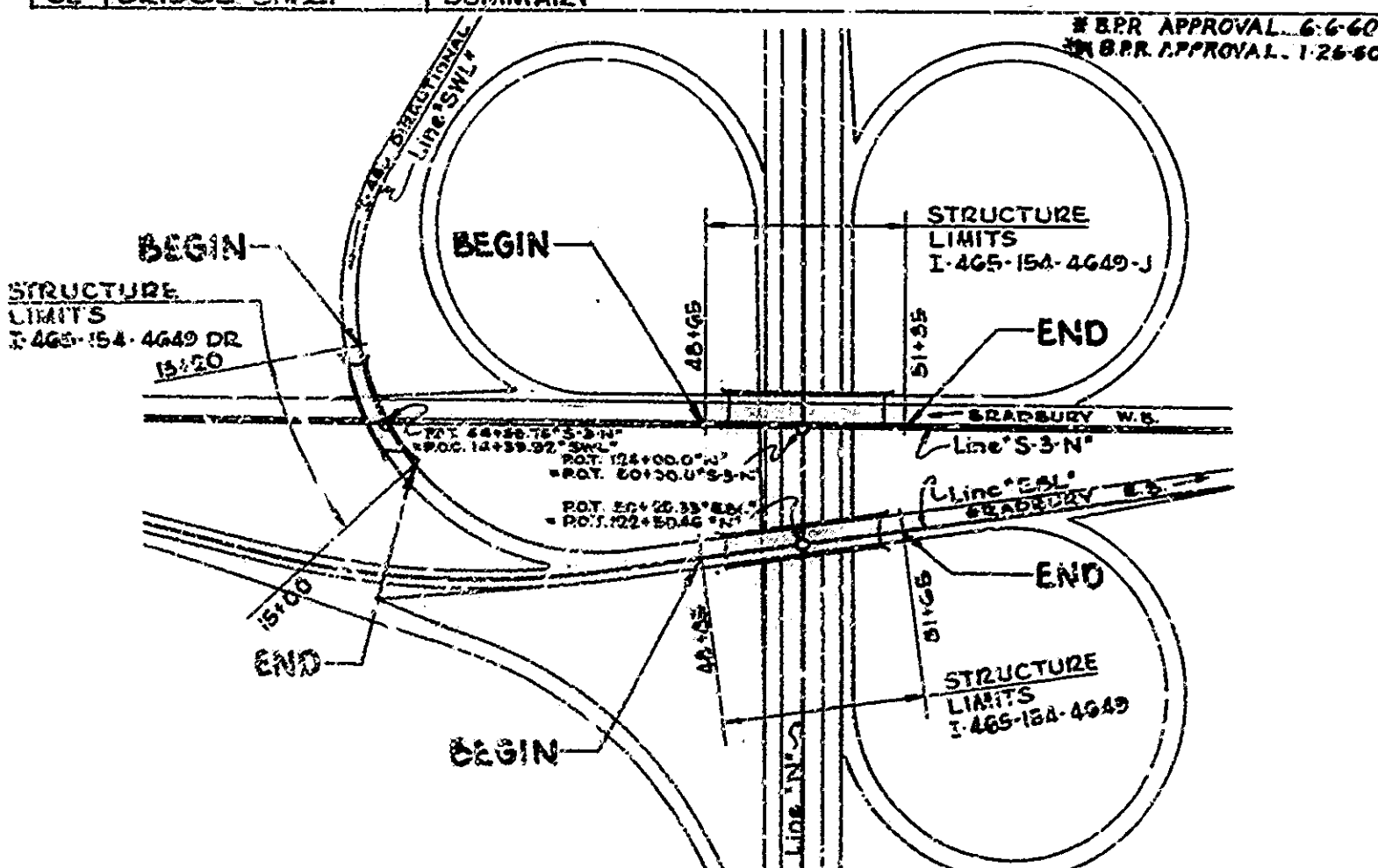




STATE OF INDIANA
STATE HIGHWAY DEPARTMENT

BRIDGE PLANS
FOR SPANS OVER 20 FEET
ON
INTERSTATE ROUTE NO. 465 SECTION - 4
F. A. PROJECT NO. I-465-4⁽⁷⁾ 154

BEGINNING AT A POINT APPROXIMATELY 1976 FEET EAST OF THE WEST LINE OF SECTION 24 AND EXTENDING IN AN EASTERLY DIRECTION FOR A DISTANCE OF 260 FEET TO A POINT APPROXIMATELY 1654 FEET EAST OF THE WEST LINE OF SECTION 24, ALL BEING IN SECTION 24, T15N, R2E, WAYNE TOWNSHIP, MARION COUNTY, INDIANA.

BEGINNING AT A POINT APPROXIMATELY 1374 FEET EAST OF THE WEST LINE OF SECTION 24 AND EXTENDING IN AN EASTERLY DIRECTION FOR A DISTANCE OF 280 FEET TO A POINT APPROXIMATELY 1654 FEET EAST OF THE WEST LINE OF SECTION 24, ALL BEING IN SECTION 24, T19N, R2E, WAYNE TOWNSHIP, MAZION COUNTY, INDIANA.

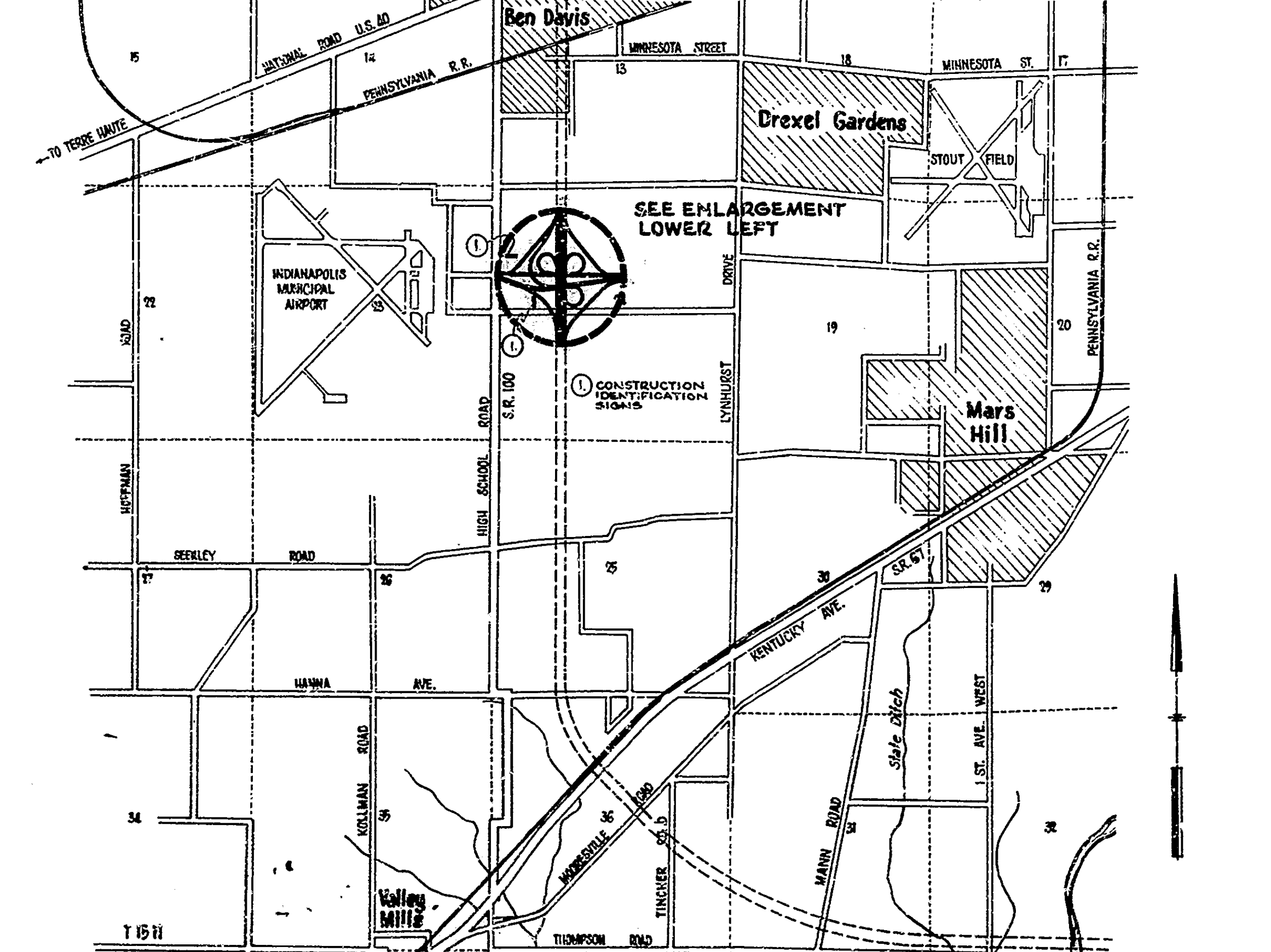
<u>STRUCTURE NO.</u>	<u>ROADWAY LENGTH</u>	<u>BRIDGE LENGTH</u>	<u>TOTAL LENGTH</u>	<u>MAXIMUM GRADE</u>
I-405-154-4649	0.010 MI.	0.045 MI.	0.055 MI.	2.00 %

BEGINNING AT A POINT APPROXIMATELY 1354 FEET EAST OF THE WEST LINE OF SECTION 24 AND EXTENDING IN AN EASTERLY DIRECTION FOR A DISTANCE OF 270 FEET TO A POINT APPROXIMATELY 1624 FEET EAST OF THE WEST LINE OF SECTION 24, ALL BEING IN SECTION 24, T19N, R22E, WAYNE TOWNSHIP, MARION COUNTY, INDIANA

<u>STRUCTURE NO.</u>	<u>ROADWAY LENGTH</u>	<u>BRIDGE LENGTH</u>	<u>TOTAL LENGTH</u>	<u>MAXIMUM GRADE</u>
I-465-154-4649 J	0.009 MI.	0.042 MI.	0.051 MI.	3.00 %

BEGINNING AT A POINT APPROXIMATELY 302 FEET EAST OF THE WEST LINE OF SECTION 24 AND EXTENDING IN A SOUTHEASTERLY DIRECTION A DISTANCE OF 180 FEET TO A POINT APPROXIMATELY 983 FEET EAST OF THE WEST LINE OF SECTION 24. ALL BEING IN SECTION 24, T12N, R29E, WAYNE TOWNSHIP, MARION COUNTY, INDIANA.

<u>STRUCTURE NO.</u>	<u>ROADWAY LENGTH</u>	<u>BRIDGE LENGTH</u>	<u>TOTAL LENGTH</u>	<u>MAXIMUM GRADE</u>
I-465-15A-4640 DR	0.007 MI.	0.027 MI.	0.034 MI.	-4.05%



CERTIFIED Walter J. Beam
PEWEE, BRIDGES & BEAM, INC.
CONSULTING STRUCTURAL ENGINEERS



REVISIONS	
DATE	SHEET NO.
3-7-61	12, 27, 62

C. R. Reminger
DIRECTOR OF BUREAU OF REVENUE, STATE HIGHWAY DEPARTMENT OF MISSOURI



CHIEF ENGINEER—STATE HIGHWAY DEPARTMENT OF IND.

DIVISION ENGINEER

BRIDGE FILE: I-465-154-4649, I-46

BRIDGES OVER 20' SPAN					
FED'D ROAD REGION NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465- (47)156	1960	1	72

[illegible]

TRAFFIC DATA		I-465	BRADBURY
A.D.T. (1958)	30,865	V.P.D.	7,084 V.P.D.
A.C.T. (1975 PROJECTED)	83,770	V.P.D.	14,944 V.P.D.
TRUCKS	6	%	5
DESIGN SPEED	70	M.P.H.	50 M.P.H.
ACCESS CONTROL	FULL		

SOIL BORING LOG

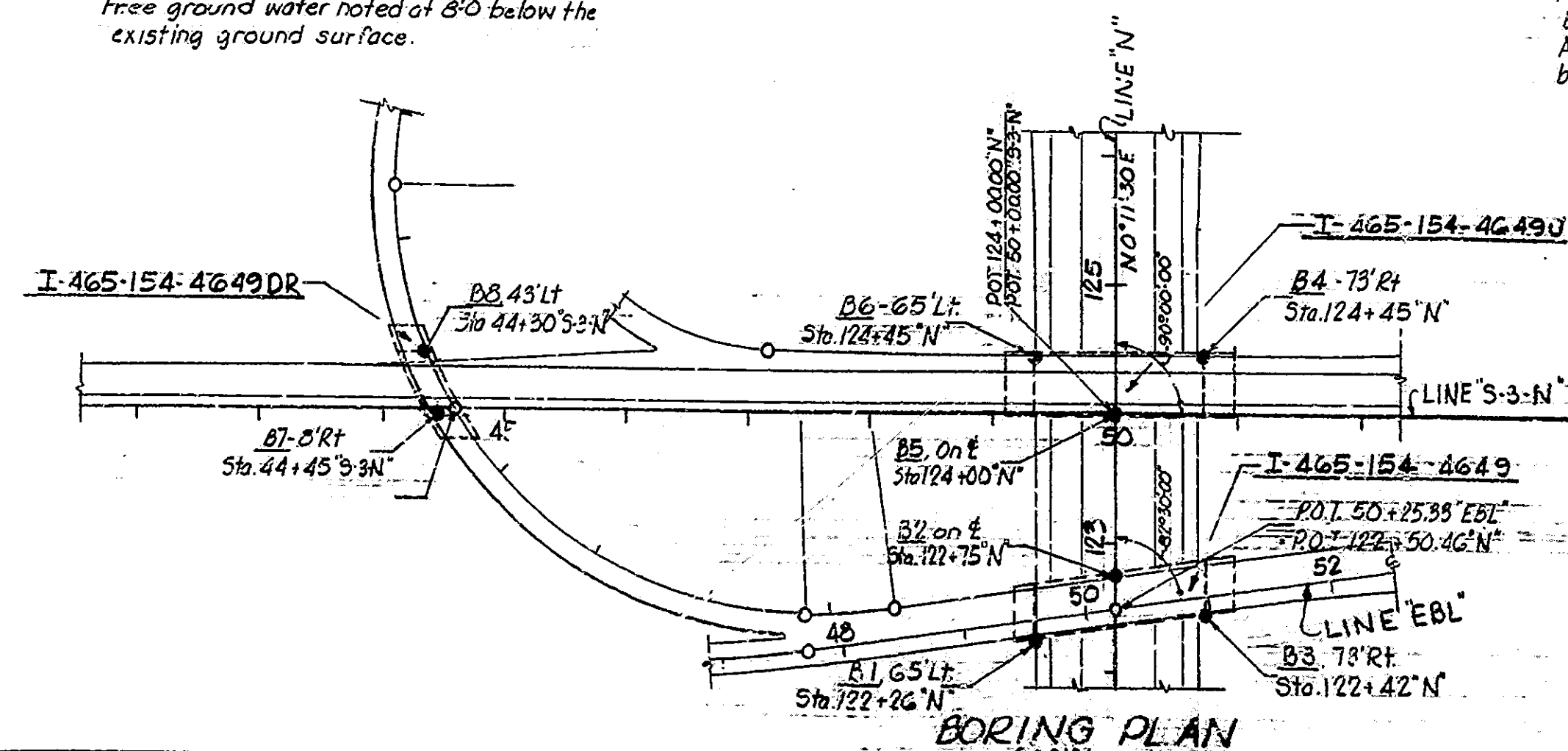
BRIDGES OVER 20' SPAN					
PUB. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(1)154	1961	5	72

BORING N°		1		2		3		4		5		6		7		8	
STATION		LINE "N" 122+26		LINE "N" 122+75		LINE "N" 122+42		LINE "N" 124+45		LINE "N" 124+00		LINE "N" 124+45		LINE "S-3-N" 44+45		LINE "S-3-N" 44+30	
OF SET		65' Lt		ON E		73' Rt		73' Rt		ON E		65' Lt		8' Lt		45' Lt	
SURFACE ELEV.		771.5		772.0		771.5		773.6		773.4		773.4		777.9		777.8	
GROUNDWATER ELEV.		766.5		764.0		762.5		765.1		771.9		764.4		770.4		777.8	
ELEV	Sample N°	Sample Elev	N	Description	Sample N°	Sample Elev	N	Description	Sample N°	Sample Elev	N	Description	Sample N°	Sample Elev	N	Description	ELEV
715																	
770				771.5				772.0				773.6				773.8	
				Brown Very stiff silty clay				Dark brown organic silt				773.4				Brown silty clay	775
765	1	766.5	2	765.5	1	767.0	11	770.5	1	768.6	6	768.4	2	768.4	5	773.9	770
				Brown sand and gravel				Brown moist very stiff to hard sandy clayey silt with trace of fine gravel.				Brown moist stiff clayey silt with a trace of sand and medium gravel				Brown stiff silty sand with a trace of gravel	
760	2	761.5	17	764.0	2	762.0	12	760.5	2	763.6	8	763.4	5	763.4	33	766.9	765
												Brown dry very stiff clay with a trace of fine sand and medium gravel					
755	3	756.5	17	759.5	3	757.0	21	759.5	3	758.0	10	758.4	20	758.4	20	756.3	760
				Gray hard silty clay with a trace of sand and gravel				Gray moist hard silt and clay with a trace of gravel				Gray very hard sandy silt and clay with a trace of sand and gravel				Gray hard silty clay with a trace of sand and gravel	
750	4	751.5	15	752.5	4	752.0	30	752.5	4	753.6	11	753.4	21	753.4	16	750.9	755
																No ground water. Drilling very hard at 10.0 thru 20.0' below the existing ground surface.	
745	5	746.5	13	743.5	5	747.0	28	743.5	5	748.6	13	748.4	11	748.4	16	746.9	750
								Gray and brown hard silt and clay with a trace of sand and gravel.				Gray moist hard clay and silt with a trace of fine sand and gravel.				Very stiff gray silty clay with a trace of sand and gravel	
740	6	741.5	17	740.5	6	742.0	30	742.1	6	743.6	15	743.4	17	743.4	17	742.4	745
								Gray moist hard clay and silt with a trace of sand and fine gravel.								Bottom of boring 31.0'	
735				Bottom of boring 31.5'				Bottom of boring 31.0'								Free ground water noted at 7.5' below the existing ground surface. Very hard drilling at 15' thru 31.0' below existing ground surface.	740
				Free ground water was noted 5'0" below the existing ground surface.				Free ground water noted at 8.5' below the existing ground surface.									
730				Drilling very hard from 1.5' below existing ground surface thru 31.0'				Free ground water noted at 9.0' below the existing ground surface									735
				Seam of sand at 24.0' below existing ground surface.													
725																	730
720																	725
																	720

Bottom of boring 31.5'
Free ground water noted at 8'0" below the existing ground surface.

Free ground water noted at 1.5' and at 38.5' below the existing ground surface.
A soft layer, 2" thick, was noted at 22' below the existing ground surface.

NOTE: "N" = Relative Density - Number of blows required to drive a 2" O.D. Sample spoon 6" with a 140 lb weight falling 30". First number represents blow count thru disturbed soil and is not to be used.

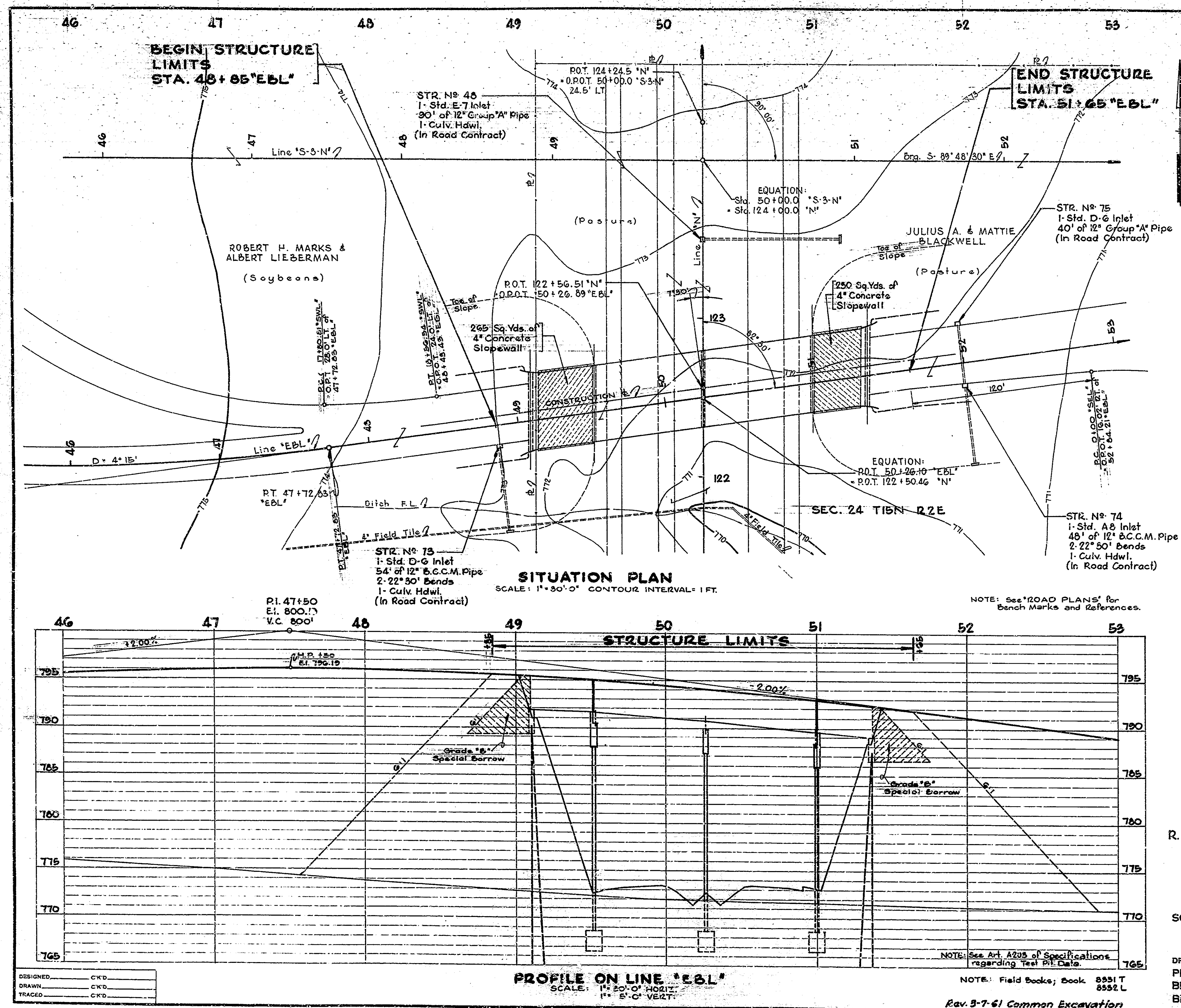


SOIL BORING LOG STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:

FEBRUARY 24, 1961

PROJECT: I-465-4(1)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649 I-465-154-4649J
I-465-154-4649 DR



STRUCTURE TO BE BUILT ON AN 800' V.C.

NOTE: Outlet end of 2" x 4" steel conduit to extend beyond structure into ground and not to be exposed. Cap end (typ)

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(1) 154	1961	13	72

ELEVATION
Scale: 1/2" = 1'-0"

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

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

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

GENERAL NOTES

No present structure at proposed bridge site. Depth of footings to be extended if found necessary. See Art. 6403.2(a) of Specifications. Piles shall have minimum bearing value shown on detail drawings. Determine pile lengths by Art. F203 of the Specifications.

For details of steel encased concrete piles see Br. Std. C, the Special Provisions and applicable articles in the Specifications.

Piles shall be driven to elevations shown on plans or below if necessary to obtain desired bearing.

Reinforcing steel covering shall be 1" min. in slabs, 3" in footings except bottom steel which shall be 4" and 2" in all other parts unless noted.

Concrete in footings and collision walls to be Class "E".

Concrete in superstructure, including railing and bent caps to be Class "F".

Concrete in structure not noted above in steel encased concrete piles and in concrete slopewall to be Class "D".

Continuous concrete pours shall be required between construction joints as shown on detail plans.

Bent forms 1/4" beneath copings, and chamfer exposed edges 1" unless noted.

Tolerance in position of steel encased concrete pile head maximum 2".

All railings to be constructed perpendicular to grade.

Waterproof mudwalls in accordance with specifications.

5' Exp. Jts. with load transfer to be placed at end of R.C. Br. Approach. See Br. Std. M3.

See Special Provisions for items included in this contract.

Superstructure falsework to be released before pouring railing parapet wall.

DESIGN DATA

Designed for H20-S16-24 loading in accordance with 1957 A.A.S.H.O. Spec. Plans, 1958 carrying members checked for Live Load for Bridges on Interstate System.

JOINT LEGEND

1 1/2" Exp. Jt. - See Br. Std. C - Similar to 1" Jt. except width

1" Exp. Jt. - See Br. Std. C

Joint "D" indicates 1/2" preformed joint filler under front 6" of girder bearing area.

TYPICAL CROSS SECTION

Std. Divided Lane Section for F.A. Interstate Projects Rev. 4.4-60

See Sheet No. 3

NOTE: The following items are not in the Bridge Contract

R.C. Bridge Approach

Spl. Integ. Conc. Curb - Type "B" & Type "C"

Straight Beam Guard Rail

1" Exp. Joint with Load Transfer

1" Exp. Jt.

GENERAL PLAN

R.C. GIRDER & CONTINUOUS STEEL BEAM BRIDGE

4 SPANS; 40'-6", 2 @ 73'-6", 34'-6", 42'-0" ROWW, 2'-2" WALKS

SKREW 7'-30" RT.

BRADBURY EASTBOUND OVER I-465

STATE HIGHWAY DEPARTMENT OF INDIANA

MARION COUNTY

SCALE: As Noted

FEBRUARY 24, 1961

Walter M. Deann

DESIGNED: C.K.D.

DRAWN: C.S.T.

DRAWING: 520F 15

PROJECT: I-465-4(1) 154

BRIDGE CONTRACT NO. 5243

BRIDGE FILE: I-465-154-4649

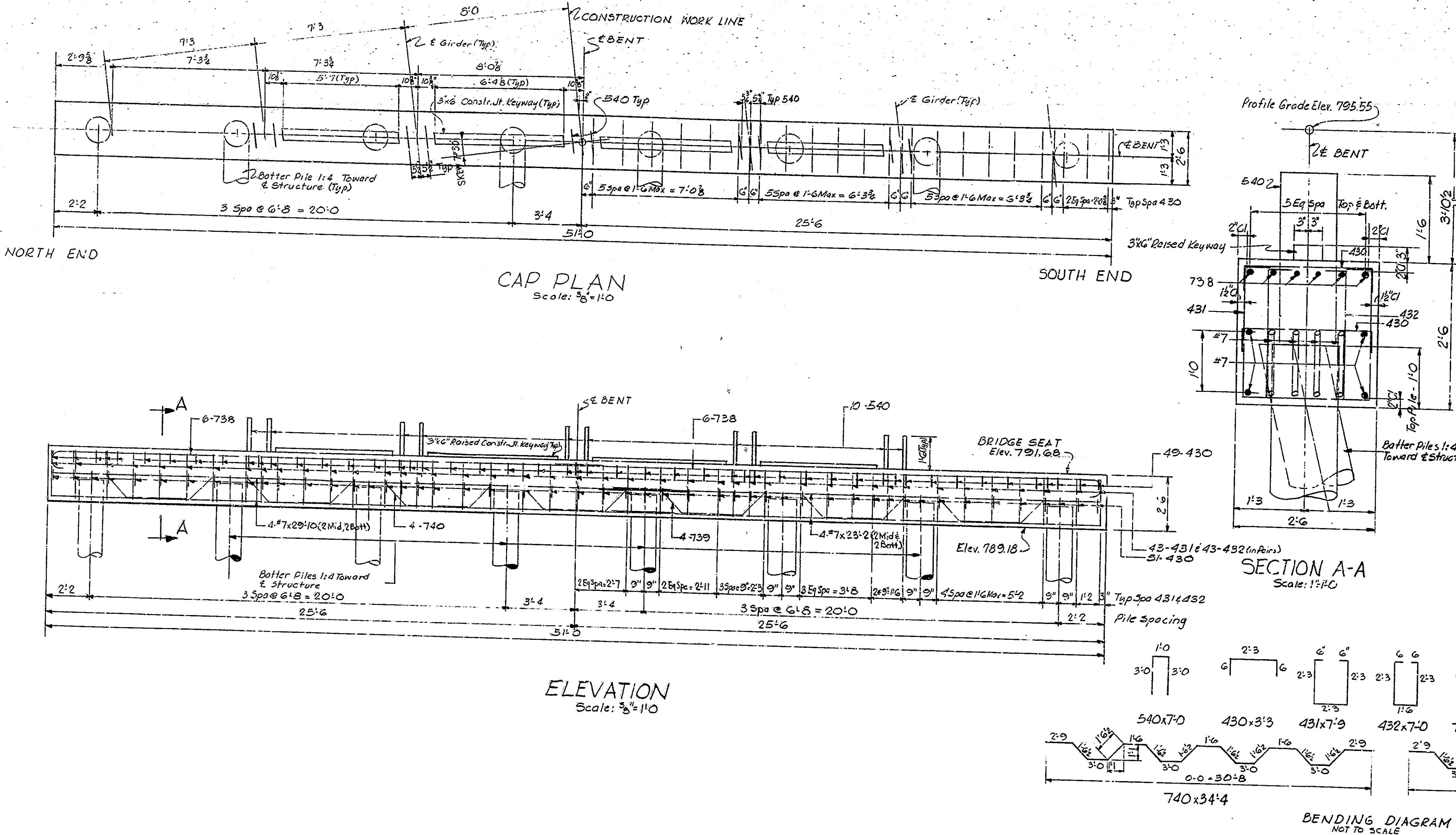
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4 (7) 134	1961	14	72

BILL OF MATERIALS
BENT No 1

MARK OR SIZE	N ^o of Sw's	Length lbs	Weight lbs
738	12	27.4	
739	4	26.9	
740	4	31.4	
*7	4	29.0	
*7	4	23.2	
Total	34		1603
540	10	7.0	73
430	100	3.3	
431	43	7.9	
432	43	7.0	
Total	196		641
Total Steel			2317

CONCRETE	
Class "F", Cop	11.9 CY

MISCELLANEOUS
8-14" ϕ x 7 Ga. Steel Pile
shells @ 35' = 280LF



NOTES:
See Br. Std. C1 for reinforcing bar notes.

Cap not to be poured until after fill has been completed up to approximately $\pm$ elevation of the bottom of cap.
B-14" ϕ x 75a. Steel Pile shells required at bent.
Minimum bearing - 40 Ton/pile.

BENT No 1 DETAILS
STATE HIGHWAY DEPARTMENT OF INDIANA

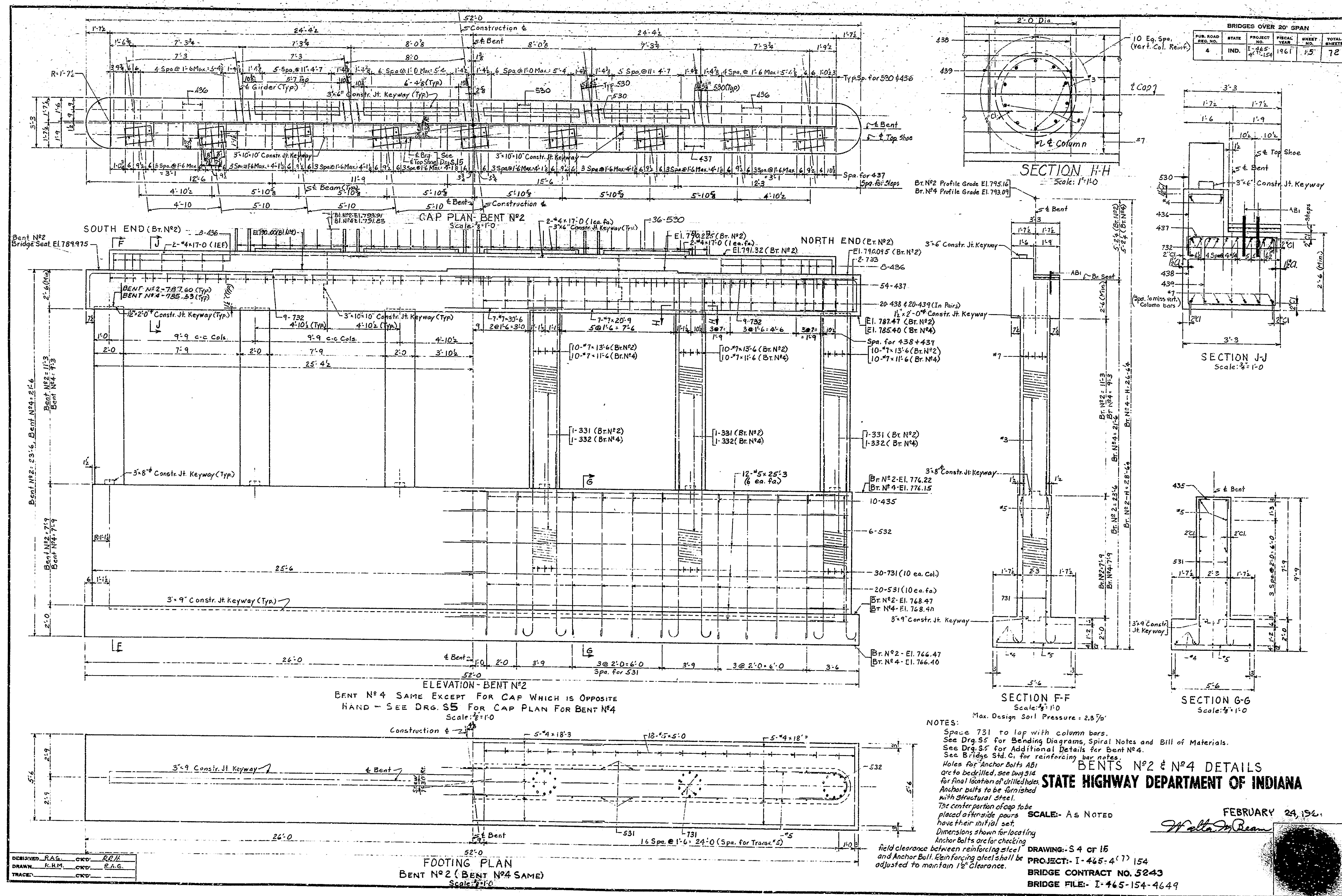
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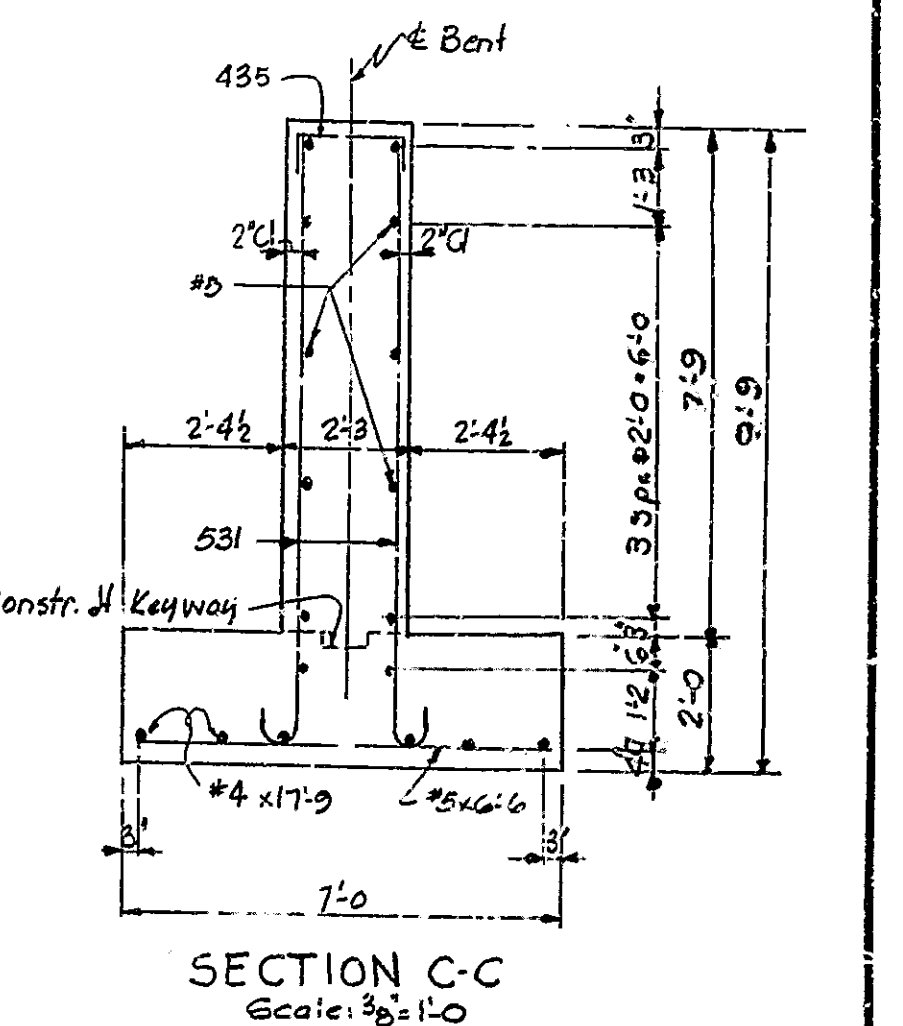
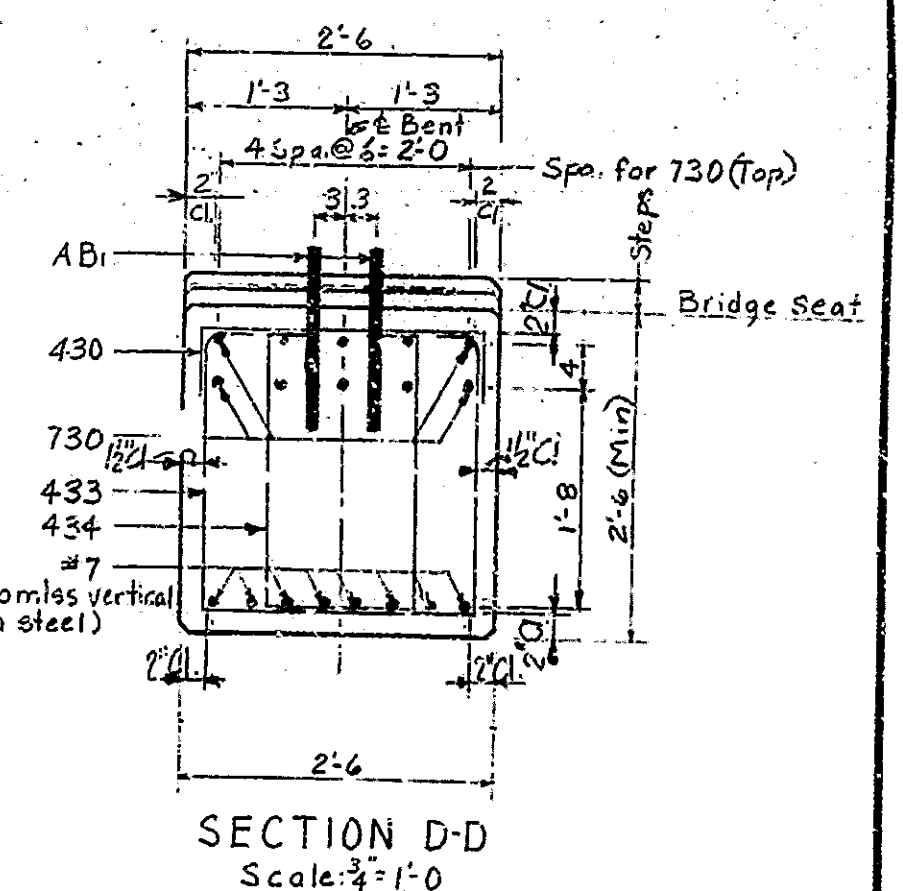
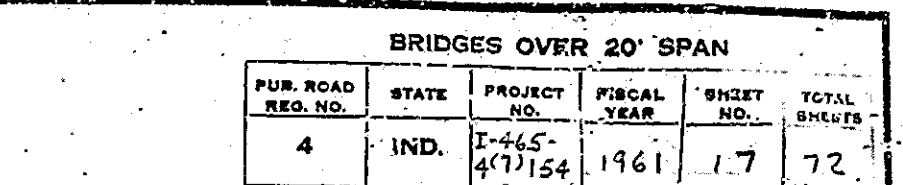
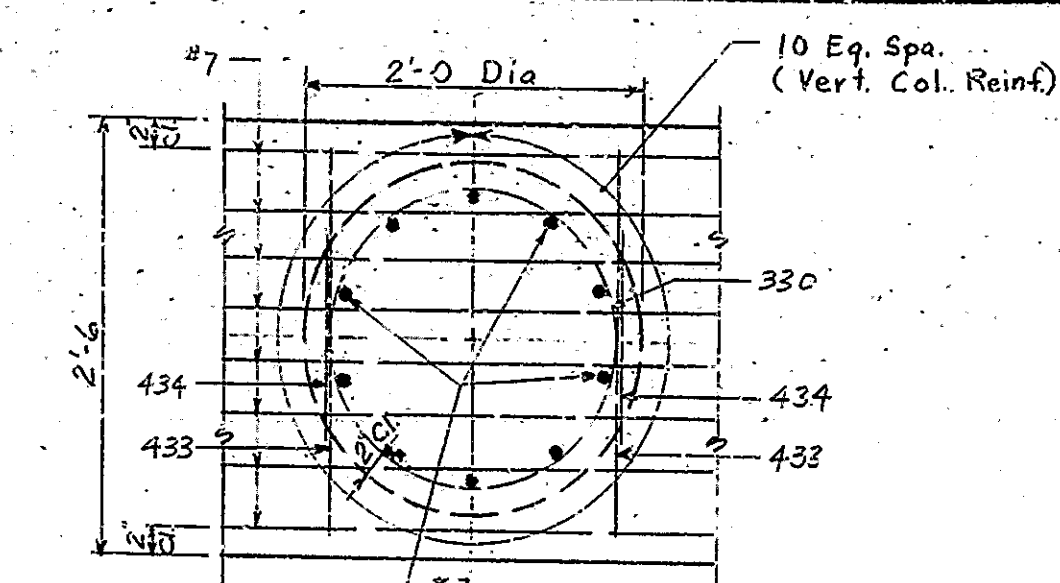
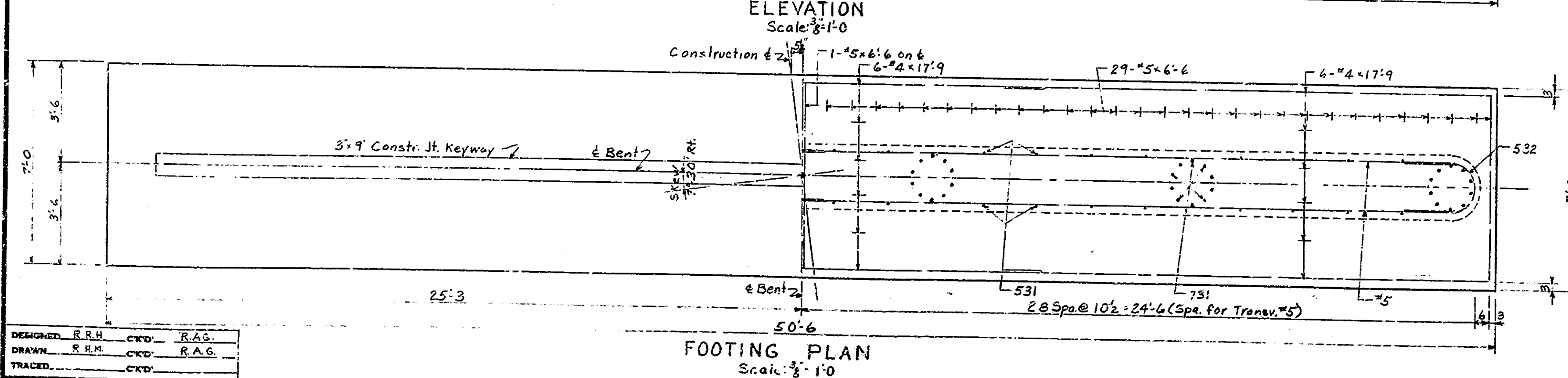
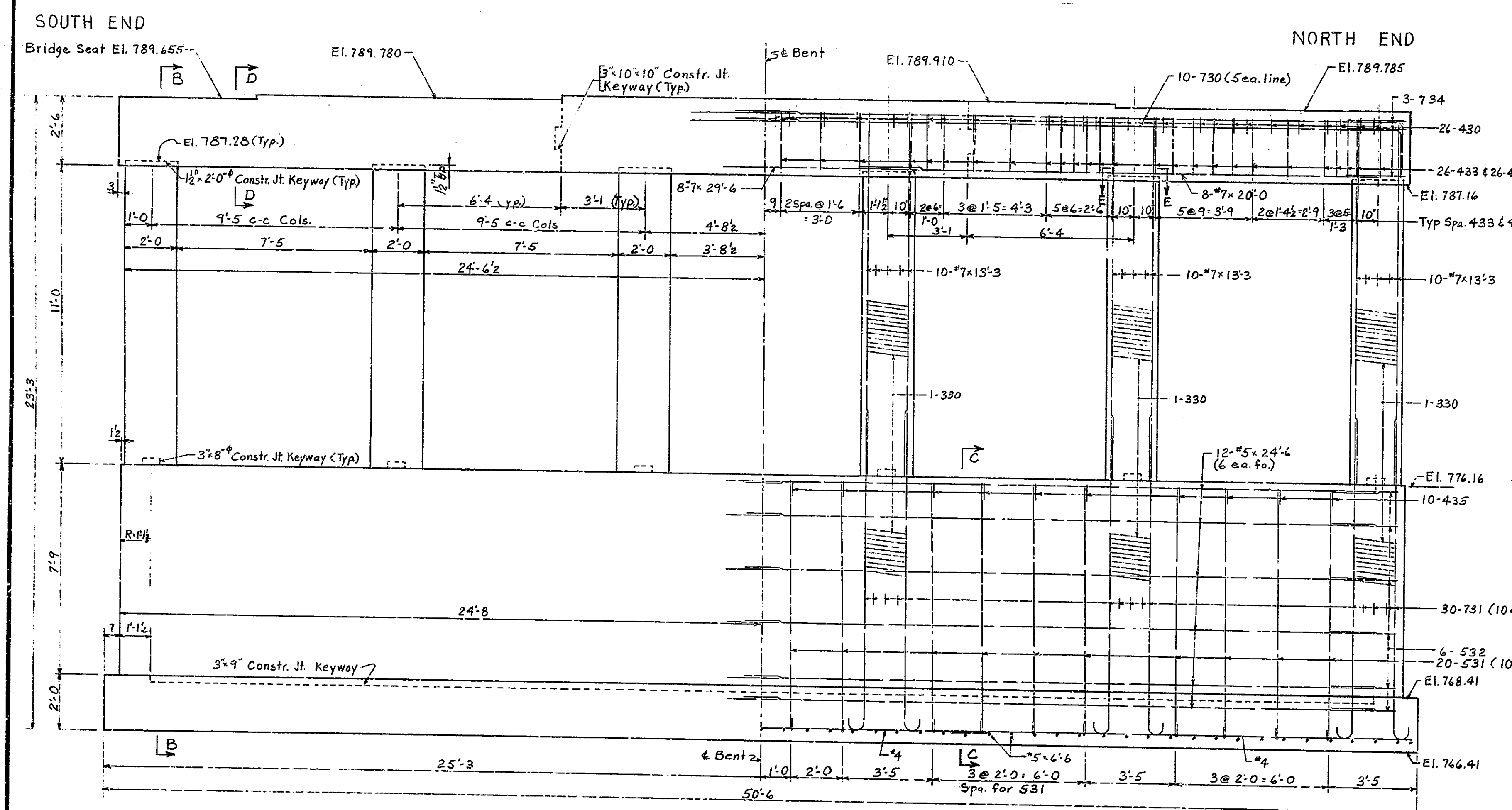
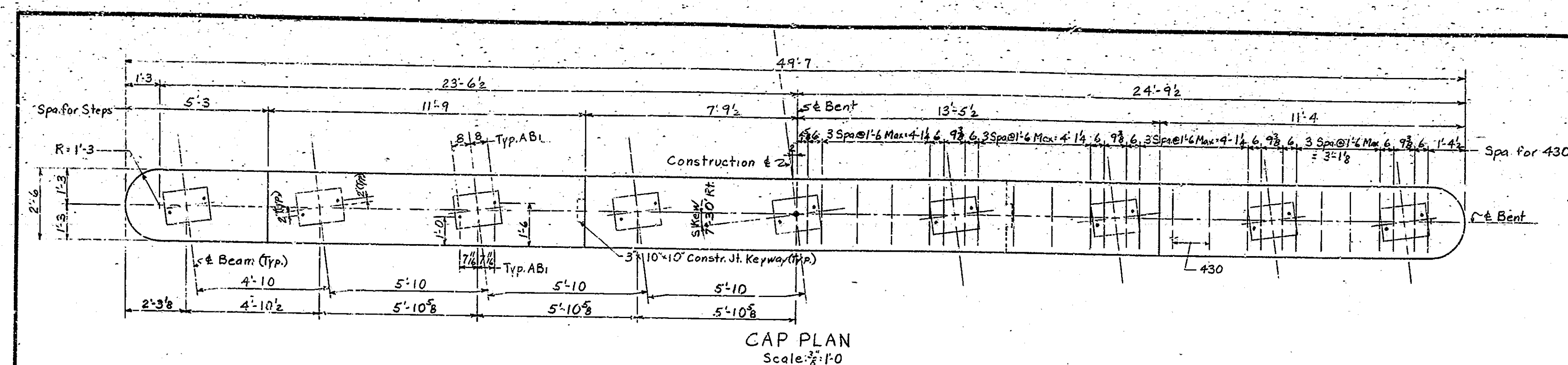
FEBRUARY 24, 1961

FEBRUARY
Walter M. Bean

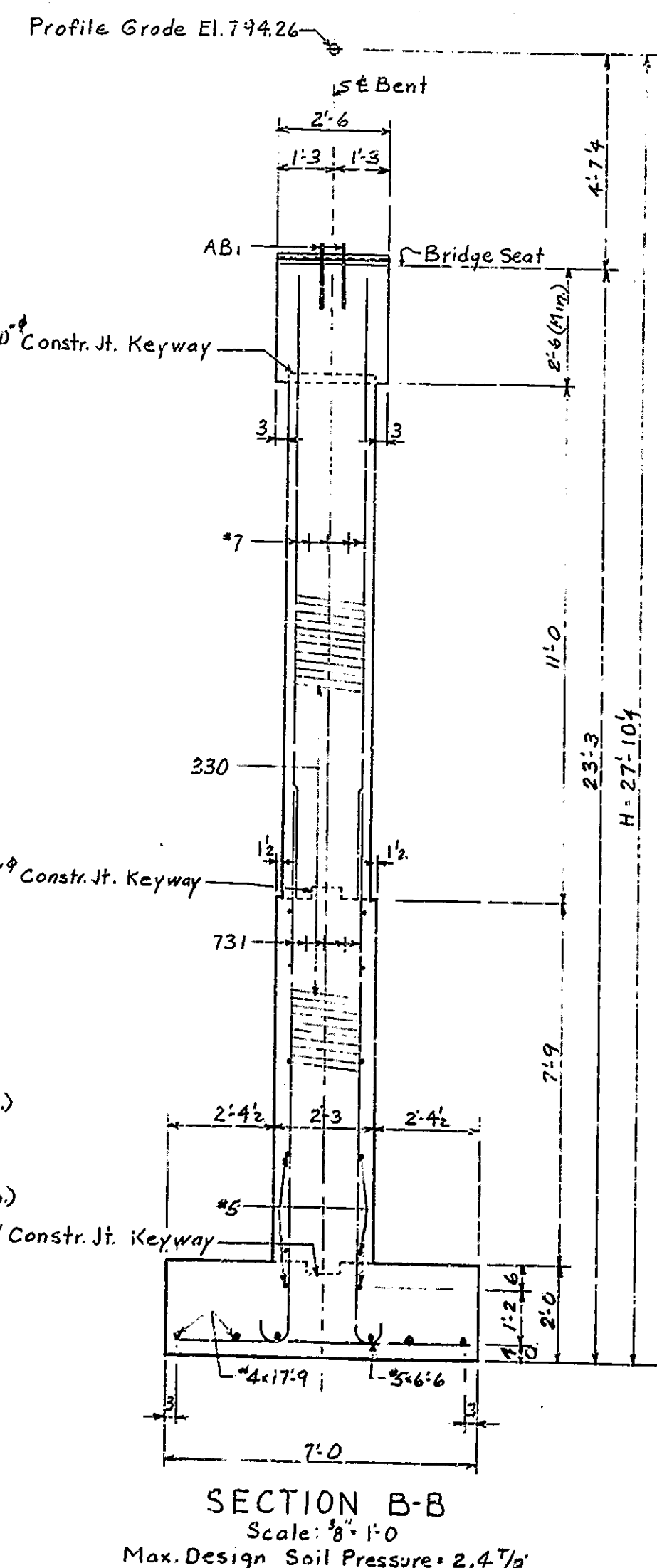
DRAWING-53 OF 15
PROJECT-I-465-4(7)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE- I-465-154. 4649

DESIGNED RCH CK'D. RCH
DRAWN WCH CK'D. RCH
TRACED _____ CK'D. _____





Space 731 for top with column bars.
See Drg 55 for Bending Diagrams, Spiral Notes & Bill of Materials.
See BrStC1 for reinforcing bar notes.
The center portion of each top to be placed outside pour
have their initial set.
Holes for Anchor Bolts (ABs) are to be drilled, see Drg 515
for final location of drilled holes.
Anchor bolts to be furnished with structural steel.
Dimensions shown for locating anchor bolts are for
checking field clearance between reinforcing steel,
and anchor bolt. Reinforcing steel shall be adjusted
to maintain 1" clearance.



