

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. DATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-	154-4-54-10) BP-1 (118) BP	LOGAN	16	1
FAI 55, 155, FAP 315			CONTRACT NO 72K73	

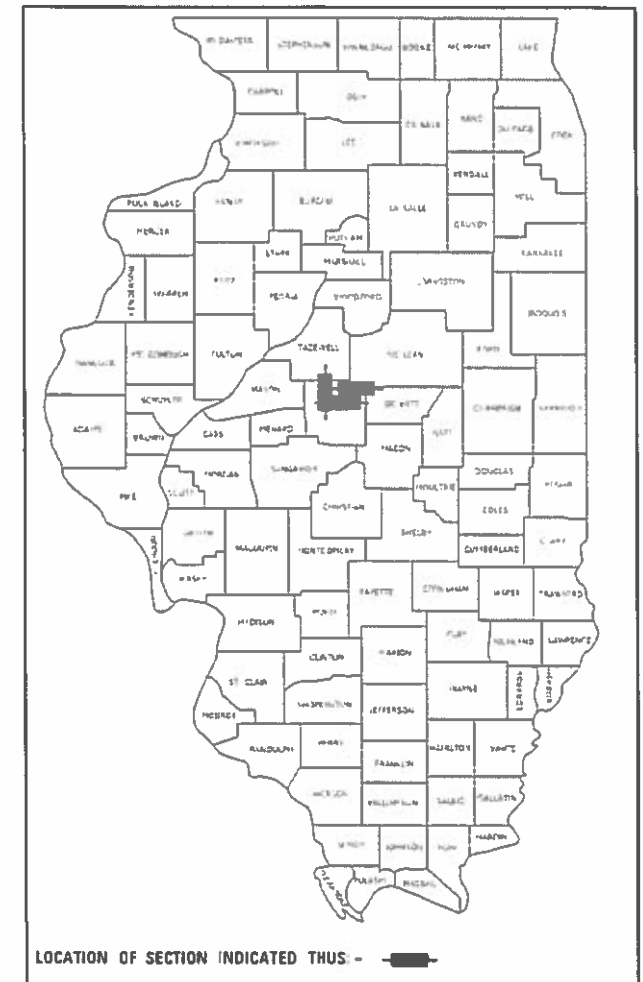
065

FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROPOSED BRIDGE PAINTING

FAI 55, 155, FAP 315 (I-55, I-155, US 136)
SECTION (54-4, 54-10) BP-1, (118) BP
PROJECT NHPP-VE3Q(925)
BRIDGE PAINTING
LOGAN COUNTY

D-96-059-18



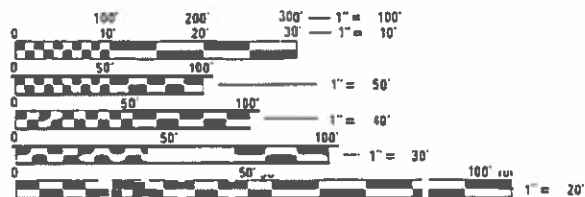
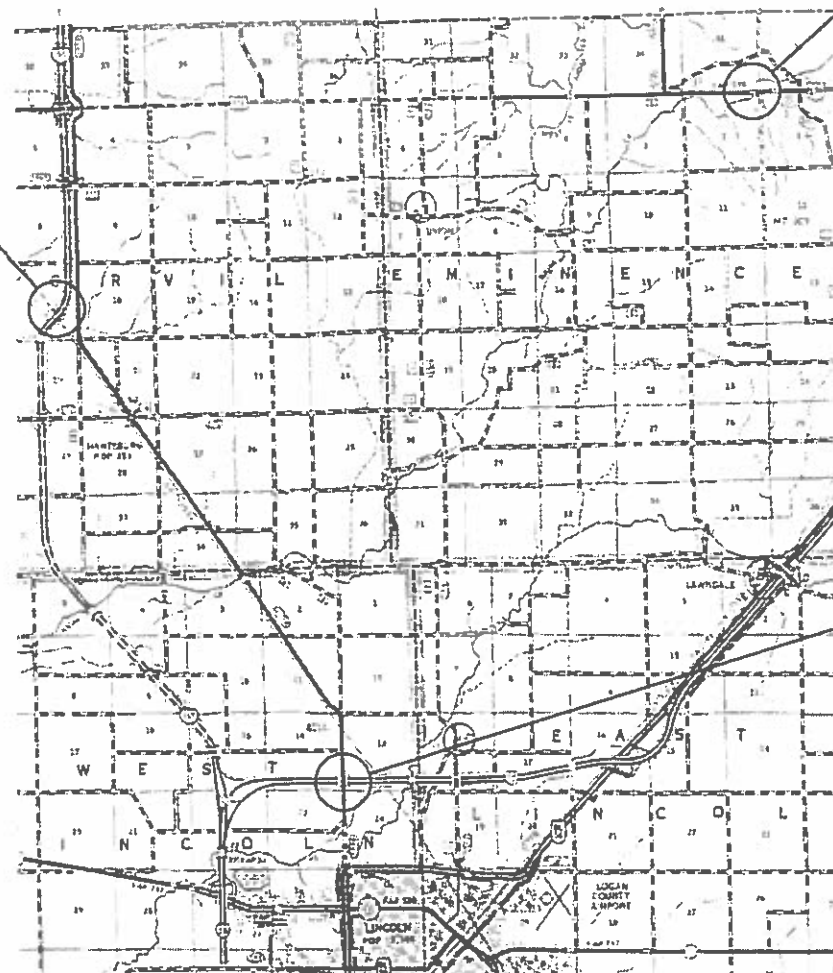
C-96-107-18

LOCATION #3
SN 054-0076
SB I-155 OVER ICG RR
2.7 MI S US 136

LOCATION #4
SN 054-0077
NB I-155 OVER ICG RR
2.7 MI S US 136

LOCATION #2
SN 054-0027
US 136 OVER SUGAR CR.
1.2 MI E OF ARMINGTON RD.

LOCATION #1
SN 054-0052
OLD IL 121 OVER I-55
2.7 MI N OF IL 10 INT.



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

CONTRACT NO. 72K73

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 10 October 2018

[Signature] IAL ENGINEER

[Signature] ENGINEER OF DESIGN AND ENVIRONMENT

[Signature] DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

3

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

0-01515-6002	0-01515-6003
NHPP 90/10	NHPP 80/20

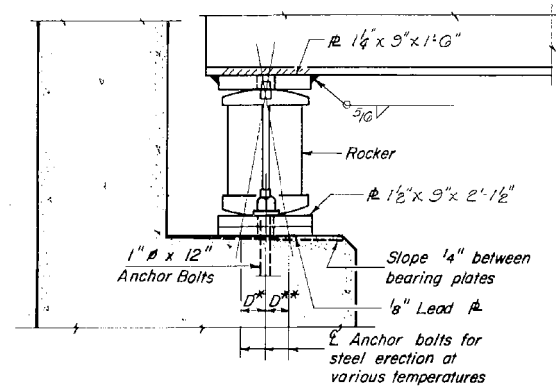
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	BRIDGE -RURAL	BRIDGE -RURAL
				0047	0047
				LOGAN	LOGAN
67100100	MOBILIZATION	L SUM	1	0.75	0.25
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	2	2	0
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1	0	1
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1	1	0
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	90	90	0
70400100	TEMPORARY CONCRETE BARRIER	FOOT	600	600	0
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	600	600	0
70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2	0
70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2	0
X5060603	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 3	L SUM	1	1	0
X5060604	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 4	L SUM	1	1	0
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1	0
Z0007102	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1	0	1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1	0

MODEL: Default
 FILE NAME: \\centralidb\OPERATIONS\Bridges\Bridges\CAD\72K73 - Logan County\paint 2019\plan\sheet.dgn

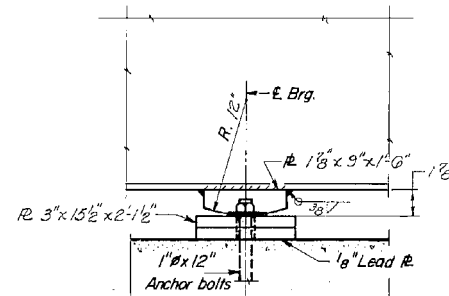
REV. - MS

USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES				F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DRAWN -	REVISED -	* (54-4,54-10) BP-1, (118) BP						LOGAN	16	3		
PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -		* FAI 55, 155, FAP 315	CONTRACT NO. 72K73							
PLOT DATE = 10/5/2018	DATE -	REVISED -		ILLINOIS FED. AID PROJECT								
				SCALE:	SHEET	OF	SHEETS	STA.	TO STA.			

