~~BRIDGE~~ CONTRACT No. R-8233

INDEX

PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION	CONTRACT NO.
ST.-F-847(3)	46-53-5918	CONTINUOUS PRESTRESSED I-BEAM	39'-9, 46'-6, 39'-9	CASCADE, ROAD	556+80	R-8233

SHEET NO.	SHEET DESIGNATION	SUBJECT	B.P.R. APPROVAL
1		INDEX & TITLE SHEET	
2	ONE SHEET	TEST BORING DATA	
3	C1(STR. 46-53-5918)	LAYOUT	
4	C2	GENERAL PLAN	
5	C3	GENERAL	
6	C4	BENT No 1 DETAILS	
7	C5	BENT No 2 DETAILS	
8	C6	BENT No 3 DETAILS	
9	C7	BENT No 4 DETAILS	
10	C8	SUPERSTRUCTURE DETAILS	
11	C9	SUPERSTRUCTURE DETAILS	
12	C10	BEAM DETAILS	
13	C11	SUPERSTRUCTURE DETAILS	
14	ONE SHEET	SUMMARY	

STATE OF INDIANA

INDIANA STATE HIGHWAY COMMISSION

BRIDGE PLANS

FOR SPANS OVER 20 FEET ON STATE ROAD NO. 46 SECTION

PROJECT ST.-F-847(3) PE
ST.-F-847(3) R/W
ST. F-847(3) CONST

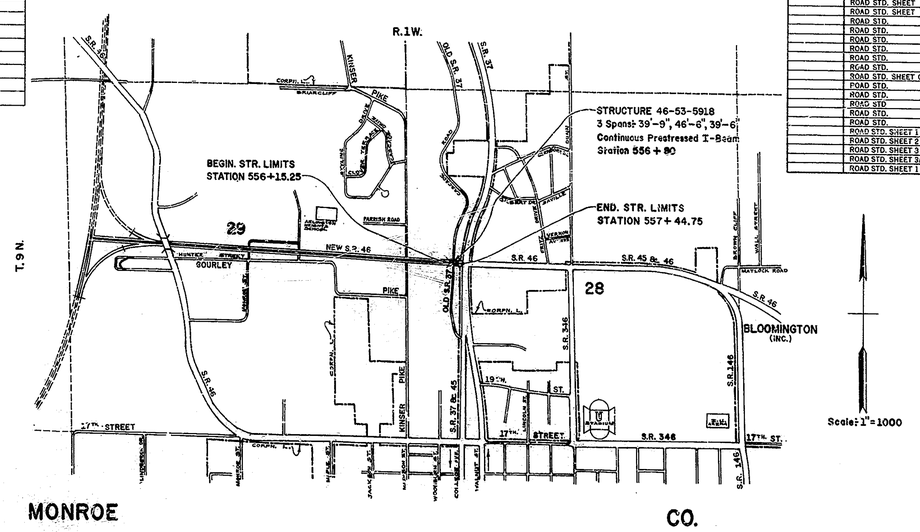
S.R. 46 OVER OLD S.R. 37

STRUCTURE LIMITS

BEGINNING AT A POINT ON PROPOSED NEW S.R.46 Line "A" APPROX. 64.75' WEST OF THE ℄ OF PROPOSED CASCADE ROAD (Line "PR 5.9A") AND EXTENDING EAST APPROX. 129.5' TO A POINT ON PROPOSED NEW S.R. 46 (Line "A") APPROX. 64.75' EAST OF THE ℄ OF PROPOSED CASCADE ROAD, ALL IN SECTION 28-T.9N.-R.1W., MONROE COUNTY.

BRIDGE LENGTH = 0.024 MI.
TOTAL LENGTH = 0.024 MI.

MAX. GRADE= -3.00%



BRIDGES OVER 20' SPAN

PUBLIC ROAD MILEAGE NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	ST-F-847(3)	1970	1	24

INDEX CONTINUED
STANDARD DRAWINGS

SHEET NO.	SHEET DESIGNATION	SUBJECT	B.P.R. APPROVAL	ADOPTED "A" REVISION "B"
15	BRIDGE STD. C1	STANDARD MISCELLANEOUS DETAILS		R-10-11-65
	BRIDGE STD. C2	STANDARD MISCELLANEOUS DETAILS		
16	BRIDGE STD. D	CASTING DETAILS ROADWAY DRAINS	8-25-69	R-6-10-69
	BRIDGE STD. F	ROADWAY DRAIN OUTLET DETAILS		
	BRIDGE STD.			
	BRIDGE STD. J	EXPANSION JOINT		
	BRIDGE STD. M	MISCELLANEOUS APPROACH DETAILS		
	BRIDGE STD. M3	R.C. BRIDGE APPROACH TURNOUT DETAILS-12'-6" SHOULDERS		
	BRIDGE STD. M5	SLOPEWALL AND DRAINAGE DETAIL"		
	BRIDGE STD.			
17	BRIDGE STD. PB2	PRESTRESSED CONCRETE TYPE II I-BEAMS	4-16-62	A-Jan. 16, 1962
	BRIDGE STD. PB5	PRESTRESSED BOX BEAMS		
	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS WIDE		
18	BRIDGE STD. PB10	TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS		
19	BRIDGE STD. PB11	ELASTOMERIC BEARING PAD DETAILS	3-14-63	A-Nov. 5, 1962
20	BRIDGE STD. BR1	ALUMINUM BRIDGE RAILING	5-20-65	A-Apr. 6, 1965
21	BRIDGE STD. BR2	ALUMINUM BRIDGE RAILING DETAILS	9-26-69	R-8-1-69
22	BRIDGE STD. BR3	STEEL BRIDGE RAILING	9-26-69	R-8-1-69
	BRIDGE STD. R2A	BRIDGE LIGHTING DETAILS	9-26-69	R-8-1-69
23	BRIDGE STD. BR4	STEEL BRIDGE RAILING DETAILS	9-26-69	R-8-1-69
	BRIDGE STD.			
	BRIDGE STD. S1	TYPICAL DETAILS FOR PLACING GRADE "B" SPECIAL BORROW		
	BRIDGE STD. S2	TYPICAL DETAILS FOR PLACING GRADE "B" SPECIAL BORROW		
	BRIDGE STD. T SHEET A	STANDARD TEMPORARY BRIDGE		
	BRIDGE STD. T SHEET B	STANDARD TEMPORARY BRIDGE		
	ROAD STD. SHEET A	STANDARD PAVEMENT JOINTS		
	ROAD STD. SHEET MA	MISCELLANEOUS STANDARDS		
24	ROAD STD. SHEET MB2	MISCELLANEOUS STANDARDS	4-21-65	R-10-15-65
	ROAD STD. SHEET MC	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MC1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MD	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MD1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET ME	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET ME1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MF	MISCELLANEOUS STRUCTURE STANDARDS		
	ROAD STD. SHEET MG	MISCELLANEOUS STRUCTURE STANDARDS		
	ROAD STD. SHEET MH	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MI	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MJ	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET N	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MN	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MP	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MP1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MQ	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MR	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MR1	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET S	MISCELLANEOUS STANDARDS CENTER DITCH INLETS		
	ROAD STD. SHEET S1	MISCELLANEOUS STANDARDS CENTER DITCH INLETS		
	ROAD STD. SHEET MT	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD.	STANDARD STRUCTURE CONNECTIONS FOR EXTENSION		
	ROAD STD.	STANDARD REINF. CONC. BOX CULVERTS		
	ROAD STD.	STANDARD REINF. CONC. BOX CULVERTS-SK. END & WING DETAILS		
	ROAD STD.	STANDARD REINF. CONC. CULVERTS-SLAB TOP TYPE (W.F.)		
	ROAD STD.	STANDARD REINF. CONC. CULVERTS-SLAB TOP TYPE (U.F.)		
	ROAD STD.			
	ROAD STD. SHEET GR1	BEAM GUARD RAIL		
	ROAD STD.	STANDARD REINF. CONCRETE ARCH-12' SPAN		
	ROAD STD.	STANDARD HEADWALLS		
	ROAD STD	STANDARD STRUCTURAL PLATE ARCH		
	ROAD STD.	CONCRETE WINGS FOR STD. STRUCTURAL PLATE ARCHES		
	ROAD STD.	STANDARDS FOR SUPER-ELEVATION		
	ROAD STD. SHEET 1 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 3A DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 1 DETOURS	CONSTRUCTION IDENTIFICATION SIGNS		

TRAFFIC DATA

A.D.T. (1966)		6880 V.P.D.
A.D.T. (1988 PROJECTED)		14,400 V.P.D.
A.D.T. (19 PROJECTED)		V.P.D.
TRUCKS		19 %
DESIGN SPEED		70 M.P.H.
ACCESS CONTROL		Partial

INDIANA STATE HIGHWAY COMMISSION
STANDARD SPECIFICATIONS DATED 1969
TO BE USED WITH THESE PLANS.