BENT №3 DETAILS
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- AS NOTED

FEBRUARY 24, 1961

Walter M. Beaman

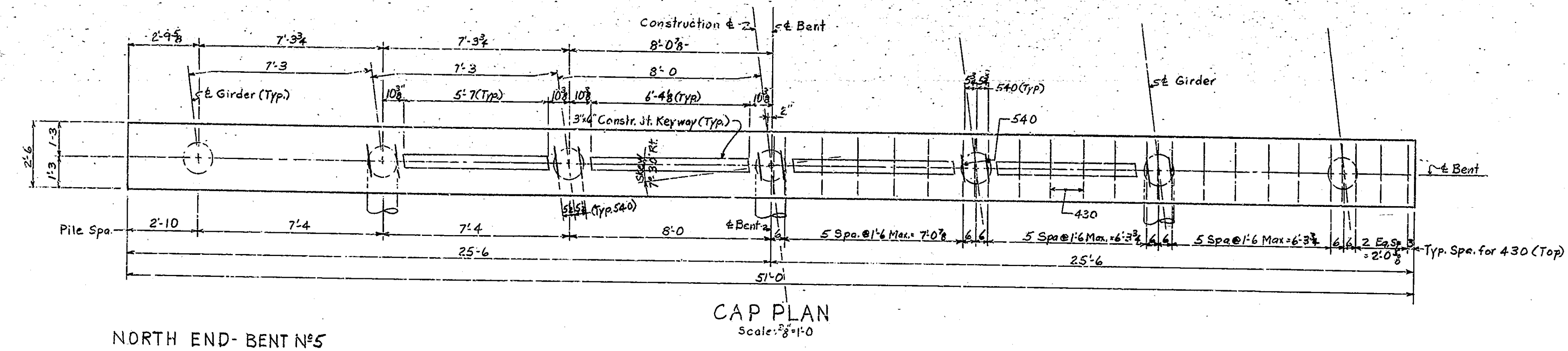
DRAWING:- S6 OF 15
PROJECT:- I-465-4⁽⁷⁾154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE:- I-465-154-4649



BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-47154	1961	18	72

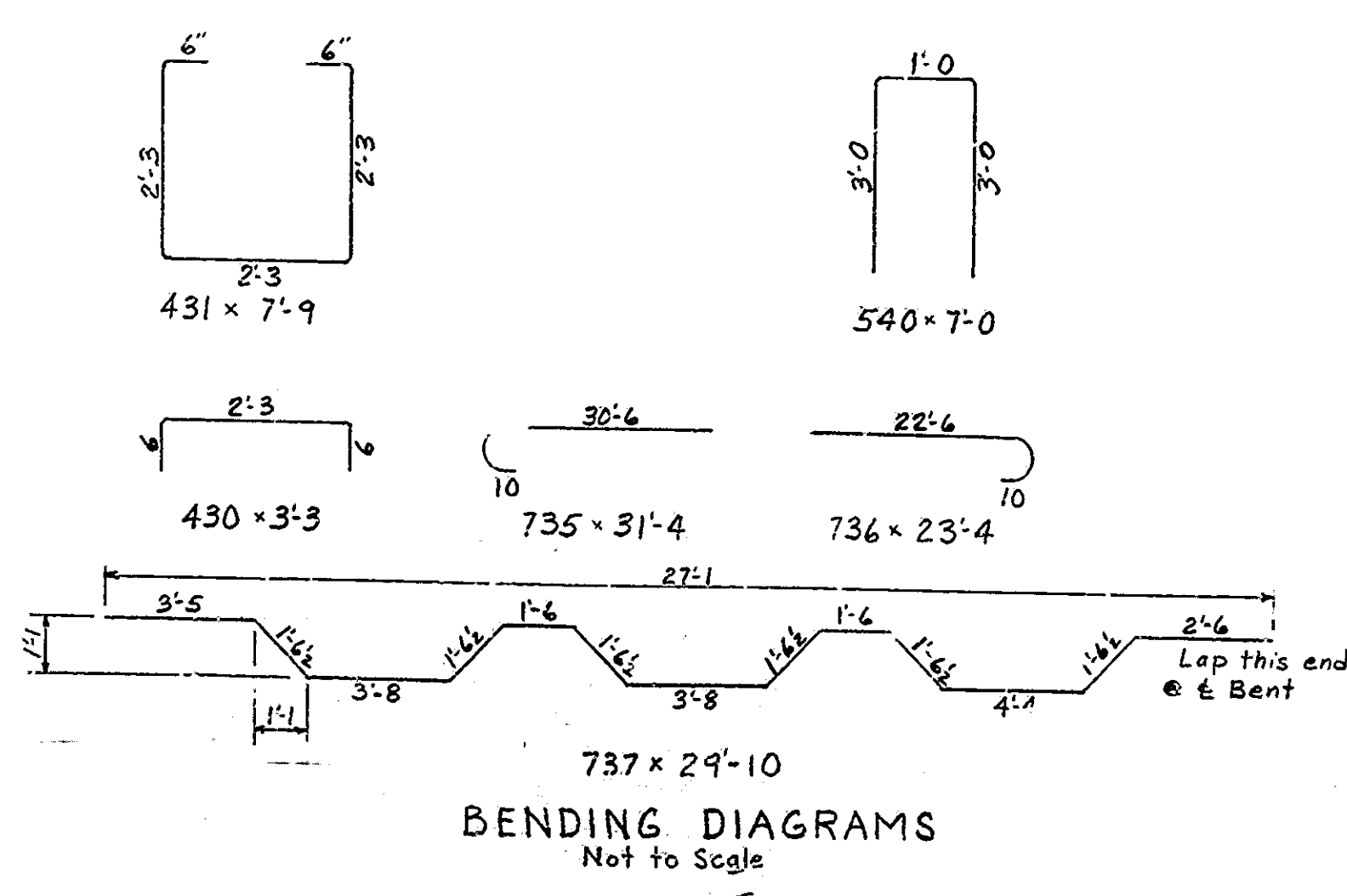
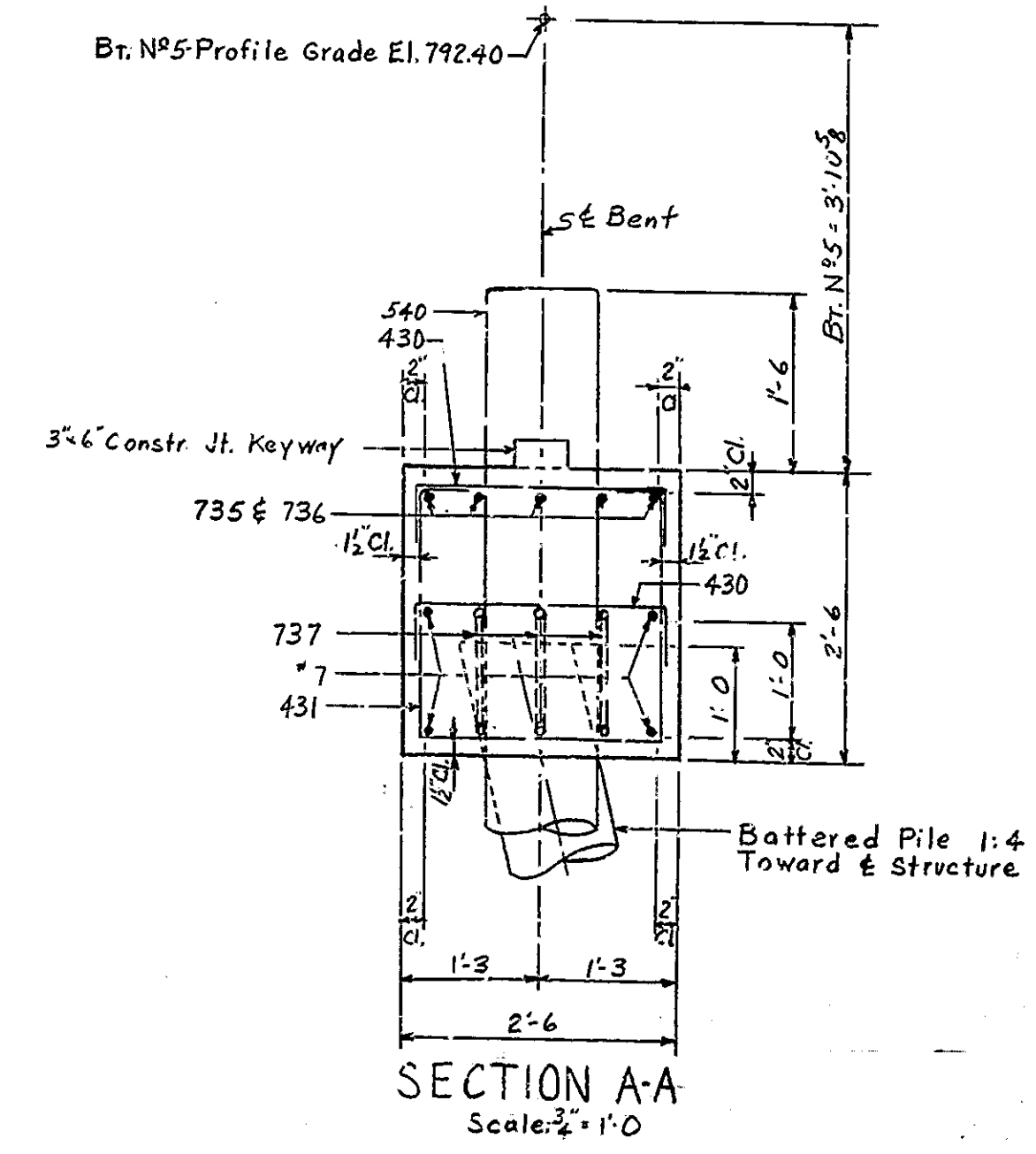
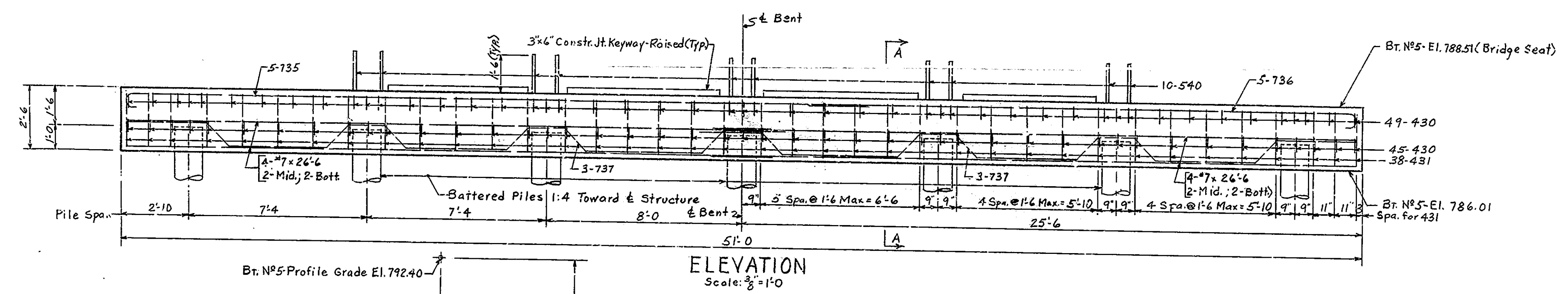
BILL OF MATERIALS BENT N°5

MARK OR SIZE	N° OF BARS	LENGTH	WEIGHT (LBS.)
735	5	31'4"	
736	5	23'4"	
737	6	29'10"	
#7	8	26'6"	
Total N°7			1358
540	10	7'0"	73
430	94	3'3"	
431	38	7'9"	
Total N°4			401
Total Steel			1832
CONCRETE			
Class F- Cap			11.9 C.Y.
MISCELLANEOUS			
7-14" x 7 Ga. Steel			
Pile Shells @ 30'-0" = 210 L.F.			



NORTH END- BENT N°5

SOUTH END- BENT N°5



NOTES:
See Bridge Std. C1 for reinforcing bar notes.
Cap not to be poured until after fill has been completed up to approximately the elevation of the bottom of cap.
7-14" x 7 Ga. Steel Pile Shells required.
Piles to be driven to 40 Tons/Pile Minimum Bearing.

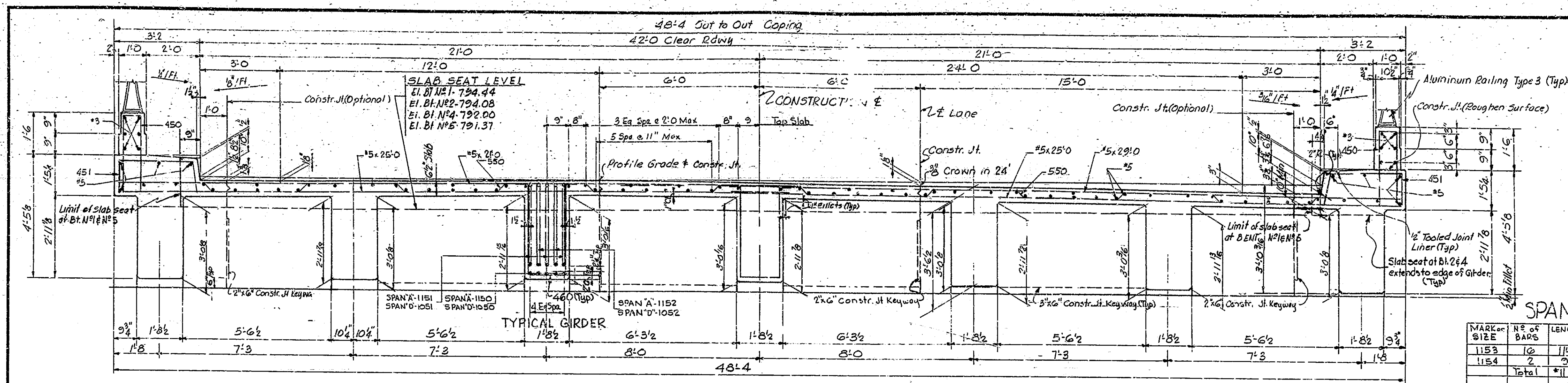
BENT N°5 DETAILS STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- AS NOTED

FEBRUARY 24, 1961

DRAWING:- S7 OF 15
PROJECT:- I-465-4(7) 154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE:- I-465-154-4649

DESIGNED	R.R.H.	CHKD	R.H.M.
DRAWN	R.H.M.	CHKD	R.H.M.
TRACED		CHKD	



BRIDGES OVER 20' SPAN						
PUM. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
4	IND.	(7) 154	1961	20	72	

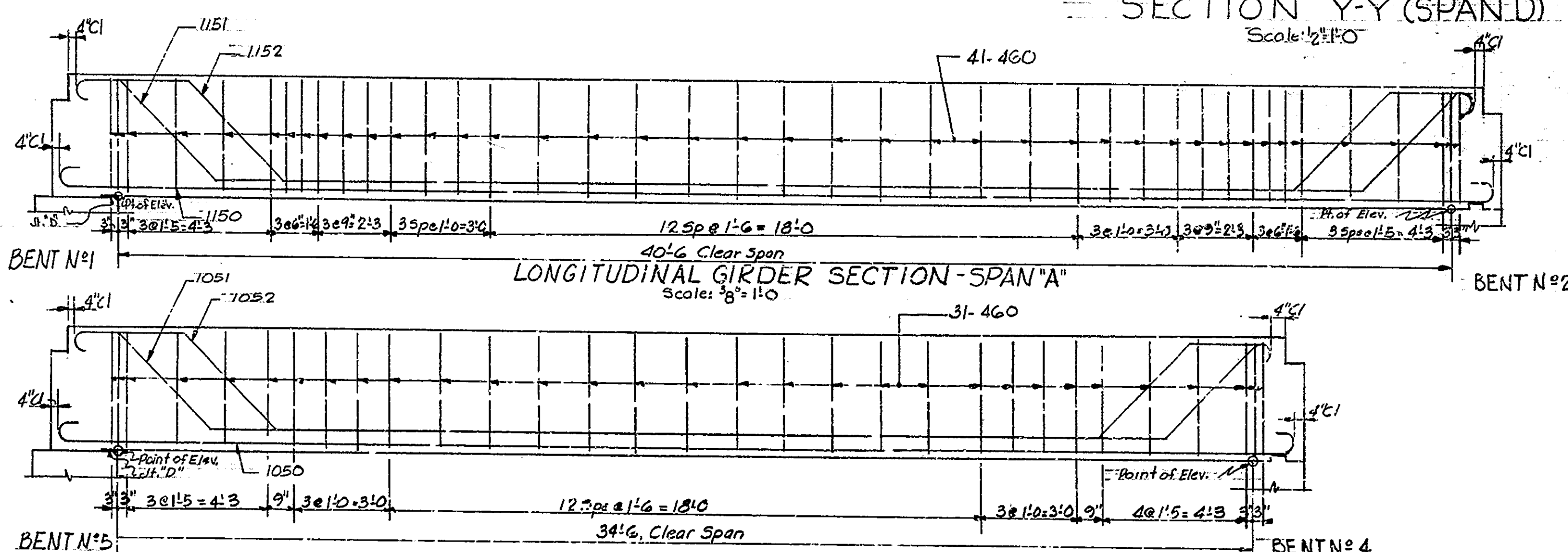
BILL OF MATERIALS SPAN "A"

MARK OR SIZE	Nº OF BARS	LENGTH	WEIGHT
		ft	lbs
1150	35	45.8	
1151	21	46.10	
1152	16	47.0	
1154	2	9.0	
Total	74		1829.4

SPAN D

MARK OR SIZE	Nº OF BARS	LENGTH	WEIGHT
		ft	lbs
1153	10	11.7	
1154	2	9.0	
Total	12		108.0

SECTION X-X (SPAN A) SECTION Y-Y (SPAN D)



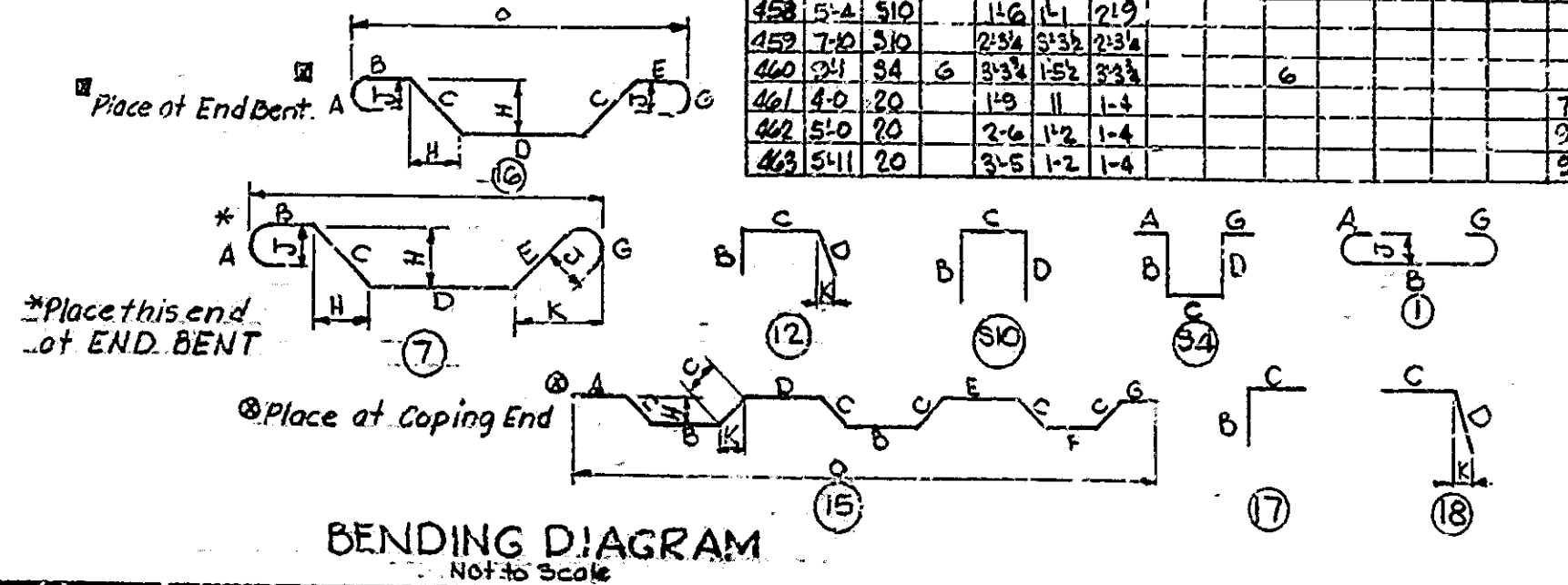
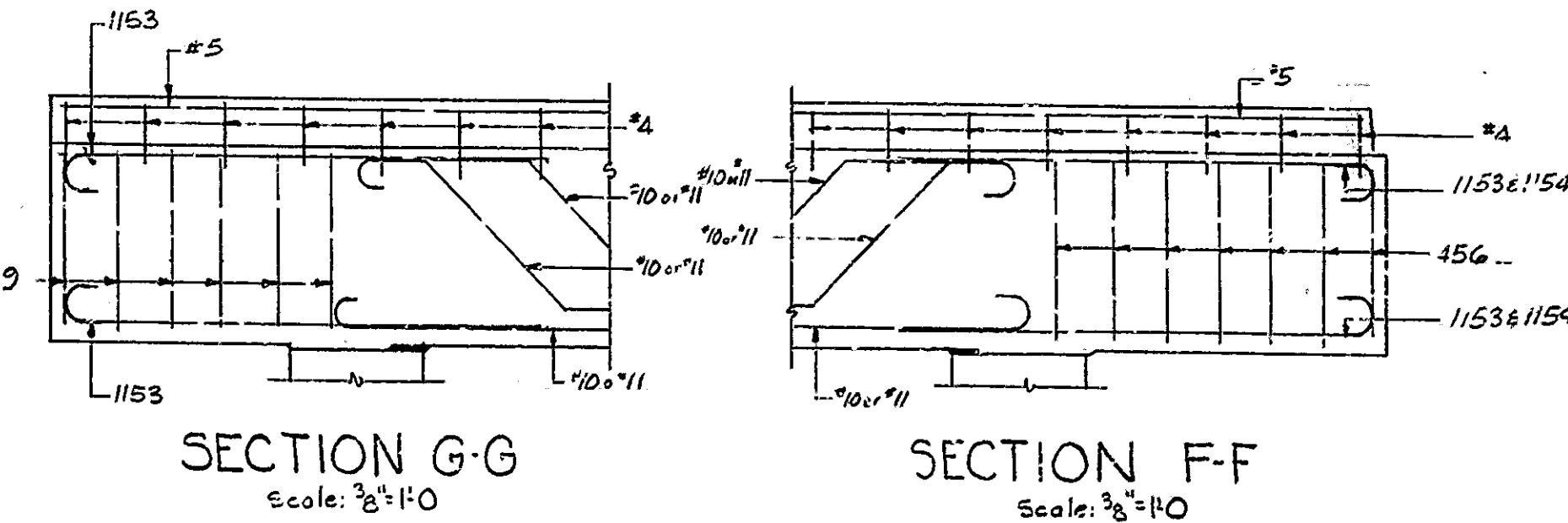
CONSTRUCTION
WORK LINE

EI. 791.84	EI. 791.47	EI. 789.35	EI. 788.71
EI. 791.92	EI. 791.55	EI. 789.43	EI. 788.79
EI. 791.78	EI. 791.62	EI. 789.21	EI. 788.87
EI. 791.97	EI. 791.61	EI. 789.51	EI. 788.87
EI. 791.30	EI. 791.53	EI. 789.44	EI. 788.80
EI. 791.81	EI. 791.45	EI. 789.36	EI. 788.73
EI. 791.72	EI. 791.36	EI. 789.28	EI. 788.65
40'-6" Clear Span	4 Girders	34'-6" Clear Span	

BENT N#1 BENT N#2 BENT N#4 BENT N#5 BOTTOM GIRDER ELEVATION

BAR BENDING DIAGRAM

MARK	LENGTH	TYPE	A	B	C	D	E	F	G	H	J	K	R
1150	45.8	1	12	12	12	12	12	12	12	12	12	12	12
1151	46.10	7	12	12	12	12	12	12	12	12	12	12	12
1152	47.0	16	12	12	12	12	12	12	12	12	12	12	12
1153	11.7	1	12	12	12	12	12	12	12	12	12	12	12
1154	9.0	2	12	12	12	12	12	12	12	12	12	12	12



See Br 51d C1 for reinforcing bar notes
See Br 51d E1 for Aluminum Railing Details
See Dwg 5B for location SEC. X-X, F-F, G-G & Y-Y

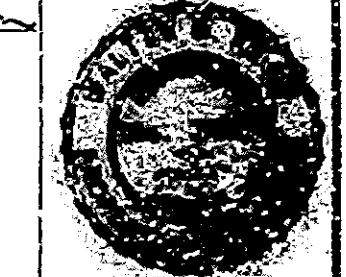
SPAN "A" & "D" DETAILS STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

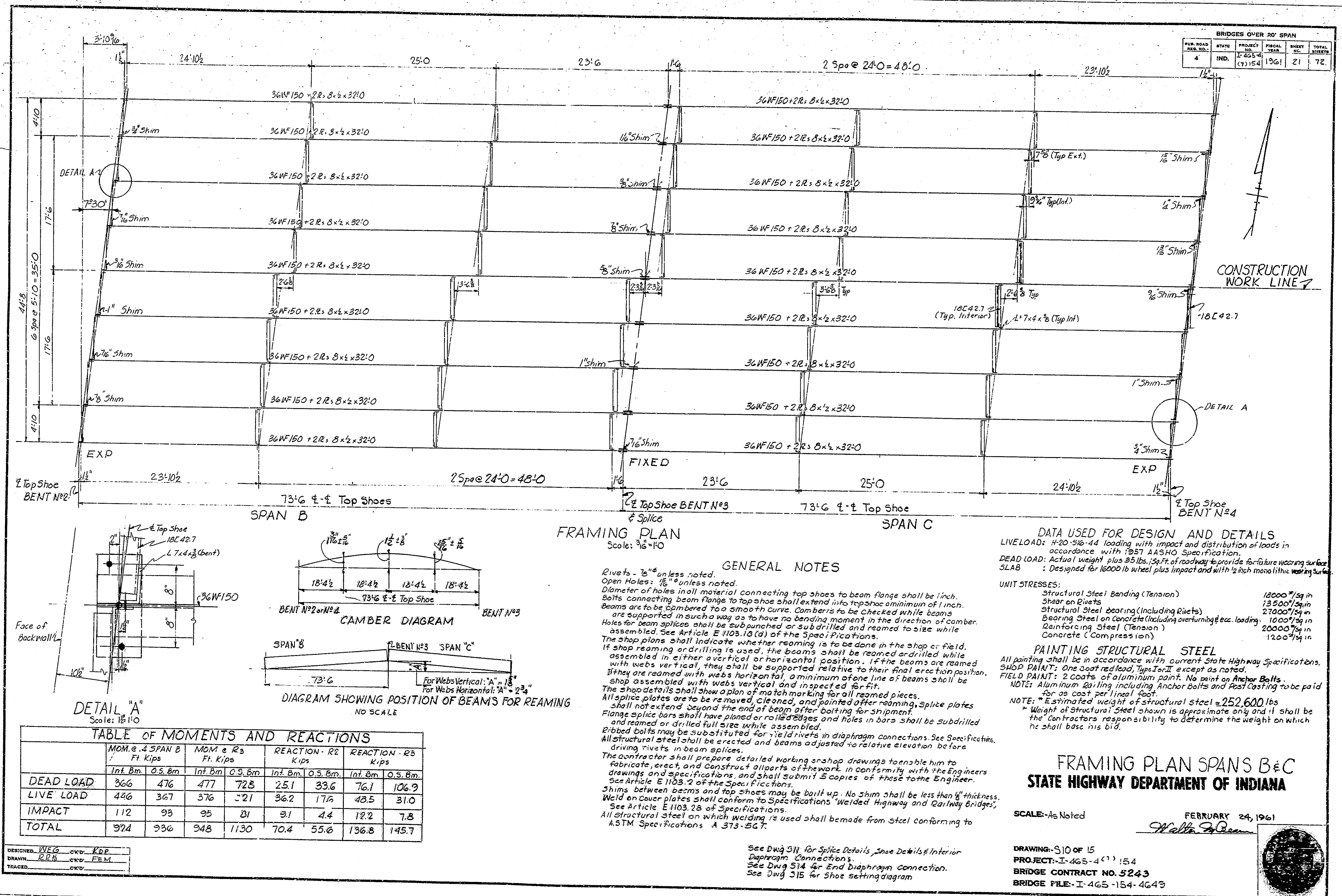
FEBRUARY 24, 1961

Walter M. Bann

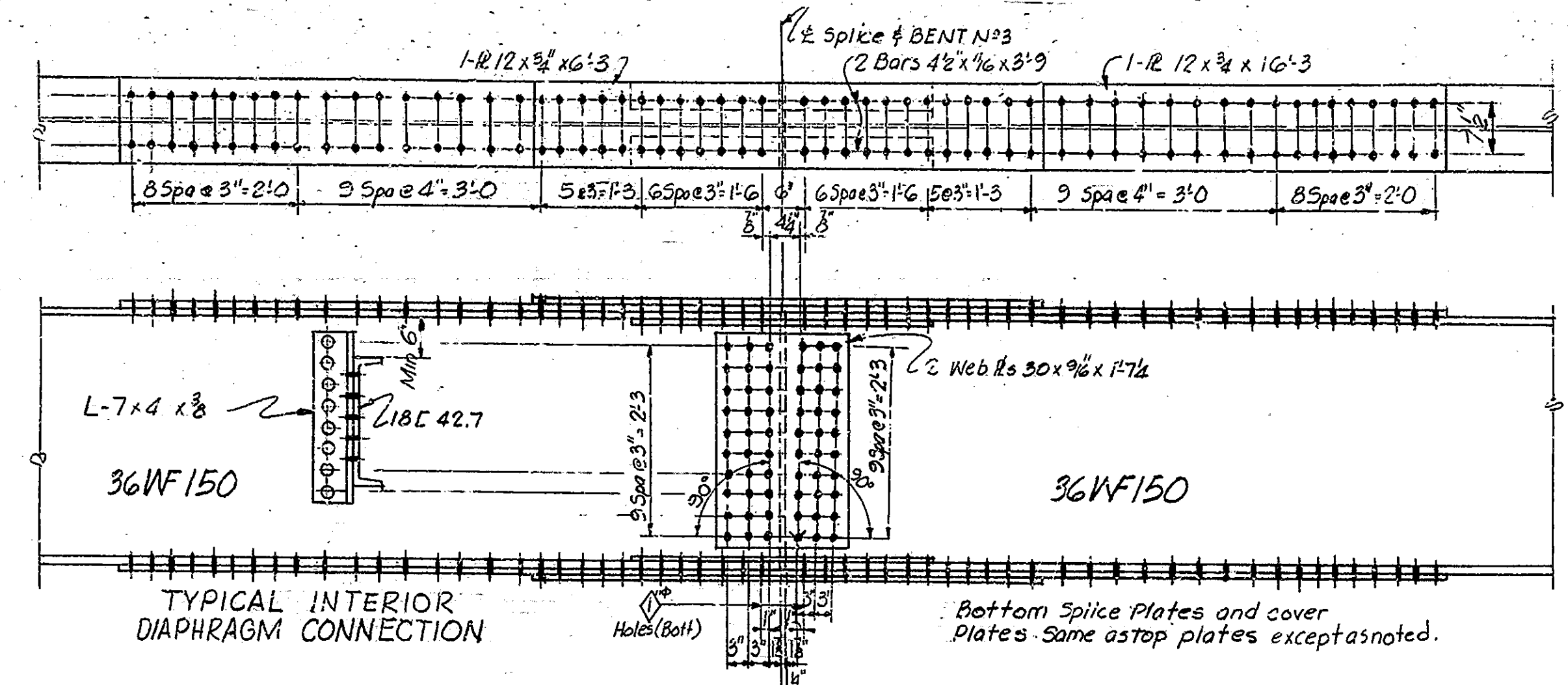
DRAWING: S9 OF 15
PROJECT: I-465-4(1)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4643



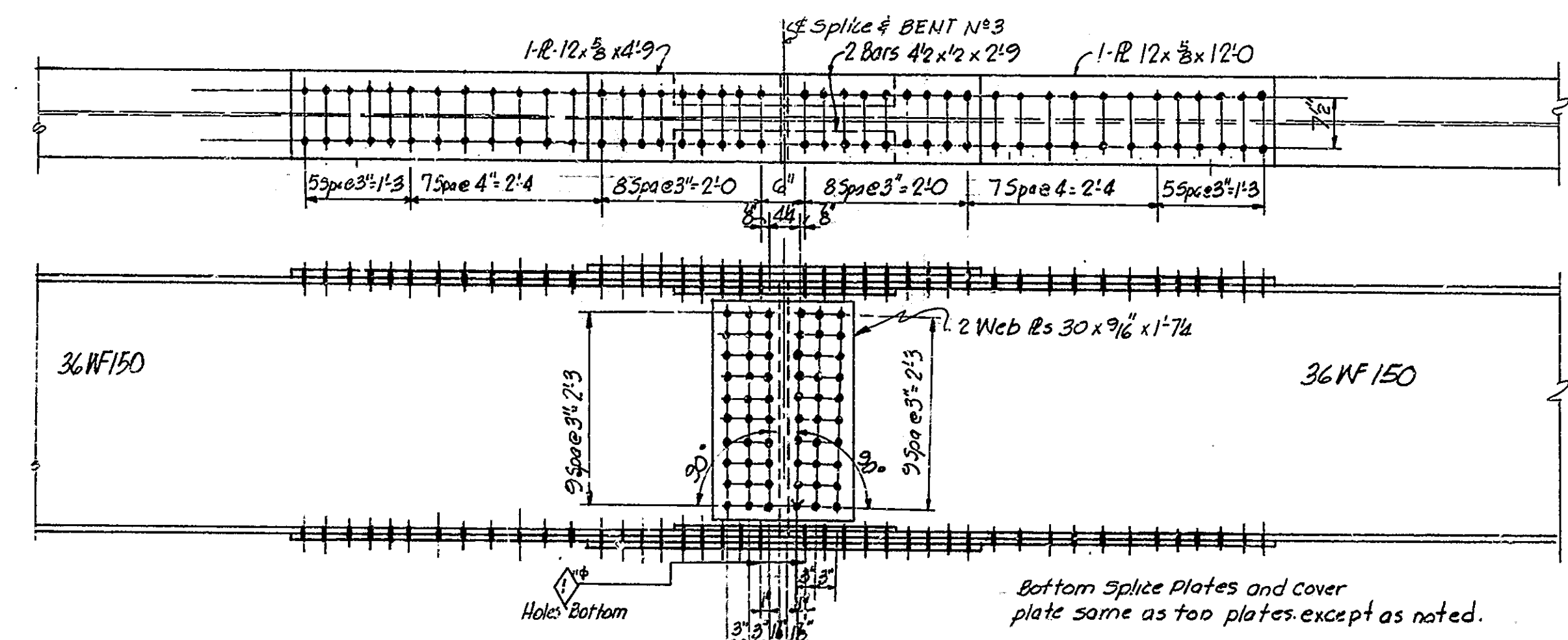
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DRAWN: R.C.H. CKD: D.W.G.
TRACED: CKD:



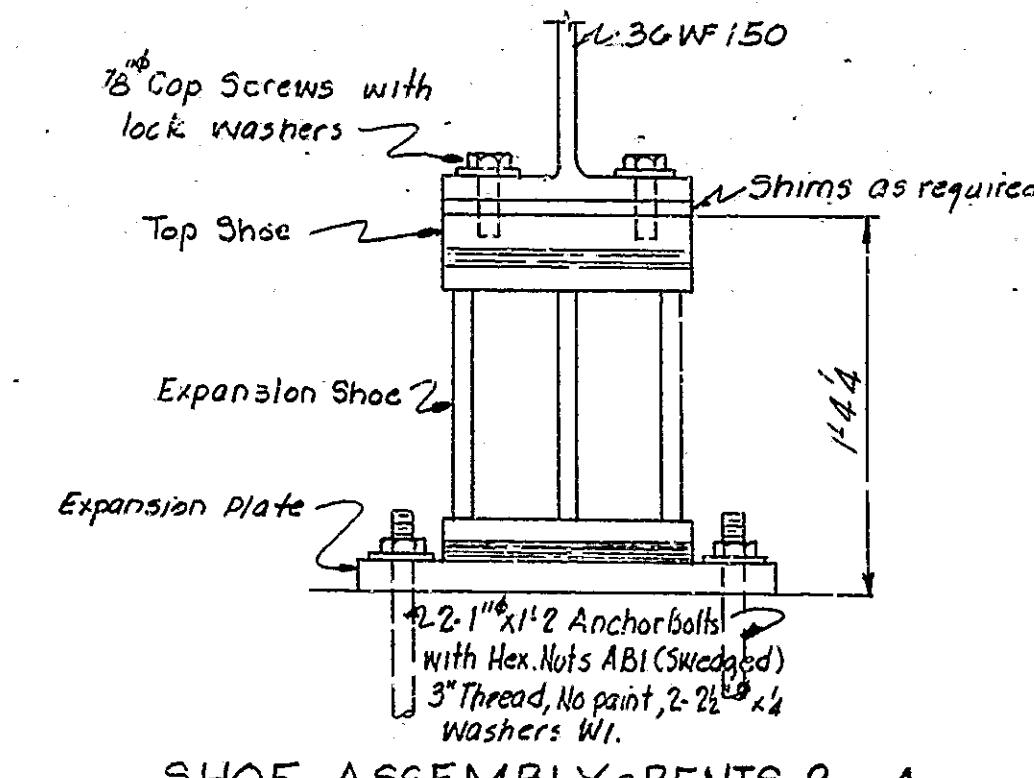
BRIDGES OVER 20' SPAN					
PUR. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	465-4(7)154	1961	22	72



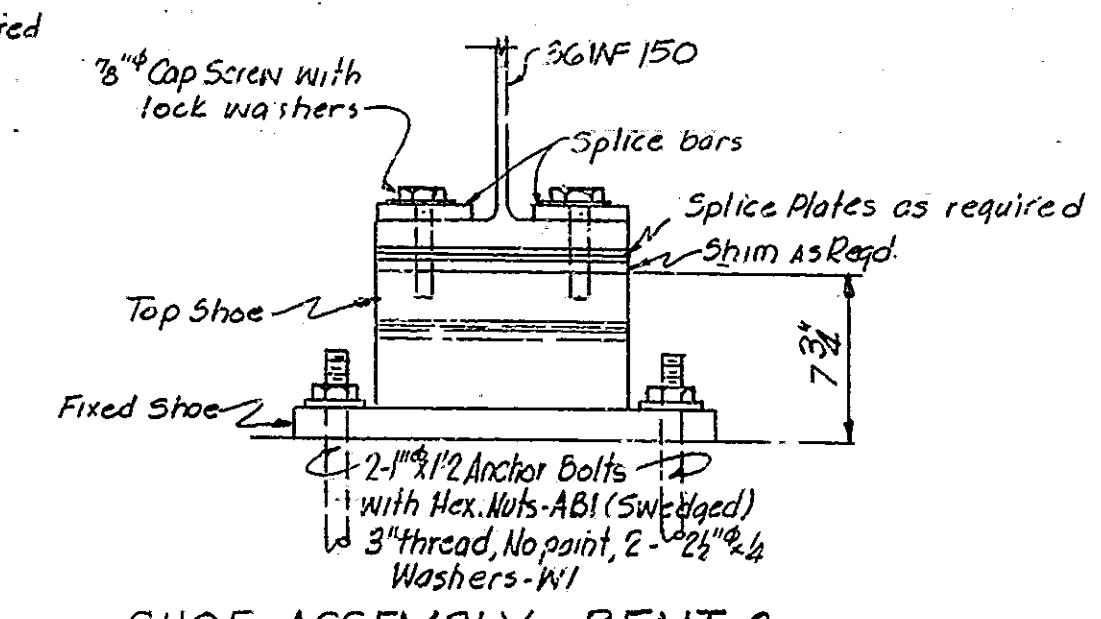
SPLICE DETAILS - EXTERIOR BEAMS
Scale: 3/4"=1'-0"



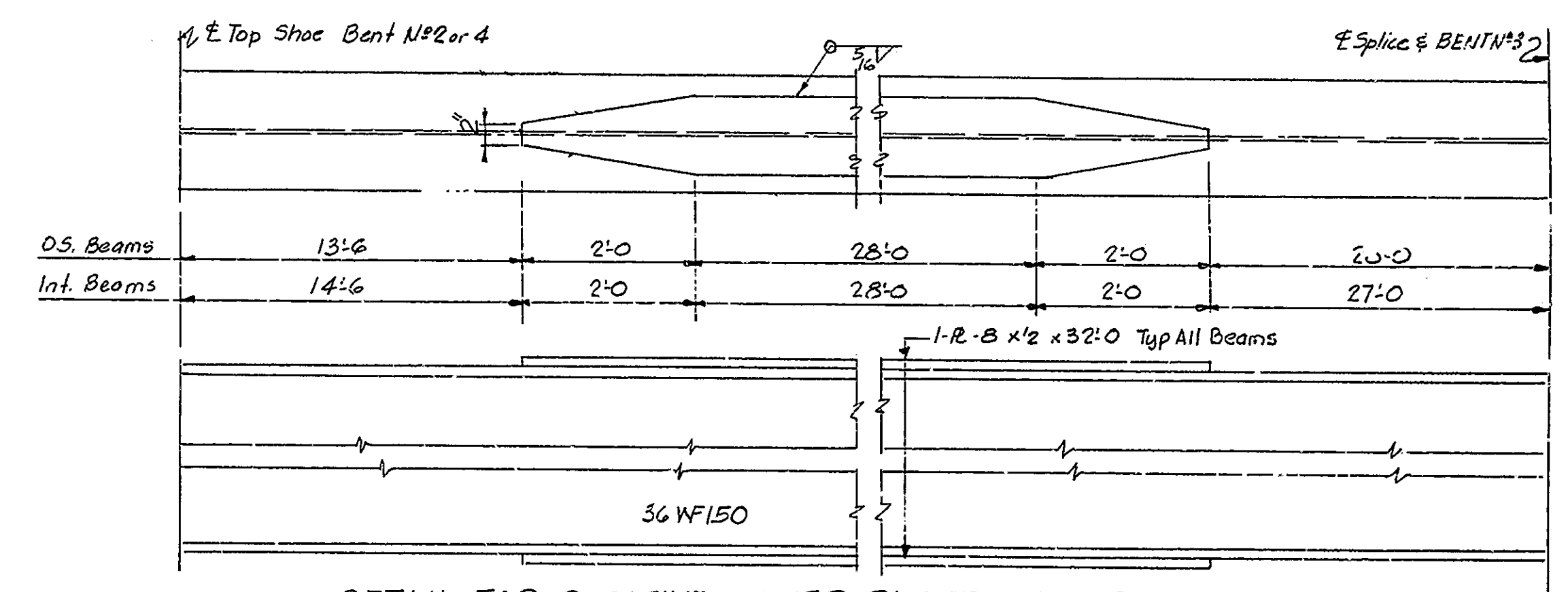
SPLICE DETAILS - INTERIOR BEAMS
Scale: 3/4"=1'-0"



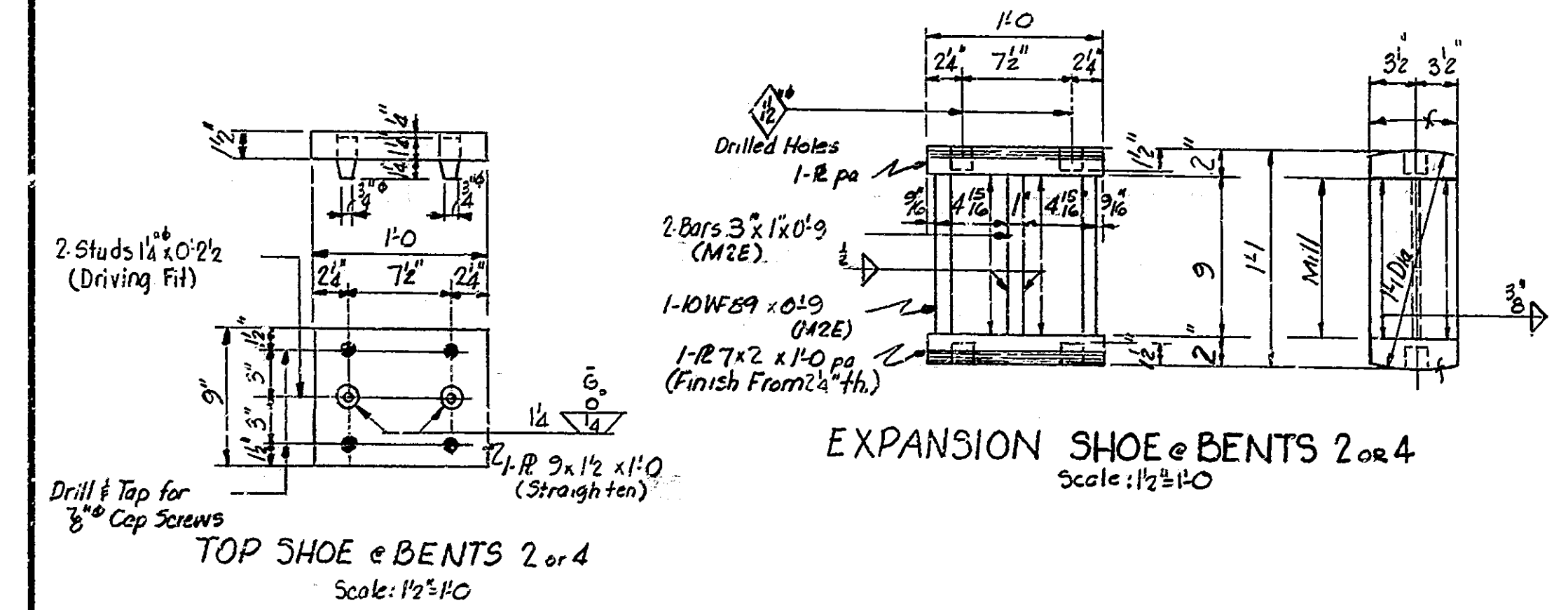
SHOE ASSEMBLY @ BENTS 2 or 4
Scale: 1/2"=1'-0"



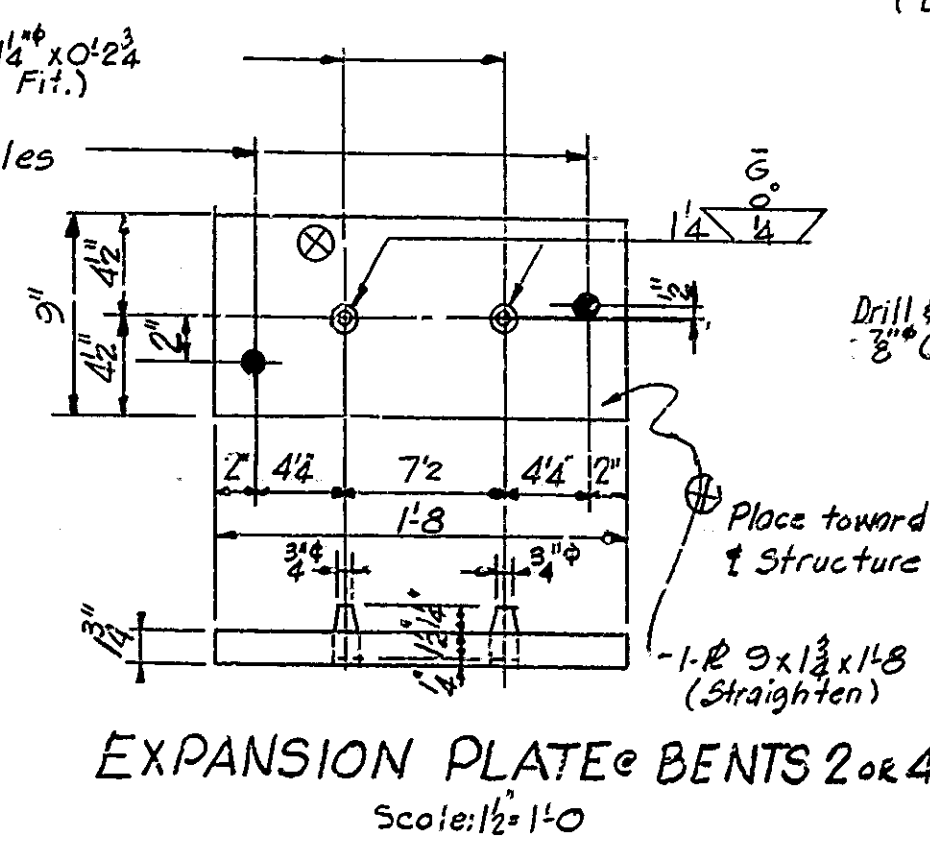
SHOE ASSEMBLY @ BENT 3
Scale: 1/2"=1'-0"



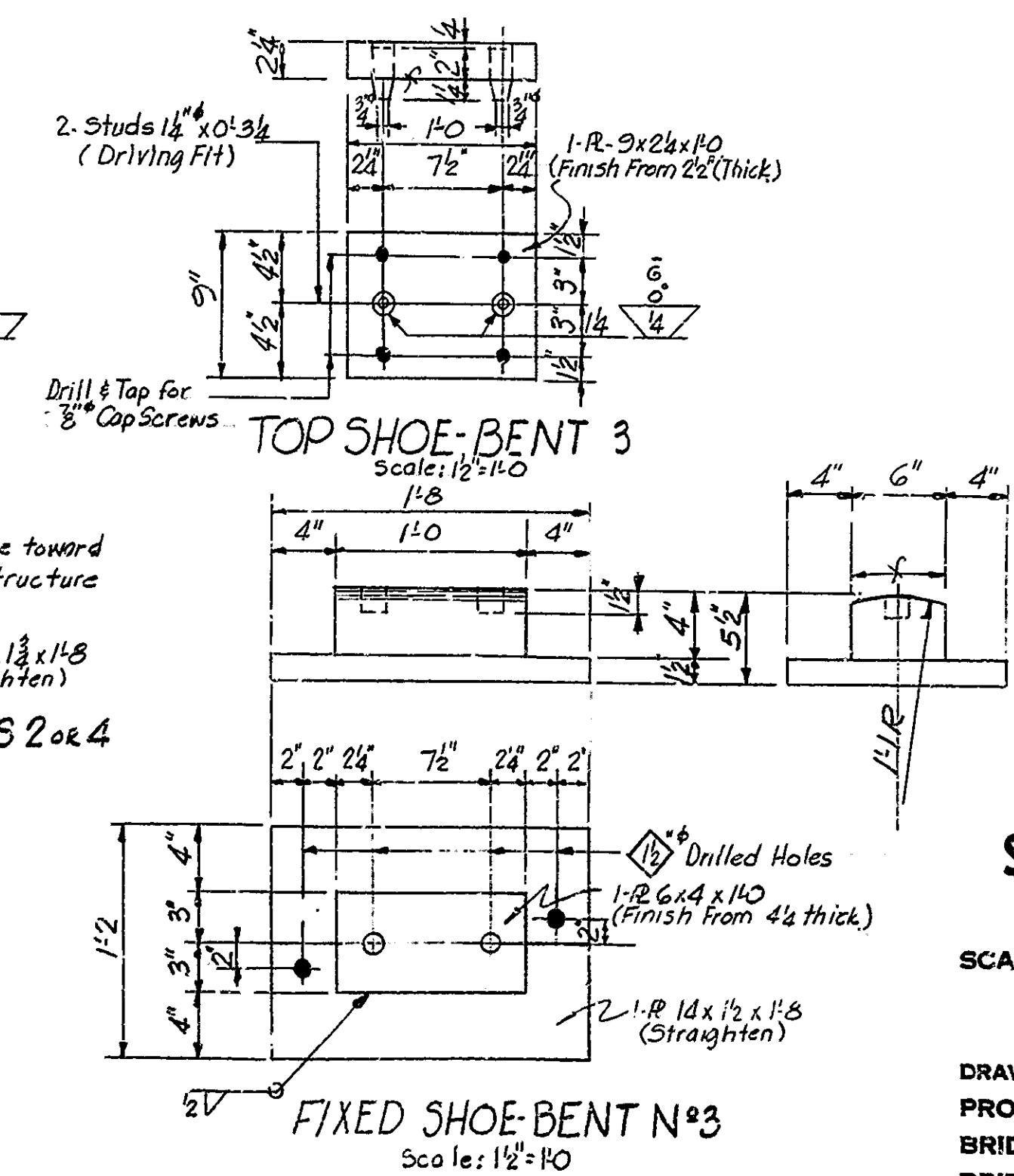
DETAIL FOR POSITIVE COVER PLATES ALL BEAMS
No Scale



EXPANSION SHOE @ BENTS 2 or 4
Scale: 1/2"=1'-0"



EXPANSION PLATE @ BENTS 2 or 4
Scale: 1/2"=1'-0"



TOP SHOE - BENT 3
Scale: 1/2"=1'-0"

FIXED SHOE - BENT N°3
Scale: 1/2"=1'-0"

NOTES:
Rivets 3/4"
Open Holes 1 1/2" unless noted
See DWG. S10 for General Notes
and location of details.
Gage Lines on Beam Webs are to be Straight

STEEL DETAILS - SPAN B & C
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

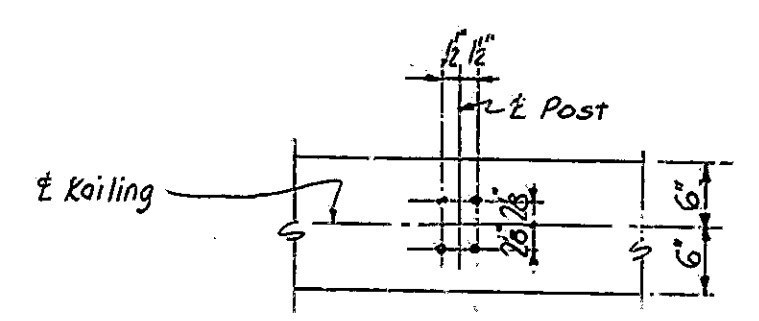
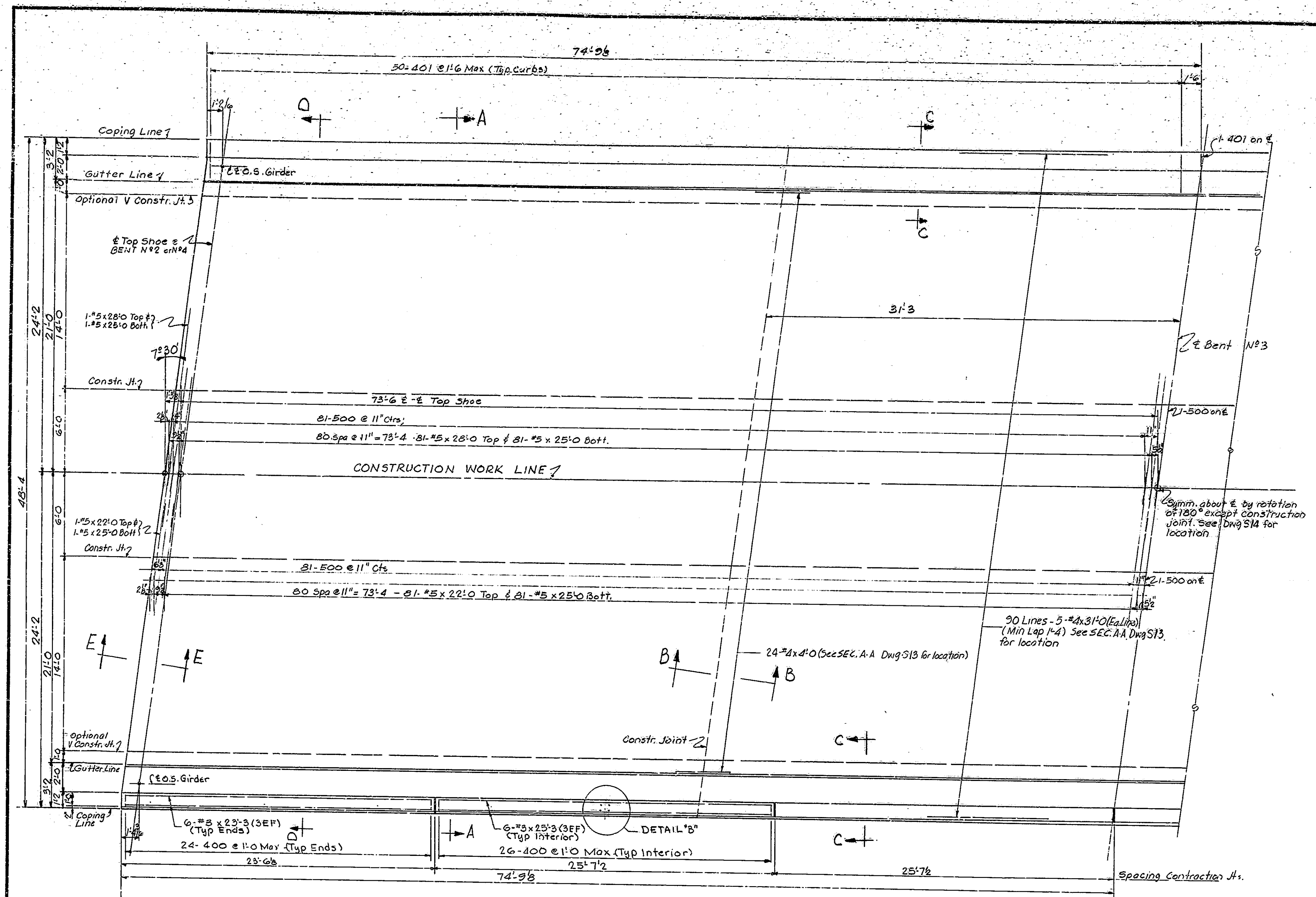
FEBRUARY 24, 1961

Malta J. Ream

DRAWING: S11 OF 15
PROJECT: I-465-4(7)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649

DESIGNED: WEG
DRAWN: BRD
TRACED: CWD

BRIDGES OVER 20' SPAN					
PUB. ROAD DES. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	1-465-4	1961	23	72



DETAIL "B"
Scale: 1 1/2" = 1'-0"
SETTING PLAN FOR POST
ANCHOR BOLTS
See Dwg S14 for location 4649

Note: After structural steel has been erected, the concrete forms shall not be blocked against the expansion end of the steel in making any pours adjacent to steel spans.

