CONTRACT No. R-22229

BRIDGES OVER 20' SPAN					
FEDERAL REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	NH-089-4(4)	19	1	44

INDIANA DEPARTMENT OF TRANSPORTATION

BRIDGE PLANS

FOR SPANS OVER 20 FEET ON STATE ROAD NO. 49

PROJECT NO. NH/089-4 ( ) P.E. ( ) R/W (4) CONST

INDEX

PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION
NH-089-4(4)	49-64-1016B	PRESTR. CONCRETE I-BMS WIDENED W. 33"x36" P.C. BOX BMS	1 SPAN @ 52'-6½" CL. SKEW 24° RT.	U.S. 20	449+00

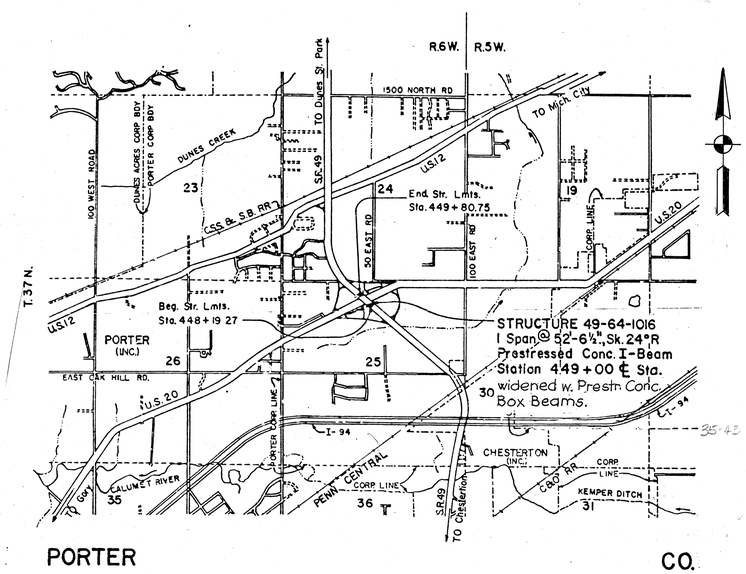
SHEET NO	SHEET DESIGNATION	SUBJECT	FHWA APPROVAL
1	ONE SHEET	INDEX AND TITLE SHEET	
2	ONE SHEET	TYPICAL CROSS SECTIONS	
3	ONE SHEET	PLAN & PROFILE	
4	ONE SHEET	MAINTENANCE OF TRAFFIC	
5	S1	LAYOUT	
6	S2	GENERAL PLAN	
7	S3	ABUTMENT No.1 or No.2 FOOTINGS	
8	S4	ABUTMENT No.1 or No.2 STEM	
9	S5	ABUTMENT No.1 or No.2 WINGS & BILL OF MATERIALS	
10	S6	SUPERSTRUCTURE DETAILS	
11	S7	CONCRETE BRIDGE RAILING & SCREED ELEVATIONS	
12	ONE SHEET	BRIDGE SUMMARY	

VALPARAISO-CHESTERTON ROAD

BEGINNING AT A POINT ON S.R.49 LINE "M" APPROX. 29.55' SOUTHWEST OF THE ℄ OF U.S.20 & EXTENDING NORTHWEST A DISTANCE OF APPROX. 59.11' TO A POINT ON S.R.49 APPROX. 29.56' NORTHWEST OF THE ℄ OF U.S.20 ON LINE "K", ALL IN SECTION 25-T.37N.-R.6W., PORTER COUNTY.

RP 48+48

BRIDGE	LENGTH	0.011	MI.
ROADWAY	LENGTH	0	MI.
TOTAL	LENGTH	0.011	MI.
MAX.	GRADE	4.00	%



PORTER CO.

TRAFFIC DATA		
A.D.T. (1990)		7400 V.P.D.
A.D.T. (19 PROJECTED)		V.P.D.
D.H.V. (19 PROJECTED)		V.P.D.
TRUCKS	D.H.V.	% A.D.T. 20%
DESIGN SPEED	40	M.P.H.
ACCESS CONTROL	NONE	

INDEX CONTINUED
STANDARD DRAWINGS

SHEET NO.	SHEET DESIGNATION	SUBJECT	F.H.W.A. APPROVAL	ADOPTED "E" REVISION "R"
14	BRIDGE STD. BR1	CONCRETE BRIDGE RAILING TRANSITION TYPE TGB	3-9-93	AUG 1992
15	BRIDGE STD. BR1A	CONCRETE BRIDGE RAILING TRANSITION TYPE TGB	3-9-93	AUG 1992
	BRIDGE STD. BR3	STEEL BRIDGE RAILING		
	BRIDGE STD. BR4	STEEL BRIDGE RAILING DETAILS		
	BRIDGE STD. BR5	RAILING CONNECTION DETAILS		
	BRIDGE STD.			A DEC 92
16	BRIDGE STD. C1	MISCELLANEOUS DETAILS	1-26-93	R-DEC '92
17	BRIDGE STD. C2	MISCELLANEOUS DETAILS	PENDING	R-9-1-95
18	BRIDGE STD. C3	MISCELLANEOUS DETAILS	1-26-95	R 1-3-95
	BRIDGE STD. C4	MISCELLANEOUS DETAILS		
	BRIDGE STD. D	CASTING DETAILS ROADWAY DRAINS		
	BRIDGE STD. D1	ADJUSTING FRAME DETAILS FOR ROADWAY DRAINS		
	BRIDGE STD.			
19	BRIDGE STD. PB-2	PRESTRESSED CONCRETE TYPE II-BEAMS	4-16-62	JAN 1962
20	BRIDGE STD. PB	PRESTRESSED CONCRETE TYPE 1-BEAMS		
21	BRIDGE STD. PB6	PRESTRESSED BOX BEAMS	7-26-71	REV. 3-1-71
22	BRIDGE STD. PB6A	PRESTRESSED COMPOSITE BOX BEAMS 3' WIDE	7-26-71	REV. 3-1-71
	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS 3' WIDE		
23	BRIDGE STD. PB10	TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS	8-14-63	NOV. 1962
24	BRIDGE STD. PB11	ELASTOMERIC BEARING PAD DETAILS	2-03-87	R-FEB '87
	BRIDGE STD.			
	BRIDGE STD.			
	BRIDGE STD. R2A	BRIDGE LIGHTING DETAILS		
	BRIDGE STD. R2B	BRIDGE LIGHTING DETAILS		
25	BRIDGE STD. S1	MISCELLANEOUS DETAILS	1-22-87	R-12-1-86
	BRIDGE STD. SH1	STEEL SHOE DETAILS		
	BRIDGE STD. T SHEET A	STANDARD TEMPORARY BRIDGE		
	BRIDGE STD. T SHEET B	STANDARD TEMPORARY BRIDGE		
	BRIDGE STD.			
	BRIDGE STD.			
	BRIDGE STD.			
	BRIDGE STD.			
	BRIDGE STD.			
	ROAD STD. SHEET A	STANDARD PAVEMENT JOINTS		
	ROAD STD. SHEET B	STANDARD PAVEMENT JOINTS		
26	ROAD STD. SHEET CCPJ-1	MISCELLANEOUS STANDARDS LONGITUDINAL JT.	PENDING	R-9-1-95
27	ROAD STD. SHEET CCPJ-2	MISCELLANEOUS STANDARDS LONGITUDINAL CONST. JT.	PENDING	R-9-1-95
28	ROAD STD. SHEET CCPJ-3	MISCELLANEOUS STANDARDS TYPE D-1 CONTRACTION JT	PENDING	R-9-1-95
29	ROAD STD. SHEET CCPJ-4	MISCELLANEOUS STANDARDS TRANSV. CONST JT	PENDING	R-9-1-95
30	ROAD STD. SHEET CCPJ-5	MISCELLANEOUS STANDARDS EXPANSION JT.	PENDING	R-9-1-95
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
31	ROAD STD. SHEET CB-1	MISCELLANEOUS STANDARDS CONC. MEDIAN BARRIER	PENDING	R-5-1-95
32	ROAD STD. SHEET CB-2	MISCELLANEOUS STANDARDS TEMP. CONC. BARRIER	PENDING	R-5-1-95
33	ROAD STD. SHEET CB-2A	MISCELLANEOUS STANDARDS TEMP. CONC. BARRIER	1-21-94	A NOV 93
34	ROAD STD. SHEET RCBA-1	MISCELLANEOUS STANDARDS REINF. CONC. BRIDGE APPR.	PENDING	R-10-2-95
35	ROAD STD. SHEET RCBA-2	MISCELLANEOUS STANDARDS REINF. CONC. BRIDGE APPR.	PENDING	R-11-1-95
	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. 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 GR	GUARD RAIL CLASS		
	ROAD STD. SHEET GR	GUARD RAIL CLASS		
	ROAD STD. SHEET GR	GUARD RAIL CLASS		
	ROAD STD. SHEET GR	GUARD RAIL CLASS		
	ROAD STD. SHEET GR5	ALUMINUM GUARD RAIL DETAILS		
	ROAD STD. SHEET GR6	STEEL TUBE GUARD RAIL DETAILS		
	ROAD STD. SHEET GR7	GUARD RAIL PIER CONNECTION DETAILS		
	ROAD STD. SHEET GR8	STEEL BEAM GUARD RAIL		
	ROAD STD. SHEET GR9	ALUMINUM BEAM GUARD RAIL		
	ROAD STD. SHEET GR10	GUARD RAIL BURIED ENDS		
	ROAD STD. SHEET GR10A	GUARD RAIL BREAKAWAY CABLE TERM.		
	ROAD STD.			
	ROAD STD. SHEET CB2	TEMPORARY CONCRETE BARRIER; G.R.E.A.T. cz. UNIT		
36-44	9 SHEETS	CROSS SECTIONS		
	ROAD STD. SHEET 1 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 1A DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 1B DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 2A DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 3A DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 4 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 5 DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 5A DETOURS	STANDARD DETOUR SIGNS		

RECOMMENDED FOR APPROVAL

APPROVED

RECOMMENDED FOR APPROVAL

JOSEPH L. HARRISON REGISTERED No. 7880 STATE OF INDIANA PROFESSIONAL ENGINEER

FEDERAL HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION
APPROVED:
DIVISION ADMINISTRATOR DATE

BRIDGE FILE: 49-64-1016B

REVISIONS	
DATE	SHEET NO.

REVISIONS	
DATE	SHEET NO.

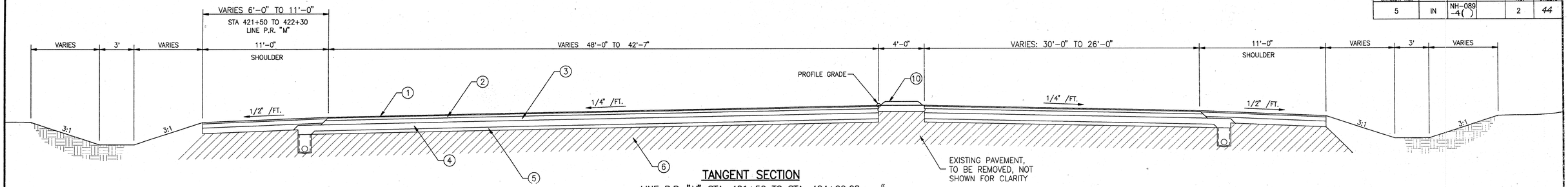
INDIANA DEPARTMENT OF TRANSPORTATION
STANDARD SPECIFICATIONS DATED 1995
TO BE USED WITH THESE PLANS.

