

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	(2 & 3) BP	PIKE	9	1
		HUNDS	CONTRACT NO. 72K30	

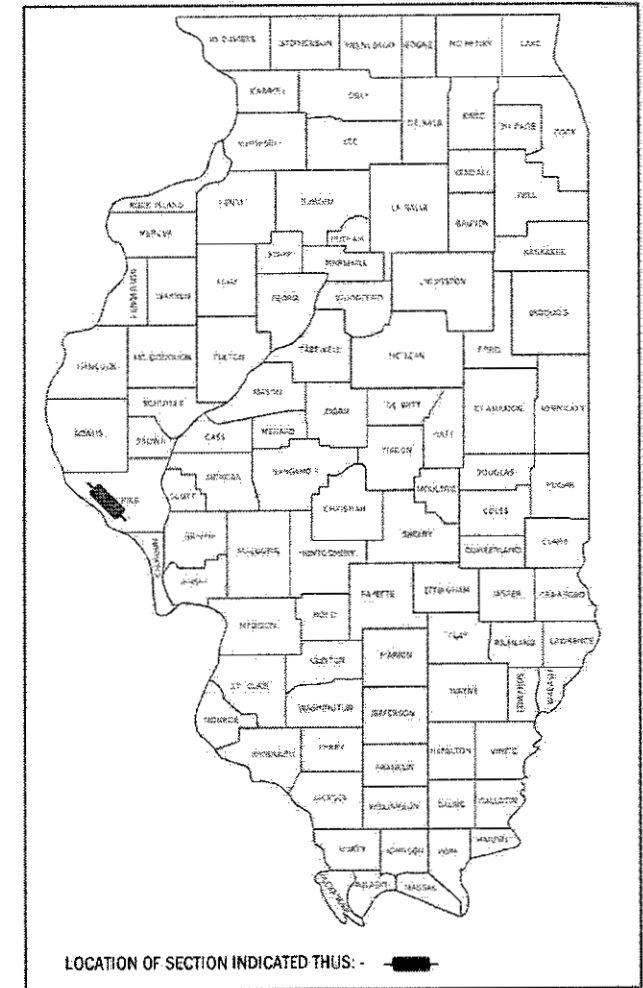
D-96-015-18

FOR INDEX OF SHEETS, SEE SHEET NO. 2

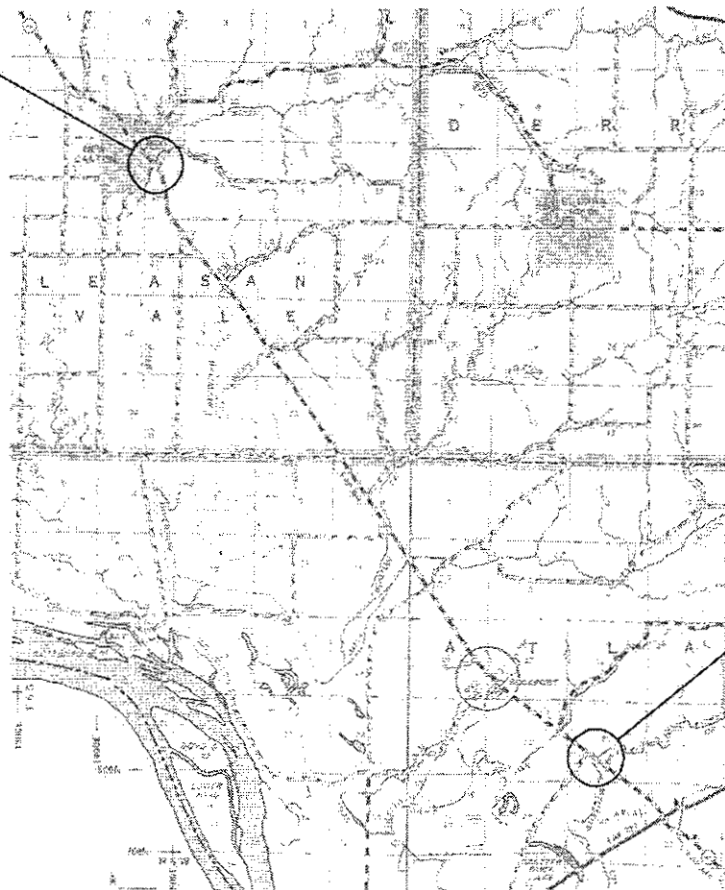
PROPOSED BRIDGE PAINTING

FAP ROUTE 304 (IL 96)
SECTION (2 & 3) BP
PROJECT NHPP-B3DL(154)
BRIDGE PAINTING PIKE
COUNTY

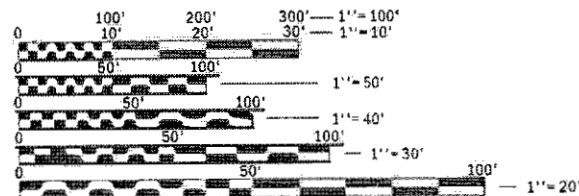
C-96-022-18



STRUCTURE #1 - SN 075-0038
IL 96 OVER KISER CREEK
AT NEW CANTON



STRUCTURE #2 - SN 075-0044
IL 96 OVER AMBROSIA CREEK
1 MI NW OF US 54 IN ATLAS



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811

BRIDGE MAINTENANCE ENGINEER: BRANDON DUDLEY - (217) 785-9290

GROSS LENGTH = x.xx FT. = x.xxx MILE
NET LENGTH = x.xx FT. = x.xxx MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED: 3 October 2017
[Signature]
REGIONAL ENGINEER

Nov 30 2017
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

Nov 30 2017
[Signature]
DIRECTOR OF PROGRAM DEVELOPMENT

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

CONTRACT NO. 72K30

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX, STANDARDS, GENERAL NOTES, SIGNATURES, & SUMMARY OF QUANTITIES
- 3-9 EXISTING BRIDGE PLANS (FOR INFORMATION ONLY)

HIGHWAY STANDARDS

- 000001-06
- 001006
- 701001-02
- 701006-05
- 701201-04
- 701901-07

0-01514-6004
NHPP 80/20

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	BRIDGE
				0047 RURAL
67100100	MOBILIZATION	L SUM	1	1
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	1
	NON			
X5060601	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1
	NON			
X5060602	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1	1
20010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1
20010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1	1

GENERAL NOTES:

1. WORK SHALL CONSIST OF BLASTING AND PAINTING STRUCTURAL STEEL LOCATIONS AS DEFINED IN THE SPECIAL PROVISIONS. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". ALL AREAS TO BE PAINTED SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING PER SSPC SP 10. ALL EXISTING STEEL CLEANED SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U. THE COLOR OF THE FINAL FINISH COAT SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS.
2. THE USE OF AIR MONITORS WILL NOT BE REQUIRED
3. THE SSPC-OP-1 PAINTING CONTRACTOR CERTIFICATION WILL BE REQUIRED FOR THESE BRIDGES.
4. CARE SHALL BE TAKEN NOT TO DAMAGE RUBBER BEARING OR JOINT COMPONENTS DURING BLASTING AND CLEANING OPERATIONS. ANY DAMAGE TO THESE COMPONENTS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. RUBBER COMPONENTS SHALL NOT BE PAINTED.
5. UPON COMPLETION OF PAINTING OPERATIONS AT EACH LOCATION, THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM PIER OR ABUTMENT CAPS UPON WHICH PAINTING OPERATIONS TOOK PLACE. FINAL CLEANUP SHALL BE CONSIDERED INCIDENTAL TO THE PAINT PAY ITEM FOR THE RESPECTIVE LOCATION. THE ENGINEER SHALL HAVE THE RIGHT TO WITHHOLD PAYMENT UNTIL SATISFACTORY CLEANUP IS ACHIEVED.