See Br. Std. B1 for Aluminum Railing Details
See Dwg S13 for SEC. A-A & D-D
See Dwg S14 for SEC. B-B, C-C & E-E & Corner Details
See Dwg S14 for location of Concrete Pours & Bill of Materials

SUPERSTRUCTURE DETAILS - SPAN B & C
STATE HIGHWAY DEPARTMENT OF INDIANA

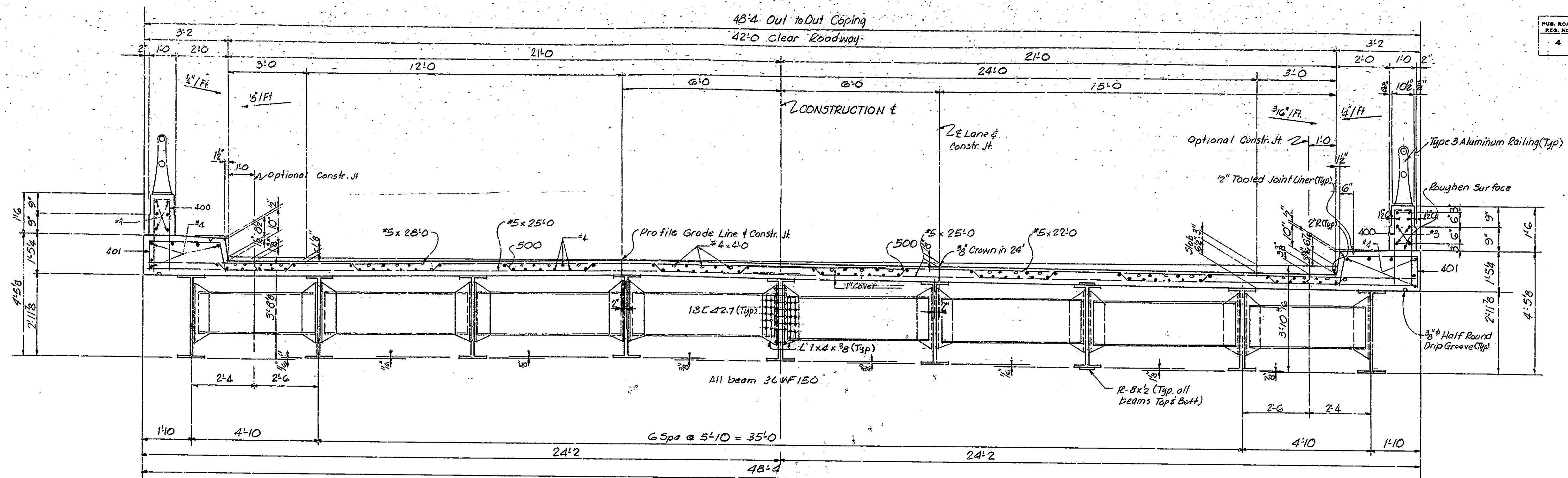
SCALE: As Noted

FEBRUARY 24, 1961

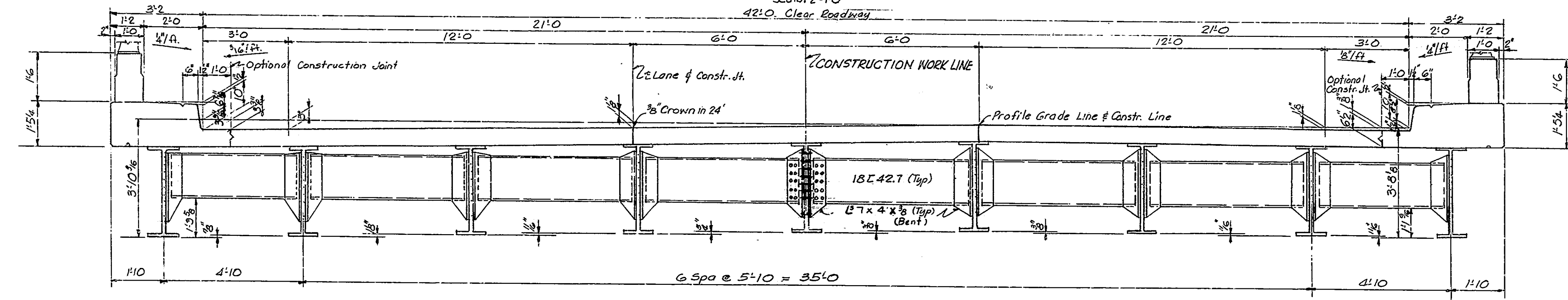
Halter

DRAWING: S12 OF 15
PROJECT: I-465-4 & 7-154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649

DESIGNED: WEG	CHKD: KAP
DRAWN: RRA	CHKD: FEM
TRACED:	CHKD:



SECTION A-A-SHOWING INTERIOR DIAPHRAGMS
Scale: 1/2" = 1'-0"



SECTION D-D SHOWING END DIAPHRAGMS
Scale: 1/2" = 1'-0"

BRIDGES OVER 30' SPAN						
PUB. ROAD NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
4	IND.	I-465-4 (7) 154	1961	24	72	

See Dwg S12 for location SEC. A-A & D-D
See Dwg S10 for General Notes
See Dwg S11 for Interior Diaphragm Connections
See Dwg S14 for End Diaphragm Connections

SUPERSTRUCTURE DETAILS-SPAN B&C
STATE HIGHWAY DEPARTMENT OF INDIANA

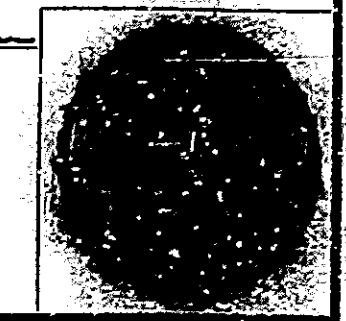
SCALE: As Noted

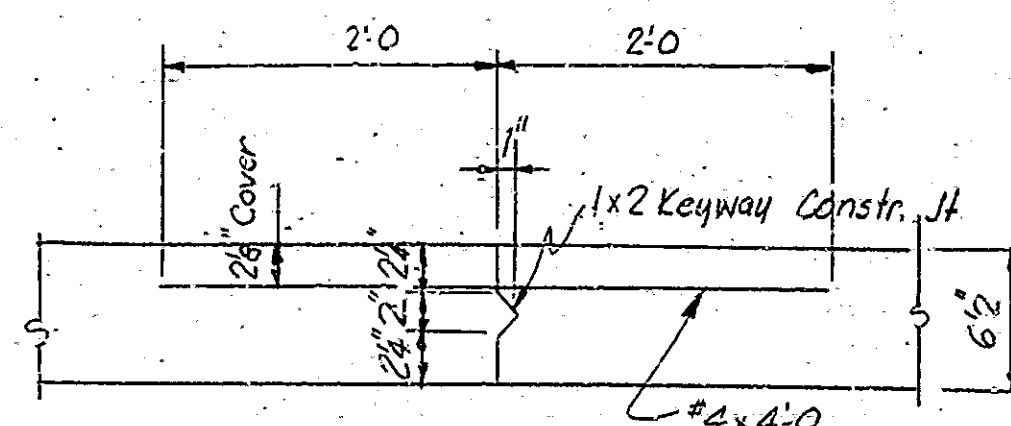
FEBRUARY 24, 1961

Walter J. ...

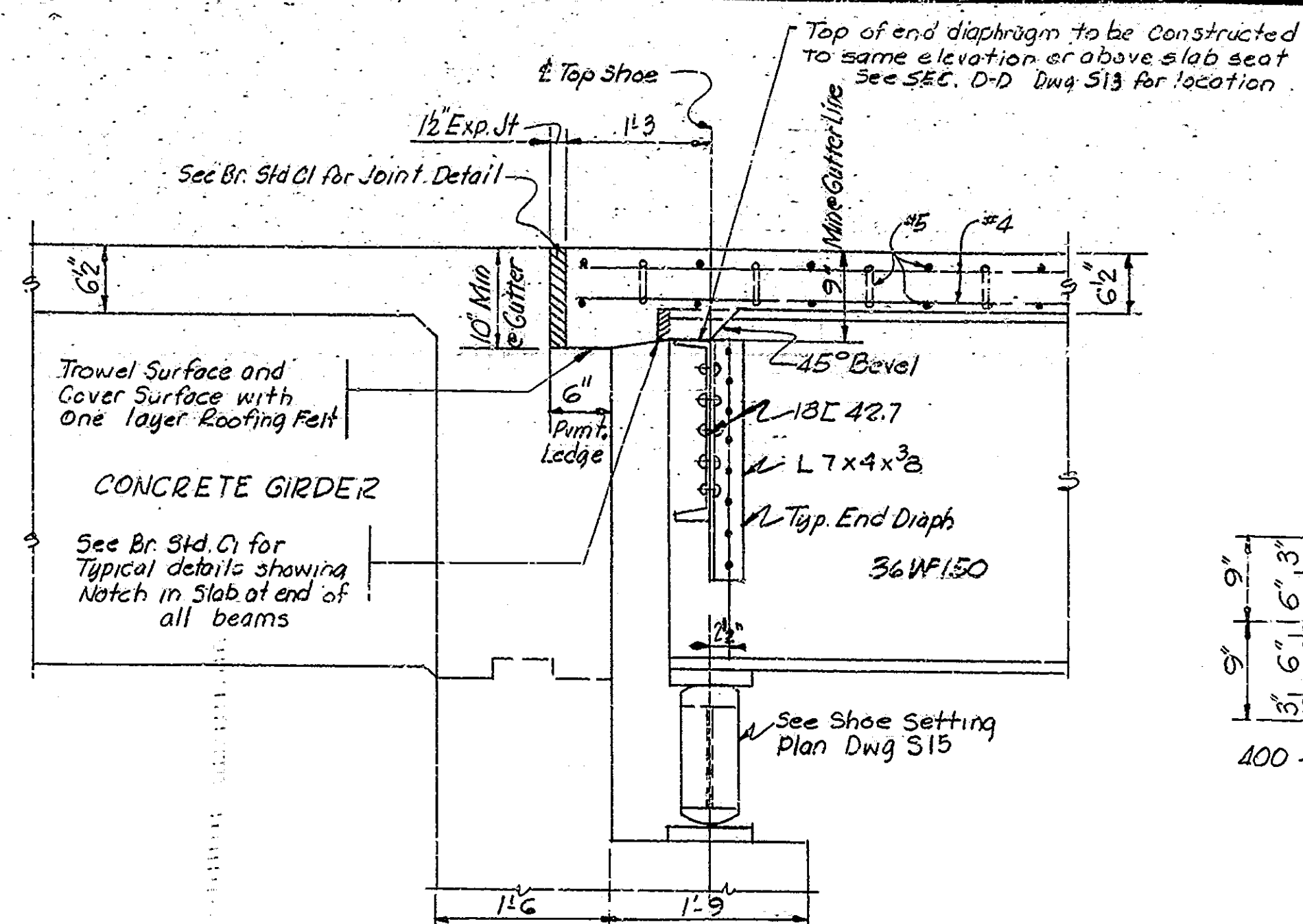
DESIGNED: WEG	CHKD: W.D.P.
DRAWN: R.D.	CHKD: F.E.M.
TRACED: C.W.D.	

DRAWING: S13 OF 15
PROJECT: I-465-4 (7) 154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649

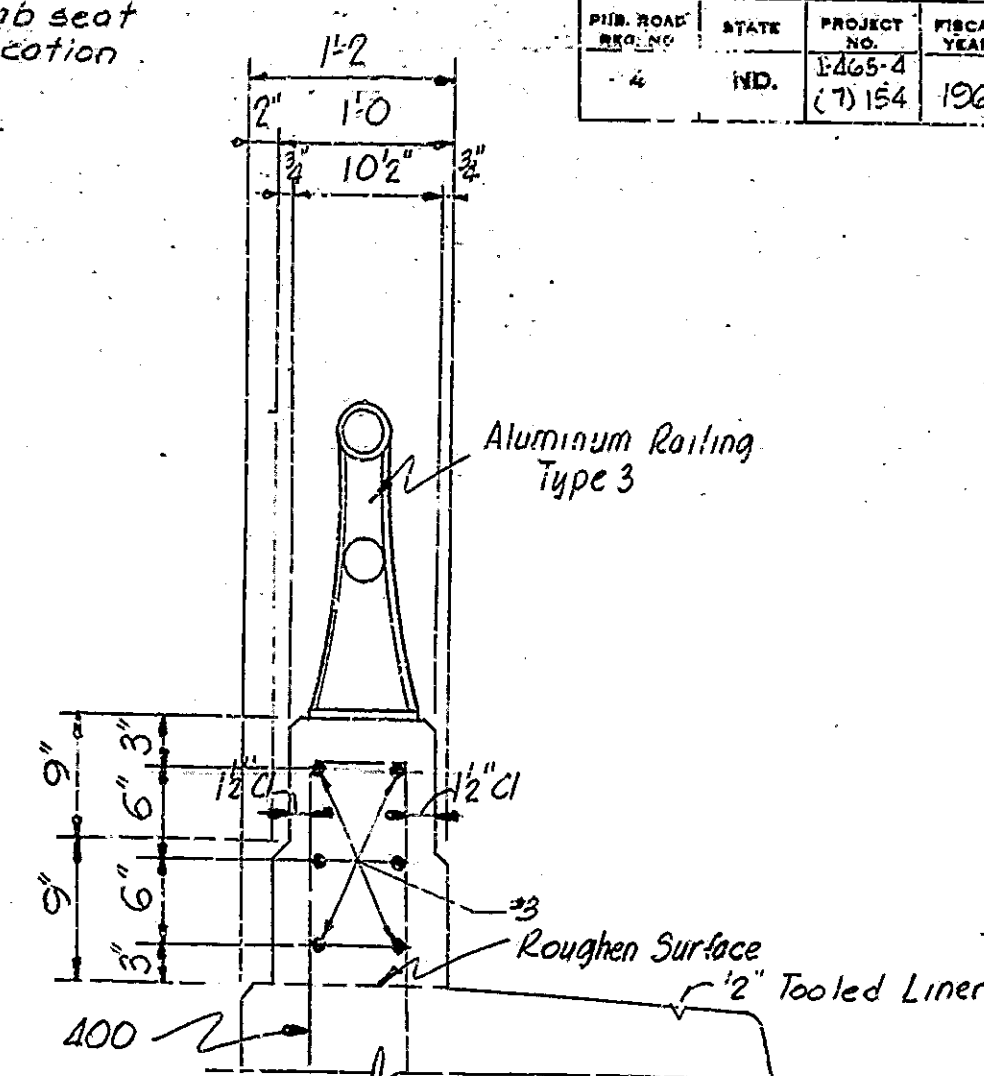




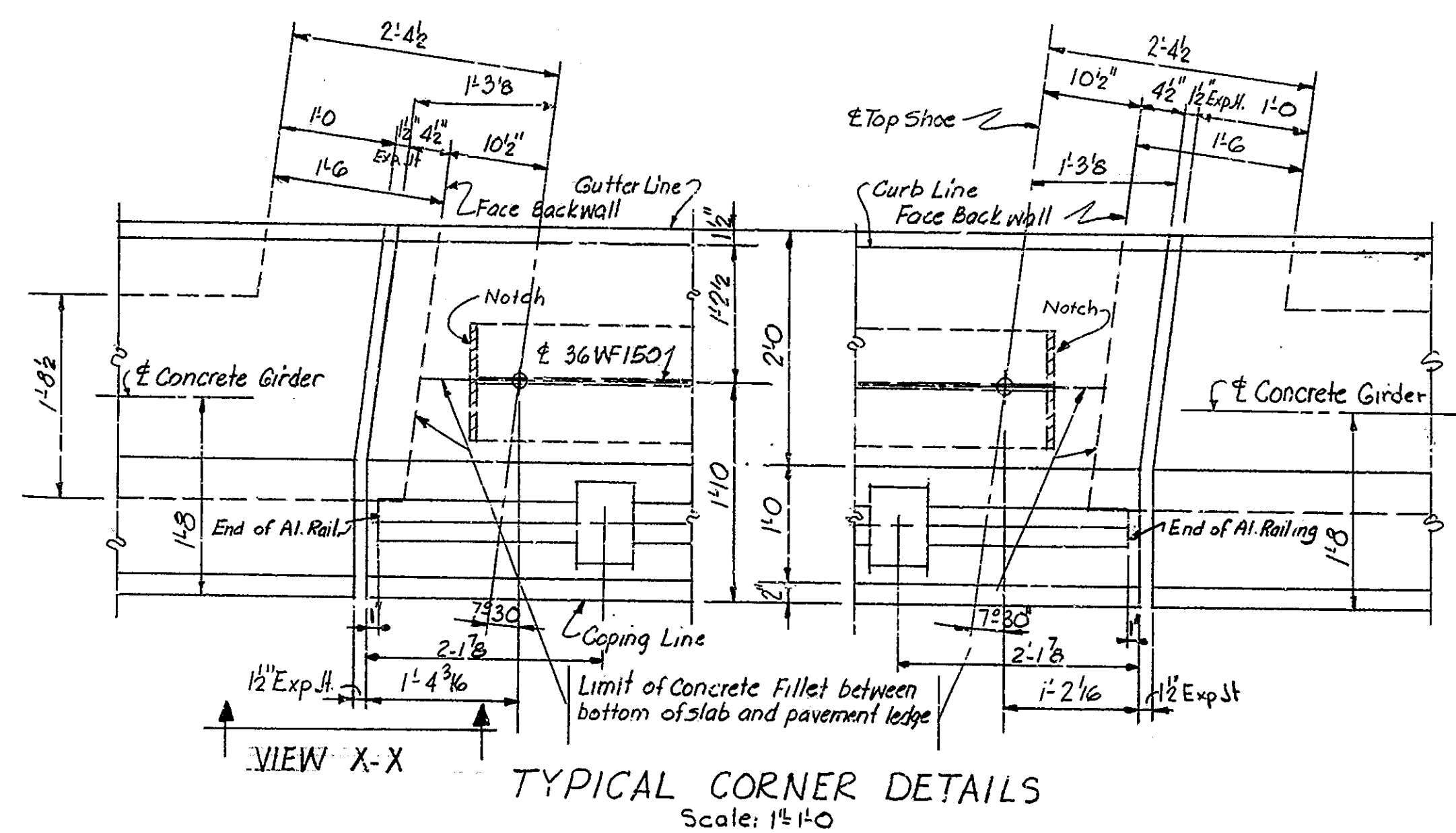
SECTION B-B
Scale: 1/2"=1'-0"
See Dwg S11 for location



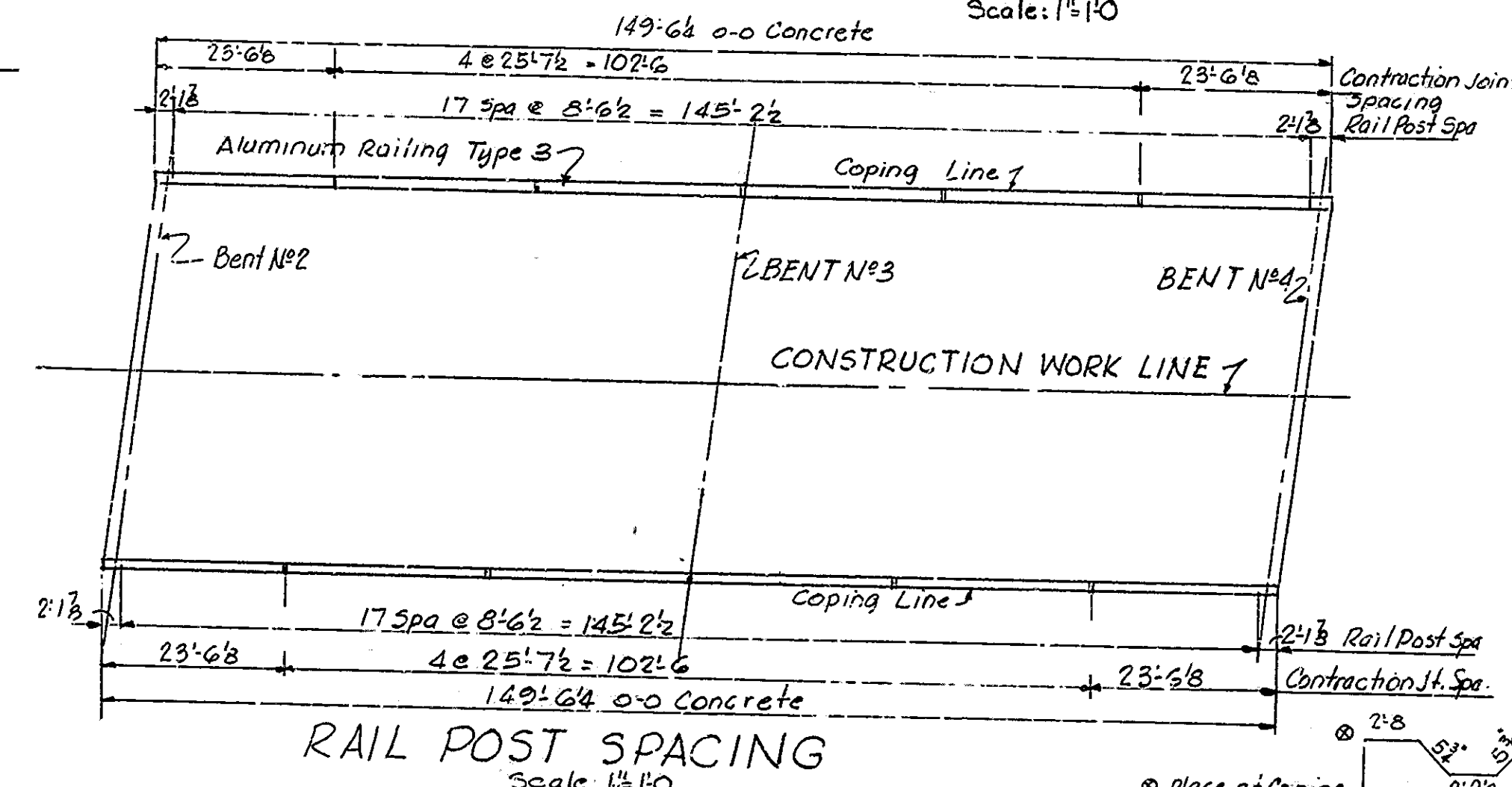
SECTION E-E
Scale: 1 1/2"=1'-0"



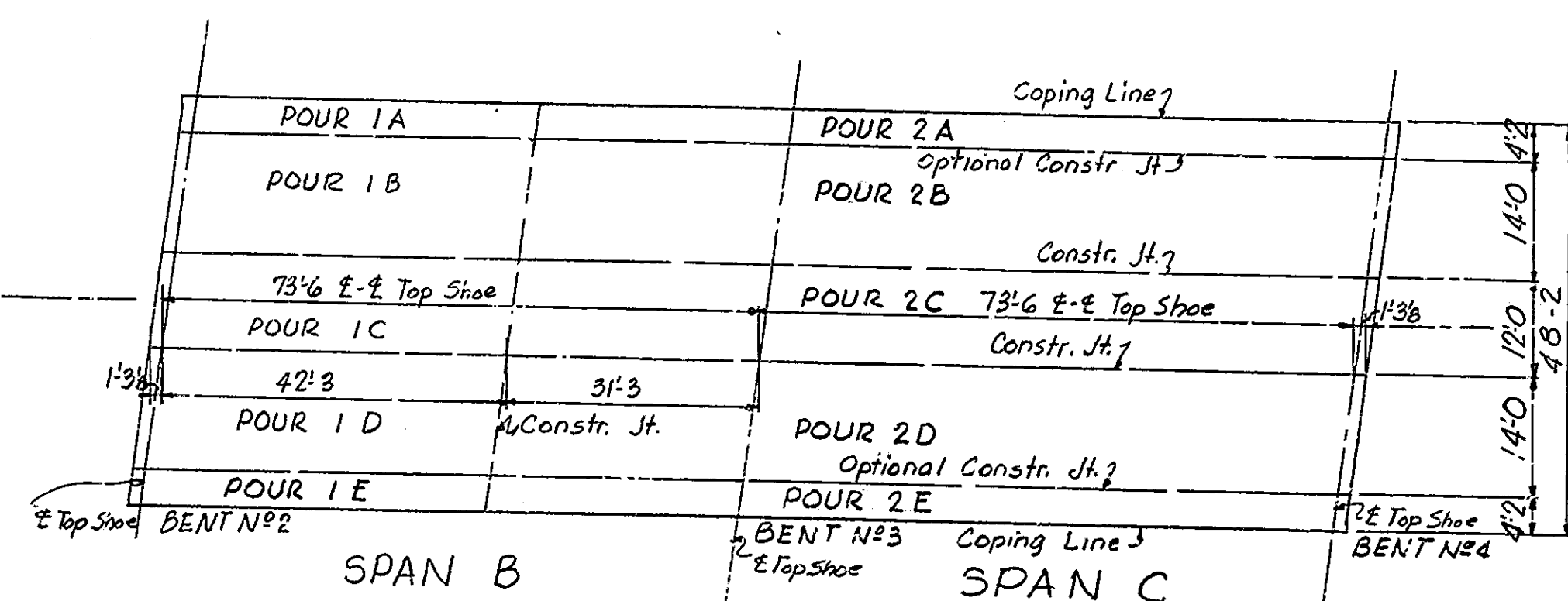
SECTION C-C
Scale: 1 1/2"=1'-0"



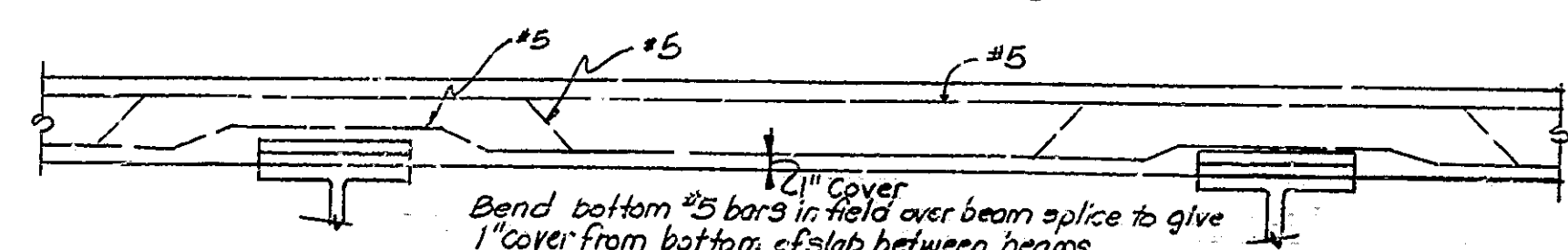
TYPICAL CORNER DETAILS
Scale: 1 1/2"=1'-0"



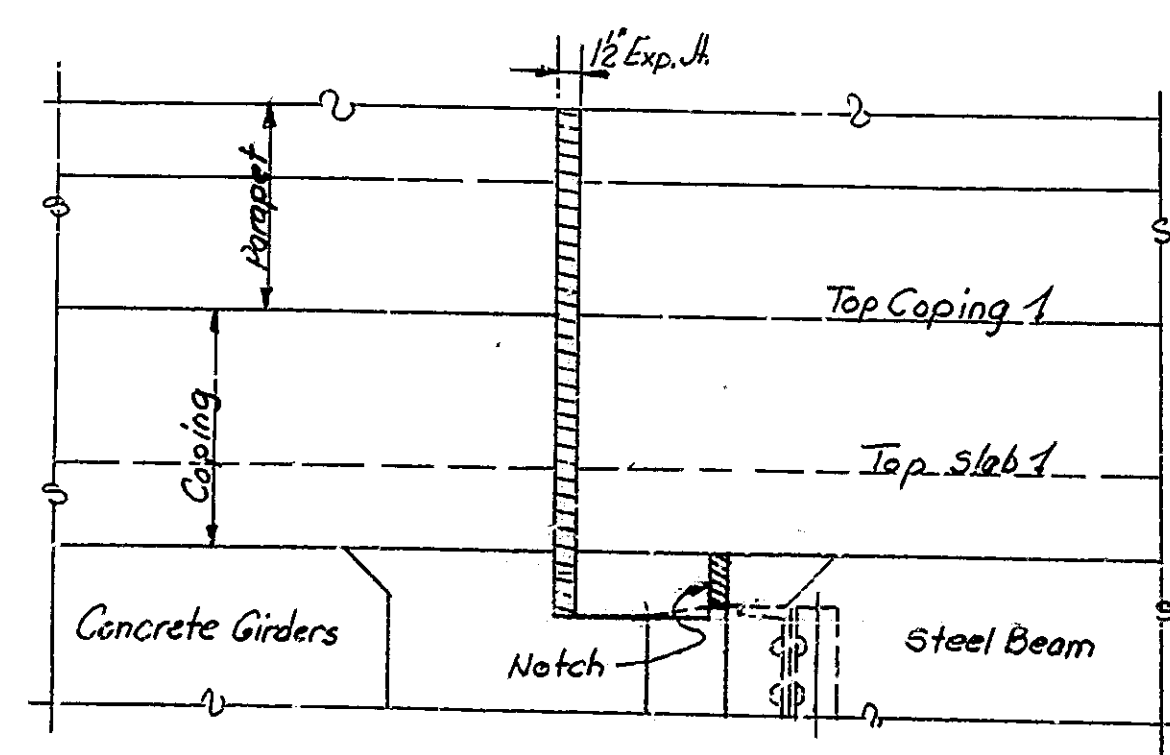
RAIL POST SPACING
Scale: 1 1/2"=1'-0"



CONCRETE PLACEMENT DIAGRAM
Scale: 1 1/2"=1'-0"



FIELD BEND REQUIRED ON BOTTOM BAR OVER BEAM SPLICE
Not to Scale



VIEW X-X
Scale: 1 1/2"=1'-0"

BRIDGES OVER 20' SPAN					
STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
IND.	1465-4 (7) 154	1961	25	72	

BILL OF MATERIAL

MARK or SIZE	NO OF Bars	LENGTH	WEIGHT
500	326	27'-0"	
#5	164	23'-0"	
#5	326	23'-0"	
#5	164	27'-0"	
Total	980		24286
400	326	5'-10"	
401	282	4'-10"	
#4	450	31'-0"	
#4	28	4'-0"	
Total	1086		11220
#3	48	7'-1 1/2"	
#2	24	23'-3"	
Total	72		666
Total			33172
CONCRETE (C.F.)			
POUR 1A			8.1 CY
1B			10.8 CY
1C			10.8 CY
1D			12.5 CY
1E			8.1 CY
2A			19.6 CY
2B			30.1 CY
2C			25.8 CY
2D			30.0 CY
2E			19.6 CY
Total Concrete			177.2 CY
CONCRETE RAILING (C.F.)			
15'-6 CY			
Aluminum Railing			239.1 LF

NOTES:
See Dwg. S12 for location of SEC. B-B, C-C & E-E
See Br. Std. C1 for reinforcing bar notes.
See Br. Std. R1 for aluminum Railing details.

SUPERSTRUCTURE DETAILS-SPAN B & C STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

FEBRUARY 24, 1961
Halla J. Ream

DRAWING: S14 OF 15
PROJECT: I-465-4 (7) 154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649

TABLE OF ELEVATIONS

POINT	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A	Elev. Top of Coping Form	795.815	795.820	795.830	795.830	795.810	795.870	795.825	795.815	794.980	794.885	794.755	794.620	794.480	794.320	794.145	793.950	793.815
	Elev. Top of Outside Beam																	
	Dist. Top of Beam to Top Coping Form																	
B	Elev. Top of Scream	795.015	794.960	794.815	794.770	794.650	794.515	794.370	794.220	794.120	794.030	793.900	793.765	793.620	793.465	793.285	793.095	792.960
	Elev. Top of Beam																	
	Dist. Top of Beam to Top of Scream																	
C	Elev. Top of Scream	795.150	795.095	795.010	794.905	794.785	794.650	794.505	794.360	794.260	794.170	794.040	793.910	793.765	793.610	793.435	793.245	793.105
	Elev. Top of Beam																	
	Dist. Top of Beam to Top of Scream																	
D	Elev. Top of Scream	795.070	795.020	794.930	794.830	794.710	794.580	794.435	794.285	794.190	794.100	793.970	793.840	793.695	793.540	793.365	793.175	793.040
	Elev. Top of Beam																	
	Dist. Top of Beam to Top of Scream																	
E	Elev. Top of Scream	794.900	794.850	794.765	794.665	794.545	794.415	794.270	794.125	794.030	793.940	793.810	793.680	793.540	793.380	793.210	793.020	792.885
	Elev. Top of Beam																	
	Dist. Top of Beam to Top of Scream																	
F	Elev. Top of Coping Form	795.765	795.715	795.630	795.530	795.410	795.280	795.135	794.990	794.895	794.805	794.675	794.545	794.405	794.250	794.075	793.890	793.755
	Elev. Top of Outside Beam																	
	Dist. Top of Beam to Top Coping Form																	

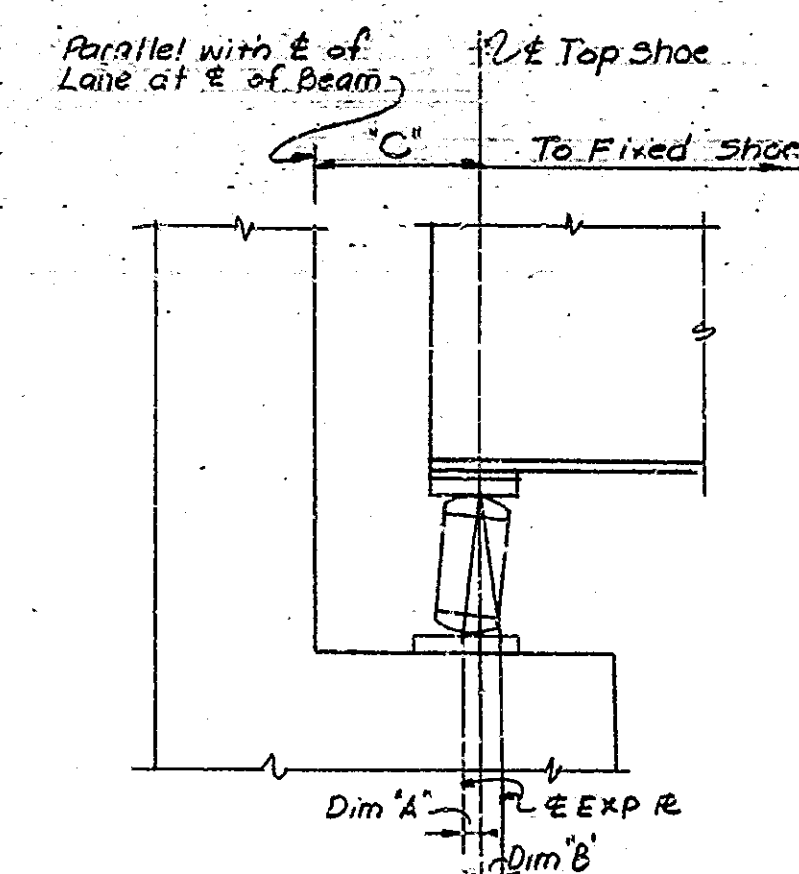
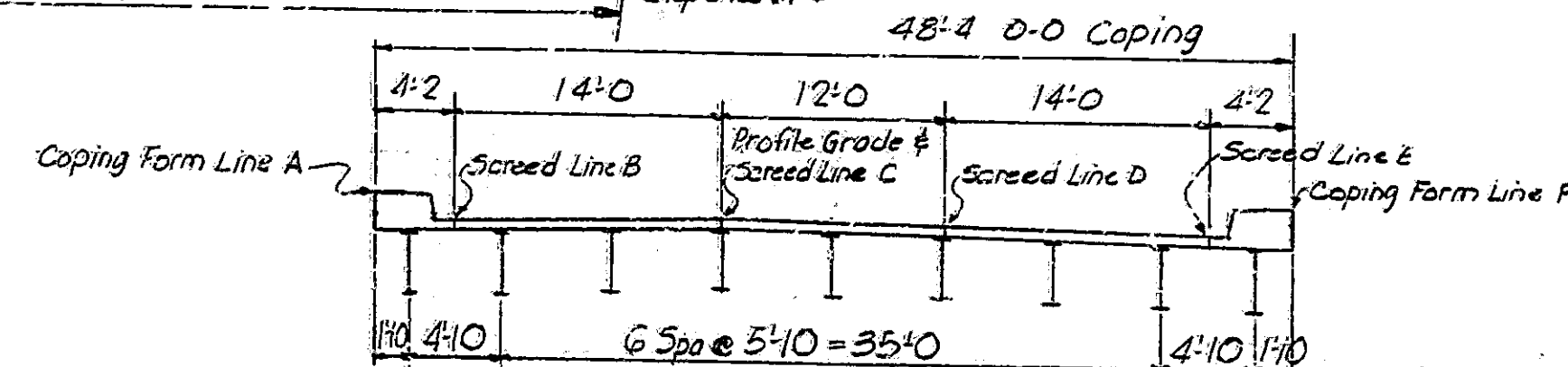
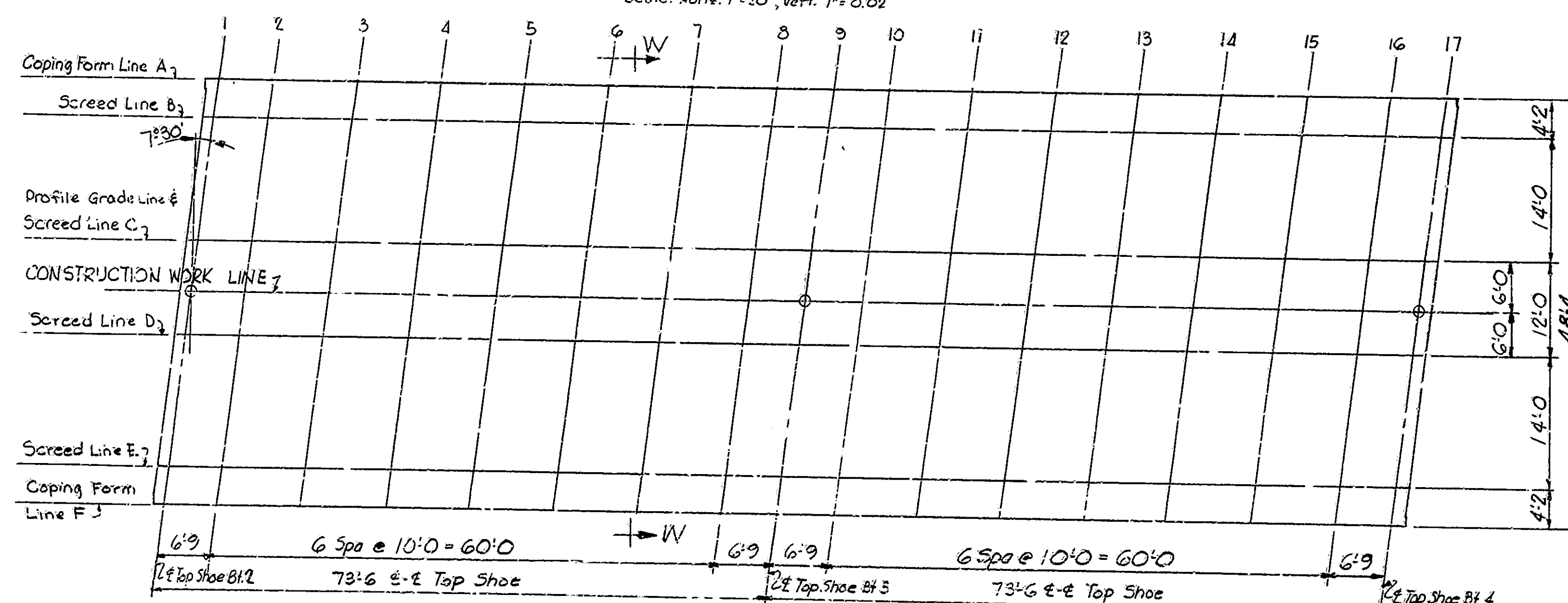
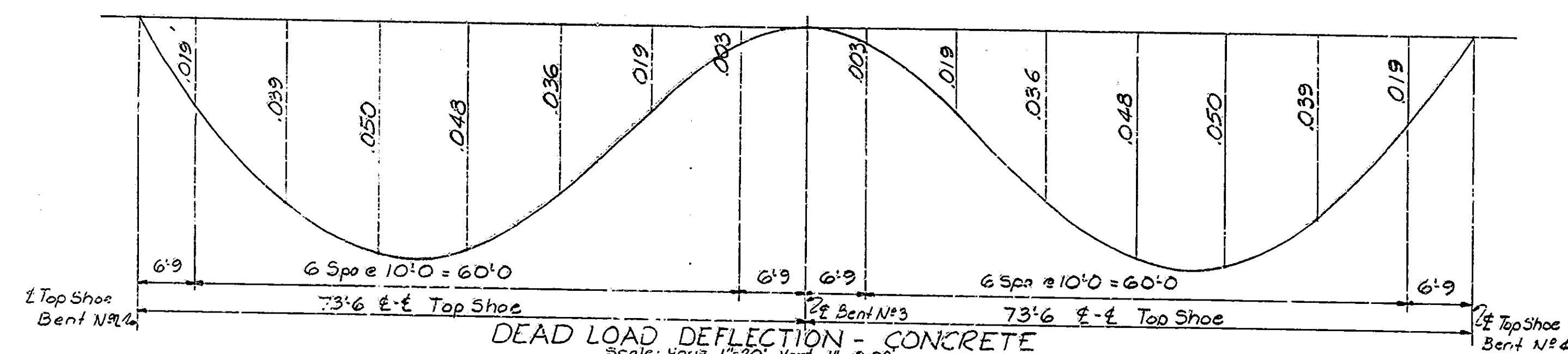


TABLE N° I

Temperature	Dim. "A"	Dim. "B"
Top Shoe to Exp. Pl. Bent 2 or 4	0 20 40 60 80 100 120	0 20 40 60 80 100 120

NOTES:

- Purpose:
 "PLAN OF SCREEDS" shows location of screeds.
 "TABLE OF ELEVATIONS" shows data for setting screeds and coping forms, so that the slab and copings will be at the final grade elevations after all concrete has been poured.
 "TABLE N° I," shows data for setting expansion plates.

GENERAL PROCEDURE

- After all rivets have been driven adjust the superstructure longitudinally so that dimension "C" from the E Top Shoe to the face of the back wall at Bent N° 2 and Bent N° 4 are equal.
- With the superstructure in the adjusted position called for in N° I, set the anchor bolts for the fixed shoes at Bent N° 3.
- Adjust the expansion plate under each expansion shoe in accordance with dimension "A" or "B" in TABLE N° I for the prevailing temperature. Note that dimension "A" is always the distance from a vertical line through the E of Top Shoe in a direction away from the fixed shoe. Set anchor bolts.
- After the shoes are set, take elevations at all screed points on top of the adjacent beam. Enter these elevations in "TABLE OF ELEVATIONS". Subtract these elevations from the tabulated elevations and use the resulting dimension as the height for setting the screed or coping form above the form. This dimension remains constant regardless of how much or in what order the concrete is poured. Do not set screeds or coping forms by leveling.
- No concrete is to be poured until the above operations are completed.

SCREEDS - SPANS B & C
 STATE HIGHWAY DEPARTMENT OF INDIANA

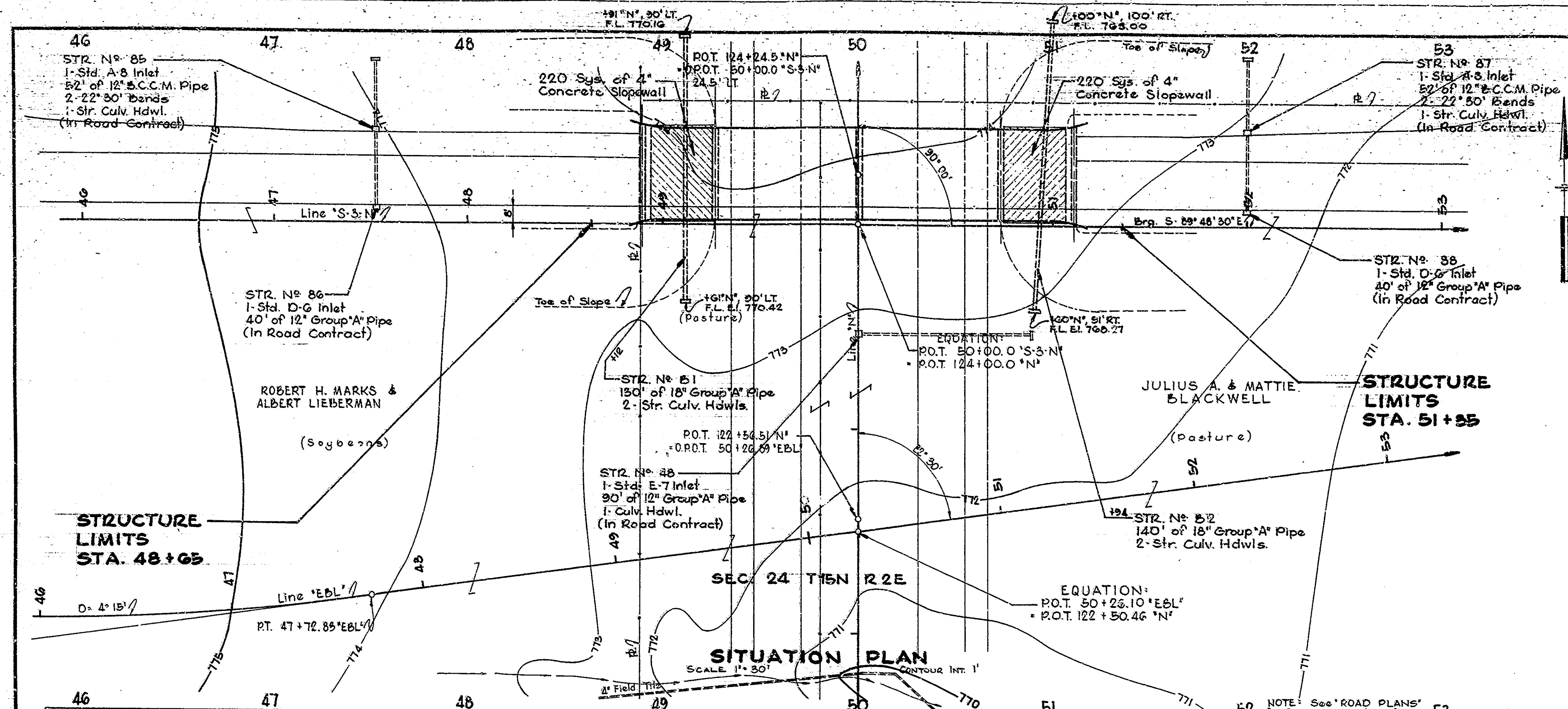
SCALE: As Noted

FEBRUARY 24, 1961

H. A. J. J. J.

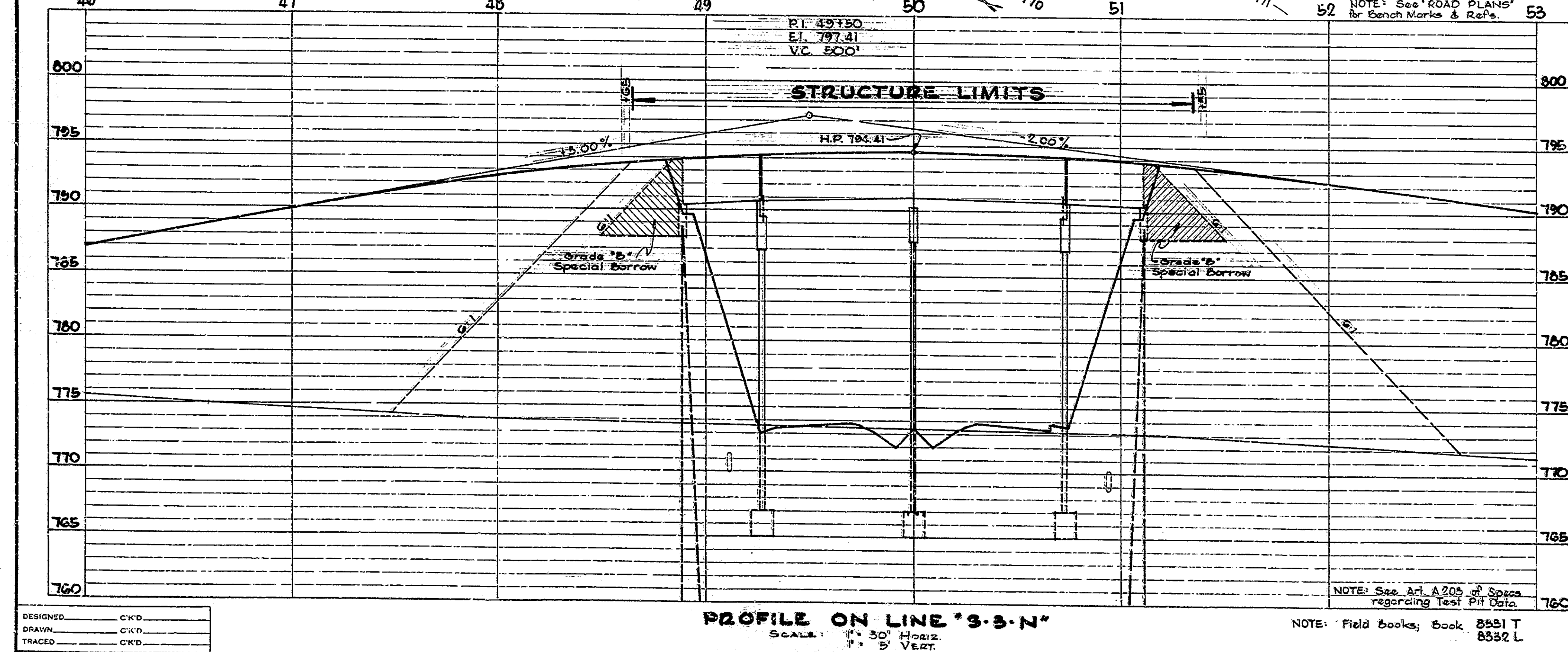
DRAWING - S15 OF 15
 PROJECT - I-465-4(7)154
 BRIDGE CONTRACT NO. 5243
 BRIDGE FILE - I-465-154-4649

DESIGNED: W. E. J. C. W. J. J.
 DRAWN: R. E. J. C. W. J. J.
 TRACED: C. W. J. J.



EARTHWORK SUMMARY

Fill + 20%	16,885 Cys.
Surplus Excavation	140 Cys.
Special Borrow	16,745 Cys.
Grade "B" Spl. Borrow	875 Cys.



LAYOUT

R.C. GIRDER & CONTINUOUS STEEL BEAM BRIDGE
4 SPANS; 34'-6", 20'-0", 34'-6" SQUARE
59'-0" ROADWAY 2-2'-0" WALKS

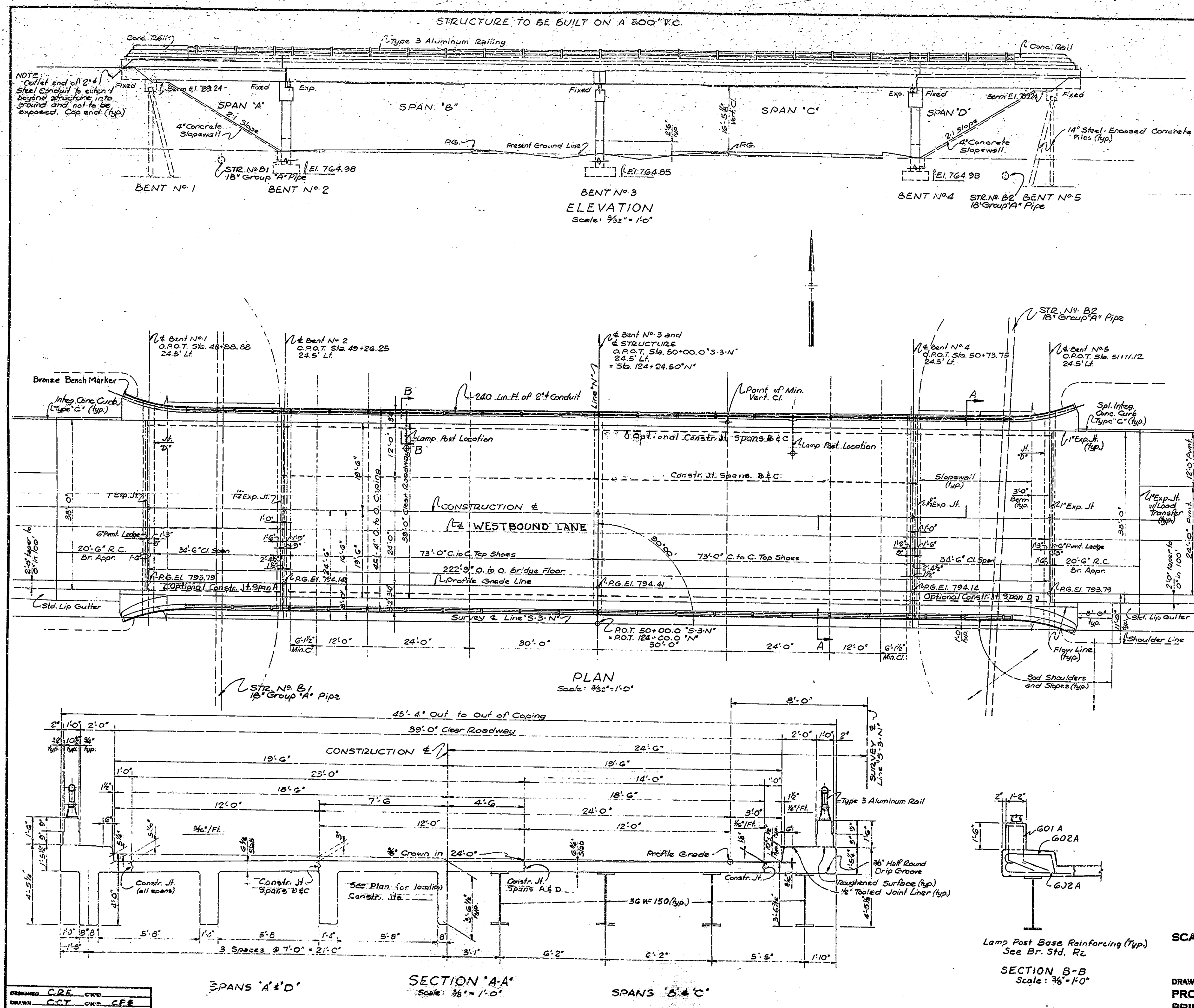
STATE HIGHWAY DEPARTMENT OF INDIANA
MARION COUNTY

SCALE: As Noted

FEBRUARY 24, 1961

Walter J. Brown

DRAWING: S1 OF 14
PROJECT: I-465-154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649-J



BRIDGES OVER 20' SPAN					
PROJ. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(1)154	1961	29	72

GENERAL NOTES

No present structure at proposed bridge site.
Depth of footings to be extended if found necessary. See Art. 8403.2a of the Specifications.
Piles shall have minimum bearing value shown on detail drawings.
Determine pile lengths by Art. F203 of the Specifications.
For details of steel encased concrete piles see Br. Std. C, the Special Provisions and applicable articles in the Specifications.
Piles shall be driven to elevations shown on plans or below if necessary to obtain desired bearing.
Reinforcing steel covering shall be 1" min. in floor slabs, 3" in footings except bottom steel which shall be 4" and 2" in all other parts unless noted.
Concrete in footings and collision walls to be Class "E".
Concrete in superstructure including railing and bent caps to be Class "F".
Concrete in structure not noted above, in steel-encased conc. piles, headwalls & in concrete slopewall to be Class "D".
Continuous concrete pours shall be required between construction joints as shown on detail plans.
Bevel forms 1/4" under copings and chamfer exposed edges 1" unless noted.
Tolerance in position of steel encased concrete pile head maximum 2".
All railings to be constructed perpendicular to grade.
Waterproof mudwalls in accordance with specifications.
3" Exp. Jts. with load transfer to be placed at end of R.C. Bridge Approach. See Br. Std. M3.
See Special Provisions for items noted in this contract.
Superstructure falsework to be erected before pouring railing parapet wall.

