BRIDGE CONTRACT No. 6811

BRIDGES OVER 20' SPAN					
FED. ROAD REGION NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4(21)115	1963	1	39

STATE OF INDIANA

INDIANA STATE HIGHWAY COMMISSION

BRIDGE PLANS

FOR SPANS OVER 20 FEET ON INTERSTATE ROAD NO. 70 SECTION 4

I PROJECT NO. 70-4(21)115

BEGINNING AT STA. 1494+80 ON THE SURVEY ℄ OF PROJECT NO. I-70-4(20)115 APPROXIMATELY 1259.5 FT. SOUTH AND 2679.5 FT. WEST OF THE NORTHEAST CORNER OF SECTION 17,T16N,R9E AND EXTENDING IN A NORTHEASTERLY DIRECTION APPROXIMATELY 680 FT. TO STA. 1501+00 APPROXIMATELY 942.7 FT. SOUTH AND 2087.7 FT. WEST OF THE NORTHEAST CORNER OF SECTION 17,T16N,R9E, ALL IN HENRY COUNTY.

[illegible] Length	0.085 Miles
Road Length	0.040 Miles
Total Length	0.125 Miles
Max. Grade	+8.00 %

INDEX

PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION	CONTRACT NO.
I-70-4(21)115	I-70-115-5140 & 5140 J	CONTINOUS STEEL BEAM SKEW 80° LEFT	3 SPAN CONT. 65'-6 79'-0 65'-6	MONTGOMERY CREEK	1496+32 LINE A	6811

SHEET NO.	SHEET DESIGNATION	SUBJECT	B.P.R. APPROVAL
1		INDEX and TITLE SHEET	
2		STANDARD DIVIDED LANE SECTION for F.A.I. PROJECTS MAR. 1961 [illegible]	7-17-64
3	ROAD SHEET	SR 109 INTERCHANGE GEOMETRICS, SH. NO. 22 OF PROJ. I-70-4(50)114	
4&5	ROAD SHEETS	PLAN and PROFILE STA 1466+00 to 1550+00 LN. A SH.10 & 11 OF PROJ. I-70-4(50)114	
6		R.C. BRIDGE APPROACH	
7		STRUCTURE BORING LOG	
8	S1	LAYOUT	
9	S2	GENERAL PLAN	
10	S3	BENTS 1 & 4 DETAILS - W.B. STRUCTURE	
11	S4	BENTS 1 & 4 DETAILS - E.B. STRUCTURE	
12	S5	PIER 2 DETAILS - W.B. STRUCTURE	
13	S6	PIER 3 DETAILS - W.B. STRUCTURE	
14	S7	PIER 2 DETAILS - E.B. STRUCTURE	
15	S8	PIER 3 DETAILS - E.B. STRUCTURE	
16	S9	FRAMING PLAN	
17	S10	STRUCTURAL STEEL DETAILS	
18	S11	SUPERSTRUCTURE DETAILS - E.B. STRUCTURE	
19	S12	SUPERSTRUCTURE DETAILS - W.B. STRUCTURE	
20	S13	SCREEDS	
21		SUMMARY	
22-27	ROAD PLAN SHEETS	CROSS SECTIONS, SH.30 TO SH.35 OF ROAD PROJ. I-70-4(50)114	

INDEX CONTINUED
STANDARD DRAWINGS

SHEET NO.	SHEET DESIGNATION	SUBJECT	B.P.R. APPROVAL	ADOPTED "A" REVISION "R"
28	BRIDGE STD. C1	STANDARD MISCELLANEOUS DETAILS		R-3-27-63
	BRIDGE STD. C2	STANDARD MISCELLANEOUS DETAILS		
29	BRIDGE STD. D	[illegible] ROADWAY DRAINS	1-12-60	A-1-8-60
	BRIDGE STD. F	[illegible] DETAILS		
	BRIDGE STD. [illegible]	TYPICAL [illegible] GUARD RAIL DETAILS		
	BRIDGE STD. [illegible]	TYP. DETAILS OF THICK. PAVEMENT & LOC. TOE OF SL. AROUND END BENTS		
	BRIDGE STD. [illegible]	TYP. DETAILS OF THICK. PAVEMENT & LOCATING TOE OF SLOPE		
	BRIDGE STD. [illegible]	CONT. STEEL BEAM-TYP. APPROACH DETAILS-TWIN STRUCTURES		
	BRIDGE STD. [illegible]	ST. BEAM & R.C. GIRDER-TYP. APPROACH DETAILS-TWIN STRUCTURES		
	BRIDGE STD. [illegible]	CONT. STEEL BEAM-TYP. APPROACH DETAILS-TWO-LANE STRUCTURES		
	BRIDGE STD. M1	MISCELLANEOUS APPROACH DETAILS		
	BRIDGE STD. M2	MISCELLANEOUS APPROACH DETAILS		
[illegible]A	BRIDGE STD. J	EXPANSION JOINTS		R-4-7-[illegible]
	BRIDGE STD. [illegible]	R.C. BRIDGE APPROACH TURNOUT [illegible]		
[illegible]	BRIDGE STD. [illegible]	[illegible] DETAILS	[illegible]	[illegible]
[illegible]A	BRIDGE STD. [illegible]	STEEL RAILING - TYPE C		R-4-27-[illegible]
	BRIDGE STD. P2	[illegible] CONCRETE PILE DETAILS		
	BRIDGE STD. P7	PRESTRESSED CONCRETE TYPE I-BEAMS		
	BRIDGE STD. P8	[illegible] COMPOSITE BOX BEAMS [illegible]		
31	BRIDGE STD. [illegible]	ALUMINUM RAILING - TYPE 5		[illegible]
32	BRIDGE STD. [illegible]	ALUMINUM RAILING DETAILS		[illegible]
	BRIDGE STD. S1	TYPICAL DETAILS FOR PLACING SPECIAL FILLING MATERIAL		
33	BRIDGE STD. S2	TYPICAL DETAILS FOR PLACING GRADE "D" SPECIAL BORROW	[illegible]	[illegible]
	BRIDGE STD. T SHEET A	STANDARD [illegible]		
	BRIDGE STD. T SHEET B	STANDARD [illegible]		
	ROAD STD. SHEET A	[illegible]		
34	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS	[illegible]	[illegible]
34A	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS	[illegible]	[illegible]
35	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS	[illegible]	[illegible]
	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS		
36	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS		A DEC. 1961
37	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS	[illegible]	[illegible]
	ROAD STD. SHEET [illegible]	MISCELLANEOUS STRUCTURE STANDARDS		
	ROAD STD. SHEET [illegible]	MISCELLANEOUS STRUCTURE STANDARDS		
	ROAD STD. SHEET [illegible]	MISCELLANEOUS [illegible] DRIVE STANDARDS		
	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET K	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS		
[illegible]	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS	[illegible]	[illegible]
[illegible]	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS		[illegible]
	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET S	MISCELLANEOUS STANDARDS CENTER [illegible]		
	ROAD STD. SHEET [illegible]	MISCELLANEOUS [illegible]		
	ROAD STD. SHEET [illegible]	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD.	[illegible] CONNECTIONS FOR EXTENSION		
	ROAD STD.	STANDARD REINF. CONC. BOX CULVERTS		
	ROAD STD.	STANDARD REINF. CONC. BOX CULVERTS - [illegible] END & WING DETAILS		
	ROAD STD.	STANDARD REINF. CONC. CULVERTS-SLAB TOP TYPE [illegible]		
	ROAD STD.	STANDARD REINF. CONC. CULVERTS-SLAB TOP TYPE [illegible]		
	ROAD STD. SHEET [illegible]	STANDARD GUARD RAIL		
	ROAD STD. SHEET [illegible]	[illegible]		
	ROAD STD.	[illegible] CONCRETE [illegible]		
	ROAD STD.	[illegible]		
	ROAD STD.	[illegible] PLATE ARCH		
	ROAD STD.	[illegible] STRUCTURAL PLATE ARCHES		
	ROAD STD.	[illegible]		
	ROAD STD. SHEET 1 DETOURS	[illegible]		
	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR [illegible]		
	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS		
[illegible]	ROAD STD. SHEET 1	CONSTRUCTION IDENTIFICATION SIGNS	[illegible]	[illegible]

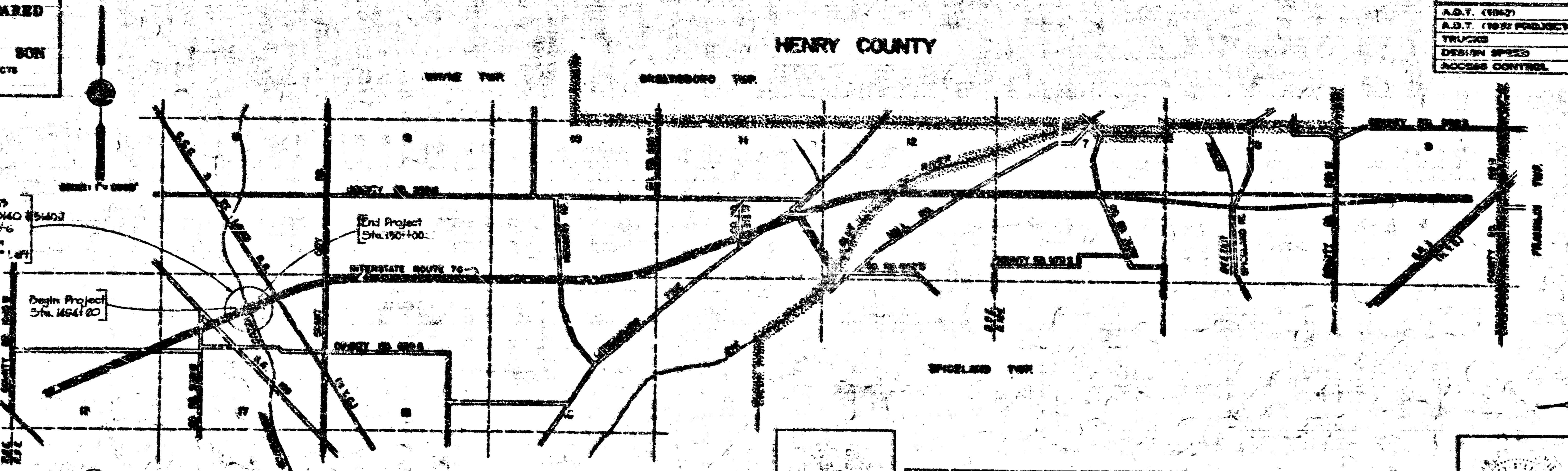
TRAFFIC DATA		
A.D.T. (1962)	1200	V.P.D.
A.D.T. (1982 PROJECTED)	25636	V.P.D.
TRUCKS	10	%
DESIGN SPEED	70	M.P.H.
ACCESS CONTROL	FULL	

THESE PLANS PREPARED BY

CHAS. W. COLE & SON

ENGINEERS AND ARCHITECTS

SOUTH BEND, INDIANA



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

SUBMITTED FOR APPROVAL JULY 3, 1963

REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA REG. NO. [illegible]
CHAS. W. COLE

REVISIONS	
DATE	SHEET NO.
1-5-65	6,8,9,10,11,12,13,[illegible],20,21
	[illegible]
5-25-65	[illegible]
5-6-65	8,11,16,17,18,19,20,21

RECOMMENDED FOR APPROVAL 7-18-63

APPROVED 7-19-63

CHIEF ENGINEER, INDIANA STATE HIGHWAY COMMISSION

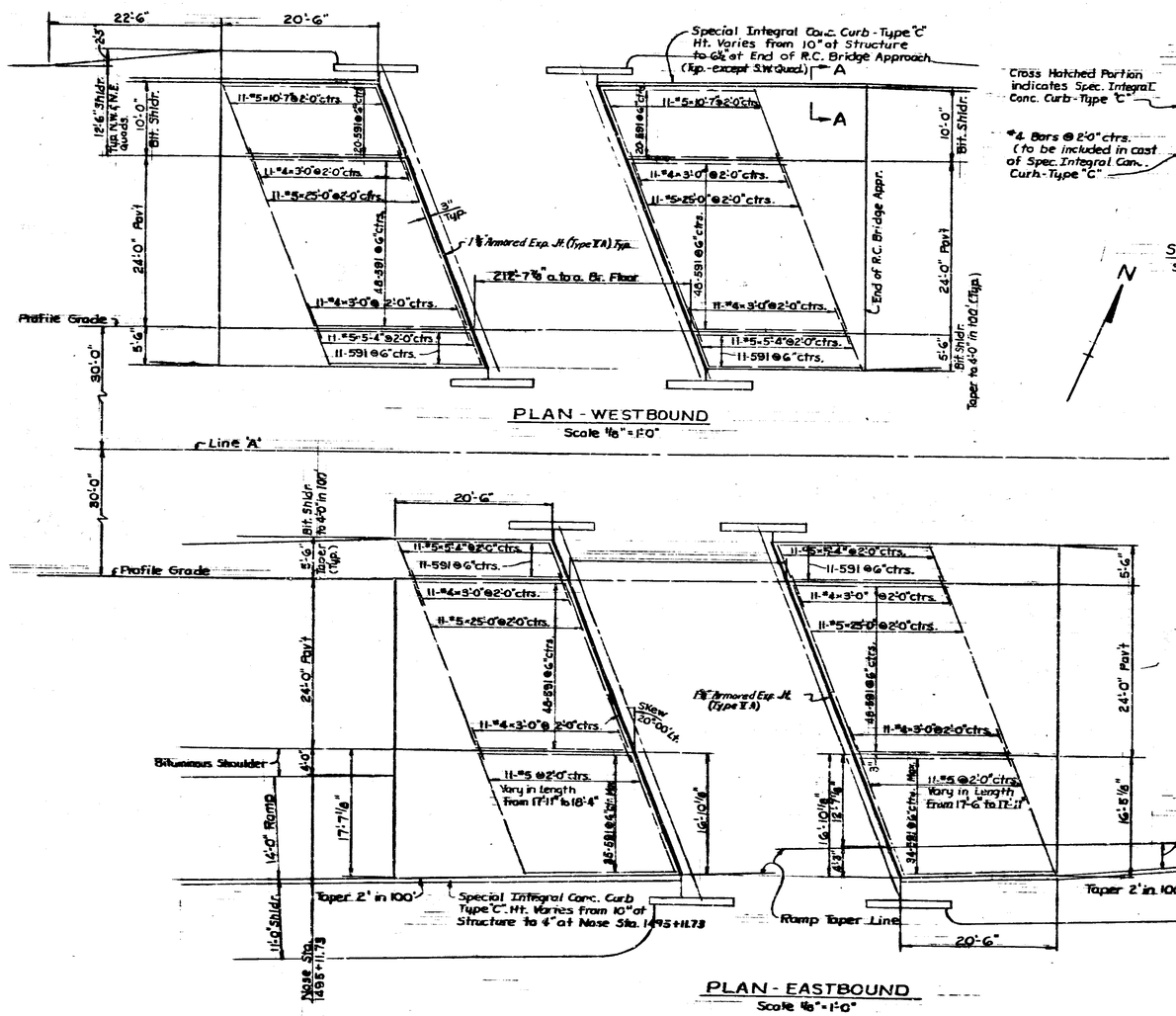
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED:

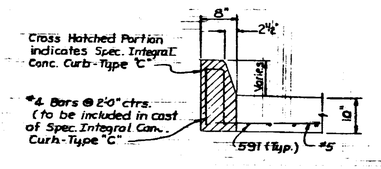
DIVISION ENGINEER DATE:

BRIDGE FILE: I-70-115-5140 & 5140 J

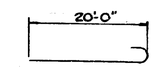
BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21) 115	1963	6	39



PLAN - WESTBOUND
Scale ⅛" = 1'-0"



SECTION A-A
Scale ⅜" = 1'-0"



591 × 20'-6"

BILL OF MATERIAL
REINFORCING STEEL

SIZE OR MARK	LENGTH	EASTBOUND No.	EASTBOUND Weight	WESTBOUND No.	WESTBOUND Weight
591	20'-6"	187		158	
5	Varies - 17'-11" to 18'-4" in ½" Incrmt.	11			
5	25'-0"	22		22	
5	Varies 17'-6" to 17'-11" in ½" Incrmt.	11			
5	10'-7"			22	
5	5'-4"	22		22	
Total #5			5121#		4125#
4	3'-0"	44		44	
Total #4			88#		88#
Total - Eastbound			5209#		
Total - Westbound					4213#

	Eastbound	Westbound
10" R.C. Pavt	152 Sq. Yds.	147 Sq. Yds.
10" Widened R.C. Pavt	143 Sq. Yds.	95 Sq. Yds.
Special Integral Conc. Curb-Type "C"	58 Lin. Ft.	55 Lin. Ft.
1½" Expansion Jt. (Type "A")	99 Lin. Ft.	84 Lin. Ft.