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT 6**

EXAMINED Sept 26th 20 17
[Signature]
ENGINEER OF OPERATIONS

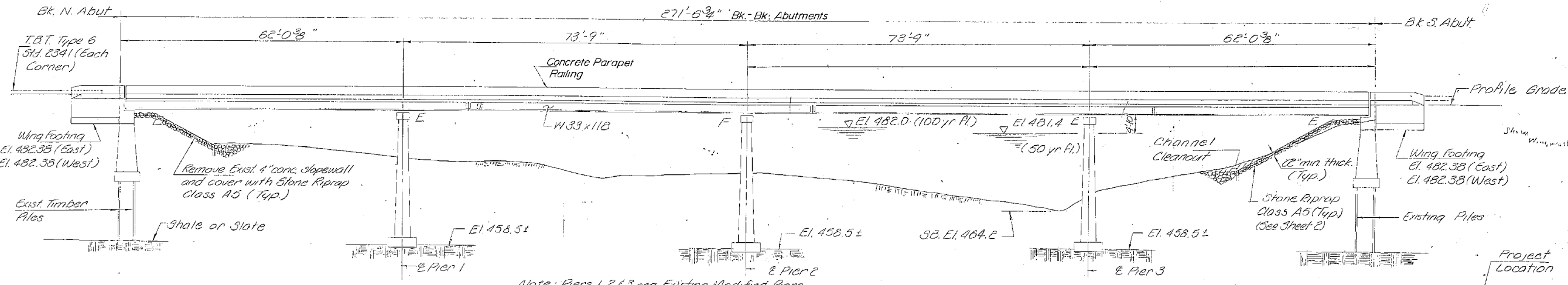
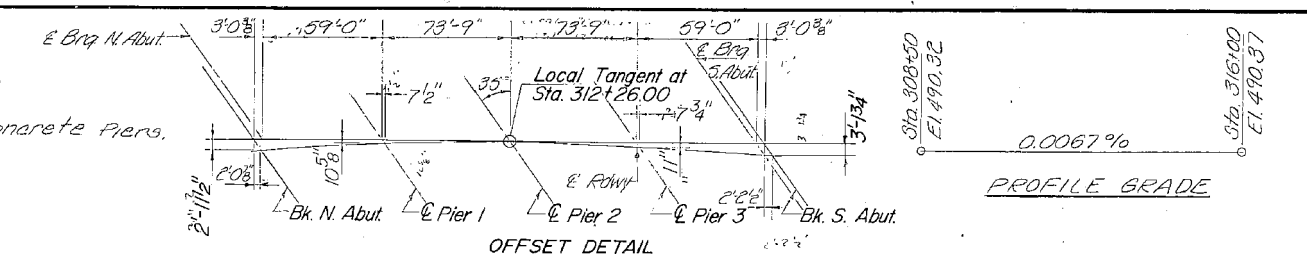
EXAMINED Oct 2nd 20 17
[Signature]
ENGINEER OF PROJECT IMPLEMENTATION

EXAMINED September 26 20 17
[Signature]
ENGINEER OF PROGRAM DEVELOPMENT

Benchmark: USGS Survey Cap in S.W. Wingwall of existing structure. El. 490.84

Existing Structure: 4-Span R.C. Deck on continuous Steel WF beams. Solid Concrete Piers, Spill through buttressed Concrete Abutments, solid concrete Piers. Gross bridge length ± 269'-10", by 32'-4" wide. Existing Structure to be used as Stage I traffic lane during Stage I construction of prop. structure. See Special Provisions for salvage.

Sheet 1 of 16 Sheets
 DESIGN STRESS 3E3
 Concrete: $f_c = 3500$ psi
 $f_y = 60000$ psi (Reinf.)
 Structural Steel: $f_y = 50000$ psi (ME23, Gr. 50) (Structural)

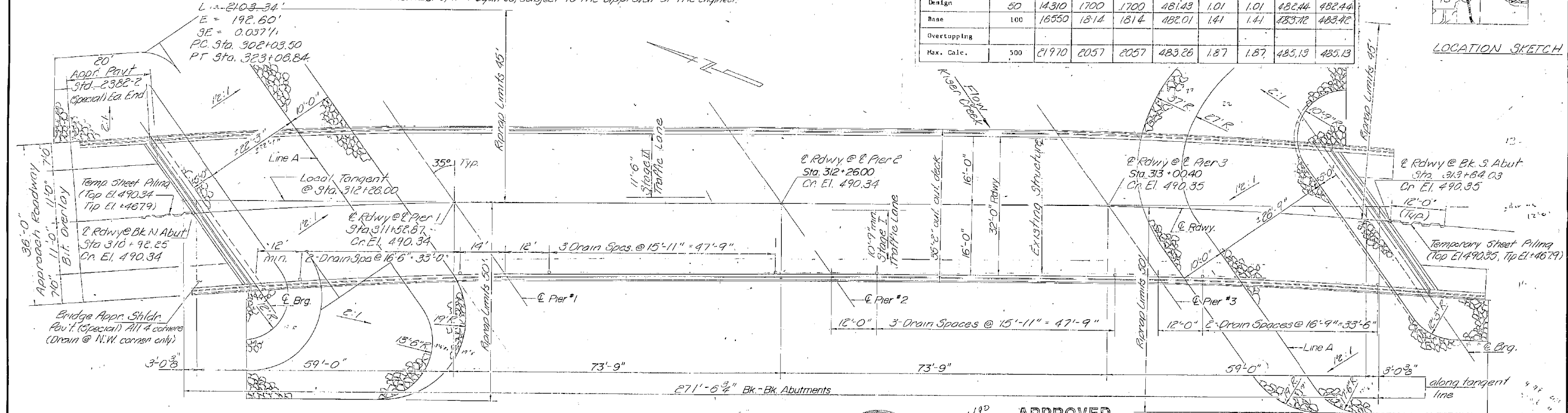
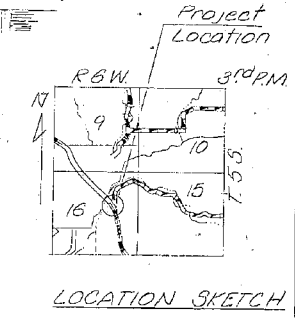


CURVE DATA
 P.I. Sta. 312+99.74
 $\Delta = 39^\circ-51'-31''$
 $D = 1^\circ-53'-42''$
 $R = 3023.53$
 $T = 1098.24'$
 $L = 2103.34'$
 $E = 192.60'$
 $SE = 0.03711$
 P.C. Sta. 302+03.50
 P.T. Sta. 323+06.84

Note: Information shown for the temporary sheet piling is estimated. It is the contractor's responsibility to provide a design of the temporary sheet piling and associated members, if required, subject to the approval of the engineer.

WATERWAY INFORMATION

Flood Yr.	Freq. C.F.S.	Q	Opening Sq. Ft.		Nat. H.W.E.	Head-Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	50	14310	1700	1700	481.43	1.01	1.01	482.44	482.44
Base	100	16550	1814	1814	482.01	1.41	1.41	483.42	483.42
Overlapping									
Max. Calc.	500	21970	2057	2057	483.26	1.87	1.87	485.13	485.13



DESIGN SPECIFICATIONS
 1989 A.A.S.H.T.O Specifications & 1990 Interim Specifications
 1983 Seismic Retrofitting Guide Specifications

APPROVED
 FOR STRUCTURAL ADEQUACY ONLY
 Fred J. Stone, Jr. (4-15-91)
 Licensed Structural Engineer
 Expiration Date 11/30/92

GENERAL PLAN & ELEVATION
 FA. ROUTE 304 (IL ROUTE 96)
 OVER KISER CREEK
 SECTION 2 BR
 PIKE COUNTY
 S.N. 075-0038

ALLEN HENDERSON & ASSOCIATES

CONSULTING CIVIL AND STRUCTURAL ENGINEERS

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS SN 075-0038
 (FOR INFORMATION ONLY)

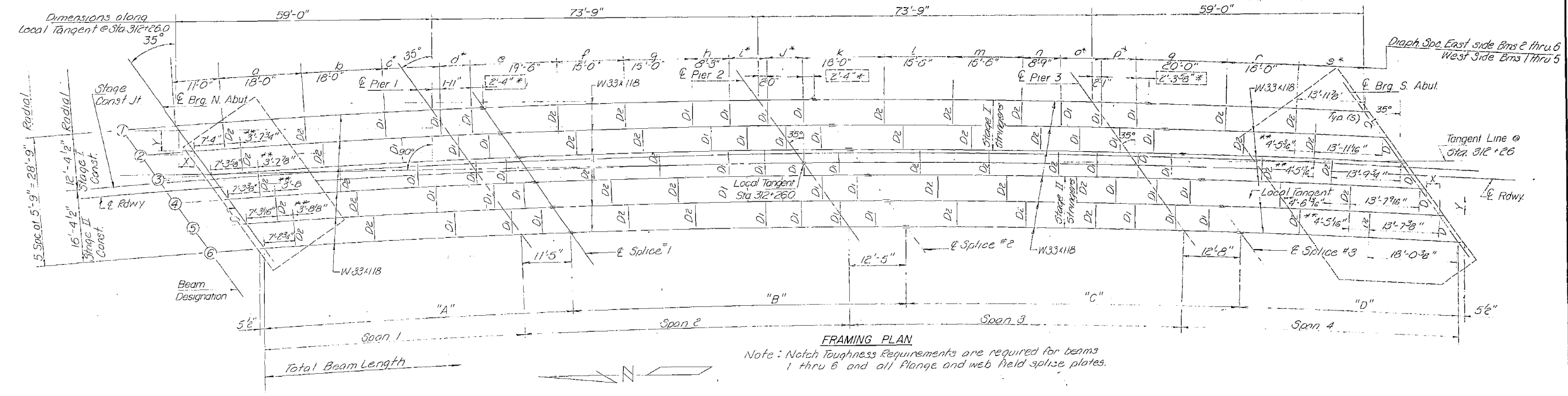
USER NAME	DESIGNED	REVISED
dudleybm	-	-
	DRAWN	REVISED
	CHECKED	REVISED
	DATE	REVISED

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	(2 & 3) BP	PIKE	9	3
CONTRACT NO. 72K30				
ILLINOIS FED. AID PROJECT				

MODEL: Definit FILE: M:\GIS\OPERATIONS\Bridges\Bridges\CAD\72K30 - IL 96.palm\brstsheet.dgn