DESIGN DATA

Designed for H20-S16-44 loading in accordance with 1957 A.A.S.H.O. Specifications. Main carrying members checked for Live Load for Bridges on Interstate System.

JOINT LEGEND

1/2" Exp. Joint - See Br. Std. C - Similar to 1" Exp. Joint.
Joint "D" indicates 1/2" preferred joint filler under front of girder bearing area.

TYPICAL CROSS-SECTION

See Sheet No. 3
Std. Divided Lane Section for F.A. Interstate Projects Rev. 4-4-60

NOTE: The following items are not in Bridge Contract.
R.C. Bridge Approach
Std. Lip Gutter
Spl. Integ. Conc. Curb - Type "C"
Str. Beam Guard Rail
1" Exp. Joint with Load Transfer.
1" Exp. Joint

STANDARD DRAWINGS	
BRIDGE STANDARDS	
C1-Reinforcing bar notes & details, field splice of pile shells, beam notch & 1" Exp. Joints.	
M2-Slopewall	
M3-R.C. Br. Approach	
R1-Aluminum Railing, Type 3	
R2-Bridge Lighting details	
S2-Placing Special Fill Material	
G2A-Guard Rail	
ROAD STANDARDS	
MA-Pavement Offsets	
MP-Pipes	
ME-Pipe Culvert Headwalls, Std. Lip Gutter	
Sht. 2 Defours - Barriers	
* Not included in Bridge Contract.	

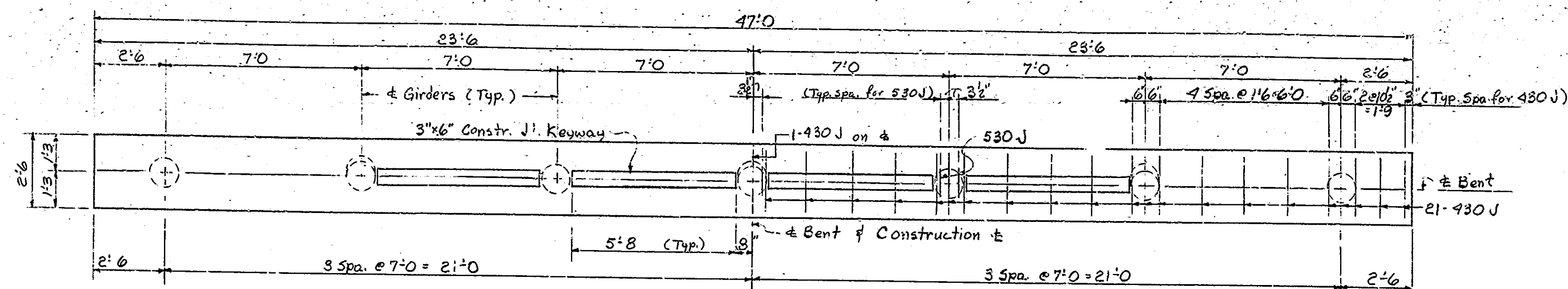
GENERAL PLAN

R.C. GIRDER & CONTINUOUS STEEL BEAM BRIDGE
4 SPANS; 34'-6", 73'-0", 73'-0", 34'-6" - 39'-0" RDWY. - TWO - 1'-0" WALKS SQUARE
BRADBURY WESTBOUND OVER I-465
STATE HIGHWAY DEPARTMENT OF INDIANA
MARION COUNTY

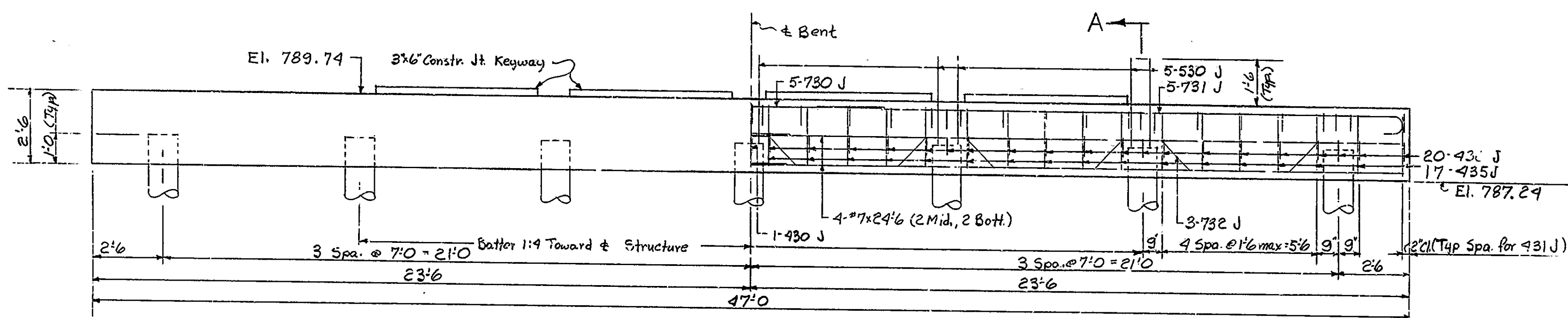
SCALE: As NOTED
FEBRUARY 24, 1961

DRAWING: 52 OF 14
PROJECT: I-465-4(1)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649.1

BRIDGES OVER 20' SPAN						
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
4	IND.	I-465-4(7) 154	1961	30	72	

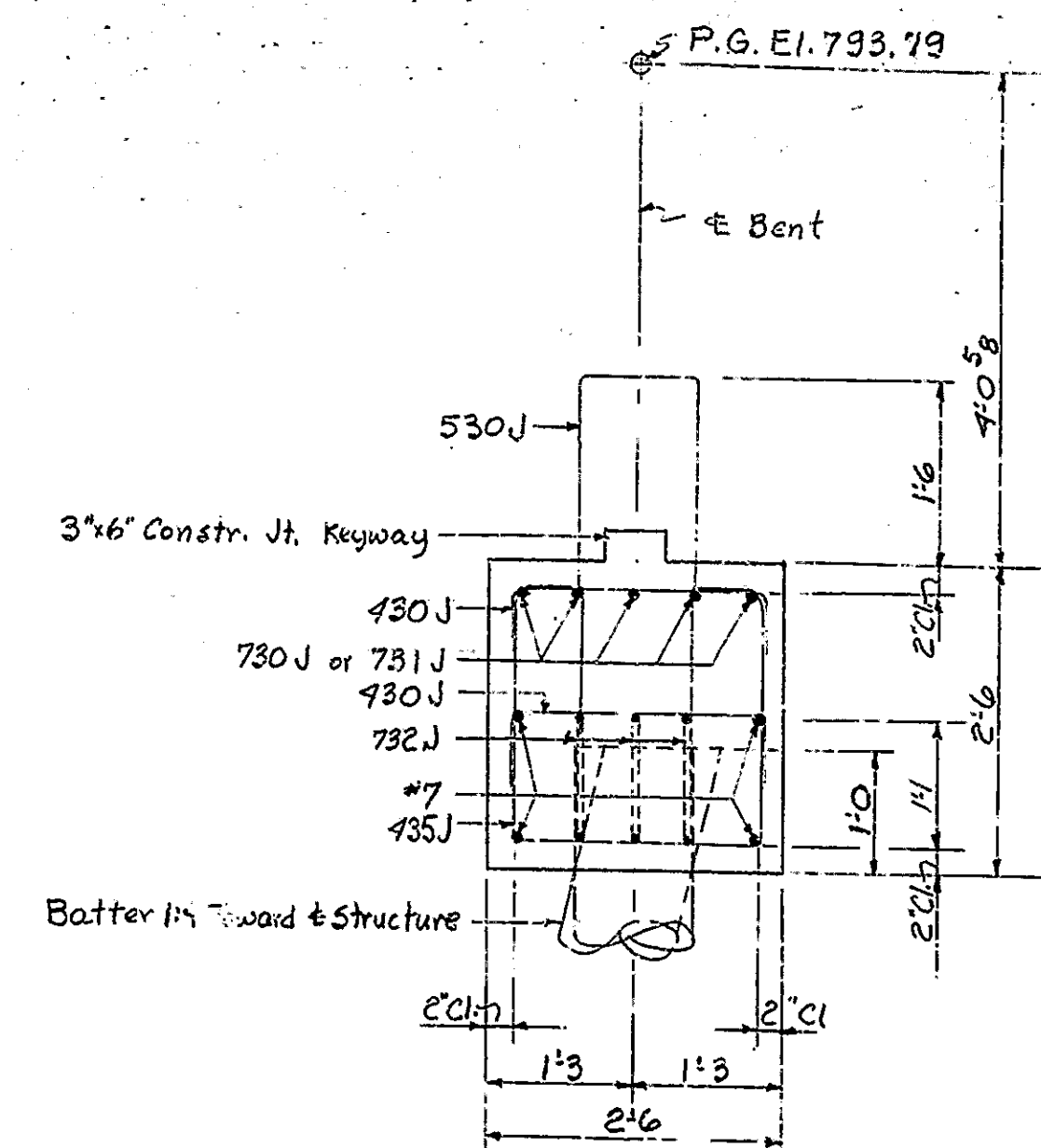


CAP PLAN
Scale: 3/8"=1'-0"



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

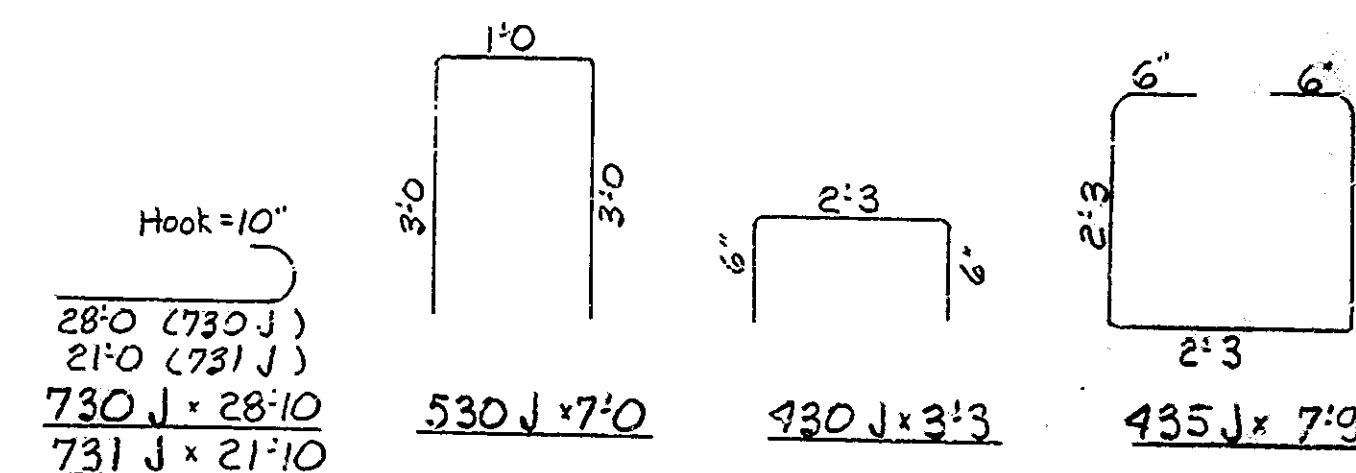
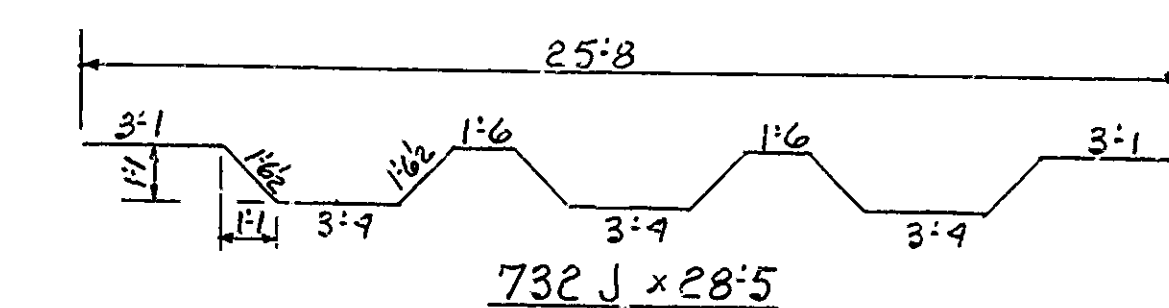
NOTE: The bent cap is not to be poured until the fill has been completed to the approximate elevation of the bottom of the cap. 7-14"x7-6" Steel Pile Shells are required. Minimum bearing = 40 Tons/pile. See 3rd Std. C1 for reinforcing bar notes.



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

BILL OF MATERIALS
BENT NO. 1
(BENT NO. 5 SAME)

SIZE OF MARK	Nº OF BARS	LENGTH	WEIGHT (Lbs.)
730 J	5	28'-10"	
731 J	5	21'-10"	
732 J	6	28'-5"	
#7	8	29'-0"	
Total	Nº 7		1,267
530 J	10	7'-0"	73
430 J	24	3'-3"	
435 J	34	7'-9"	
Total	132		358
Total Steel			1,625
CONCRETE			
Class "F" Cap = 11.0 Cu. Yds.			
MISCELLANEOUS			
7-14"x7-6" Steel Pile			
Shells @ 30'-0" = 21.0 Lin. Ft.			



BENDING DIAGRAMS
Not To Scale

BENTS NO. 1 & NO. 5 - DETAILS
STATE HIGHWAY DEPARTMENT OF INDIANA

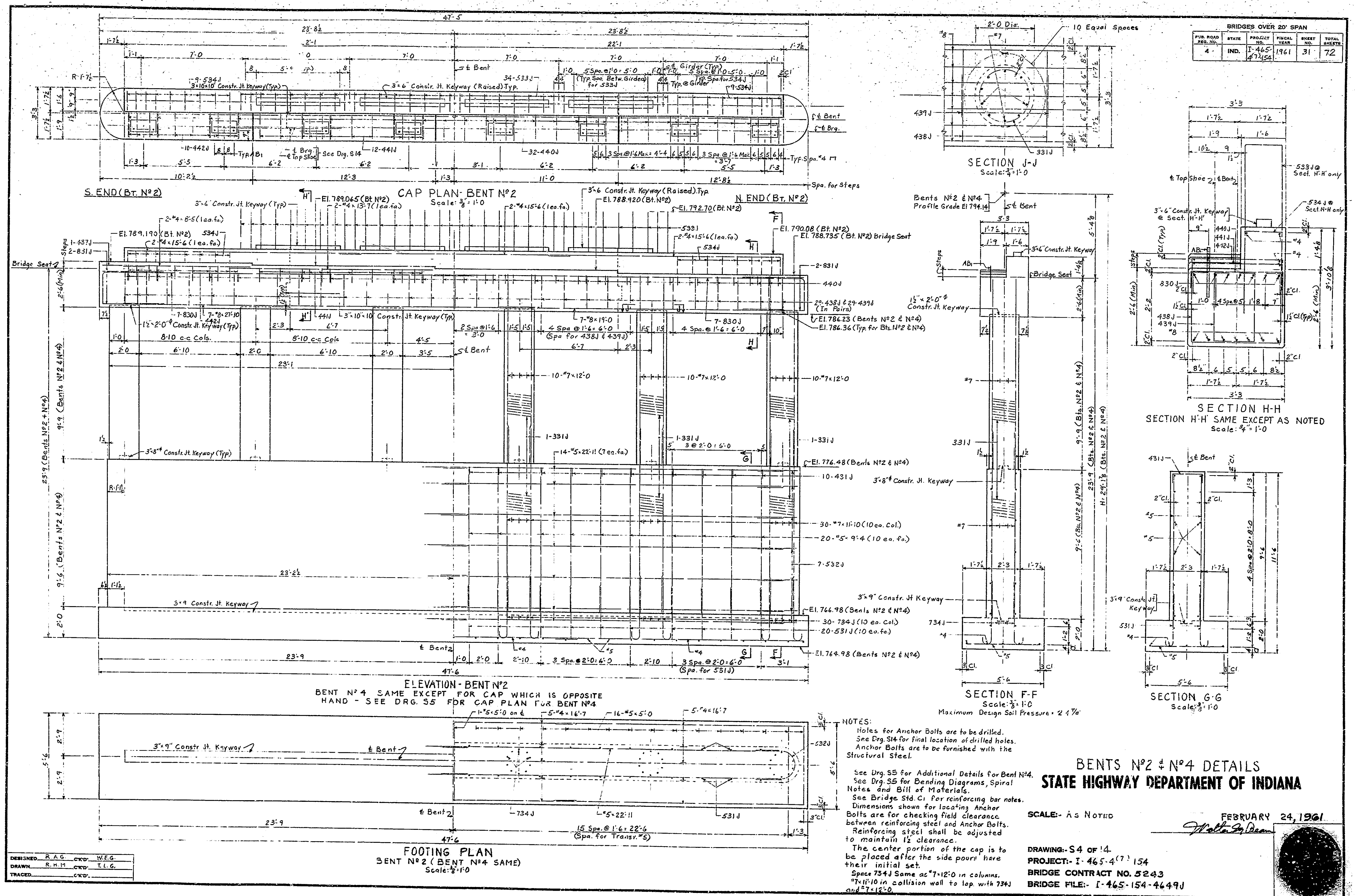
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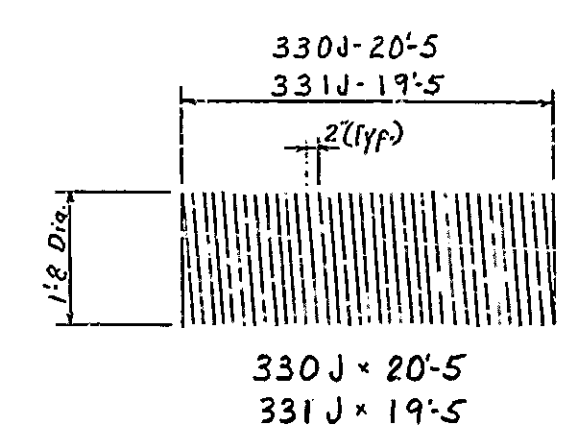
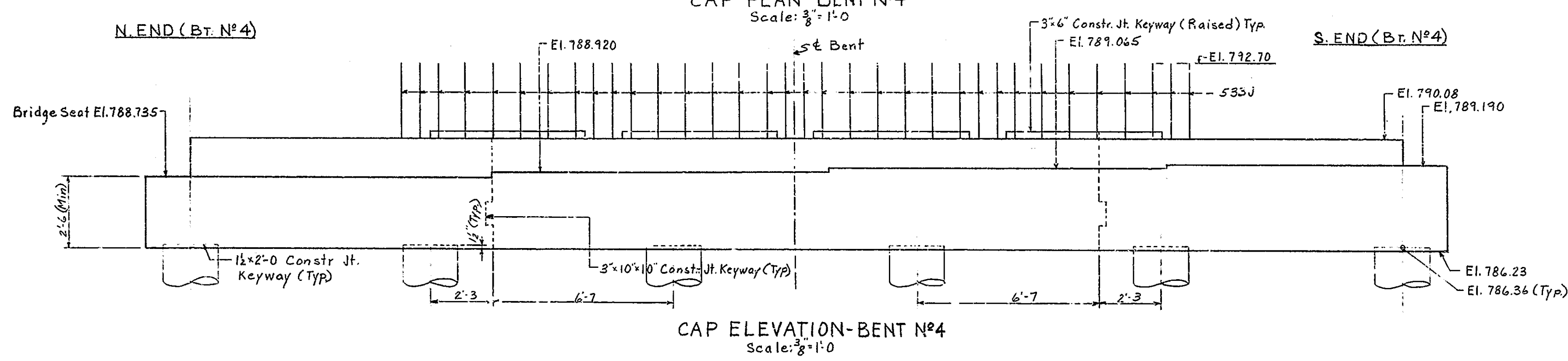
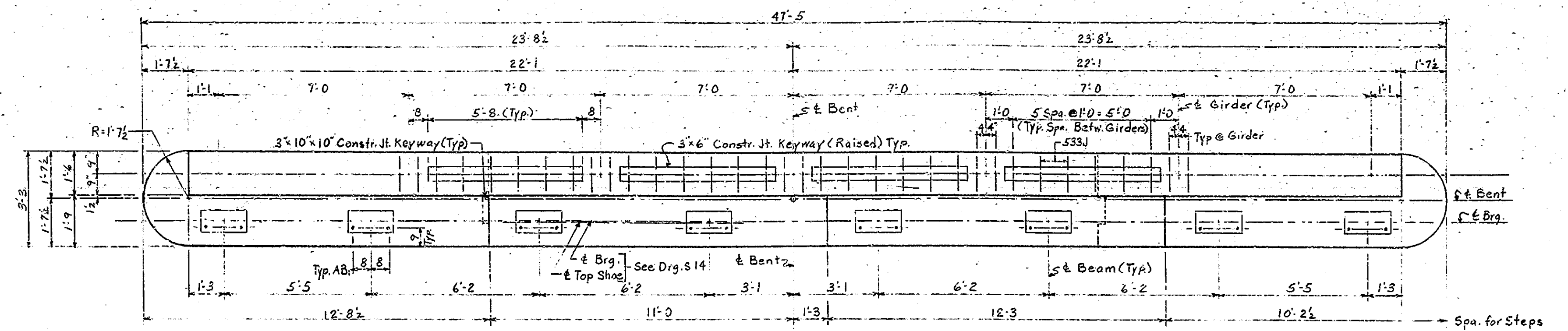
FEBRUARY 24, 1961

Walter McRae

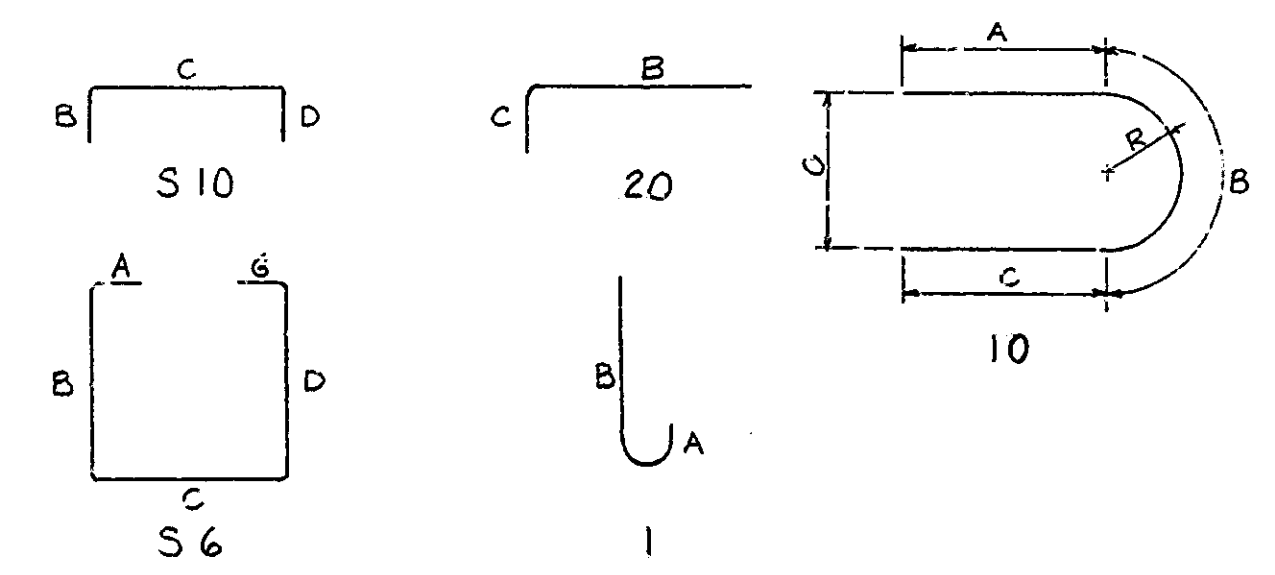
DRAWING: 53 OF 14
PROJECT: I-465-4(7) 154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4699 J

DESIGNED	RAG	CHKD.	TLG
DRAWN	RAG	CHKD.	TLG
TRACED		CHKD.	





1. Spirals shall have 1/2 extra turns provided at the ends and 1/2 turns of lap at adjoining sections. Cost of spacer bars to be included in cost of spiral.
2. Spiral to be made of 3/8" cold drawn wire.



BENDING DIAGRAMS
Not to Scale

BAR BENDING DETAILS									
MARK	LENGTH	TYPE	A	B	C	D	G	K	O
830J	27'-0"	20		24'-10"	2'-2"				
831J	9'-11"	10	2'-8"	4'-7"	2'-8"			1'-5 1/2"	2'-11"
732J	25'-9"	20		23'-11"	1'-10"				
733J	8'-1"	10	2'-4"	3'-5"	2'-4"			1'-1"	2'-2"
734J	4'-10"	1	10	4'-0"					
531J	3'-11"	1	7	3'-4"					
532J	6'-2"	10	1'-8"	2'-10"	1'-8"			10 3/4"	1'-9 1/2"
533J	12'-1"	10		5'-5"	1'-3"	5'-5"			
534J	6'-9"	10		2'-9"	1'-3"	2'-9"			
430J	3'-3"	S 10		6	2'-3"	6			
431J	2'-11"	S 10		6	1'-11"	6			
432J	3'-11"	S 10		10	2'-3"	10			
433J	4'-3"	S 10		1'-0"	2'-3"	1'-0"			
434J	6'-1"	10	1'-4"	3'-5"	1'-4"			1'-1"	2'-2"
435J	7'-9"	S 6	6	2'-3"	2'-3"	2'-3"	6		
436J	6'-9"	S 6	6	2'-3"	1'-3"	2'-3"	6		
437J	7'-3"	10	1'-4"	4'-7"	1'-4"			1'-5 1/2"	2'-11"
438J	8'-6"	S 6	6	2'-3"	3'-0"	2'-3"	6		
439J	6'-11"	S 6	6	2'-3"	1'-5"	2'-3"	6		
440J	4'-0"	S 10		6	3'-0"	6			
441J	4'-8"	S 10		10	3'-0"	10			
442J	5'-0"	S 10		1'-0"	3'-0"	1'-0"			

- NOTES:
- Holes for Anchor Bolts (AB) are to be drilled. Anchor Bolts are to be furnished with Structural Steel. See Drg. S 14 for final location of drilled holes.
 - See Drg. S 4 for Additional Details for Bent No. 4.
 - See Bridge Std. C for reinforcing bar notes.
 - Dimensions shown for locating Anchor Bolts are for checking field clearance between reinforcing steel and Anchor Bolts.
 - Reinforcing steel shall be adjusted to maintain 1/2" clearance. The center portion of the cap is to be placed after the side pours have their initial set.

BENT N°4 DETAILS AND BILLS OF MATERIALS STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: AS NOTED
FEBRUARY 24, 1961

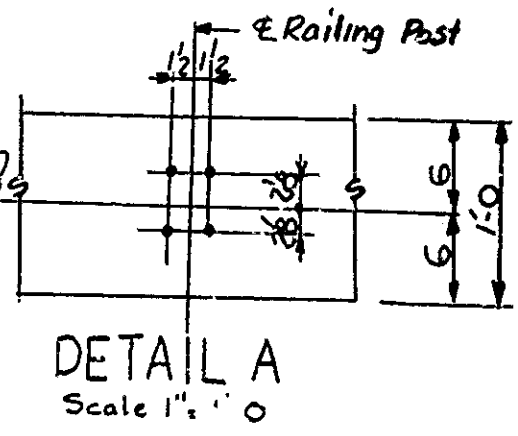
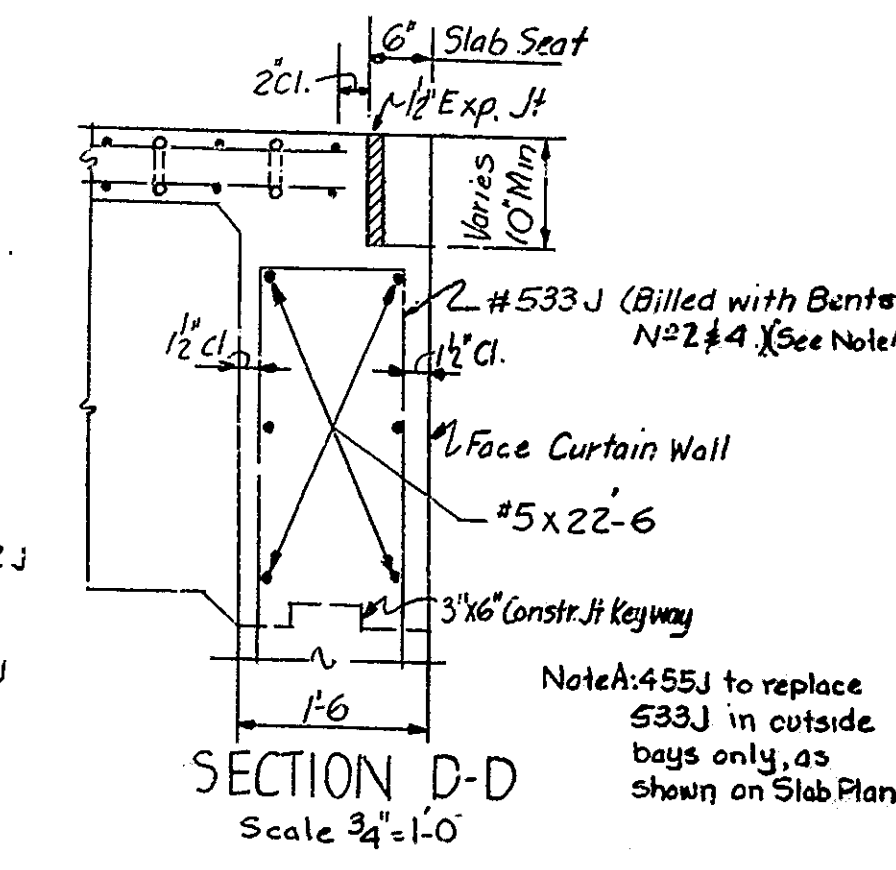
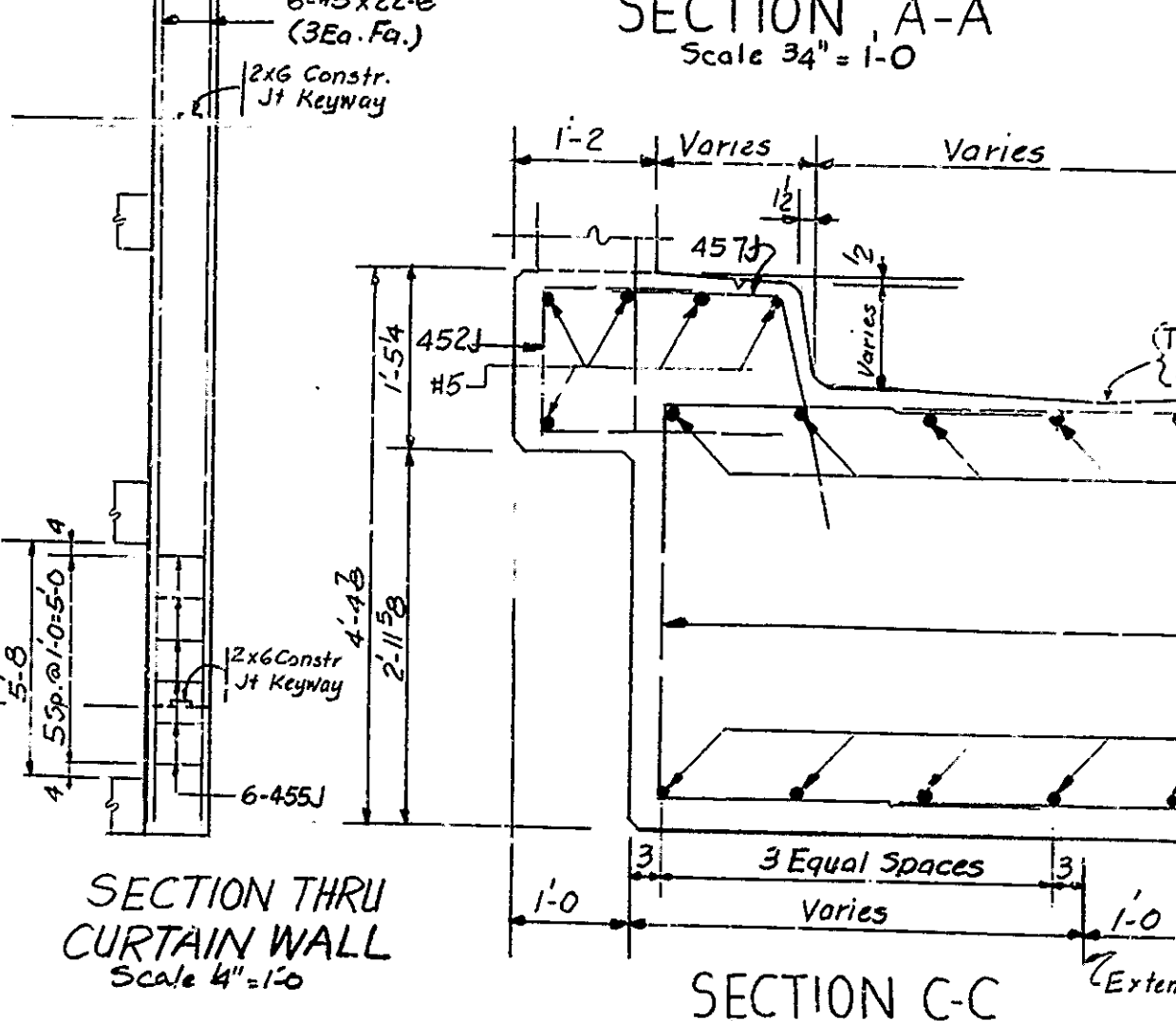
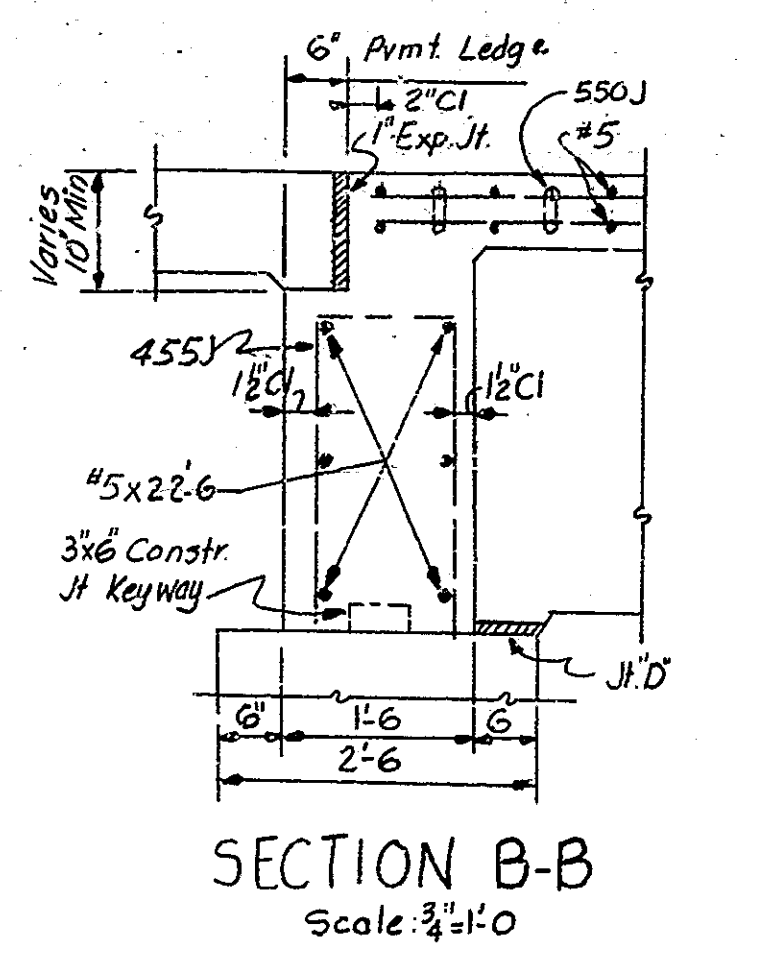
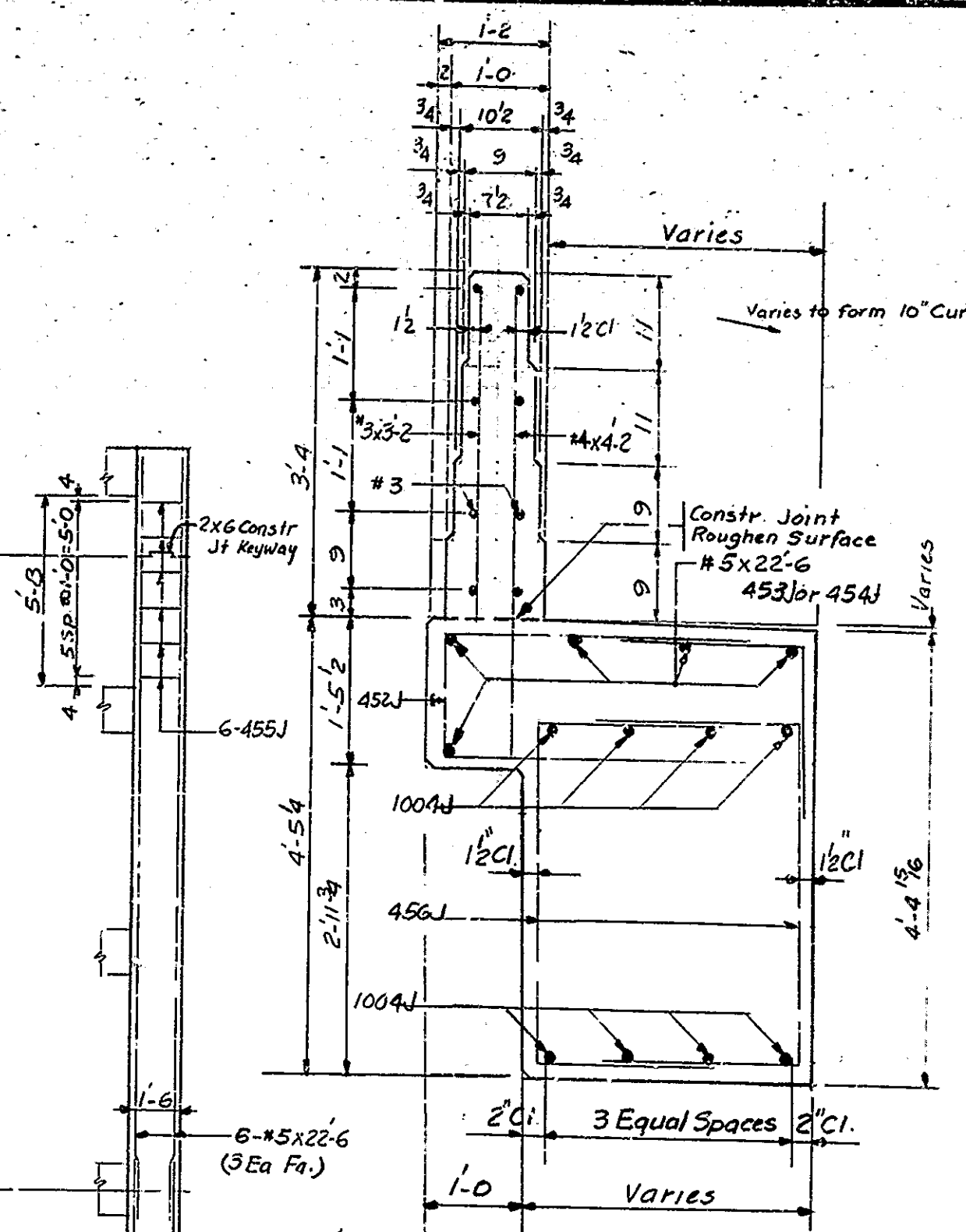
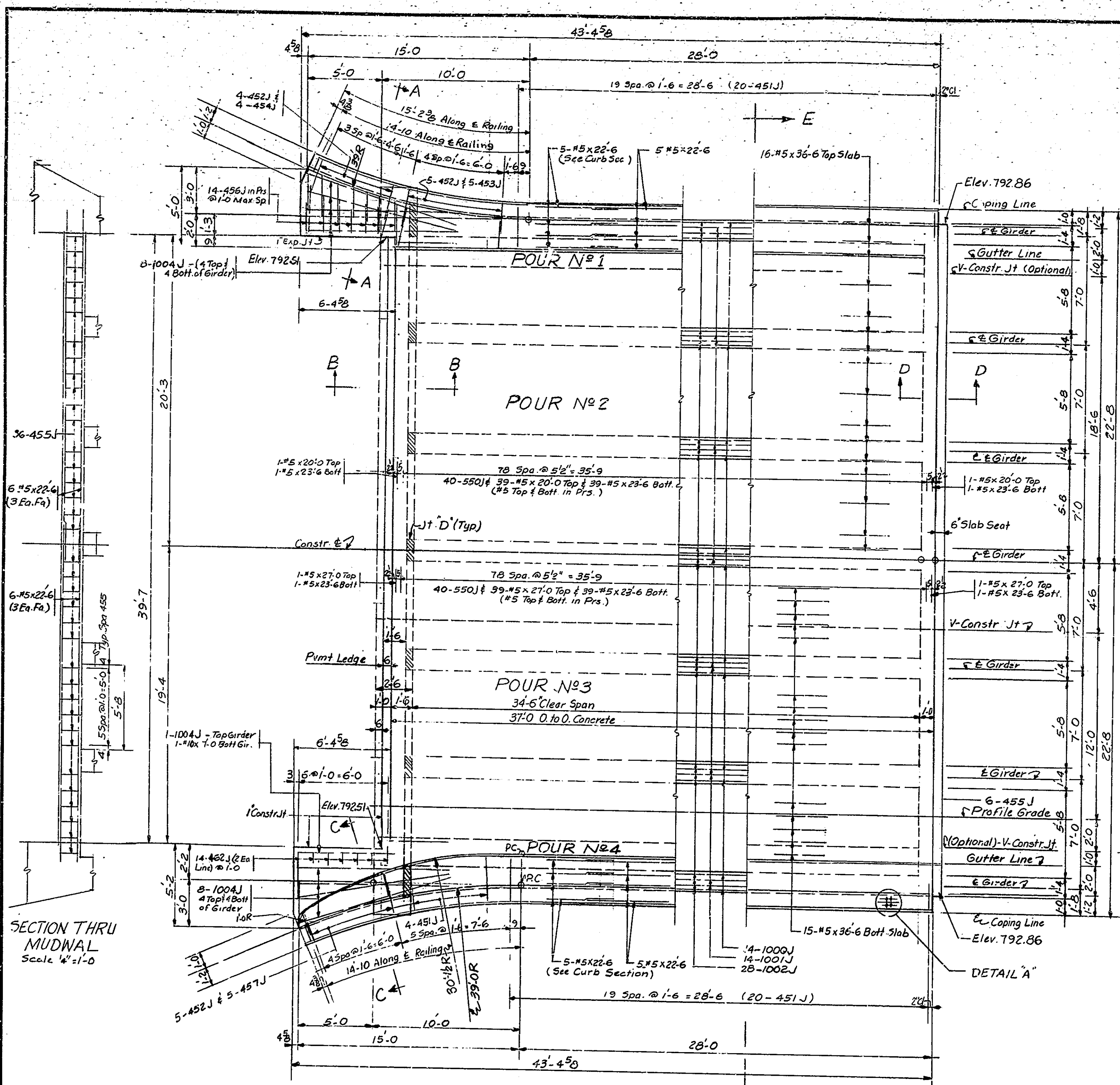
DRAWING: S 5 OF 14
PROJECT: I-465-4(7) 154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649J

BRIDGES OVER 20' SPAN					
PUB. ROAD RES. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(7) 154	1961	32	72

BENT N°2 (BENT N°4 SAME)				BENT N°3			
MARK OR SIZE	N° OF BARS	LENGTH	WEIGHT (Lbs.)	MARK OR SIZE	N° OF BARS	LENGTH	WEIGHT (Lbs.)
830J	14	27'-0"		732J	20	25'-9"	
831J	4	9'-11"		733J	6	8'-1"	
*8	7	27'-10"		734J	60	4'-10"	
*8	7	19'-0"		*7	8	27'-2"	
Total N°8			1990	*7	8	18'-6"	
734J	60	4'-10"		*7	60	12'-10"	
*7	60	12'-0"		*7	60	12'-1"	
*7	60	11'-10"		Total N°7			5547
Total N°7			3516	531J	40	3'-11"	
531J	40	3'-11"		532J	14	6'-2"	
532J	14	6'-2"		*5	28	22'-6"	
533J	34	12'-1"		*5	40	9'-7"	
534J	18	6'-9"		*5	63	6'-6"	
*5	28	22'-11"		Total N°5			1737
*5	40	9'-4"		430J	32	3'-3"	
*5	33	5'-0"		431J	20	2'-11"	
Total N°5			2039	432J	12	3'-11"	
431J	20	2'-11"		433J	10	4'-3"	
437J	1	7'-3"		434J	1	6'-1"	
438J	29	8'-6"		435J	46	7'-9"	
439J	29	6'-11"		436J	46	6'-9"	
440J	32	4'-0"		*4	18	16'-5"	
441J	12	4'-8"		*4	2	13'-7"	
442J	10	5'-0"		*4	2	8'-0"	
*4	15	16'-7"		Total N°4			844
*4	6	15'-6"		330J	6	20'-5"	1381
*4	2	13'-7"		Total Steel			9609
*4	2	8'-5"					
Total N°4			756				
331J	6	19'-5"	1410				
Total Steel			9711				
CONCRETE				CONCRETE			
Class F- Cap			18.1 C.Y.	Class F- Cap			11.4 C.Y.
Class D- Columns			6.9 C.Y.	Class D- Columns			7.4 C.Y.
Class E- Above Ftg.			36.6 C.Y.	Class E- Above Ftg.			36.6 C.Y.
Class E- Ftg.			19.4 C.Y.	Class E- Ftg.			24.4 C.Y.

DESIGNED: R.A.G. CKD: W.E.G.
DRAWN: R.H.M. CKD: T.L.G.
TRACKED: CKD:

BRIDGES OVER 20' SPAN					
PUB. PROJ. REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	465-4(7)154	1961	34	72



DESIGN DATA

UNIT STRESSES: $F_s = 20,000 \text{ psi}$, $F_c = 1200 \text{ psi}$

LIVE LOAD: H-20-S16-44 with impact and distribution of loads in accordance with 1957 AASHO Specifications except for floor slab which was designed for a 16000# wheel load.

DEAD LOAD: Increased by 35% of roadway for future wearing surface. Slab designed with 1/4 inch wearing surface.

Maximum Dead Load deflection = 3/8"

SPANS A' & D' DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

FEBRUARY 24, 1961

Walter M. Beaman

DRAWING: 57 OF 14

PROJECT: I-465-4(7)-154

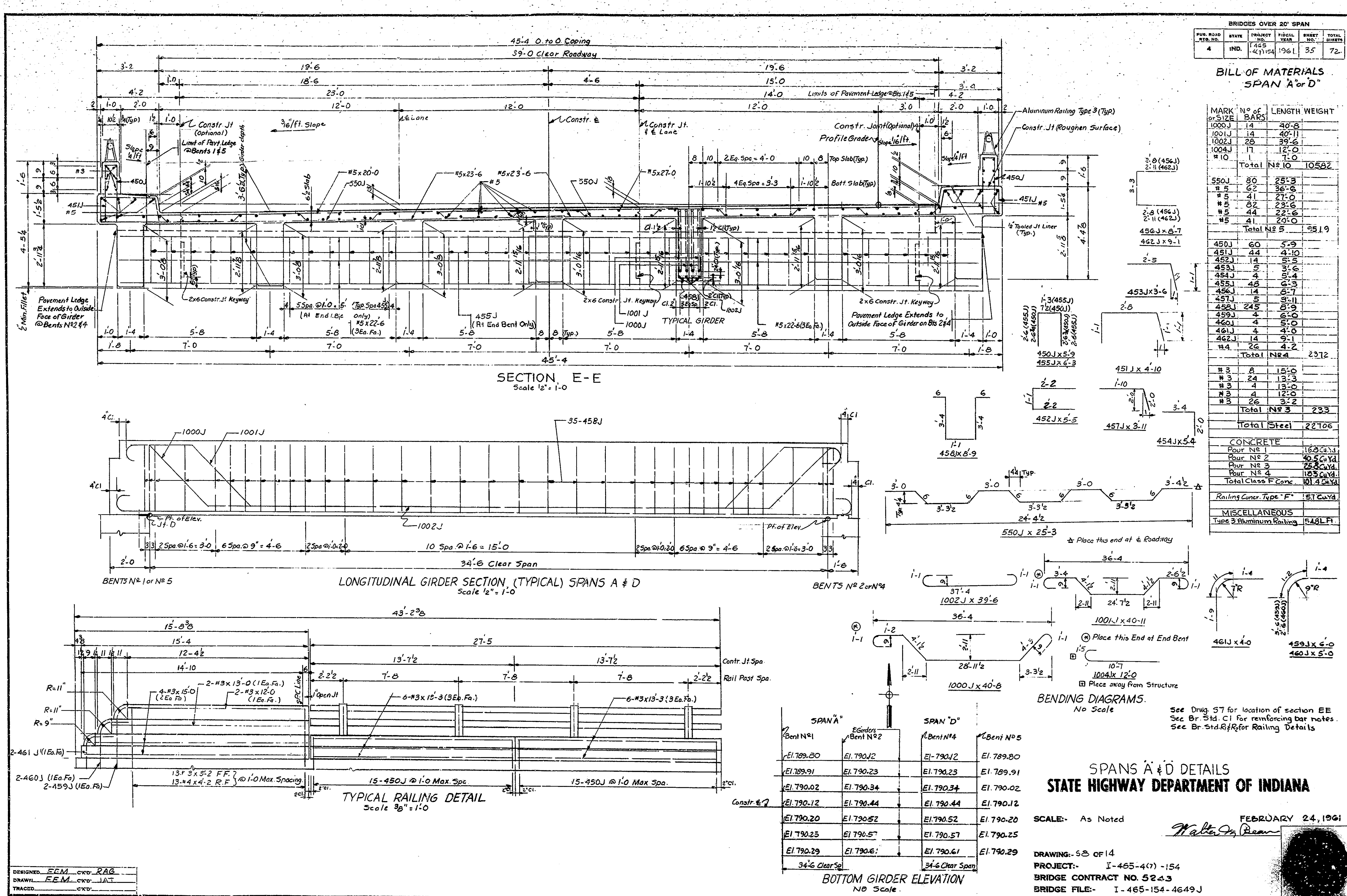
BRIDGE CONTRACT NO. 5243

BRIDGE FILE: I-465-154-4649J

DESIGNED: FEM C.K.O. RAG

DRAWN: FEM C.K.O. JAT

TRACED: C.K.O.



BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	465-4 (1) 15	56	36	72

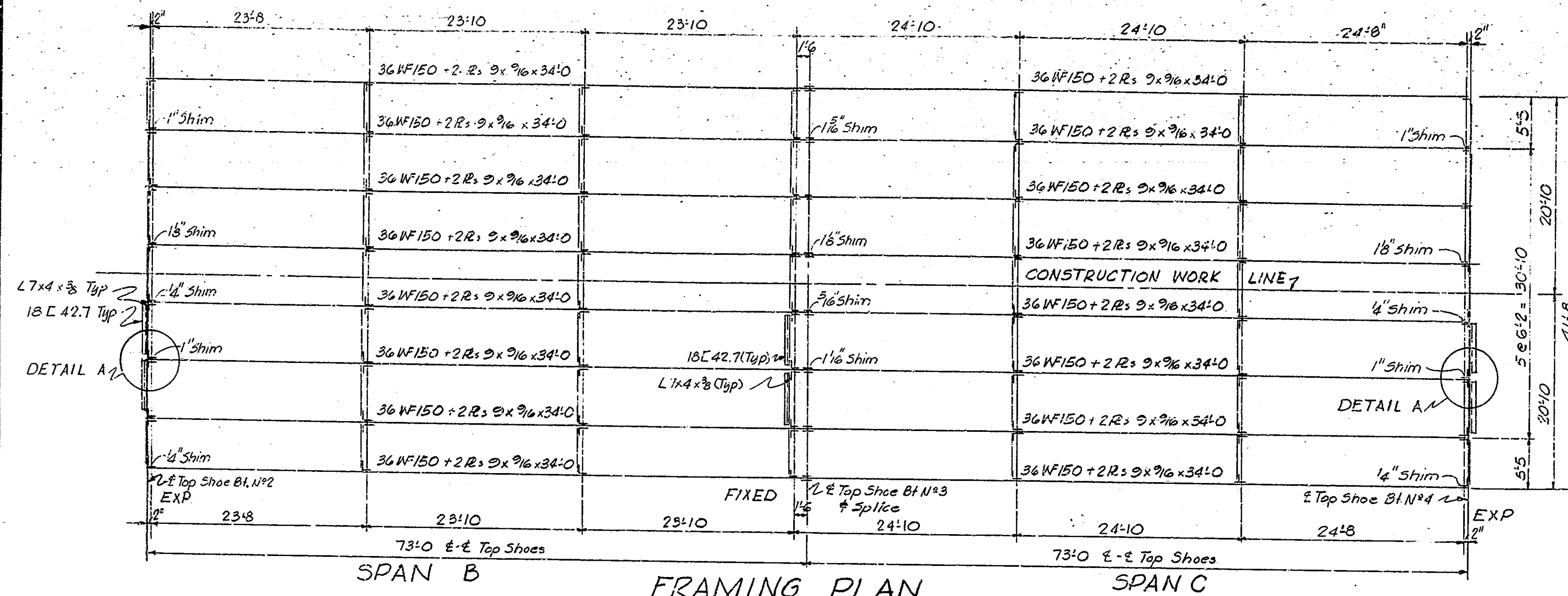
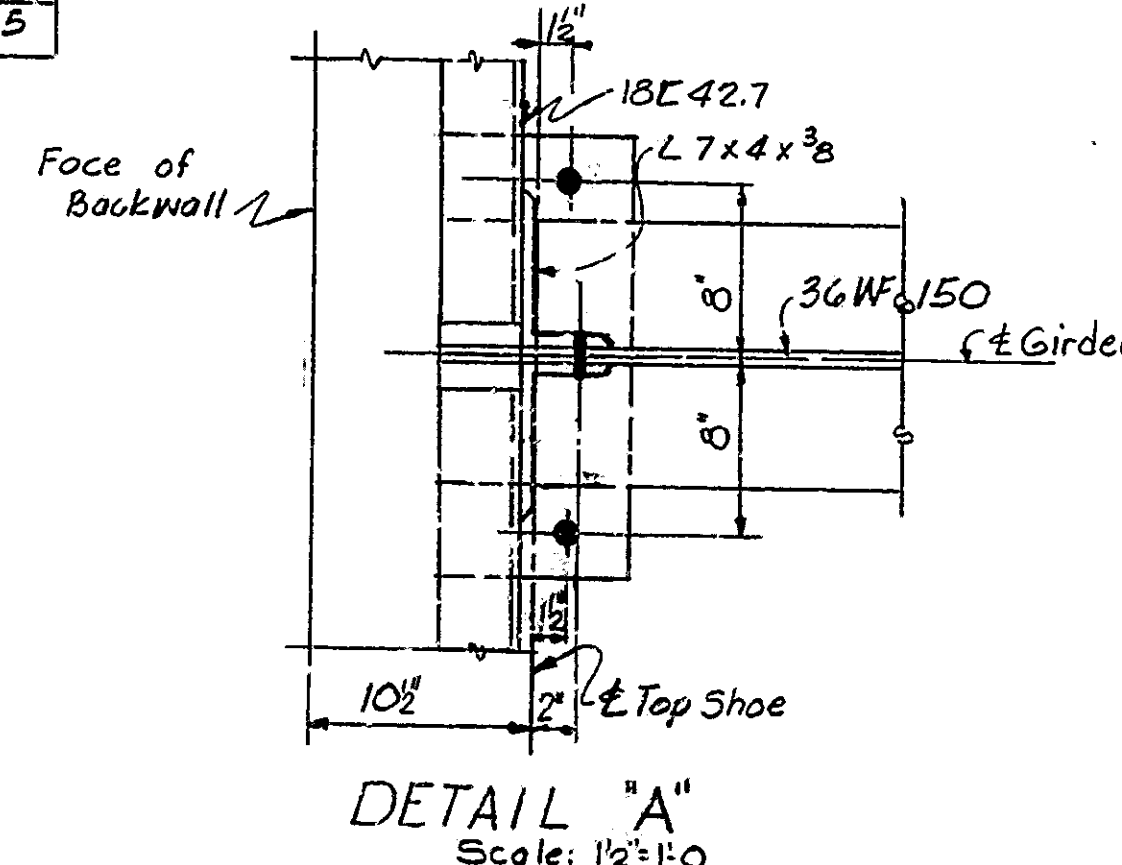
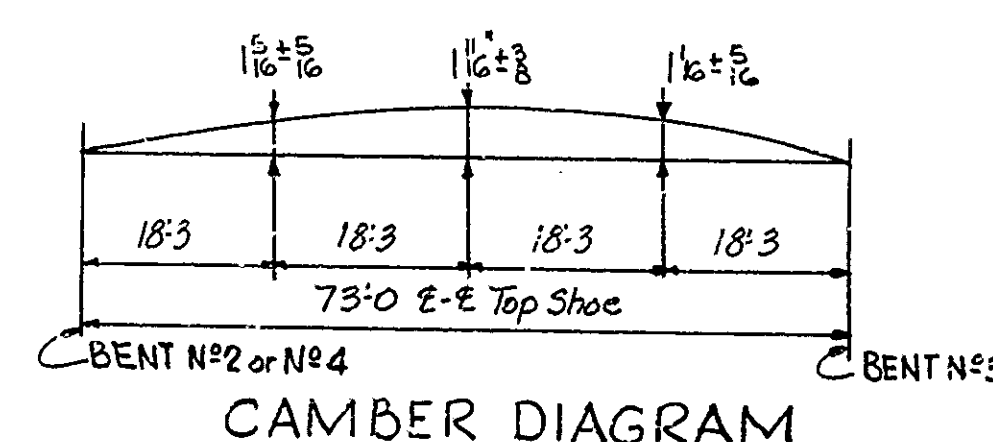
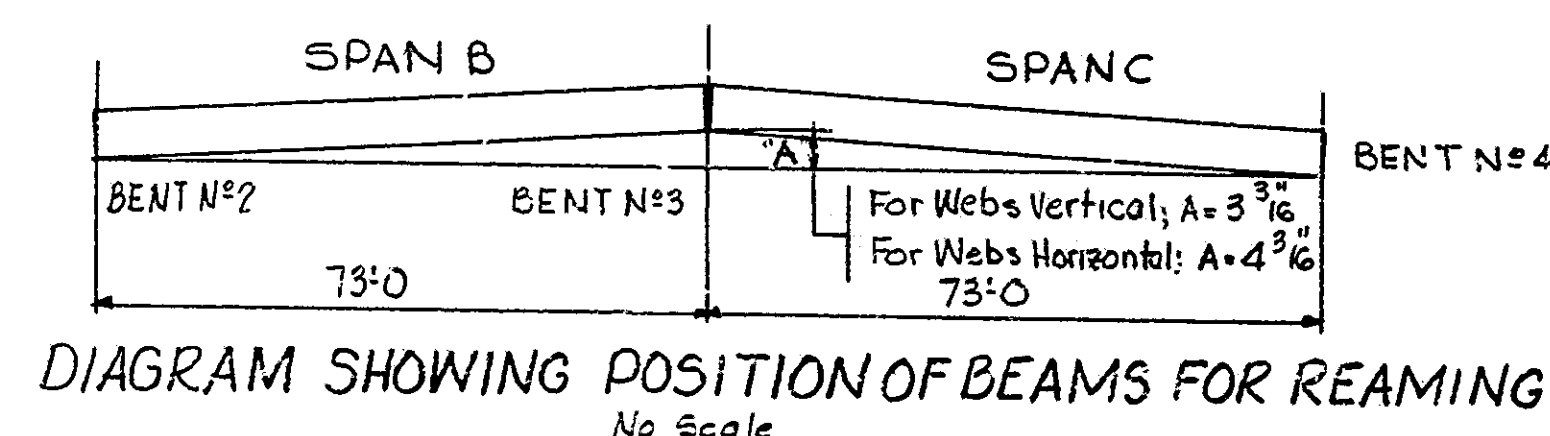


TABLE OF MOMENTS & REACTIONS							
	MOM @ 0.4 SPAN B		MOM @ R3		REACTION- R2		REACTION- R3
	Ft. Kips		Ft. Kips		Kips		Kips
	INT BM	O.S. BM	INT BM	O.S. BM	INT BM	O.S. BM	INT BM O.S. BM
DEAD LOAD	377	476	495	740	26.0	33.9	79.1 108.6
LIVE LOAD	466	406	392	358	38.2	20.2	50.8 34.2
IMPACT	118	103	99	91	9.7	5.1	12.9 8.7
TOTAL	961	985	986	1189	73.9	59.2	142.8 151.5



GENERAL NOTES

Rivets- 5/8" unless noted.
 Open Holes- 1 1/2" unless noted.
 Diameter of holes in all material connecting top shoes to beam flange shall be 1 inch.
 Bolts connecting beam flange to top shoe shall extend into top shoe a minimum of 1 inch.
 Beams are to be cambered to a smooth curve. Camber is to be checked while beams are supported in such a way as to have no bending moment in the direction of camber.
 Holes for beam splices shall be subpunched or subdrilled and reamed to size while assembled. See Article E 1103.18 (d) of the Specifications.
 The shop plans shall indicate whether reaming is to be done in the shop or field.
 If shop reaming or drilling is used, the beams shall be reamed or drilled while assembled in either a vertical or horizontal position. If the beams are reamed with webs vertical, they shall be supported relative to their final erection position, if they are reamed with webs horizontal, a minimum of one line of beams shall be shop assembled with webs vertical and inspected for fit.
 The shop details shall show a plan of match marking for all reamed pieces.
 All splice plates are to be removed, cleaned, and painted after reaming. Splice plates shall not extend beyond the end of beam after bolting for shipment.
 Flange splice bars shall have planed or rolled edges and holes in bars shall be subdrilled and reamed or drilled full size while assembled.
 Ribbed bolts may be substituted for field rivets in diaphragm connections. See Specifications.
 All structural steel shall be erected and beams adjusted to relative elevation before driving rivets in beam splices.
 The contractor shall prepare detailed working or shop drawings to enable him to fabricate, erect, and construct all parts of the work in conformity with the Engineers drawings and specifications, and shall submit 5 copies of these to the Engineer.
 See Article E 1103.2 of the Specifications.
 Shims between beams and top shoes may be built up. No shim shall be less than 1/8" thickness.
 Weld on cover plates shall conform to Specifications "Welded Highway and Railway Bridges".
 See Article E 1103.28 of Specifications.
 All structural steel on which welding is used shall be made from steel conforming to A.S.T.M. Specifications A 373-56T.

DATA USED FOR DESIGN AND DETAILS

LIVE LOAD: H-20-S16-44 loading with impact and distribution of loads in accordance with 1957 AASHTO Specifications.
 DEAD LOAD: Actual weight plus 35 lbs./Sq. Ft. of roadway to provide for future wearing surface.
 SLAB: Designed for 16000 lb. wheel plus impact and with 1/2" monolithic wearing surface.

UNIT STRESSES:

Structural Steel Bending (Tension)	18000 #/Sq. in.
Shear on Rivets	19500 #/Sq. in.
Structural Steel Bearing (Including Rivets)	27000 #/Sq. in.
Bearing Steel on Concrete (Including overturning & ecc. loading)	1000 #/Sq. in.
Reinforcing Steel (Tension)	20000 #/Sq. in.
Concrete (Compression)	1200 #/Sq. in.

PAINTING STRUCTURAL STEEL

All painting shall be in accordance with current State Highway Specifications.
 SHOP PAINT: One coat red lead, Type I or II except as noted.
 FIELD PAINT: 2 Coats of aluminum paint. No paint on Anchor Bolts.
 NOTE: Aluminum Railing including Anchor Bolts and Post Casting to be paid for as cost per linear foot.
 NOTE: *Estimated weight of structural steel = 230,000 lbs.
 *Weight of structural steel shown is approximate only and it shall be the Contractors responsibility to determine the weight on which he shall base his bid.

FRAMING PLAN-SPAN B & C
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

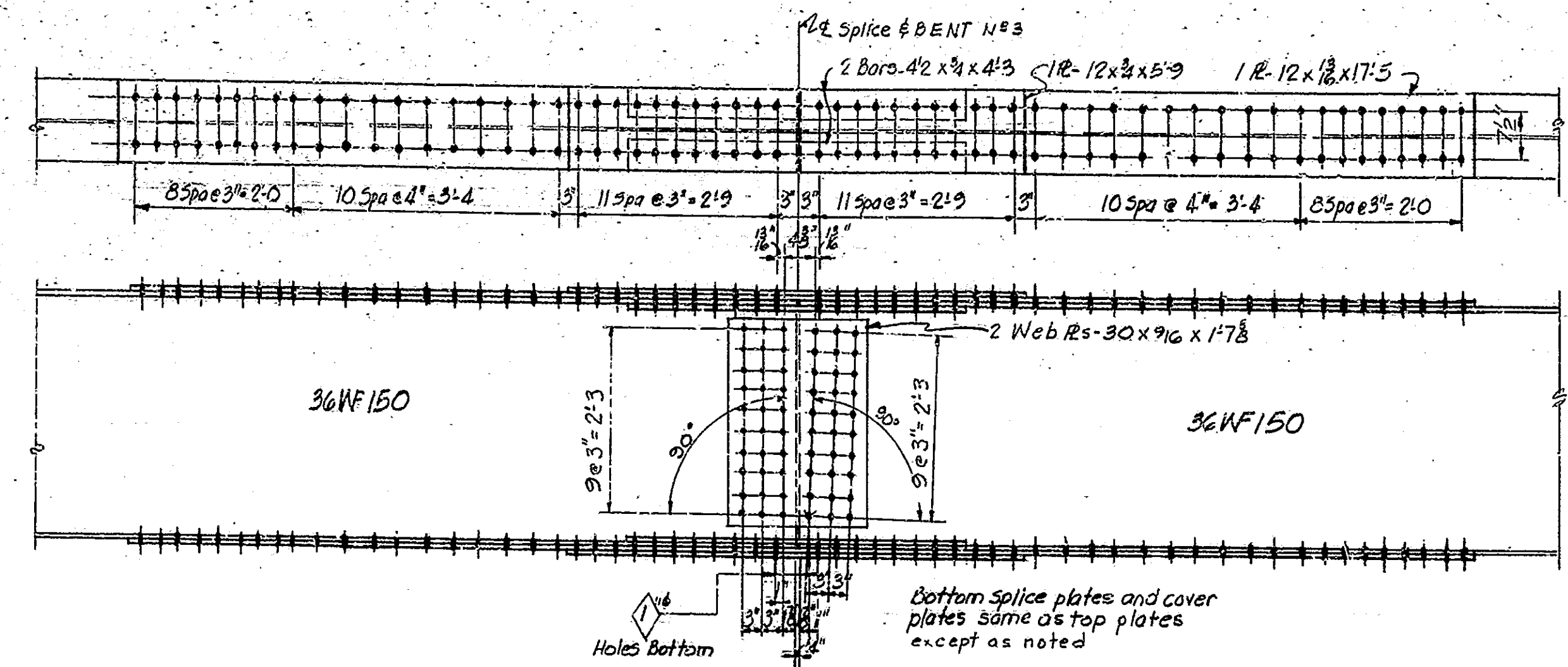
FEBRUARY 24, 1961

Walter P. Brown

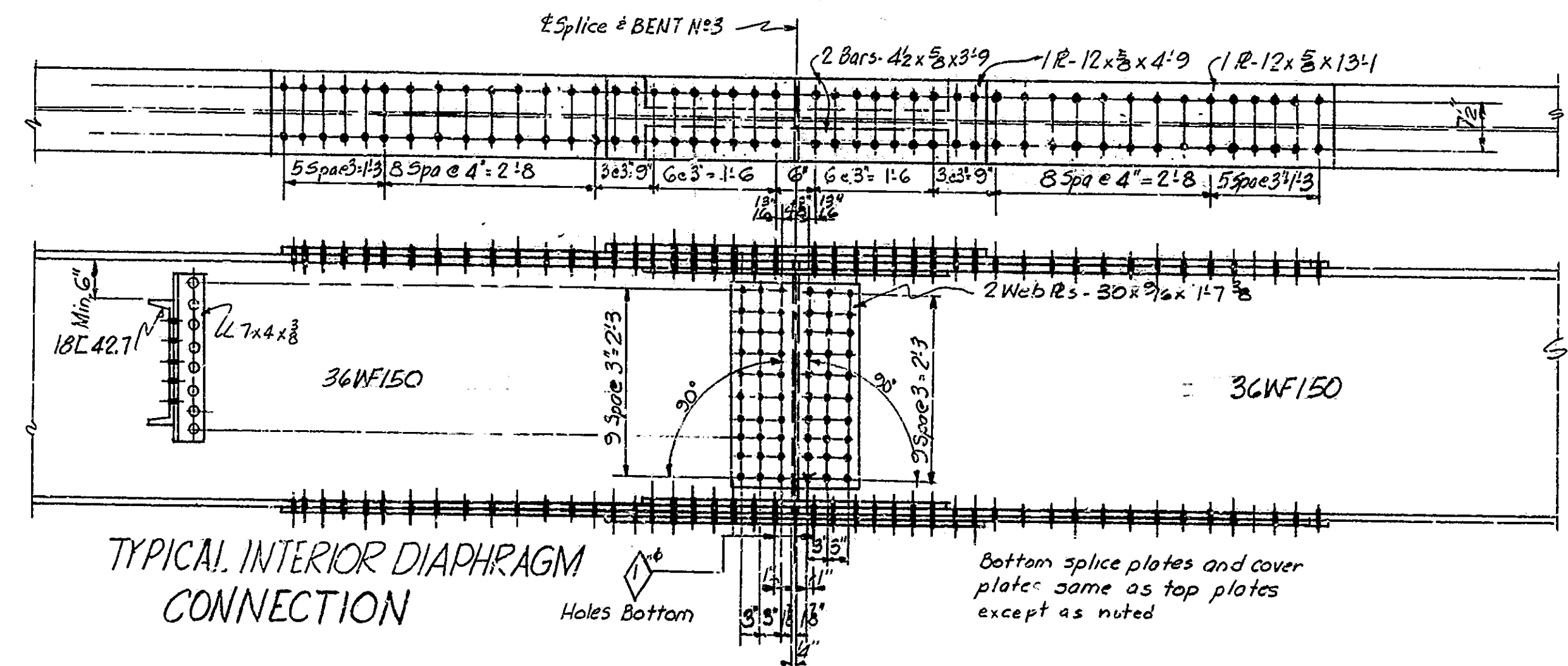
DESIGNED: WEG CND: RPH
 DRAWN: RPH CND: FEM
 TRACED: CND

DRAWING: 59 OF 14
 PROJECT: I-465-4 (7) 154
 BRIDGE CONTRACT NO. 5243
 BRIDGE FILE: I-465-154 - 4649 J

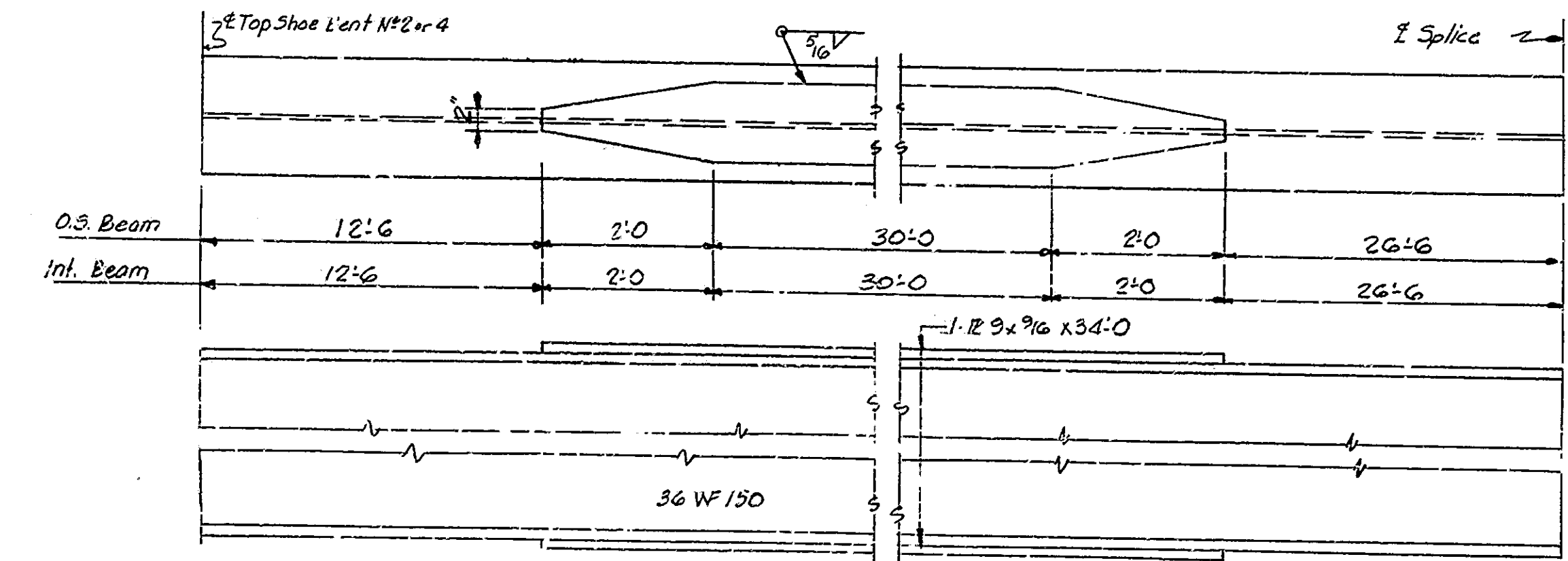




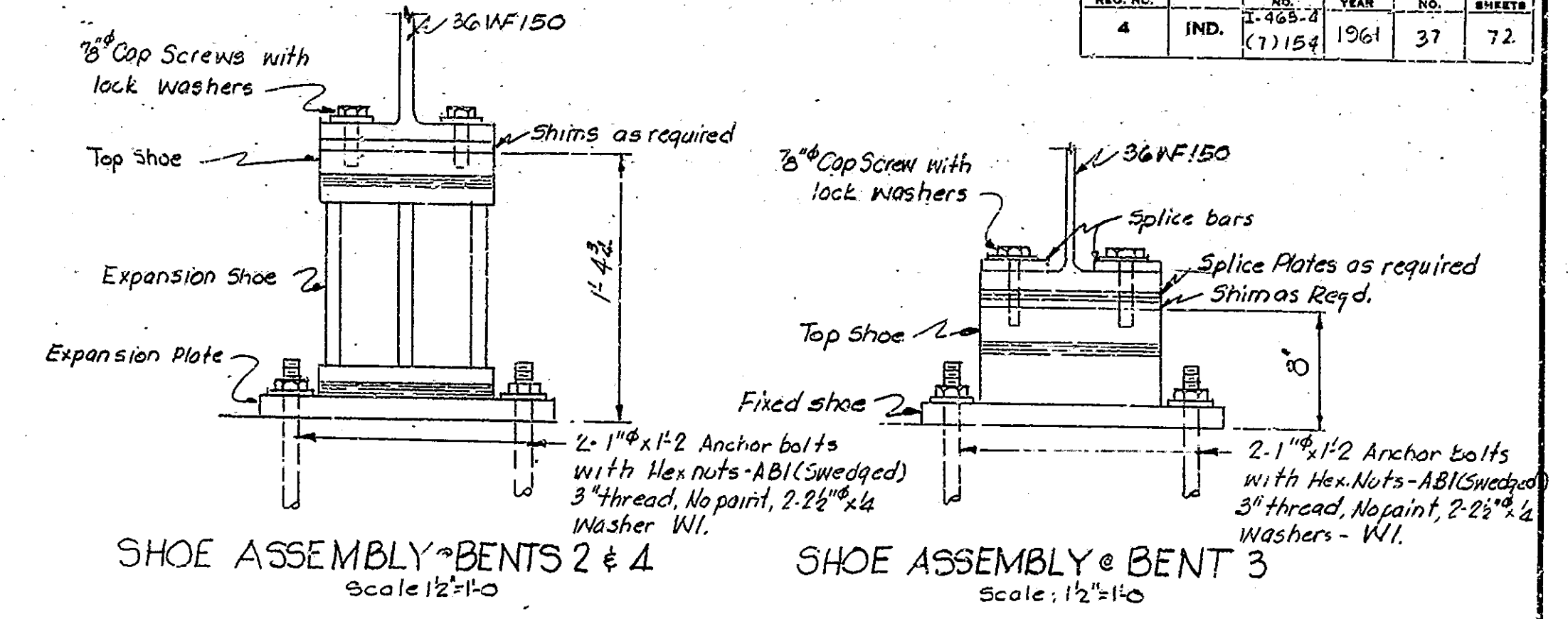
SPlice DETAILS- EXTERIOR BEAM
Scale: 3/4"=1'-0"



SPlice DETAILS-INTERIOR BEAM
Scale: 3/4"=1'-0"

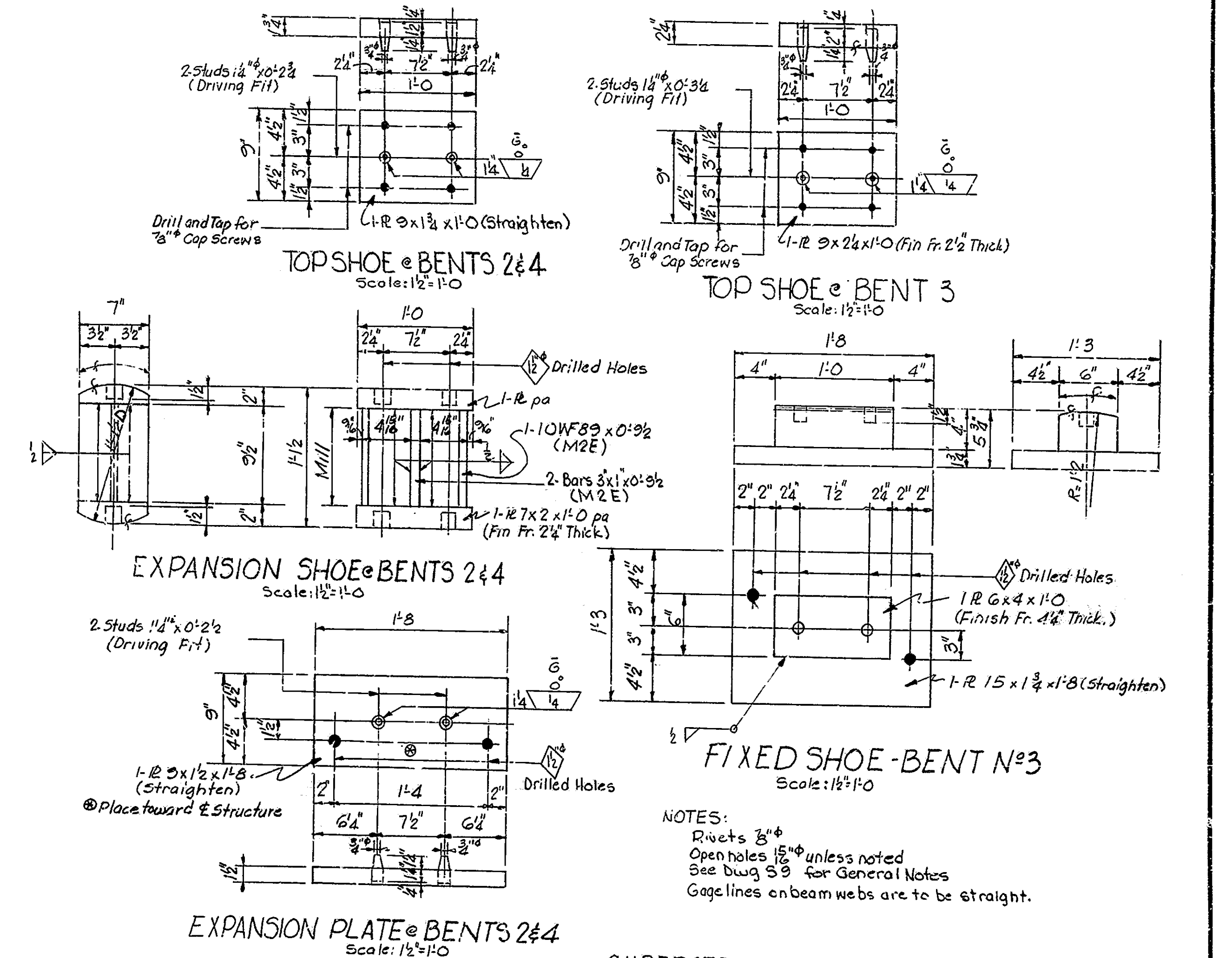


DETAIL FOR POSITIVE COVER PLATES ALL BEAMS
No Scale



SHOE ASSEMBLY-BENTS 2 & 4
Scale: 1/2"=1'-0"

SHOE ASSEMBLY-BENT 3
Scale: 1/2"=1'-0"



EXPANSION SHOE-BENTS 2 & 4
Scale: 1/2"=1'-0"

FIXED SHOE-BENT N°3
Scale: 1/2"=1'-0"

NOTES:
Rivets 3/4"
Open holes 1 1/2" unless noted
See Drawing S-3 for General Notes
Gage lines on beam webs are to be straight.

EXPANSION PLATE-BENTS 2 & 4
Scale: 1/2"=1'-0"

SUPERSTRUCTURE DETAILS-SPAN B-C
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

FEBRUARY 24, 1961

Walter M. Beam

DRAWING: S-10 OF 14
PROJECT: I-465-4(7) 154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649 J

DESIGNED: WEG CKD: RRB
DRAWN: DGB CKD: HEM
TRACED: CKD:

DESIGNED WEG CK'D RGH
DRAWN ERT CK'D EEM
TRACED _____ CK'D _____

SCALE:- As Noted

FEBRUARY 24, 1961

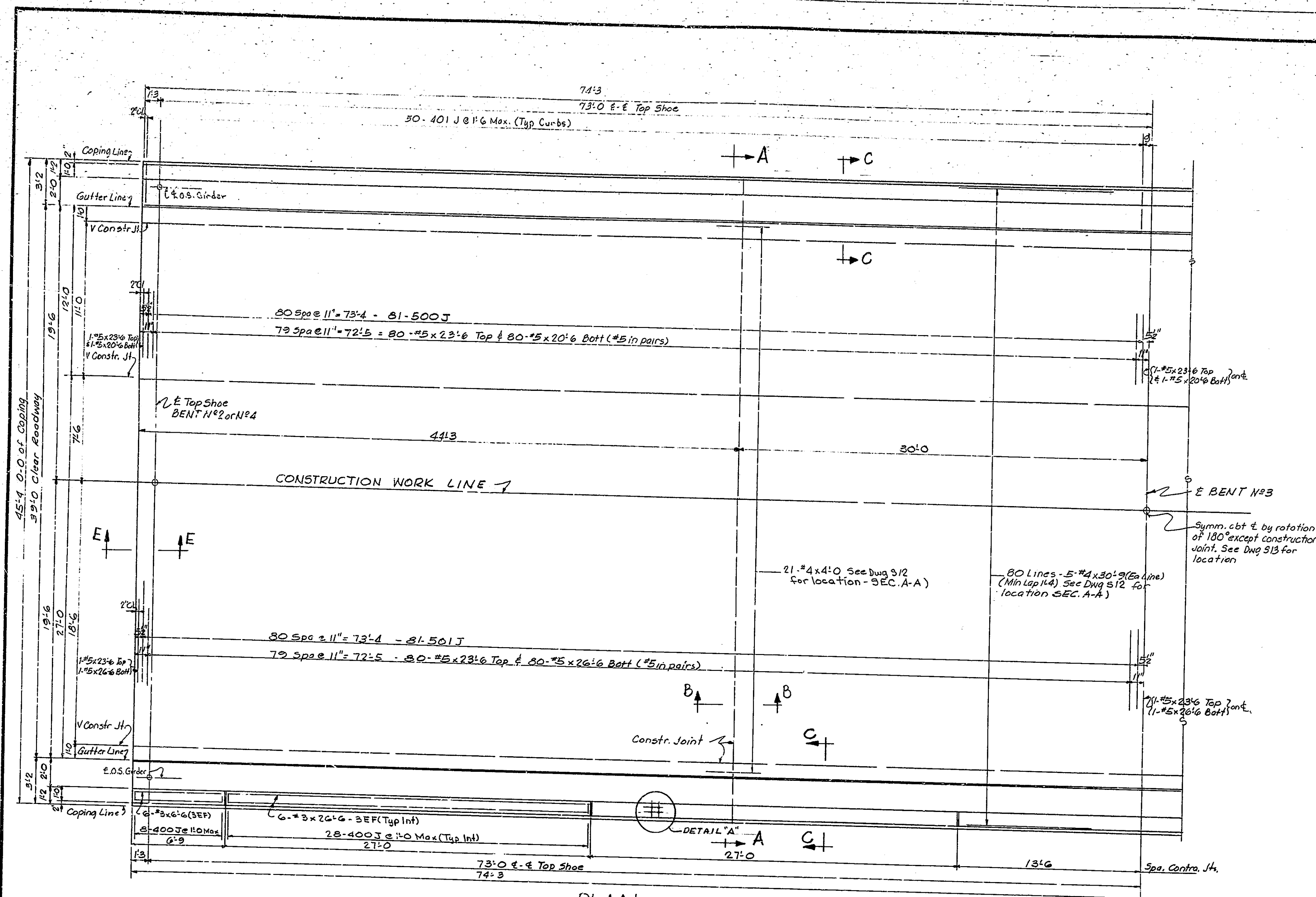
DRAWING: 311 OF 14
PROJECT: - I-465-4(1)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: - I-465-154-4649J



After Structural Steel has been erected, the concrete forms shall not be blocked against the expansion end of the steel in making any piers adjacent to steel spans.

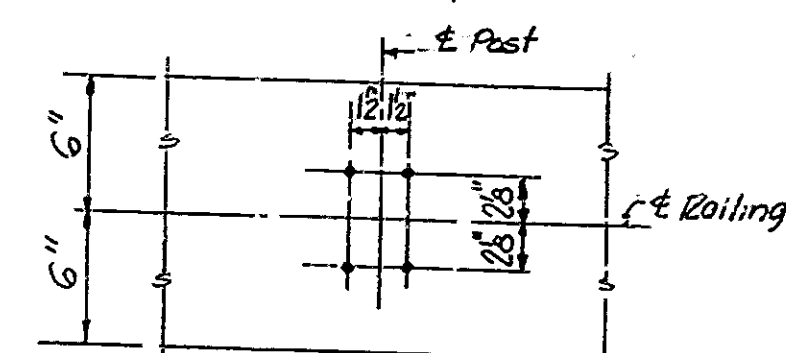
See Dwg 312 for SEC: A-A
See Br. Std 21 for Aluminum Railing Details
See Dwg 313 for location of Concrete Pours, Bill of Materials.
SEC.EE, B-B, C-C & Aluminum Railing Spacing.

SUPERSTRUCTURE DETAILS-SPAN B&C
STATE HIGHWAY DEPARTMENT OF INDIANA



PLAN
Scale: $\frac{1}{4}'' = 1'-0''$

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



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

Scale: 1"=1'-0"

Scale: 1"=8'

SETTING PLAN FOR POST
ANCHOR BOLTS

See Dwg 513 for location 4649J

[illegible]

MARBAUGH ENG. SUPPLY-NO. 166

BILL OF MATERIAL

CONCRETE (CIE")	
POUR 1A	8.3 C
1B	10.3 C
1C	24.8 C
1D	8.3 C
2A	19.6 C
2B	24.1 C
2C	57.3 C
2D	19.5 C
Total Conc. C.I.F	172.2 C
Reinforcing Concrete C.I.F.	15.5 C
Aluminum Reinforcing Type 3	297 L

WARGAUGH ENG. SUPPLY-NO. 186

TABLE OF ELEVATIONS		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A	Elevation Top of Casing Form	794.580	794.645	794.725	794.790	794.830	794.850	794.850	794.850	794.850	794.850	794.850	794.850	794.850	794.850	794.850	794.850	794.850
	Elevation Top of Outside Beam																	
B	Dist. Top of Bm. to Top of Casing Fm.																	
	Elevation Top of Screenshot	793.720	793.785	793.865	793.930	793.970	793.990	793.990	793.990	793.990	793.990	793.990	793.990	793.990	793.990	793.990	793.990	793.990
C	Dist. Top of Bm. to Top of Screenshot																	
	Elevation Top of Screenshot	793.895	793.955	794.040	794.100	794.140	794.160	794.160	794.160	794.160	794.160	794.160	794.160	794.160	794.160	794.160	794.160	794.160
D	Dist. Top of Bm. to Top of Screenshot																	
	Elevation Top of Beam	794.155	794.215	794.300	794.360	794.400	794.420	794.420	794.420	794.420	794.420	794.420	794.420	794.420	794.420	794.420	794.420	794.420
E	Dist. Top of Bm. to Top of Screenshot																	
	Elevation Top of Outside Beam	795.035	795.095	795.180	795.240	795.280	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300
E	Dist. Top of Bm. to Top of Casing Fm.																	
	Elevation Top of Outside Beam	795.035	795.095	795.180	795.240	795.280	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300	795.300

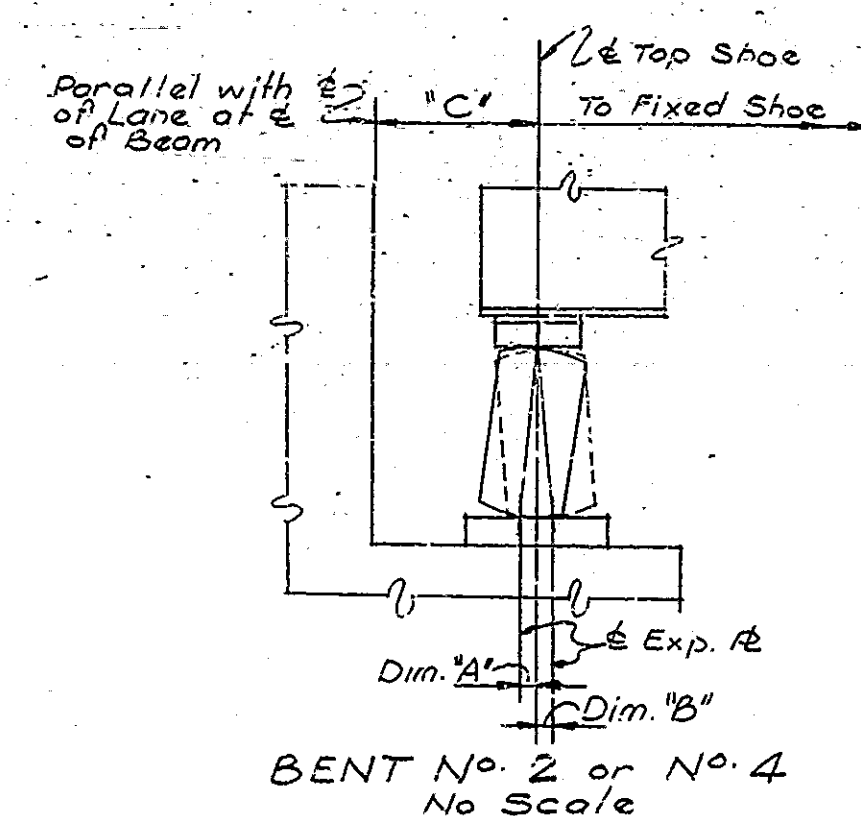
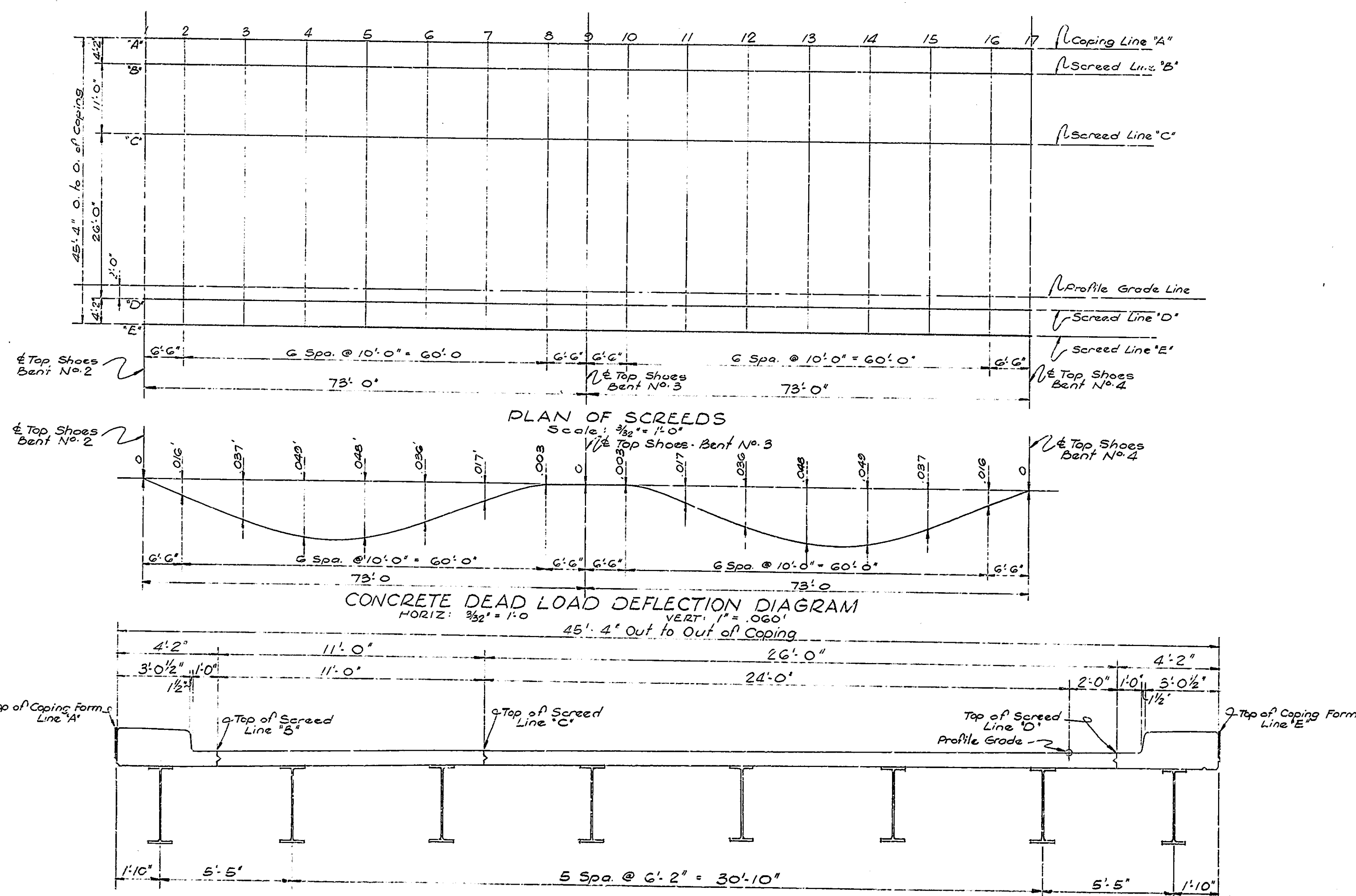


TABLE 1		Dim. "A"				Dim. "B"		
Temperature		0°	20°	40°	60°	80°	100°	120°
Top Shoe to Exp. R @ Bent No. 2 or 4		1/8"	1/4"	1/2"	3/4"	1"	1 1/4"	1 1/2"

- NOTES:
- Purpose:
- "PLAN OF SCREEDS" shows location of screed points.
- "TABLE OF ELEVATIONS" shows data for setting screeds and coping forms so that the slab and coping will be at the final elevation after all concrete has been poured.
- "TABLE No. 1" shows data for setting expansion plates.
- GENERAL PROCEDURE
- After all rivets have been driven, adjust the superstructure longitudinally so that dimension "C" from the Top Shoe to the face of the backwall at Bent No. 2 and Bent No. 4 are equal.
 - With the superstructure in the adjusted position called for in No. 1 above, set the anchor bolts for the fixed shoe at Bent No. 3.
 - Adjust the expansion plate under each expansion shoe in accordance with Dim. "A" or "B" in TABLE No. 1 for the prevailing temperature. Note that dimension "A" is always the distance from a vertical line through the Top Shoe in a direction away from the fixed shoe. Set anchor bolts.
 - After the shoes are set, take elevations at all screed points on top of the adjacent beam. Enter these elevations in "TABLE OF ELEVATIONS". Subtract these elevations from the tabulated elevations and use the resulting dimension as the height for setting the screed or coping form above the beam. This dimension remains constant regardless of how much or in what order the concrete is poured. Do not set screeds or coping forms by leveling.
 - No concrete is to be poured until the above operations have been completed.

SCREEDS - SPAN B & C
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

FEBRUARY 24, 1961

M. J. M. M.

DRAWING: S140P14
PROJECT: I-465-4(7)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4643.1



STRUCTURE QUANTITIES																			
ITEM	CONCRETE				RAILING		REINFORCING STEEL (1934 STD. WTS.)												TOTALS
	CLASS F	CLASS D	CLASS E	CLASS F	CLASS F		#11(14)	#10(12)	#9(10)	#8(10)	#7(8)	#6(6)	#5(5)	#4(4)	#3(3)	#2(2)			
	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	LN FT	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	LBS	
SUBSTRUCTURE																			
BENT NO. 1	11.0																		
BENT NO. 2	18.1	6.9	36.4	19.4															
BENT NO. 3	11.4	7.4	36.6	24.4															
BENT NO. 4	18.1	6.9	36.4	19.4															
BENT NO. 5	11.0																		
SPAN "A"	101.4				5.7														
SPAN "B" & "C"	172.2				15.5														
SPAN "D"	101.4				9.7														
REIN. STEEL FOR LIGHTING																			
SPLICE BARS																			
TOTALS	444.6	21.2	109.4	63.2	26.9		21,254	4,003	15,129	218	49,548	17,966	5,429			113,547	230,000	14	420

BILL OF SPLICE BARS				
Size	Number	Pieces	Length	Weight
#10	2		10' 6"	90
#8	1		8' 0"	25
#7	3		8' 0"	16
#5	3		8' 0"	35
#4	4		8' 0"	16
#3	3		5' 6"	6
TOTAL				186

BILL OF MATERIALS FOR R.C. BRIDGE APPROACH				
Size	Number	Pieces	Length	Weight
#10	2		10' 6"	90
#8	1		8' 0"	25
#7	3		8' 0"	16
#5	3		8' 0"	35
#4	4		8' 0"	16
#3	3		5' 6"	6
TOTAL				186

APPROACH STRUCTURES						
STRUCT. NO.	LOCATION	SIZE	KIND	LENGTH	CL. D CONC. IN STRUTS CU YDS.	REIN. STEEL LBS.
51	Sig. 28+12	18"	Group "A"	150'	2.29	
52	Sig. 30+04	18"	Group "A"	140'	2.29	
TOTALS				4.58		

BARRICADES, BARRIERS, TRAFFIC SIGNS, & LIGHTS				
ITEM	UNIT	QUANTITY	ASSEMBLY	
WARNING SIGNS	Each		Signs 130 R	
			" 123 R	
			" 124 R	
			" 115 R	
			Torches	
STD. BARRICADES (TYPE A)	Each		Barricades (Type A)	
			Signs 113 R	
			" W11 R	
			" 117	
STD. SIGNS (TYPE B)	Each		Signs 113	
BRIDGE (SUITABLE) BARRIERS	Each		Suitable Barriers	
			Lanterns or Torches	
STD. BARRICADES (TYPE C)	Each		Barricades (Type C)	
			Signs 113	
			Lanterns or Torches	
TYPICAL SIGN STANDARDS	Each		Signs 113 R	
			" W11 R	
			" 117	
			Lanterns	

*Not a pay item.
 ** The weight of Structural Steel shown is approximate only and it shall be the Contractor's responsibility to determine the weight on which he bases his bid.

BILL OF ADDITIONAL REINFORCING STEEL FOR LIGHTING			
MARK or SIZE	NO. OF BARS	LENGTH	WEIGHT (LBS)
G01 A	8	8' 0"	
G02 A	18	4' 0"	
TOTAL			218

SUMMARY					
ITEM	DESCRIPTION	UNIT	QUANTITY		
1	Class F Concrete	Cu. Yds.	444.6		
2	Class D Concrete	Cu. Yds.	21.2		
3	Class E Concrete above Footings	Cu. Yds.	109.4		
4	Class E Concrete in Footings	Cu. Yds.	63.2		
5	Railing Concrete	Lin. Ft.			
6	Reinforcing Steel	Lbs.	113,547		
7	Structural Steel	Lbs.			
8	Cast Iron	Lbs.			
9	Untreated Timber Piles Furnished	Lin. Ft.			
10	Untreated Timber Piles Driven	Lin. Ft.			
11	Furnishing Equipment for Driving Piles	Lump Sum			
12	Wet Excavation	Cu. Yds.			
13	Waterway Excavation	Cu. Yds.			
14	Common Excavation	Cu. Yds.			
15	Special Borrow	Cu. Yds.	10,745		
16	Grade B Special Borrow	Cu. Yds.	875		
17	Sodding	Sq. Yds.	280		
18	Mulched Seeding	Sq. Yds.	205		
19	Cement Concrete Pavement	Sq. Yds.			
20	Reinforced Cement Concrete Pavement	Sq. Yds.			
21	Thickened Rein. Cement Concrete Pavement	Sq. Yds.			
22	Aggregate for Compacted Aggregate Base	Tons			
23	Removal Present Structure	Lump Sum			
24	Temporary Bridge and Approaches	Lump Sum			
25	Warning Signs	Each			
26	Std. Barricades (Type A)	Each			
27	Class D Concrete in Structures	Cu. Yds.	4.6		
28	R/W Markers	Each			
29	Steel Pile Shells Furnished 14"	Lin. Ft.	420		
30	Steel Pile Shells Driven 14"	Lin. Ft.	420		
31	Structural Steel (4649)	Lump Sum			
32	Structural Steel (4649 J)	Lump Sum			
33	Structural Steel (4649 DR)	Lump Sum			
34	Railing Concrete	Cu. Yds.	26.9		
35	Aluminum Railing - Type 1	Lin. Ft.			
36	Aluminum Railing - Type 3	Lin. Ft.	406.6		
37	Foundation Excavation (Unclass)	Cu. Yds.	425		
38	4" Concrete Slapewall	Sq. Yds.	440		
39	18" Group "A" Pipe	Lin. Ft.	270		
40	2" x Steel Conduit	Lin. Ft.	240		
41	Anchor Rods AR 21	Each	8		

*NOTE: Two (2) additional aluminum railing posts required for lighting. (See Br. Std. R2) Include in cost per foot of Aluminum Railing.

Drawing
 Not
 Legible

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-2 (1) 154	1961	43	72

SECTION 24 T15N R2E

STR. No. 84
1-Std. D.G. Inlet
50' of 12" S.C.C.M. Pipe
2-22" 30' Bends
1-Str. Culv. Hdwl.
(In Road Contract)

STR. No. 85
1-Std. D.G. Inlet
18' of 12" Group "A" Pipe
1-Str. Culv. Hdwl.
(In Road Contract)

STR. No. 116
1-Std. A.B. Inlet
40' of 12" S.C.C.M. Pipe
2-22" 30' Bends
1-Str. Culv. Hdwl.
(In Road Contract)

STR. No. 119
1-Std. A.B. Inlet
50' of 12" S.C.C.M. Pipe
2-22" 30' Bends
1-Str. Culv. Hdwl.
(In Road Contract)

P.O.T. 44 +58.76 'S3/N'
P.O.C. 14 +39.93 'SWL'

P.O.C. 14 +11.79, 10' RT. 'SWL'

END STRUCTURE LIMITS - STA. 15+00

BEGIN STRUCTURE LIMITS - STA. 13+20

SITUATION PLAN
SCALE: 1" = 50'
CONTOUR INTERVAL: 1 FT.

ROBERT H. MARKS & ALBERT LIEBERMAN

See ROAD PLANS for Bench Marks & References.

SECTION "A-A"
No SCALE

EARTHWORK SUMMARY

Item	Quantity	Unit
Fill + 20%	19,725	Cys.
Surplus Excavation	50	Cys.
Special Borrow	19,675	Cys.
Grade "B" Special Borrow	480	Cys.

LAYOUT
2 C. GIRDER & STEEL BEAM BRIDGE
3 SPANS: 43'-0", 51'-6 1/4", 59'-0" 20' ROWY.
SKEW 26° 51' 49" RT. 2-1'6" WALKS

STATE HIGHWAY DEPARTMENT OF INDIANA
MARION COUNTY

SCALE: AS NOTED **FEBRUARY 24, 1961**

Walter M. Brown

DESIGNED: C.K.D.
DRAWN: C.K.D.
TRACED: C.K.D.

NOTE: See Art. A203 of the Specifications regarding Test Pit Data.