part 2 of 2
R-22229

SF-22427 DESIGN No. 7208190

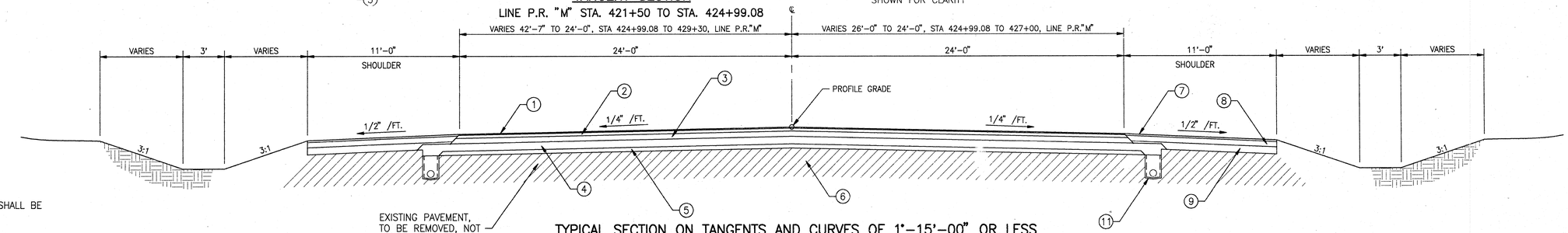
TP100

FEDERAL ROAD DIVISION NO.	STATE	PROJ. NO.	YEAR	SHEET NO.	TOTAL SHEETS
5	IN	NH-089 -4( )		2	44



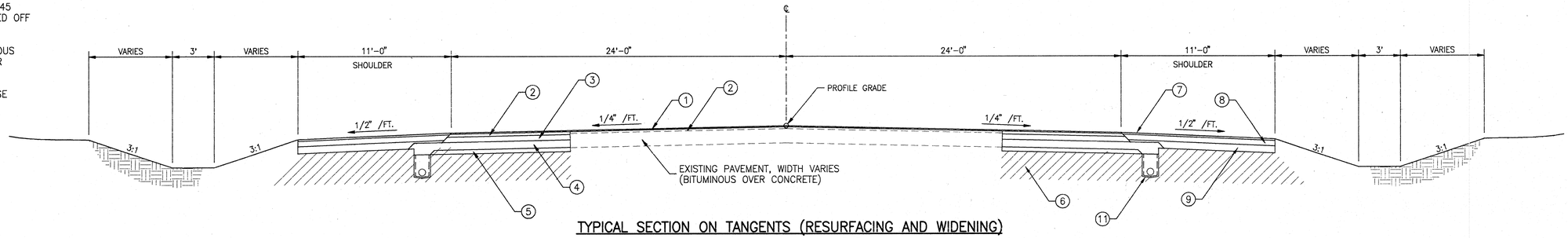
TANGENT SECTION

LINE P.R. "M" STA. 421+50 TO STA. 424+99.08



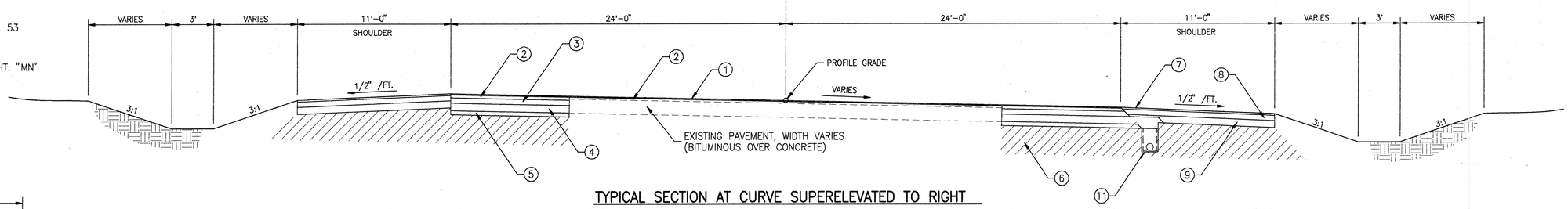
TYPICAL SECTION ON TANGENTS AND CURVES OF 1°-15'-00" OR LESS

LINE P.R. "M" STA. 424+99.08 TO LINE P.R. "M" STA. 440+47.46 (BACK)
= LINE "M" STA. 438+25.45 (AHEAD)



TYPICAL SECTION ON TANGENTS (RESURFACING AND WIDENING)

LINE P.R. "M" STA. 440+47.46 (BACK) = LINE "M" STA. 438+25.45 (BACK)
TO LINE "M" STA. 455+56.36 (AHEAD)



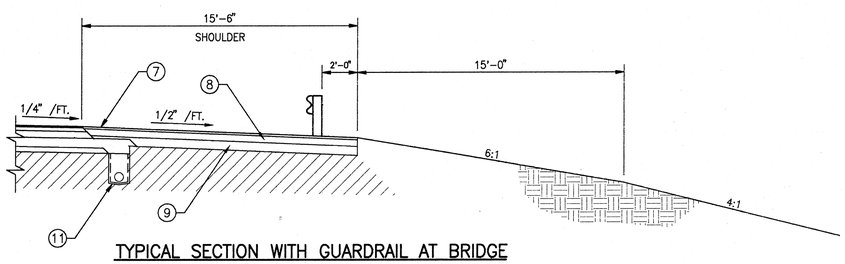
TYPICAL SECTION AT CURVE SUPERELEVATED TO RIGHT

LINE "M" STA. 455+56.35 TO STA. 463+00

NOTES:

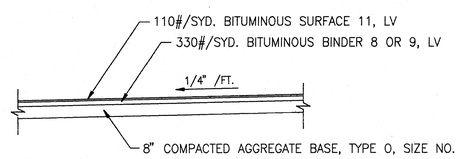
1. EXISTING CONCRETE AND BITUMINOUS PAVEMENT SHALL BE REMOVED TO STATION 440+47.26 (P.R. "M").
2. NEW BITUMINOUS PAVEMENT AS SHOWN ON TYPICAL CROSS SECTIONS, SHALL BE BUILT ON SUBGRADE COMPACTED IN ACCORDANCE WITH SECTION 207.02 OF INDOT STANDARD SPECIFICATIONS.
3. THE EXISTING BITUMINOUS SURFACE, FROM 438+25.45 (LINE "M") TO 463+00 (LINE "M"), SHALL BE MILLED OFF UP TO 1 INCH.
4. RESURFACE MILLED AREAS WITH 110#/SYD BITUMINOUS SURFACE 11, MV ON 275#/SYD BITUMINOUS BINDER 8 OR 9, MV
5. DITCH SIDE SLOPE SHALL BE 3:1 UNLESS OTHERWISE SHOWN ON CROSS SECTIONS.

1. 110#/SYD. BITUMINOUS SURFACE 11, MV
2. 275#/SYD. BITUMINOUS BINDER 8 OR 9, MV
3. 495#/SYD. BITUMINOUS BASE 5, MV
4. 700#/SYD. BITUMINOUS BASE 5C, MV
5. 385#/SYD. BITUMINOUS BASE 5D, MV
6. COMPACTED SUBGRADE
7. 165#/SYD. BITUMINOUS SURFACE 11, LV WITH BITUMINOUS CORRUGATIONS
8. 495#/SYD. BITUMINOUS BASE 5D, LV
9. 6" COMPACTED AGGREGATE BASE, TYPE O, SIZE NO. 53
10. CONCRETE CENTER CURB, TYPE "B"
11. UNDERDRAIN, FOR DETAILS, SEE MISC. STANDARD SHT. "MN"



TYPICAL SECTION WITH GUARDRAIL AT BRIDGE

LINE "M" STA. 443+50 TO STA. 453+50



TYPICAL SECTION AT HJELM RD.

INDIANA DEPARTMENT OF TRANSPORTATION
STATE ROUTE 49, PORTER COUNTY

TYPICAL CROSS SECTION

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

FOR INFORMATION ONLY

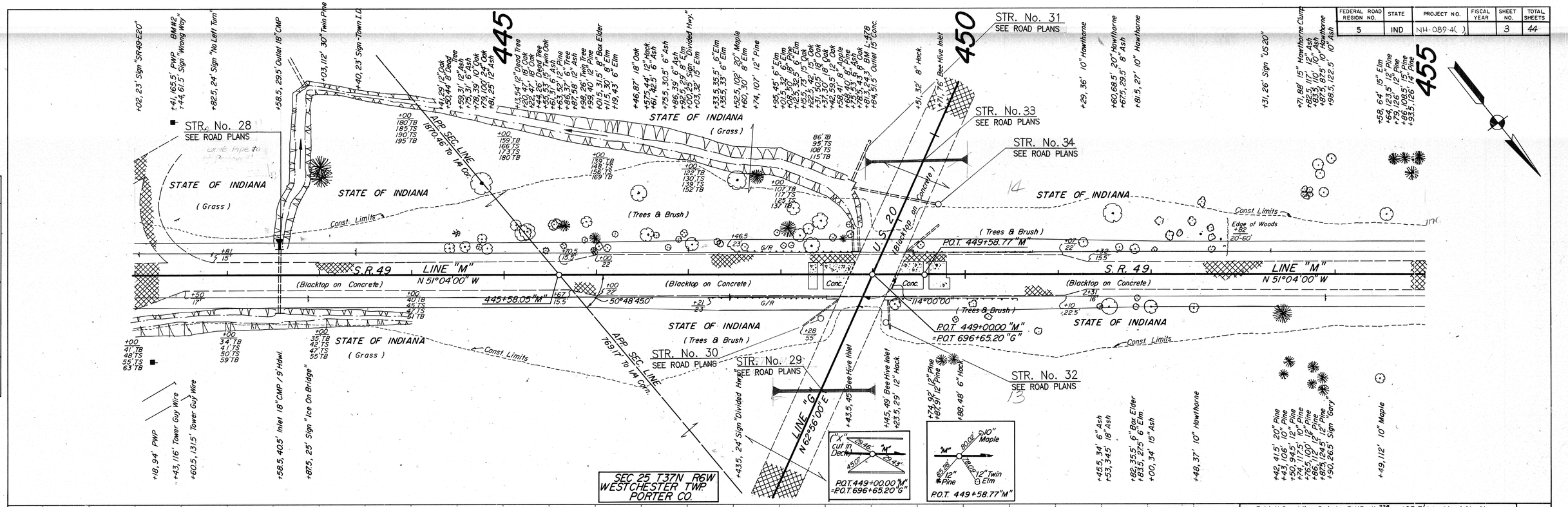
JOSEPH L. HARRISON
REGISTERED
No. 7880
STATE OF INDIANA
PROFESSIONAL ENGINEER

R-22279

FEDERAL ROAD DIVISION NO.	STATE	PROJ. NO.	YEAR	SHEET NO.	TOTAL SHEETS
5	IN	NH-089 -4( )		2	44

DRAWING ID P:\91048\DRAWINGS\TPSEC-BR.DWG
PLOT DATE 07/19/95 - 16:42

FEDERAL ROAD REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND	NH-089-4( )		3	44



PLAN

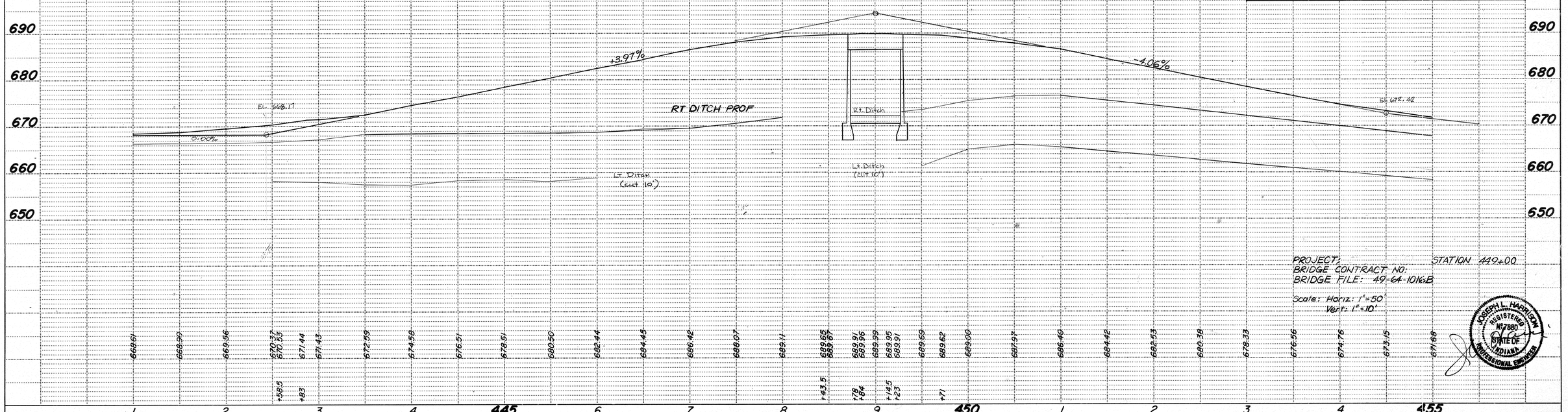
NOTE BOOK NO.	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
R/W PLAT CHECKED		

PVI STA 449+02.44
ELEV: 694.68
V.C. = 480'

* NOTE: Upstation of Line P.R. "M" Sta 440+47.46
Proposed Profile Grade Line equals
Existing Profile Grade Line

B.M.#2 Mine Spk. in PWP # 228/471, 165.5' Lt. Sta. 441+41
El. 668.36

L-478 Standard Disc. in Top S.W. Wing of Str. on S.R. 49
over U.S. 20, 24.3' Lt. Sta. 448+81.3
El. 689.95



PROFILE

NOTE BOOK NO.	BY	DATE
SURVEYED		
PLOTTED		
GRADES CHECKED		
B.M. NOTED		
STRUCTURE NOTAT'NS CH'KD		

PROJECT:
BRIDGE CONTRACT NO:
BRIDGE FILE: 49-64-1016-B

STATION 449+00

Scale: Horiz: 1" = 50'
Vert: 1" = 10'

JOSEPH L. HARRISON
REGISTERED
No. 7880
STATE OF INDIANA
PROFESSIONAL ENGINEER

HIGHWAY FEDERAL AID SHEET
PLATE 1-SINGLE PLAN AND PROFILE-FULL DOT
TELEDYNE
PRINTED IN U.S.A.

