BRIDGE CONTRACT No. B-6922

BRIDGES OVER 20' SPAN					
PUBLIC ROAD DIVISION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(78)155	1965	1	30

STATE OF INDIANA

INDIANA STATE HIGHWAY COMMISSION

BRIDGE PLANS

FOR SPANS OVER 20 FEET

ON

INTERSTATE ROUTE NO. 70 SECTION 3

F.A. PROJECT NO. I-465-4(78)155

WEST LEG CIRCUMURBAN HIGHWAY

STRUCTURE LIMITS

BEGINNING AT A POINT ON I-70 (LINE "I-70") APPROX. 121.5' SOUTHWEST OF THE ℄ OF I-465 (LINE "N") AND EXTENDING NORTHEAST A DISTANCE OF APPROX. 243' TO A POINT ON I-70 (LINE "I-70") APPROX. 121.5' NORTHEAST OF THE ℄ OF I-465 (LINE "N"), ALL IN SECTION 25-T.15 N.-R.2E., MARION COUNTY.

ROADWAY LENGTH = 0.000 MI.
BRIDGE LENGTH = 0.046 MI.
TOTAL LENGTH = 0.046 MI.
— CONSIDERED 0.00 MI. ON I-465

MAX. GRADE:- 0.82%

INDEX

PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION	CONTRACT NO.
I-465-4(78)155	I-70-73-4647A	WIDENING OF PRESENT TWIN STRUCTURES	(37', 2@80.5', 37', SK. 25° R.)	INTERSTATE 465	160+00	B-6922

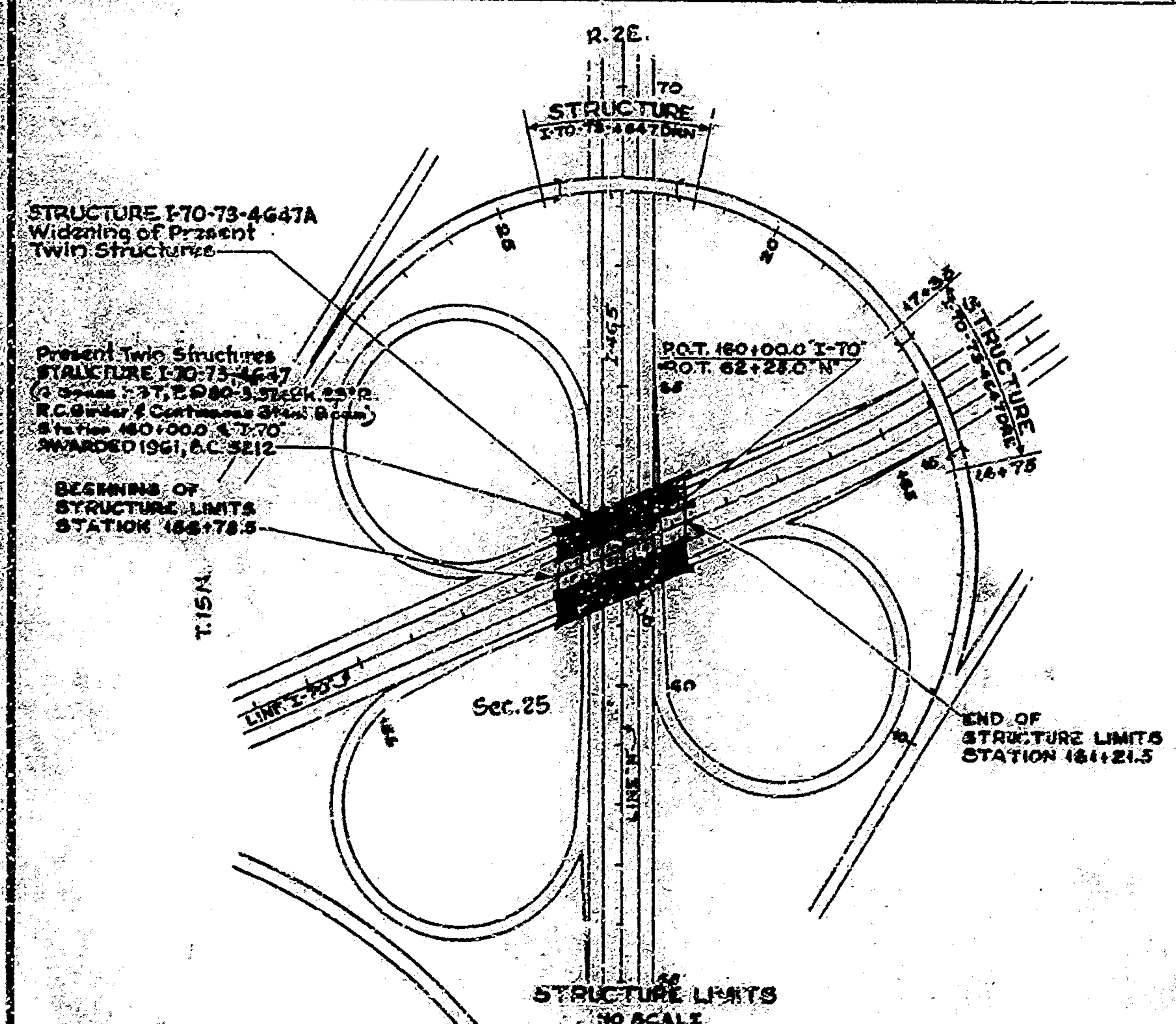
SHEET NO.	SHEET DESIGNATION	SUBJECT	B.P.R. APPROVAL
1		INDEX & TITLE SHEET	
2	ROAD PLAN SHEET NO. 4A	TYPICAL CROSS SECTIONS-ROAD PROJ. NO. I-70-3(4)72	
3	ROAD PLAN SHEET NO. 9	ROAD PLAN & PROFILE-ROAD PROJ. NO. I-70-3(4)72	
4	ROAD SHEET 18	R.C. BRIDGE APPROACH DETAILS PROJ. NO. I-70-3(4)72	
5	BRIDGE SHEET 12	SOIL BORING LOG BRIDGE FILE NO. I-70-73-4647 CONTR. 5212	
6	S 1 (STR. I-70-73-4647A)	LAYOUT	
7	S 2	GENERAL PLAN	
8	S 3	BENT NO. 1 (W.B.) & BENT NO. 5 (E.B.)	
9	S 4	BENT NO. 1 (E.B.) & BENT NO. 5 (W.B.)	
10	S 5	BENT NO. 2 (E.B.) & BENT NO. 4 (W.B.) DETAILS	
11	S 6	BENT NO. 4 (E.B.) & BENT NO. 2 (W.B.) DETAILS	
12	S 7	BENT NO. 2 & BENT NO. 4 DETAILS AND BILL OF MATERIAL	
13	S 8	BENT NO. 3 DETAILS (E.B.)	
14	S 9	BENT NO. 3 DETAILS (W.B.)	
15	S10	SPAN "A" (E.B.) & SPAN "D" (W.B.) DETAILS	
16	S11	SPAN "A" (W.B.) & SPAN "D" (E.B.) DETAILS	
17	S12	SPAN "A" & SPAN "D" DETAILS	
18	S13	FRAMING PLAN-SPANS "B" & "C"	
19	S14	STEEL NOTES & DATA	
20	S15	STEEL DETAILS	
21	S16	STEEL DETAILS	
22	S17	BILL OF MATERIAL-SPANS "B" & "C"	
23	S18	SUPERSTRUCTURE DETAILS-SPANS "B" & "C"	
24	S19	SUPERSTRUCTURE DETAILS-SPANS "B" & "C"	
25	ONE SHEET	SUMMARY	

INDEX CONTINUED

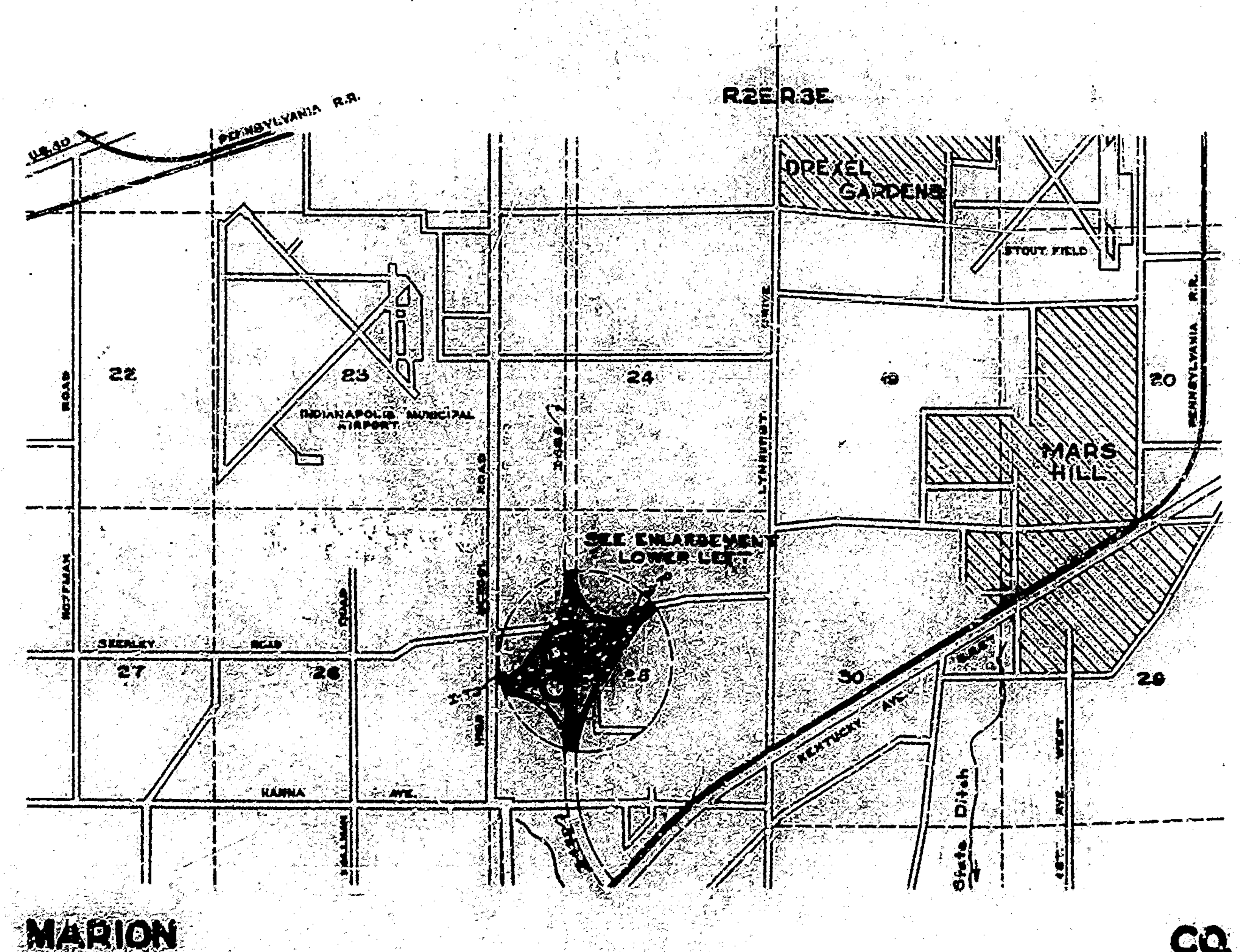
STANDARD DRAWINGS

SHEET NO.	SHEET DESIGNATION	SUBJECT	B.P.R. APPROVAL	ADOPTED "A" REVISION "R"
26	BRIDGE STD. C1	STANDARD MISCELLANEOUS DETAILS	1-12-60	R-12-2-65
	BRIDGE STD. C2	STANDARD MISCELLANEOUS DETAILS		
	BRIDGE STD. D	[illegible] DETAILS ROADWAY DRAINS		
	BRIDGE STD. E	ROADWAY DRAIN OUTLET DETAILS		
	BRIDGE STD. GRA	TYPICAL BEAM GUARD RAIL DETAILS		
	BRIDGE STD. H	TYP. DETAILS OF THICK. PAVEMENT & LOC. TOE OF SL. AROUND END BENTS		
	BRIDGE STD. H	TYP. DETAILS OF THICK. PAVEMENT & LOCATING TOE OF SLOPE		
	BRIDGE STD. HS	CONT. STEEL BEAM-TYP. APPROACH DETAILS-TWIN STRUCTURES		
	BRIDGE STD. HS	ST. BEAM & R.C. GIRDER-TYP. APPROACH DETAILS-TWIN STRUCTURES		
	BRIDGE STD. HS21	CONT. STEEL BEAM-TYP. APPROACH DETAILS-TWO-LANE STRUCTURES		
	BRIDGE STD. M1	MISCELLANEOUS APPROACH DETAILS		
	BRIDGE STD. M2	MISCELLANEOUS APPROACH DETAILS		
	BRIDGE STD. M3	MISCELLANEOUS APPROACH DETAILS		
	BRIDGE STD. M4	R.C. BRIDGE APPROACH TURNOUT DETAILS-12'-6" SHOULDERS		
27	BRIDGE STD. M5	SLOPEWALL AND DRAINAGE DETAILS		R-8-19-65
	BRIDGE STD. P2	STANDARD CONCRETE PILE DETAILS		
	[illegible]	PRESTRESSED CONCRETE TYPE I-BEAMS		
	BRIDGE STD. P8	PRESTRESSED COMPOSITE BOX BEAMS WIDE		
	BRIDGE STD. PB10	TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS		
28	BRIDGE STD. R1	ALUMINUM RAILING DETAILS		R-9-6-60
	BRIDGE STD. R1 S	STEEL RAILING DETAILS		
	BRIDGE STD. R2	BRIDGE LIGHTING DETAILS		
	BRIDGE STD. S1	TYPICAL DETAILS FOR PLACING GRADE "B" SPECIAL BORROW		
29	BRIDGE STD. S2	TYPICAL DETAILS FOR PLACING GRADE "B" SPECIAL BORROW	3-25-63	R-2-15-62
	BRIDGE STD. T SHEET A	STANDARD TEMPORARY BRIDGE		
	BRIDGE STD. T SHEET B	STANDARD TEMPORARY BRIDGE		
	ROAD STD. SHEET A	STANDARD PAVEMENT JOINTS		
30	ROAD STD. SHEET MA	MISCELLANEOUS STANDARDS	3-26-64	R-2-1-64
	ROAD STD. SHEET MB	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MC	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MC1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MD	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MD1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET ME	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET ME1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MF	MISCELLANEOUS STRUCTURE STANDARDS		
	ROAD STD. SHEET MG	MISCELLANEOUS STRUCTURE STANDARDS		
	ROAD STD. SHEET MH	MISCELLANEOUS PRIVATE DRIVE STANDARDS		
	ROAD STD. SHEET MI	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MJ	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MK	MISCELLANEOUS STANDARDS		
	ROAD STD. SH[illegible]	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MP	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MP1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MQ	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MR	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MR1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET S	MISCELLANEOUS STANDARDS CENTER DITCH INLETS		
	ROAD STD. SHEET S1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MT	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD.	STANDARD STRUCTURE CONNECTIONS FOR EXTENSION		
	ROAD STD.	STANDARD REINF. CONC. BOX CULVERTS		
	ROAD STD.	STANDARD REINF. CONC. BOX CULVERTS-SK. END & WING DETAILS		
	ROAD STD.	STANDARD REINF. CONC. CULVERTS-SLAB TOP TYPE (W.F.)		
	ROAD STD.	STANDARD REINF. CONC. CULVERTS-SLAB TOP TYPE (U.F.)		
	ROAD STD. SHEET GR	STANDARD GUARD RAIL		
	ROAD STD. SHEET GR1	BEAM GUARD RAIL		
	ROAD STD.	STANDARD REINF. CONCRETE ARCH-12' SPAN		
	ROAD STD.	STANDARD HEADWALLS		
	ROAD STD.	STANDARD STRUCTURAL PLATE ARCH		
	ROAD STD.	CONCRETE WINGS FOR STD. STRUCTURAL PLATE ARCHES		
	ROAD STD.	STANDARDS FOR SUPER-ELEVATION		
	ROAD STD. SHEET 1 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 3A DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET			

TRAFFIC DATA	I-70	I-465
A.D.T. (1959)	23,134	(1960) 31,723 V.P.D.
A.D.T. (1970 PROJECTED)	61,222	(1980) 85,657 V.P.D.
A.D.T. (19 PROJECTED)		V.P.D.
TRUCKS	6	6 %
DESIGN SPEED	70	70 M.P.H.
ACCESS CONTROL	FULL	FULL



INDIANA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS DATED 1963 TO BE USED WITH THESE PLANS.



Scale 1"=2,000'

REVISIONS	
DATE	SHEET NO.
11-5-65	26, 27

RECOMMENDED FOR APPROVAL 11-4-65
C. J. Klingelhoefer

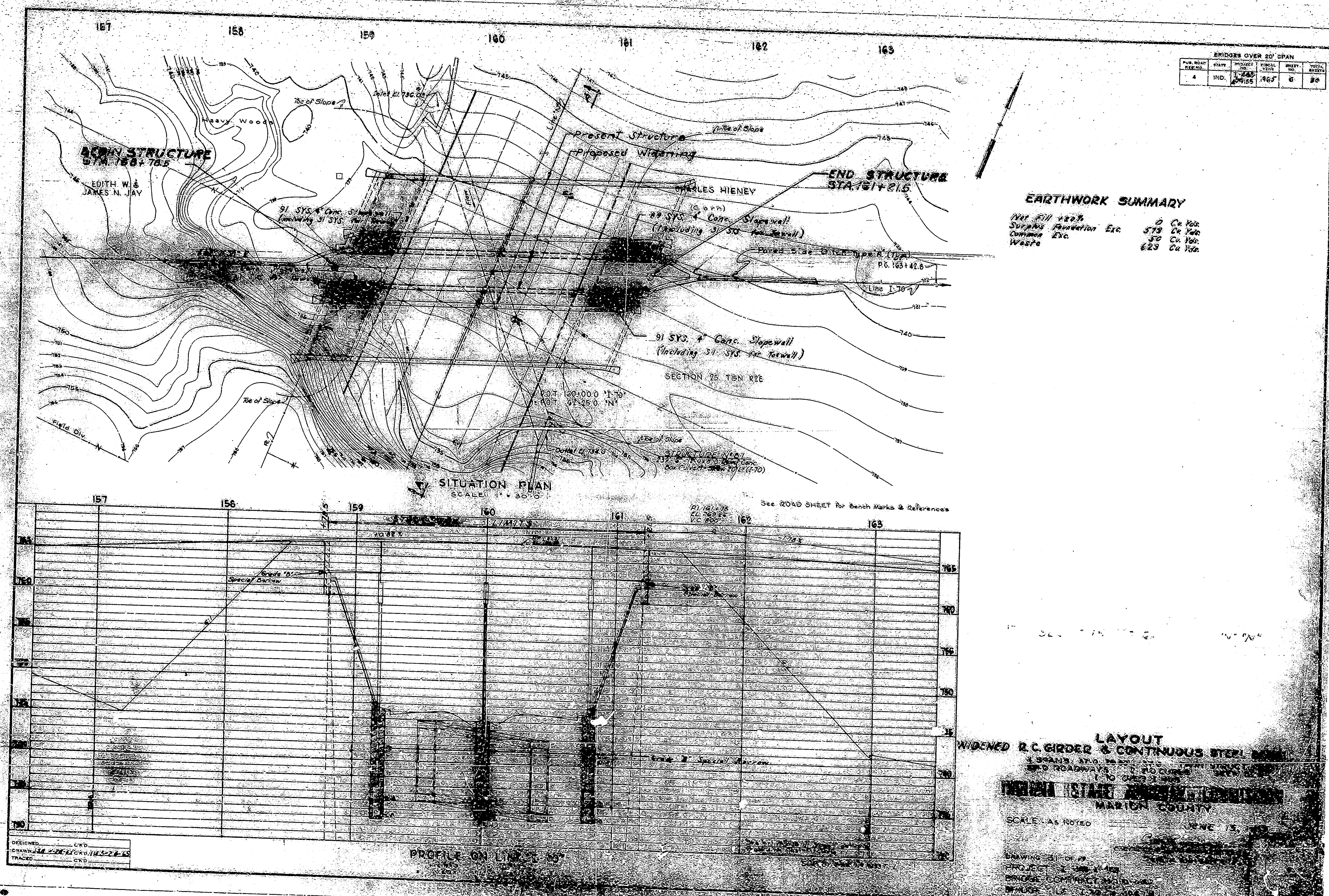
CARL J. KLINGELHOEFER REGISTERED No. 2420 STATE OF INDIANA PROFESSIONAL ENGINEER