PROFILE ON LINE "SWL"
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

SCALE:- AS NOTED

FEBRUARY 24, 1964

Walter J. Brown

DRAWING: S/ OF 17

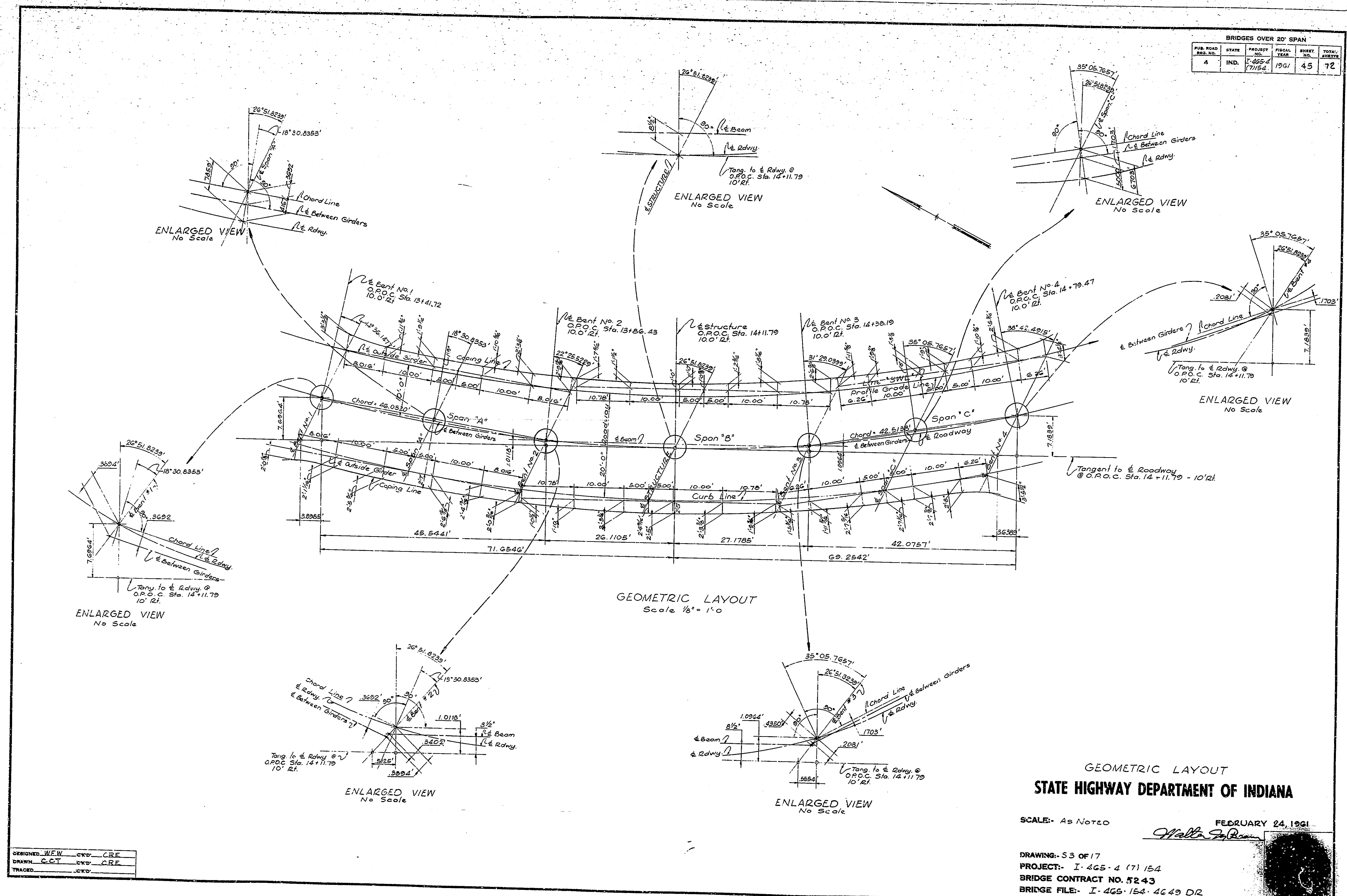
PROJECT:- I-465-4 (71) 154

BRIDGE CONTRACT NO. 5243

BRIDGE FILE.- I-465-154-4649 DR

EST. 12+11.79 SW

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4 171154	1961	45	72



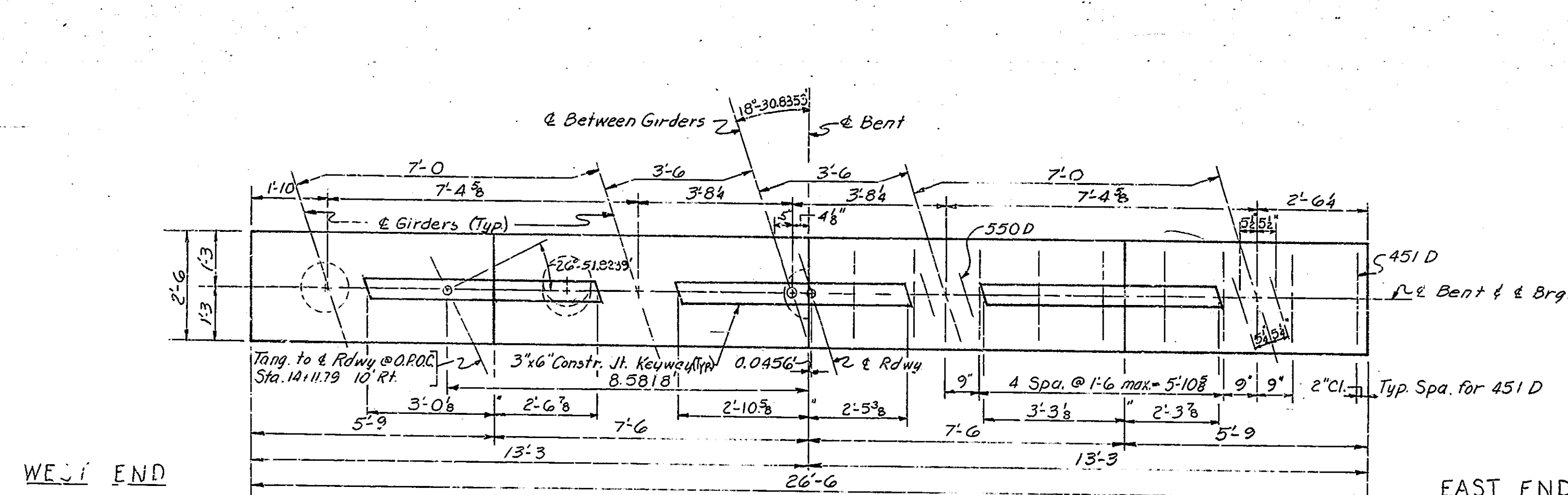
DESIGNED	W.F.W.	CKD	C.R.F.
DRAWN	C.C.T.	CKD	C.R.F.
TRACED		CKD	

BRIDGES OVER 20' SPAN					
PUB. ROAD DES. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4 (7) 154	1961	46	72

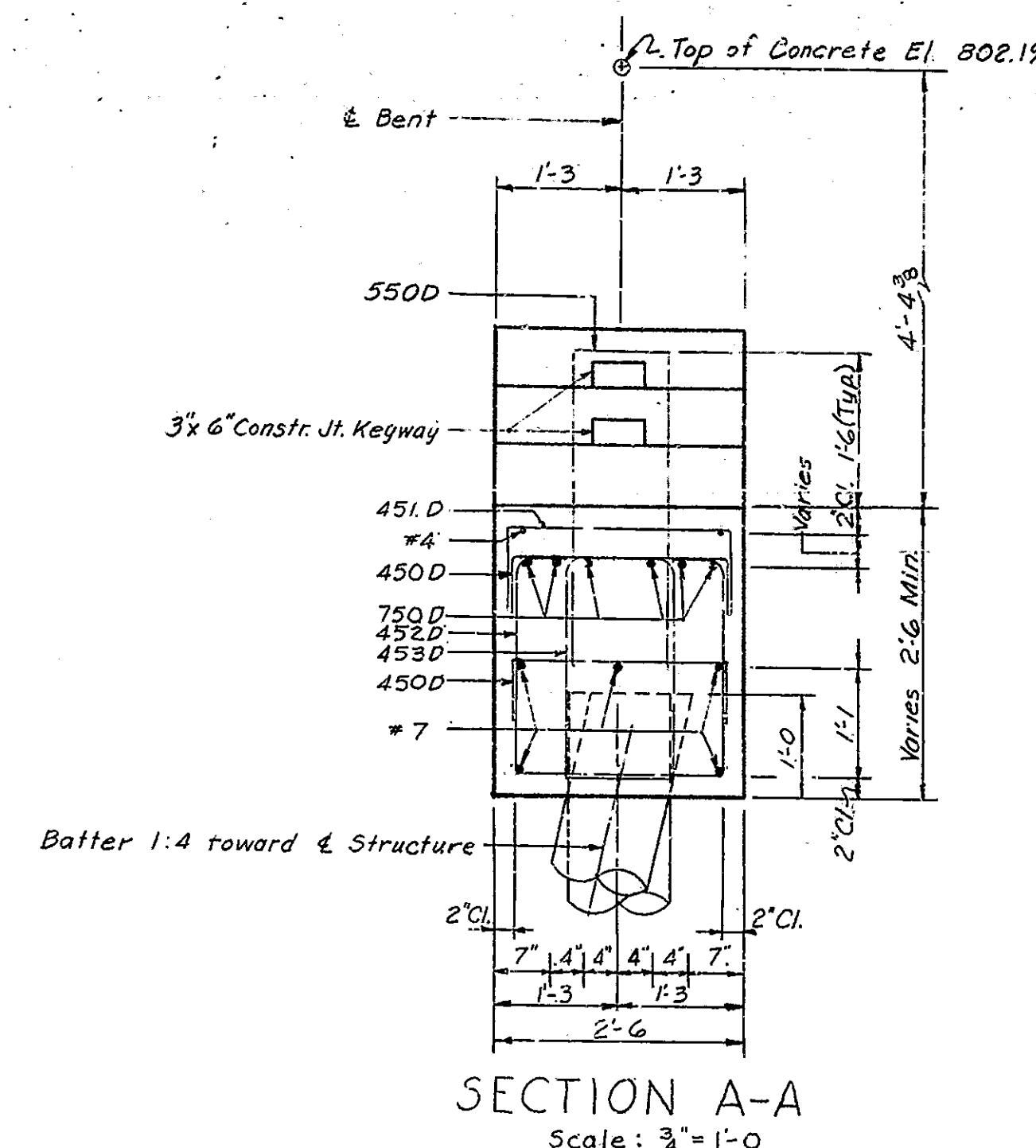
BILL OF MATERIALS BENT NO. 1

MARK OR SIZE	Nº OF BARS	LENGTH (FT.)	WEIGHT (LBS.)
750D	6	27.9	
#7	5	26.0	
	Total	Nº 7	606
550D	8	7.2	60
450D	37	3.3	
451D	23	4.7	
452D	24	7.9	
453D	24	6.9	
#4	4	8.6	
#4	2	6.9	
#4	2	5.3	
	Total	Nº 4	422
	Total Steel		1088

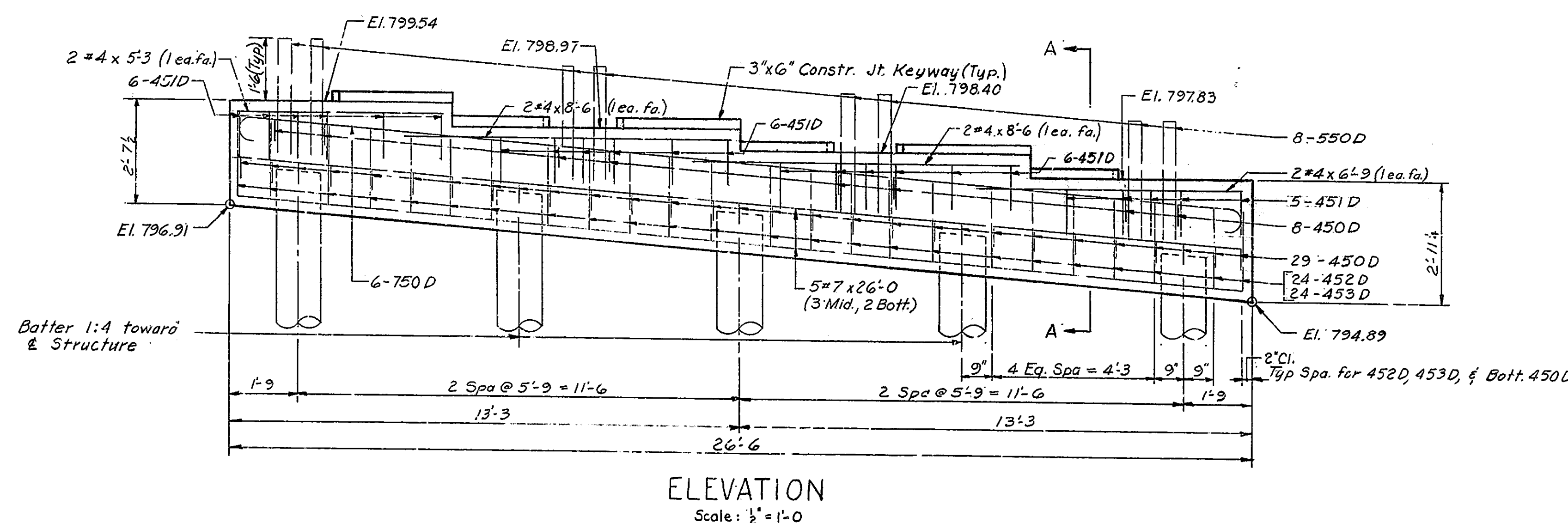
CONCRETE
Class "F" Cop = 6.9 Cu. Yds.
MISCELLANEOUS
5-14" x 7 Ga. Steel Pile
Shells @ 40'-0" = 200 Lin. Ft.



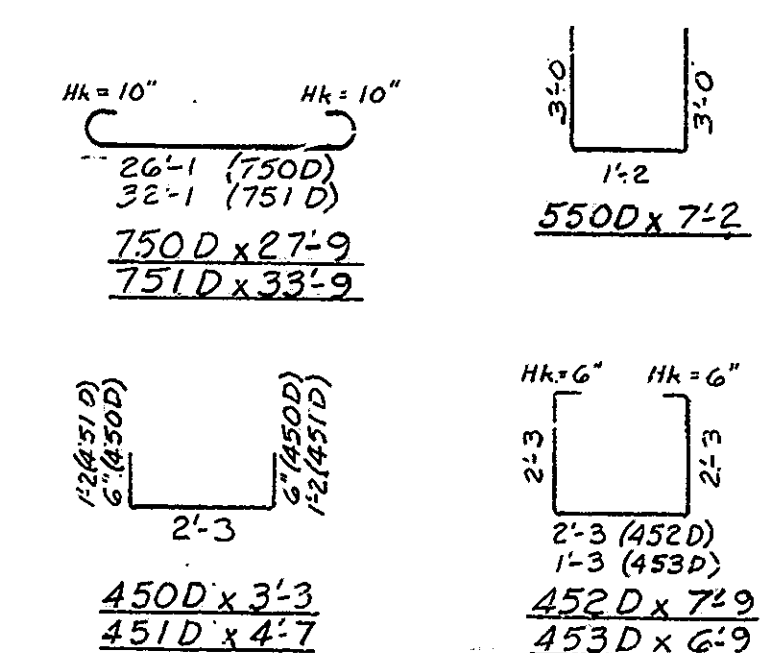
CAP PLAN
Scale: 1/8" = 1'-0"



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



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



BENDING DIAGRAMS
No Scale

NOTE: See Drg. S.7 for location of 751D.

NOTE: The bent cap is not to be poured until the fill has been completed to the approximate elevation of the bottom of the cap. 5-14" x 7 Ga. Steel Pile Shells are required. Minimum bearing = 35 Tons / pile. See Br. Std. Cl. for reinforcing bar notes. See Drg. S.3 for Geometric Layout.

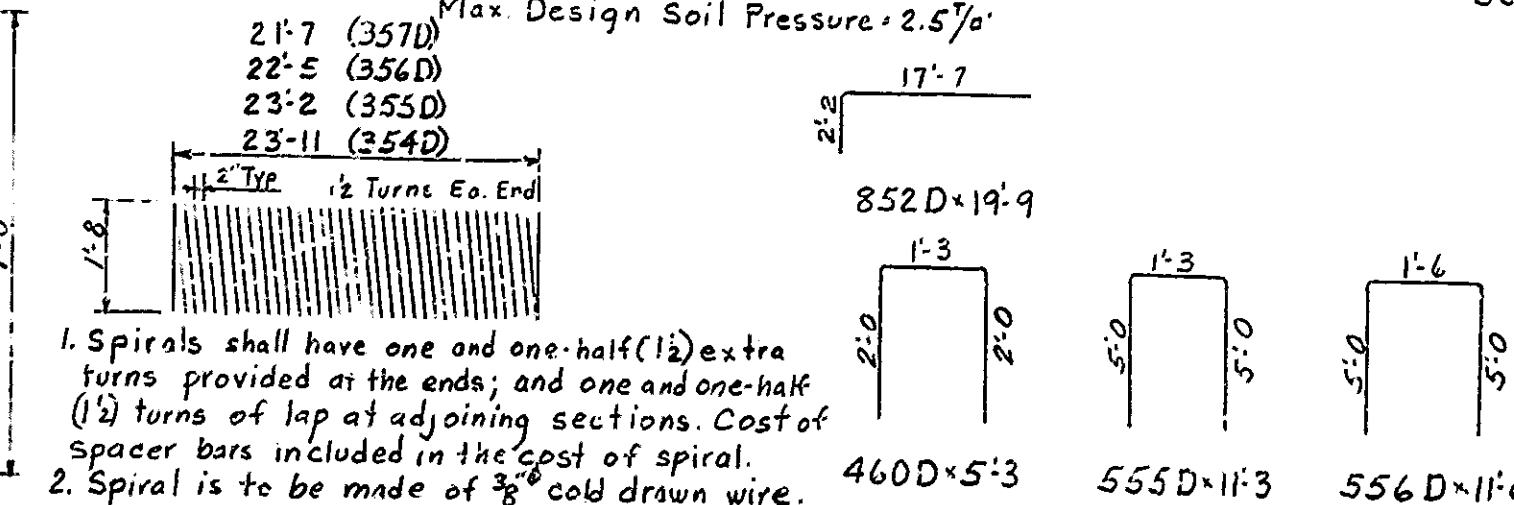
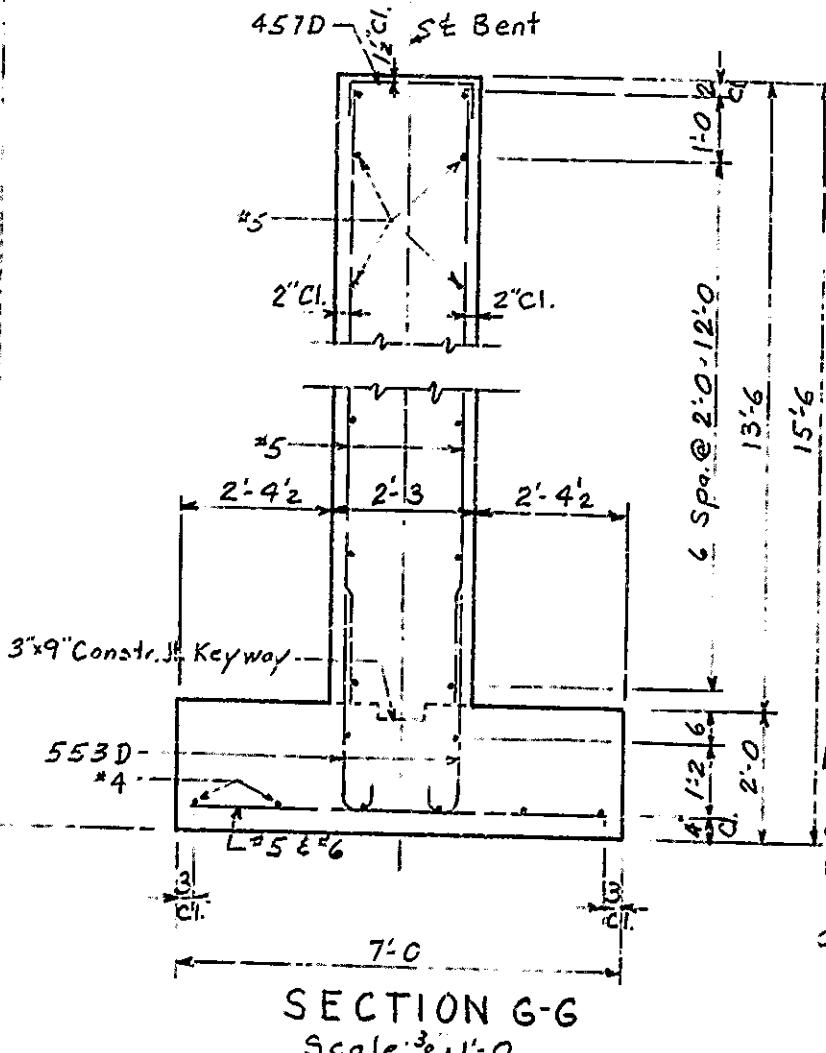
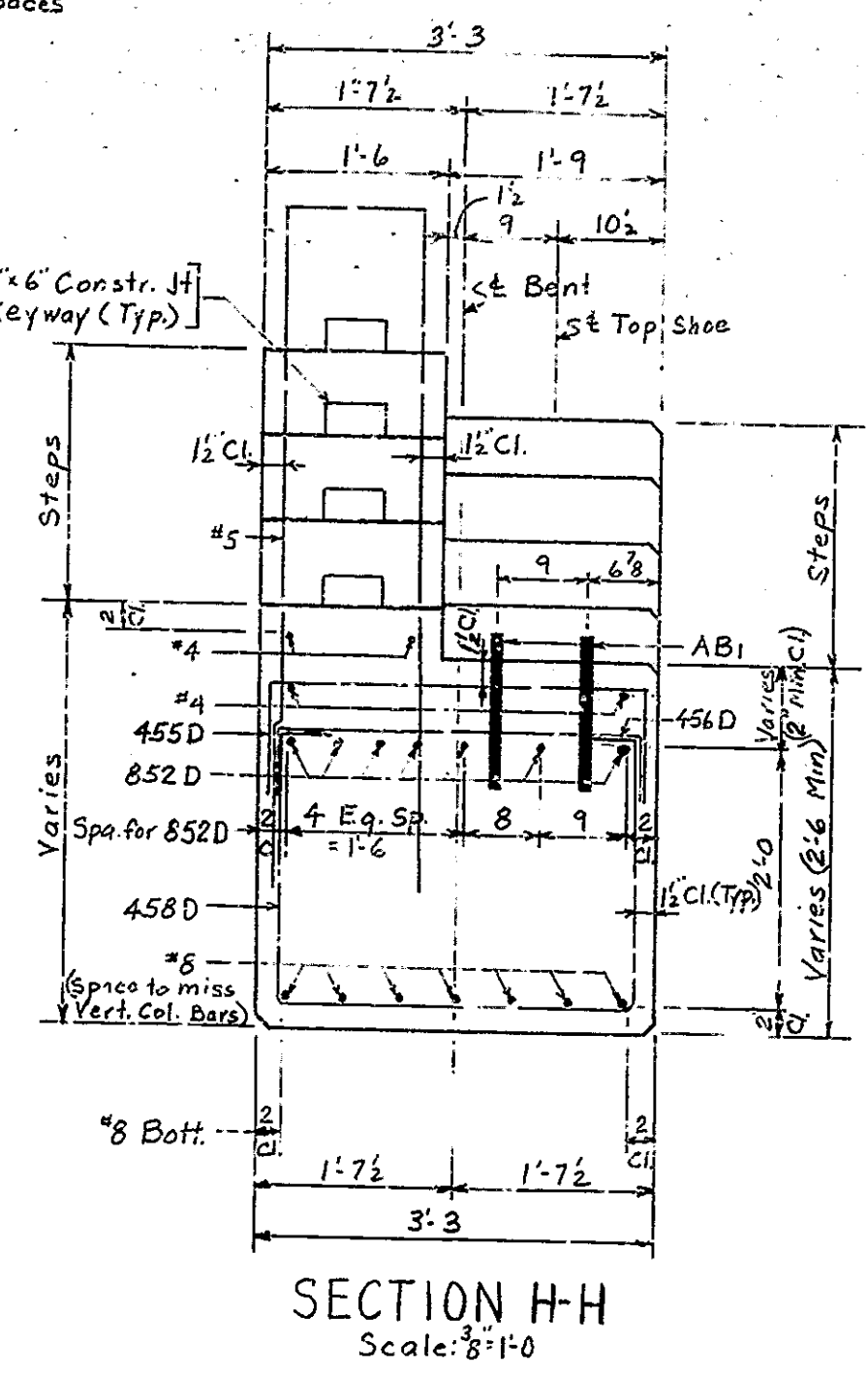
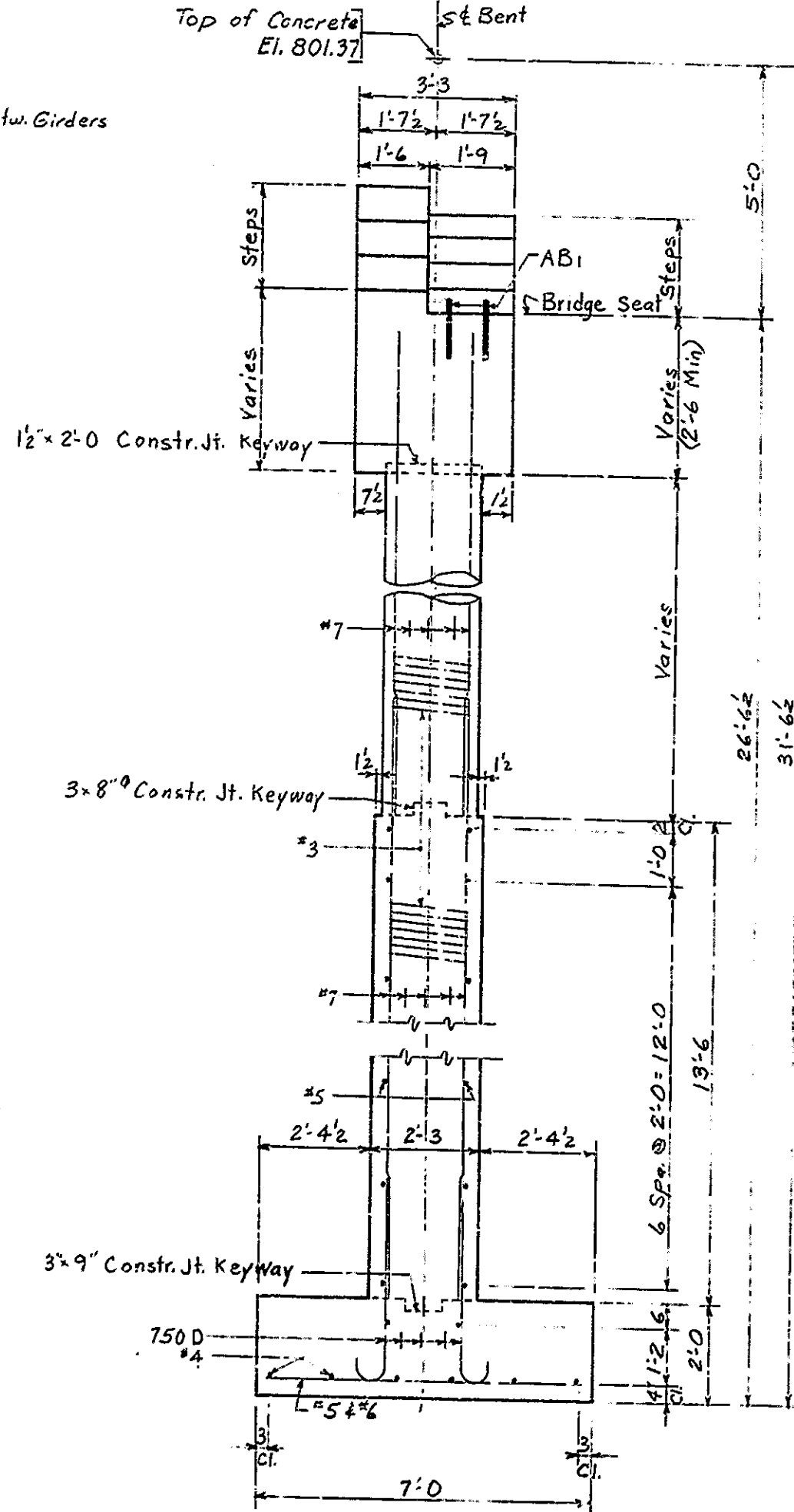
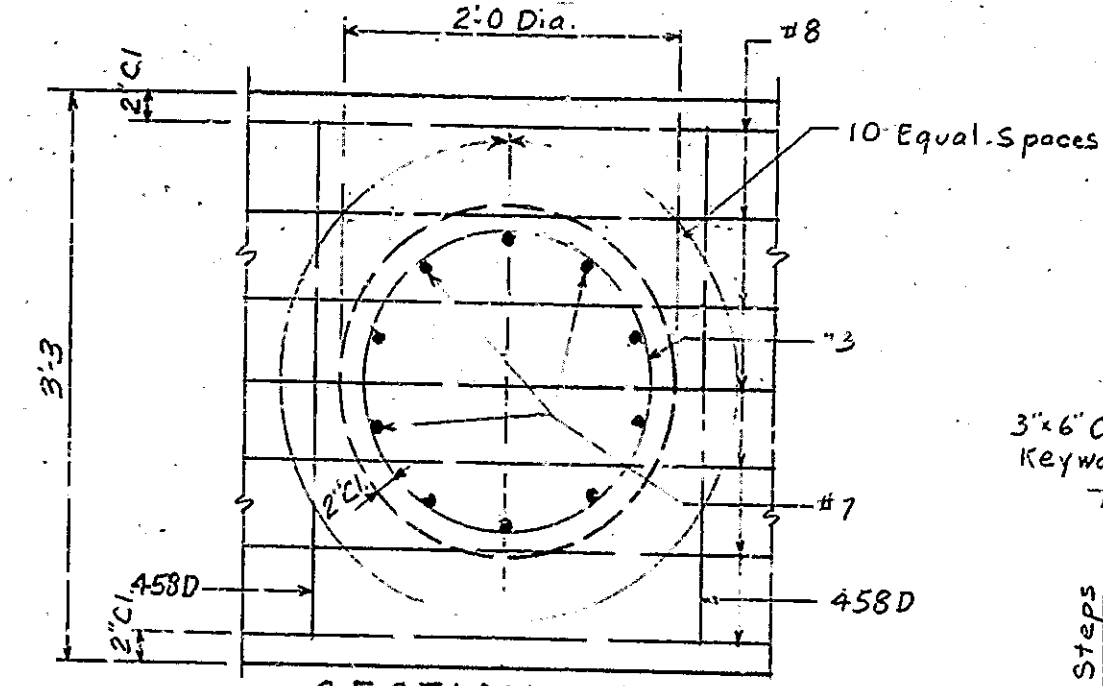
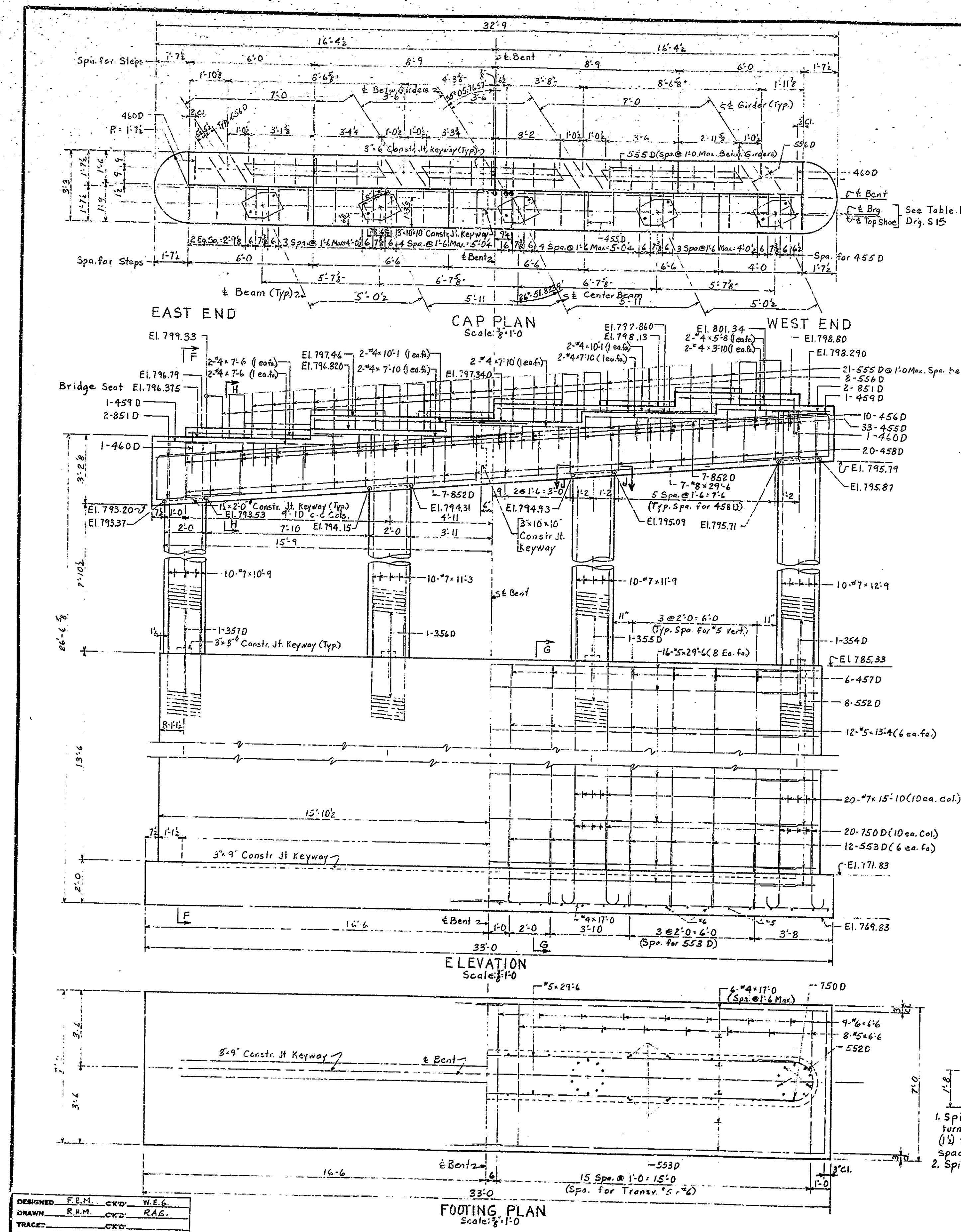
BENT NO. 1 DETAILS STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: AS NOTED

FEBRUARY 24, 1961
Walter M. Beaman

DRAWING: S.4 OF 17
PROJECT: I-465-4(7)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649 DR

DESIGNED	FEM	CKD	TLG
DRAWN	TLG	CKD	RAG
TRACED		CKD	



BRIDGES OVER 20' SPAN					
PUR. ROAD	STATE	PROJECT	FISCAL	SHEET	TOTAL
NO.	NO.	NO.	YEAR	NO.	SHEETS
4	IND.	I-465-4(7)154	1961	48	72

BILL OF MATERIALS BENT NO. 3

MARK AND SIZE	NO. OF BARS	LENGTH	WEIGHT (LBS)
851D	4	9'-9"	
852D	14	19'-9"	
#8	7	29'-6"	
Total No. 8			1394
750D	40	4'-10"	
#7	40	15'-10"	
#7	10	12'-9"	
#7	10	11'-9"	
#7	10	11'-3"	
#7	10	10'-9"	
Total No. 7			2640
#6	18	6'-6"	176
552D	16	6'-4"	
553D	24	3'-11"	
555D	21	11'-3"	
556D	8	11'-6"	
#5	16	29'-6"	
#5	24	13'-4"	
#5	16	6'-6"	
Total No. 5			1481
455D	33	5'-0"	
456D	10	4'-0"	
457D	12	2'-11"	
458D	20	8'-6"	
459D	2	7'-1"	
460D	2	5'-3"	
#4	12	17'-0"	
#4	4	10'-1"	
#4	6	7'-10"	
#4	4	7'-6"	
#4	2	5'-8"	
#4	2	3'-10"	
Total No. 4			518
354D	1	23'-11"	
355D	1	23'-2"	
356D	1	22'-5"	
357D	1	21'-7"	
Total No. 3			1098
Total Steel			7307
CONCRETE			
Class F - Cap			11.6 C.Y.
Class D - Columns			4.3 C.Y.
Class E - Above Footing			35.2 C.Y.
Class E - Footing			17.1 C.Y.

NOTES:
 Dimensions shown for locating Anchor Bolts are for checking field clearance between Anchor Bolts and reinforcing steel.
 Reinforcing steel shall be adjusted to maintain 1/2" clearance.
 Holes for Anchor Bolts are to be drilled.
 See Drg. S15 for final location of drilled holes.
 Anchor Bolts are to be furnished with Structural Steel.
 See Drg. S5 for Bending Diagrams not shown on this sheet.
 See Bridge Std. C1 for reinforcing bar notes.
 Space 750D same as #7 column bars, #7x15'-10" bars in collision wall lapped with 750D and #7 column bars.
 Second Pour of Cap to be made after first pour has its initial set.

BENT NO. 3 DETAILS STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: AS NOTED

FEBRUARY 24, 1961

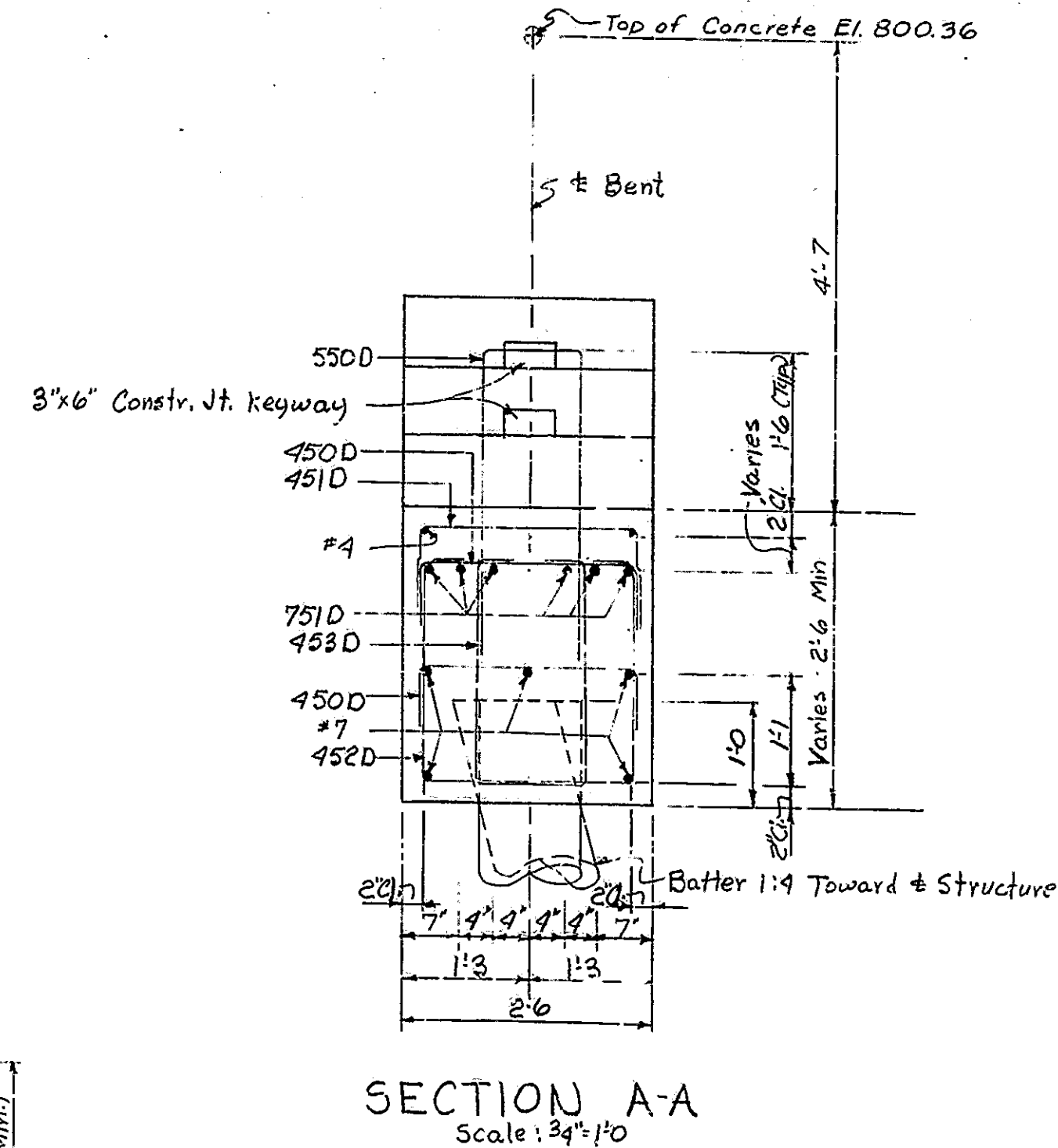
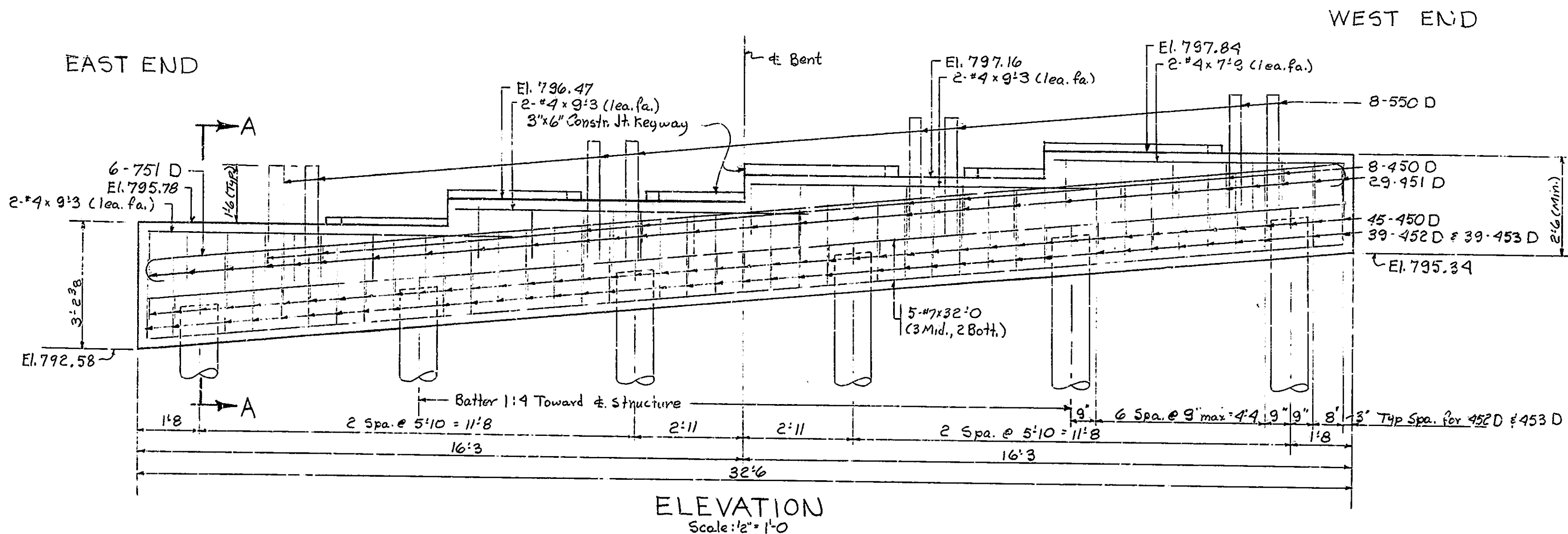
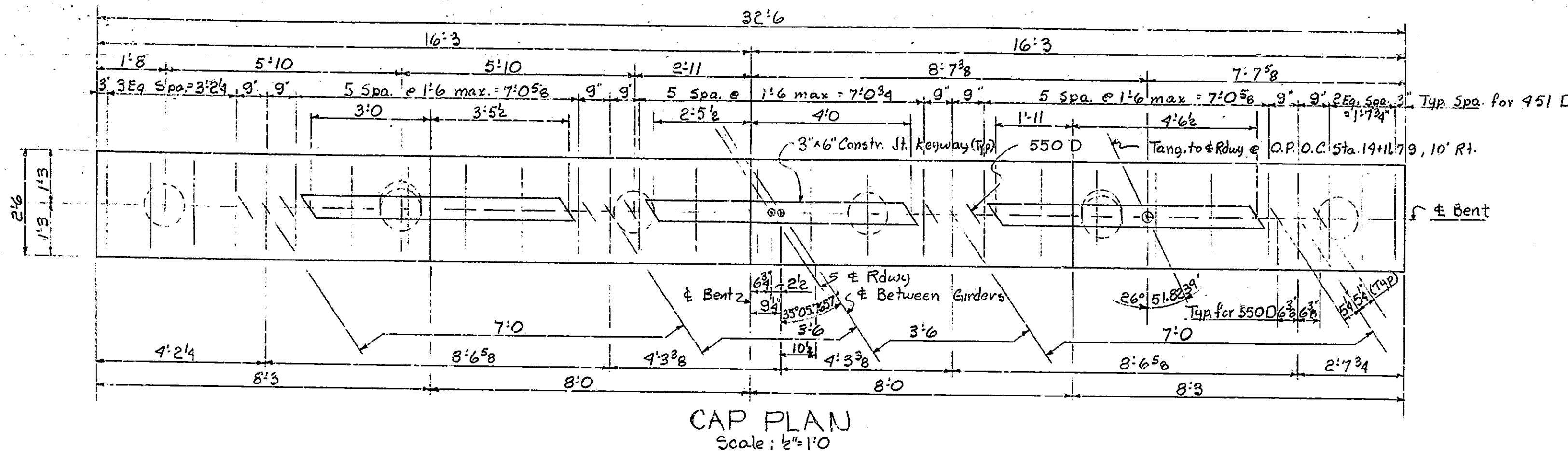
DRAWING: S6 OF 17
 PROJECT: I-465-4(7)154
 BRIDGE CONTRACT NO. 5243
 BRIDGE FILE: I-465-154-4649 DR

DESIGNED: F.E.M. C.K.D. W.E.G.
 DRAWN: R.M. C.K.D. R.A.G.
 CHECKED: C.K.D.

BRIDGES OVER 20' SPAN					
PUB. ROAD REQ. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4.	IND.	I-465- 417154	1961	49	12

BILL OF MATERIALS BENT N° 4

SIZE or MARK	N° of BARS	LENGTH (Lbs.)	WEIGHT (Lbs.)
550 D	6	33.9	
#7	5	32.0	
Total	N° 7	741	
550 D	8	7.0	60
450 D	53	3.3	
451 D	29	4.7	
452 D	39	7.9	
453 D	39	6.9	
#4	6	9.3	
#4	2	7.9	
Total	N° 9	6.29	
Total Steel		1,430	
CONCRETE			
Class F. Cap = 8.7 Cu. Yds.			
MISCELLANEOUS			
6-14" x 7 Ga. Steel Pile			
Shells @ 40' 0" = 240 Lbs. Ft.			



NOTE: The bent cap is not to be poured until the fill has been placed to the approximate elevation of the bottom of the cap. 6-14" x 7 Ga. Steel Pile Shells are required. Minimum bearing, 37 Tons/pile. See Br. Std. C1 for reinforcing bar notes. See Drg. S4 for Bending Diagrams. See Drg. S3 for Geometric Layout.

BENT N° 4 DETAILS STATE HIGHWAY DEPARTMENT OF INDIANA

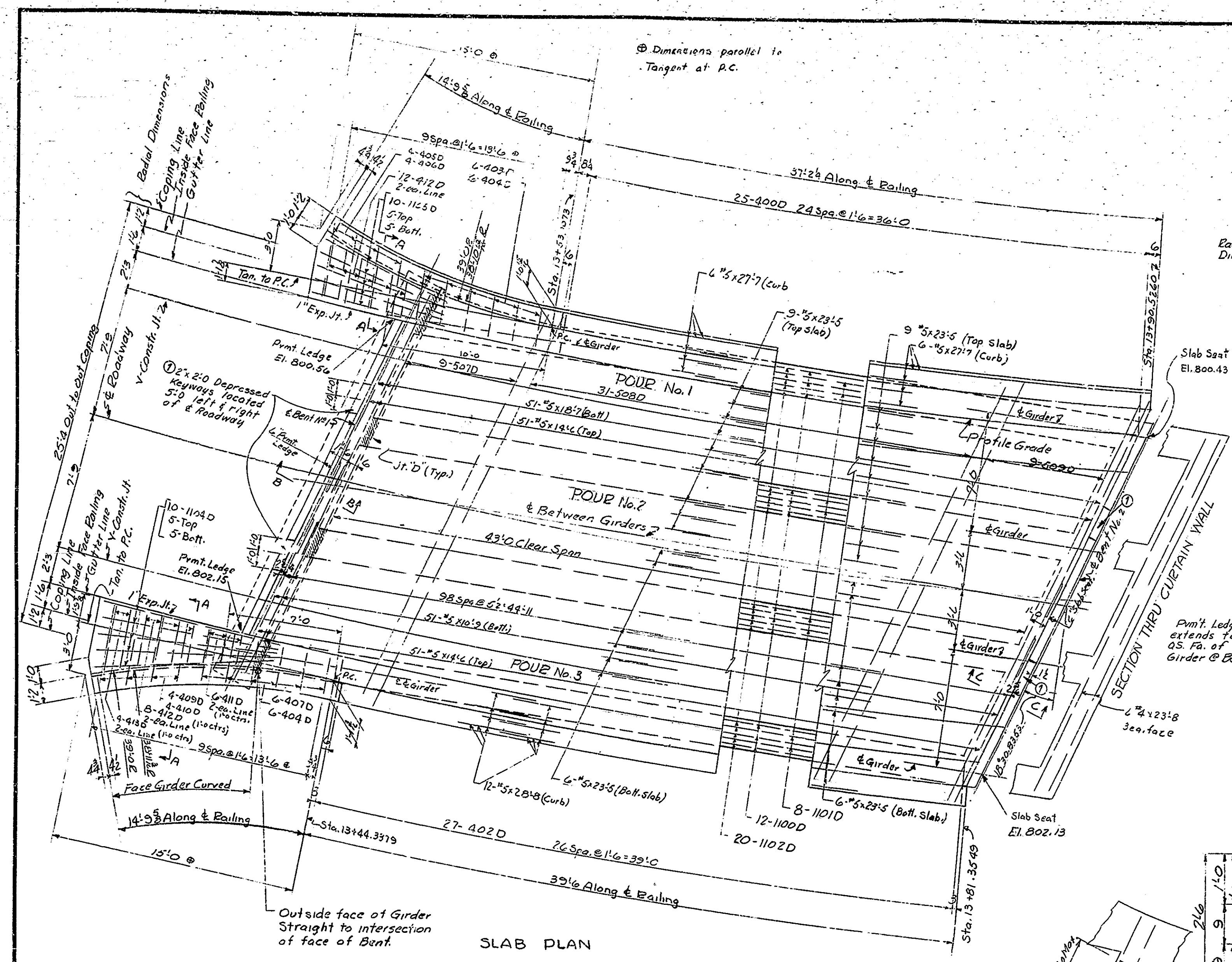
SCALE: AS NOTED

FEBRUARY 24, 1961
Walter M. (Signature)

DRAWING: S7 OF 17
PROJECT: I-465-417154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649 DR

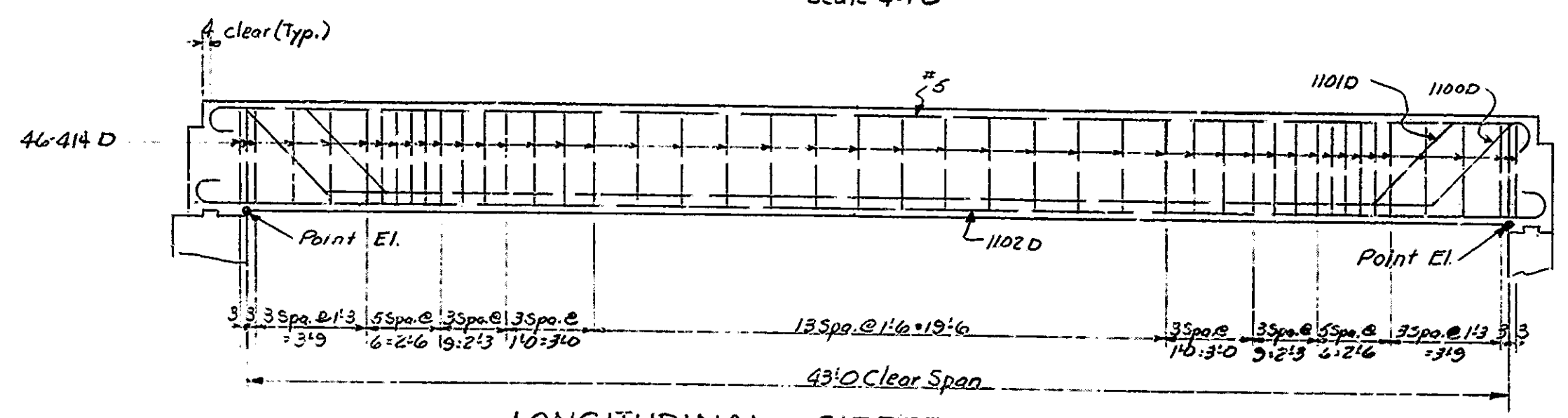
DESIGNED	FEM	CHKD	TLG
DRAWN	R28	CHKD	TLG
TRACED		CHKD	

BRIDGES OVER 20' SPAN						
PUB. ROAD RES. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
4.	IND.	I-46-4	1961	50	72	



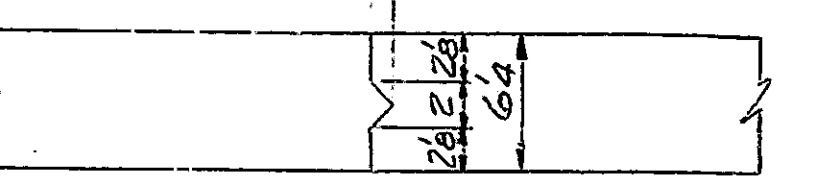
SLAB PLAN

Scale 4"=1'-0"



LONGITUDINAL GIRDER SECTION - SPAN A

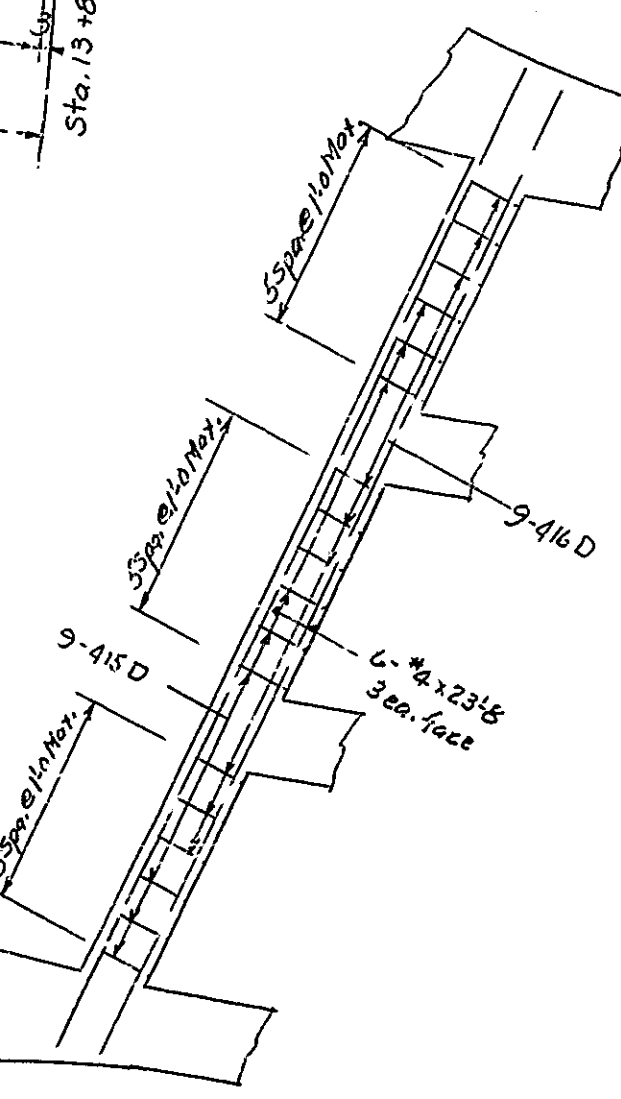
Scale 4"=1'-0"



V-CONSTRUCTION JOINT

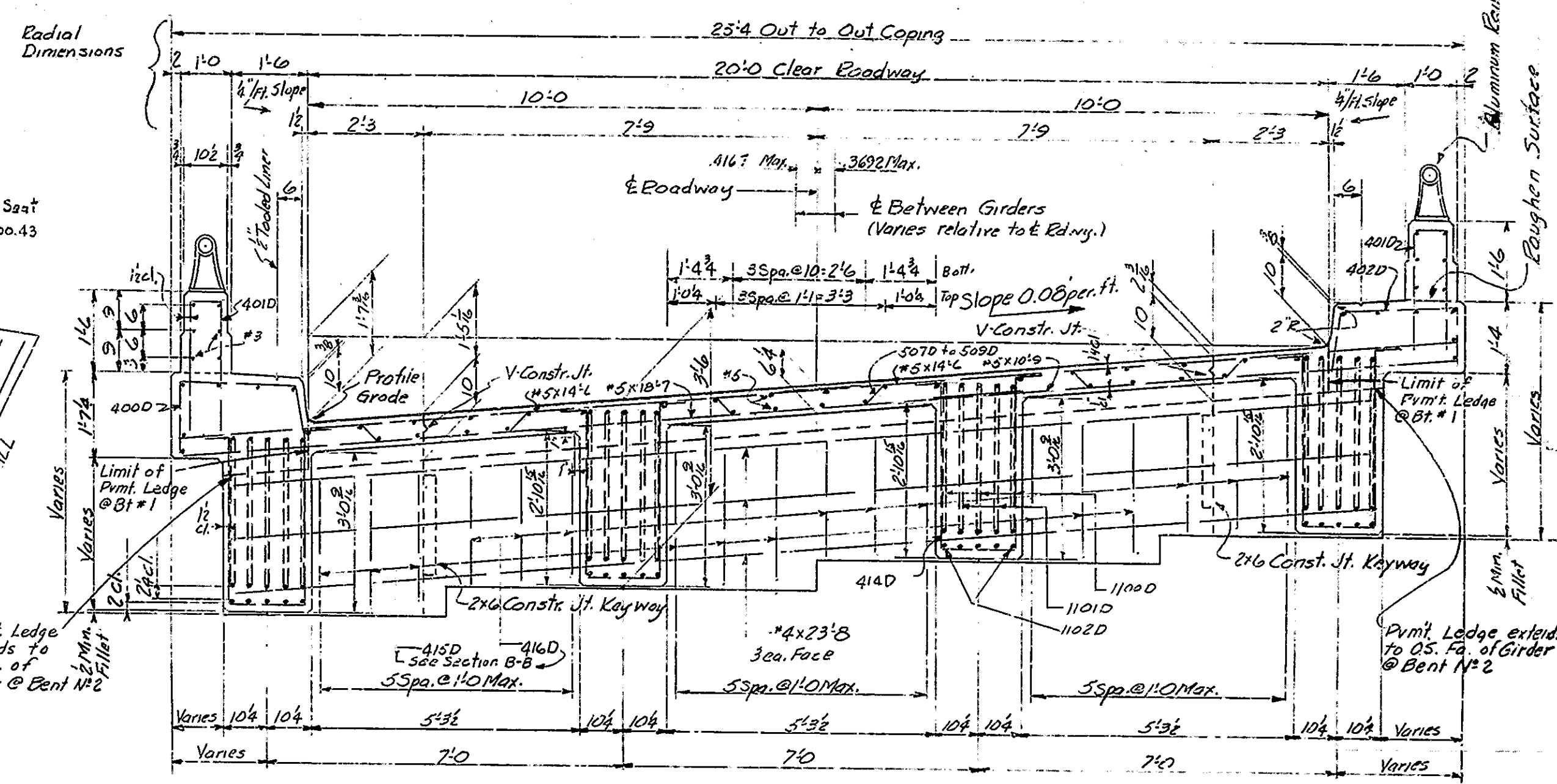
Scale 1 1/2"=1'-0"

