BRIDGE CONTRACT NO. 5701

INDEX

PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION	CONTRACT NO.
U.S.-181 (7)	23-009-4992	R.C. GIRDER & COMPOSITE STEEL	29'-0, 81'-0, 29'-0 SQUARE	U.S. 33	411+84.52 LINE 'D'	5701
	23-009-4993	STRUCTURAL STEEL & CONTINUOUS STEEL PLATE GIRDERS	114'-9; 2@ 147'-9; 114'-9 SQUARE	ST. JOSEPH RIVER	416+44	
	23-009-4994	R.C. GIRDER & COMPOSITE STEEL	39'-0, 67'-0, 31'-6 SKEW-5°40' RT.	MISHAWAKA AVE.	421+35.71	

SHEET NO.	SHEET DESIGNATION	SUBJECT
1		Title Sheet
2&5	Road Plan Sheet	Typ. Cross Sections (Sh. 4,5,6,7 of Rd. Project US 181(6).0.615
6-7	" " "	Line 'D' Plan-Profile, Sta. 405 to 420 - Sta. 420 to 434, Sh. 12 & 13 of Rd. Project
8-9	" " "	Line 'D' Details, Sta. 410 to 416 - Sta. 416 to 422, Sh. 16 & 17 of Rd. Project
10	" " "	Line S-11-D Plan-Profile " 20 " " "
11	" " "	Line S-13-D Plan-Profile, Sta. 44 to Sta. 56 " 24 " " "
12	" " "	Line S-14-D Plan-Profile " 25 " " "
13	" " "	Line 'D' S.E. Transition Details " 46 " " "
14	" " "	Line S-14-D S.E. Transition Details " 45 " " "
15	" " "	Line Data - U.S. 33 Interchange " 28 " " "
16	" " "	Grading Plan - U.S. 33 Interchange " 31 " " "
17	" " "	R/W Plan - U.S. 33 Interchange " 30 " " "
18	" " "	Ramp Profiles - U.S. 33 Interchange " 41 " " "
19	" " "	Line Data - Mishawaka Ave. Interchange " 32 " " "
20	" " "	Grading Plan - Mishawaka Ave. Interchange " 35 " " "
21	" " "	R/W Plan - Mishawaka Ave. Interchange " 34 " " "
22		Log of Borings
23	S_1	Layout
24	S_2	General Plan
25	S_3	Bent No. 1 Details
26	S_4	Bent No. 4 Details
27	S_5	Bent No. 1 & No. 4 Details
28-29	S_6-S_7	Sent No. 2 Details
30-31	S_8-S_9	Bent No. 3 Details
32-34	S_{10}-S_{12}	Superstructure Details - Spans A & C
35-36	S_{13}-S_{14}	Structural Steel Details
37-38	S_{15}-S_{16}	Superstructure Details - Span B
39	S_{17}	Screed Data
40		R.C. Bridge Approach Details
41		Summary
42		Log of Borings
43	S_1	Layout
44	S_2	General Plan
45	S_3	General Plan
46	S_4	Location Sheet
47-50	S_5-S_8	Abutment No. 1 Details
51-54	S_9-S_{12}	Bent No. 5 Details
55	S_{13}	Bent No. 9 Details
56	S_{14}	Pier No. 2 Details
57	S_{15}	Pier No. 3 Details
58	S_{16}	Pier No. 4 Details
59	S_{17}	Pier No. 6 Details
60	S_{18}	Pier No. 7 & No. 8 Details
61	S_{19}	Retaining Wall 'A' Details
62	S_{20}	Retaining Wall 'B' Details
63	S_{21}	Framing Plan - Spans A & D and Diaphragm Details - Spans A, B, C & D
64	S_{22}	Structural Steel Details - Spans A & D
65	S_{23}	Structural Steel Details - Spans B & C
66	S_{24}	Shoe Details - Spans A, B, C & D
67	S_{25}	Structural Steel Details - Span A-1
68	S_{26}	Structural Steel Details - Span A-1 & Plan of Screeds
69	S_{27}	Expansion Joint Details
70	S_{29}	Superstructure Details - Span A, E.B.
71	S_{29}	Superstructure Details - Span A, W.B.
72	S_{30}	Superstructure Details - Span D
73-74	S_{31}-S_{32}	Superstructure Details - Spans B & C
75	S_{33}	Superstructure Details - Span A-1
76-79	S_{34}-S_{37}	Superstructure Details - Spans E, F & G
80	S_{38}	Screed Data
81		R. C. Bridge Approach Details
82		Summary
83		Details of Temporary Connection of Eddy St. to North Side Blvd.
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86	S_2	General Plan
87-88	S_3-S_4	Geometrics
89	S_5	Bent No. 1 Details
90	S_6	Bent No. 4 Details
91	S_7	Bent No. 1 & 4 Details
92-93	S_8-S_9	Bent No. 2 Details
94-95	S_{10}-S_{11}	Bent No. 3 Details
96	S_{12}	Superstructure Details - Span A
97	S_{13}	Superstructure Details - Span C
98-99	S_{14}-S_{15}	Superstructure Details - Spans A & C
100-101	S_{16}-S_{17}	Structural Steel Details
102-104	S_{18}-S_{20}	Superstructure Details - Span B
105	S_{21}	Screed Data
106		R.C. Bridge Approach Details

23-009-4992 / 23-009-4993 / 23-009-4994

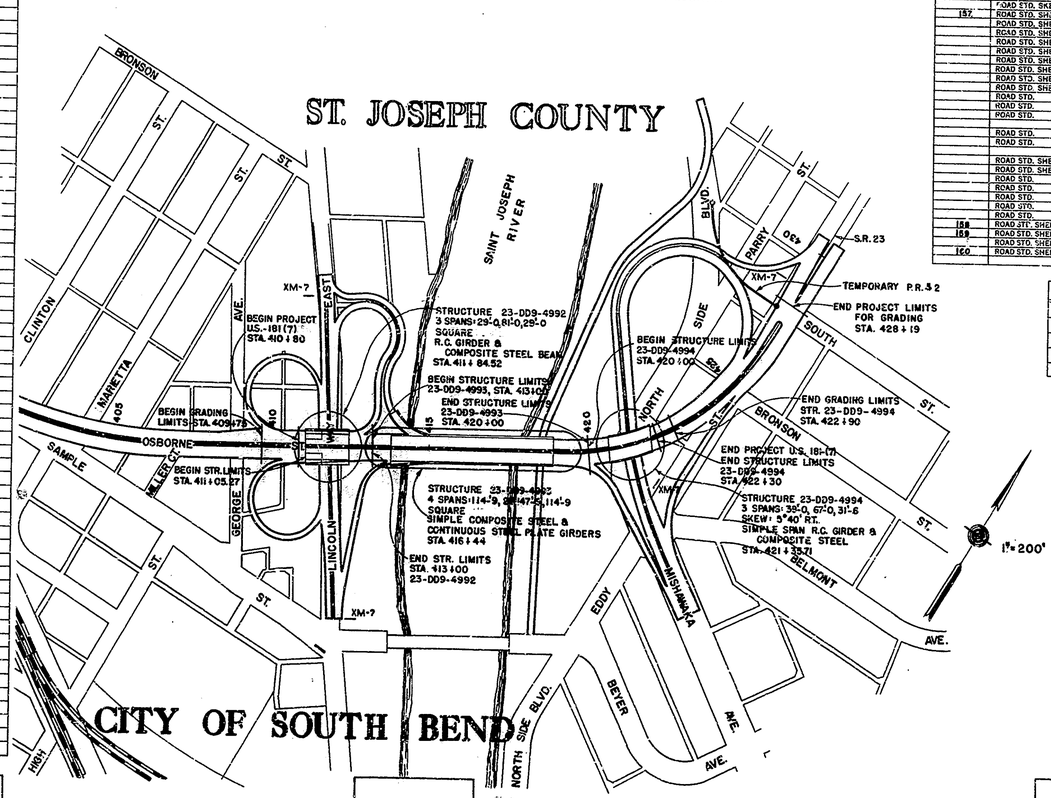
STATE HIGHWAY DEPARTMENT OF INDIANA.
STANDARD SPECIFICATIONS DATED 1960
TO BE USED WITH THESE PLANS.

THESE PLANS PREPARED BY
CHAS. W. COLE & SON
ENGINEERS AND ARCHITECTS
SOUTH BEND, INDIANA

STATE OF INDIANA
STATE HIGHWAY COMMISSION

BRIDGE PLANS
FOR SPANS OVER 20 FEET ON STATE ROAD NO. 23 SECTION NO. DD 9
PROJECT NO. U.S. 181 (7)

BEGINNING AT STATION 410+80 ON THE SURVEY ℄ OF PROJECT U.S.-181(3) APPROXIMATELY 111 FEET SOUTHWEST OF THE INTERSECTION OF U.S. 33 AND OSBORN ST. AND EXTENDING IN A NORTHEASTERLY DIRECTION APPROXIMATELY 1152 FEET TO STATION 422+50 APPROXIMATELY 265 FEET SOUTHWEST OF THE INTERSECTION OF BRONSON ST. AND EDDY ST. ALL IN THE CITY OF SOUTH BEND, ST. JOSEPH COUNTY.



SUBMITTED FOR APPROVAL JUNE 5, 1962

Chas. W. Cole
REGISTERED PROFESSIONAL ENGINEER STATE OF INDIANA REG. NO. 3
CHAS. W. COLE

REVISIONS	
DATE	SHEET NO.
7-24-62	15A Deleted
10-10-62	21, 23, 41, 43, 82, 85, 107
11-7-62	6
5-3-63	67, 68
7-18-63	86

RECOMMENDED FOR APPROVAL 7-18-62

C. R. Ramines
ENGINEER OF BRIDGE DESIGN, MONICA, STATE HIGHWAY COMMISSION

APPROVED 7-19-62

Geo. E. Goodwin
CHIEF ENGINEER — INDIANA STATE HIGHWAY COMMISSION

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

BRIDGE FILE:- 23-009-4992; 23-009-4993; 23-009-4994

BRIDGES OVER 20' SPAN

PUBLIC ROAD REGION NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	1	160

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STANDARD DRAWINGS

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108-147	ROAD PLAN SHEETS	CROSS SECTIONS, SH. 84-116, 128-132, 137, 144, 149, 168, (159-161, 166-172 of RD. PROJ. US-181(6) 0.615		
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	BRIDGE STD. C2	STANDARD MISCELLANEOUS DETAILS		
149	BRIDGE STD. D	CASTING DETAILS ROADWAY DRAINS	1-12-60	A-JAN. 3, 1950
	BRIDGE STD. F	ROADWAY DRAIN OUTLET DETAILS		
	BRIDGE STD. H	TYP. DETAILS OF THICK. PAVEMENT & LOC. TOE OF SL. A, E, B.		
	BRIDGE STD. H	TYP. DETAILS OF THICK. PAVEMENT & LOCATING TOE OF SLOPE		
	BRIDGE STD. M1	MISCELLANEOUS APPROACH DETAILS		
	BRIDGE STD. M2	MISCELLANEOUS APPROACH DETAILS		
	BRIDGE STD. M3	MISCELLANEOUS APPROACH DETAILS		
150	BRIDGE STD. M5	SLOPEWALL DETAILS	8-10-61	A-4-25-61
	BRIDGE STD. P2	STANDARD CONCRETE PILE DETAILS		
151	BRIDGE STD. P1-A	ALUMINUM RAILING DETAILS		
152	BRIDGE STD. R2	BRIDGE LIGHTING DETAILS		R-9-26-61
	BRIDGE STD. S1	TYPICAL DETAILS FOR PLACING SPECIAL FILLING MATERIAL	9-28-61	R-2-24-61
	BRIDGE STD. S2	TYPICAL DETAILS FOR PLACING SPECIAL FILLING MATERIAL		
	BRIDGE STD. T SHEET A	STANDARD TEMPORARY BRIDGE		
	BRIDGE STD. T SHEET B	STANDARD TEMPORARY BRIDGE		
	ROAD STD. SHEET A	STANDARD PAVEMENT JOINTS		
153	ROAD STD. SHEET MA	MISCELLANEOUS STANDARDS	5-9-61	R-7-11-60
	ROAD STD. SHEET MB	MISCELLANEOUS STANDARDS		
154	ROAD STD. SHEET MC	MISCELLANEOUS STANDARDS	1-29-60	R-4-1-59
	ROAD STD. SHEET MC1	MISCELLANEOUS STANDARDS		
155	ROAD STD. SHEET MD	MISCELLANEOUS STANDARDS	1-26-60	R-5-26-59
	ROAD STD. SHEET MD1	MISCELLANEOUS STANDARDS		
156	ROAD STD. SHEET ME	MISCELLANEOUS STANDARDS	5-9-61	R-8-16-60
	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 K	MISCELLANEOUS STANDARDS		
157	ROAD STD. SHEET MN	MISCELLANEOUS STANDARDS	5-9-61	R-6-11-61
	ROAD STD. SHEET MP	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MQ	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MR	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.	STANDARD STRUCTURE CONNECTIONS FOR EXTENSION		
	ROAD STD.	STANDARD REINF. CONC. BOX CULVERTS		
	ROAD STD.	STANDARD REINF. CONC. BOX CULVERTS-SK. END & WING		
	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 GF	STANDARD GUARD RAIL		
	ROAD STD. SHEET GR	STEEL 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 & WIDENING OF CURVES		
158	ROAD STD. SHEET 1 DETOURS	STANDARD DETOUR SIGNS	1-26-62	A-Dec. 61
159	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR SIGNS	1-26-62	A-Dec. 61
	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS		
160	ROAD STD. SHEET 4 DETOURS	STANDARD DETOUR SIGNS	1-26-62	R-12-1-61

TRAFFIC DATA	23-009-4992 / 23-009-4993	23-009-4994
A.D.T. (1961)	13,496 V.P.D.	13,496 V.P.D.
A.D.T. (1981 PROJECTED)	37,463 V.P.D.	37,463 V.P.D.
TRUCKS	10 %	10 %
DESIGN SPEED	50 M.P.H.	50 M.P.H.
ACCESS CONTROL	NONE	NONE

ROADWAY LENGTH: 0.062 MILES
BRIDGE LENGTH : 0.158 MILES
TOTAL LENGTH : 0.218 MILES
MAXIMUM GRADE : -1.27 %

FED. ROAD REG. NO	STATE	U.S. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND	181(6)0615	1962	34	177

AMENDED REPLAT OF BEYERS 2ND ADD.

LOT Nº	OWNER
1, 2, 3	ZIMMER DAIRY PRODUCTS CO.
4	HARRY E. & NELLIE I. McCALLUM
5, 6, 7	KINDIG BROS. INC.
8	ERNEST SNIDER & HARRY KOHLER

SUNNYMEDE 3RD ADD.

LOT Nº	OWNER
388	LESLIE C. & PHYLLIS M. WHITCOMB
389	ADELINE KENT, ETAL
390	EDW. W. & BERNICE H. MILLER
426	H. & RUTH M. ROBBINS
427	BURT G. & MARY E. FECTEAU
428	MABLE & EUNICE MARTINDALE
429	EDW. A. EVERETT & GEO. S. CRESSY
497, 498	BROWN - BRUNER, INC.
499 E.54'	HELEN KATZ
499 W.6'	HARRY KATZ
500, 501, 502, 503	THE OHIO OIL CO.

SUNNYMEDE 2ND ADD.

LOT Nº	OWNER
345	JAMES H. Sr. & LYDIA F. NAUS
346	JAMES H. Sr. & LYDIA NAUS
347, 386	PAUL M. & GLADYS P. TANNER
387	SAMUEL & MARLENE E. KATZ

SAM PARRY 2ND ADD.

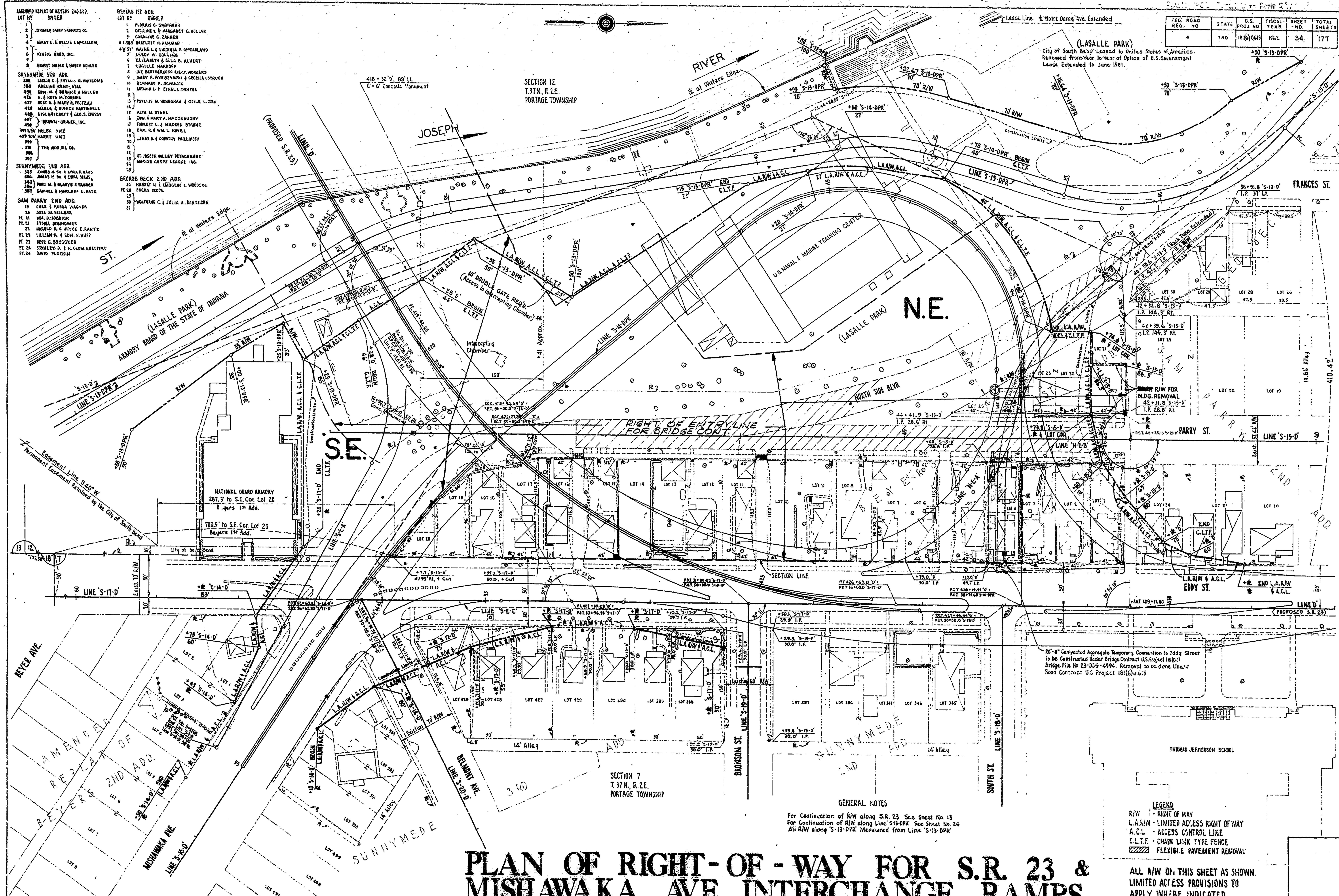
LOT Nº	OWNER
19	CHAS. & RUSHA WAGNER
20	BESS M. KILLBER
PT. 21	WM. D. HOBBICK
PT. 21	ETHEL DUNHOWER
22	HAROLD R. & ALYCE E. RANTZ
PT. 23	LILLIAN R. & EDW. H. HUPP
PT. 23	ROSE G. BRUGGNER
PT. 24	STANLEY D. & K. CLEM. KUESPERT
PT. 24	DAVID PLOTKIN

BEYERS 1ST ADD.

LOT Nº	OWNER
1	FLORRIS C. SMOTHERS
2	CAROLINE V. & MARGARET G. KOLLER
3	CAROLINE C. ZAHNER
4 E.58.5'	BARTLETT H. HAMMAN
4 W.57'	WAYNE L. & VIRGINIA D. McFARLAND
5	LEROY W. COLLINS
6	ELIZABETH & ELLA B. ALHERT
7	LUCILLE HARROFF
8	INT. BROTHERHOOD ELECT. WORKERS
9	MARY R. WYPISZYNSKI & CECELIA USTRUCK
10	BERHARD R. SCHULTZ
11	ARTHUR L. & ETHEL L. WINTER
12, 13, 14	PHYLLIS M. HENEGHAN & OPILE L. REX
15	ALTA M. STAHL
16	EDW. & MARY A. McCONAUGHY
17	FORREST L. & MILDRED STRANZ
18	EMIL R. & WM. L. HAVEL
19, 20	JAMES G. & DOROTHY PHILLIPOFF
21, 22, 23, 24, 25	ST. JOSEPH VALLEY DETACHMENT MARINE CORPS LEAGUE INC.

GEORGE BECK 2ND ADD.

LOT Nº	OWNER
26	HUBERT H. & EMOGENE E. WOODCOX
PT. 28	FREDA SCOPE
29, 30, 31	WOLFGANG C. & JULIA A. DANNHORN



Lease Line ℄ Notre Dame Ave. Extended
(LASALLE PARK)
City of South Bend Leased to United States of America.
Renewed from Year to Year at Option of U.S. Government
Lease Extended to June 1981.
RIVER
JOSEPH
ST.
SECTION 12
T. 37 N., R. 2 E.
PORTAGE TOWNSHIP
(LASALLE PARK)
ARMORY BOARD OF THE STATE OF INDIANA
U.S. NAVAL & MARINE TRAINING CENTER
(LASALLE PARK)
N.E.
S.E.
NATIONAL GUARD ARMORY
NORTH SIDE BLVD.
RIGHT OF ENTRY LINE FOR BRIDGE CONT.
FRANCES ST.
PARRY ST.
EDDY ST.
BEYER AVE.
MISHAWAKA AVE.
BELMONT AVE.
BRONSON ST.
SOUTH ST.
SECTION 7
T. 37 N., R. 2 E.
PORTAGE TOWNSHIP
THOMAS JEFFERSON SCHOOL
20'-8" Compacted Aggregate Temporary Connection to Eddy Street to be Constructed Under Bridge Contract U.S. Project 181(6) Bridge File No. 23-DD9-4994. Removal to be done Under Road Contract U.S Project 181(6)0615

GENERAL NOTES

For Continuation of R/W along S.R. 23 See Sheet No. 13
For Continuation of R/W along Line 'S-13-DPR' See Sheet No. 24
All R/W along 'S-13-DPR' Measured from Line 'S-13-DPR'

LEGEND

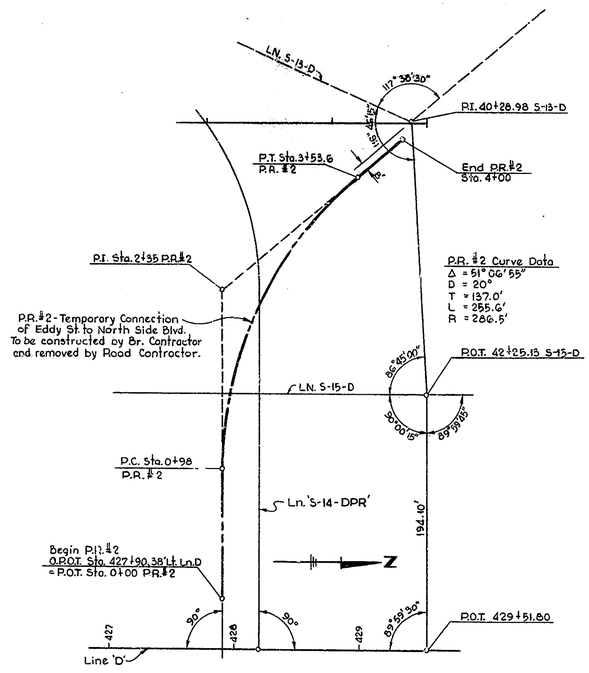
R/W - RIGHT OF WAY
L.A.R/W - LIMITED ACCESS RIGHT OF WAY
A.C.L. - ACCESS CONTROL LINE
C.L.T.F. - CHAIN LINK TYPE FENCE
FLEXIBLE PAVEMENT REMOVAL

PLAN OF RIGHT-OF-WAY FOR S.R. 23 & MISHAWAKA AVE. INTERCHANGE RAMPS

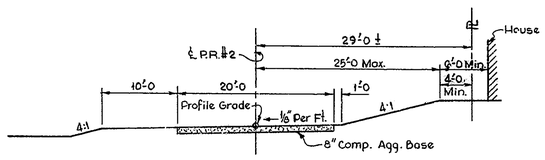
ALL R/W ON THIS SHEET AS SHOWN.
LIMITED ACCESS PROVISIONS TO APPLY WHERE INDICATED.
SCALE : 1" = 50'

BRIDGES OVER 20' SPAN

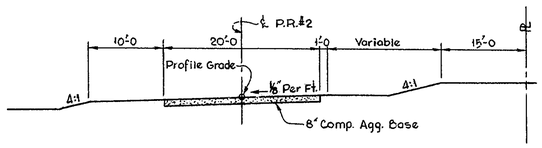
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	83	160



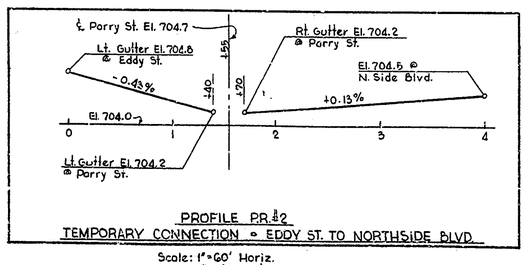
P.R. #2 ALIGNMENT
Scale: 1"=50'



TYPICAL CROSS-SECTION FOR P.R. #2
STA. 0+00 TO STA. 1+40
Scale: 1/8"=1'-0



TYPICAL CROSS-SECTION FOR P.R. #2
STA. 1+70 TO STA. 4+00
Scale: 1/8"=1'-0



PROFILE P.R. #2
TEMPORARY CONNECTION - EDDY ST. TO NORTHSIDE BLVD.
Scale: 1"=60' Horiz.
1"=1' Vert.