*- See diaphragm spacing tabulations



BEAM DIMENSIONS

BEAM	RADIUS	"A"	"B"	"C"	"D"	TOTAL BEAM LENGTH
1	3037.905'	68'-11 5/8"	73'-11 5/8"	74'-5 5/8"	47'-8 1/8"	265'-1"
2	3032.155'	69'-0 1/4"	74'-0 1/2"	74'-6 3/4"	47'-8 1/8"	265'-4"
3	3026.405'	69'-0 3/4"	74'-1 1/4"	74'-7 1/2"	47'-9 3/8"	265'-7 1/8"
4	3020.655'	69'-1 1/8"	74'-2"	74'-9 1/4"	47'-10 3/8"	265'-10"
5	3014.905'	69'-1 7/8"	74'-2 3/4"	74'-9 1/2"	47'-11 1/4"	266'-1"
6	3009.155'	69'-2 1/2"	74'-3 1/2"	74'-10 1/4"	48'-0"	266'-4 1/4"

LAYOUT DIMENSIONS

Beam	Brig. N. Abut.	Pier 1	Splice 1	Pier 2	Splice 2	Pier 3	Splice 3	Brig. S. Abut.
	"X" "Y"	"X" "Y"	"X" "Y"	"X" "Y"	"X" "Y"	"X" "Y"	"X" "Y"	"X" "Y"
1	2'-3 3/4" 3'-3"	0'-9 1/2" 1'-1 5/8"	0'-7" 0'-10"	0'-0 1/8" 0'-0 1/4"	0" 0"	0'-5 3/4" 0'-8 1/8"	0'-8 7/8" 0'-11 1/8"	1'-9 3/4" 2'-6 3/8"
2	2'-1 7/8" 3'-1"	0'-8 5/8" 1'-0 3/8"	0'-6 1/4" 0'-8 7/8"	0" 0"	0'-0 1/8" 0'-0 1/8"	0'-6 1/2" 0'-9 1/4"	0'-9 1/4" 1'-1 1/4"	1'-10 7/8" 2'-8 3/4"
3	2'-0 1/2" 2'-11"	0'-7 7/8" 0'-9 3/4"	0'-5 1/2" 0'-7 7/8"	0" 0"	0'-0 1/8" 0'-0 1/8"	0'-7 1/4" 0'-10 3/8"	0'-10 3/8" 1'-2 1/2"	2'-0 1/2" 2'-11"
4	1'-11 1/4" 2'-9"	0'-7" 0'-10"	0'-4 1/2" 0'-7"	0" 0"	0'-0 1/4" 0'-0 3/8"	0'-8 1/8" 0'-11 1/4"	1'-4 1/2" 2'-2 1/4"	3'-11 1/4" 3'-11 1/4"
5	1'-9 3/4" 2'-7"	0'-6 1/4" 0'-9"	0'-4 1/2" 0'-6 1/2"	0" 0"	0'-0 1/8" 0'-0 1/8"	0'-9" 1'-0 7/8"	1'-0 7/8" 1'-5 3/4"	2'-3 3/4" 3'-3 3/4"
6	1'-8 1/2" 2'-5 1/4"	0'-5 3/4" 0'-8"	0'-3 3/4" 0'-5 1/4"	0'-0 1/8" 0'-0 1/4"	0'-0 3/4" 0'-1"	0'-10" 1'-2 1/4"	1'-1 1/2" 1'-7 3/8"	2'-5 1/2" 3'-6 1/8"

NOTES

All dimensions are along & beam except as noted.

Dimensions X and Y are given from the respective local tangent of each beam at Sta. 312+26.00.

Beams shall be fabricated to their respective radii.

All dimensions are along the curve except as noted.

Work this sheet with sheet nos. 9 & 10

The diaphragm between Beams 3 & 4 at each abutment shall be installed during Stage II Construction.

All stringers (W33x118) and splice plates shall be A.A.S.H.T.O. M-223.

All diaphragms, connection & plates and bearing plates: A.A.S.H.T.O. M-183.

DIAPHRAGM SPACINGS

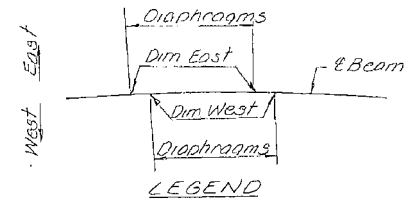
Loc. Bm.	1	2	3	4	5	6	Loc. Bm.	1	2	3	4	5	6
a	---	17'-11 5/8"	17'-11 5/8"	17'-11 5/8"	17'-11 5/8"	17'-11 5/8"	---	---	---	---	---	---	---
b	---	17'-11 5/8"	17'-11 5/8"	17'-11 5/8"	17'-11 5/8"	17'-11 5/8"	q	19'-11 9/16"	19'-11 9/16"	19'-11 9/16"	19'-11 9/16"	19'-11 9/16"	19'-11 9/16"
e	---	14'-5 5/8"	14'-5 5/8"	14'-5 5/8"	14'-5 5/8"	14'-5 5/8"	r	15'-11 5/8"	15'-11 5/8"	15'-11 5/8"	15'-11 5/8"	15'-11 5/8"	15'-11 5/8"
f	---	14'-11 5/8"	14'-11 5/8"	14'-11 5/8"	14'-11 5/8"	14'-11 5/8"	c (east)	12'-7 3/8"	12'-7 3/8"	12'-7 3/8"	12'-10 1/2"	12'-10 1/2"	12'-9 9/16"
g	---	14'-11 5/8"	14'-11 5/8"	14'-11 5/8"	14'-11 5/8"	14'-11 5/8"	c (west)	12'-7 3/8"	12'-7 3/8"	12'-7 3/8"	12'-10 1/2"	12'-10 1/2"	12'-9 9/16"
h	---	8'-2 1/8"	8'-2 1/8"	8'-2 1/8"	8'-2 1/8"	8'-2 1/8"	d (east)	7'-0"	7'-0"	7'-0"	7'-1 3/4"	7'-2 1/4"	7'-2 1/4"
k	---	17'-11 9/16"	17'-11 9/16"	17'-11 9/16"	17'-11 9/16"	17'-11 9/16"	d (west)	7'-0"	7'-0"	7'-0"	7'-1 3/4"	7'-2 1/4"	7'-2 1/4"
l	---	13'-5 5/8"	13'-5 5/8"	13'-5 5/8"	13'-5 5/8"	13'-5 5/8"	i (east)	8'-3 3/8"	8'-4 1/2"	8'-5"	8'-5 1/2"	8'-6 1/2"	8'-6 1/2"
m	---	15'-5 5/8"	15'-5 5/8"	15'-5 5/8"	15'-5 5/8"	15'-5 5/8"	i (west)	8'-3 3/8"	8'-4 1/2"	8'-5"	8'-5 1/2"	8'-6 1/2"	8'-6 1/2"
n	---	8'-8 1/4"	8'-8 1/4"	8'-8 1/4"	8'-8 1/4"	8'-8 1/4"	j (east)	7'-11"	7'-11"	7'-11"	7'-11"	7'-11"	7'-11"
							j (west)	7'-11"	7'-11"	7'-11"	7'-11"	7'-11"	7'-11"
							o (east)	8'-8"	8'-8"	8'-8"	8'-10 1/2"	8'-10 1/2"	8'-11 1/2"
							o (west)	8'-8"	8'-8"	8'-8"	8'-10 1/2"	8'-10 1/2"	8'-11 1/2"
							p (east)	8'-1 3/4"	8'-1 3/4"	8'-2 1/4"	8'-3 1/2"	8'-4 1/2"	8'-4 1/2"
							p (west)	8'-1 3/4"	8'-1 3/4"	8'-2 1/4"	8'-3 1/2"	8'-4 1/2"	8'-4 1/2"
							q (east)	13'-11 3/4"	13'-11 3/4"	13'-11 3/4"	13'-11 3/4"	13'-11 3/4"	13'-11 3/4"
							q (west)	13'-11 3/4"	13'-11 3/4"	13'-11 3/4"	13'-11 3/4"	13'-11 3/4"	13'-11 3/4"

SPAN LENGTH TABLE

Beam	Span 1	Span 2	Span 3	Span 4
1	57'-8 3/8"	72'-11 5/8"	74'-3"	60'-3 3/4"
2	57'-7 1/4"	73'-0 1/2"	74'-3 3/4"	60'-4 1/2"
3	57'-7 3/8"	73'-1 1/4"	74'-4 1/4"	60'-5 3/8"
4	57'-8 3/8"	73'-2"	74'-5 1/2"	60'-6 1/8"
5	57'-8 3/8"	73'-2 3/8"	74'-5 1/2"	60'-6 8"
6	57'-9 1/2"	73'-3 1/2"	74'-7 1/2"	60'-7 3/4"

TOP OF BEAM ELEVATIONS *

Loc. Bm.	Brig. N. Abut.	Pier 1	Splice #1	Pier 2	Splice #2	Pier 3	Splice #3	Brig. S. Abut.
1	490.15	490.15	490.15	490.15	490.15	490.16	490.16	490.16
2	489.93	489.94	489.94	489.94	489.94	489.95	489.95	489.95
3	489.72	489.72	489.72	489.73	489.73	489.73	489.73	489.74
4	489.51	489.51	489.51	489.52	489.52	489.52	489.52	489.53
5	489.30	489.30	489.30	489.30	489.30	489.31	489.31	489.31
6	489.08	489.09	489.09	489.09	489.09	489.10	489.10	489.10