APPROVED 11-4-65

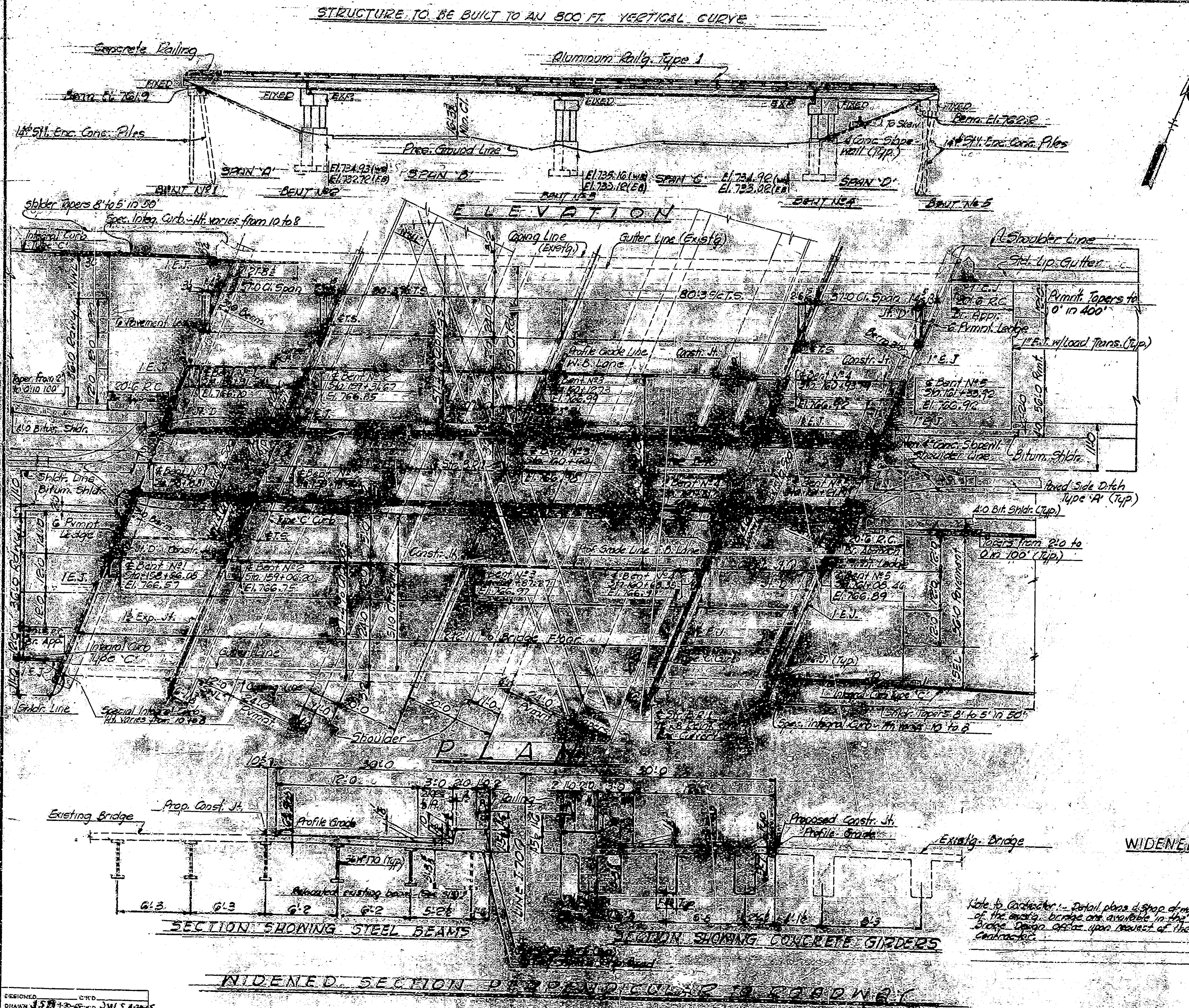
DEPUTY CHIEF HIGHWAY ENGINEER—INDIANA STATE HIGHWAY COMMISSION

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED:
DIVISION ENGINEER DATE

BRIDGE FILE: I-70-73-4647A


BRIDGES OVER 20' SPAN
PUB. ROAD REG. NO. 4
STATE IND.
FISCAL YEAR 1965
SHEET NO. 6
EARTHWORK SUMMARY
Net Fill
Surplus Foundation Exc. 579 Cu. Yds.
Common Exc. 50 Cu. Yds.
Waste 629 Cu. Yds.
BEGIN STRUCTURE
STA. 158+78.5
END STRUCTURE
STA. 161+21.5
EDITH W. & JAMES N. JAY
CHARLES HIENEY
Heavy Woods
Present Structure
Proposed Widening
Toe of Slope
91 SYS. 4" Conc. Slopewall
(Including 31 SYS. for Toewall)
89 SYS. 4" Conc. Slopewall
SECTION 25 T15N R2E
Line I-70
Field Div.
SITUATION PLAN
See ROAD SHEET for Bench Marks & References
Grade "B" Special Borrow
PROFILE ON LINE
LAYOUT
WIDENED R.C. GIRDER & CONTINUOUS STEEL
MARION COUNTY
SCALE - AS NOTED
JUNE 15,
DESIGNED
DRAWN
TRACED
CK'D

STRUCTURE TO BE BUILT TO AN 800 FT. VERTICAL CURVE



Note to Contractor:– Detail plans & shop drwgs. of the existg. bridge are available in the Bridge Design office upon request of the Contractor.

DESIGNED		CK'D	
DRAWN		CK'D	JWS
TRACED		CK'D	

BRIDGES OVER 20' SPAN

FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(78)155	1965	7	30

GENERAL NOTES

Depth of footings to be extended if found necessary. See Art B 403.2 (a) Specifications.

For details of steel encased concrete piles see Br. Std. C1, Special Provisions and applicable articles in the Specifications.

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

Reinforcing steel covering shall be 1½ inches in top and 1 inch min. in bottom of floor slabs, 3 inches in footing except bottom steel which shall be 4 inches, 1½" for stirrups in T-beams, and 2 inches in all other parts unless noted.

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

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

Concrete in bent columns, slopewalls, steel encased concrete piles to be class "D".

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

Waterproof back of mudwalls and bent caps in accordance with the Specifications.

Bevel forms ¾" under copings, and chamfer exposed edges 1 inch unless noted.

Construct 4" concrete slopewall at locations as shown on Layout.

Tolerance in position of pile head maximum 2 inches.

Three 1 inch Expansion Joints with Load Transfer to be placed in the pavement as shown on Br. Std. M3.

All railings to be constructed perpendicular to grade.

When new work is to be fitted to old work, the contractor shall check all dimensions and conditions in the field, and report any errors or discrepancies to the Engineer or assume responsibility for their correctness and the fit of new parts to old.

For Pay Items covering this structure see "Bridge Summary".

See Special Provisions or items included in this contract.

Portion of Aluminum Railing (Type 1) is to be removed and reset as indicated on detail plans.

JOINT LEGEND

Joint "D" indicates ½" Preformed Joint Filler placed under front 6" of girder bearing area at End Bents.

1" Expansion Joint – See Bridge Standard C1.

1½" Exp. Joint – Same as 1" Exp. Jt. except thickness – see Br. Std. C1.

DESIGN DATA

Designed for HS 20-44 loading in accordance with 1961 AASHO specifications. Checked for special loading of 2-24,000 lb. axles spaced @ 4'-0 Centers.

TYPICAL CROSS SECTION

See Sheet No. 2

STANDARD DRAWINGS

BRIDGE STD.	ROAD STD.	PURPOSE
C1		Bent Bar Notes [illegible]
		1" Exp. Jt., Pile Splice & [illegible] Data
		[illegible]
		Slopewall
		Aluminum Railing
		[illegible]
		[illegible]
	M3	Pavement [illegible]

GENERAL PLAN

WIDENED R.C. GIRDER & CONTINUOUS STEEL BEAM BRIDGE

4-SPANS 37'-0 2 @ 86'-3 37'-0 TWIN STRUCTURES

51'-0 ROADWAY SKEW 23° RT. 2'-0 CURBS

I-70 [illegible] I-465

INDIANA STATE HIGHWAY COMMISSION

MARION COUNTY

SCALE:- ⅛" = 1' (U.N.) JUNE 15, 1966

RECOMMENDED FOR APPROVAL: [signature]

DRAWING: 52 OF 19

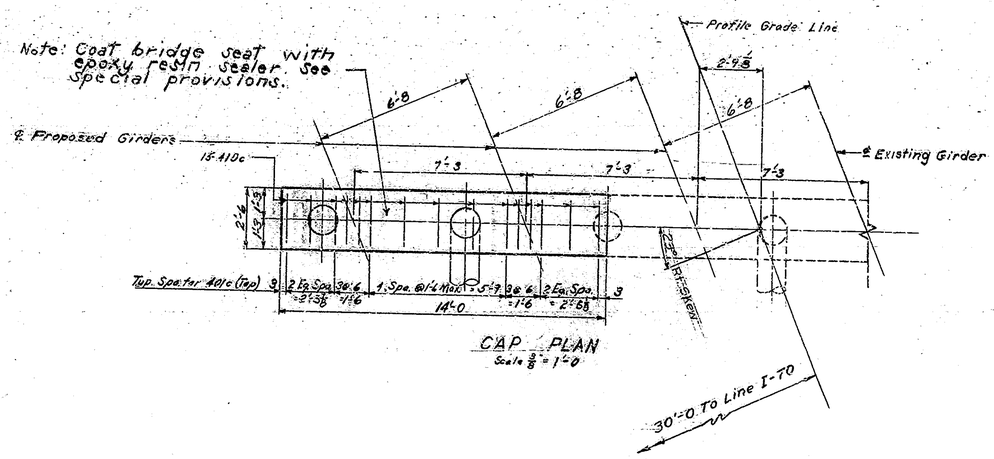
PROJECT: I-465-4(78)155 ℄ Sta. 160+00

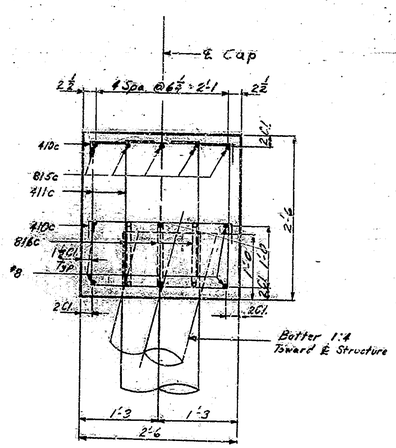
BRIDGE CONTRACT NO. B-0922

BRIDGE FILE: I-70-73-3047 A

BRIDGES OVER 20' SPAN					
PUB. ROAD REQ. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-2(178)155	1965	8	30

Note: Coat bridge seat with epoxy resin sealer. See Special provisions.

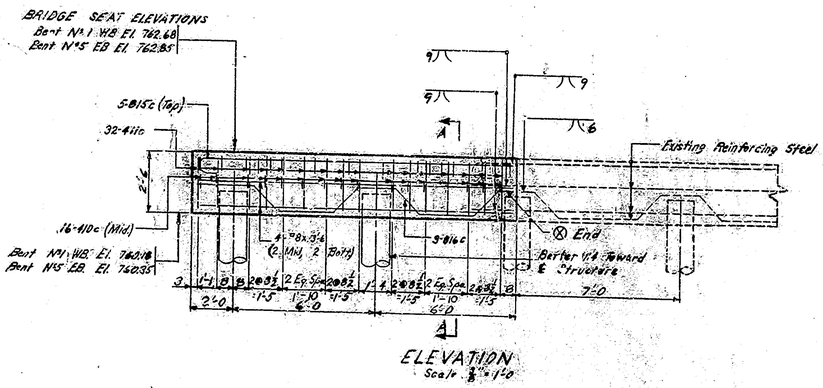


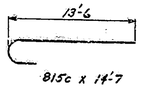


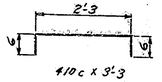
SECTION A-A
Scale 1"=1'-0

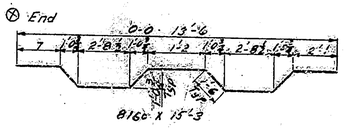
BILL OF MATERIALS
BENT N° 1 WB
(BENT N° 5 EB - SAME)

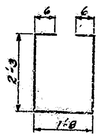
REINFORCING STEEL			
Size & Mark	No. of Bars	Length	Weight
#15c	3	14'-7	
#15c	2	13'-3	
#8	4	14'-0	
		Total #8	46 lbs
#10c	31	19'-9	
#11c	32	7'-2	
		Total #11	220 lbs
	Total	Steel	681 lbs
CONCRETE			
Class "F"			32 cu. yds.
MISCELLANEOUS			
4-7"x7"x⅜" Steel Encased Concrete Piles @ approx 45°			90 Lin. Ft.

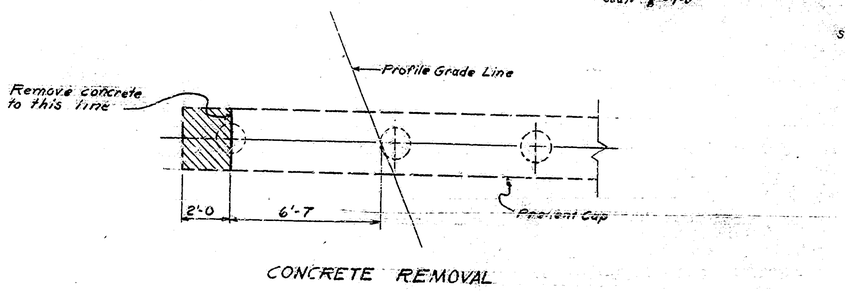












STEEL ENCASED CONCRETE PILES
Bent N°1 WBL 2
Bent N°5 EBL 2
All piles to be driven to 40 Tons minimum bearing.

NOTES:
See Br. Std. C, for Reinforcing bar notes.
See Dwg. S2 for General Notes
Bent cap is not to be poured until the fill has been completed up to the approximate elevation of the bottom of the cap.
Exposed reinforcing steel to extend into new concrete.
Exposed reinforcing steel to be cleaned and straightened.

DESIGNED _____ C'K'D _____
DRAWN LSR 2-12-65 C'K'D LWHW 3-25-65
TRACED _____ C'K'D _____

BENT N° 1 (WB) & BENT N°5 (EB)
INDIANA STATE HIGHWAY COMMISSION

SCALE:- As Noted JUNE 15, 1965
RECOMMENDED FOR APPROVAL:- _____ ENGINEER OF BRIDGE DESIGN

DRAWING: S3 OF 19
PROJECT:- I-465-2(178)155
BRIDGE CONTRACT NO. B-6622
BRIDGE FILE:- I-70-75-4641A

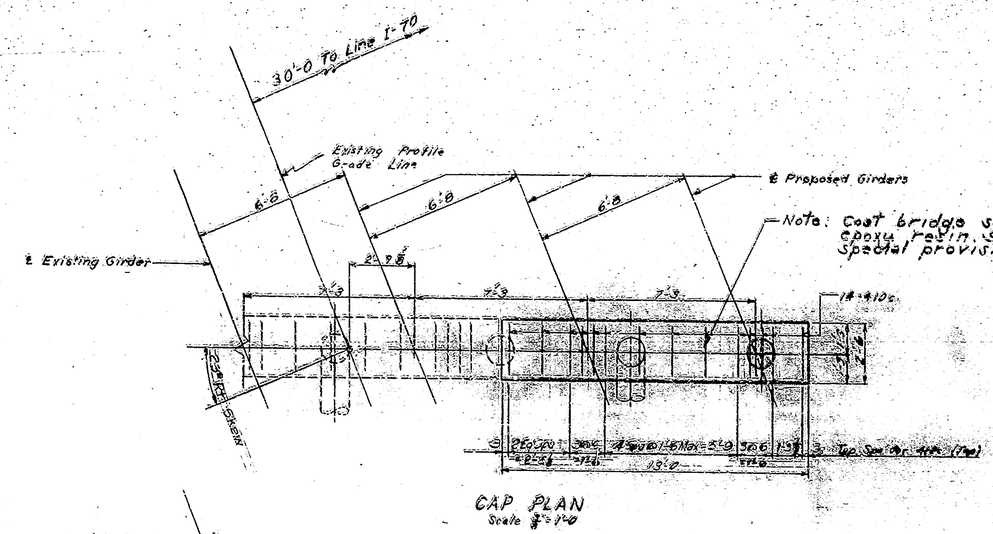
CHARLES R. SUMNER REGISTERED No. 2275 STATE OF INDIANA PROFESSIONAL ENGINEER

BRIDGES OVER 20' SPAN

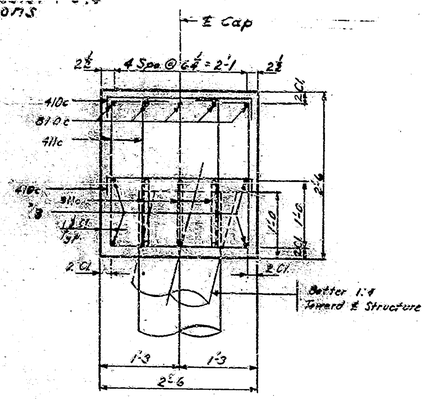
PUB. ROAD SECTION	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465 4(78) 155	1965	9	90

BILL OF MATERIALS
BENT N° 1 EB
(BENT N° 5 WB-SAME)

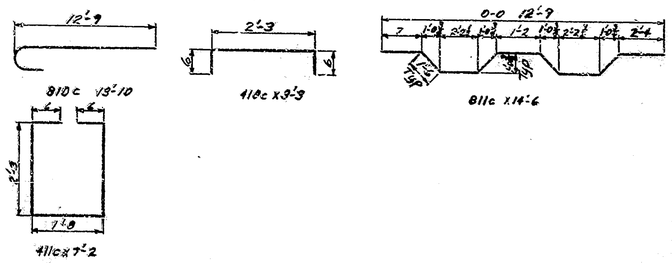
REINFORCING STEEL			
Size & Mark	No. of Bars	Length	Weight
#10c	5	18'-10	
#11c	32	18'-6	
#8	4	18'-9	
		Total #8	237#
#10c	30	9'-3	
#11c	32	7'-2	
		Total #11	218#
		Total	455#
CONCRETE			
Class "C"			80 cys.
MISCELLANEOUS			
2-7 Ga. x 18" Steel Encased Concrete Piles @ approx. 45' =			90 Lin. Ft.

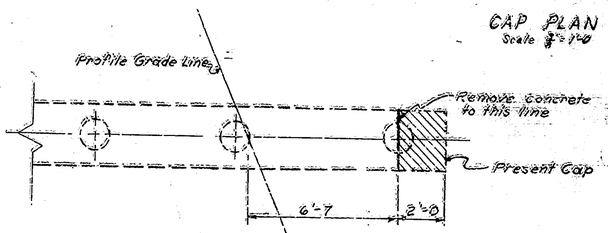


CAP PLAN
Scale 3/8" = 1'-0

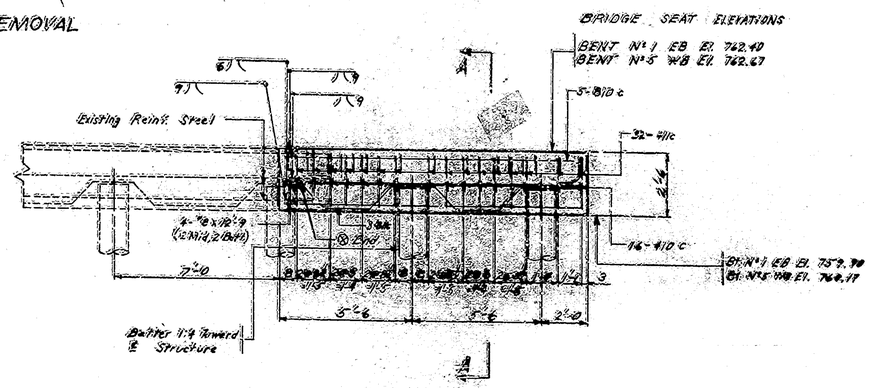


SECTION A-A
Scale 1" = 1'-0





CONCRETE REMOVAL



ELEVATION
Scale 3/8" = 1'-0

STEEL ENCASED CONCRETE PILES
Bent N°1 EBL 2
Bent N°5 WBL 2
All piles to be driven to 40 Tons minimum bearing.

