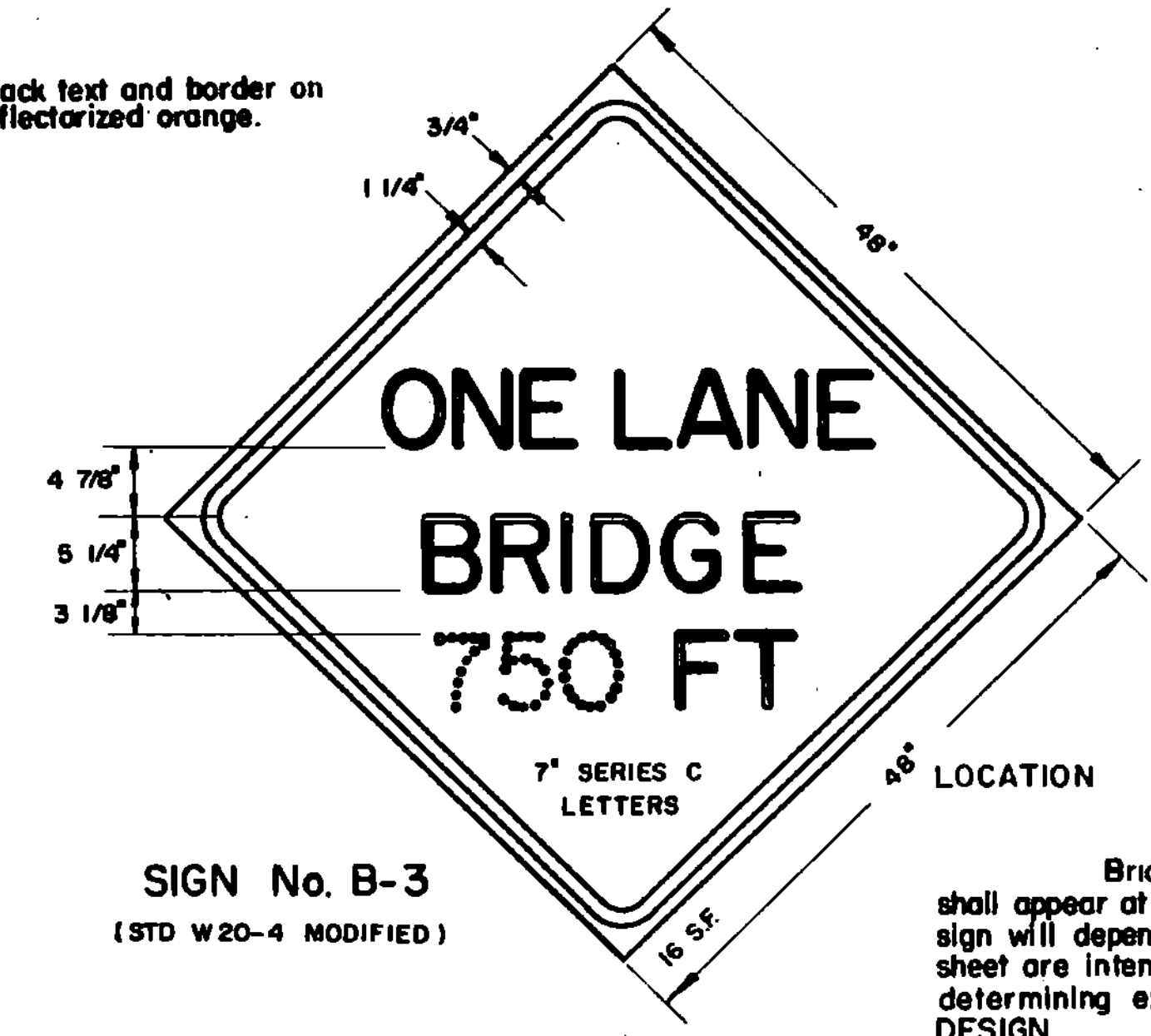
SIGN No. B-1
(STD. W 20-1 MODIFIED)

Black text and border on reflectorized orange.



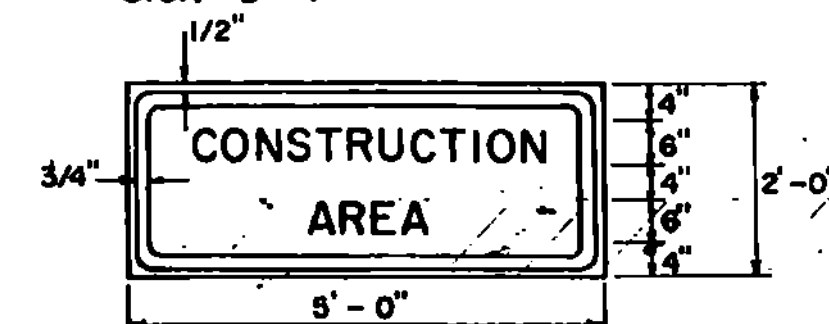
SIGN No. B-2
(STD. W 20-2)

Black text and border on reflectorized orange.



SIGN No. B-3
(STD. W 20-4 MODIFIED)

SIGN B-4



Black text and border on reflectorized orange background.

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 encapsulated 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.

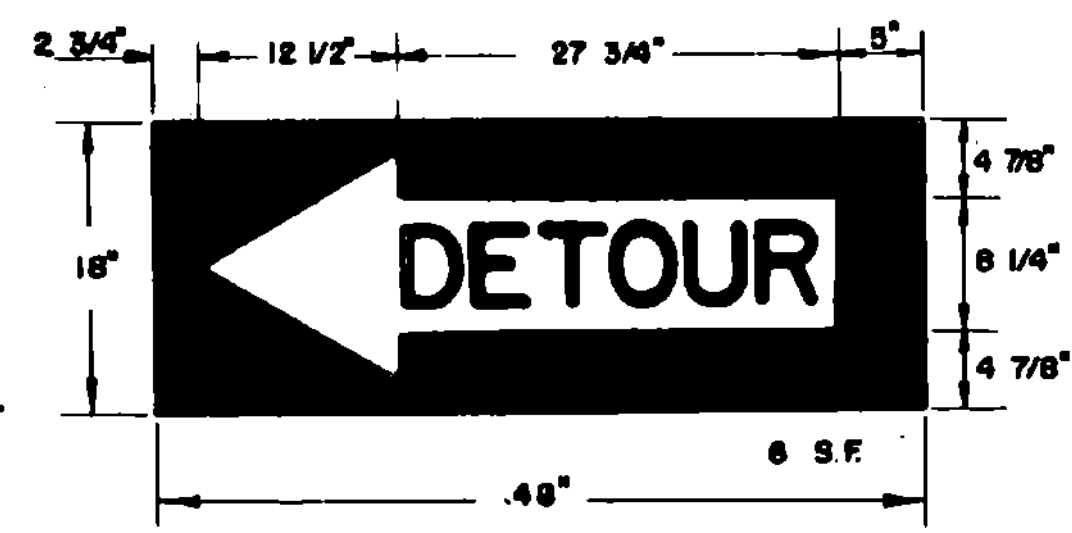
GENERAL

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 107.08 Traffic Control Devices.)

6" SERIES D LETTERS

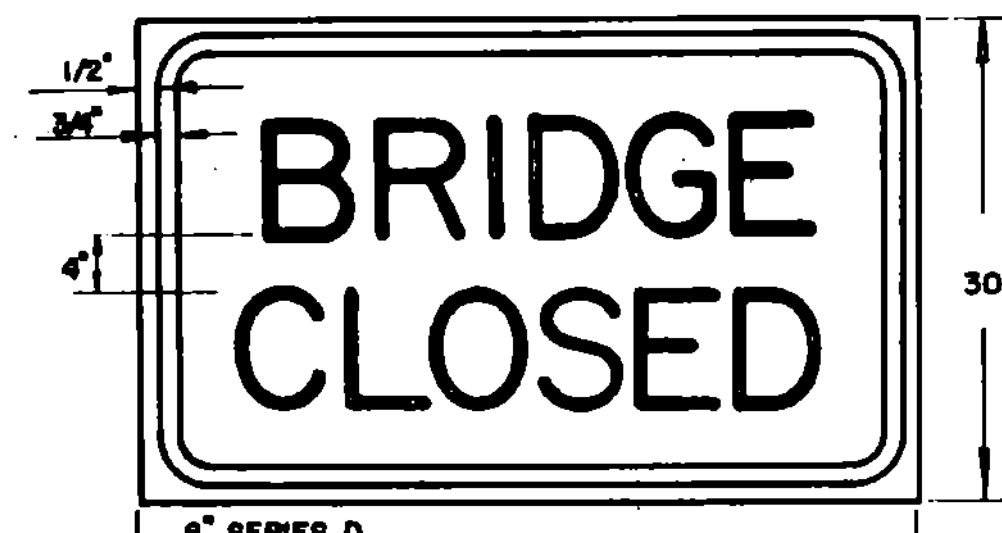
Black text and border with reflectorized orange arrow

Arrow left or right as required



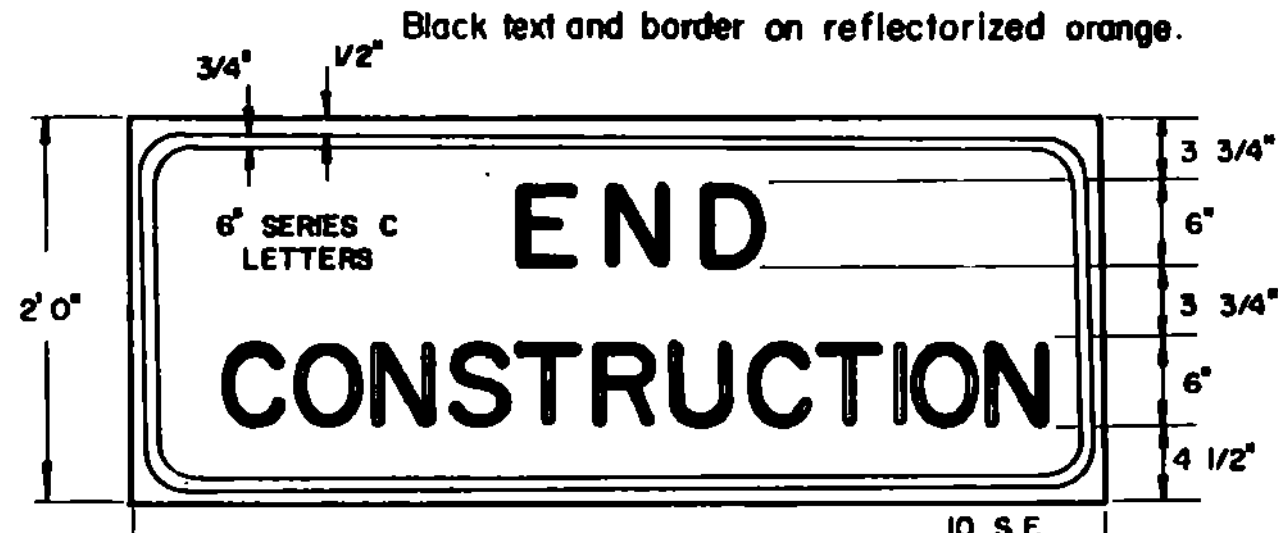
SIGN No. B-6
(STD. M 4-10)

Black text and border on reflectorized white.



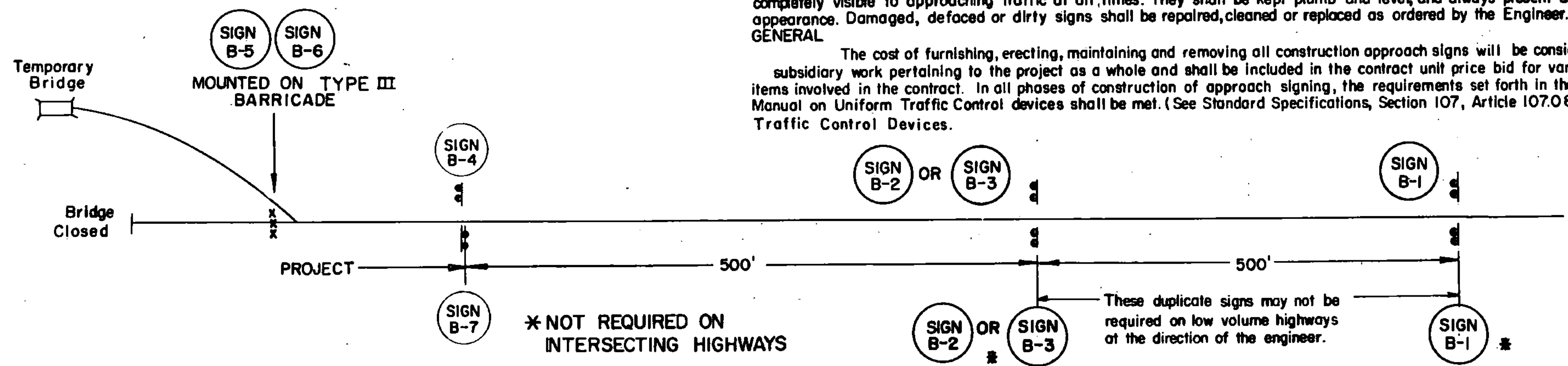
SIGN B-5
(STD. R 11-2 MODIFIED)

Black text and border on reflectorized orange.



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.