Revised dimensions indicated by dashed enclosure

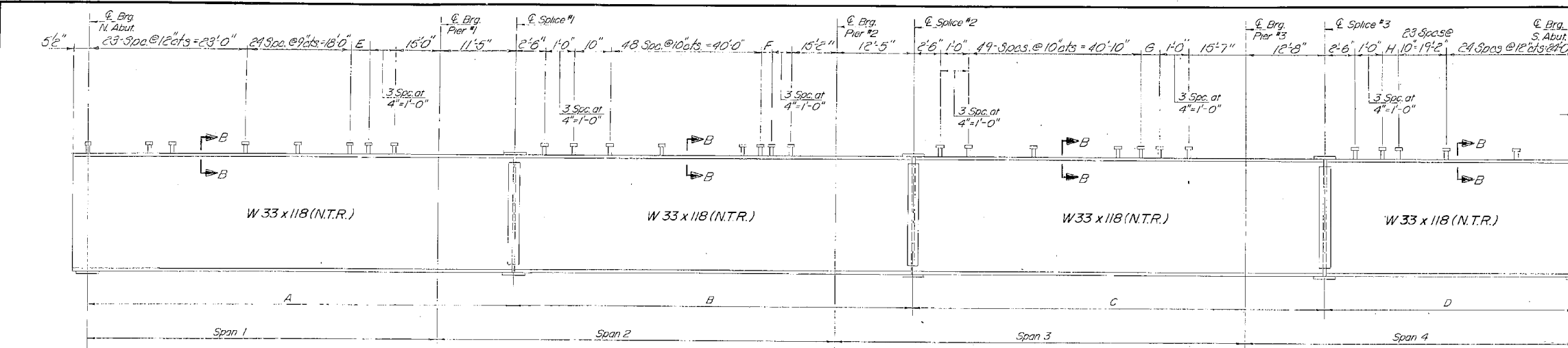
* * - Indicates added dimension

As Revised

STRUCTURAL STEEL
FA. ROUTE 304 (IL ROUTE 96)
OVER KISER CREEK
SECTION 2 BR
PIKE COUNTY
S.N. 075-0038

(FRAMING PLAN & DETAILS)

MODEL: Default
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VALUE OF θ

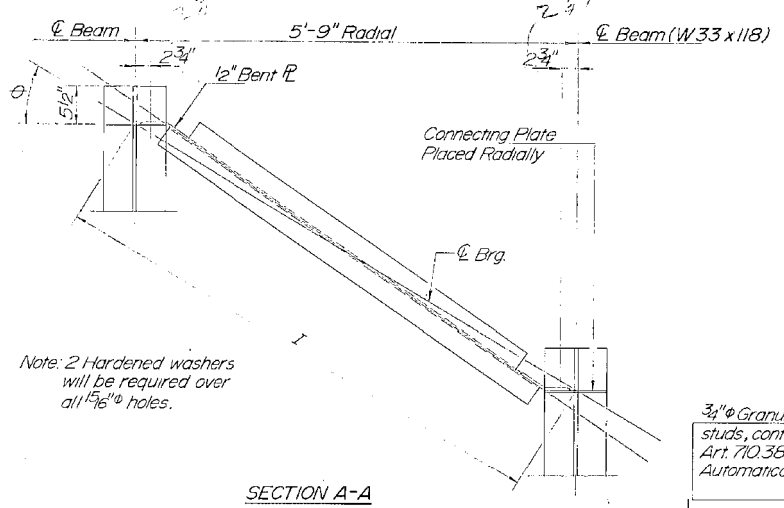
LOC.	BM	#1	#2	#3	#4	#5	#6
Q. Brg. N. Abut.		32°20'54"	32°24'02"	32°29'11"	32°33'21"	32°37'33"	32°41'45"
Q. Brg. S. Abut.		37°20'54"	37°25'52"	37°30'52"	37°35'54"	37°40'57"	37°46'02"

DIMENSION I

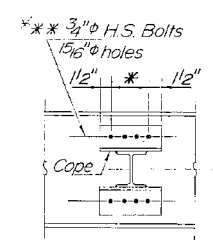
LOC.	BM	BTWN BMS 1&2	BTWN BMS 2&3	BTWN BMS 3&4	BTWN BMS 4&5	BTWN BMS 5&6
Q. Brg. N. Abut.		6'-9 3/4"	6'-9 3/4"	6'-9 7/8"	6'-9 7/8"	6'-10"
Q. Brg. S. Abut.		7'-2 7/8"	7'-3"	7'-3"	7'-3 1/8"	7'-3 1/4"

BEAM ELEVATION
 For A, B, C & D and Span Dimensions
 See Sheet No. 8 of 16
 Members Designated N.T.R. shall conform to the Supplemental Requirements for Notch Toughness (Zone 2)

** 1/2" vertical x 1 3/8" slotted holes in connection angle at beam 3 with 5/16" structural plate washers. The bolts for the slotted holes shall only be finger tightened prior to the deck slab pouring and then be fully tightened after completion of the pouring.

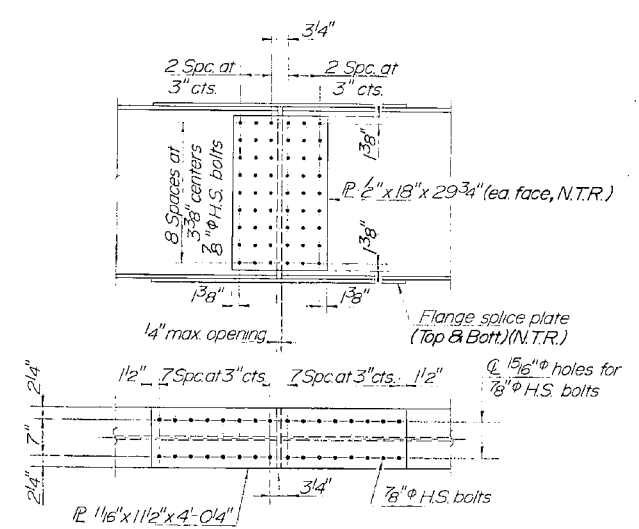


Note: 2 Hardened washers will be required over all 1 3/8" holes.

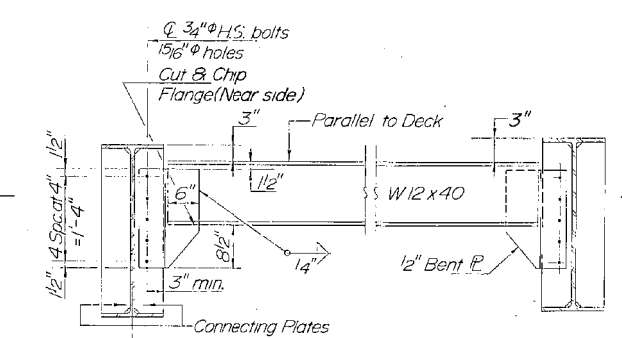


DIAPHRAGM D2
 (50 Required)

3/4" Granular or solid flux filled headed studs, conforming to the requirements of Art. 710.3B of the Standard Specs. Automatically end welded to flange.



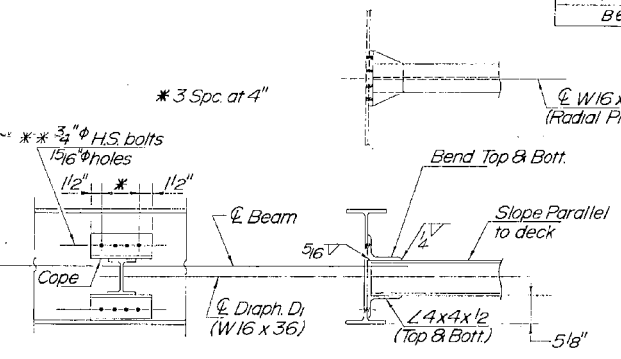
PLAN
 (Top & Bottom Flange Plates - N.T.R.)
 FIELD SPLICE DETAIL
 (Splices #1, #2 & #3)



DIAPHRAGM D
 (10 - Required)

(Note: Omit connecting plate at exterior side of exterior beam.)

Note: Work this sheet with Sheet No. 8 of 16
 All connecting holes for Diaphragms shall be 1 3/8". Two hardened washers shall be required over all oversize holes.