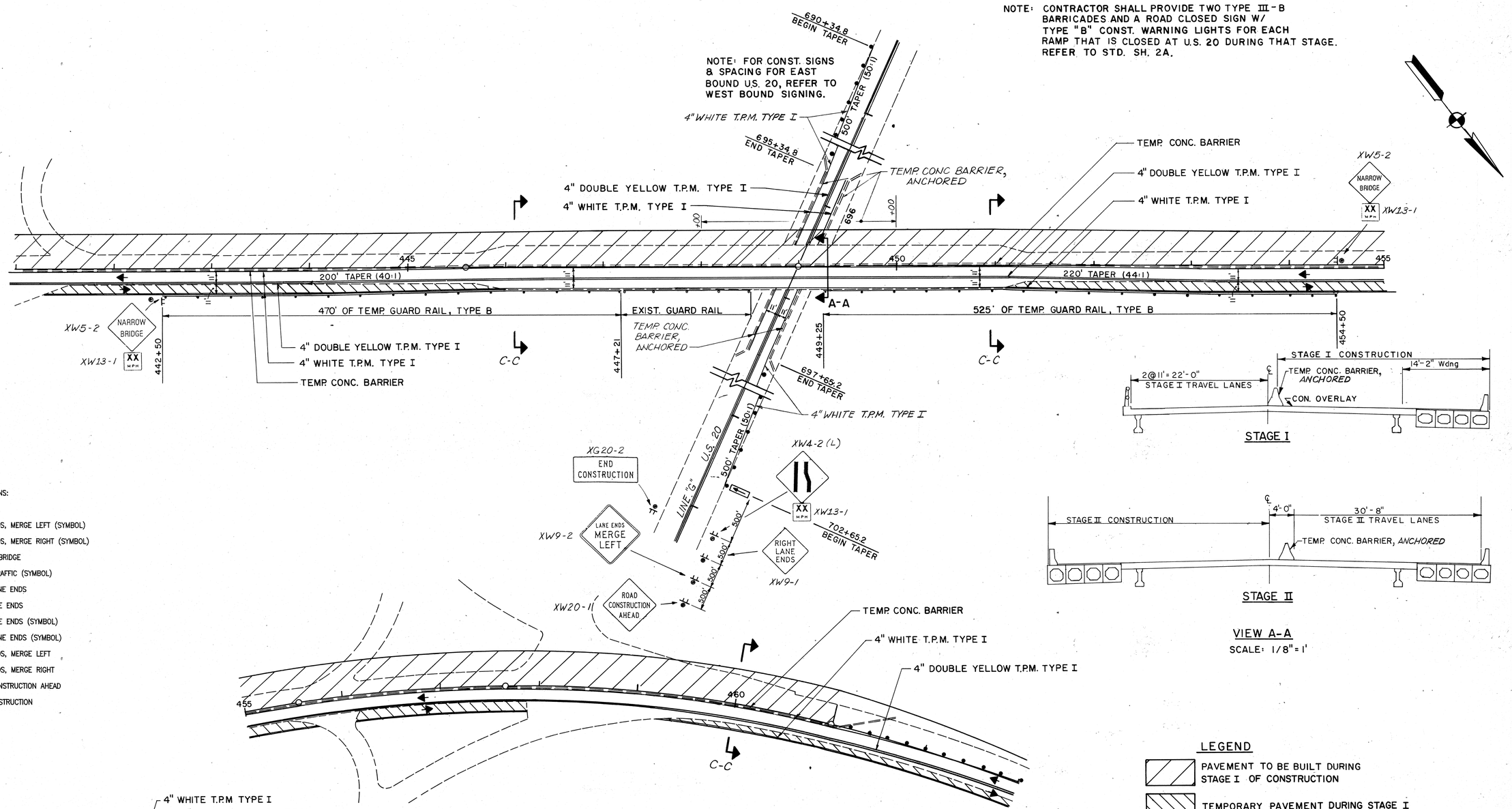
R-22229

PROJECT NO.	LINE	SHEET NO.	TOTAL SHEETS	FILE
NH-089-4( )	"M"	3	44	

FEDERAL ROAD REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	NH-089-4(E)		4	44

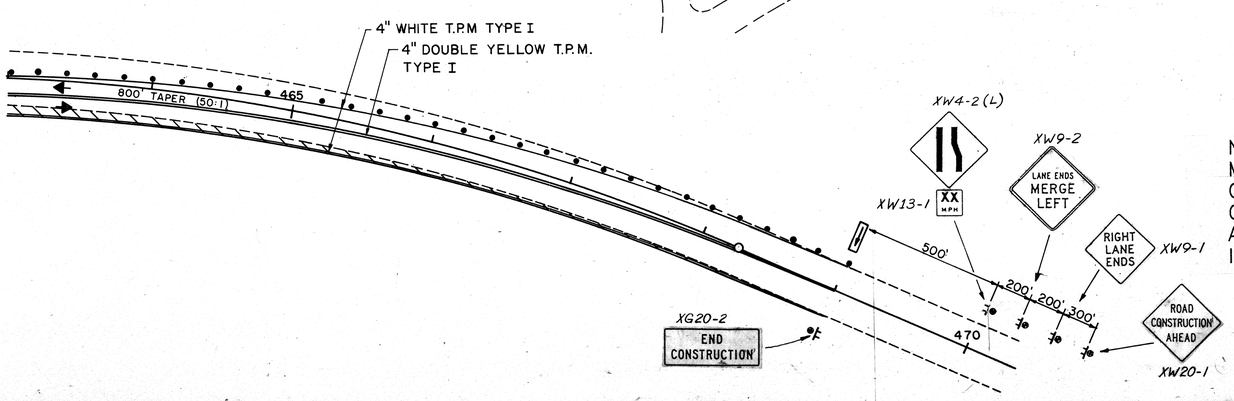
NOTE: CONTRACTOR SHALL PROVIDE TWO TYPE III-B BARRICADES AND A ROAD CLOSED SIGN W/ TYPE "B" CONST. WARNING LIGHTS FOR EACH RAMP THAT IS CLOSED AT U.S. 20 DURING THAT STAGE. REFER TO STD. SH. 2A.

NOTE: FOR CONST. SIGNS & SPACING FOR EAST BOUND U.S. 20, REFER TO WEST BOUND SIGNING.



LEGEND OF CONSTRUCTION SIGNS:

XW1-6	ARROW
XW4-2(L)	LANE ENDS, MERGE LEFT (SYMBOL)
XW2-2(R)	LANE ENDS, MERGE RIGHT (SYMBOL)
XW5-2	NARROW BRIDGE
XW6-3	2 WAY TRAFFIC (SYMBOL)
XW9-1(L)	RIGHT LANE ENDS
XW9-1(R)	LEFT LANE ENDS
XW9-1-A(L)	LEFT LANE ENDS (SYMBOL)
XW9-1-A(R)	RIGHT LANE ENDS (SYMBOL)
XW9-2(L)	LANE ENDS, MERGE LEFT
XW9-2(R)	LANE ENDS, MERGE RIGHT
XW20-1	ROAD CONSTRUCTION AHEAD
XG20-2	END CONSTRUCTION



NOTE:
MAINTENANCE OF TRAFFIC WORK INCLUDED IN THIS CONTRACT EXTENDS FROM STA. 448+00 TO 450+00 ON S.R.49 AND ON U.S.20 ONLY.
ALL OTHER WORK SHOWN IS FOR CONTRACTOR'S INFORMATION ONLY.

LEGEND

- PAVEMENT TO BE BUILT DURING STAGE I OF CONSTRUCTION
- TEMPORARY PAVEMENT DURING STAGE I
- CONSTRUCTION SIGN
- CONSTRUCTION WARNING LIGHT, TYPE A
- STD DRUM, SPACING: 100' TANGENT, 40' TAPER
- TYPE III-B
- ARROW PANEL
- TEMP. CONC. BARRIER
- TYPE "C" CONST. WARN. LIGHT & DELINEATORS

PROJECT:
BRIDGE CONTRACT NO: R-22229
BRIDGE FILE: 49-64-1016B

DETAILS
MAINTENANCE OF TRAFFIC
STATE ROAD 49

SCALE: 1"=50'

JOSEPH L. HARRISON REGISTERED No 7800 STATE OF INDIANA PROFESSIONAL ENGINEER

FEDERAL ROAD REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	NH-089-4( )		4	44

Sin = .4067 tan α = .4452
cos = .9135 sec = 1.0946

SEC. 25-T37N-R6W
WESTCHESTER TWP.
PORTER COUNTY

PRESENT STRUCTURE

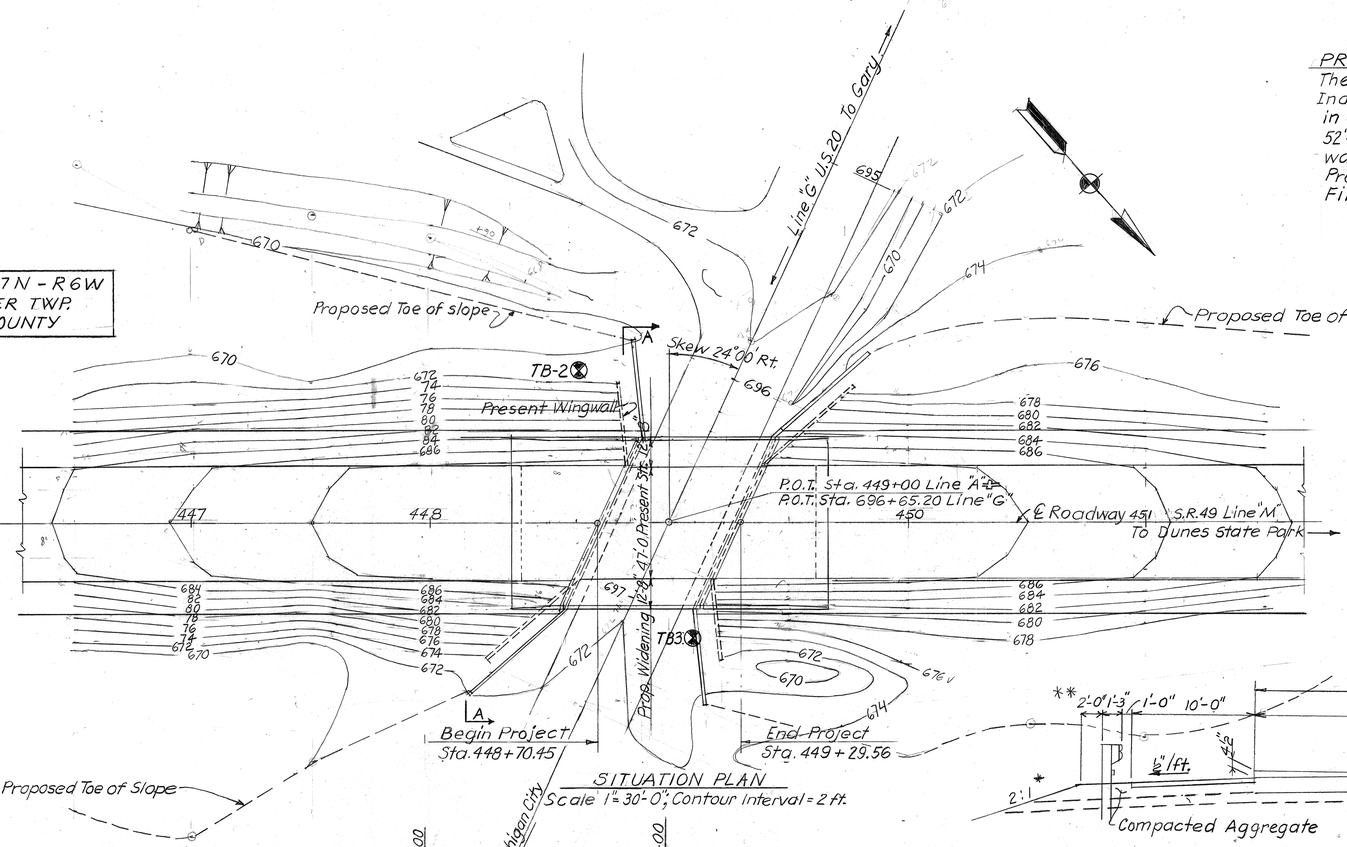
The present Structure built by Ind. State Highway Commission in 1931 as Road Project 180 1-Span 52'-6½" R.C. Girder Bridge. Bridge was reconstructed in 1971 as Prestressed Conc. Girder Bridge, File No. 49-64-1015A.