REVISIONS AND CORRECTIONS

SEPT. 11, 1973 - REVISED PER ORDER OF FHWA, SEPT. 11, 1973.
 NOV. 7, 1973 - REVISED PER ORDER OF FHWA.
 MAY 14, 1974 - REFLECTIVE MATERIAL CHANGE.
 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
 DATE

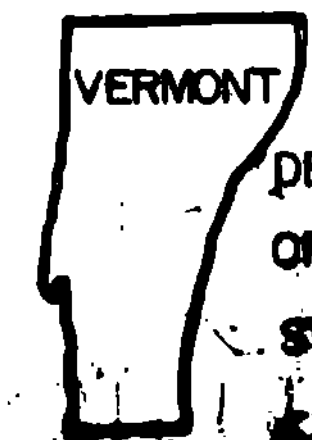
R. H. Arnold
 CHIEF ENGINEER

E. V. Stickney
 ASST. CHIEF ENGINEER

G. M. Lane
 HIGHWAY ENGINEER

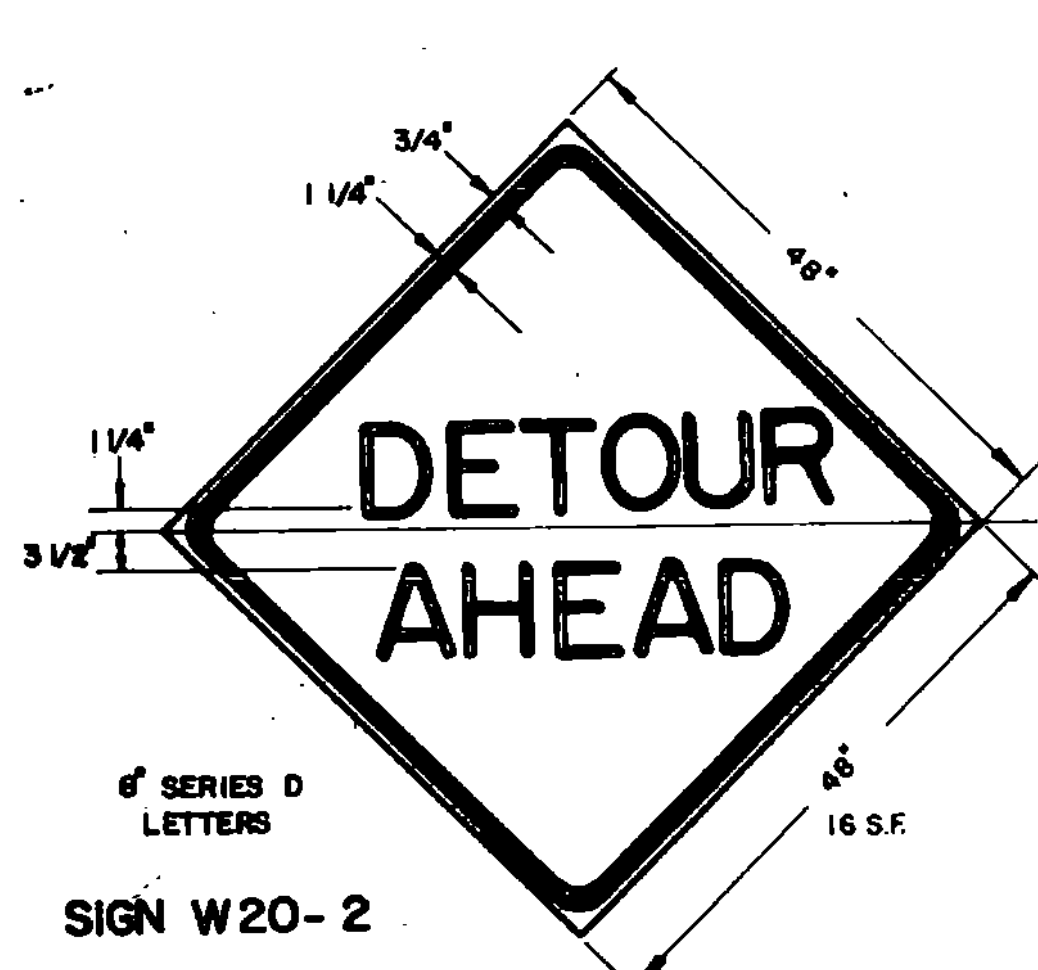
TRAFFIC SIGNS

BRIDGE CONSTRUCTION
 APPROACH SIGNS

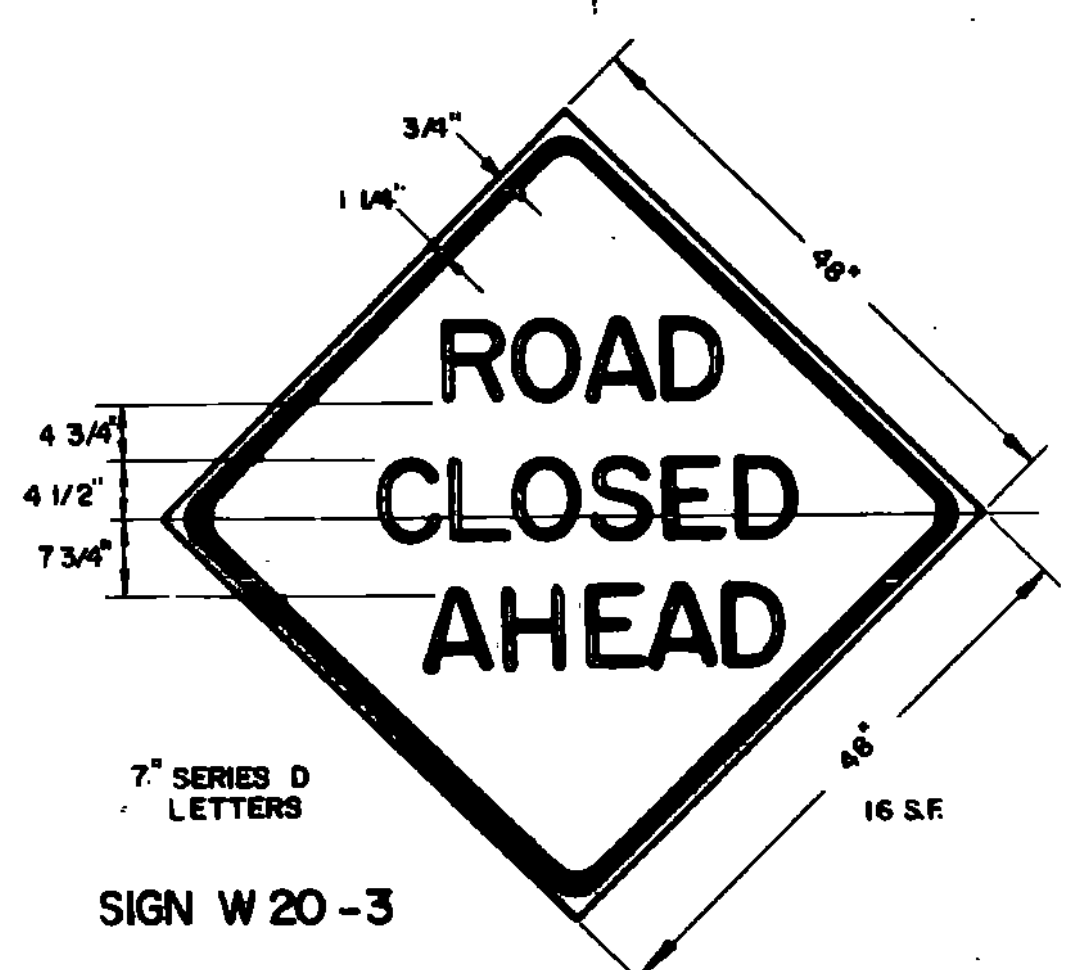


VERMONT
 DEPARTMENT
 OF HIGHWAYS
 STANDARD

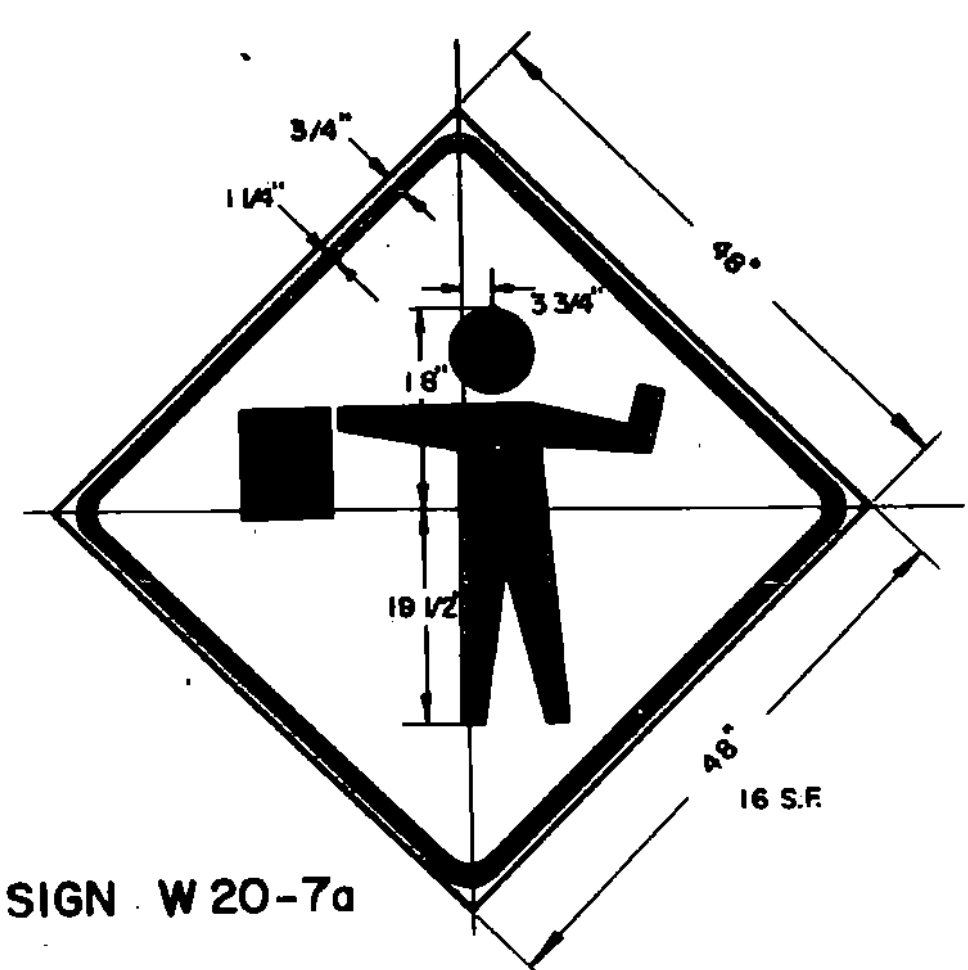
E-3



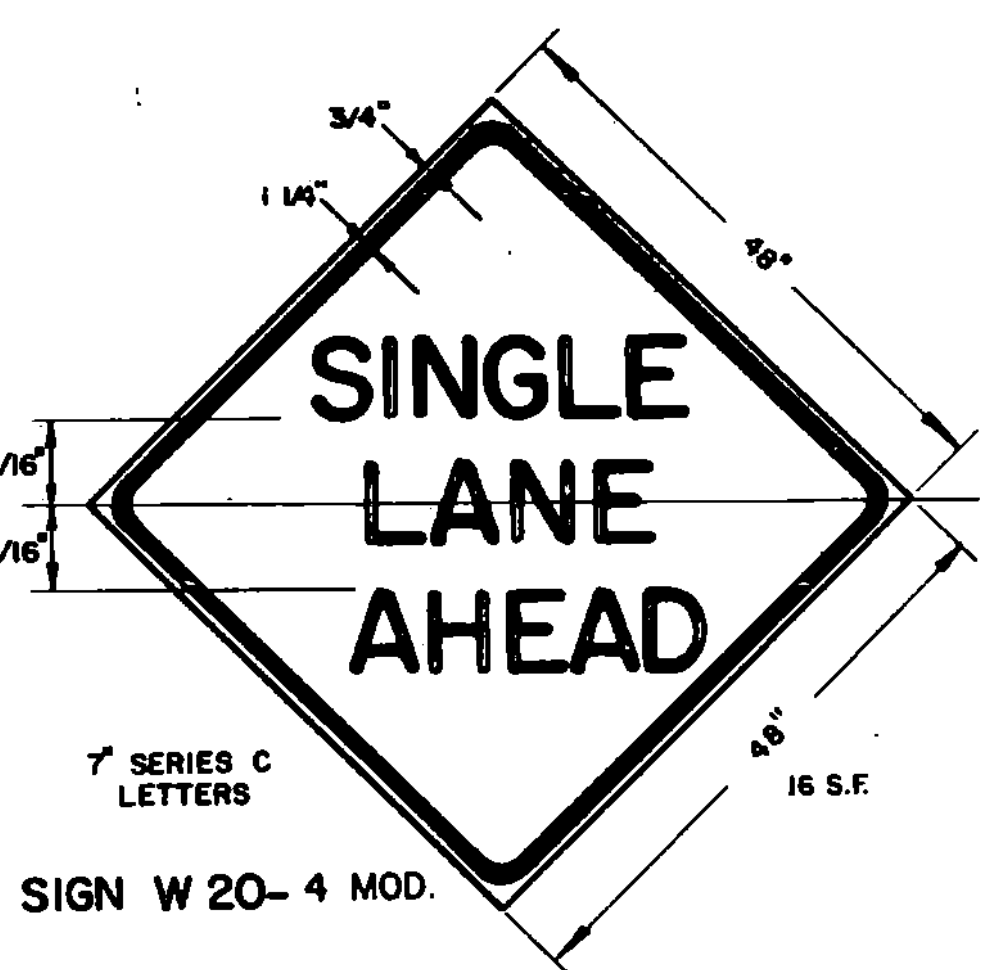
SIGN W20-2
6" SERIES D LETTERS
16 S.F.



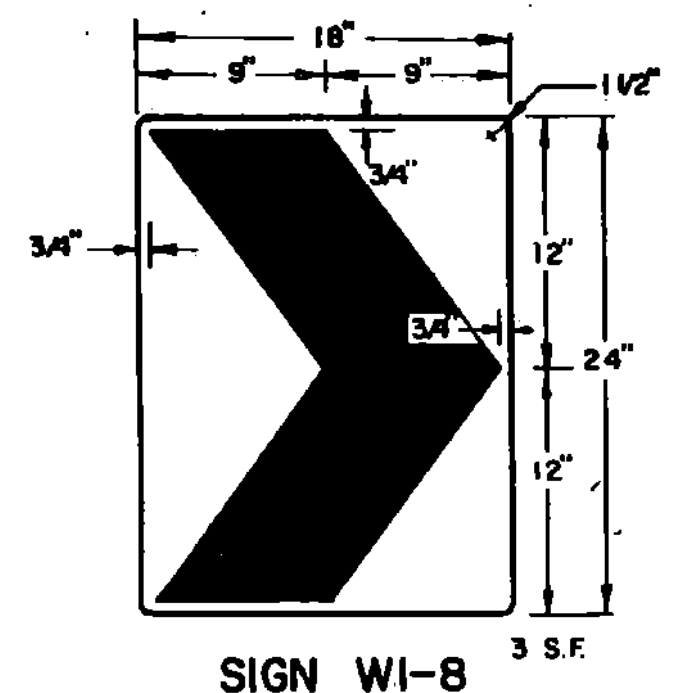
SIGN W20-3
7" SERIES D LETTERS
16 S.F.