Design Data:
 Unit Stresses: $f_s = 20,000 \text{ psi}$; $f_c = 1,200 \text{ psi}$
 Live Load: H-20-S16-44 with impact and distribution of loads in accordance with 1957 A.A.S.H.O. Specifications except floor slab designed for 16,000 lb wheel load.
 Dead Load increased 35% for roadway for future wearing surface.
 Slab designed with 1/4" wearing surface.
 Max. Dead Load Deflection: 1/2"



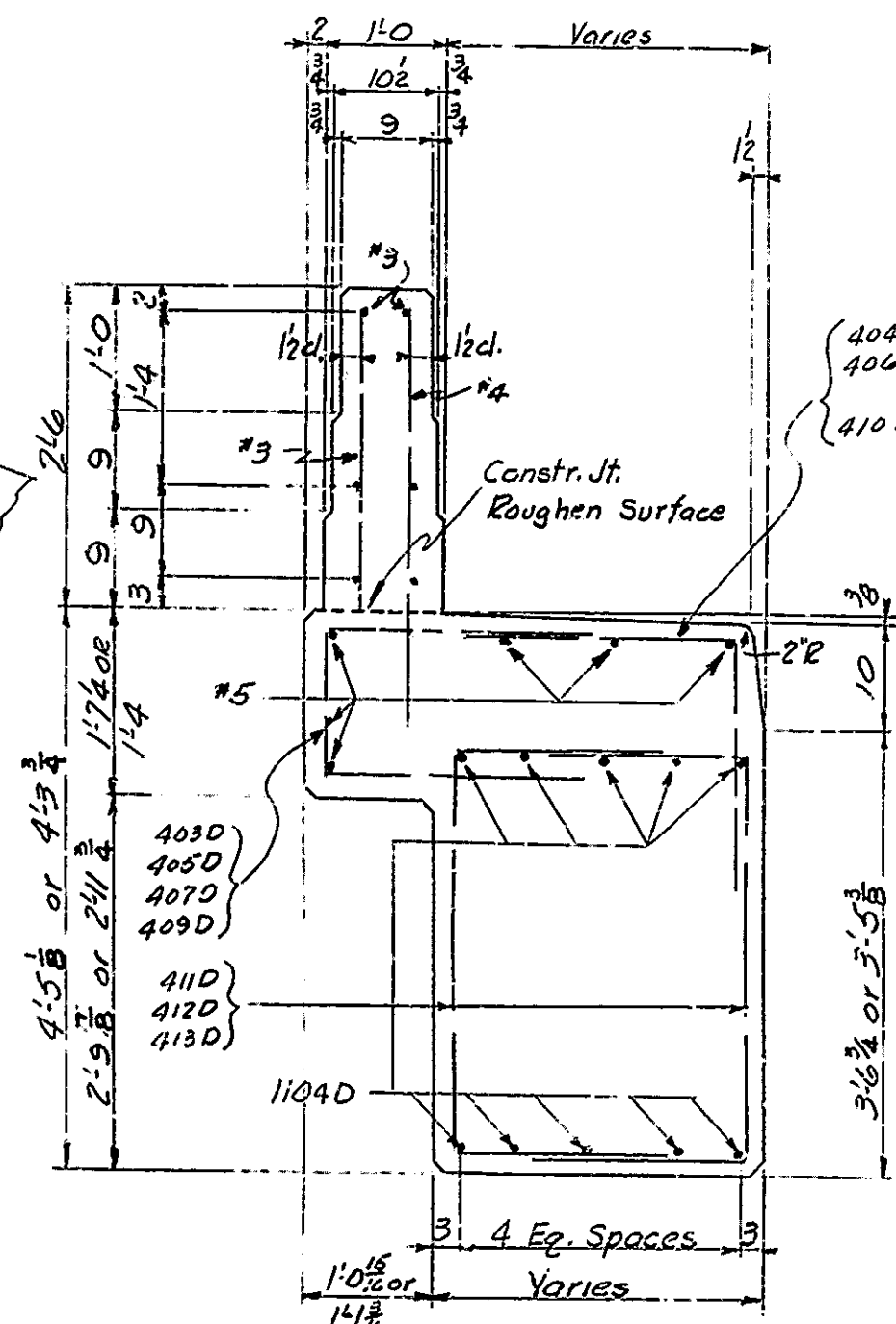
SECTION THRU MUDWALL BENT NO. 1

Scale 4"=1'-0"



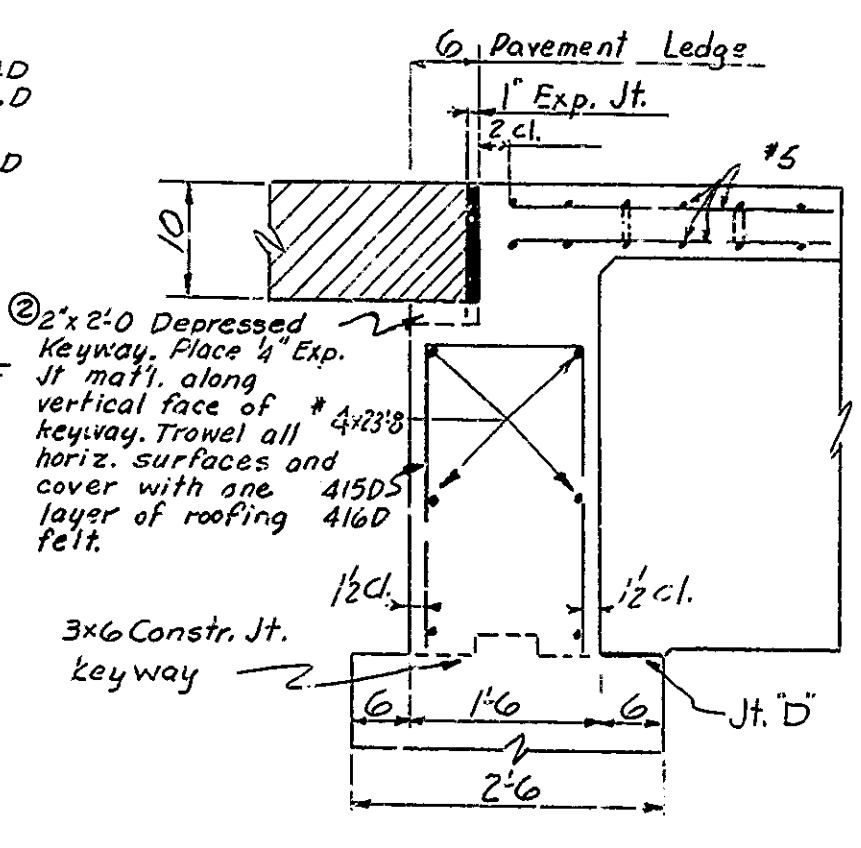
TRANSVERSE SECTION (NORMAL TO CHORD LINE)

Scale 2"=1'-0"



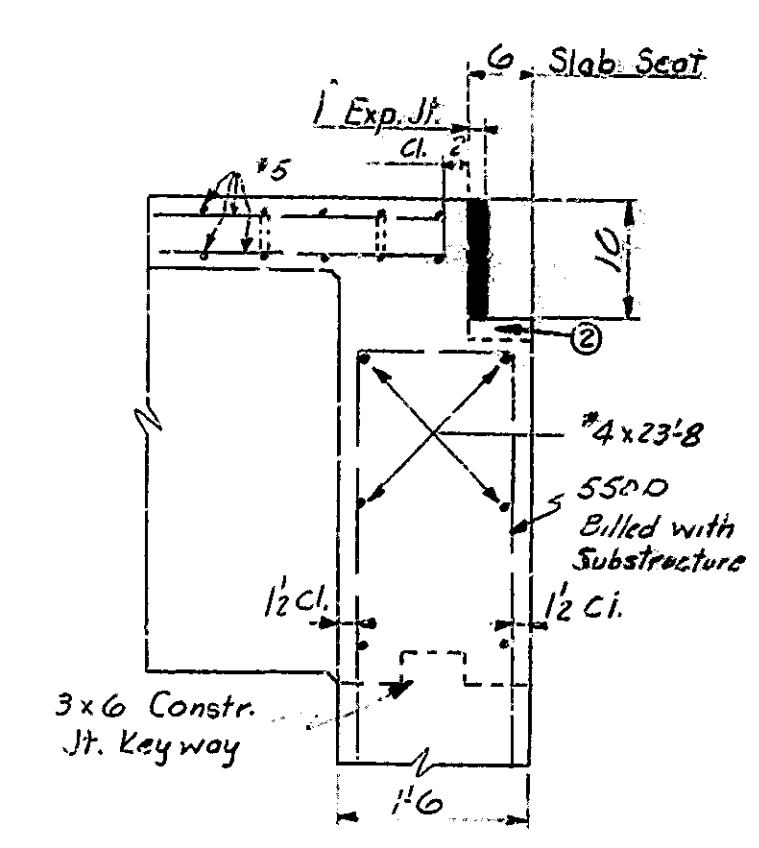
SECTION A-A

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



SECTION B-B

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



SECTION C-C

Scale 3/4"=1'-0"

SUPERSTRUCTURE DETAILS - SPAN A
 STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

FEBRUARY 24, 1961

Walter J. Baer

Note:
 See Dwg. S9 For Bill of Materials and Railing Details & Bending Diagrams.
 See Br. Std. C1 for reinforcing bar Notes.
 See Dwg. S3 For Geometrical Layout.
 See Dwg. S9 for Bottom of Girder Elevations.

DRAWING: S8 OF 17
 PROJECT: I-465-4(7) 154
 BRIDGE CONTRACT NO. 5243
 BRIDGE FILE: I-465-154-4649 DE

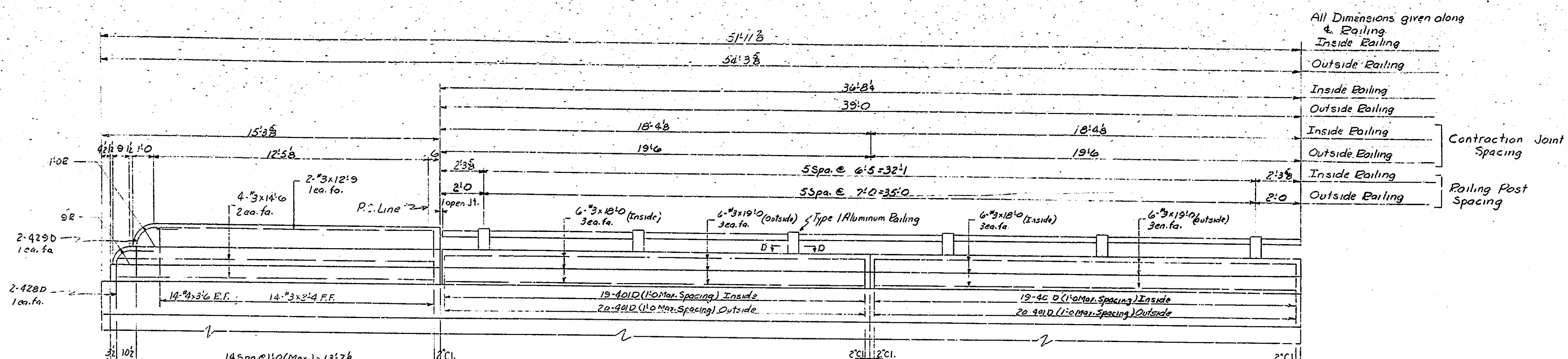
DESIGNED	F.E.M.	CKD	T.L.G.
DRAWN	J.A.T.	CKD	T.L.G.
TRACED		CKD	

BILL OF MATERIALS

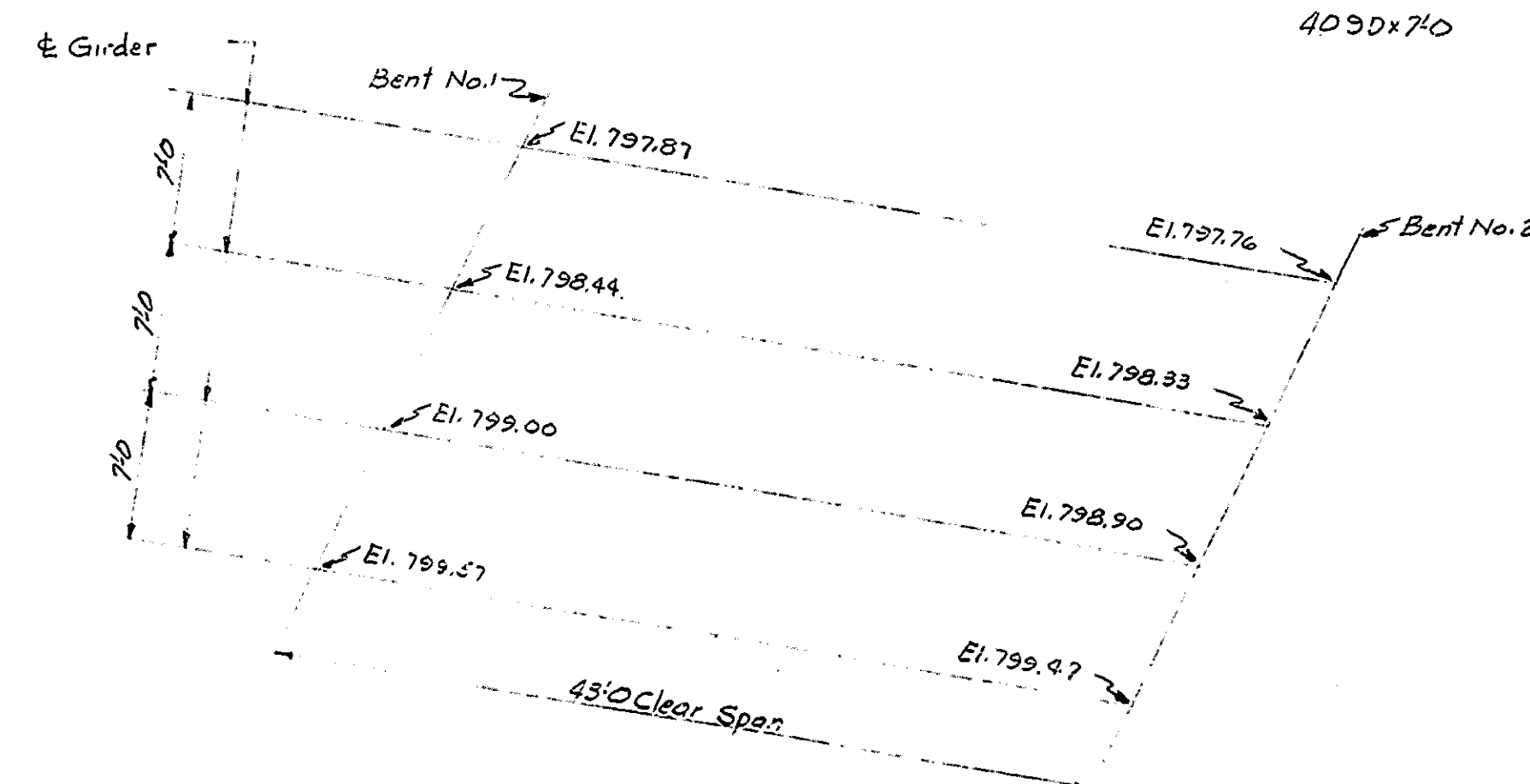
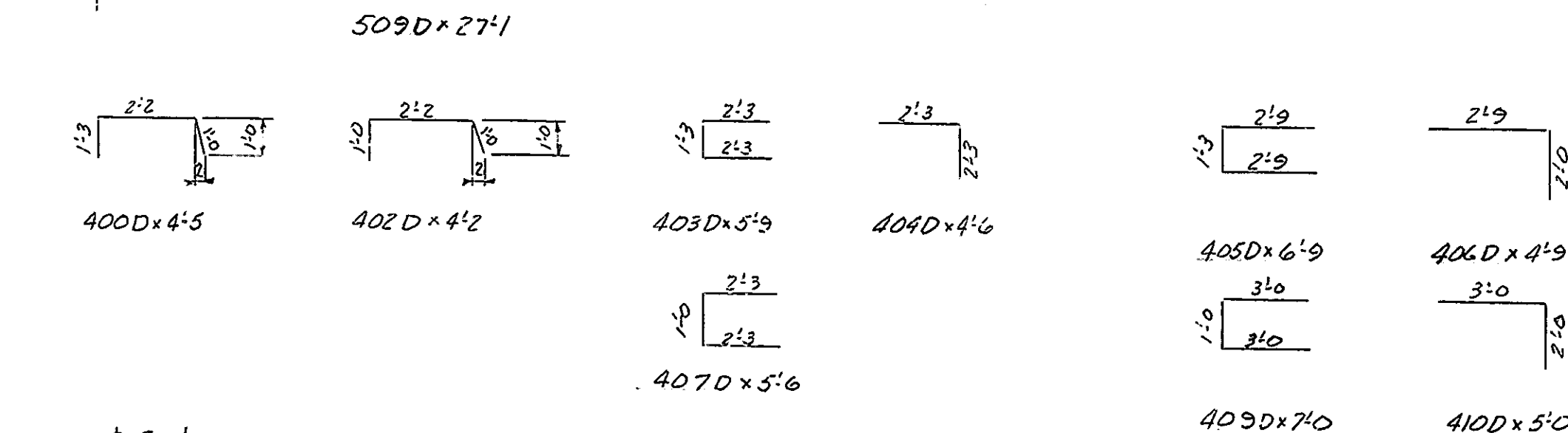
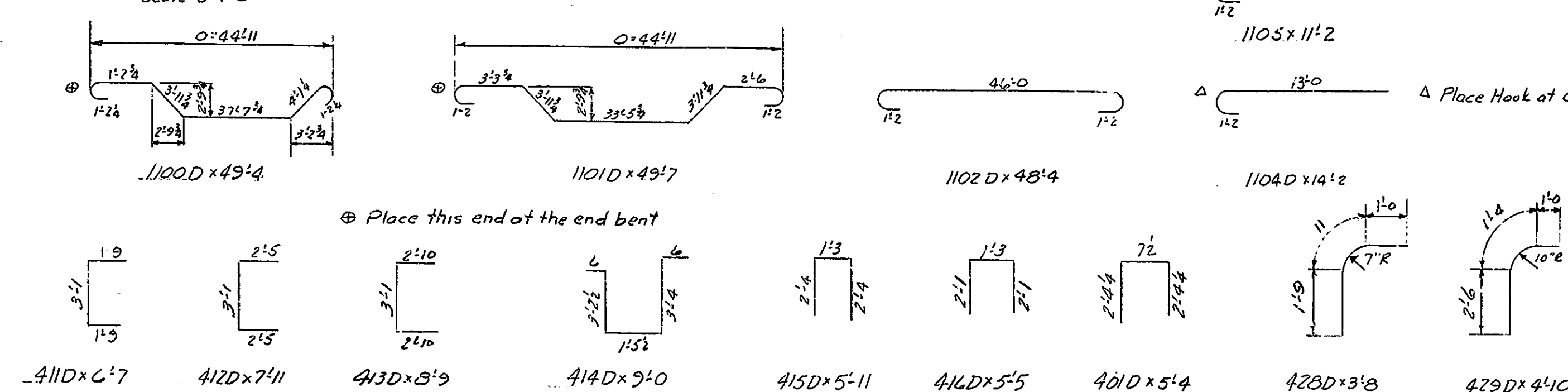
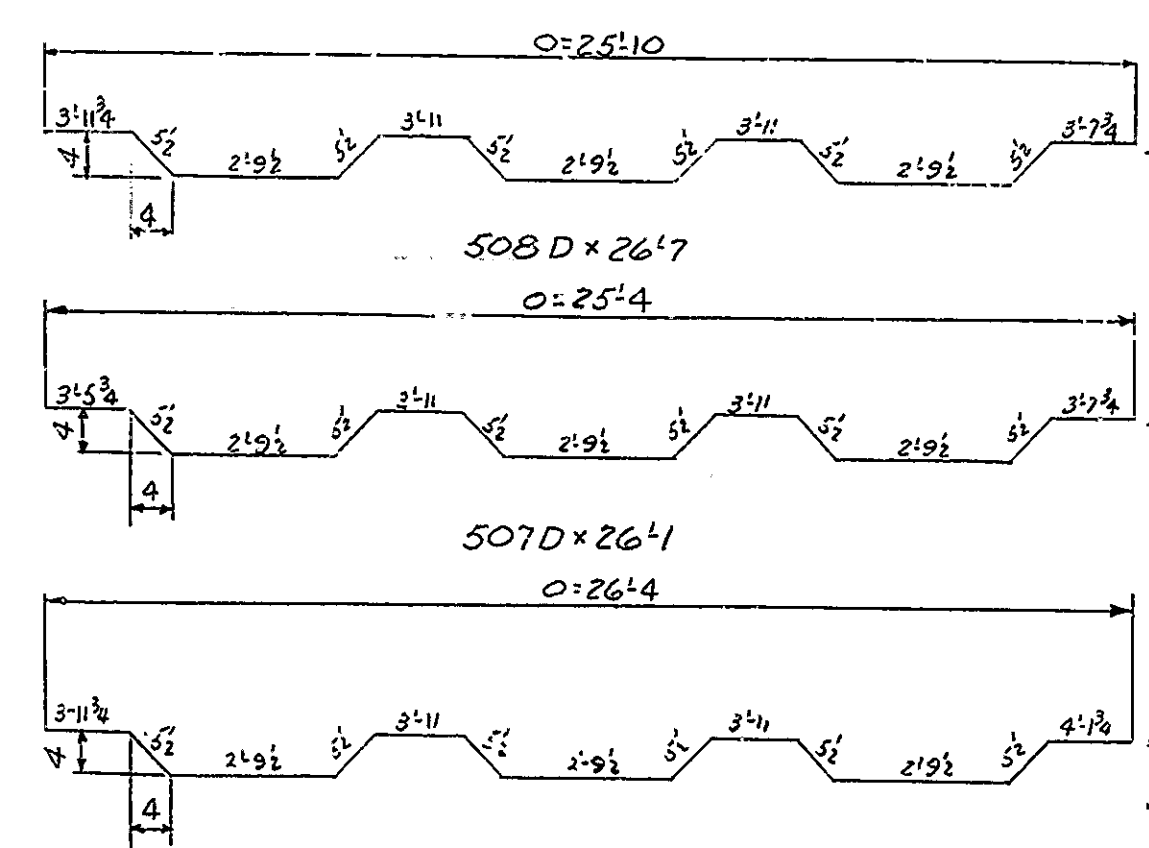
	total	11	11 752
507D	9	26:1	
508D	31	26:7	
509D	9	2:41	
*5	12	28:8	
*5	12	27:7	
*5	60	23:5	
*5	51	18:7	
*5	102	14:6	
*5	51	10:9	
	Total	*5	663

#3	12	19'0	
#3	12	18'0	
#3	8	14'6	
#3	4	12'9	
#3	28	2'4	
	Total	#3	254
Total Steel			2079

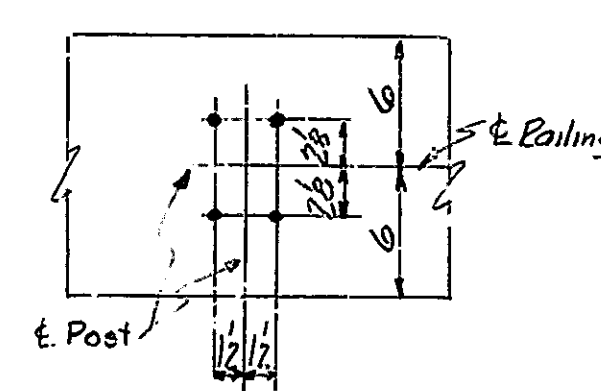
RAILING CONCRETE	
Inside Railing	3.1
Outside Railing	3.2
Total	6.30
Aluminum Railing (Type :) 75.8/lin	



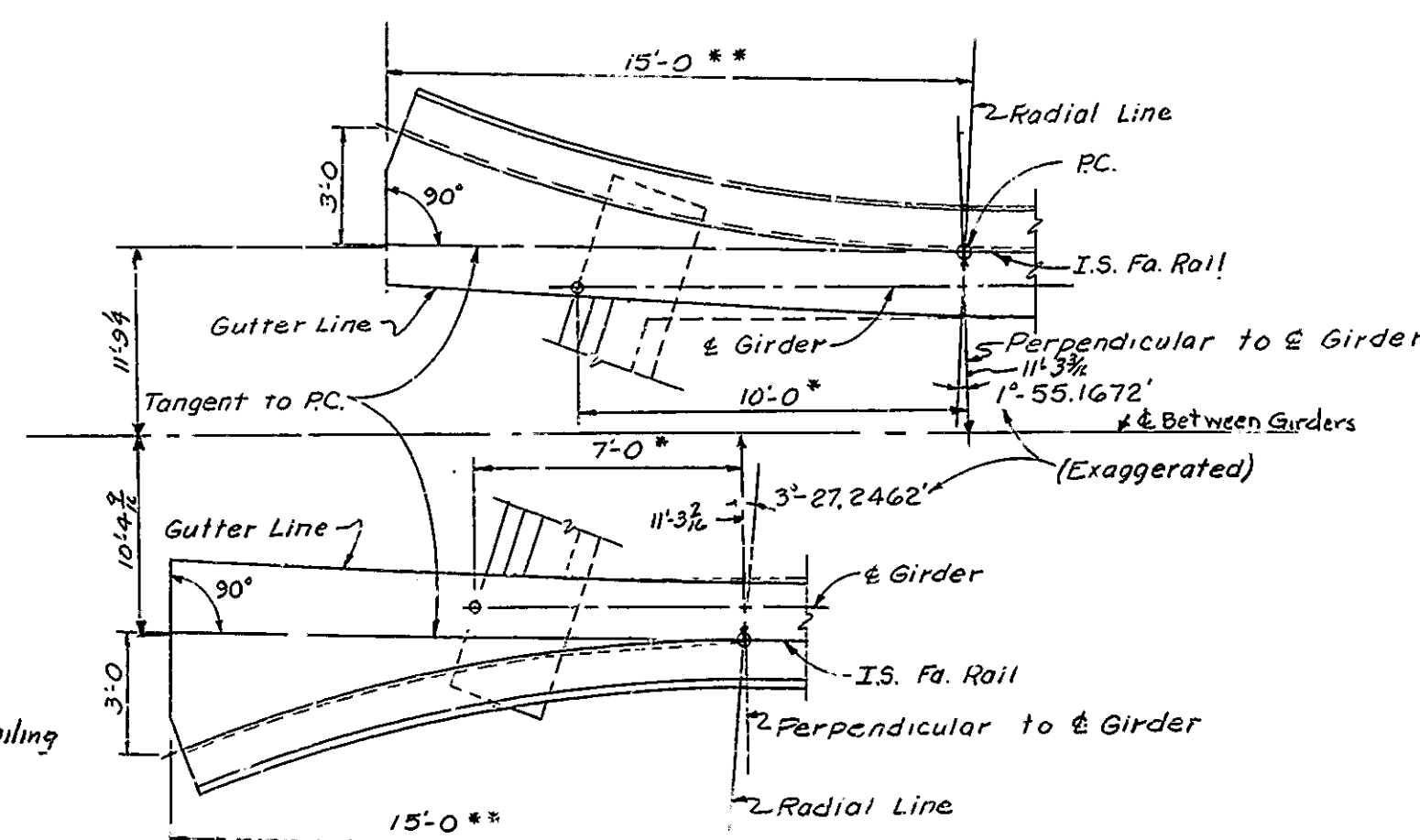
ELEVATION SPAN-A
Scale $\frac{3}{8}'' = 1'-0''$



BOTTOM GIRDER ELEVATION
NOT TO SCALE



SECTION D-D
Scale 1/2"=1'-0"



WING LAYOUT
Scale: $\frac{1}{4}" = 1'-0"$

Note: See Dwg. 58 for Location of Bottom of Girder Elevations.
See Br. Std. C1 for reinforcing bar notes
See Br. Std. R1 & R2 for Easing.

SUPERSTRUCTURE DETAILS - SPAN A
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- As Noted

FEBRUARY 24, 1961

Walter M. Brown

DRAWING:- S9 OF 17
PROJECT:- I-465-4(7)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE:- I-465-154-4649 DE

BRIDGES OVER 20' SPAN					
PUB. ROAD RES. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	465-4(7)154	1961	52	72

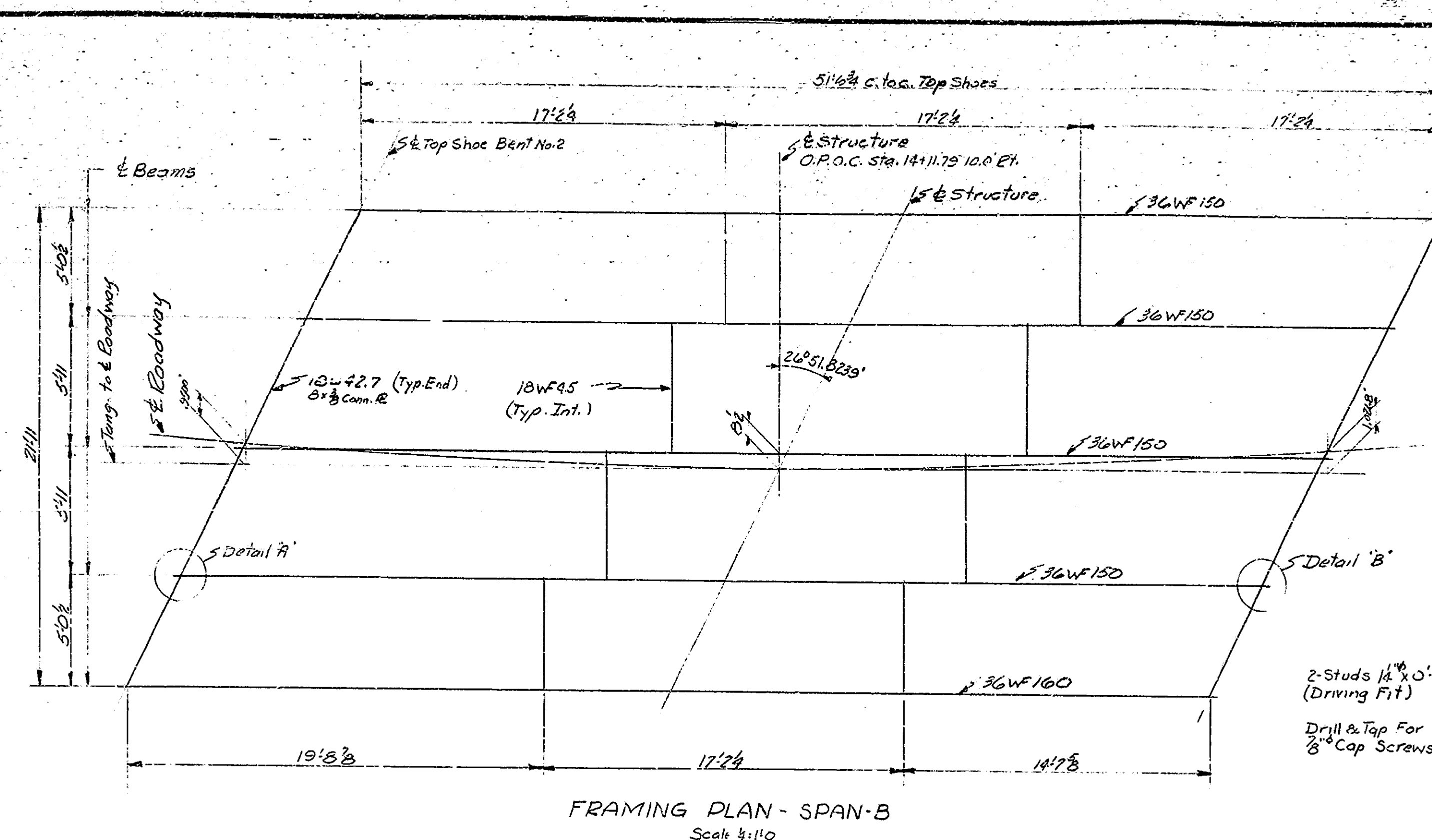


TABLE OF MOMENTS AND REACTIONS						
	Moment @ Span B Ft. Kip.			Reaction R2-R3 Kip.		
	Ext. Bm. Inside	Int. Bm.	Ext. Bm. Outside	Ext. Bm. Inside	Int. Bm.	Ext. Bm. Outside
DEAD LOAD	346.9	294.6	383.1	30.77	22.86	32.06
LIVE LOAD	300.6	352.4	300.6	21.23	35.68	21.23
IMPACT	85.1	99.7	85.1	6.01	10.10	6.01
TOTAL	732.6	746.7	768.8	58.01	68.64	59.30

GENERAL NOTES

Rivets - $\frac{3}{8}$ " unless noted.
 Open Holes $\frac{1}{8}$ " unless noted.
 Diameter of holes in all materials connecting top shoes to beam flange shall be 1 inch.
 Bolts connecting beam flange to top shoe shall extend into top shoe a minimum of 1 inch.
 Beams must be cambered to a smooth curve. Camber must be checked while beams are supported in such a way as to have no bending moment in the direction of camber.
 Ribbed bolts may be substituted for field rivets in diaphragm connections. See Specifications.
 The Contractor shall prepare detailed working or shop drawings to enable him to fabricate erect, and construct all parts of the work in conformity with the Engineers drawings and specifications and shall submit 5 copies of these to the Engineer. See Article E 1103.2 of the specifications.
 Welding shall conform to specifications "Welded Highway and Railway Bridges," See Article E 1103.28 of the specifications.
 All structural steel on which welding is used shall be made from steel conforming to ASTM specification A373-56T.

DATA USED FOR DESIGN AND DETAILS

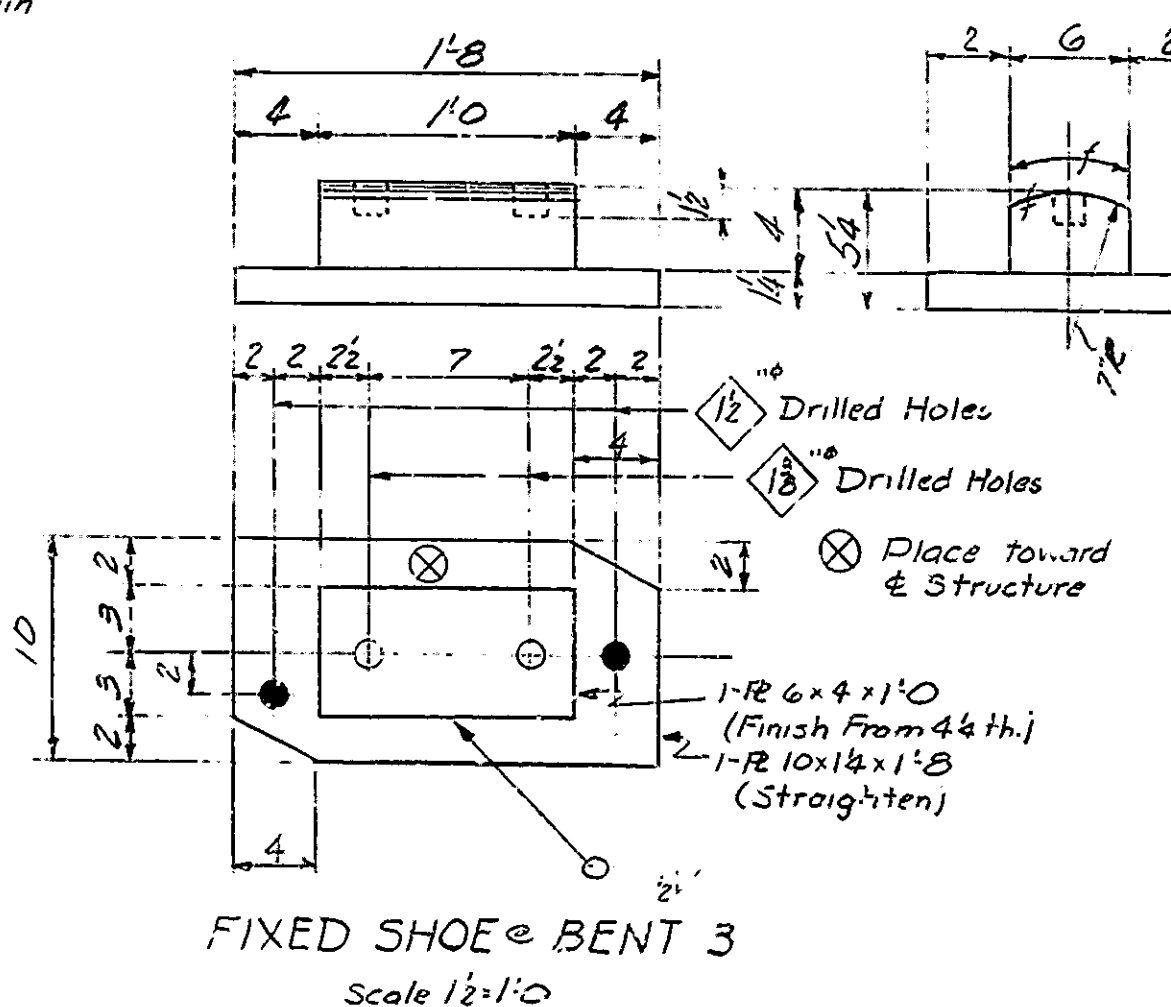
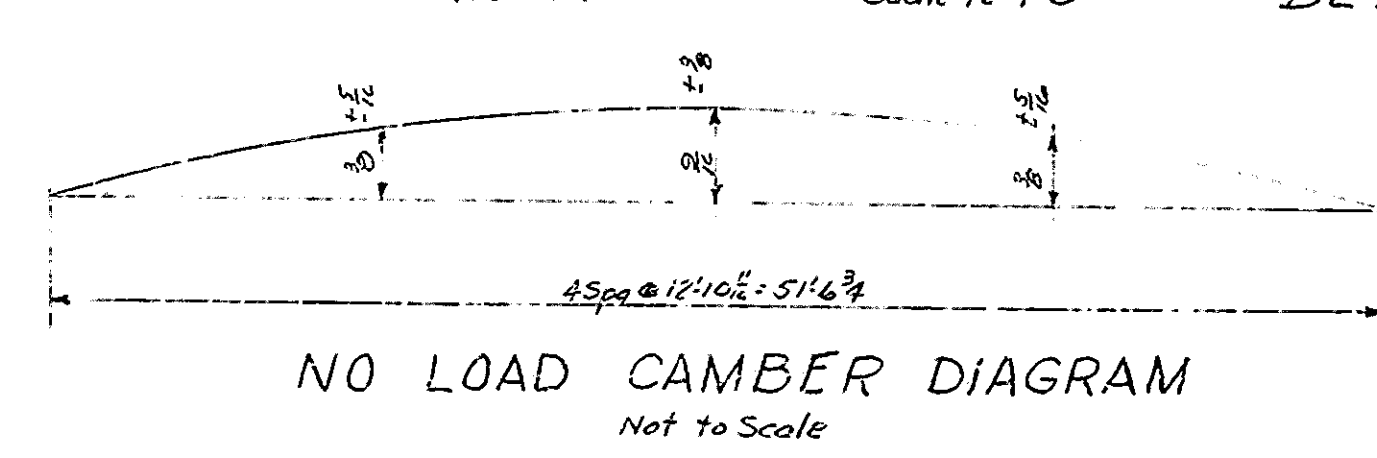
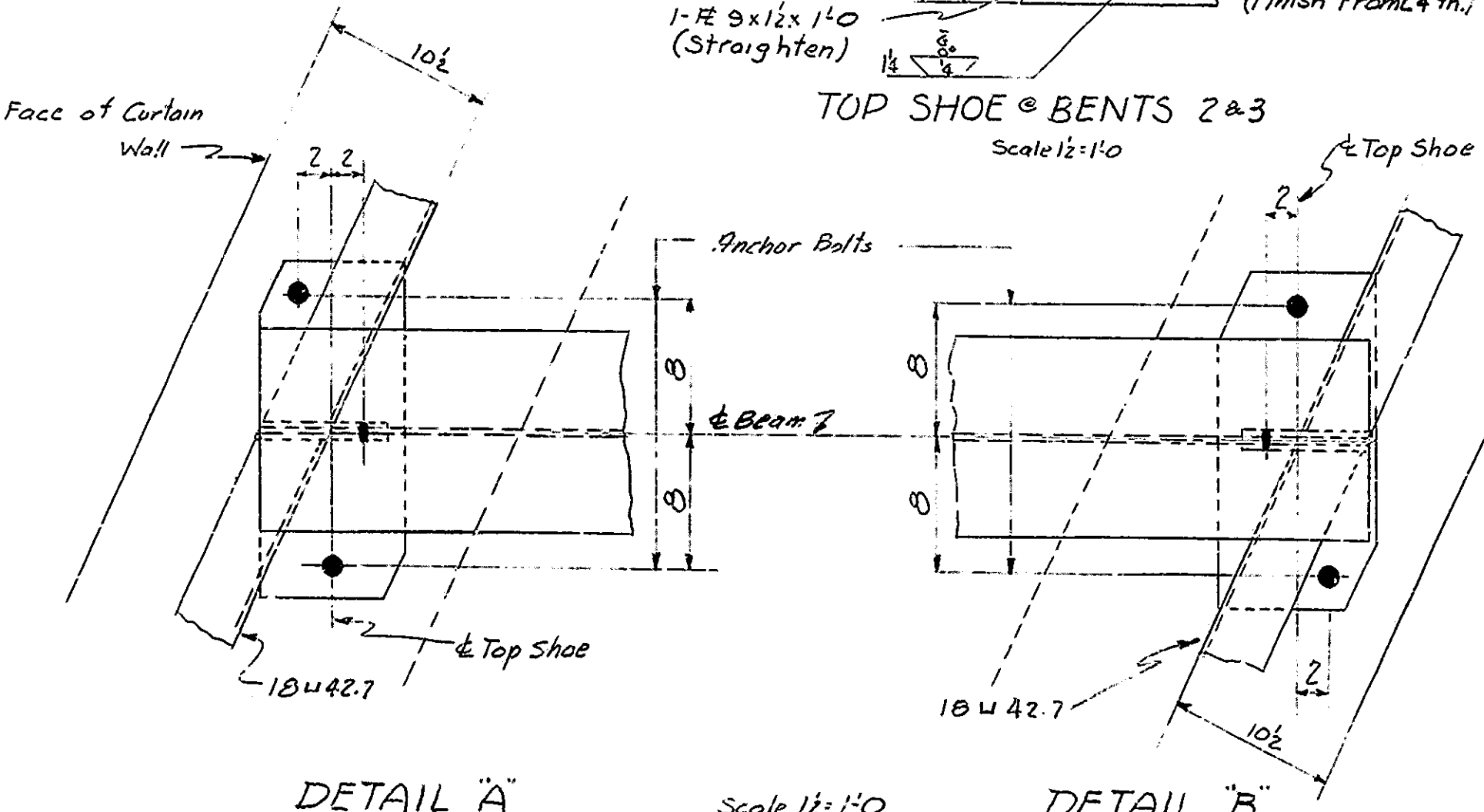
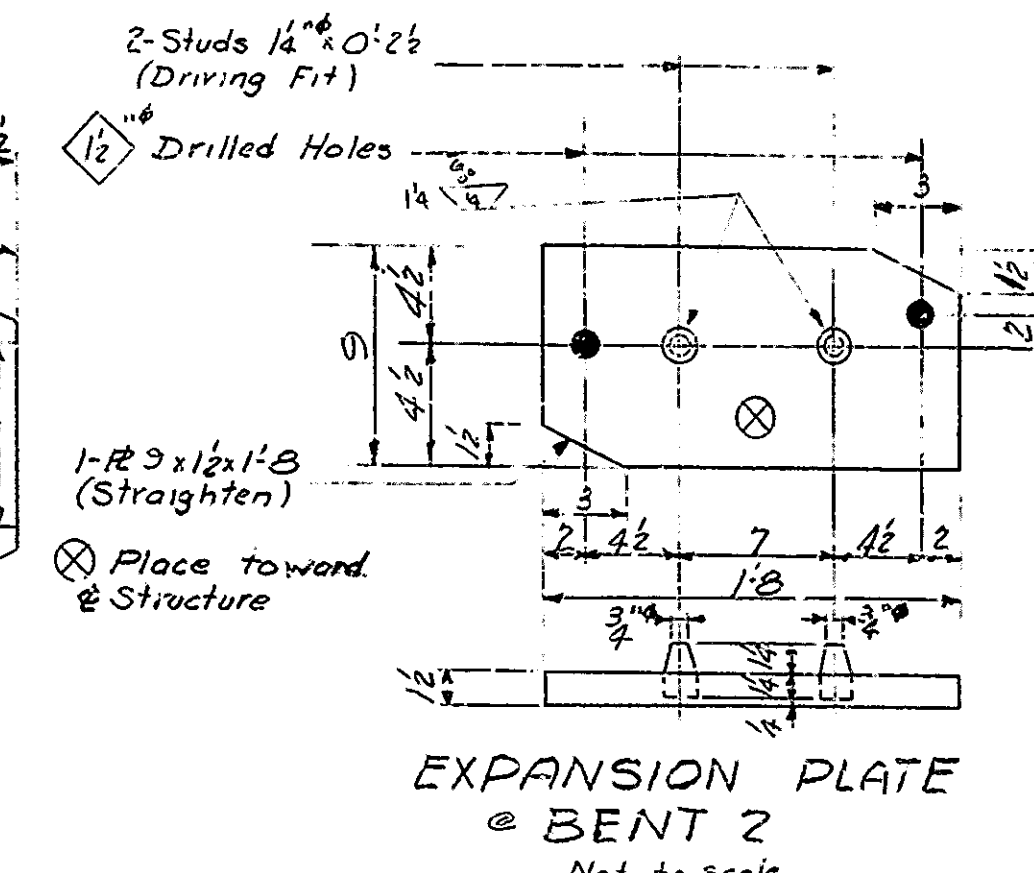
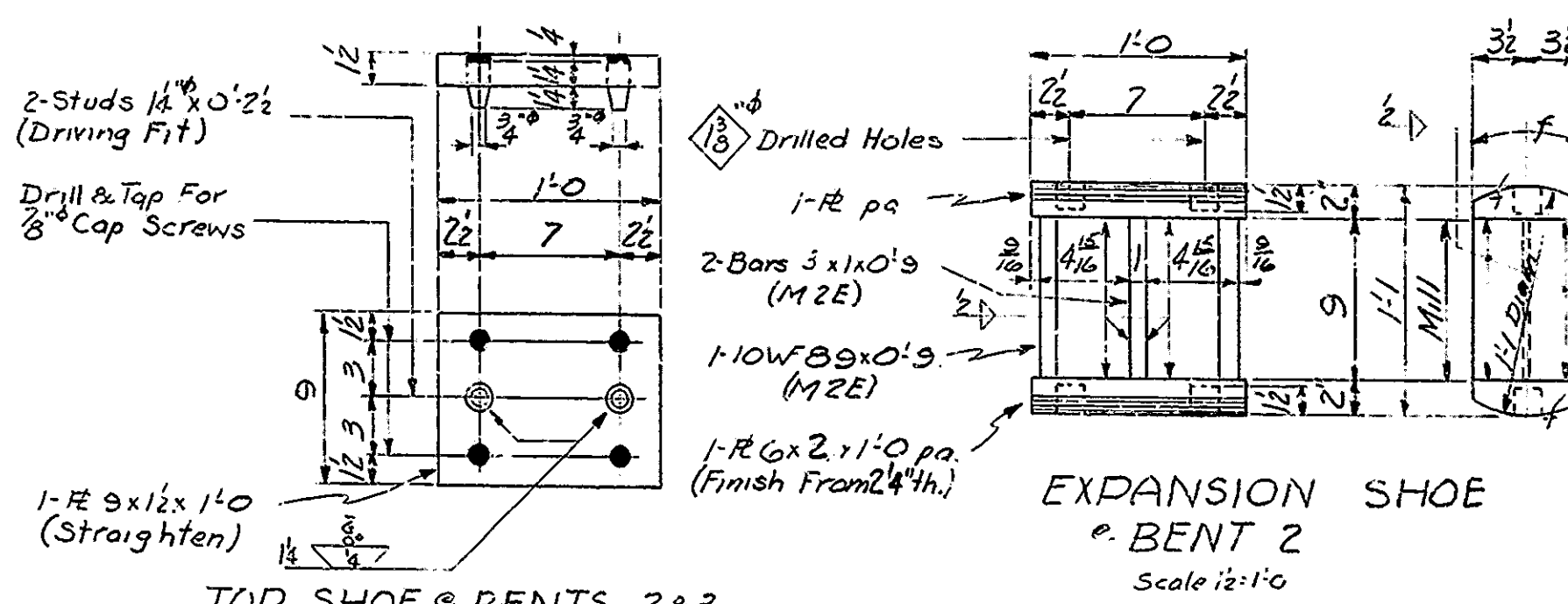
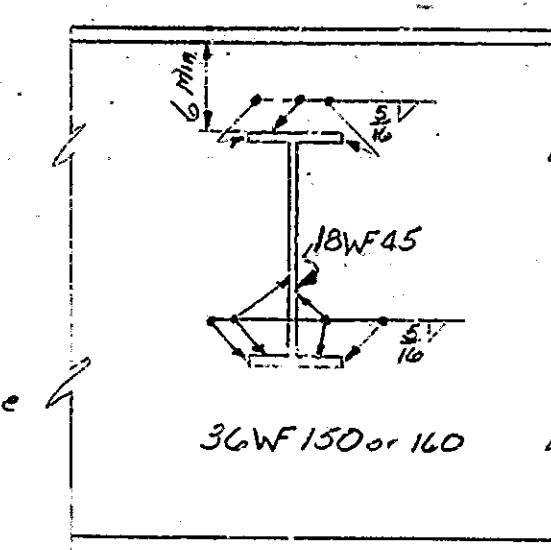
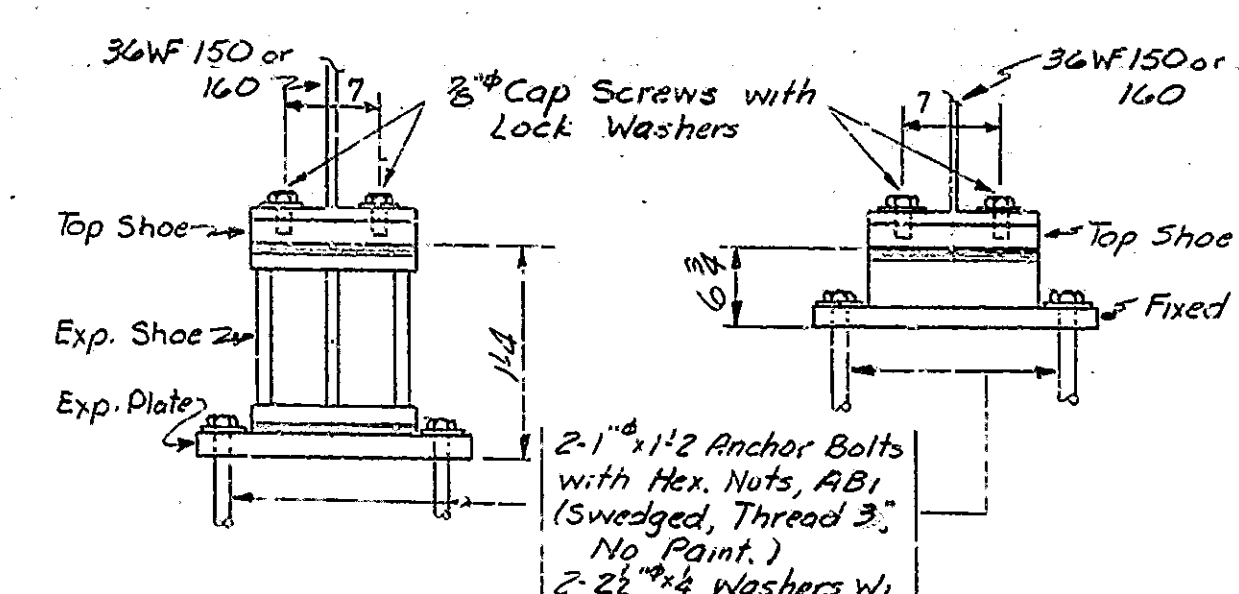
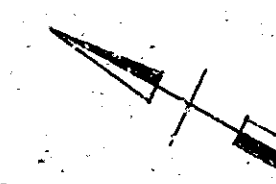
LIVE LOAD: H20-S16-44 loading with impact and distribution of loads in accordance with 1957 AASHTO Specifications.
DEAD LOAD: Actual Weight plus 35 pounds per Sq. Ft. of roadway to provide for future wearing surface.
SLAB: Designed for 16000 lb wheel plus impact and with 2 inch monolithic wearing surface.
UNIT STRESSES:
 Structural Steel Bending (Tension) 18,000 #/sq. in.
 Shear on Bolts 13,500 #/sq. in.
 Structural Steel Bearing (Including Rivets) 27,000 #/sq. in.
 Bearing Steel on Concrete (Including overturning and Eccentric Loading) 1,000 #/sq. in.
 Reinforcing Steel (Tension) 20,000 #/sq. in.
 Concrete (Compression) 1,200 #/sq. in.

PAINTING STRUCTURAL STEEL

All Paint shall be in accordance with current State Highway Specifications
SHOP PAINT: One Coat Red Lead, Type I or II except as noted.
FIELD PAINT: 2 Coats of Aluminum.

NOTE: Aluminum Railing including Anchor Bolts and Post Castings to be paid for as cost per lineal foot.