UTILITY OWNERS

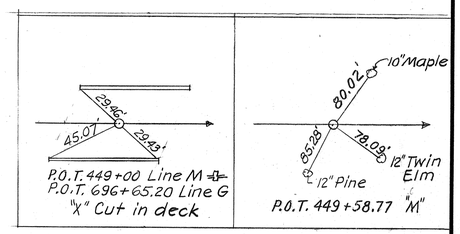
Electric Power Line; Northern Indiana Public Service Co. Ind.

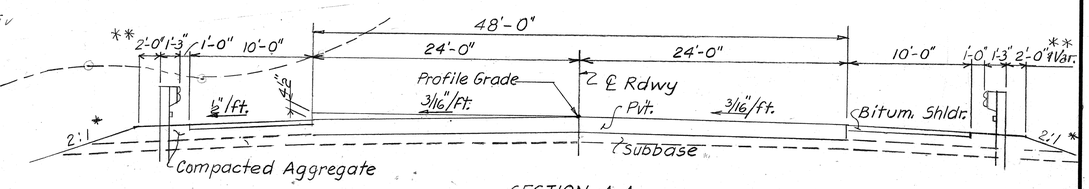
Notes

1. See Roadway Plans for Approch Structures, Bench Markers and additional details.
2. See Special Provisions for Boring Logs.



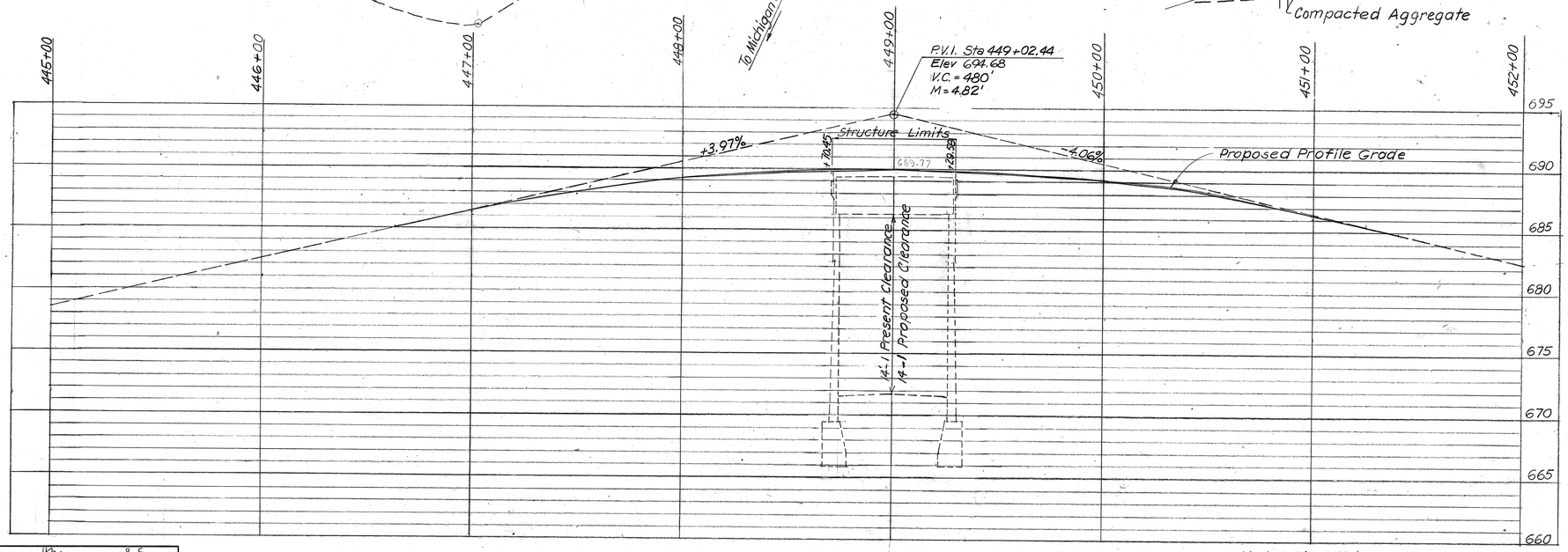
SITUATION PLAN
Scale 1" = 30'-0"; Contour Interval = 2 ft.





SECTION A-A

Note *: Transition normal Roadway slope within 50.0 ft. to 2:1 slope at the end of wingwalls.
** Shoulder width at bridge site.



PROFILE ON ℄ ROADWAY
Scales: Horiz. 1" = 30'-0" Vert. 1" = 5'-0"

Note: Field Notes Book #1

LAYOUT

INDIANA DEPARTMENT OF TRANSPORTATION

PORTER COUNTY

SCALE:- AS NOTED DATE:- 1992

SENIOR DESIGNER

DRAWING:- S1 OF 8 SHEET:- 5 OF 44
PROJECT:- NH-089-4( ) STATION:- 449+00
BRIDGE CONTRACT NO. R-22229
BRIDGE FILE:- 49-64-1016B

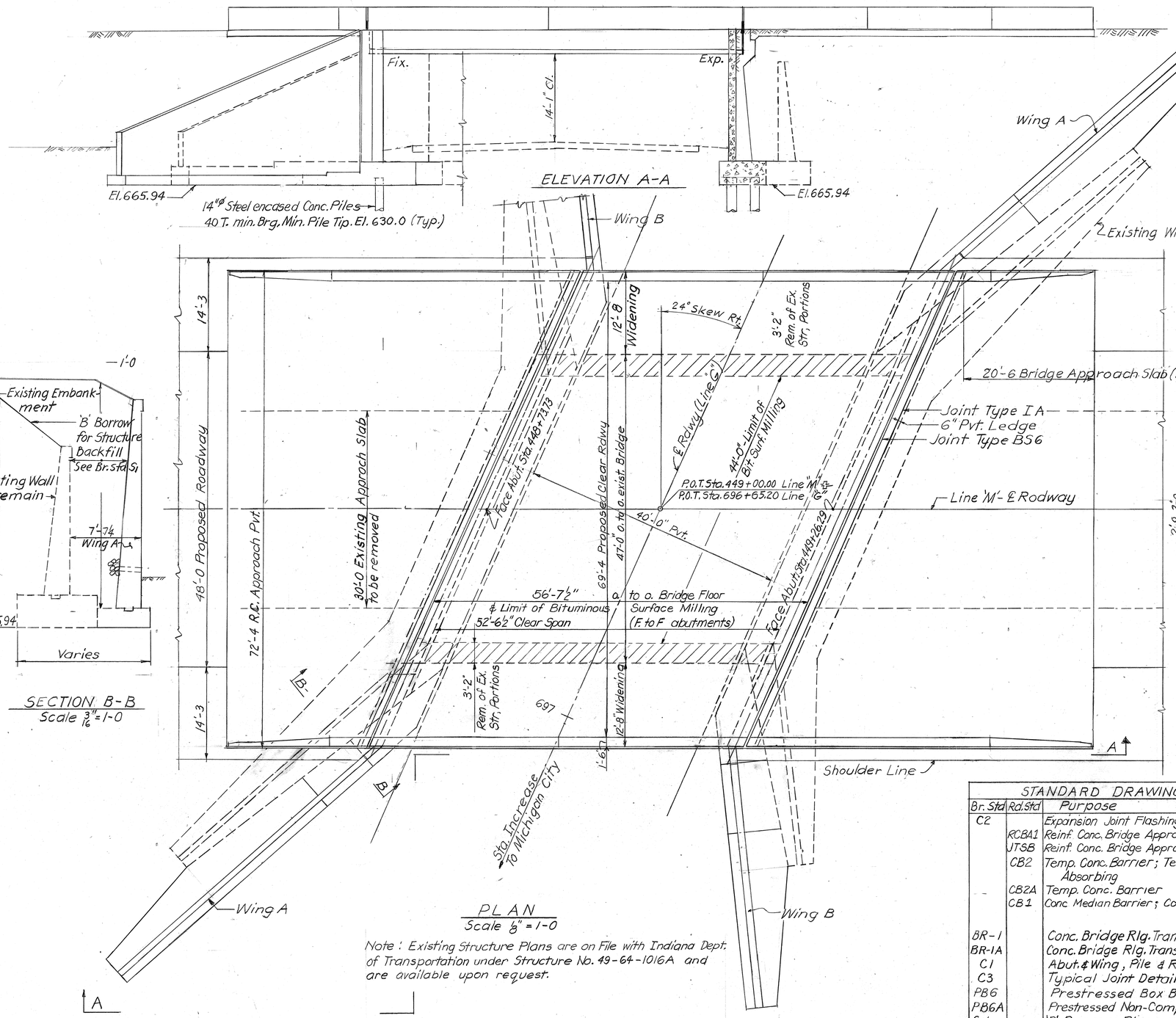
JOSEPH L. HARRISON REGISTERED No. 7880 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED	RW	C'K'D	B.S.
DRAWN	RW	C'K'D	B.S.
TRACED		C'K'D	

SF-22317

TP101

See Special Prov. for Paving Lug



Note: Existing Structure Plans are on File with Indiana Dept. of Transportation under Structure No. 49-64-1016A and are available upon request.

GENERAL NOTES

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

Depth of footings to be extended if found necessary. See Art. 206.11 of Specifications.

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

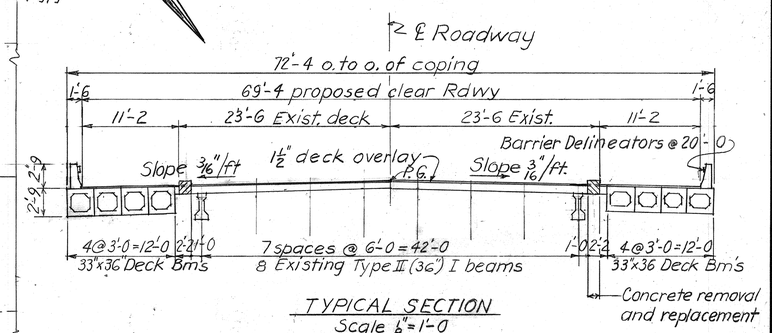
Concrete in footings, wingwalls, abutments to be Class "B". Concrete in superstructure and railings to be Class "C".

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

Waterproof backs of abutments, mudwalls, and wingwalls in accordance with Art. 702.22 of the Specifications.

Chamfer exposed edges 1" unless noted.

For pay items covering this structure see Estimate of Quantities.



TYPICAL SECTION
Scale ⅛" = 1'-0

Reinforcing Steel shall be ASTM A615, Grade 60.

DESIGN DATA

Deck Beams shall be in accordance with Bridge Std. PB-6A

Reinforced Concrete Unit Stresses: f_s = 24,000 p.s.i.
f_c = 1,200 p.s.i.

Live Load: HS 20-44 in accordance with 1989 AASHTO Specifications.

Dead Load: Actual weight plus 35 p.s.f. allowance for future wearing surface.