NOTES:
See Br. Std. Ms for R.C. Bridge Approach Details.
See Br. Std. C1 for Reinforcing Bar Notes.
See Rd. Std. Mu for Integral Conc. Curb-Type C.
Items on this sheet not included in Bridge Contract.
To be constructed under Road Project I-70-4(30) 114

PLAN - EASTBOUND
Scale ⅛" = 1'-0"

R.C. BRIDGE APPROACH DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE:- AS NOTED — JULY 9, 1963

SUBMITTED FOR APPROVAL:- [signature]

DRAWING:- OF
PROJECT:- I-70-4 (21) 115
BRIDGE CONTRACT NO. 6811
BRIDGE FILE:- I-70-115-5140 & 5140 J

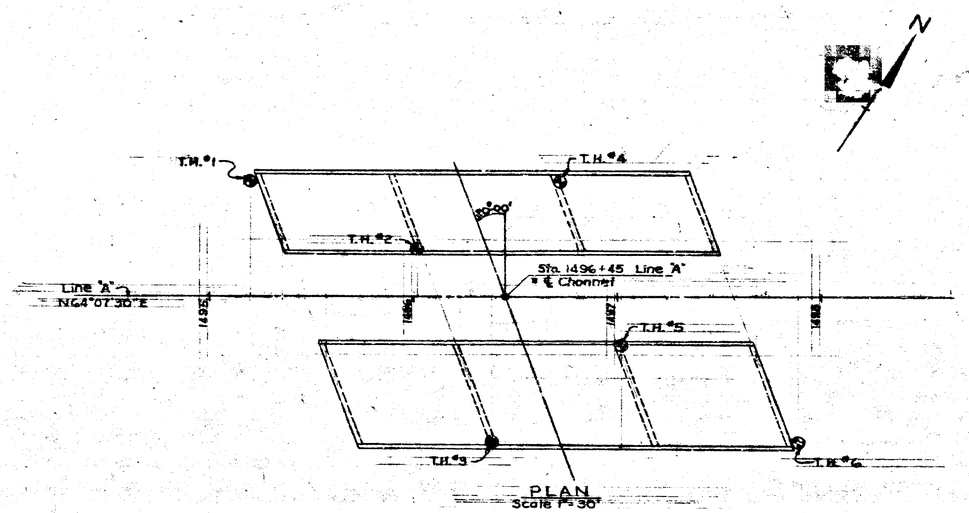
DESIGNED ____ CKD. ____
DRAWN RT 3-63 CKD. ____
TRACED ____ CKD. ____

P 1-5-65 Exp. Jts.

November 6, 1961

PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
I-70-4 (21) 115	A	6	39	I-70-115-5140-J Sub-J

Sheet No. 7



PLAN
Scale 1" = 30'

Boring No.	T.H. #1	T.H. #2	T.H. #3	T.H. #4	T.H. #5	T.H. #6
Station	1495 + 20	1496 + 02	1496 + 38	1496 + 72	1497 + 02	1497 + 89
Offset	60' Lt.	25' Lt.	75' Rt.	60' Lt.	25' Rt.	75' Rt.
Ground El.	994.0	972.1	971.8	972.8	972.8	971.9

T.H. #1

Sample No.	El.	N	Description
	994.0		Ground Level
1	993.0	PUSH	Sandy Loam
2	990.0	PUSH	Sandy Clay
3	988.5	PUSH	Silty Sand & Gravel
4	985.6	66	Sandy Clay
5	978.5	18	Sandy Loam & Gravel
6	976.5	28	
7	966.6	101	Sandy Clay, Loam & Gravel
8	956.6	111	

End of Boring @ 30'

T.H. #2

Sample No.	El.	N	Description
	972.1		Ground Level
1	971.6	PUSH	Sandy Loam
2	969.1	PUSH	
3	962.6	39	Sand & Gravel (Some organic material)
4	953.1	102	Sandy Loam
5	956.6	67	Sandy Clay Loam & Gravel
6	951.6	101	
7	948.6	101	Sand
8	944.6	21	
9	936.6	88	
10	931.6	101	Sand & Gravel
11	926.6	101	
12	921.6	101	

End of Boring @ 51.2'

T.H. #3

Sample No.	El.	N	Description
	971.8		Ground Level
1	969.3	PUSH	Sandy Loam
2	968.8	PUSH	
3	962.3		Sandy Gravel & Sand
4	956.5	49	Sandy Clay Loam & Gravel
5	951.5	78	
6	946.5	101	Sand
7	942.8	38	

End of Boring @ 30'

T.H. #4

Sample No.	El.	N	Description
	972.8		Ground Level
1	970.3	PUSH	Silty Sand
2	969.8	PUSH	Silty Clay
3	967.3	22	Silty Sand
4	952.3	116	Sand & Gravel
5	957.3	46	Sandy Clay Loam & Gravel
6	952.3	32	
7	947.8	17	
8	943.5	9	Sandy Clay & Gravel

End of Boring @ 30'

T.H. #5

Sample No.	El.	N	Description
	972.8		Ground Level
1	970.3	PUSH	Sandy Loam
2	969.8	PUSH	
3	967.3	31	Sand & Gravel
4	964.6		
5	962.3	68	Sandy Clay Loam & Gravel
6	957.3	27	
7	952.8	38	
8	947.3	43	
	944.8	97	
	942.8		

End of Boring @ 30'

T.H. #6

Sample No.	El.	N	Description
	971.9		Ground Level
1	969.4	PUSH	Silty Clay
2	968.9	PUSH	Sand & Gravel
3	966.4	4	Sandy Clay Loam & Gravel
4	961.4	23	
5	958.9		
6	956.4	71	Sandy Loam & Gravel
	951.4	136	
7	948.9	37	Sand & Gravel (Pressure)
8	946.9	22	Silty Sand
	944.9		

End of Boring @ 30'

NOTES:

▼ Denotes ground water table

N Indicates the number of blows required to drive a 1⅜" I.D., 2" O.D. Split Spoon Sampler 12" by means of a 140# weight falling 30".

See Art. A203 of Specifications regarding Test Pit Data.

STRUCTURE BORING LOG

JULY 3, 1963

Scales: Horiz. 1" = 30'-0 Vert. 1" = 10'-0

Submitted for Approval: [illegible]

PROJECT: I 70-4(21)196

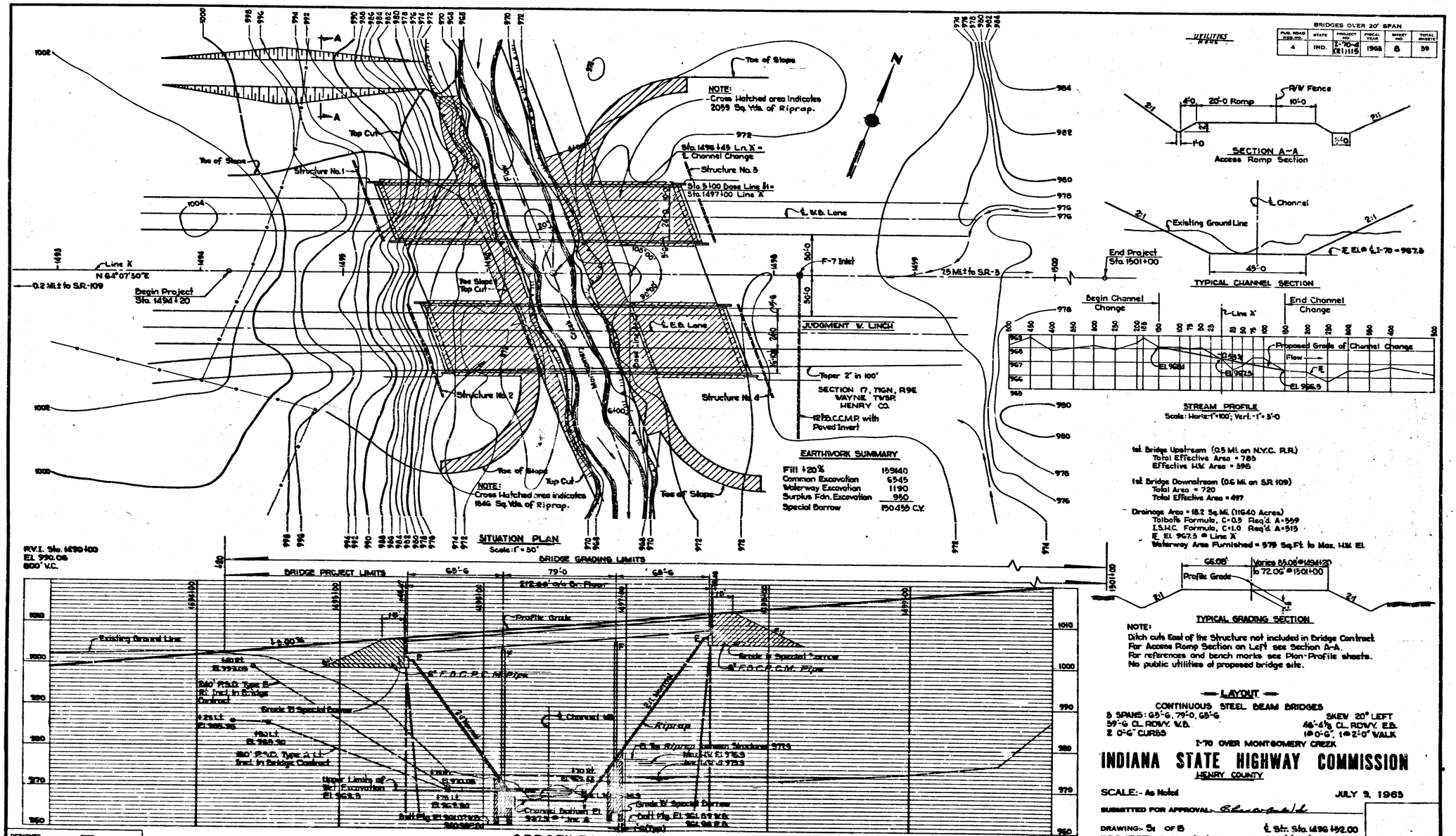
BRIDGE CONTRACT No. 281

BRIDGE FILE: I-70-116-6140 & 116-6141

PLATE 1—PLAN (PROFILE & PIT STANDARD)

BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21) 115	1968	8	39

UTILITIES NONE



NOTE:
Ditch cuts East of the Structure not included in Bridge Contract
For Access Ramp Section on Left see Section A-A.
For references and bench marks see Plan-Profile sheets.
No public utilities of proposed bridge site.

— LAYOUT —

CONTINUOUS STEEL BEAM BRIDGES

3 SPANS: 65'-6", 79'-0, 65'-6" — SKEW 20° LEFT

59'-6" CL. RDWY. W.B. — 46'-4½" CL. RDWY. E.B.

2 0'-6" CURBS — 1@0'-6", 1@2'-0" WALK

I-70 OVER MONTGOMERY CREEK

INDIANA STATE HIGHWAY COMMISSION

HENRY COUNTY

SCALE:- As Noted — JULY 9, 1965

SUBMITTED FOR APPROVAL:- [signature]

DRAWING:- 3 OF 15 — ℄ Str. Sta. 1496+92.00 Line A

PROJECT:- I-70-4(21)115

BRIDGE CONTRACT NO. 6811

BRIDGE FILE:- I-70-115-5140 ℄ 5140 J

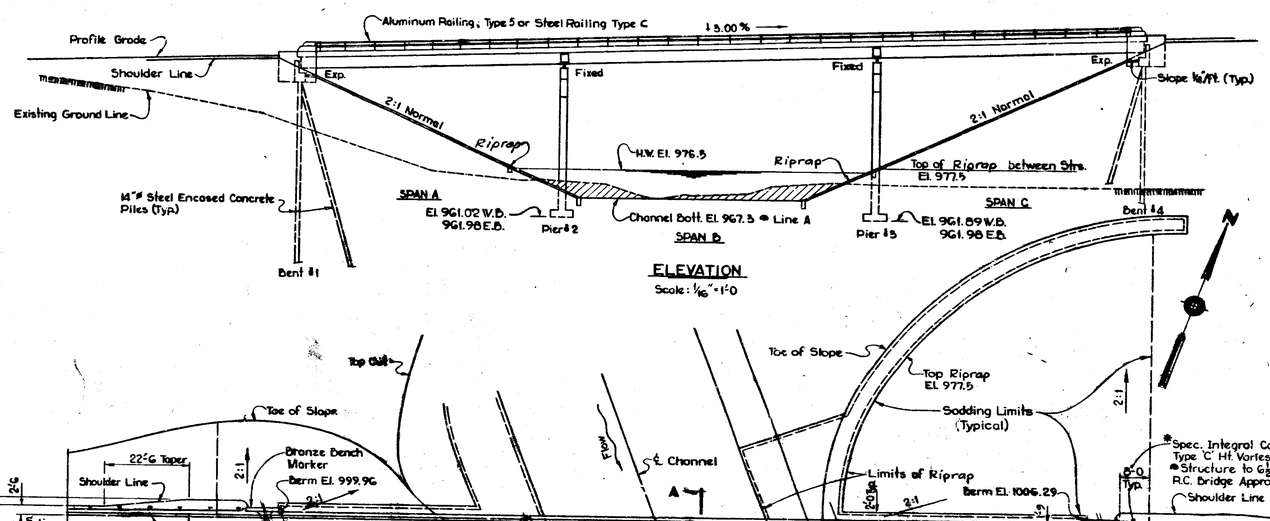
DESIGNED ____ CK'D. ____
DRAWN ____ CK'D. ____
TRACED ____ CK'D. ____

Field Books: Level Book 8711 L, pgs. 10-12
Transit Book 8710 T, pg. 11

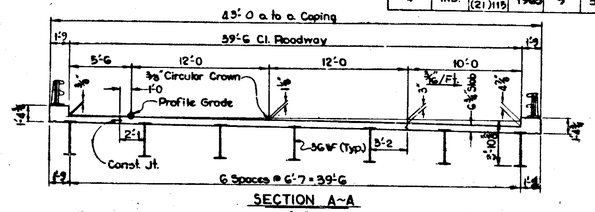
Rev. 1-5-65 Slopewall to Riprap.
Rev. 5-25-65 Slopewall to Riprap & Perf. C.M. Pipe to F.B.C.P.C.M. Pipe

BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21) 115	1965	9	39

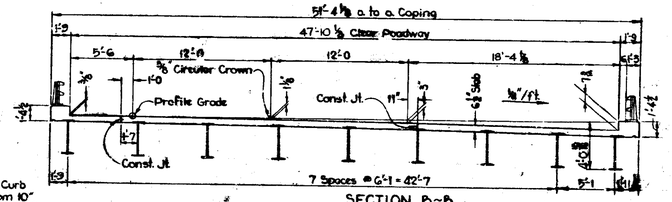
STRUCTURE TO BE BUILT ON A ↓5.00 % GRADE