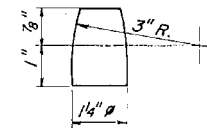
* 5A-4HB-1



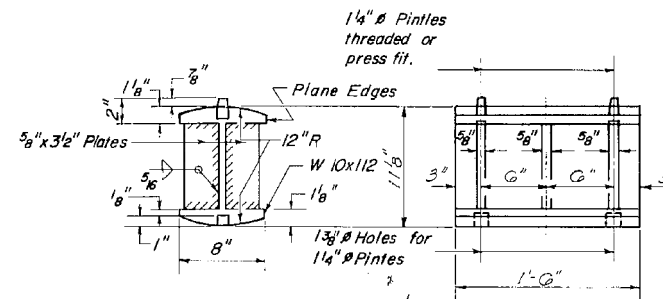
ELEVATION



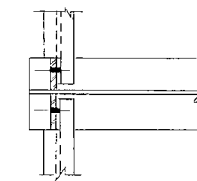
ELEVATION



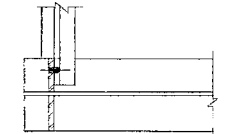
PINTLE



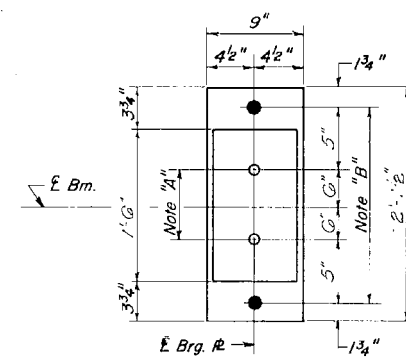
ROCKER



DIAPHRAGM D
(At Interior Girder)

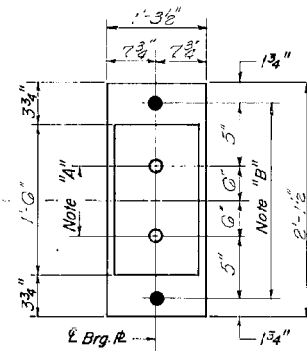


DIAPHRAGM D
(At Exterior Girder)



PLAN
AT ABUTMENT

Note "A"
1 3/8" ϕ Holes - 1" deep in
top fl. for 1 1/4" ϕ Pintles
Thread or press fit
pintles in bottom fl.



PLAN
AT PIER

Note "B"
1 1/2" ϕ Holes for 1" ϕ Anchor
Bolts - 2 1/2" x 2 1/2" x 5/16" fl.
Washers under nut.

NOTES FOR SETTING OF ANCHOR BOLTS
AT EXPANSION BEARINGS

- D^* (Side of brg. away from fixed brg.)
 $D^* = \frac{1}{8}$ " per each 100' of expansion for
every 15° fall below the normal temp.
of 50° F.
 D^{**} (Side of brg. toward fixed brg.)
 $D^{**} = \frac{1}{8}$ " per each 100' of expansion for
every 15° rise above the normal temp.
of 50° F.
- After beams have been erected and dimensions
 D^* & D^{**} determined, holes shall be drilled and
anchor bolts shall be grouted in place. All fixed
anchor bolts may be built into the masonry.

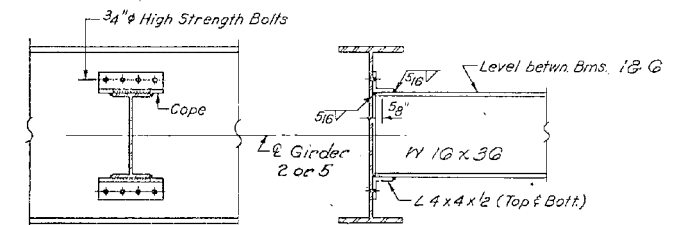
INTERIOR GIRDER MOMENT TABLE

	0.4 Sp. 1	Pier
I_s (in. ⁴)	22893	53220
I_c (in. ⁴)	64548	
S_s (in. ³)	1189	2122
S_c (in. ³)	1059	
R (K/ft)	1.075	1.725
M_R (K)	732	2508
$f_s \ell$ (ksi)	7.4	14.4
$s \ell$ (K/ft)	.487	
$M_s \ell$ (K)	410	
$M \ell$ (K)	1000	870
M_{imp} (K)	2.15	187
Total (K)	1631	1057
$f_s \ell$ (ksi)	11.9	0.0
f_s Total (ksi)	19.3	20.0
VR (K)	62.6	

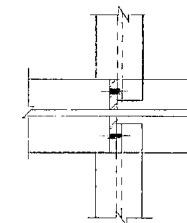
INTERIOR GIRDER REACTION TABLE

	Abut.	Pier
$R \ell$ (K)	60.2	215.3
$R \ell$ (K)	40.9	80.5
Imp. (K)	10.0	7.5
R Total (K)	117.1	313.1

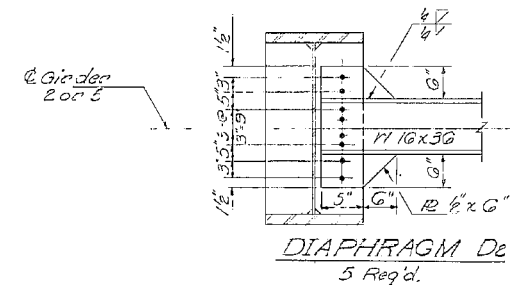
I_s and S_s are the moment of inertia and section modulus
of the steel section.
 I_c and S_c are the moment of inertia and section modulus
of the composite section used in computing f_s .
 VR is the maximum ℓ + Impact shear range in span.



DIAPHRAGM D
40 Req'd



DIAPHRAGM D
(At Pier)



DIAPHRAGM D
5 Req'd

DESIGNED	R. K. Mathur
CHECKED	James R. ...
DRAWN	J. SCHNEIDER
CHECKED	JP

EXAMINED	Richard H. Golterman
PASSED	W. Bannerman
APPROVED	Richard H. Golterman

I-2-G 3-29-71

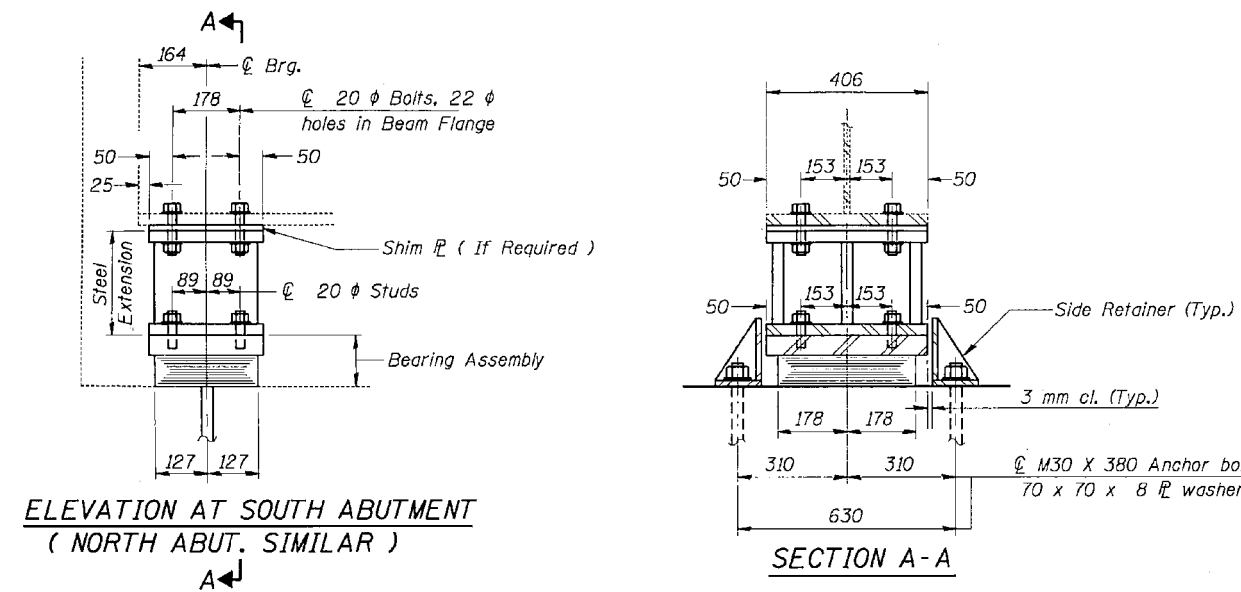
STRUCTURAL STEEL
F.A.I. RT. 55 SEC. 54-4HB-1
LOGAN COUNTY
STA. 5+01.60.50

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	**	LOGAN	259	217
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			
	** (54-4)RS-1 & (54-5,6)RS SN 054-0052 SHEET 6 OF 10			

GIRDER REACTIONS

R _l	(KN)	270
R _r	(KN)	209
Imp.	(KN)	45
R (Total)	(KN)	524

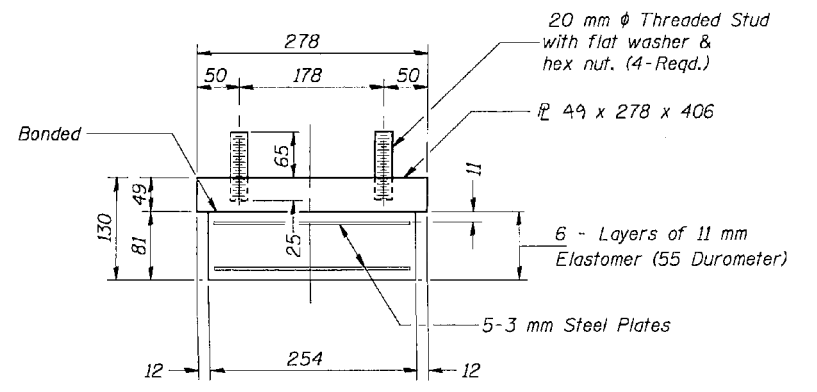
Notes: Diaphragm removal and replacement may be required to facilitate drilling holes. Cost is incidental to "Furnishing and Erecting Structural Steel".
New steel extensions, side retainers, connection bolts, and anchor bolts are included in "Furnishing and Erecting Structural Steel". See sheet 7 for Anchor Bolt installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Minimum jack capacity = 800 kN



ELEVATION AT SOUTH ABUTMENT
(NORTH ABUT. SIMILAR)

SECTION A-A

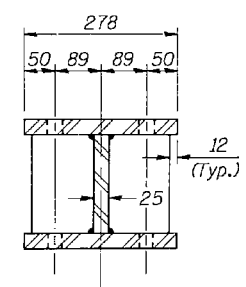
TYPE I ELASTOMERIC EXP. BRG.



