

INDEX					
PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION
MARS-RS-433(1)	66-13-6920	CONTINUOUS PRESTRESSED CONC I BEAM	3 SPANS 39'-0, 39'-9 39'-0	WEST FORK LITTLE BLUE RIVER	936+10 LINE "A"

SHEET NO.	SHEET DESIGNATION	SUBJECT	F.H.W.A. APPROVAL
1	ONE SHEET	INDEX AND TITLE SHEET	
2	ONE SHEET	TYPICAL CROSS SECTION	
3	ONE SHEET	EROSION CONTROL	
4	ONE SHEET	ROAD PLAN AND PROFILE	
5	ONE SHEET	SOIL BORINGS	
6	C1	LAYOUT	
7	C2	GENERAL PLAN	
8	C3	BENT NO. 1 AND NO. 4 AND DETAILS	
9	C4	PIER NO. 2 AND NO. 3 AND DETAILS	
10	C5	SUPERSTRUCTURE AND DETAILS	
11	C6	SUPERSTRUCTURE AND DETAILS	
12	C7	BEAM DETAILS	
13	C8	SCREEDS	
14	ONE SHEET	BRIDGE SUMMARY	
15	ONE SHEET	BRIDGE ESTIMATE OF QUANTITIES	
16-19	FOUR SHEETS	CROSS SECTIONS LINE "A"	
20-21	TWO SHEETS	CROSS SECTIONS LINE "I-A"	

INDIANA DEPARTMENT OF HIGHWAYS

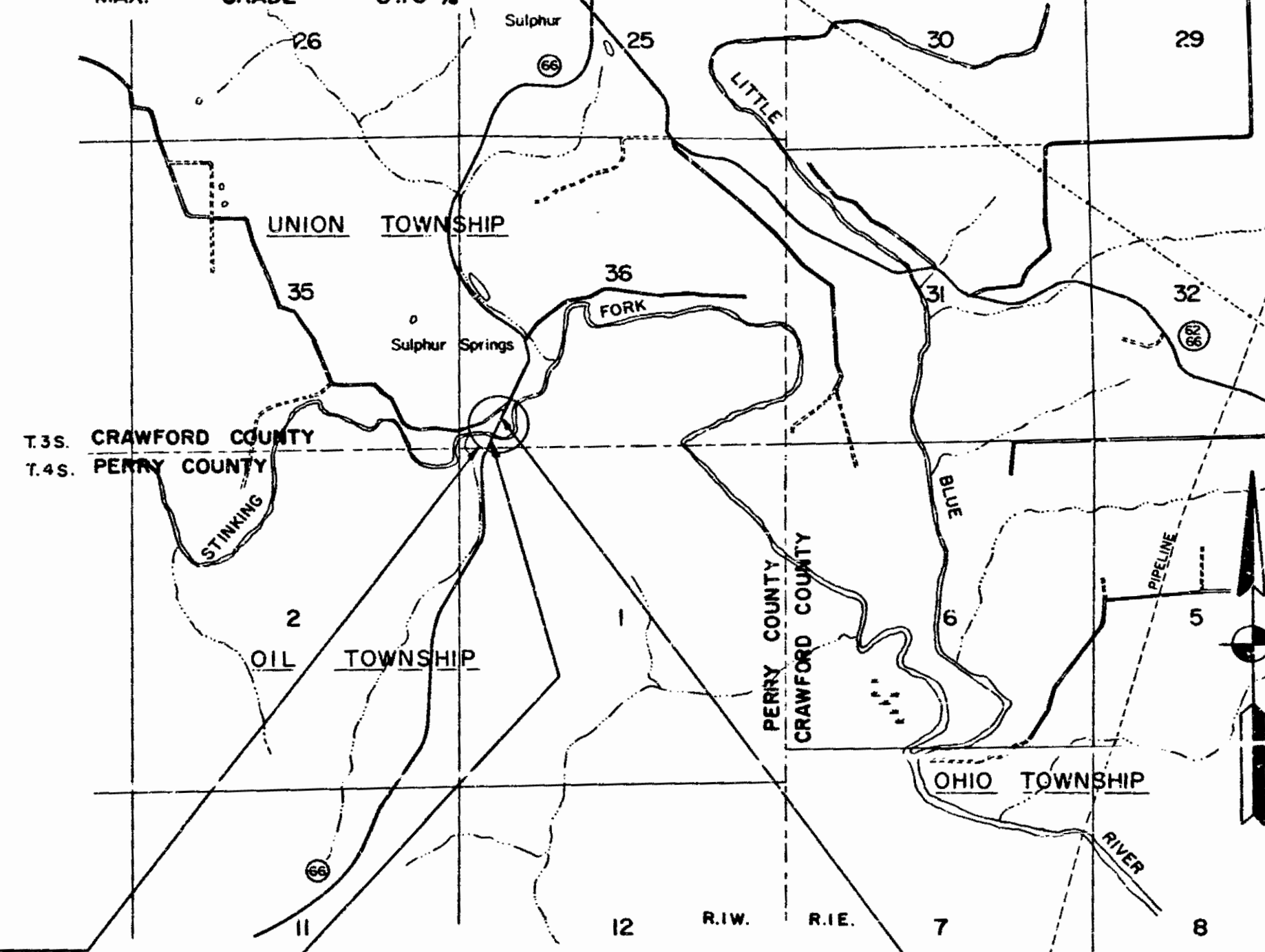
BRIDGE PLANS FOR SPANS OVER 20 FEET ON

STATE ROAD NO. 66

PROJECT NO. **RS-4313 (1) PE.**
ST-4313 (A) R/W
MARS-RS-4313 (1) CONST.

BEGINNING AT A POINT ON PRESENT STATE ROAD 66 APPROXIMATELY 20 FEET NORTH EASTERLY OF SAID LINE OF NORTH LINE OF SECTION 36, TOWNSHIP 3 SOUTH, RANGE 1 WEST CALLED THE BEGINNING OF PROJECT MARS-RS-4313(1) THEN EXTENDING NORTHERLY DIRECTION ALONG THE CENTERLINE OF PRESENT STATE ROAD 66 A DISTANCE OF APPROXIMATELY 380 FEET TO A POINT ON PRESENT STATE ROAD 66 CALLED THE ENDING OF PROJECT MARS-RS-4313(1) LOCATED IN SECTION 36, TOWNSHIP 3 SOUTH, RANGE 1 WEST, UNION TOWNSHIP, CRAWFORD COUNTY.

BRIDGE LENGTH: 0.023 MI.
 ROADWAY LENGTH: 0.049 MI.
 TOTAL LENGTH: 0.072 MI.
 MAX. GRADE: -0.70 %



LOCATION PLAN
SCALE: 1" = 2000'

Bridge File: 66-13-6920

End Project No MARS-RS-4313(1)
Station 938+00 Line "A"

NOTE: Wherever "INDIANA STATE HIGHWAY COMMISSION" appears in these plans, it shall be interpreted as "INDIANA DEPARTMENT OF HIGHWAYS"

Begin Project No MARS-RS-4313(1)
Station 934+20 Line "A"

TRAFFIC DATA		
A.D.T. (1984)		241 V.P.D.
A.D.T. (2004 PROJECTED)		235 V.P.D.
D.H.V. (2004 PROJECTED)		31 V.P.H.
TRUCKS		D.H.V. 7% A.D.T. II%
DESIGN SPEED		45 M.P.H.
ACCESS CONTROL		NONE

PLANS PREPARED BY:
MONICAL ASSOCIATES INC.
 CONSULTING ENGINEERS
 INDIANAPOLIS, INDIANA

CERTIFIED: *George L. Mullins*

DATE: *April 11, 1985*

DATE	REVISIONS SHEET NO.
6-26-85	1,4,6
10-2-85	1,4,6
4-14-86	1,2,4,7,8,10,11,14,15 Revised; 22,23,24,25,34,35,36,38 Deleted; 25A,27A,31A,31B,33A,34A,34B,34C Added

DATE	REVISIONS SHEET NO.

INDIANA DEPARTMENT OF HIGHWAYS
 STANDARD SPECIFICATIONS DATED 1985
 TO BE USED WITH THESE PLANS.

INDEX CONTINUED					
SHEET NO.	SHEET DESIGNATION	SUBJECT	F.H.W.A. APPROVAL	ADOPTED REVISION	DATE
22	BRIDGE STD. BR1	ALUMINUM BRIDGE RAILING		DELETED	R 10-23-84
23	BRIDGE STD. BR2	ALUMINUM BRIDGE RAILING DETAILS		DELETED	R 10-23-84
24	BRIDGE STD. BR3	STEEL BRIDGE RAILING		DELETED	12-16-80 R 11-3-80
25	BRIDGE STD. BR4	STEEL BRIDGE RAILING DETAILS		DELETED	5-10-79 R 12-1-79
25A	BRIDGE STD. BR5	RAILING CONNECTION DETAILS			PENDING R 12-1-85
26	BRIDGE STD. BR6	RAILING CONNECTION DETAILS			12-21-81 R 12-7-81
27	BRIDGE STD. C1	MISCELLANEOUS DETAILS			12-21-81 R 12-7-81
27	BRIDGE STD. C2	MISCELLANEOUS DETAILS			12-21-81 R 12-7-81
27	BRIDGE STD. C3	MISCELLANEOUS DETAILS			12-21-81 R 12-7-81
27A	BRIDGE STD. C4	MISCELLANEOUS DETAILS			3-8-76 R 1-9-76
27A	BRIDGE STD. D	CASTING DETAILS ROADWAY DRAINS			
28	BRIDGE STD. D1	ADJUSTING FRAME DETAILS FOR ROADWAY DRAINS			
28	BRIDGE STD. PB1	PRESTRESSED CONCRETE TYPE I I-BEAMS	4-16-62		A JAN. 1962
28	BRIDGE STD. PB	PRESTRESSED CONCRETE TYPE I I-BEAMS			
28	BRIDGE STD. PB6	PRESTRESSED BOX BEAMS			
28	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS WIDE			
28	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS WIDE			
29	BRIDGE STD. PB10	TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS	8-14-63		A NOV. 1962
30	BRIDGE STD. PB11	Elastomeric BEARING PAD DETAILS	10-19-83		R 9-9-83
30	BRIDGE STD.				
30	BRIDGE STD. R2A	BRIDGE LIGHTING DETAILS			
30	BRIDGE STD. R2B	BRIDGE LIGHTING DETAILS			
31	BRIDGE STD. S1	MISCELLANEOUS DETAILS			1-17-82 R 8-2-71
31	BRIDGE STD. S1	STEEL SHOE DETAILS			
31A	BRIDGE STD. T SHEET A	STANDARD TEMPORARY BRIDGE			PENDING R 9-19-84
31	BRIDGE STD. T SHEET B	STANDARD TEMPORARY BRIDGE			
31	BRIDGE STD.				
31	BRIDGE STD.				
31B	ROAD STD. SHEET A	STANDARD PAVEMENT JOINTS			PENDING R 6-3-85
31B	ROAD STD. SHEET B	STANDARD PAVEMENT JOINTS			
31B	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
32	ROAD STD. SHEET MA	MISCELLANEOUS STANDARDS			PENDING R 9-4-84
33	ROAD STD. SHEET MB	MISCELLANEOUS STANDARDS			PENDING R 9-4-84
33	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET MH1	MISCELLANEOUS STANDARDS			PENDING R 6-3-85
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
33A	ROAD STD. SHEET	MISCELLANEOUS STANDARDS			
34	ROAD STD. SHEET GR 4	GUARD RAIL TYPE G			DELETED PENDING R 4-2-84
34A	ROAD STD. SHEET GR 2	GUARD RAIL CLASS HS			6-4-84 R 4-2-84
34B	ROAD STD. SHEET GR 4A	GUARD RAIL CLASS HS			PENDING R 4-2-84
34	ROAD STD. SHEET GR	GUARD RAIL CLASS			
35	ROAD STD. SHEET GR5	ALUMINUM GUARD RAIL DETAILS			5-21-82 R 4-1-82
36	ROAD STD. SHEET GR6	STEEL TUBE GUARD RAIL DETAILS			5-21-82 R 4-1-82
34C	ROAD STD. SHEET CR7	GUARD RAIL PIER CONNECTION DETAILS			5-21-82 R 4-1-82
34C	ROAD STD. SHEET CR8	STEEL BEAM GUARD RAIL			
34C	ROAD STD. SHEET CR9	ALUMINUM BEAM GUARD RAIL			
37	ROAD STD. SHEET CR10	GUARD RAIL HURTED ENDS			PENDING R 2-1-85
37	ROAD STD. SHEET GR10A	GUARD RAIL BREAKAWAY CABLE TERM.			
37	ROAD STD.				
38	ROAD STD. SHEET CB2	TEMPORARY CONCRETE BARRIERS			DELETED PENDING R 6-1-84
39	TRAFFIC STD. MT 3	TRAFFIC SIGN DETAILS			8-30-82 A JUL 1982
40	ROAD STD. SHEET I DETOURS	STANDARD DETOUR SIGNS			PENDING R 2-1-85
40	ROAD STD. SHEET 1A DETOURS	STANDARD DETOUR SIGNS			
40	ROAD STD. SHEET 1B DETOURS	STANDARD DETOUR SIGNS			
41	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR SIGNS			4-1-85 R 2-1-85
42	ROAD STD. SHEET 2A DETOURS	STANDARD DETOUR SIGNS			4-1-85 R 2-1-85
43	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS			4-10-84 R 2-1-84
44	ROAD STD. SHEET 3A DETOURS	STANDARD DETOUR SIGNS			12-8-83 R 10-3-83
45	ROAD STD. SHEET 4 DETOURS	STANDARD DETOUR SIGNS			12-8-83 R 10-3-83
46	ROAD STD. SHEET 5 DETOURS	STANDARD DETOUR SIGNS			4-10-84 R 2-1-84
46	ROAD STD. SHEET 5A DETOURS	STANDARD DETOUR SIGNS			

RECOMMENDED FOR APPROVAL *E. Wayne Walker*



APPROVED *E. Wayne Walker*
 CHIEF HIGHWAY ENGINEER

FEDERAL HIGHWAY ADMINISTRATION
 DEPARTMENT OF TRANSPORTATION
 APPROVED: _____
 DIVISION ADMINISTRATOR DATE _____

BRIDGE FILE: 66-13-6920

- NOTES**
1. Fill or Cut Slopes to be adjusted to insure that work is contained within R/W.
 2. Additional Fill or Cut Quantities required for widened shoulder are not reflected in quantities shown in these plans.
 3. Additional Compacted Aggregate and Seal Coat Type 5 quantities are reflected in the quantities shown in the Estimate of Quantities.
 4. Transition Rate to normal shoulder to be 1:10 maximum.

MATERIAL NOTES

BITUMINOUS WEDGE AND LEVELING
 110 #/sqd. Bituminous Surface Type II over Variable depth Bituminous Base

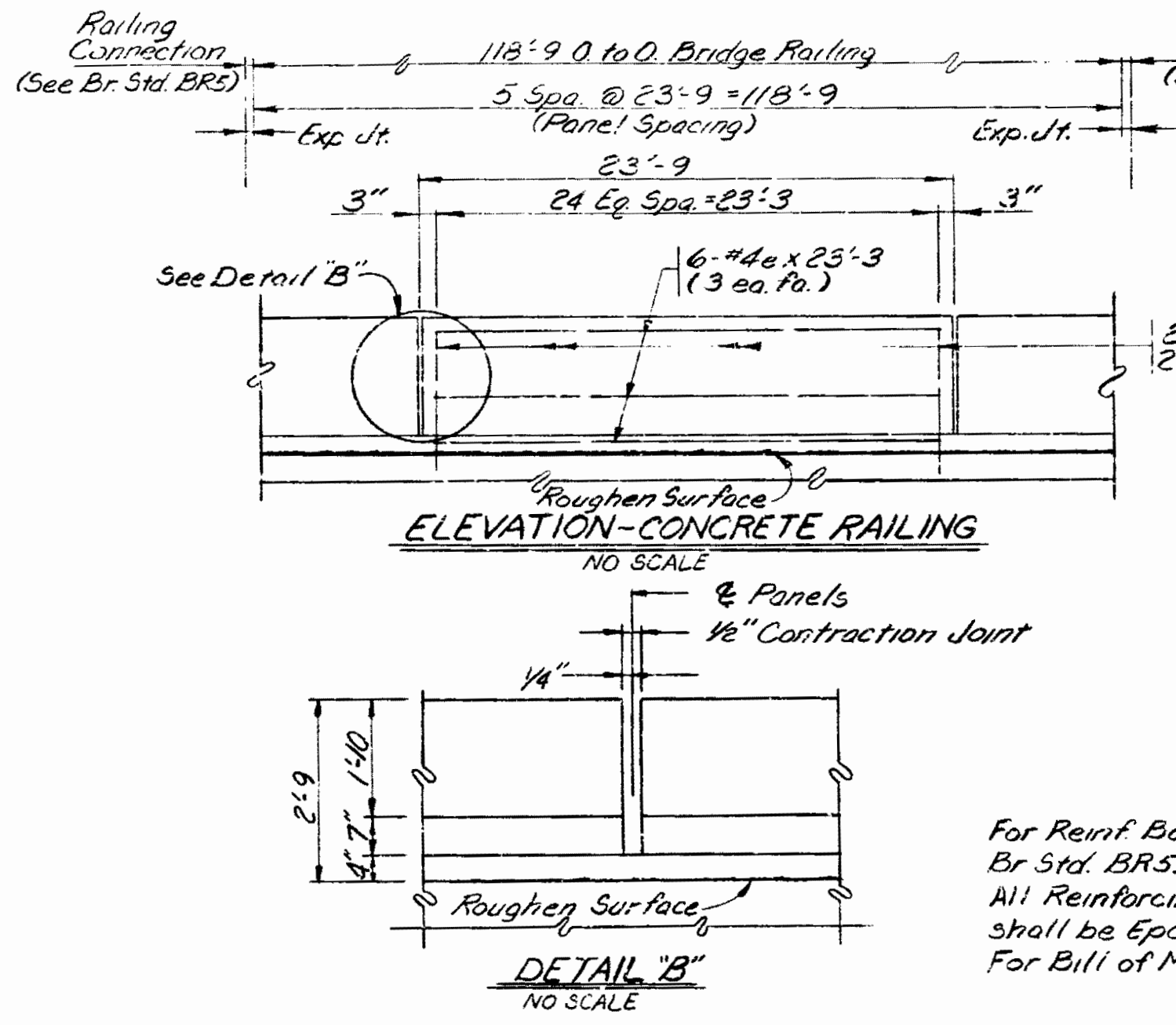
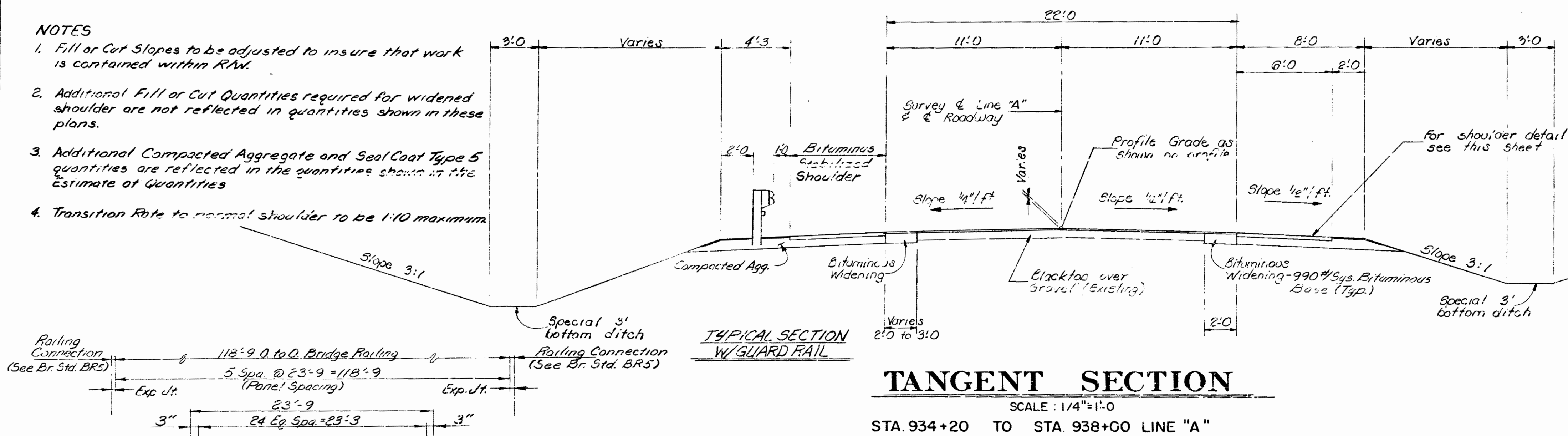
BITUMINOUS WIDENING
 990 #/sqd. Bituminous Base

The maximum depth of bituminous surface Type II shall not exceed 1 1/2". All locations where total wedge thickness will exceed 1 1/2", a bituminous base shall be placed as a first course to within one inch of the finished grade.

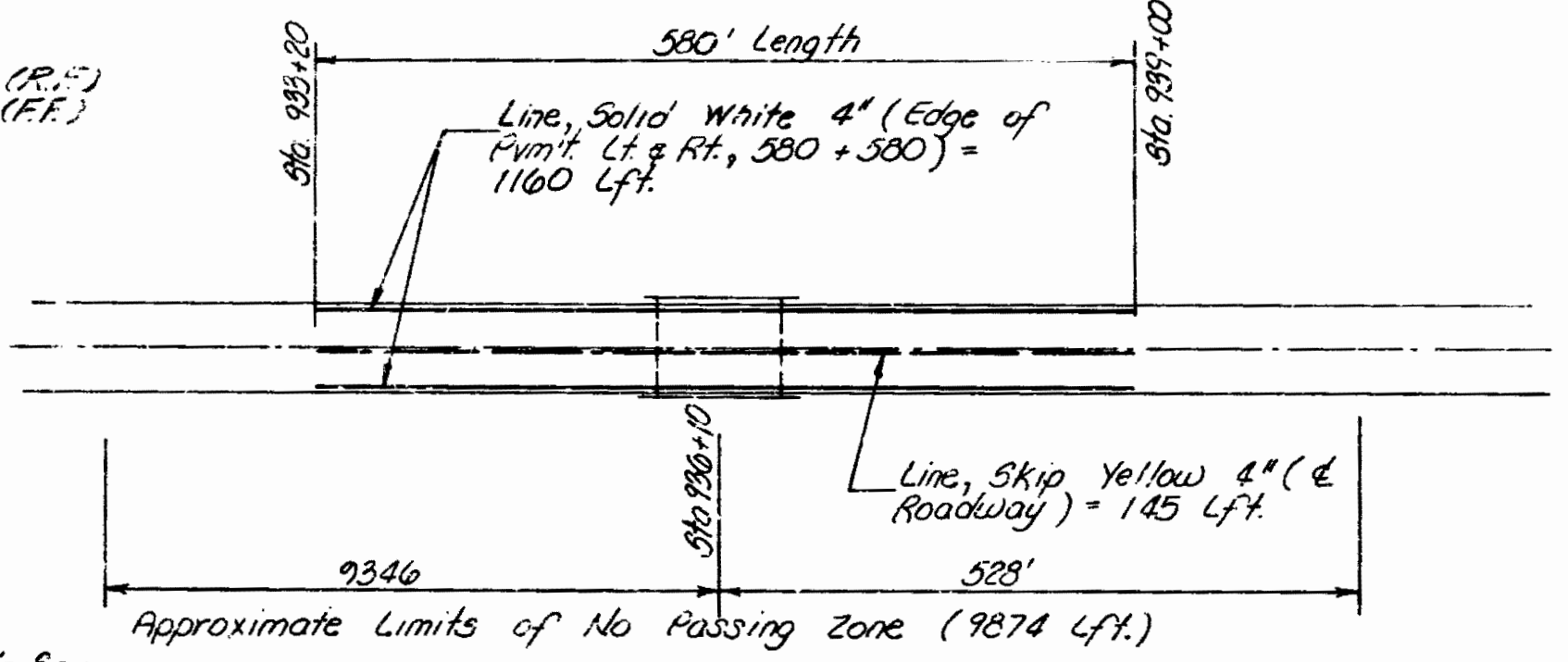
Unless otherwise specified, the contractor shall have the option of using either Hot Asphaltic Concrete (HAC) or Hot Asphaltic Emulsion (HAE) on all bituminous items except surface.

All bituminous materials, required for this contract to be paid for as "Bituminous Mixture for Approaches."

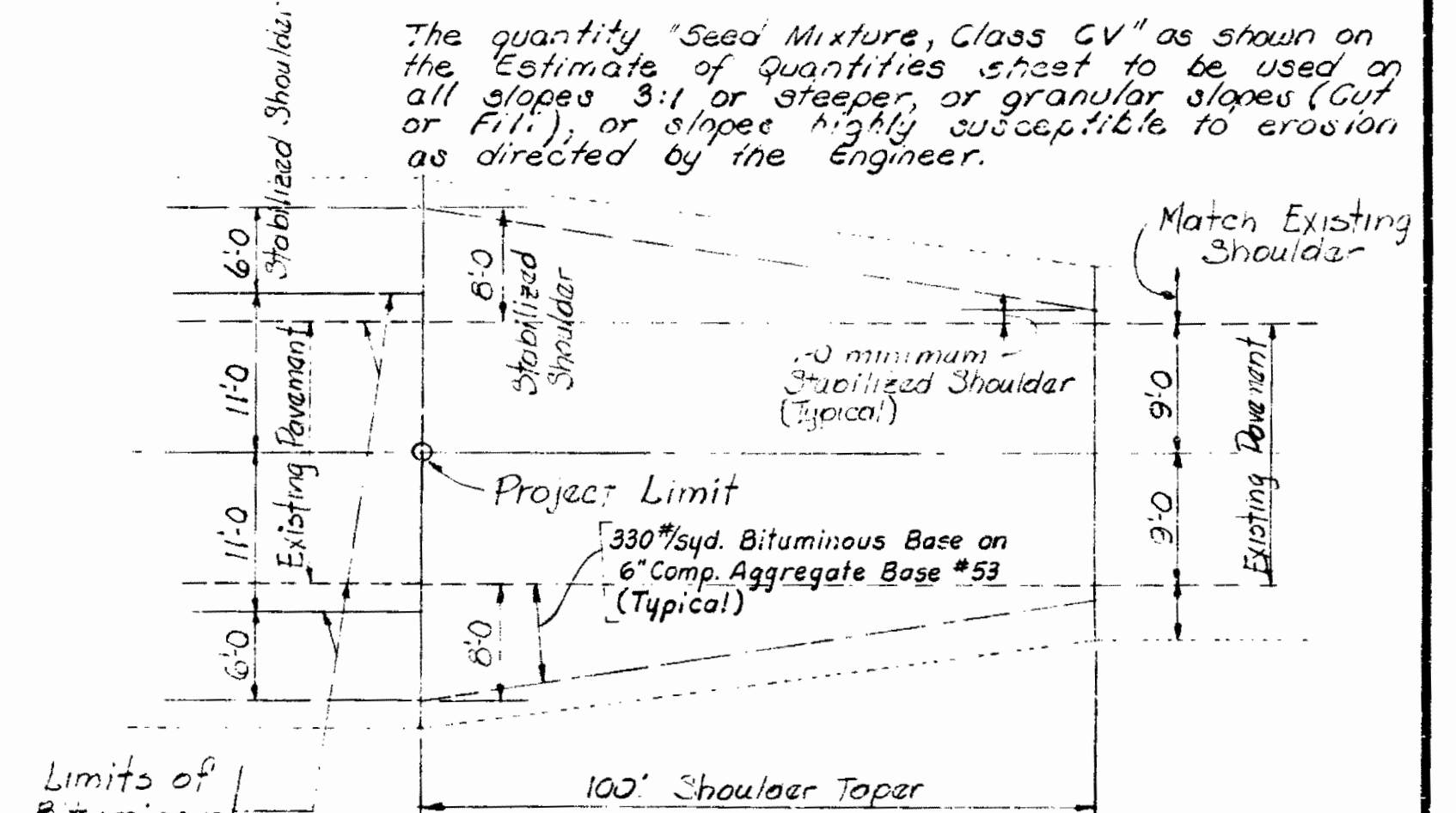
Tack coat to be paid for as "Bituminous Material for tack coat" in sq. yds.