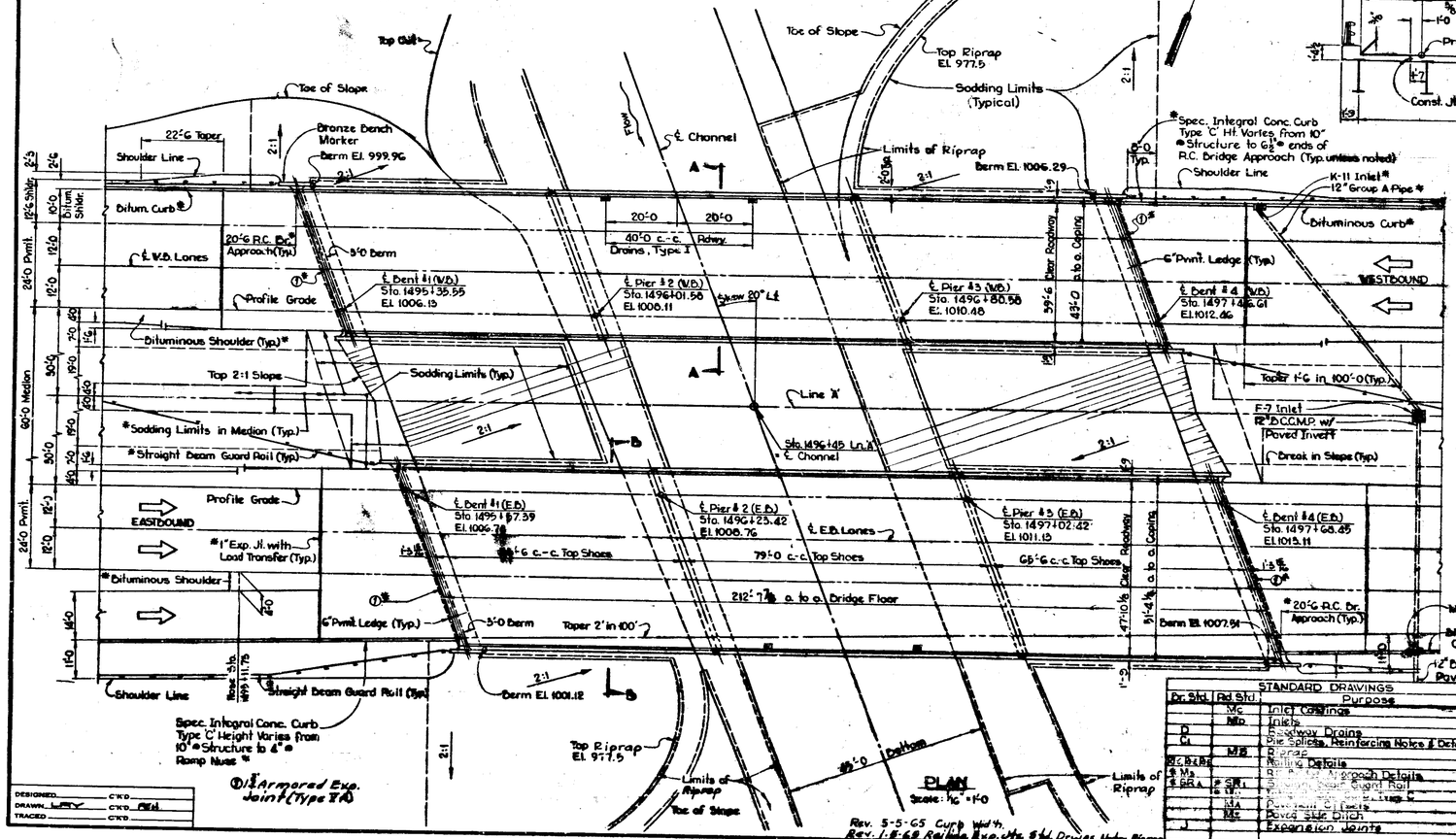
ELEVATION
Scale: 1/16" = 1'-0



SECTION A-A
Scale: 3/16" = 1'-0



SECTION B-B
Scale: 3/16" = 1'-0



PLAN
Scale: 1/16" = 1'-0

*1" Armored Exp. Joint (Type 'A')

DESIGNED	C'K'D
DRAWN LRY	C'K'D RFM
TRACED	C'K'D

STANDARD DRAWINGS

Dr. Std.	Rd. Std.	Purpose
	Mc	Inlet Castings
	MD	Inlets
D		Roadway Drains
CL		Pipe Splices, Reinforcing Notes & Details
	MB	Riprap
RC, B & Bs		Railing Details
& Ms		Bridge Approach Details
& BRA	& SBR	Bridge Beam Guard Rail
	& MBR	Bridge Median Beam Guard Rail
	MA	Pavement Markings
	Mc	Paved Side Ditch
J		Expansion Joints
Sa		Perf. CMP & Spiral borrow @ End Bents
	MP	Pipe Groups
	MP-1	Pipe Culverts

GENERAL NOTES: Scale: 3/16" = 1'-0

For Painting Exp. Joint Armor see Special Provisions.
Exp. Joint Armor to conform to Roadway Crown.
No present structure at proposed bridge site.
Depth of footing to be extended if found necessary. See Art. B 805.2(a) of Specifications.
Piles shall have a minimum bearing value shown on detail drawings. Determine pile lengths by Art. F 205 of Specifications.
For details of steel encased piles see Br. Std. C, the Special Provisions and applicable articles in the Specifications.
Piles shall be driven to elevation necessary to obtain desired bearing.
Reinforcing steel covering shall be 1 1/2" in top and 1" min. in bottom of floor slabs, 3" in footings except bottom steel which shall be 4" and 2" in all other parts unless noted.
Concrete in footings, & pier stems to construction joint to be Class 'E'.
Concrete in superstructure, including parapets, bent caps & top of pier stem down to construction joint to be Class 'F'.
Concrete in 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 wingwalls in accordance with the Specifications.
Bevel forms 1/4" under copings and chamfer exposed edges 1" unless noted.
Construct Riprap at locations shown on Layout.
Tolerance in position of steel encased concrete pile heads maximum 2".
*Three 1" expansion joints with load transfer to be placed in the approach pavement. See Bridge Std. Ms.
All railing posts to be constructed perpendicular to grade.
& Standard type I Roadway drains w/ Grate A to be placed as shown on this drawing.
See special provisions for items included in this contract.
For Pay Items covering this Structure see "Bridge Summary"

DESIGN DATA:
Designed for H20-S16-44 loading in accordance with 1961 A.A.S.H.O. Specifications.
Checked for 2-24,000 lb. axles spaced at 4'-0 centers.

TYPICAL SECTIONS:
See Standard Divided Lane Sections for Federal Aid Interstate Project.

NOTE: For ramp taper details see Rd. Std. Mu-2.
* Denotes items not included in Bridge Contract.

JOINT LEGEND: For Armored Exp. Joint see Br. Std. J.

GENERAL PLAN

CONTINUOUS STEEL BEAM BRIDGES
5 SPANS: 65'-6, 79'-0, 65'-6 — SKEW 20° LT.
39'-6 CL. RDWY. W.B., 47'-10 1/8 CL. RDWY. E.B.
2 @ 0'-6 CURBS — 2 @ 0'-6 CURBS

I-70 OVER MONTGOMERY CREEK

INDIANA STATE HIGHWAY COMMISSION

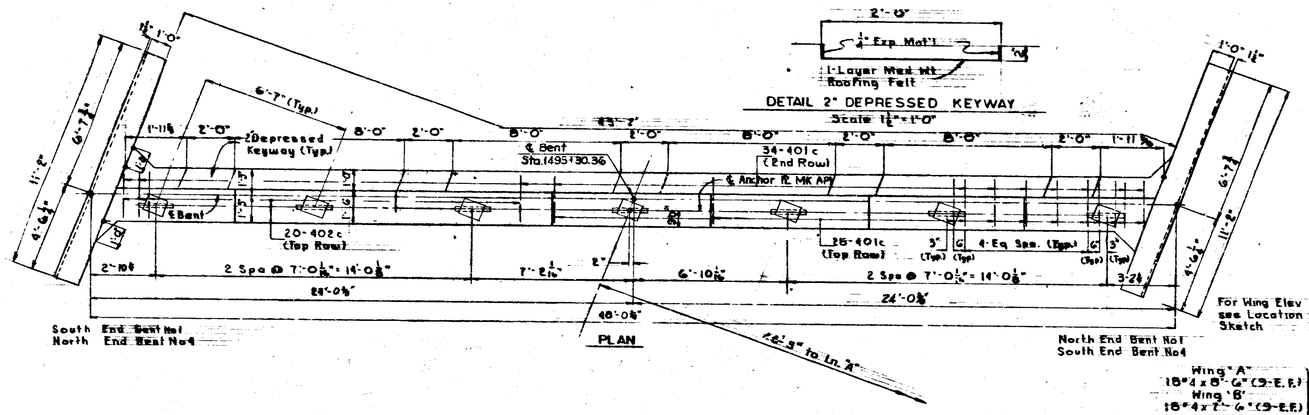
HENRY COUNTY

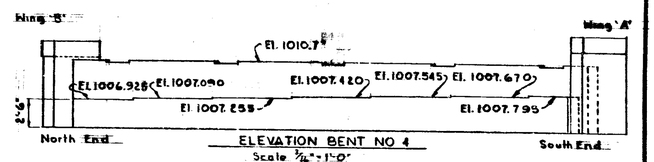
SCALE:- As Noted — JULY 2, 1965

SUBMITTED FOR APPROVAL:- [illegible]

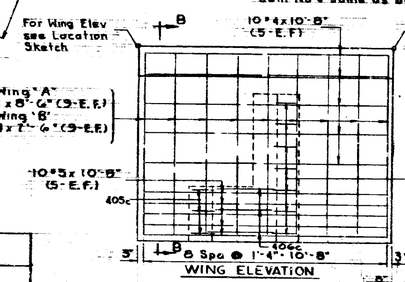
DRAWING:- 2 of 13 — ℄ Str. Sta. 1496+52.00 Line A
PROJECT:- I-70-4(21) 115
BRIDGE CONTRACT NO. 6811
BRIDGE FILE:- I-70-115-5140(W.B.) & 5140 J(E.B.)

BRIDGER OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	2-70-4 (21) 115	1963	10	59

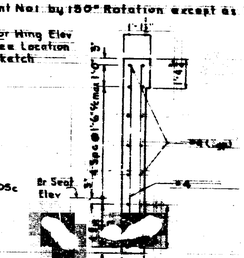




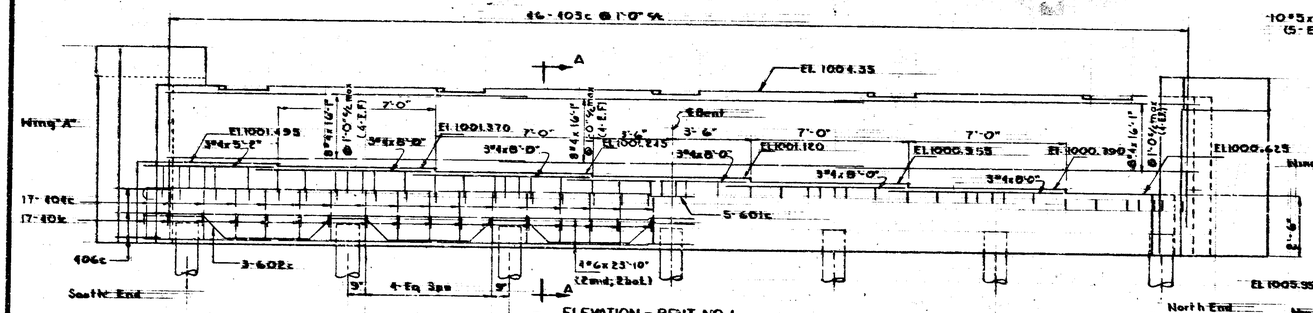
ELEVATION BENT NO 4
Scale 3/16" = 1'-0"
Bent No 4 Same as Bent No1 by 180° Rotation except as Noted



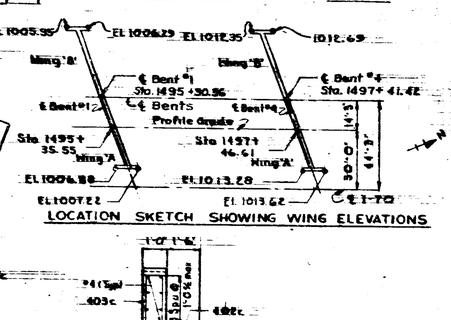
WING ELEVATION



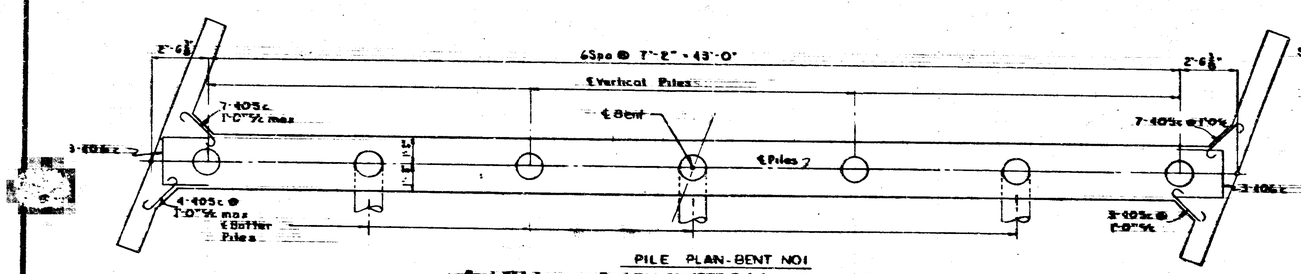
SECTION "B-B"



ELEVATION - BENT NO 1

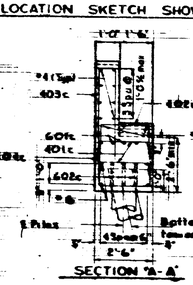


LOCATION SKETCH SHOWING WING ELEVATIONS



PILE PLAN - BENT NO1

Bent No4 Same as Bent No1 by 180° Rotation



SECTION "A-A"

BILL OF MATERIALS

REINFORCING STEEL					
		Bent No1		Bent No 4	
Mark or Size	Length	No	Weight Lbs	No	Weight Lbs
601c	24'-6"	10		10	
602c	26'-7"	6		6	
#6	23'-10"	8	854	8	854
Total #6 Bars					
#5	10'-8"	20		20	
Total #5 Bars			223		223
401c	3'-2"	96		96	
402c	4'-2"	20		20	
403c	10'-8"	46		46	
404c	7'-6"	34		34	
405c	4'-0"	21		21	
406c	6'-8"	6		6	
#4	16'-1"	24		24	
#4	10'-8"	20		20	
#4	8'-6"	18		18	
#4	8'-0"	15		15	
#4	7'-6"	18		18	
#4	5'-2	3		3	
Total #4 Bars			1521		1521
Total Reinf. Steel			2638		2638
CONCRETE					
Class "F" Conc		25.8 Cu.Yd		26.0 Cu.Yd	
MISCELLANEOUS					
14"ϕ x 7ga. Steel Pile Shells		7@40' = 280 Lin.Ft		7@50' = 350 Lin.Ft	
Anchor Plates MK AP1		7-Each		7-Each	

NOTES:
See Br Std C: for Reinf Bar Notes.
Anchor Plates AP1 to be Pre-Set in Concrete
Bent Cap Shall Not be Poured until Fill has been Completed to Approximate Elev of Bottom of Cap.
14" ϕ Steel Encased Conc Piles are to be Driven to 40 Tons Minimum Bearing Capacity.
For detail of Anchor Plates MK. AP1, see Dwg. S7.