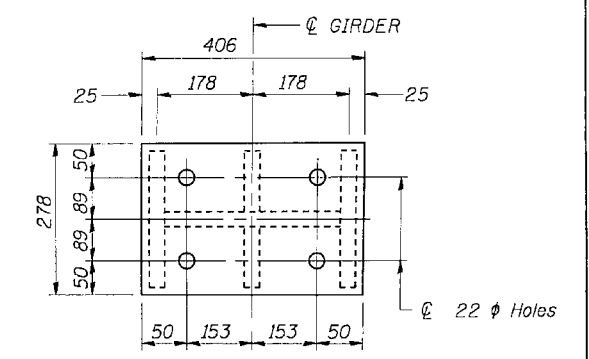
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

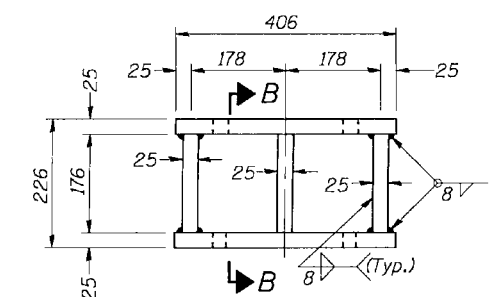
Bearing replacement at the North and South abutments only.



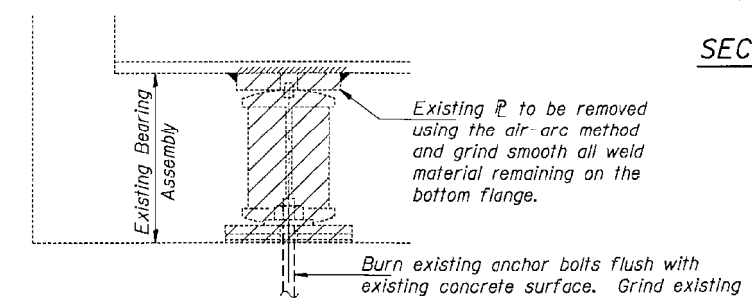
SECTION B-B



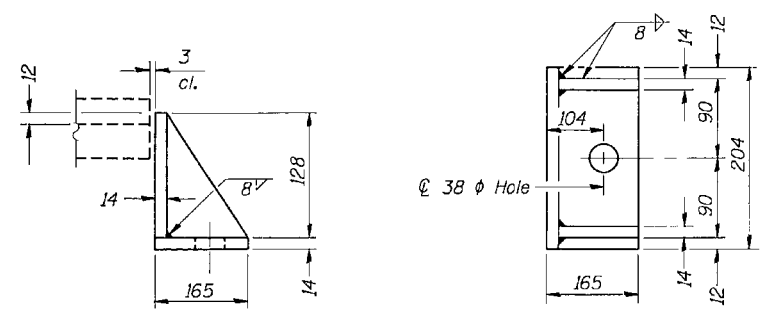
PLAN TOP AND BOTTOM PLATE



STEEL EXTENSION DETAIL



EXISTING BEARING REMOVAL DETAIL



SIDE RETAINER
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12
F & E Structural Steel	Kg	1130
Jack & Remove Existing Bearings	Each	12

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING REPLACEMENT DETAILS
S.N. 054-0052
DATE: DECEMBER 7, 1998
DRAWN BY CAD
CHECKED BY NAK

NOTE: UNLESS OTHERWISE SHOWN ALL DIMENSIONS ARE IN MILLIMETERS.

PROJECT: M050738 - FILE:M050738R1.DGN

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/5/2018	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS, SN 054-0052
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
**	(54-4,54-10) BP-1, (118) BP	LOGAN	16	8
	* FAI 55, 155, FAP 315		CONTRACT NO. 72K73	
		ILLINOIS	FED. AID PROJECT	

B.M. cut on S.W. Wingwall Sugar Creek Bridge, Sta. 162 Elev. 606.82
 Existing Structure: Built as SBI 119 Sec. 118 BR, Sta. 166+03
 in 1937. Superstructure: RC Deck with 30W108 Beams
 Substructure: is RC. Abuts on R. Conc. piles and Pier Bents
 on R. Conc. piles.
 Superstructure to be removed by bridge Contractor - no salvage.
 Temporary structure to furnish 600' waterway opening,
 H520 loading - by bridge Contractor.

STATE OF ILLINOIS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	158	LOGAN	15	1
FED. ROAD DIST. NO. 2		ILLINOIS	FED. AID PROJECT	

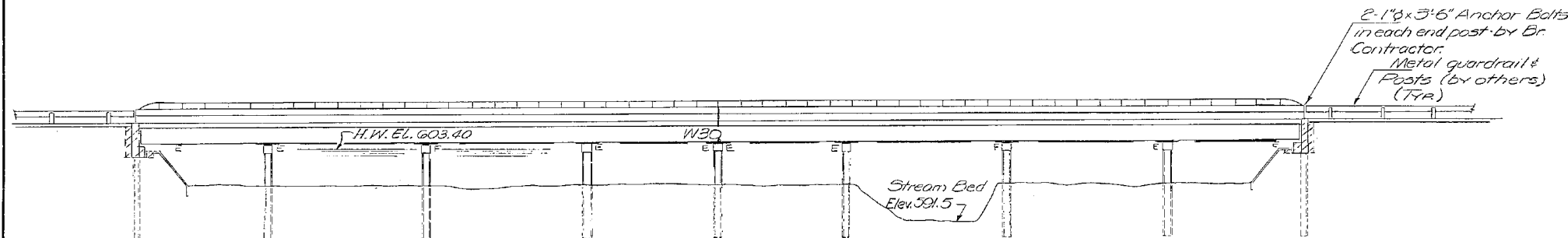
GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
 Fasteners shall be high strength bolts. Bolts 3/4"; open holes 1/8", unless otherwise noted.
 Calculated weight of structural steel = 581,300 lbs.
 The basic lead silico chromate paint system shall be used for shop & field painting of structural steel.
 Field welding of construction accessories will not be permitted to the bottom flange of beams or girders 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.
 Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 58 lbs. per 100 sq. ft.
 Layout of slope wall may be varied in the field to suit ground conditions as directed by the Engineer.
 The Contractor shall drive 2 concrete test piles, one each in permanent locations at pier bent 2 and East abutment, as directed by the Engineer before ordering the remainder of piles.

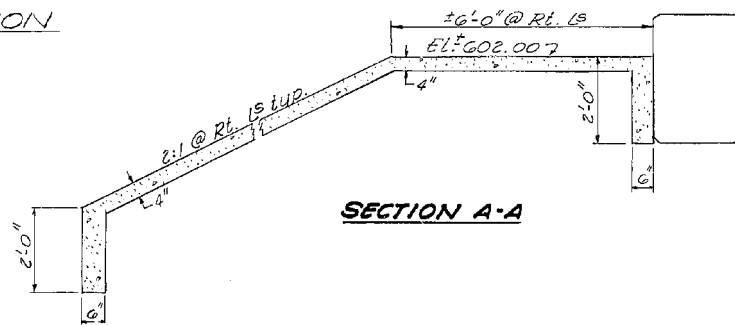
It shall be the responsibility of the Contractor to verify all dimensions & conditions existing in the field prior to construction & ordering of materials.

The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of class X concrete, except the aggregates shall conform to the requirements of handrail concrete.

Expansion bolts shall consist of self-drilling expansion anchors & 3/4" x 12" hooked bolts.



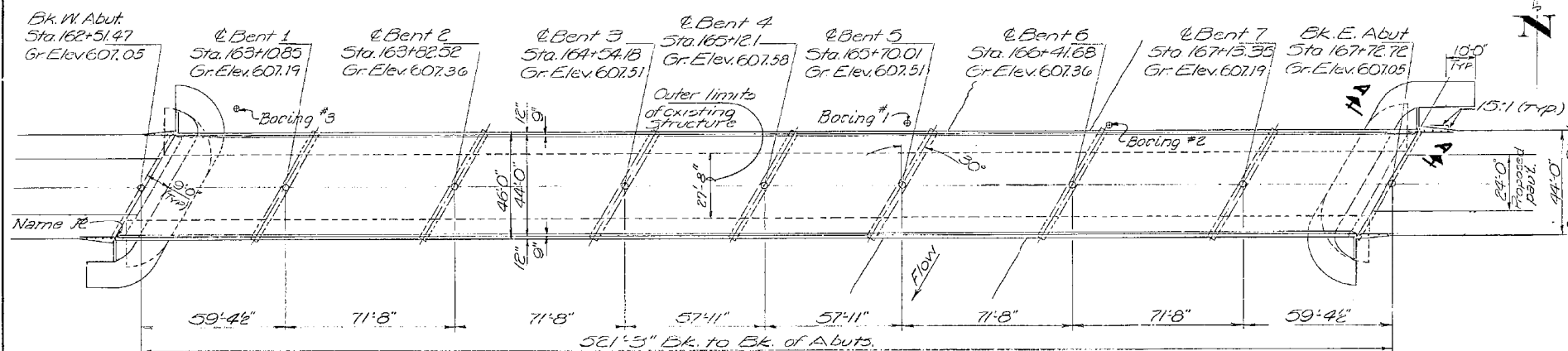
ELEVATION



SECTION A-A

STATION 166+03
 RE-BUILT 19 BY
 STATE OF ILLINOIS
 FA. RT. 119 SEC. 118 BR

LOADING H520
 NAME PLATE
 See Std. 2119-1



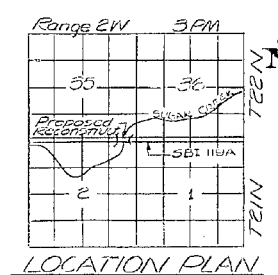
PLAN

DESIGN STRESSES

$f_c = 1200$ psi (Super) Deck Slab
 $f_c = 1400$ psi Sur. Curb & Parapet
 $f_s = 20000$ psi (Reinf.)
 $f_s = 20000$ psi (Structural)
 $v_c = 75$ psi (Frgs)
 $m = 10$
 Design Specifications 1969 AASHTO
 (as applicable)

WATERWAY INFORMATION

Drainage Area: 76700 Acres
 Character: Rolling wooded/cultivated
 Present Opening: 2650 Sq. Ft.
 Req'd Opening: 2650 Sq. Ft.
 Proposed Opening: 2650 Sq. Ft.
 $Q(50) = 7400$ cfs.