DIMENSION

STRINGER NO.	E	F	G	H
B 1	6 5/8"	1'-0 5/8"	0'-11"	0'-11 3/4"
B 2	7 1/4"	1'-1 1/2"	0'-11 3/4"	1'-0 1/2"
B 3	7 3/4"	1'-2 1/4"	1'-0 3/4"	1'-1 3/8"
B 4	8 3/8"	1'-3"	1'-1 1/2"	1'-2 1/8"
B 5	8 7/8"	1'-3 3/4"	1'-2 1/2"	1'-2 1/8"
B 6	9 1/2"	1'-4 1/2"	1'-3 1/2"	1'-3 3/4"

STRUCTURAL STEEL
 FA. ROUTE 304 (IL ROUTE 96)
 OVER KISER CREEK
 SECTION 2 BR
 PIKE COUNTY
 S.N. 075-0038

MODEL: Default
 FILE: \\mtdc\c\OPERATIONS\bridge\bridgeplans_CAD\72K30 - IL 96.pml\stbrsheet.dgn

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/2017	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS SN 075-0038
 (FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

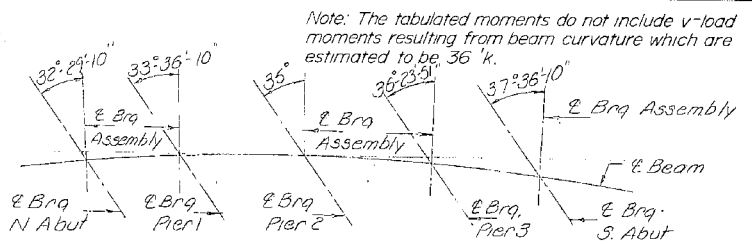
F.A.P. RTE. 304	SECTION (2 & 3) BP	COUNTY PIKE	TOTAL SHEETS 9	SHEET NO. 5
CONTRACT NO. 72K30			ILLINOIS FED. AID PROJECT	

	0.4 SP 1 or 0.6 SP 4	PIER #1 or PIER #3	0.5 SP 2 or 0.5 SP 3	PIER #2
I_s (in ⁴)	5900	5900	15896	5900
I_c (in ⁴)	15896	5900	15896	5900
S_s (in ³)	359	359	359	359
S_c (in ³)	5021.0	359	5021.0	359
S_b (in ³)	535.3	359	535.3	359
Q (k/ft)	0.696	0.976	0.696	0.976
M_D (k)	177.19	419.43	162.56	423.42
S_D (k/ft)	0.280		0.280	
M_S (k)	83.39		91.47	
M_L (k)	366.97	218.56	403.12	233.68
M (Imp.) (k)	98.83	44.34	100.99	59.22
$5/8(M_L + Imp.)$ (k)	776.33	438.17	840.17	488.17
M_a (k)	1347.97	1114.88	1422.46	1185.07
M_u (k)				
f_s (non-comp.) (ksi)	5.92	10.66	5.43	10.60
f_s (comp.) (ksi)	1.87	3.36	2.05	3.55
f_s (5/8(L + Imp.) (ksi)	17.40	14.65	18.83	16.32
f_s (overload) (ksi)	25.13	28.67	26.31	30.47
f_s (total) (ksi)	32.67	37.27	34.20	39.61
VR (k)	330	442	350	438

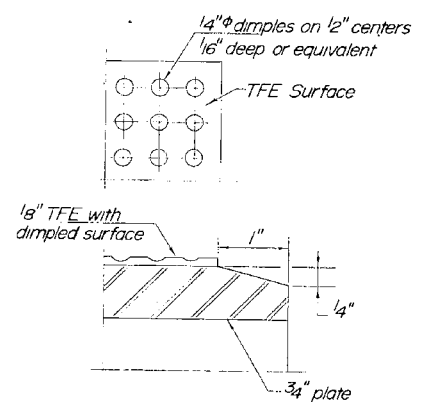
	ABUT.	PIER #1 or PIER #3	PIER #2
R_D (k)	22.50	72.51	72.19
R_L (k)	34.98	43.08	43.87
Impact (k)	9.43	10.82	11.03
R (Total) (k)	66.91	126.41	127.09

MOMENT TABLE LEGEND

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total and Overload).
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_s (Total and Overload).
 VR is the maximum $4 +$ impact shear range in span.
 f_s (Total) is the sum of the stresses due to $1.3 M_D + M_S + \frac{5}{8}(M_L + I)$
 f_s (Overload) is the sum of the stresses due to $M_D + M_S + \frac{5}{8}(M_L + I)$
 M_D - Moment due to dead loads on non-composite section.
 M_S - Moment due to dead loads on composite section.
 M_L - Moment due to live load on non-composite or composite.
 I - Live load impact
 $M_a = 1.3(M_D + M_S) + \frac{5}{8}(M_L + I)$



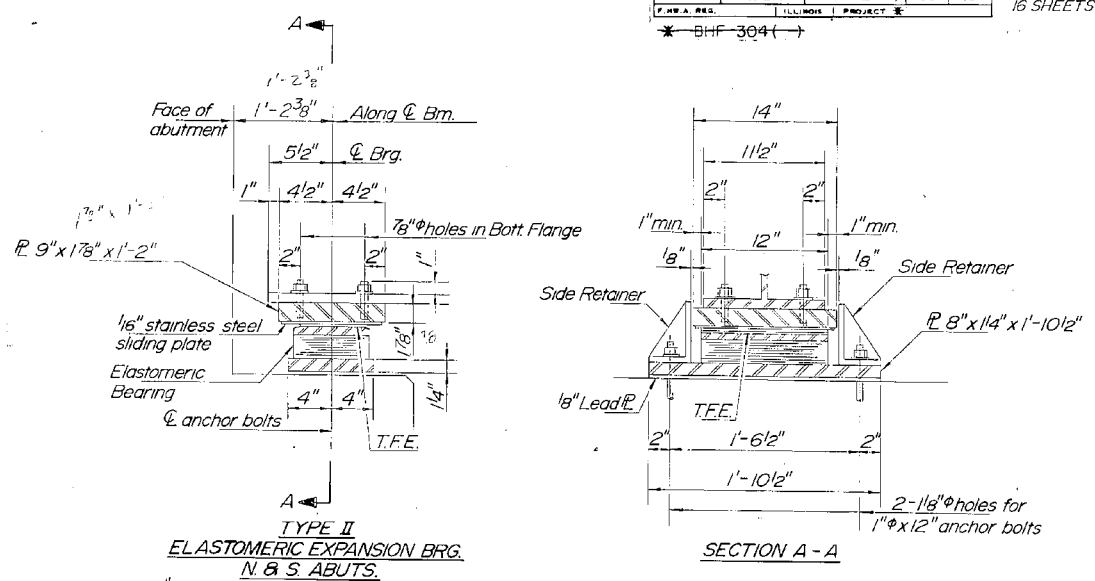
BEARING LAYOUT



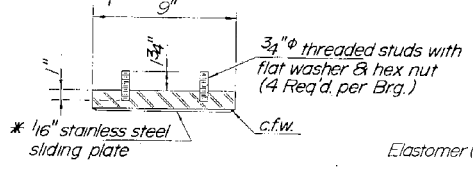
T.F.E. DETAIL FOR ABUT. BRGS.

Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMMA-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

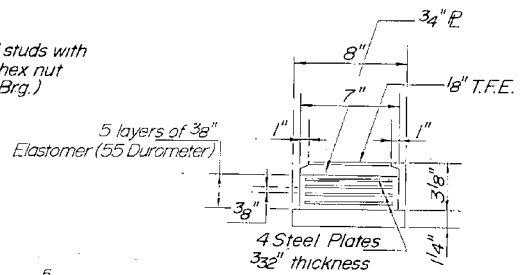
Note: All stringers, flange splice plates, web splice plates - M223, Grade 50.
 All other Structural Steel - M183.



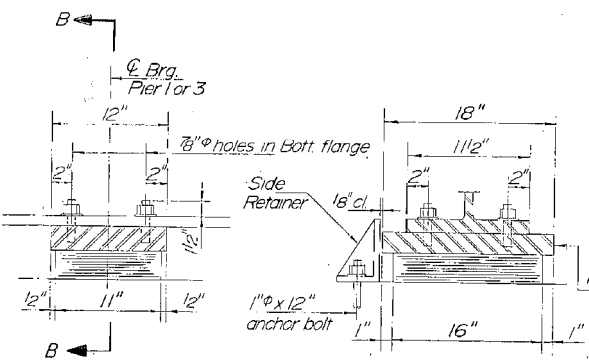
TYPE II ELASTOMERIC EXPANSION BRG. N. & S. ABUTS.



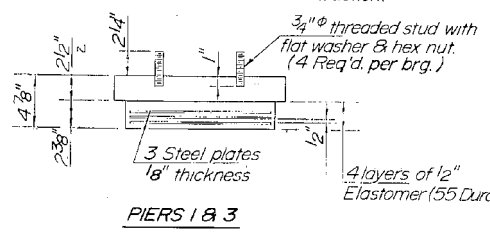
TOP BRG. ASSEMBLY



BOTTOM BRG. ASSEMBLY ABUTMENTS

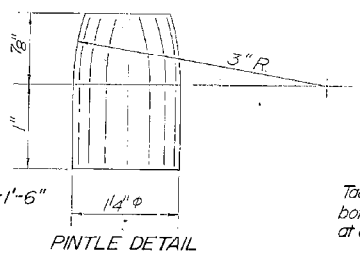


TYPE I ELASTOMERIC EXPANSION BRG. PIERS 1 & 3

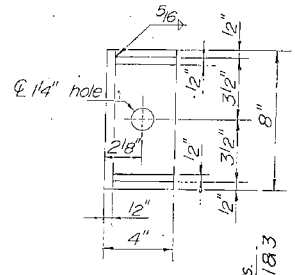


PIERS 1 & 3

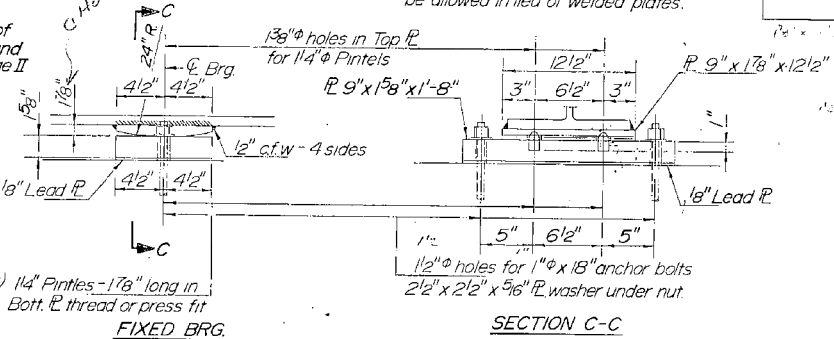
Note: Quantity of Structural Steel for Pier 2 bearings included in the sum item for Structural Steel.