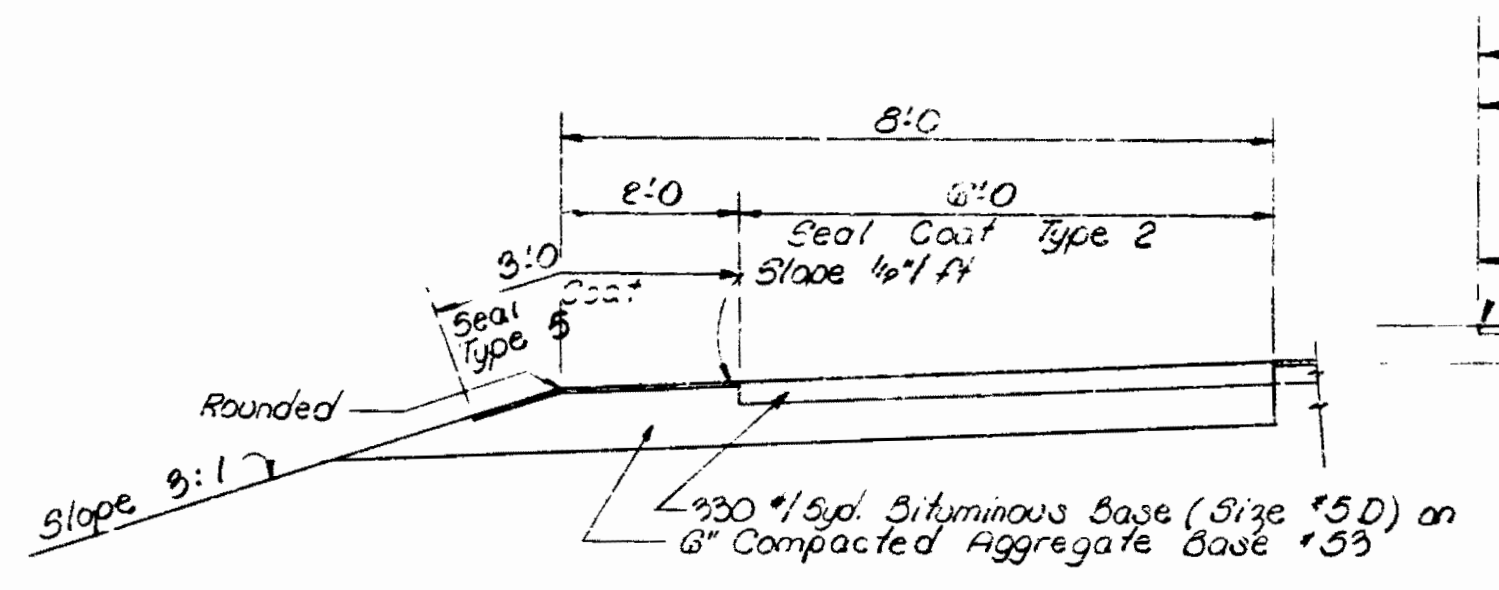
For Reinf. Bar Details See Br. Std. BRS.
 All Reinforcing Steel in Concrete Railing shall be Epoxy Coated.
 For Bill of Materials see Sheet No. 10



STRIPING
 Not to Scale

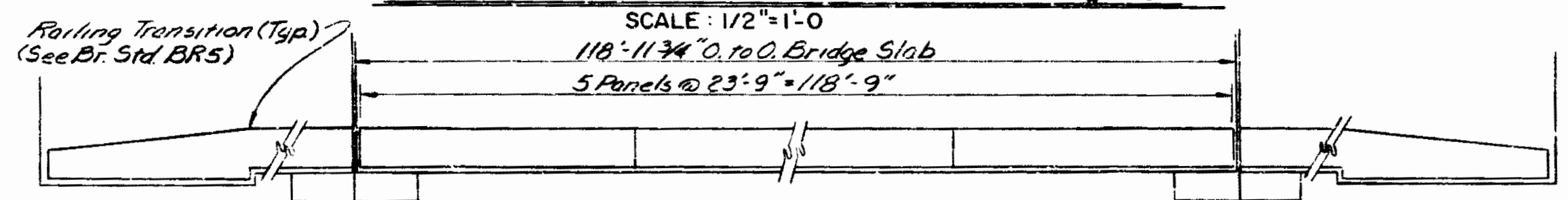


INCIDENTAL CONSTRUCTION DETAIL
 No Scale

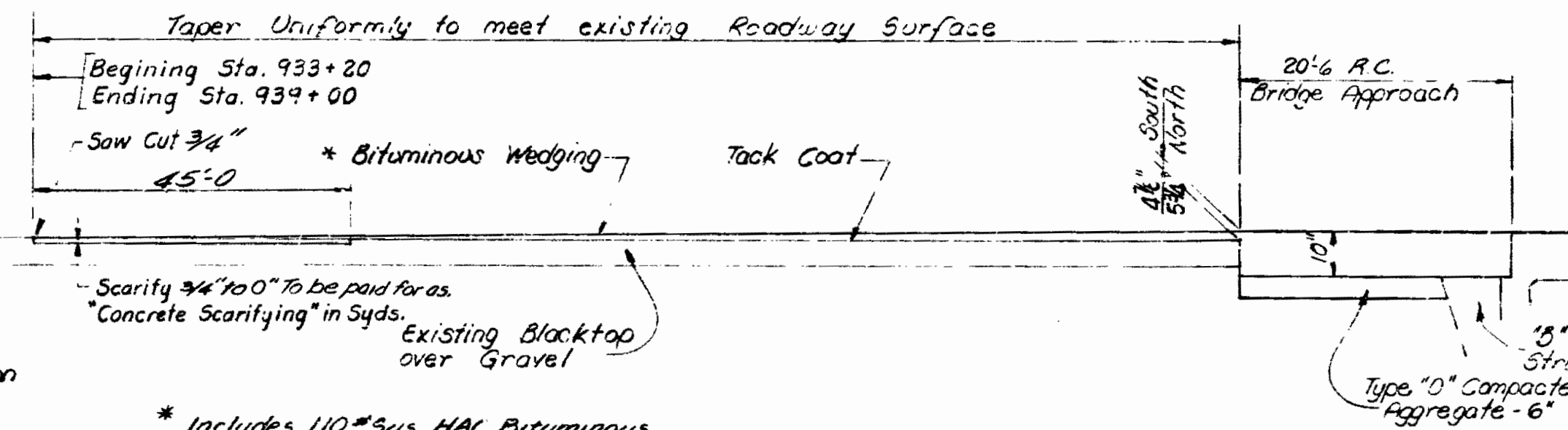


DETAIL OF SHOULDER

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



RAILING PLAN
 NO SCALE



LONGITUDINAL SECTION

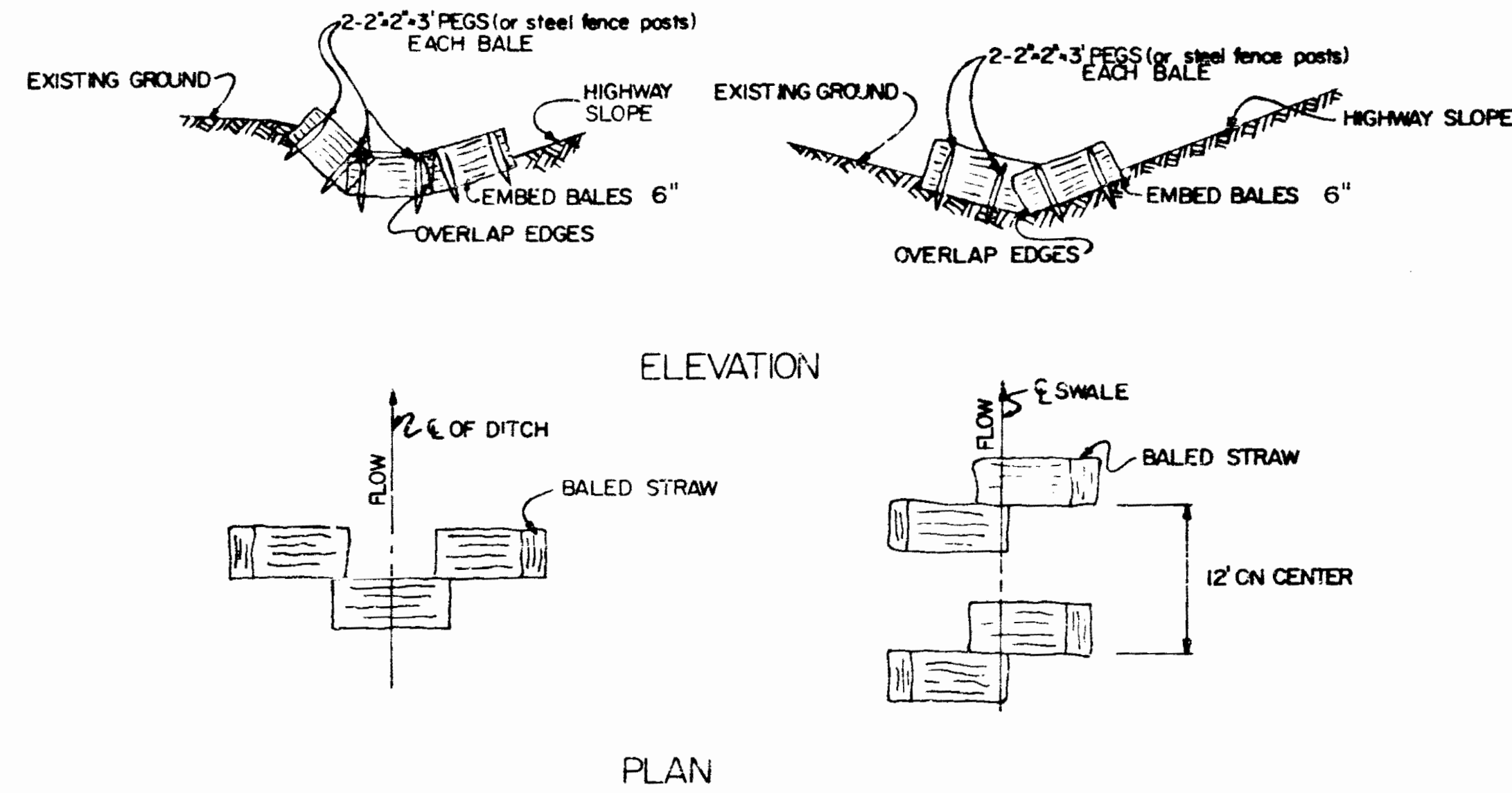
NOT TO SCALE

TYPICAL CROSS SECTIONS

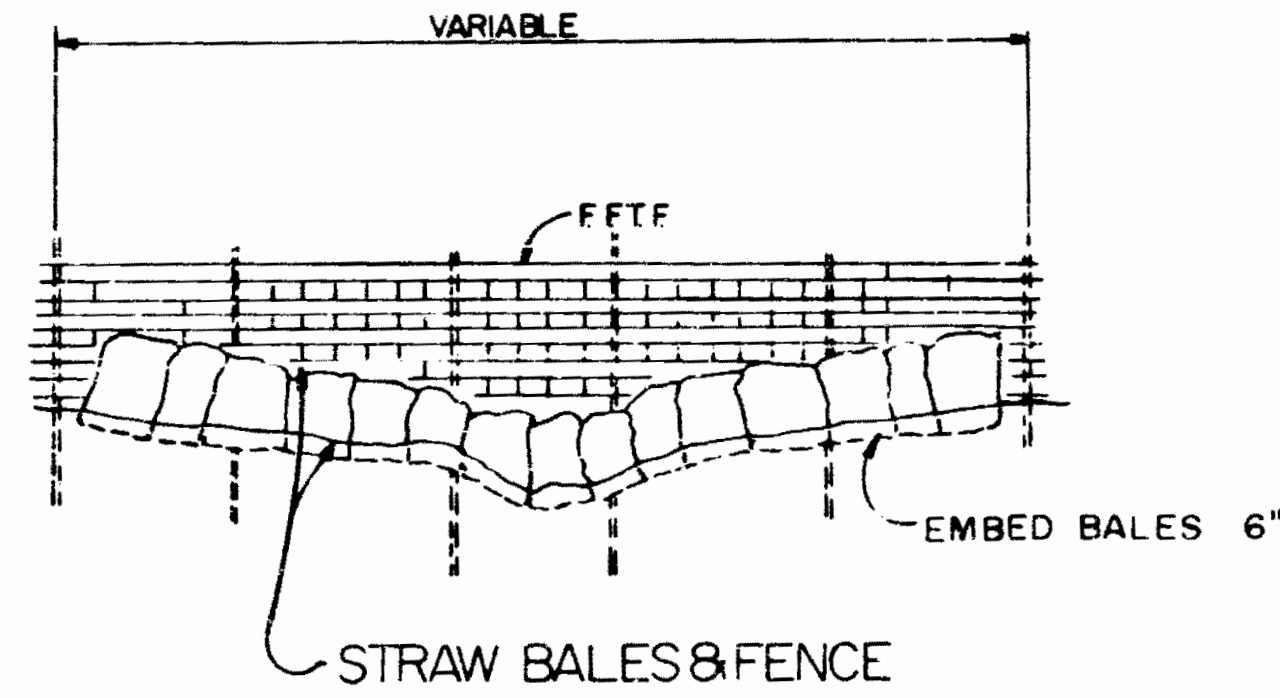
INDIANA DEPARTMENT OF HIGHWAYS
 PERRY and CRAWFORD COUNTY

SCALE: As Noted DATE: April 11, 1985
 SUBMITTED FOR APPROVAL *Ralph S. Mullinnix*
 DRAWING: OF SHEET: 2 OF 46
 PROJECT: MARS-RS-4313(1)
 CONTRACT NO. B-16251
 BRIDGE FILE: 66-13-6920

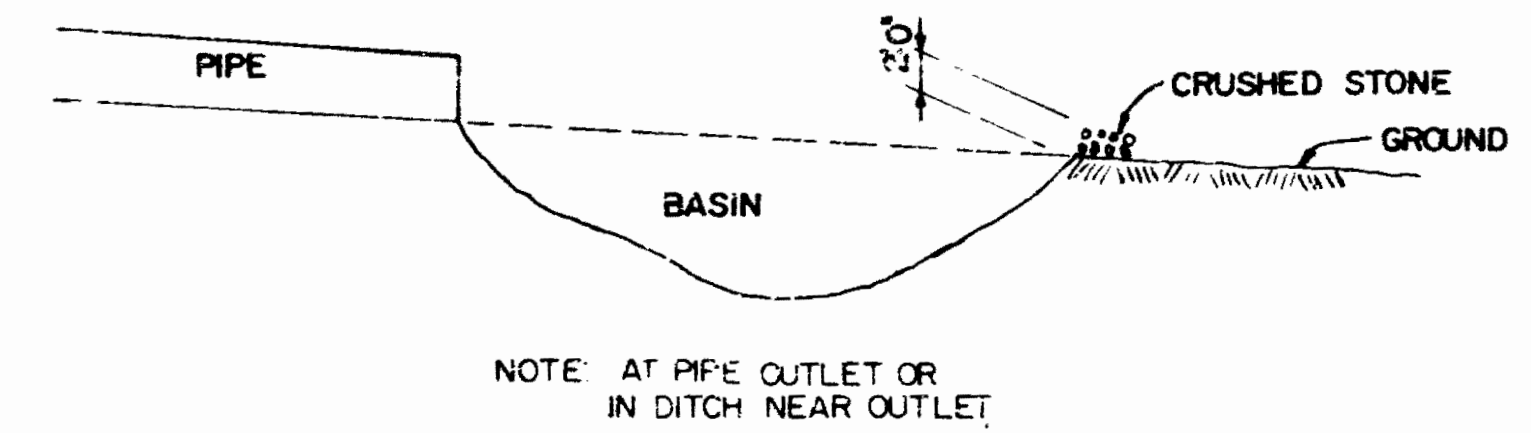
DESIGNED: C.K.D.
 DRAWN: JIM BOYDEN C.K.D. BcM
 TRACED: C.K.D.



METHOD A



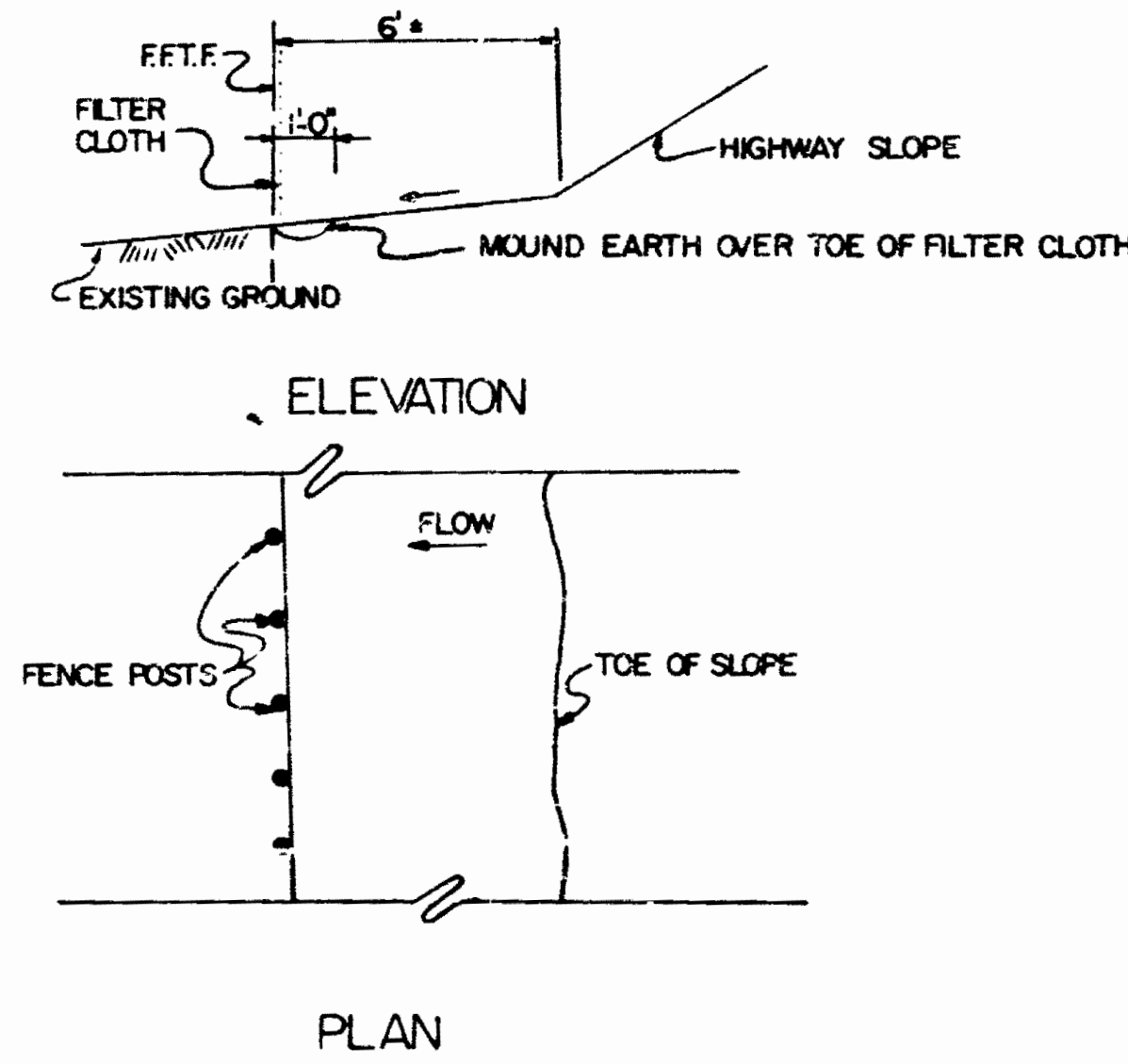
METHOD B



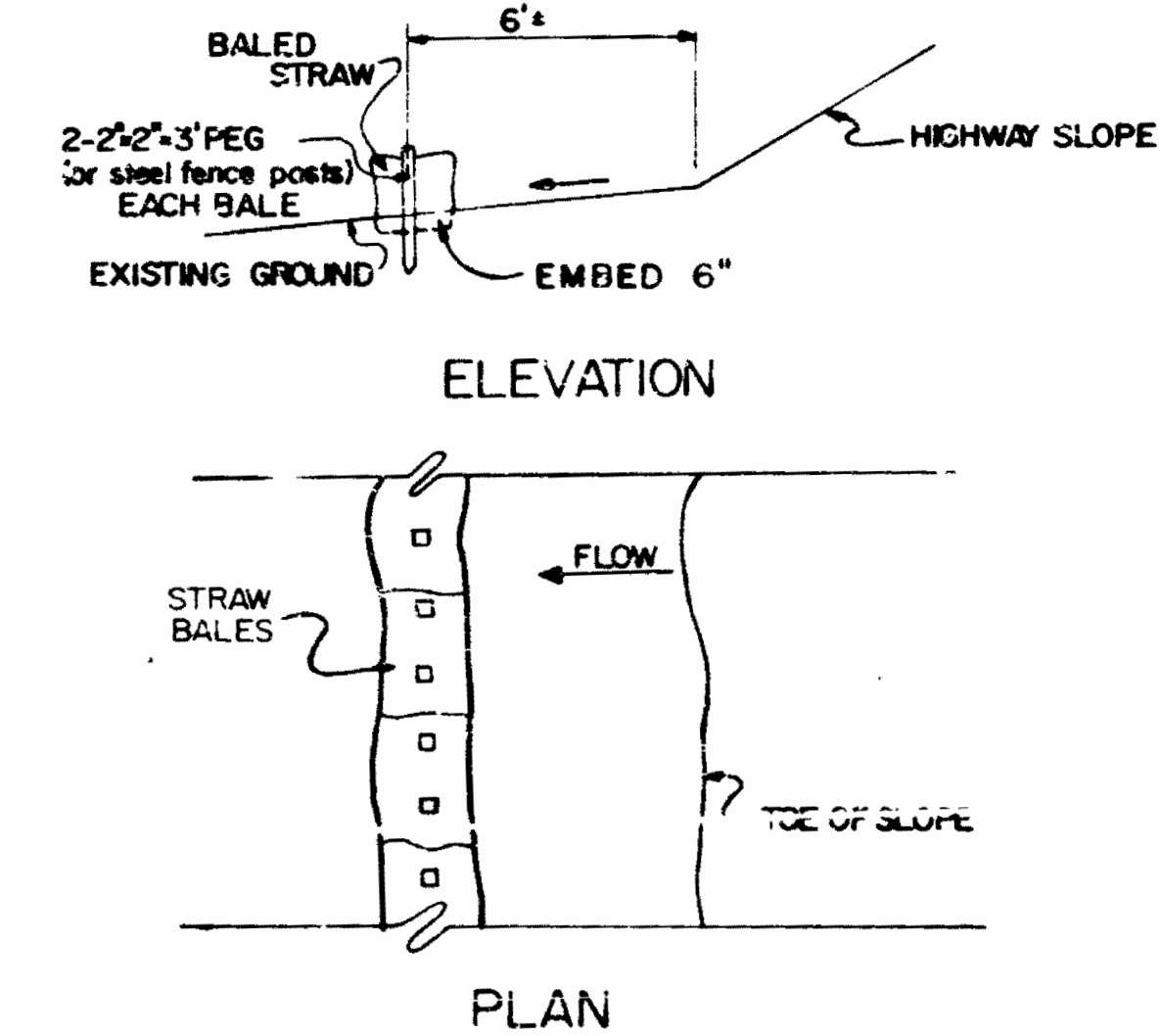
METHOD D

TABLE OF QUANTITIES

LOCATIONS	SIZE	METHOD				
		A	B	C	D	E
STATION TO STATION	FEET	BALES	LFT.	LFT.	EACH	BALES
Sta. 935+65, 44' Lt.		3				
Sta. 935+75, 35' Rt.		3				
Sta. 936+35, 46' Lt.		3				
Totals		9				



METHOD C



METHOD E

- PAY ITEMS
- METHOD A "STRAW BALES IN PLACE" EACH
 - METHOD B "EROSION CONTROL METHOD B" LIN.FT.
 - METHOD C "EROSION CONTROL METHOD C" LIN.FT.
 - METHOD D "EROSION CONTROL METHOD D" EACH
 - METHOD E "STRAW BALES IN PLACE" EACH

EROSION CONTROL
INDIANA DEPARTMENT OF HIGHWAYS

SCALE: DATE: April 11, 1985

SUBMITTED FOR APPROVAL *Ralph A. Mullinnis*

DRAWING OF SHEET 3 OF 46

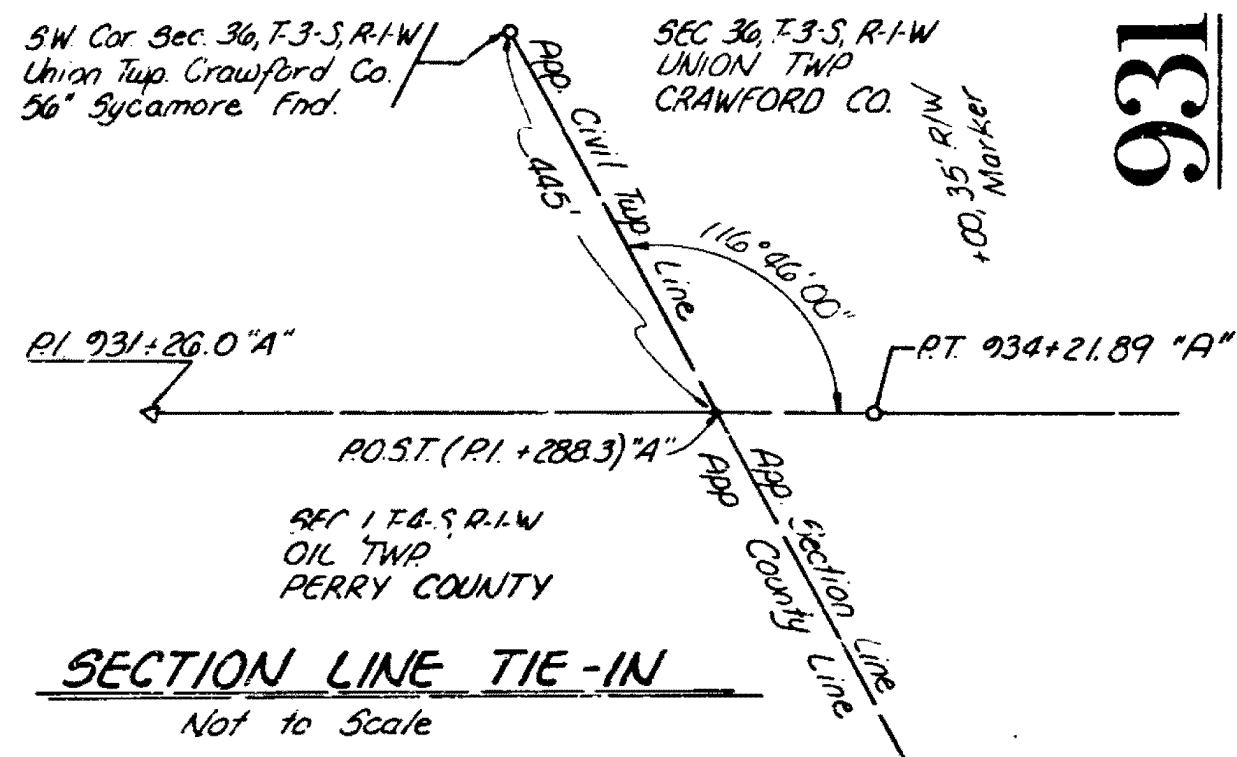
PROJECT: MARS-RS-4313(1)

CONTRACT NO. B-16251

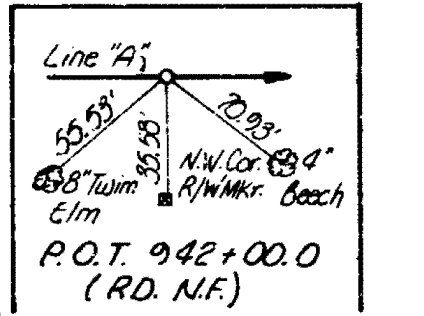
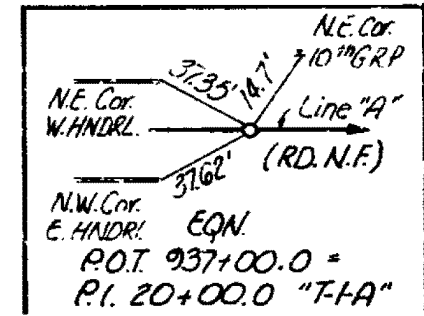
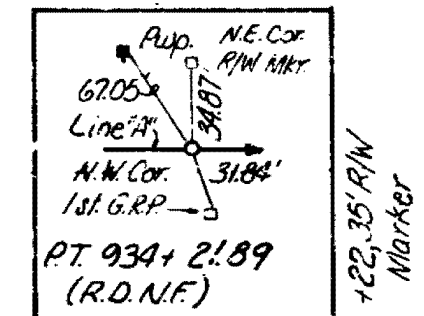
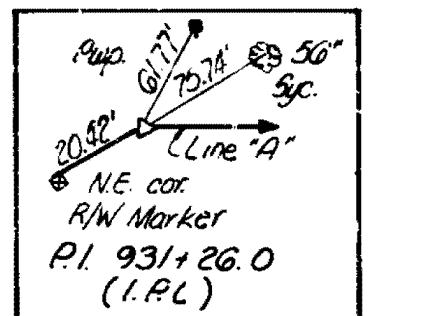
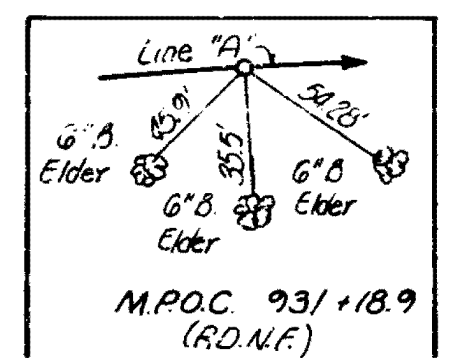
BRIDGE FILE: 66-13-6920

Rev. 6-6-79 Method D and E
Rev. 4-7-80 Method A, B and E

DESIGNED: C.K.D.
DRAWN: J.S. 5-1-79
TRACED: C.K.D.