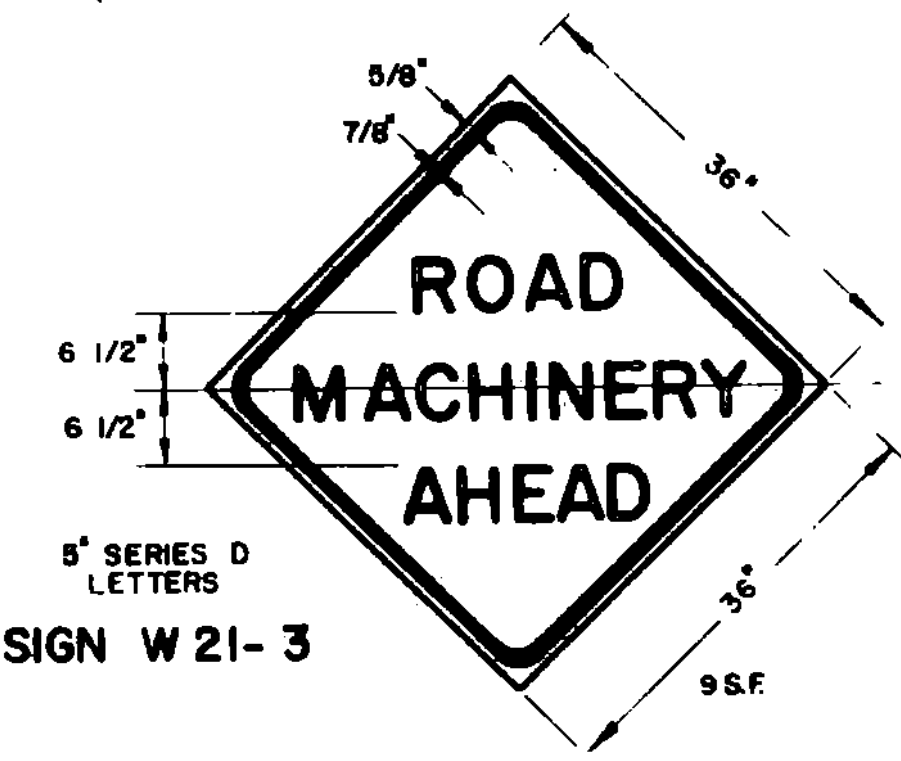
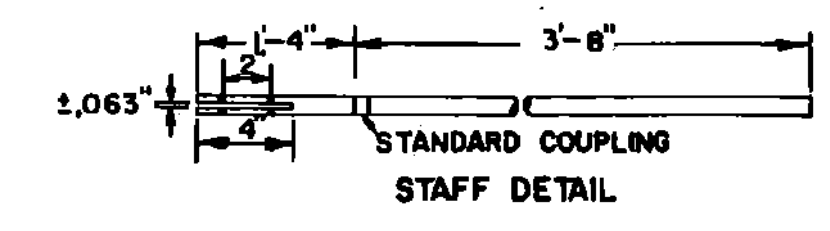
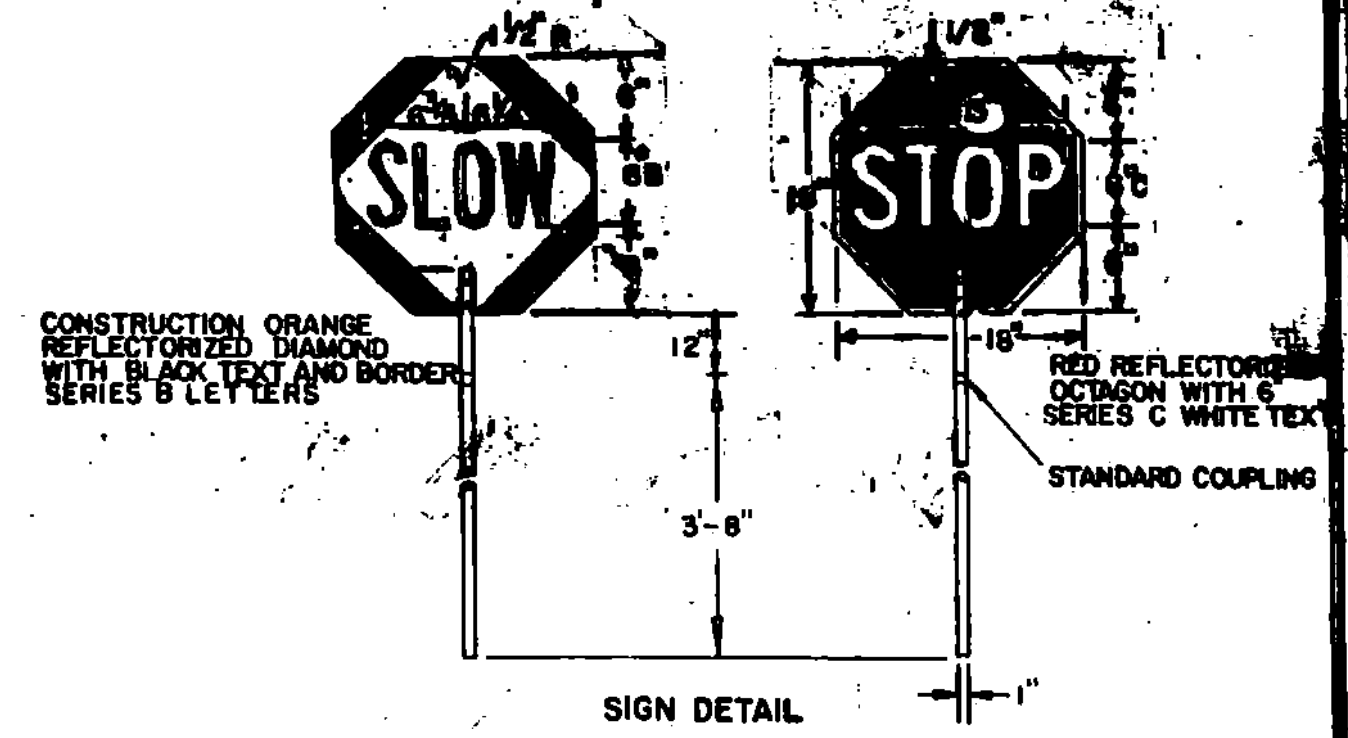
SIGN W20-7a
16 S.F.



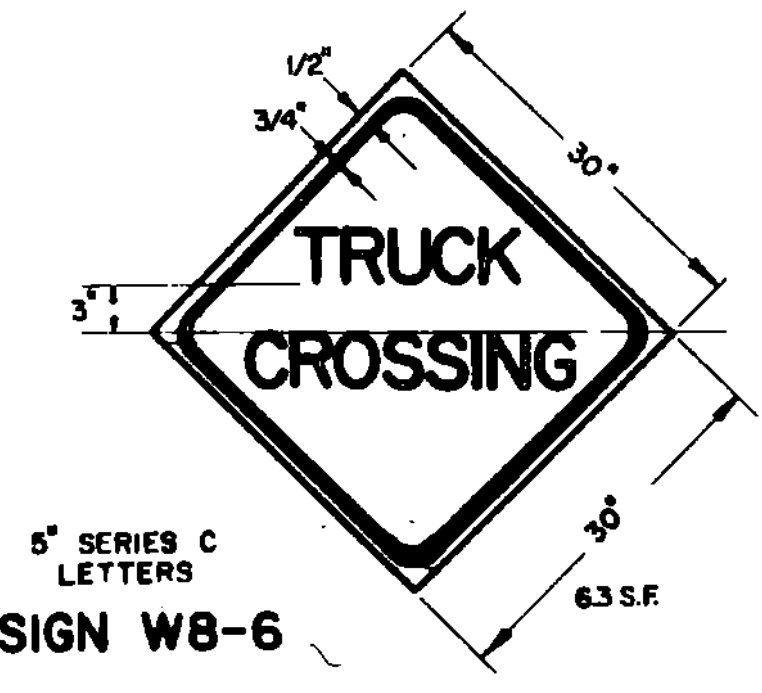
SIGN W20-4 MOD
7" SERIES C LETTERS
16 S.F.



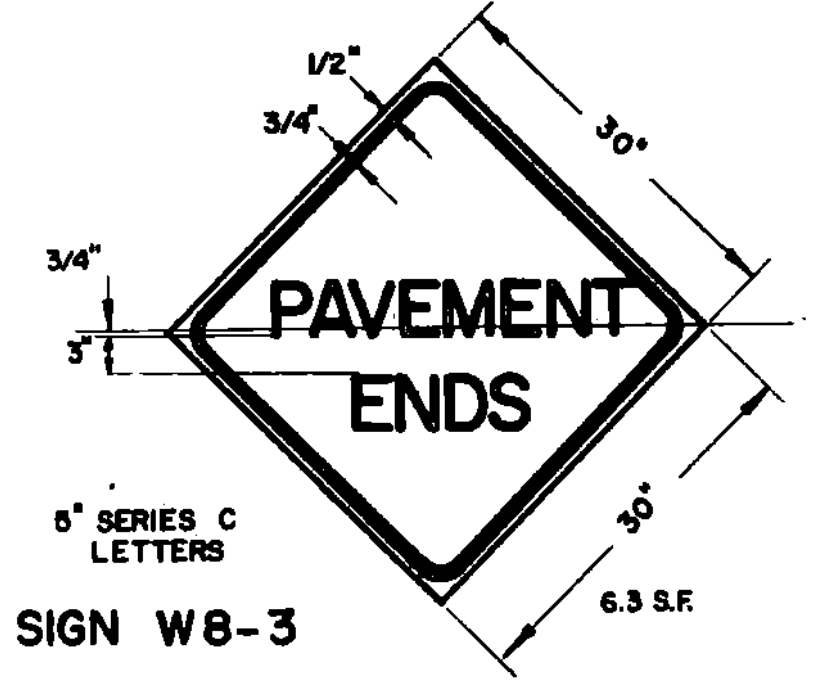
SIGN W1-8
3 S.F.



SIGN W21-3
6" SERIES D LETTERS
9 S.F.



SIGN W8-6
5" SERIES C LETTERS
6.3 S.F.



SIGN W8-3
5" SERIES C LETTERS
6.3 S.F.

NOTES

APPLICATION OF STANDARDS

Since it is not possible to prescribe detailed standards of application for all of the situations that may conceivably arise on a construction project, reference must be made to the Manual on Uniform Traffic Control Devices for the principles, procedures and standards that will be required in connection with on-project construction signs and barricades. The signs here shown represent a sample of those that probably will be most used.

DESIGN

The designs of the signs and barricades shall conform with the details shown on this sheet and with the standards prescribed in the Manual. Deviations will not be permitted.

MATERIALS

The signs shall be of metal, wood, plywood, hardwood 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 AND COLORS

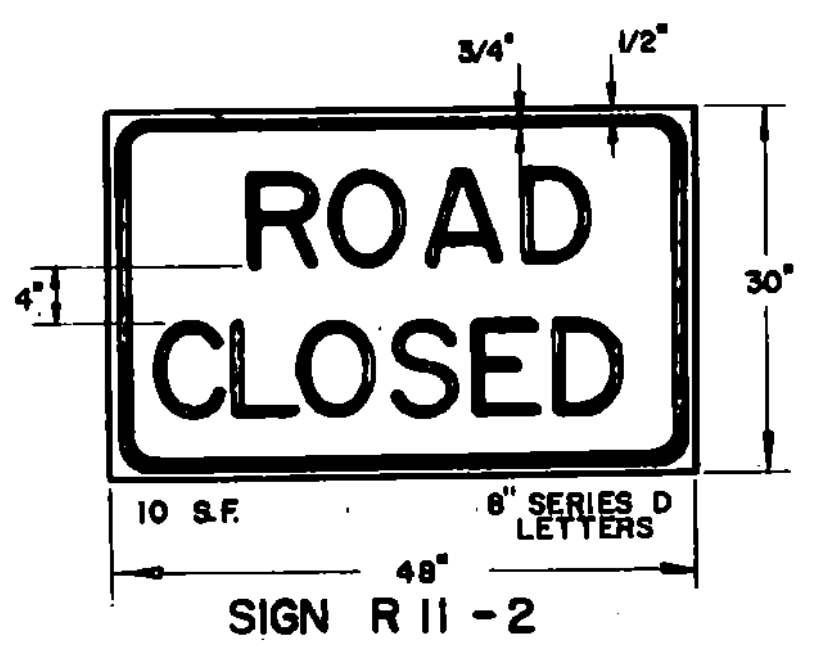
All signs except sign R11-2 and the sign paddle shall have black text and borders on an encapsulated lens reflective orange background. Sign R11-2 shall have black text and border on an encapsulated lens reflective white background.