REVISIONS	
DATE	SHEET NO.
11-17-69	1

William O. Abbott
SQUAD CHIEF

RECOMMENDED FOR APPROVAL 10/7/69

J H Richardson
ASSISTANT ENGINEER OF PLANS AND SPECIFICATIONS

RECOMMENDED FOR APPROVAL 10-7-69

ENGINEER OF PLANS AND SPECIFICATIONS—INDIANA STATE HIGHWAY COMMISSION

APPROVED 10-8-69

CHIEF HIGHWAY ENGINEER—INDIANA STATE HIGHWAY COMMISSION

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

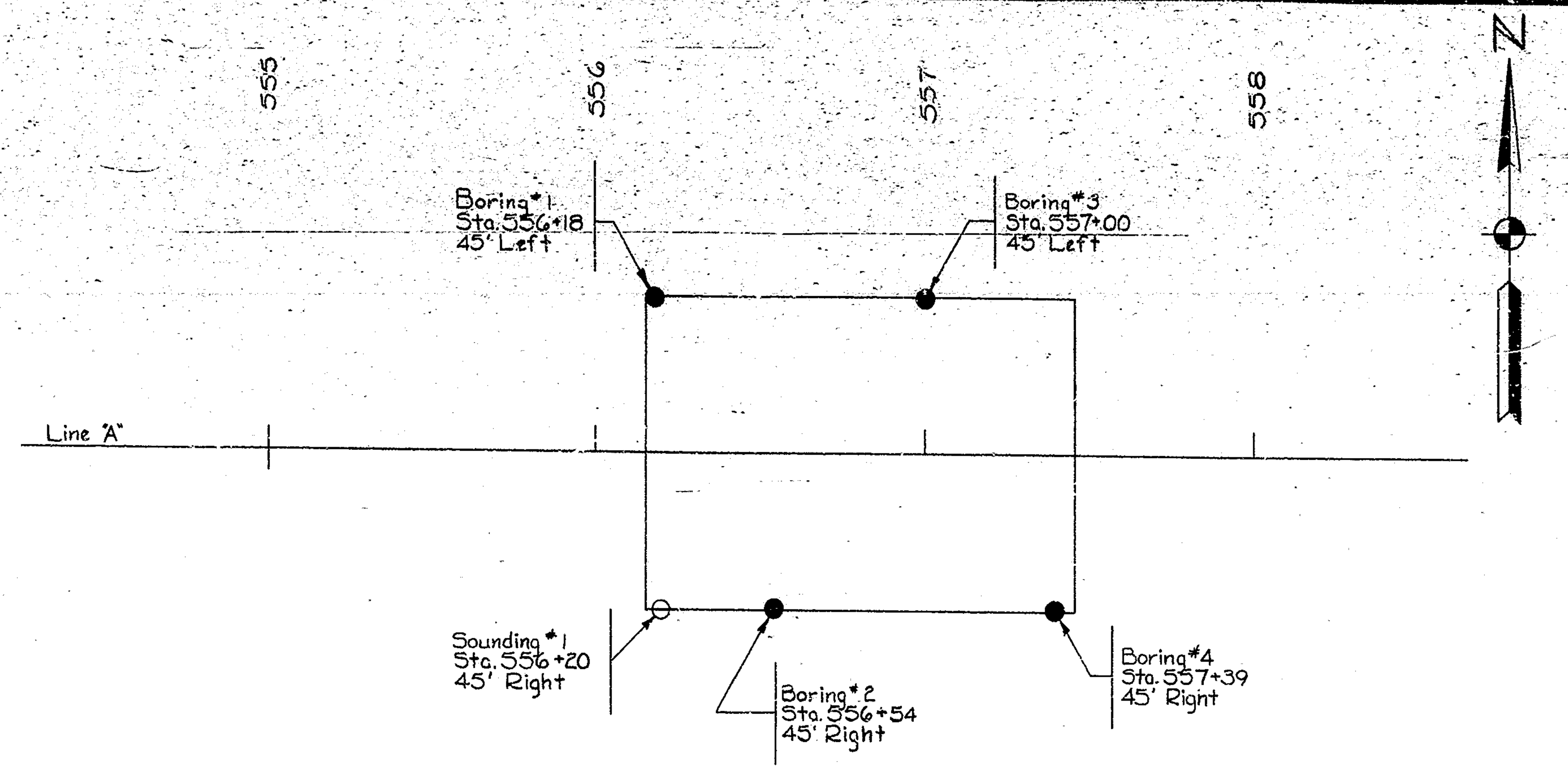
APPROVED:-

DIVISION ENGINEER — DATE

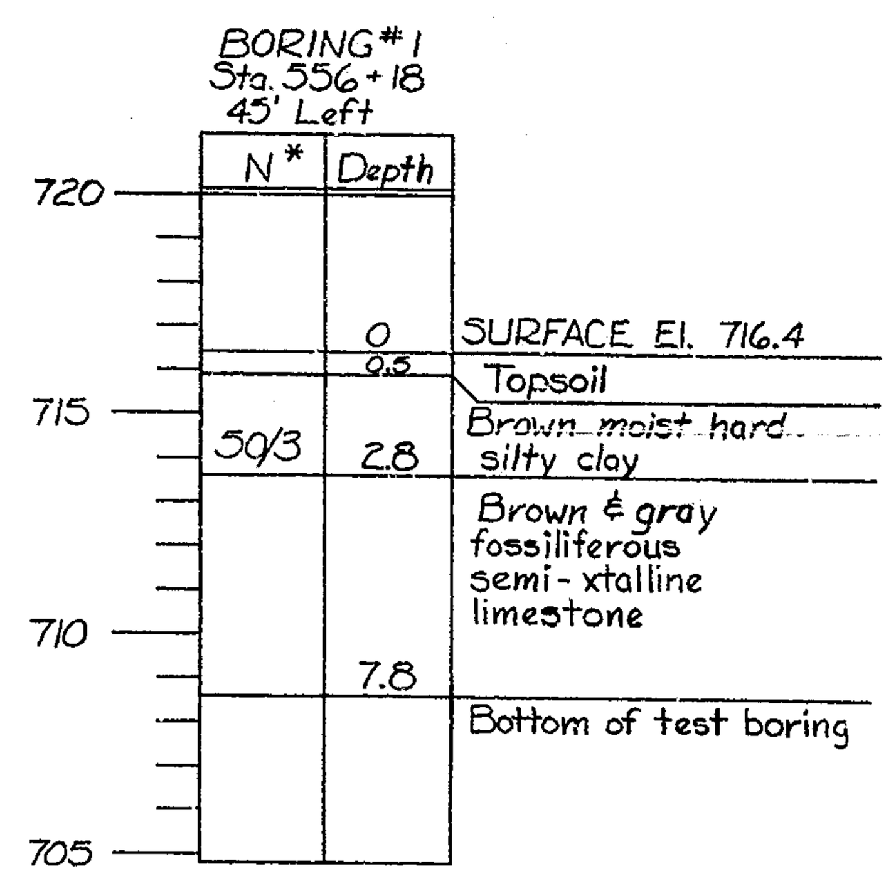
BRIDGE FILE: 46-53-5918

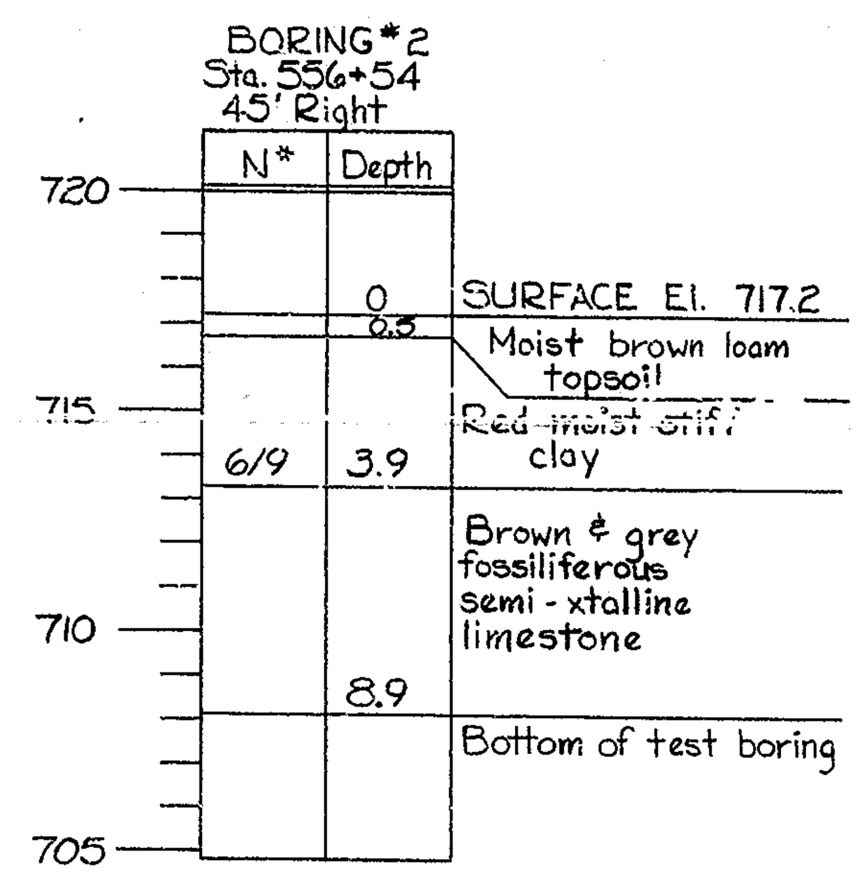
BRIDGES OVER 20' SPAN

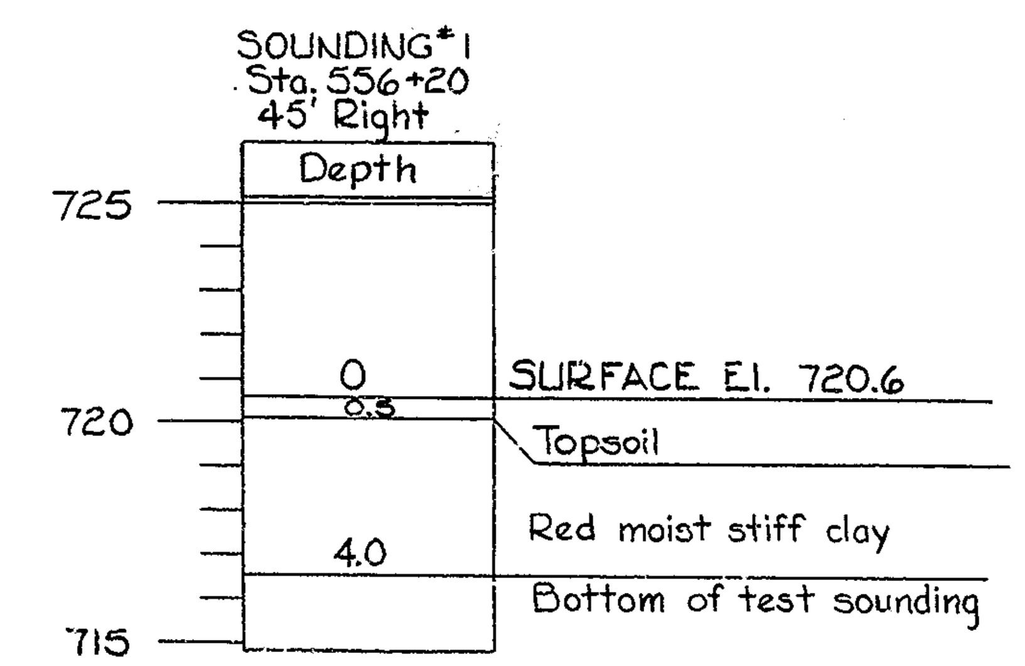
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	2	24



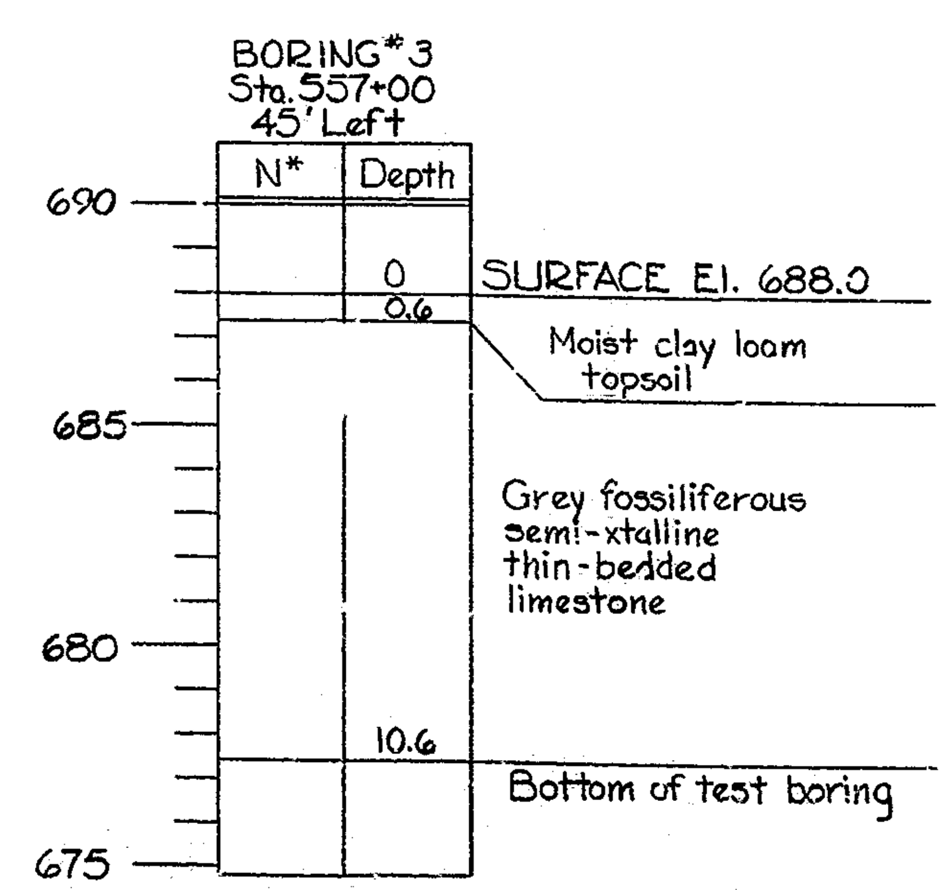
BORING PLAN
Scale: 1" = 30'-0

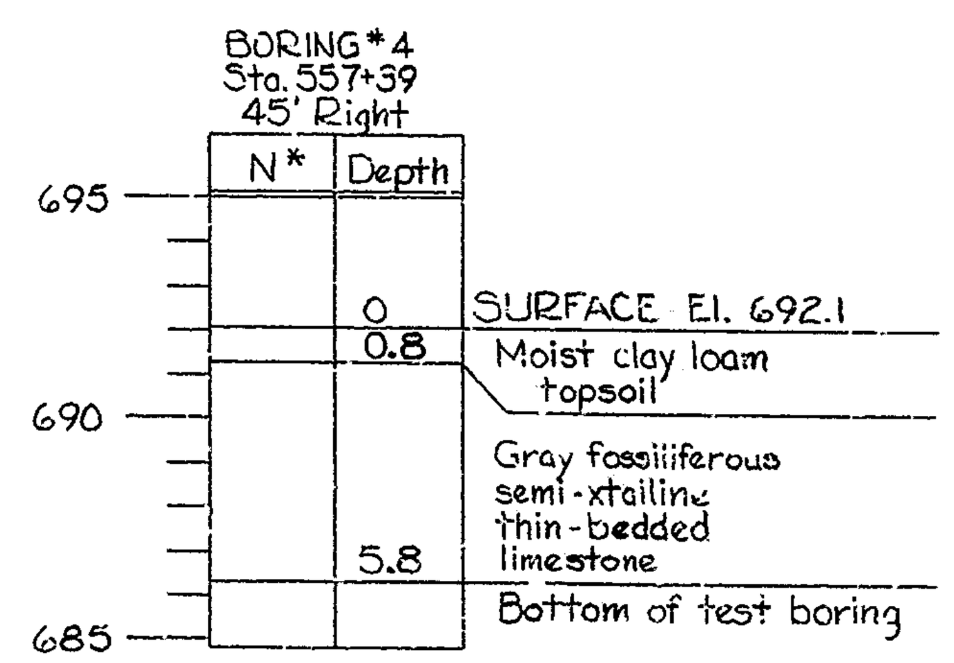






NOTE: N* indicates number of blows per foot in standard penetration test - Driving 2" O.D. Sample - 1' with 140 lb. hammer falling 30"; Count made at 6" intervals.





SOIL BORING LOG
Vert. Scale: 1" = 4'-0

DESIGNED ____ CK'D ____
DRAWN J.C. CK'D DKC
TRACED ____ CK'D ____

TEST BORING DATA

INDIANA STATE HIGHWAY COMMISSION

SCALE:- As Noted SEPTEMBER 12, 1969

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

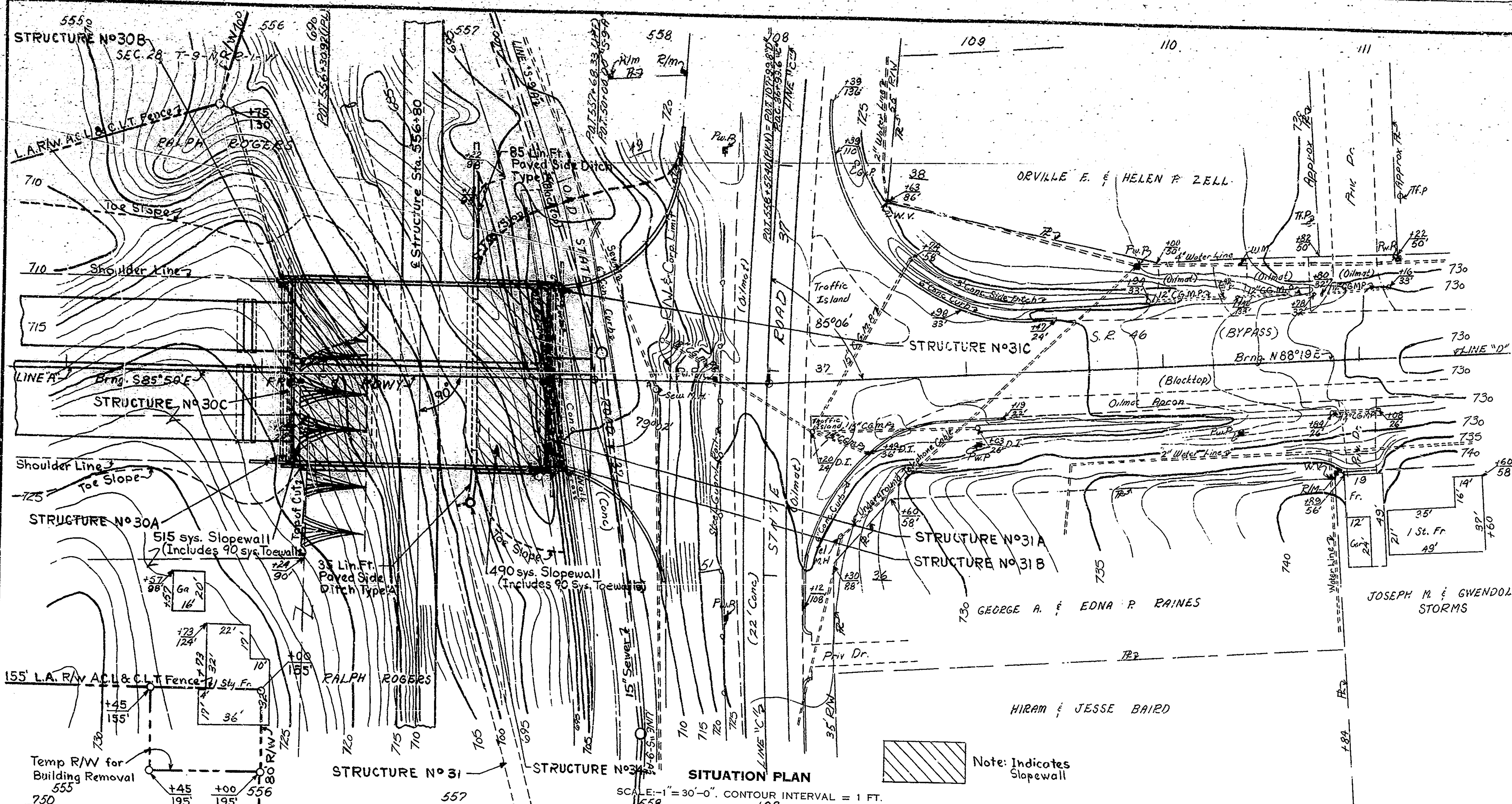
DRAWING:- OF
PROJECT:- STF-847(3)
~~BRIDGE~~ CONTRACT NO. R-8233
BRIDGE FILE:- 46-53-5916

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

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	3	24

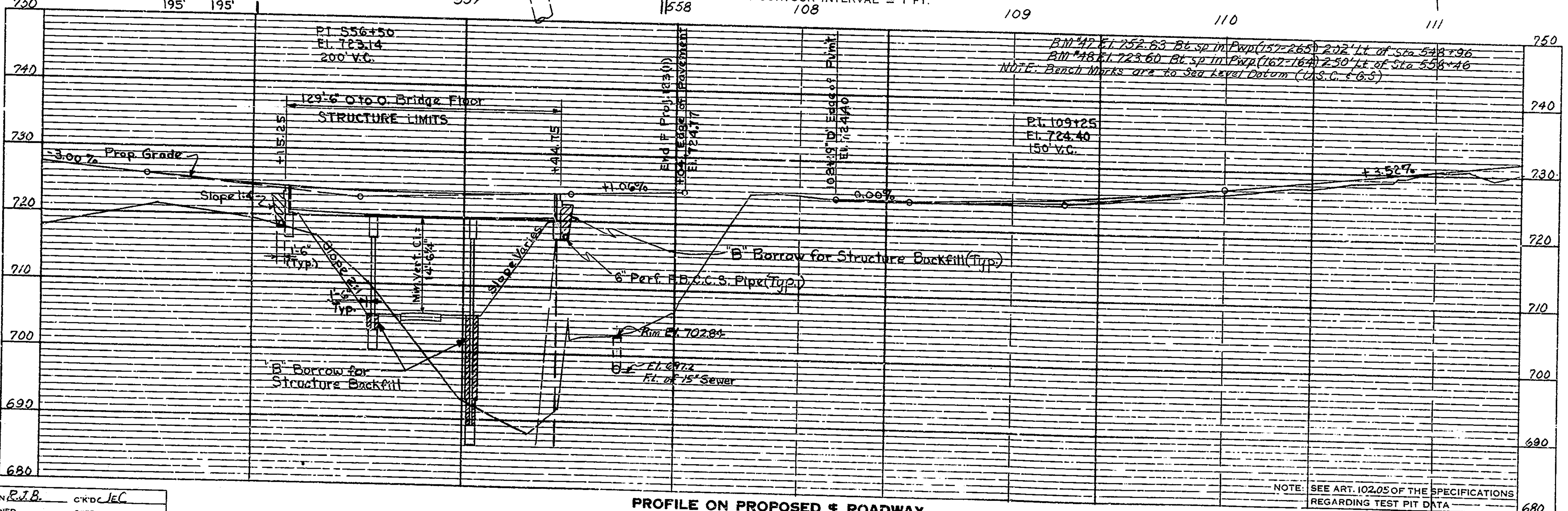
UTILITY OWNERS
Water & Sewer = City of Bloomington
Gas Lines = Indiana Gas & Water
Tel. P. = Indiana Bell Telephone
Pw. P. = Public Service of Indiana

Note: Structure is on Road Proj. STF-847(3)



SITUATION PLAN

SCALE:-1" = 30'-0". CONTOUR INTERVAL = 1 FT.