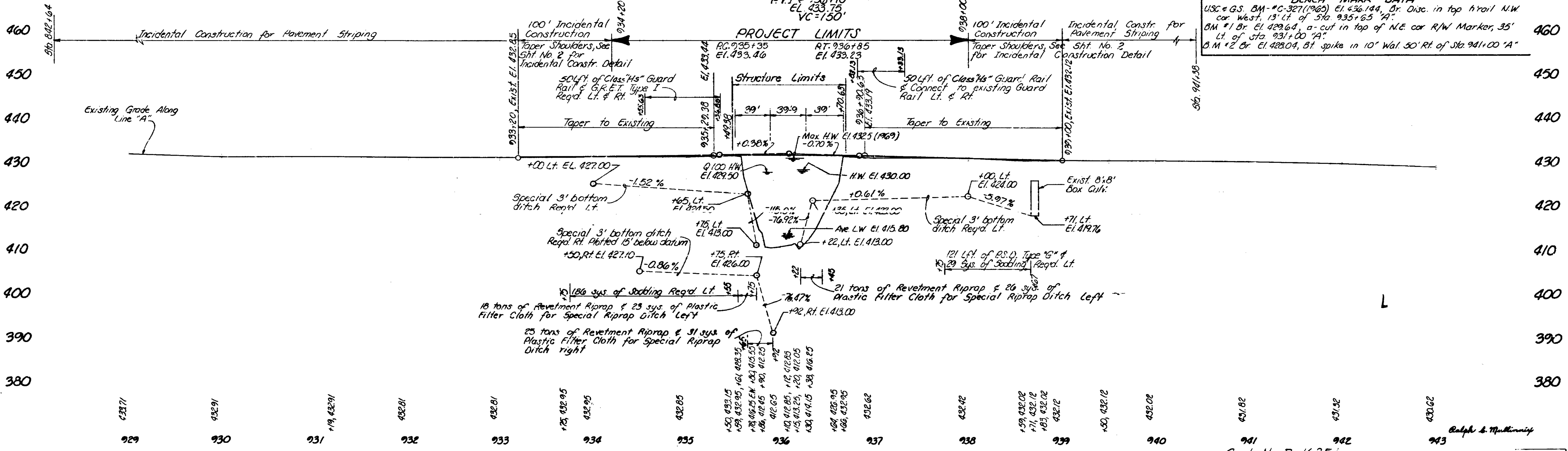
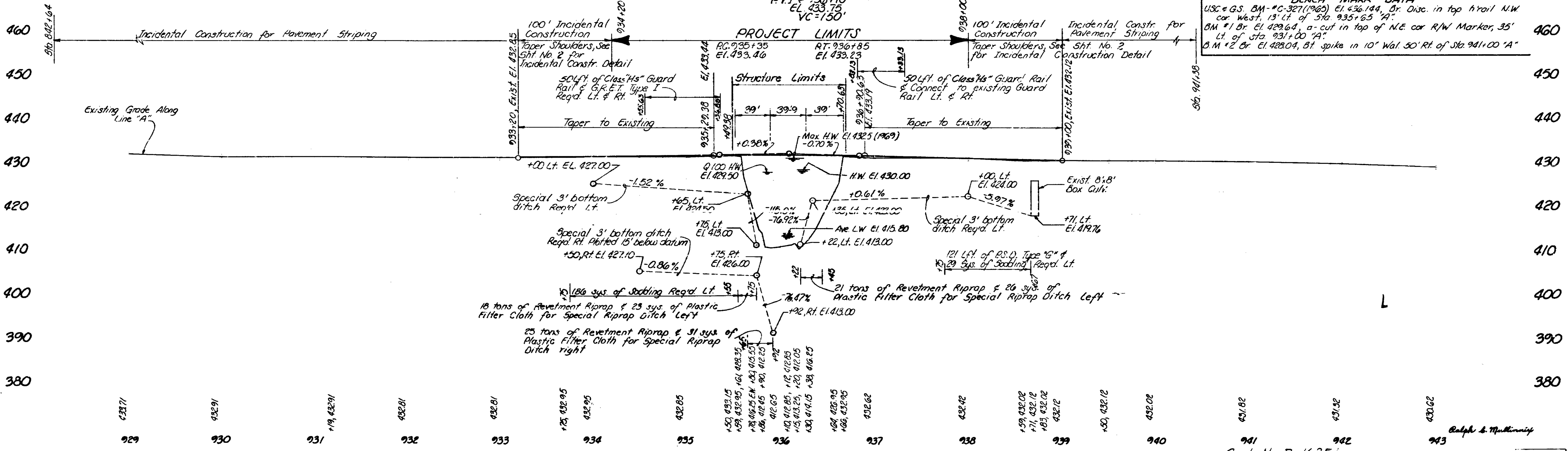


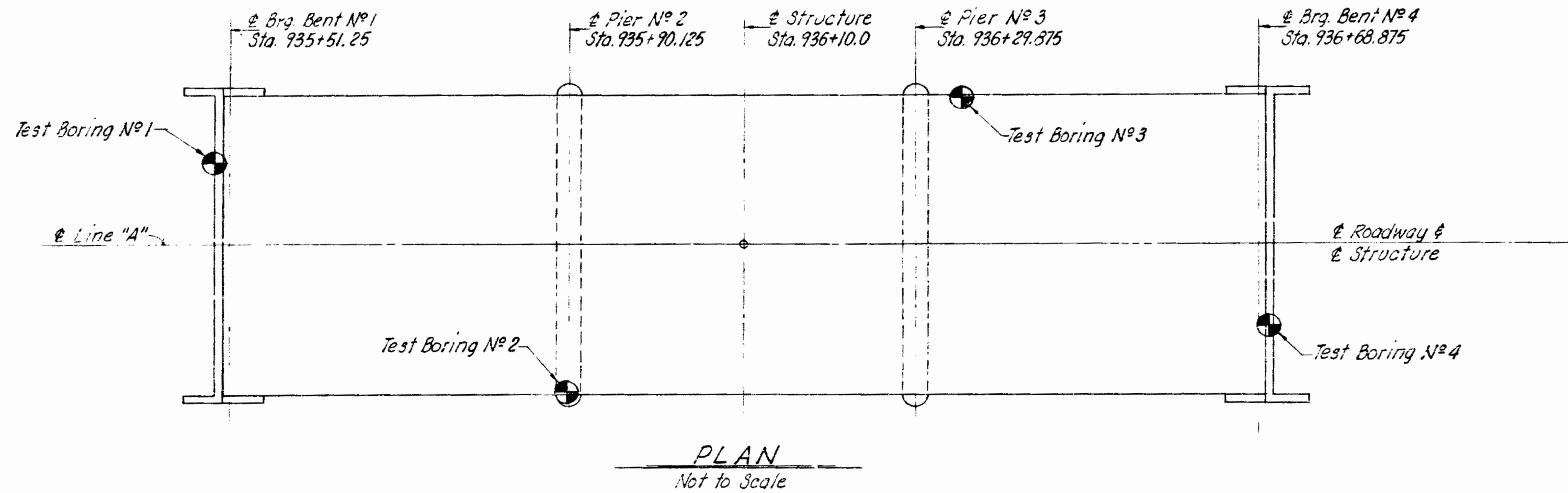
CURVE DATA
 PI 931+26.0
 Δ = 30° 19' Rt.
 D = 5' 00"
 T = 310.444'
 R = 1185.915'
 E = 41.3'
 L = 606.333'



BENCH MARK DATA
 U.S.C. & G.S. BM #C-327(1965) El. 436.144, Br. Disc. in top h rail N.W. cor West, 13' Lt. of Sta. 935+65 "A"
 BM #1 Br. El. 429.64, a-cut in top of N.E. cor R/W Marker, 35' Lt. of Sta. 931+00 "A"
 BM #2 Br. El. 428.04, 5" spike in 10' Wal. 50' Rt. of Sta. 941+00 "A"

NOTE:
 Level data is U.S.C. & G.S. datum using U.S.C. & G.S. BM C-327 El. 436.144. Level datum for the bridge & Road survey is ± 300.2 below U.S.C. & G.S. datum.





Test Boring No. TB-1 Sta. 935+49.5 Offset 10' Left Line "A" Surface Elevation 432.8			Test Boring No. TB-2 Sta. 935+90.0 Offset 18' Right Line "A" Surface Elevation 414.8			Test Boring No. TB-3 Station 936+35.0 Offset 18' Left Line "A" Surface Elevation 417.0			Test Boring No. TB-4 Station 936+70.50 Offset 10' Right Line "A" Surface Elevation 433.2		
Sample No.	N	Description	Sample No.	N	Description	Sample No.	N	Description	Sample No.	N	Description
430		432.8 Surface							433.2 Surface		
SS-1	3-5-7	432.7 Topsoil (Visual)							SS-1	433.1	2-2-3 Topsoil (visual)
SS-2	8-8-8	Silty loam, stiff to very stiff							SS-2		3-3-4 Clay, soft to medium stiff, moist, brown and grey with some
SS-3	7-9-10	moist, brown (fill) (Visual)							SS-3		3-3-3 limestone fragments (fill) (visual)
SS-4	10-11-10								SS-4	422.2	4-4-4
420									SS-5		1-1-1
SS-5	8-8-11								SS-6		5-4-6 Sandy loam, very loose to med. dense, moist, grey
410		SS-6 5-5-6 Sandy loam, medium dense, moist to wet after 22'. brown to grey							SS-7		4-7-7
SS-7	7-8-7								SS-8	403.2	5-7-8
400		SS-8 403.3 Sandstone, highly weathered soft, med. grained, light brown (visual)							SS-1	414.2	3-3-4 Water depth
SS-9	399.3								SS-2	411.0	6-6-7 Sandy loam, loose to med. dense, very moist to wet, dark brown to grey after 3'
SS-10	397.3								SS-3		2-3-3
									SS-4		4-6-6
390		SS-11 404.0 Silty clay loam, med. stiff to stiff, moist, grey							SS-5	401.0	20-20-20 Sandstone, highly weathered, soft med. grained, light brown (visual)
									SS-6	399.0	399.0 Sandstone, weathered, soft med. grained, v. low bedding planes, brown (visual)
380		SS-12 392.8 Sandstone, weathered, soft, med. grained, v. low bedding planes, brown (visual)							SS-7	397.2	397.2 Sandstone, weathered, soft med. grained, v. low bedding planes, brown (visual)
									SS-8		Shale, weathered, soft, fine grained, v. low bedding planes, grey (visual) Bott. Test Hole
370		SS-9 399.0 Shale, weathered, soft, fine grained, v. low bedding planes, grey (visual)							SS-9		Auger refusal at 31.0 ft. Rock core from 31.0 to 36.0 ft.
									SS-10		
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N indicates the number of blows required to drive a 1 1/8" I.D. split spoon sampler 6" by means of a 140 lb. weight falling 30".
The first number shown is through disturbed material and should be ignored.
The sum of the last two numbers shall be taken as the blow count for the standard penetration test through 12" of undisturbed material

SOIL BORINGS

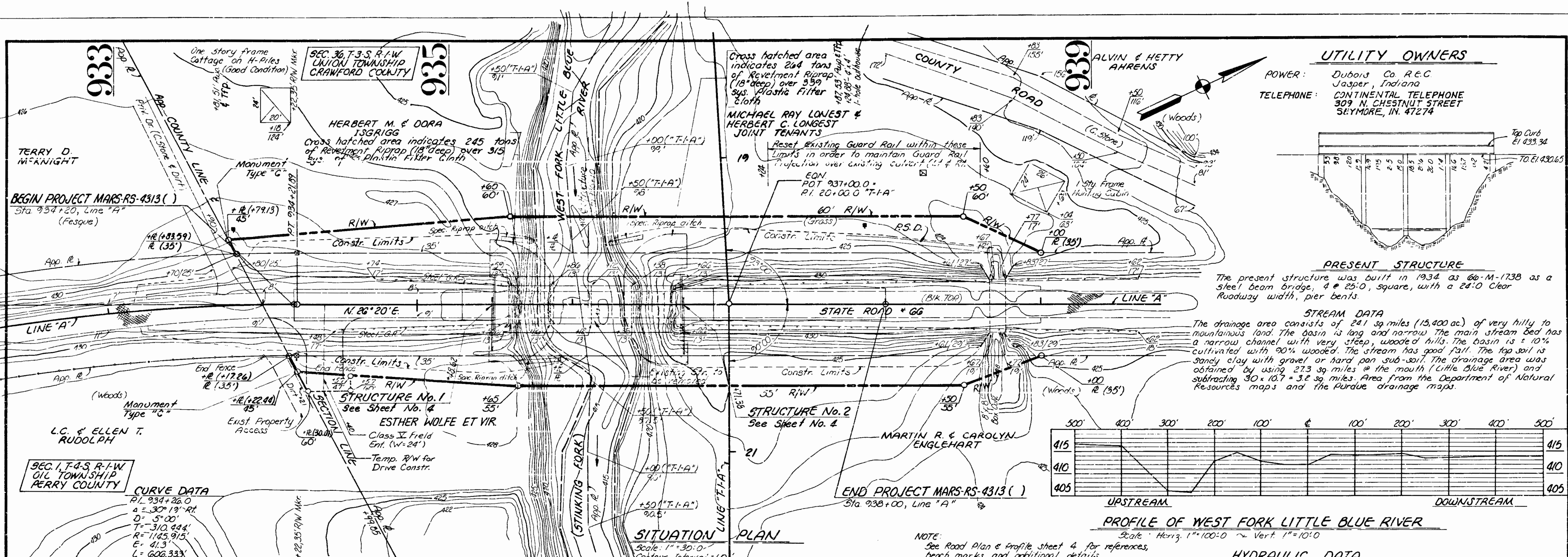
INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- As Noted DATE:- April 11, 1985

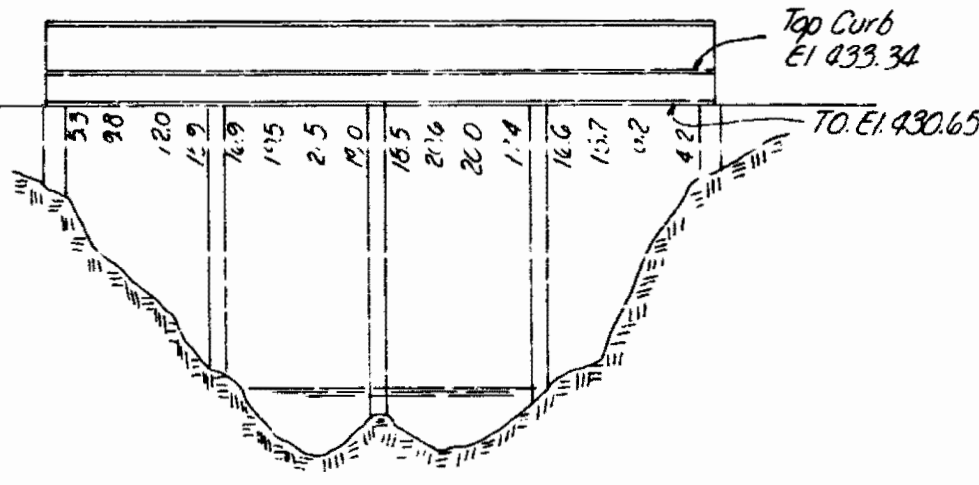
SUBMITTED FOR APPROVAL Ralph E. Mullinnick

DRAWING: OF SHEET: 5 OF 46
PROJECT:- MARS-RS-4313(1)
CONTRACT NO. B-1625/
BRIDGE FILE:- 66-13-6920

DESIGNED: CKD
DRAWN: Meo CKD RCM
TRACED: CKD

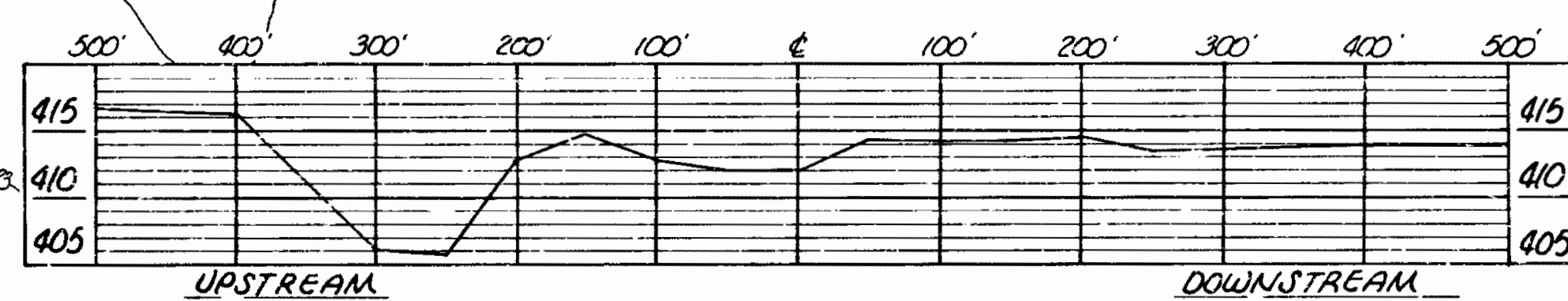


UTILITY OWNERS
 POWER: Dubois Co. REC
 Jasper, Indiana
 TELEPHONE: CONTINENTAL TELEPHONE
 309 N. CHESTNUT STREET
 SEYMORE, IN. 47274



PRESENT STRUCTURE
 The present structure was built in 1934 as 60-M-1738 as a steel beam bridge, 4 @ 25'-0", square, with a 24'-0" Clear Roadway width, pier bents.

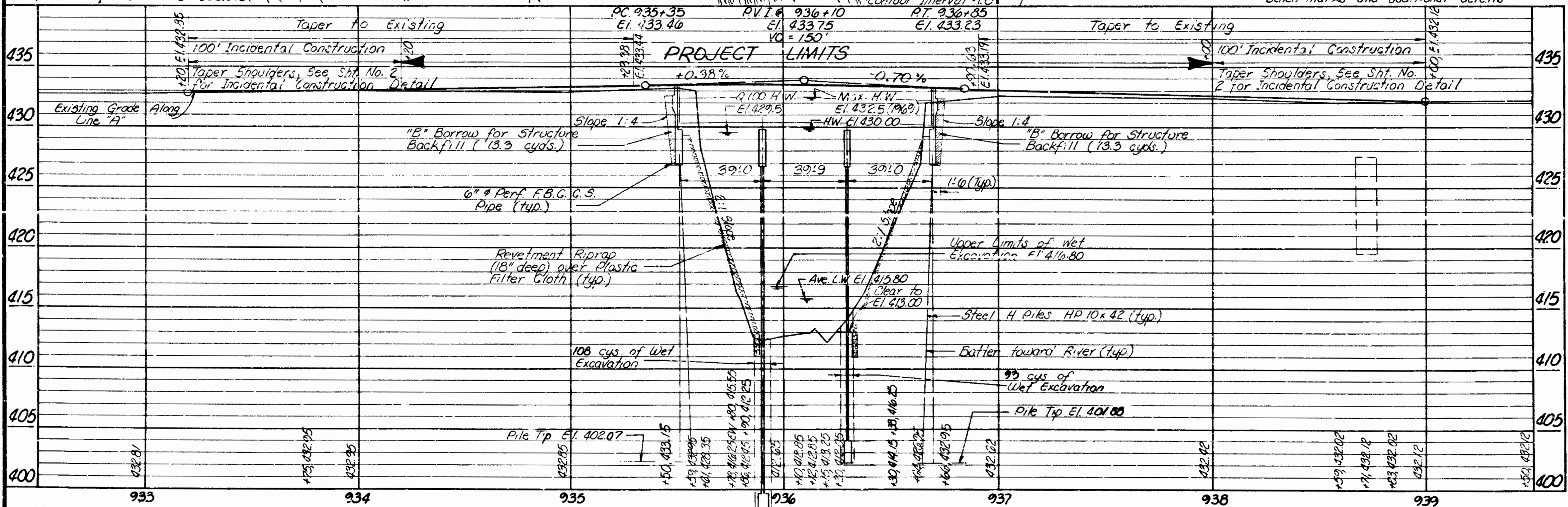
STREAM DATA
 The drainage area consists of 24.1 sq miles (15,400 ac.) of very hilly to mountainous land. The basin is long and narrow the main stream bed has a narrow channel with very steep, wooded hills. The basin is ± 10% cultivated with 90% wooded. The stream has good fall. The top soil is sandy clay with gravel or hard pan sub-soil. The drainage area was obtained by using 27.3 sq miles @ the mouth (Little Blue River) and subtracting 30 x 10.7 = 3.2 sq miles. Area from the Department of Natural Resources maps and the Purdue drainage maps.



PROFILE OF WEST FORK LITTLE BLUE RIVER
 Scale: Horiz. 1"=100'-0" ~ Vert. 1"=10'-0"

NOTE:
 See Road Plan & Profile sheet 4 for references, bench marks and additional details

CURVE DATA
 P.L. 934+26.0
 Δ = 30° 19' 41"
 D = 5'-00"
 T = 310.444'
 R = 145.915'
 E = 41.3'
 L = 606.333'



PROFILE ON PROPOSED & ROADWAY
 Scale: Horiz. 1"=30'-0" ~ Vert. 1"=5'-0"

HYDRAULIC DATA
 Str. Waterway Area Required, Below El. 429.5 = 1130 Sq. Ft.
 Str. Waterway Area Provided, Below El. 429.5 = 1210 Sq. Ft.
 Drainage Area = 24.1 Sq. Mile
 Design Discharge Q100 = 9300 C.F.S.
 Road Overflow Area = 50 Sq. Ft.
 Water Surface Elevation = 429.5 M.S.L.
 Structure Velocity = 7.7 F.P.S.
 Backwater Produced = 1.2 ft.
 Existing Waterway Area (Below Q100) = 1040 Sq. Ft. (per 100H)
 Road over Topping Elev. = 430.5 Ft. M.S.L.
 Minimum Low Structure Elevation = 430.0 Ft. M.S.L.

EARTHWORK TABLE

Fill + 20%	= 1407 cys.
Common Excavation	= -306 cys.
Wet Excavation (70%)	= -327 cys.
(Surplus) Foundation Excavation	= 61 cys.
Borrow	= 713 cys.
Total Waterway Excavation	= 467 cys.
Benching *	= 564 cys.
Wet Excavation @ Piers	= 201 cys.

LAYOUT
 CONTINUOUS PRESTRESSED CONC. I BEAM BRIDGE, 3 SPANS
 39'-0", 39'-0", 39'-0" x 34'-0" CLEAR ROADWAY OVER
 WEST FORK LITTLE BLUE RIVER on S.R. 66
INDIANA DEPARTMENT OF HIGHWAYS
 PERRY and CRAWFORD

SCALE: As Noted DATE: April 11, 1985

SUBMITTED FOR APPROVAL *Ralph S. Mullinnix*

DRAWING: C1 OF C8 SHEET: 6 OF 46
 PROJECT: MARS-RS-4313 ()
 CONTRACT NO. B-16251
 BRIDGE FILE: 66-13-6920

DESIGNED: Rev. CKD RCV
 DRAWN: Jim O CKD RCV
 TRACED: CKD

* No Direct Payment, Benchings will not be paid for as Common Excavation

REV. 6-26-85 PROPERTY OWNER, R. COORDINATE REV. 10-2-85 UTILITY OWNER & TYP. ADDED TO PWD LEFT.

STRUCTURE TO BE BUILT ON A 150 FT. VERTICAL CURVE

GENERAL NOTES

- Depth of footings to be extended if found necessary. See Article 206.11 (c) of Specifications.
- Footings shall extend minimum of 6" into solid rock.
- Reinforcing steel not to be ordered until rock is uncovered.
- Piles shall have minimum bearing value shown on detail drawings. Determine pile lengths by Article 701 of Specifications.
- Piles shall be driven to approximate refusal.
- Reinforcing steel covering shall be 2 1/2" in top and 1" min. in bottom of floor slab; 3" in footings except bottom steel which shall be 4" and 2" in all other parts, unless noted.
- Concrete in footings, and pier stems to construction joint to be Class "B". Class "A" in pier caps.
- Concrete in superstructure to be Class "C".
- Continuous concrete pours shall be required between construction joints as shown in detail plans.
- Waterproof backs of midwalls, wingwalls in accordance with Article 702.22 of the Specifications.
- Chamfer exposed edges 1" unless noted.
- Construct riprap at location shown on layout.
- Tolerance in position of pile head maximum 2".
- Only the top of pier and end bent caps, front face of midwalls, face of end diaphragms, face of deck coping, and underside of the bridge floor from coping to face an outside beam, outside face of exterior concrete beams, concrete barrier railing, and top of the deck to be sealed. All Surface Seal to be paid for as Lump Sum.
- Concrete in end Bents, wingwalls to be class "A".

ELEVATION

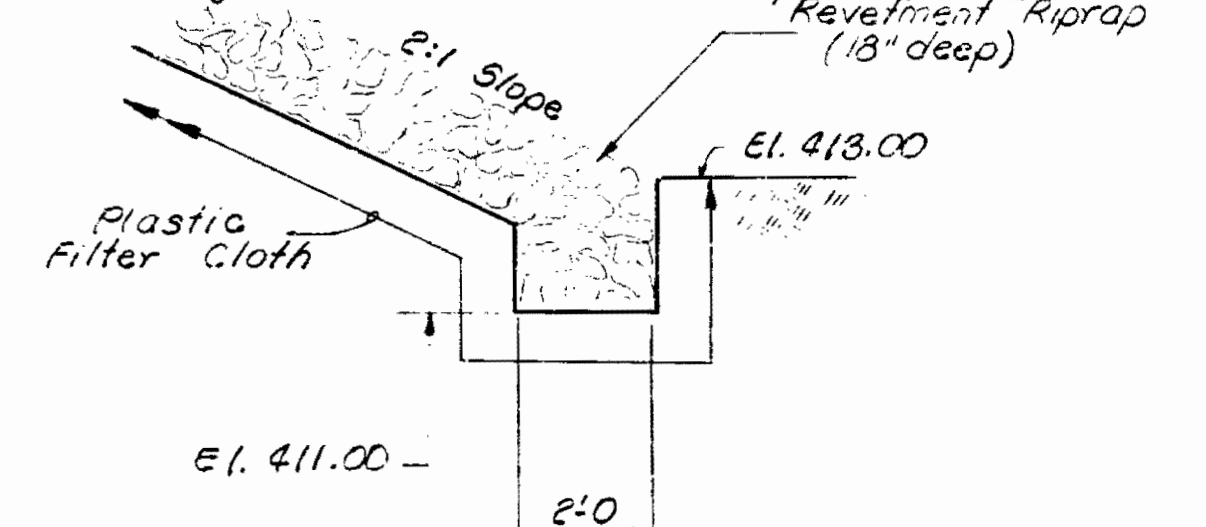
SCALE: 1/8" = 1'-0"

TYPICAL CROSS SECTION

See Sheet No. 2

DESIGN DATA

Unit Stresses: $f_s = 20,000$ p.s.i.; $f_c = 1200$ p.s.i.
 Live Load: HS 20-44 with impact and distribution of loads in accordance with 1983 AASHTO Specifications.
 Dead Load: Actual plus 35% for future wearing surface



TYPICAL RIPRAP KEY

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

PLAN

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

Bridge Std.	Road Std.	Description
D		Casting Details Roadway Drains
ERE		Railing Connection Details
C1		Reinforcing Bar Notes
G3		Constr. Joints
RB1		Prestressed Conc. Type I Beam
RB10		Tolerances for Fabrication of Prestressed Beams
ae 11		Electromechanical Details
S1		"B" Borrow for Structure Backfill
MA		Flexible Bridge Approach
M3		Paved side ditch
GR4A		Guard Rail Class 75"
GR2		Guard Rail Class 75"
GR7		Per Connection Details
A		Wire Fabric
Sht. 12, 2A, 3, 3A, 4		Standard Detour Signs
Sht. 5		Sign Descrip. Details
MF3		Traffic Sign Details
MH1		Class II Drive
GR10		G.R.E.T. Buried Ends

GENERAL PLAN

CONTINUOUS PRESTRESSED CONC. I-BEAM BRIDGE, 3 SPANS
 39'-0", 39'-9", 39'-0" x 34'-0" CLEAR ROADWAY OVER
 WEST FORK LITTLE BLUE RIVER ON S.R. 66

INDIANA DEPARTMENT OF HIGHWAYS

PERRY and CRAWFORD

SCALE: As Noted DATE: April 11, 1985

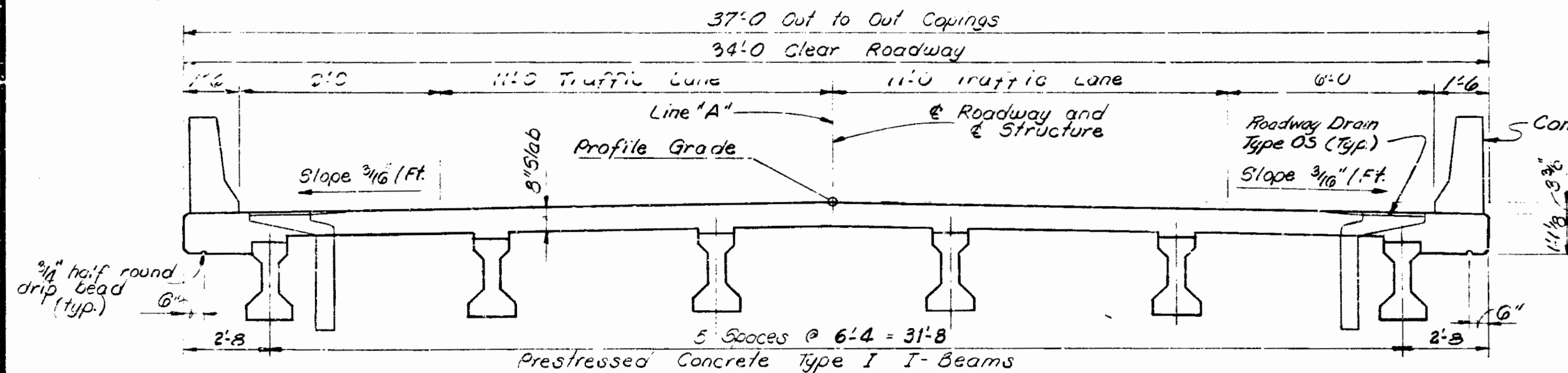
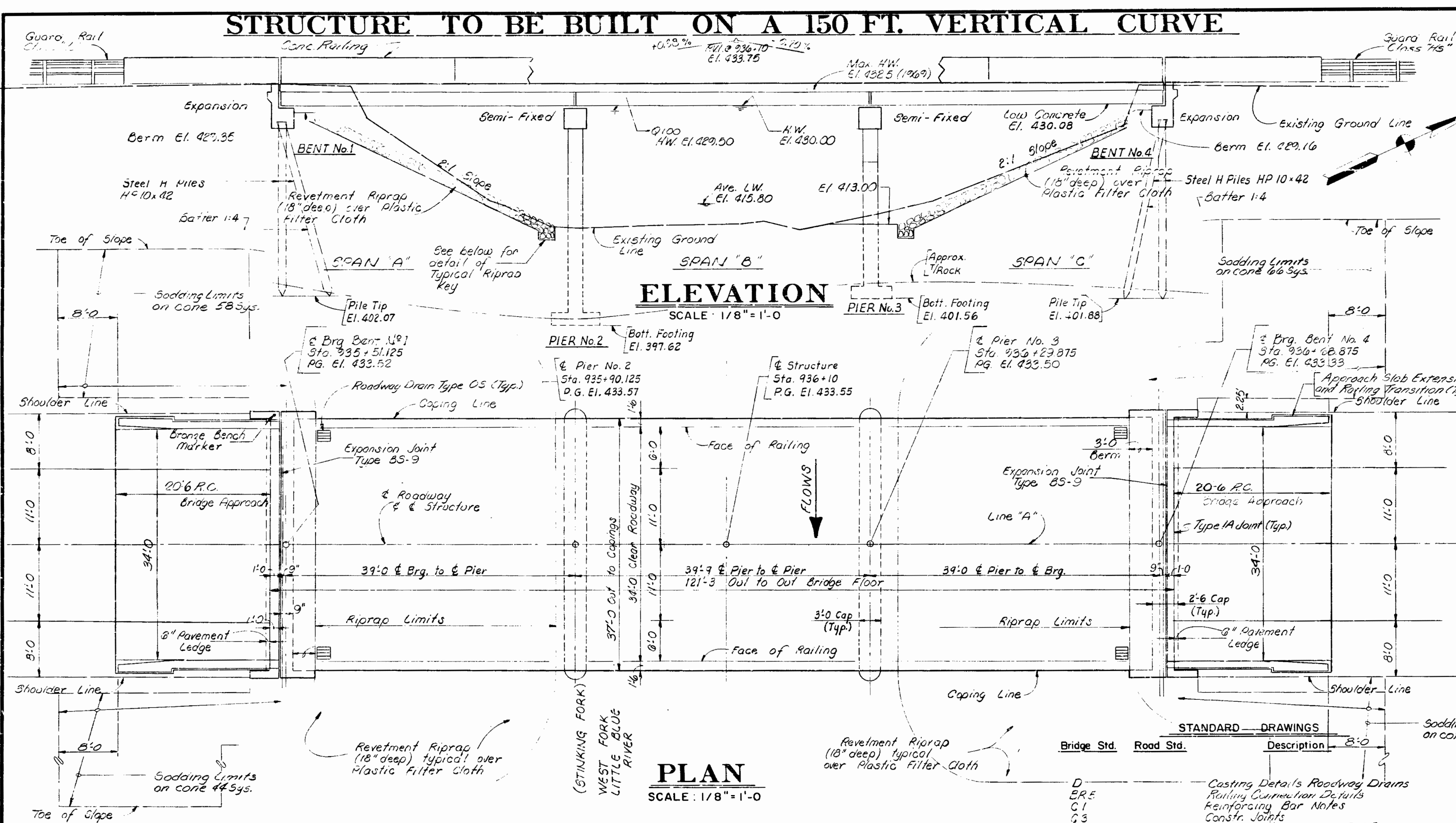
SUBMITTED FOR APPROVAL *Ralph S. Mullinnix*

DRAWING: C2 OF C8 SHEET: 7 OF 46

PROJECT: MARS-RS-4313(1)