INSTALLATION

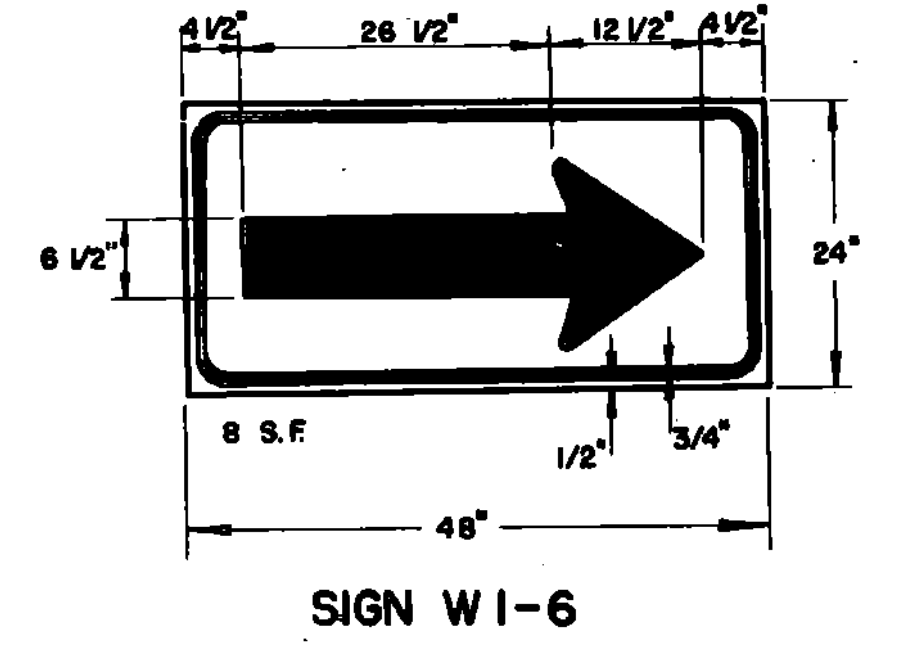
Signs and barricades shall be in place prior to the start of the construction operation to which they apply, and shall be removed promptly when the need no longer exists. Each sign shall be erected in a neat and workmanlike manner on wood or metal posts set securely in the ground, or on portable supports for temporary use, or on barricades when appropriate. As a general rule, roadside signs shall be 5 feet above road level with the nearest edge at least 6 feet outside the shoulder point. The installation of all signs and barricades shall be subject to the approval of the Engineer.

MAINTENANCE

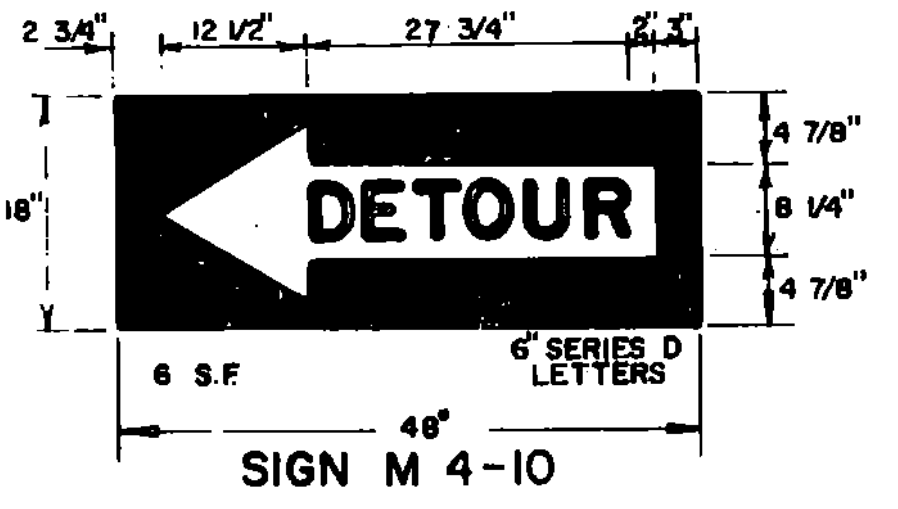
Signs shall be kept in a clean and legible condition at all times with the reflective quality completely unimpaired. Signs, sign supports, and barricades shall be repaired, cleaned, repainted or replaced whenever necessary. Weeds, shrubbery, construction materials, equipment, and snow shall not be allowed to obscure any sign or barricade. The maintenance of all traffic control devices shall be subject to the orders of the Engineer.



SIGN R11-2
10 S.F.
6" SERIES D LETTERS



SIGN W1-6
8 S.F.
ARROW RIGHT OR LEFT AS REQUIRED



SIGN M4-10
6 S.F.
6" SERIES D LETTERS
ARROW LEFT OR RIGHT AS REQUIRED.

The on-project construction signs covered by this sheet are intended to be used as the situations apply within normal two-lane highway construction areas, for the protection of the public and workmen and for the guidance of traffic through or around construction operations. When messages other than those shown here are needed, the signs and their applications shall conform with the standards set forth in the Manual on Uniform Traffic Control Devices.

The cost of furnishing, erecting, maintaining and removing all construction approach signs shall be considered as subsidiary work pertaining to the project as a whole and shall be included in the contract unit price bid for various items involved in the contract.

REVISIONS AND CORRECTIONS

DEC. 14, 1973 - BEADS ON PAINT FOR BACKGROUND MATERIAL REMOVED.
DEC. 14, 1974 - REFLECTIVE MATERIAL CHANGE.
JUNE 7, 1977 - REFLECTIVE MATERIAL NOTE CHANGED.
JUNE 7, 1977 - SIGNS REFERENCED TO NUMBERS IN M.U.T.C.D.
APR. 20, 1978 - FLAGPERSON SIGN CHANGED TO SYMBOL.
DEC. 18, 1978 - ILLUMINATION DELETED.
FEB. 27, 1980 - SIGN W1-8 AND SIGN PADDLE ADDED. SIGN DETAILS REVISED.
APR. 1, 1980 - SIGN PADDLE SIGN REVISED.
FEB. 3, 1986 - UPDATED TO 1986 SPECIFICATIONS

APPROVED

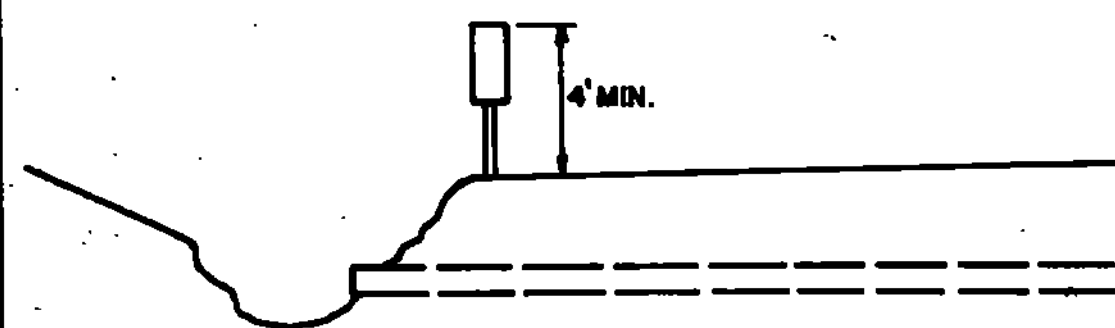
Dec. 14, 1971	<i>R. H. Arnold</i> CHIEF ENGINEER
	<i>E. W. Stishny</i> ASST. CHIEF ENGINEER
	<i>G. M. Law</i> HIGHWAY ENGINEER

TRAFFIC SIGNS
ON-PROJECT CONSTRUCTION SIGNS



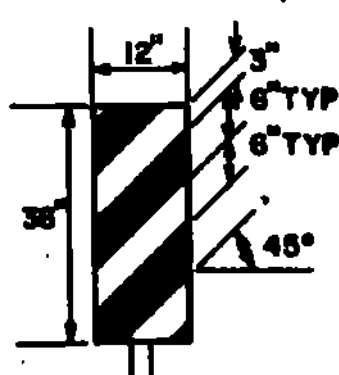
STANDARD
E-6

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



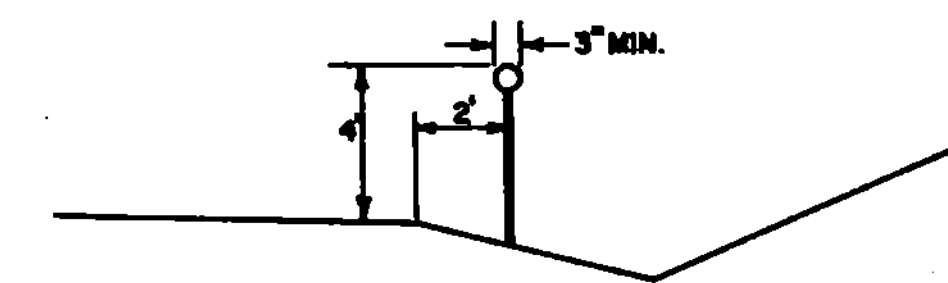
HAZARD MARKER TYPICAL

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 CONDITIONS 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.

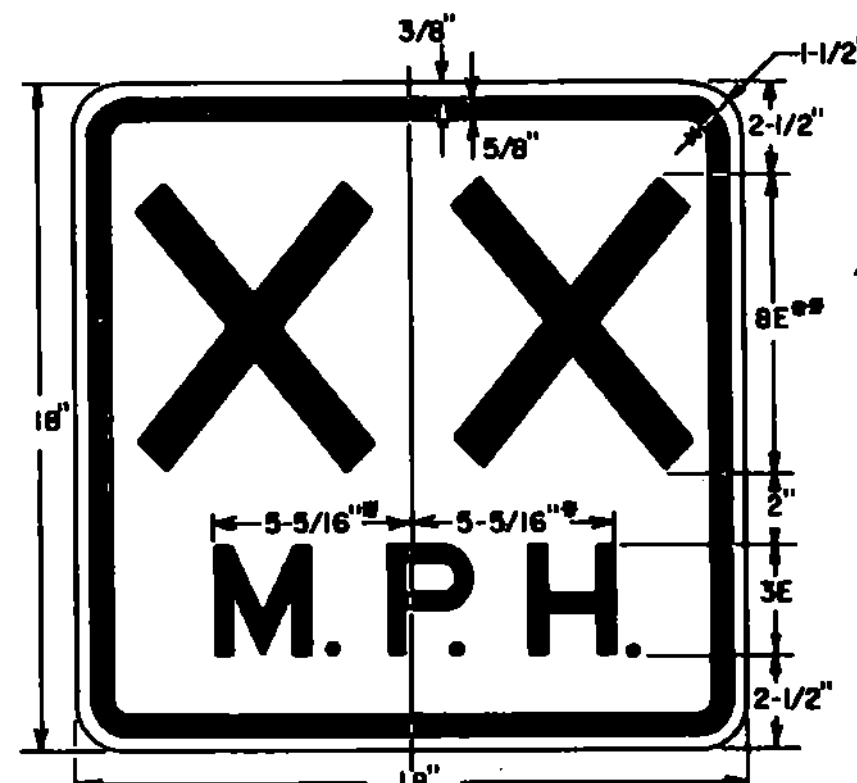


SYMBOL

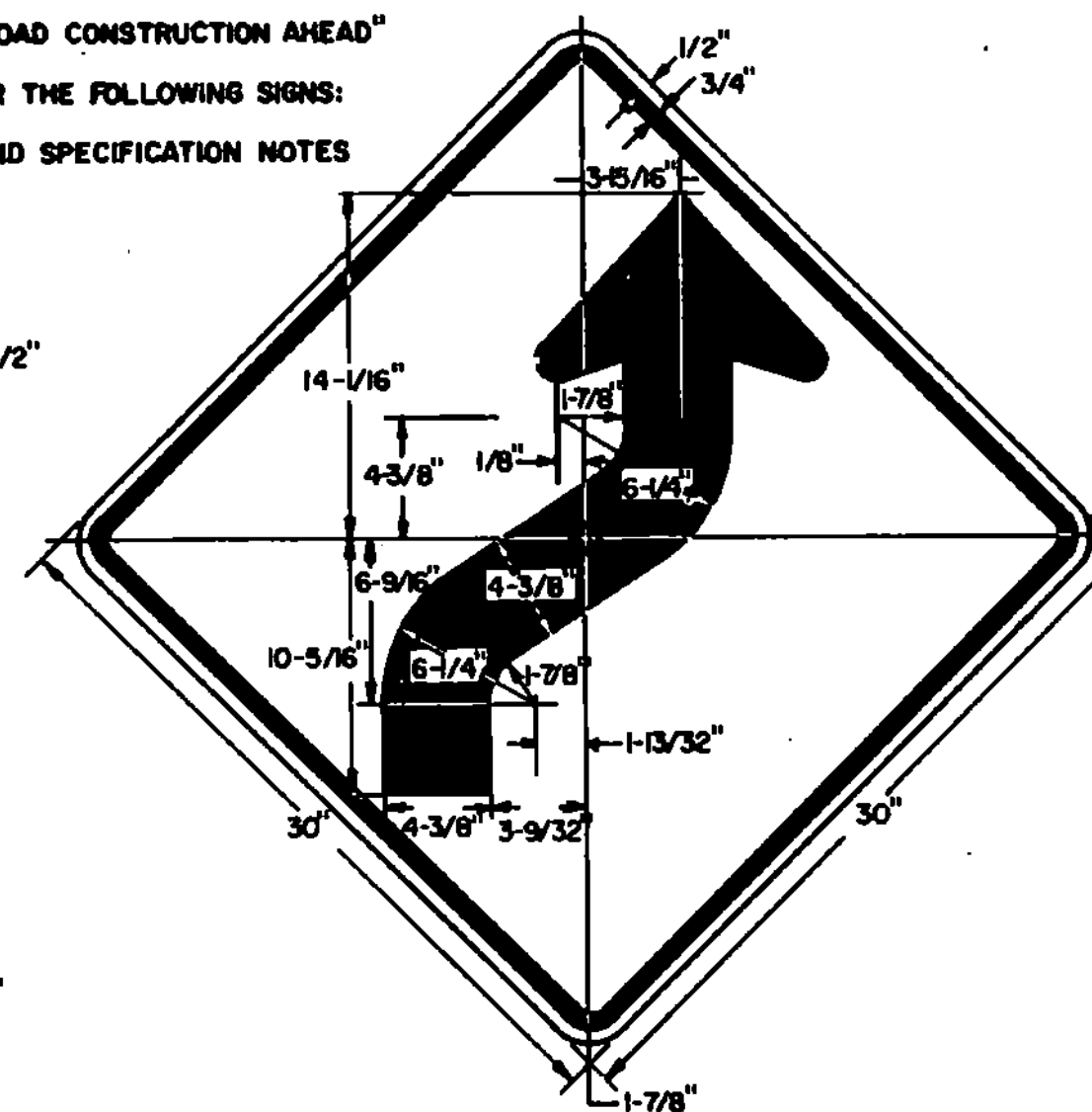
DELINEATOR TYPICAL

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.