NOTES:
For topography and R/W see sheet no. 21.
For references and interchange geometrics see sheet no. 19.

DETAILS OF TEMPORARY CONNECTION OF EDDY ST. TO NORTH SIDE BLVD. (P.R. #2)

INDIANA STATE HIGHWAY COMMISSION

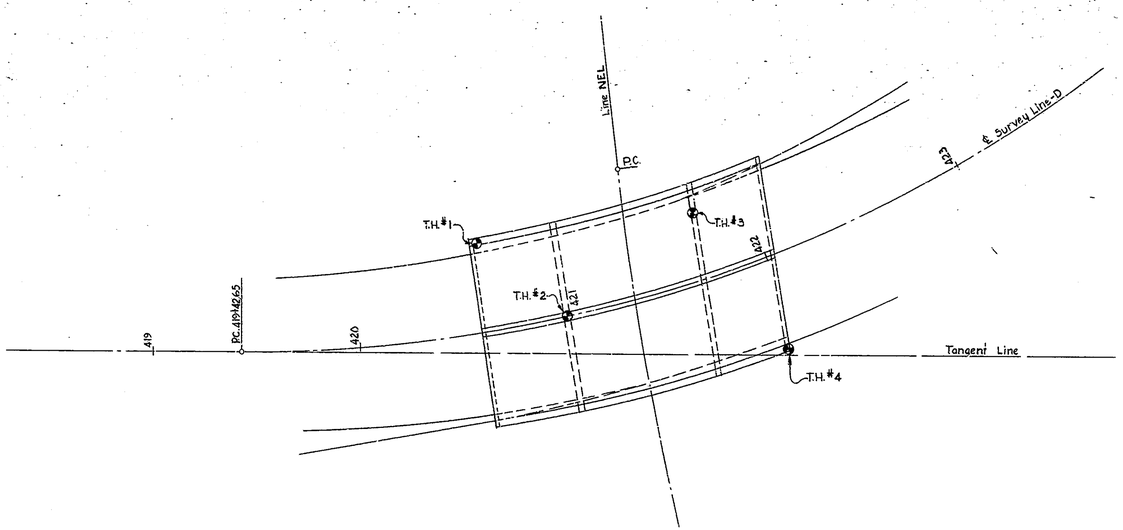
SCALE:- As Noted JUNE 5, 1962

SUBMITTED FOR APPROVAL:- Richard W. Rambo Chief

DRAWING:- OF
PROJECT:- U.S.-181 (7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

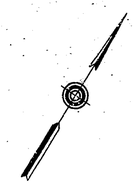
DESIGNED _____ C'K'D _____
DRAWN L.R.Y. C'K'D F.G.H. 5-1962
TRACED _____ C'K'D _____

US-181(7). 1962 : 84 : 160



°PLAN°

Scale: 1"=30'-0"



NOTE:
All Stations and Offsets shown for Boring Locations are measured from Tangent Line.

See Art. A-203 of the Specifications regarding Test Pits.

Boring No.	T.H. # 1	T.H. # 2	T.H. # 3	T.H. # 4
Station	420+56	421+00	421+60	422+05
Offset	50' Left	17' Left	64' Left	3' Left
Ground Elev.	692.0	703.8	702.9	707.7

T.H. # 1

Sample No.	Sample Elev.	N	Description
	692.0		Ground level
1	687.0	10	Fill - Sand and Gravel, some organic, moist to wet.
2	682.0	1	▼ El. 681.0
3	677.0	2	
4	672.0	6	Loose, grey fine Sand, trace of gravel and silt, dry to wet.
5	667.0	10	
6	662.0	15	Stiff, gray Clay, moist
7	657.0	49	Hard, gray Clay, moist.
8	652.0	46	Hard, gray Clay, trace of medium sand, moist.

End of Boring
Depth of Boring = 40'

Pile Tip El. 645 ± (Bent No. 1)

T.H. # 2

Sample No.	Sample Elev.	N	Description
	703.8		Ground level
1	698.8	4	Organic Topsoil
2	693.8	11	Fill.. Loose, brown, medium Sand, trace of Gravel, dry to wet, some organic
3	688.8	6	
4	683.8	4	Loose, brown, fine Sand, dry to moist. ▼ El. 683.8
5	678.8	11	
6	673.8	45	Hard, brown Clay, moist.
7	668.8	49	Hard, gray Clay, moist.
8	663.8	61	
9	658.8	80	
10	653.8	32	

End of Boring
Depth of Boring = 50'

Bott. Pkg. El. 687.00 (Bent No. 2)

Pile Tip El. 662.02 (Bent No. 2)

T.H. # 3

Sample No.	Sample Elev.	N	Description
	702.9		Ground level
			Black top pavement and Gravel Base
1	697.9	7	Loose, brown, uniform Sand, dry
2	692.9	38	Dense, brown, medium Sand, trace silt and gravel, dry.
3	687.9	46	
4	682.9	26	Firm, brown, uniform Sand, moist to wet ▼ El. 684.9
5	677.9	52	
6	672.9	48	Very stiff, gray clay, trace sand, moist
7	667.9	61	Hard, gray clay, trace of Sand, moist

End of Boring
Depth of Boring = 35'

Bott. of Pkg. El. 686.45 (Bent No. 3)

Pile Tip El. 676.02 (Bent #3)

T.H. # 4

Sample No.	Sample Elev.	N	Description
	707.7		Ground level
1	704.2	6	Top Soil - Black and Sand
2	699.2	2	Loose to dense, brown, uniform to medium Sand, trace of gravel, moist.
3	694.2	41	▼ El. 692.7
4	689.2	48	Hard, gray Clay, moist.
5	684.2	64	
6	679.2	59	
7	677.7	54	

End of Boring
Depth of Boring = 30'

NOTE:
▼ Denotes ground water table
N Indicates the number of blows req'd to drive a 1⅜" I.D. 2" O.D. Split Spoon Sampler 12" by means of 140 lb Weight falling 30".

STRUCTURE BORING LOG

Scale: Hori. 1"=30'-0" Vert. 1"=10'-0" JUNE 5, 1962

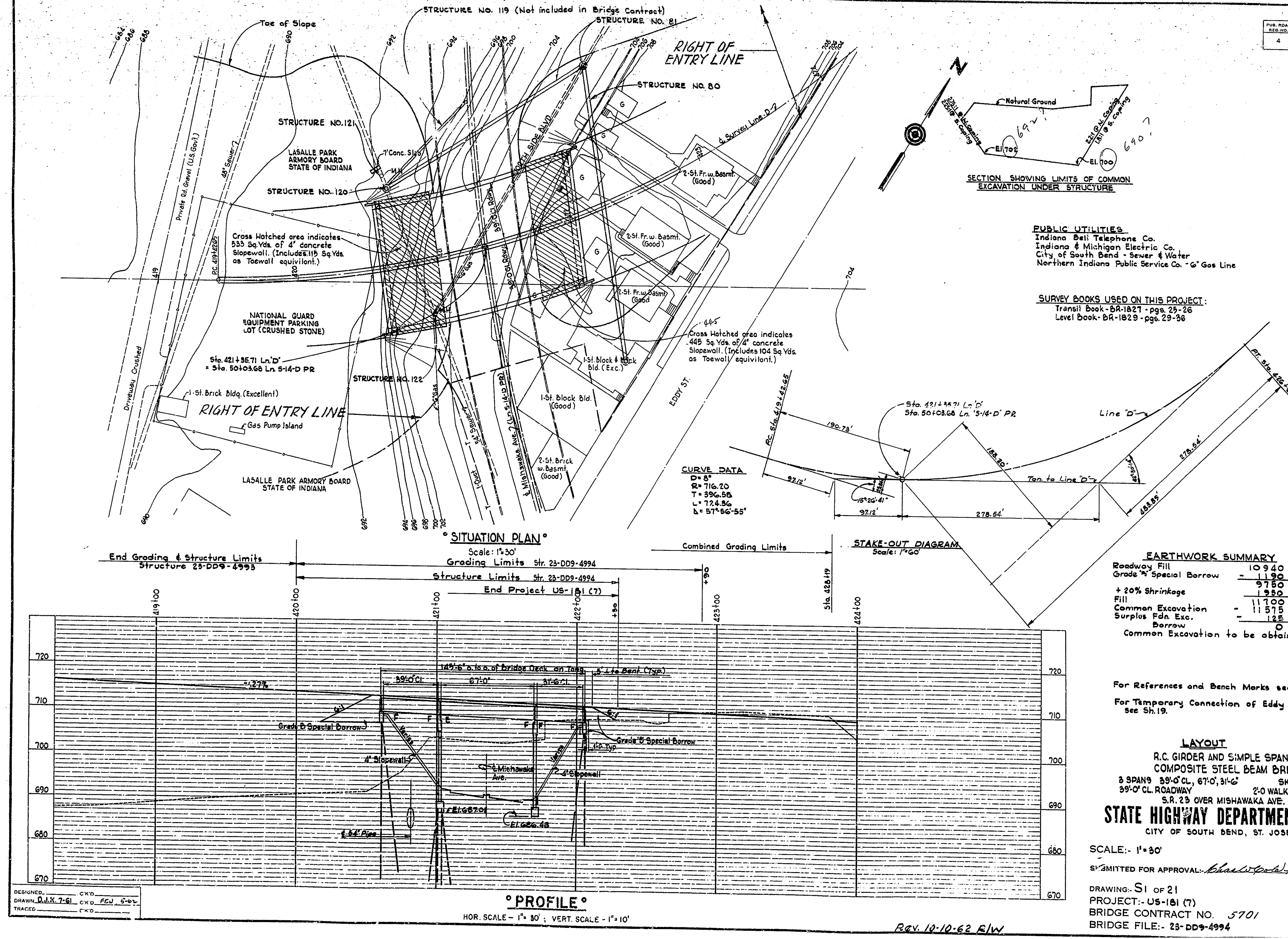
Submitted for Approval:

PROJECT: U.S. 181 (7)

BRIDGE CONTRACT NO. 5701

BRIDGE FILE: 23-DD9-4994

BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	83	160



PUBLIC UTILITIES

Indiana Bell Telephone Co.
Indiana & Michigan Electric Co.
City of South Bend - Sewer & Water
Northern Indiana Public Service Co. - "G" Gas Line

SURVEY BOOKS USED ON THIS PROJECT:

Transit Book - BR-1827 - pgs. 25-26
Level Book - BR-1829 - pgs. 29-36

CURVE DATA

D = 8°
R = 716.20
T = 396.58
L = 724.36
Δ = 57°56'55"

EARTHWORK SUMMARY

Roadway Fill	10940	Cu. Yds.
Grade "A" Special Borrow	- 1190	+ 25% = 1490
	9750	
+ 20% Shrinkage	1950	
Fill	11700	
Common Excavation	- 11575	
Surplus Fdn. Exc.	- 125	
Borrow	0	

Common Excavation to be obtained from Ln. S-14-D

For References and Bench Marks see Plan-Profile Sheets.

For Temporary Connection of Eddy St. to Northside Blvd. see Sh. 19.

LAYOUT

R.C. GIRDER AND SIMPLE SPAN
COMPOSITE STEEL BEAM BRIDGE
3 SPANS 39'-0" CL, 67'-0", 31'-6" SKEW 5°40' RT.
39'-0" CL. ROADWAY 2'-0 WALK & 2'-0 CENTER CURB
S.R. 23 OVER MISHAWAKA AVE.

STATE HIGHWAY DEPARTMENT OF INDIANA

CITY OF SOUTH BEND, ST. JOSEPH COUNTY

SCALE:- 1" = 30' JUNE 5, 1962

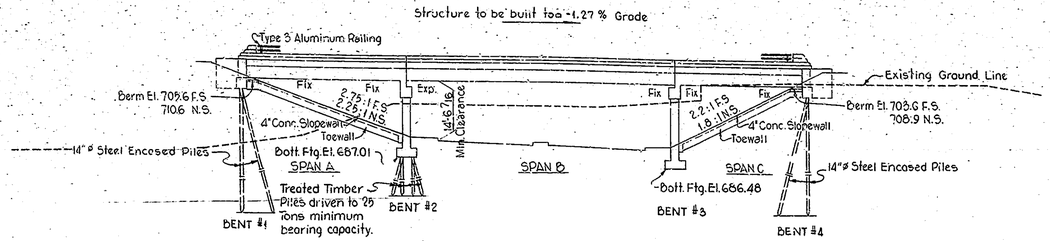
SUBMITTED FOR APPROVAL:- [signature]

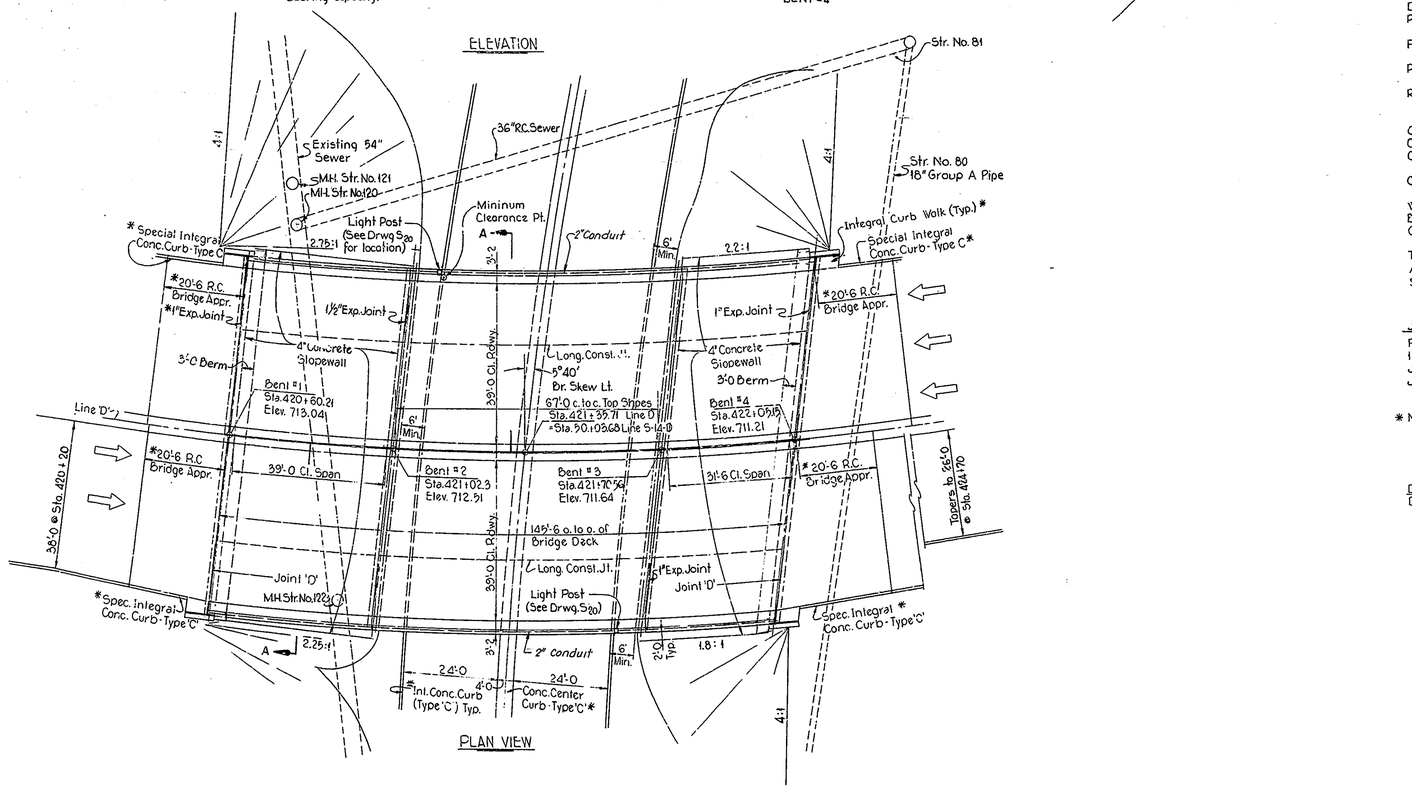
DRAWING:- S1 OF 21
PROJECT:- US-181 (7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

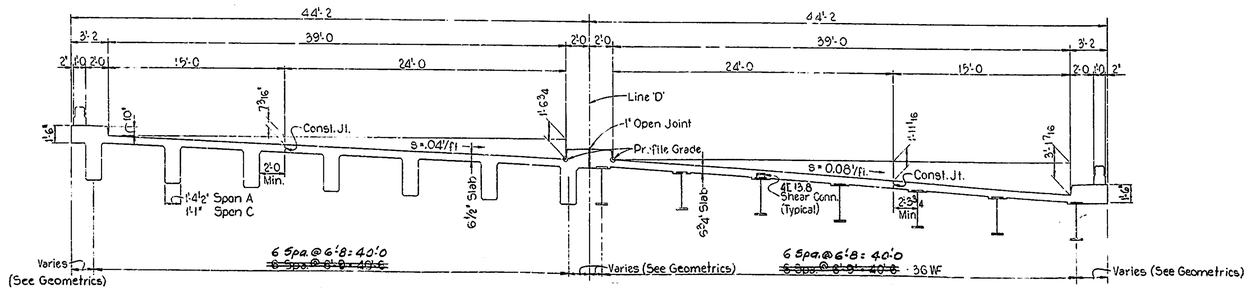
DESIGNED ___ C'K'D ___
DRAWN D.J.K. 7-61 C'K'D FCJ 6-62
TRACED ___ C'K'D ___

Rev. 10-10-62 R/W

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	86	160







GENERAL NOTES:

No present structure at proposed bridge site.
Depth of footings to be extended if found necessary. See Art. B403.2(a) of Specifications.
Piles shall have minimum bearing value shown on detail drawings. Determine pile lengths by Arts. F103 and F203 of Specifications.
For details of steel encased concrete piles see Bridge Standard C1, the 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 1 inch in floor slabs, 3 inches in footings, except bottom steel which shall be 4 inches, and 2 inches in all other parts unless noted.
Concrete in footings to be class 'E'.
Concrete in superstructure, including railing and bent caps to be class 'F'.
Concrete in structure not noted above, in steel encased concrete piles, concrete slopewall and paved side ditches to be class 'D'.
Continuous concrete pours shall be required between construction joints as shown on detail plans.
Waterproof abutments and wingwalls in accordance with Specifications.
Bevel forms ¼" under copings; and chamfer exposed edges 1 inch unless noted.
Construct 4" concrete slopewall of locations shown on Layout.

Tolerance in position of pile head maximum 2".
All railings to be constructed perpendicular to grade.
See special provisions for items included in this contract.

JOINT LEGEND

For 1" Expansion Joint see Bridge Standard C1.
1½" Expansion Joint same as 1" Expansion Joint except width.
Joint 'D' indicates ½" preformed joint filler under front 6" of Girder Bearing Area.
Joint 'H' indicates vertical 1" preformed joint filler extending down from the Bridge Seat to the bottom of Cap.

* Not included under Bridge Contract. To be constructed under Road Contract Project U.S. 181(6) 0.615

DESIGN DATA:
Designed for H20-S16-44 Loading in accordance with 1957 A.A.S.H.O. Specifications.

TABLE OF STANDARDS		
Br. Std.	Road Std.	Purpose
C1		Standard Miscellaneous Details
* M3		R.C. Bridge Approach Details
M5		Slopewall Details
R1-A		Aluminum Railing Details
R2		Bridge Lighting Details
	MC	Manhole Casting
	MD	Type D Manhole
	*E-11-JR	Pavement Reinforcing
	MN	Backfill for Pipe Structures
* GR_A		Guard Rail Details
	* A	Std. Pavement Joints
	* Mu	Type C Curb
	* GR1	Guard Rail Details
	*10' Ramp Sec.	Pavement Offsets on Roadway
	Sht. #1 Det.	Std. Detour Signs
	Sht. #2 Det.	Barricades
	Sht. #4 Det.	Std. Detour Signs

GENERAL PLAN
R.C. GIRDER AND SIMPLE SPAN
COMPOSITE STEEL BEAM BRIDGE
3 SPANS 39'-0" CL., 67'-0, 31'-6 CL. SKEW 5°40 RT.
39'-0 CL. ROADWAY 2'-0 WALK & 2'-0 CENTER CURB
S.R. 23 OVER MISHAWAKA AVE.

STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- 1/16" = 1'-0 UNLESS NOTED JUNE 5, 1962

SUBMITTED FOR APPROVAL:- [signature]

DRAWING:- S2 OF 21
PROJECT:- U.S.-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

DESIGNED _____ C'K'D _____
DRAWN DJK CLRY C'K'D FEN SGV
TRACED _____ C'K'D _____

Rev. 7-18-63 Brn. & Girder Spa.