CONTRACT NO. B-16251

BRIDGE FILE: 66-13-6920

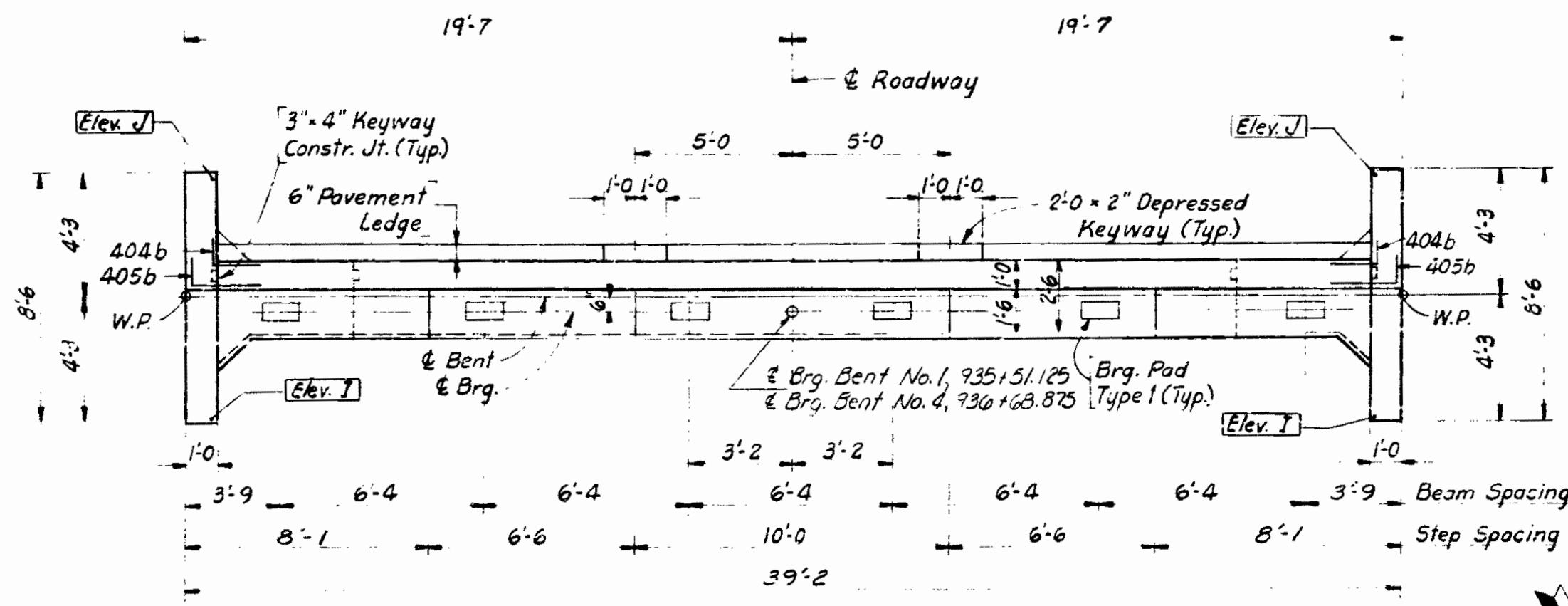


TYPICAL SECTION

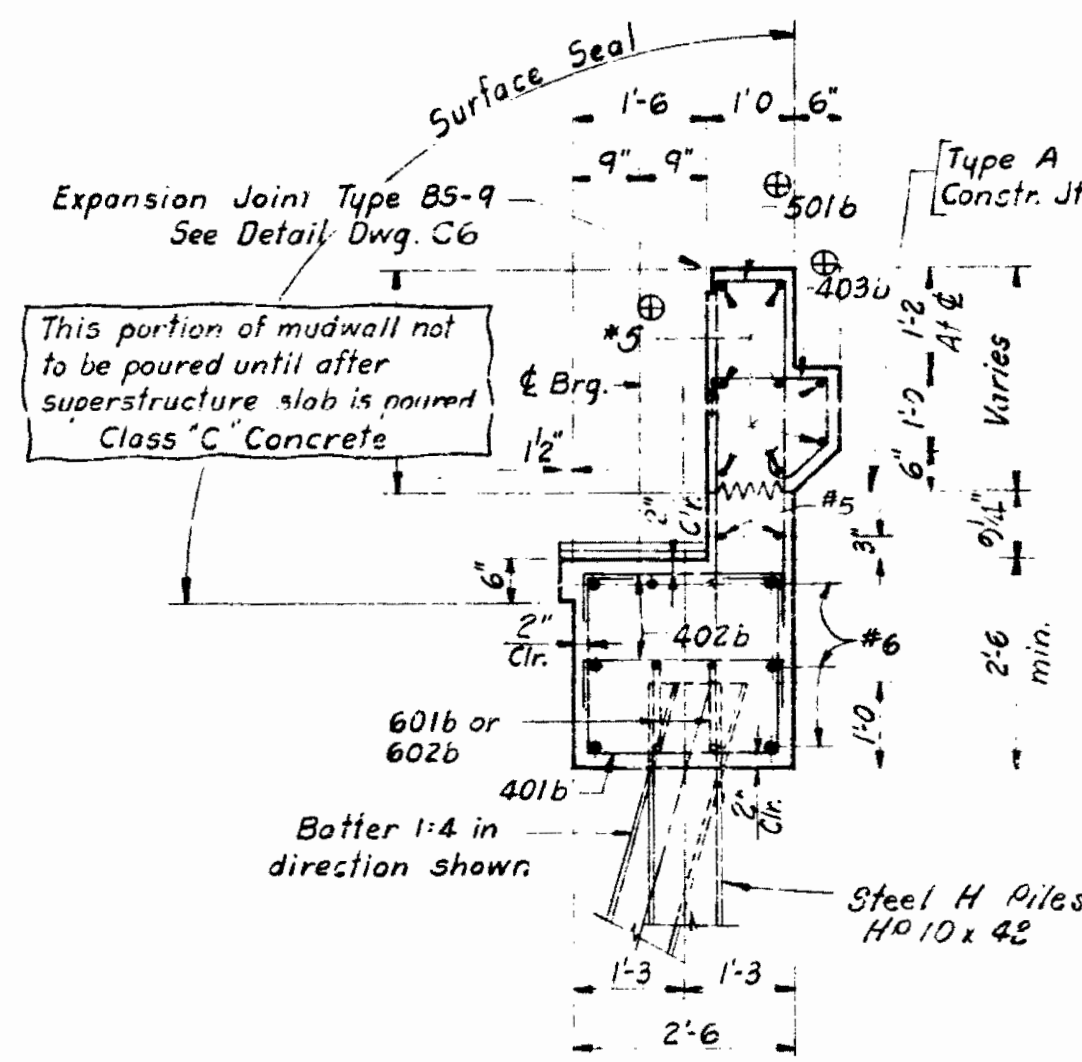
SCALE: 3/8" = 1'-0"

DESIGNED: <i>RCM</i>	CK'D: <i>RDM</i>
DRAWN: <i>JE</i>	CK'D: <i>RCM</i>
TRACED: _____	CK'D: _____

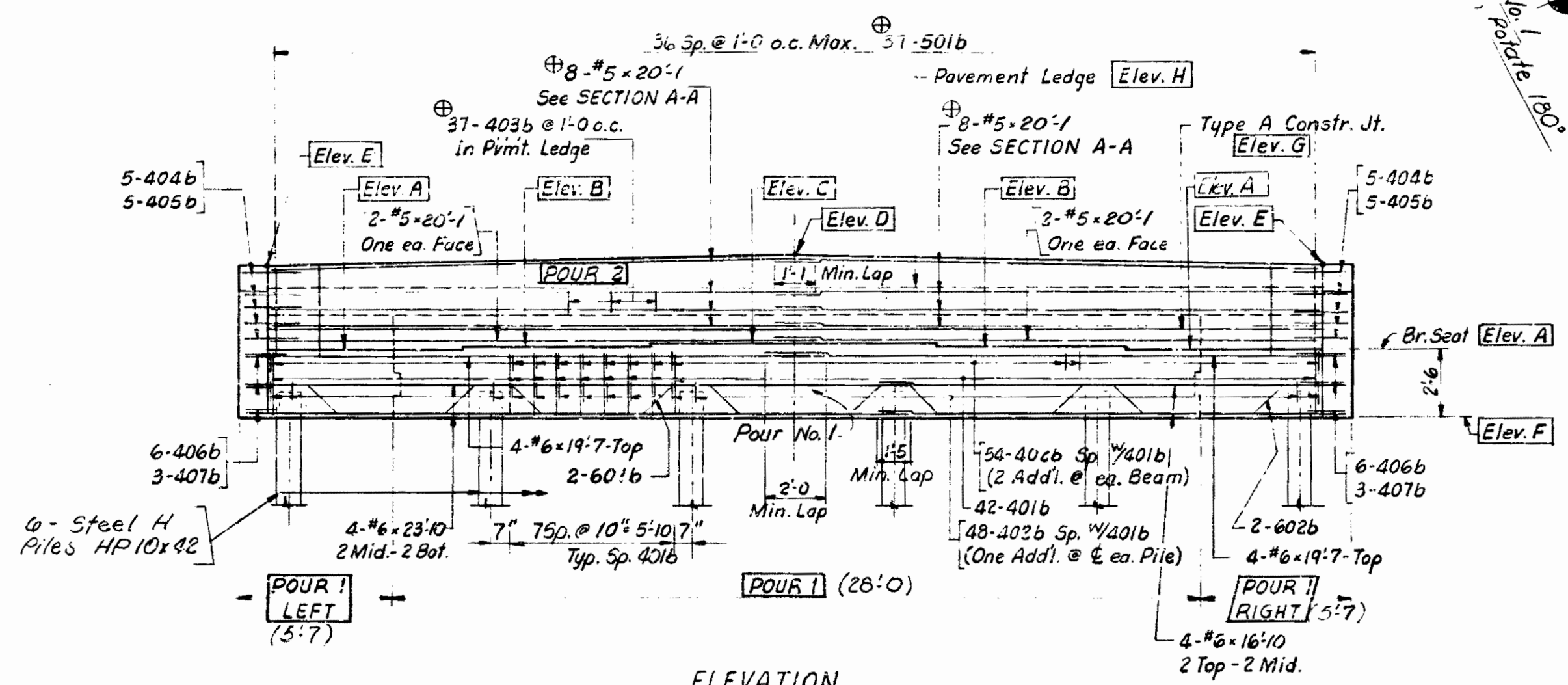
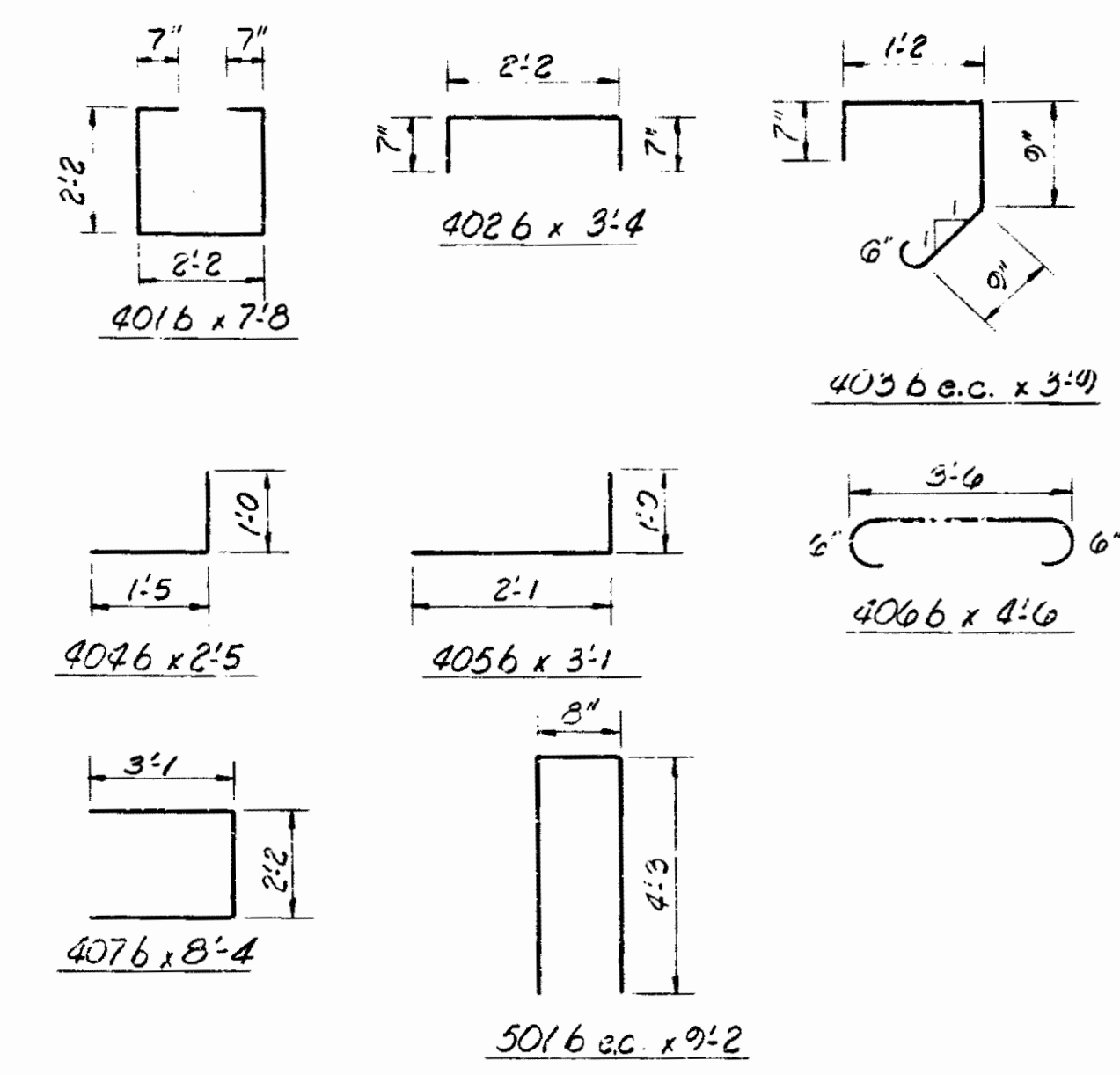
Rev 4-14-86 O. to O. Width, Railing, Approaches, Sodding Limits, S'rd. Drwg's, Notes; Drains Added



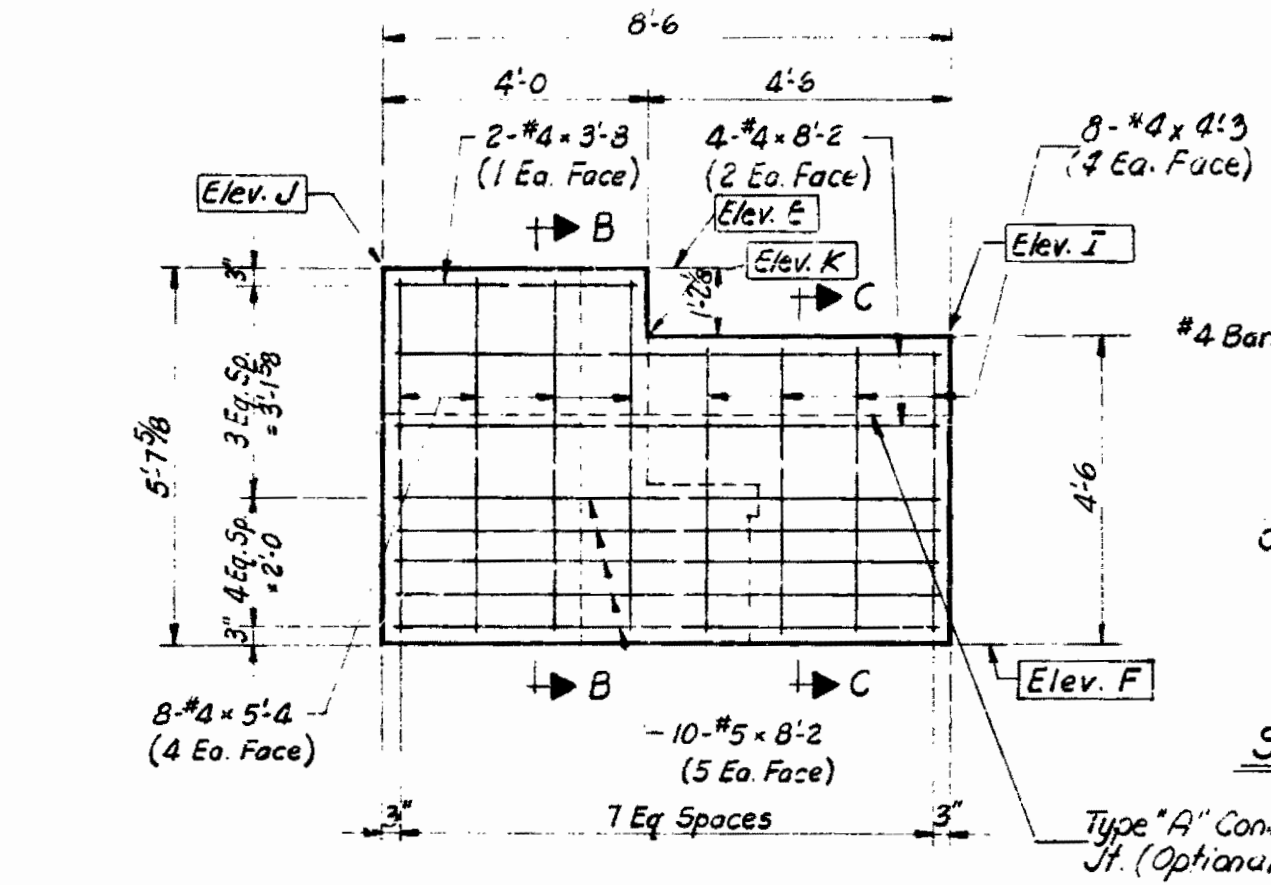
PLAN
Scale: 4"=1'-0"



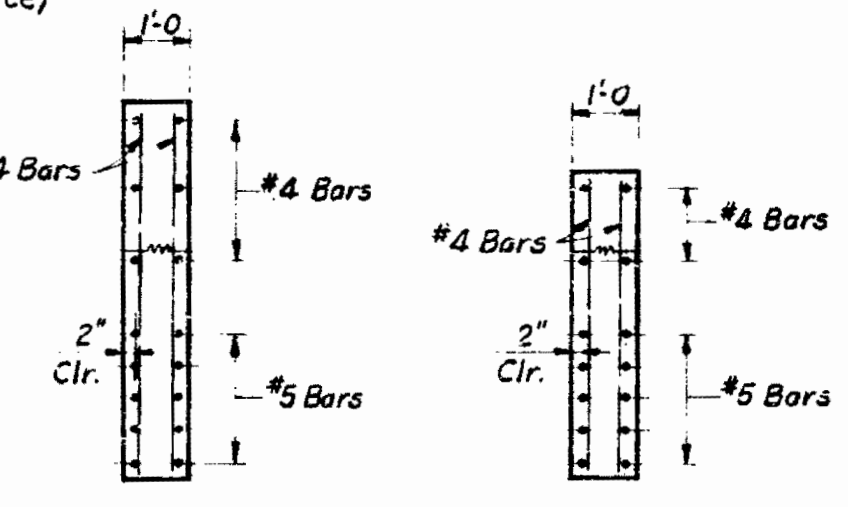
SECTION A-A
Scale: 2"=1'-0"



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

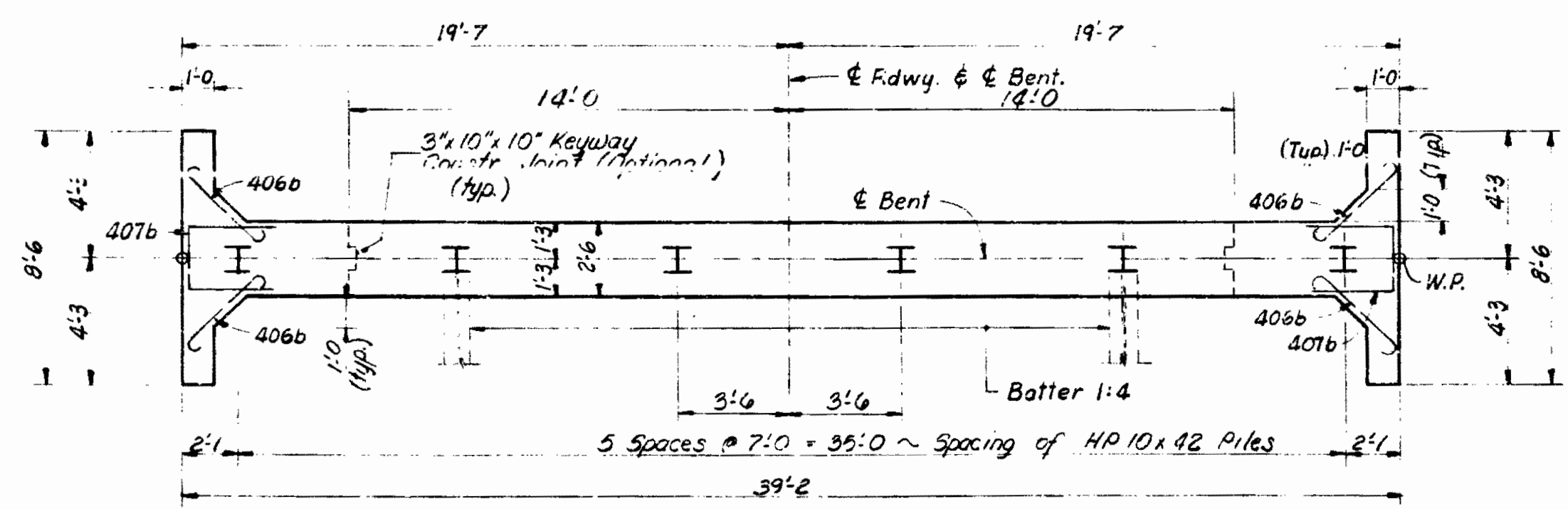


WING ELEVATION
Scale: 3/8"=1'-0"

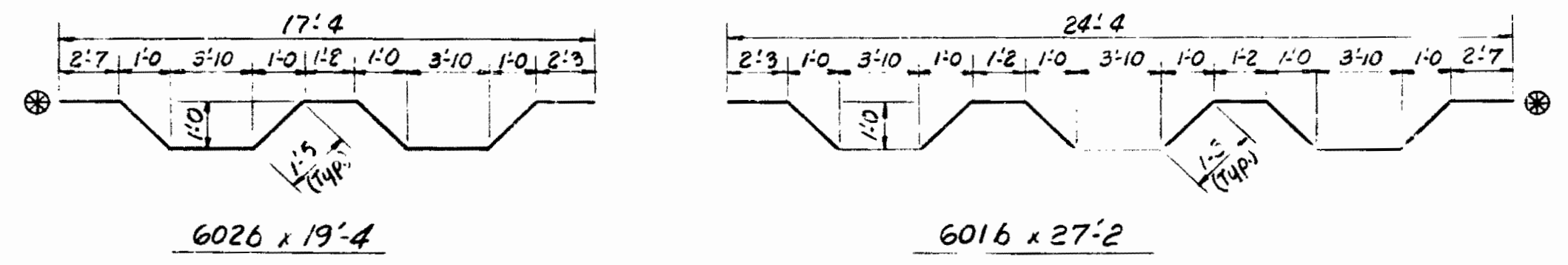


SECTION B-B
Scale: 3/8"=1'-0"

SECTION C-C
Scale: 3/8"=1'-0"



FOOTING PLAN
Scale: 1/2"=1'-0"



Coping End

NOTES:
See Bridge Standard C1 for Reinforcing Bar Notes.
For General Notes, See Dwg. C-2
See Bridge Standard C-3 for Type "A" Constr. Joint.
See Bridge Standard PB11 for Elastomeric Bearing Pads.

BENT No 1 & No 4 DETAILS
INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- As Noted DATE:- April 11, 1985
SUBMITTED FOR APPROVAL *Ralph S. Mullinnix*
DRAWING: C3 OF C8 SHEET: 8 OF 46
PROJECT: MARS-RS-4313(1)
CONTRACT NO. B-16251
BRIDGE FILE: 66-13-6920

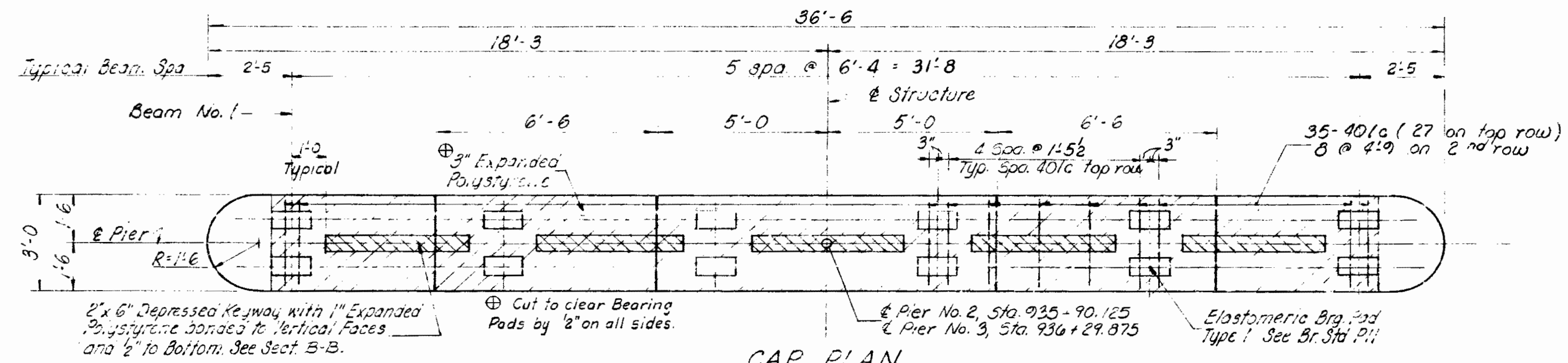
BILL OF MATERIALS BENT No. 1			
BENT No. 4 SAME (EXCEPT AS NOTED)			
REINFORCING STEEL			
Size or Mark	No. of Bars	Length (FT)	Weight (LBS.)
501b	37	9'-2"	
#5	16	20'-1"	
		Total #5	689
4036	37	3'-9"	93
		Total Epoxy Coated Reinf. Steel	782
601b	2	27'-2"	
602b	2	19'-4"	
#6	4	23'-10"	
#6	8	19'-7"	
#6	4	16'-10"	
		Total #6	620
#5	4	20'-1"	
#5	20	8'-2"	
		Total #5	254
401b	42	7'-8"	
402b	102	3'-4"	
403b	10	2'-5"	
405b	10	3'-1"	
406b	12	4'-6"	
407b	6	8'-4"	
#4	8	8'-2"	
#4	16	5'-4"	
#4	16	4'-3"	
#4	4	3'-8"	
		Total #4	705
		Total Reinforcing Steel	1579
CONCRETE			
Pour No. 1			7.5 cys.
Pour No. 1 Lt.			2.9 cys.
Pour No. 1 Rt.			2.9 cys.
		Total Class "A"	13.3 cys.
Pour No. 2 - Class "C" Concr.			4.4 cys.
MISCELLANEOUS			
6" Steel H Piles @ 26'-6" each (10 HP 42)			159 Lft.
Surface Seal			3 1/4 Sft.