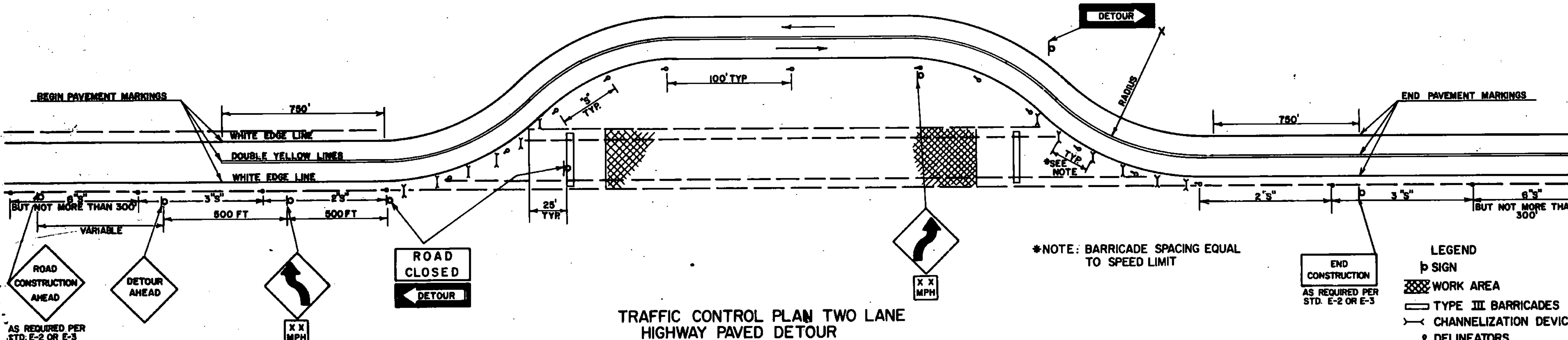


NOTES

- SIGNS & DELINEATION SHOWN FOR ONE DIRECTION OF TRAVEL ONLY.
- 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.
- FLASHING WARNING LIGHTS MAY BE USED TO CALL ATTENTION TO THE EARLY WARNING SIGNS.
- CONTRACTOR IS RESPONSIBLE FOR PAVEMENT MARKING AND SHALL REMOVE ANY CONFLICTING OR CONFUSING EXISTING MARKINGS.
- ADDITIONAL SIGNING MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
- UNPAVED DETOURS REQUIRE PAVEMENT MARKINGS FOR TRANSITIONS ON EXISTING PAVEMENT.

DELINEATOR SPACING

DESIGN SPEED MPH	REQUIRED RADIUS FT	SPACING - "S" FT
25	150	30
30	250	40
40	450	60
50	750	75



TRAFFIC CONTROL PLAN TWO LANE HIGHWAY PAVED DETOUR

- LEGEND**
- SIGN
 - ▨ WORK AREA
 - ▬ TYPE III BARRICADES
 - CHANNELIZATION DEVICES
 - DELINEATORS

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 ERRECTED 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.

- WOODEN BARRICADES (TYPES I AND II)
 - 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.
 - MAY BE USED IF OPERATING SPEEDS OF 20 M.P.H. OR LESS ARE EXPECTED.
- 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

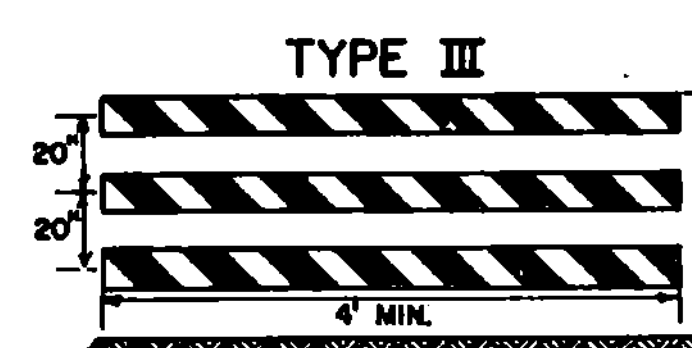
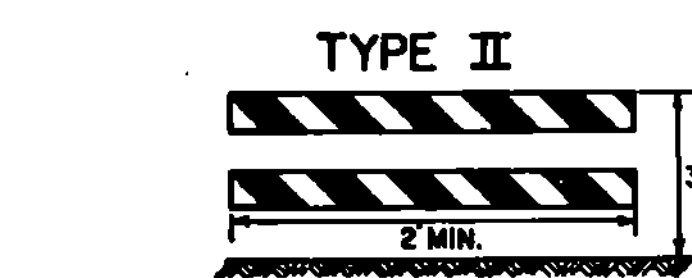
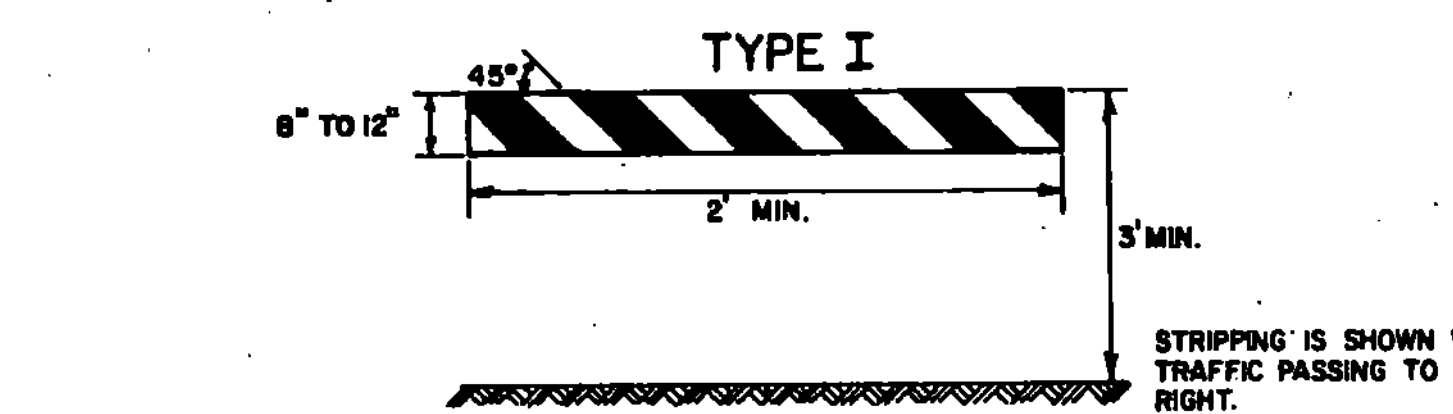
THE BARRICADES PANELS SHOWN ON THIS SHEET SHALL HAVE ALTERNATING REFLECTORIZED WHITE AND ORANGE STRIPES. THE ORANGE SHALL CONFORM WITH THE STANDARD COLORS ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS AND APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY 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.



BARRICADE CHARACTERISTICS	I		II	
	CHARACTERISTICS	CHARACTERISTICS	CHARACTERISTICS	CHARACTERISTICS
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 STRY BRACE		
FLEXIBILITY	ESSENTIALLY MOVEABLE	PORTABLE		
ANGLE OF STRIPE	45°	45°		
COLOR OF STRIPS	ORANGE AND WHITE	ORANGE AND WHITE		

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 REPLACED AS ORDERED BY THE ENGINEER.

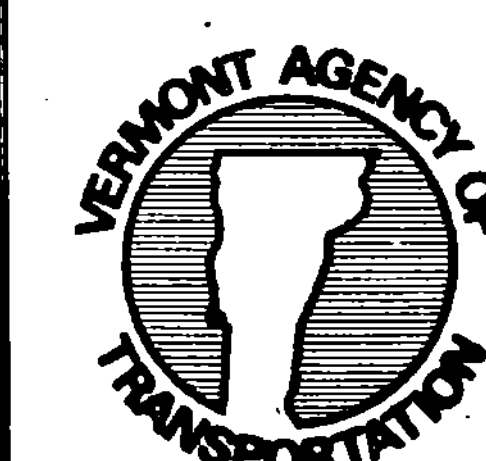
LIGHTING

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

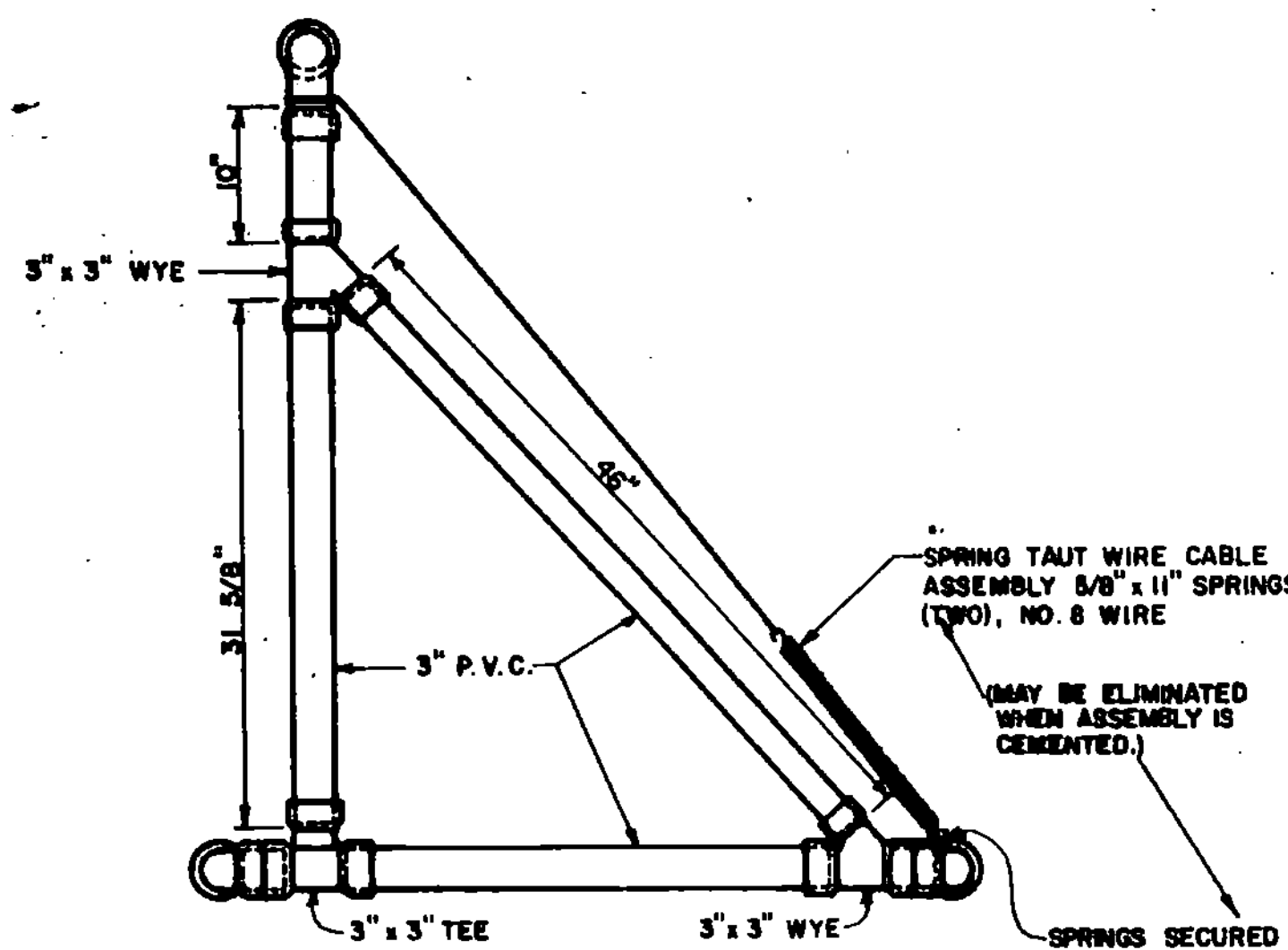
REVISIONS AND CORRECTIONS
 FEB. 12, 1982 MATERIALS NOTE CLARIFIED, SIGN ADDITIONS.
 FEB. 2, 1983 NOTE # 6 RE: UNPAVED DETOURS ADDED.
 FEB. 8, 1986 UPDATED TO 1986 SPECIFICATIONS

APPROVED: _____
 DATE: SEPT. 22, 1981
 DIRECTOR OF ENGINEERING AND CONSTRUCTION
 CHIEF OF DESIGN
 TRANSPORTATION DESIGN ENGINEER