BRIDGES OVER 20' SPAN

FUR. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	87	160

PLAN
No Scale

TANGENT OFFSETS - LINE "D"
No Scale

Curve Data
P.C. 419+42.65 (Line "D")
Δ = 57°56' 55" Lt.
D = 8° 00'
R = 716.20'
T = 396.58'
L = 724.36'

NOTES.
For Additional Geometric Details see Drwg S2
All Beams in Spans "A" & "C" are parallel to chord of Line "D" between ℄ Bents
All Beams in Span "B" are parallel to Line Tangent to Line "D" @ STA. 421+35.71.
See Drwg S1 for Location of Line Tangent to Line "D" @ STA 421+35.71

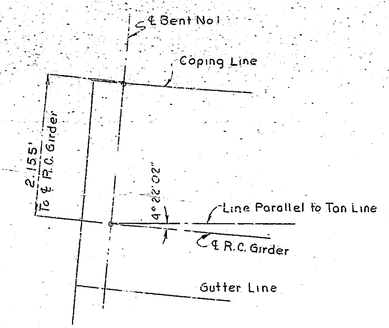
GEOMETRICS:
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- None
JUNE 5, 1962
SUBMITTED FOR APPROVAL:
DRAWING:- S3 OF 21
PROJECT:- US-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

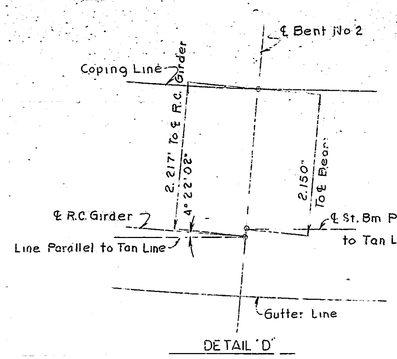
DESIGNED RE C'K'D
DRAWN AJT C'K'D RE
TRACED C'K'D

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	88	160



DETAIL "A"



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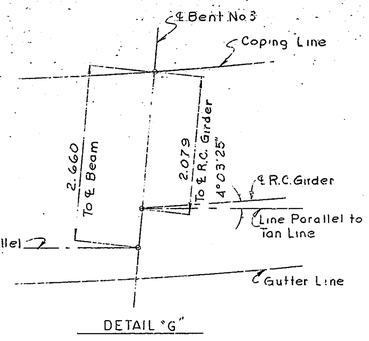

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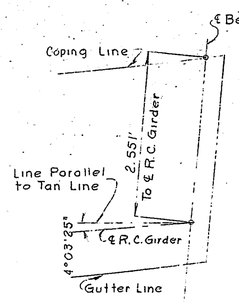
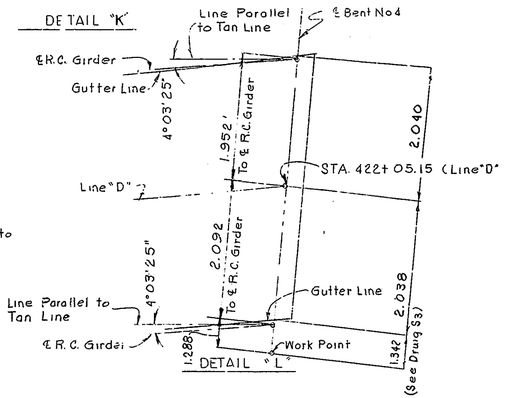
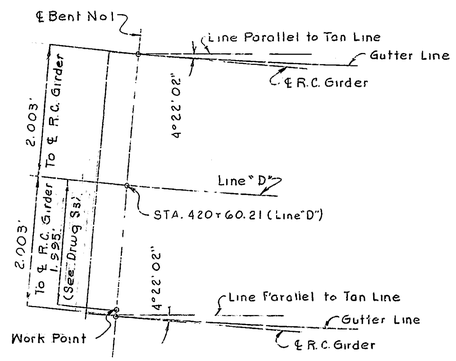


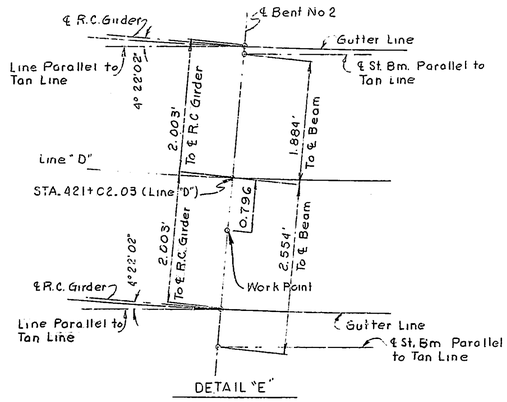
DETAIL "K"



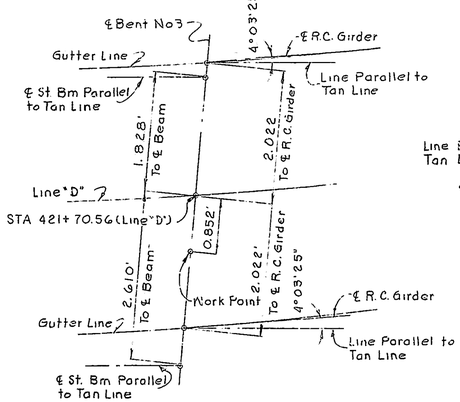
DETAIL "L"



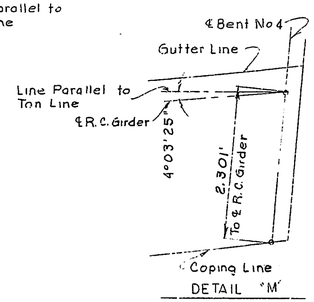
DETAIL "B"



DETAIL "E"

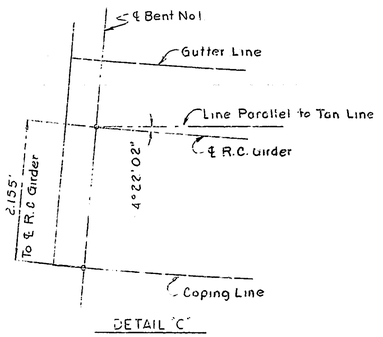


DETAIL "H"



DETAIL "M"

Note: All Dimensions are along ℄ Bents.



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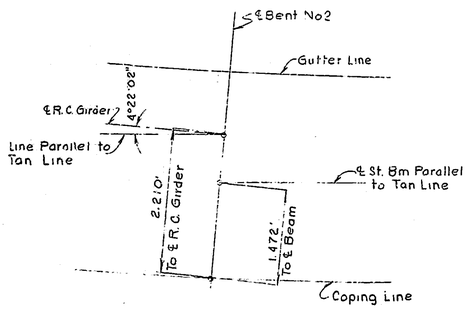
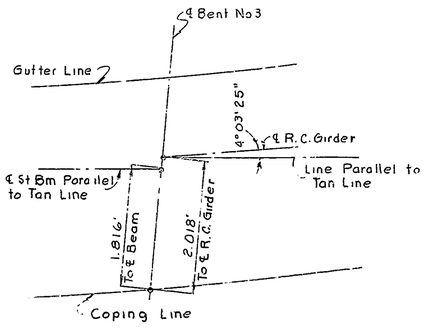


DETAIL "F"



DETAIL "J"

DESIGNED RE C'K'D
DRAWN AJT C'K'D RE.
TRACED C'K'D

GEOMETRICS

STATE HIGHWAY DEPARTMENT OF INDIANA

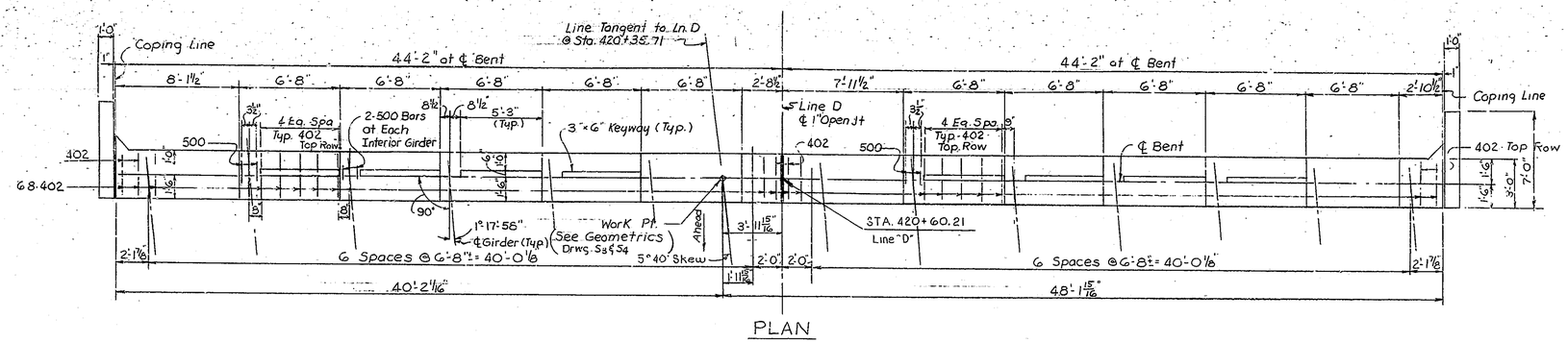
SCALE:- 1"=1'-0" JUNE 5, 1962

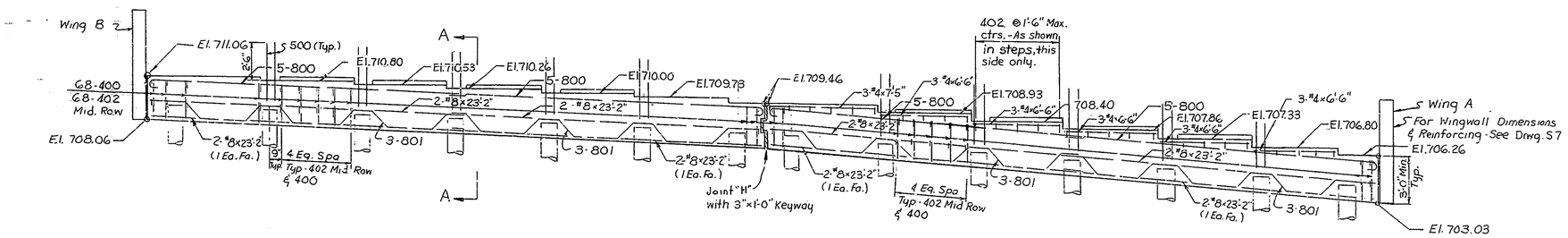
SUBMITTED FOR APPROVAL:-

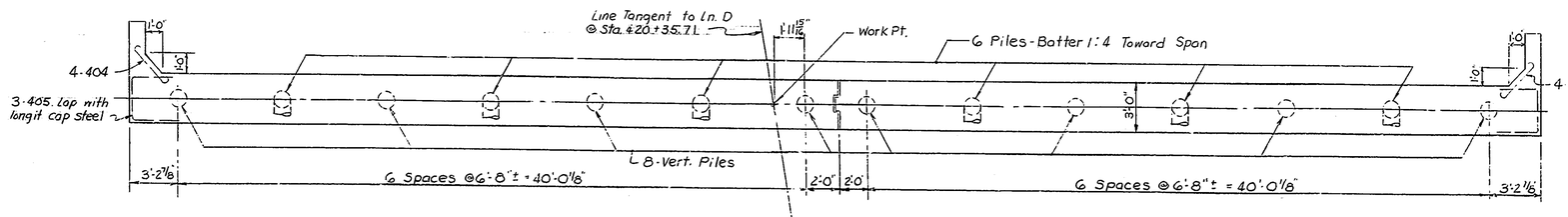
DRAWING:- S4 OF 21
PROJECT:- US-181(7)
BRIDGE CONTRACT NO. 5101
BRIDGE FILE:- 23-DD9-4994

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	U.S.181 (7)	1962	89	160







NOTE:
14-14ϕ Steel Encased Conc. Piles x 76a.
All Piles driven to 40 Ton Min. Brg. Capacity
Pile Tip Elev. 6451

NOTES:
For Reinforcing Steel Notes, see Br. Std. C1
See Drwg. S2 for General Notes
see Drwg. S3&4 for Geometrics
See Drwg. S7 for Additional Details, Reinforcing Bar Details & Bill of Materials.
Bent Cap not to be poured until after fill has been completed to approximate elevation of bottom of cap.

BENT NO. 1 DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

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

JUNE 5, 1962

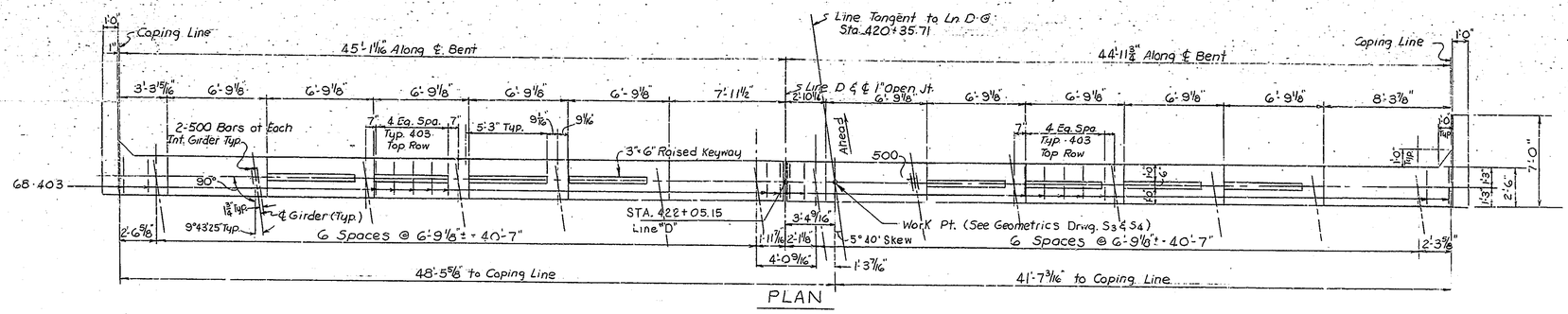
SUBMITTED FOR APPROVAL:- Charles Lapolla

DRAWING:- S5 OF 21
PROJECT:- U.S.-181 (7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

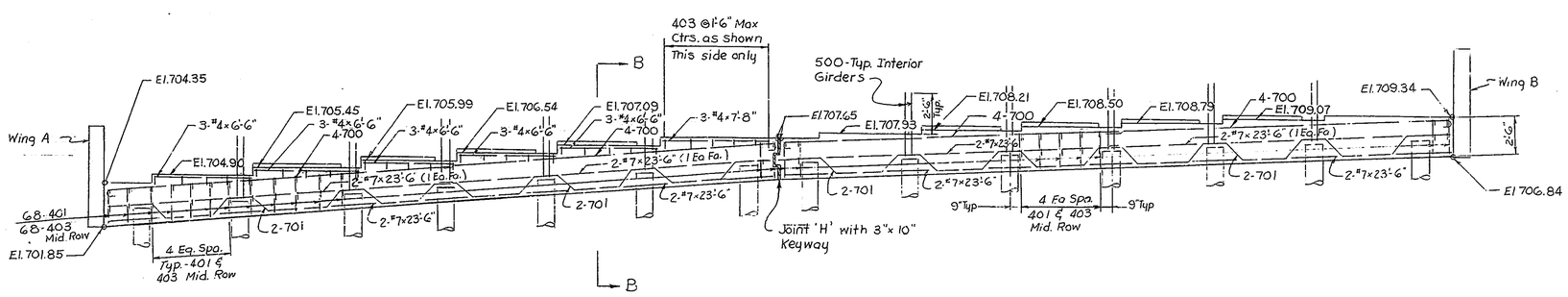
DESIGNED	AJT	CK'D	RJ
DRAWN	RT 11-61	CK'D	AJT
TRACED		CK'D	

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	U.S.131 (7)	1962	90	160

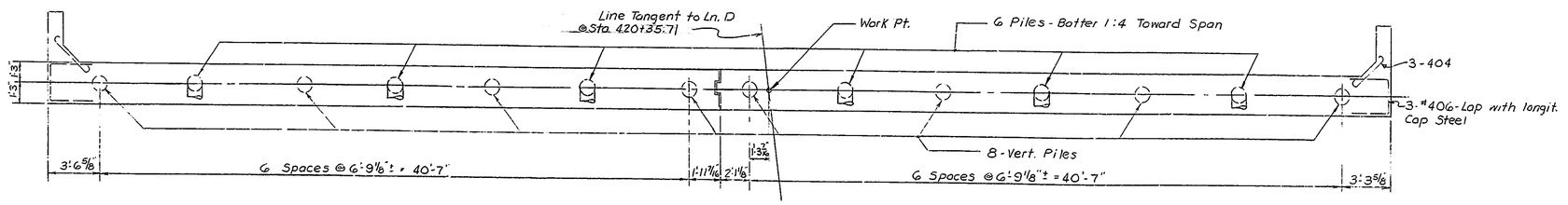


PLAN



ELEVATION

NOTES:
For Additional Notes, see Drwg. S5
For Additional Details, Reinforcing Bar Details & Bill of Materials, see Drwg. S7.
See Drwg. S3 & S4 for Geometrics.
Bent Cap not to be poured until after fill has been completed to approximate elevation of bottom of cap.



PILE PLAN

NOTE:
14 - 14"ø Steel Encased Concrete Piles x 7 Ga.
All Piles driven to 40 Ton Min. Brg. Capacity
Pile Tip Elev. 676±

BENT NO. 4 DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

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

JUNE 5, 1962

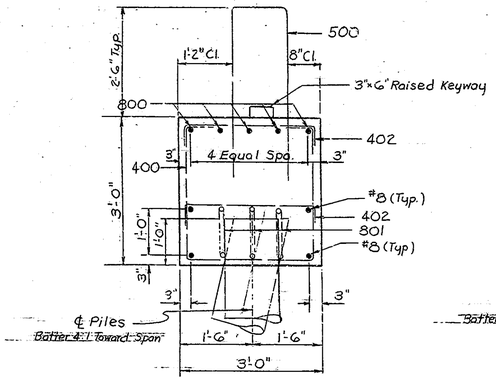
SUBMITTED FOR APPROVAL:- [signature]

DRAWING:- 56 OF 21
PROJECT:- U.S.-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

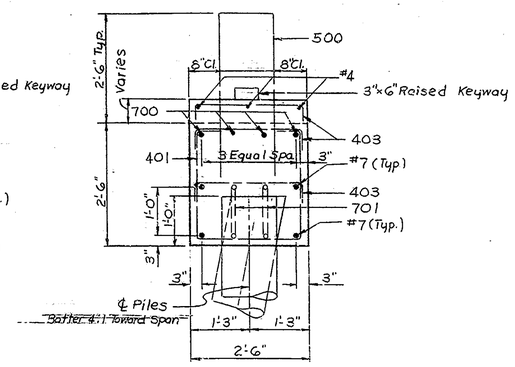
DESIGNED	AJT	CK'D	RT
DRAWN	RT 11-61	CK'D	AJT
TRACED		CK'D	

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181 (7)	1962	91	160

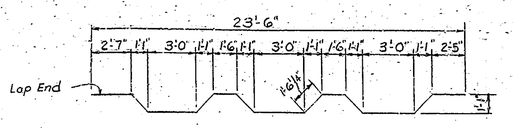
BRIDGES OVER 20' SPAN



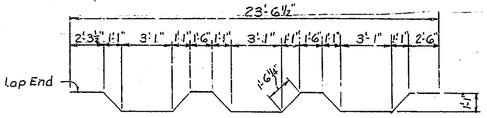
SECTION A-A
Scale 3/4"= 1'-0"



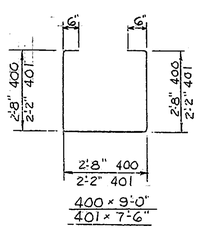
SECTION B-B
Scale 3/4"= 1'-0"



801 × 26'-2"

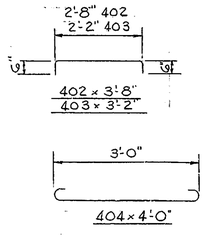


701 × 26'-2"



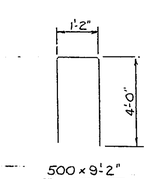
400 × 9'-0"
401 × 7'-6"

405 × 7'-8"
406 × 7'-2"

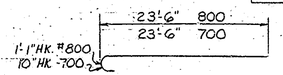


402 × 3'-8"
403 × 3'-2"

404 × 4'-0"



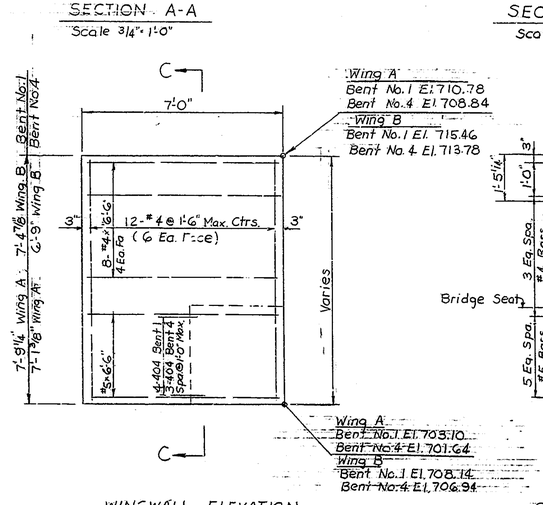
500 × 9'-2"



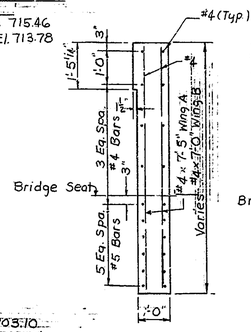
800 × 24'-7"
700 × 24'-4"

Bar or Size	Length	BENT NO. 1 No.	BENT NO. 1 Wt.	BENT NO. 4 No.	BENT NO. 4 Wt.	TOTAL Wt.
800	24'-7"	20				
801	26'-2"	12				
#8	23'-2"	16				
Total Wt. #8 Bars			3141			3141
700	24'-4"			16		
701	26'-2"			8		
#7	23'-6"			16		
Total Wt. #7 Bars					1992	1992
#5	6'-6"	24		20		
500	9'-2"	20		20		
Total Wt. #5 Bars			354		327	681
400	9'-0"	68				
401	7'-6"			68		
402	3'-8"	167				
403	3'-2"			167		
404	4'-0"	18		6		
405	7'-8"	6		3		
406	7'-2"			6		
#4	7'-5"	15				
#4	7'-0"	12				
#4	6'-9"			12		
#4	6'-6"	31		43		
Total Wt. #4 Bars		1135		995		2130
Total Reinf. Steel		4630		3314		7944 Lbs

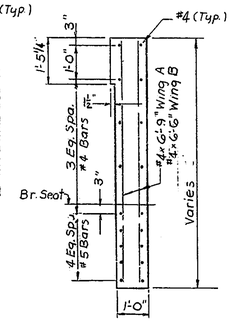
ITEM	BENT 1.	BENT 4
Class F Concrete	34.1 C.Y.	25.2 C.Y.
14-14"Ø Steel Enc. Conc. Piles - 65' Long	910 Lin. Ft.	
14-14"Ø Steel Enc. Conc. Piles - 35 Long		490 Lin. Ft.



WINGWALL ELEVATION
Scale ½"= 1'-0"



SECTION C-C
AT BENT NO.1
Scale 1½"= 1'-0"



SECTION C-C
AT BENT NO.4
Scale 1½"= 1'-0"

DESIGNED AJT C'K'D RT 11-61
DRAWN RT 11-61 C'K'D AJT
TRACED C'K'D

BENT NO.1 & BENT NO.4 DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- AS NOTED

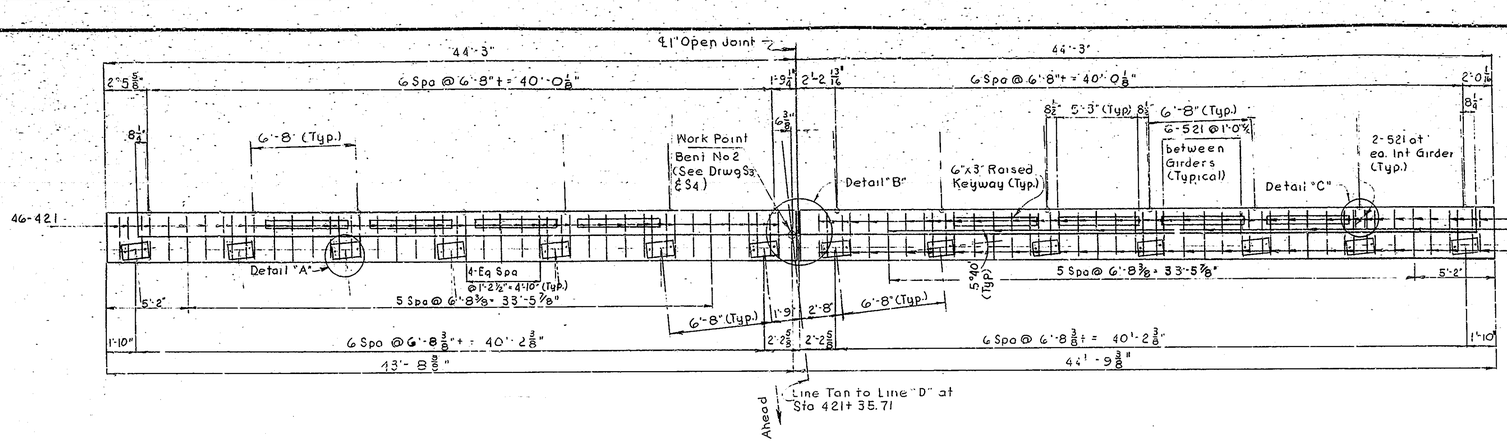
JUNE 5, 1962

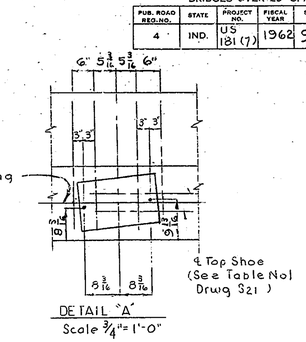
SUBMITTED FOR APPROVAL:- [signature]

DRAWING:- S7 OF 21
PROJECT:- U.S.-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

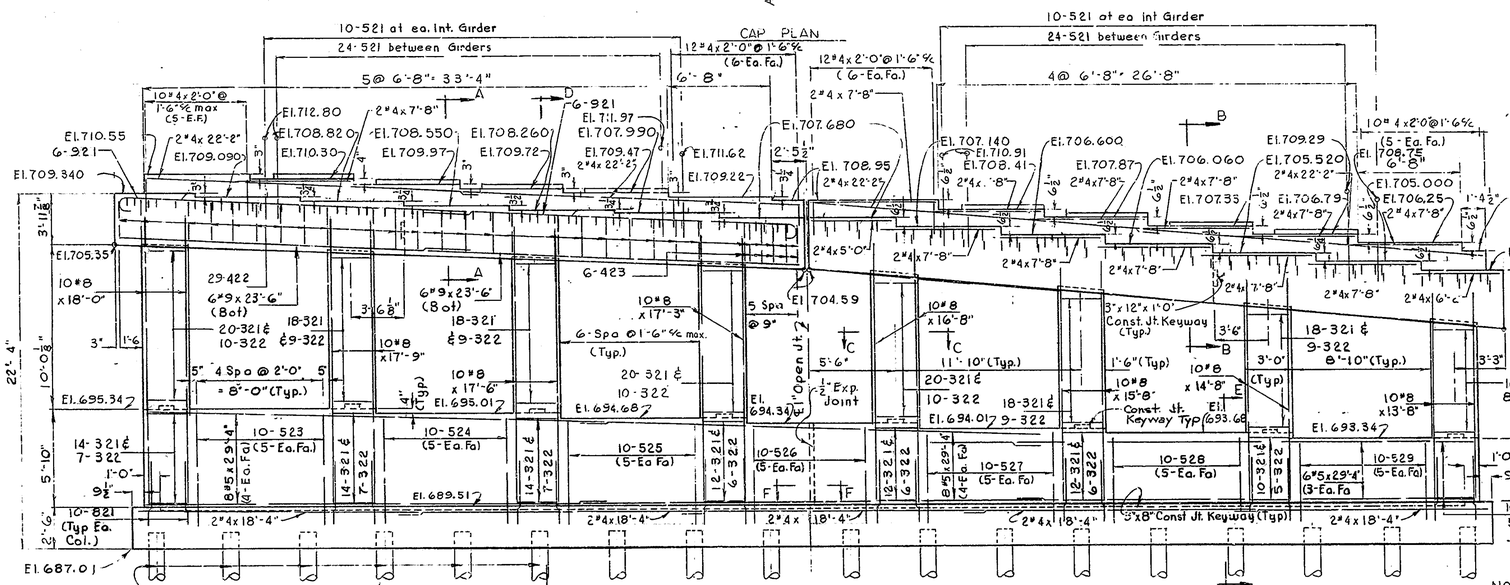
BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US 181 (7)	1962	92	160



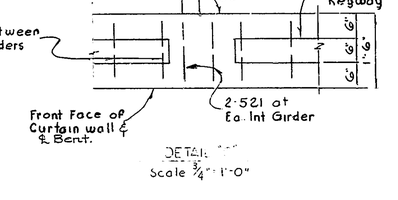


DETAIL "A"
Scale 3/4" = 1'-0"

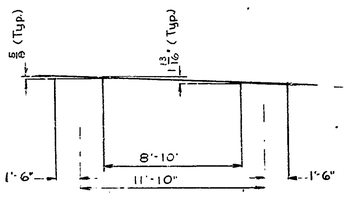


Line Tan to Line "D"
@ STA. 421+35.71

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

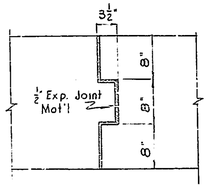


DETAIL "C"
Scale 3/4" = 1'-0"

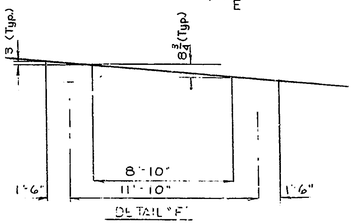


DETAIL "E"

Typical Left Half Elevation as Shown



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



DETAIL "F"

Typical Right Half Elevation as Shown

NOTES.