Rev 1-5-65 Cap Length

DETAILS BENT NO 1 & 4 WESTBOUND
INDIANA STATE HIGHWAY COMMISSION

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

JULY 9, 1965

SUBMITTED FOR APPROVAL:- [signature]

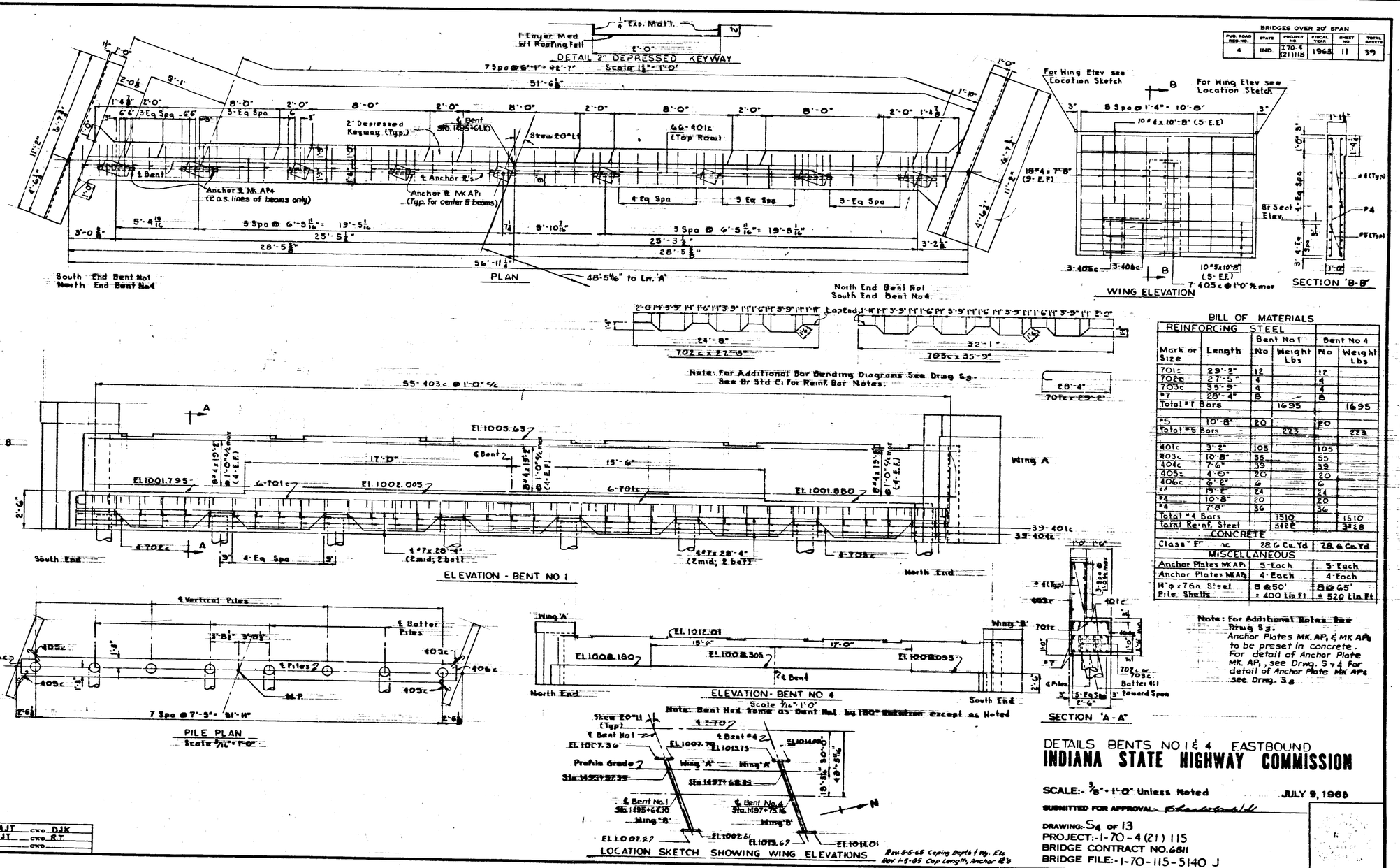
DRAWING:- S3 OF 13
PROJECT:- 1-70-4(21) 115
BRIDGE CONTRACT NO. 6811
BRIDGE FILE:- 1-70-115-5140

DESIGNED AJT C'K'D DJK
DRAWN AJT C'K'D RT
TRACED C'K'D

November 4, 1961

PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
2-70-4 (21) 115	8	10	59	70-115-5140

BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I 70-4 (21) 115	1963	11	39



BILL OF MATERIALS

REINFORCING STEEL		Bent No 1		Bent No 4	
Mark or Size	Length	No	Weight Lbs	No	Weight Lbs
701c	29'-2"	12		12	
702c	27'-5"	4		4	
703c	35'-9"	4		4	
#7	28'-4"	8		8	
Total #7 Bars			1695		1695
#5	10'-8"	20		20	
Total #5 Bars			223		223
401c	3'-2"	105		105	
403c	10'-8"	55		55	
404c	7'-6"	39		39	
405c	4'-0"	20		20	
406c	6'-2"	6		6	
"	19'-2"	24		24	
#4	10'-8"	20		20	
#4	7'-8"	36		36	
Total #4 Bars			1510		1510
Total Reinf. Steel			3428		3428
CONCRETE					
Class "F"			28.6 Cu. Yd		28.6 Cu. Yd
MISCELLANEOUS					
Anchor Plates MK AP1		5 Each		5 Each	
Anchor Plates MK AP4		4 Each		4 Each	
14" φ x 7 Ga Steel Pile Shells		8 @ 50' = 400 Lin Ft		8 @ 65' = 520 Lin Ft	

Note: For Additional Notes See Drwg S3.
Anchor Plates MK. AP1 & MK AP4 to be preset in concrete.
For detail of Anchor Plate MK. AP1 see Drwg. S7 & for detail of Anchor Plate MK AP4 see Drwg. S8

DETAILS BENTS NO 1 & 4 EASTBOUND

INDIANA STATE HIGHWAY COMMISSION

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

JULY 9, 1965

SUBMITTED FOR APPROVAL: [illegible]

DRAWING:- S4 OF 13

PROJECT:- I-70-4 (21) 115

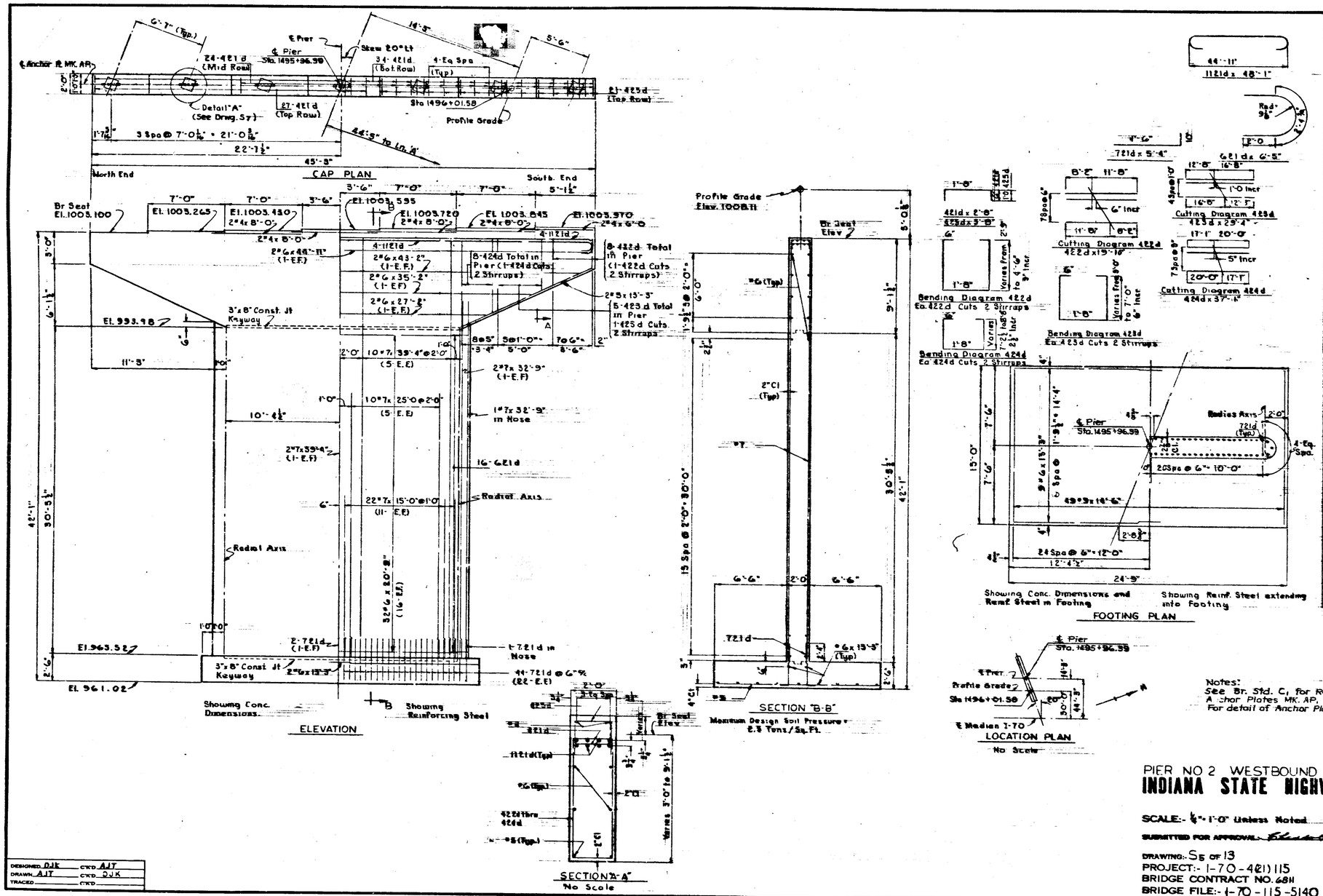
BRIDGE CONTRACT NO. 6811

BRIDGE FILE:- I-70-115-5140 J

DESIGNED AJT CKD DJK
DRAWN AJT CKD R.T.
TRACED CKD

November 6, 1961

PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
I-70-4 (21) 115	A	11	39	I-70-115-5140 J



BRIDGES OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21) 115	1963	14	59

BILL OF MATERIALS

REINFORCING STEEL			
Mark or Size	Length	No	Weight Lbs
1121d	48'-1"	8	
Total #11 Bars			2044
#9	14'-6"	49	
Total #9 Bars			2416
721d	5'-4"	92	
#7	39'-4"	22	
#7	32'-9"	6	
#7	25'-0	20	
#7	15'-0"	44	
Total #7 Bars			5544
621d	6'-5	32	
#6	44'-11"	2	
#6	43'-2"	2	
#6	35'-2"	2	
#6	27'-2"	2	
#6	20'-9"	32	
#6	13'-3"	22	
Total #6 Bars			2195
#5	13'-3"	4	
Total #5 Bars			55
421d	2'-8"	85	
422d	19'-10"	8	
423d	29'-4"	5	
424d	37'-1"	8	
425d	3'-8	21	
#4	8'-0"	8	
#4	26'-0"	2	
Total #4 Bars			456
Total Reinf. Steel			12910
CONCRETE			
Class "F" Conc. (Cap)		26.6 Cu. Yd	
Class "E" Conc above Footing		50.4 Cu. Yd	
Class "E" Conc. in Footing		34.4 Cu. Yd	
MISCELLANEOUS			
Anchor Plates MK. AP		7 Each	

Notes:
See Br. Std. C1 for Reinforcing Bar Notes.
Anchor Plates MK. AP, to be preset in concrete.
For detail of Anchor Plate MK AP, see Drwg. S7.

PIER NO 2 WESTBOUND

INDIANA STATE HIGHWAY COMMISSION

SCALE:- ¼" = 1'-0" Unless Noted JULY 9, 1963

SUBMITTED FOR APPROVAL:- [illegible]

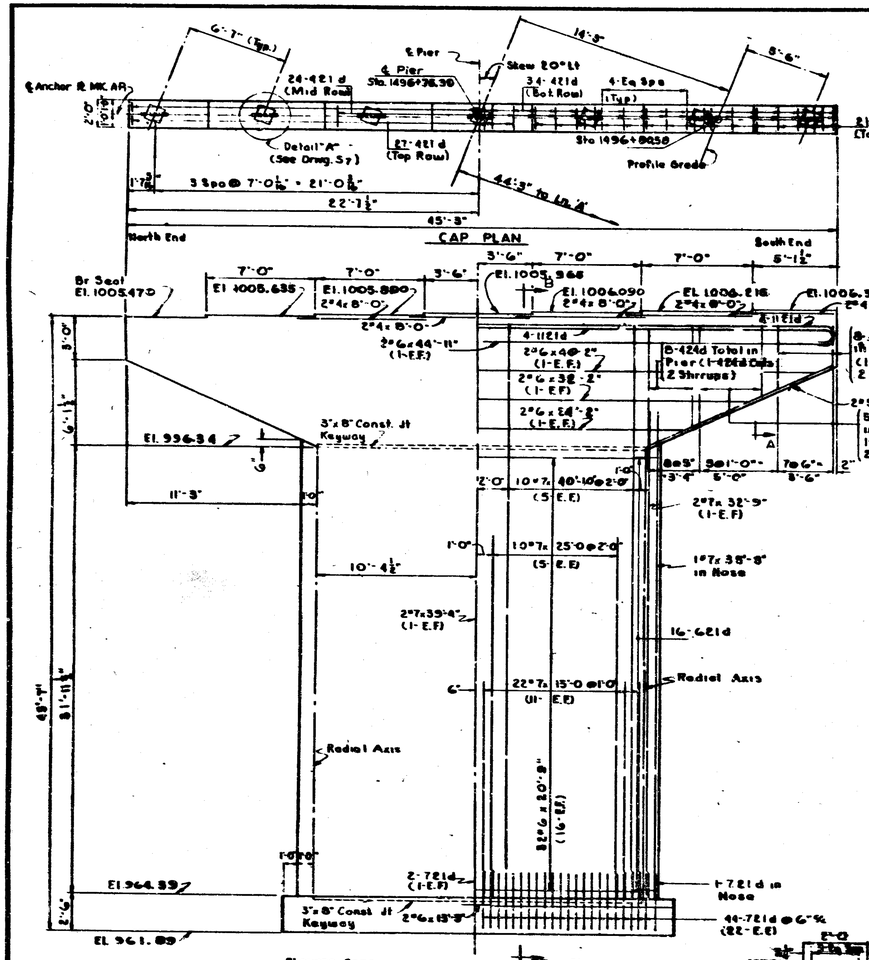
DRAWING:- S5 OF 13
PROJECT:- I-70-4(21)115
BRIDGE CONTRACT NO. 681
BRIDGE FILE:- I-70-115-5140

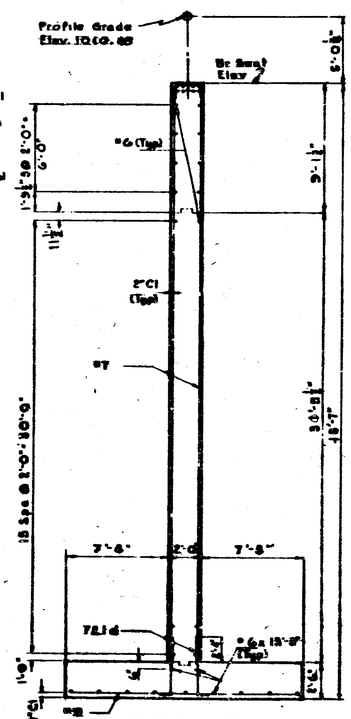
DESIGNED DJK	CKD. AJT
DRAWN AJT	CKD. DJK
TRACED	CKD.