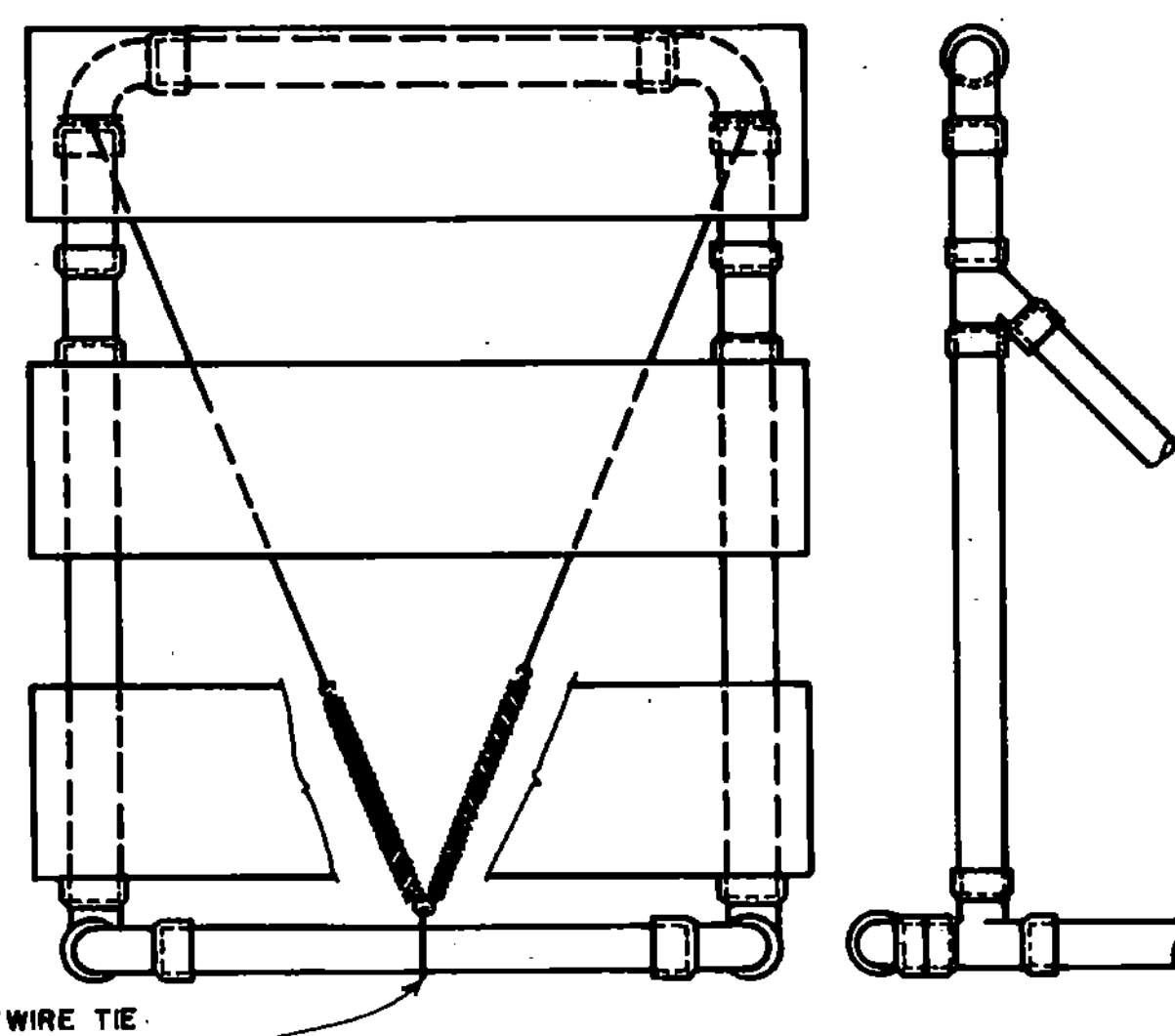
DELINEATION, BARRICADES AND DETOURS FOR CONSTRUCTION AREAS



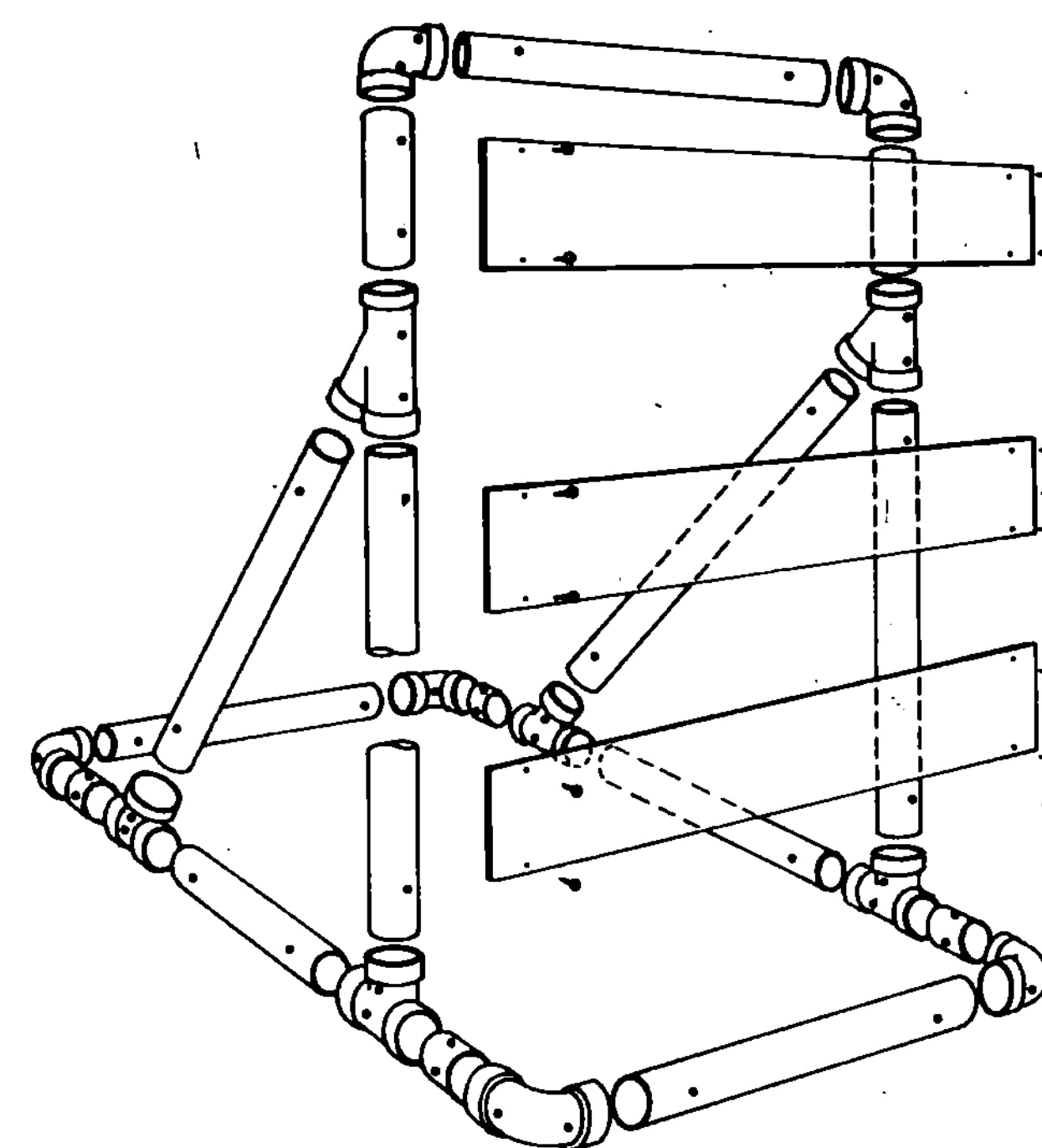
STANDARD E-7



SIDE VIEW



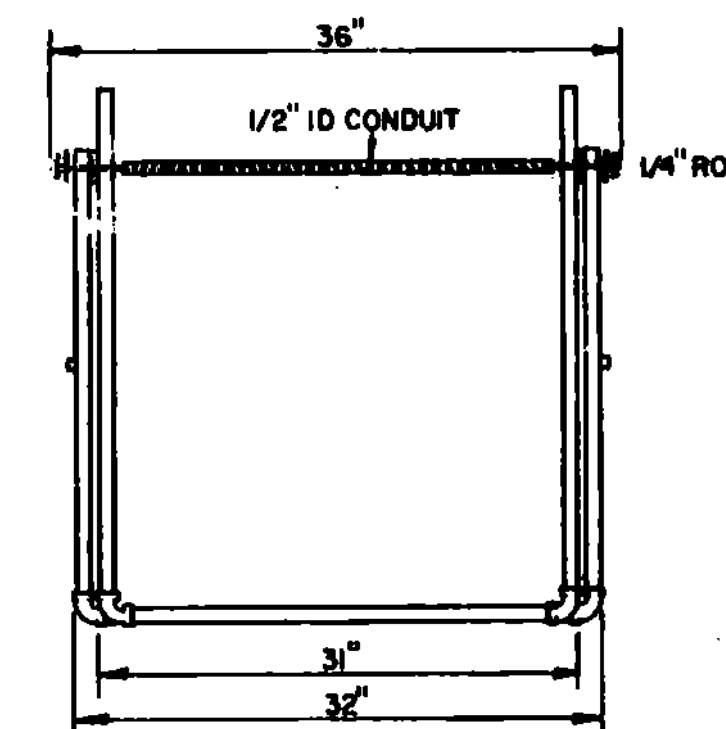
FRONT VIEW



BARRICADE ASSEMBLY

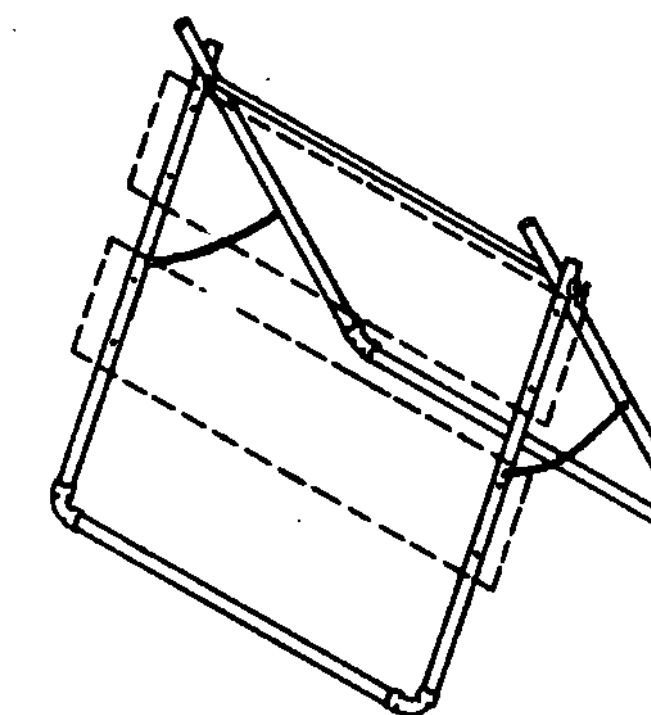
MATERIALS LIST FOR ONE BARRICADE

3" Diameter Pipe	30 LF
3" 1/4 Bend Elbow	6 EA
3" Tees	2 EA
3" Wyes	4 EA
8" x 48" x .025 Barricade Panels	2 EA
5/8" x 11" No. 8 Spring	2 EA
1" No. 14 Pan Head Metal Screws	12 EA
No. 14 Black Annealed Tie Wire	15 LF



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



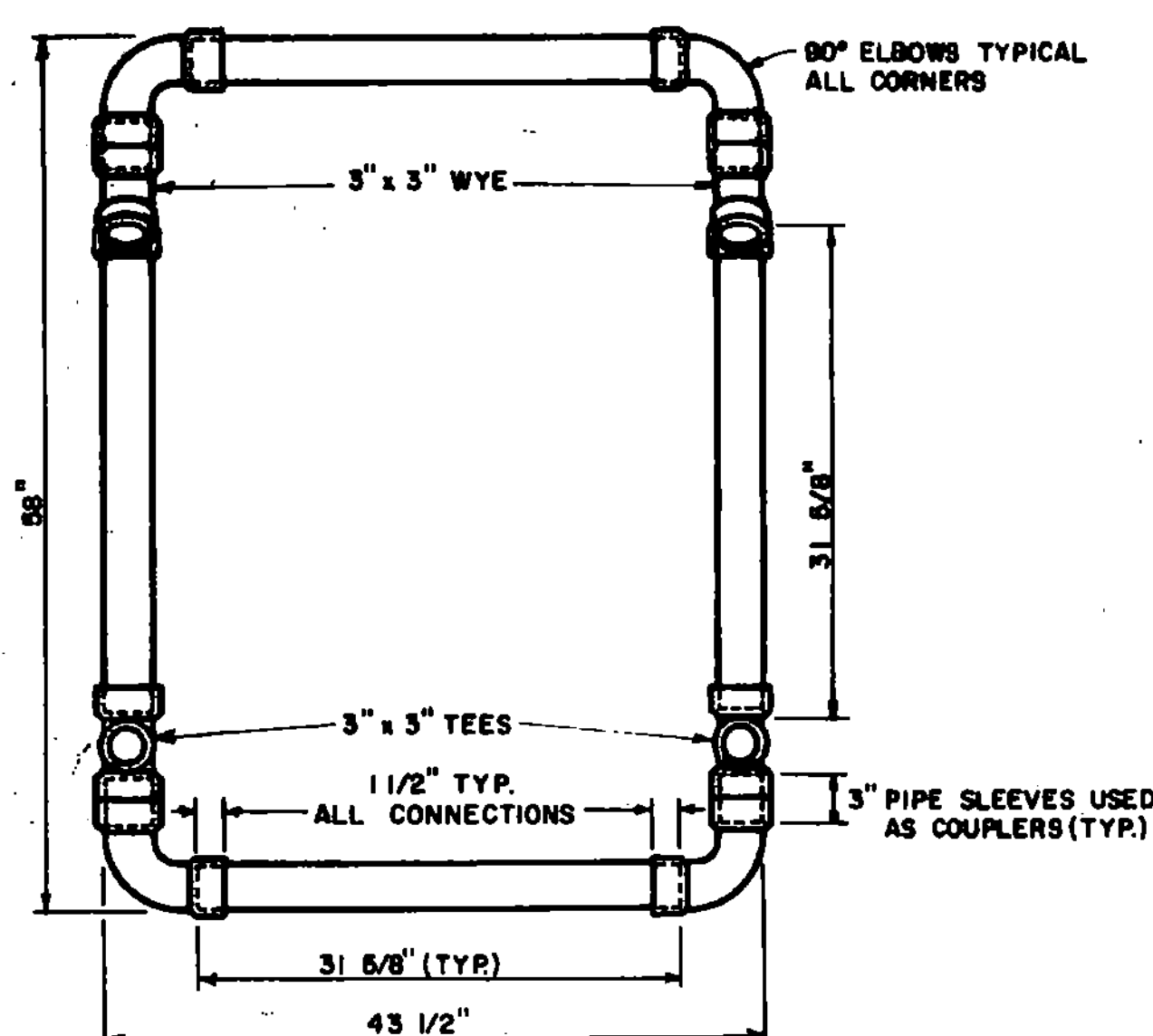
TYPE I & II BARRICADE DETAILS

BARRICADES SHALL BE STABILIZED WITH SAND BAGS OF MINIMUM WEIGHT WHICH WILL NOT CONSTITUTE A HAZARD WHEN BARRICADE IS HIT. THEY SHALL BE PLACED ONLY ON THE BASE FRAME OF THE BARRICADE. STABILIZERS SHALL BE SO PLACED AS NOT TO BE A HAZARD TO VEHICLES PASSING ON EITHER SIDE.