Holes for Anchor Bolts are to be drilled See Drwg S2i for fina location of drilled holes.

36 Treated Timber Piles to be diven to 25 tons minimum bearing

Dimensions shown for locating anchor bolts are for checking field clearance between reinforcing steel and anchor bolts. Reinforcing Steel shall be adjusted to maintain 1½ inches clearance.

Anchor Bolts are to be billed with Superstructure.

See Drwg S3 for Geometrics

See Drwg S2 for General Notes

See Drwg S8 for Sec "A-A", "B-B", "C-C", "D-D", "E-E" Reinforcing Bar Details, and Bill of Materials.

See Br. Std. C1 for Reinforcing Bar Notes.

BENT NO. 2 - DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

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

JUNE 5, 1962

SUBMITTED FOR APPROVAL:- [signature]

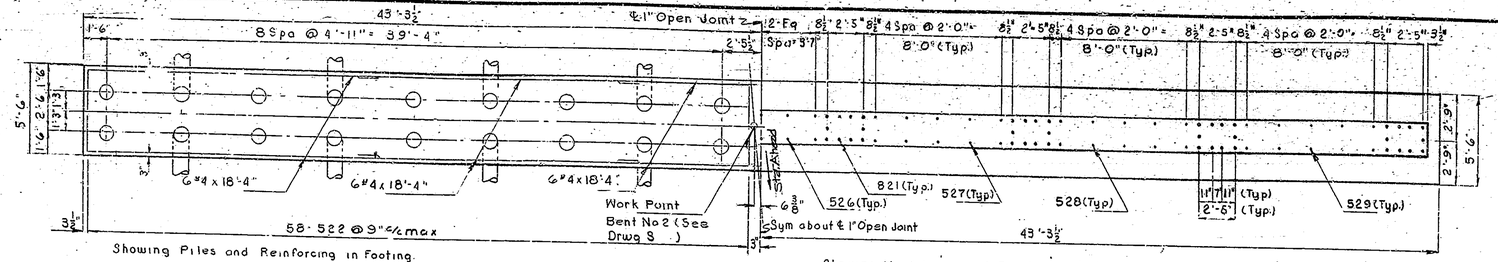
DRAWING:- S8 OF 21

PROJECT:- US-181(7)

BRIDGE CONTRACT NO. 5701

BRIDGE FILE:- 23-00[illegible]-4994

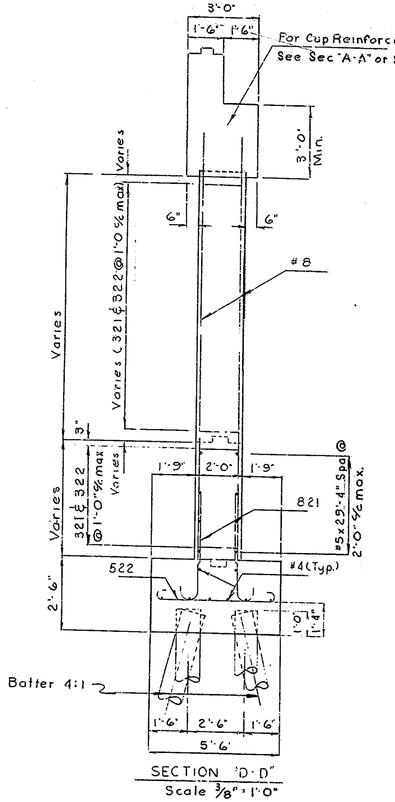
DESIGNED	A.J.T.	C'K'D	R.E.
DRAWN	A.J.T.	C'K'D	R.E.
TRACED		C'K'D	



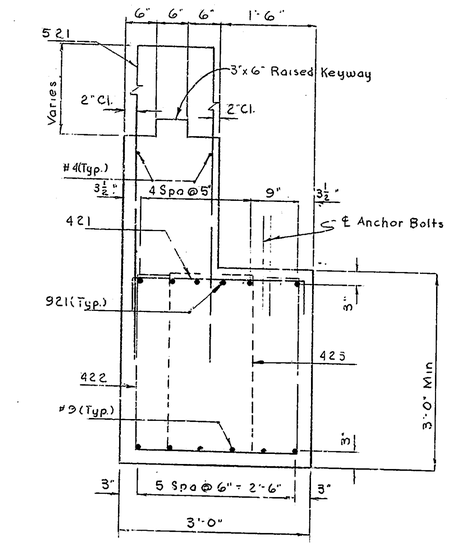
Showing Piles and Reinforcing in Footing.

Showing Neat Lines and Reinforcing extending into Footing

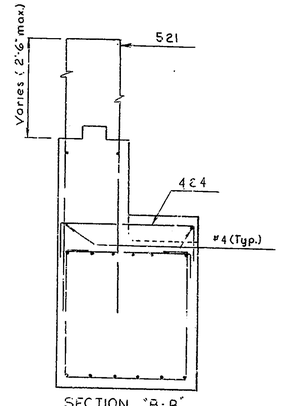
FOOTING PLAN
Scale ¼" = 1'-0"



SECTION "D-D"
Scale ⅜" = 1'-0"

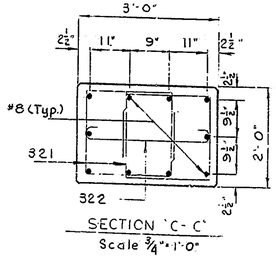


SECTION "A-A"
Scale 1" = 1'-0"

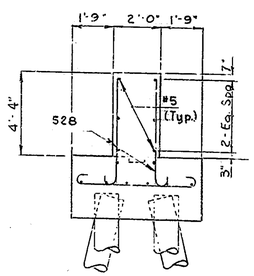


SECTION "B-B"
Scale ¾" = 1'-0"

Note: Section "B-B" Same as Section "A-A" except as noted

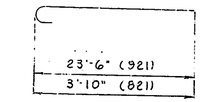


SECTION "C-C"
Scale ¾" = 1'-0"

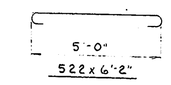


SECTION "E-E"
Scale ⅜" = 1'-0"

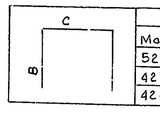
NOTES:
For Reinf Bar Notes See Br Std C1
For Additional Notes See Drwg S8



921 x 24'-9"
821 x 4'-11"



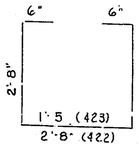
522 x 6'-2"



Mark	Dimensions B	C	Length
521	4'-9"	1'-2"	10'-8"
421	6"	2'-8"	3'-8"
424	9"	2'-8"	4'-2"

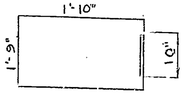
6"10 (523)	
6'-6 (524)	
6'-2" (525)	
5'-10" (526)	
5'-6" (527)	
5'-2" (528)	
4'-10" (529)	

523 x 7'-5"
524 x 7'-1"
525 x 6'-9"
526 x 6'-5"
527 x 6'-1"
528 x 5'-9"
529 x 5'-5"

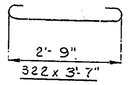


2'-8" (422)

422 x 9'-0"
423 x 7'-9"



321 x 8'-0"



322 x 3'-7"

BRIDGES OVER 20' SPAN

PUB. ROAD RES. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-18 (7)	1962	93	160

BILL OF MATERIALS

REINFORCING STEEL			
Mark or Size	Length	No	Weight
921	24'-9"	24	
#9	23'-6"	24	
Total #9	Bars		3937
821	4'-11	80	
#8	18'-0"	10	
#8	17'-9"	10	
#8	17'-6"	10	
#8	17'-3"	10	
#8	16'-8	10	
#8	15'-8"	10	
#8	14'-8"	10	
#8	13'-8"	10	
Total #8	Bars		4552
521	10'-8"	68	
522	6'-2"	116	
523	7'-5"	10	
524	7'-1"	10	
525	6'-9"	10	
526	6'-5"	10	
527	6'-1	10	
528	5'-9"	10	
529	5'-5"	10	
#5	29'-4"	22	
Total #5	Bars		2644
421	3'-8"	78	
422	9'-0"	58	
423	8'-3"	12	
424	4'-2	41	
#4	22'-2"	8	
#4	18'-4"	40	
#4	7'-8	24	
#4	6'-2"	2	
#4	5'-0	2	
#4	2'-0"	44	
Total #4	Bars		1525
321	8'-0"	246	
322	3'-7"	123	
Total #3	Bars		906
Total Reinf Steel			13564

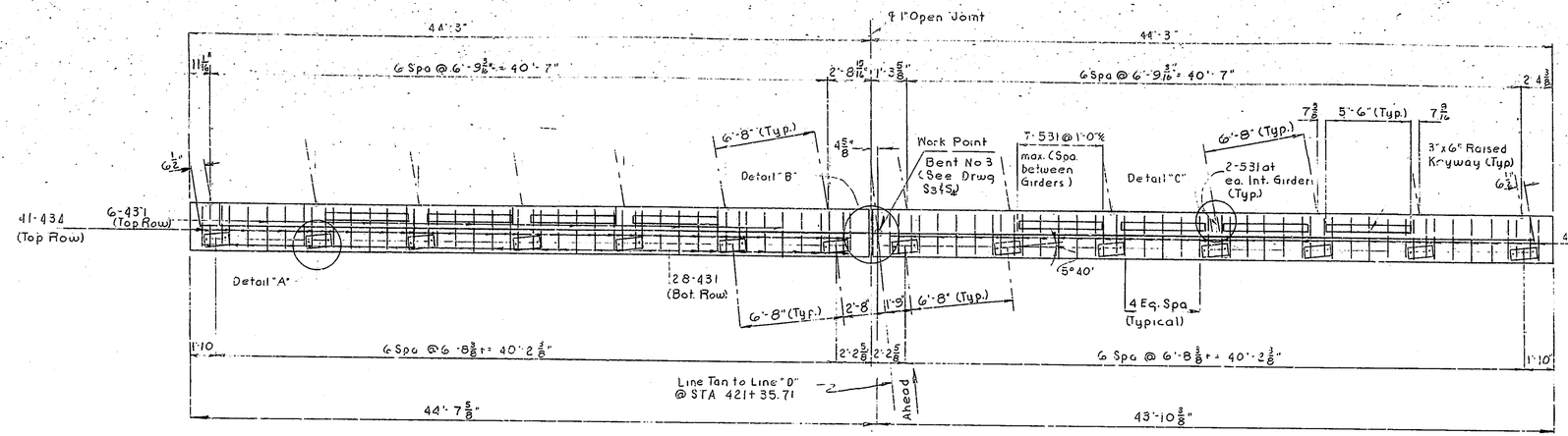
CONCRETE		
Class "F" Conc (Cap)	40.1	Cu.Yd
Class "D" Conc (Col.)	16.7	Cu.Yd
Class "E" Conc. above Footing	31.3	Cu.Yd
Class "E" Conc. in Footing	44.1	Cu.Yd
MISCELLANEOUS		
36-Treated Timber Piles @ 30'-0"	1080	Lin.Ft.

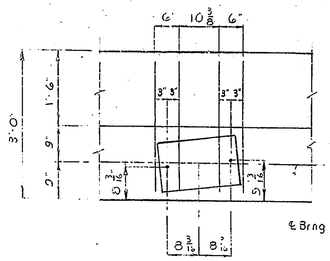
DESIGNED AJT C'K'D RE
DRAWN AJT C'K'D RE
TRACED C'K'D

BENT NO. 2 DETAILS
STATE HIGHWAY DEPARTMENT OF INDIANA

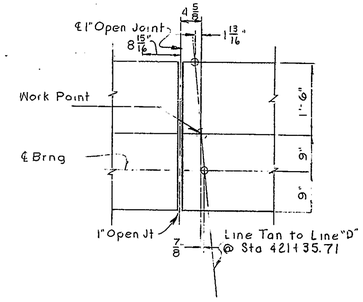
SCALE:- As Noted
JUNE 5, 1962
SUBMITTED FOR APPROVAL:- Chas. W. Good Jr.
DRAWING:- S9 OF 21
PROJECT:- US-18! (7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:-23-DD9-4994

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	94	160

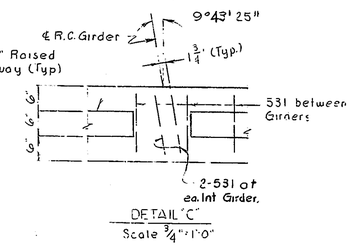




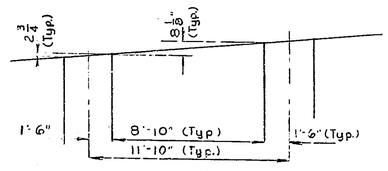
DETAIL "A"
Scale 3/4" = 1'-0"



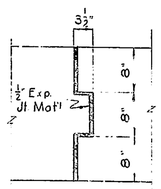
DETAIL "B"
Scale 3/4" = 1'-0"



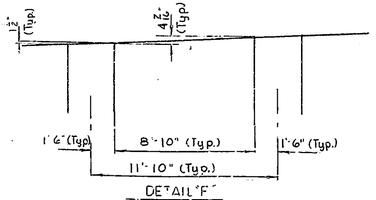
DETAIL "C"
Scale 3/4" = 1'-0"



DETAIL "E"
Typical Left Half Elevation as Shown



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



DETAIL "F"
Typical Right Half Elevation as Shown

Notes:
See Drwg S11 for Sec. A-A" Sec. B-B" Sec. D-D" Sec. E-E, Reinforcing Bar Details, and Bill of Materials.
See Drwg S5 for Additional Notes
See Drwg S5 for Geometrics

BENT NO. 3 DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

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

JUNE 5, 1962

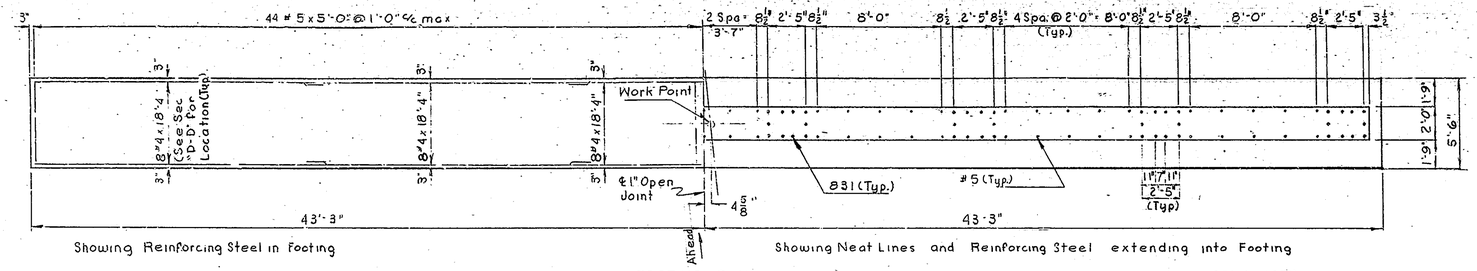
SUBMITTED FOR APPROVAL:- Chas. Lofton

DRAWING:- S10 OF 21
PROJECT:- US-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

DESIGNED	AJT	C'K'D	RE
DRAWN	AJT	C'K'D	RE
TRACED		C'K'D	

BRIDGES OVER 20' SPAN

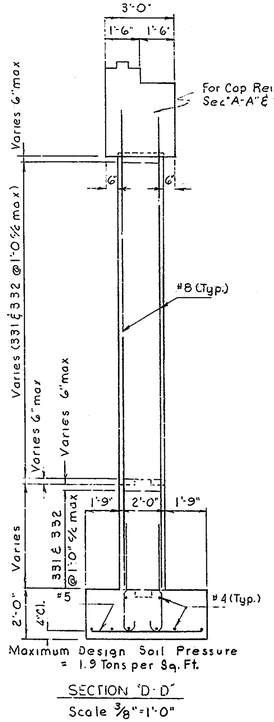
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	95	160



Showing Reinforcing Steel in Footing

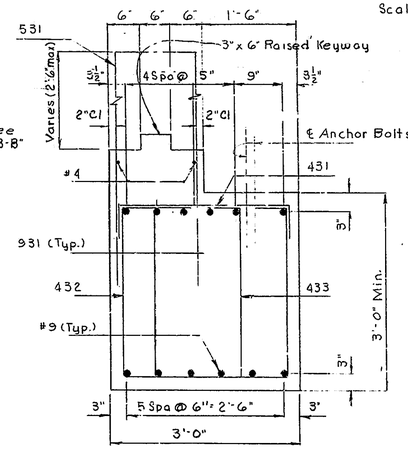
Showing Neat Lines and Reinforcing Steel extending into Footing

FOOTING PLAN
Scale ¼" = 1'-0"

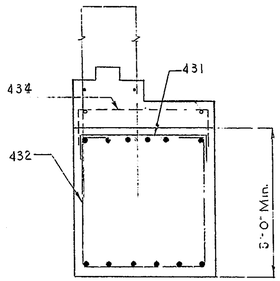


Maximum Design Soil Pressure = 1.9 Tons per Sq. Ft.

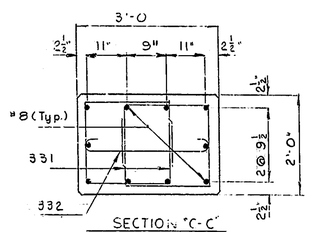
SECTION "D-D"
Scale ⅜" = 1'-0"



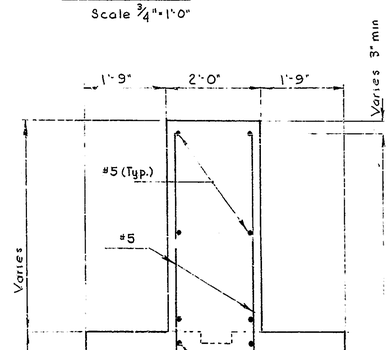
SECTION "A-A"
Scale 1" = 1'-0"



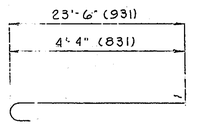
SECTION "B-B"
Scale ¾" = 1'-0"



SECTION "C-C"
Scale ¾" = 1'-0"

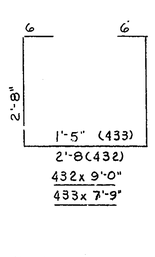


SECTION "E-E"
Scale ¾" = 1'-0"

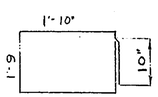


931 x 24'-9"
831 x 5'-5"

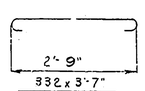
Mark	Dimensions		
	B	C	Length
531	4'-11	1'-2"	11'-0"
431	6"	2'-8"	3'-8"
434	9"	2'-8"	4'-2"



2'-8" (432)
432 x 9'-0"
433 x 7'-9"



331 x 8'-0"



332 x 3'-7"

BILL OF MATERIALS

REINFORCING STEEL

Mark or Size	Length	No	Weight
931	24'-9"	24	
#9	23'-6	24	
Total #9	Bars		3937
831	5'-5"	80	
#8	19'-8"	10	
#8	19'-2"	10	
#8	18'-8"	10	
#8	18'-2"	10	
#8	17'-5"	10	
#8	16'-7"	10	
#8	15'-8"	10	
#8	14'-9"	10	
Total #8	Bars		4897
531	11'-0"	76	
#5	29'-4"	18	
#5	6'-1	10	
#5	5'-9"	10	
#5	5'-5	10	
#5	5'-1	10	
#5	5'-0"	87	
#5	4'-9	10	
#5	4'-5	10	
#5	4'-1	10	
Total #5	Bars		2247
431	3'-8"	80	
432	9'-0"	58	
433	7'-9"	12	
434	4'-2"	41	
#4	21'-11"	8	
#4	18'-4"	40	
#4	7'-9"	22	
#4	6'-0	2	
#4	5'-3	2	
#4	1'-6	40	
Total #4	Bars		1497
331	8'-0	274	
332	3'-7"	137	
Total #3	Bars		1009
Total Reinf Steel			13587

CONCRETE

Class "F" Conc (Cap)	36.8 Cu.Yd
Class "D" Conc (Col)	20.7 Cu.Yd
Class "E" Conc. above Footing	23.0 Cu.Yd
Class "E" Conc in Footing	35.2 Cu.Yd