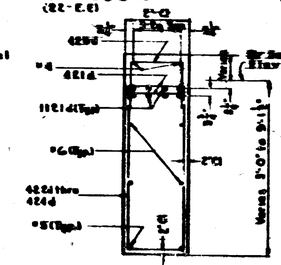
November 6, 1961

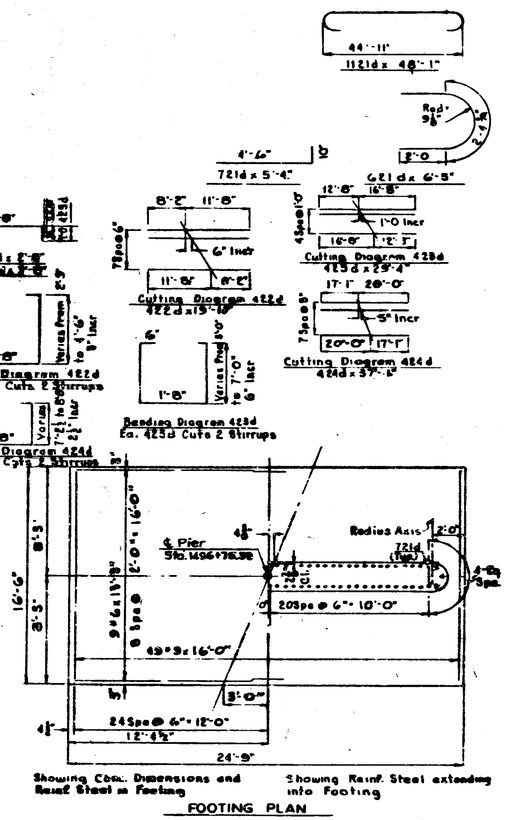
PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	TITLE
I-70-4(21)115	A	12	59	I-70-115-5140

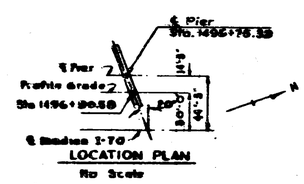
4 5140 J











Notes:
See Br. Std. C1 for Reinforcing Bar Notes.
Anchor Plates MK. AP1 to be preset in concrete.
For detail of Anchor Plate MK AP1, see Drwg. S7.

BRIDGES OVER 20' SPAN

FUN. ROAD SYSTEM NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS IN
4	IND.	I-70-4 (21) 115	1963	13	39

BILL OF MATERIALS

REINFORCING STEEL			
Mark or Size	Length	No	Weight Lbs
1121d	48'-1"	8	
Total #11 Bars			2044
#9	16'-0"	43	
Total #9 Bars			2666
721d	5'-4"	92	
#7	40'-10"	22	
#7	35'-3"	6	
#7	25'-0	20	
#7	13'-0"	44	
Total #7 Bars			5642
621d	6'-5	32	
#6	44'-11"	2	
#6	40'-2"	2	
#6	32'-2"	2	
#6	24'-2"	2	
#6	20'-9"	32	
#6	13'-3"	22	
Total #6 Bars			2168
#5	15'-3"	4	
Total #5 Bars			55
421d	2'-8"	85	
422d	19'-10"	8	
423d	2.9'-4"	5	
424d	37'-1"	8	
425d	3'-8	21	
#4	8'-0"	8	
#4	6'-0"	2	
Total #4 Bars			656
Total Reinf Steel			15231
CONCRETE			
Class 'F' Conc (Cap)			26.6 Cu. Yd
Class 'E' Conc above Footing			52.0 Cu. Yd
Class 'E' Conc in Footing			38.0 Cu. Yd
MISCELLANEOUS			
Anchor Plates AP1			7 Each

PIER NO 3 WESTBOUND

INDIANA STATE HIGHWAY COMMISSION

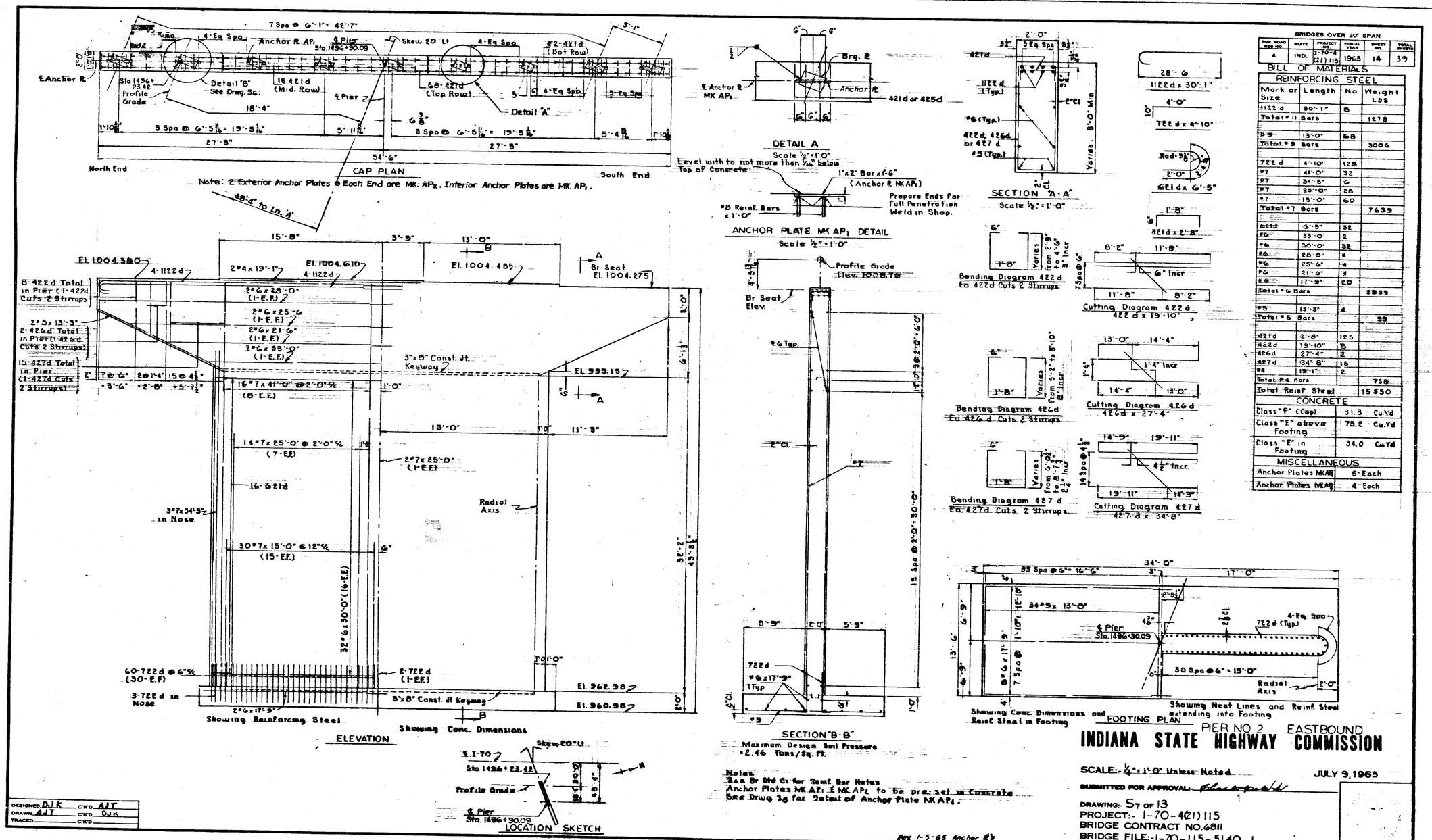
SCALE:- ¼"=1'-0" Unless Noted — JULY 9, 1963

SUBMITTED FOR APPROVAL:

DRAWING S6 OF 13
PROJECT:- I-70-4(21)115
BRIDGE CONTRACT NO. 6811
BRIDGE FILE:- I-70-115-5140

DESIGNED DJK CKD. AJT
DRAWN AJT CKD. DJK
TRACED CKD.

November 6, 1963



BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21) 115	1963	14	39

BILL OF MATERIALS

REINFORCING STEEL

Mark or Size	Length	No	Weight Lbs
1122 d	30'-1"	6	
Total #11 Bars			1275
#9	13'-0"	68	
Total #9 Bars			3006
722 d	4'-10"	128	
#7	41'-0"	32	
#7	34'-5"	6	
#7	25'-0"	28	
#7	15'-0"	60	
Total #7 Bars			7639
622d	6'-5"	32	
#6	38'-0"	2	
#6	30'-0"	32	
#6	28'-0"	4	
#6	25'-6"	4	
#6	21'-6"	4	
#6	17'-9"	20	
Total #6 Bars			2833
#5	13'-3"	4	
Total #5 Bars			55
421d	2'-8"	125	
422d	19'-10"	8	
426d	27'-4"	2	
427d	34'-8"	16	
#4	19'-1"	2	
Total #4 Bars			758
Total Reinf. Steel			15550

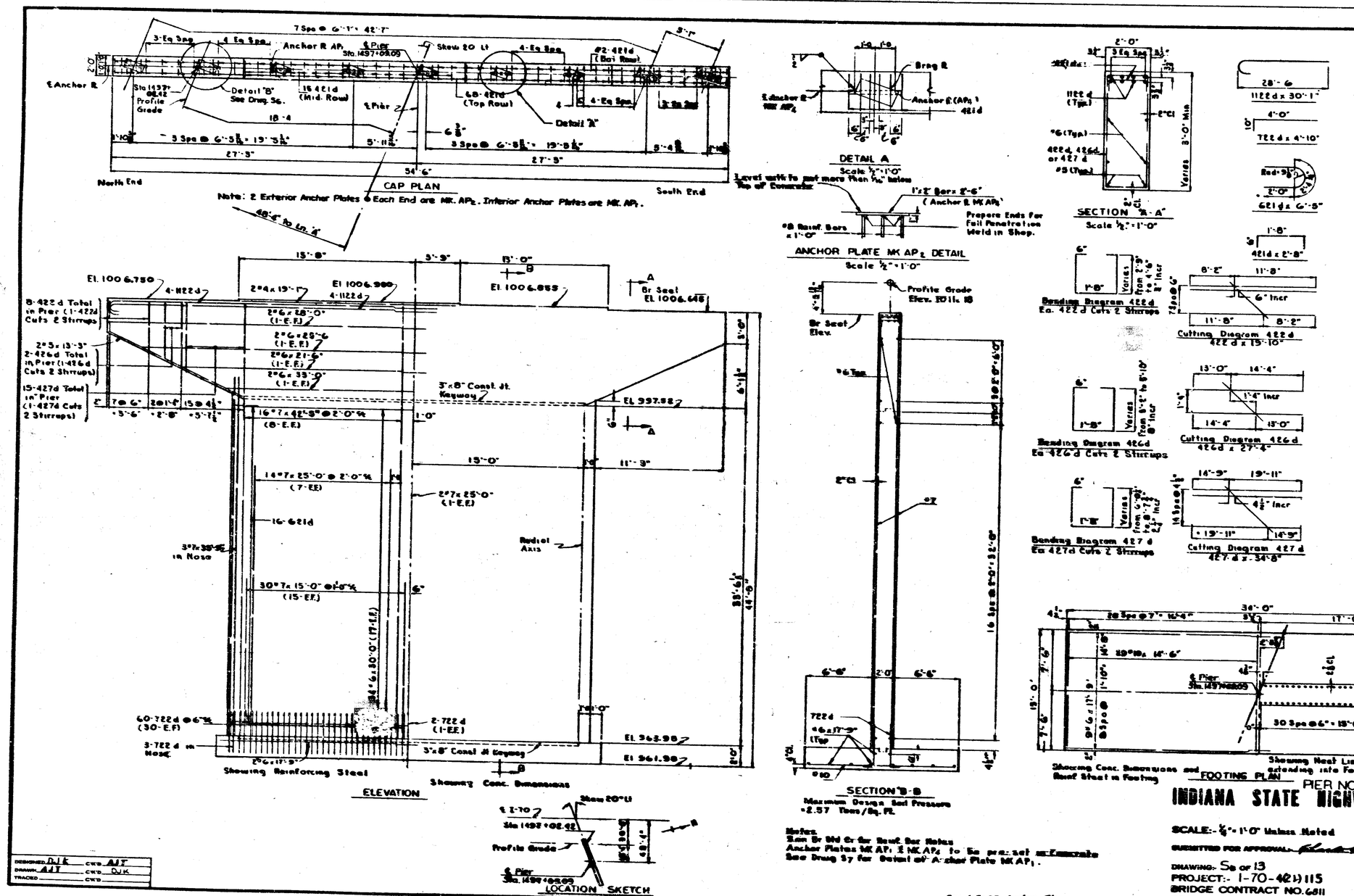
CONCRETE

Class "F" (Cap)	31.8	Cu.Yd
Class "E" above Footing	75.2	Cu.Yd
Class "E" in Footing	34.0	Cu.Yd

MISCELLANEOUS

Anchor Plates MK AP1	5 Each
Anchor Plates MK AP2	4 Each

PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
I-70-4(21)115	A	14	39	I-70-115-5140 J



BRIDGES OVER 20' SPAN

FUD. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21) 115	1965	15	39

BILL OF MATERIALS

REINFORCING STEEL			
Mark or Size	Length	No	Weight Lbs
1122 d	30'-1"	8	
Total #11 Bars			1279
#10	14'-6"	58	
Total #10 Bars			3619
722 d	4'-10"	128	
#7	42'-8"	32	
#7	36'-9"	6	
#7	25'-0"	28	
#7	15'-0"	60	
Total #7 Bars			7748
621d	6'-5"	34	
#6	33'-0	2	
#6	30'-0"	34	
#6	28'-0"	4	
#6	25'-6"	4	
#6	21'-6"	4	
#6	17'-9"	22	
Total #6 Bars			2996
#5	13'-3"	4	
Total #5 Bar			55
421d	2'-8"	125	
422d	19'-10"	8	
426d	27'-4"	2	
427d	34'-8"	15	
#4	19'-1	2	
Total #4 Bars			738
Total Reinf. Steel			16435
CONCRETE			
Class "F" (Cap)		31.8	Cu.Yd
Class "E" above Footing		78.4	Cu.Yd
Class "E" in Footing		37.8	Cu.Yd
MISCELLANEOUS			
Anchor Plates MKAP1		5-Each	
Anchor Plates MKAP2		4-Each	

PIER NO 3 EASTBOUND

INDIANA STATE HIGHWAY COMMISSION

SCALE:- 1/4" = 1'-0" Unless Noted

JULY 9, 1965

SUBMITTED FOR APPROVAL:- [signature]

DRAWING:- S8 of 13

PROJECT:- I-70-4(21) 115

BRIDGE CONTRACT NO. 6811

BRIDGE FILE:- I-70-115-5140 J

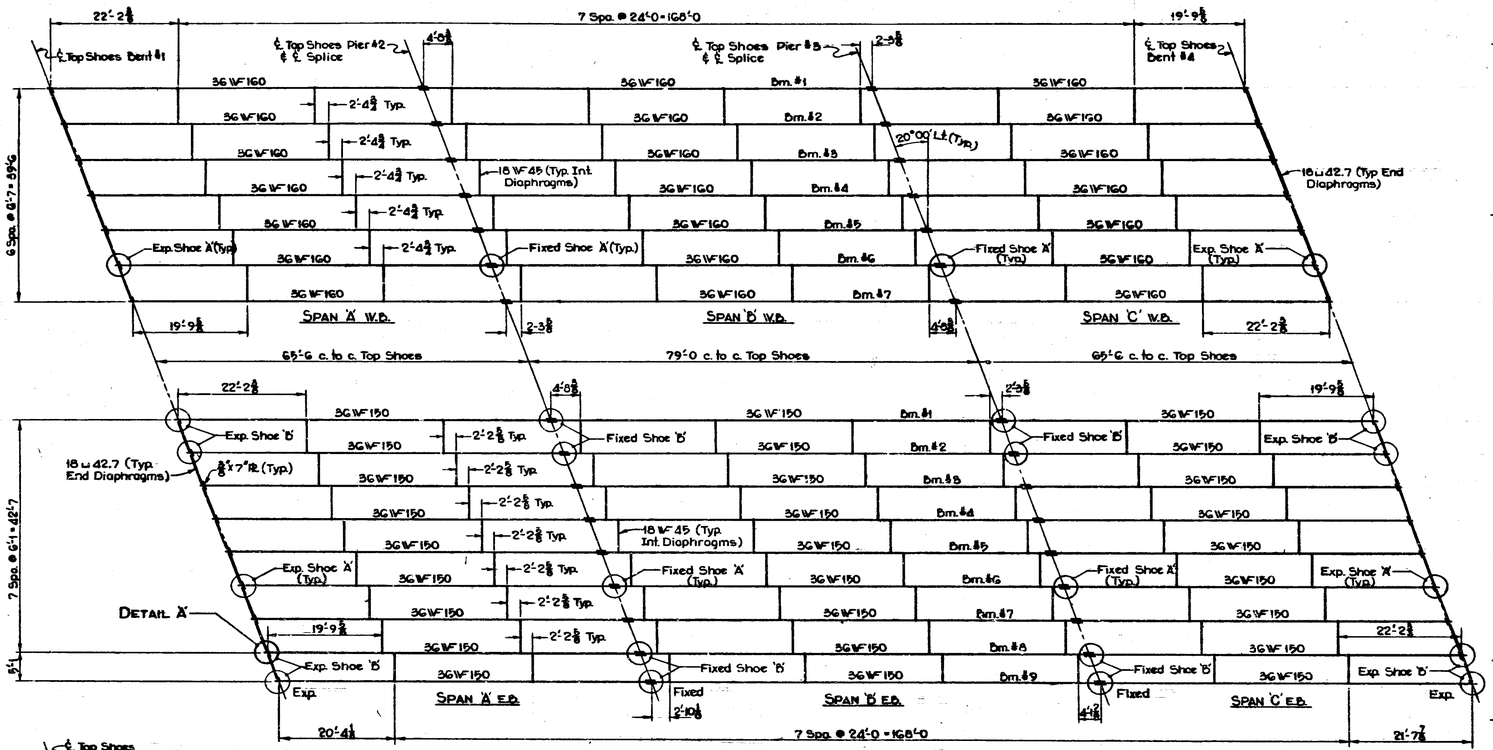
Rev. 1-5-65 Anchor P's

November 6, 1961

DESIGNED DJK CK'D AJT
DRAWN AJT CK'D DJK
TRACED CK'D

FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21) 115	1965	16	59

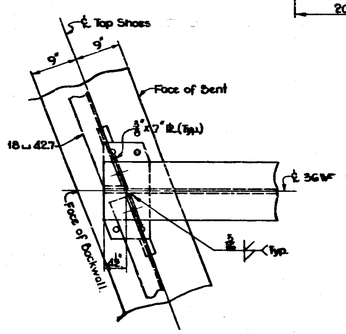
BRIDGES OVER 20' SPAN



PLAN

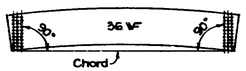
Scale: 3/32" = 1'-0

Eastbound and Westbound to have separate erection marks.