DESIGNED	F.E.M.	CWD	T.G.
DRAWN	J.A.T.	CWD	F.E.M.
TRACED		CWD	



FRAMING PLAN - SPAN B STATE HIGHWAY DEPARTMENT OF INDIANA

NOTES:

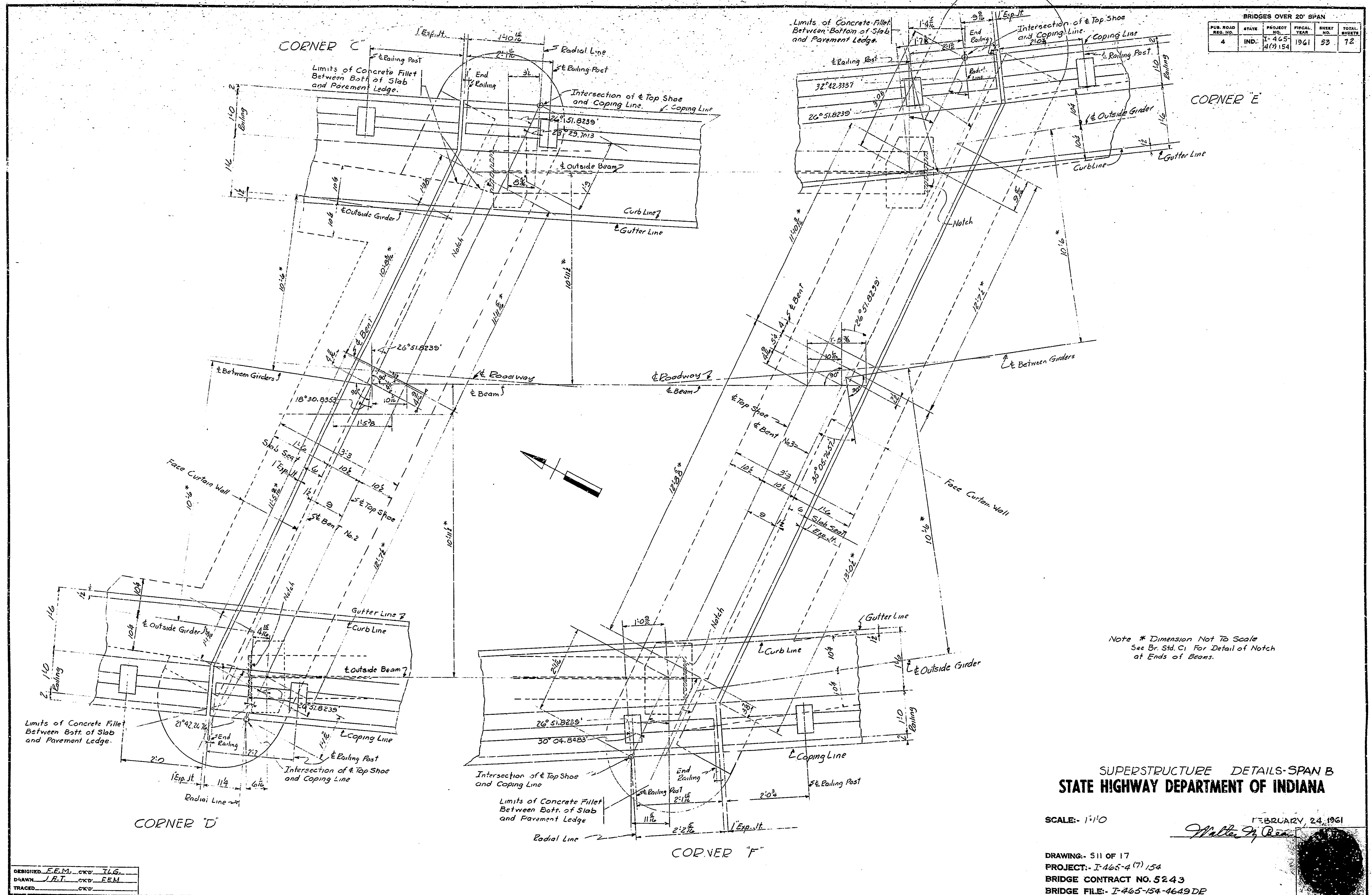
See Dwg. S12 For End Diaphragm Connections.
 See Dwg. S15 For Anchor Bolt Setting Plan and Erection Procedure.

* Estimated Weight of Structural Steel = 46,900 lbs
 * Weight of Structural Steel shown is approximate only and it shall be the contractors responsibility to determine the weight on which he bases his bid.

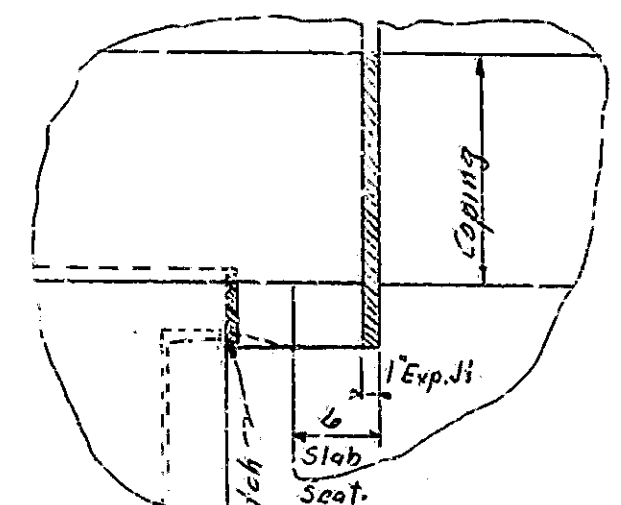
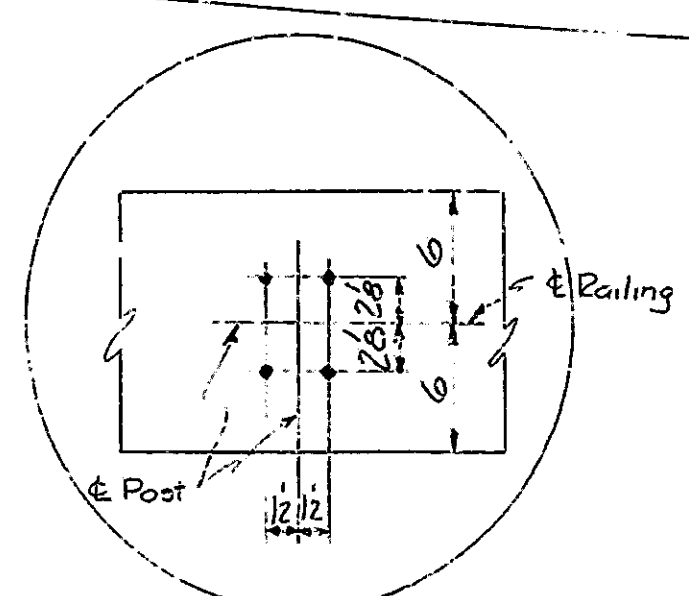
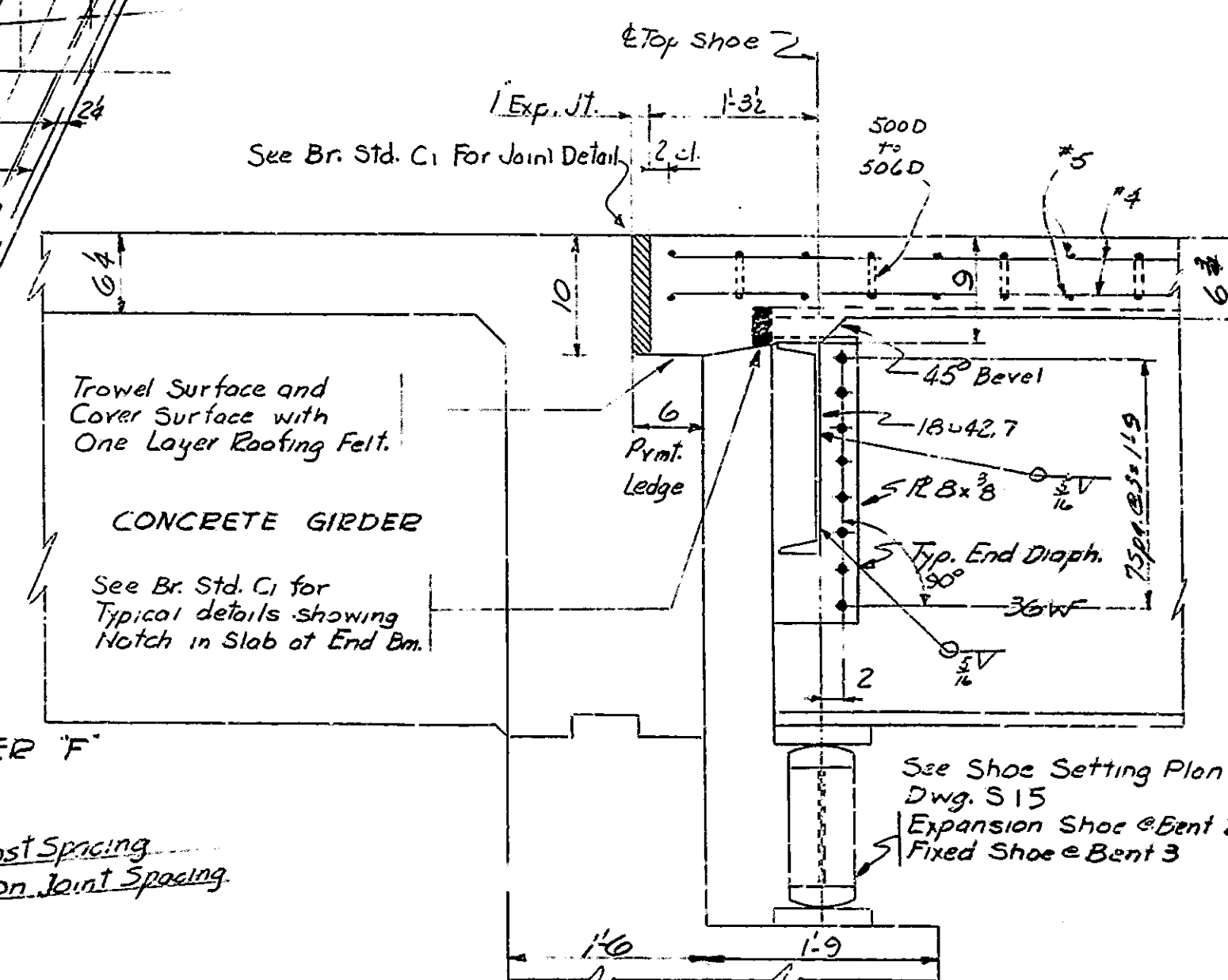
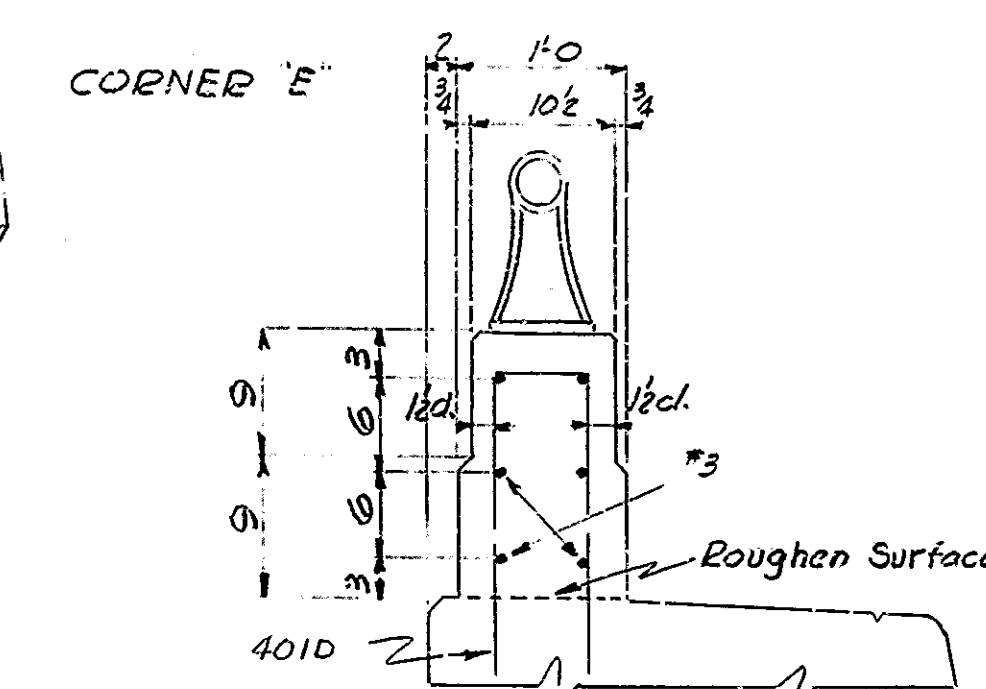
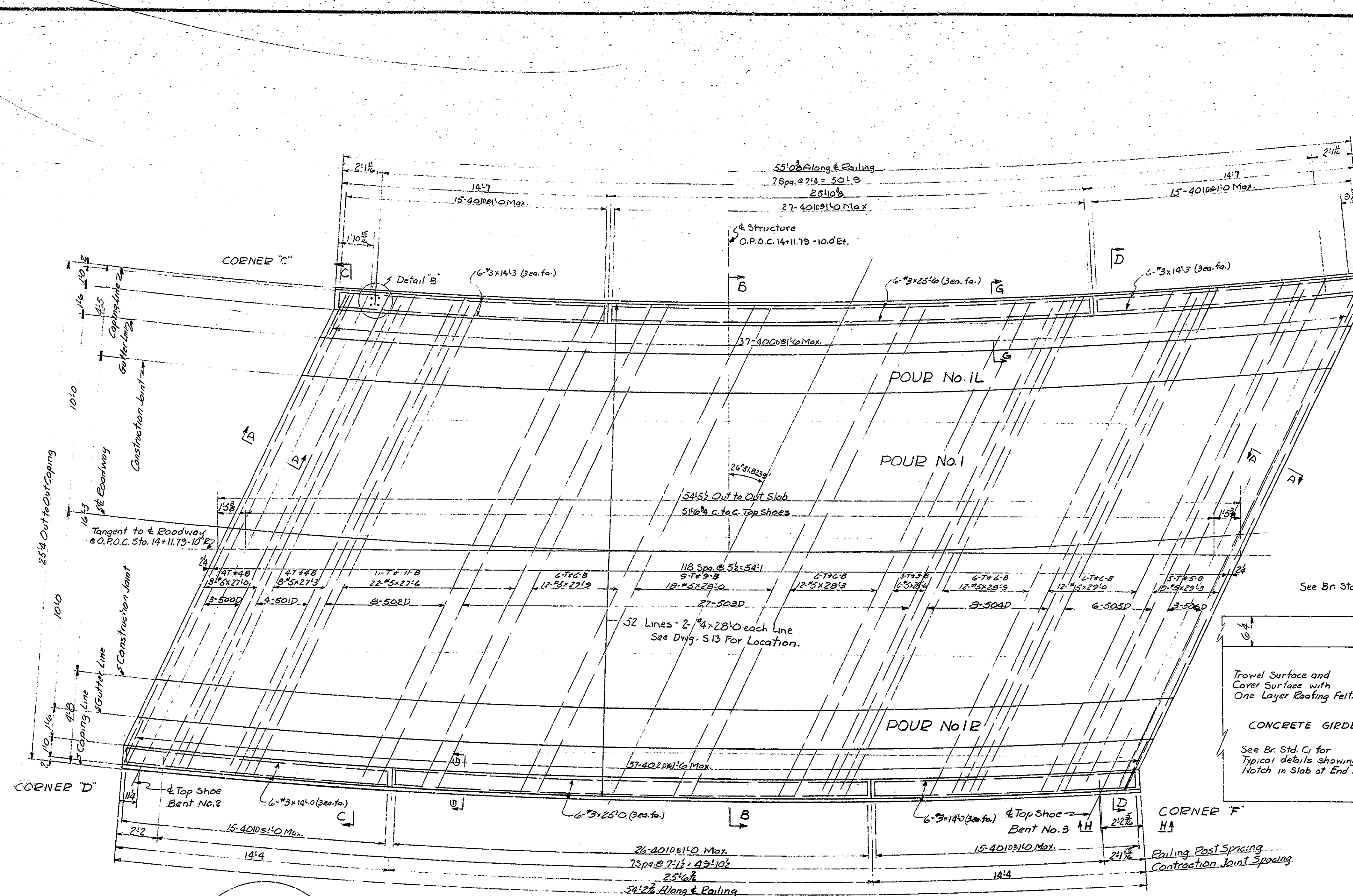
SCALE: As Noted

FEBRUARY 24, 1961

DRAWING: S10 OF 17
 PROJECT: I-465-4(7)154
 BRIDGE CONTRACT NO. 5243
 BRIDGE FILE: I-465-154-4649 DE



BRIDGES OVER 20' SPAN					
PUB. ROAD DES. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465- 47154	1961	54	72



SLAB PLAN
Scale 3/8"=1'0"

ELEVATION H-H
No Scale

Notes:
See Dwg. S3 For Geometrical Layout.
See Dwg. S11 For Corner Details.
See Dwg. S13 For Sections B-B, C-C, & D-D.
See Dwg. S14 For POUR Diagram and Bill of Materials.
After structural steel has been erected concrete forms shall not be blocked against the expansion end of the steel in making any pours adjacent to steel spans.

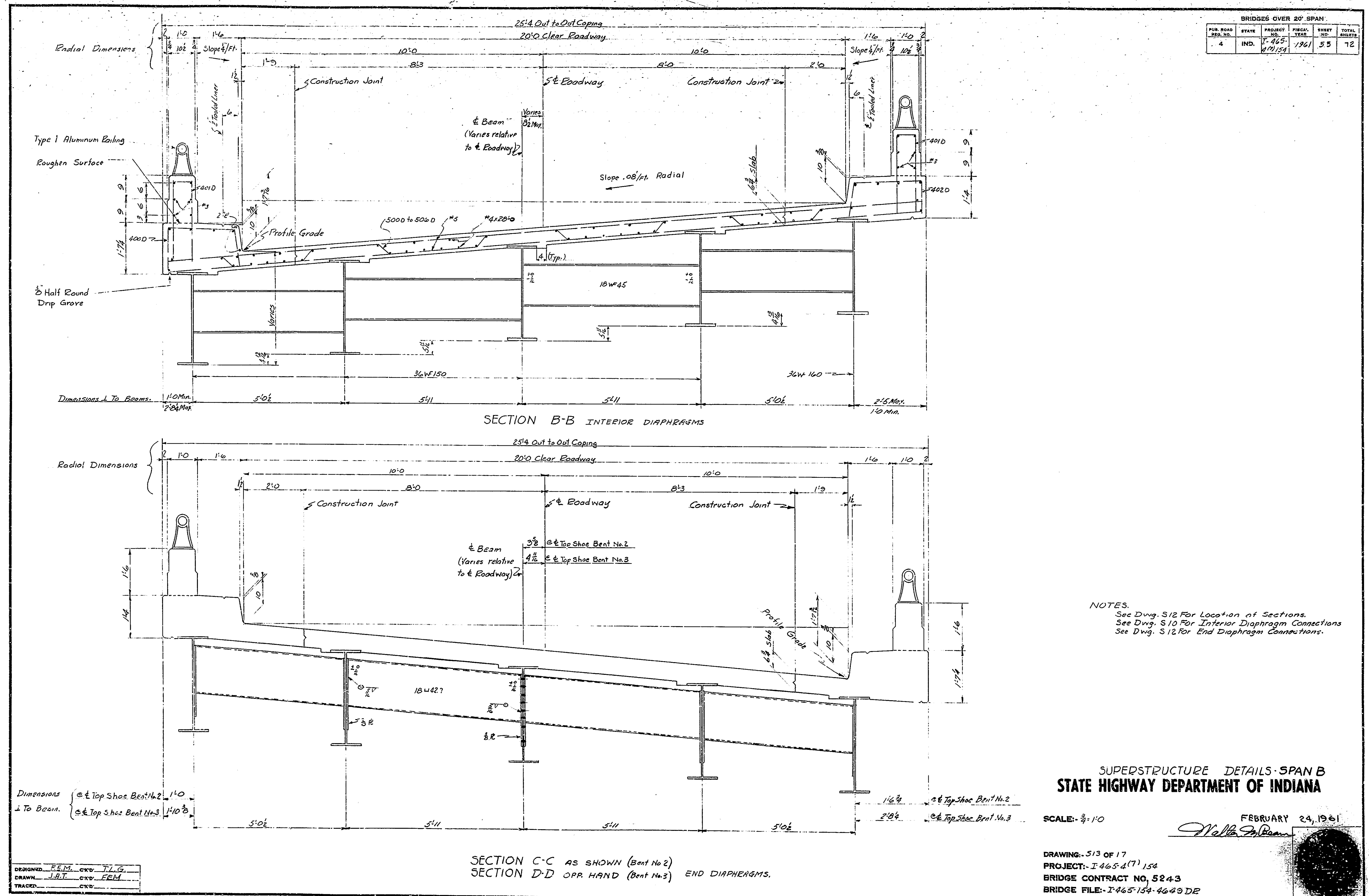
SECTION A-A
Scale 1"=1'0"
SUPERSTRUCTURE DETAILS SPAN-B
STATE HIGHWAY DEPARTMENT OF INDIANA

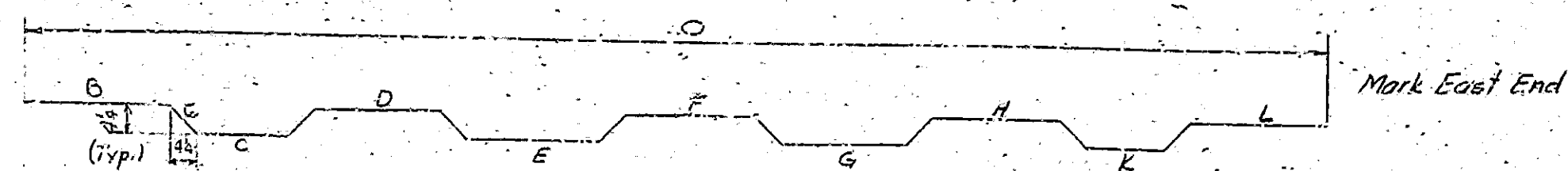
SCALE: As Noted

FEBRUARY 24, 1961

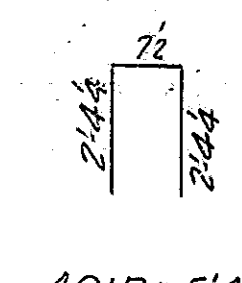
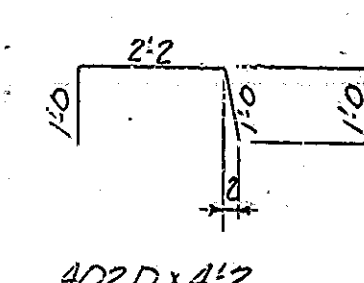
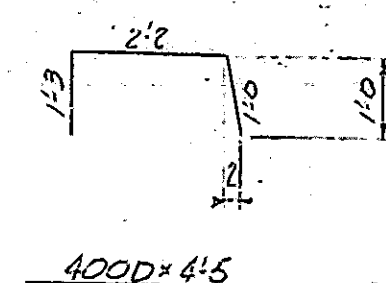
DRAWING: S12 OF 17
PROJECT: I-465-47154
BRIDGE CONTRACT NO. 52-43
BRIDGE FILE: I-465-154-4649DE

DESIGNED: F.E.M. C.K.D. T.L.G.
DRAWN: J.B.T. C.K.D. F.E.M.
TRACED: C.K.D.





MARK SIZE	No. BARS	LENGTH	B	C	D	E	F	G	H	K	L	O
500D	3	28'1"	2'0"	2'7 1/2"	2'6"	3'3"	2'8"	3'3"	2'6"	2'7 1/2"	2'5"	26'11"
501D	4	27'6"	2'0"	2'7 1/2"	2'6"	3'3"	2'8"	3'3"	2'6"	2'7 1/2"	2'1"	26'4"
502D	8	28'4"	2'7"	2'7 1/2"	2'6"	3'3"	2'8"	3'3"	2'6"	2'7 1/2"	2'1"	26'11"
503D	27	28'8"	3'2"	2'7 1/2"	2'6"	3'3"	2'8"	3'3"	2'6"	2'7 1/2"	2'1"	26'11"
504D	8	29'3"	3'2"	2'7 1/2"	2'6"	3'3"	2'8"	3'3"	2'6"	2'7 1/2"	2'1"	28'1"
505D	6	29'9"	3'2"	2'7 1/2"	2'6"	3'3"	2'8"	3'3"	2'6"	2'7 1/2"	3'2"	28'7"
506D	3	29'9"	2'7"	2'7 1/2"	2'6"	3'3"	2'8"	3'3"	2'6"	2'7 1/2"	3'2"	28'7"

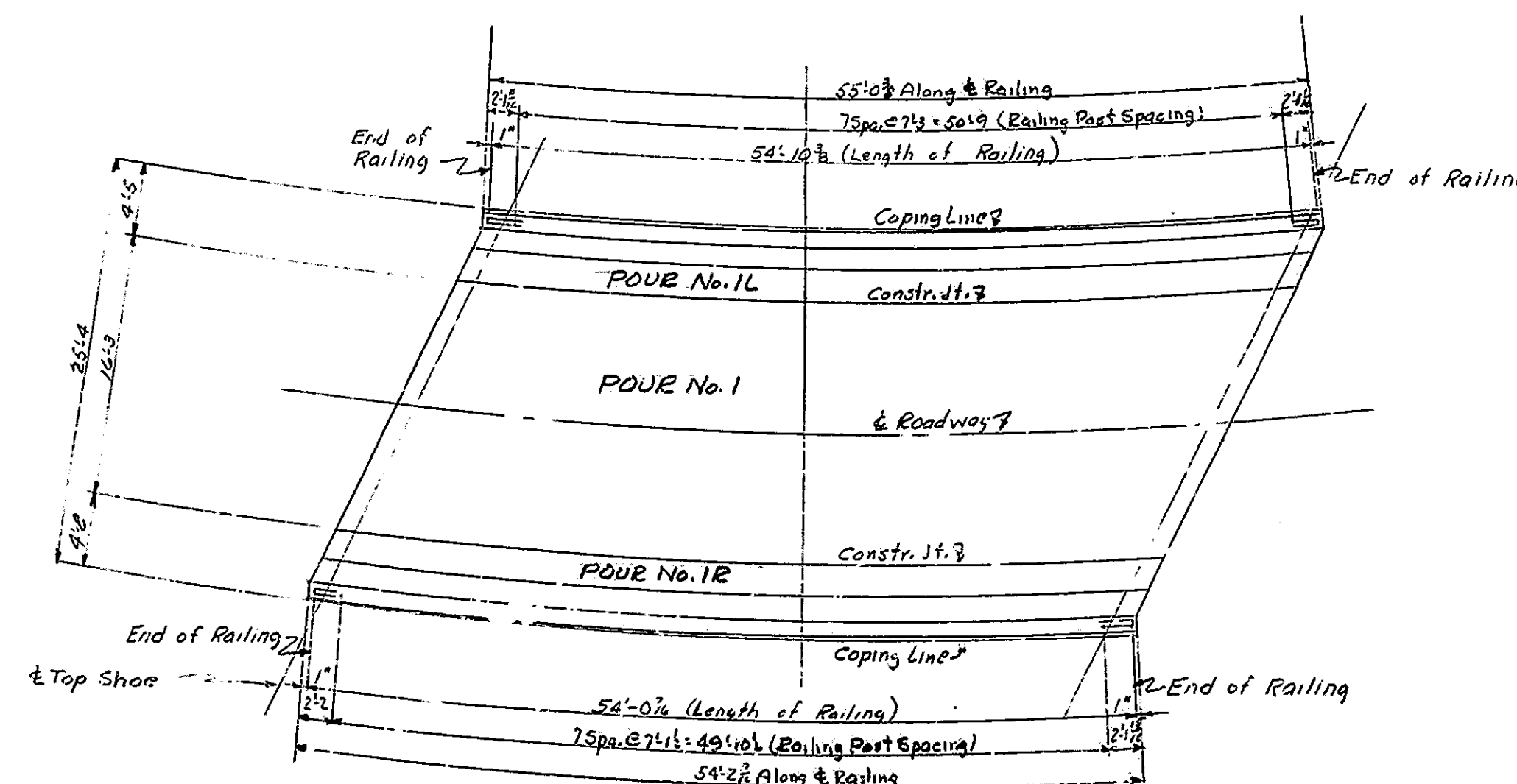


BENDING DIAGRAMS
No. Scale

BRIDGES OVER 20' SPAN					
PUB. ROAD RES. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	F-465-2 4/17/54	1961	56	12

BILL OF MATERIALS

MARK SIZE	No. of BARS	LENGTH	WEIGHT
500D	3	28'1"	
501D	4	27'6"	
502D	8	28'4"	
503D	27	28'8"	
504D	8	29'3"	
505D	6	29'9"	
506D	3	29'9"	
*5	10	28'5"	
*5	12	29'0"	
*5	12	28'9"	
*5	6	28'6"	
*5	12	28'9"	
*5	18	28'0"	
*5	12	27'9"	
*5	22	27'6"	
*5	8	27'3"	
*5	8	27'0"	
Total	5		5284
400D	37	4'5"	
401D	113	5'4"	
402D	37	4'2"	
*4	106	28'0"	
Total	4		8560
*3	6	23'6"	
*3	6	23'0"	
*3	12	14'3"	
*3	12	14'0"	
Total	3		281
TOTAL STEEL			8086
CONCRETE			
POUR No.		Cu. Yds.	
1		18.8	
1E		10.1	
1L		10.7	
TOTAL Class F		39.6	
RAILING CONCRETE		576.4	
Aluminum Railing (Type I)		108.94/ft	



POUR DIAGRAM AND
RAILING POST SPACING
Scale 5/16"

NOTE:
See Dwg. S12 For Slab Details
See Br. Std. C1 For Reinforcing Bar Note.

SUPERSTRUCTURE DETAILS - SPAN-B
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

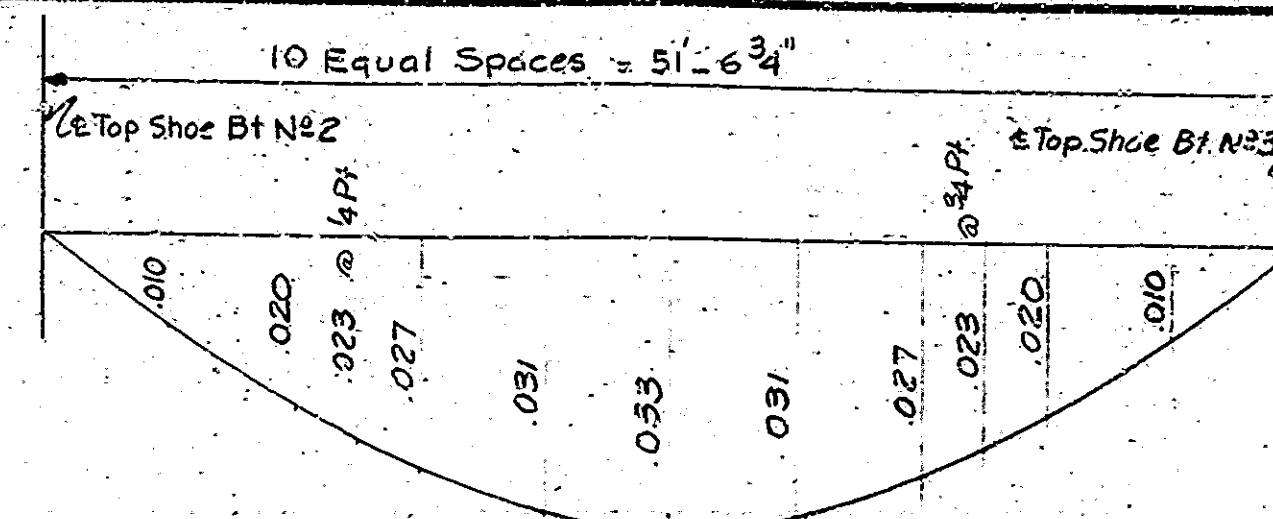
FEBRUARY 24, 1961

Walter J. Rasmussen

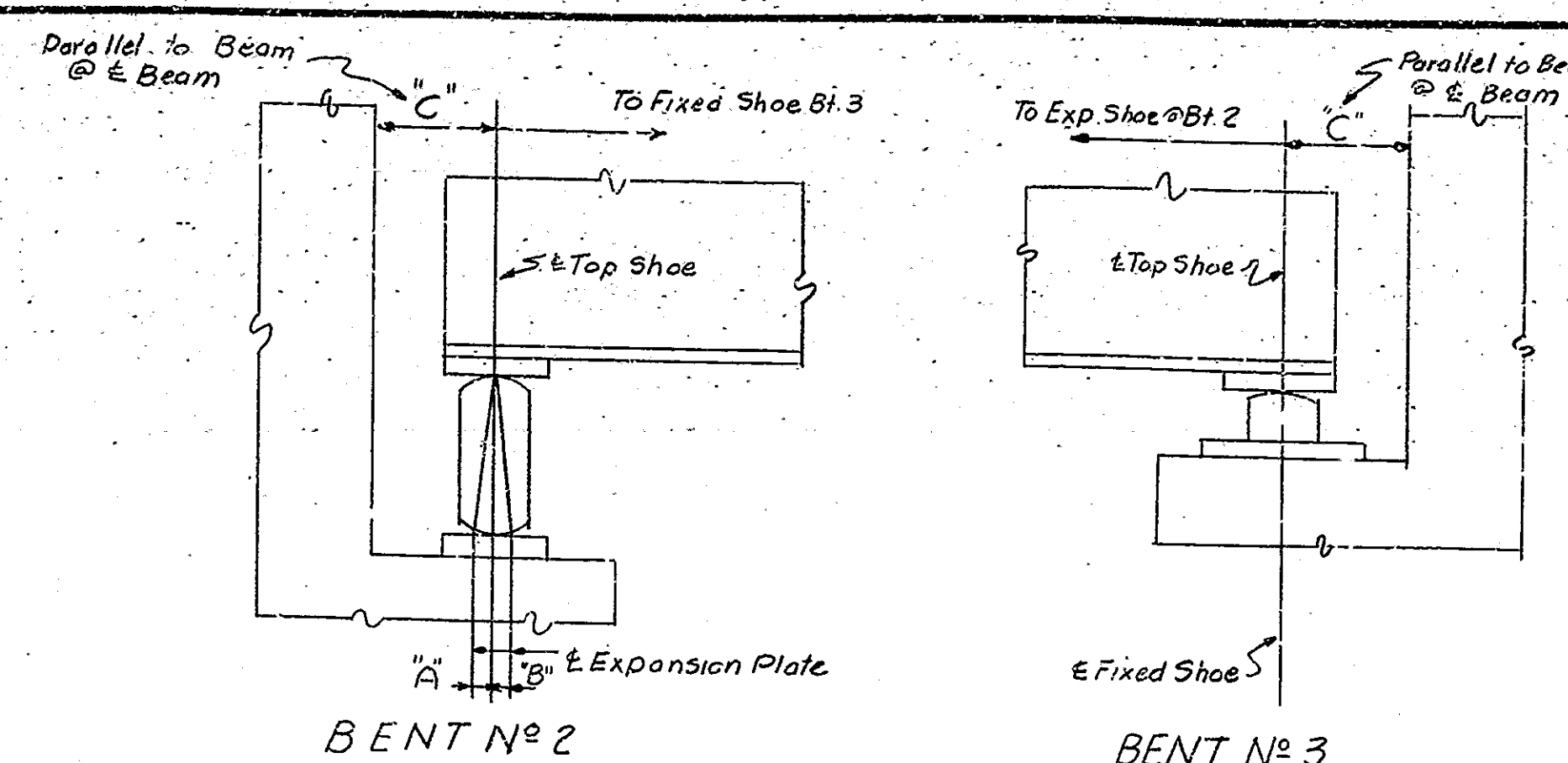
DESIGNED F.E.M. C.K.D. T.L.G.
DRAWN J.H.C. C.K.D. F.E.M.
CHECKED C.K.D.

DRAWING: S14 OF 17
PROJECT: I-465-2(1)/54
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-2-4649DE

TABLE OF ELEVATIONS							
POINT	LOCATION	1	2	3	4	5	6
A	Elev. Top of Coping Form	-	802.080	802.005	801.910	801.785	801.640
	Elev. Top of Outside Beam	-	-	-	-	-	-
	Dist. Top of Bm. to Top of Coping Form	-	-	-	-	-	-
B	Elev. Top of Screenshot	-	801.340	801.285	801.185	801.060	800.910
	Elev. Top of Beam	-	-	-	-	-	-
	Dist. Top of Bm. to Top of Screenshot	-	-	-	-	-	-
C	Elev. Top of Screenshot	802.130	802.470	802.590	802.485	802.350	802.195
	Elev. Top of Beam	-	-	-	-	-	-
	Dist. Top of Bm. to Top of Screenshot	-	-	-	-	-	-
D	Elev. Top of Coping Form	803.760	803.700	803.620	803.510	803.375	803.215
	Elev. Top of Beam	-	-	-	-	-	-
	Dist. Top of Bm. to Top of Coping Form	-	-	-	-	-	-

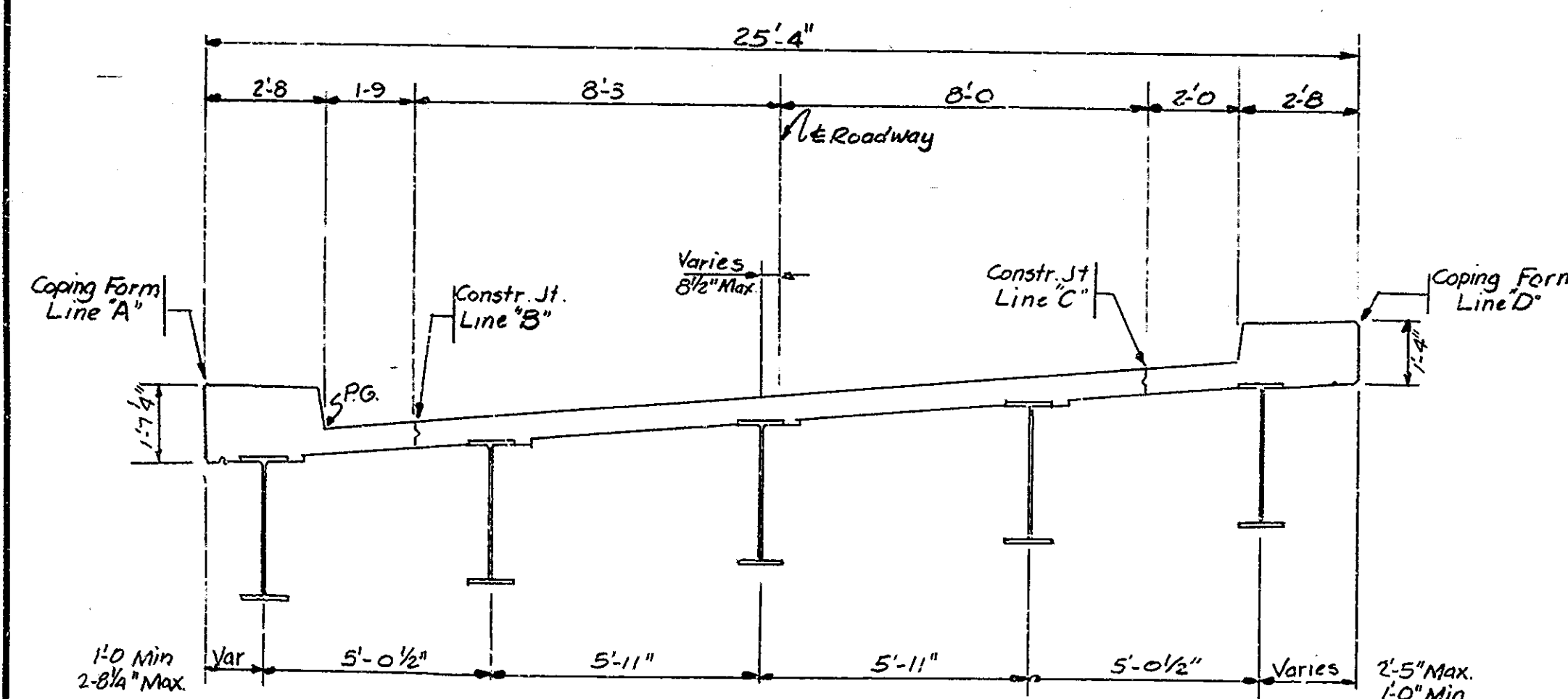


CONCRETE DEAD LOAD DEFLECTION
DIAGRAM
Scale $\frac{3}{4}'' = .1 L$ Horiz.
 $1'' = 0.2'$ Vert.

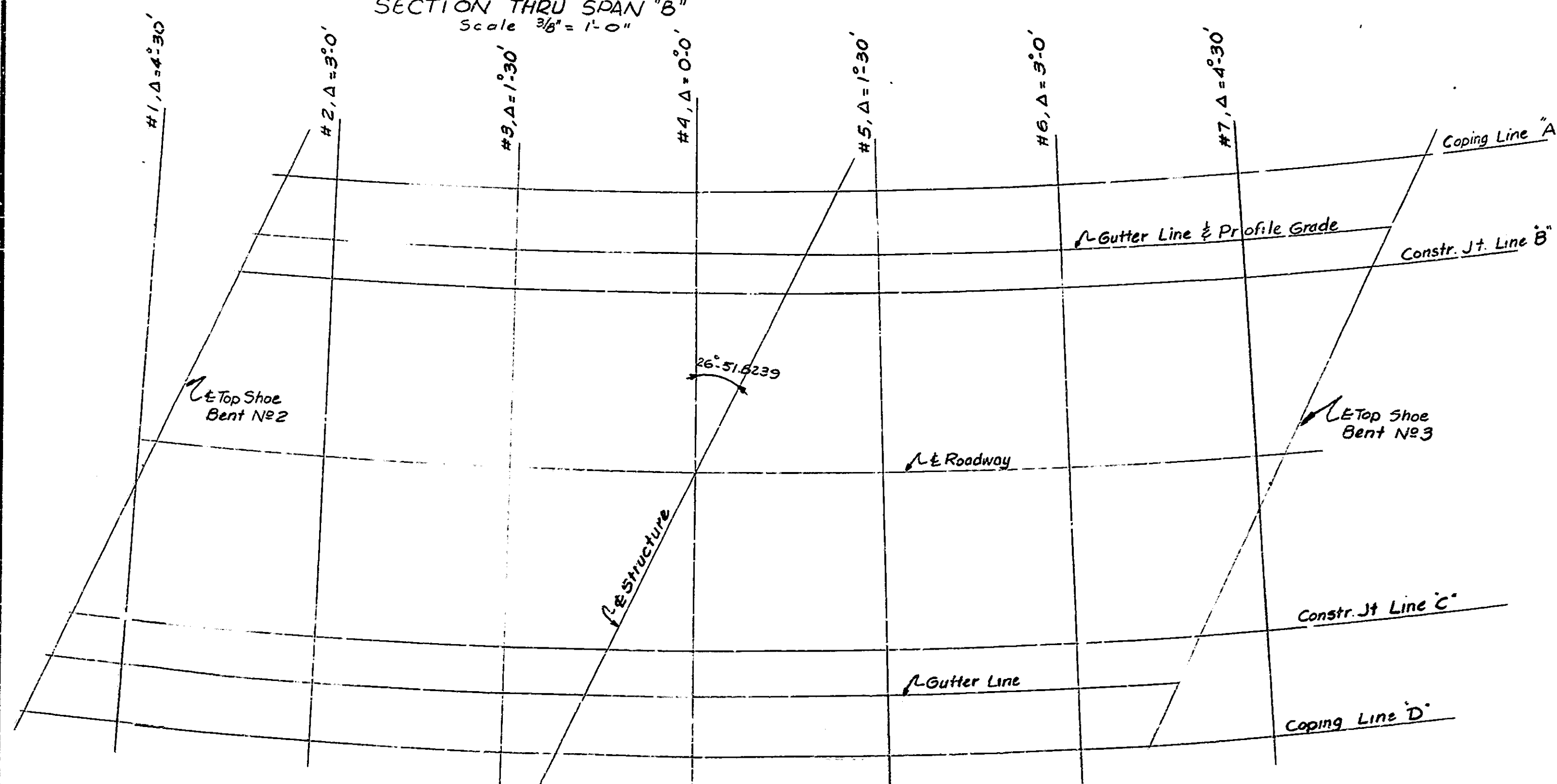


SHOE SETTING DIAGRAM
Scale $1'' = 1'-0''$

BRIDGES OVER 20' SPAN					
PUB. ROAD NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(7)154	1961	57	12



SECTION THRU SPAN "B"
Scale $\frac{3}{8}'' = 1'-0''$



PLAN OF SCREEDS
Scale $1/4'' = 1'-0''$

TABLE I		DIMENSION "A"				DIMENSION "B"		
Temperature		0°	20°	40°	60°	80°	100°	120°
Top Shoe to Expansion Plate @ Bt. No. 2		1/4"	3/16"	1/8"	0"	1/8"	3/16"	1/4"

NOTES:
Purpose:
"PLAN OF SCREEDS" shows location of screeds.
"TABLE OF ELEVATIONS" shows data for setting screeds and coping forms, so that the slab and copings will be at the final grade elevations after all concrete has been poured.
"TABLE I" shows data for setting expansion plates.

GENERAL PROCEDURE
1. After riveting and welding have been completed, adjust the superstructure longitudinally so that dimension "C" from the Top Shoe to the face of the curbwall at Bent No. 2 and Bent No. 3 are equal.
2. With the superstructure in the adjusted position called for in No. 1, set the anchor bolts for the fixed shoe at Bent No. 3.
3. Adjust the expansion plate under each expansion shoe in accordance with dimension "A" or "B" in TABLE I for the prevailing temperature. Note that dimension "A" is always the distance from a vertical line through the Top Shoe in a direction away from the Fixed Shoe. Set anchor bolts.
4. After the shoes are set, take elevations at all screed points on top of adjacent beam. Enter these elevations in "TABLE OF ELEVATIONS". Subtract these elevations from the tabulated elevations and use the resulting dimension as the height for setting the screed or coping form above that point. This dimension remains constant regardless of how much or in what order the concrete is poured. Do not set screeds or coping forms by leveling.
5. No concrete is to be poured until the above operations are completed.

SCREED INFORMATION			
Line	DEGREE OF CURVE	RADIUS	UNIT ARC
A	17°-38.62'	324.7378	8'-6"
P.G.	17°-30'	327.4045	8'-6 7/8"
B	17°-24.42'	329.1545	8'-7 3/8"
C	16°-35.28'	345.4045	9'-0 1/2"
D	16°-22.01'	350.0712	9'-2"

NOTES
1. Lines No. 1 thru 7 are radial lines.
2. Unit deflection between any two adjacent lines is 1°-30'.
3. Δ signifies total deflection from a tangent to the screed line at the end of structure.

SCREEDS SPAN B
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted

FEBRUARY 24, 1961

Walter J. Brown

DRAWING: S15 of 17

PROJECT: I-465-4(7) 154

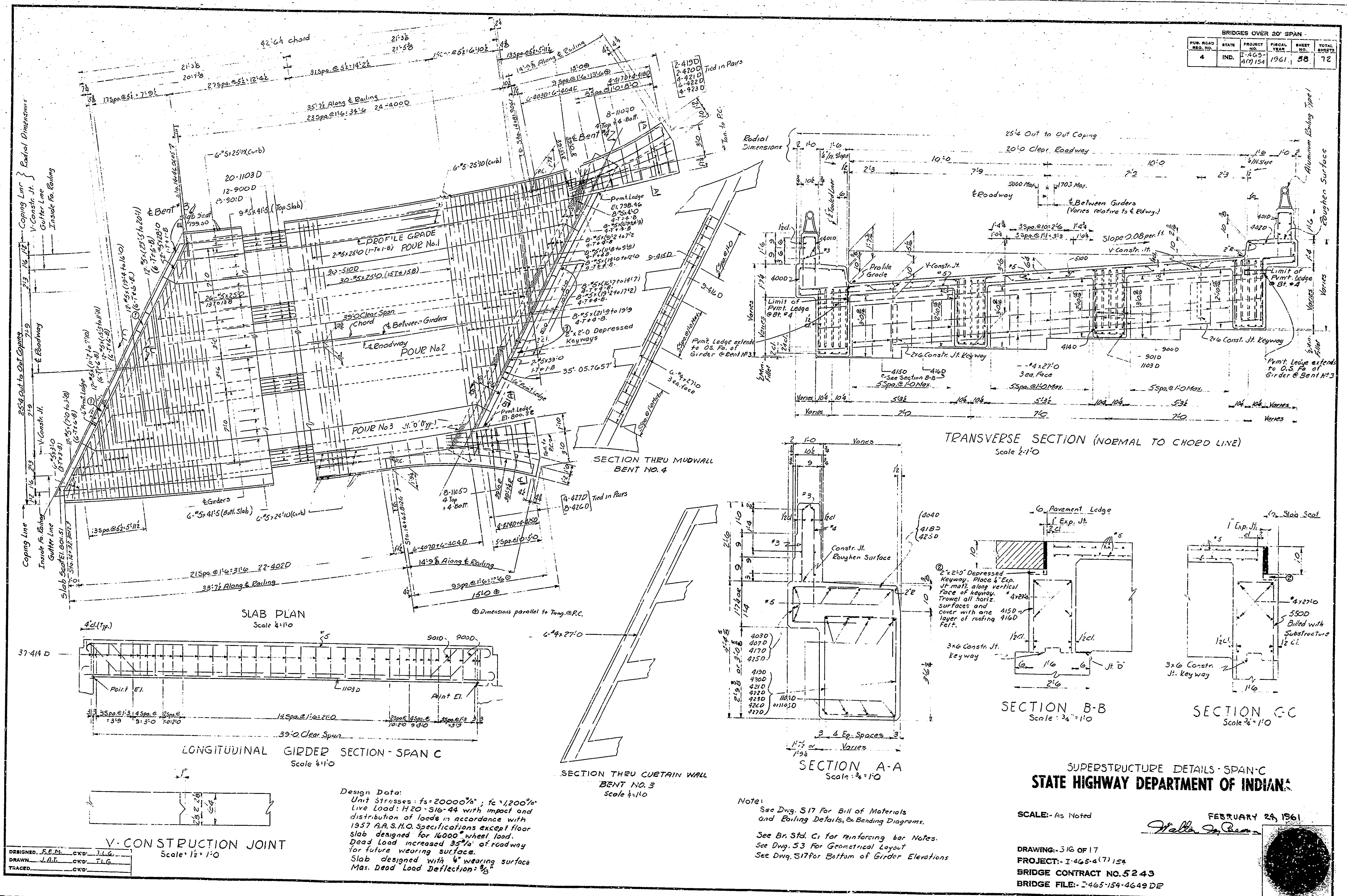
BRIDGE CONTRACT NO. 5243

BRIDGE FILE: I-465-154-4649 DR



DESIGNED: FEM CKD T.L.G.
DRAWN: FEM CKD J.G.T.
TRACED: CKD

BRIDGES OVER 20' SPAN						
PUB. ROAD NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
4	IND.	1-465-4(7)154	1961	58	72	

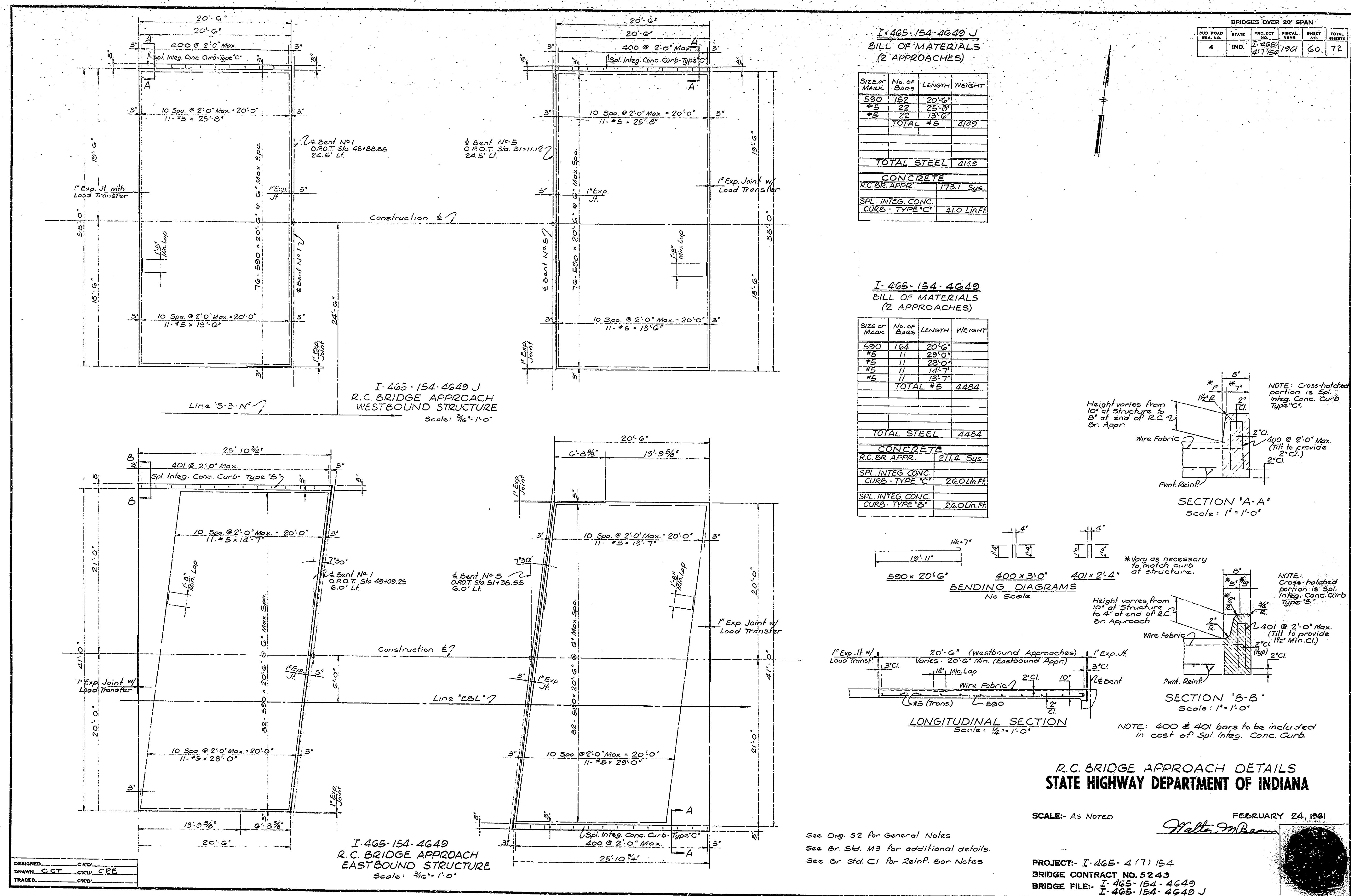


SUPERSTRUCTURE DETAILS - SPAN C
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: As Noted
FEBRUARY 23, 1961

DRAWING: 316 OF 17
PROJECT: 1-465-4(7)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: 1-465-154-4649 DE

DESIGNED: R.P.M. CKD: J.L.G.
DRAWN: J.D.L. CKD: T.L.G.
TRACED: CKD:



R.C. BRIDGE APPROACH DETAILS
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE: AS NOTED

PROJECT: I-465-4(7)154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE: I-465-154-4649 J
I-465-154-4649 J

See Div. 52 for General Notes
See Br. Std. M3 for additional details
See Br. Std. C1 for Rein. Bar Notes

FEBRUARY 24, 1961

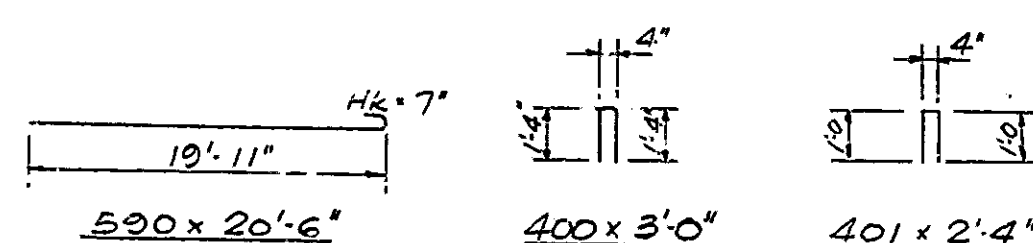
Walter M. Beam

BILL OF MATERIALS
(TWO APPROACHES)

TOTAL STEEL	2227
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R. C. BR. APPROACH
Scale: $3/8" = 1' 0"$

See Dwg. S2 for General Notes
See Br. Std. M3 for additional details
See Br. Std. C1 for Reinf. Bar Notes



BENDING DIAGRAMS

To match curb at structure.

Height varies from 10" of Structure to 4" at end of R.C. Cr. Appr.

Wire Fabric

bars to cost of

Furn. Reinf.

8"
#5
2"
2"
2"
2"
2"

NOTE:
Gas-tightened portion is Sol. Integ. Conc. Curb Type "B".

3/4"
2" Cl (typ)
L401 @ 2'0" Max.
(T.F. to provide 1 1/2" Min. Cl.)
2" Cl. Min.

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

SCALE:- AS NOTED

FEBRUARY 24 1966

PROJECT:- I-465-4 (7) 154
BRIDGE CONTRACT NO. 5243
BRIDGE FILE:- I-465-154-4649 DR