NOTES:
See Br. Std. C, for Reinforcing bar notes.
See Dwg. S2 for General Notes
Bent cap is not to be poured until the fill has been completed up to the approximate elevation of the bottom of the cap.
Exposed reinforcing steel to extend into new concrete
Exposed reinforcing steel to be cleaned and straightened.

BENT N°1 (EB) & BENT N°5 (WB)

INDIANA STATE HIGHWAY COMMISSION

SCALE:- As Noted JUNE 15, 1965

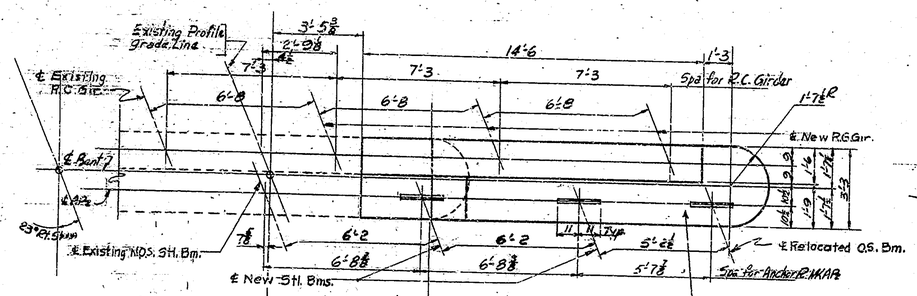
RECOMMENDED FOR APPROVAL:- C.R.R. Chief Engineer

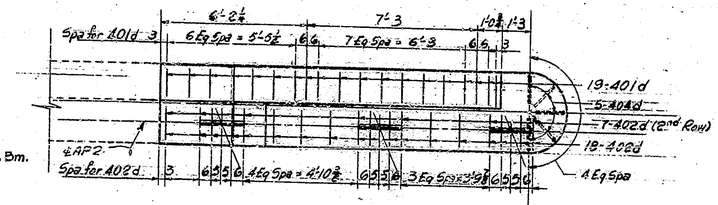
DRAWING:- S4 OF 19
PROJECT:- I-465-4(78)155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE:- I-70-13-1647.A

CHARLES R. RICHEY NO. 2275 STATE OF INDIANA REGISTERED PROFESSIONAL ENGINEER

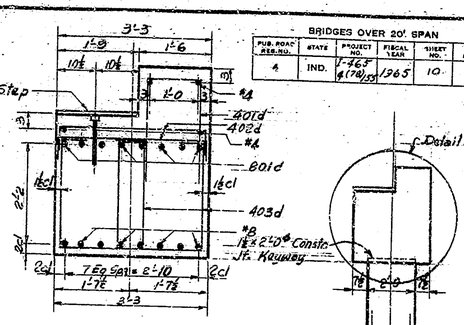
DESIGNED C'K'D
DRAWN JSR 3/1/65 C'K'D WHN 3-16-65
TRACED C'K'D

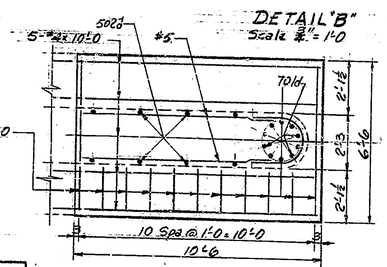
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(76)155	1965	10	30

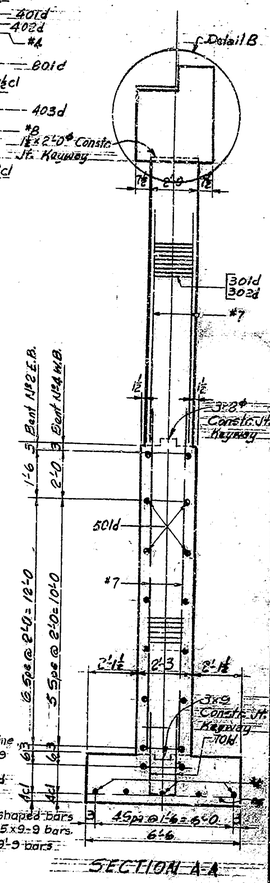


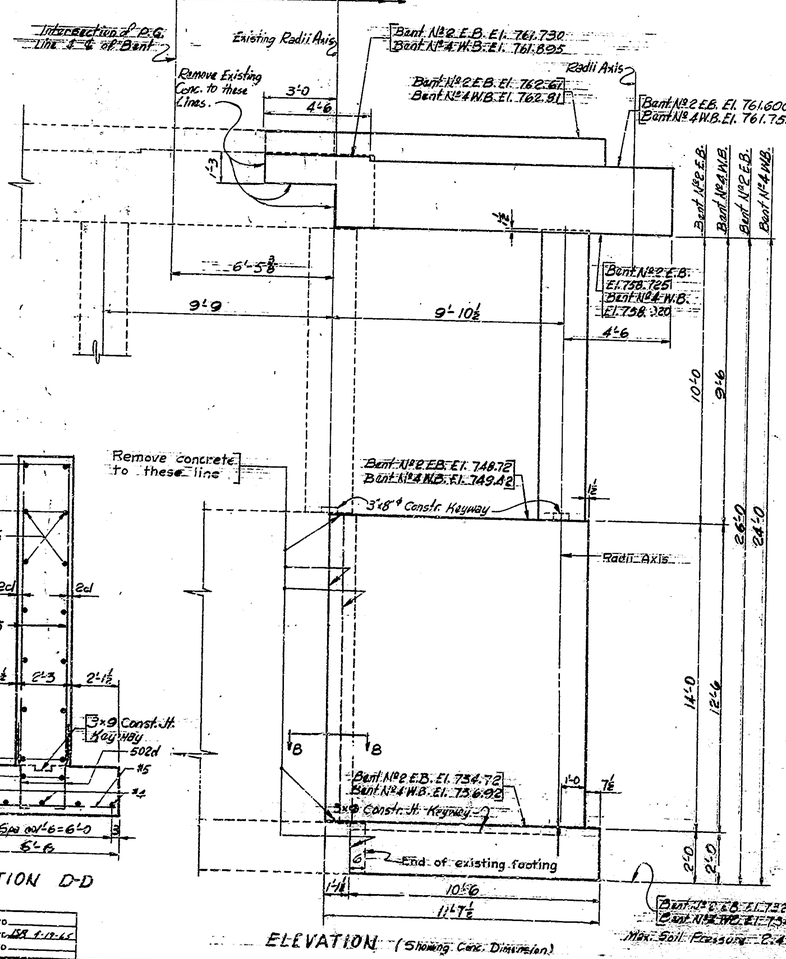


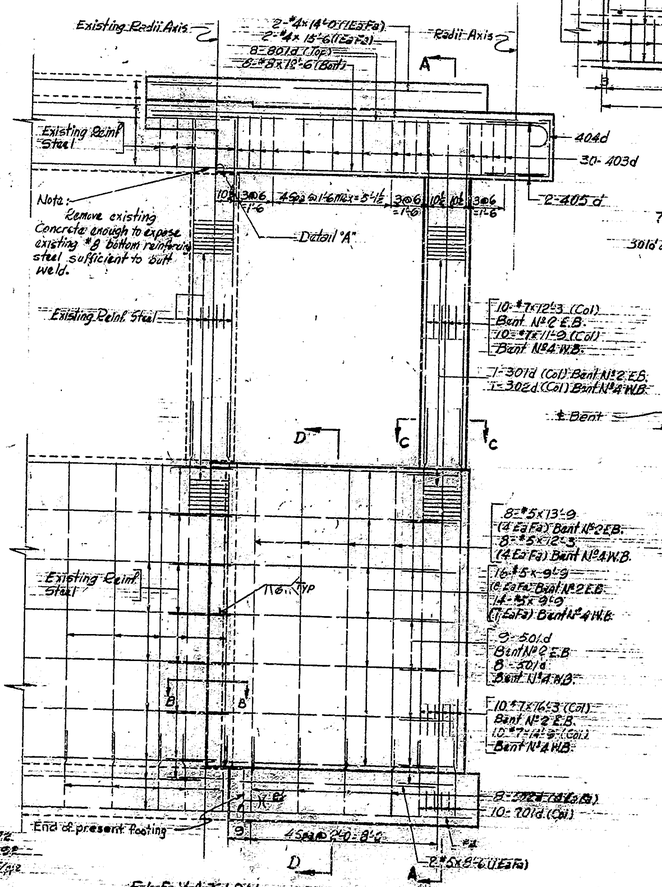
Note: Coat bridge seat with epoxy resin sealer. See Special provisions

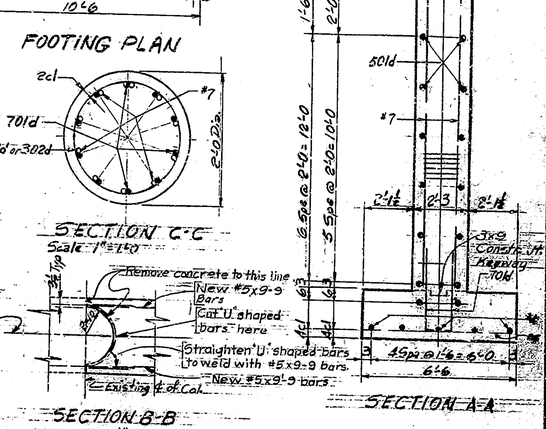












NOTES:
See Br. Std. C, for reinforcing bar bends.
Anchor R MK AA, to be preset in concrete.
See Drwgs. 7 for Detail "A", Anchor R Details, bending diagrams & Bill of Materials.
Clean and straighten existing exposed reinforcing steel.

BENT No 2 E.B. & BENT No 4 W.B. DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE: 3/8" = 1'-0 Unless Noted. JUNE 15, 1965

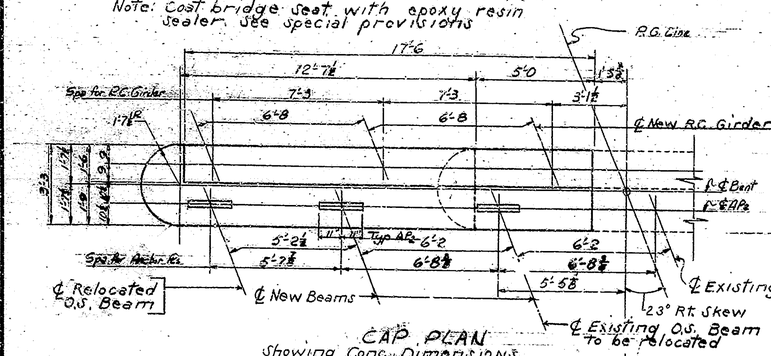
RECOMMENDED FOR APPROVAL: C. R. Gunnoe, ENGINEER OF BRIDGE DESIGN

DRAWING: 55 OF 79
PROJECT: I-465-4(76)155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE: I-70-73-16.81 A

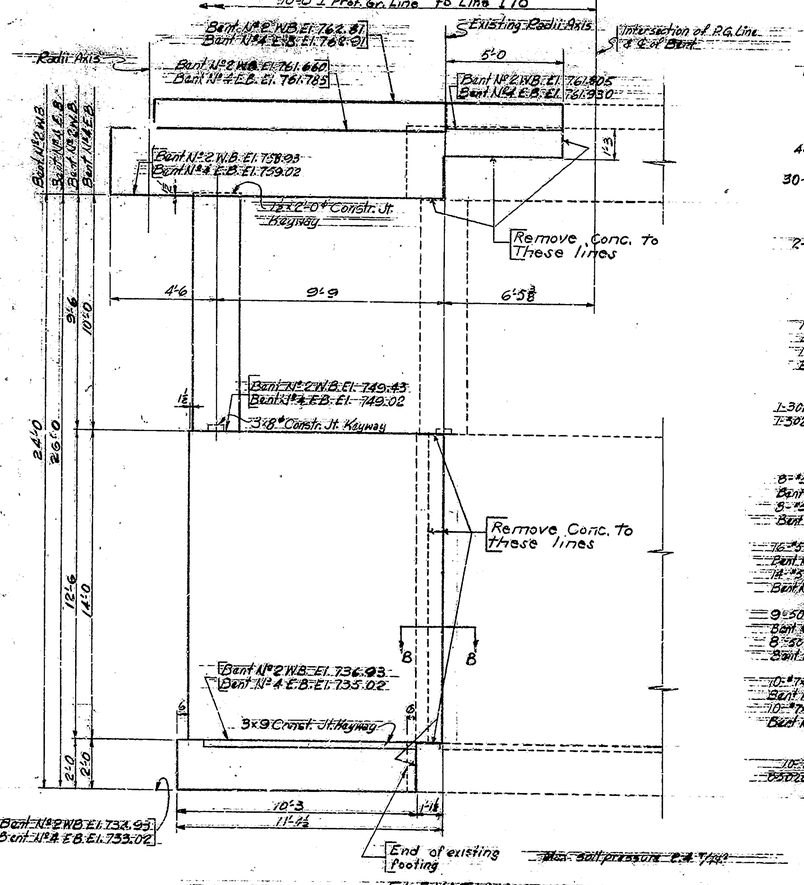
CHARLES R. GUNNOE, REGISTERED, NO. 2279, STATE OF INDIANA, PROFESSIONAL ENGINEER

DESIGNED ____ C'K'D ____
DRAWN WHW C'K'D BR 1-13-66
TRACED ____ C'K'D ____

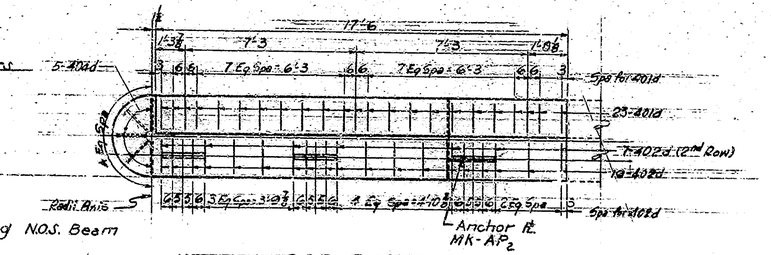
Note: Coat bridge seat with epoxy resin sealer. See special provisions



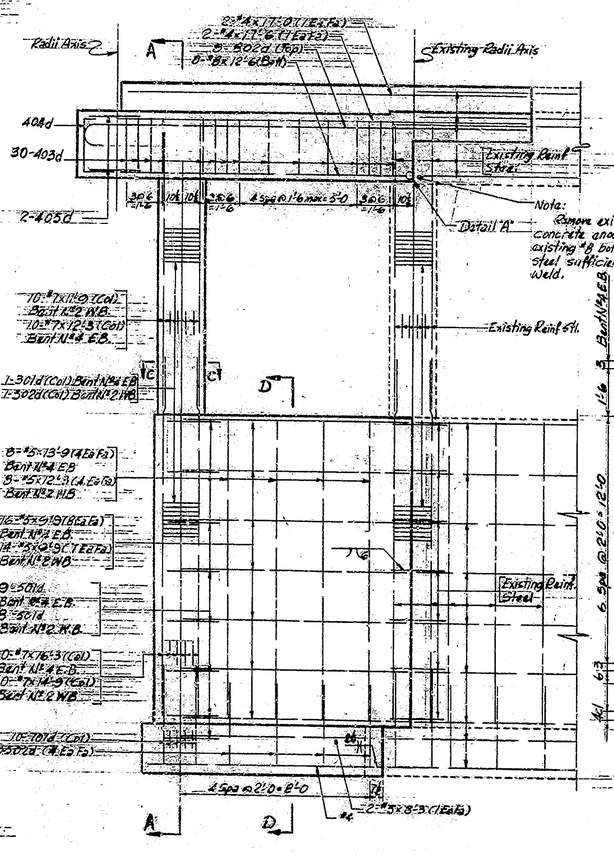
CAP PLAN
Showing Conc. Dimensions
30'-0 ⊥ Prof. Gr. Line to Line 170



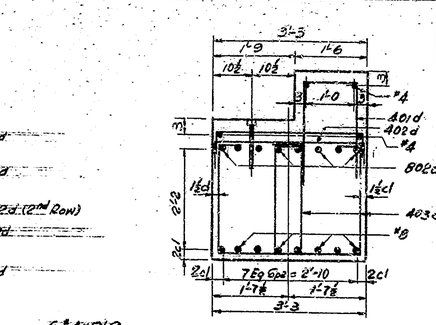
ELEVATION (Showing Conc. Dimension)



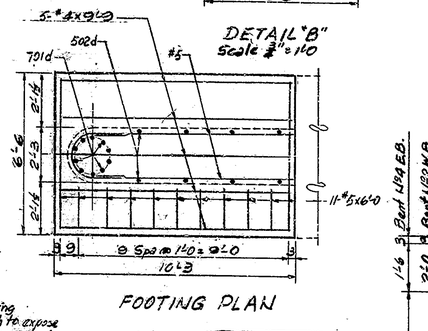
CAP PLAN
Showing Reinf. Steel



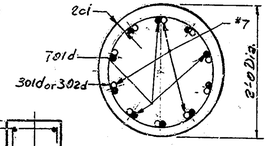
ELEVATION (Showing Reinf. Steel)



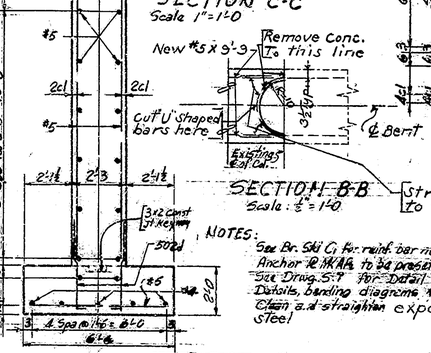
DETAIL "B"
Scale ¾" = 1'-0



FOOTING PLAN

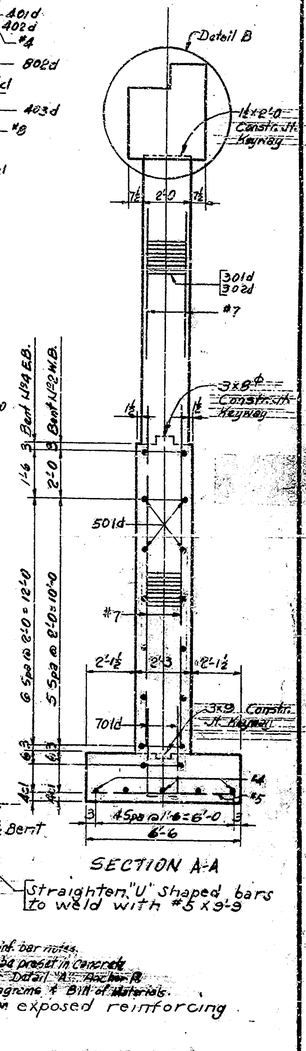


SECTION C-C
Scale 1"=1'-0



SECTION B-B
Scale ¾" = 1'-0

Straighten "U" shaped bars to weld with #5 x 9'-9



SECTION A-A

SECTION D-D

NOTES:
See Br. Std. C, for reinf. bar notes.
Anchor 12 AKA to be preset in concrete
See Drwg. S-7 for Detail 'B' Anchor R
Details, bending diagrams & Bill of Materials.
Clean and straighten exposed reinforcing steel

BRIDGES OVER 20' SPAN					
PUB. ROAD DESIGN	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
/	IND.	F 465 (18) 155	1965	11	30

BENT N°4 E.B. & BENT N°2 W.B. DETAILS

INDIANA STATE HIGHWAY COMMISSION

SCALE: 1" = 1'-0 Unless Noted — JUNE 15, 1965

RECOMMENDED FOR APPROVAL: C.R.R. Zimmer, ENGINEER OF BRIDGE DESIGN

DRAWING S-6 OF 19

PROJECT F 465 (18) 155

BRIDGE CONTRACT NO. B-6922

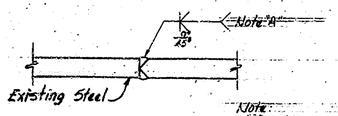
BRIDGE FILE I-70-D-4567A

CHARLES R. ROMINGER, REGISTERED No. 2275, STATE OF INDIANA, PROFESSIONAL ENGINEER

DESIGNED	C'K'D
DRAWN WHW	C'K'D JSD 4-19-65
TRACED	C'K'D

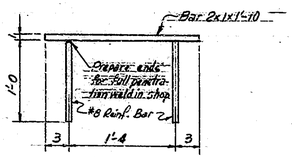
BRIDGES OVER 20' SPAN

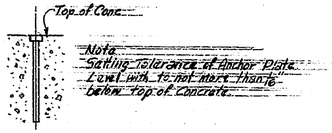
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I 465-4 (78) 155	1965	12	80



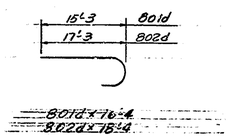
Note "A" Chip or grind root to sound metal before welding second side.