LOCATION PLAN

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUB.	SUPER.	TOTAL
Removal of Existing Superstructure	Each			1
Concrete Removal	Cu. yds.			12.6
Expansion Bolts (3/4")	Each	126		126
Structure Excavation	Cu. yds.	135		135
Protective Coat	Sq. yds.		2,830	2,830
Class X Concrete	Cu. yds.	68.4	670.6	739.0
Structural Steel	Lump Sum			1
Stud Shear Connectors	Each		7,728	7,728
Aluminum Railing	Lin. Ft.		1,034	1,034
Reinforcement Bars	Lbs.	6,780	177,770	184,550
Concrete Piles	Lin. Ft.	927		927
Test Piles (Concrete)	Each	2		2
Name Plate	Each			1
Sloped Wall (4")	Sq. yds.	374		374
Temporary Bridge Complete	Each			1
Neoprene Expansion Joint (2")	Lin. Ft.		104	104
Neoprene Expansion Joint (4")	Lin. Ft.		53	53

GENERAL PLAN and ELEVATION
 FA. 119 over SUGAR CREEK
 FA. RTE. 119 SEC. 118 BR
 LOGAN COUNTY
 STA. 166+03

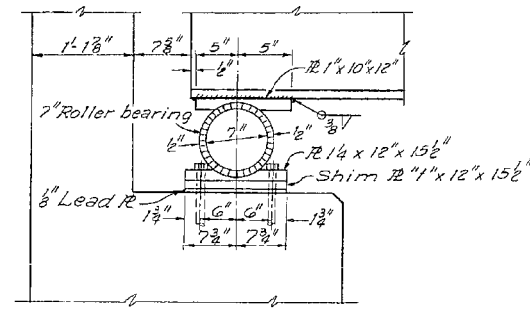
DESIGNED Charles P. Beard
 CHECKED Ashok J. Sen
 DRAWN FERRANDO
 CHECKED Ashok J. Sen

AUGUST 5, 1971
 EXAMINED [Signature]
 PASSED [Signature]
 APPROVED [Signature]

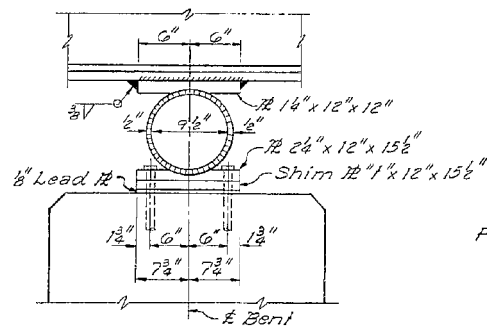
LOADING H520-44

Rev. 9-30-70

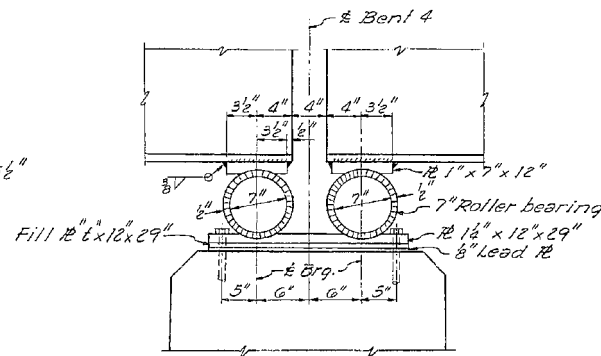
USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS	EXISTING STRUCTURE PLANS, SN 054-0027	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 100,000' / in.	DRAWN -	REVISED -	DEPARTMENT OF TRANSPORTATION	(FOR INFORMATION ONLY)	55	(54-4,54-10) BP-1, (118) BP	LOGAN	16	9
PLOT DATE = 10/5/2018	CHECKED -	REVISED -			* FAI 55, 155, FAP 315		CONTRACT NO. 72K73		
	DATE -	REVISED -			ILLINOIS	FED. AID PROJECT			



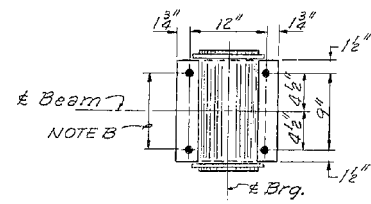
SECTION
Dimensions along & beam
No. req'd. 14



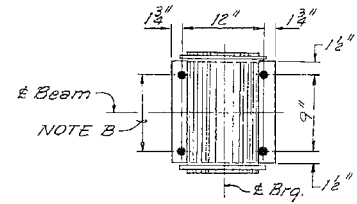
SECTION
Dimensions along & beam
No. req'd. 8 (new) & 20 (salvaged) = 28 total



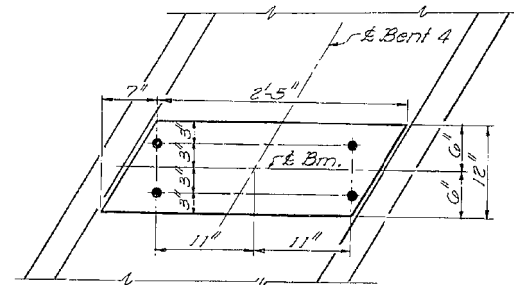
SECTION
Dimensions along & beam
No. req'd. 7



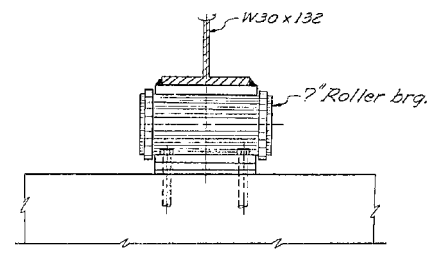
PLAN AT ABUTMENTS



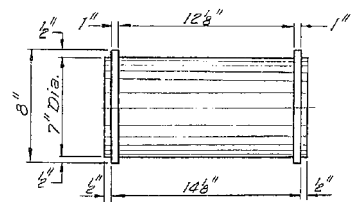
PLAN AT BENTS 1, 3 & 7



PLAN AT BENT 4



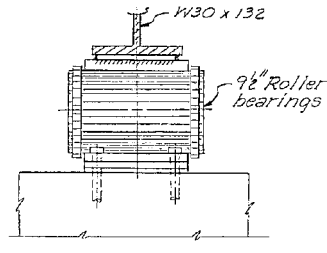
ELEVATION



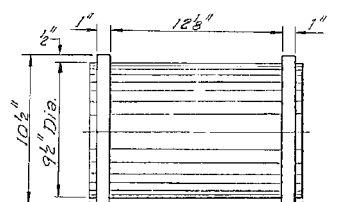
7 INCH ROLLER BEARING

NOTE A
1 1/2" Holes - 1" deep in top flange for piniles. Thread or press fit piniles into bottom flange.

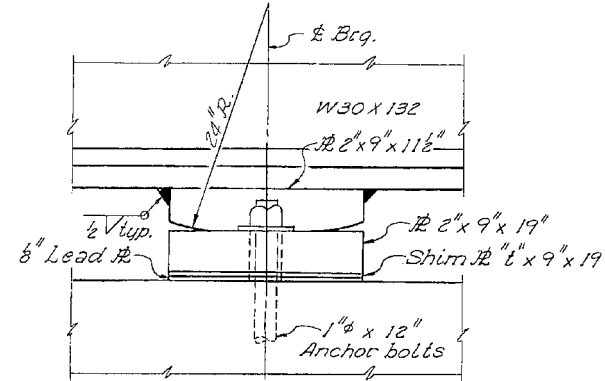
NOTE B
1 1/2" Holes for 1" anchor bolts. 2 1/2" x 2 1/2" x 7/16" flange washers under nut.



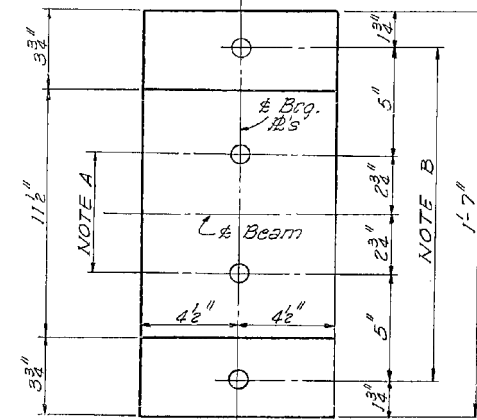
ELEVATION



9 1/2 INCH ROLLER BEARING



ELEVATION
No. req'd. 14



PLAN AT BENTS 2 & 6

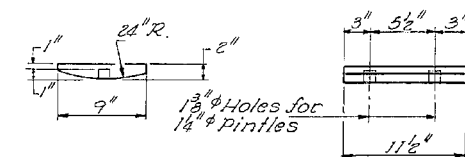
ROLLER BEARING DATA

	W. ABUT.	BENT 1	BENT 2	BENT 3	BENT 4	BENT 5	BENT 6	BENT 7	E. ABUT.	TOTAL
9 1/2" Roller Bearings	New	2		2		2		2		8
	Salvage		5		5		5		5	20
7" Roller Bearings	7				14				7	28

Use all new top & bottom bearing plates.
Sandblast & repaint the salvaged roller bearings.
Salvage, cleaning, painting & reassembling existing rollers shall be incidental to structural steel.