DETAIL 'A'

Scale: 1" = 1'-0



WEB PUNCHING SKETCH

No Scale

DESIGN DATA:

Live Loads: H20-S16-44 loading with impact and distribution of loads in accordance with 1961 A.A.S.H.O. Specifications.

Dead Loads: Actual weight plus 89 pounds per square foot of roadway to provide for future wearing surface.

Slab: Designed with ½" monolithic wearing surface.

Unit Stresses:
- Structural Steel Bending (Tension) A-36 ..... 20,000 p.s.i.
- Shear on Rivets ..... 15,500 p.s.i.
- Structural Steel Bearing (Except Rivets & H.S. Bolts) ..... 29,500 p.s.i.
- Bearing Steel on Concrete (Including Overturning and eccentric loading) ..... 1,000 p.s.i.
- Reinforcing Steel (Tension) ..... 20,000 p.s.i.
- Concrete (Compression) ..... 1,200 p.s.i.
- Structural Steel Bearing (Rivets & H.S. Bolts) ..... 40,000 p.s.i.

STRUCTURAL STEEL NOTES:

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.

Open holes ⅝" unless noted. Rivets ⅞" ø unless noted.

Holes in all material connecting top shoes to beam flanges shall be 1 in. dia. Bolts for top shoes to extend into shoe 1 in. Minimum.

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

The shop plans shall indicate whether reaming is to be done in shop or field. If shop reaming or drilling is used, the beams may be reamed with the webs either in a horizontal or vertical position. If the beams are reamed with the webs vertical, they shall be supported relative to their final erection position. If they are reamed with the 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 matchmarking for all reamed pieces.

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

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 Engineer's drawings and specifications and shall submit five (5) copies of these to the Engineer. See Art. 1105.2 of the Specifications.

Shims between beams and top shoes may be built up.

No shim shall be less than ⅛" in thickness.

As soon as the Engineer has approved the field welds, all welds and any surface from which the shop coat has been omitted on beams, or has 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.

All Structural Steel to be A-36 Steel.

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: Two coats of Aluminum.

STRUCTURAL STEEL WEIGHTS (Estimated) = 618,350 lbs.
- E.B. (5140J) = 340,915
- W.B. (5140) = 277,415

BRONZE PLATES = 461 lbs. (E.B. Only)

NOTE:
See Dwg. 5-10 for Additional Details.

TABLE OF MOMENTS AND REACTIONS - WESTBOUND STRUCTURE

	Mom. @ 0.4 Span 'A' Ft.-Kips		Mom. @ Piers 2 & 3 Ft.-Kips		Mom. @ 0.5 Span 'B' Ft.-Kips		Reaction-Bents 1 & 5 Kips		Reaction-Piers 2 & 3 Kips	
	Interior Beam	Exterior Beam	Interior Beam	Exterior Beam	Interior Beam	Exterior Beam	Interior Beam	Exterior Beam	Interior Beam	Exterior Beam
Dead Load	337.9	356.6	470.4	512.6	542.2	555.3	25.8	27.4	77.8	83.2
Live Load	436.2	425.2	406.0	395.8	429.3	418.6	40.1	27.2	52.9	39.6
Impact	114.3	111.4	102.9	100.3	105.2	102.6	10.5	7.1	13.4	10.0
Total	888.4	893.2	979.3	1008.7	876.7	876.5	76.4	61.7	144.1	132.8

TABLE OF SHIMS - W.B. STR.

Beam	1	2	3	4	5	6	7
Bent #1	0	1/8	1/4	1/8	5/16	3/16	0
Pier #2	0	1/8	1/4	1/8	5/16	3/16	0
Pier #3	0	1/8	1/4	1/8	5/16	3/16	0
Bent #4	0	1/8	1/4	1/8	5/16	3/16	0

TABLE OF MOMENTS AND REACTIONS - EASTBOUND STRUCTURE

	Mom. @ 0.4 Span 'A' Ft.-Kips			Mom. @ Piers 2 & 3 Ft.-Kips			Mom. @ 0.5 Span 'B' Ft.-Kips			Reaction - Bents 1 & 5 Kips			Reaction - Piers 2 & 3 Kips		
	Interior Beam	Lt. Ext. Beam	Rt. Ext. Beam	Interior Beam	Lt. Ext. Beam	Rt. Ext. Beam	Interior Beam	Lt. Ext. Beam	Rt. Ext. Beam	Interior Beam	Lt. Ext. Beam	Rt. Ext. Beam	Interior Beam	Lt. Ext. Beam	Rt. Ext. Beam
Dead Load	303.9	330.8	369.6	417.7	474.4	556.4	309.8	330.0	362.2	23.2	25.4	29.5	69.7	77.1	90.3
Live Load	403.4	401.9	351.6	375.4	374.1	327.2	397.0	395.6	346.1	36.9	25.9	18.8	48.7	37.7	29.1
Impact	105.7	105.3	92.1	95.2	94.8	88.0	97.3	96.9	84.8	9.7	6.3	4.9	12.4	9.6	7.4
Total	813.0	838.0	813.3	888.3	943.3	966.6	804.1	822.4	793.1	69.8	58.1	58.2	130.8	124.4	127.0

TABLE OF SHIMS - E.B. STR.

Beam	1	2	3	4	5	6	7	8	9
Bent #1	3/16	1	15/16	13/16	7/16	1	1/2	5/16	0
Pier #2	3/16	7/8	0	0	0	15/16	3/8	11/16	0
Pier #3	3/16	7/8	0	0	0	15/16	3/8	11/16	0
Bent #4	3/16	1	15/16	13/16	7/16	1	1/2	5/16	0

Rev. 5-5-65 Str. Steel Weight.
Rev. 1-5-65 Design Data

November 6, 1961

DESIGNED D.J.K. CK'D A.J.T.
DRAWN J.E.W. CK'D D.J.K.
TRACED CK'D

FRAMING PLAN

INDIANA STATE HIGHWAY COMMISSION

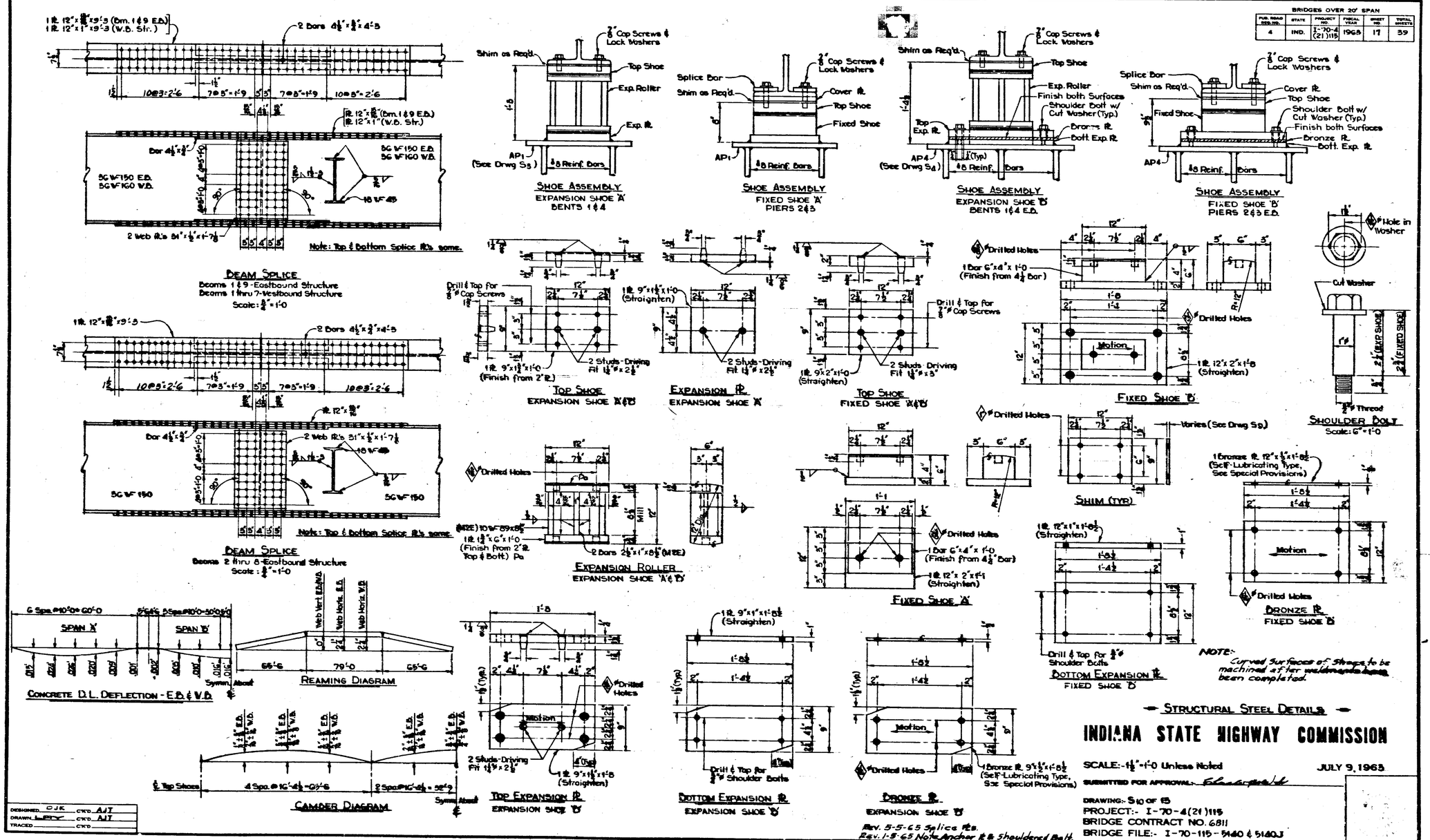
SCALE:- As Noted

JULY 9, 1963

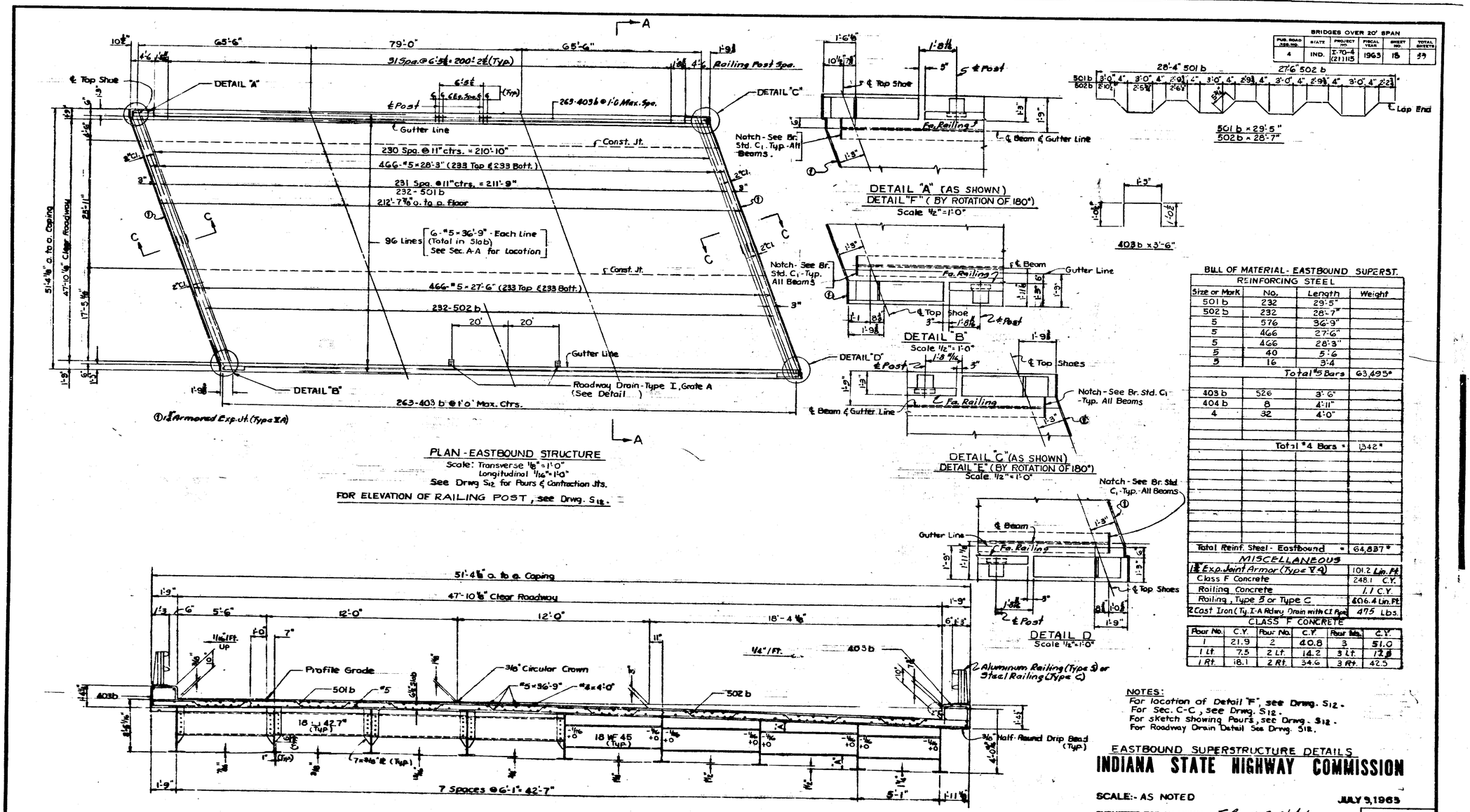
SUBMITTED FOR APPROVAL:- [signature]