PROFILE ON PROPOSED ℄ ROADWAY

SCALES: HORIZ. 1" = 30'-0" VERT. 1" = 10'-0"

Note: See Road Plans for cross sections adjacent to the structure and for additional details.

NOTE: FIELD NOTES. BOOK B.R-2113

DRAWN R.J.B.	C'K'D JEC		
DESIGNED	C'K'D		
TRACED ELM	C'K'D DKC		

LAYOUT

STATE ROAD 46 OVER OLD & PRES. S.R. 37

INDIANA STATE HIGHWAY COMMISSION

MONROE COUNTY

SCALE:—AS NOTED SEPTEMBER 12, 1969

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

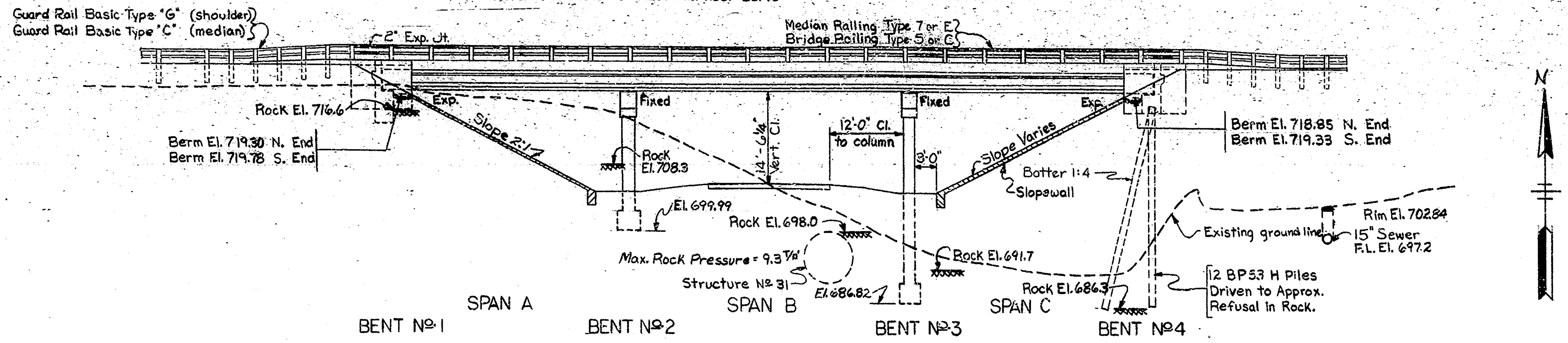
DRAWING:- C_1 OF 11

PROJECT:- STF-847(3) STATION:— 556+80

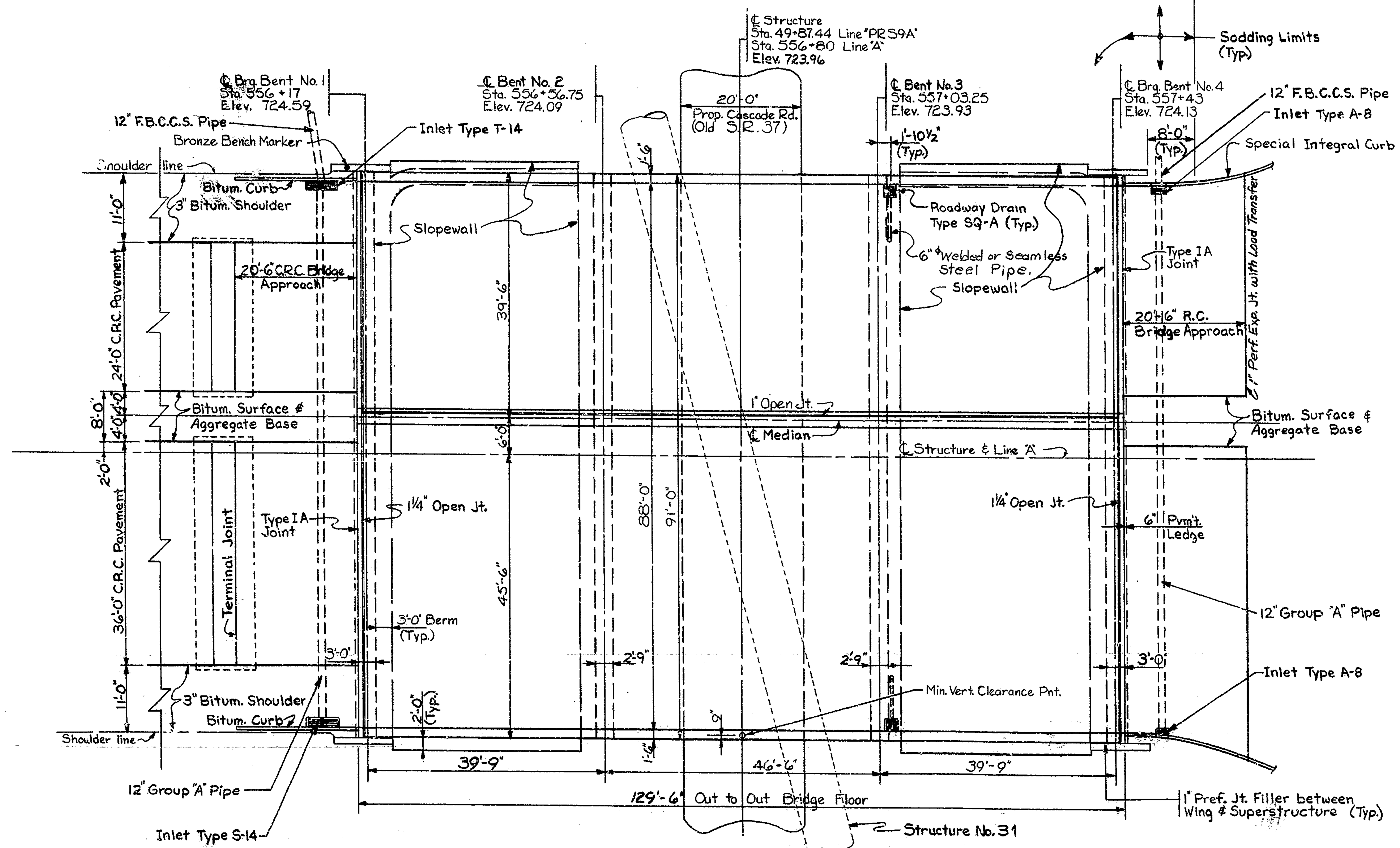
~~BRIDGE~~ CONTRACT NO. R-8233

BRIDGE FILE:- 46-53-5918

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	4	24



ELEVATION



PLAN

GENERAL NOTES

See Drawing C3

TYPICAL SECTION

See Drawing C3

TYPICAL CROSS SECTIONS

See Sheet № 3 of Road Plans.

DESIGN DATA

Designed for HS20-44 loading in accordance with 1969 A.A.S.H.O. Spec's.

GENERAL PLAN

CONTINUOUS PRESTRESSED I-BEAM BRIDGE

3 SPANS @ 39'-9", 46'-6", 39'-9" SQUARE
36'-9½" & 48'-9½" Clear Roadway Westbound & Eastbound Respectively

OVER CASCADE RD. ON S.R. 46

INDIANA STATE HIGHWAY COMMISSION

MONROE COUNTY

SCALE:- 3/32" = 1'-0" SEPTEMBER 12, 1969

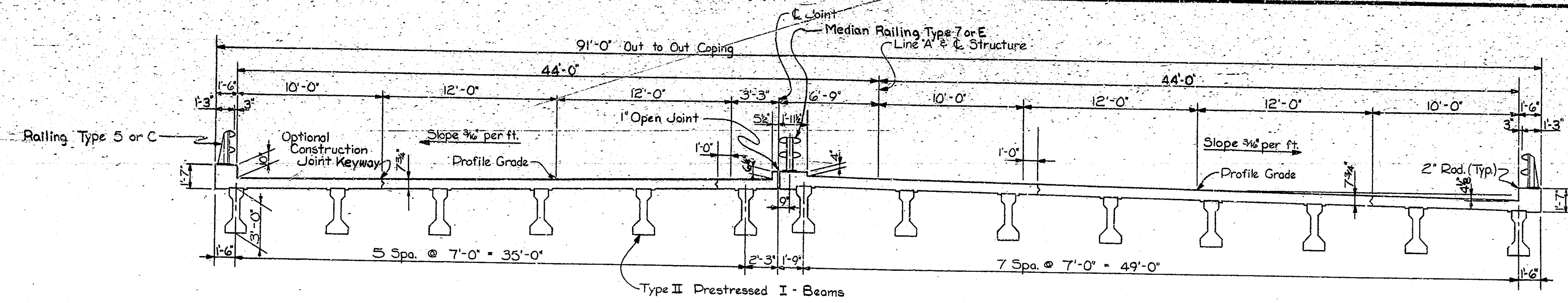
RECOMMENDED FOR APPROVAL:- C.R. Ruminer
ENGINEER OF BRIDGE DESIGN

CHARLES R. RUMINER REGISTERED No. 6275 STATE OF PROFESSIONAL ENGINEER

DRAWING:- C2 OF 11
PROJECT:- STF-847(3) STATION:- 556+80
~~BRIDGE~~ CONTRACT NO. R-8233
BRIDGE FILE:- 46-53-5918

DESIGNED	C'K'D
DRAWN JEC 8-15-68	C'K'D DKC
TRACED	C'K'D

BRIDGES OVER 20' SPAN					
FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	5	24



TYPICAL SECTION

GENERAL NOTES

No present structure at proposed bridge site
Depth of footings to be extended if found necessary. See Art. 206.11(c) of Specifications.
Footings shall extend into solid rock as shown on the Plans.
Reinforcing steel not to be ordered until rock in uncovered.

Determine pile lengths by Art. 701 of Specifications.
Piles Shall be driven to approximate refusal.
Reinforcing steel covering shall be 2 inches in top and 1 inch min. in bottom of floor slabs, 4 inches in bottom of footings, and 2 inches in all other parts, unless noted.
Concrete in footings to be class "B".
Concrete in superstructure, bent columns and caps, *and end bents to be class* "A".
Concrete in paved side ditches and slopewalls to be class "A".
Continuous concrete pours shall be required between construction joints as shown on detail Plans.
Waterproof joints in mudwalls and bent wingwalls in accordance with Art. 702.22 of the Specifications.
Chamfer exposed edges 1 inch unless noted.
2 standard Type SQ-A roadway drains to be placed as shown on Drawing C_2
Construct slopewall at locations shown on layout.
Tolerance in position of pile head maximum 2 inches.
All railing posts to be constructed perpendicular to grade.
Top of end bent caps, front face of mudwalls and face of diaphram at end bent to be coated with epoxy. See Special Provisions.
For pay items covering this structure see Bridge Summary.
See Special Provisions for items included in this contract.

STANDARD DRAWINGS

BR. STD.	RD. STD.	PURPOSE
C_1		Reinf. Bar Notes, Bar Bending Details, Type 1A Jt. Splicing Steel H Piles.
D		Roadway Drains Type SQ-A
PB_2		Prestressed Concrete Type II I-Beams
PB_{10}		Tolerance for Fabrication of Prestressed Beams
PB_{11}		Elastomeric Bearing Pad Details
BR_1		Aluminum Bridge Railing
BR_2		Aluminum Bridge Railing Details
BR_3		Steel Bridge Railing
BR_4		Steel Bridge Railing Details
	MB_2	Slopewall

GENERAL PLAN - CONT'D.

INDIANA STATE HIGHWAY COMMISSION

MONROE COUNTY

SCALE:- 1/4" = 1'-0" SEPTEMBER 12, 1969

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

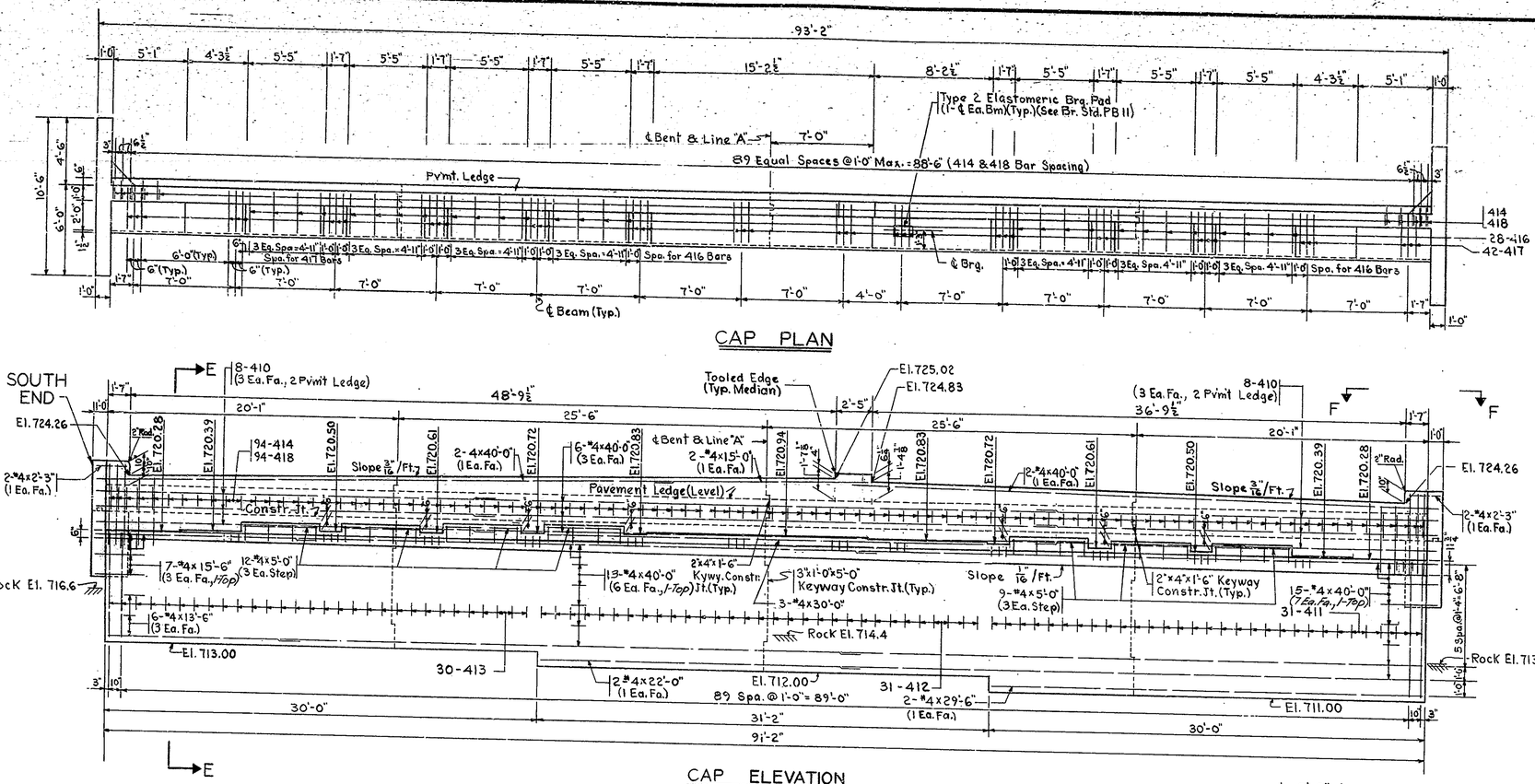
DRAWING:- C_3 OF 11
PROJECT:- STF-847(3) STATION-556+80
~~BRIDGE~~ CONTRACT NO. R-8233
BRIDGE FILE:- 46-53-5918