SHIM PLATES

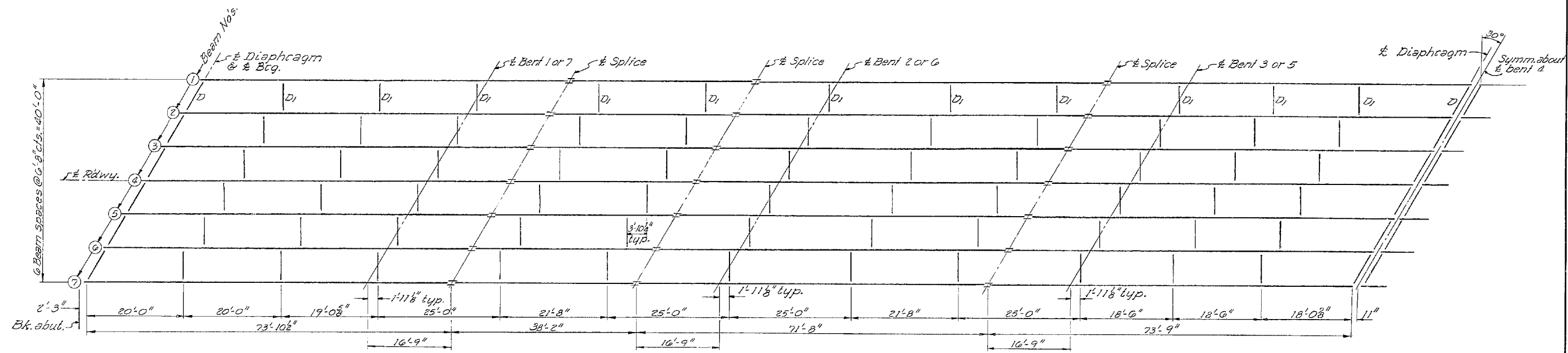
	B ₁	B ₂	B ₃	B ₄	B ₅	B ₆	B ₇
W. Abut.	0	0	0	1/2"	0	0	0
Bent 1	0	3/8"	2	3/8"	1/2"	0	0
Bent 2	0	3/4"	1 1/8"	2 1/8"	1 1/2"	0	0
Bent 3	0	1 1/8"	2 3/4"	4"	2 1/2"	1"	0
Bent 4	0	0	1/2"	2 1/8"	1/2"	0	0
Bent 5	0	1 1/2"	2 1/8"	4 1/8"	2 1/8"	1 1/2"	0
Bent 6	0	1/8"	1 1/2"	2 3/4"	1 3/4"	3/4"	0
Bent 7	0	1/4"	1 1/2"	2 3/4"	1 1/2"	0	0
E. Abut.	0	0	0	1/4"	0	0	0



ROCKER AT BENT 2 & 6
No. req'd. 14

DESIGNED	Charles Phue	EXAMINED	Aug. 5 1971
CHECKED	Robert Jurek	PASSED	W.E. Bannerman
DRAWN	J. Mullonix	APPROVED	Richard H. Holtzman
CHECKED	Robert Jurek		

BEARINGS
F.A. RT. 119 SEC. 118 BR
LOGAN COUNTY
STATION 166+03



FRAMING PLAN

*TOP OF BEAM ELEVATIONS

	B ₁	B ₂	B ₃	B ₄	B ₅	B ₆	B ₇
W. Abut.	606.10	606.23	606.33	606.43	606.31	606.19	606.05
Bent 1	606.18	606.31	606.42	606.52	606.40	606.28	606.13
.23 Span 2	606.21	606.34	606.44	606.54	606.42	606.30	606.15
.77 Span 2	606.32	606.45	606.55	606.64	606.53	606.41	606.26
Bent 2	606.36	606.49	606.59	606.68	606.57	606.45	606.30
.77 Span 3	606.47	606.60	606.70	606.80	606.69	606.57	606.42
Bent 3	606.50	606.63	606.73	606.84	606.72	606.61	606.46
Bent 4	606.58	606.73	606.84	606.95	606.84	606.73	606.58
Bent 5	606.46	606.61	606.72	606.84	606.73	606.63	606.50
.23 Span 6	606.42	606.57	606.69	606.80	606.70	606.60	606.47
Bent 6	606.30	606.45	606.57	606.68	606.59	606.49	606.36
.23 Span 7	606.26	606.41	606.53	606.64	606.55	606.45	606.32
.77 Span 7	606.15	606.30	606.42	606.54	606.44	606.34	606.21
Bent 7	606.13	606.28	606.40	606.52	606.42	606.31	606.18
E. Abut.	606.05	606.19	606.31	606.43	606.33	606.23	606.10

* For fabrication only

**EXISTING BENT SEAT ELEVATIONS

	B ₂	B ₃	B ₄	B ₅	B ₆
W. Abut.		603.02	603.01	603.00	
Bent 1	602.58	602.59	602.60	602.61	602.62
Bent 2	603.52	603.52	603.53	603.53	603.54
Bent 3	602.83	602.84	602.85	602.86	602.87
Bent 4	603.43	603.43	603.43	603.43	603.43
Bent 5	602.83	602.84	602.84	602.85	602.85
Bent 6	603.55	603.54	603.54	603.53	603.52
Bent 7	602.60	602.62	602.63	602.64	602.65
E. Abut.		603.00	603.01	603.02	

** These elevations are to be verified by the contractor in the field before ordering the shim plates on sheet # 7. Should the actual elevations vary from those shown above, the difference shall be adjusted in the thickness of the shims. No additional compensation for shim adjustments.

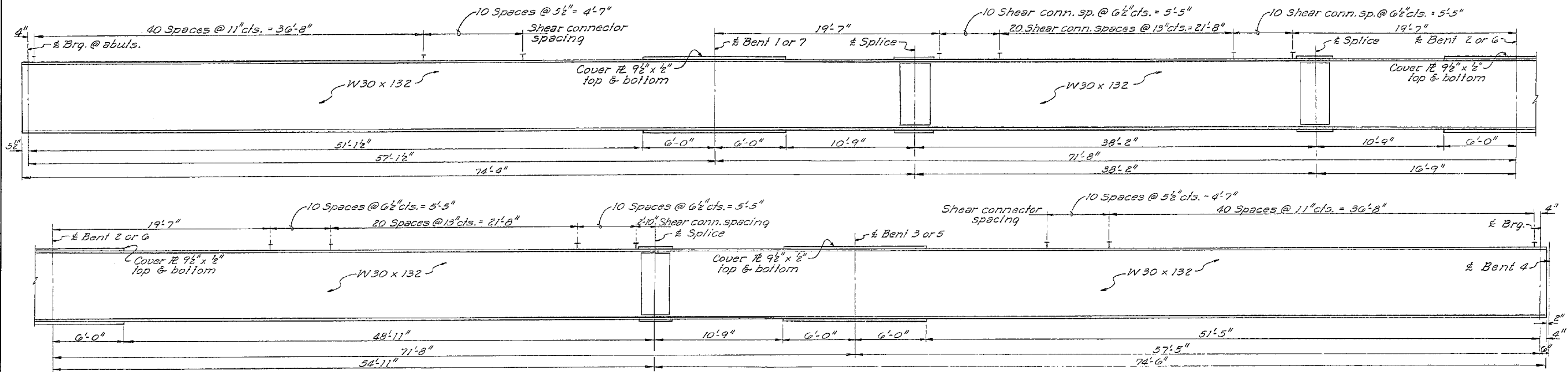
DESIGNED	<i>Charles P. Plun</i>	EXAMINED	<i>Richard A. Goltzman</i>
CHECKED	<i>Robert J. Jenuja</i>	PASSED	<i>Richard A. Goltzman</i>
DRAWN	<i>J. Mullerix</i>	APPROVED	<i>Richard A. Goltzman</i>
CHECKED	<i>Robert J. Jenuja</i>		

DATE: AUG. 5 1971

STRUCTURAL STEEL
FRAMING PLAN
 F.A. RT. 119 SEC. 118B
 LOGAN COUNTY
 STATION 166+03

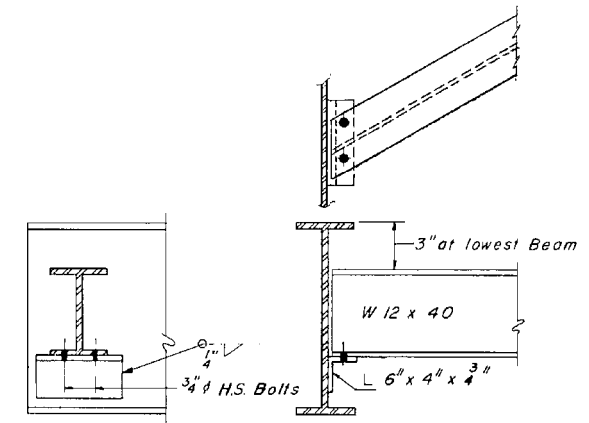
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ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
11	118 BR	LOGAN	43	35
SHEET NO. 11				
15 SHEETS				