DETAIL "A"

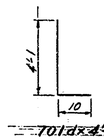




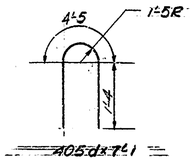
DETAIL FOR ANCHOR PLATE MK AP2



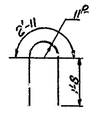
801d x 76'-4
802d x 78'-4



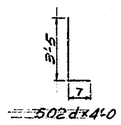
701d x 4'-11



405d x 7'-1

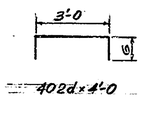


501d x 6'-3

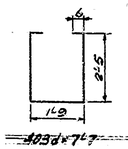


502d x 4'-0

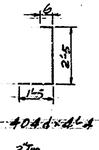
401d x 5'-3



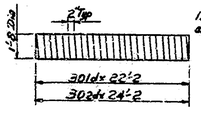
402d x 4'-0



403d x 7'-7



404d x 4'-4



1. Any lap made in spiral shall be by welding or 1½ turns lap.
2. Spiral to be made of ⅜" ϕ cold drawn wire.
3. The cost of spacer is to be included in the cost of spiral.

BENT No2 E.B.

REINFORCING STEEL

Size & Mark	No. of Bars	Length	Weight
801d	8	16'-4	
#8	8	12'-6	
		Total #8	616
701d	10	4'-11	
#7	10	16'-3	
#7	10	12'-3	
		Total #7	683
501d	9	6'-3	
502d	8	4'-0	
#5	8	13'-9	
#5	16	9'-9	
#5	2	8'-6	
#5	11	6'-0	
		Total #5	456
401d	19	5'-3	
402d	25	4'-0	
403d	30	7'-7	
404d	5	4'-4	
405d	2	7'-1	
#4	2	15'-6	
#4	2	14'-0	
#4	5	10'-0	
		Total #4	382
301d	1	22'-2	267
		Total Steel	2404

CONCRETE

Class F in Cap	6.2 Cu.Yds.
Class D in Column	1.2 Cu.Yds.
Class E above Ftg	12.0 Cu.Yds.
Class E in Ftg	5.1 Cu.Yds.

MISCELLANEOUS

Anchor R MK AP2	3 Ea

BENT No2 W.B.

REINFORCING STEEL

Size & Mark	No. of Bars	Length	Weight
802d	8	18'-4	
#8	8	12'-6	
		Total #8	659
701d	10	4'-11	
#7	10	14'-9	
#7	10	11'-9	
		Total #7	642
501d	8	6'-3	
502d	8	4'-0	
#5	8	12'-3	
#5	14	9'-9	
#5		8'-3	
#5		6'-0	
		Total #5	416
401d	23	5'-3	
402d	26	4'-0	
403d	30	7'-7	
404d	5	4'-4	
405d	2	7'-1	
#4	2	17'-6	
#4	2	17'-0	
#4	5	9'-9	
		Total #4	405
302d	1	24'-2	291
		Total Steel	2,413

CONCRETE

Class F in Cap	6.4 Cu.Yds.
Class D in Column	1.1 Cu.Yds.
Class E above Ftg	10.60 Cu.Yds.
Class E in Ftg	4.9 Cu.Yds.

MISCELLANEOUS

Anchor R MK AP2	3 Ea

BENT No4 E.B.

REINFORCING STEEL

Size & Mark	No. of Bars	Length	Weight
802d	8	18'-4	
#8	8	18'-6	
		Total #8	659
701d	10	4'-11	
#7	10	16'-3	
#7	10	12'-3	
		Total #7	683
501d	9	6'-3	
502d	8	4'-0	
#5	8	13'-9	
#5	16	9'-9	
#5	2	8'-3	
#5	11	6'-0	
		Total #5	456
401d	23	5'-3	
402d	26	4'-0	
403d	30	7'-7	
404d	5	4'-4	
405d	2	7'-1	
#4	2	17'-6	
#4	2	17'-0	
#4	5	9'-9	
		Total #4	405
301d	1	22'-2	267
		Total Steel	2,470

CONCRETE

Class F in Cap	6.5 Cu.Yds.
Class D in Column	1.2 Cu.Yds.
Class E above Ftg	11.9 Cu.Yds.
Class E in Ftg	4.9 Cu.Yds.

MISCELLANEOUS

Anchor R MK AP2	3 Ea

BENT No4 W.B.

REINFORCING STEEL

Size & Mark	No. of Bars	Length	Weight
801d	8	16'-4	
#8	8	12'-6	
		Total #8	616
701d	10	4'-11	
#7	10	14'-9	
#7	10	11'-9	
		Total #7	642
501d	8	6'-3	
502d	8	4'-0	
#5	8	12'-3	
#5	14	9'-9	
#5	2	8'-6	
#5	11	6'-0	
		Total #5	417
401d	19	5'-3	
402d	25	4'-0	
403d	30	7'-7	
404d	5	4'-4	
405d	2	7'-1	
#4	2	15'-6	
#4	2	14'-0	
#4	5	10'-0	
		Total #4	382
302d	1	24'-2	291
		Total Steel	2348

CONCRETE

Class F in Cap	6.2 Cu.Yds.
Class D in Column	1.1 Cu.Yds.
Class E above Ftg	10.7 Cu.Yds.
Class E in Ftg	5.1 Cu.Yds.

MISCELLANEOUS

Anchor R MK AP2	3 Ea

Notes:
See Br. Std. C1 for reinforcing bar Notes.
See Dwg S-3 & S-6 for additional details.

BENT No2 & BENT No4 DETAILS AND BILL OF MATERIAL

INDIANA STATE HIGHWAY COMMISSION

SCALE:- No Scale — JUNE 15, 1965

RECOMMENDED FOR APPROVAL:- C.R. Runnels — ENGINEER OF BRIDGE DESIGN

DRAWING:- S7 OF 19

PROJECT:- I-465-4 (78) 155

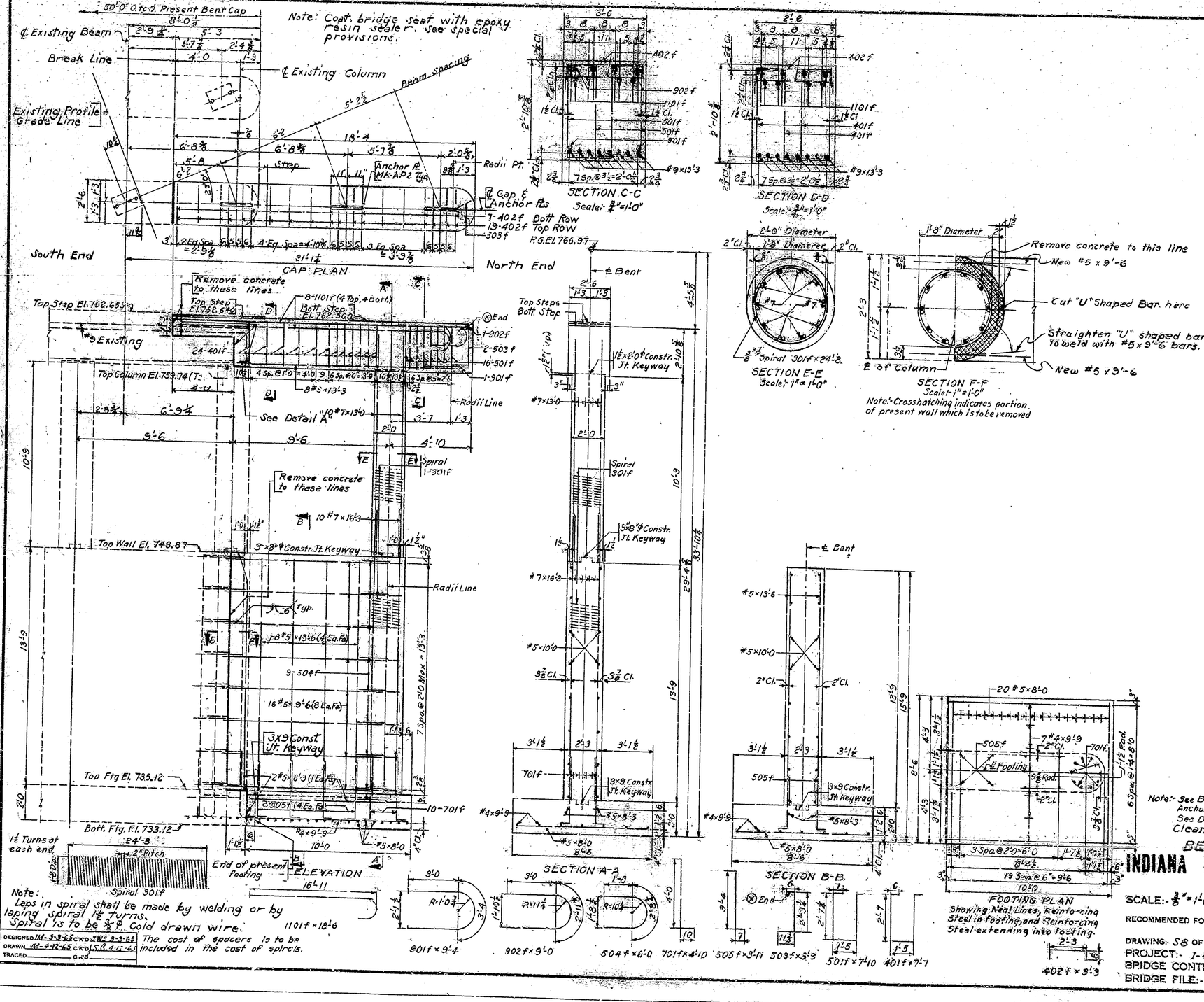
BRIDGE CONTRACT NO. B-6922

BRIDGE FILE:- I-70-73-4647A

CHARLES R. LUCAS — REGISTERED NO 2275 STATE OF INDIANA — PROFESSIONAL ENGINEER

DESIGNED	C'K'D
DRAWN WHH	C'K'D JSB 6/22/65
TRACED	C'K'D

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(78)155	1965	18	30



BILL OF MATERIALS
BENT No 3 EAST BOUND

REINFORCING STEEL			
SIZE AND MARK	NO. OF BARS	LENGTH	WEIGHT
1101f	8	18'-6	786#
901f	1	9'-4	
902f	1	9'-0	
#9	8	13'-3	
		Total #9	423#
701f	10	4'-10	
#7	10	16'-3	
#7	10	13'-0	
		Total #7	697#
501f	16	7'-10	
503f	2	3'-9	
504f	9	6'-0	
505f	8	3'-11	
#5	8	13'-6	
#5	16	9'-6	
#5	2	8'-3	
#5	20	8'-0	
		Total #5	682 #
401f	24	7'-7	
402f	26	3'-3	
#4	7	9'-9	
		Total #4	224 #
301f	1	24'-8	297#
		TOTAL STEEL	3109. #

CONCRETE	
Class F Cap	4.5 Cu. Yds.
Class D Column	1.3 Cu. Yds.
Class E Above Footing	11.4 Cu. Yds.
Class E In Footing	6.3 Cu. Yds.

MISCELLANEOUS	
Anchor Plates AP2	3 Each

Note:- See Br. Std. C1 for Reinforcing Bar Notes.
Anchor Plates Mk AP2 shall be pre-set in the concrete.
See Drwg. S7 for Anchor Plate details, and, detail "A"
Clean and straighten exposed reinforcing steel

BENT No 3 DETAILS (E.B.)

INDIANA STATE HIGHWAY COMMISSION

SCALE:- ⅜"=1'-0" Unless Noted JUNE 15, 1965

RECOMMENDED FOR APPROVAL: C. R. Runnels
ENGINEER OF BRIDGE DESIGN

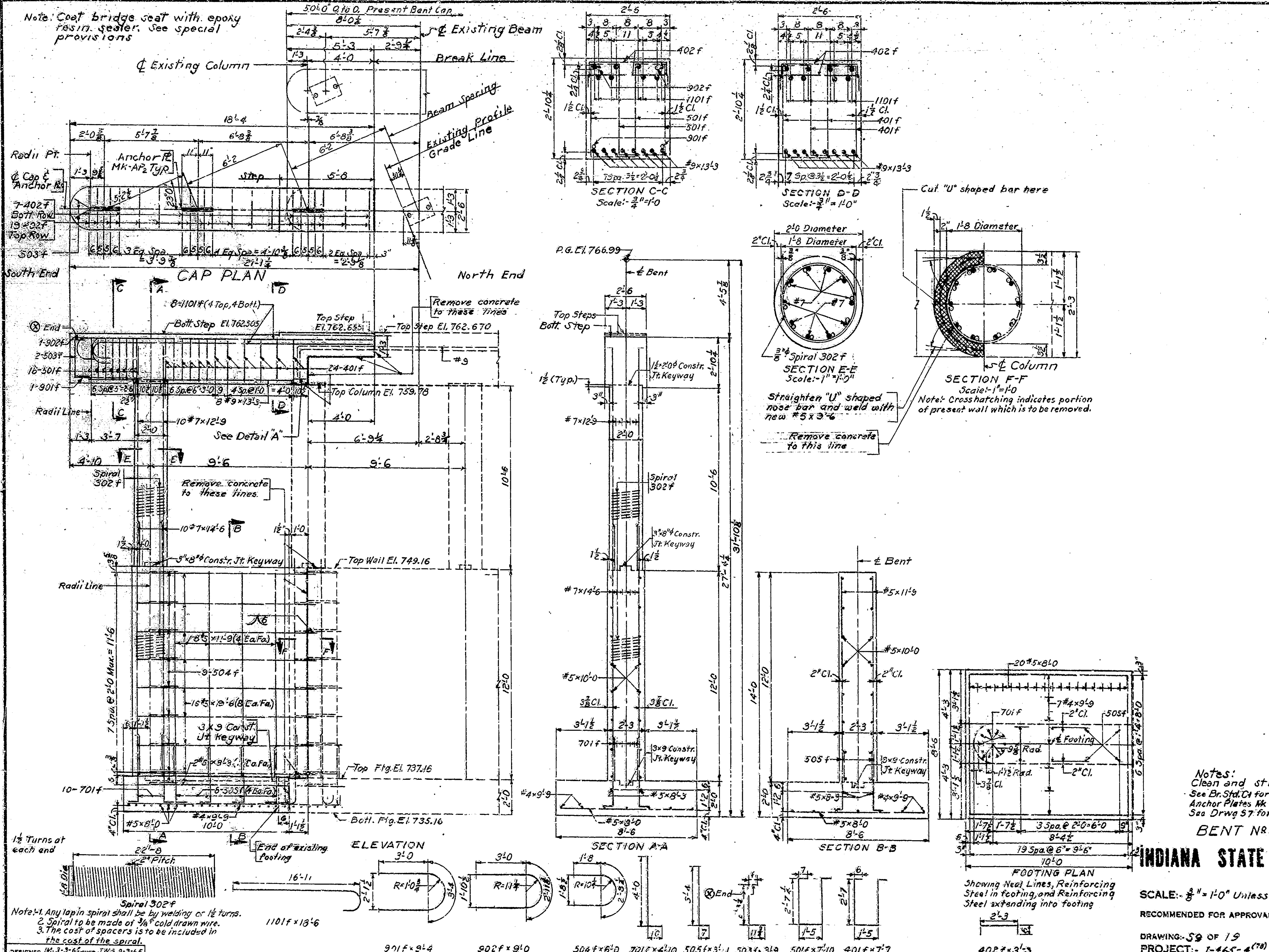
DRAWING: S6 OF 19
PROJECT:- I-465-4(78) 155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE:- I-70-73-4647A

CHARLES R. RUNNELS REGISTERED NO. 2275 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED JM 5-3-65 CKD JWS 8-3-65
DRAWN JM 4-12-65 CKD JWS 8-3-65
TRACED CKD

Fed. Road Reg. No.	State	Project No.	Fiscal Year	Sheet No.	Total Sheets
4	IND.	I-465-4(78)155	1965	14	30

BRIDGES OVER 20' SPAN



BILL OF MATERIALS
BENT № 3 WEST BOUND

REINFORCING STEEL			
SIZE AND MARK	№ OF BARS	LENGTH	WEIGHT
1101f	8	18'-6	786#
901f	1	9'-4	
902f	1	9'-0	
#9	8	13'-3	
		Total #9	423#
701f	10	4'-10	
#7	10	14'-6	
#7	10	12'-9	
		Total #7	656#
501f	16	7'-10	
503f	2	3'-9	
504f	9	6'-0	
505f	8	3'-11	
#5	8	11'-9	
#5	16	9'-6	
#5	2	8'-3	
#5	20	8'-0	
		Total #5	669#
401f	24	7'-7	
402f	26	3'-3	
#4	7	9'-9	
		Total #4	223#
302f	1	22'-8	273#
TOTAL STEEL			3030#

CONCRETE	
Class F Cap	4.3 Cu. Yds.
Class D Column	1.2 Cu. Yds.
Class E Above Footing	9.9 Cu. Yds.
Class E In Footing	6.3 Cu. Yds.

MISCELLANEOUS	
Anchor Plates AP2	3 Each

Notes:
Clean and straighten exposed reinforcing steel
See Br. Std. C1 for Reinforcing Bar Notes.
Anchor Plates Mk AP2 shall be preset in the concrete
See Drwg S7 for Anchor Plate details and detail "A"

BENT № 3 DETAILS (W.B)

INDIANA STATE HIGHWAY COMMISSION

SCALE:- ⅜" = 1'-0" Unless Noted

JUNE 15, 1965

RECOMMENDED FOR APPROVAL:- C. R. Rummer
ENGINEER OF BRIDGE DESIGN

DRAWING:- S9 OF 19
PROJECT:- I-465-4(78) 155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE:- I-70-73-4647A

CHARLES R. RUMMER REGISTERED NO 2275 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED M. 3-3-65 CK'D JWS 3-3-65
DRAWN M. 4-19-65 CK'D SB 4-20
TRACED CK'D

PUB. ROAD SEC. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND	I-465-4(78)155	1965	15	30

BRIDGES OVER 20' SPAN

WING B

SLAB PLAN — SPAN "A" EB & "D" WB
Scale: 3/8" = 1'-0

SECTION THRU MUDWALL
Scale 3/8" = 1'-0

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

SECTION THRU CURTAIN WALL
Scale 3/8" = 1'-0

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

ELEVATION
Scale 3/8" = 1'-0

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

NOTES:
For General Notes See Drwg. S2
For reinforcing bar notes see Sr. Std. C1.
For aluminum railing details see Br. Std. R1-A.
For additional details see Drwgs. S11 & S12
For location of sections D-D & E-E see Drwg. S12

① Travel smooth and cover with one layer of roofing felt (medium weight).

DESIGN DATA:
UNIT STRESSES: f_s = 20,000 psi.; f_c = 1200 psi
LIVE LOAD: HS 20-44 with impact and distribution of loads in accordance with 1957 A.A.S.H.O. Specifications except for floor slab which was designed for a 16,000 lb. wheel load.
DEAD LOAD: Increased 35 p.s.f. of roadway for future wearing surface. Slab designed with 4 inch wearing surface.
Maximum dead load deflection = 5/16 inch.