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

DESIGNED	CK'D
DRAWN J.E.C. 8-29-69	CK'D DKC
TRACED	CK'D

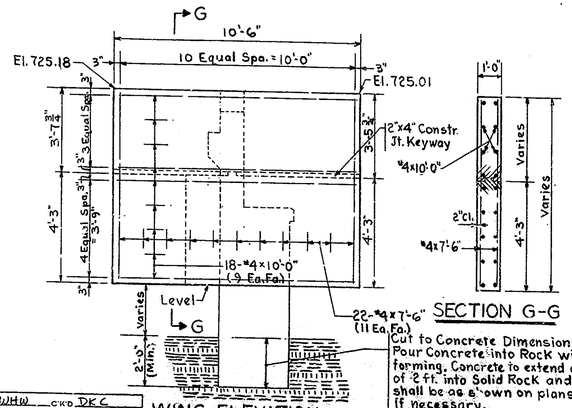
FUR. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	6	24

BRIDGES OVER 20' SPAN



CAP PLAN

CAP ELEVATION

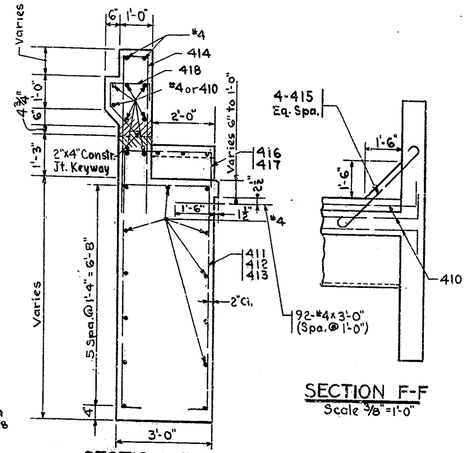


SECTION G-G

Cut to Concrete Dimensions. Pour Concrete into Rock without forming. Concrete to extend a minimum of 2 ft. into Solid Rock and Elevations shall be as shown on plans or below if necessary.

WING ELEVATION

Scale: 3/8" = 1'-0" Max. Rock Press. = 2.1 T/sf

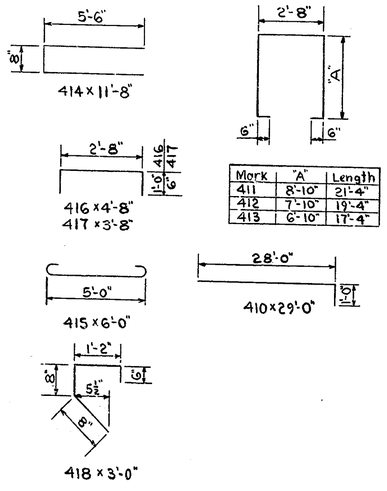


SECTION E-E

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

SECTION F-F

Scale 3/8" = 1'-0"



BENDING DIAGRAMS

Mark	"A"	Length
411	8'-10"	21'-4"
412	7'-10"	19'-4"
413	6'-10"	17'-4"

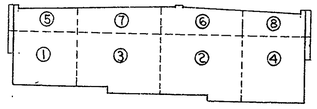
BILL of MATERIALS

REINFORCING STEEL

SIZE or MARK	No BARS	LENGTH	WEIGHT
410	16	29'-0"	
411	31	21'-4"	
412	31	19'-4"	
413	30	17'-4"	
414	94	11'-8"	
415	8	6'-0"	
416	28	4'-8"	
417	42	3'-8"	
418	94	3'-0"	
#4	38	40'-0"	
#4	3	30'-0"	
#4	2	29'-6"	
#4	2	22'-0"	
#4	7	15'-6"	
#4	2	15'-0"	
#4	6	13'-6"	
#4	36	10'-0"	
#4	44	7'-6"	
#4	21	5'-0"	
#4	92	3'-0"	
#4	4	2'-3"	
Total #4			465#
Total Steel			465#

~ CONCRETE ~

Class "A" in Sub Structure:	
Pour #1 1@19.6	19.6 C.Yds.
Pour #2 1@26.9	26.9 C.Yds.
Pour #3 1@25.0	25.0 C.Yds.
Pour #4 1@24.1	24.1 C.Yds.
Pour #5 1@4.0	4.0 C.Yds.
Pour #6 1@3.1	3.1 C.Yds.
Pour #7 1@3.6	3.6 C.Yds.
Pour #8 1@4.0	4.0 C.Yds.
Total Class "A"	110.9 C.Yds.
MISCELLANEOUS	
"B" Borrow for Structure Backfill	69 C.Yds.



POUR DIAGRAM

Note:- Pours No. 5, 6, 7 & 8 not to be made until Superstructure Slab has been poured.

NOTE: See Br. Std. C1 for Reinf. Bar Notes.
See Br. Std. PB11 for Brg. Pad Details.

BENT Nº 1 DETAILS

INDIANA STATE HIGHWAY COMMISSION

SCALE:- 1/4" = 1'-0" or AS NOTED SEPTEMBER 12, 1969

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

DRAWING:- C4 OF 11

PROJECT:- STF-847(3)

~~BRIDGE~~ CONTRACT NO. R-8233

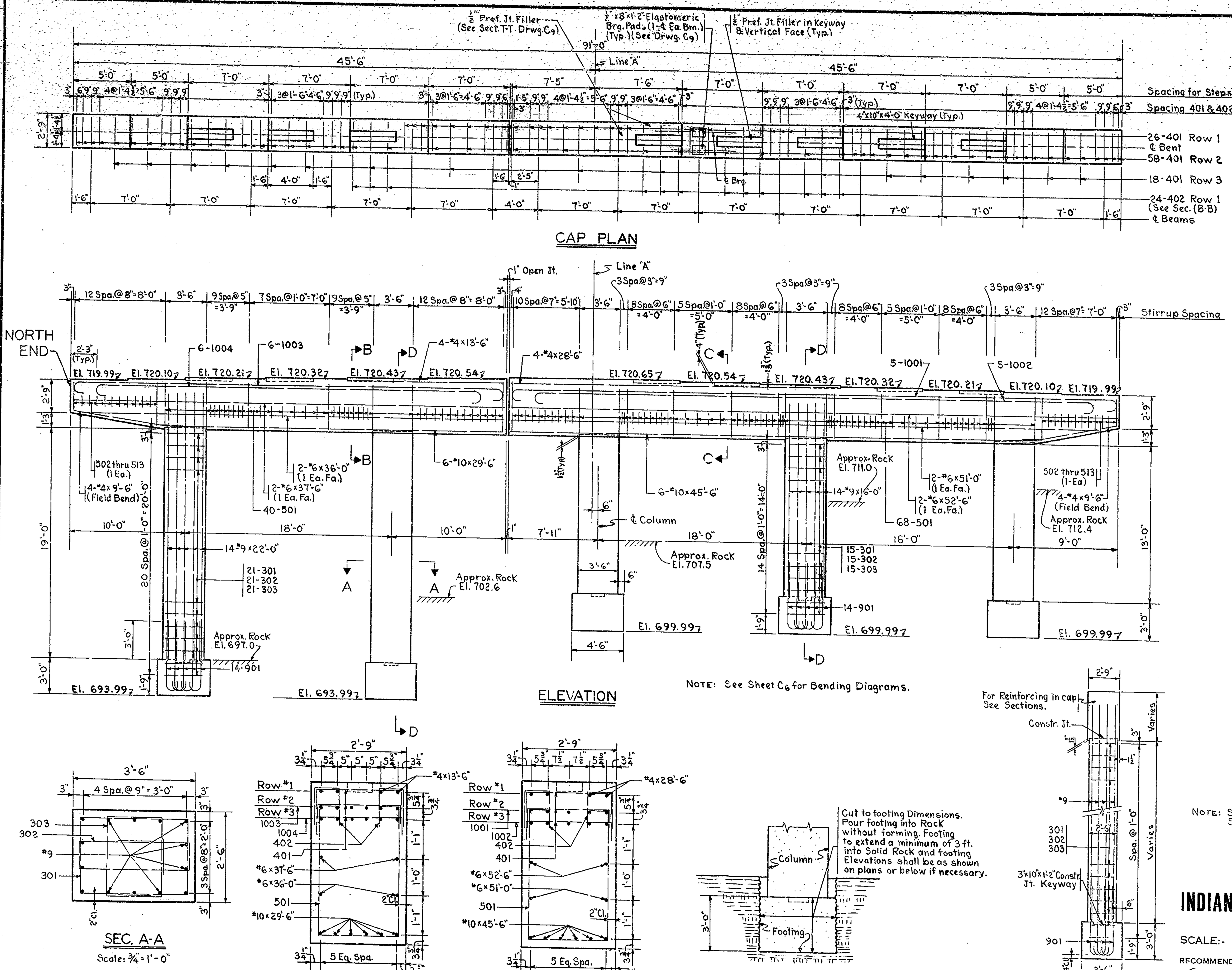
BRIDGE FILE:- 46-53-5918

DESIGNED WHW C'K'D DKC
DRAWN ELM 4-18-69 C'K'D JST
TRACED C'K'D

CHARLES R. RUNNINGER REGISTERED NO. 2273 STATE OF INDIANA PROFESSIONAL ENGINEER

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	7	24



BILL of MATERIALS

PIER Nº 2

REINFORCING STEEL			
SIZE & MARK	Nº of BARS	LENGTH	WEIGTH
1001	5	55'-3"	
1002	5	51'-9"	
1003	6	40'-3"	
1004	6	36'-3"	
#10	6	45'-6"	
#10	6	29'-6"	
	TOTAL #10		6203
901	70	7'-0"	
#9	28	22'-0"	
#9	42	16'-0"	
	TOTAL #9		6045
#6	2	52'-6"	
#6	2	51'-0"	
#6	2	37'-6"	
#6	2	36'-0"	
	TOTAL #6		532
501	108	10'-9"	
502	2	10'-7"	
503	2	10'-5"	
504	2	10'-1"	
505	2	9'-11"	
506	2	9'-9"	
507	2	9'-7"	
508	2	9'-3"	
509	2	9'-1"	
510	2	8'-11"	
511	2	8'-9"	
512	2	8'-5"	
513	2	8'-3"	
	TOTAL #5		1447
401	102	3'-5"	
402	24	2'-8"	
#4	4	28'-6"	
#4	4	13'-6"	
#4	8	9'-6"	
	TOTAL #4		439
301	87	11'-8"	
302	87	9'-0"	
303	87	8'-8"	
	TOTAL #3		960
	TOTAL STEEL		15626

CONCRETE	
CLASS "A" SUBSTRUCTURE:	
CAP (W.B.) =	16.1 Cu.Yds
COLUMNS (W.B.) 2@6.20 =	12.4 Cu.Yds
CAP (E.B.) =	23.2 Cu.Yds
COLUMNS (E.B.) 3@4.27 =	12.8 Cu.Yds
TOTAL CLASS "A"	64.5 Cu.Yds
CLASS "B" in FOOTING	
FOOTING (W.B.) 2@1.75 =	3.5 Cu.Yds
FOOTING (E.B.) 3@1.75 =	5.3 Cu.Yds
TOTAL CLASS "B"	8.8 Cu.Yds
MISCELLANEOUS	
"B" Borrow for Str. Backfill	*8.0 Cu.Yds.*

NOTE: See Bridge Std. C1 for Reinforcing Ba[illegible]ies.
See Drwg. C10 for Brg. Pad Details.

BENT Nº 2 DETAILS

INDIANA STATE HIGHWAY COMMISSION

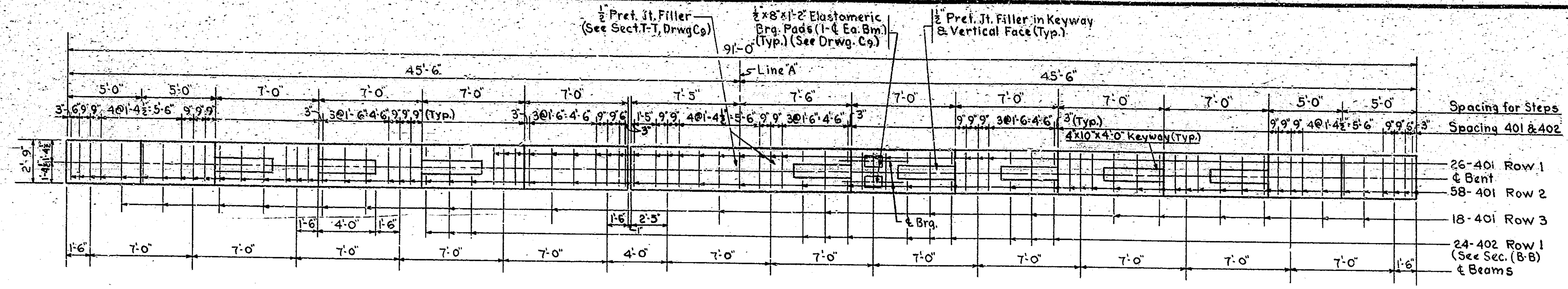
SCALE:- ¼"=1'-0" OR AS NOTED — *SEPTEMBER 12, 1969*