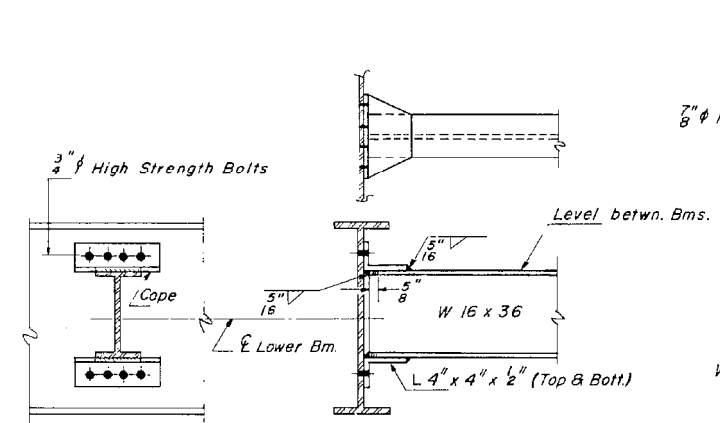


BEAM ELEVATIONS

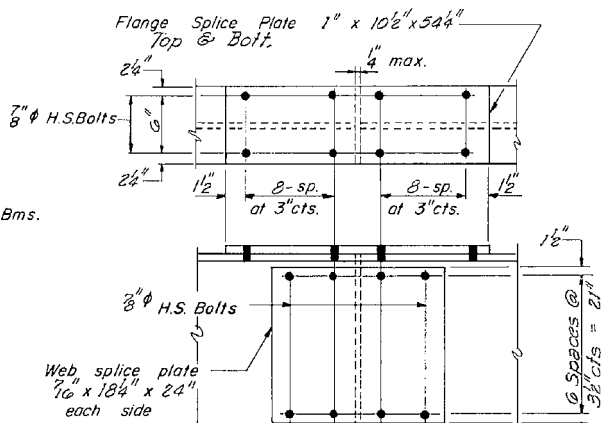
Note: Clip top flanges of beams at bent 4 to clear joint in slab.



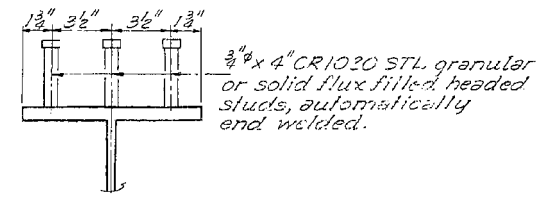
DIAPHRAGM D
24 Required



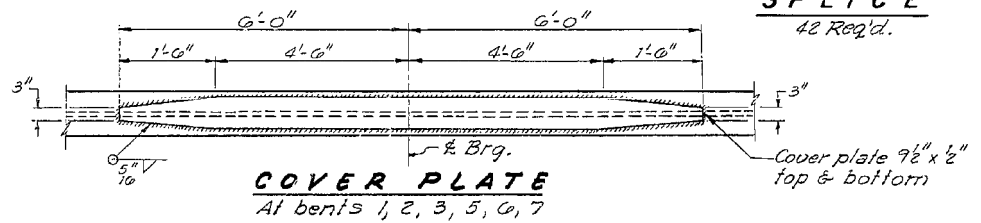
DIAPHRAGM D1
132 Required



SPLICE
42 Req'd.



SHEAR CONNECTOR
1,104 Req'd. per beam



COVER PLATE
At bents 1, 2, 3, 5, 6, 7

DESIGNED	Charles P. [Signature]	EXAMINED	Aug. 5 1971
CHECKED	Asahel Tenney	PASSED	[Signature]
DRAWN	J. Schneller	APPROVED	[Signature]
CHECKED	Asahel Tenney		

I-2-D 9-1-65, 8-1-70

STRUCTURAL STEEL
F.A. RT. 119 SEC. 118 BR
LOGAN COUNTY
STATION 166 + 03

MODEL: Defaul FILE NAME: \\CENTRAL\B\OPERATIONS\Bridges\Bridges\CAD\72K73 - Logan County\asht 2019\plans\sheet.dgn

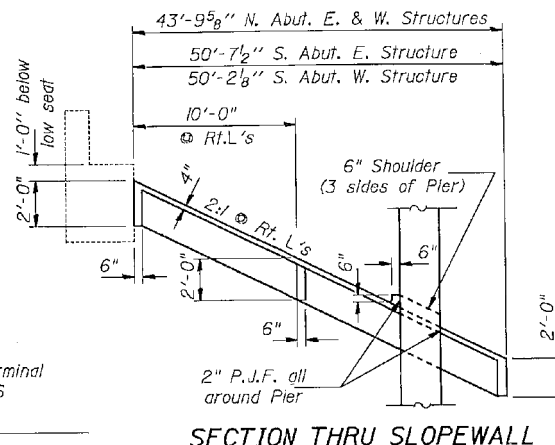
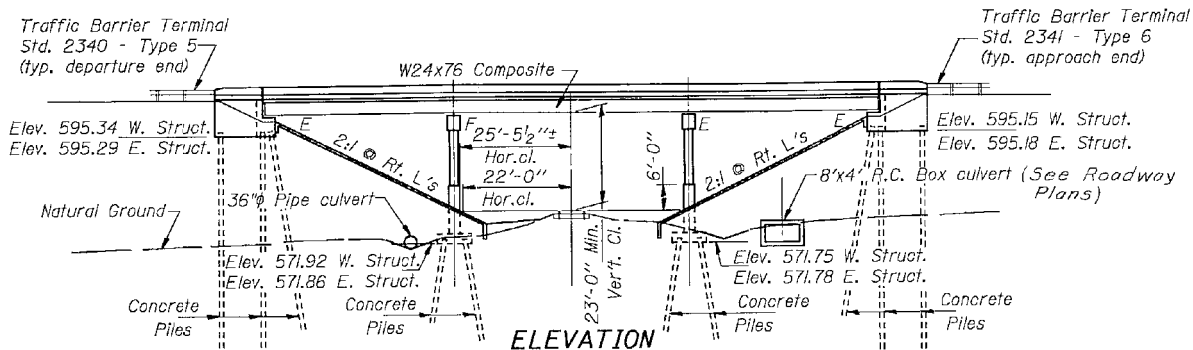
USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS	EXISTING STRUCTURE PLANS, SN 054-0027	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	DRAWN -	REVISED -	DEPARTMENT OF TRANSPORTATION	(FOR INFORMATION ONLY)	*	(54-4,54-10) BP-1, (118) BP	LOGAN	16	12
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -			*	FAI 55, 155, FAP 315	CONTRACT NO. 72K73		
PLOT DATE = 10/5/2018	DATE -	REVISED -			SCALE:	SHEET OF SHEETS	STA. TO STA.		
								ILLINOIS	FED. AID PROJECT

Bench Mark: B.M. #203 - Chisled "+" on R.R. tie bolt N.E. corner of R.R. trestle over So. Prairie Creek (on East stringer R.R. tie Elev. 573.58)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

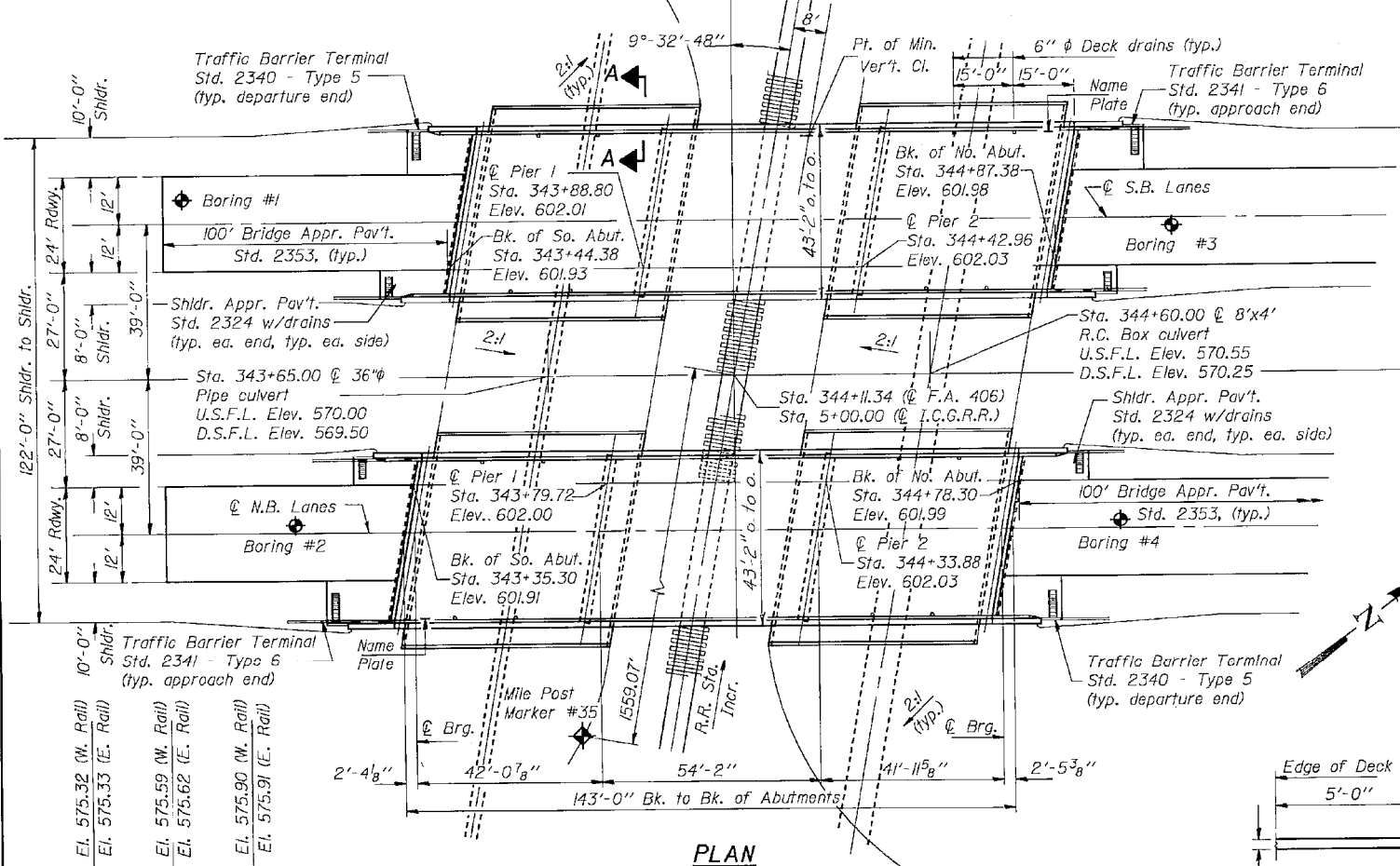
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. / 18 SHEETS
F.A. 406	54-10VB	LOGAN	34	11	
FED. AID DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

No Existing Structure.