DESIGNED AJT C'K'D RE
DRAWN AJT C'K'D RE
TRACED C'K'D

Note:
For Reinf. Bar Notes See Br. Std C1
For Additional Notes See Drwg S10

BENT NO 3 DETAILS

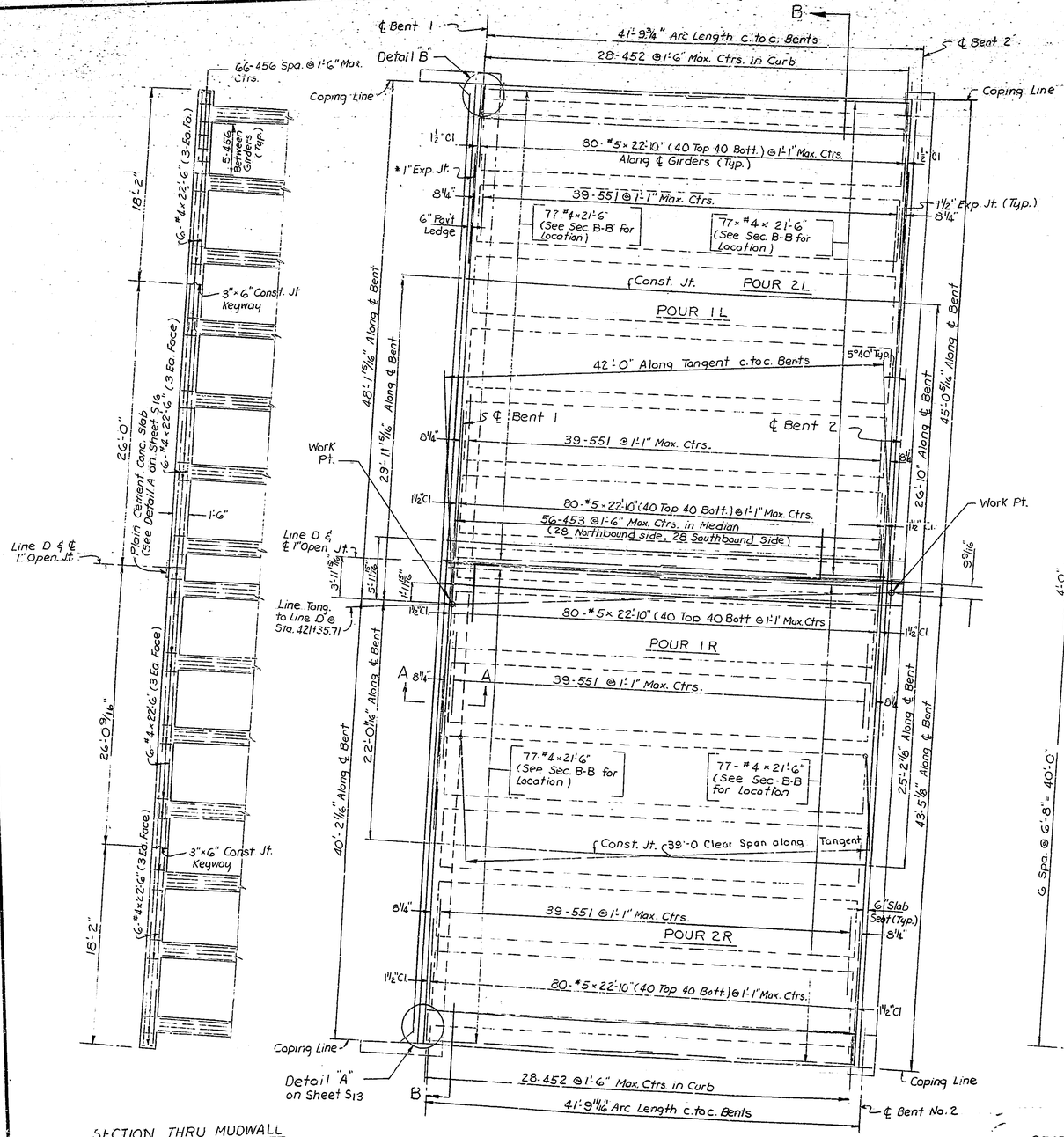
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- As Noted JUNE 5, 1962

SUBMITTED FOR APPROVAL:- [signature]

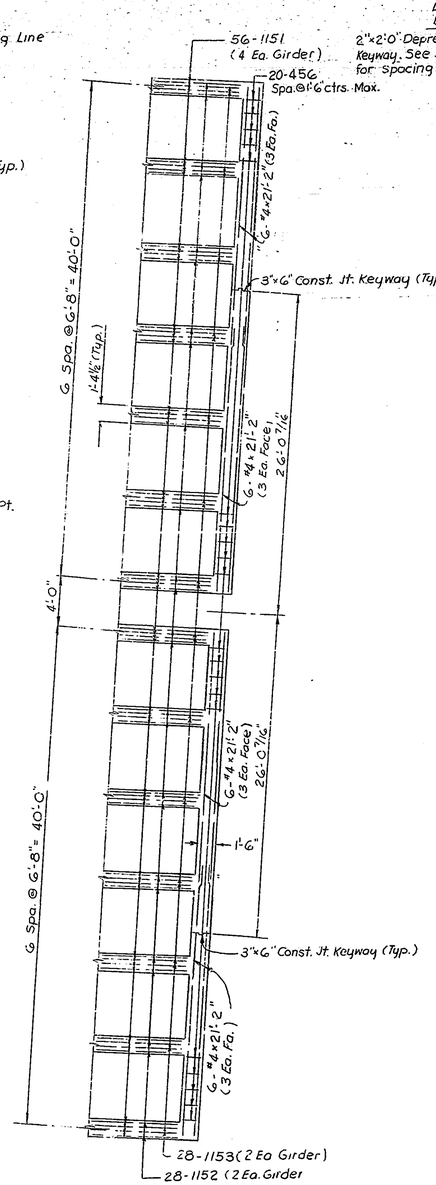
DRAWING:- S11 OF 21
PROJECT:- US-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	U.S.181 (7)	1962	96	160

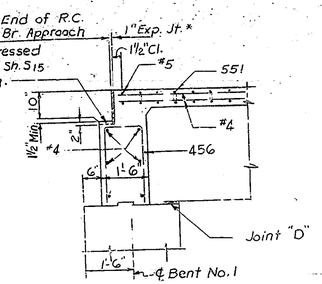


SECTION THRU MUDWALL

PLAN-SPAN A



SECTION THRU CURTAINWALL



SECTION A-A
scale ½" = 1'-0"

DESIGN DATA:
Unit Stresses: fs = 20000 Lbs./Sq. In.
fc = 1200 Lbs./Sq. In.
Live Load: H20-S16-44 with impact, with distribution in accordance with 1957 A.A.S.H.O. Specifications.
Dead Load: Increased 35 Lbs./Sq. Ft. for future wearing surface.
Slab designed for 16000 Lb. wheel load with ¼ inch wearing surface.
D.L. Deflection (Max.) = 5/16"

Notes: Conc. Girders are parallel to chord of Line D between ℄ Bents 1 & 2 in Span A

Coping Line, Gutter Line, Const. Jts. & 1" open Jt. are on arc of curve.
See Sheet S3&4 for Geometrics.
See Br. Std. C1 for Reinforcing Bar Notes.
After structural steel has been erected concrete forms shall not be blocked against the expansion end of the steel in making any pours adjacent to steel spans.
See Drwg. S15 for Details "A" & "B"
* Not Included in Bridge Contract.
See Drwg. S17 for spacing of 2"x2'-0" Keyways.

SPAN A DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

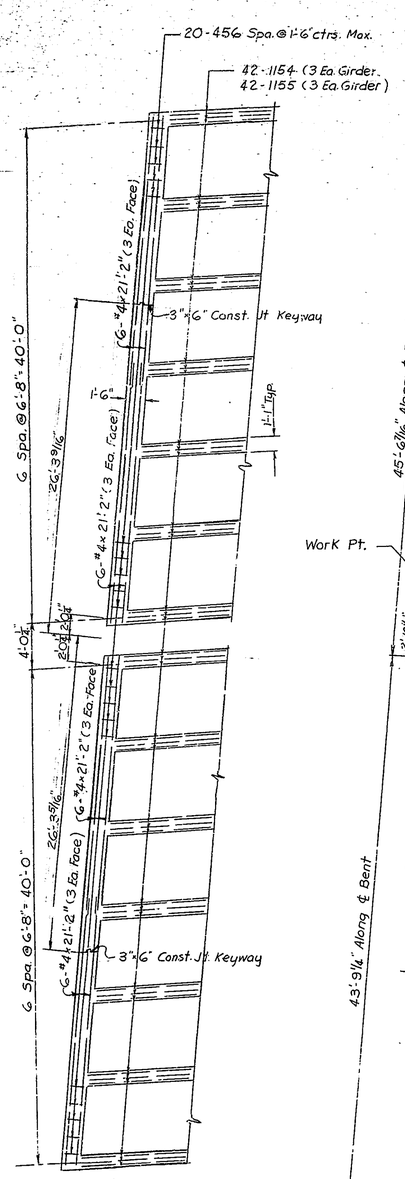
SCALE:- 3/16" = 1'-0" UNLESS NOTED — JUNE 5, 1962

SUBMITTED FOR APPROVAL:- Edward Arbogast Jr.

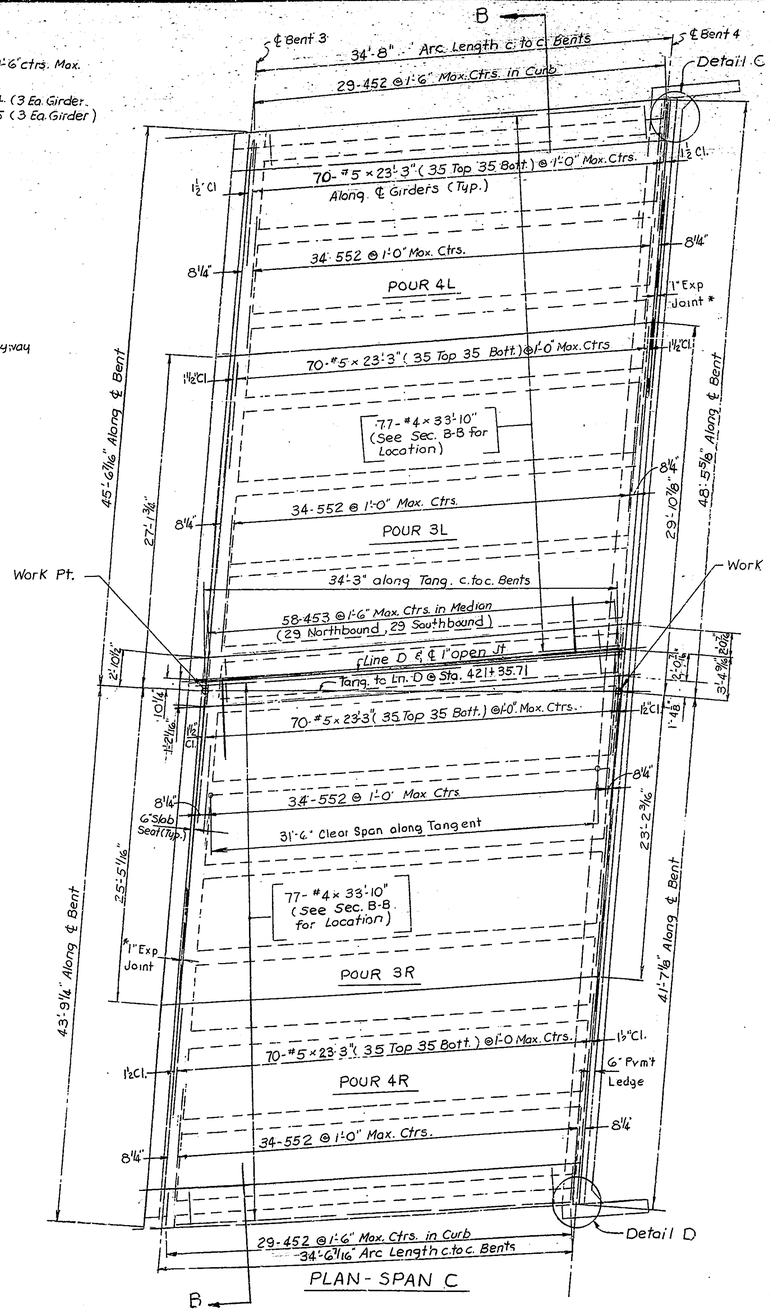
DRAWING:- S12 OF 21
PROJECT:- U.S-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

DESIGNED	AJT	C'K'D	RT
DRAWN	KT 10-61	C'K'D	AJT
TRACED		C'K'D	

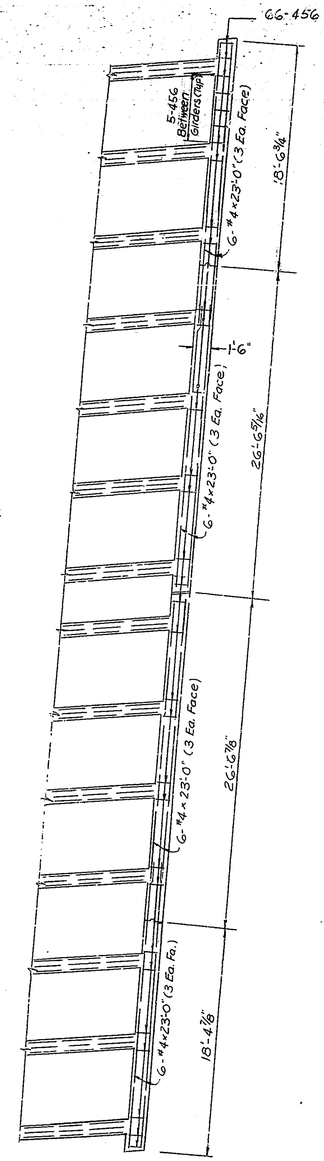
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	U.S. 181 (7)	1962	97	160



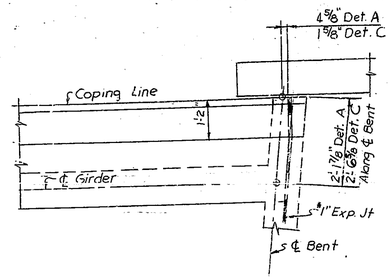
SECTION THRU CURTAINWALL



PLAN - SPAN C



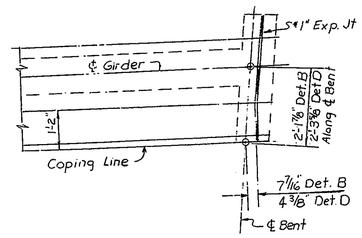
SECTION THRU MUDWALL



DETAIL C - SPAN C SHOWN

Detail A - Span A similar by 180° Rotation

Scale 1½" = 1'-0"



DETAIL D - SPAN C SHOWN

Detail B - Span A similar by 180° Rotation

Scale 1½" = 1'-0"

Note:
Concrete girders are parallel to chord of Line "D" between ℄ Bents 3 & 4 in Span C.
For additional notes see Drwg. S12
*Not Included in Bridge Contract
See Drwg. S15 for Spacing of 2"x2'-0" Keyways.
See Drwgs. S3 & S4 for Geometrics.

SPAN C DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- 3/16" = 1'-0" UNLESS NOTED

JUNE 5, 1962

SUBMITTED FOR APPROVAL:- Chas. D. Todd

DRAWING:- S13 OF 21

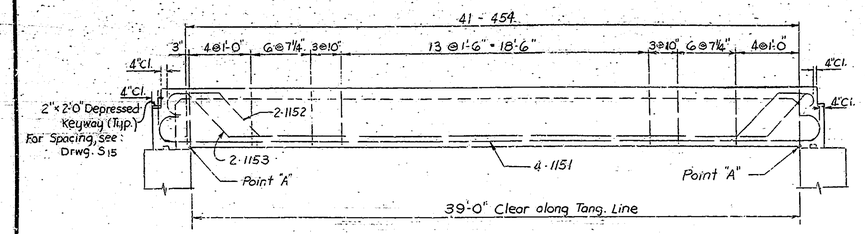
PROJECT:- U.S.-181(7)

BRIDGE CONTRACT NO. 5701

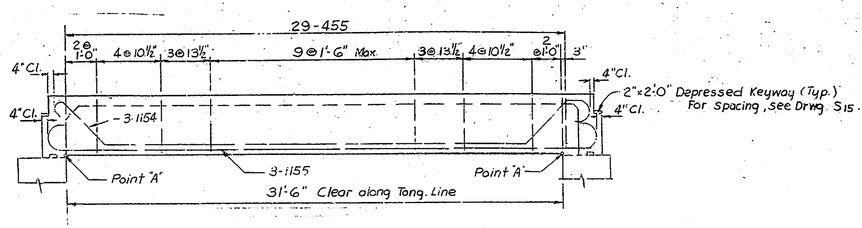
BRIDGE FILE:- 23-DD9-4994

DESIGNED	AJT	C'K'D	RT
DRAWN	RT 10-61	C'K'D	AJT
TRACED		C'K'D	

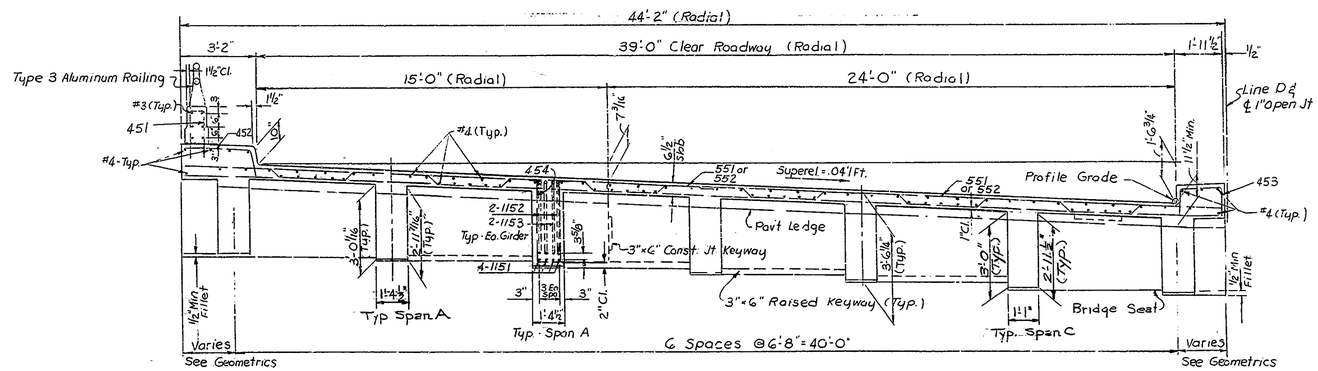
BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	U.S. 181 (7)	1962	98	160



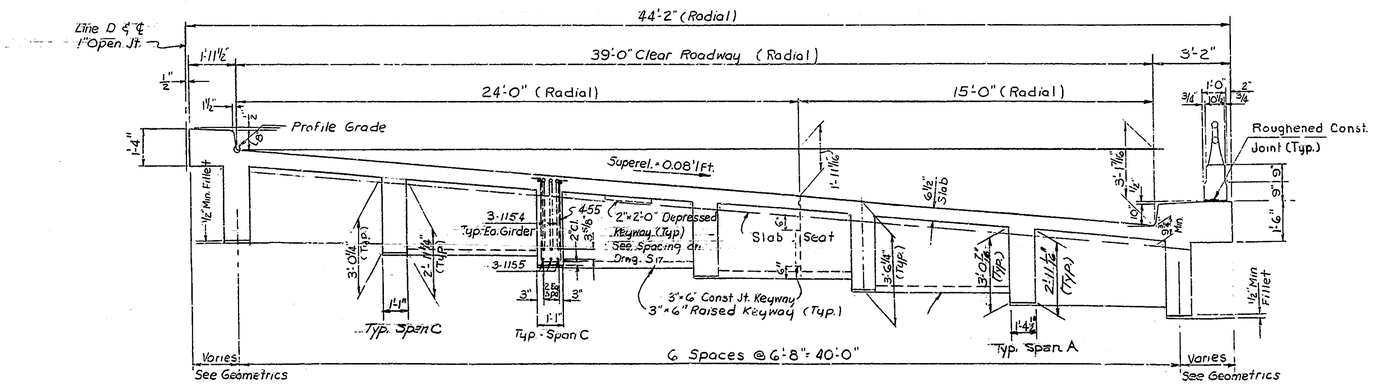
TYPICAL SECTION THRU GIRDER - SPAN A
Scale 1/4" = 1'-0"



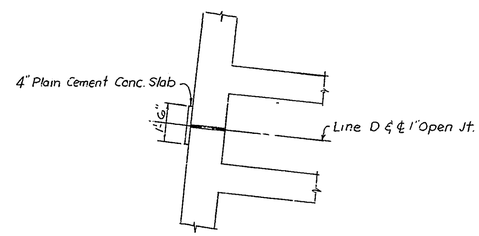
TYPICAL SECTION THRU GIRDER - SPAN C
Scale 1/4" = 1'-0"



HALF SECTION B-B
(Showing Reinforcing Steel)
Scale 3/8" = 1'-0"



HALF SECTION B-B
(Showing Dimensions)
Scale 3/8" = 1'-0"



DETAIL A

SPAN A & SPAN C DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

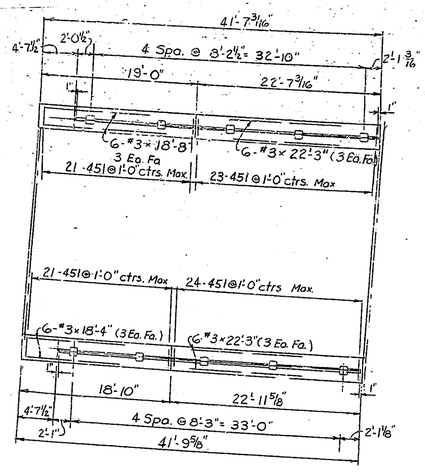
SCALE:- AS NOTED — JUNE 5, 1962

SUBMITTED FOR APPROVAL:- Charles E. Cockerham

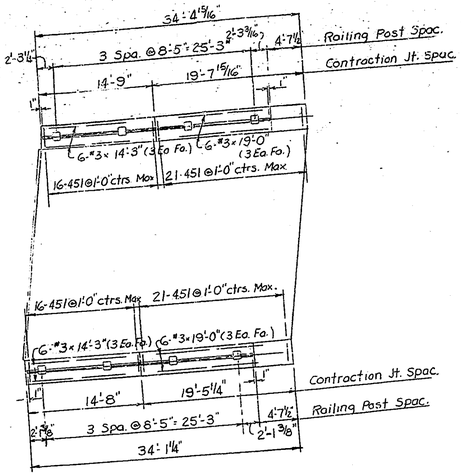
DRAWING:- S14 OF 21
PROJECT:- U.S. 181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

DESIGNED	AJT	C'K'D	RT
DRAWN	RT 10-61	C'K'D	AJT
TRACED		C'K'D	

BRIDGES OVER 20' SPAN					
PUB. ROAD RTE. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	U.S. 181 (7)	1962	99	160



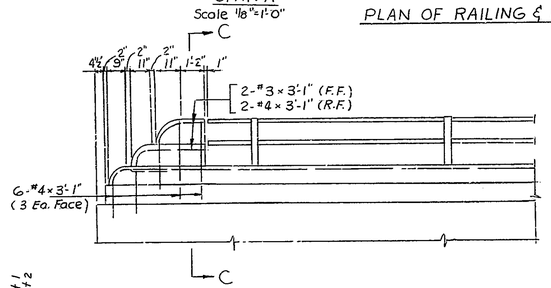
SPAN A



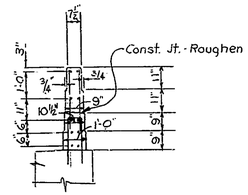
SPAN C

PLAN OF RAILING & PARAPET

SPAN A Scale 1/8"=1'-0"

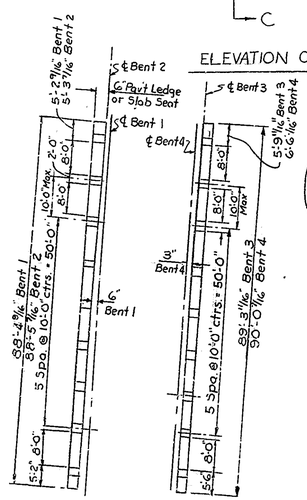


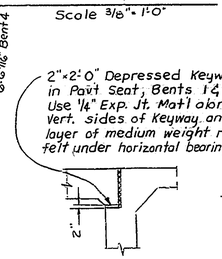
SPAN C Scale 1/8"=1'-0"



ELEVATION OF RAILING & PARAPET

Scale 3/8"=1'-0"

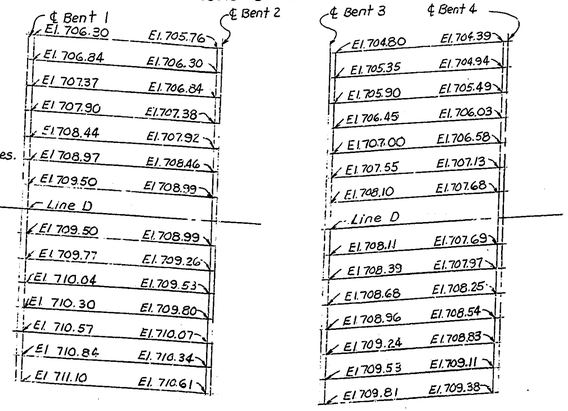




DETAIL SHOWING DEPRESSED KEYWAY IN APPROACH PAVT SEAT - BENTS 1 & 4

SECTION C-C

Scale 3/8"=1'-0"



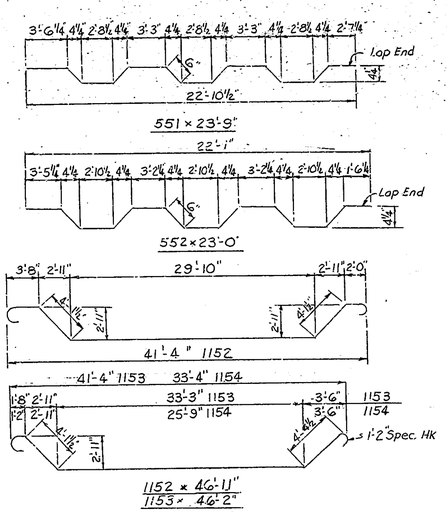
SPAN A SPAN C

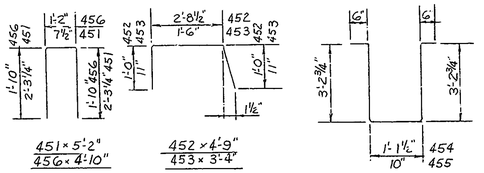
BOTTOM OF GIRDER (POINT A) ELEVATIONS

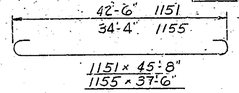
SPACING OF 2"x2'0" DEPRESSED KEYWAYS

Scale 1/16"=1'-0"

DESIGNED AJT 10-61 CK'D RT 10-61
DRAWN RT 10-61 CK'D AJT 10-61
TRACED CK'D







1151 x 45'-8"
1155 x 37'-6"

Mark or Size	Length	SPAN A No.	SPAN A Weight	SPAN C No.	SPAN C Weight	TOTAL Weight
1151	45'-8"	56				
1152	46'-11"	28				
1153	46'-2"	28				
1154	38'-2"			42		
1155	37'-6			42		
Total Wt. # 11 Bars			27435		16885#	44320
551	23'-9"	156				
552	23'-0"			136		
5"	23'-3"			280		
5"	22'-10"	320				
Total Wt. # 5 Bars			11485		10053	21538
451	5'-2"	89		74		
452	4'-9"	56		38		
453	3'-4"	56		58		
454	8'-7"	574				
455	8'-4"			406		
4	21'-2"	24		24		
4	22'-6"	24				
4	23'-0"			24		
4	33'-10"			154		
4	21'-6"	308				
4	3'-1"	16		16		
456	4'-10"	86		86		
Total Wt. # 4 Bars			9335		7328	16663
3	14'-3"			12		
3	18'-8"	6				
3	19'-0"			12		
3	22'-3"	12				
3	18'-4	6				
3	3'-1"	4		4		
Total Wt. # 3 Bars		189		155		344
Total Reinf. Steel		48444		34421		82865

	Span A	Span C
Class F Concrete	200.2 C.Y.	156.8 C.Y.
Railing Concrete	4.4 C.Y.	3.6 C.Y.
Aluminum Railing (Type 3)	73.8 Lin. Ft.	58.8 Lin. Ft.
2" ϕ Steel Conduit	83.3 Lin. Ft.	68.3 Lin. Ft.