RECOMMENDED FOR APPROVAL:- C.R. Ruminer (signature)
ENGINEER OF BRIDGE DESIGN

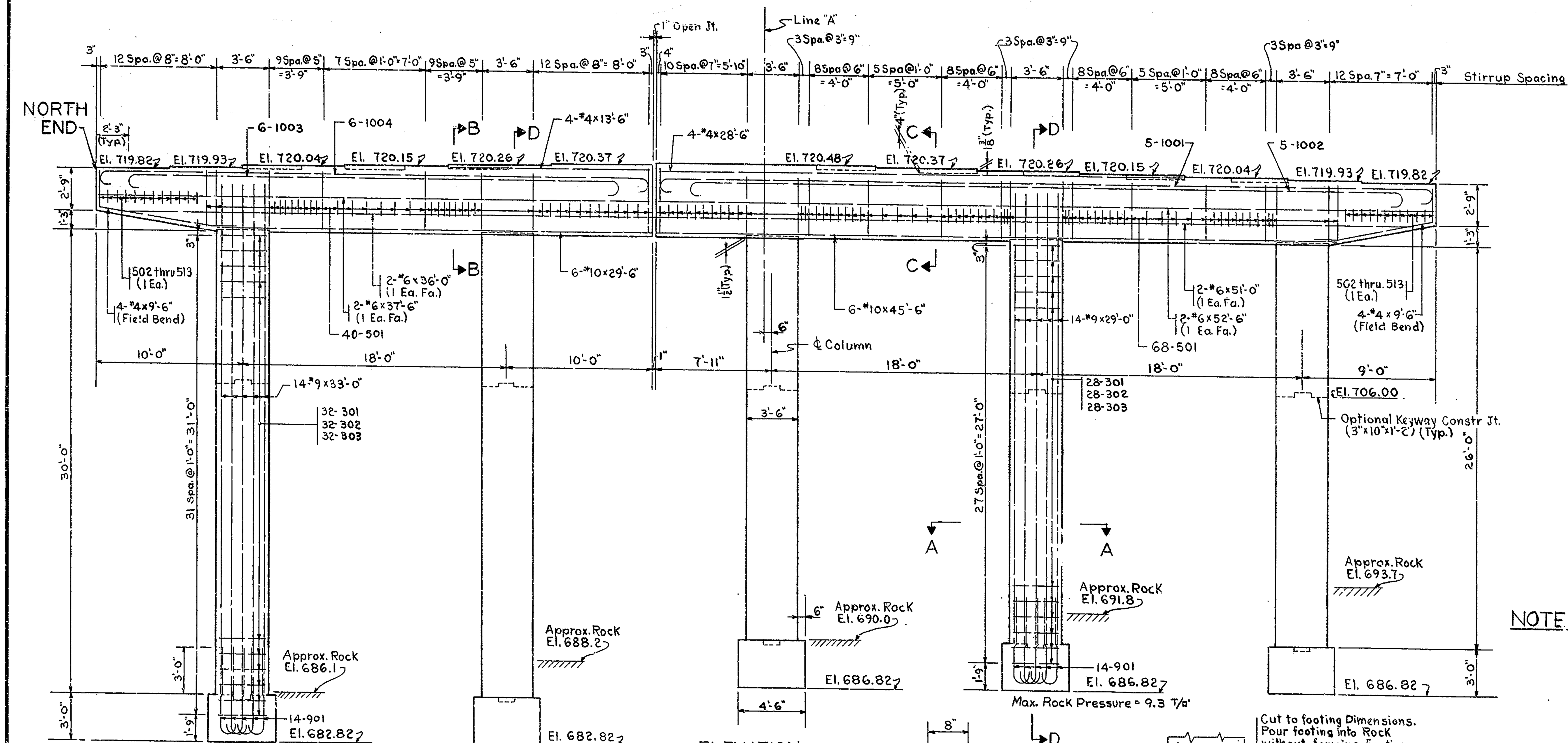
DRAWING:- C5 OF 11
PROJECT:- STF-847(3)
~~BRIDGE~~ CONTRACT NO. R-8233
BRIDGE FILE:- 46-53-5918

DESIGNED WHW CK'D DKC
DRAWN ELM 2-6-69 CK'D JST
TRACED CK'D

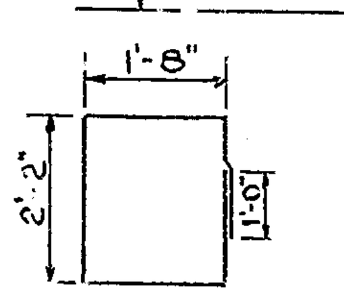
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	8	24



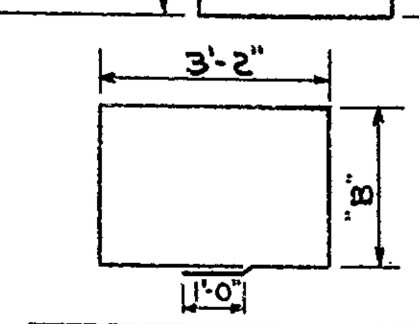
CAP PLAN



ELEVATION

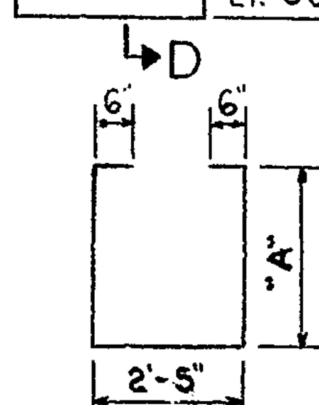


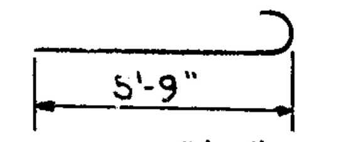
303x8'-8"



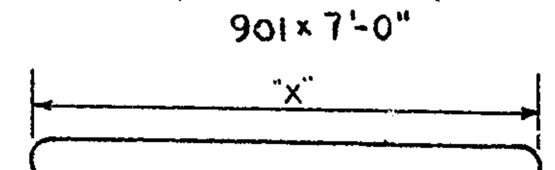
Mark	"B"	Length
301	2'-2"	11'-8
302	10"	9'-0"

Mark	"A"	Length
501	3'-8"	10'-9"
502	3'-7"	10'-7"
503	3'-6"	10'-5"
504	3'-4"	10'-1"
505	3'-3"	9'-11"
506	3'-2"	9'-9"
507	3'-1"	9'-7"
508	2'-11"	9'-3"
509	2'-10"	9'-1"
510	2'-9"	8'-11"
511	2'-8"	8'-9"
512	2'-6"	8'-5"
513	2'-5"	8'-3"

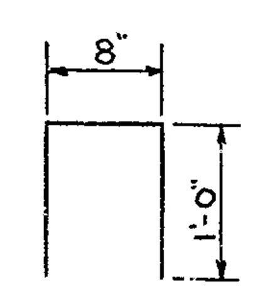




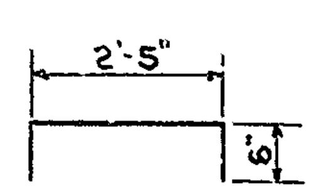
901x7'-0"



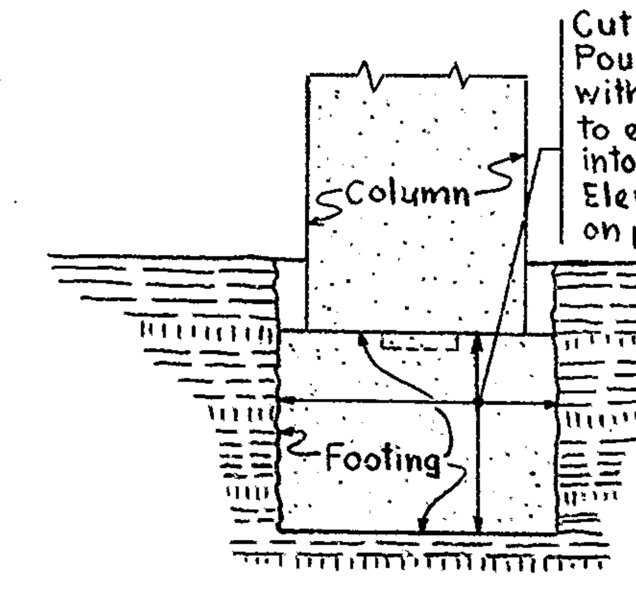
Mark	"X"	Length
1001	52'-5"	55'-3"
1002	48'-5"	51'-3"
1003	37'-5"	40'-3"
1004	33'-5"	36'-3"



402x2'-8"



401x3'-5"



Cut to footing Dimensions. Pour footing into Rock without forming. Footing to extend a minimum of 3' into Solid Rock and footing Elevations shall be as shown on plans or below if necessary.

DETAIL of FOOTING POUR

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

BILL of MATERIALS

BENT Nº 3

REINFORCING STEEL			
SIZE & MARK	Nº of BARS	LENGTH	WEIGTH
1001	5	55'-3"	
1002	5	51'-3"	
1003	6	40'-3"	
1004	6	36'-3"	
#10	6	45'-6"	
#10	6	29'-6"	
TOTAL #10			6203
901	70	7'-0"	
#9	28	33'-0"	
#9	42	29'-0"	
TOTAL #9			8949
#6	2	52'-6"	
#6	2	51'-0"	
#6	2	37'-6"	
#6	2	36'-0"	
TOTAL #6			532
501	108	10'-9"	
502	2	10'-7"	
503	2	10'-5"	
504	2	10'-1"	
505	2	9'-11"	
506	2	9'-9"	
507	2	9'-7"	
508	2	9'-3"	
509	2	9'-1"	
510	2	8'-11"	
511	2	8'-9"	
512	2	8'-5"	
513	2	8'-3"	
TOTAL #5			1447
401	102	3'-5"	
402	24	2'-8"	
#4	4	28'-6"	
#4	4	13'-6"	
#4	8	9'-6"	
TOTAL #4			439
301	148	11'-8"	
302	148	9'-0"	
303	148	8'-8"	
TOTAL #3			1632
TOTAL STEEL			19202

CONCRETE	
CLASS "A" in SUBSTRUCTURE:	
CAP (W.B.)	16.1 Cu.Yds.
COLUMNS (W.B.) 2@9.75 =	19.5 Cu.Yds.
CAP (E.B.)	23.2 Cu.Yds.
COLUMNS (E.B.) 3@8.5 =	25.4 Cu.Yds.
TOTAL CLASS "A":	84.2 Cu.Yds.
CLASS "B" in FOOTING:	
FOOTING (W.B.) 2@1.75 =	3.5 Cu.Yds.
FOOTING (E.B.) 3@1.75 =	5.3 Cu.Yds.
TOTAL CLASS "B":	8.8 Cu.Yds.
~ MISCELLANEOUS ~	
"B" Borrow for Str. Backfill =	67.0 Cu.Yds.

NOTE:

SEE DRWG. C_{10} FOR BRG. PAD DETAILS

SEE DRWG. C_5 FOR SECTIONS A-A THRU D-D

SEE BR. STD. C_1 FOR REIN. BAR NOTES

BENT Nº 3 DETAILS

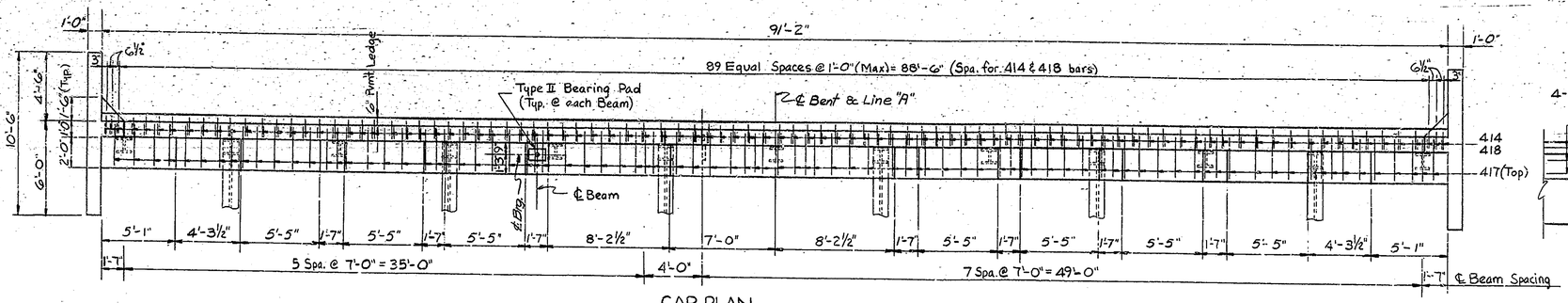
INDIANA STATE HIGHWAY COMMISSION

SCALE:- 1/4"=1'-0" OR AS NOTED   SEPTEMBER 12, 1969

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

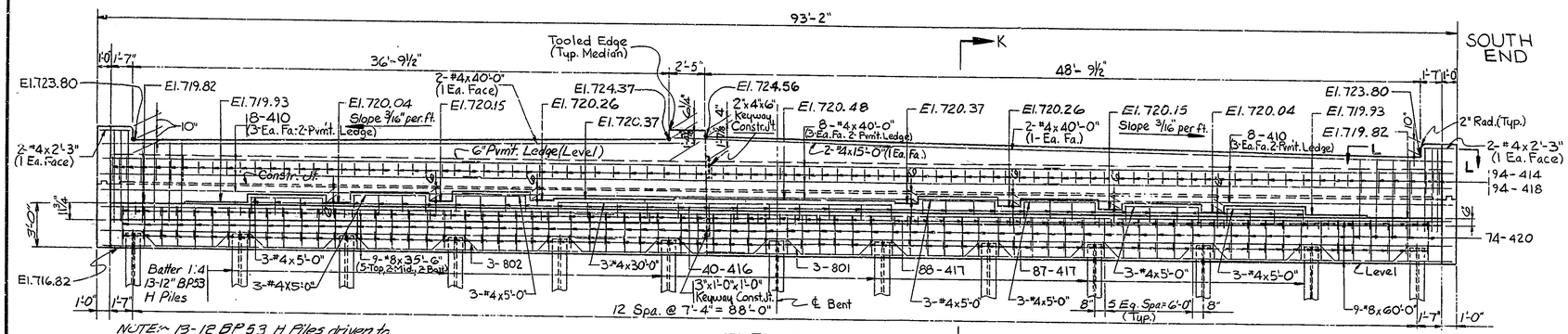
DRAWING:- C_6 OF 11
PROJECT:- STF-847(3)
~~BRIDGE~~ CONTRACT NO. R-3233
BRIDGE FILE:- 46-53-5918

DESIGNED WHW C'K'D DKC
DRAWN ELM 3-5-69 C'K'D JST
TRACED ____ C'K'D ____



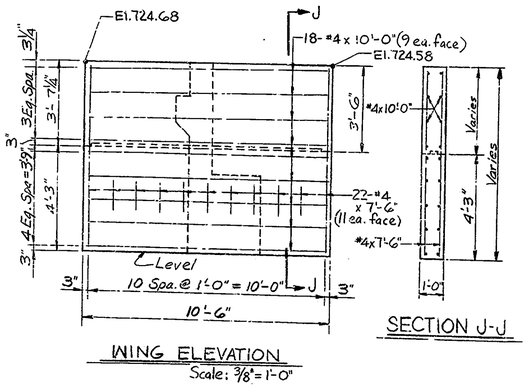
CAP PLAN

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



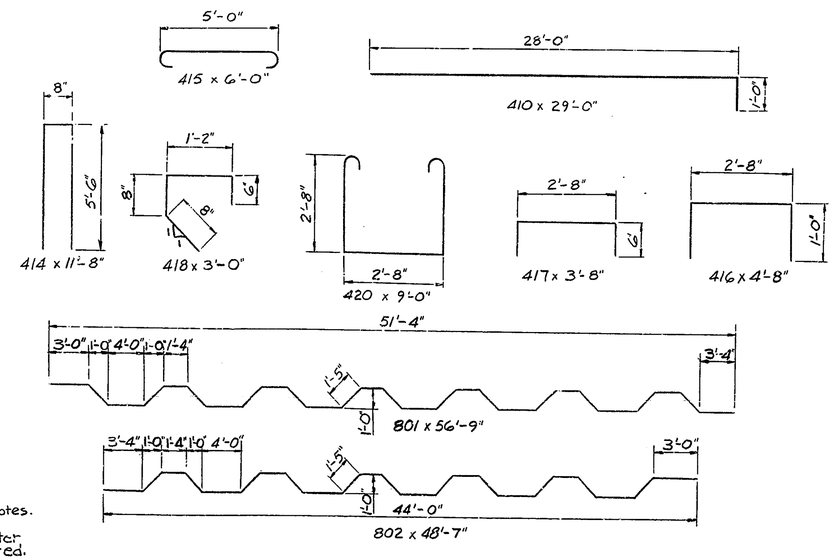
ELEVATION

NOTE:- 13-12 BP 53 H Piles driven to approximate refusal in rock.