⊕ = Epoxy Coated Reinforcing Bars

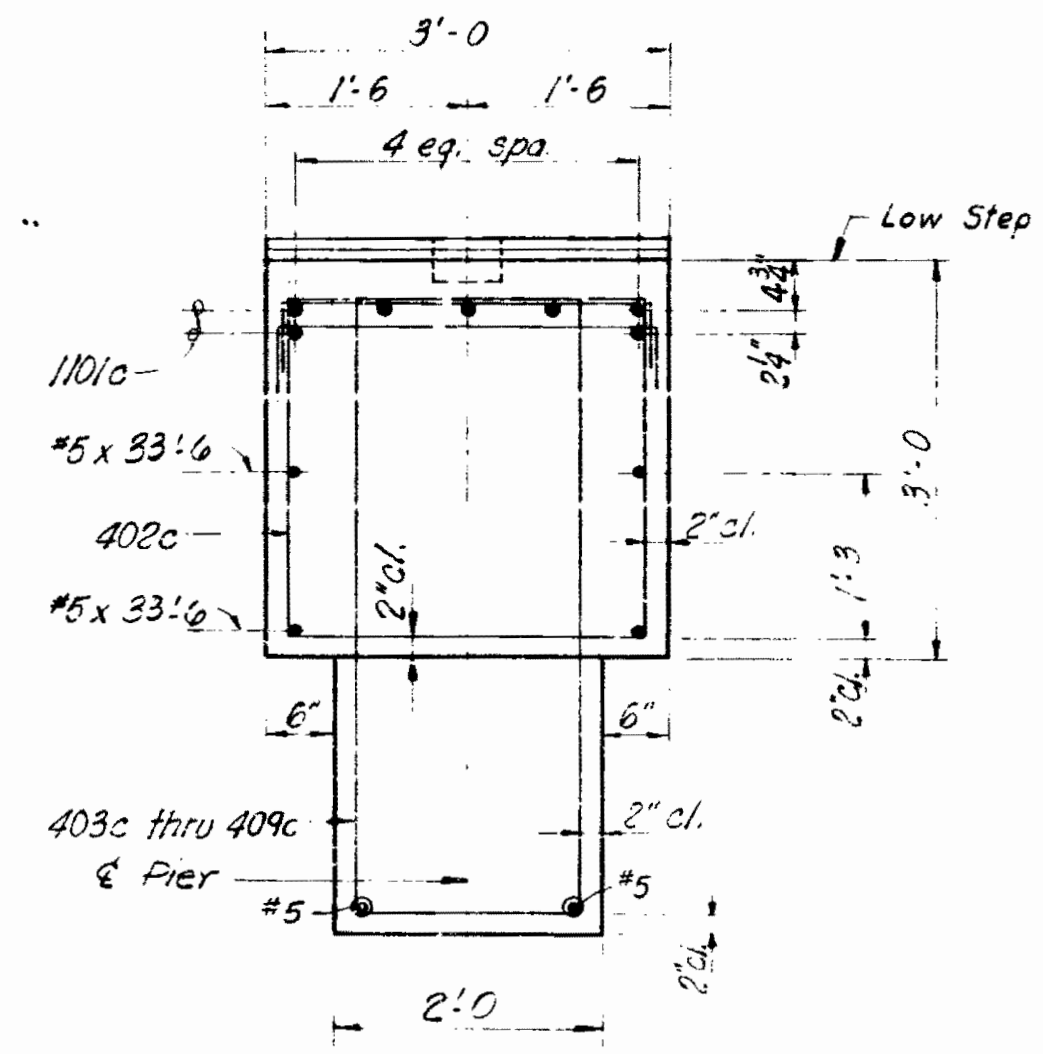
DESIGNED: RCM CKD: RDM
DRAWN: RCM-JEB CKD: RCM
TRACED: CKD

	A	B	C	D	E	F	G	H	I	J	K
Bent #1	430.07	430.17	430.27	433.51	433.23	427.57	430.84	432.34	432.06	433.22	432.05
Bent #4	429.88	429.98	430.08	433.32	433.04	427.38	430.65	432.15	431.89	433.01	431.86

Rev. 4-14-86 Dimensions, Reinf. Steel, Bill of Materials

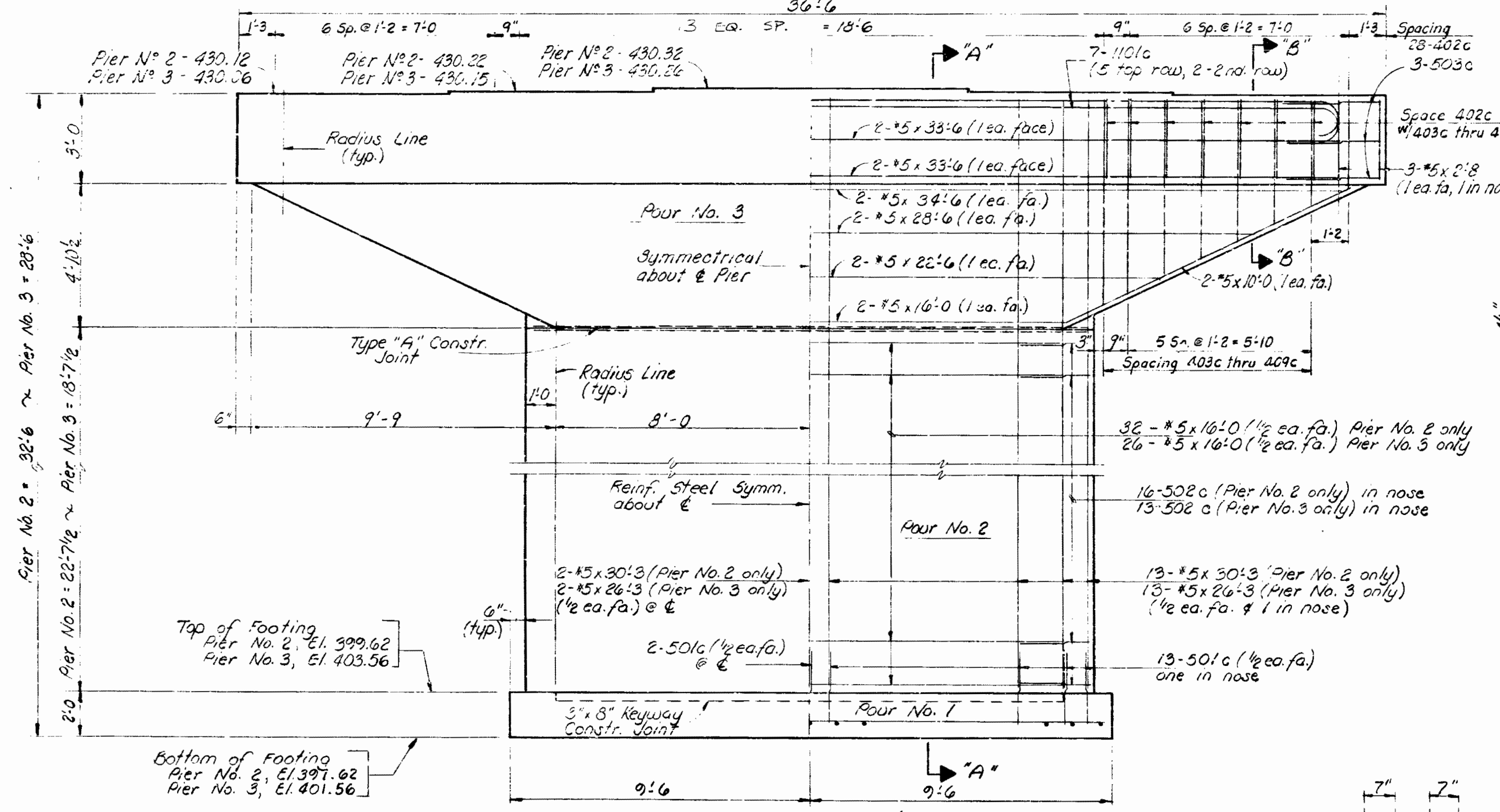


CAP PLAN
Scale: 3/8" = 1'-0"

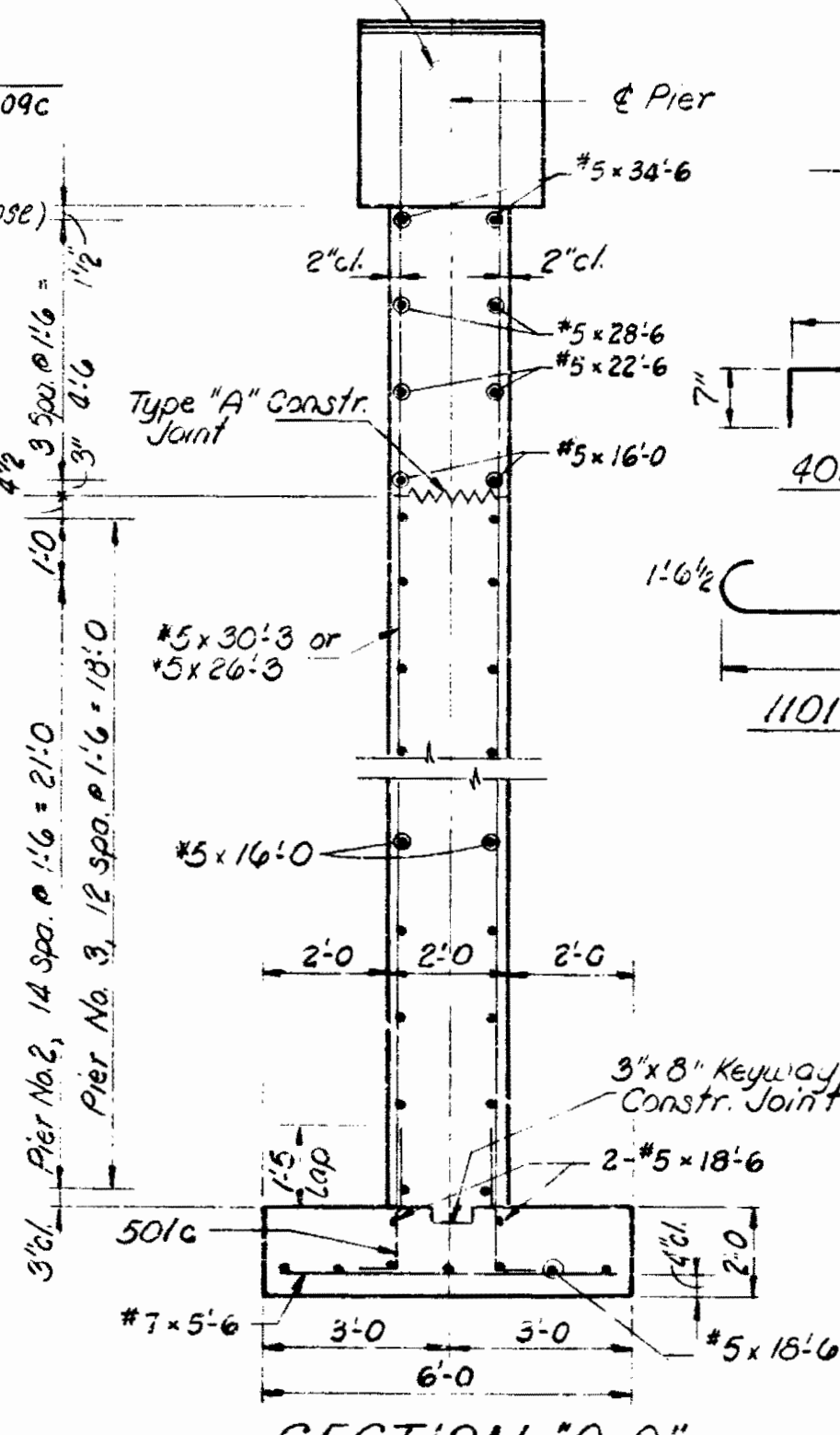


SECTION B-B
Scale: 3/8" = 1'-0"

BILL OF MATERIALS			
PIER NO. 2 (PIER NO. 3 SAME EXCEPT AS NOTED)			
REINFORCING STEEL			
Size or Mark	No. of Bars	Length (FT)	Weight (LBS.)
1101c	7	36.7	
		Total #11	1360
17	23	5.6	
		Total #7	259
501c	28	3.10	
502c	32	5.6	
502c	26	5.6	
503c	6	7.1	
5	2	3.8	
		Total #4	380
		Total #5 Pier No. 2	2341
		Total #5 Pier No. 3	2090
401c	35	3.10	
402c	23	2.11	
403c	2	16.5	
404c	2	15.7	
405c	2	12.5	
406c	2	13.3	
407c	2	12.1	
408c	2	10.11	
409c	2	9.9	
		Total #4	380
		Total Reinforcing Steel	4340
		Pier No. 2 =	4089
		Pier No. 3 =	4089
CONCRETE			
Class "B" in Footing			8.4 cys.
Class "B" above Footing			
Pier No. 2 =			29.4 cys.
Pier No. 3 =			24.2 cys.
Class "A" in Cap (Cap to Constr. Jt.)			21.6 cys.



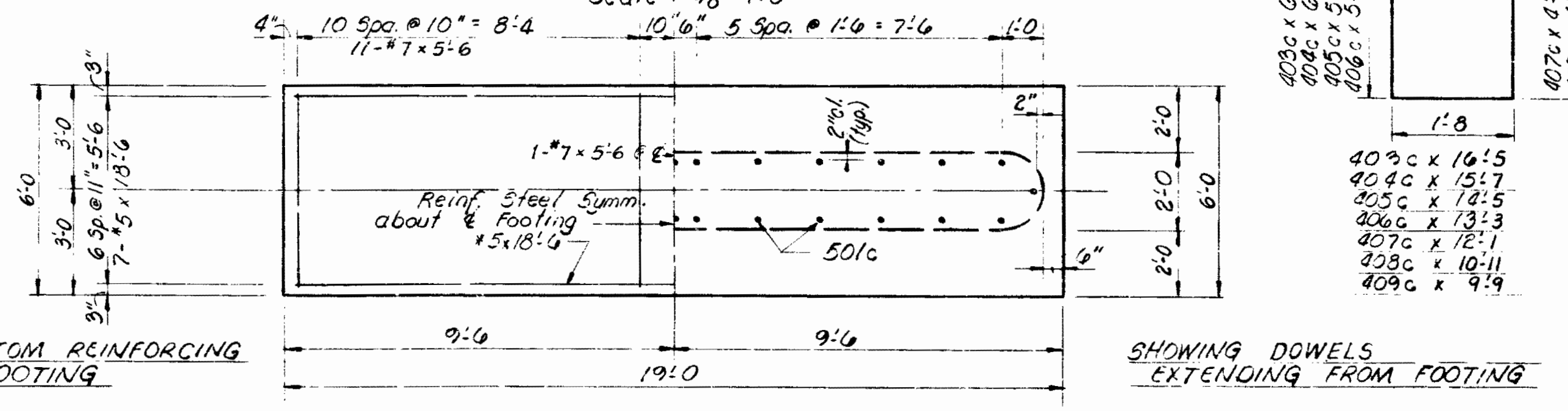
ELEVATION
Scale: 3/8" = 1'-0"



SECTION A-A
Scale: 3/8" = 1'-0"

Max. Rock Pressure = 5 Tons/Sq. Ft.

NOTES:
See Bridge Standard C1 for Reinforcing Bar Notes.
See Bridge Standard C5 for Type "A" Constr. Joint.



FOOTING PLAN
Scale: 3/8" = 1'-0"

SHOWING BOTTOM REINFORCING IN FOOTING

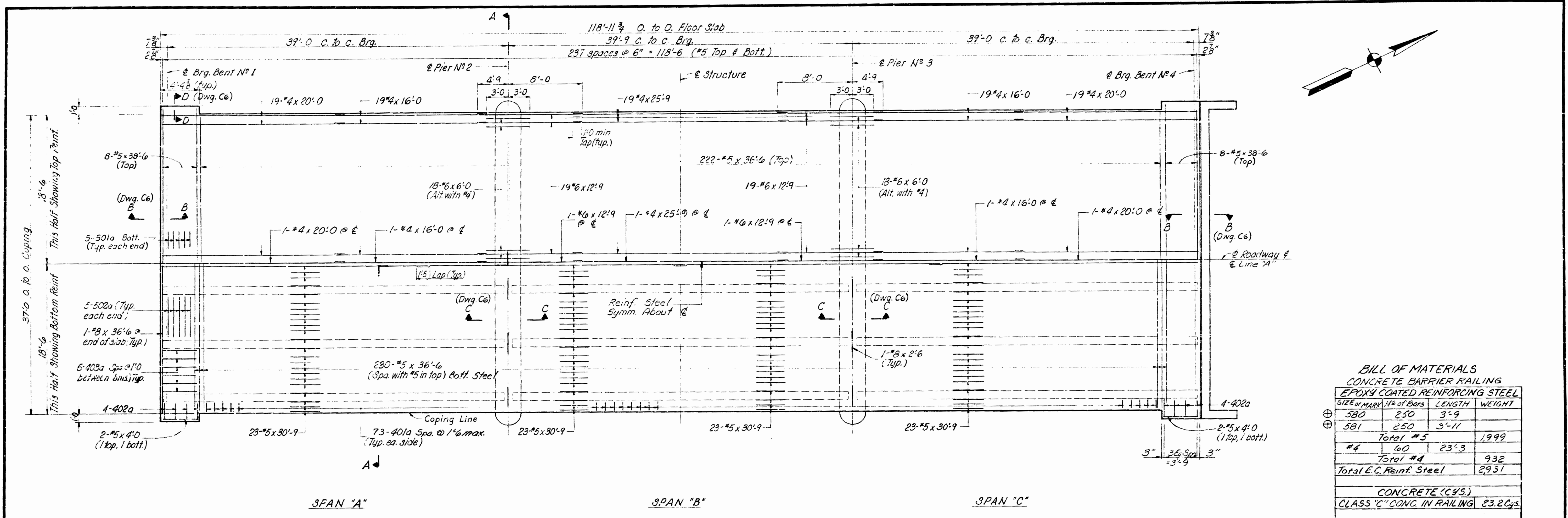
SHOWING DOWELS EXTENDING FROM FOOTING

PIER NO. 2 & NO. 3 DETAILS
INDIANA DEPARTMENT OF HIGHWAYS

SCALE: As Noted DATE: April 11, 1985
SUBMITTED FOR APPROVAL *Ralph S. Mullinnix*

DRAWING: C4 OF C8 SHEET: 9 OF 46
PROJECT: MARS-RS-4313(1)
CONTRACT NO. B-16251
BRIDGE FILE: 66-13-6920

DESIGNED: *R.M. - RDM* CKD: RDM
DRAWN: *M.C. - MCM* CKD: RCM
TRACED: CKD



FLOOR SLAB PLAN
Scale: 3/16" = 1'-0"

BILL OF MATERIALS
CONCRETE BARRIER RAILING
EPOXY COATED REINFORCING STEEL

SIZE OR MARK	No of Bars	LENGTH	WEIGHT
#50	250	3'-9	
#51	250	3'-11	
Total #5			1,999
#4	160	23'-3	
Total #4			932
Total E.C. Reinf. Steel			2,931
CONCRETE (CY'S.)			
CLASS "C" CONC. IN RAILING			23.2 Cys.

See Bridge Std. BR5 for Bar Bending Details.

Unit Stresses:
f_s = 20,000 psi
f_c = 1,200 psi

After beams have been erected, concrete forms shall not be blocked against the expansion end of the beams in making any pours adjacent to the beam spans.
The top reinforcing in the deck shall be securely tied down to the deck forms and, or the beams to prevent lifting during concrete placement.

See Bridge Standard C1 for Reinforcing Bar Notes.

All reinforcing steel in the bridge slab to be epoxy coated. Areas of coating damage during fabrication or handling in the field shall be repaired with the material compatible with the coating applied by the manufacturer. See the Special Provisions.

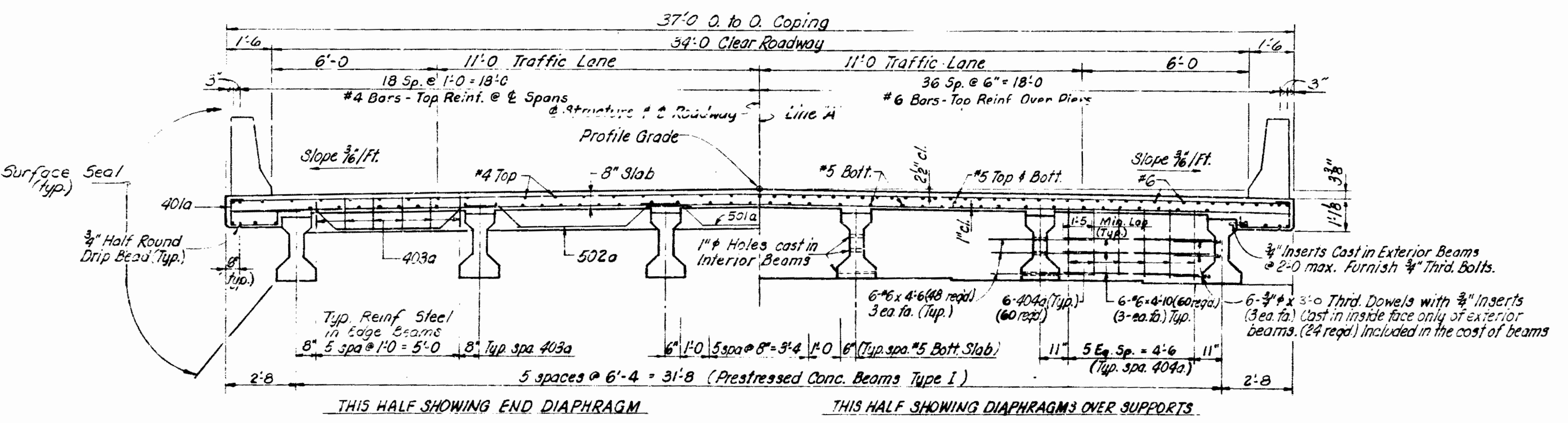
Suitable restraint shall be provided to prevent the rotation of the outside beams from construction loads such as finishing machines, forms, etc.

For additional details and Bill of Materials, see Drawings C6 & C1.

See Bridge Std. C1 for Reinforcing Bar Notes.

SUPERSTRUCTURE DETAILS
INDIANA DEPARTMENT OF HIGHWAYS

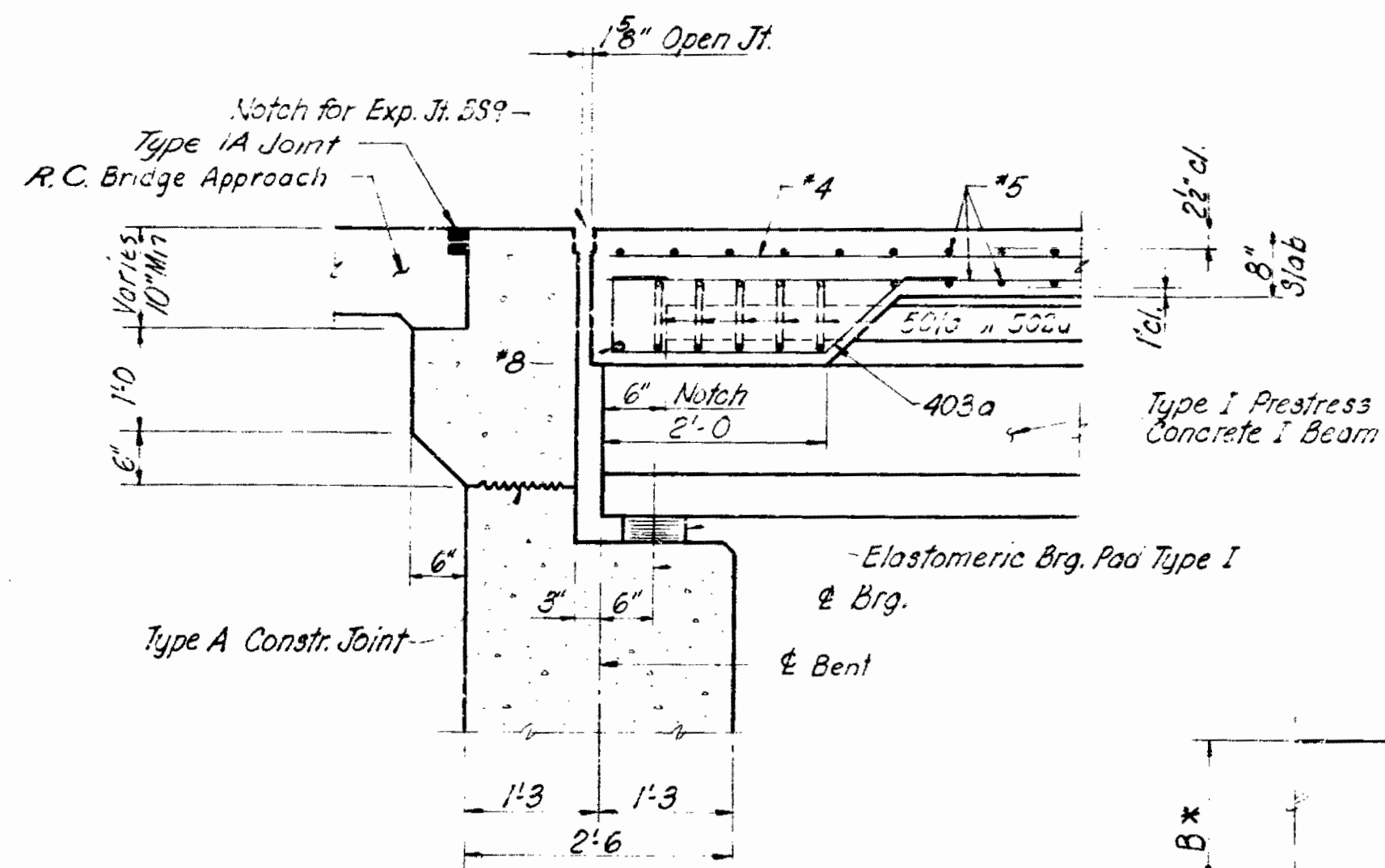
SCALE:- As Noted DATE:- April 11, 1985
SUBMITTED FOR APPROVAL *Ralph & Mullinnis*
DRAWING:- C5 OF C8 SHEET:- 10 OF 46
PROJECT:- MARS-RS-4313(1)
CONTRACT NO. B-16251
BRIDGE FILE:- 66-13-6920



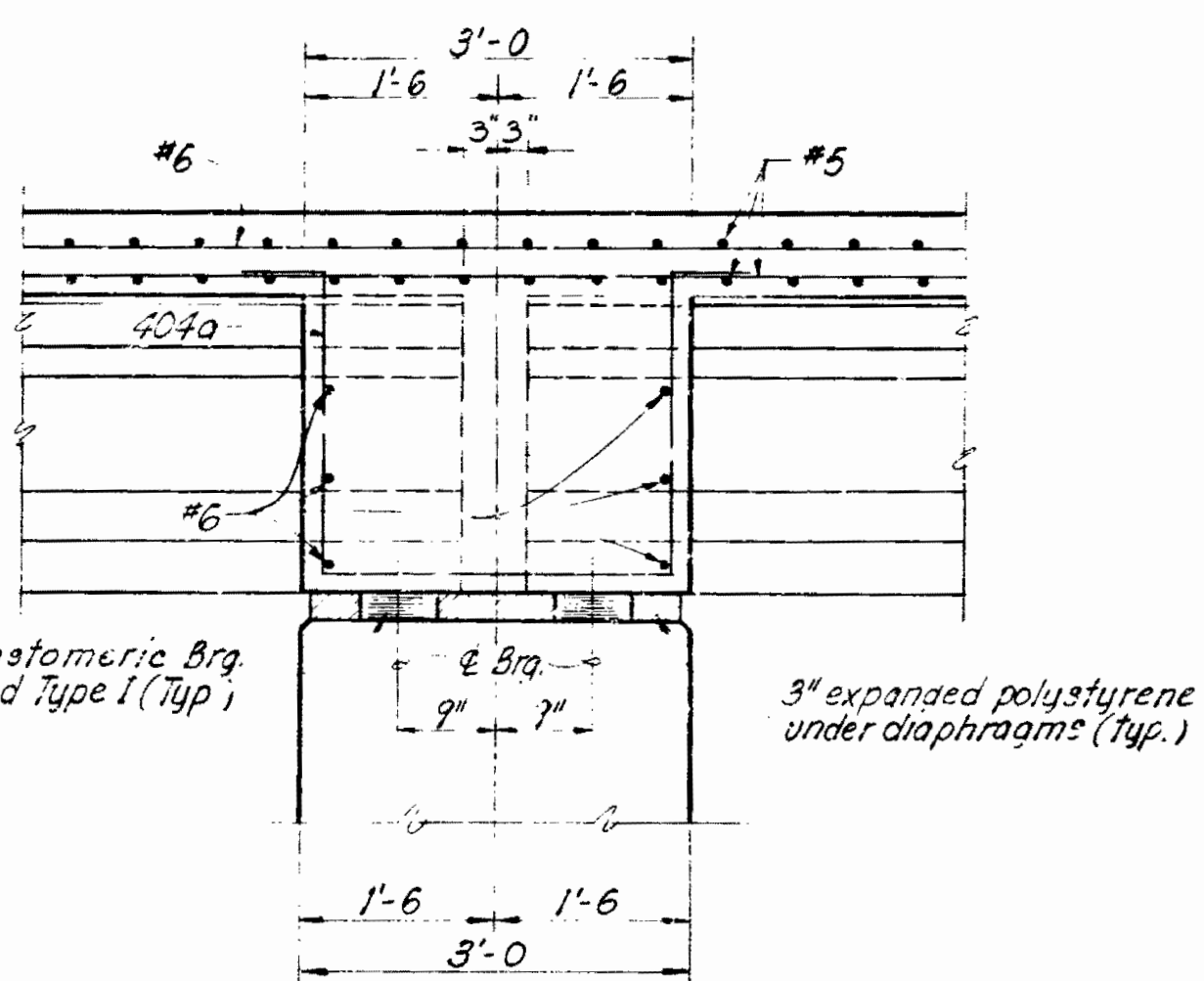
SECTION A-A
Scale: 3/8" = 1'-0"

DESIGNED: RCM	CKD: RDM
DRAWN: MeB	CKD: RCM
TRACED:	CKD:

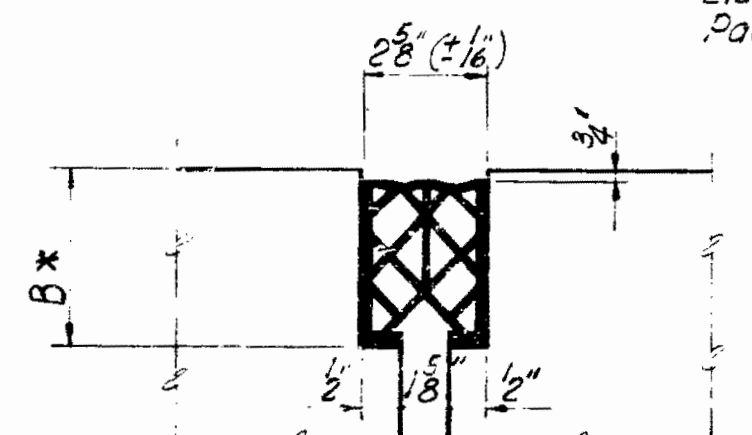
Rev 4-14-86 Roadway Width Dimensions, Reinforcing Railing;
Railing Bill of Materials Added



SECTION B-B
Scale: 3/4" = 1'-0"

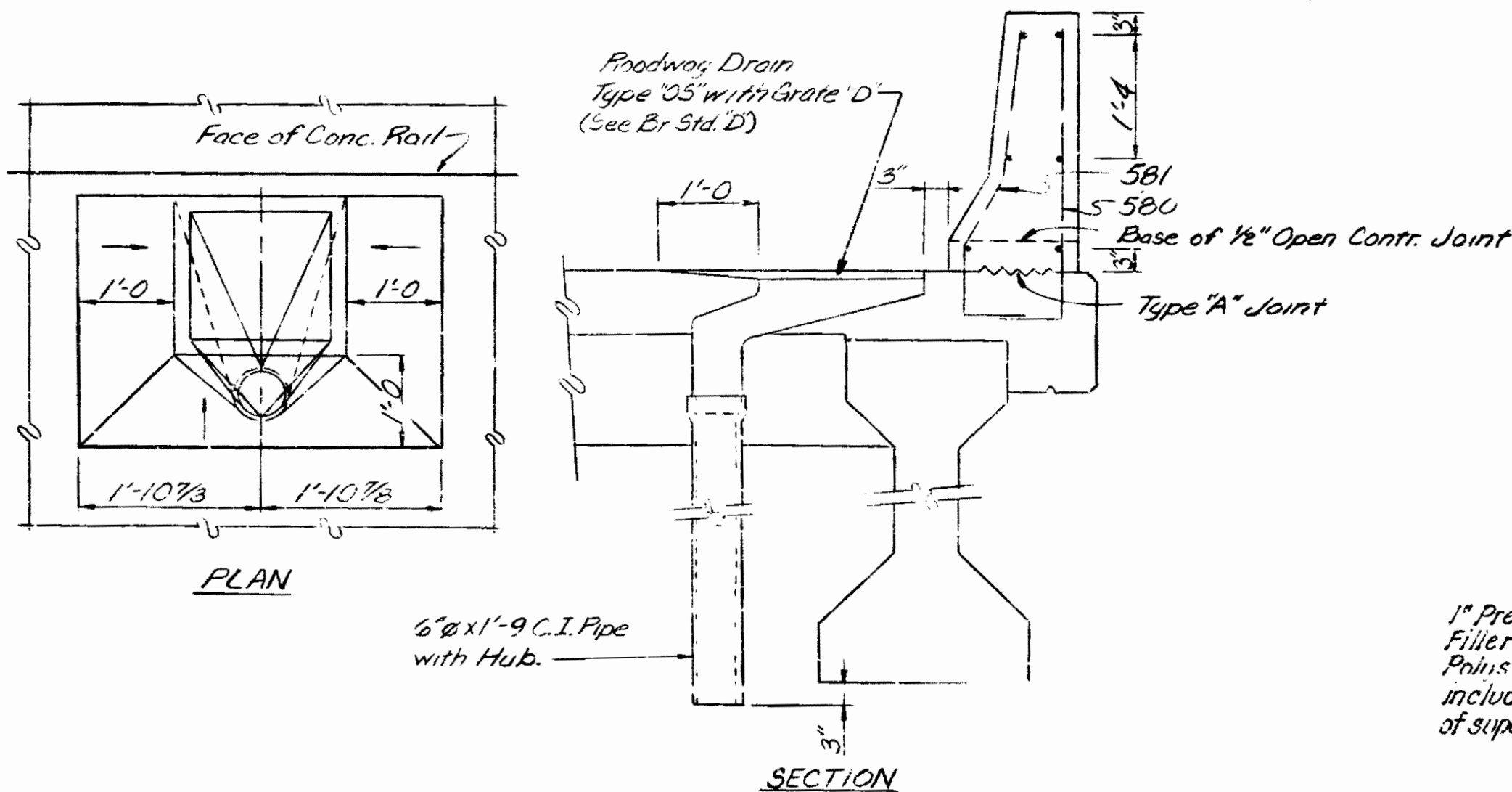


SECTION C-C
Scale: 3/4" = 1'-0"