STANDARD DRAWINGS

Br. Std	Rd. Std	Purpose
C2		Expansion Joint Flashing
	RCBA1	Reinf. Conc. Bridge Approach
	JTSB	Reinf. Conc. Bridge Approach
	CB2	Temp. Conc. Barrier; Temp. Energy Absorbing
	CB2A	Temp. Conc. Barrier
	CB1	Conc. Median Barrier; Conc. Glare Screen
BR-1		Conc. Bridge Rlg. Transition Type T6B
BR-1A		Conc. Bridge Rlg. Transition Type T6B
C1		Abut. & Wing, Pile & Reinf. Details
C3		Typical Joint Details
PB6		Prestressed Box Beams
PB6A		Prestressed Non-Composite Box Bms
S-1		'B' Borrow Placement
PB-10		Tolerances for Fabrication of Prestr. Beams

GENERAL PLAN

WIDENING OF EXISTING PRESTR. CONC. I-BM. BRIDGE
Single Span @ 52'-6½" (clear)
Skew 24° Right
47'-0 Clear Roadway widened to 69'-4
SR 49 over US 20

INDIANA DEPARTMENT OF TRANSPORTATION

SCALE:- As noted DATE:- 1993

SENIOR DESIGNER

DRAWING:- 52 OF 8 SHEET:- 6 OF 44

PROJECT:- NH-089-4( ) STATION:- 449+00

BRIDGE CONTRACT NO. R-22220

BRIDGE FILE:- 49-64-1016B

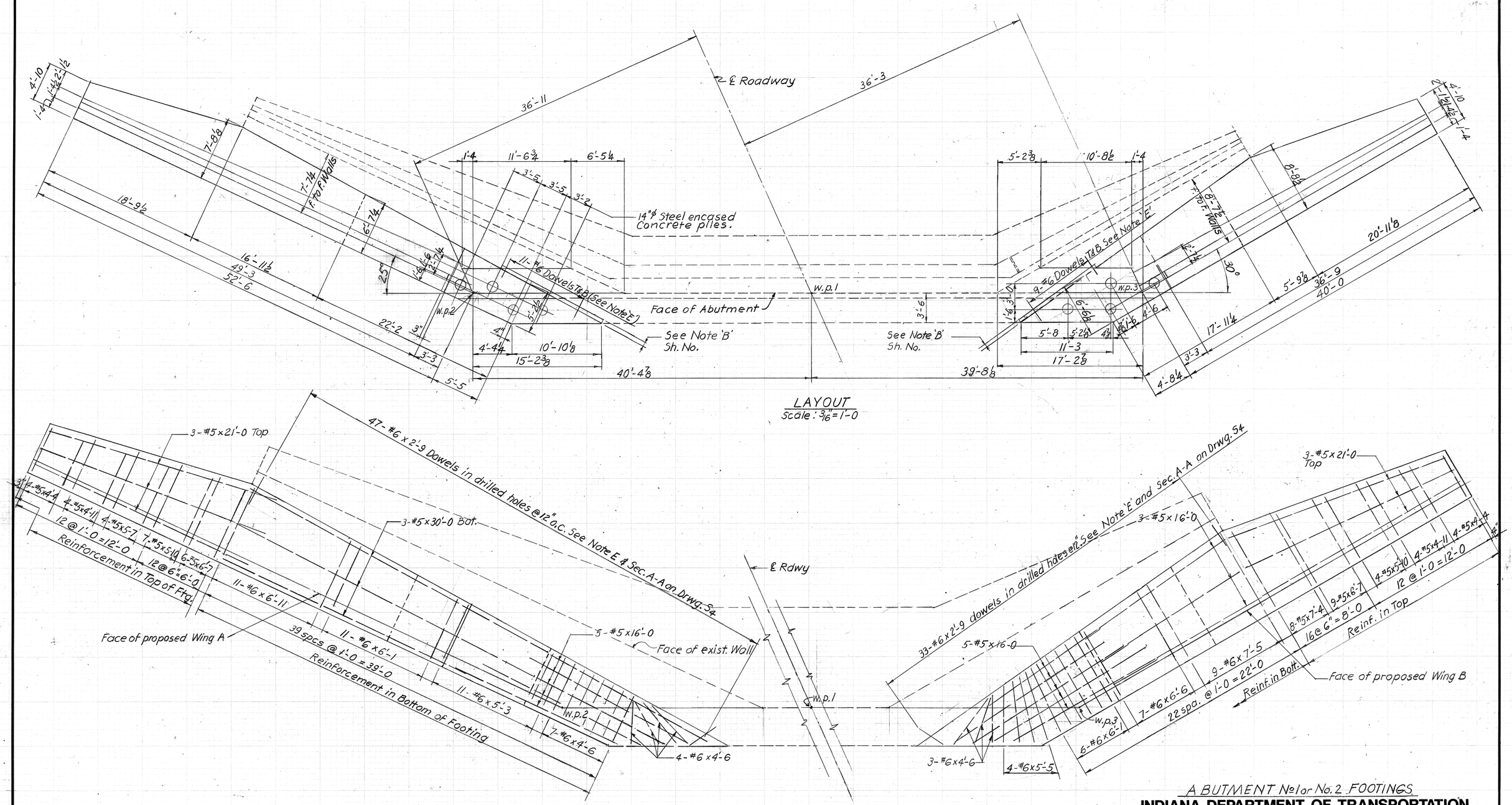
JOSEPH L. HARRISON REGISTERED No. 19980 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED	HW	C'K'D	A.P.
DRAWN	HW	C'K'D	A.P.
TRACED		C'K'D	

SF-22317

TP101

Slope of Wall = 1/490 = .0013



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

FOOTING REINFORCEMENT
Scale: 1/4" = 1'-0

A BUTMENT No. 1 or No. 2 FOOTINGS

INDIANA DEPARTMENT OF TRANSPORTATION

SCALE:— As noted DATE:—

SENIOR DESIGNER

DRAWING: 93 OF 8 SHEET: 7 OF 44

PROJECT: NH-089-4( ) STATION: —449+00

BRIDGE CONTRACT NO. R-22229

BRIDGE FILE: 49-64-1016 B

JOSEPH L. HARRISON REGISTERED No. 7980 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED	HW	C'K'D	A.P.
DRAWN	HW	C'K'D	A.P.
TRACED		C'K'D	

SF-22317

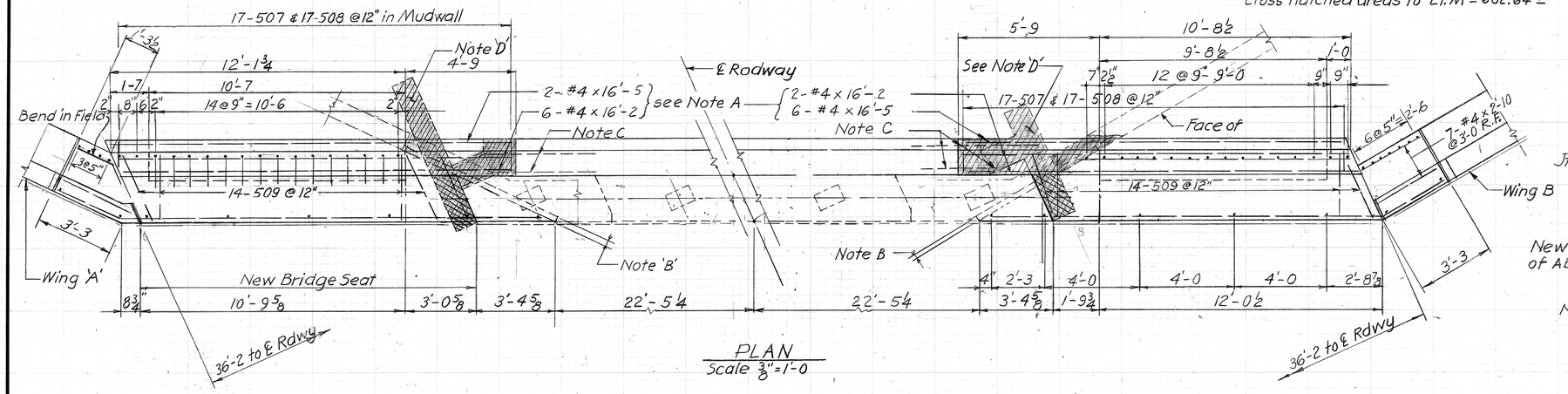
TP118

Note 'A': See Section for Location and spacing of Bars.

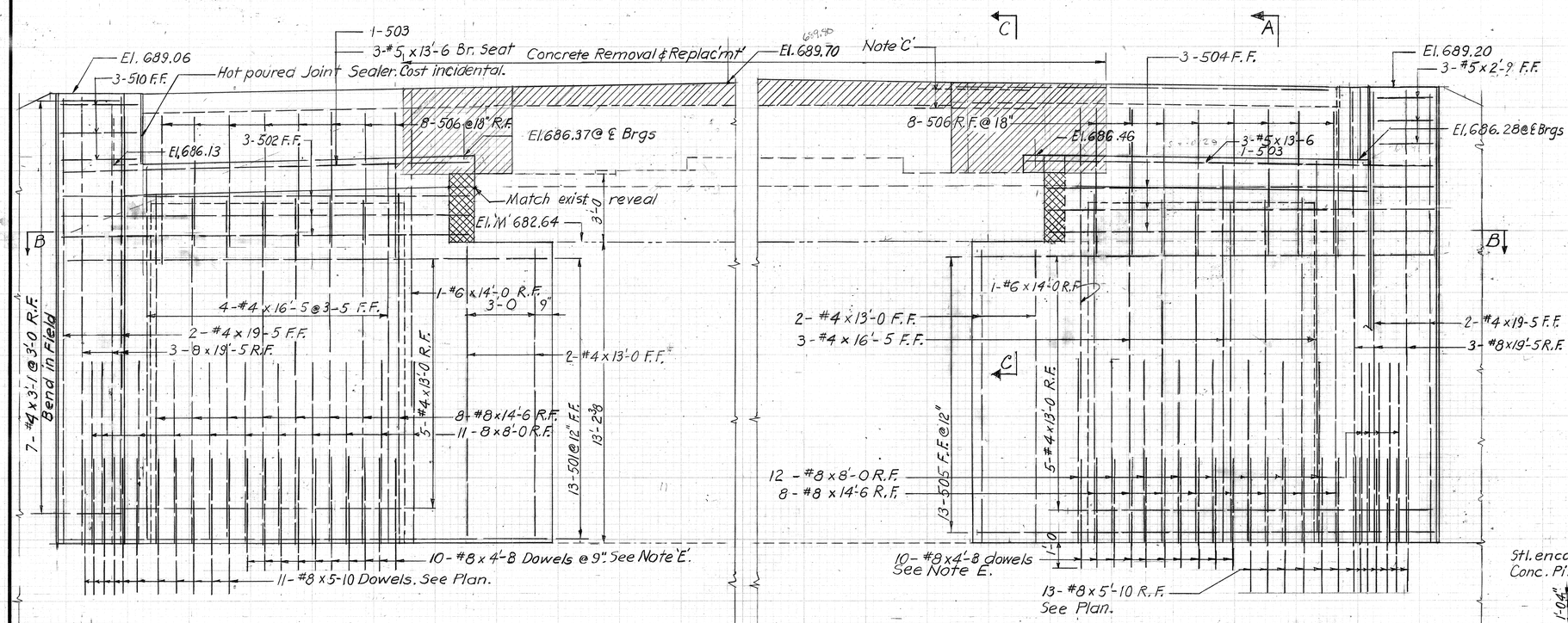
Note 'B': Undercut 1" minimum behind reinforcement bars. 3" minimum of concrete removal.

Note 'C': Clean and straighten bars and incorporate in new construction.

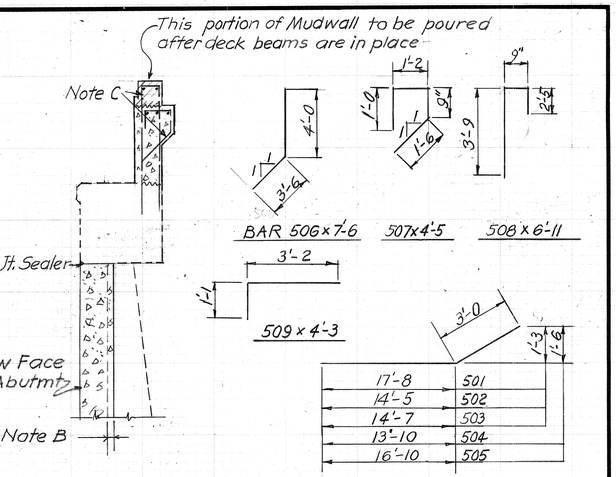
Note 'D': Remove hatched portions of mud-walls to the bridge seat level. Remove cross hatched areas to El. M = 682.64 ±