SPAN "A" (EB) & SPAN "D" (WB) DETAILS

INDIANA STATE HIGHWAY COMMISSION

SCALE:- AS NOTED JUNE 15, 1965

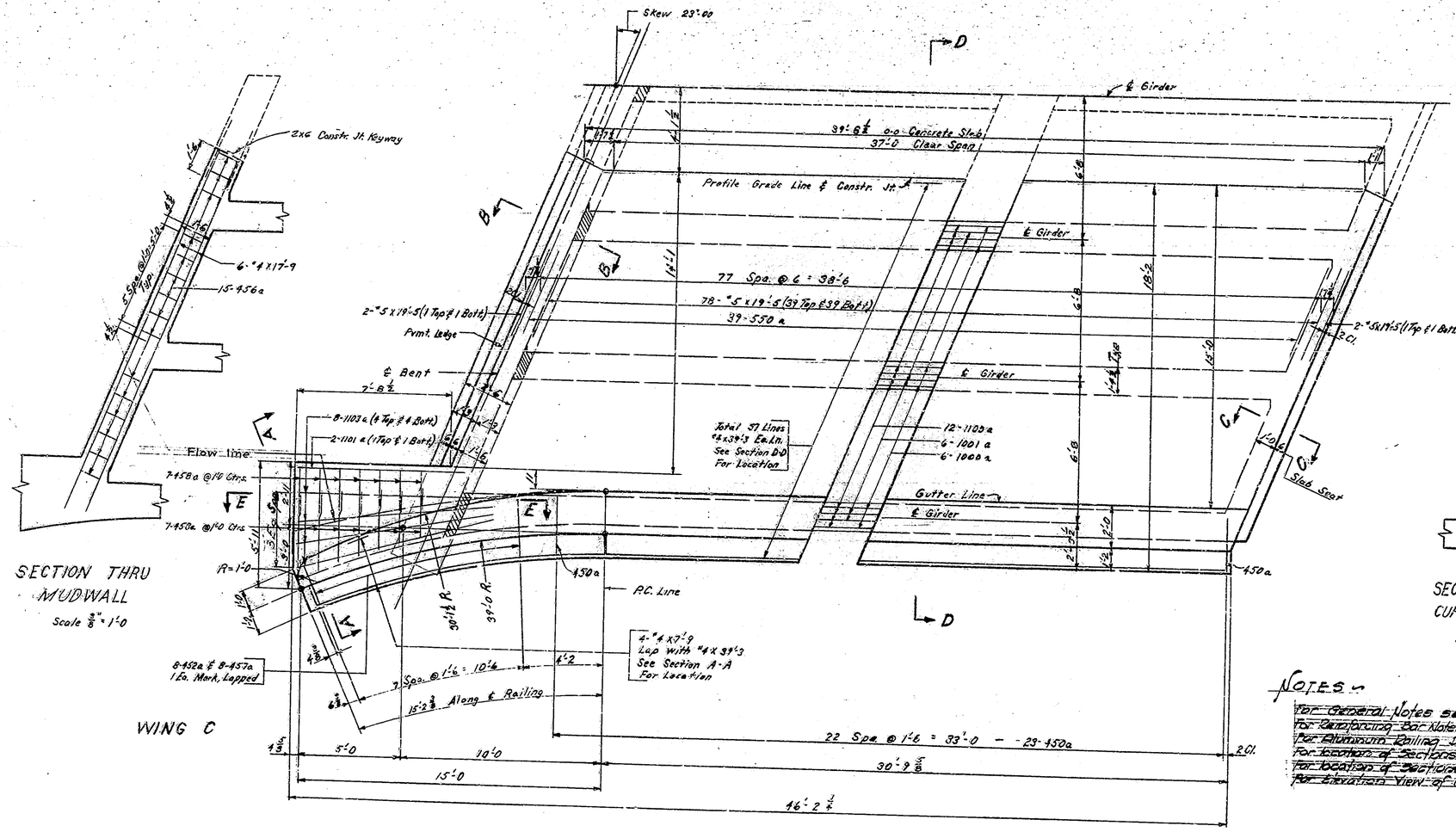
RECOMMENDED FOR APPROVAL:- C R Runner
ENGINEER OF BRIDGE DESIGN

DRAWING:- 510 OF 19
PROJECT:- I-465-4(78)155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE:- I-70-73-4647A

CHARLES R. POWER REGISTERED NO. 2275 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED _____ C'K'D _____
DRAW. JSP 2-18-65 C'K'D WLS 3/2/65
TRACED _____ C'K'D _____

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(12)155	1965	16	20



SLAB PLAN — SPAN "A" WB & "D" EB

Scale ⅜" = 1'-0

NOTES:-

For General Notes see Drwg. 5P.
For Reinforcing Bar Notes see Dr. Std. C1.
For Aluminum Railing Details see Br. Std. D-A.
For location of Sections A-A, B-B & C-C see Drwg. 5K.
For location of Sections D-D & E-E see Drwg. 5K.
For Elevation View of Coping & Railing see Drwg. 5K.

DESIGNED _____ C'K'D _____
DRAWN MS & RBS 2-22-65 C'K'D JWS 3/12/65
TRACED _____ C'K'D _____

SPAN "A" (WB) & SPAN "D" (EB) DETAILS

INDIANA STATE HIGHWAY COMMISSION

SCALE:- ⅜" = 1'-0

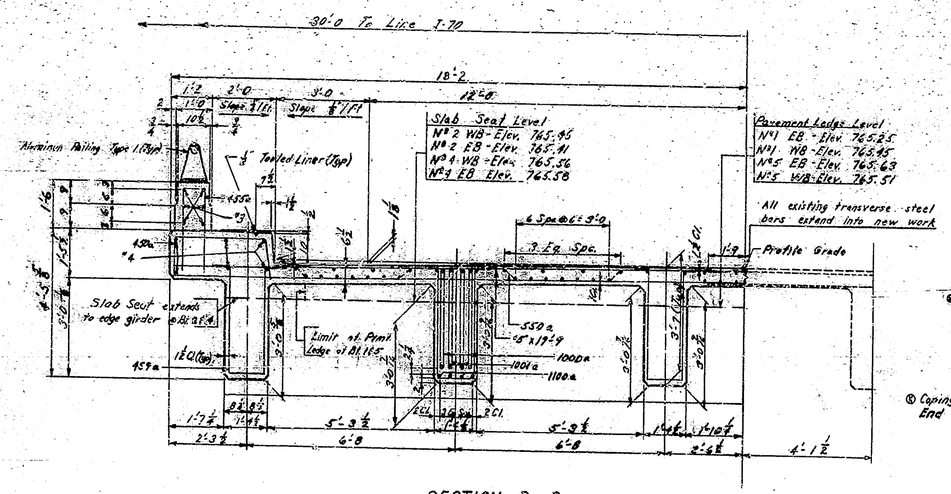
JUNE 15 1965

RECOMMENDED FOR APPROVAL:- _____
ENGINEER OF BRIDGE DESIGN

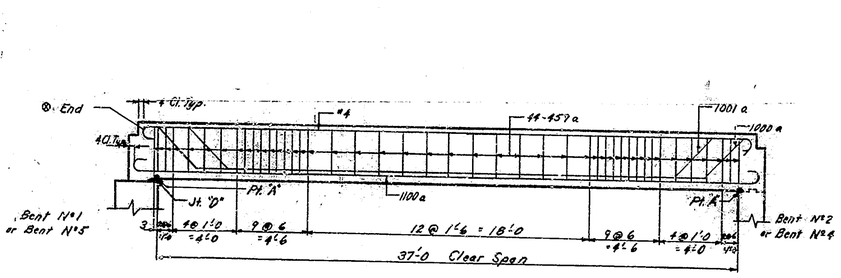
DRAWING:- 5H OF 19
PROJECT:- I-465-4(12)155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE:- I-70-73-46.7A

CHARLES E. RUMMEL REGISTERED NO. 2278 STATE OF INDIANA PROFESSIONAL ENGINEER

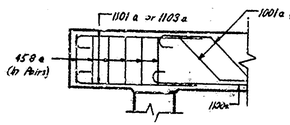
BRIDGES OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(10)155	1965	17	310



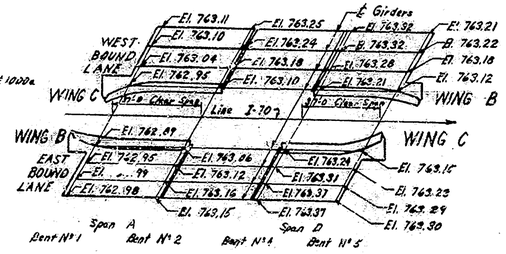
SECTION D-D
Scale 1/2" = 1'-0"



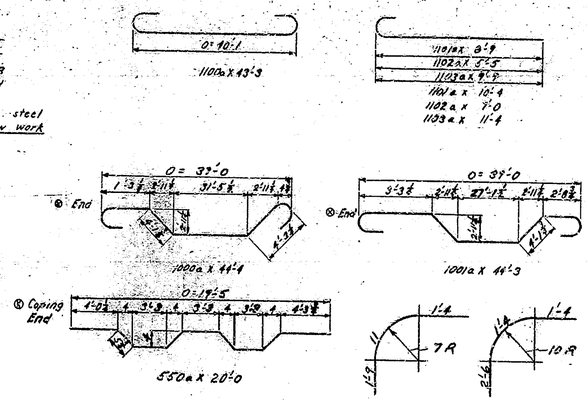
LONGITUDINAL GIRDER SECTION
Scale 1/4" = 1'-0"

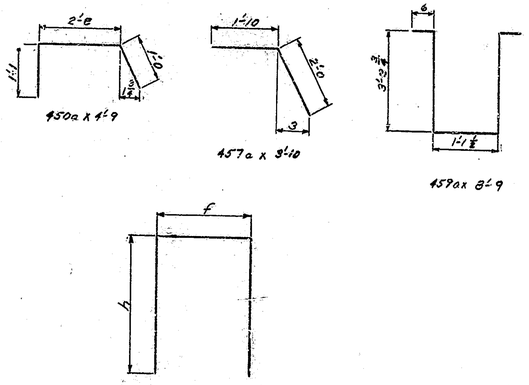


SECTION E-E
Scale 1/4" = 1'-0"

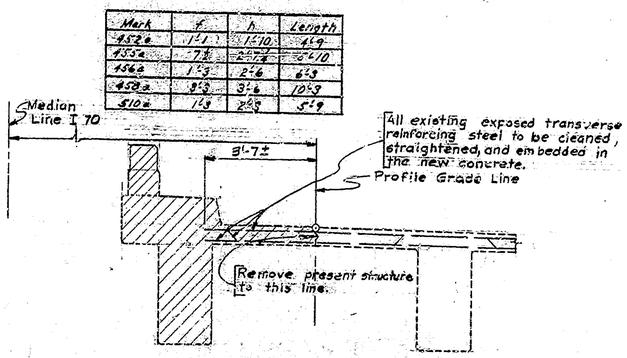


BOTTOM OF GIRDER ELEVATIONS AT POINT "A" ℄ WING LOCATION
Not to Scale





Mark	f	h	Length
452a	1'-1"	1'-10"	4'-9"
455a	7"	2'-7"	5'-10"
456a	1'-3"	2'-6"	6'-3"
459a	8'-3"	3'-6"	10'-9"
510a	1'-3"	2'-3"	5'-9"



PART SECTION PRESENT STRUCTURE
Scale 1/2" = 1'-0"

BILL OF MATERIALS
SPAN "A" - EASTBOUND LANE
(SPAN "D" - WESTBOUND LANE - SAME)

REINFORCING STEEL			
Mark & Size	No. of Bars	Length	Weight lbs.
1100a	12	43'-3	
1101a	8	10'-6	
1102a	2	7'-0	
		Total #11	3271 #
1000a	6	44'-9	
1001a	6	44'-3	
		Total #10	2287 #
510a	15	5'-9	
550a	39	20'-0	
#5	182	19'-5	
		Total #5	2564 #
450a	23	4'-9	
452a	3	4'-9	
455a	32	5'-10	
456a	15	6'-3	
457a	8	3'-10	
458a	12	10'-9	
459a	12	8'-9	
461a	2	5'-2	
462a	2	4'-0	
#4	37	39'-5	
#4	12	12'-9	
#4	1	7'-9	
#4	13	3'-6	
		Total #4	2336 #
#3	6	18'-0	
#3	2	14'-6	
#3	2	13'-10	
#3	2	12'-8	
#3	6	11'-11	
#3	13	2'-3	
		Total #3	109 #
	Total	Steel	10,367 #
CONCRETE			
Total Class "A"		46.9 cys	
Railing Concrete		2.7 cys	
MISCELLANEOUS			
Resetting Aluminum Railing (Type I) *		30.7 Lin. Ft.	

BILL OF MATERIALS
SPAN "A" - WESTBOUND LANE
(SPAN "D" - EASTBOUND LANE - SAME)

REINFORCING STEEL			
Mark & Size	No. of Bars	Length	Weight lbs.
1102a	12	43'-3	
1101a	2	10'-6	
1103a	8	11'-8	
		Total #11	3342 #
1000a	6	44'-9	
1001a	6	44'-3	
		Total #10	2287 #
510a	18	5'-9	
550a	37	20'-0	
#5	82	19'-5	
		Total #5	2556 #
450a	22	4'-9	
452a	3	4'-9	
455a	32	5'-10	
456a	15	6'-3	
457a	8	3'-10	
458a	14	10'-9	
459a	132	8'-10	
461a	2	5'-2	
462a	2	4'-0	
#4	37	39'-5	
#4	12	12'-9	
#4	1	7'-9	
#4	13	3'-6	
		Total #4	2350 #
#3	6	18'-0	
#3	2	14'-6	
#3	2	13'-10	
#3	2	12'-8	
#3	6	11'-11	
#3	13	2'-3	
		Total #3	109 #
	Total	Steel	10,653 #
CONCRETE			
Total Class "A"		46.9 cys	
Railing Concrete		2.7 cys	
MISCELLANEOUS			
Resetting Aluminum Railing (Type I) *		30.7 Lin. Ft.	

* New anchor bolts, nuts, and washers are to be used. The cost is to be included in "Resetting Aluminum Railing (Type I)".

NOTES:
For General Notes see Drwg. S2
For reinforcing bar notes see Br. Std. C,
For additional details see Drwg. S10 & S11
For location of sections A-A, B-B, F-F, C see Drwg. S10
For Aluminum railing details see Br. Std. P, J-A

SPAN "A" & SPAN "D" DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE:- AS NOTED — JUNE 15, 1965

RECOMMENDED FOR APPROVAL:- C.R.R. (ENGINEER OF BRIDGES DESIGN)

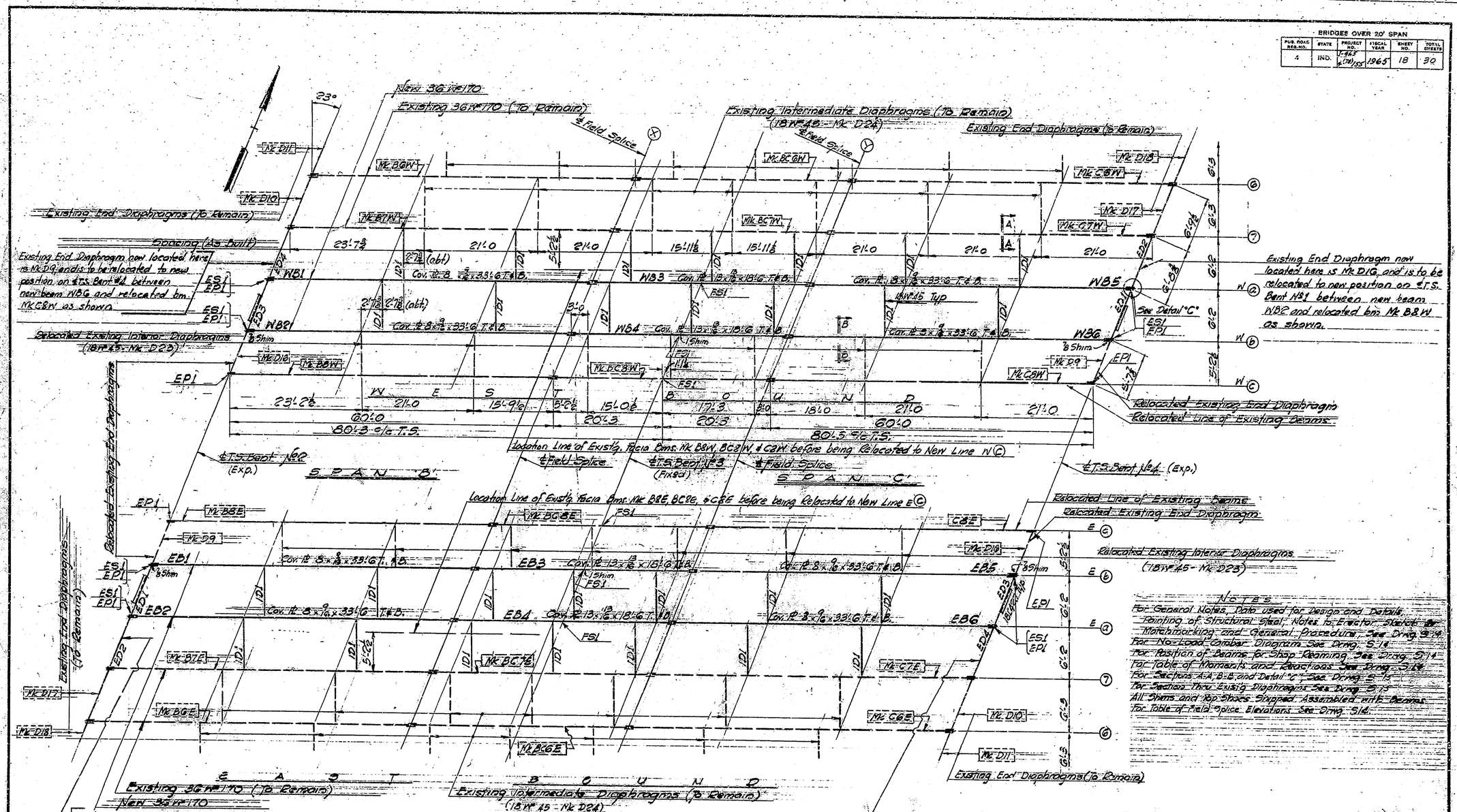
DRAWING:- S12 OF 19
PROJECT:- I-465-4(10)155
BRIDGE CONTRACT NO. B-3922
BRIDGE FILE:- I-70-79-4637 A

DESIGNED _____ CK'D _____
DRAWN JSA 7-26-65 CK'D WJS 8/16/65
TRACED _____ CK'D _____

CHARLES R. RUNGE — REG. NO. 2275 — STATE OF INDIANA — REGISTERED PROFESSIONAL ENGINEER

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(19)155	1965	18	30



N O T E S

For General Notes, Data used for Design and Details, Painting of Structural Steel, Notes to Erector, Sketch of Matchmarking and General Procedure See Dwng. S 14
For No. 2 Load Combination Diagram See Dwng. S 14
For Position of Beams for Shop Reaming See Dwng. S 14
For Table of Moments and Reactions See Dwng. S 14
For Sections A-A, B-B, and Detail "C" See Dwng. S 15
For Section Thru Exist'g. Diaphragms See Dwng. S 15
All Shims and Top Shoes Shipped Assembled with the Beams
For Table of Field Splice Elevations See Dwng. S 14

DESIGNED Rolf C'K'D
DRAWN Rolf 8365 C'K'D WF65 5-21-65
TRACED C'K'D

FRAMING PLAN - SPANS B & C

INDIANA STATE HIGHWAY COMMISSION

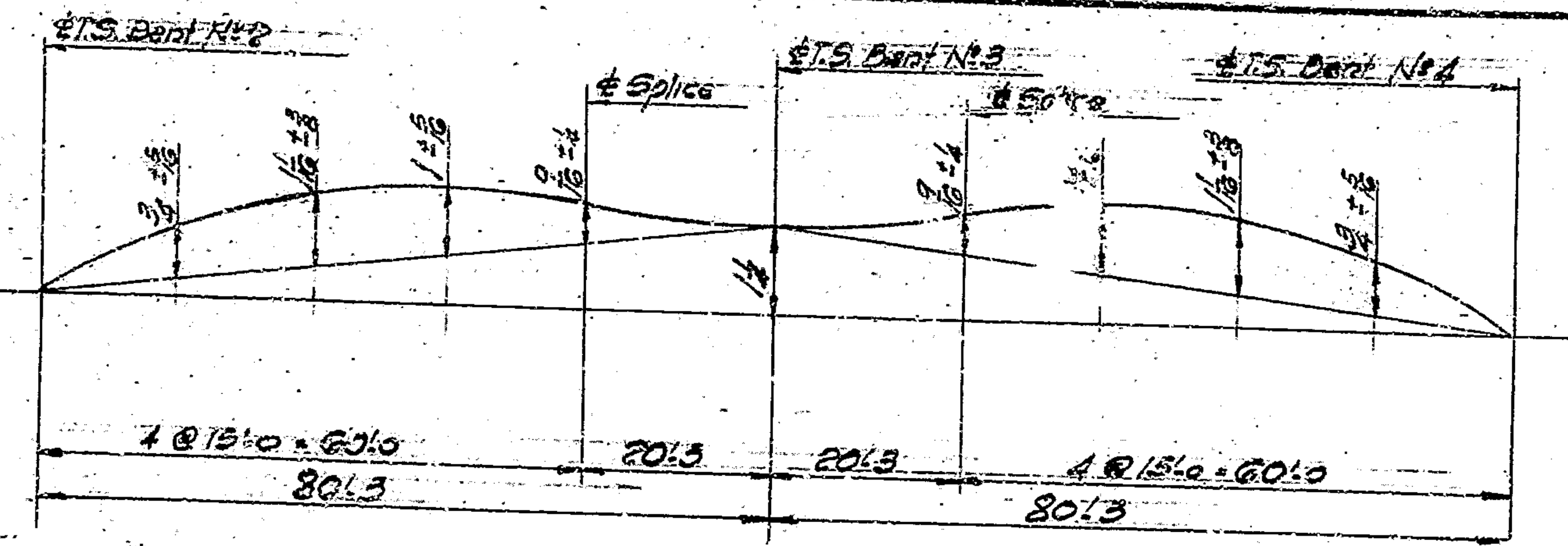
MARION COUNTY

SCALE: 0" Horiz. 1/8" = 1' Vert. JUNE 15, 1965

RECOMMENDED FOR APPROVAL: C. R. Rummel
ENGINEER OF BRIDGE DESIGN

DRAWING S 13 OF 19
PROJECT I-465-4(19)155
BRIDGE CONTRACT NO. B-[illegible]
BRIDGE FILE: 7-53-NE-[illegible]A

CHARLES R. RUMMEL REGISTERED NO. 2275 STATE OF INDIANA PROFESSIONAL ENGINEER



NO LOAD CAMBER AND REAMING DIAGRAM

BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(78)155	1965	19	30

GENERAL NOTES (SHOP)

Rivets - ⅞" Open Holes 15/16" Unless Noted.