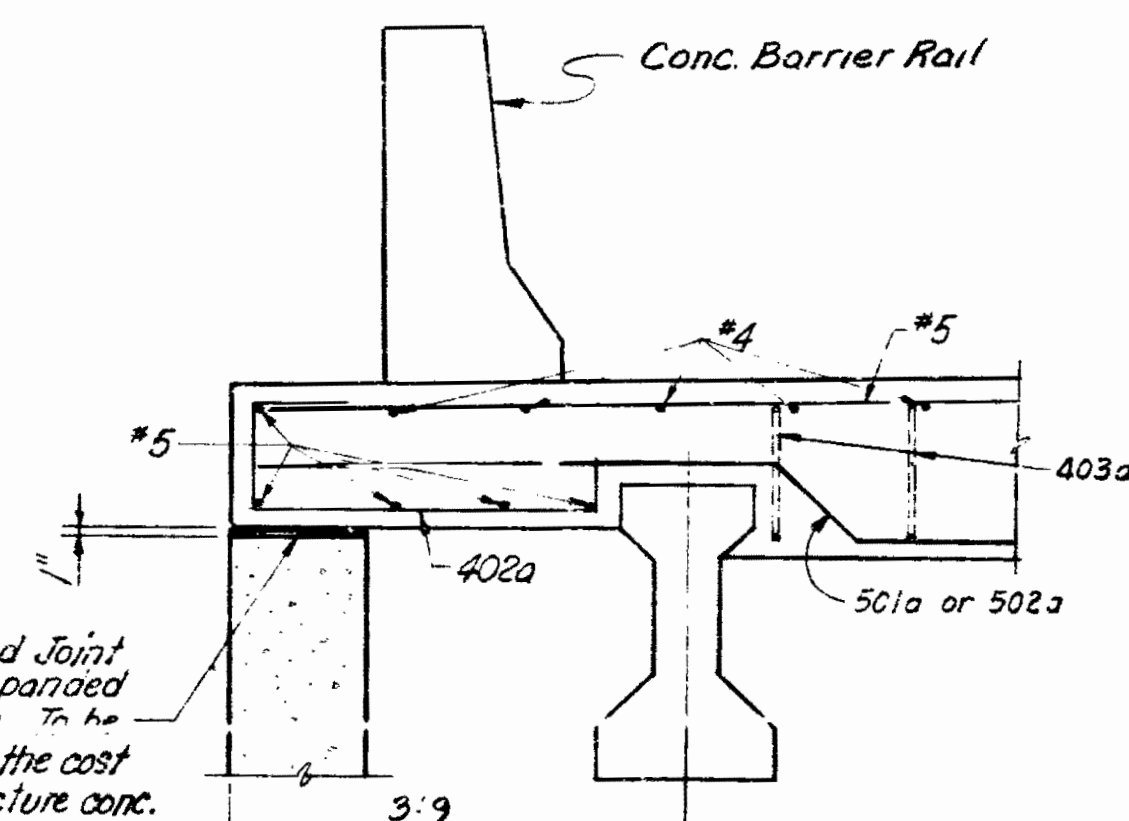


* To be determined in the field
See the Special Provisions

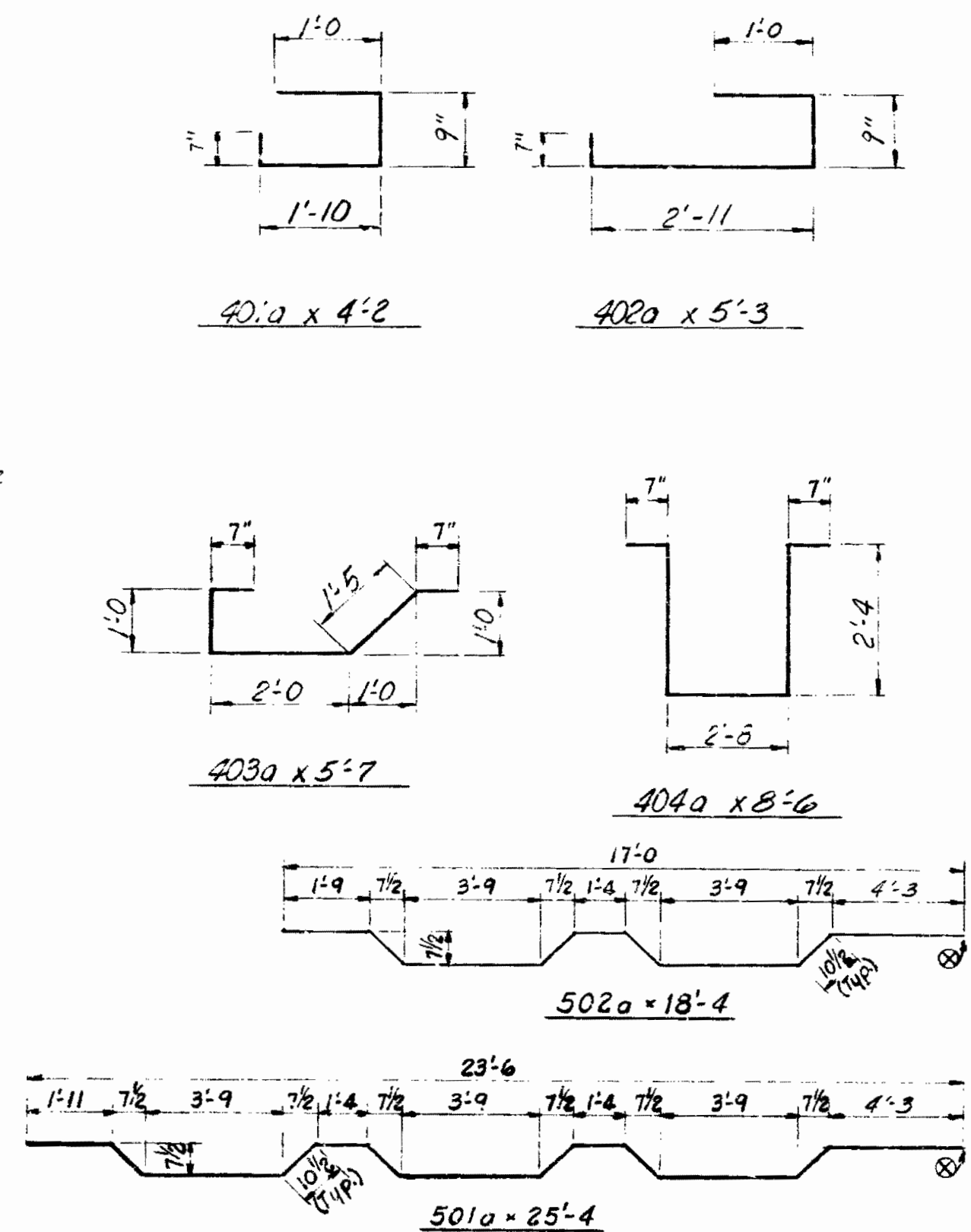
EXPANSION JOINT TYPE BS-9
Not to scale



ROADWAY DRAIN DETAILS
For Location See General Plan
No Scale



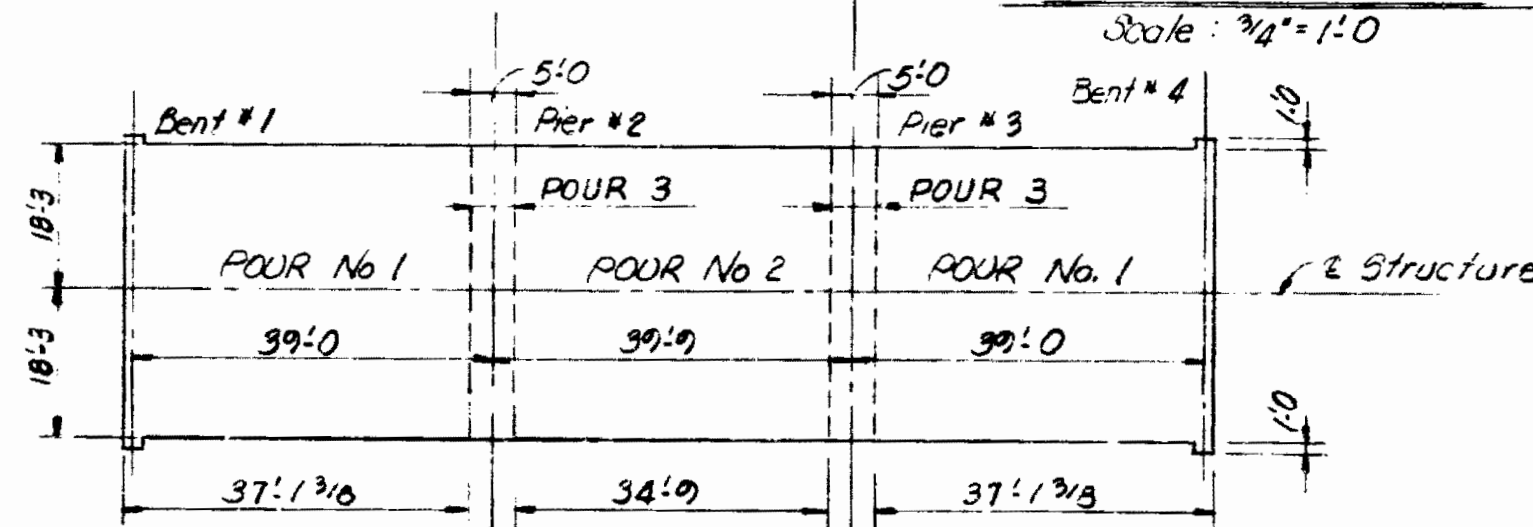
SECTION D-D
Scale: 3/4" = 1'-0"



BAR BENDING DIAGRAMS

Notes:
See Bridge Standard C1 for Reinforcing Bar Notes.
For additional Details See Dwg. C-5
* For One R.C. Bridge Approach Only.
** See Road Std. MA for Bar Bending Details.

NOTE:
Sequence of pours to be made in order of pour numbers.
All superstructure construction joints are optional,
except as noted, and pours may be made continuous
provided the pour terminates at a construction joint
indicated on the plans. The contractor may change
the sequence of pours or location of construction
joints subject to the approval of the Engineer.
Pours over interior supports to be made last to reduce the effect
of the slab dead load in the negative moment area. Pour #3 will
include the diaphragm at supports, and will be held to a 5' length.



POUR DIAGRAM
Scale: 1" = 20'-0"

BILL OF MATERIALS
SUPERSTRUCTURE

Reinforcing Steel Epoxy Coated			
Size or Mark	No. of Bars	Length	Weight (Lbs.)
#8	2	36'-6"	
#8	12	2'-6"	
		Total #8	275
#6	78	12'-9"	
#6	72	3'-0"	
#5	60	4'-10"	
#5	43	4'-6"	
		Total #6	2903
501a	10	25'-4"	
502a	10	18'-4"	
#5	16	38'-6"	
#5	452	36'-6"	
#5	184	30'-9"	
#5	8	4'-0"	
		Total #5	24,240
401a	146	4'-2"	
402a	16	5'-3"	
403a	60	5'-7"	
404a	60	8'-6"	
#4	39	25'-0"	
#4	78	20'-0"	
#4	78	16'-0"	
		Total #4	3552

Total Epoxy Coated Reinforcing Steel 30,970

CONCRETE

Pour No. 1	2 @ 39'-4"	78.8 cys.
Pour No. 2		35.0 cys.
Pour No. 3, 2 @ 12'-6"		25.2 cys.
		Total Class "C" 139.0 cys.

MISCELLANEOUS

Expansion Jt. Type BS-9	78 Lft.
Surface Seal (Estimated Quantity)	4793 sq. ft.

* R.C. APPROACH SLAB

REINFORCING STEEL		
SIZE or MARK	Nº of BARS	LENGTH (Lbs.)
#5	68	20'-6"
#5	11	33'-6"
		Total Reinforcing Steel 1,838

CONCRETE
Reinf. Conc. Pcm (10 inch) 77.6 cys.

SUPERSTRUCTURE DETAILS

INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- As Noted

DATE:- April 11, 1985

SUBMITTED FOR APPROVAL

Ralph S. Mullinnis

DRAWING:- C6 OF C8 SHEET:- 11 OF 46

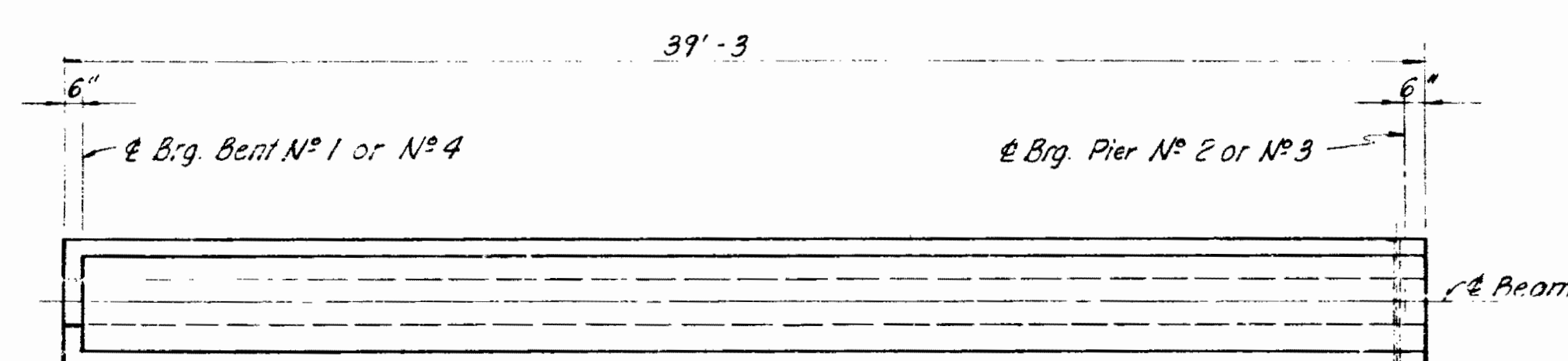
PROJECT:- MARS-RS-4313 (1)

CONTRACT NO. B-16251

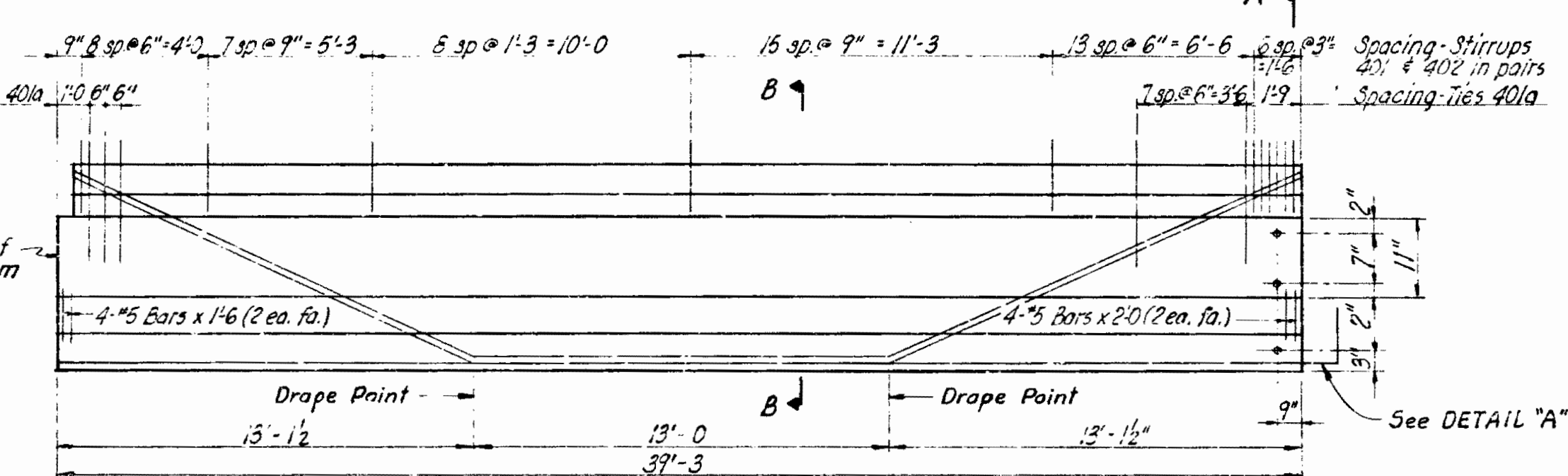
BRIDGE FILE:- 66-13-6920

DESIGNED	RCM	CKD	RDM
DRAWN	MEB-JEB	CKD	RCM
TRACED		CKD	

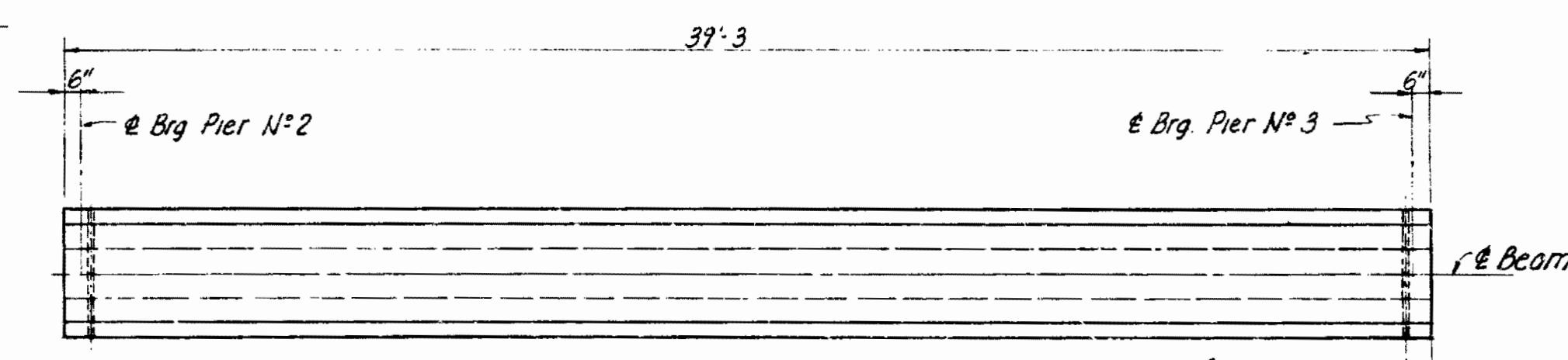
Rev. 4-A-86 Section B-B, D-D, Reinforcing, Bill of Materials;
Corner Details Deleted, Drain Details Added



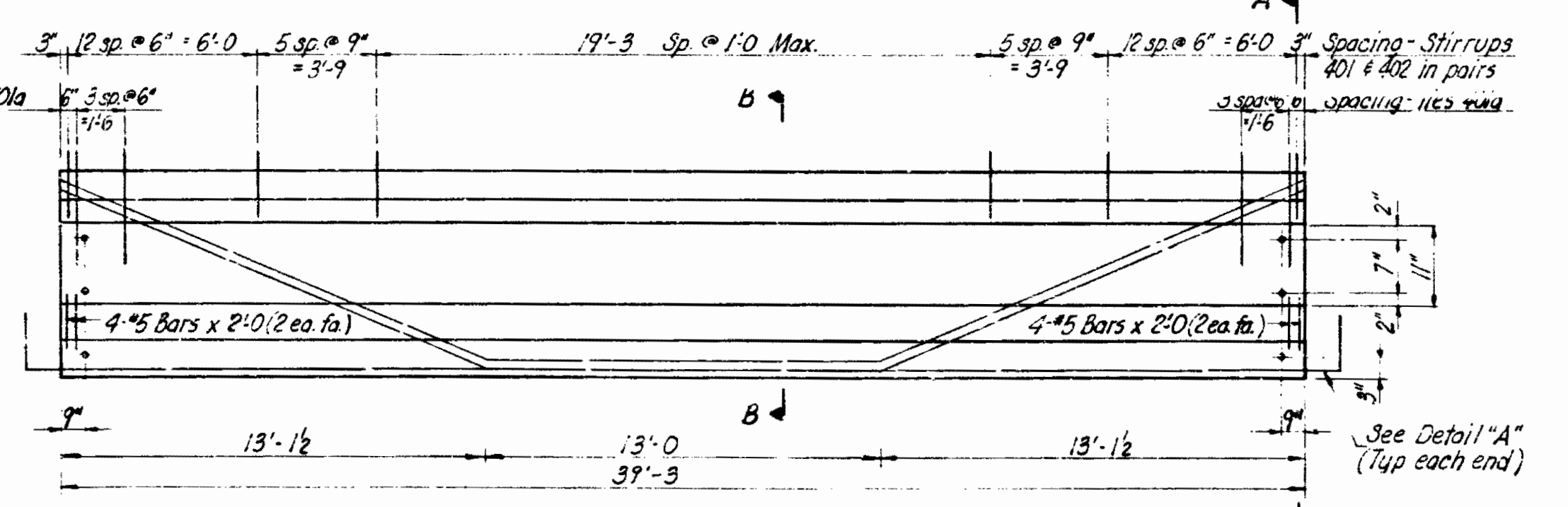
PLAN



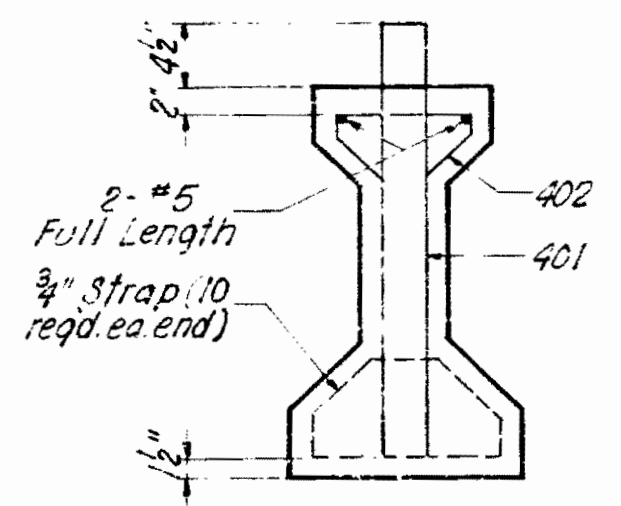
ELEVATION - SPAN "A"
SPAN "C" SAME OPPOSITE HAND
Not to scale



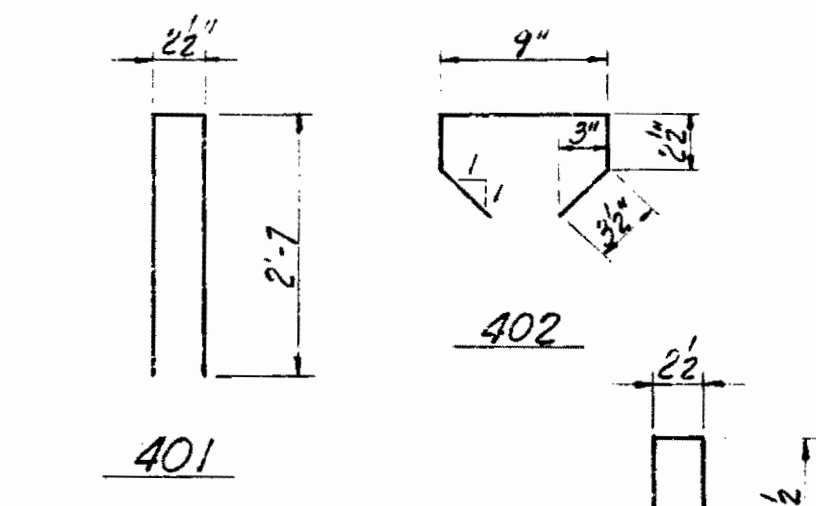
PLAN



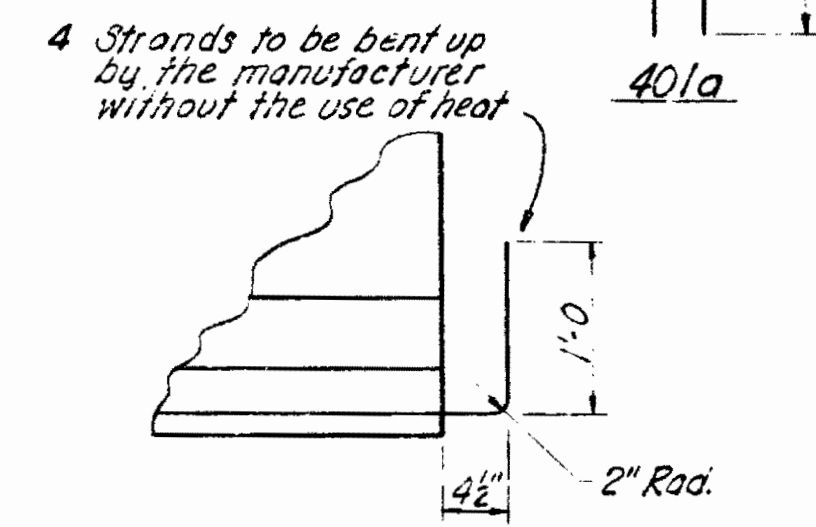
ELEVATION - SPAN "B"
Not to scale



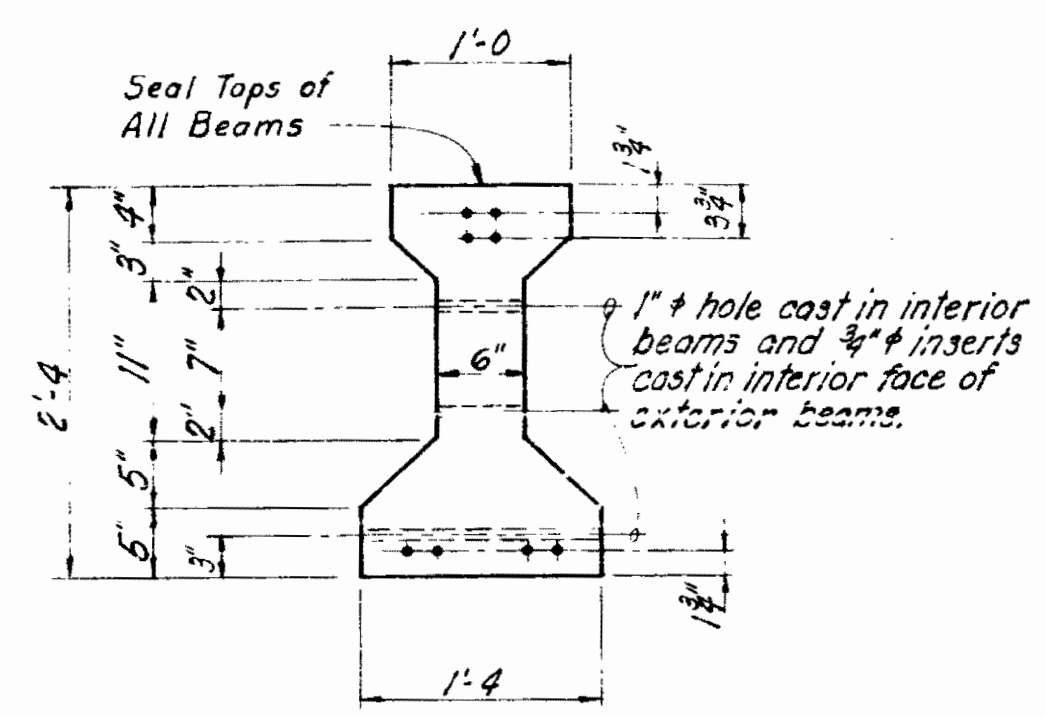
STIRRUP DETAIL
Scale: 1" = 1'-0"



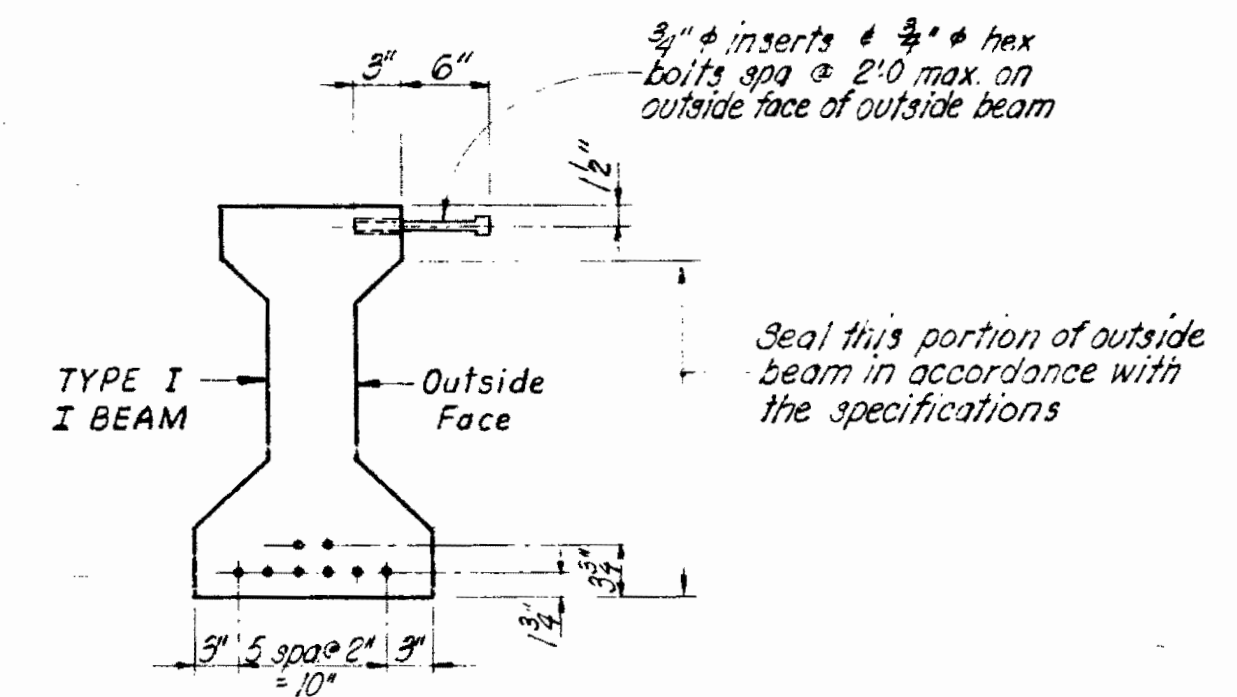
DETAIL "A"
Not to scale



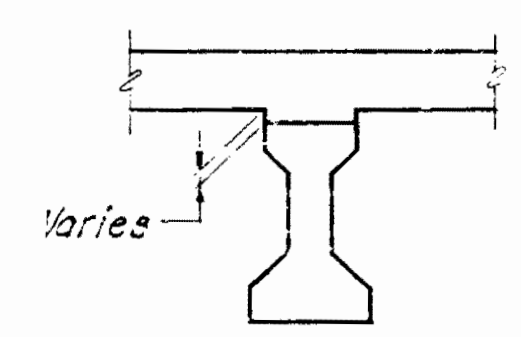
4 Strands to be bent up by the manufacturer without the use of heat



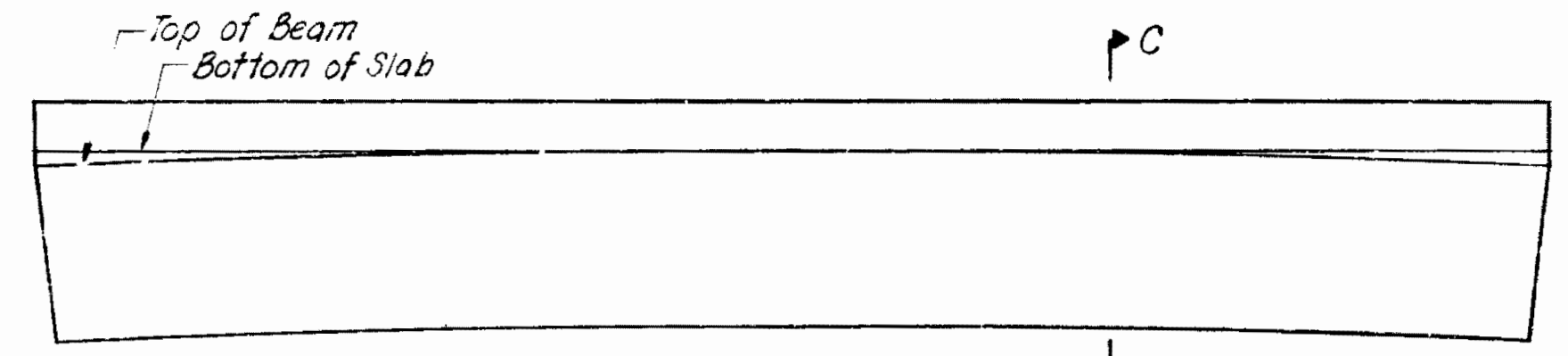
SECTION A-A
Scale: 1" = 1'-0"



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



SECTION C-C
Not to scale



BEAM ELEVATION
Not to scale

Note:
Bridge seat elevations were calculated using design camber and dead load deflection of slab (Residual Beam Camber) with top of beam at bottom of slab elevation at centerline of span. Actual cambers which are greater than design cambers will be taken care of by permitting the top of beam to extend into the slab. (limit of 1 inch).