PINTLE DETAIL



SIDE RETAINER DETAIL



FIXED BRG. PIER 2

SECTION C-C

BILL OF MATERIAL

Item	Quantity
Elastomeric Brg. Assembly, Type I	Each 12
Elastomeric Brg. Assembly, Type II	Each 12

STRUCTURAL STEEL
 FA. ROUTE 304 (IL ROUTE 96)
 OVER KISER CREEK
 SECTION 2 BR
 PIKE COUNTY
 S.N. 075-0038
 (BEARINGS)

ALLEN HENDERSON & ASSOCIATES

CONSULTING CIVIL AND STRUCTURAL ENGINEERS

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS SN 075-0038
 (FOR INFORMATION ONLY)

USER NAME	DESIGNED	REVISED
= dudleybm	-	-
DRAWN	-	-
CHECKED	-	-
DATE	-	-

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	(2 & 3) BP	PIKE	9	6
CONTRACT NO. 72K30				
ILLINOIS FED. AID PROJECT				

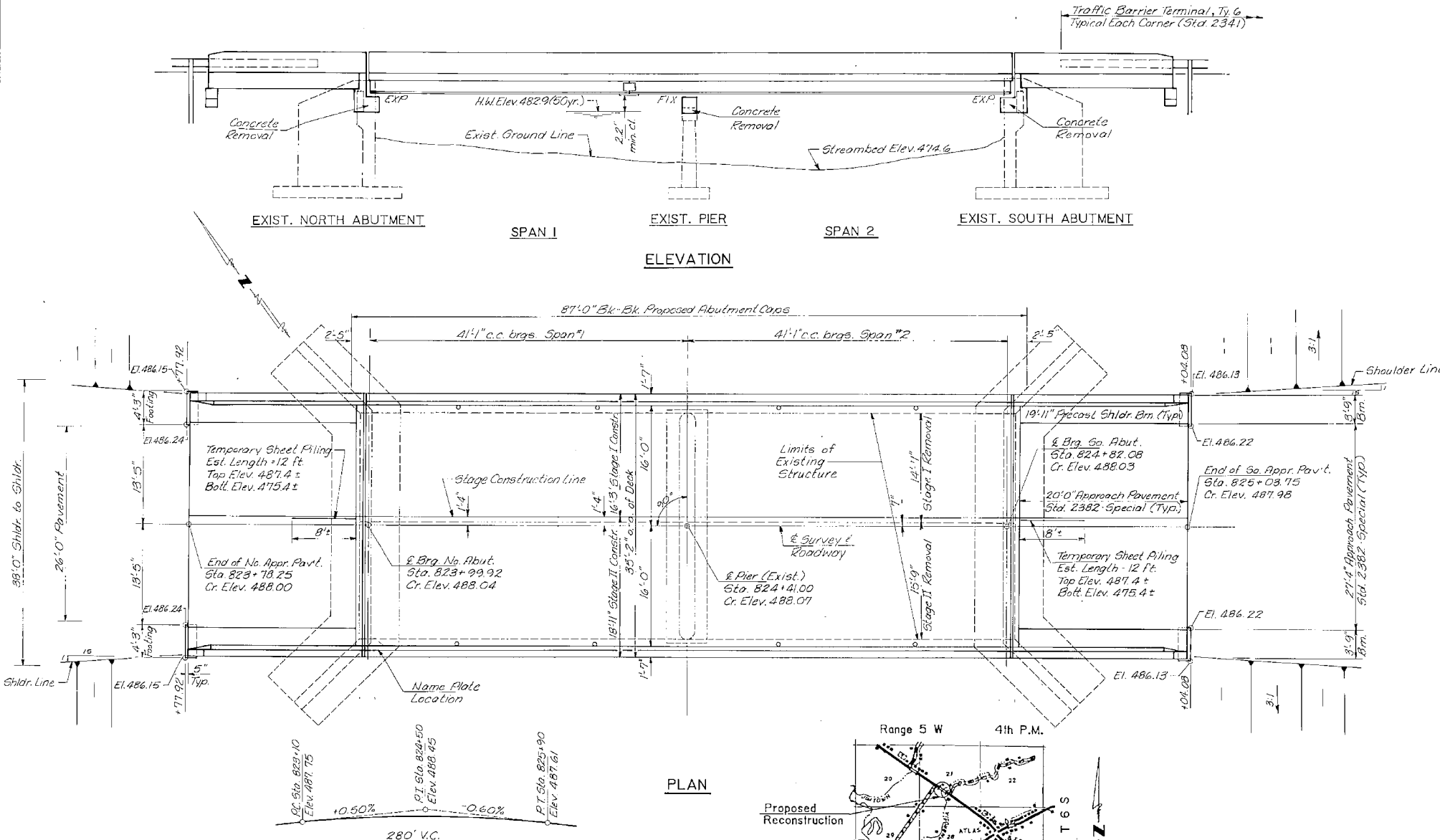
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F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2	3BR-1	Pike	19	16
ILLINOIS PROJECT BR-21				

Existing Structure - (075-0044) 2 Span Reinforced Concrete (Continuous) B.M. - Chiseled "C" on north west wingwall Deck Girder, Closed Concrete Abutments, Solid Concrete Pier, 86' Bk.-Bk. Abuts., 30' o.-o. Deck. Contractor shall remove the existing superstructure and portions of the existing substructure. Superstructure shall be widened and longer reinforced concrete caps added to the substructures. Traffic shall be maintained at all times utilizing stage construction. No salvage.

GENERAL NOTES

CLASS X CONCRETE SHALL BE USED THROUGHOUT.
 THE STANDARD SPECIFICATIONS ADOPTED BY THE DEPARTMENT OF TRANSPORTATION JULY 1, 1988 SHALL APPLY TO THIS WORK.
 THE ZINC-SILICATE AND VINYL PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED. THE COLOR OF THE VINYL FINISH COATS SHALL BE HUNSBILL NO. 7.5 G 4/8 INTERSTATE GREEN.
 FOR CANTILEVER FORMING BRACKETS, SEE SPECIAL PROVISIONS.
 FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.
 ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.
 BEARING SEAL SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8 INCH. ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR SHIMMING THE BEARING. TWO 1/8 INCH ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS OF THE TOP PLATE SHALL BE PROVIDED AND PLACED AS DETAILED.
 THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOLERANCE ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS AND ALL THEIR SPlice PLATE MATERIAL.
 REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR A-53 GRADE 60.
 CALCULATED WEIGHT OF STRUCTURAL STEEL 36,000 LBS. (M23)
 11,050 LBS. (M18)
 FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 7/8 INCH DIAMETER, OPEN HOLES 15/16 INCH DIAMETER, UNLESS OTHERWISE NOTED.
 PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.
 THE INFORMATION SHOWN FOR THE TEMPORARY SHEET PILING IS ESTIMATED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A DESIGN AND COMPUTATIONS FOR THE TEMPORARY SHEET PILING AND ASSOCIATED MEMBERS AS REQUIRED, SUBJECT TO THE APPROVAL OF THE ENGINEER.
 SHOULDER TRANSITION TO EXISTING WINGWALL SHALL BE SHAPED WITH BROKEN CONCRETE. COST INCLUDED IN THE CONTRACT.
 BRIDGE SEAT SEALER SHALL BE APPLIED TO THE SEAT AREA OF THE ABUTMENTS. ESTIMATED QUANTITY = 112 SQ. FT.



BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures	Each			
Concrete Removal	Cu. Yd.		11.1	11.1
Structure Excavation	Cu. Yd.		26	26
Preformed Joint Seal, 2 1/2"	Lin. Ft.	70		70
Class X Concrete Superstructure	Cu. Yc.	100.2		100.2
Protective Coat	Sq. Yd.	84		84
Elastomeric Bearing Assembly, Type I	Each		12	12
Class X Concrete	Cu. Yd.		28.6	28.6
Precast Concrete Bridge Slab	Sq. Ft.	299		299
Furnishing & Erecting Structural Steel	L. Sum			
Stud Shear Connectors	Each	1,320		1,320
Reinforcement Bars, Epoxy Coated	Pound	22,770	4,030	26,800
Temporary Sheet Piling	Sq. Ft.		192	192
Name Plates	Each			
Temporary Concrete Barrier	Lin. Ft.	90		90
Floor Drains	Each	8		8
Bridge Sect Seder	L. Sum			

** Quantity does not include bridge deck surface.

STATION 824+41
 BUILT 199 BY
 STATE OF ILLINOIS
 F.A. RTE. 2 SECTION 3 BR-1
 F.A. PROJ. ACBHF-2(b1)
 LOADING HS-20
 STR. NO. 075-0044

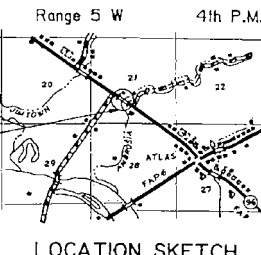
PROPOSED PROFILE GRADE
 Alogg C. Rdwy. - F.A. Rte. 2

DESIGN STRESSES

f'c=3,500 p.s.i.
 fy=60,000 (Reinf.)
 fy=50,000 (struct.) M 223 Gr 50
 The design complies with requirements of the 1989 AASHTO Standard Specifications for Highway Bridges.
 Design provides for future wearing surface of 25 pounds per square foot.
 Loading HS 20-44.

LETTERING FOR NAME PLATE

Locate name plate at the northwest end of the concrete parapet. See Standard 2113.



APPROVED
 FOR STRUCTURAL ADEQUACY ONLY

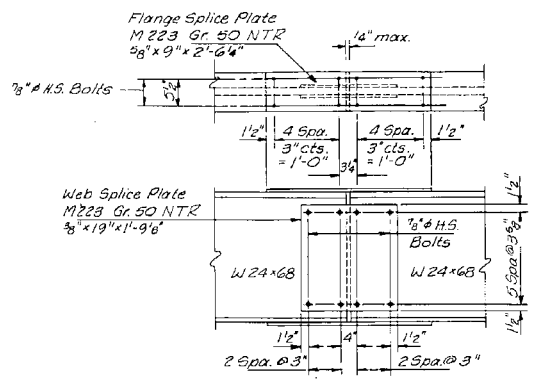
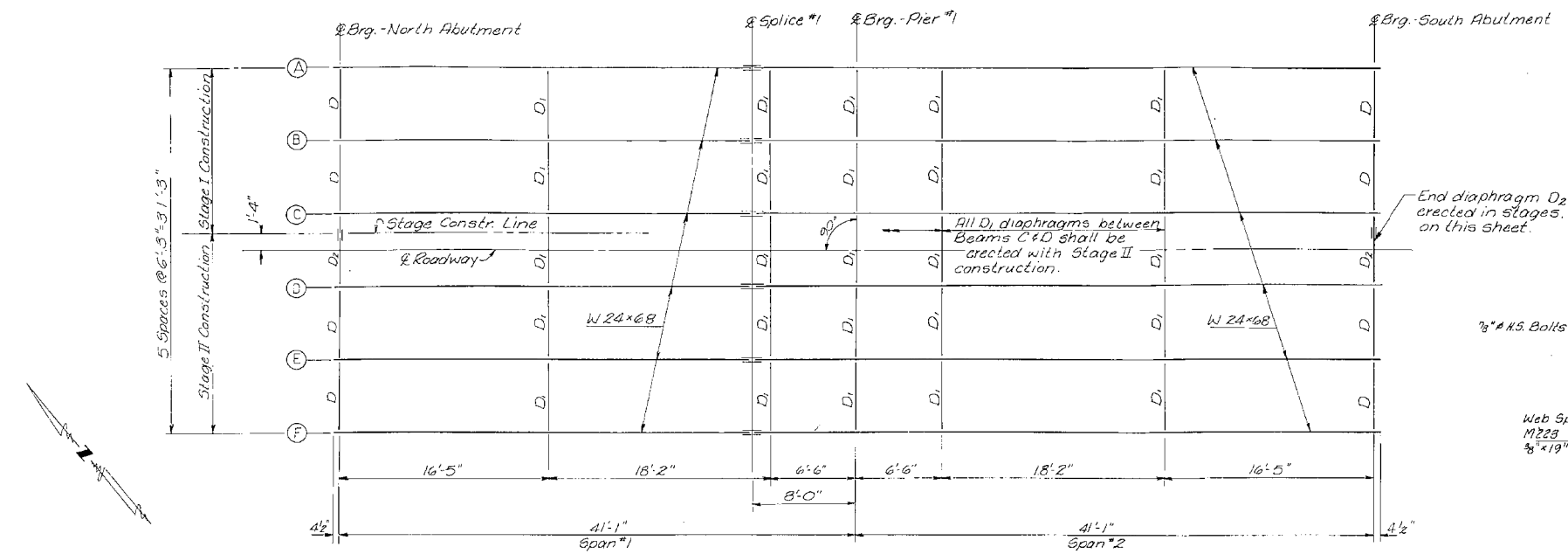
Jan K. Howard
 Licensed Structural Engineer



GENERAL PLAN & ELEVATION
 ILLINOIS ROUTE 96 OVER
 AMBROSIA CREEK
 F.A. RTE. 2 SECTION 3 BR-1
 STATION 824+41
 PIKE COUNTY
 STRUCTURE NUMBER 075-0044

auby, oglesby & bartolomucci consulting engineers and surveyors
 1223 south first street / springfield, illinois 62704
 DRAWN TMM DATE June 19, 1990 JOB NO. 89-43(A) SHEET NO. 1 of 13
 CHECKED RSB

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2	3 BR-1	PIKE	19	12
PROJECT		272-2		



	0.4 SPAN 1	0.6 SPAN 2	PIER NO. 1
I_g	in ⁴	1830	1830
I_c	in ⁴	6073	
S_x	in ³	154	154
S_c	in ³	251	
DL	(ft-k)	0.702	0.972
M_{DL}	(ft-k)	83	191
S_{DL}	(ft-k)	0.270	
M_{SOL}	(ft-k)	38	
M_{LL}	(ft-k)	234	107
M_{IMP}	(ft-k)	70	31
$S_3(M_{LL} + IMP)$	(ft-k)	507	230
M_0	(ft-k)	816	527
M_u	(ft-k)	1499	
$f_2(OL)$	(ksi)	6.5	14.9
$f_2(SDL)$	(ksi)	1.8	
$f_2(S_3(M_{LL} + IMP))$	(ksi)	24.2	17.9
$f_2(Overload)$	(ksi)	32.5	32.8
$f_2(Total)$	(ksi)		42.6
V_e	(K)	42.8	

	ABUTMENT	PIER	
R_{OL}	(K)	15.3	49.2
R_L	(K)	30.4	36.2
R_{MP}	(K)	9.1	10.9
R_{TOTAL}	(K)	54.8	96.3

M_0 (Applied Moment) = $1.3[M_{DL} + M_{SOL} + S_3(M_{LL} + IMP)]$

M_u = Full Plastic Moment Capacity for Compact, Braced Section.

S_3 = Non-compact section

I_g and S_g are the moment of inertia and section modulus of the steel section used in computing $f_2(Total)$ and (Overload).

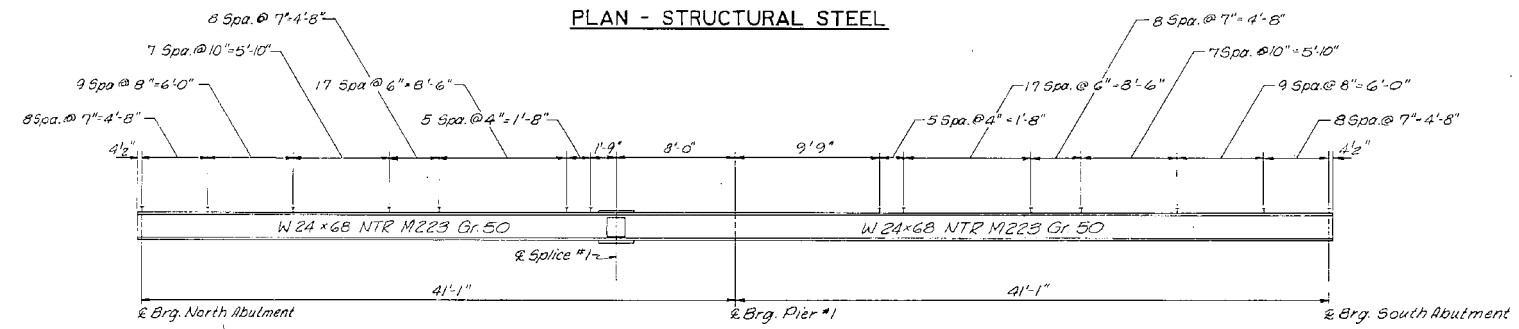
I_c and S_c are the moment of inertia and section modulus of the composite section used in computing $f_2(Total)$ and (Overload).

V_e is the maximum 4 + impact shear range in span.