Paint - All Paint shall be in accordance with current State Highway Specifications:-
 Shop - One coat Red Lead Type I or II U.N.
 Field - Two (2) Coats Aluminum (No Stenciling Permitted).

High Strength bolts may be used in lieu of rivets. See Article E1104.11 of the Specifications.
 (If high strength bolts are used there shall be no paint within 3" of all open holes.

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 direction of camber.

Holes for beam splices shall be subpunched or subdrilled and reamed to size while assembled. See Art. E1103.18(d) of the Specs.

The shop plans shall indicate whether reaming or drilling is to be done in shop or field. If shop reaming or drilling is used, the
 beams shall be assembled in accordance with diagram. If the beams are shop reamed or drilled, full size drift pins
 shall be used in erection.

The shop details shall show a plan of matchmarking for all reamed pieces.

All splice plates shall be removed, cleaned and painted after reaming. Splice plates shall not extend beyond the
 ends of beams 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.

If Fabricator uses these drawings for shop plans he shall check same and assume full responsibility for the
 accuracy of the details, and shall submit four (4) copies of these to the Engineer. See Art. E1103.2
 of the Specifications.

All structural steel shall be ASTM A-36

All welding shall conform to the current AWS Specs. for Welded Highway and Railway Bridges U.N.

DATA USED FOR DESIGN AND DETAILS

Live Load - HS 20-44 loading with impact and distribution of loads in accordance with
 1961 AASHO Specifications. Structure checked for special loading
 consisting of 2-24,000 pound axles spaced 4'-0 apart.

Dead Load - Actual weight plus 35 lbs. per sq. ft. of roadway to provide for future wearing surface.

Slab - Designed for 16,000 lb. wheel plus impact, and with ½" monolithic wearing surface.

Unit Stresses - Structural Steel

Bending, Tension, or Compression	20,000 #/sq. inch
Shear on Rivets	13,500 #/sq. inch
Shear in Fillet Welds	12,400 #/sq. inch
Bearing (Not including Power Driven Rivets and Torqued High Strength Bolts)	29,500 #/sq. inch
Bearing - (Power Driven Rivets and Torqued High Strength Bolts)	40,000 #/sq. inch
Bearing Steel on Concrete (Including Overturning and Eccentric Loading)	1,000 #/sq. inch
Reinforcing Steel (Tension)	20,000 #/sq. inch
Concrete (Compression)	1,200 #/sq. inch

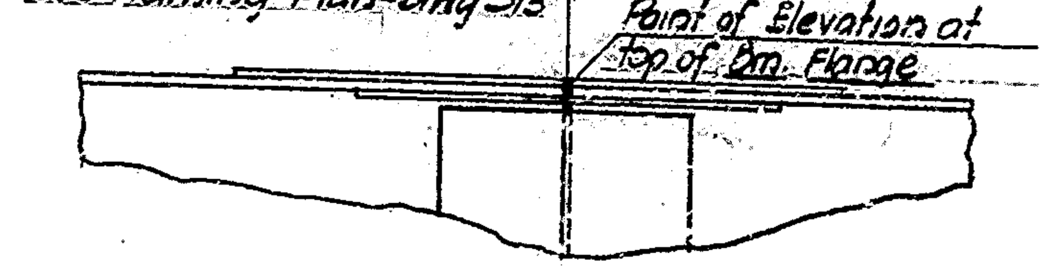
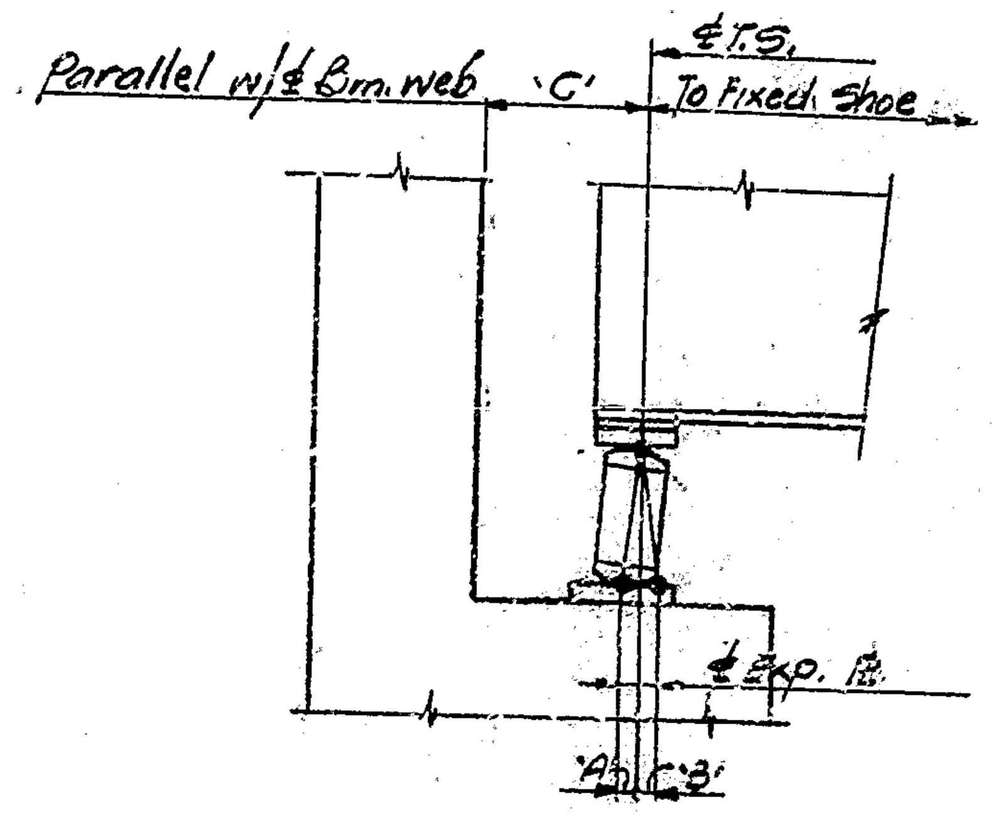


TABLE OF ℄ SPLICE ELEVATIONS

W.B.	Beam ℄ Splice Line	WcX	WbX	WaX	WcY	WbY	WaY
	Elev.	766.66	766.97	766.38	766.88	766.83	766.40
E.B.	Beam ℄ Splice Line	EcX	EbX	EaX	EcY	EbY	EaY
	Elev.	766.27	766.90	766.30	766.78	766.33	766.40



BENT No 2 & No 4

TABLE No 1

Temperature	Dim. 'A'				Dim. 'B'		
	0°	20°	40°	60°	80°	100°	120°
℄ Top Shoe to ℄ Exp. Pl. (Bent 2 & 4)	3/8	1/4	1/8	0	1/8	1/4	3/8

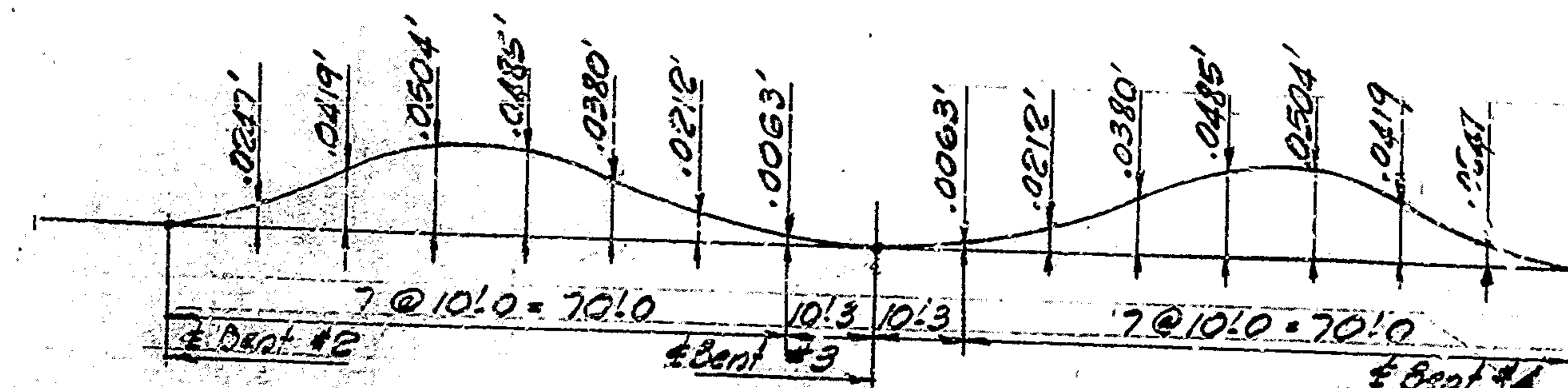
GEN'L. PROCEDURE - (1) After all Struct. Stl. is erected & riv. & welds completed, adj. the superstr. length [illegible] curtainwall bent [illegible] is equal [illegible] (2) With the Superstr. in the adj. position [illegible] to the [illegible] at Bent [illegible] the Exp. Pl. under each Exp. Shoe [illegible] the [illegible] [illegible] (3) No Concrete in Floor [illegible] until the above operations are completed. (4) [illegible] will be furnished [illegible]

NOTES TO ERECTOR

All Struct. Steel shall be erected using a min. of 50% full size drift pins in Bm. Flange Splices & 50% in Bm. web splices and
 elevations checked before field riveting or bolting field splices. No splices shall be riveted or bolted
 until all steel is erected and unsupported by falsework. See this drawing for Elevations at ℄ Field Splices.

Where new work is to be fitted to old work, the Contractor shall check all dimensions and conditions in the field and report
 any errors or discrepancies to the Engineer or assume responsibility for their correctness and fit of new parts
 to old.

As soon as the Engineer has approved the field welds, all welds and any surface from which the shop coat has been
 omitted or becomes worn off or has otherwise become defective shall be thoroughly cleaned of all charred
 paint or any foreign matter and completely covered with one coat of Shop Paint.



CONCRETE DEADLOAD DEFLECTIONS

DESIGNED		C'K'D	
DRAWN	Rolf 2-26-65	C'K'D	[illegible] 5-11-65
TRACED		C'K'D	

STEEL NOTES & DATA

INDIANA STATE HIGHWAY COMMISSION

SCALE:- No Scale

JUNE 15, 1965

RECOMMENDED FOR APPROVAL: C.R. Rumman[?]
ENGINEER OF CAST IN BRIDGE

DRAWING 9/4 OF 19

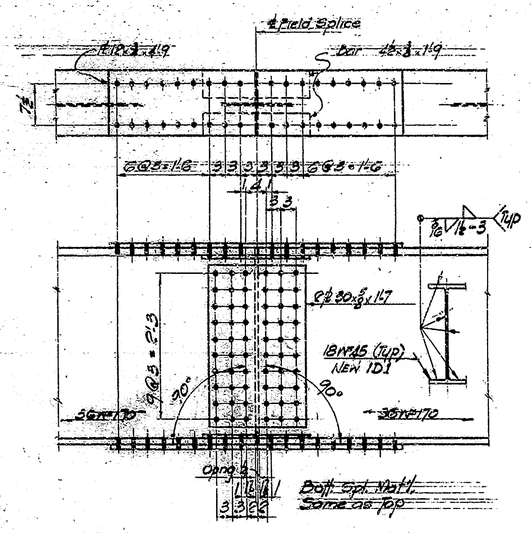
PROJECT:- I-465-4(78)155

BRIDGE CONTRACT NO. B-6922

BRIDGE FILE:- I-70-73-4647A

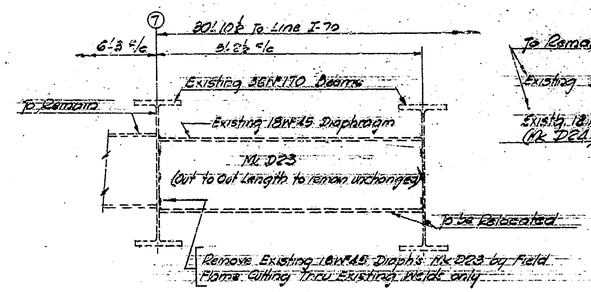
CHARLES R. RUMMAN[?] REGISTERED No. 2375 STATE OF INDIANA PROFESSIONAL ENGINEER

BRIDGES OVER 20' SPAN					
PUB. ROAD RTE. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(78)155	1965	20	30

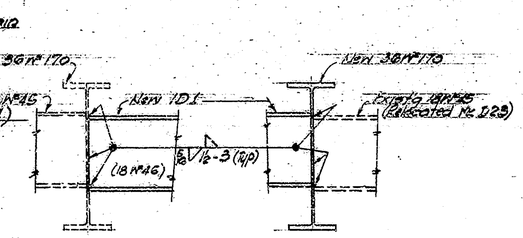


TYPICAL FIELD SPLICE DETAIL

(Also showing typical Field Welding for interior Diaphragms)

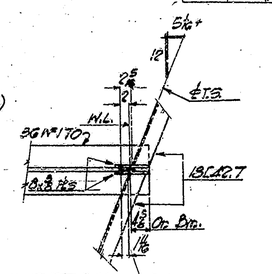


SECTION THRU EXIST'G DIAPHRAGMS



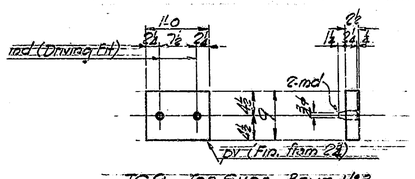
SECTION A-A SECTION B-B

(Showing Field Welding of New Mat'l. to Existing Mat'l.)

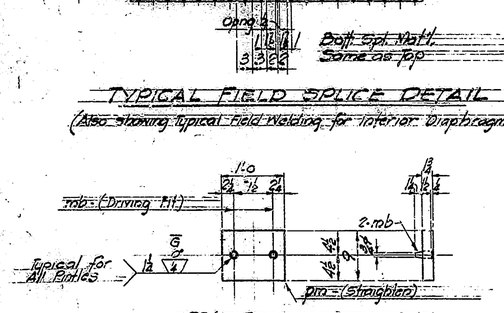


DETAIL "C"

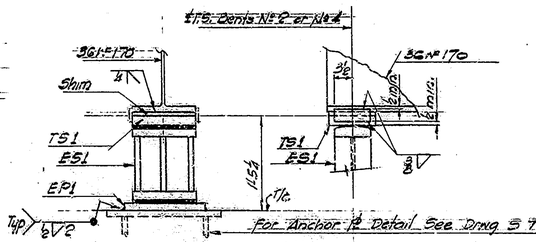
(Typ. End Diaphragm Detail)



TS2 - TOP SHOE BENT N°3

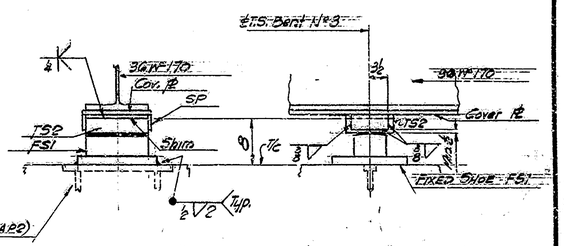


FS1 - FIXED SHOE BENT N°3



SHOE ASSEMBLY - BENTS N°2 or N°4

(EXPANSION)



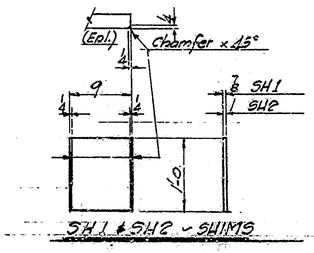
SHOE ASSEMBLY - BENT N°3 (FIXED)

Showing all New Mat'l. Reqd. on Beam Lines We, Ne, Ea & Eb (See S 19)

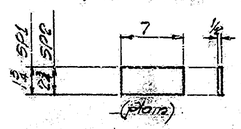
(Except Dwg.)

TS1 - TOP SHOE BENTS 2 & 4

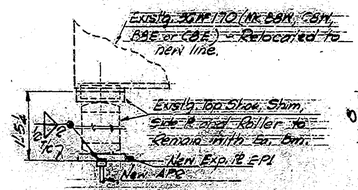
FS1 - EXPANSION SHOE BENTS 2 & 4



SH1 & SH2 - SHIMS



SP1 & SP2 - SIDE PLS.



Showing Existing bearing matl. which shall remain with Existg. Beams (Relocated to new Brn. Lines We and Ec above) and New matl. reqd. to make total Shoe

SHOE ASSEMBLY - EXP. (BENTS N°2 or N°4)

SHOE ASSEMBLY - FIXED (BENT N°3)

BEAM LINES We & Ec ONLY (See S 19)

REQUIRED LIST		
N°Reqd.	Description	Mark
8	Top Shoes	TS2
4	Top Shoes	TS1
8	Expansion Shoes	FS1
12	Expansion Plates	EP1
6	Fixed Shoe	FS1
4	Shims	SH1
6	Shims	SH2
8	Side Plates	SP1
12	Side Plates	SP2

Notes -

Bolts - ¾ø
O. Holes - 1" Lrg.
For Screed Roller See Dwg. S 13.
Top Shoes, Shims and Side Plates shall be SHOP ASSEMBLED to respective Beams (see Shop Assembly Details of all new matl. above and Beam Details Dwg. S 16). For Beam Shop Assembly Details See Dwg. S 16.
Curved surfaces of Shoes 15 is machined only after Fabrication is completed.
For Shop Bill of Material See Dwg. S 17.