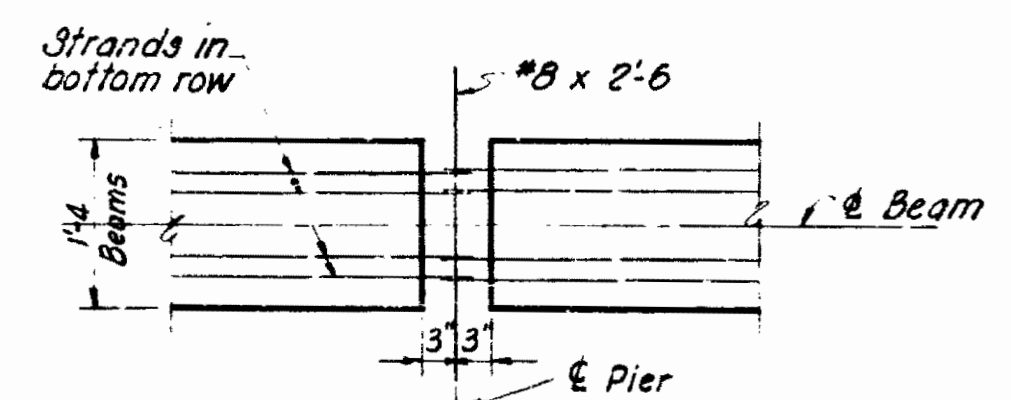
	Deflection @ Mid-Span - In Inches	
	Span 1 @ 3	Span 2
Initial Beam Camber	0.478	0.465
Slab Dead Load	-0.333	-0.307
Residual Camber	0.145	0.158

PRESTRESSING NOTES

Prestressed concrete beams to be designed in accordance with 1983 A.A.S.H.T.O. Specifications
 Minimum 28 day compressive strength of concrete to be 5,000 p.s.i.
 Minimum compressive strength of concrete at time of prestressing to be 4,000 p.s.i.
 Prestressing steel to be 7/8" diameter 7 wire stress relieved strand with a minimum tensile strength of 270,000 p.s.i. Strands to be pulled to 28,936 lbs. each.
 Beam manufacturer shall equip beams with satisfactory lifting devices and the contractor shall follow the manufacturer's recommendations for handling and erection.
 The material and labor for the manufacture, transportation and erection of prestressed concrete I-beams, including elastomeric bearing pads, dowels and grout, inserts, 3/4" threaded rods, lifting devices, sealer on exterior beams as specified, and on tops of all beams, shall be included in the lump sum item "Concrete Structural Members".
 Sealing required on the outside face of the exterior beams to be done by the beam fabricator in the shop as shown on detail plans. Do not rub.
 The beam manufacturer shall furnish the Engineer, thru the contractor, five (5) sets of shop drawings for his approval prior to the casting of the beams.
 The beams shall be cast a minimum of 15 days before the slab is poured.
 Seams are to be supported at the bearing points while stored and while transporting to job site.
 Tops of beams to be scored transversely at about 3" on center with pointed tool.

BEAM DETAILS

INDIANA DEPARTMENT OF HIGHWAYS

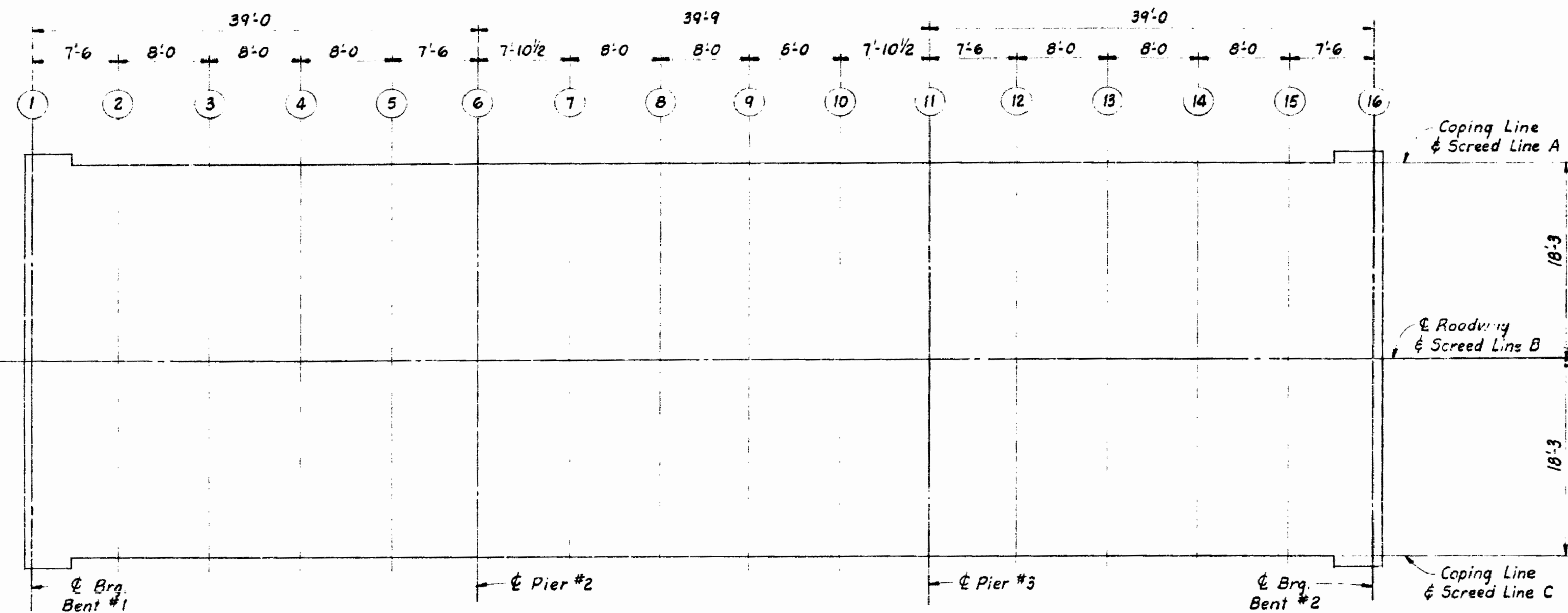


PLAN SHOWING EXTENDED STRANDS AT PIERS 2 & 3
Scale: 3/4" = 1'-0"

Notes:
See Bridge Standard C1 for Reinforcing Bar Notes.
See Bridge Standard PBI, PB10 and PB11 for additional details

SCALE:- As Noted DATE:- April 11, 1985
 SUBMITTED FOR APPROVAL *Ralph E. Mullinnis*
 DRAWING:- C1 OF C8 SHEET:- 12 OF 46
 PROJECT:- MARS-RS-4313(1)
 CONTRACT NO. B-16251
 BRIDGE FILE:- 66-13-6920

DESIGNED: RCM CKD: RDM
 DRAWN: M.E.B. CKD: RCM
 TRACED: CKD



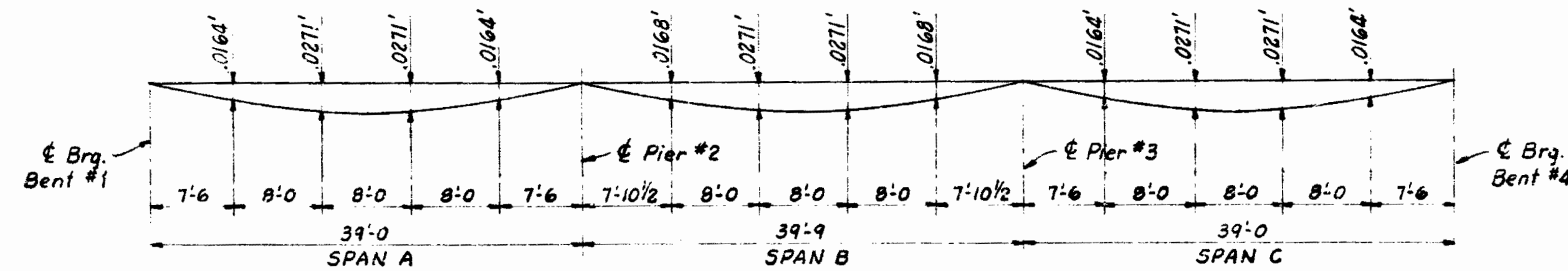
SCREED PLAN

PURPOSE:
 "SCREED PLAN" shows location of screeds. "TABLE OF SCREED ELEVATIONS" shows data for setting screeds and coping forms so that the slab and coping will be at the final grade elevations after all concrete has been poured.

PROCEDURE:
 After beams are in place take elevations of all screed points or top of the adjacent beam. Enter these elevations in the "Table of Screed Elevations". Subtract these elevations from the tabulated elevations and use the resulting dimensions as the height for setting the coping or screed form above that point on the beam. This dimension remains constant regardless of how much or in what order the concrete is poured. Do not set coping or screed forms by leveling.
 No concrete is to be poured until the above operations are completed.

TABLE OF SCREED ELEVATIONS

LINE	LOCATION	POINT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A	Elevation Top of Coping Form		433.230	433.265	433.290	433.300	433.295	433.280	433.295	433.295	433.285	433.255	433.215	433.210	433.190	433.155	433.100	433.040
	Elevation Top of Outside Beam																	
	Distance Top of Beam to Top of Coping Form																	
B	Elevation Top of Screed		433.515	433.550	433.575	433.585	433.580	433.565	433.580	433.580	433.570	433.540	433.500	433.495	433.475	433.440	433.385	433.325
	Elevation Top of Beam																	
	Distance Top of Beam to Top of Screed																	
C	Elevation Top of Coping Form		433.230	433.265	433.290	433.300	433.295	433.280	433.295	433.295	433.285	433.255	433.215	433.210	433.190	433.155	433.100	433.040
	Elevation Top of Outside Beam																	
	Distance Top of Beam to Top of Coping Form																	



CONCRETE DEAD LOAD DEFLECTION DIAGRAM

INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- None DATE:- April 11, 1985

SUBMITTED FOR APPROVAL *Ralph S. Mullinnix*

DRAWING:- CB OF CB SHEET:- 13 of 46

PROJECT:- MARS-RS-4313(1)

CONTRACT NO. B-16251

BRIDGE FILE:- 66-13-6920

DESIGNED: *RCM* CK'D: *RCM*
 DRAWN: *RCM* CK'D: *RCM*
 TRACED: _____ CK'D: _____

ITEM	CONCRETE					QUANTITIES																					
	CLASS C SUPERSTR	CLASS A SUBSTR	CLASS B ABOVE FTG	CLASS C IN FTG	CLASS C IN RAILING	EPOXY COATED REINF. TOTAL	REINF. STEEL TOTAL	STRUCT. STEEL ***	ANCHOR RODS MK-AR	ANCHOR PLATES MK-AP	UNTREATED TIMBER	TREATED TIMBER	STEEL ENCASED CONC.	STEEL H BEARING	CAST IRON DRAIN PIPE	CAST IRON GRATES, BASINS, & FITTINGS	RAILING TYPE SA OR CI	EXP. JOINT TYPEBS9	EXP. JOINT CLASS	CONC. STR. MEMBERS BOX BEAMS TYPE	I BEAM TYPE 1	APPLIED SHEET MEMBRANE	BITUM. MIXTURE FOR APPROACHES	MOD. P.C. CONCRETE SURFACE	DECK DRAIN	SURFACE SEAL	
	CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	CU. YDS.	LBS.	LBS.	LBS.	EACH	EACH	NO.	NO.	NO.	NO.	LBS.	LBS.	LN. FT.	LN. FT.	LN. FT.	SQ. FT.	LN. FT.	SQ. FT.	TONS	CU. YDS.	EACH	SQ. FT.	
BENT NO. 1	4.4	13.3				782	1579							6	159												314
PIER NO. 2		21.6	29.4	8.4			4340																				
PIER NO. 3		21.6	24.2	8.4			4089																				
BENT NO. 4	4.4	13.3				782	1579							6	159												314
SUPERSTRUCTURE	135.0					30970									146	1008		77			706.5						4793
BARRIER RAILING **					23.2		2931																				
APPROACH SLAB EXTENSION*					8.4		1,626	256																			
BARRIER RAILING TRANSITION*							1,312																				
REIN. STEEL FOR APPROACH STRUCTURES							3476																				
REIN. STEEL FOR R.C. BRIDGE APPROACHES ***																											
REIN. STEEL FOR LIP GUTTER, PVM1, TOPERS, ETC.																											
TOTALS	147.8	69.8	53.6	16.8	31.6	38403	11,843							12	318	146	1,008	77			706.5						5421

ESTIMATED QUANTITY

STRUCT. NO.	LOCATION	APPROACH			STRUCTURES			REMARKS
		SIZE	KIND	LENGTH	CONCR. CL. A	REINF. STEEL	PIPE END SEC.	
				IN STRS.	LBS.	EACH		
1	STA. 935+48.62 @	6"	PERF. FB.C.C.S. PIPE (0.052")	58			OUTLET TO EAST THROUGH CONE & ONE DELINATOR POST	
2	STA. 936+71.38 @	6"	PERF. FB.C.C.S. PIPE (0.052")	58			OUTLET TO EAST THROUGH CONE & ONE DELINATOR POST	
TOTALS								Total of Reinforcing Steel Carried to "Structure Quantities"

LT OR RT.	STATION TO STATION	TYPE	PAVED SIDE DITCH (LIN. FT.)				SODDING (SQ. YD.)								
			PAY LENGTH	NO. OF LUGS	PAY LENGTH	CUT OFF WALLS	PAY LENGTH	TOTAL PAY LENGTH	FOR PSD	FOR DITCHES	SHOULDERS	CONE	TOTAL SOD		
LT.	933+75 TO 935+55											186		186	
LT.	937+75 TO 938+67	G	97	1	8	2	16	121	29					29	
LT.	SOUTH @ BRIDGE												58	58	
RT.	SOUTH @ BRIDGE												44	44	
LT.	NORTH @ BRIDGE												66	66	
RT.	NORTH @ BRIDGE												54	54	
TOTALS													PAVED SIDE DITCH TYPE G =	121 LFT	457

** See Sheet No. 10 For Bill of Materials.
 * See Bridge Std. BR5 For Bill of Materials.
 *** See Sheet No. 11 For Bill of Materials.

LT/RT.	STATION	DESCRIPTION	WIDTH	RADIUS	GRADE	LENGTH	DIST. BEYOND R/W	EXCAVATION (CY)		BITUM. SURFACE	BITUM. BINDER	BITUM. BASE	CCMP AGG. BASE
								CUT	FILL				
RT.	934+40	CLASS. DRIVE	24	15/25	10	45	10	0	69				

NOTES:
 Weight of Spirals includes weight of 1 1/2 extra turns top and bottom.
 Spacers and 1 1/2 turns at laps included in cost of Spiral.
 *** The weight of structural steel is approximate only, and it shall be the Contractor's responsibility to determine the weight on which he bases his bid.
 For Test Bar Samples See Bridge Standard Cl.

MARCH 1975
 SUMMARIZED JEB C.K.D. RCM
 TRACED C.K.D.

DATE	ITEM
4-14-86	Concrete, Epoxy Coated Reinf. Steel, Plain Reinf. Steel, Bar Rose Seal, Sodding, Railing Type SA or CI Deleted, Barrier Railing, Approach Slab Extensions, Railing Transitions, Cast Iron Drain Pipe, Grates Added

BRIDGE SUMMARY

INDIANA DEPARTMENT OF HIGHWAYS

DATE April 10, 1985
 SUBMITTED FOR APPROVAL Ralph A. Mullinnig
 SHEET 14 OF 46
 PROJECT: MARS-RS-4313 (1)
 CONTRACT NO: B-16251
 BRIDGE FILE: 66-13-6920

ESTIMATE OF QUANTITIES

STRUCTURE PAY ITEMS				
CODE NO.	DESCRIPTION	UNIT	STRUCTURE	TOTAL QUANTITY
51000	CONCRETE CLASS A IN SUPERSTRUCTURE	CYS.		147.8
51001	CONCRETE CLASS A IN SUPERSTRUCTURE	CYS.		
51005	CONCRETE CLASS A IN SUBSTRUCTURE	CYS.		69.8
51010	CONCRETE CLASS B ABOVE FOOTINGS	CYS.		53.6
51015	CONCRETE CLASS B IN FOOTINGS	CYS.		16.8
51875	SPECIAL CLASS A CONCRETE	SFT.		
51015	CONCRETE STRUCTURAL MEMBERS	LSUM		1
51030	REINFORCING STEEL	LBS.		11843
51032	EPOXY COATED REINFORCING STEEL	LBS.		38403
51035	STRUCTURAL STEEL	LBS.		
51038	STRUCTURAL STEEL	LSUM		
51090	BRONZE PLATES	LBS.		
51070	ANCHOR PLATES (MK-AP 1)	EACH		
51075	ANCHOR PLATES (MK-AP 2)	EACH		
51080	ANCHOR PLATES (MK-AP 3)	EACH		
51085	ANCHOR PLATES (MK-AP 4)	EACH		
51112	ANCHOR BOLTS	EACH		
51065	TIE DOWN ASSEMBLY MK-1A	EACH		
51095	CAST IRON DRAIN PIPE 4 INCH	LBS.		146
51100	CAST IRON DRAIN PIPE 6 INCH	LBS.		
51105	CAST IRON DRAIN PIPE 8 INCH	LBS.		
51110	CAST IRON GRATES, BASINS AND FITTINGS	LBS.		1008
51121	REMOVAL OF PRESENT RAILING	LFT.		
51132	RAILING RESET	LFT.		
51115	RAILING (TYPE 5 OR C)	LFT.		
51120	RAILING (TYPE 5A OR C1)	LFT.		
51125	RAILING (TYPE 6 OR D)	LFT.		
51130	RAILING (TYPE 7 OR E)	LFT.		
51020	CLASS C CONCRETE RAILING	CYS.		31.6
51025	CLASS C CONCRETE RAILING	LFT.		
51121	BARRIER RAILING TYPE X	LFT.		
51215	CLASS X EXCAVATION	CYS.		20
51220	WET EXCAVATION	CYS.		201
51223	WATERWAY EXCAVATION	CYS.		467
51224	WATERWAY EXCAVATION	LSUM		
51225	DRY EXCAVATION	CYS.		
51230	FOUNDATION EXCAVATION (UNCLASSIFIED)	CYS.		61
51231	FOUNDATION EXCAVATION (UNCLASSIFIED)	LSUM		
51813	PNEUMATICALLY PLACED MORTAR	SFT.		
51870	REPOINTING MASONRY IN STR'S	SFT.		
51814	WELDED STEEL WIRE FABRIC	SFT.		
51859	PAINTING OLD STEEL BRIDGE	LSUM		
51881	EXPANSION JOINT TYPE BSS	LFT.		
51882	EXPANSION JOINT TYPE BSS	LFT.		
51887	EXPANSION JOINT TYPE BSS	LFT.		
51888	EXPANSION JOINT TYPE BSS	LFT.		
51890	EXPANSION JOINT TYPE BS11	LFT.		78
51925	EXPANSION JOINT CLASS S-S	LFT.		
51926	EXPANSION JOINT CLASS T-S	LFT.		

STRUCTURE PAY ITEMS				
CODE NO.	DESCRIPTION	UNIT	STRUCTURE	TOTAL QUANTITY
51135	TIMBER PILES FURNISHED, UNTREATED	LFT.		
51140	TIMBER PILES DRIVEN, UNTREATED	LFT.		
51145	TIMBER PILES FURNISHED, TREATED	LFT.		
51150	TIMBER PILES DRIVEN, TREATED	LFT.		
51155	PILE SHELLS FURNISHED AND DRIVEN (12 INCH)	LFT.		
51160	PILE SHELLS FURNISHED AND DRIVEN (14 INCH)	LFT.		
51182	STEEL H PILES FURNISHED AND DRIVEN (4 BP 36)	LFT.		
51190	STEEL H PILES FURNISHED AND DRIVEN (10 BP 42)	LFT.		318
51195	STEEL H PILES FURNISHED AND DRIVEN (12 BP 50)	LFT.		
51210	PILE ENCASMENT (CONCRETE)	LFT.		
51228	REMOVAL OF PRESENT STRUCTURE (PORTIONS)	LSUM		1
51230	REMOVAL OF PRESENT STRUCTURE	LSUM		
51235	TEMPORARY BRIDGE AND APPROACHES	LSUM		
51260	CONCRETE SLOPEWALL 5 INCH	SYS.		
51265	SLOPEWALL	SYS.		
51270	RIPRAP	SYS.		
51275	REVENEMENT RIPRAP	TON		573
51271	HANDMAID RIPRAP 12 INCH	SYS.		
51272	DUMPED RIPRAP	TON		
51274	PLASTIC FILTER CLOTH	SYS.		734
51106	DECK DRAINS	EACH		
51395	STEEL DRAIN PIPE (6 INCH)	LSUM		
51400	STEEL DRAIN PIPE (8 INCH)	LSUM		
51092	STEEL PIPE CONDUIT (2 INCH)	LFT.		
51866	RIVETS REMOVED	EACH		
51864	FIELD DRILLED HOLES	EACH		
51867	STRUCTURAL STEEL CUTTING	SIN		
51863	FIELD DRILLED HOLES IN CONCRETE	EACH		
	SURFACE SEAL	LSUM		1
51826	SURFACE SEAL	SFT.		
51827	BRIDGE DECK MEMBRANE	LSUM		
51842	BRIDGE DECK OVERLAY	SYS.		
51845	BRIDGE DECK SURFACE	SYS.		
51843	BRIDGE DECK PATCHING	SFT.		
51831	CONCRETE SCARIFYING	SYS.		111
51890	ADDITIONAL CONCRETE SCARIFYING	SYS.		
51837	BLASTING AND CLEANING	SYS.		
51838	FINISHING AND CURING	SYS.		

APPROACH PAY ITEMS				
CODE NO.	DESCRIPTION	UNIT	STRUCTURE	TOTAL QUANTITY
02020	UNCLASSIFIED EXCAVATION	CYS.		
52240	COMMON EXCAVATION	CYS.		306
52245	B BORROW	CYS.		713
52250	B BORROW	CYS.		
52255	B BORROW FOR STRUCTURE BACKFILL	CYS.		27
52300	REMOVAL OF PAVEMENT	SYS.		
02235	BREAKING PAVEMENT	SYS.		
52490	TERMINAL JOINT	LFT.		
52495	CONTRACTION JOINT, TYPE D-1	LFT.		
52280	CONCRETE PAVEMENT REINFORCED (7 INCH)	SYS.		
52285	CONCRETE PAVEMENT REINFORCED (8 INCH)	SYS.		
52290	CONCRETE PAVEMENT REINFORCED (9 INCH)	SYS.		
52300	CONCRETE PAVEMENT REINFORCED (10 INCH)	SYS.		171
09070	CONCRETE SIDEWALK	SYS.		
52305	TYPE 2 COMPACTED AGGREGATE FOR BASE (SIZE NO. 50)	TON		
52310	COVER AGGREGATE	TON		
52306	COVER AGGREGATE (SIZE NO. 12)	TON		
52605	AGGREGATE FOR SHOULDER DRAINS	TON		
52610	AGGREGATE FOR UNDER DRAINS	CYS.		
52308	TYPE 0 COMPACTED AGGREGATE FOR BASE (SIZE NO. 53)	TON		391
52310	SUBBASE	CYS.		
52315	BITUMINOUS STABILIZED SUBBASE TYPE I, II, OR III	TON		
52320	BITUMINOUS STABILIZED SUBBASE	TON		
52415	BITUMINOUS BASE	TON		167
04260	BITUMINOUS BASE (SIZE NO. 50)	TON		81
52451	BITUMINOUS BINDER	TON		
52450	BITUMINOUS SURFACE	TON		56
52455	BITUMINOUS MATERIAL FOR TACK COAT	SYS.		815
52461	BITUMINOUS MATERIAL FOR PRIME COAT	SYS.		
	SEAL COAT TYPE 5	SYS.		306
04348	SEAL COAT TYPE 2	SYS.		491
52470	BITUMINOUS MIXTURE FOR APPROACHES	TON		366
52475	BITUMINOUS MIXTURE FOR SHOULDER	TON		
52480	BITUMINOUS MATERIAL, APPLIED	TON		
52500	GUARD RAIL, TYPE A	LFT.		
52505	GUARD RAIL, TYPE B	LFT.		
52510	GUARD RAIL, TYPE C	LFT.		
52515	GUARD RAIL, TYPE D	LFT.		
52520	GUARD RAIL, TYPE E	LFT.		
52525	GUARD RAIL, TYPE F	LFT.		
52530	GUARD RAIL, TYPE G	LFT.		
52531	GUARD RAIL, TYPE H	LFT.		
06035	RESET GUARD RAIL	LFT.		200
52535	REMOVAL OF GUARD RAIL	LFT.		272
52380	SODDING	SYS.		312
52385	MULCHING SEEDING (LEGUME)	SYS.		437
52388	SEED MIXTURE "R"	LBS.		2520
52397	SEED MIXTURE "TR"	LBS.		
52400	MULCHING MATERIAL	TON		
52405	FERTILIZER	TON		
52410	WATER	M.G.		1
52415	AGRICULTURAL LIMESTONE	TON		
52398	SEED MIXTURE "CV"	LBS.		5
52401	MULCHING MATERIAL (WOOD CELLULOSE FIBER)	TON		
	GUARD RAIL END TREATMENT TYPE I	EACH		2
52610	MAINTAINING TRAFFIC	LSUM		
52370	CLEARING RIGHT-OF-WAY	LSUM		
52434	BREAKAWAY CABLE	EACH		
	TERMINAL TYPE "A"	EACH		