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

SECTION J-J



NOTES: See Br. Std. C1 for Reinforcing Bar Notes.
See Br. Std. P811 for Brg. Pad Detail.
Mudwall not to be poured until after Superstructure Slab has been poured.

DESIGNED WHW	C'K'D. DKC		
DRAWN LDB 4-9-67	C'K'D. JET		
TRACED	C'K'D		

BRIDGES OVER 20' SPAN

PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	9	24

BILL OF MATERIAL (Bent #4)

REINFORCING STEEL

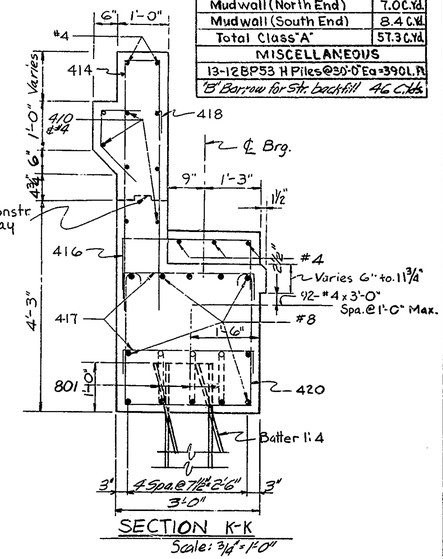
SIZE & MARK	Nº BARS	LENGTH	WEIGHT
801	3	56'-9"	
802	3	48'-7"	
#8	9	60'-0"	
#8	9	35'-6"	
Total #8			3159#
410	16	29'-0"	
414	94	11'-8"	
415	8	6'-0"	
416	40	4'-8"	
417	175	3'-8"	
418	94	3'-0"	
420	74	9'-3"	
#4	12	40'-0"	
#4	3	30'-0"	
#4	2	15'-0"	
#4	36	10'-0"	
#4	44	7'-6"	
#4	21	5'-0"	
#4	92	3'-0"	
#4	4	2'-3"	
Total #4			3383#
Total Steel			6522#

~CONCRETE~

Class "A" in Sub Structure:	
Cap Pour (North End)	18.8C.Yd.
Cap Pour (South End)	23.1C.Yd.
Mudwall (North End)	7.0C.Yd.
Mudwall (South End)	8.4 C.Yd.
Total Class "A"	57.3 C.Yd.

MISCELLANEOUS

13-12 BP 53 H Piles @ 30'-0" Ea = 390 L.Ft.	
"B" Borrow for Str. backfill	46 C.Yds.



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

BENT Nº 4 DETAILS
INDIANA STATE HIGHWAY COMMISSION

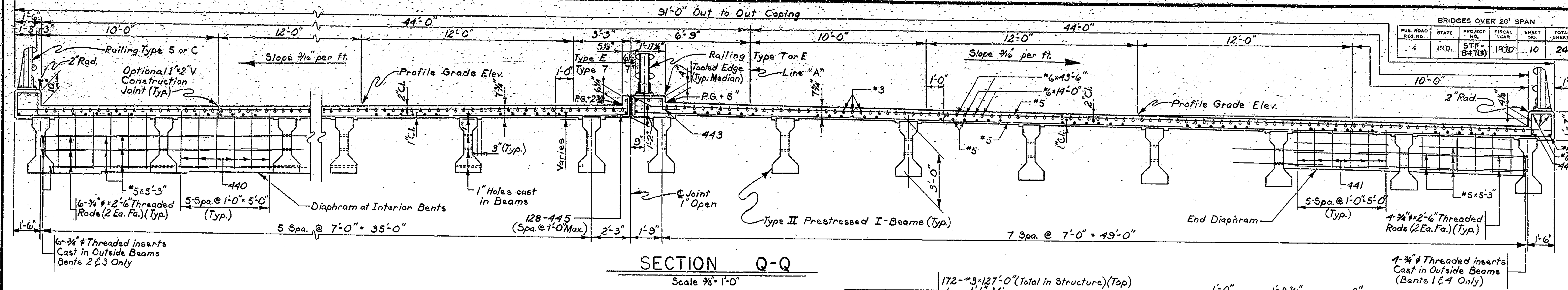
SCALE:- 1/4" = 1'-0" UNLESS NOTED SEPTEMBER 12, 1969

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

DRAWING:- C7 OF 11
PROJECT:- STF-847(3)
~~BRIDGE~~ CONTRACT NO. R-8233
BRIDGE FILE:- 46-53-5918

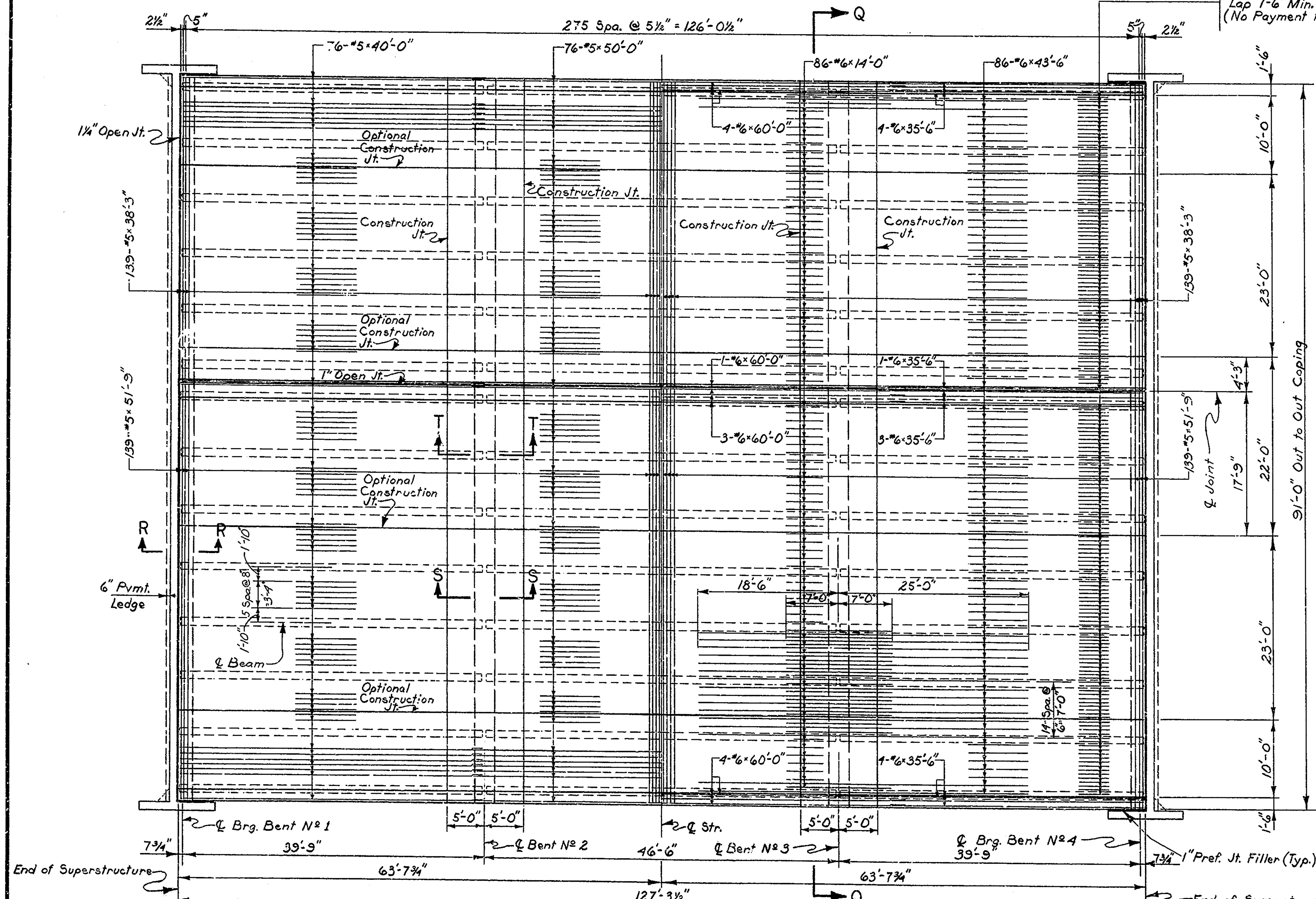
REGISTERED PROFESSIONAL ENGINEER

BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	10	24



SECTION Q-Q

Scale ⅜" = 1'-0"

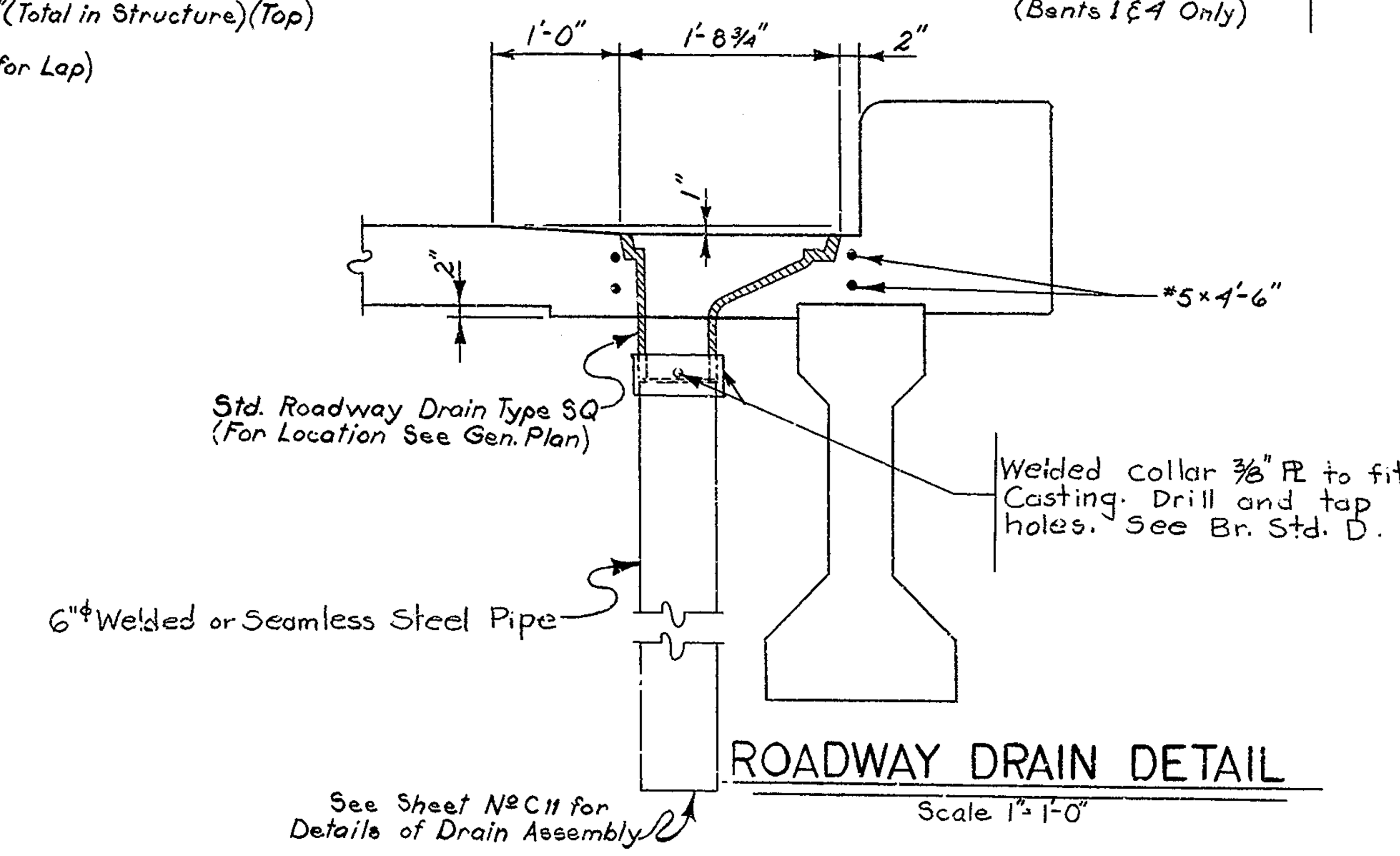


LEFT HALF SHOWING BOTTOM STEEL

PLAN

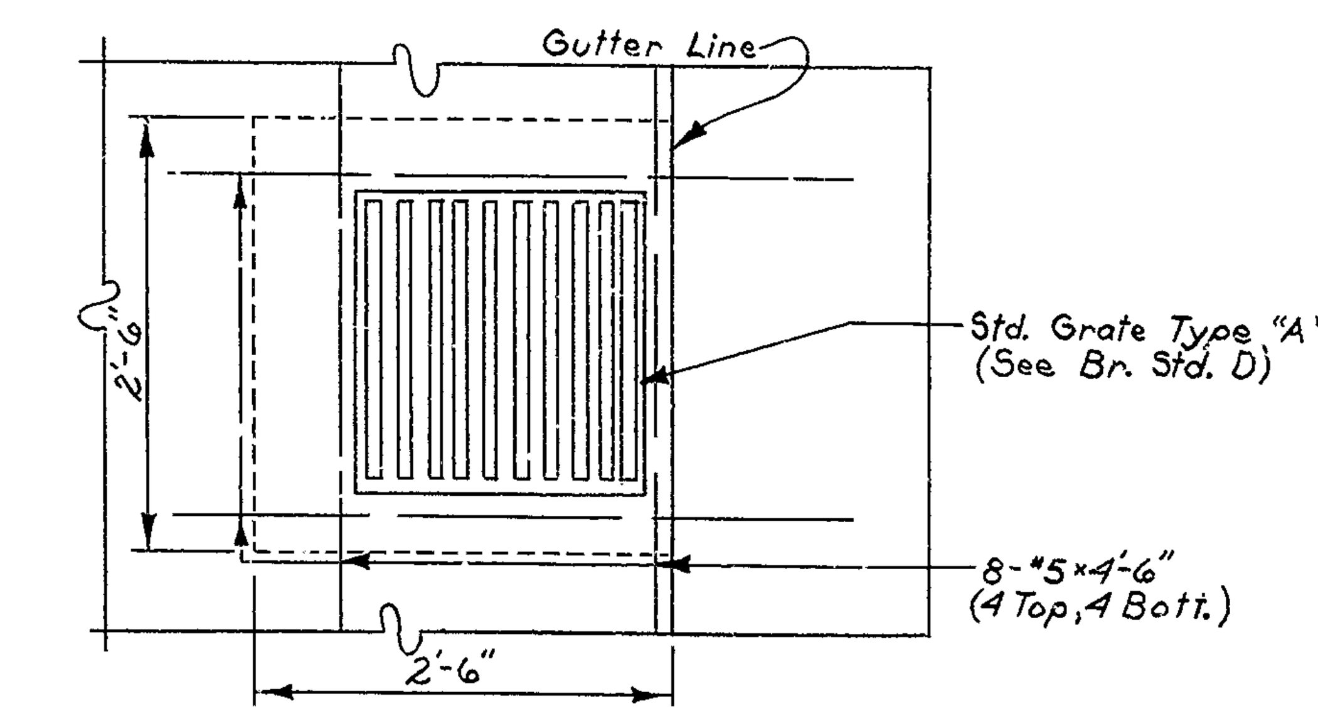
Scale ⅛" = 1'-0"

RIGHT HALF SHOWING TOP STEEL



ROADWAY DRAIN DETAIL

Scale 1" = 1'-0"



ROADWAY DRAIN PLAN

Scale 1" = 1'-0"

NOTE:
See Drwg. C9 for Sections R-R, S-S, and T-T.
Welded deformed steel wire fabric may be used in place of #3 bars in top of the slab. See the Special Provisions.