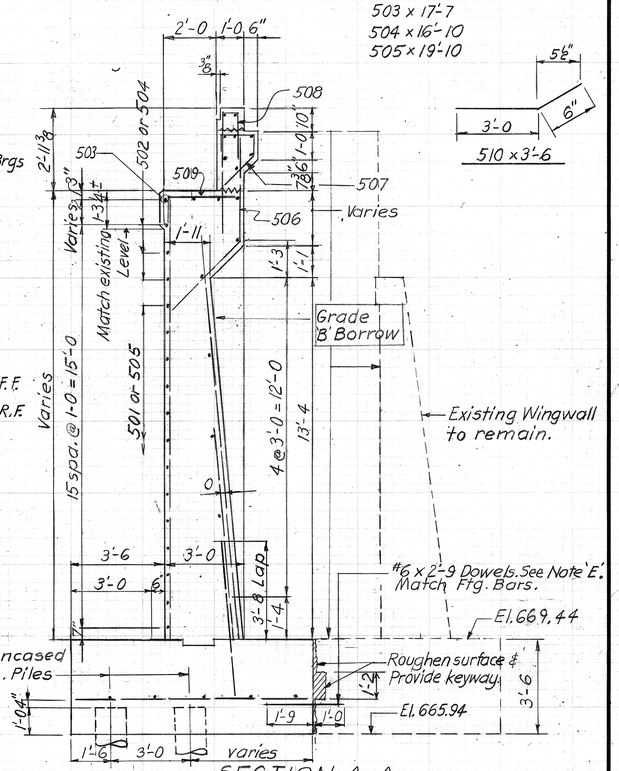
PLAN
Scale ⅜" = 1'-0



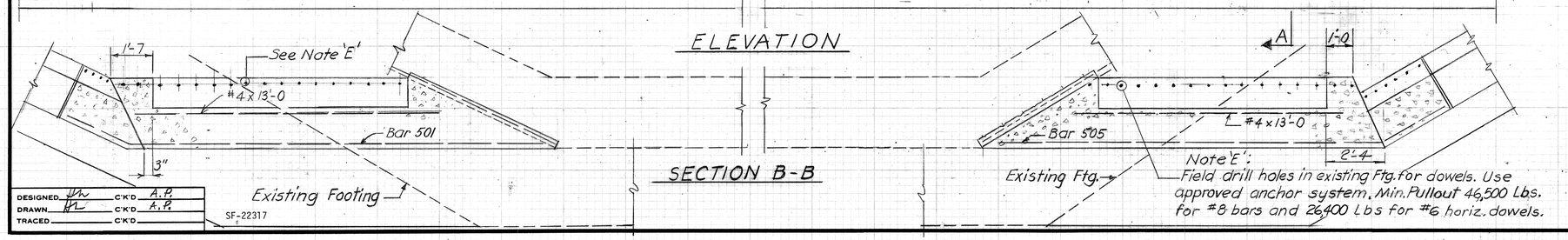
ELEVATION



SECTION C-C



SECTION A-A



SECTION B-B

INDIANA DEPARTMENT OF TRANSPORTATION

ABUTMENT No. 1 or No. 2 STEMS

SCALE:- ⅜" = 1'-0 DATE:- 19

SENIOR DESIGNER

DRAWING:- 54 OF 8 SHEET:- 8 OF 44

PROJECT:- NH-089-4( ) STATION:- 449+00

BRIDGE CONTRACT NO. R-22229

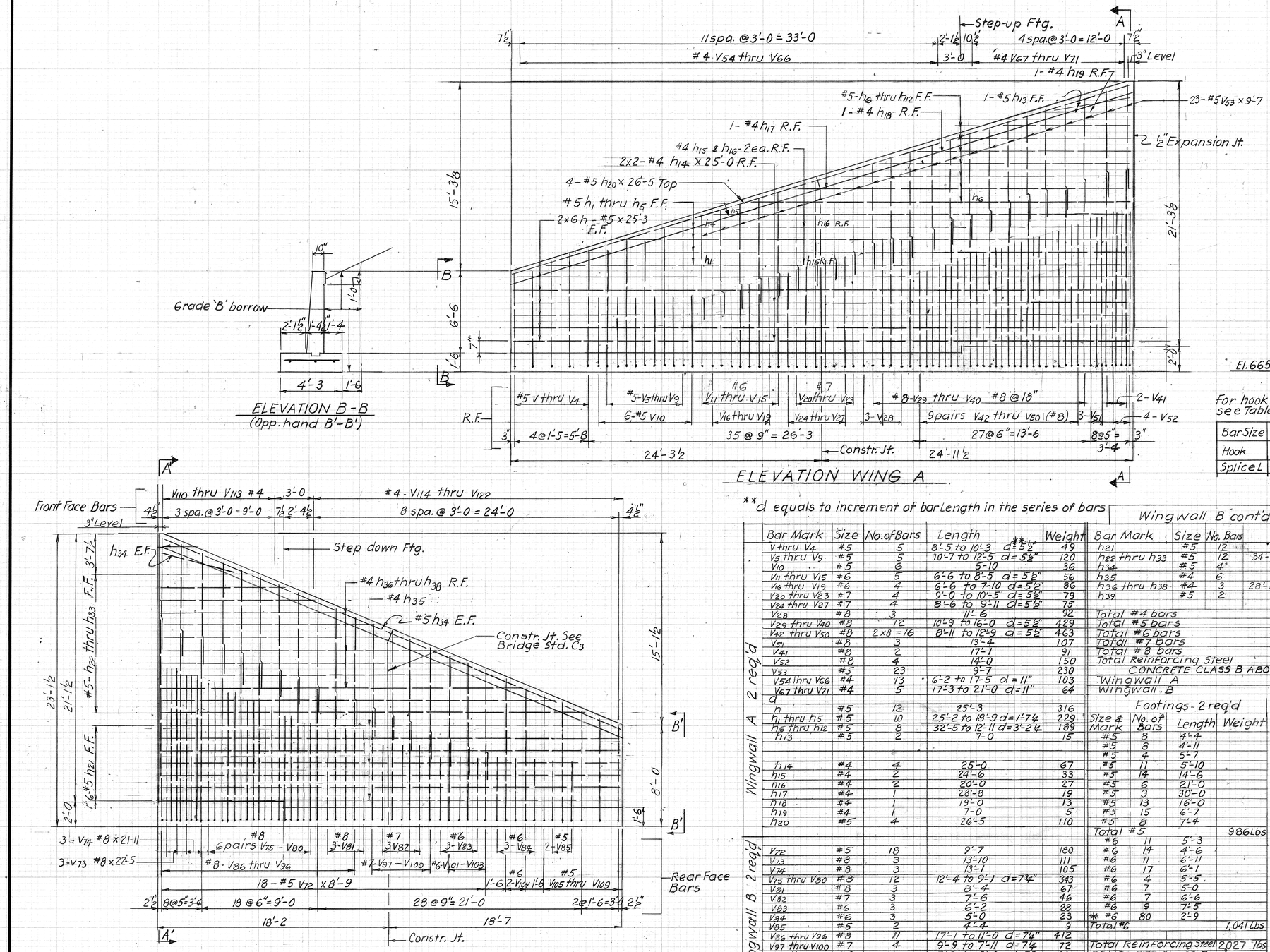
BRIDGE FILE:- 49-64-1016 B

JOSEPH L. HARRISON REGISTERED No 7880 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED		C'K'D	A.P.
DRAWN		C'K'D	A.P.
TRACED		C'K'D	

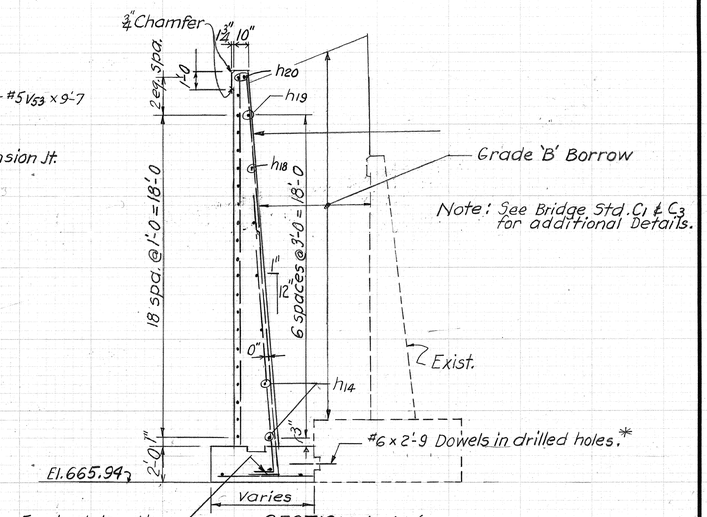
SF-22317

TP118



ELEVATION WING A

ELEVATION B-B
(Opp. hand B'-B')



SECTION A-A (Opposite hand A'-A')

Bar Size	#5	#6	#7	#8
Hook	10"	1'-0	1'-2	1'-4
Splice L	1'-9	2'-1	2'-10	3'-8

ELEVATION WING 'B'

**d equals to increment of bar length in the series of bars

	Bar Mark	Size	No. of Bars	Length	Weight
Wingwall A 2 req'd	V thru V4	#5	5	8'-5 to 10'-3 d=5½"	49
	V5 thru V9	#5	5	10'-7 to 12'-5 d=5½"	120
	V10	#5	6	5'-10	36
	V11 thru V15	#6	5	6'-6 to 8'-5 d=5½"	56
	V16 thru V19	#6	4	6'-6 to 7'-10 d=5½"	86
	V20 thru V23	#7	4	9'-0 to 10'-5 d=5½"	79
	V24 thru V27	#7	4	8'-6 to 9'-11 d=5½"	75
	V28	#8	3	11'-6	92
	V29 thru V40	#8	12	10'-9 to 16'-0 d=5½"	429
	V42 thru V50	#8	2 x 8 = 16	8'-11 to 12'-9 d=5½"	463
	V51	#8	3	13'-4	107
	V41	#8	2	17'-1	91
	V52	#8	4	14'-0	150
	V53	#5	23	9'-7	230
	V54 thru V66	#4	13	6'-2 to 17'-5 d=11"	103
	V67 thru V71	#4	5	17'-3 to 21'-0 d=11"	64
	h1	#5	12	25'-3	316
	h1 thru h5	#5	10	25'-2 to 18'-9 d=1'-7¼	229
	h6 thru h12	#5	8	32'-5 to 12'-11 d=3'-2¼	189
	h13	#5	2	7'-0	15
	h14	#4	4	25'-0	67
	h15	#4	2	24'-6	33
	h16	#4	2	20'-0	27
	h17	#4	1	28'-8	19
	h18	#4	1	19'-0	13
	h19	#4	1	7'-0	5
	h20	#5	4	26'-5	110
Wingwall B 2 req'd	V72	#5	18	9'-7	180
	V73	#8	3	13'-10	111
	V74	#8	3	13'-1	105
	V75 thru V80	#8	12	12'-4 to 9'-1 d=7¼"	343
	V81	#8	3	8'-4	67
	V82	#7	3	7'-6	46
	V83	#6	3	6'-2	28
	V84	#6	3	5'-0	23
	V85	#5	2	4'-4	9
	V86 thru V96	#8	11	17'-1 to 11'-0 d=7¼"	412
	V97 thru V100	#7	4	9'-9 to 7'-11 d=7¼	72
	V101 thru V103	#6	3	7'-2 to 6'-0 d=7"	30
	V104	#6	2	12'-3	37
	V105 thru V109	#5	5	10'-10 to 8'-4 d=7½"	100
	V110 thru V113	#4	4	20'-10 to 17'-1 d=1'-3	51
	V114 thru V122	#4	9	16'-4 to 6'-3 d=1'-3	68

Wingwall B cont'd 2 req'd

Bar Mark	Size	No. Bars	Length	Weight
h21	#5	12	19'-0	238
h22 thru h33	#5	12	34'-1 to 7'-9 d=2'-5	262
h34	#5	4	20'-4	85
h35	#4	6	19'-0	76
h36 thru h38	#4	3	28'-10 to 14'-6 d=7'-2	43
h39	#5	2	9'-9	16
Total #4 bars				569
Total #5 bars				2,184
Total #6 bars				260
Total #7 bars				272
Total #8 bars				2,370
Total Reinforcing Steel				5,655
CONCRETE CLASS B ABOVE FOOTINGS				
Wingwall A				40.1 C.Y.S.
Wingwall B				28.9 C.Y.S.

Footings - 2 req'd

Size & Mark	No. of Bars	Length	Weight
#5	8	4'-4	
#5	8	4'-11	
#5	4	5'-7	
#5	11	5'-10	
#5	14	14'-6	
#5	6	21'-0	
#5	3	30'-0	
#5	13	16'-0	
#5	15	6'-7	
#5	8	7'-4	
Total #5			986 Lbs
#6	11	5'-3	
#6	14	4'-6	
#6	11	6'-11	
#6	17	6'-1	
#6	4	5'-5	
#6	7	5'-0	
#6	7	6'-6	
#6	9	7'-5	
* #6	80	2'-9	
Total #6			1,041 Lbs
Total Reinforcing Steel			2,027 Lbs
CONCRETE CLASS B			
Pour 1 (Wing 'A' Ftgs)			27.0 CYS
Pour 2 (Wing 'B' Ftgs)			27.4 CYS
MISCELLENEOUS			
Field drilled Holes in Conc. for #6 Dowels			80 Ea.