STEEL DETAILS

INDIANA STATE HIGHWAY COMMISSION

SCALE: - 1" = 1'

JUNE 15 1965

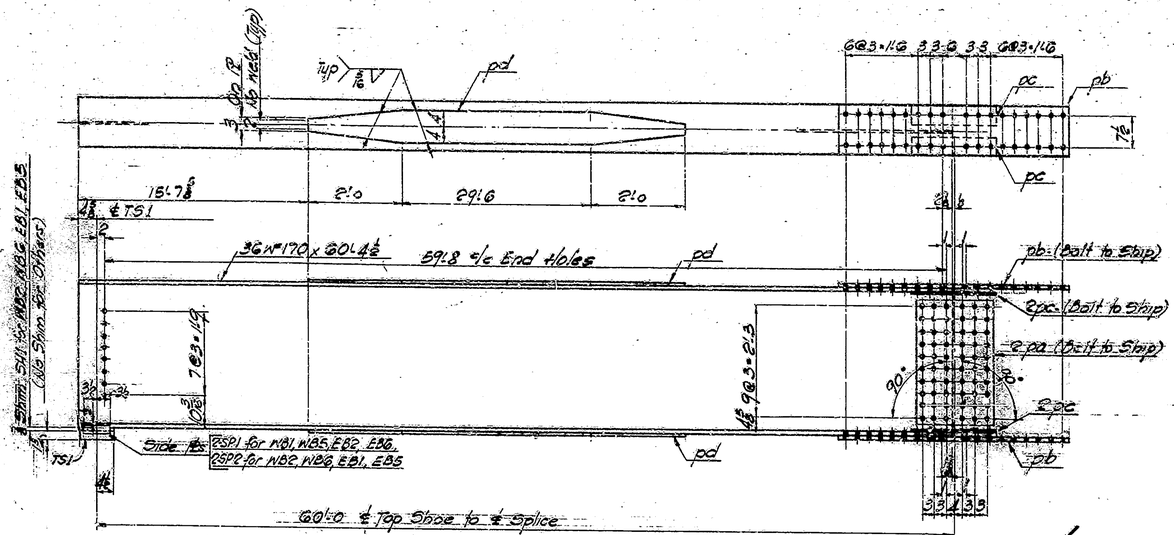
RECOMMENDED FOR APPROVAL: C.G.R. Jr.
ENGINEER OF BRIDGE DESIGN

DRAWING: S 15 OF 19
PROJECT: I-465-4(78)155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE: I-70-75-4647A

REGISTERED NO. 2279 STATE OF INDIANA CHARLES R. RUNYAN PROFESSIONAL ENGINEER

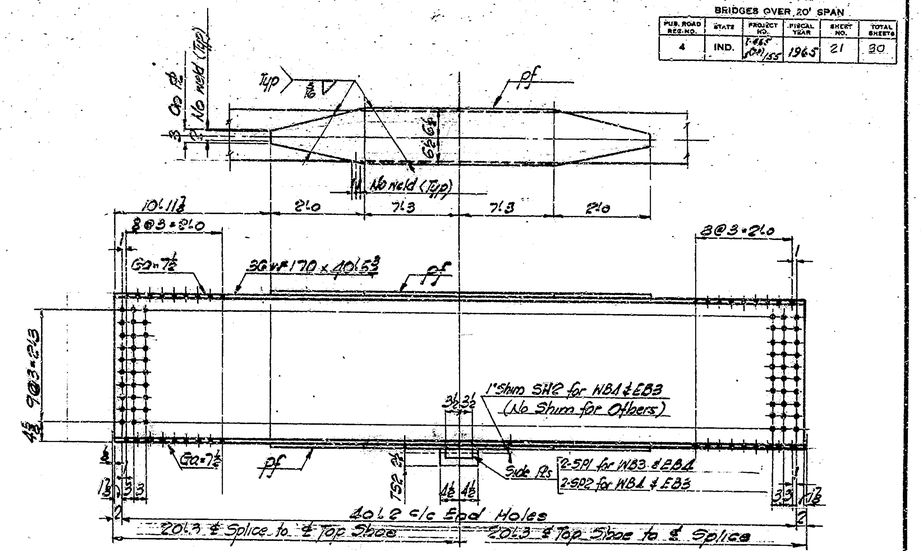
DESIGNED RHF CK'D
DRAWN Rolf 21865 CK'D WRG 5-21-65
TRACED CK'D

BRIDGES OVER 20' SPAN					
PUB. ROAD SER. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-65-4(DN)155	1965	21	90



WB1, WB2, WB5, WB6 — EB1, EB2, EB5, EB6

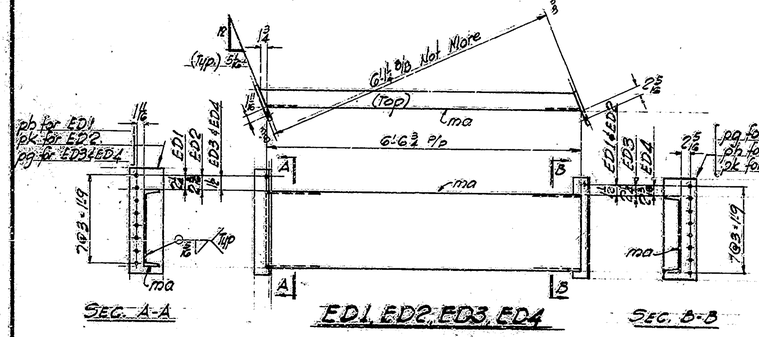
(Alike Except for Shims and Side Pls.)

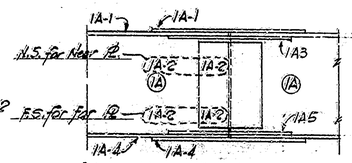


WB3, WB4 - EB3, EB4

(Alike Except for Shims and Side Pls.)

See Drwg S-15 for Shop Assembly of Shim, Top Shoe and Side Plates to Bms.



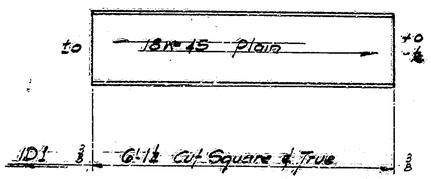


PROPOSED
SKETCH FOR MATCH MARKING
(NTS)

Intersection of Beam Line number and splice line letter form splice identification mark. This mark will appear on the ends of all beams, thus - (1A). All splice material will have the splice mark plus a different suffix numeral for each individual piece of splice material, thus - (1A-1), (1A-2) etc.

Corresponding marks will also be affixed on beam for proper placing of splice material, the match mark must be kept towards the outside and in a position closely related with its corresponding match mark on the beam.

REQUIRED LIST		
No Reqd.	Description	Mark
One	Beam	NB1
One	Beam	NB2
One	Beam	NB3
One	Beam	NB4
One	Beam	NB5
One	Beam	NB6
One	Beam	EB1
One	Beam	EB2
One	Beam	EB3
One	Beam	EB4
One	Beam	EB5
One	Beam	EB6
2	End Diaphragms	ED1
2	End Diaphragms	ED2
2	End Diaphragms	ED3
2	End Diaphragms	ED4
28	Interior Diaphragms	ID1



Notes -
Bolts - ⅞"ϕ
Open Holes 15/16"ϕ
For General Notes see Drwg S-14
For Shop No-Load Camber and Reaming Diag. See Drwg S-14
For Shop Bill of Material See Drwg S-17
For Details of Shims, Top Shoes & Side Plates See Drwg S-15

DESIGNED ____ C'K'D ____
DRAWN Ref 21165 C'K'D WRE 5-21-65
TRACED ____ C'K'D ____

STEEL DETAILS

INDIANA STATE HIGHWAY COMMISSION

SCALE:- ½" = 1' U.N. JUNE 15, 1965

RECOMMENDED FOR APPROVAL: C.R. Rummel
ENGINEER OF BRIDGE DESIGN

DRAWING S-16 OF 15
PROJECT:- I-465-4(DN)155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE 69-27-6922

CHARLES R. RUMMEL REGISTERED NO. 2275 STATE OF INDIANA PROFESSIONAL ENGINEER

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND. I-465-4(78)155	1965	22	30

BILL OF MATERIAL

LINE	PIECE	SHAPE	LENGTH FT.	LENGTH IN.	ASSY MARK	REMARKS	WEIGHT
1		ONE BEAM - WB1					
2	1	36WF170	60	4½			10264
3	2	PL 30 ⅜	1	7	pa		202
4	2	PL 10 ¾	4	9	pb		291
5	4	PL 4½ ⅜	1	9	pc		40
6	2	PL 8 ⅝	33	6	pd		1025
7	1	PL 9 ½	1	0	pm	Straighten	54
8	2	Rods 1¼	0	2⅜	mb	Pinned (TS1)	2
9	2	Bar 1½ ½	0	7	SP1		3
10							
11		ONE BEAM - WB2					
12	1	36WF170	60	4½			10264
13	2				pa		202
14	2				pb		291
15	4				pc		40
16	2				pd		1025
17	1				pm	(TS1)	54
18	2				mb	(TS1)	2
19	2	Bar 2½ ½	0	7	SP2		5
20	1	PL 9 ⅛	1	0	SH1	Straighten	27
21							
22		ONE BEAM - WB3					
23	1	36WF170	40	6½			6881
24	2	PL 13 ⅛	18	6	pf		1328
25	1	PL 9 ²⁵/₃₂	1	0	pv	Fin. from 23°	83
26	2	Rods 1¼	0	9½	md	Pinned (TS2)	2
27	2				SP1		3
28							
29		ONE BEAM - WB4					
30	1	36WF170	40	6½			6881
31	2				pf		1328
32	1				pv	(TS2)	84
33	2				md	(TS2)	2
34	2				SP2		5
35	1	PL 9	1	0	SH2	Straighten	31
36							
37		ONE BEAM - WB5					
38	1	36WF170	60	4½			10264
39	2				pa		202
40	2				pb		291
41	4				pc		40
42	2				pd		1025
43	1				pm	(TS1)	54
44	2				mb	(TS1)	2
45	2				SP1		3
46							
47	1	ONE BEAM - WB6					
48	2	36WF170	60	4½			10264
49	2				pa		202
50	4				pb		291
51	2				pc		40
52	1				pd		1025
53	2				pm	(TS1)	54
54	2				mb	(TS1)	2
55	1				SP2		5
56					SH1		27
57		ONE BEAM - EB1					
58	1	36WF170	60	4½			10264
59	2				pa		202
60	2				pb		291
61	4				pc		40
62	2				pd		1026
63	1				pm	(TS1)	54
64	2				mb	(TS1)	2
65	1				SH1		27
66	2				SP2		5
67							
68		ONE BEAM - EB2					
69	1	36WF170	60	4½			10264
70	2				pa		202
71	2				pb		291
72	4				pc		40
73	2				pd		1025
74	1				pm	(TS1)	54
75	2				mb	(TS1)	2
76	2				SP1		3
77							
78							
79		ONE BEAM - EB3					
80	1	36WF170	40	6½			6881
81	2				pf		1328
82	1				pv	(TS2)	84
83	2				md	(TS2)	2
84	1				SH2		31
85	2				SP2		5
86							
87		2 DIAPHRAGMS - EB4					
88	2				mb		573
89	2				pg		41
90	2				pk		41
91							
92		ONE BEAM - EB5					
93	1	36WF170	60	4½			10264
94	2				pa		202
95	2				pb		291
96	4				pc		40
97	2				pd		1025
98	2				pm	(TS1)	54
99	2				mb	(TS1)	2
100	1				SH1		27
101	2				SP2		5
102							
103		ONE BEAM - EB6					
104	1	36WF170	60	4½			10264
105	2				pa		202
106	2				pb		291
107	4				pc		40
108	2				pd		1025
109	2				pm	(TS1)	54
110	2				mb	(TS1)	2
111	2				pa		202
112	2				pb		291
113	4				pc		40
114	2				pd		1025
115	2				pm	(TS1)	54
116	2				mb	(TS1)	2
117	2				SP1		3
118							
119		2 DIAPHRAGMS - EB7					
120	2	L 8 ⅝	6	8½	ma		573
121	2	L 8 ⅝	2	0	pg		41
122	2	L 8 ⅝	2	0	pk		41
123							
124		2 DIAPHRAGMS - EB8					
125	2				ma		573
126	2				pg		41
127	2	L 8 ⅝	2	0	pk		41
128							
129		2 DIAPHRAGMS - EB9					
130	2				ma		573
131	2				pg		41
132	2				pk		41
133							
134							
135							
136		28 DIAPHRAGMS - ID1					
137	28	13WF45	6	1½		Plain	7691
138							
139		B - EXPANSION SHOES - ES1					
140	8	10WF89	0	10	mc	Mill 2 Ends	593
141	10	PL 7 ½	2	1	pa	Fin. From 2½"	858
142	16	Bars 5	1	0	pp	Mill 2 Ends	136
143							
144		12 EXPANSION SHOES - ES1					
145	12	PL 9 ½	1	3	pf	Straighten	689
146	24	Rods 1¼	0	2⅜	mf		29
147							
148		6 - FIXED SHOES - FS1					
149	6	PL 14 ½	1	3	pn	Straighten	556
150	6	PL 6 ¼	1	0	pq	Fin. from 4½"	520
151							
152							
153							
154		1712 - ¾" Field Rivets (17.18 x 39")					616
155							
156		TOTAL STEEL - 142,702					
157							
158							
159							
160		MISCELLANEOUS					
161	590	¾" Rivets	Removed in Field				
162	58	Sq. In. of Field	Flame Cutting *				
163							
164							
165							
166							
167							
168							
169							
170							
171							
172							
173							
174							
175							
176							
177							
178							
179							
180							

* This is paid for as part of Item 28 - "Removal of Present Structure (Portions)." See Summary Sheet

Notes -
For General Notes See Dwg. S 14

DESIGNED ____ CKD ____
DRAWN Calf 8/65 CKD WEG 5-21-65
TRACED ____ CKD ____

BILL OF MATERIAL - SPANS 'B' & 'C'

INDIANA STATE HIGHWAY COMMISSION

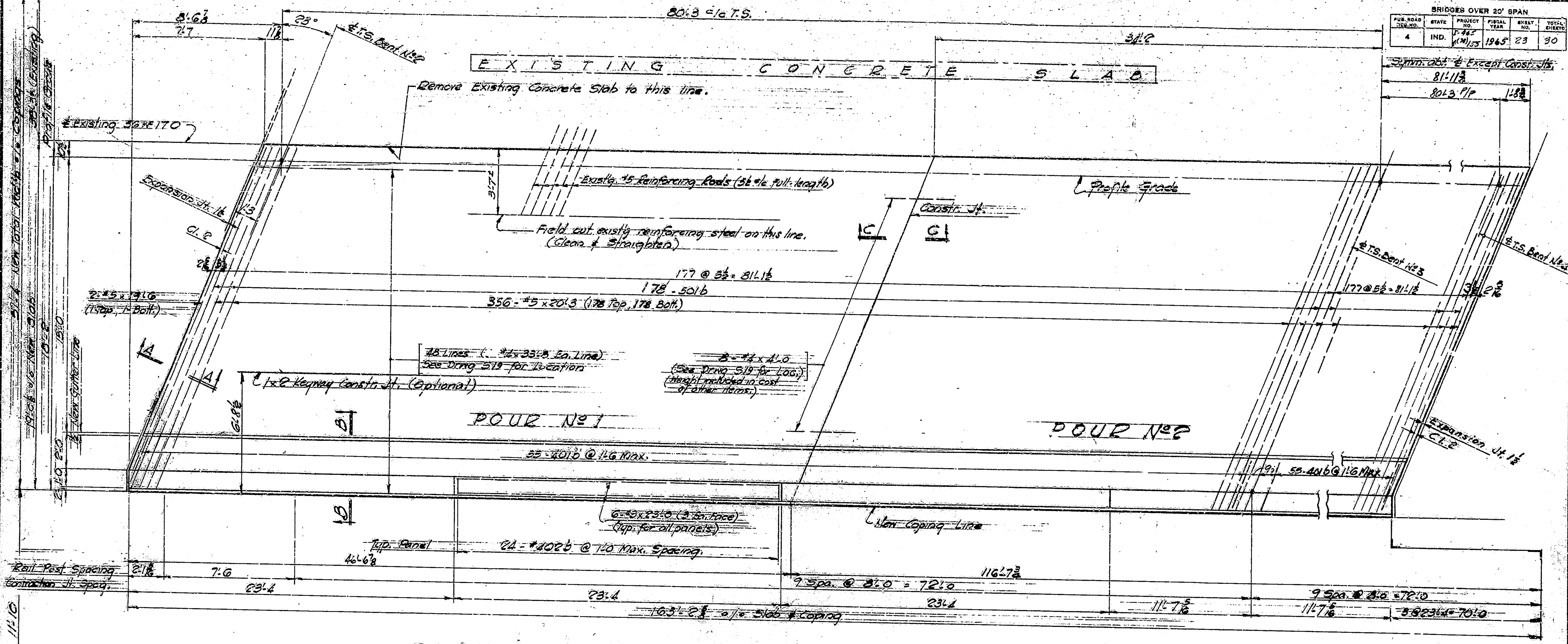
SCALE: - 1/4 JUNE 15, 1965

RECOMMENDED FOR APPROVAL: C R Ruminer
ENGINEER OF BRIDGE DESIGN

DRAWING S 17 OF 19
PROJECT: I-465-4(78)155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE: I-70-73.46 17A

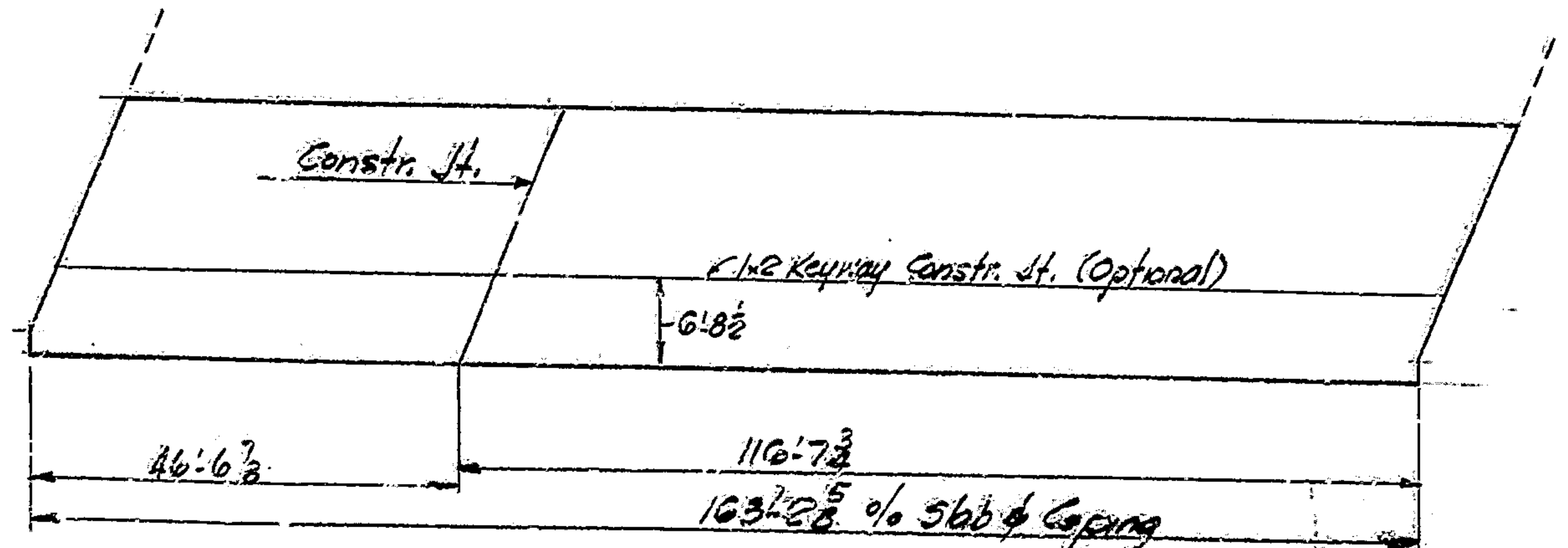
CHARLES R. RUMINER REGISTERED NO. 2255 STATE OF INDIANA PROFESSIONAL ENGINEER

BRIDGES OVER 20' SPAN					
FED. ROAD DIV. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(38)155	1965	23	30



PLAN WEST BOUND LANE

EAST BOUND LANE SAME EXCEPT BY 180° ROTATION



FULL PLAN SHOWING LOCATION OF TRANSVERSE CONSTR. JT. (NTS)

Notes:-

For General Notes See Drwg. S 2
For Reinforcing Bar Notes See Br. Std. C1.
Sequence of pours to be made in order of pour numbers. Transverse construction joints are optional and pours may be continuous provided the pour terminates at a construction joint indicated on the plans.
For Sections A-A, B-B & C-C and Corner Details See Drwg. S 19.
After all steel has been erected. Panel forms shall not be blocked against the expansion end of the steel in making any pours adjacent to steel spans.