NOTE: See Br. Std. C1 for Reinforcing Bar Notes.

DESIGNED DKC	C'K'D WHW
DRAWN D.P.W. 1/14/69	C'K'D DKC
TRACED	C'K'D

SUPERSTRUCTURE DETAILS
INDIANA STATE HIGHWAY COMMISSION

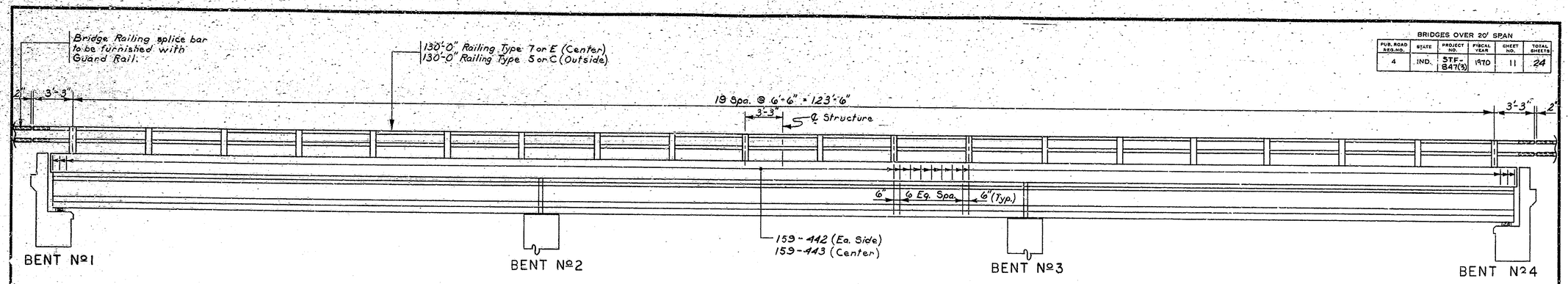
SCALE:- AS NOTED

SEPTEMBER 12, 1969

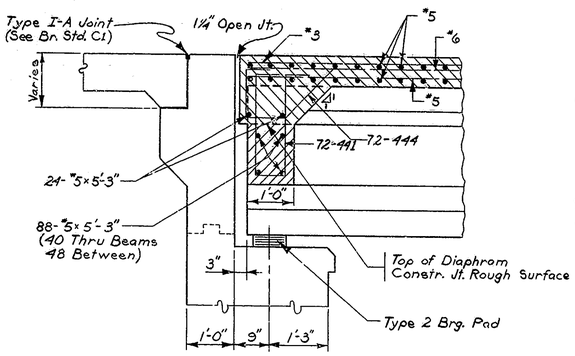
RECOMMENDED FOR APPROVAL:- C R Rumner
ENGINEER OF BRIDGE DESIGN

DRAWING:- C8 OF 11
PROJECT:- STF-847(3)
~~BRIDGE~~ CONTRACT NO. R-8233
BRIDGE FILE:- 46-53-5918

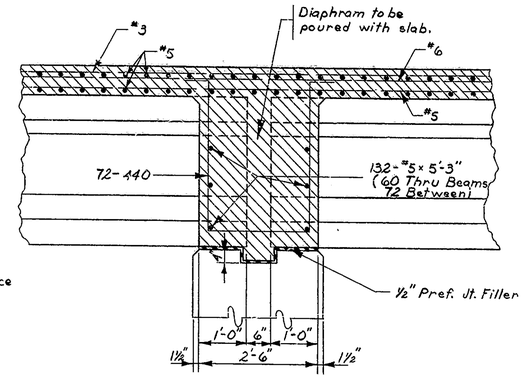
BRIDGES OVER 20' SPAN					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	11	24



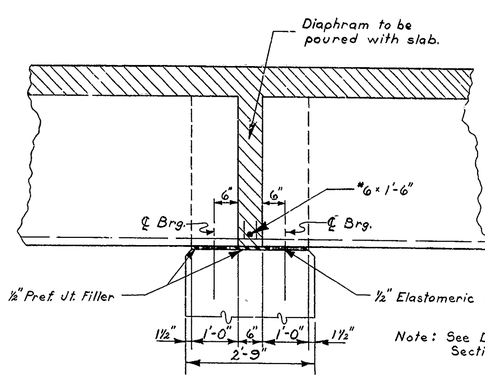
ELEVATION
SCALE 1/4" = 1'-0"



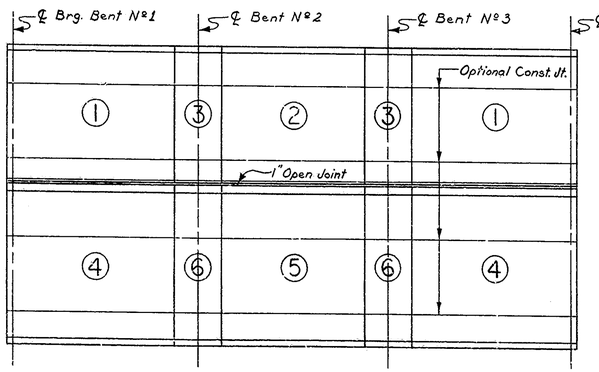
SECTION R-R



SECTION S-S



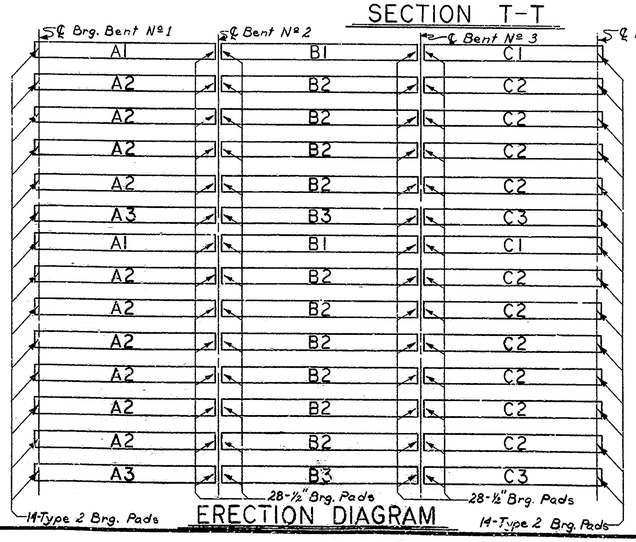
Note: See Drwg. C8 for location of Section R-R, S-S & T-T.



POUR DIAGRAM
No Scale

NOTE: See the Special Provisions for superstructure concrete pours & joint option.
Pour numbers indicate sequence of pours for each structure. Diaphrams at the end of the structure to be poured before slab is poured. Diaphrams at Bents No 2 & No 3 to be poured with slab.

SECTION T-T



ERECTION DIAGRAM

DESIGN DATA

Reinforced Concrete:
Unit Stresses ~ fs = 20,000 psi fc = 1200 psi.
Live Load ~ HS 20-44 with impact and distribution of loads in accordance with 1969 A.A.S.H.O. Specifications.
Dead Load ~ Increased 35 lbs/s' of roadway width for future wearing surface. Slab designed with 1" wearing surface.

Note: See Brg. Std. C1 for Reinforcing Bar Notes.

DESIGNED DKC C'K'D WHW
DRAWN D.R.W. C'K'D DKC
TRACED C'K'D

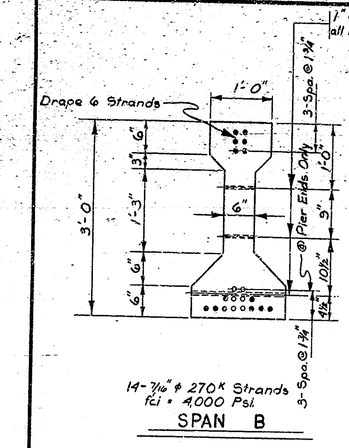
SUPERSTRUCTURE DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE:- AS NOTED SEPTEMBER 12, 1969

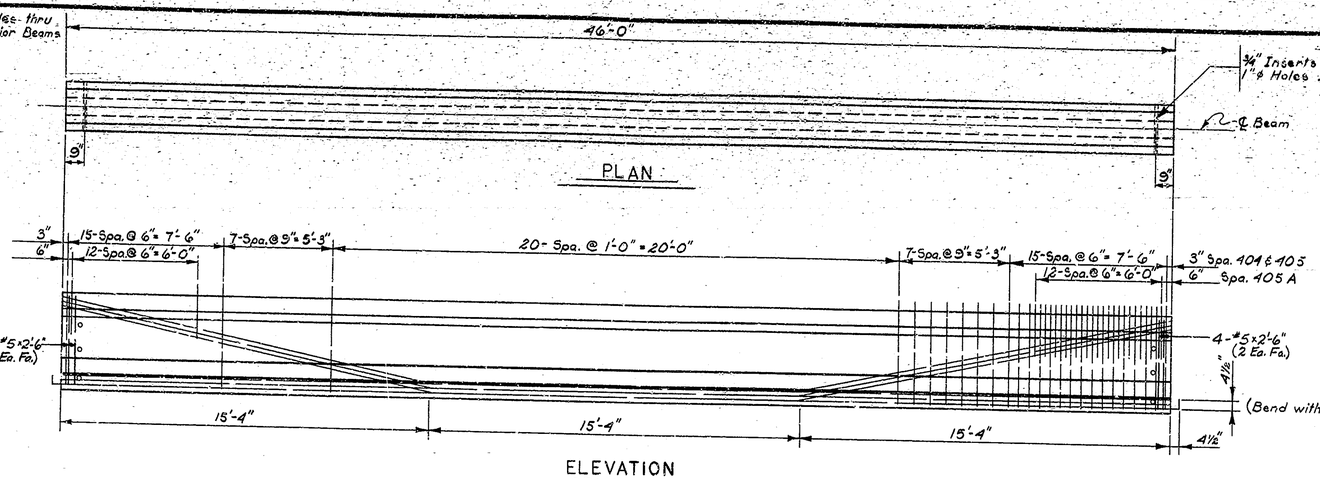
RECOMMENDED FOR APPROVAL:- C.F. Rummel
ENGINEER OF BRIDGE DESIGN

DRAWING:- 39 OF 11
PROJECT:- STF-847(3)
~~BRIDGE~~ CONTRACT NO. R-8233
BRIDGE FILE:- 46-53-5918

REGISTERED PROFESSIONAL ENGINEER

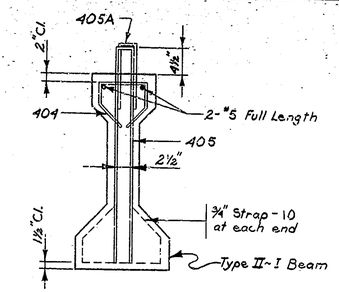


SPAN B

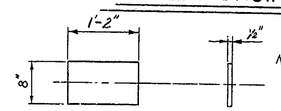


ELEVATION
SPAN B

BRIDGES OVER 20' SPAN					
FED. ROAD REQ. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
- 4 -	IND.	STF-847(3)	1970	12	24

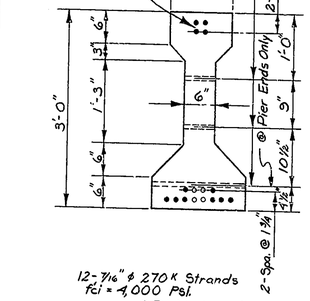


SECTION SHOWING REINFORCING

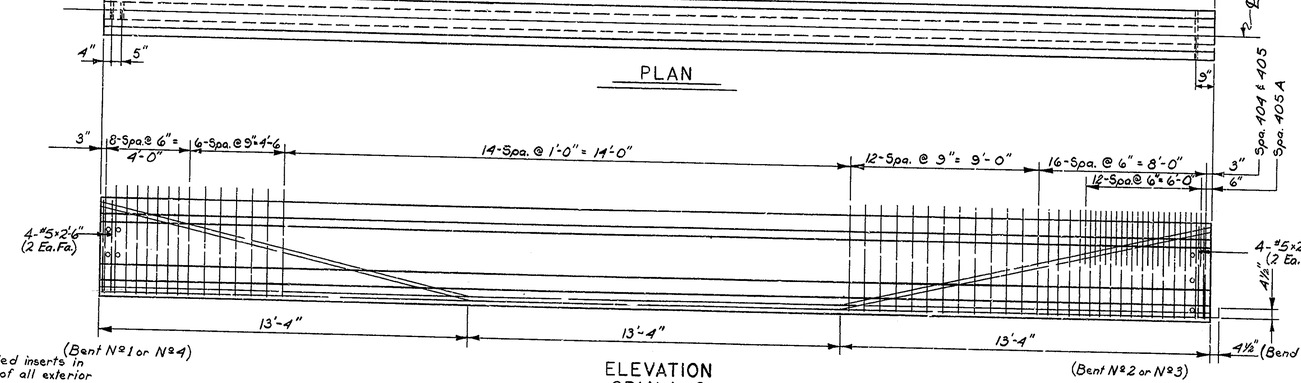


NOTE: Bearing Pads to be 60 durometer hardness. 56 Pads required.

ELASTOMERIC BEARING
PAD FOR BENTS Nº2 & Nº3



SPAN A or C



ELEVATION
SPAN AorC

GENERAL NOTES

The cost of Elastomeric Bearing Pads, ¾" ϕ x 2'-6" threaded rods, ¾" ϕ threaded inserts in outside beams, ½" Preformed Joint Filler, and Prestressed Concrete I-Beams, to be included in the Lump Sum bid for Structural Members.

Outside face of outside beams to be given initial rub in shop by fabricator and final rub in field by contractor in accordance with Art. 702.20(b) except rubbing to be done within 12 hours after concrete is poured.

Screed data to be furnished upon request.

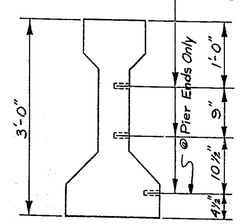
Bridge seats were set using design camber and dead load deflection of slab so that top of beam will be at bottom of slab elevation at centerline of span. Fillet depth to vary along length of beam to compensate for camber. Actual cambers which are greater than design cambers will be taken care of by permitting the top of beam to extend into slab. Actual cambers which are less than design cambers will require slightly higher fillets.

DESIGN DATA

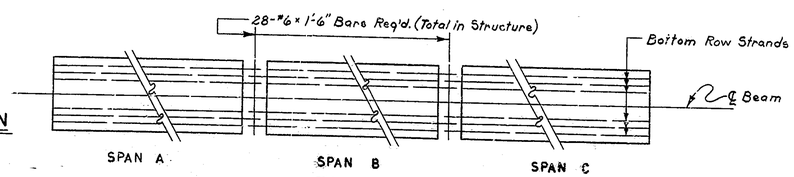
SPAN A or C	SPAN B
Initial Beam Camber = +0.3522"	Initial Beam Camber = +0.4928"
Slab Dead Load Deflection = -0.1835"	Slab Dead Load Deflection = -0.3311"
Residual Beam Camber = +0.1687"	Residual Beam Camber = +0.1617"

Prestressed Beams:
All beams shall be Type II as shown on Br. Std. PB2.