CLASS F CONC. POURS

POUR	AMOUNT
1L	56.5 C.Y.
1R	56.5 C.Y.
2L	43.6 C.Y.
2R	43.6 C.Y.
3L	44.5 C.Y.
3R	44.5 C.Y.
4L	33.9 C.Y.
4R	33.9 C.Y.

NOTE:
For Reinforcing Bar Notes, see Br. Std. C1.

SPANS A & C DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- AS NOTED JUNE 5, 1962

SUBMITTED FOR APPROVAL:- Edward Arnold Jr.

DRAWING:- S15 OF 21
PROJECT:- U.S.-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

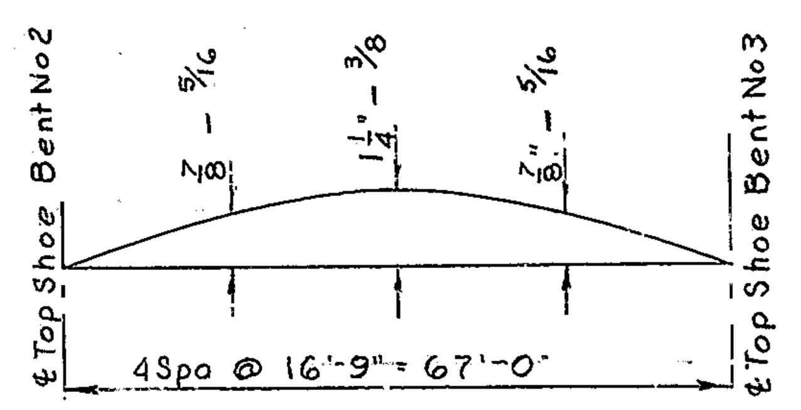
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	100	160

TABLE OF STRESSES & REACTIONS

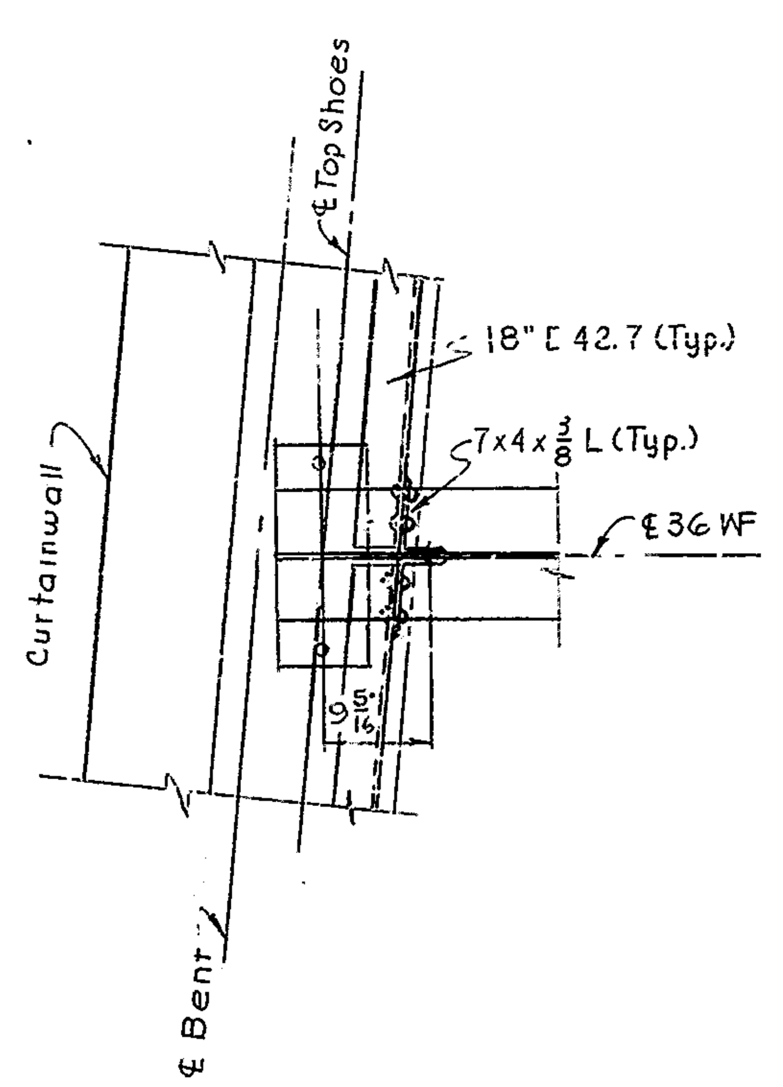
	Bm No 1		Bms No 2 to 6		Bm No 7	
	fs (Top)	fs (Bot)	fs (Top)	fs (Bot)	fs (Top)	fs (Bot)
D.L	11.66	8.78	10.54	7.93	14.44	10.64
D.L.c	1.00	1.79	1.35	1.97	0.70	1.61
LL+I	1.74	8.62	3.23	10.04	0.82	7.70
Total fs	14.40	19.19	15.12	19.94	14.96	19.95

	Bm 1	Bms 2 to 6	Bm 7
D.L.	27.7ᴷ	25.1ᴷ	34.5ᴷ
D.L.c	7.6ᴷ	7.6ᴷ	7.6ᴷ
LL+I	38.2ᴷ	53.2ᴷ	35.6ᴷ
Total R	73.5ᴷ	85.9ᴷ	77.1ᴷ

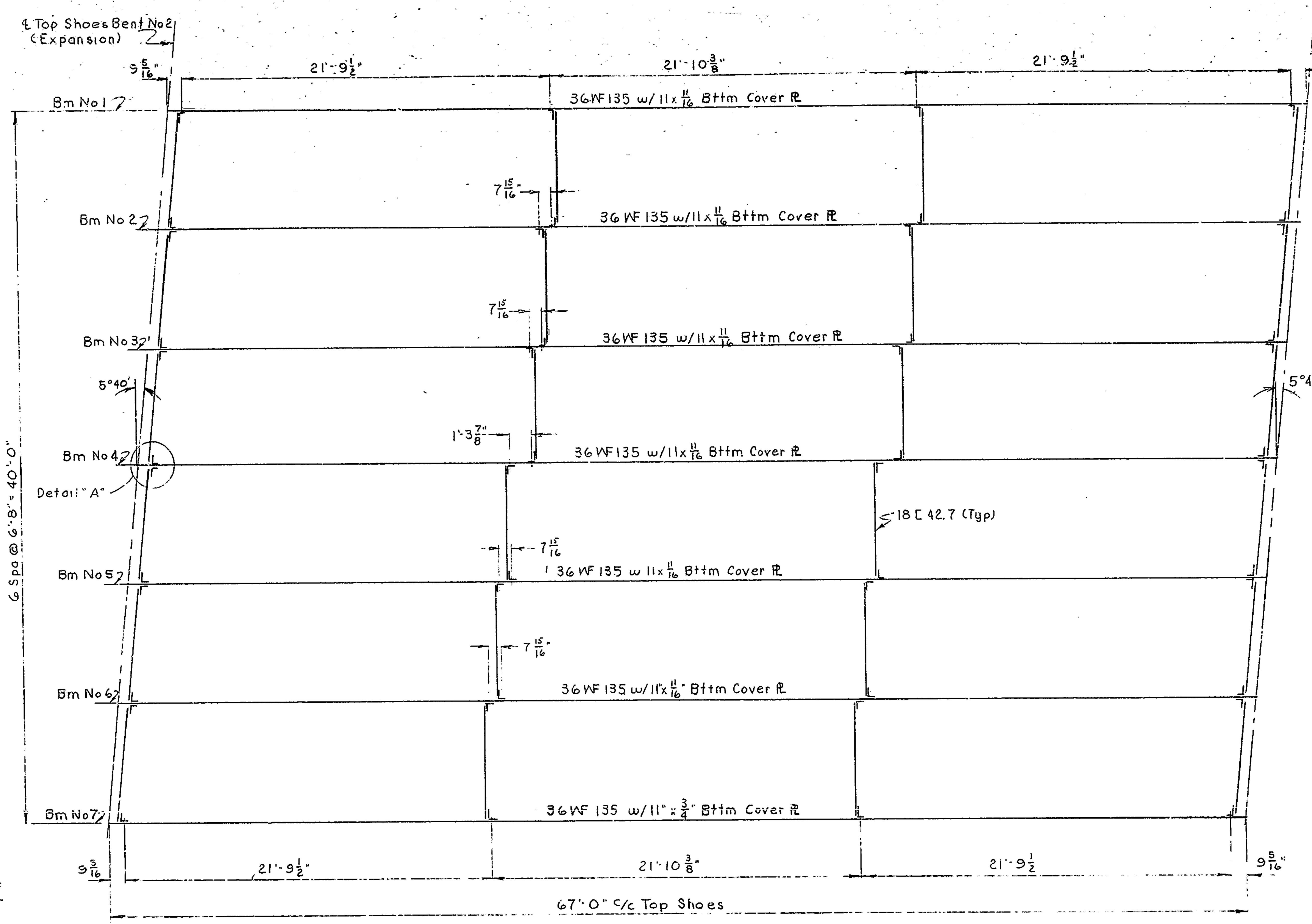
Note
D.L. = Dead Load
D.L.c = Superimposed Dead Load (n=30)
LL+I = Live Load + Imp (n=10)



CAMBER DIAGRAM



DETAIL "Z"
Scale ¾" = 1'-0"



PLAN NORTHBOUND SUPERSTRUCTURE
Scale ¼" = 1'-0"

Southbound Plan Same as Northbound by 180° Rotation

Northbound & Southbound to have Different Erection Marks.

STRUCTURAL NOTES
(1) All rivets ⅞"φ unless noted
(2) Open holes 15/16"φ unless noted
(3) Diameter of holes in all material connecting top shoes to Beam Flanges shall be 1 inch.
(4) 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
(5) Ribbed bolts may be substituted for field rivets in in diaphragm connections. See Specifications.
(6) 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 5 copies of these to the Engineer. See Art 1103.2 of the specifications.
(7) Shims between Beams and Top Shoes may be built up. No Shim shall be less than ⅛" in thickness.
(8) Beams and Cover Plates shall be fabricated from A.S.T.M A-36 steel Remainder of Structural Steel may be fabricated from either A.S.T.M. A-36 or A-7 except Top and Bottom Plates of Rollers, Top Shoes, and Expansion Plates which are from ASTM A-242 Steel
(9) Aluminum Railing, including Anchor Bolts and Post Castings to be paid for as cost per Lin. Ft

DESIGN DATA:
Live Load: H20-S16-44 loading with impact and distribution of loads in accordance with 1957 A.A.S.H.O. Specifications. (n-10)
Dead Load: Actual Weight
Superimposed Dead Load: 35 lbs per sq. ft of Roadway to provide for future wearing surface, actual weight of parapet, and actual weight of Aluminum Railing. (n = 15)
Unit Stresses:

Structural Steel (ASTM A-36) Tension	20 000 psi
(ASTM A-7 (Tension)	18 000 psi
Shear on Rivets (A.S.T.M. A-7)	13 500 psi
Structural Steel Bearing (Including Rivets)	27,000 psi
Bearing - Steel on Concrete (Including Overturning and Eccentric Loading)	1,000 psi
Reinforcing Steel (Tension)	20,000 psi
Concrete (Compression)	1,200 psi

PAINTING STRUCTURAL STEEL
All paint shall be in accordance with current State Highway Specifications.
Shop Paint: One (1) coat Red Lead Type I or II except as noted.
Field Paint: Two (2) coats of Aluminum.

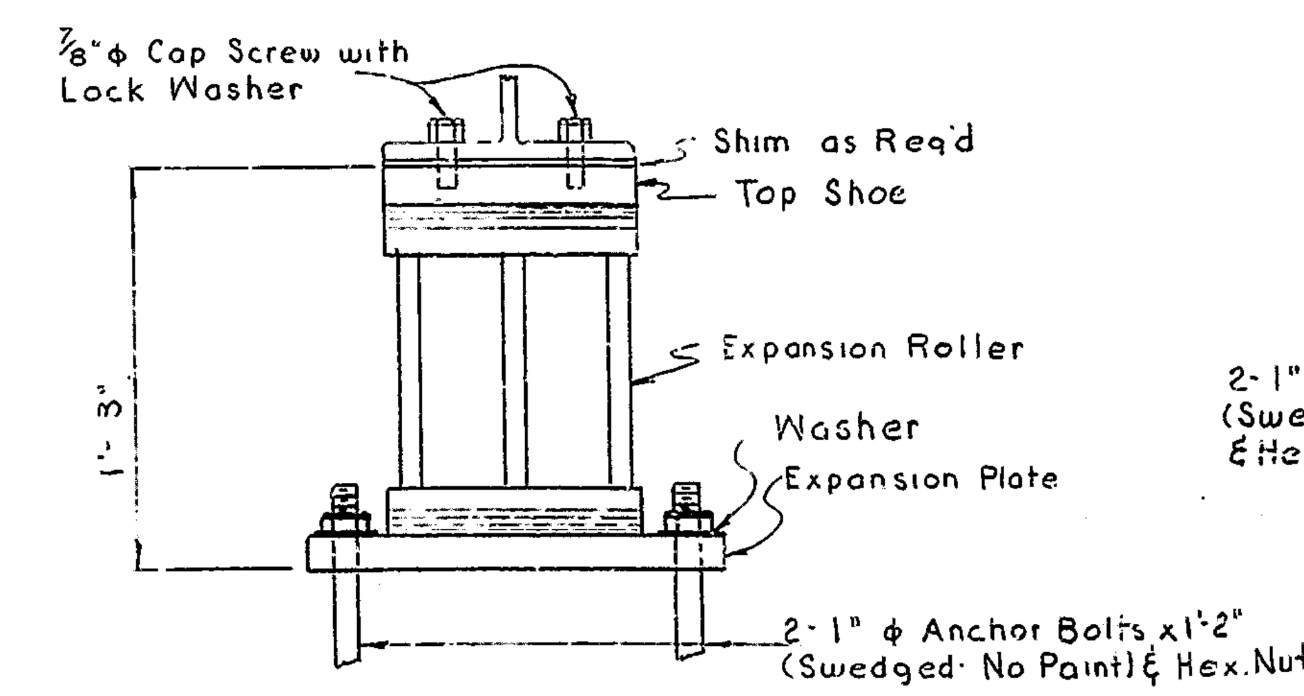
ESTIMATED WEIGHT STRUCTURAL STEEL

A-36 Steel*	143 200 lbs
A-242 Steel	3900 lbs
* A-36 or A-7 Steel	23900 lbs
Total	171000 lbs

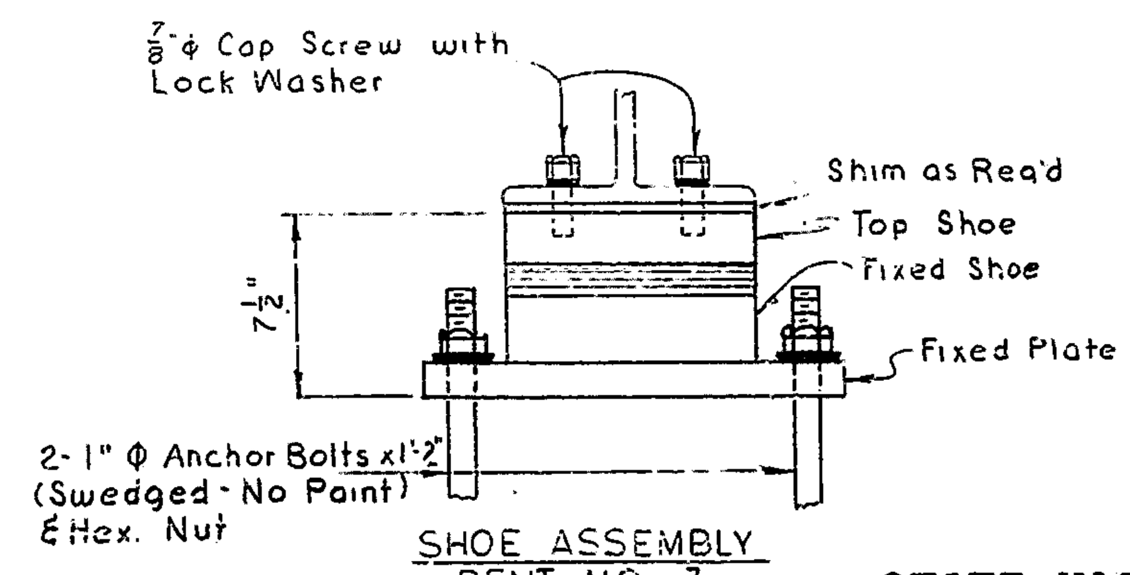
*Includes 3500 lbs for channel shear connectors

TABLE OF SHIM THICKNESS

	Southbound							Northbound						
Bm.	7	6	5	4	3	2	1	1	2	3	4	5	6	7
Bent No 2	0"	0"	3/16"	3/16"	3/16"	3/16"	3/16"	11/16"	3/16"	¼"	0"	0"	0"	5/16"
Bent No 3	3/16"	0"	0"	5/16"	⅛"	⅛"	3/16"	⅝"	0"	3/16"	0"	⅛"	0"	5/16"



SHOE ASSEMBLY - BENT NO 2
Scale 1½" = 1'-0"



SHOE ASSEMBLY
BENT NO. 3
Scale 1½" = 1'-0"

DESIGNED A.J.T.	C'K'D RE	
DRAWN A.J.T.	C'K'D RE	
TRACED	C'K'D	

FRAMING PLAN

STATE HIGHWAY DEPARTMENT OF INDIANA

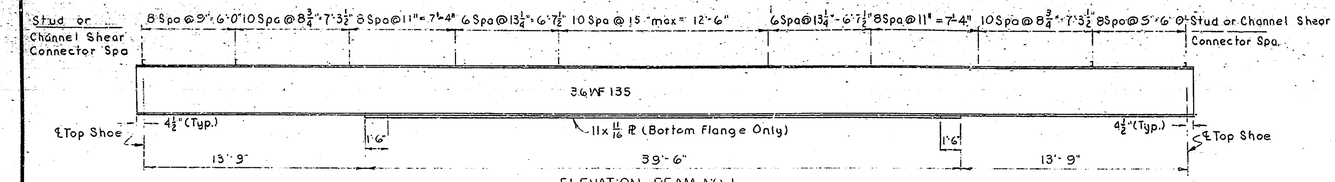
SCALE:- As Noted JUNE 5, 1962

SUBMITTED FOR APPROVAL: [signature]

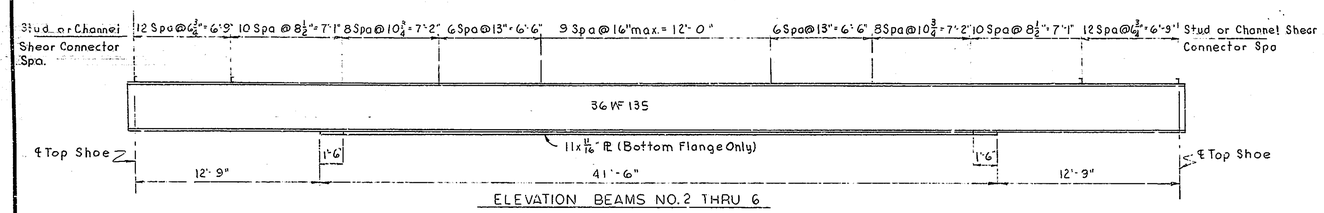
DRAWING:- S16 OF 21
PROJECT:- US-181 (7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

BRIDGES OVER 20' SPAN

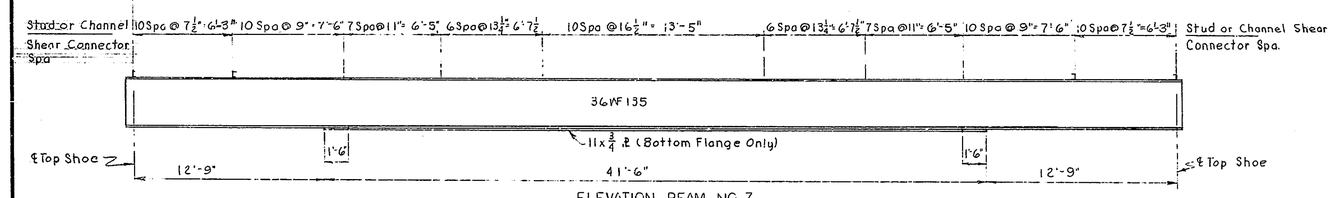
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	101	160



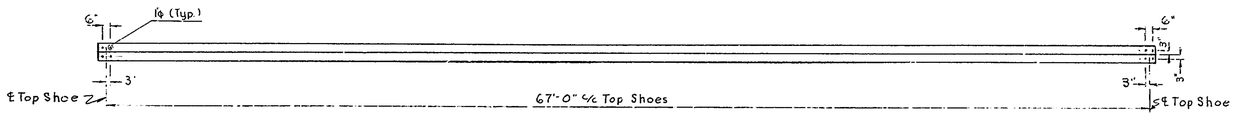
ELEVATION BEAM NO. 1



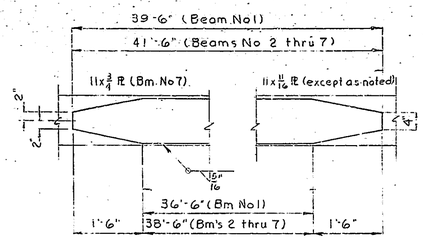
ELEVATION BEAMS NO. 2 THRU 6



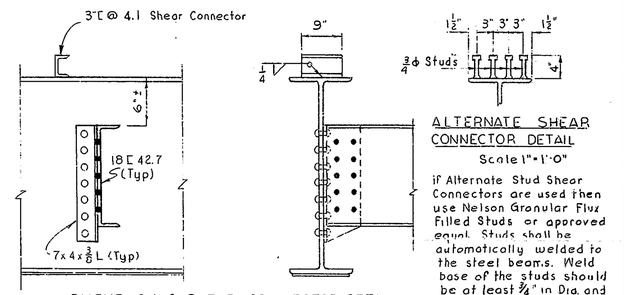
ELEVATION BEAM NO. 7



PLAN - BOTTOM FLANGE OF BEAMS



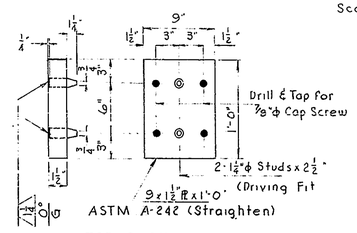
PLAN OF BOTTOM FLANGE COVER PLATE
Scale 3/4" = 1'-0"



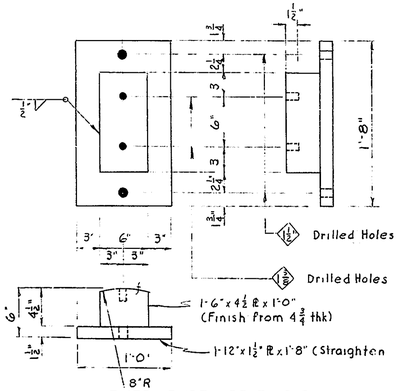
DIAPHRAGM & SHEAR CONNECTOR DETAIL
Scale 1"=1'-0"

ALTERNATE SHEAR CONNECTOR DETAIL
Scale 1"=1'-0"

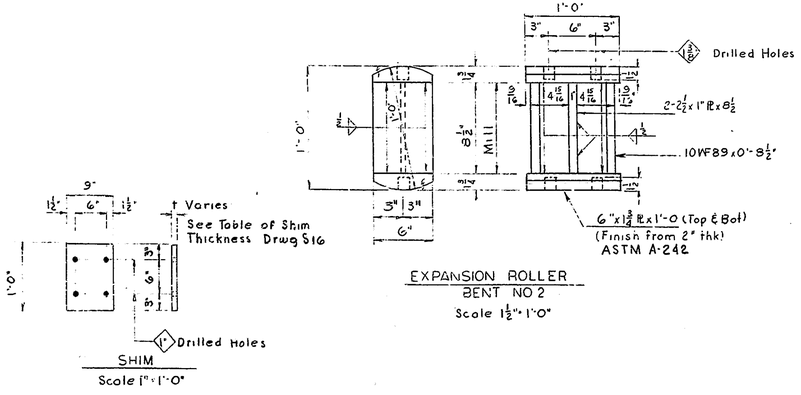
If Alternate Stud Shear Connectors are used then use Nelson Granular Five Filled Studs or approved equal. Studs shall be automatically welded to the steel beams. Weld base of the studs should be at least ¾" in Dia. and are to be welded on centers as shown on the drawing.