GENERAL NOTES

See Proposal for Boring Data.
Fasteners shall be high strength bolts. Bolts 7/8" φ, open holes 15/16" φ, unless otherwise noted.
All high strength bolt connections shall conform to the requirements of the latest issue of the Specifications for Structural Joints using ASTM A325 (M64) or A490 (M253) bolts for slip-critical connections. Except tightening methods using either the load indicating washers or the calibrated wrench are not allowed.
Calculated weight of M-183 Structural Steel = 41,790 Lbs.
Calculated weight of M-223 Structural Steel = 132,050 Lbs.
The Zinc-silicate and vinyl paint system shall be used for shop and field painting of Structural Steel except where otherwise noted.
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.
The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These Components are the wide flange beams and all splice plate material.
Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.
Slope wall shall be reinforced with welded wire fabric, 6" x 6" - W4.0 x 4.0, weighing 58 lbs. per 100 sq. ft.
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
Bearing seat 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 by shimming the bearing. Two 1/2" 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 top plate shall be provided and placed as detailed.
Concrete piles at abutments shall be driven in holes precored through the embankment in accordance with Article 513.09(c) of the Standard Specifications.
The contractor shall drive four concrete test piles in permanent locations one each at S. Abut. W. Structure, Pier 2 W. Structure, Pier 1 E. Structure and N. Abut. E. Structure as directed by the Engineer before ordering the remainder of piles.



STATION 344+11.34
BUILT 198 BY
STATE OF ILLINOIS
F.A. RT. 406 SEC. 54-10VB
F.A. PROJ. EBF-406-1(43)
LOADING HS20
STR. NO. 054-0076
**NAME PLATE
WEST STRUCTURE**
See Std. 2113

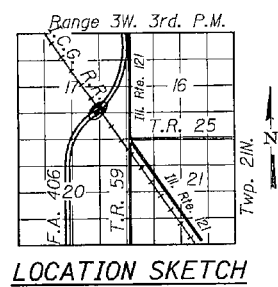
STATION 344+11.34
BUILT 198 BY
STATE OF ILLINOIS
F.A. RT. 406 SEC. 54-10VB
F.A. PROJ. EBF-406-1(43)
LOADING HS20
STR. NO. 054-0077
**NAME PLATE
EAST STRUCTURE**
See Std. 2113

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu. Yd.		610	610
Floor Drains	Each	16		16
Protective Coat	Sq. Yd.	1,520		1,520
Class X Concrete	Cu. Yd.		396.9	396.9
Structural Steel	L. Sum			1
Stud Shear Connectors	Each	5,208		5,208
Reinforcement Bars	Lbs.		56,970	56,970
Reinforcement Bars (Epoxy Coated)	Lbs.	90,620		90,620
Concrete Piles	Lin. Ft.		5,008	5,008
Test Pile Concrete	Each		4	4
Name Plates	Each	2		2
Slope Wall 4 Inch	Sq. Yd.			1,316
Preformed Joint Seal 2 1/2"	Lin. Ft.	87		87
Preformed Joint Seal 4"	Lin. Ft.	87		87
Elastomeric Bearing Assembly, Type I	Each	24		24
Elastomeric Bearing Assembly, Type II	Each	12		12
Class X Concrete Superstructure	Cu. Yd.	359.8		359.8

DESIGN SPECIFICATIONS

AASHTO (1983), 1984 and 1985 Interims.
LOADING HS 20-44
Allow 25#/sq. ft. for future wearing surface.
DESIGN STRESSES
f'c = 3,500 psi
fy = 60,000 psi (Reinf.)
fy = 50,000 psi (Struct. Stl.) (M223, Gr.50)
fy = 36,000 psi (Struct. Stl.) (M183)

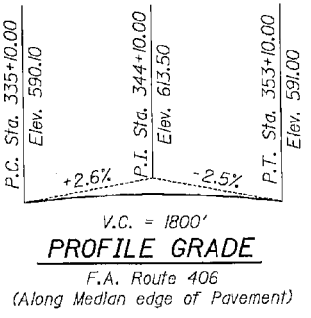


GENERAL PLAN
F.A. RTE. 406 OVER ILL. CENT. GULF R.R.
F.A. RTE. 406 SECTION 54-10VB
LOGAN COUNTY
STATION 344+11.34 (F.A. RTE. 406)
STRUCTURE NUMBER 054-0076 (S.B.)
STRUCTURE NUMBER 054-0077 (N.B.)

REV 3-27-87

DESIGNED *Mary H. Bloxdorf*
CHECKED *Paul S. Johnson*
DRAWN *P.W. Sweet*
CHECKED *MHB*

January 16 1987
EXAMINED *Jean O. Keppar*
PASSED *James J. Kuybatur*
APPROVED _____
DIRECTOR OF HIGHWAYS



MODEL: Default
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USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/5/2018	CHECKED -	REVISED -
	DATE -	REVISED -

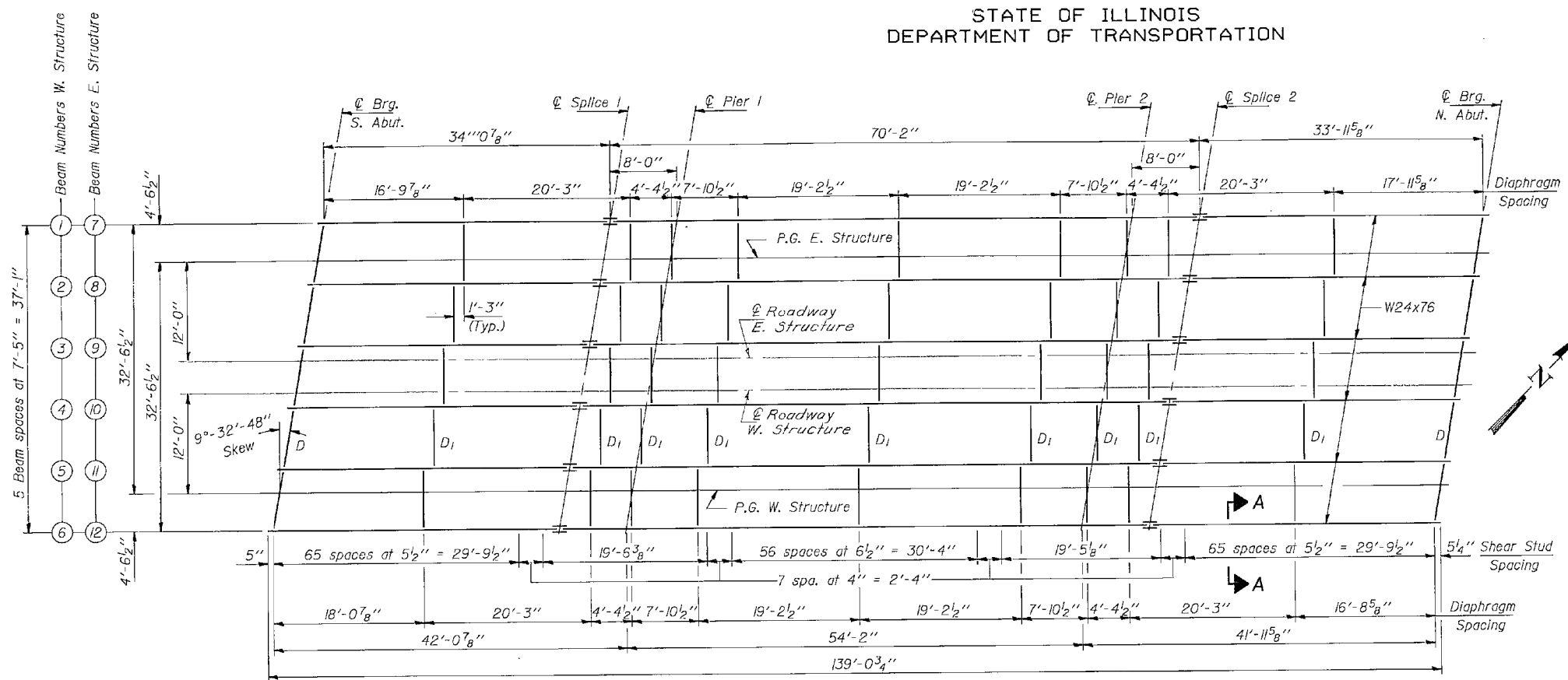
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS, SN 054-0076 & 0077
(FOR INFORMATION ONLY)
SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	(54-4,54-10) BP-1, (118) BP	LOGAN	16	13
* FAI 55, 155, FAP 315		CONTRACT NO. 72K73		
		ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEETS	*SHEET	SHEET NO. 8
F.A. 406	54-10VB	LOGAN	34	18	18 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