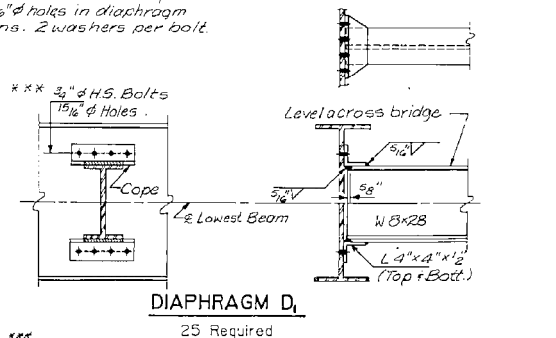
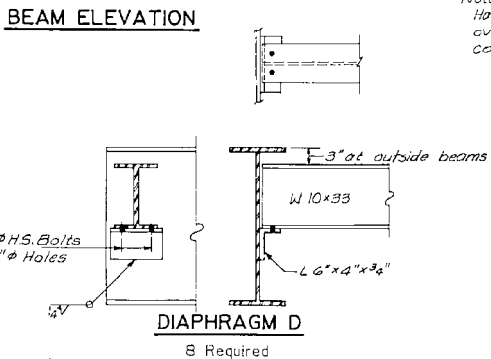
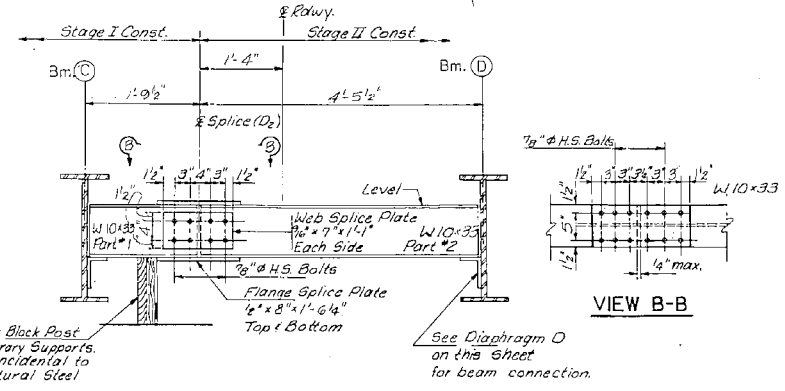
The Fully Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 + 10.50.1.1

$f_2(Total)$ is the sum of the stresses due to $1.3[M_{DL} + M_{SOL} + S_3(M_{LL} + IMP)]$

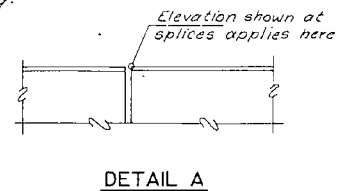
$f_2(Overload)$ is the sum of the stresses due to $M_{OL} + M_{SOL} + S_3(M_{LL} + I)$



Note: Hardened washers shall be required over all 1 1/2" holes in diaphragm connections. 2 washers per bolt.



BEAM	CBRG. N. ABUT.	CSPLICE NO.	CBRG. PIER NO.	CBRG. S. ABUT.
Beam "A"	487.111	487.094	487.095	487.099
Beam "B"	487.223	487.211	487.212	487.216
Beam "C"	487.325	487.308	487.309	487.313
Beam "D"	487.325	487.308	487.309	487.313
Beam "E"	487.223	487.211	487.212	487.216
Beam "F"	487.111	487.094	487.095	487.099



ITEM	QUANTITY
Furnishing and Erecting Lump Sum	1
Stud Shear Connectors	Each 1320

Note: N.T.R. indicates Notch Toughness Requirements are applicable.

STRUCTURAL STEEL & DETAILS
ILLINOIS ROUTE 96 OVER
AMBROSIA CREEK
F.A. RTE. 2 SECTION 3 BR-1
STATION 824+41
PIKE COUNTY
STRUCTURE NUMBER 075-0044

auby, oglesby & bartolomucci consulting engineers land surveyors planners
1323 south first street / springfield, illinois 62704

DRAWN TAW DATE June 19, 1990 JOB NO. 89-43(A) SHEET NO. 7 of 13

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/3/2017	CHECKED -	REVISED -
	DATE -	REVISED -

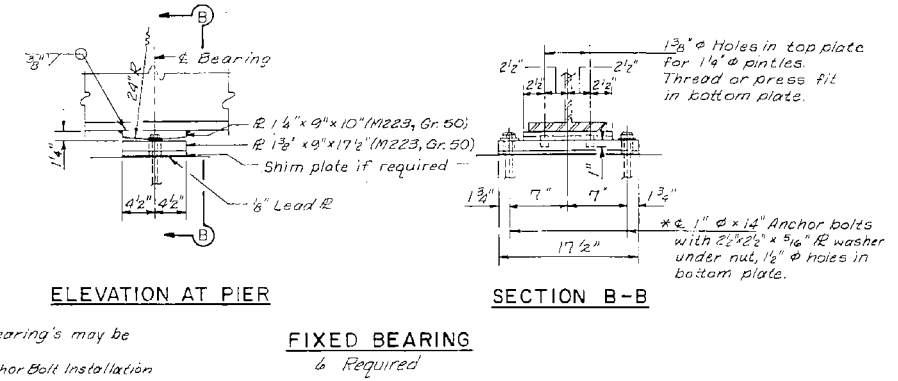
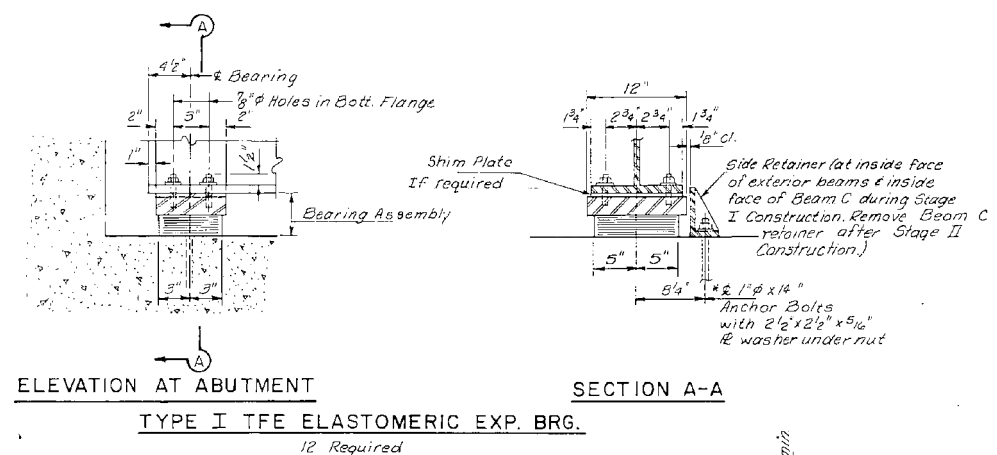
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS SN 075-0044
(FOR INFORMATION ONLY)

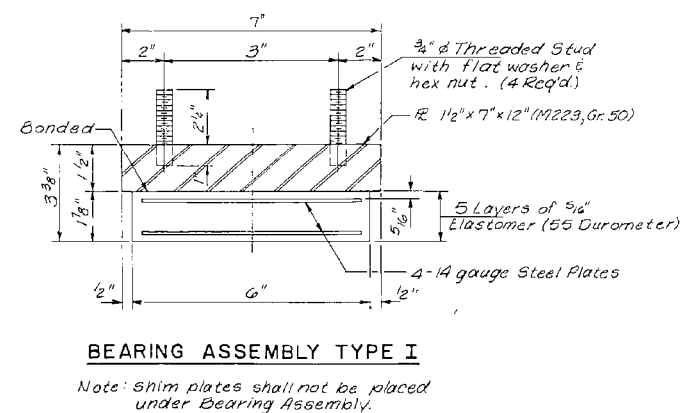
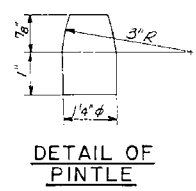
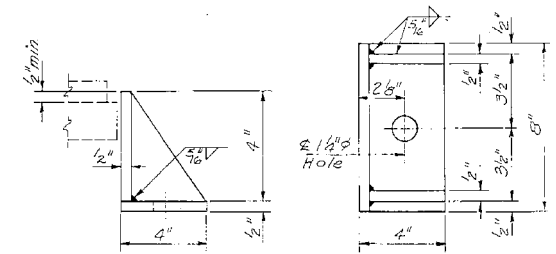
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	(2 & 3) BP	PIKE	9	8
ILLINOIS FED. AID PROJECT			CONTRACT NO. 72K30	

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
2	BR-1	Pike	19	13
ILLINOIS PROJECT	BRF-21			



* Notes:
 Anchor bolts at fixed bearing's may be built into the masonry.
 See Sheet 10 of 13 for Anchor Bolt Installation



BILL OF MATERIAL

ITEM	QUANTITY
Elastomeric Bearing Assembly, Type I	Each 12

BEARINGS
 ILLINOIS ROUTE 96 OVER
 AMBROSIA CREEK
 F.A. RTE. 2 SECTION 3 BR-1
 STATION 824+41
 PIKE COUNTY
 STRUCTURE NUMBER 075-0044

auby, ogleby & bartolomucci consulting engineers and surveyors planners
 1323 south first street, springfield, illinois 62704

DRAWN TMAJ DATE June 19, 1990 JOB NO. 89-43(A) SHEET NO. 18 of 13
 CHECKED ZEG

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USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/3/2017	DATE -	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS SN 075-0044
 (FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
304	(2 & 3) BP	PIKE	9	9
CONTRACT NO. 72K30				
ILLINOIS FED. AID PROJECT				