Abutment Walls - 2 Req'd

Size & Mark	No. of Bars	Length	Weight
#4	7	3'-1	
#4	4	19'-5	
#4	15	16'-5	
#4	14	13'-0	
#4	7	2'-10	
#4	8	16'-2	
Total #4			452 Lbs
501	13	17'-8	
502	3	17'-5	
503	2	17'-7	
504	3	16'-10	
505	13	19'-10	
506	16	7'-6	
507	34	4'-5	
508	34	6'-11	
509	28	4'-3	
510	3	3'-6	
#5	6	13'-6	
#5	3	2'-9	
Total No. 5			1,408 Lbs
#6		5'-0	
#6	2	14'-0	
#6	3	10'-6	
Total #6			97 Lbs
#8	24	5'-10	
* #8	20	4'-8	
#8	16	14'-6	
#8	6	19'-5	
#8	23	8'-0	
Total #8			2,045 Lbs
Total Reinforcing Steel			4,002 Lbs
CONCRETE CLASS B			
Pour 1 (Wall at Wing 'A')			28.9 CYS
Pour 2 (Wall at Wing 'B')			28.0 CYS
CONCRETE CLASS A			
Mudwall at Wing 'A'			1.4 CYS
Mudwall at Wing 'B'			1.4 CYS

* Dowels in drilled holes. Cost of anchoring incidental to drilling. (See Note "E", Sheet 8 of 34)

ABUTMENT No. 1 or No. 2 WINGS & BILL OF MATERIAL

INDIANA DEPARTMENT OF TRANSPORTATION

SCALE: ¼" = 1'-0 DATE:- 19

SENIOR DESIGNER

DRAWING:- S5 OF 8 SHEET:- 9 OF 44

PROJECT:- NH-089-4( ) STATION:- 449+00

BRIDGE CONTRACT NO. R-22229

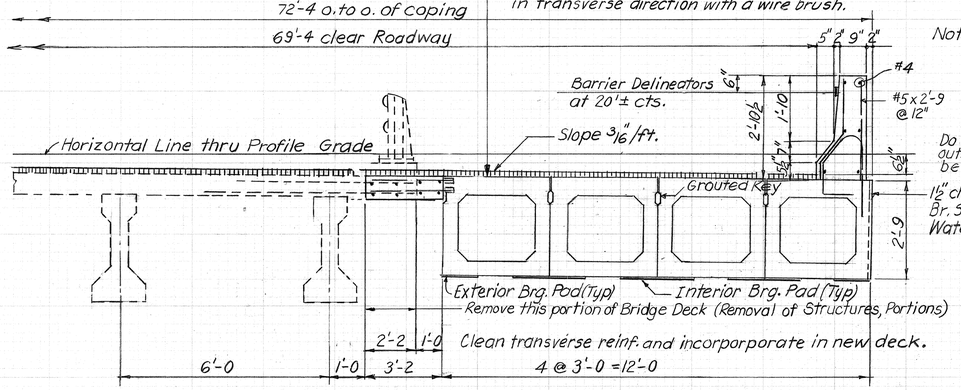
BRIDGE FILE:- 49-64-1016 B

JOSEPH L. HARRISON REGISTERED 17880 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED HW C'K'D A.P.
DRAWN HW C'K'D A.P.
TRACED C'K'D

SF-22317

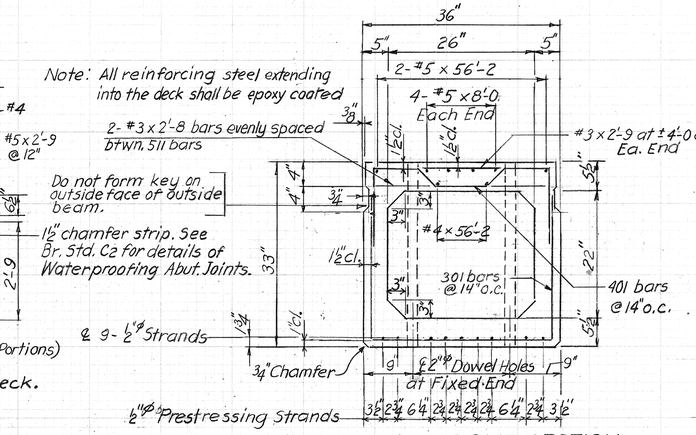
TP118



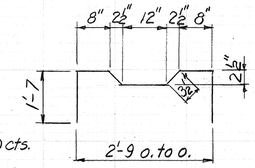
PART CROSS SECTION
Scale: ½" = 1'-0

* Note: Dowel rods to be grouted and allowed to cure prior to grouting shear keys.

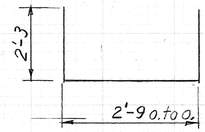
Note: All reinforcing steel extending into the deck shall be epoxy coated



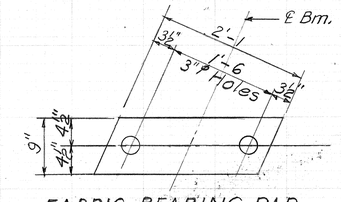
TYPICAL BEAM SECTION
Scale: none



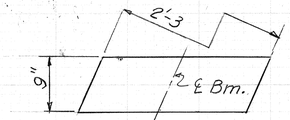
Bar 402



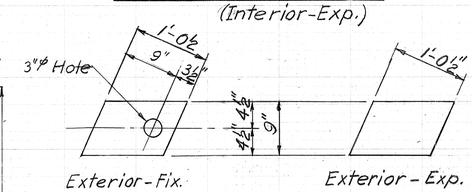
Bar 301



FABRIC BEARING PAD
(Interior - Fixed)

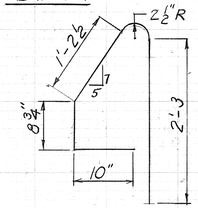


FABRIC BEARING PAD
(Interior-Exp.)

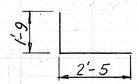


FABRIC BEARING PADS

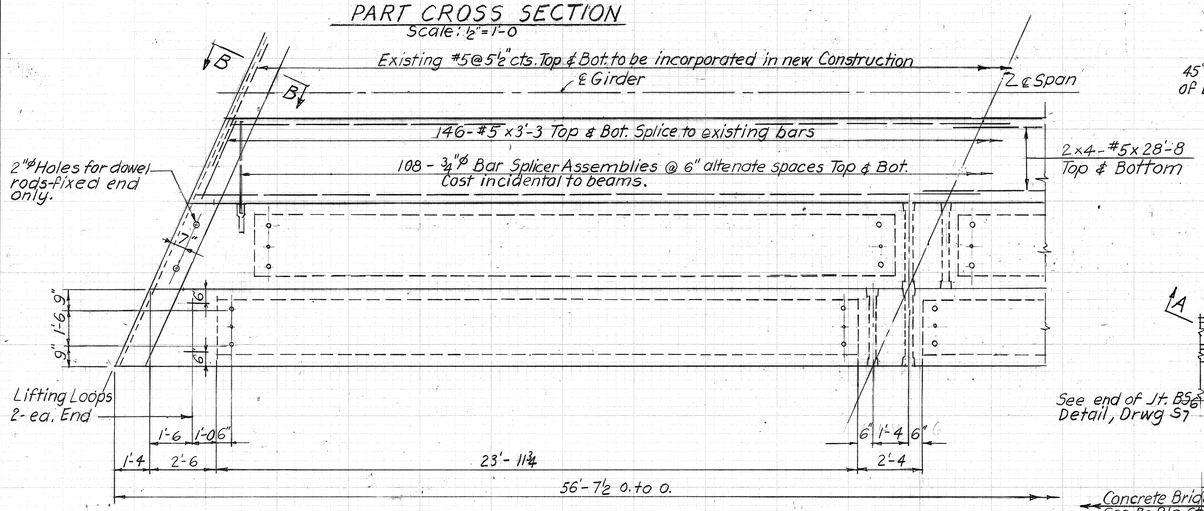
Note: The bearing seat surfaces shall be adjusted by shimming to ensure firm and even bearing. Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing.



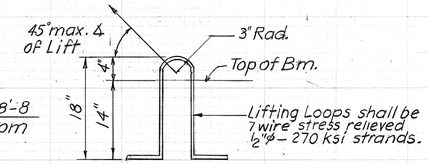
Bar 513
Epoxy Coated



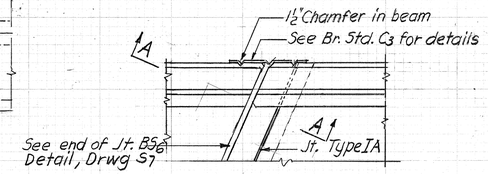
BAR 401



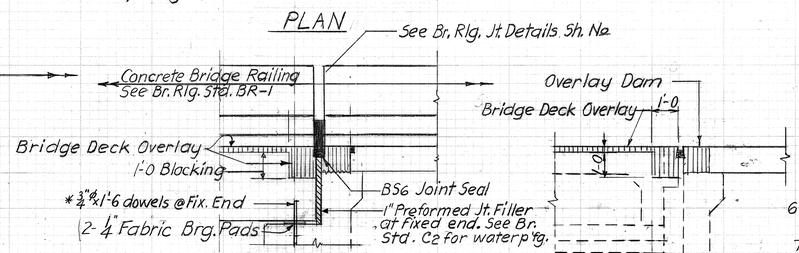
PART PLAN
Scale ⅜" = 1'-0



LIFTING LOOP DETAIL

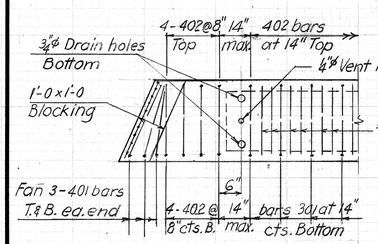


PLAN

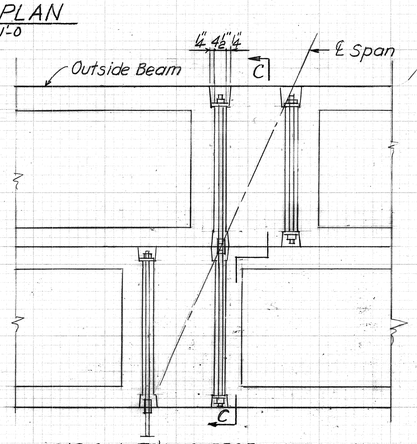


SECTION A-A

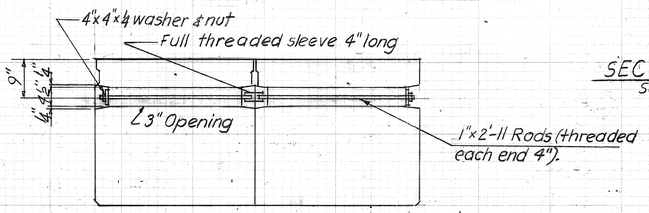
SECTION B-B
Scale ⅜" = 1'-0



END REINFORCEMENT
Scale: ⅜" = 1'-0



TYPICAL TRANSVERSE TIE ASSEMBLY
Scale: ¾" = 1'-0



SECTION C-C

Size & Mark	No. of Bars	Length	Weight
#5	584	3'-3	
#5	16	28'-8	
Total #5 Epoxy Coated			2460#
Total Reinforcing Stl.			2460#
Pour No. 1 (West)			4.1 cu.y.
Pour No. 2 (East)			4.1 cu.y.
Total Class C Conc. in Bridge Floor			8.2 cu.y.
MISCELLANEOUS			
Concrete Structural Member, Prestr. 33"x36" Brms			1359 sq. Ft.
Surface Milling			277 SYS
Partial Depth Bridge Deck Patching			240 SFT
Additional Bridge Deck Overlay			8.7 CYS
Bridge Deck Overlay			456 SYS
Expansion Joint BS6			166 LFT
Barrier Delineators			16 ea.

1. Prestressing Steel shall be ½"φ nominal dia. uncoated seven wire special Lo-Lax strands, Grade 270 ksi and 0.167" cross sectional area, conforming to ASTM A-416. The initial force applied to each strand shall be 28,900 Lbs.
2. Reinforcement bars shall conform to AASHTO M-31 or M-33, Grade 60.
3. See Br. Std. C1 for Reinforcing Bar Notes.
4. See Br. Std. P.B6 for General Notes.
5. See Br. Std. PB10 for Notes & Tolerancies.
6. After Beams have been erected, drill holes for anchor dowels and fill holes with grout.
7. Cost of reinforcement cast into the beam, of bearing pads and grouting longitudinal shear keys included in the unit price of 33"x36" beams.