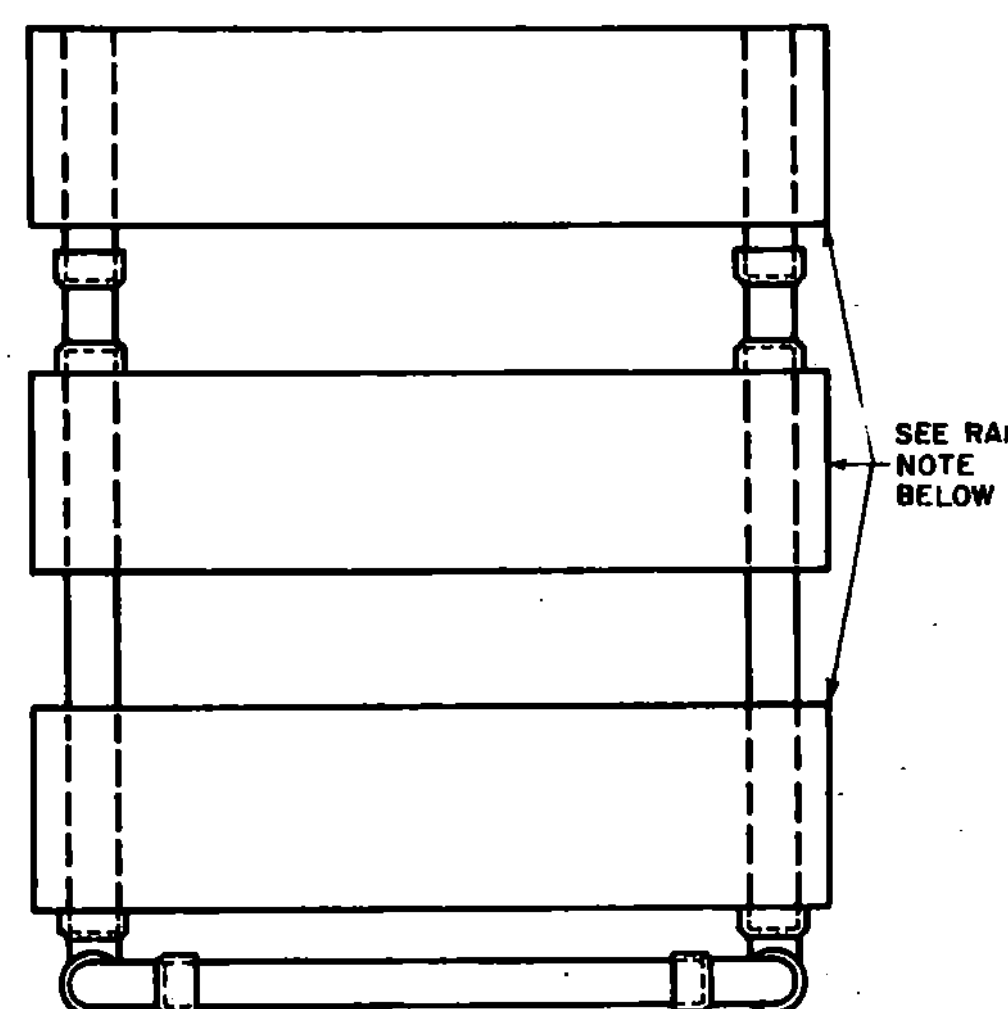
IF BARRICADE REPLACEMENT COSTS CAN BE CONSIDERED NEGLIGIBLE, GLUED JOINTS MAY PROVIDE ADDITIONAL STABILITY TO THE INSTALLATION.

WARNING LIGHTS

WARNING LIGHTS, IF REQUIRED BY THE PLANS OR RESIDENT ENGINEER, SHALL BE AFFIXED TO THE TOP OF THESE BREAKAWAY BARRICADES WITH A MINIMUM MOUNTING HEIGHT OF 36 INCHES TO THE BOTTOM OF THE LENS. A FLASHING WARNING LIGHT SHOULD BE PLACED ON BARRICADES USED SINGLY AND STEADY BURN WARNING LIGHTS SHOULD BE PLACED ON BARRICADES USED IN A SERIES FOR TRAFFIC CHANNELIZATION. THE WARNING LIGHTS SHALL CONFORM TO THE REQUIREMENTS FOUND IN THE M.U.T.C.D. WHEN THE INTEGRAL WARNING LIGHT UNIT IS USED, THE BATTERY PACK SHALL CONTAIN A LIGHT WEIGHT DRY CELL BATTERY AND THE UNIT SHALL BE RESTRAINED WITH A TETHER CABLE OR WIRE (12' LENGTH) SECURELY FASTENED TO THE BARRICADES SO AS TO AVOID HAVING THE UNIT BECOME A DANGEROUS FLYING OBJECT IF THE BARRICADE IS HIT.



TOP VIEW OF BASE



SEE STANDARD E-7 FOR RAIL DETAILS.
RAILS ATTACHED WITH 1" NO. 14 PAN HEAD METAL SCREW.

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 8" 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 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 substituted. 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.

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. 6, 1982 - CEMENTING NOTE AND BARRICADES TYPE I & II ADDED.
JUNE 13, 1984 - RAILS CHANGED FROM 9" TO 8".
JAN. 3, 1985 - SAND AND WARNING LIGHT NOTE ADDED.
FEB. 3, 1988 - UPDATED TO 1985 SPECIFICATIONS

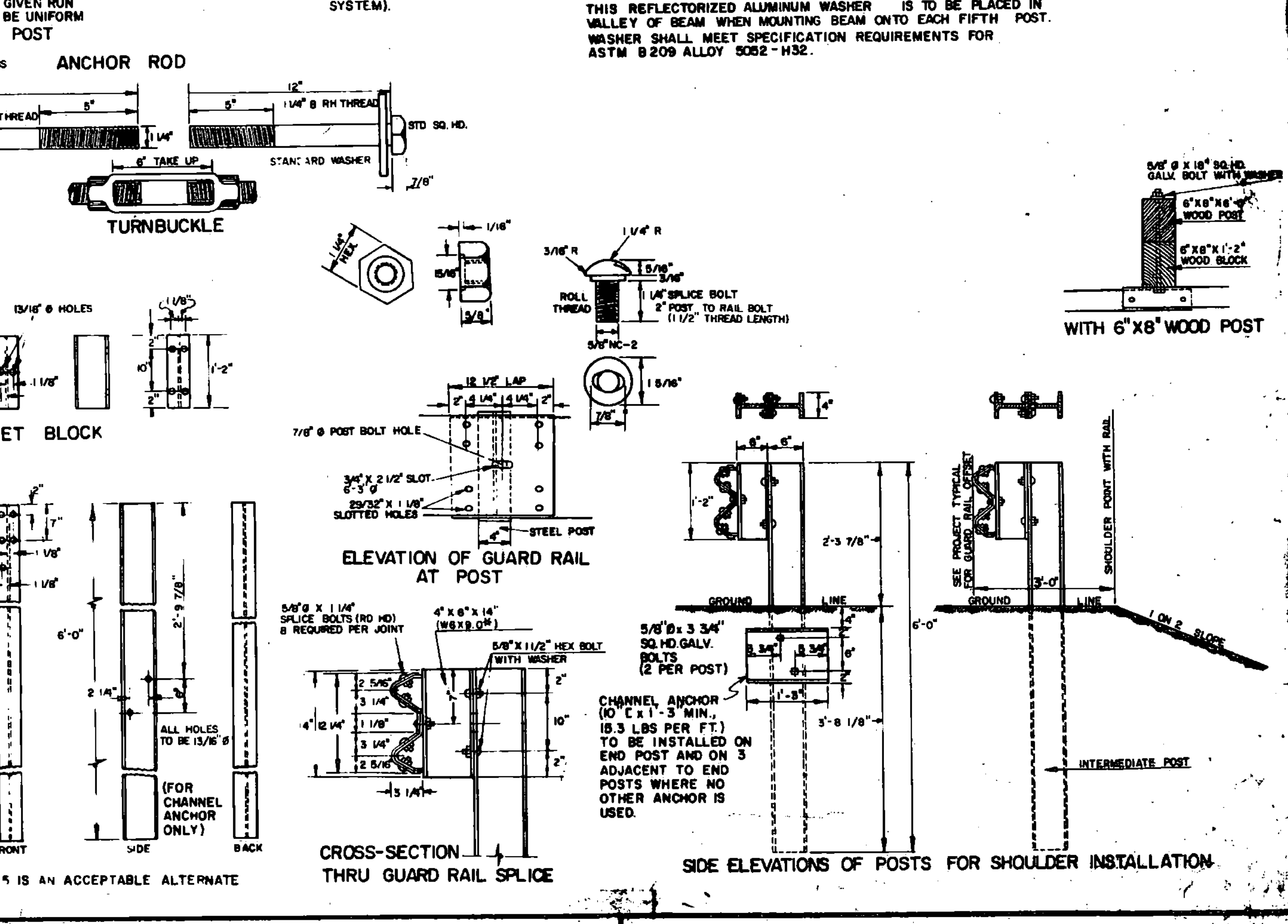
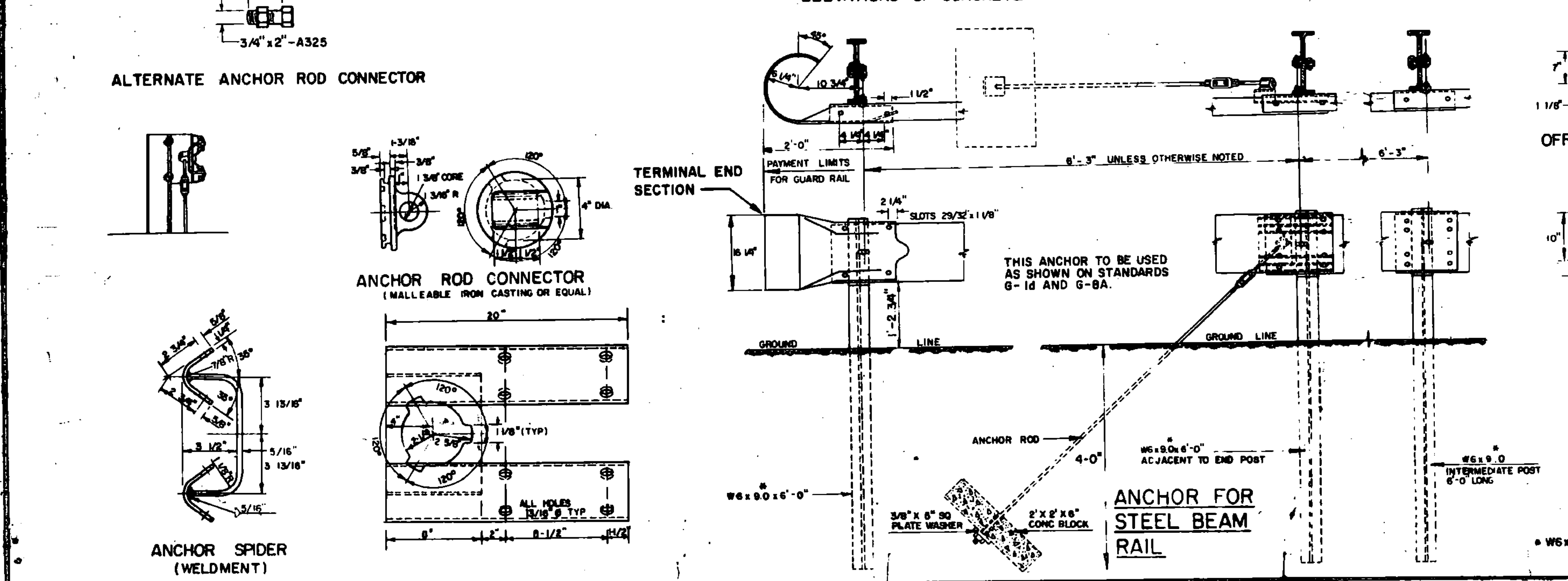
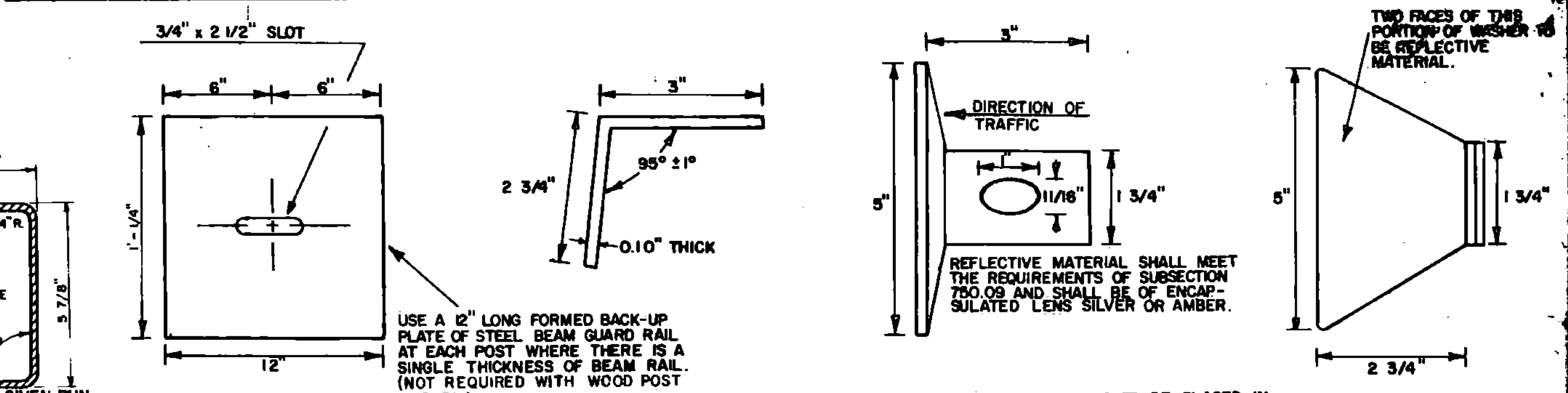
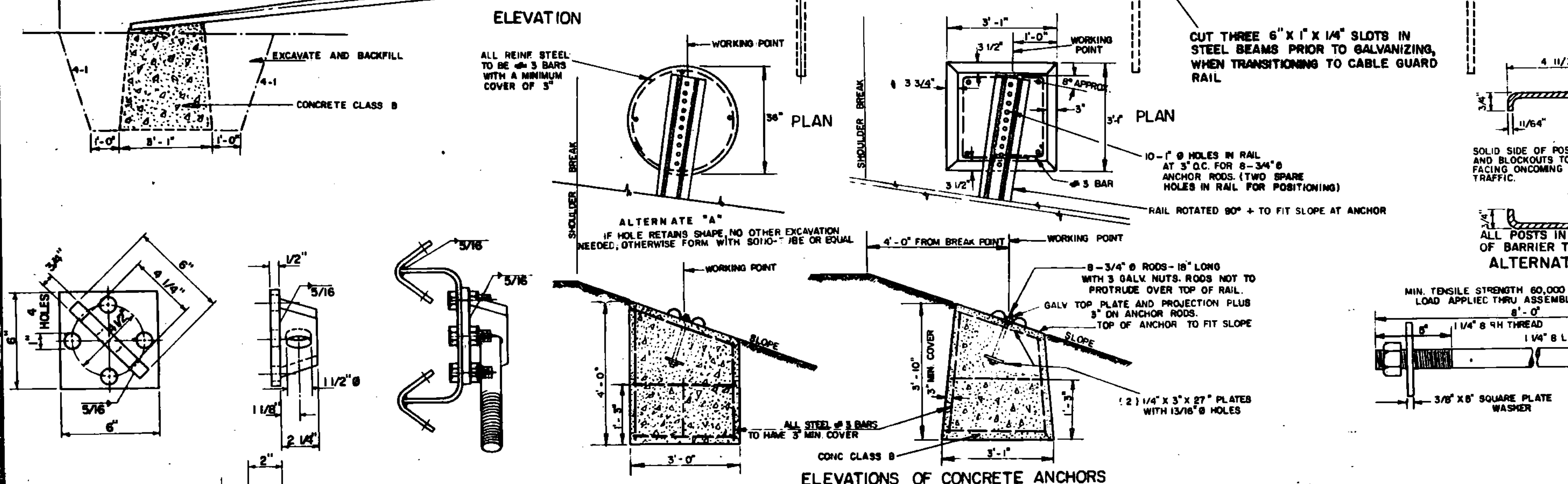
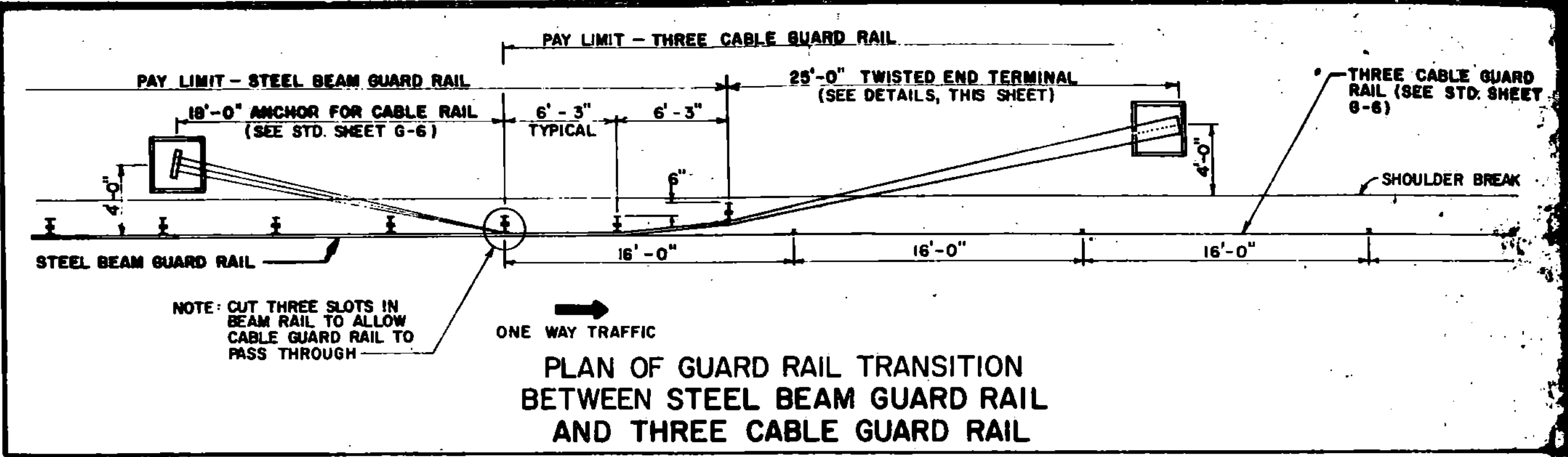
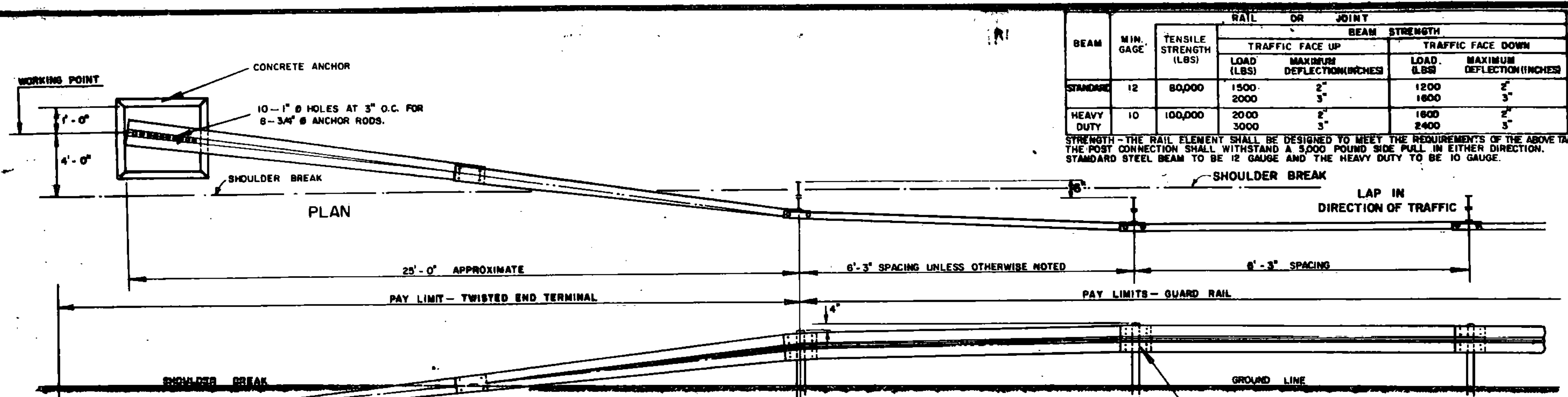
APPROVED
DATE Dec 30, 1976
E.H. Stacey
CHIEF ENGINEER
RO Munn
ASST. CHIEF ENGINEER
Lois O'Connell
HIGHWAY ENGINEER