SUPERSTRUCTURE DETAILS-SPANS B & C

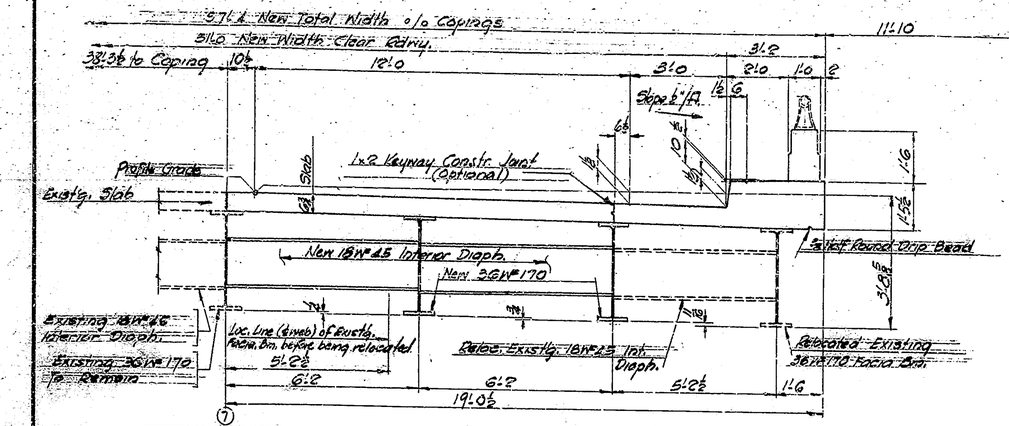
INDIANA STATE HIGHWAY COMMISSION

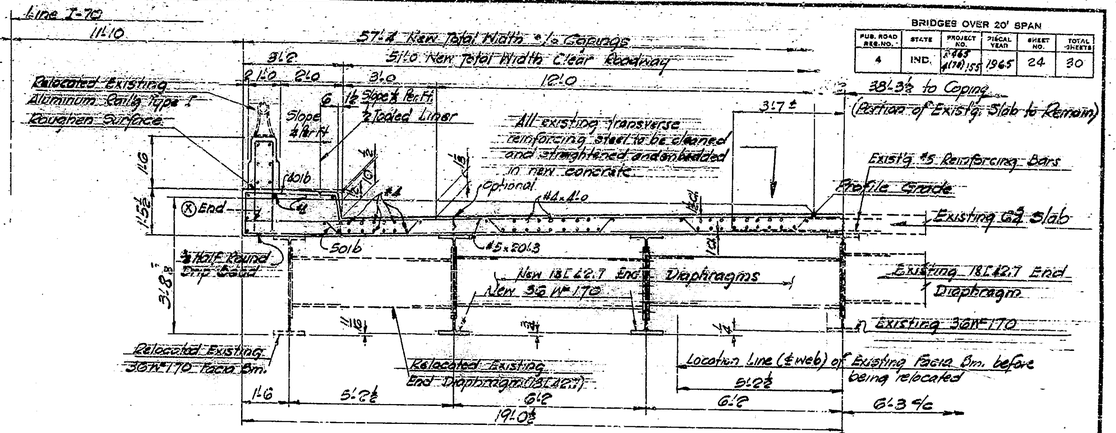
SCALE: ⅜" = 1' 0"   JUNE 15 1965

RECOMMENDED FOR APPROVAL: C. R. Rumirer

DRAWING: S 18 OF 19
PROJECT: I-465-4(38)155
BRIDGE CONTRACT NO. B-6922
BRIDGE FILE: I-70-B-4547A

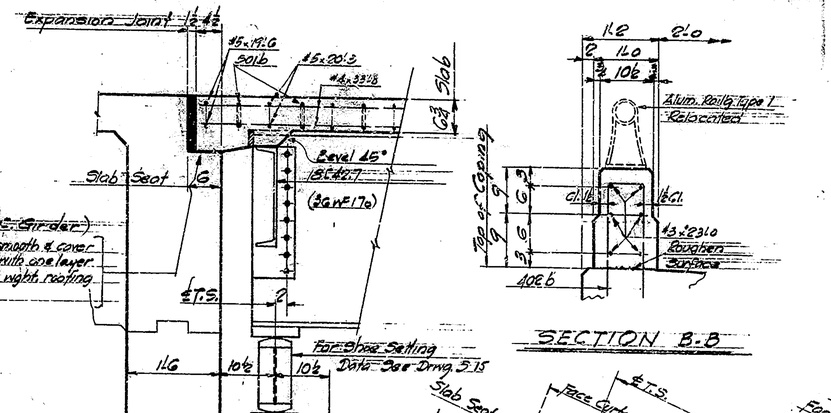
CHARLES R. RUMIRER REGISTERED NO. 2275 STATE OF INDIANA PROFESSIONAL ENGINEER

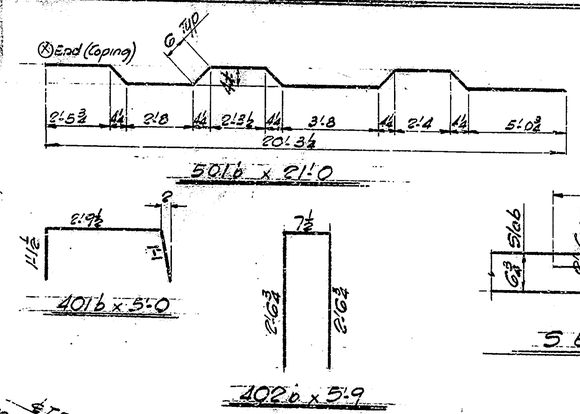


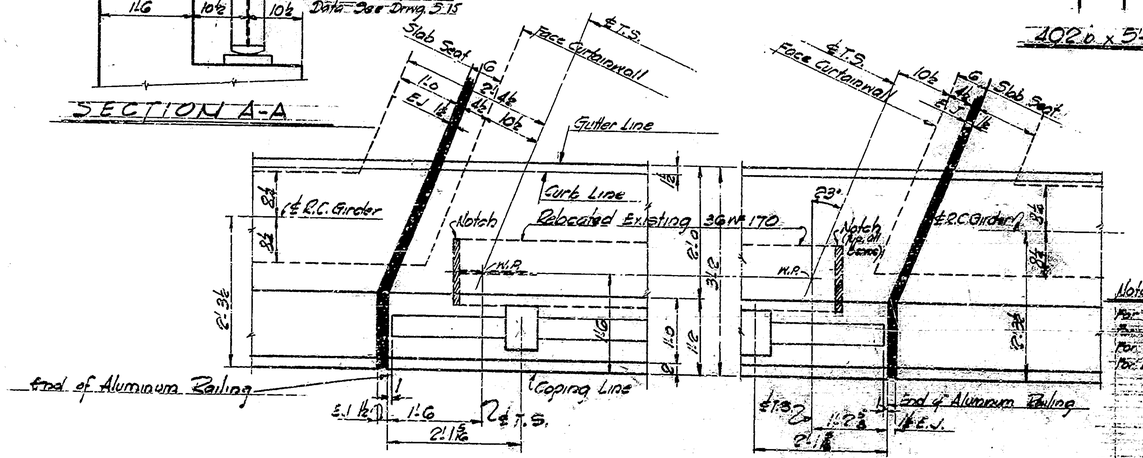


TYPICAL CROSS-SECTION PERPENDICULAR TO THE ℄ OF ROADWAY (Scale ½" = 1'-0)

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-465-4(10)155	1965	24	30







BILL OF MATERIAL

WEST BOUND LISTED

(EAST BOUND SAME)

Mark - Size	No. of Bars	Length	Weight
3016	178	21'-0	
#5	356	20'-3	
#5	2	19'-6	
	Total No. #5		11,358
4016	110	5'-0	
4028	168	5'-9	
#4	240		
* #4	3	4'-0	
	Total No. #4		641
#3	42	23'-0	968
	Total Steel		18,232 #
CONCRETE			
Pour No. 1 Class "A"			24.0 cy
Pour No. 2 Class "F"			58.0 cy
Total Class "F"			82.0 cy
Railing Concrete			4.5 cy
MISCELLANEOUS			
** Resetting Aluminum Railing Type 1			93 L.F.

* The weight of 3-#4 x 4'-0 bars is not included in Bill of Mat'l. This weight is to be included in the cost of other items.

** Non anchor bolts, nuts and washers are to be used. The cost is to be included in "Resetting Aluminum Railing (Type 1)"

Notes -

For General Notes See Dwg. 5.2

For Reinforcing Bar Notes See Sht. 5C

For Typical Notes at Ends of all Steel Beams See Sht. 5C

For Locations of Sections Detailed hereon See Dwg. 5.18

SUPERSTRUCTURE DETAILS - SPANS B & C

INDIANA STATE HIGHWAY COMMISSION

SCALE: 1½" U.N.

JUNE 15, 1965

RECOMMENDED FOR APPROVAL: C R Runnels

DRAWING 5.19 OF 19

PROJECT: I-465-4(10)155

BRIDGE CONTRACT NO. B-6022

BRIDGE FILE: 5-70-79-4647-A

DESIGNED GAF CK'D

DRAWN GAF 2-11-65 CK'D WFS 2-21-65

TRACED CK'D

CHARLES R. RUNNELS REGISTERED ENGINEER NO. 2275 STATE OF INDIANA REGISTERED PROFESSIONAL ENGINEER

STRUCTURE QUANTITIES

ITEM	CONCRETE CLASS F CU. YDS	CONCRETE CLASS D CU. YDS	CLASS E ABOVE FTGS CU. YDS	CLASS E IN FTGS CU. YDS	RAILING CONCRETE CLASS F CU. YDS	RAILING LIN. FT.	REINF. STEEL #11 LBS	#10 LBS	#9 LBS	#8 LBS	#7 LBS	#6 LBS	#5 LBS	#4 LBS	#3 LBS	FOR SPIRALS ** LBS	TOTALS LBS	STRUCTURAL STEEL *** LBS	BRONZE BEARING PLATES LBS	ANCHOR PLATES MK-AP2 EACH	ANCHOR RODS MK-AR EACH	CAST IRON LBS	ALUMINUM RAILING (TYPE) LIN. FT.	PILES UNTREATED TIMBER Nº	LIN. FT.	TREATED TIMBER Nº	LIN. FT.	STEEL ENCASED CONCRETE Nº	LIN. FT.	STEEL H BEARING Nº	LIN. FT.	RESETTING ALUMINUM RAILING (TYPE 1) LIN. FT.
WESTBOUND LANE																																
SUBSTRUCTURE																																
BENT Nº 1	3.2									281				230			881											2	80			
BENT Nº 2	6.4	1.1	10.5	4.0						679	[illegible]		[illegible]	258	281		[illegible]			9												
BENT Nº 3	4.5	1.1	12.8	4.8			798		428	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]		[illegible]			9												
BENT Nº 4	6.3	1.1	10.7	5.1						616	[illegible]		417	[illegible]	201		[illegible]			9												
BENT Nº 5	3.0									457				[illegible]			[illegible]											2	90			
SUPERSTRUCTURE																																
SPAN A	46.9				2.7		[illegible]	[illegible]					[illegible]	[illegible]	169		[illegible]															50.7
SPANS B&C	[illegible]				8.5								[illegible]	[illegible]	[illegible]		[illegible]	142,702														108.1
SPAN D	[illegible]				2.7		2,271	[illegible]					[illegible]	[illegible]	[illegible]		[illegible]															50.7
SUBTOTAL	[illegible]	3.5	52.2	18.3	13.9		[illegible]	[illegible]	428	2,17[illegible]	[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	142,702		9								4	180			[illegible]
EASTBOUND LANE																																
SUBSTRUCTURE																																
BENT Nº 1	3.0									457				[illegible]			[illegible]															
BENT Nº 2	6.2	1.2	12.0	5.1						616	683		[illegible]	[illegible]	[illegible]		[illegible]			9								2	80			
BENT Nº 3	4.5	1.3	11.4	[illegible]			796		[illegible]		697		[illegible]	[illegible]	[illegible]		[illegible]			9												
BENT Nº 4	6.5	1.2	11.9	[illegible]						659	639		[illegible]	[illegible]	[illegible]		[illegible]			9												
BENT Nº 5	3.2									481				[illegible]			[illegible]											2	90			
SUPERSTRUCTURE																																
SPAN A	46.4				2.7		2,271	2,287					[illegible]	[illegible]	[illegible]		[illegible]															50.7
SPAN B&C	82.0				8.5								[illegible]	[illegible]	[illegible]		[illegible]	142,702														108.1
SPAN D	46.9				2.7		[illegible]	[illegible]					[illegible]	[illegible]	[illegible]		[illegible]															[illegible]
SUBTOTAL	198.7	3.7	95.9	18.3	13.9		[illegible]	[illegible]	[illegible]	2,172	[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	142,702		9								4	80			[illegible]
SPLICE BARS							58	45	32	23	16		[illegible]	16	[illegible]		224															
Reinf. Steel for Approach Structures																																
Reinf. Steel for R.C. Bridge Approaches																																
Reinf. Steel for Lip Gutter, Pvmt. Tapers, etc.																																
TOTALS	397.[illegible]	7.2	[illegible]	[illegible]	27.8		[illegible]	[illegible]	876	[illegible]	4,0[illegible]		[illegible]	[illegible]	[illegible]		[illegible]	285,404		18								8	340			419.0

APPROACH STRUCTURES

STRUCT. Nº	LOCATION	DESCRIPTION SIZE	KIND	LENGTH LIN. FT.	CL. D CONC. IN STRUCTS. CU. YDS.	REINF. STEEL LBS.	CAST IRON LBS.	REMARKS
			TOTALS					Total of Reinforcing Steel carried to "Structure Quantities"

BILL OF SPLICE BARS

REINFORCING STEEL

SIZE	LENGTH LIN. FT.	WEIGHT EACH	BRIDGE FILE Nº PIECES	WEIGHT LBS	Nº PIECES	WEIGHT LBS	Nº PIECES	WEIGHT LBS	TOTAL WEIGHT LBS
# 11	11'-0"	58.4	1	58					
# 10	10'-6"	45.2	1	45					
# 9	9'-6"	32.3	1	32					
# 8	8'-9"	23.4	1	23					
# 7	8'-0"	16.4	1	16					
# 6	7'-6"	11.9							
# 5	6'-9"	7.0	4	28					
# 4	6'-0"	4.0	4	16					
# 3	5'-6"	2.1	3	6					
TOTAL SPLICE BARS				224					

SUMMARIZED WEG 5-21-65 CKD. L.M. 5-21-65
TRACED WEG 6-14-65 CKD. WHW 6-14-65

NOTE: For Test Bar Samples see Bridge Std. C1.

BILL OF MATERIALS FOR R.C. BRIDGE APPROACHES

REINFORCING STEEL

SIZE & MARK	NUMBER PIECES	LENGTH LIN. FT.	BRIDGE FILE WEIGHT LBS.	WEIGHT LBS.	WEIGHT LBS.	TOTAL WEIGHT LBS.

BARRICADES, BARRIERS, TRAFFIC SIGNS AND LIGHTS

ITEM	UNIT	QUANTITY	ASSEMBLY	BRIDGE FILE			TOTALS
TYPICAL SIGN STANDARDS	Each		Signs XW-1				
			Signs XW-2				
			Signs XW-3				
			Signs XM-2				
			Signs W-4B, W-35A				
			Torches				
STANDARD BARRICADES (TYPE A)	Each		Barricades (Type A)				
			Signs XR-1				
			Signs M-20A				
			Lanterns				
STANDARD BARRICADES (TYPE B)	Each		Barricades (Type B)				
			Signs XR-1				
			Lanterns				
STANDARD SIGNS	Each		Signs W-11				
			Signs W-35A				
			Torches				
SUITABLE BRIDGE BARRIERS	Each		* Suitable Barriers				
			* Lanterns or Torches				
CONSTRUCTION IDENTIFICATION SIGNS	Each		* Signs XM-6				
			* Signs XM-7				
			* Signs XM-8				

* Not a Pay Item. Place as directed by the Engineer. "W-35A" safe speed to be determined by the Engineer. When sign standards are used in unpaved areas the contractor may use two posts set (3) three feet in the ground. Directional, advisory or warning signs shall be right hand or left hand as the location of the sign requires.
** Weight of spirals includes weight of 1½ extra turns top and bottom. Spacers and 1½ 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.

Rev. 11-5-65 Item 42 Deleted.

BRIDGES OVER 20' SPAN

FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND	I-465-4(78)155	1965	23	30

SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITIES BRIDGE FILE			TOTALS
1	Class F Concrete	Cu. Yds.	397.[illegible]			
2	Class D Concrete	Cu. Yds.	7.2			
3	Class E Concrete above Footings	Cu. Yds.	[illegible]			
4	Class E Concrete in Footings	Cu. Yds.	[illegible]			
5	Railing Concrete	Cu. Yds.	27.8			
6	Reinforcing Steel	Lbs.	97,[illegible]			
7	Structural Steel	Lump Sum	1			
8	Anchor Plates (MK-AP2)	Each	18			
9	Cast Iron	Lbs.				
10	Aluminum Railing (Type)	Lin. Ft.				
11	Untreated Timber Piles Furnished	Lin. Ft.				
12	Untreated Timber Piles Driven	Lin. Ft.				
13	Steel Pile Shells Furnished (14")	Lin. Ft.	340			
14	Steel Pile Shells Driven (14")	Lin. Ft.	340			
15	Furnishing Equipment for Driving Piles	Lump Sum	1			
16	Wet Excavation	Cu. Yds.				
17	Waterway Excavation	Cu. Yds.				
18	Common Excavation	Cu. Yds.	50			
19	Special Borrow	Cu. Yds.				
20	Grade B Special Borrow	Cu. Yds.	445			
21	Sodding	Sq. Yds.	504			
22	Mulched Seeding	Sq. Yds.				
23	Plain Cement Concrete Pavement (")	Sq. Yds.				
24	Reinforced Cement Concrete Pavement (")	Sq. Yds.				
25	Aggregate for Compacted Aggregate Base	Tons				
26	Compacted Aggregate Shoulder	Tons				
27	Subbase	Cu. Yds.				
28	Removal Present Structure (Portions)	Lump Sum	1			
29	Temporary Bridge and Approaches	Lump Sum				
30	Typical Sign Standards	Each				
31	Standard Barricades (Type A)	Each				
32	Standard Barricades (Type B)	Each				
33	Standard Signs	Each				
34	R/W Markers	Each				
35	Slopewall	Sq. Yds.				
36	" Expansion Joint	Lin. Ft.				
37	Straight Beam Guard Rail	Lin. Ft.				
38	Class D Concrete in Structures	Cu. Yds.				
39	Foundation Excavation (Uncl.)	Cu. Yds.	480			
40	4" Conc. Slopewall	Sq. Yds.	560			
41	Resetting Aluminum Railing	Lin. Ft.	419			
42						
43	Rivets Removed	Each	592			
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SUMMARY
INDIANA STATE HIGHWAY COMMISSION

JUNE 15, 1965

RECOMMENDED FOR APPROVAL: C.R. Rumner
ENGINEER OF BRIDGE DESIGN

PROJECT: I-465-4(78)155
BRIDGE CONTRACT NO. B-6622
BRIDGE FILE: I70-73-4547A

CHARLES R. RUMNER No. 2275 STATE OF INDIANA PROFESSIONAL ENGINEER

END STR