SUPERSTRUCTURE DETAILS
INDIANA DEPARTMENT OF TRANSPORTATION

SCALE:- As noted DATE:- 19

SENIOR DESIGNER

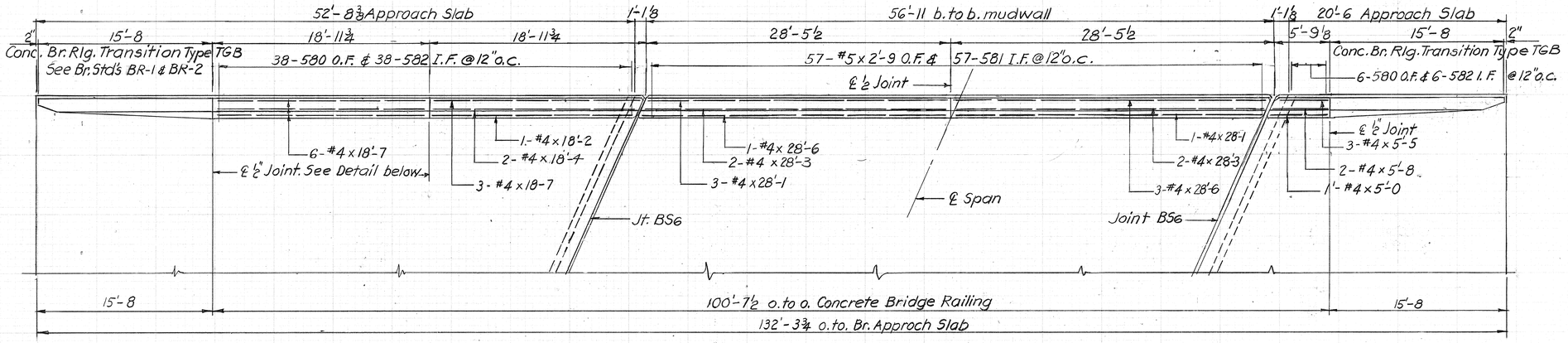
DRAWING:- S6 OF 8 SHEET:- 10 OF 44
PROJECT:- NH-089-4( ) STATION:- 449+00
BRIDGE CONTRACT NO. R-22229
BRIDGE FILE:- 49-64-1016B

JOSEPH L. HARRISON REGISTERED No. 7880 INDIANA PROFESSIONAL ENGINEER

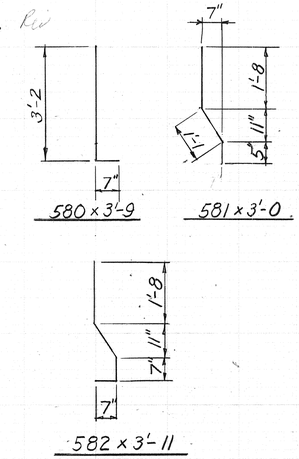
DESIGNED JLH C'K'D A.P.
DRAWN JLH C'K'D A.P.
TRACED C'K'D

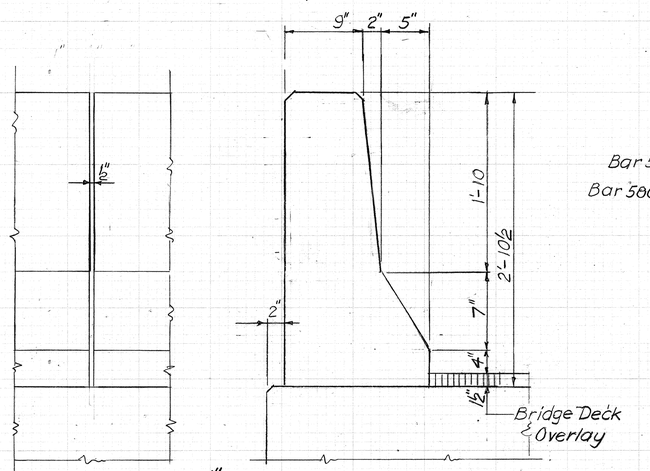
SF-22317

TP118

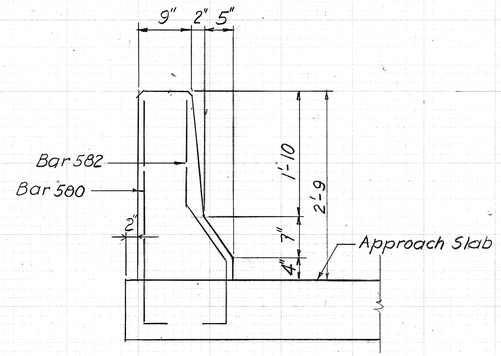


PLAN
Scale 3/16" = 1'-0

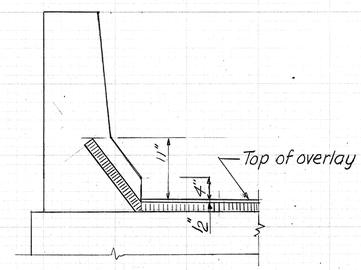




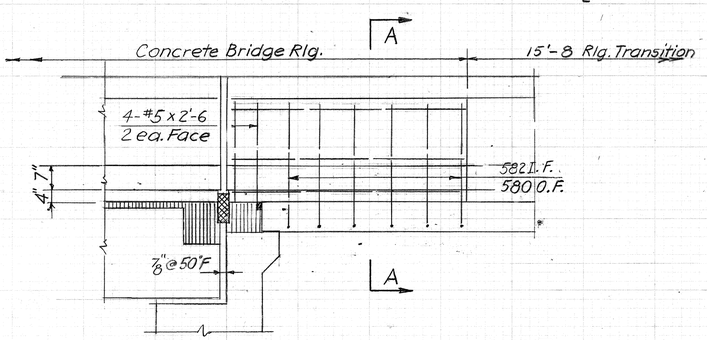
½" BRIDGE RAILING JOINT DETAILS
Scale: 1½" = 1'-0



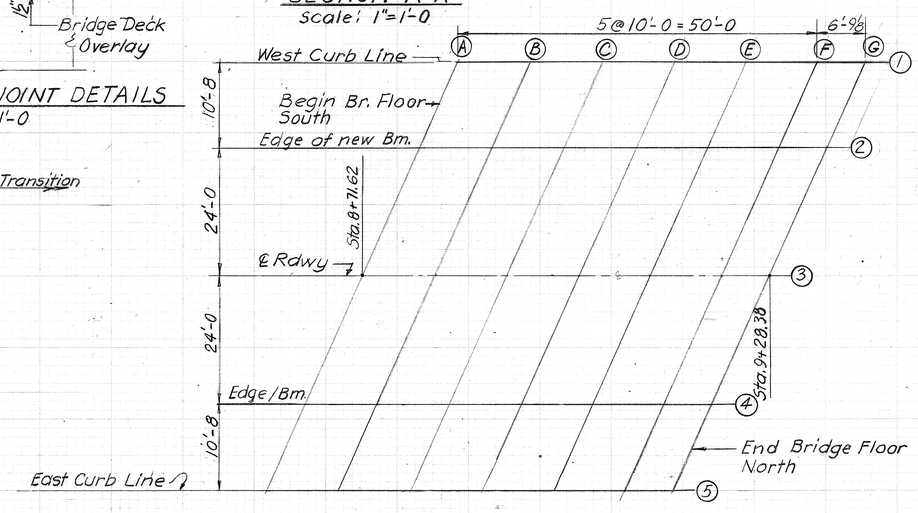
SECTION A-A
Scale: 1" = 1'-0



END OF JOINT BS6 DETAIL



DETAIL AT DECK EXPANSION JOINT
Scale: ½" = 1'-0



PLAN

TOP OF OVERLAY ELEVATIONS

Line No.	A	B	C	D	E	F	G
1	689.214	689.228	689.224	689.204	689.167	689.114	689.068
2	689.369	689.390	689.395	689.382	689.353	689.308	689.268
3	689.703	689.742	689.764	689.770	689.759	689.731	689.703
4	689.268	689.325	689.365	689.388	689.395	689.385	689.369
5	689.068	689.133	689.181	689.212	689.227	689.225	689.214

TWO (2) RAILNGS			
BILL OF MATERIALS			
Size & Mark	No. of Bars	Length	Weight

TWO (2) RAILINGS			
Size & Mark	No. of Bars	Length	Weight Lbs
Epoxy Coated Reinforcing Steel			
#4	12	18'-7	
	2	18'-2	
	4	18'-4	
	6	18'-7	
	8	28'-6	
	8	28'-3	
	8	28'-1	
	6	5'-5	
	4	5'-8	
	2	5'-0	
Total #4 Bars			7.94 Lbs.
#5	8	2'-6	
580	88	3'-9	
581	114	3'-0	
582	88	3'-11	
#5	114	2'-9	
Total #5 Bars			1409 lbs.
Total Epoxy Coated Steel			2203 lbs.
Surface Seal			1702 SFT
Concrete Railing Class 'C'			
In Br. Rlg. Pour 1 (West)			10.1 C.Y.
In Br. Rlg Pour 2 (East)			10.1 C.Y.
Concrete Bridge Railing Transition, TGB			4 Each

CONCRETE BRIDGE RAILING & SCREED ELEVATIONS
INDIANA DEPARTMENT OF TRANSPORTATION

SCALE:- as shown DATE:- 19

SENIOR DESIGNER

DRAWING: S7 OF S8 SHEET:- 11 OF 44
PROJECT:- NH-089-4( ) STATION:- 449+00
BRIDGE CONTRACT NO. R-22229
BRIDGE FILE:- 49-64-1016 B

JOSEPH L. HARRISON REGISTERED No. 7980 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED HW C'K'D A.P.
DRAWN HW C'K'D A.P.
TRACED C'K'D

SF-22317

TP118

BRIDGE FILE

STRUCTURE QUANTITIES

ITEM	CONCRETE CLASS C SUPERSTR CU. YDS.	CONCRETE CLASS A SUBSTR CU. YDS.	CONCRETE CLASS B ABOVE FTG. CU. YDS.	CONCRETE CLASS B IN. FTG. CU. YDS.	DRILED HOLES IN CONCRETE 3/4" DOWELS EACH	DRILED HOLES IN CONCRETE 1" DOWELS EACH	CONCRETE RAILING CLASS C CU. YDS.	CONCRETE BRIDGE RAIL TRANSITION TYPE B EACH	REINF. STEEL TOTAL LBS.	EPOXY COATED THREADED BAR SPLICERS, 3/4" EACH	EPOXY COATED REINF. STEEL LBS.	BARRIER DELINEATORS EACH	PILES EPOXY COATED SHELLS NO.	PILES EPOXY COATED SHELLS 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.	REMOVAL OF 10 inch REINFORCED CONC. PVT. SQ. YDS.	CAST IRON, GRATES, BASINS, & FITTINGS LBS.	FOUNDATN. EXCAVATION (UNCLASSIFIED) CU. YDS.	EXP. JOINT TYPE B56 LIN. FT.	'B' BORROW FOR STRUCT. BACKFILL CU. YDS.	CONC. STR. MEMBERS BOX BEAMS TYPE 33"x36" SQ. FT.	CONC. STR. MEMBERS I BEAM TYPE LIN. FT.	REMOVAL OF PRESENT STRUCTURE (PORTION) LUMP SUM	10 INCH REINF. CEMENT CONC. PAVEMENT SQ. YDS.	SURFACE MILLING SQ. YDS.	BRIDGE DECK OVERLAY SQ. YDS	ADDITIONAL BRIDGE DECK OVERLAY CU. YDS.	SURFACE SEAL SQ. FT.	PARTIAL DEPTH BRIDGE DECK PATCHING SQ. FT.	FULL DEPTH BRIDGE DECK PATCHING SQ. FT.	TEMPORARY CONCRETE BARRIER LIN. FT.	TEMP. CONC. BARRIER, ANCHORED LIN. FT.
SUPERSTRUCTURE	13.6						20.2	4		216	2203	16												166		1359		1		277	456	8.7	1702	240	50		
SUBSTRUCTURE		5.6	251.8	108.8	160	40			23,368								8	296				368															
MISCELLANEOUS																																					
Reinf. Steel for Approach Structures																																					
Reinf. Steel for R.C. Bridge Approaches									14,950												288								588								
Reinf. Steel for Lip Gutter, Pvmt., Tapers, etc.																																					
TOTALS	13.6	5.6	251.8	108.8	160	40	20.2	4	38,318	216	2,203	16					8	296			288		368	166		1359		1	588	277	456	8.7	1,702	240	50		

BRIDGE FILE

APPROACH STRUCTURES

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

PAVED SIDE DITCH & SODDING SUMMARY

LT. OR RT.	STATION TO STATION	PAVED SIDE DITCH (LIN. FT.) TYPE	PAY LENGTH	NO. OF LUGS	PAY LENGTH	CUT OFF WALLS	PAY LENGTH	TOTAL PAY LENGTH	SODDING (SQ. YD.) FOR PSD	FOR DITCHES	SHOULDERS	OTHER	TOTAL SOD

APPROACH TABLE

LOCATION LT/RT	LOCATION STATION	DESCRIPTION	WIDTH FT.	RADII FT.	GRADE %	LENGTH FT.	DIST. BEYOND R/W FT.	EXCAVATION (CYS) CUT	EXCAVATION (CYS) FILL	BITUM. SURFACE #/SQ.YD.	BITUM. SURFACE TONS	BITUM. BINDER #/SQ.YD.	BITUM. BINDER TONS	BITUM. BASE #/SQ.YD.	BITUM. BASE TONS	COMP. AGG. BASE Depth (In)	COMP. AGG. BASE TONS

REVISIONS

DATE	ITEM

JUNE 1984

SUMMARIZED _____ C'K'D _____

TRACED _____ C'K'D _____

SF-22332

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.
For Test Bar Samples See Bridge Standard C1.

BRIDGE SUMMARY

INDIANA DEPARTMENT OF TRANSPORTATION

DATE

SENIOR DESIGNER

SHEET 12 OF 44

JOSEPH L. HARRISON REGISTERED 7880 STATE OF INDIANA PROFESSIONAL ENGINEER

PROJECT: NH-089-4( )
CONTRACT NO: R-22229
BRIDGE FILE: 49-64-1016 B

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TP103