DRAWING:- 8-9 OF 19
PROJECT:- I-70-4(21)115
BRIDGE CONTRACT NO. 6811
BRIDGE FILE:- I-70-115-5140 & 5140J

PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
I-70-4(21)115	A	16	59	I-70-115-(140) 5140J


BRIDGES OVER 20' SPAN
FUB. ROAD REG. NO. 4
STATE IND.
PROJECT NO. I-70-4 (21)115
FISCAL YEAR 1963
SHEET NO. 17
TOTAL SHEETS 39
BEAM SPLICE
Beams 1 & 9 - Eastbound Structure
Beams 1 thru 7 - Westbound Structure
Scale: 3/4" = 1'-0
Note: Top & Bottom Splice Pl's same.
BEAM SPLICE
Beams 2 thru 8 - Eastbound Structure
Scale: 3/4" = 1'-0
Note: Top & Bottom Splice Pl's same.
SHOE ASSEMBLY
EXPANSION SHOE 'A'
BENTS 1 & 4
SHOE ASSEMBLY
FIXED SHOE 'A'
PIERS 2 & 3
SHOE ASSEMBLY
EXPANSION SHOE 'B'
BENTS 1 & 4 E.B.
SHOE ASSEMBLY
FIXED SHOE 'B'
PIERS 2 & 3 E.B.
TOP SHOE
EXPANSION SHOE 'A' & 'B'
EXPANSION PL
EXPANSION SHOE 'A'
TOP SHOE
FIXED SHOE 'A' & 'B'
FIXED SHOE 'B'
SHOULDER BOLT
Scale: 6" = 1'-0
EXPANSION ROLLER
EXPANSION SHOE 'A' & 'B'
FIXED SHOE 'A'
SHIM (TYP)
BRONZE PL
FIXED SHOE 'B'
BOTTOM EXPANSION PL
FIXED SHOE 'B'
CONCRETE D.L. DEFLECTION - E.B. & W.B.
REAMING DIAGRAM
CAMBER DIAGRAM
TOP EXPANSION PL
EXPANSION SHOE 'B'
BOTTOM EXPANSION PL
EXPANSION SHOE 'B'
BRONZE PL
EXPANSION SHOE 'B'
NOTE:
Curved Surfaces of Shoes to be machined after weldments have been completed.
Rev. 5-5-65 Splice Pls.
Rev. 1-5-65 Note Anchor Pl & Shouldered Bolt.
STRUCTURAL STEEL DETAILS
INDIANA STATE HIGHWAY COMMISSION
SCALE:- 1½" = 1'-0 Unless Noted
JULY 9, 1963
SUBMITTED FOR APPROVAL:-
DRAWING:- S10 OF 13
PROJECT:- I-70-4(21)115
BRIDGE CONTRACT NO. 6811
BRIDGE FILE:- I-70-115-5140 & 5140J
DESIGNED OJK CK'D AJT
DRAWN LPY CK'D AJT
TRACED CK'D
November 6, 1961
PROJECT NO. I-70-4(20)115
LINE A
SHEET NO. 16
TOTAL SHEETS 39
FILE

BRIDGES OVER 20' SPAN					
FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21) 115	1963	18	59



BILL OF MATERIAL - EASTBOUND SUPERST.

REINFORCING STEEL			
Size or Mark	No.	Length	Weight
501 b	232	29'-5"	
502 b	232	28'-7"	
5	576	36'-9"	
5	466	27'-6"	
5	466	28'-3"	
5	40	5'-6	
5	16	3'-4	
		Total #5 Bars	63,495*
403 b	526	3'-6"	
404 b	8	4'-11"	
4	32	4'-0"	
		Total #4 Bars =	1342*
Total Reinf. Steel - Eastbound =			64,837*

MISCELLANEOUS	
1 1/2" Exp. Joint Armor (Type IA)	101.2 Lin. Ft.
Class F Concrete	248.1 C.Y.
Railing Concrete	1.1 C.Y.
Railing, Type B or Type C	406.4 Lin. Ft.
2 Cast Iron (Ty. I-A Rdwy Drain with CI Pipe)	475 Lbs.

CLASS F CONCRETE					
Pour No.	C.Y.	Pour No.	C.Y.	Pour No.	C.Y.
1	21.9	2	40.8	3	51.0
1 Lt.	7.5	2 Lt.	14.2	3 Lt.	12.8
1 Rt.	18.1	2 Rt.	34.6	3 Rt.	42.5

NOTES:
For location of Detail "F", see Drwg. S12.
For Sec. C-C, see Drwg. S12.
For sketch showing Pours, see Drwg. S12.
For Roadway Drain Detail See Drwg. S12.

EASTBOUND SUPERSTRUCTURE DETAILS

INDIANA STATE HIGHWAY COMMISSION

SCALE:- AS NOTED

JULY 3, 1963

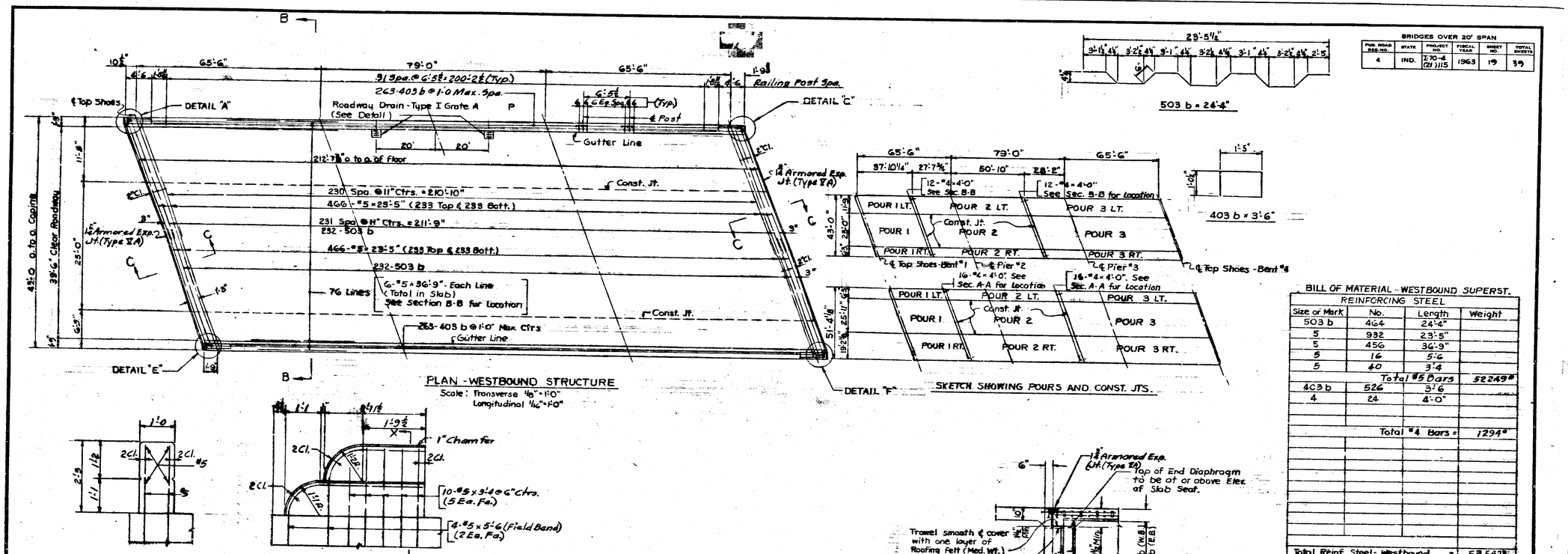
SUBMITTED FOR APPROVAL: Chief Engineer

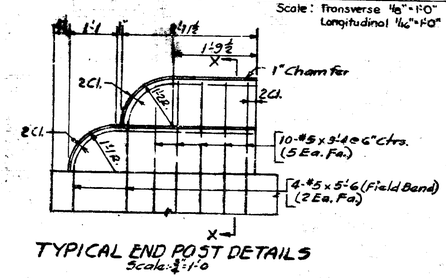
DRAWING:- S11 OF 13
PROJECT:- I-70-4(21)115
BRIDGE CONTRACT NO. 6811
BRIDGE FILE:- I-70-115-5140 J

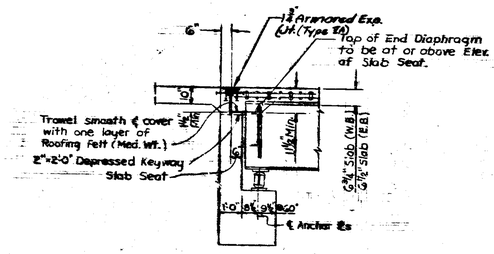
DESIGNED D.J.K. CKD. A.J.T.
DRAWN R.T. CKD. A.J.T.
TRACED CKD.

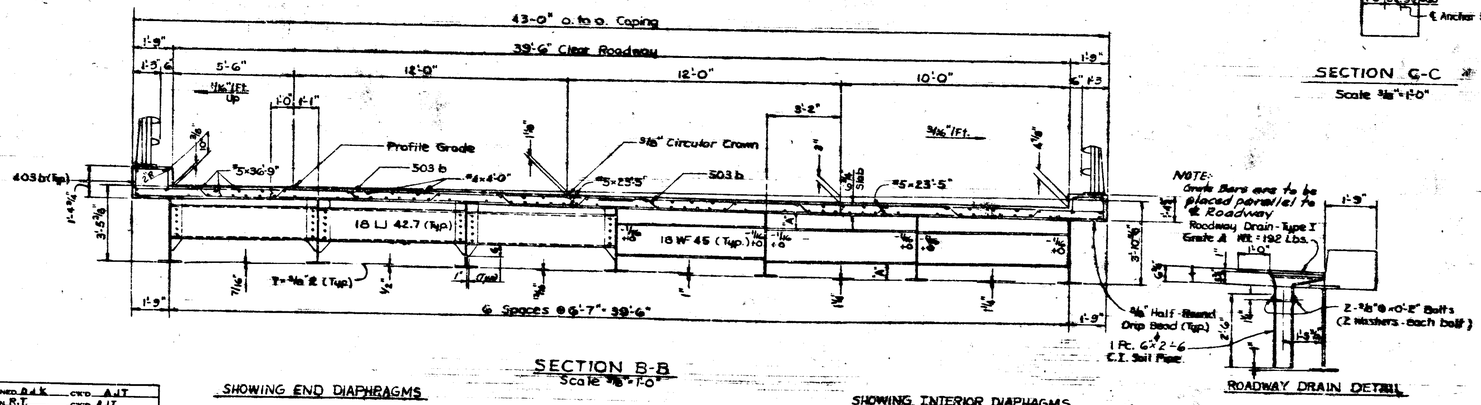
PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
I-70-4(21)115	A	18	59	I-70-115-5140J

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21)115	1963	19	39









Note: Interior diaphragms to be erected so that dimensions "A" (Top & Bottom) will be equal (± 1/8").

Rev. 5-5-65 Crack Drain Conc. Drain Det. & Bill of Mat'ls.
Rev. 1-5-65 Railing Exp. Jts. Bill of Mat'ls.

BILL OF MATERIAL - WESTBOUND SUPERST.			
REINFORCING STEEL			
Size or Mark	No.	Length	Weight
503 b	464	24'-4"	
5	932	23'-5"	
5	456	36'-9"	
5	16	5'-6	
5	40	3'-4	
Total #5 Bars			52249#
403 b	526	3'-6	
4	24	4'-0"	
Total #4 Bars =			1294#
Total Reinf. Steel - Westbound =			53,543#
MISCELLANEOUS			
1 1/2" Exp. Jt. Armor (Type II A)			83.41 Lin. Ft.
Class F Concrete			217.6 C.Y.
Railing Concrete			1.1 C.Y.
Railing - Type 5 or Type C			406.4 Lin. Ft.
2 Cast Iron (Ty. I A Rdwy. Drain with C.I. Pipe)			475 Lbs.

CLASS F CONCRETE					
Pour No.	C.Y.	Pour No.	C.Y.	Pour No.	C.Y.
1	21.6	2	40.9	3	50.7
1 Lt.	12.1	2 Lt.	23.4	3 Lt.	28.8
1 Rt.	7.6	2 Rt.	14.6	3 Rt.	17.9

NOTES:
See Drwg. S_2 for General Notes.
See Drwg. S_9 for Structural Steel Notes.
Anchor bolts for Railing Posts shall be preset.
After structural steel has been erected forms shall not be blocked against expansion ends of the steel in making any pours adjacent to steel spans.
See Br. Std. C_1 for Beam Notch & Reinf. Bar Notes.
See Br. Std. R_1-C, R_1-E, R_1-F for Railing Details.
For Corner Details "A", "C", "E" & "F" see Drwg. S_{11}.
For Details of Roadway Drain, See Br. Std. D.
Work this sheet, with Drwg. S_{11}.

WESTBOUND SUPERSTRUCTURE DETAILS

INDIANA STATE HIGHWAY COMMISSION

SCALE:- AS NOTED

JULY 9, 1965

SUBMITTED FOR APPROVAL:- [signature]

DRAWING:- S_{12} OF 13
PROJECT:- I-70-4 (21) 115
BRIDGE CONTRACT NO. 6811
BRIDGE FILE:- I-70-115-5140

DESIGNED D.J.K. CK'D A.J.T.
DRAWN R.T. CK'D A.J.T.
TRACED CK'D

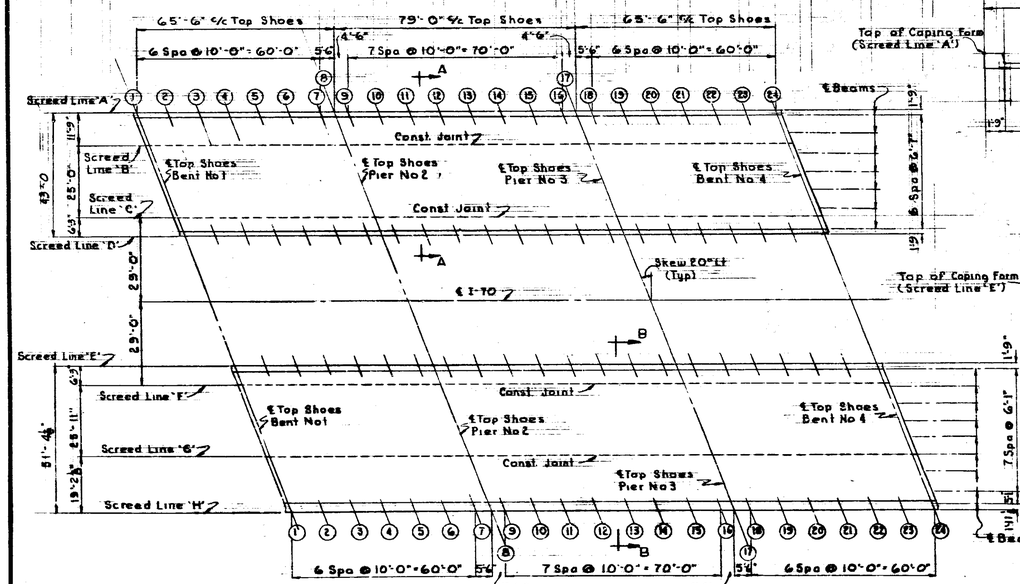
November 6, 1961

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
4	IND.	I-70-4 (21) 115	1963	20	39