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
STANDARD	12	80,000	1500 LOAD (LBS) MAXIMUM DEFLECTION (INCHES)	1200 LOAD (LBS) MAXIMUM DEFLECTION (INCHES)
HEAVY DUTY	10	100,000	2000 LOAD (LBS) MAXIMUM DEFLECTION (INCHES)	1600 LOAD (LBS) MAXIMUM DEFLECTION (INCHES)

STRENGTH - THE RAIL ELEMENT SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF THE ABOVE TABLE. THE POST CONNECTION SHALL WITHSTAND A 5000 POUND SIDE FALL IN EITHER DIRECTION. STANDARD STEEL BEAM TO BE 12 GAUGE AND THE HEAVY DUTY TO BE 10 GAUGE.



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. 18, 1980	INCREASED SHOULDER WIDENING FOR GUARD RAIL.
MAR 12, 1984	REVISED ANCHOR SPIDER DETAILS
JUNE 5, 1984	POST SIZE AND BACK UP PLATE NOTE CHANGED
DEC. 21, 1984	REMOVED POST WASHER
OCT. 31, 1985	REVISED TO CONFORM WITH 1986 SPECIFICATIONS

APPROVED: *Doc B. 911*

R. W. Arnold
CHIEF ENGINEER

E. H. Stehney
ASST. CHIEF ENGINEER

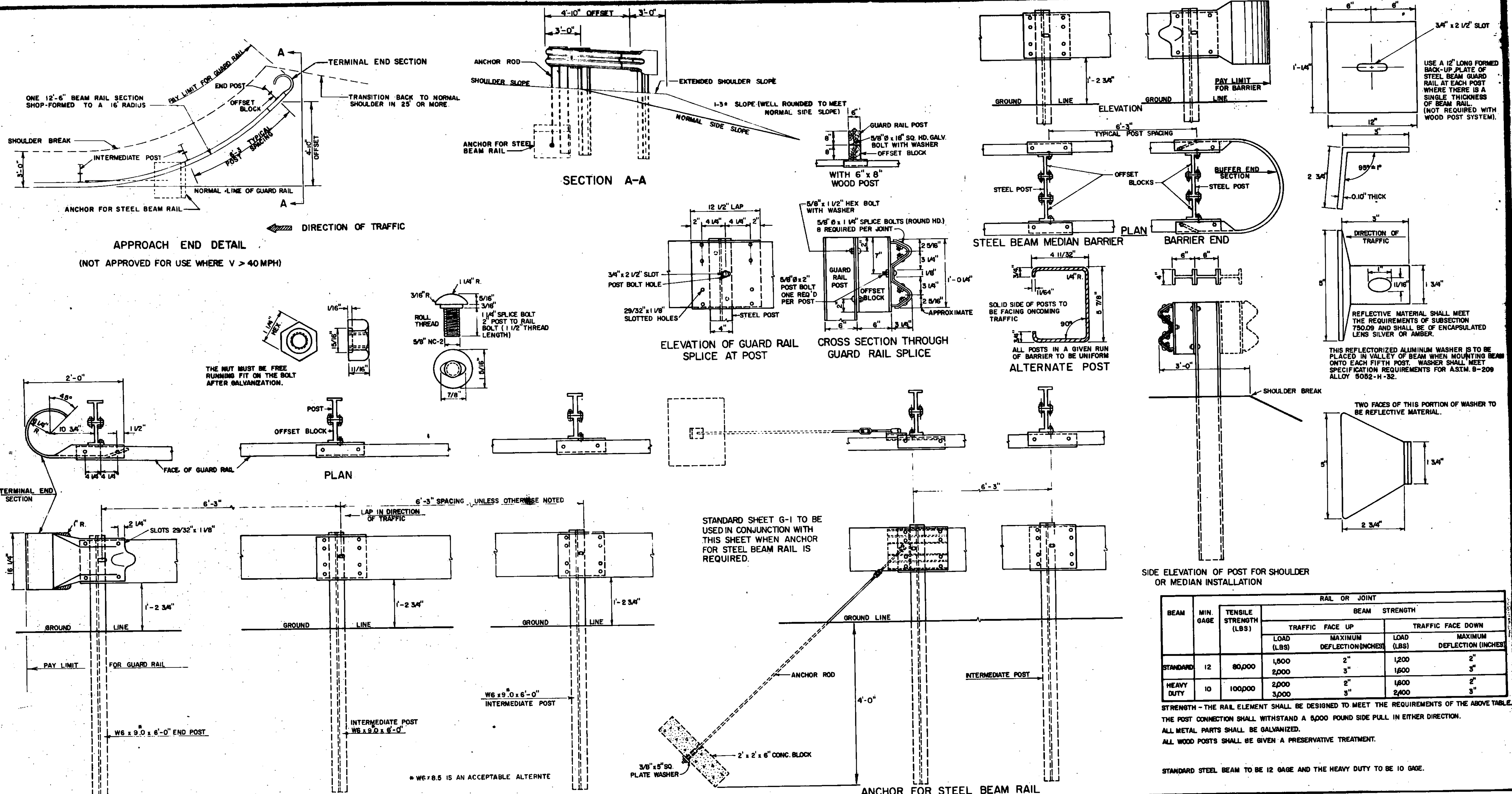
L. M. Lane
HIGHWAY ENGINEER

STEEL BEAM GUARD RAIL
HEAVY DUTY STEEL BEAM GUARD RAIL
TWISTED END TERMINAL
ANCHOR FOR STEEL BEAM RAIL

VERMONT AGENCY

STANDARD

G-1



REVISIONS & CORRECTIONS

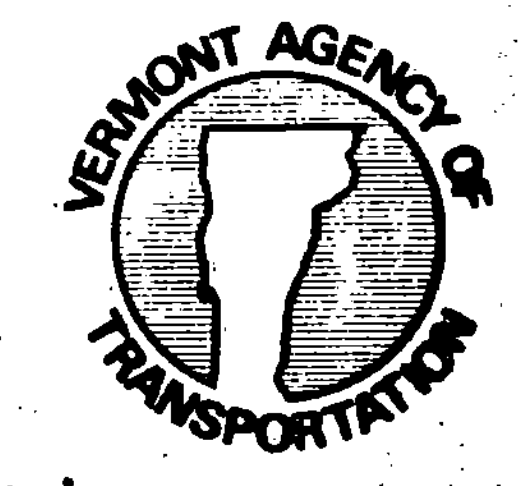
- SEPT. 10, 1976 - MINIMUM LENGTH & ADVANCE OF NEED NOTES REMOVED.
- MAR. 2, 1977 - ROUND WOOD POSTS REMOVED.
- SEPT. 12, 1977 - REFERENCE TO ROUND WOOD POSTS REMOVED.
- MAY 29, 1979 - NOTE ON REFLECTIVE MATERIAL CHANGED.
- APRIL 28, 1980 - APPROACH END DETAILS REDRAWN.
- DEC. 16, 1980 - INCREASED SHOULDER WIDENING FOR GUARD RAIL.
- JUNE 5, 1984 - POST SIZE AND BACK UP PLATE NOTE CHANGED.
- DEC. 21, 1984 - REMOVED POST WASHER.
- OCT. 31, 1985 - REVISED TO CONFORM WITH 1986 SPECIFICATIONS.

APPROVED: *E. H. Stuckey*
DATE: *May 6, 1976*
CHIEF ENGINEER

BO Munn
ASST. CHIEF ENGINEER

Louise Jones
HIGHWAY ENGINEER

STEEL BEAM GUARD RAIL
HEAVY DUTY STEEL BEAM GUARD RAIL
STEEL BEAM MEDIAN BARRIER
ANCHOR FOR STEEL BEAM RAIL



STANDARD
G-1d