TOP SHOE
Scale: 1½"=1'-0"

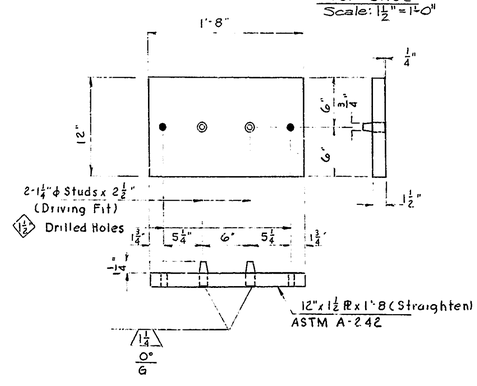


FIXED SHOE - BENT NO. 3
Scale 1½"=1'-0"



EXPANSION ROLLER BENT NO 2
Scale 1½"=1'-0"

SHIM
Scale 1"=1'-0"



EXPANSION PLATE BENT NO 2
Scale 1½"=1'-0"

STRUCTURAL STEEL DETAILS
STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- ¼"=1'-0" Unless Noted JUNE 5, 1962

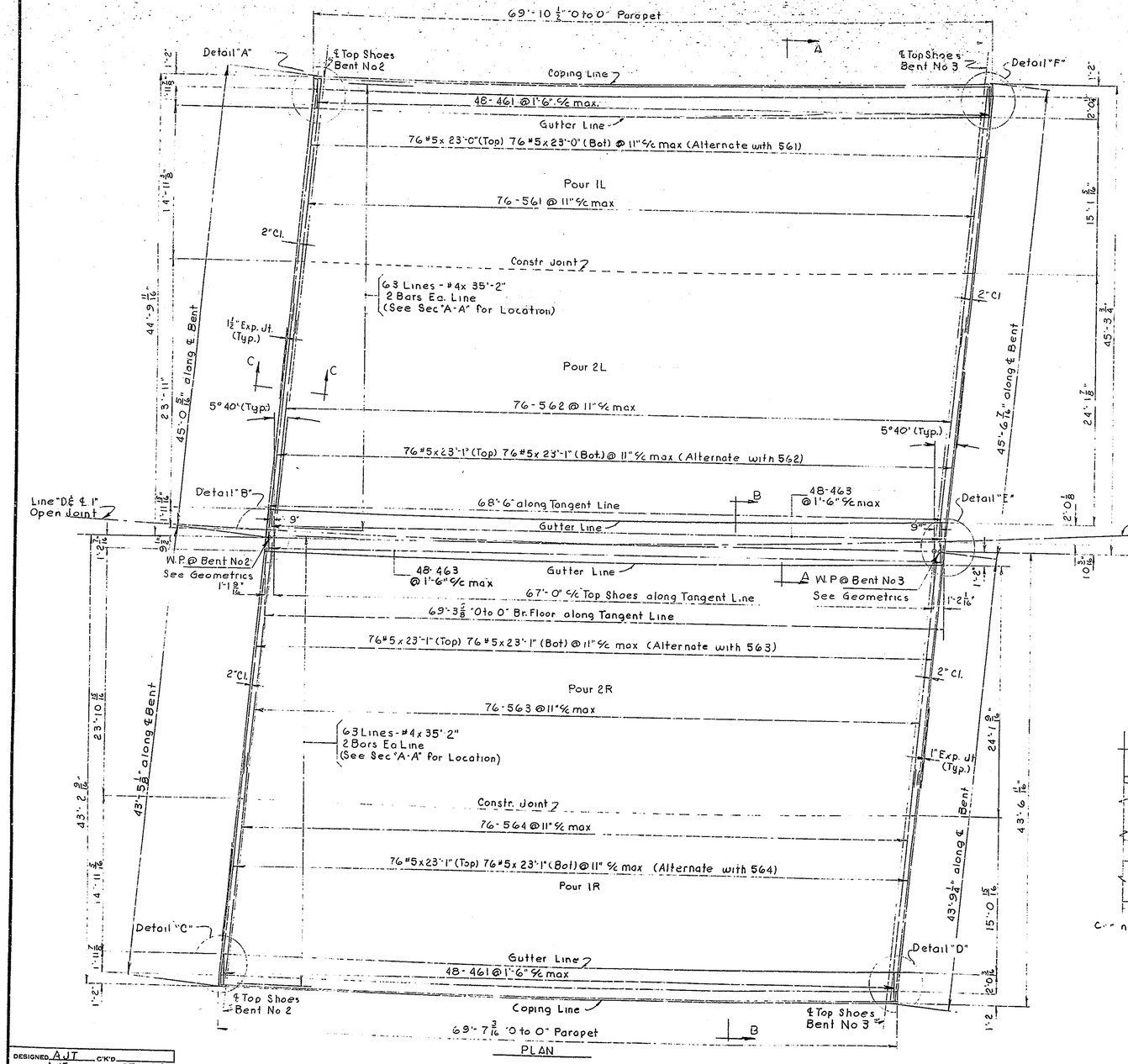
SUBMITTED FOR APPROVAL:- Chas. B. Cook

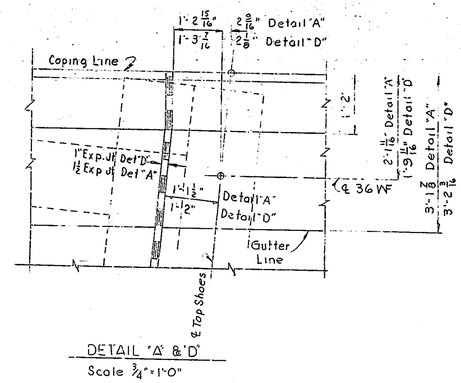
DESIGNED AJT C'K'D RE
DRAWN AJT C'K'D RE
TRACED — C'K'D —

DRAWING:- S17 OF 21
PROJECT:- US-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

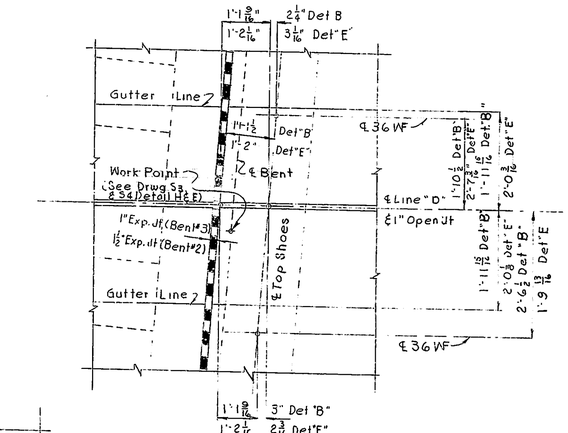
BRIDGES OVER 20' SPAN

PUB. ROAD REQ. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	102	160

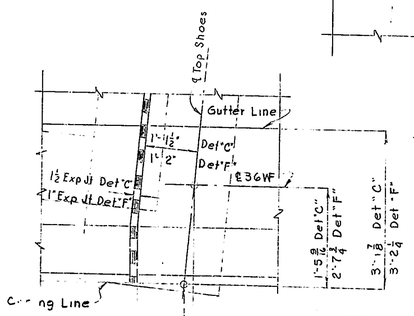




DETAIL 'A' & 'D'
Scale ¾" = 1'-0"



DETAIL 'B' SHOWN
DETAIL 'E' SAME BY 180° ROTATION
Scale ¾" = 1'-0"



DETAIL 'C' & 'F'
Scale ¾" = 1'-0"

NOTES:
See Drwg S1a for Sec. "A-A", Sec "B-B", Sec. "C-C" and Additional Details
See Drwg S1a for Additional Notes.
See Drwg S3 & S3a for Geometrics

SPAN "B" DETAILS
STATE HIGHWAY DEPARTMENT OF INDIANA

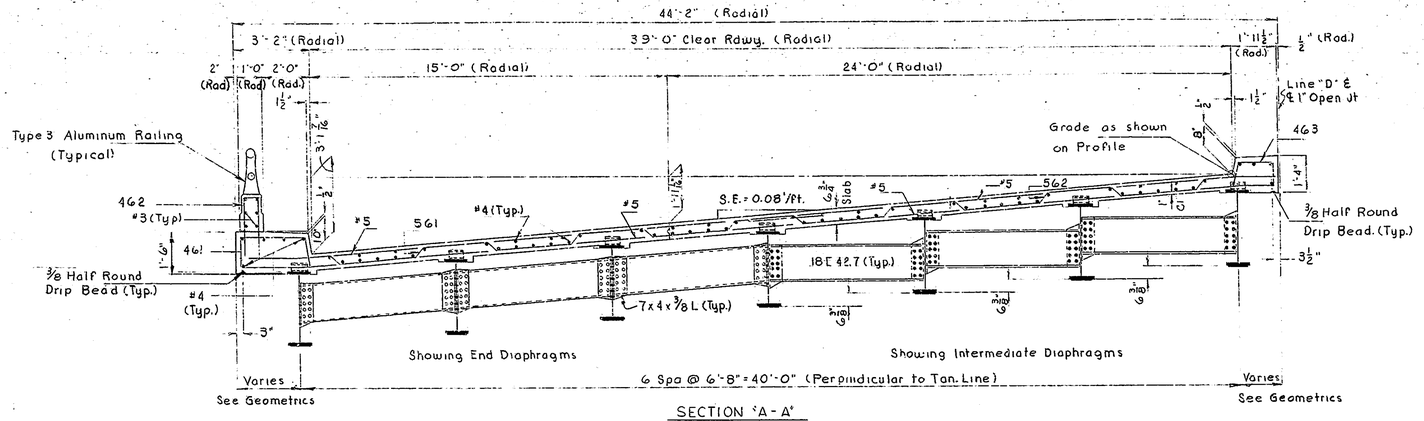
SCALE:- 3/16" = 1'-0" Unless Noted
JUNE 5, 1962

SUBMITTED FOR APPROVAL:- Chas. W. Cook Jr.

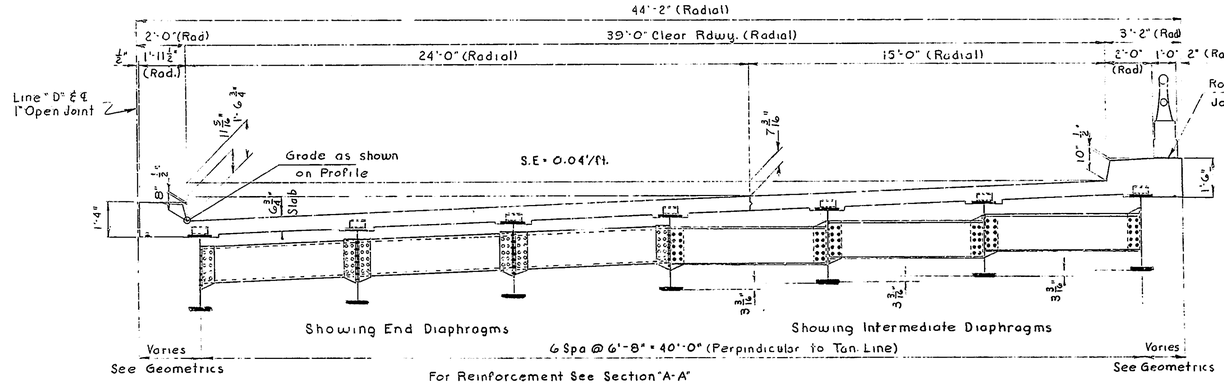
DESIGNED AJT C'K'D
DRAWN AJT C'K'D RT 11-61
TRACED C'K'D

DRAWING:- S1B OF 21
PROJECT:- US-181 (7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

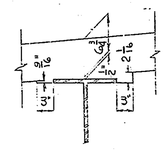
BRIDGES OVER 20' SPAN					
PUB. ROAD REQ. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	103	160



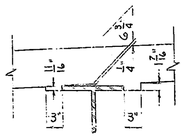
SECTION "A-A"



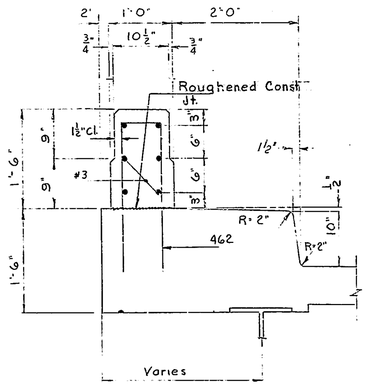
For Reinforcement See Section "A-A"



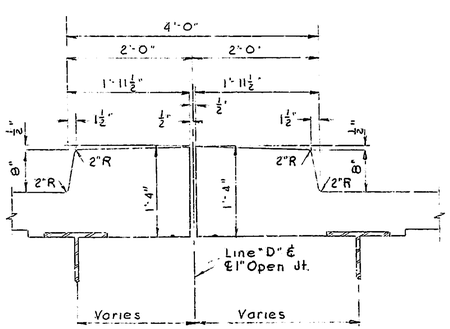
TYPICAL BEAM HAUNCH IN SECTION "A-A"
Scale 1" = 1'-0"



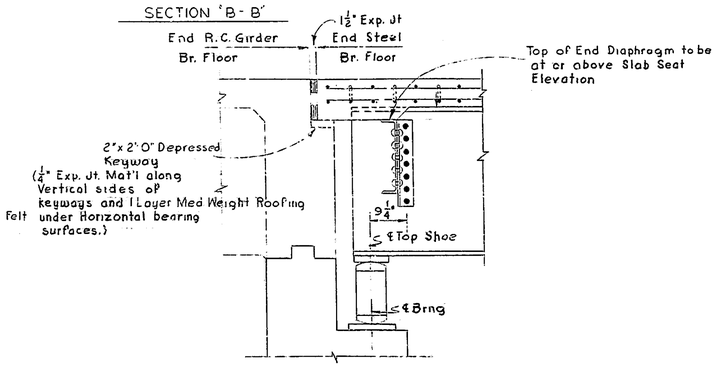
TYPICAL BEAM HAUNCH IN SECTION "B-B"
Scale 1" = 1'-0"



TYPICAL CURB DETAIL
Scale 1" = 1'-0"



TYPICAL MEDIAN DETAIL
Scale 1" = 1'-0"



SECTION "C-C"
Scale ¾" = 1'-0"

NOTES:
See Drwg S2 for General Notes
See Drwg S20 for Reinforcing Bar Details and Bill of Materials
See Br Std C1 for Reinforcing Bar Notes.
See Drwg S20 for Railing Post Spa and Contraction Joint Spa.
See Br. Std R1A for Aluminum Railing and Contraction Joint Details
After Structural Steel has been erected, concrete forms shall not be blocked against the expansion end of the steel in making any pours adjacent to the steel spans.
Anchor Bolts for Aluminum Railing Posts shall be preset in the parapet.
See Br. Std R2 for Bridge Lighting Details

SPAN "B" DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

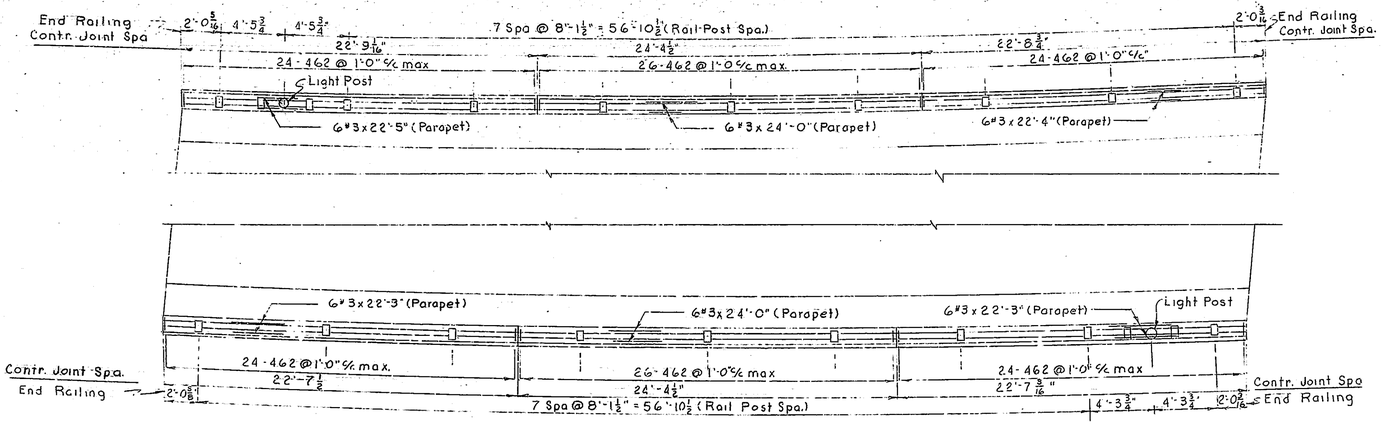
SCALE:- ⅜" = 1'-0" unless Noted — JUNE 5, 1962

SUBMITTED FOR APPROVAL:- Charles Loeb Jr.

DRAWING:- S19 OF 21
PROJECT:- US - 181 (7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

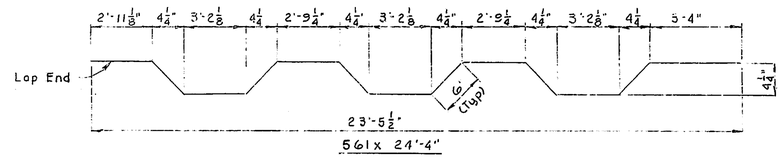
DESIGNED AJT	C'K'D		
DRAWN AJT	C'K'D RMT 11-61		
TRACED	C'K'D		

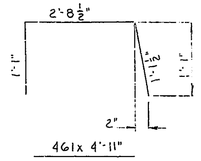
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	104	160



ALUMINUM RAILING AND CONTRACTION JOINT PLAN

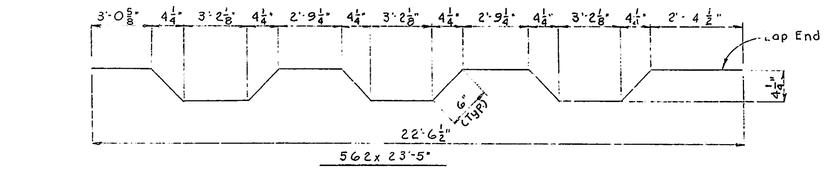
Scale 1/4" = 1'-0"

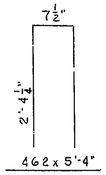


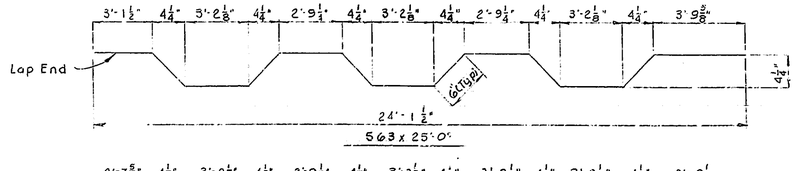


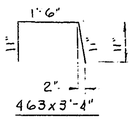
* Total Reinforcing Steel Span "B" Superstructure Only

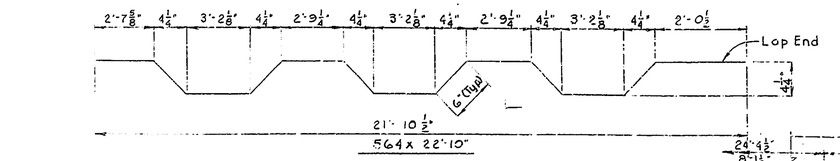
** Includes Additional Reinforcing for Lighting Details

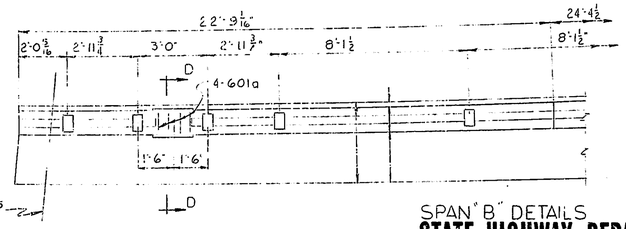






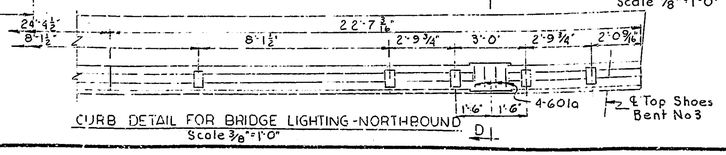






CURB DETAIL FOR BRIDGE LIGHTING - SOUTHBOUND

Scale 3/8" = 1'-0"



CURB DETAIL FOR BRIDGE LIGHTING - NORTHBOUND

Scale 3/8" = 1'-0"

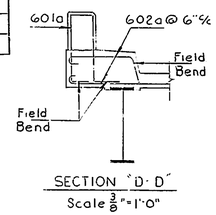
BILL OF MATERIALS

REINFORCING STEEL						
		Northbound		Southbound		
Mark or Size	Length	No	Weight	No	Weight	Total
561	24'-4"			76		
562	23'-5"			76		
563	25'-0"	76				
564	22'-10"	76				
#5	23'-0"	304		304		
Total #5	Bars		11085		11078	22163
461	4'-11	48		48		
462	5'-4"	74		74		
463	3'-4"	48		48		
#4	35'-2"	126		126		
Total #4	Bars		3488		3488	6976
#3	24'-0"	6		6		
#3	22'-5"			6		
#3	22'-4"			6		
#3	22'-3"	12				
Total #3	Bars		155		155	310
Total Reinf. Steel			14728		14721	29449
CLASS "F" CONCRETE						
Pour 1 L				33.8 Cu.Yd		
Pour 2 L				41.8 Cu.Yd		
Pour 1 R		33.9 Cu.Yd				
Pour 2 R		42.1 Cu.Yd				
Total		76.0 Cu.Yd		75.6 Cu.Yd		151.6 Cu.Yd
MISCELLANEOUS						
Railing Concrete		3.6 Cu.Yd.		3.6 Cu Yd		7.2 Cu.Yd.
Alum. Railing (Type 3)		69.6 Lin. Ft		69.9 Lin Ft		139.5 Lin. Ft
2" ϕ Steel Conduit		72.6 Lin. Ft.		72.9 Lin. Ft.		145.5 Lin. Ft.
Anchor Bolts AR 21		4 Each		4 Each		8 Each
ADDITIONAL REINF FOR LIGHTING DETAILS						
Mark	Length	No	Weight	No	Weight	Total
601a	8'-0	4		4		
602a	4'-6"	9		9		
Total #6	Bars		109		109	218
** Total Reinf. Steel			14837		14830	29667