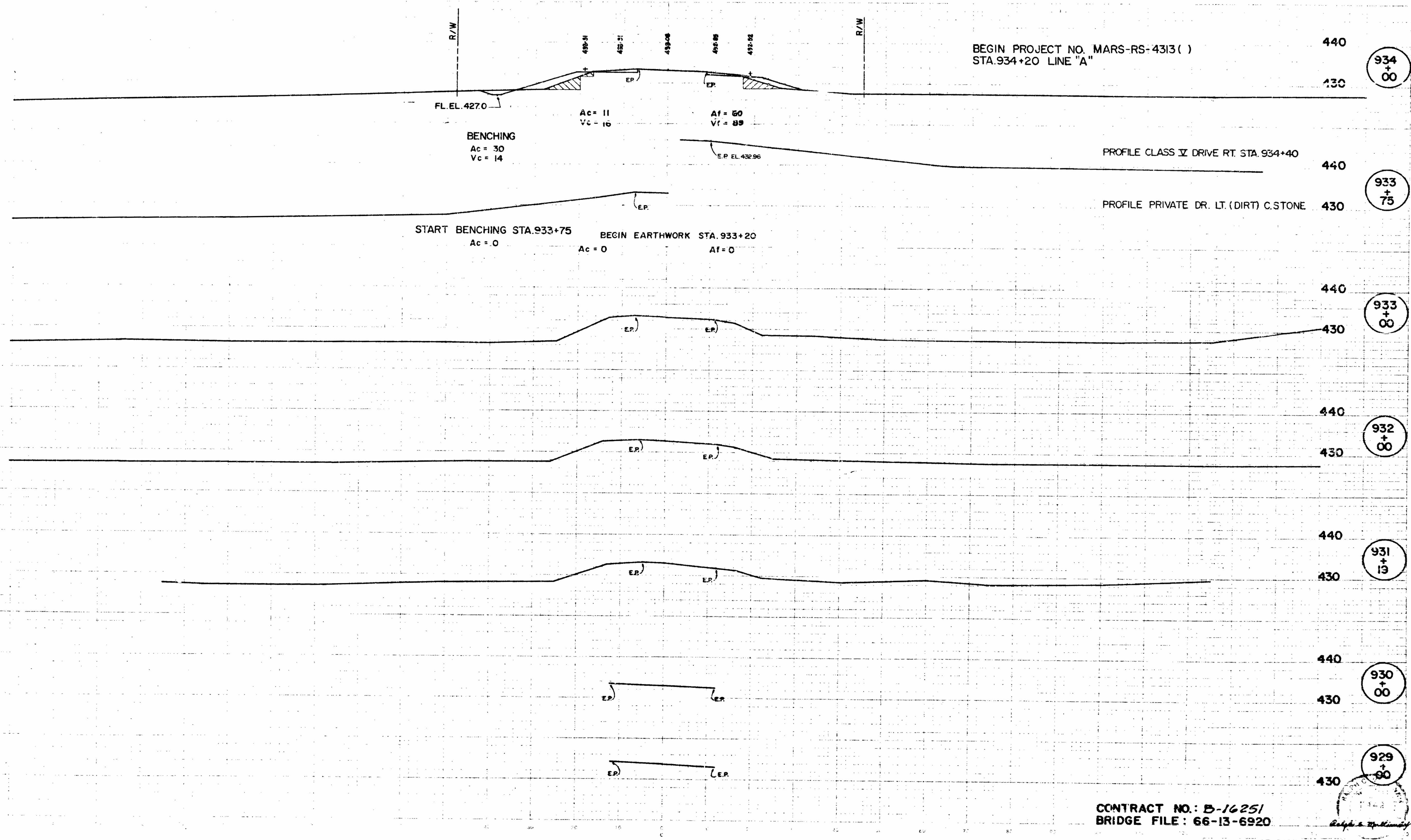
APPROACH PAY ITEMS				
CODE NO.	DESCRIPTION	UNIT	STRUCTURE	TOTAL QUANTITY
07025	PIPE: GR. A (0.064" FBCCS) 12"	LFT.		
07075	PIPE: GR. A (0.064" FBCCS) 15"	LFT.		
07125	PIPE: GR. A (0.064" FBCCS) 18"	LFT.		
07175	PIPE: GR. A (0.064" FBCCS) 24"	LFT.		
07225	PIPE: GR. A (0.064" FBCCS) 30"	LFT.		
07275	PIPE: GR. A (0.064" FBCCS) 36"	LFT.		
07325	PIPE: GR. A (0.064" FBCCS) 42"	LFT.		
10090	PIPE: GR. D (0.064" CS) 12"	LFT.		
10095	PIPE: GR. D (0.064" CS) 15"	LFT.		
10098	PIPE: GR. D (0.064" CS) 18"	LFT.		
10075	PIPE: GR. D (0.064" CS) 24"	LFT.		
10100	PIPE: GR. D (0.064" CS) 30"	LFT.		
10125	PIPE: GR. D (0.064" CS) 36"	LFT.		
10150	PIPE: GR. D (0.064" CS) 42"	LFT.		
34000	PIPE: 0.052" FBC PERF. CS 6"	LFT.		116
39000	PIPE: 0.064" FBCCS 12"	LFT.		
52375	CONCRETE CLASS A IN STRUCTURE	CYS.		
52476	CONCRETE CLASS C IN STRUCTURE	CYS.		
46000	PIPE END SECTION 12"	EACH		
46005	PIPE END SECTION 15"	EACH		
46010	PIPE END SECTION 18"	EACH		
46015	PIPE END SECTION 24"	EACH		
46020	PIPE END SECTION 24"	EACH		
46025	PIPE END SECTION 27"	EACH		
46030	PIPE END SECTION 30"	EACH		
46035	PIPE END SECTION 33"	EACH		
46040	PIPE END SECTION 36"	EACH		
45000	INLET, TYPE A-1	EACH		
45025	INLET, TYPE B-6	EACH		
45030	INLET, TYPE E-7	EACH		
45070	INLET, TYPE P-12A	EACH		
06335	PAVED SIDE DITCH TYPE A	LFT.		
06340	PAVED SIDE DITCH TYPE B	LFT.		
06345	PAVED SIDE DITCH TYPE C	LFT.		
06350	PAVED SIDE DITCH TYPE J	LFT.		
06355	PAVED SIDE DITCH TYPE F	LFT.		
06360	PAVED SIDE DITCH TYPE G	LFT.		
08365	PAVED SIDE DITCH TYPE G	LFT.		121
52831	DRILLED HOLES FOR MUDJACKING	EACH		
52830	MATERIAL FOR MUDJACKING	CYS.		
	EROSION CONTROL METHOD A	BALES		
	EROSION CONTROL METHOD E	BALES		
91660	"DO NOT SPRAY" SIGN	EACH		4
95288	STRAW BALES IN PLACE	EACH		9
	MOBILIZATION AND DEMOBILIZATION FOR SEEDING	EACH		2

APPROACH PAY ITEMS				
CODE NO.	DESCRIPTION	UNIT	STRUCTURE	TOTAL QUANTITY
06010	17" FENCE, F. FIELD	LFT.		
06040	18" FENCE, CHAIN LINK	LFT.		
52340	CONSTRUCTION SIGNS (TYPE A)	EACH		12
52345	CONSTRUCTION SIGNS (TYPE B)	EACH		6
52348	STANDARD BARRICADES (TYPE IIIA)	EACH		2
06650	STOP SIGN, TYPE R-1A	EACH		
06652	DO NOT PASS SIGN, TYPE R-11-A	EACH		
06655	YIELD SIGN, TYPE R-301	EACH		
06657	PASS WITH CARE SIGN, TYPE R-42A	EACH		
06660	CURVE SIGN, TYPE W-2AR	EACH		
06665	CURVE SIGN, TYPE W-2AL	EACH		
06670	REVERSE CURVE SIGN, TYPE W-4AR	EACH		
06675	REVERSE CURVE SIGN, TYPE W-4AL	EACH		
06680	LARGE ARROW SIGN, TYPE W-11A	EACH		
06685	STOP AHEAD SIGN, TYPE W-13A	EACH		
06725	DELIMITER WITH POST, TYPE D-1	EACH		
	3 INCH	EACH		
06740	DELIMITER WITH POST, TYPE D-2	EACH		
	3 INCH	EACH		
06770	DELIMITER POST	EACH		2
06771	FLEXIBLE DELIMITER POST	EACH		
52366	TEMPORARY PAVEMENT MARKING TAPE	LFT.		
52367	TEMPORARY PAVEMENT MARKING PAINT	LFT.		
52360	RIGHT-OF-WAY MARKERS	EACH		9
06500	MONUMENT, TYPE A	EACH		
06505	MONUMENT, TYPE B	EACH		
06510	MONUMENT, TYPE C	EACH		2
06515	MONUMENT, TYPE D	EACH		
52821	FLASHING ARROW SIGN	EACH		
51010	LINE, SOLID, YELLOW, 4"	LFT.		9874
06713	LINE, SOLID, WHITE, 4"	LFT.		1160
	LINE, SKIP - YELLOW, 4"	LFT.		
	THERMOPLASTIC LINE, SKIP	LFT.		145
06702	WHITE, 5"	LFT.		
06716	REMOVAL OF LINE, SOLID, WHITE, 4"	LFT.		
06717	REMOVAL OF LINE, SOLID, YELLOW, 4"	LFT.		
06718	REMOVAL OF LINE, SKIP, WHITE, 4"	LFT.		
52536	TEMPORARY CONCRETE BARRIER	LFT.		
52819	TEMPORARY CROSSOVER TYPE "B"	EACH		

1. INCLUDES — TONS FOR SEED MIXTURE "R"
 2. INCLUDES — TONS FOR SEED MIXTURE "R"
 3. INCLUDES — TONS FOR SEED MIXTURE "R"
- * Includes 16 Sys. For Approach Slab Extensions.

||
||
||

CROSS SECTIONS



BEGIN PROJECT NO. MARS-RS-4313 ()
 STA. 934+20 LINE "A"

FL. EL. 427.0

BENCHING
 Ac = 30
 Vc = 14

Ac = 11
 Vc = 16

Af = 60
 Vf = 89

E.P. EL. 432.96

PROFILE CLASS V DRIVE RT. STA. 934+40

START BENCHING STA. 933+75
 Ac = 0

BEGIN EARTHWORK STA. 933+20
 Ac = 0 Af = 0

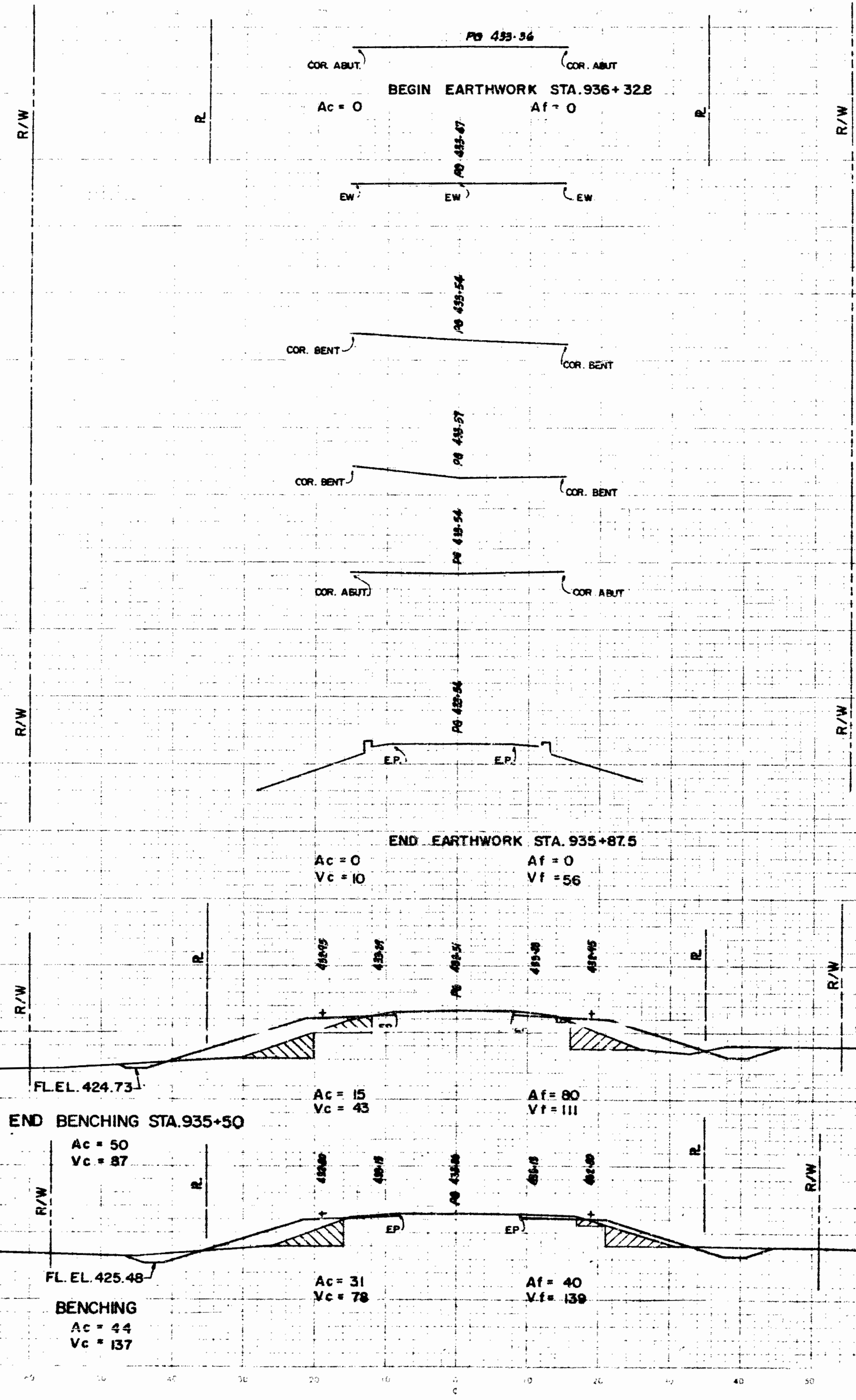
PROFILE PRIVATE DR. LT. (DIRT) C. STONE

CONTRACT NO.: B-16251
 BRIDGE FILE: 66-13-6920

BR-2668 66-13-6920
 MARS-RS-4313(1) 1984 16 46
 ROADWAY X SECTION LINE A

September 1973

CONTRACT NO. B-16251
 BRIDGE FILE: 66-13-6920
 DATE: 11-17-73
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]



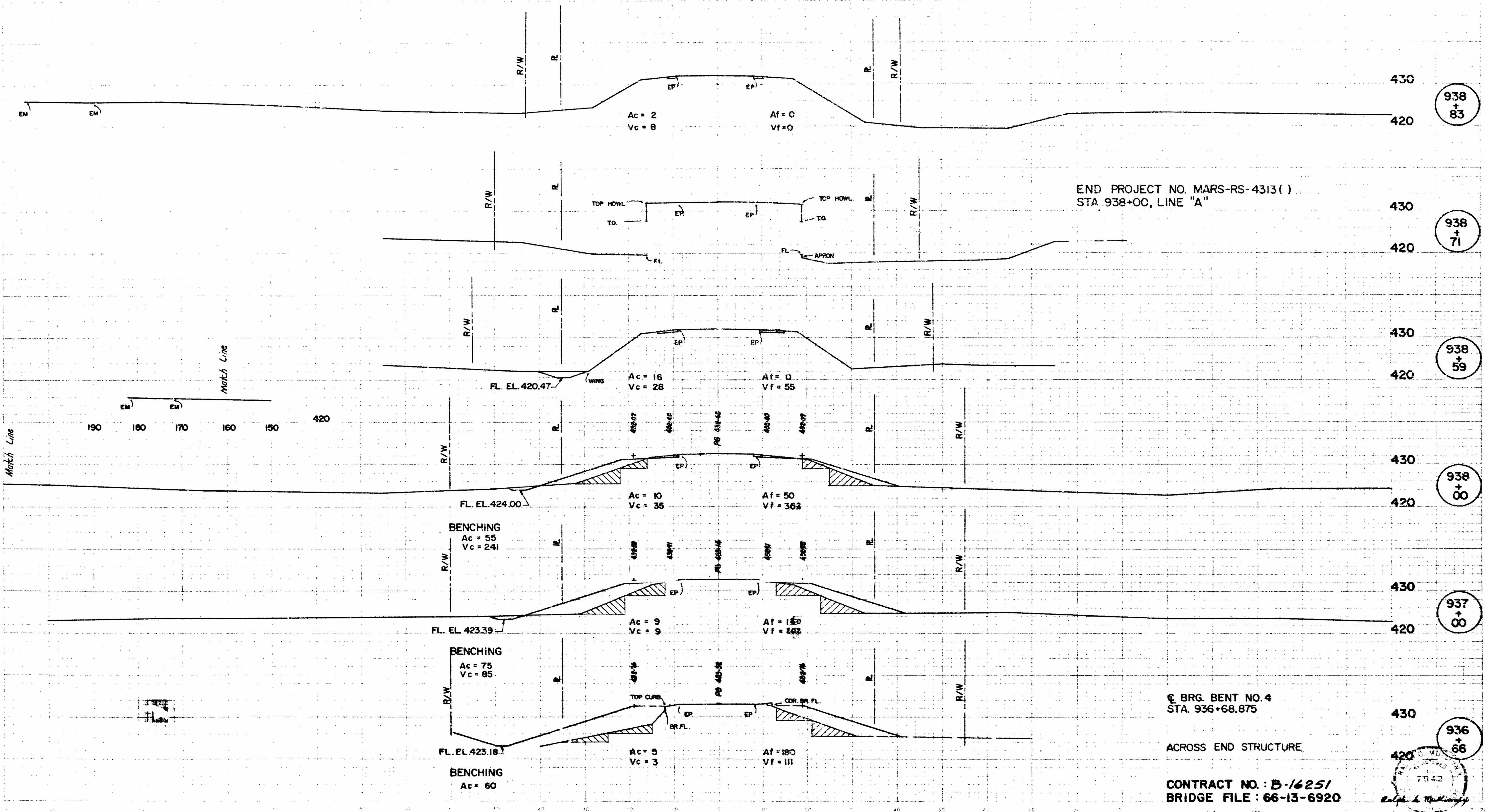
ALONG FACE ABUT N° 5	420	936 + 64
ALONG FACE BENT N° 4	410	936 + 38
Q PIER NO. 3 STA. 936+29.875		
ALONG FACE WOOD BENT N° 3	410	936 + 12
Q STRUCTURE STA. 936+10		
ALONG FACE WOOD BENT N° 2	410	935 + 86
Q PIER NO. 2 STA. 935+90.125		
ALONG FACE ABUT.	420	935 + 61
ACROSS END OF STRUCTURE	430	935 + 59
Q BRG. BENT NO. 1 STA. 935+51.125		
	440	935 + 50
	430	
	440	935 + 00
	430	

DATE: 10-01-82
BY: Jim Boyer
CHECKED: R. 12-1-82

CONTRACT NO.: B-16251
BRIDGE FILE: 66-13-6920



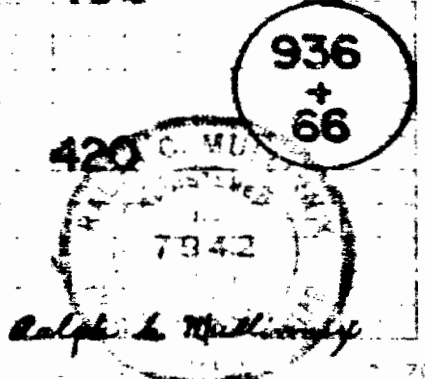
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FILE NO. 66-13-6920
MARS-RS-43151
1984 17 46
ROADWAY X SECTION LINE A

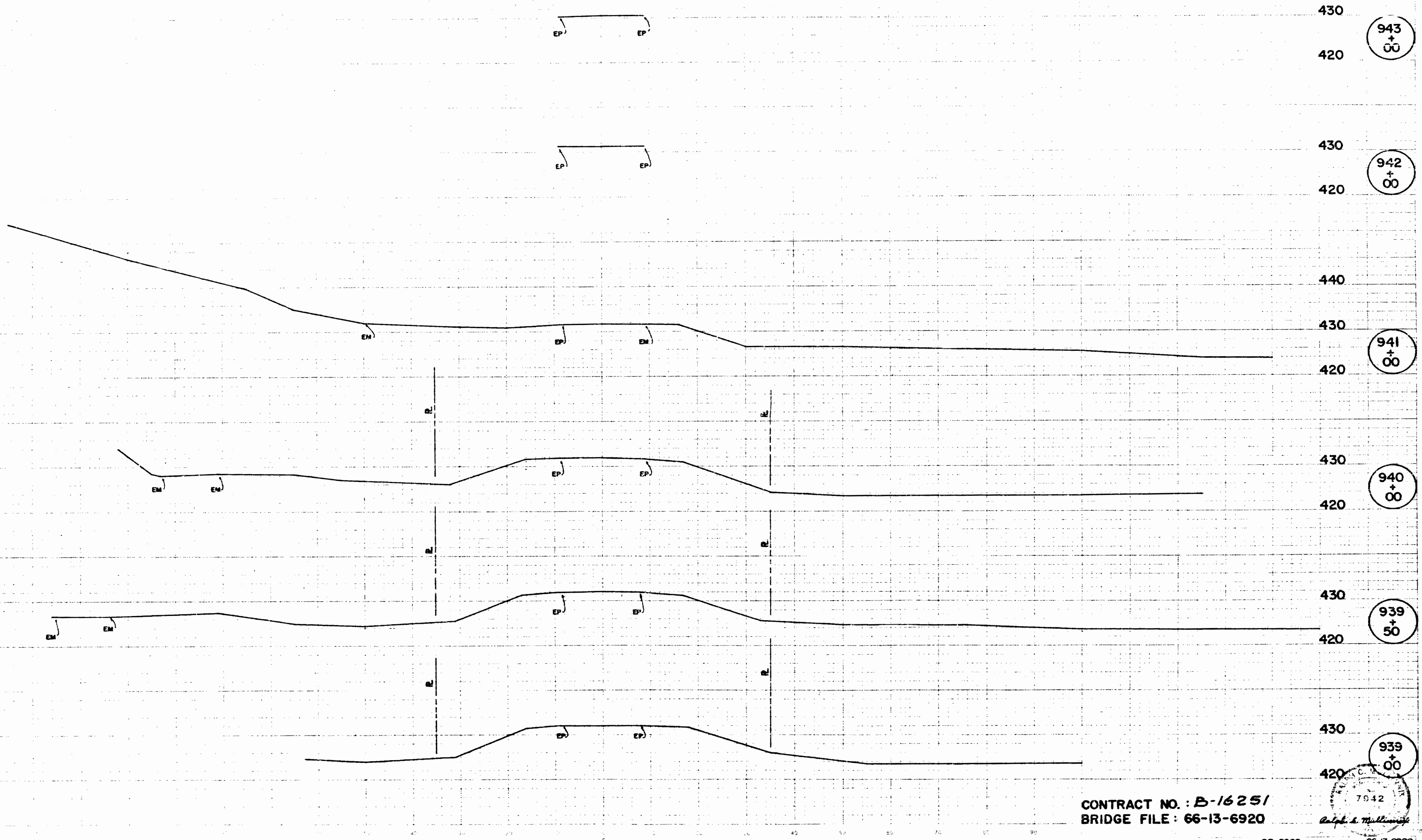


© BRG. BENT NO. 4
STA. 936+68.875

ACROSS END STRUCTURE

CONTRACT NO. : B-16251
BRIDGE FILE : 66-13-6920





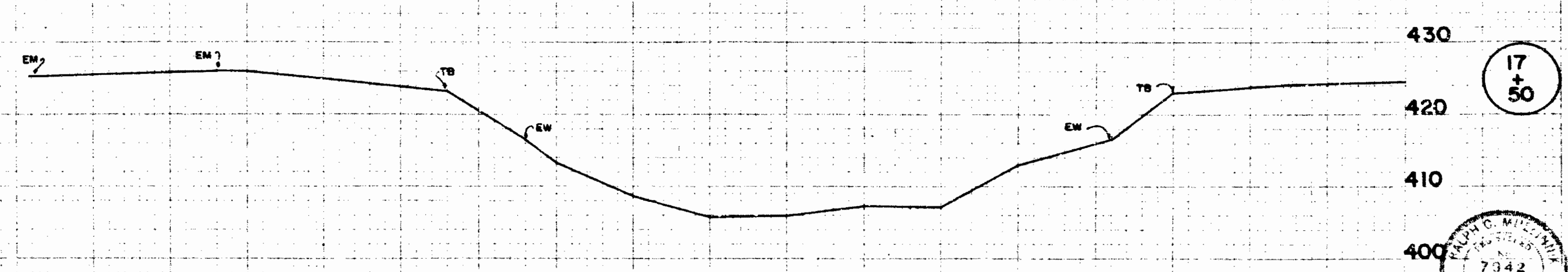
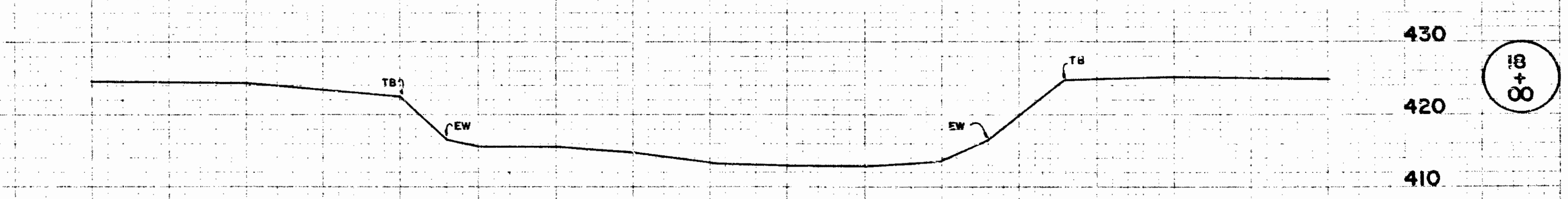
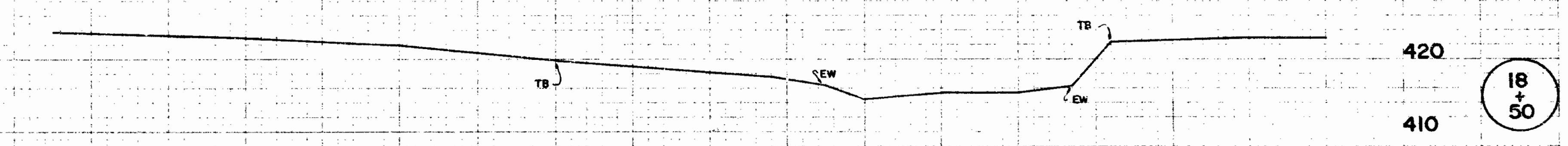
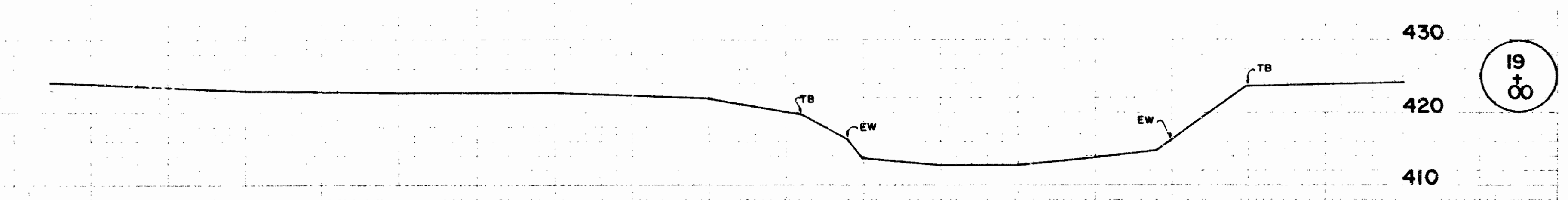
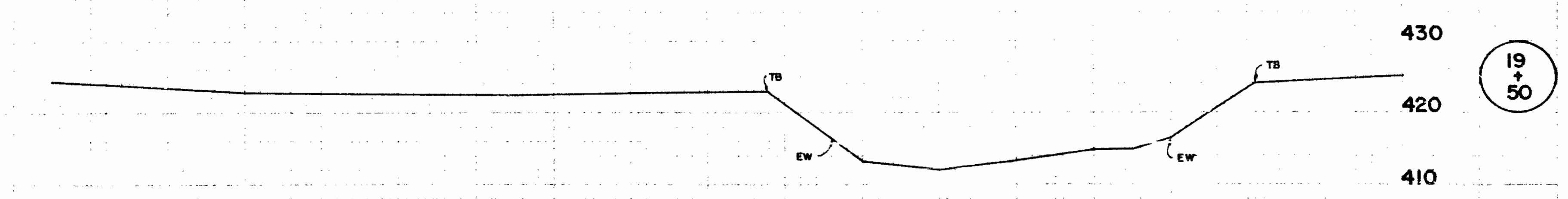
CROSS SECTIONS
 DATE: 09/27/73
 BY: Jim Ogden
 CHECKED: [Signature]

CONTRACT NO.: B-16251
 BRIDGE FILE: 66-13-6920

939+00
 7942
 Ralph L. Muller

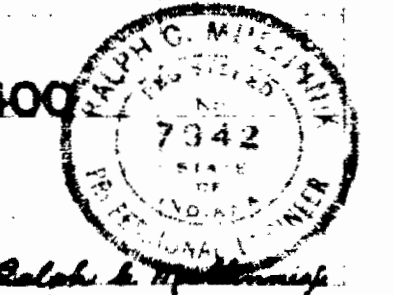
BR-2668
 66-13-6920
 1984 10 46
 ROADWAY X SECTION LINE A

CUT CROSS SECTIONS FILL



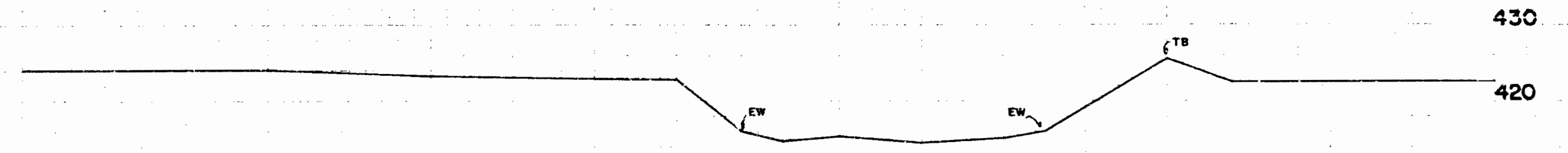
12-17-52
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 17+50

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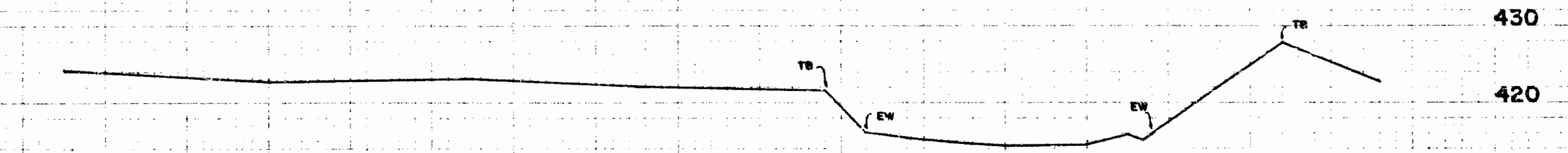


September, 1973

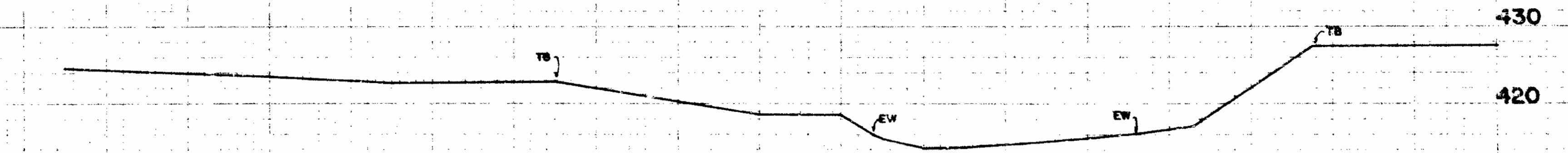
BR-2668
 66-13-6920
 1984 20 46
 WATERWAY X SECTION
 LINE T-1-A



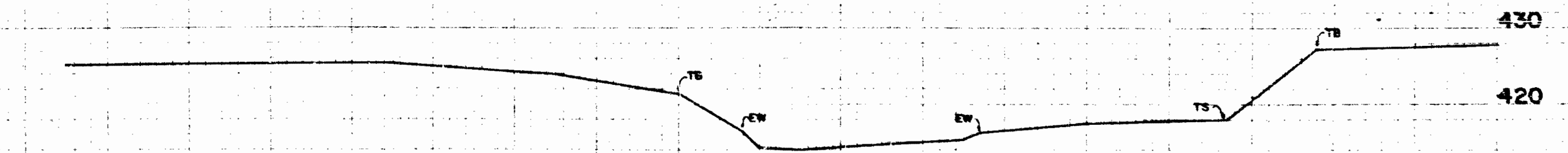
22
+
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21
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50



21
+
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20
+
50

CRCC
 DATE DRAWN
 NO. 10-17-57
 BY
 10-1-58
 CHECKED
 10-1-58

CONTRACT NO.: B-16251
 BRIDGE FILE: 66-13-6920