¾" ϕ Threaded inserts in inside face of all exterior Beams.



EXTERIOR BEAM SECTION



PLAN
SHOWING EXTENDED STRANDS

NOTES: See Br. Std. PB10 for Tolerances of Prestressed Beams.
See Br. Std. PB11 for Type 2 Brg. Pads.
See Br. Std. C1 for Reinforcing Bar Notes.

DESIGNED DKC CK'D WHW
DRAWN D.R.W. 1/1969 CK'D DKC
TRACED CK'D

BEAM DETAILS

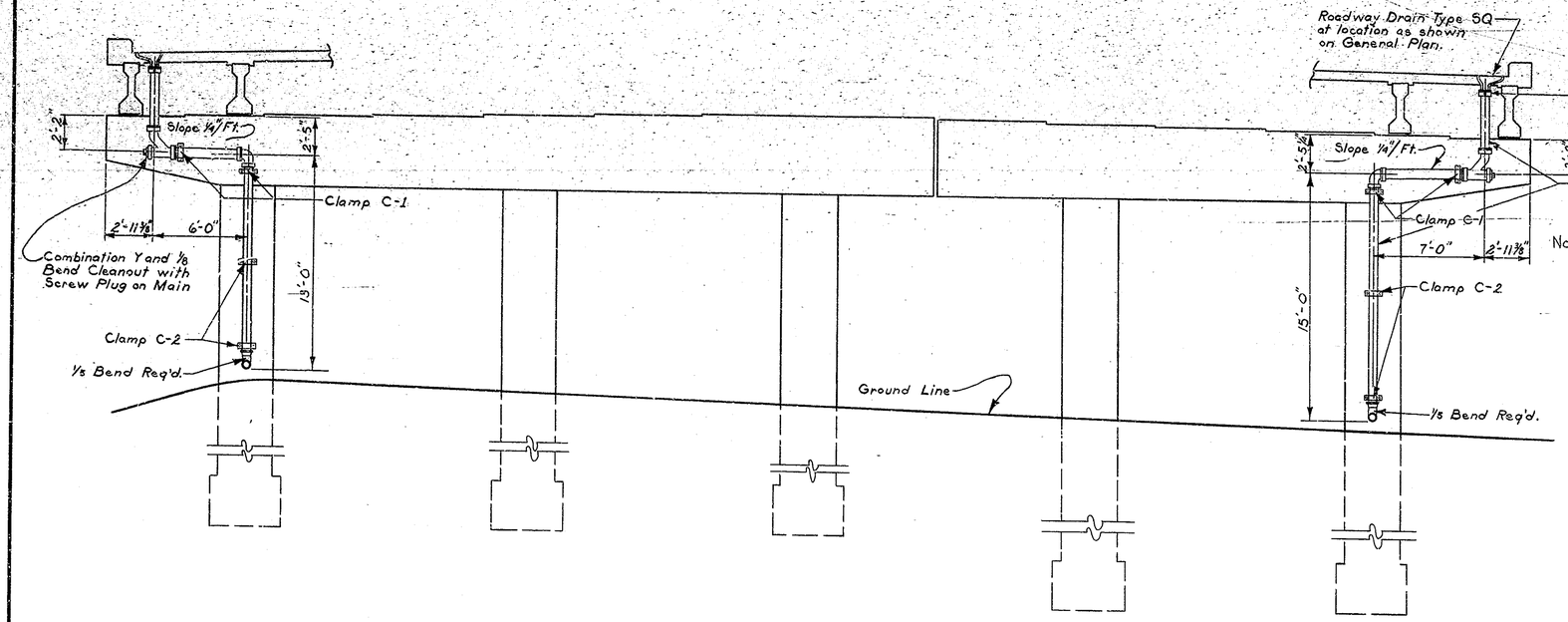
INDIANA STATE HIGHWAY COMMISSION

SCALE:- NONE SEPTEMBER 12 1969

RECOMMENDED FOR APPROVAL:- C. B. Rummel
ENGINEER OF BRIDGE DESIGN

DRAWING:- C/o OF 11
PROJECT:- STF-847(3)
~~BRIDGE~~ CONTRACT NO. R-8233
BRIDGE FILE:- 46-53-5918

BRIDGES OVER 20' SPAN-					
PUB. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF-847(3)	1970	13	24



Note:- Cost of all plates and hardware is to be included in the lump sum price of 6"ϕ welded or seamless steel pipe.

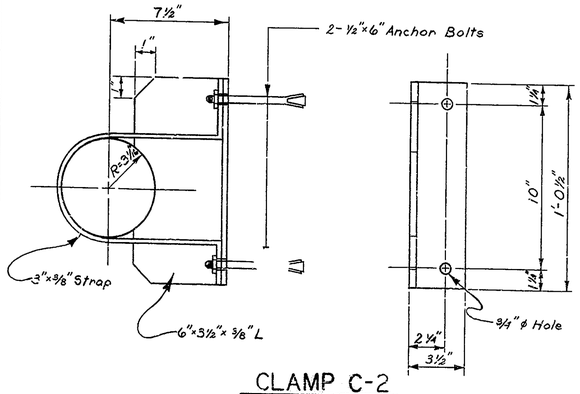
EAST SIDE BENT Nº 3

Scale 1/4" = 1'-0"

SUPERSTRUCTURE BILL OF MATERIALS

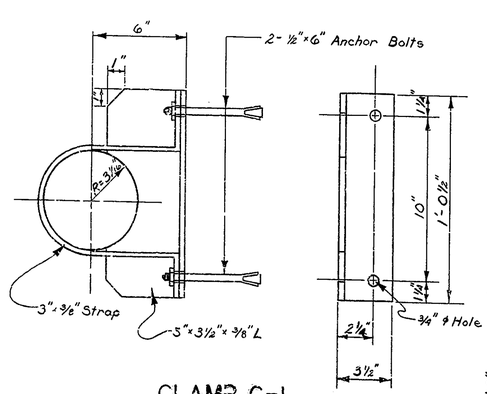
REINFORCING STEEL			
Size & Mark	Nº of Bars	Length	Weight
#6	12	60'-0"	
#6	172	43'-6"	
#6	24	35'-6"	
#6	172	14'-0"	
#6	28	1'-6"	
		Total #6	17,279 #
#5	218	51'-0"	
#5	176	50'-0"	
#5	152	40'-0"	
#5	278	38'-3"	
#5	488	5'-3"	
#5	16	4'-6"	
		Total #5	39,148 #
440	144	9'-2"	
441	144	6'-8"	
442	318	4'-8"	
443	155	4'-0"	
444	144	3'-10"	
445	128	1'-9"	
		Total #4	3,333 #
#3	172	127'-0"	8,213 #
	TOTAL	STEEL	68,033 #
~ CONCRETE ~			
Pour Nº 1-2 @ 36.5			73.0 Cys.
Pour Nº 2-1 @ 36.3			36.3 Cys.
Pour Nº 3-2 @ 18.8			37.6 Cys.
Pour Nº 4-2 @ 43.4			58.8 Cys.
Pour Nº 5-1 @ 43.0			49.0 Cys.
Pour Nº 6-2 @ 25.9			51.8 Cys.
Diaphragms @ End Bents			7.2 Cys.
Total Class "A" Concrete in Superstructure			353.7 Cys.
MISCELLANEOUS			
Railing Type S or C			260 Lin. Ft.
Railing Type T or E			130 Lin. Ft.
2- Roadway Drains Type SQ-A @ 192# Each			384 #
6"ϕ Welded or Seamless Steel Pipe.			52 Lin. Ft.

Total Length of Type II Prestressed I-Beams = 1764 Lin. Ft.



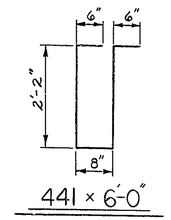
CLAMP C-2

Scale 3" = 1'-0"

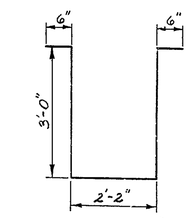


CLAMP C-1

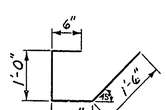
Scale 3" = 1'-0"



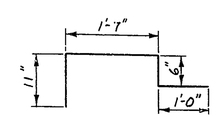
441 × 6'-0"



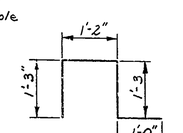
440 × 9'-2"



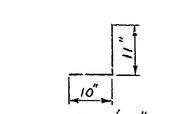
444 × 3'-10"



443 × 4'-0"



442 × 4'-8"



445 × 1'-9"

NOTE: See Br. Std. C1 for Reinforcing Bar Notes.

DESIGNED DKC C'K'D WHW
DRAWN D.R.W. C'K'D DKC
TRACED ____ C'K'D ____

SUPERSTRUCTURE DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE:- AS NOTED

SEPTEMBER 12, 1969

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

DRAWING:- C11 OF 11

PROJECT:- STF-847(3)

~~BRIDGE~~ CONTRACT NO. R-8233

BRIDGE FILE:- 46-53-59/8

REGISTERED PROFESSIONAL ENGINEER No. 2275 STATE OF INDIANA

BRIDGES OVER 20' SPAN

FED. ROAD REG. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
4	IND.	STF 847(3)	1970	14	24

STRUCTURE QUANTITIES

ITEM	CONCRETE CLASS A SUBSTR. CU. YDS.	CONCRETE CLASS A SUPERSTR. CU. YDS.	CONCRETE CLASS B ABOVE FTG. CU. YDS.	CONCRETE CLASS B IN FTG. CU. YDS.	CONCRETE RAILING CLASS A CU. YDS.	CONCRETE RAILING CLASS A LIN. FT.	REINF. STEEL TOTAL LBS.	STRUCT. STEEL *** LBS.	BRONZE PLATES LBS.	ANCHOR PLATES MK-AP EACH	ANCHOR RODS MK-AR EACH	PILES UNTREATED TIMBER NO.	PILES UNTREATED TIMBER LIN. FT.	PILES TREATED TIMBER NO.	PILES TREATED TIMBER LIN. FT.	PILES STEEL ENCASED CONC. NO.	PILES STEEL ENCASED CONC. LIN. FT.	PILES STEEL H BEARING NO.	PILES STEEL H BEARING LIN. FT.	CAST IRON DRAIN PIPE LBS.	RAILING TYPE 5 OR C LIN. FT.	CAST IRON, GRATES, BASINS, & FITTINGS LBS.	B BORROW FOR STR. BACKFILL CU. YDS.	RAILING TYPE 7 OR E LIN. FT.	6"⌀ Welded or Seamless Steel Pipe LIN. FT.
BENT Nº1	110.9						4,655																		
BENT Nº2	64.5			8.8			15,626																69		
BENT Nº3	84.2			8.8			19,202																8		
BENT Nº4	57.3						6,522																67		
SUPERSTRUCTURE		353.7					68,033											13	390				46		
																					260	384		130	52
Reinf. Steel for Approach Structures																									
Reinf. Steel for R.C. Bridge Approaches																									
Reinf. Steel for Lip Gutter, Pvmt., Tapers, etc.																									
TOTALS	316.9	353.7		17.6			114,038											13	390		260	384	190	130	‡ 52

APPROACH STRUCTURES

STRUCT. NO.	LOCATION	DESCRIPTION SIZE	DESCRIPTION KIND	LENGTH LIN. FT.	CONCR. CL. A IN STRS. CU. YDS.	REINF. STEEL LBS.	B BORROW FOR STR. BACKFILL CU. YDS.	PIPE END SEC. EACH	REMARKS
				TOTALS					Total of Reinforcing Steel Carried to "Structure Quantities"

JUNE 1, 1969

NOTES:
For Test Bar Samples See Bridge Standard C1.
* Not a Pay Item. Place as directed by the Engineer.
"W-35A" safe speed to be determined by the Engineer.
Directional, Advisory or Warning Signs shall be right hand or left hand as the location of the sign requires.

SUMMARIZED D.K.C. C'K'D W.B.R.
TRACED W.B.R. C'K'D D.K.C.

NOTES:
Weight of Spirals includes weight of 1½ extra turns top and bottom.
Spacers and 1½ turns at laps included in cost of Spiral.
*** The weight of structural steel is approximate only, and it shall be the Contractor's responsibility to determine the weight on which he bases his bid.
‡ Cost of all plates and hardware is to be included in the Lump Sum price of 6"⌀ Welded or Seamless Steel Pipe.

BARRICADES, BARRIERS, TRAFFIC SIGNS AND LIGHTS

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

SUMMARY

ITEM	DESCRIPTION	UNIT	QUANTITIES BRIDGE FILE				TOTALS
1	Concrete, Class A in Superstructure	Cu. Yds.	353.7				
2	Concrete, Class A in Substructure	Cu. Yds.	316.9				
3	Concrete, Class B above Footings	Cu. Yds.					
4	Concrete, Class B in Footings	Cu. Yds.	17.6				
5	Concrete Railing						
6	Reinforcing Steel	Pounds	114,038				
7	Structural Steel	Lump Sum					
8	Concrete Structural Members	Lump Sum	1				
9	Anchor Plates (MK-AP	Each					
10	Bronze Plates	Pounds					
11	Cast Iron, Drain Pipe, Inch	Pounds					
12	Cast Iron, Grates, Basins and Fittings	Pounds	384				
13	Railing (Type 5 or C)	Lin. Ft.	260				
14	Timber Piles Furnished, Untreated	Lin. Ft.					
15	Timber Piles Driven, Untreated	Lin. Ft.					
16	Timber Piles Furnished, Treated	Lin. Ft.					
17	Timber Piles Driven, Treated	Lin. Ft.					
18	Pile Shells Furnished & Driven (")	Lin. Ft.					
19	Steel H Piles Furnished & Driven (12 BP 53)	Lin. Ft.	390				
20	Furnishing Equipment for Driving Piles	Lump Sum	1				
21	Wet Excavation	Cu. Yds.					
22	Foundation Excavation (Unclassified)	Cu. Yds.	95				
23	Waterway Excavation	Cu. Yds.					
24	Common Excavation	Cu. Yds.					
25	Borrow	Cu. Yds.					
26	B Borrow for Structure Backfill	Cu. Yds.					
27	B Borrow	Cu. Yds.					
28	Expansion Joint, Preformed (")	Lin. Ft.					
29	Concrete Pavement, Reinforced Cement (")	Sq. Yds.					
30	(Type) Compacted Aggregate for Base						
31	Subbase	Cu. Yds.					
32	Removal of Present Structure	Each					
33	Temporary Bridge and Approaches	Lump Sum					
34	Construction Signs, (Type A)	Each					
35	Construction Signs, (Type B)	Each					
36	Standard Barricades (Type A)	Each					
37	Standard Barricades (Type B)	Each					
38	R/W Markers	Each					
39	Slopewall	Sq. Yds.	1010				
40	Riprap	Sq. Yds.					
41	Concrete, Class A in Structures	Cu. Yds.					
42	Sodding	Sq. Yds.					
43	Mulched Seeding	Sq. Yds.					
44	Anchor Rods (MK-AR	Each					
45	Class "X" Excavation	Cu. Yds.	54				
46	Railing Type 7 or E	Lin. Ft.	130				
47	6"⌀ Welded or Seamless Steel Pipe	Lump Sum	1				
48							
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SUMMARY
INDIANA STATE HIGHWAY COMMISSION

SEPTEMBER 12, 1969

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

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

PROJECT:- STF-847(3)
CONTRACT NO:- R-8233
BRIDGE FILE:- 46-53-5918