NOTES

See Br Std C for Reinf. Bar Notes

See Br Std R2 for Anchor Bolts AR-21



SECTION "D-D"

Scale 3/8" = 1'-0"

SPAN "B" DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- As Noted JUNE 5, 1962

SUBMITTED FOR APPROVAL:- Chas. Upchurch

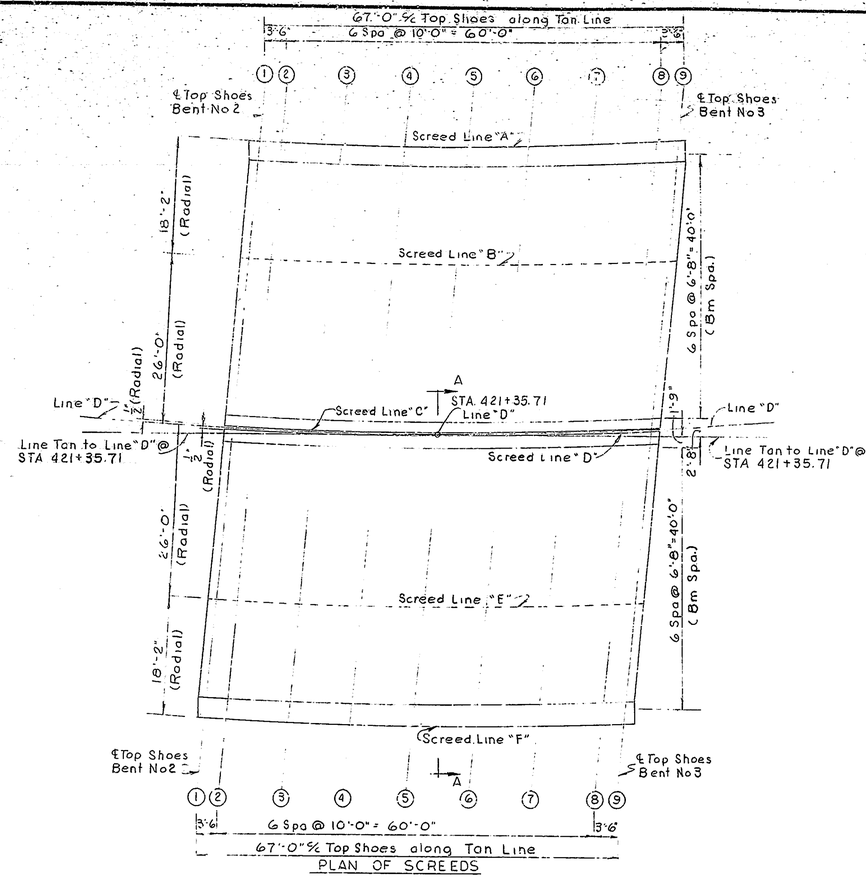
DRAWING:- S 20 OF 21

PROJECT:- US-181 (7)

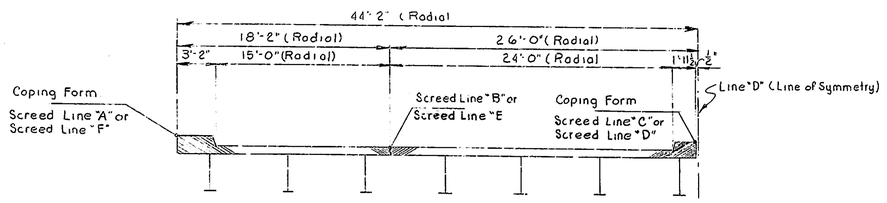
BRIDGE CONTRACT NO. 5701

BRIDGE FILE:- 23-DD9-4994

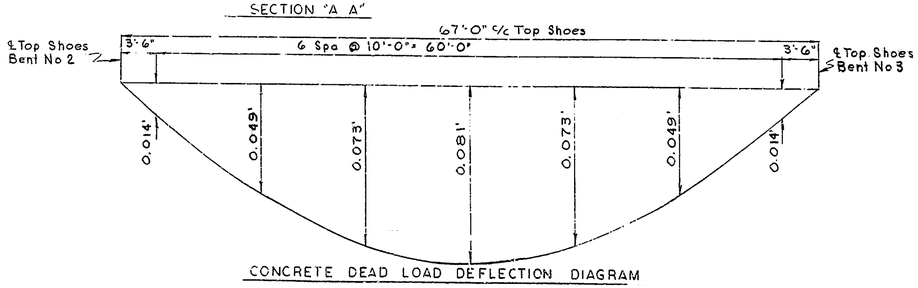
DESIGNED	A.J.T	CK'D	
DRAWN	A.J.T	CK'D	R.M.T. 11-61
TRACED		CK'D	



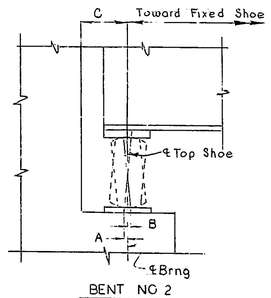
PLAN OF SCREEDS



SECTION "A A"



CONCRETE DEAD LOAD DEFLECTION DIAGRAM



BENT NO 2

TABLE NO I

	Dimension "A"				Dimension "B"		
Temperature	0°	20°	40°	60°	80°	100°	120°
℄ Top Shoe to ℄ Exp. Rt. Bent No 2	5/16	3/16	1/8	0	1/8	3/16	5/16

TABLE OF ELEVATIONS

Point	Location	1	2	3	4	5	6	7	8	9
	Elev Top of Coping Form	710.230	710.195	710.095	709.985	709.855	709.710	709.550	709.380	709.320
A	Elev Top of Outside Beam									
	Dist Top of Bm. to Coping Form									
	Elev Top of Screed	710.565	710.535	710.440	710.330	710.210	710.065	709.910	709.745	709.685
B	Elev Top of Beam									
	Dist Top of Bm to Top of Screed									
	Elev Top of Coping Form	713.215	713.180	713.090	712.990	712.870	712.735	712.580	712.420	712.360
C	Elev Top of Median Beam									
	Dist Top of Med. Bm to Cop. Form									
	Elev Top of Coping Form	713.215	713.180	713.090	712.990	712.870	712.735	712.580	712.420	712.360
D	Elev Top of Med Beam									
	Dist Top of Med. Bm to Cop. Form									
	Elev Top of Screed	713.480	713.455	713.365	713.265	713.150	713.020	712.875	712.720	712.660
E	Elev Top of Beam									
	Dist Top Bm to Top of Screed									
	Elev Top of Coping Form	714.970	714.940	714.855	714.760	714.650	714.520	714.375	714.220	714.165
F	Elev Top of Outside Beam									
	Dist Top of Bm to Coping Form									

GENERAL PROCEDURE

(1) After all rivets have been driven adjust the Superstructure longitudinally so that Dimension "C at Bents #2 and #3 is equal.

(2) With the Superstructure in the adjusted position called for in (1) set the Anchor Bolts for the Fixed Shoes at Bent No 3.

(3) Adjust the Expansion Plate under each Expansion Shoe in accordance with Dimension "A" or "B" in Table No.I for the prevailing temperature. Note that Dimension "A" is always the distance from a Vertical Line, through the ℄ Top Shoe in a direction away from the Fixed Shoe. Set the Anchor Bolts.

(4) After the Shoes are Set, take Elevations at all Screed Points on top of the adjacent beam. Enter these elevations in Table of Elevations. Subtract these elevations and use the resulting Dimension as the height for setting the Screed or Coping Form above that Point. This dimension remains constant regardless of how much or in what order the concrete is poured. Do not set screeds or coping forms by leveling

(5) No concrete in the Floor is to be poured until the above operations are completed

BRIDGES OVER 20' SPAN

PUB. ROAD REQ. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US 181(7)	1962	105	160

DESIGNED AJT C'K'D RE
DRAWN AJT C'K'D RE
TRACED C'K'D

SCREEDS

STATE HIGHWAY DEPARTMENT OF INDIANA

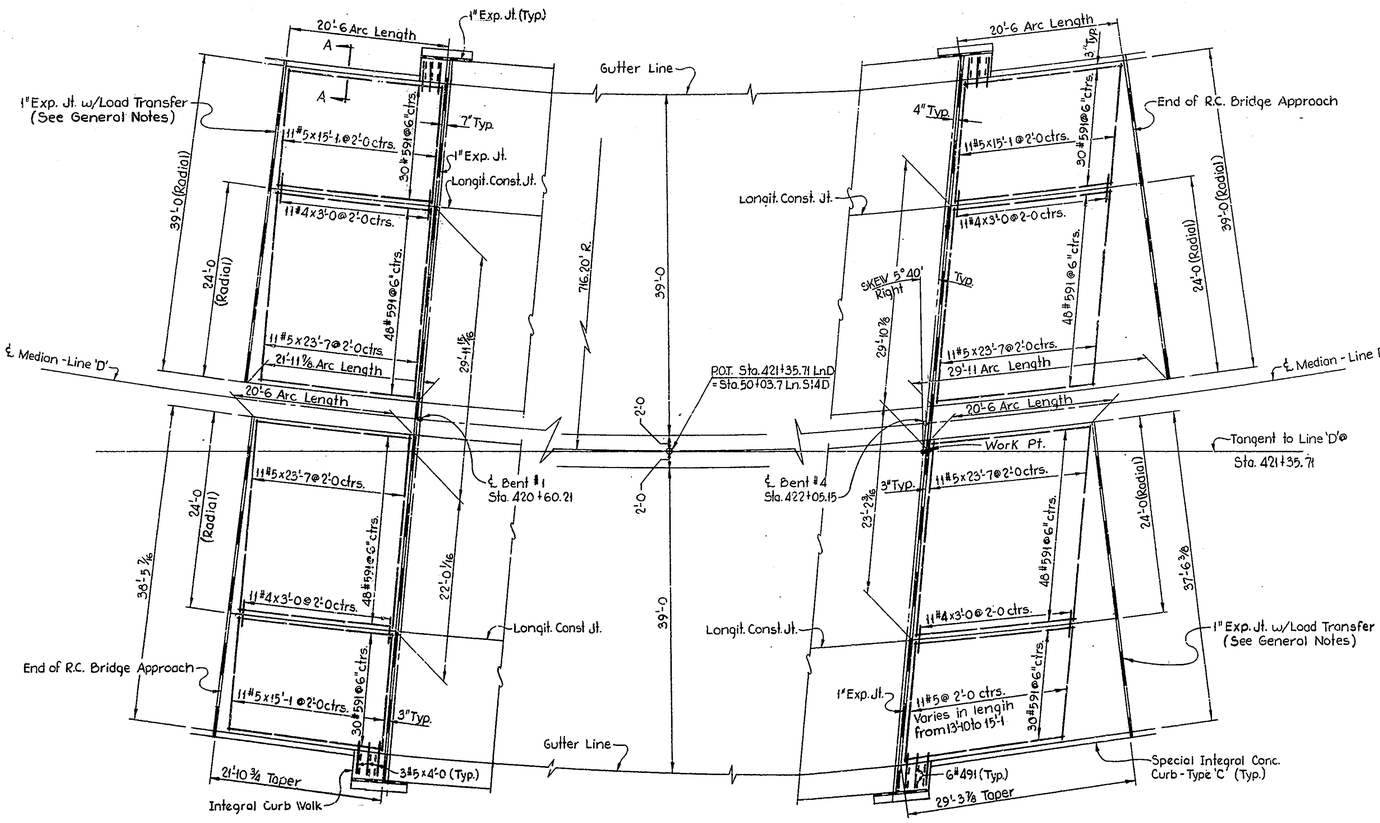
SCALE:- None JUNE 5, 1962

SUBMITTED FOR APPROVAL: Chas Luttrell H

DRAWING: S21 OF 21
PROJECT:- US-181(7)
BRIDGE CONTRACT NO. 5701
BRIDGE FILE:- 23-DD9-4994

BRIDGES OVER 20' SPAN

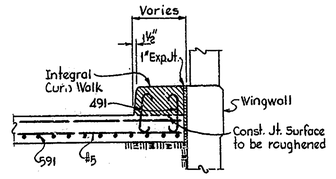
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	106	160



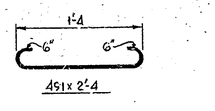
APPROACH PAVEMENT - SPAN "A"

APPROACH PAVEMENT - SPAN "C"

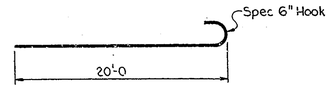
SECTION A-A
Scale: ½" = 1'-0



SECTION B-B
Scale: ½" = 1'-0



491 x 2'-4



591 x 20'-6

BILL OF MATERIALS

REINFORCING STEEL			
Mark and Size	Number of Bars	Length	Weight
591	312	20'-6	
#5	44	23'-7	
#5	33	15'-1	
#5	1	14'-5½	
#5	5	* 28'-11	
#5	12	4'-0	
Total Weight #5 Bars			6488 #
#4	44	3'-0	
491	24	2'-4	
Total Weight #4 Bars			125#
Total Weight Reinforcing Steel			8613 #

QUANTITIES	
10" R.C. Pavement	410 Sq.Yds.
Special Integral Conc. Curb - Type C	80 Lin.Ft.
1" Expansion Joint	197 Lin.Ft.
1" Expansion Join w/Load Transfer	157 Lin.Ft.
Integral Curb Walk - Class F	1.6 Cu.Yds

*Varies in length from 13'-10 to 15'-1 in increments of 1½". Cut from 28'-11 Bars

NOTES:

All items on this sheet to be included under Road Contract. (Proj. US-181(G)0.615)

See Drwg. S2 for General Notes.

See Br. Std. M_3 for R.C. Bridge Approach Details.

See Br. Std. M_4 for Integral Conc. Curb, Type C

See Br. Std. M_2 for Integral Curb Walk.

DESIGNED ____ C'K'D. ____
DRAWN LRY 10-61 C'K'D. AJT
TRACED ____ C'K'D. ____

R.C. BRIDGE APPROACH DETAILS

STATE HIGHWAY DEPARTMENT OF INDIANA

SCALE:- ⅛" = 1'-0 Unless Noted JUNE 5, 1962

SUBMITTED FOR APPROVAL:- Chas. H. Good

DRAWING:- OF

PROJECT:- US-181(7)

BRIDGE CONTRACT NO. 5701

BRIDGE FILE:- 23-DD9-4994

BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	US-181(7)	1962	107	160

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 (1934 STD. WTS.) #11(1¼") LBS.	#10(1⅛") LBS.	#9(1") LBS.	#8(1ϕ) LBS.	#7(⅞ϕ) LBS.	#6(¾ϕ) LBS.	#5(⅝ϕ) LBS.	#4(½ϕ) LBS.	#3(⅜ϕ) LBS.	#2(¼ϕ) LBS.	TOTALS LBS.	STRUCTURAL STEEL LBS.	CAST IRON LBS.	14"ø STEEL ENCASED CONCRETE PILES Nº	14"ø STEEL ENCASED CONCRETE PILES LIN. FT.	TREATED TIMBER PILES Nº	TREATED TIMBER PILES LIN. FT.	ANCHOR BOLTS MARK AR-21 EACH	2" STEEL CONDUIT LIN. FT.	ALUMINUM RAILING TYPE 3 LIN. FT.
Bent No. 1	34.1									3141			354	1135			4630			14	910					
Bent No. 2	40.1	16.7	31.3	44.1					3937	4552			2644	1525	906		13564					36	1080			
Bent No. 3	36.8	20.7	25.0	35.2					3957	4897			2247	1497	1009		13587									
Bent No. 4	25.2										1992		327	995			3314			14	490					
Superstructure																										
Span A	200.2				4.4		27435						11485	9335	189		48444								83.3	73.8
Span B	151.6				7.2							218	22163	6976	310		29667	171000						8	145.5	139.5
Span C	156.8				3.6		16885						10053	7328	155		34421								68.3	58.8
Splice Bars							175		32	23	16		35	16	6		303									
Reinf. Steel from 'Approach Structs' column																										
Reinf. Steel for R.C. Bridge Approach																										
Reinf. Steel for Lip Gutter, Pvmt. Tapers, etc.																										
TOTALS	644.8	37.4	54.3	79.3	15.2		44495		7906	12613	2008	218	49308	28807	2575		147930	**171000		28	1400	36	1080	8	297.1	272.1

BILL OF SPLICE BARS

REINFORCING STEEL

Size	Number Pieces	Length	Weight	Total Weight
#11	3	11'-0	175	
#9	1	9'-6	32	
#8	1	8'-9	23	
#7	1	8'-0	16	
#5	5	6'-9	35	
#4	4	6'-0	16	
#3	3	5'-6	6	
				303

Note:- For Test Bar Samples see Br. Std. "C1"

BILL OF MATERIALS FOR R.C. BRIDGE. APPROACH

REINFORCING STEEL

Size Mark	Nº Pcs.	Length	Nº Pcs.	Length	Nº Pcs.	Length	Weight		

APPROACH STRUCTURES

STRUCT. Nº	LOCATION	SIZE	KIND	LENGTH	CL. D CONC. IN STRUCTS. CU. YDS.	REINF. STEEL LBS.	CAST IRON LBS.	REMARKS
80	Sta. 422+25	18"	Group A	204'				Connect to Structure No. 81 Inv. Elev. 688.0 Read Contractor to connect to Str. No. 78 Inv. Elev. 688.5
81	Sta. 422+50 92' Lt.		1 Manhole Type 'A-4'					Connect to Structure No. 120
		36"	R.C. Sewer Pipe	168'				Inv. Elev. @ Str. 80 = 686.9, Inv. Elev. @ Str. 120 = 683.0 Manhole Includes Stubs for 36" Sewer and 12" Group 'A' Pipe. Top of Rim Elev. 697.0 Inv. Elev. of 12" Stub = 685.0
121	Sta. 420+70 62' Lt.		Manhole in place					Adjust Casting to Grade. Top of Rim Elev. 700.8 10' Reconstructed Manhole Req'd.
120	Sta. 420+67 50' Lt.		1 Manhole Type 'A-4'					Connect to existing 54" Sewer and to Str. No. 80 Inv. Elev. 36" Sewer = 683.0 Top of Rim Elev. 703.8 Includes 12" stub to connect to Str. No. 119. Inv. Elev. of stub = 684.0
122	Sta. 420+90 37' Rt.		Manhole in place					Adjust Casting to Grade. Top of Rim Elev. 699.6 10' Reconstructed Manhole Req'd. Remove Existing Manhole above Elev. 692.0 and Reconstruct.
				TOTALS				Total of Reinf. Steel carried to 'Structure Quantities'

SUBMITTED CK'D.
TRACED LRY CK'D FSW

BARRICADES, BARRIERS, TRAFFIC SIGNS, & LIGHTS

ITEM	UNIT	QUANTITY	ASSEMBLY					
TYPICAL SIGN STANDARDS	Each	22	Signs XW-1	10				
			" XW-3	8				
			" XM-2	2				
			" XR-1					
			Torches	20				
STD. BARRICADES (TYPE A)	Each	2	Barricades (Type A)	2				
			Signs XR-1	2				
			"					
			" M-20A	2				
			Lanterns	4				
STD. 2'0" x 4'-3" 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 113 R					
			" W11R					
			" 117					
			Lanterns					
CONSTRUCTION IDENTIFICATION SIGNS	Each	1	Signs					
			" XM-7	1				
			"					

* Not a pay item. Place as directed by the Engineer.
Where 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 Structural Steel shown is approximate and it shall be the Contractor's responsibility to determine the weight on which he bases his bid.

EARTHWORK SUMMARY

Str.	Tot. Fill	Gr.'B' Borr.	F-Gr. B	20% Shr.	Net Fill	Sur. Fdn. Exc.	Comm. Exc.
4992	15610	1010	14600	2920	17520	175	17345‡
4993	21930	7600	14330	2865	17195	290	16905
4994	10940	1190	9750	1950	11700	125	11575
Totals	48100	* 9800	38680	7735	46415	590	45825

* + 25% Shrinkage = 12250

‡ Includes 5000 Cu. Yds. of Special Borrow.

Line	Cut	Fill
D	6746	43662
S-11-D		1171
S-12-D		3267
S-13-D	78	
S-14-D	11025	
S-15-D	20166	
G	2810	
Totals	40825	48100

Rev. 10-10-62 Items 14 & 15.

SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITY 4994	4992	4993	Total
1	Class F Concrete	Cu. Yds.	644.8	704.0	1924.6	3273.4
2	Class D Concrete	Cu. Yds.	37.4	19.4		56.8
3	Class E Concrete above Footings	Cu. Yds.	54.3	136.8	680.2	871.3
4	Class E Concrete in Footings	Cu. Yds.	79.3	88.0	499.5	666.3
5	Railing Concrete	Lin. Ft.				
6	Reinforcing Steel	Lbs.	147930	155696	445935	749561
7	Structural Steel	Lbs.				
8	Cast Iron	Lbs.			7683	7683
9	Untreated Timber Piles Furnished	Lin. Ft.				
10	Untreated Timber Piles Driven	Lin. Ft.				
11	Furnishing Equipment for Driving Piles	Lump Sum			1	1
12	Wet Excavation	Cu. Yds.			1785	1785
13	Waterway Excavation	Cu. Yds.				
14	Common Excavation	Cu. Yds.	11575	12,345	16905	40825
15	Special Borrow	Cu. Yds.		5,000		* 5000
16	Grade B Special Borrow	Cu. Yds.	1490	1260	9500	12250
17	Sodding	Sq. Yds.	1080	1410	1475	3965
18	Mulched Seeding	Sq. Yds.	765	1740	1605	4110
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	550			550
23	Removal Present Structure	Lump Sum				
24	Temporary Bridge and Approaches	Lump Sum				
25	Warning Signs	Each				
26	Std. Barricades (Type A)	Each	2			2
27	Class D Concrete in Structures	Cu. Yds.				
28	R/W Markers	Each				
29	Steel Pile Shells Furnished (12")	Lin. Ft.			5770	5770
30	Steel Pile Shells Driven (12")	Lin. Ft.			5770	5770
31	Steel Pile Shells Furnished (14")	Lin. Ft.	1400	1050	9562	12012
32	Steel Pile Shells Driven (14")	Lin. Ft.	1400	1050	9562	12012
33	Treated Timber Piles Furnished	Lin. Ft.	1080			1080
34	Treated Timber Piles Driven	Lin. Ft.	1080			1080
35	Dry Excavation	Cu. Yds.			55	55
36	Foundation Excavation (Unclassified)	Cu. Yds.	210	470	625	1305
37	Structural Steel (4992)	Lump Sum		1		1
38	Structural Steel (4993)	Lump Sum			1	1
39	Structural Steel (4994)	Lump Sum	1			1
40	Railing Concrete	Cu. Yds.	15.2	15.4	68.8	99.4
41	Aluminum Railing Type 3	Lin. Ft.	272	274	1223	1769
42	Anchor Bolts, Mk. AR-21	Each	8	8	24	40
43	2" Steel Conduit	Lin. Ft.	297	299	1189	1785
44						
45	Cofferdam, Pier #2 (4993)	Lump Sum			1	1
46	Cofferdam, Pier #3 (4993)	Lump Sum			1	1
47	Cofferdam, Pier #4 (4993)	Lump Sum			1	1
48	Concrete Foundation Seal	Cu. Yds.			553.8	553.8
49	Clearing Right of Way	Lump Sum			1	1
50	4" Concrete Slopewall	Sq. Yds.	978	1017	388	2383
51						
52	Standard Barricades (Type B)	Each		1		1
53	Typical Sign Standards	Each	20	11	2	33
54	36" R.C. Sewer Pipe	Lin. Ft.	168			168
55	Reconstructed Manhole	Lin. Ft.	20			20
56	Adjust Castings to Grade	Each	2			2
57	18" Pipe, Group 'A'	Lin. Ft.	204			204
58	Manhole, Type 'A-4'	Each	2			2
59	Calcium Chloride	Tons	0.25			0.25
60						

SUMMARY

STATE HIGHWAY DEPARTMENT OF INDIANA

JUNE 5, 1962

SUBMITTED FOR APPROVAL:-

PROJECT:- U.S.-181 (7)

BRIDGE CONTRACT Nº 5701

BRIDGE FILE:- 29-DD9-4994

END STR