TABLE OF ELEVATIONS

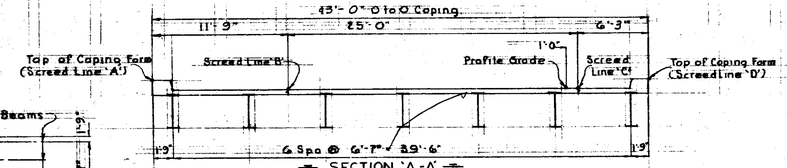
	Point	Location	1	2	3	4	5	6	7	8	9	10	11	12
Westbound	A	Elev. Top of Coping Form	1006.180	1006.495	1006.805	1007.105	1007.400	1007.690	1007.980	1008.145	1008.280	1008.585	1008.890	1009.195
		Elev. Top of Outside Beam												
		Dist Top of Bm. to Top of Coping Form												
	B	Elev Top of Screed	05.630	05.945	06.255	06.555	06.850	07.180	07.430	07.595	07.730	08.055	08.340	08.645
		Elev. Top of Adjacent Beam												
		Dist Top of Bm to Top of Screed												
	C	Elev Top of Screed	06.160	06.475	06.785	07.085	07.380	07.670	07.960	08.125	08.255	08.560	08.870	09.175
		Elev Top of Adjacent Beam												
		Dist Top of Bm to Top of Screed												
	D	Elev Top of Coping Form	07.085	07.400	07.710	08.010	08.305	08.595	08.885	09.050	09.185	09.490	09.795	10.100
		Elev. Top of Outside Beam												
		Dist Top of Bm to Top of Coping Form												
Eastbound	E	Elev Top of Coping Form	07.585	07.900	08.210	08.510	08.805	09.095	09.385	09.550	09.680	09.985	10.295	10.600
		Elev Top of Outsi Beam												
		Dist Top of Bm to Top of Coping form												
	F	Elev Top of Screed	06.790	07.105	07.415	07.720	08.010	08.300	08.595	08.765	08.890	09.195	09.500	09.810
		Elev Top of Adjacent Beam												
		Dist Top of Bm to Top of Screed												
	G	Elev Top of Screed	06.800	07.115	07.425	07.725	08.020	08.310	08.600	08.765	08.900	09.205	09.510	09.815
		Elev Top of Beam at Screed Line												
		Dist Top of Bm to Top of Screed												
	H	Elev Top of Coping Form	07.480	07.795	08.105	08.405	08.700	08.990	09.280	09.445	09.580	09.880	10.190	10.495
		Elev Top of Outside Beam												
		Dist Top of Bm to Top of Coping Form												

	Point	Location	13	14	15	16	17	18	19	20	21	22	23	24
Westbound	A	Elev. Top of Coping Form	1009.495	1009.790	1010.085	1010.380	1010.515	1010.680	1010.930	1011.300	1011.605	1011.905	1012.195	1012.480
		Elev. Top of Outside Beam												
		Dist Top of Bm. to Top of Coping Form												
	B	Elev Top of Screed	08.945	09.240	09.535	09.830	09.965	10.130	10.440	10.750	11.055	11.355	11.645	11.930
		Elev. Top of Adjacent Beam												
		Dist Top of Bm to Top of Screed												
	C	Elev Top of Screed	09.475	09.770	10.060	10.355	10.495	10.660	10.970	11.280	11.585	11.885	12.175	12.460
		Elev Top of Adjacent Beam												
		Dist Top of Bm to Top of Screed												
	D	Elev Top of Coping Form	10.400	10.695	10.990	11.285	11.420	11.585	11.895	12.205	12.510	12.810	13.100	13.385
		Elev. Top of Outside Beam												
		Dist Top of Bm to Top of Coping Form												
Eastbound	E	Elev Top of Coping Form	10.900	11.195	11.485	11.785	11.920	12.085	12.395	12.705	13.010	13.310	13.600	13.885
		Elev Top of Outsi Beam												
		Dist Top of Bm to Top of Coping form												
	F	Elev Top of Screed	10.110	10.400	10.695	10.990	11.125	11.295	11.600	11.910	12.220	12.515	12.805	13.090
		Elev Top of Adjacent Beam												
		Dist Top of Bm to Top of Screed												
	G	Elev Top of Screed	10.115	10.410	10.705	11.000	11.135	11.300	11.610	11.920	12.225	12.525	12.815	13.100
		Elev Top of Beam at Screed Line												
		Dist Top of Bm to Top of Screed												
	H	Elev Top of Coping Form	10.795	11.090	11.380	11.680	11.815	11.980	12.290	12.600	12.905	13.205	13.495	13.780
		Elev Top of Outside Beam												
		Dist Top of Bm to Top of Coping Form												



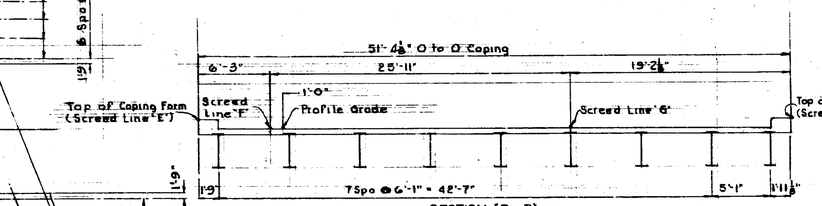
PLAN

Scale 1" = 20'



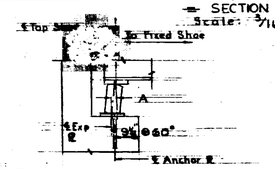
SECTION 'A-A'

Scale 3/16" = 1'-0"



SECTION 'B-B'

Scale: 3/16" = 1'-0"



BENT NO 1 OR 4

Scale ½" = 1'-0"

TABLE NO 1

	Dimension 'A'						
Temperature	0°	20°	40°	60°	80°	100°	120°
℄ Top Shoes to ℄ Exp R Bent No 1 or 4	7/8"	3/4	5/8"	1/2"	3/8"	1/4	1/8"

Rev. 5-5-65 Screed Ele.
Rev. 1-5-65 Coping Width

GENERAL PROCEDURE

1. After the superstructure has been erected, adjust the superstructure longitudinally so that dimension 'C' of Bents #1 & #4 are equal.
2. With the superstructure in the adjusted position called for in (1) Weld the Anchor Plates to the Fixed Shoes at Piers # 2 & #3.
3. Adjust the Expansion Plates under each Expansion Shoe in accordance with dimension 'A' 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. Weld the Anchor Plates to the Expansion Plates at Bents No 1 & No 4.
4. After the Shoes are set, take elevations at all Screed Points on top of beam adjacent to or at the Screed Point. Enter these elevations in the "Table of Elevations". Subtract these elevations from the tabulated elevations and use the resulting dimensions 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 screed or coping forms by leveling.
5. No concrete in the floor is to be poured until the above operations are completed.

NOTE:
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 final grade elevations after all concrete has been poured.
"Table No 1" shows data for setting Exp. Plates at Bents No 1 & 4.

SCREEDS

INDIANA STATE HIGHWAY COMMISSION

SCALE:- As Noted JULY 9, 1963

SUBMITTED FOR APPROVAL:- [signature]

DRAWING:- S13 OF 13
PROJECT:- I-70-4 (21) 115
BRIDGE CONTRACT NO. 6811
BRIDGE FILE:- I-70-115-5140 & 5140 J

DESIGNED DJK CKD. AJT
DRAWN AJT CKD. D.J.K.
TRACED CKD.

November 6, 1961

PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
I-70-4 (21) 115	A	20	39	I-70-115-5140

BRIDGES OVER 20' SPAN					
PUB. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	I-70-4 (21) 119	1968	21	59

STRUCTURE QUANTITIES

ITEM	CONCRETE CLASS F CU. YDS.	CONCRETE CLASS D CU. YDS.	CONCRETE CLASS E ABOVE FTG. CU. YDS.	CONCRETE CLASS E FTG. CU. YDS.	RAILING CONCRETE CLASS F CU. YDS.	RAILING CONCRETE CLASS F LIN. FT.	REINFORCING STEEL (1034 STD. WTS.) #11 (1 3/8") LBS.	#10 (1 1/8") LBS.	#9 (1") LBS.	#8 (7/8") LBS.	#7 (7/8") LBS.	#6 (3/4") LBS.	#5 (5/8") LBS.	#4 (1/2") LBS.	#3 (3/8") LBS.	#2 (1/4") LBS.	TOTALS LBS.	STRUCTURAL STEEL LBS.	CAST IRON LBS.	14" STEEL ENCASED CONCRETE PILES Nº	14" STEEL ENCASED CONCRETE PILES LIN. FT.	ANCHOR PLATES MK AP-1 EACH	ANCHOR PLATES MK AP-4 EACH	RAILING TYPE 5 OR TYPE C LIN. FT.	BRONZE PLATES LBS.	1 3/4" Exp. Jt. Armor (Type II A) Lin. Ft.
EASTBOUND STRUCTURE																										
BENT NO. 1	28.6										1695		225	1510			3428			8	400	5	4			
PIER NO. 2	31.3		75.2	54.0			1279		3006		7039	2835	85	758			15550					5	4			
PIER NO. 3	31.3		78.4	57.6			1279	3619			7740	2996	85	758			16455					5	4			
BENT NO. 4	28.6										1695		225	1510			3428			8	320	5	4			
SUPERSTRUCTURE	248.1				7.1								65495	1942			64837	340915	475					406.4	461	101.2
TOTAL EASTBOUND	367.9		153.6	71.8	7.1		2558	3619	3006		18777	5829	64051	5853			108678	340915	475	16	920	20	16	406.4	461	101.2
WESTBOUND STRUCTURE																										
BENT NO. 1	25.8											894	225	1521			2658			7	280	7				
PIER NO. 2	26.6		50.4	54.4			2044		2416		5544	2195	85	656			12910					7				
PIER NO. 3	26.6		52.8	57.6			2044		2666		5642	2168	85	656			12851					7				
BENT NO. 4	26.0											894	225	1521			2658			7	455	7				
SUPERSTRUCTURE	217.6				7.1								52249	1294			53543	277415	875					406.4		83.4
TOTAL WESTBOUND	322.6		103.2	72.2	7.1		4088		5082		11186	6151	52803	5648			84960	277415	875	14	735	28		406.4		83.4
SPLICE BARS							58	85	32		52	54	56	12			349									
Reinf. Steel from "Approach Structs" column																										
Reinf. Steel for Thickened Pavement																										
Reinf. Steel for Lip Gutter, Pvmt. Taper, etc.																										
TOTALS	690.5		256.8	144.0	7.2		6704	3664	8120		29995	12014	116912	11398			188907	618330	1950	30	1655	48	16	812.8	461	184.6

BILL OF SPLICE BARS

REINFORCING STEEL

Size	Nº Pcs.	Length	Location	Weight	Total Weight
#11	1	11'-0"		58	
#10	1	10'-6"		45	
#9	1	9'-6"		38	
#7	2	8'-0"		52	
#6	3	7'-6"		56	
#5	8	6'-9"		56	
#4	3	6'-0"		12	
					269

Note:- For Test Bar Samples see Br. Std. "C."

BILL OF MATERIALS FOR THICKENED PAVEMENT

REINFORCING STEEL

Size	Nº Pcs.	Length	Location	Weight	Total Weight

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
			Lanterns
STD. 3'-0" x 4'-0" SIGNS	Each		Signs 113
BRIDGE (SUITABLE) BARRIERS	Each	*	Suitable Barriers
		*	Lanterns or Torches
STD. BARRICADES (TYPE B)	Each		Barricades (Type B)
			Signs 113
			Lanterns or Torches
TYPICAL SIGN STANDARDS	Each	*	Signs ~~IM-5~~

*Not a pay item. To be placed as directed by the Engineer.

The weight of Structural Steel shown is approximate and it shall be the contractor's responsibility to determine the weight on which he bases his bid.

Where sign standards are used in unpaved areas the contractor may use two posts set (b) three feet in the ground.

APPROACH STRUCTURES

STRUCT. Nº	LOCATION	DESCRIPTION SIZE	DESCRIPTION KIND	DESCRIPTION LENGTH	CL. D CONC. IN STRUCTS. CU. YDS.	REINF. STEEL LBS.	CAST IRON LBS.	REMARKS
1	Sta. 1495+25	6"	F.B.C.P. C.M. Pipe 16 Ga.	65'				Behind Bent 1 (W.B.) Outlet through fill slope
2	Sta. 1495+55	6"	F.B.C.P. C.M. Pipe 16 Ga.	72'				Behind Bent 1 (E.B.) " " " "
3	Sta. 1497+80	6"	F.B.C.P. C.M. Pipe 16 Ga.	65'				Behind Bent 4 (W.B.) " " " "
4	Sta. 1497+85	6"	F.B.C.P. C.M. Pipe 16 Ga.	72'				Behind Bent 4 (E.B.) " " " "
5	Sta. 1498+20	12"	1-Type F-7 Inlet & F.B.C.C.M.P. w/Paved Invert	200'	.64			Provide 12" Stub for future pipe under W.B. Roadway Includes 8' for 2-22½° 80' Bends, 1 Pipe. Culv. Hdwl. reqd M-11 Inlet not included in this Contract
				TOTALS	.64			Total of Reinf. Steel carried to "structure Quantities"

SUMMARIZED _____ CK'D. _____
TRACED _____ CK'D. _____

Rev. 5-5-65 Items 16, 38, 44.
Rev. 1-5-65 Items 1, 6, 8, 32, 33, 35, 37, 39; Item 18 Deleted; Items 46 thru 50 Added.

SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY
1	Class F Concrete	Cu. Yds.	690.5
2	Class D Concrete	Cu. Yds.	
3	Class E Concrete above Footings	Cu. Yds.	256.8
4	Class E Concrete in Footings	Cu. Yds.	144.0
5	Railing Concrete	Lin. Ft.	
6	Reinforcing Steel	Lbs.	188,907
7	Structural Steel	Lbs.	
8	Cast Iron	Lbs.	950
9	Untreated Timber Piles Furnished	Lin. Ft.	
10	Untreated Timber Piles Driven	Lin. Ft.	
11	Furnishing Equipment for Driving Piles	Lump Sum	1
12	Wet Excavation	Cu. Yds.	690
13	Waterway Excavation	Cu. Yds.	1190
14	Common Excavation	Cu. Yds.	9549
15	Special Borrow	Cu. Yds.	130455
16	Grade B Special Borrow	Cu. Yds.	5550
17	Sodding	Sq. Yds.	2085
18	Mulched Seeding	Sq. Yds.	
19	Cement Concrete Pavement	Sq. Yds.	
20	Reinforced Cement Concrete Pavement	Sq. Yds.	
21	Thickened Reinf. 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.	0.6
28	R/W Markers	Each	
29	Steel Pile Shells Furnished (14"ø)	Lin. Ft.	1655
30	Steel Pile Shells Driven (14"ø)	Lin. Ft.	1655
31	Structural Steel	Lump Sum	1
32	Railing Concrete	Cu. Yds.	2.2
33	Railing Type 5 or Type C	Lin. Ft.	613
34	Anchor Plates, Mk. AP-1	Each	48
35	Anchor Plates, Mk. AP-4	Each	16
36	Bronze Plates	Lbs.	461
37	Riprap	Sq. Yds.	3905
38	6" F.B.C.P. C.M. Pipe 16 Ga.	Lin. Ft.	270
39	18" F.B.C.M.P. w/ Paved Invert 16 Ga.	Lin. Ft.	200
40	Inlets, Type F-7	Each	1
41	Paved Side Ditch, Type A	Lin. Ft.	350
42	Paved Side Ditch, Type C	Lin. Ft.	415
43	Paved Side Ditch, Type E	Lin. Ft.	280
44	1¾" Exp. Joint Armor (Type II A)	Lin. Ft.	184.6
45	Furnishing & Placing Agricultural Limestone	Tons	5.2
46	Furnishing & Placing Fertilizer	Tons	0.8
47	Furnishing & Placing Seed	lbs.	180
48	Furnishing & Applying Mulching Material	Tons	6.5
49	Agricultural Oats	lbs.	65
50	Agricultural Rye	lbs.	40
51			
52			
53			
54			
55			
56			
57			
58			
59			
60			

NOTE:
THE ABOVE QUANTITIES INCLUDE THE FOLLOWING ITEMS REQUIRED TO MITIGATE RIGHT-OF-WAY DAMAGE. - Common Excavation = 620 Cu. Yds.

END STR

I-70-115-5140

SUMMARY

STATE HIGHWAY DEPARTMENT OF INDIANA

JULY 8, 1965

SUBMITTED FOR APPROVAL:- [signature]

PROJECT:- I-70-4(21)119

BRIDGE CONTRACT Nº 6811

BRIDGE FILE:- I-70-115-5140 & 5140 J