Top of Beam Elevations

	℄ Brg. S. Abut.	℄ Splice 1	℄ Brg. Pier 1	℄ Brg. Pier 2	℄ Splice 2	℄ Brg. N. Abut.
Beam 1	601.10	601.07	601.07	601.08	601.08	601.13
Beam 2	601.26	601.22	601.22	601.23	601.24	601.28
Beam 3	601.37	601.34	601.34	601.36	601.36	601.41
Beam 4	601.43	601.40	601.40	601.42	601.42	601.47
Beam 5	601.32	601.28	601.29	601.30	601.31	601.36
Beam 6	601.17	601.14	601.15	601.17	601.17	601.22
Beam 7	601.16	601.13	601.14	601.17	601.17	601.23
Beam 8	601.29	601.27	601.27	601.31	601.31	601.38
Beam 9	601.40	601.38	601.39	601.42	601.43	601.49
Beam 10	601.34	601.32	601.32	601.36	601.37	601.43
Beam 11	601.21	601.20	601.20	601.24	601.24	601.31
Beam 12	601.06	601.04	601.04	601.08	601.09	601.16

(For Fabrication Only)

INTERIOR BEAM MOMENT TABLE

	0.4 Sp. #1 or 0.6 Sp. #3	Piers	0.5 Sp. #2
Is	(in ⁴) 2,100	2,100	2,100
Ic	(in ⁴) 6,694		6,694
Ss	(in ³) 176	176	176
Sc	(in ³) 279		279
Z	(in ³)	200	
φ	(K/ft.) .796	1.118	.796
M _℄	(K) 93	245	104
s _℄	(K/ft.) .322		.322
M _{s℄}	(K) 46		62
M _℄	(K) 286	152	335
M (Imp)	(K) 85	44	93
5 ₃ (M _℄ +I)	(K) 618	327	714
M _a	(K) 984	743	1,143
M _u	(K) 1,668	833	1,668
f _{s℄ non-comp} (k.s.i.)	6.4	16.7	7.1
f _{s℄ comp} (k.s.i.)	2.0		2.7
f _{s₃} (k.s.i.)	26.6	22.3	30.7
f _s (Overload)(k.s.i.)	35.0	39.0	40.5
VR	(K) 52.1		45.1

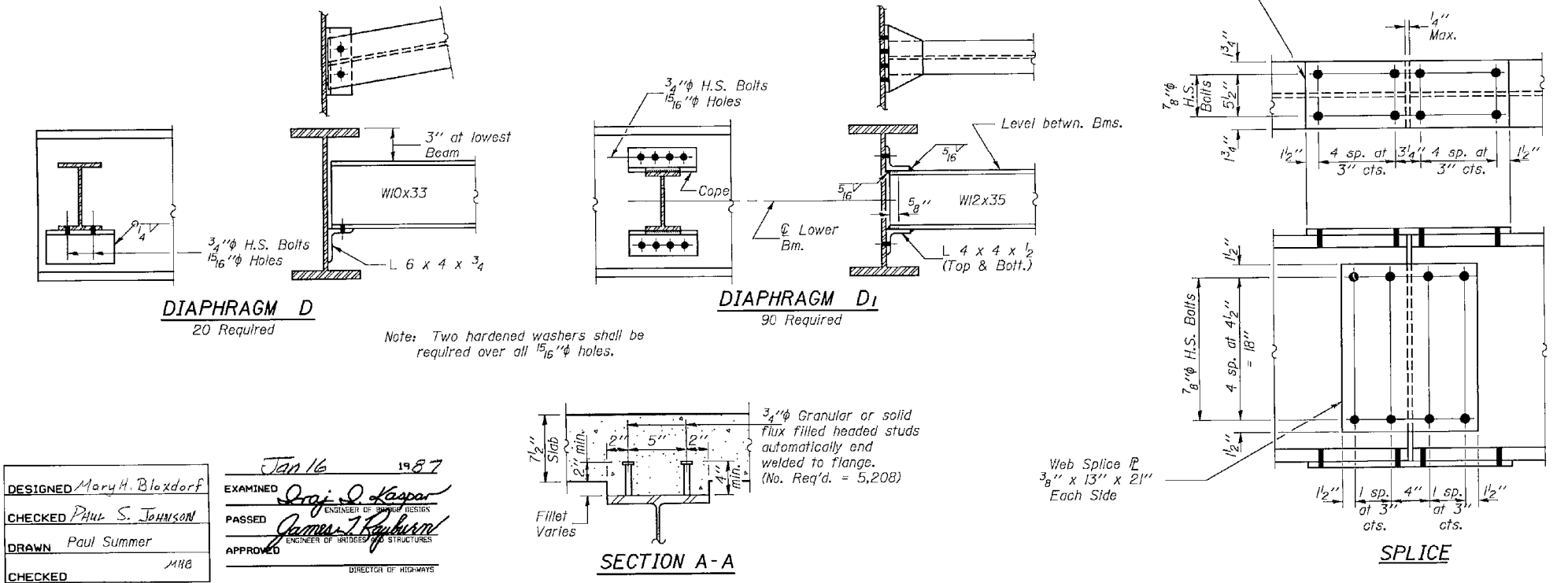
INTERIOR BEAM REACTION TABLE

	Abuts.	Piers
R _℄	(K) 17.6	59.6
R _℄	(K) 36.6	44.6
Imp.	(K) 11.0	12.9
R (Total)	(K) 65.2	117.1

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).
VR is the maximum Live Load + Impact shear range in span.
Z is the plastic section modulus used to determine the fully plastic moments in the non-composite areas.
Ma (Applied Moment) = I.3IM_℄ + Ms_℄ + 5₃(M_℄ + I).
Mu is the Full Plastic Moment Capacity for Compact, Braced section.
fs (Overload) is the sum of the stresses due to M_℄ + Ms_℄ + 5₃(M_℄ + I).

PLAN

All Beams and Splice Plate material shall conform to the Supplemental Requirements for Notch Toughness Zone 2, and shall be AASHTO M 223 (Grade 50). All other structural steel shall be AASHTO M 183.



DESIGNED Mary H. Bloxdorf
CHECKED Paul S. Johnson
DRAWN Paul Summer
CHECKED MNB

EXAMINED *Jan 16 1987* [Signature]
PASSED [Signature]
APPROVED [Signature]
DIRECTOR OF HIGHWAYS

STRUCTURAL STEEL
F.A. RT. 406 SEC. 54-10VB
LOGAN COUNTY
STA. 344+11.34

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I-2-D 8-30-80

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PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/5/2018	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

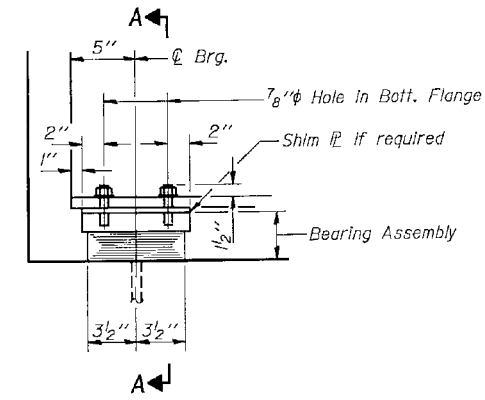
EXISTING STRUCTURE PLANS, SN 054-0076 & 0077
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

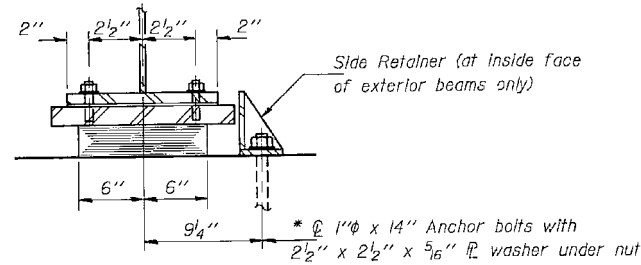
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54-10VB	(54-4,54-10) BP-1, (118) BP	LOGAN	16	14
* FAI 55, 155, FAP 315		ILLINOIS	CONTRACT NO. 72K73	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

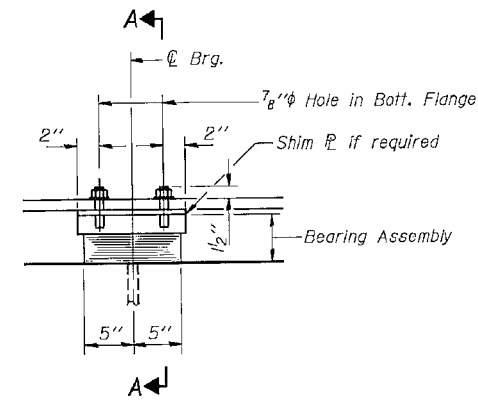
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 9
F.A. 406	10VB	LOGAN	34	19	18 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



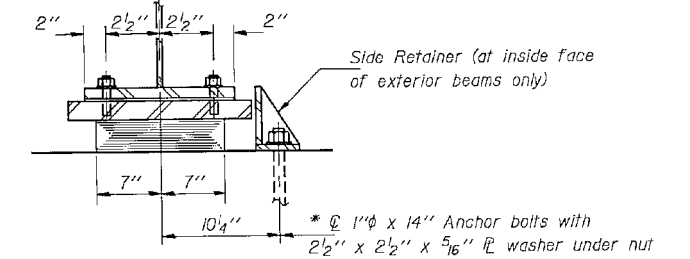
ELEVATION AT S. ABUT.



SECTION A-A

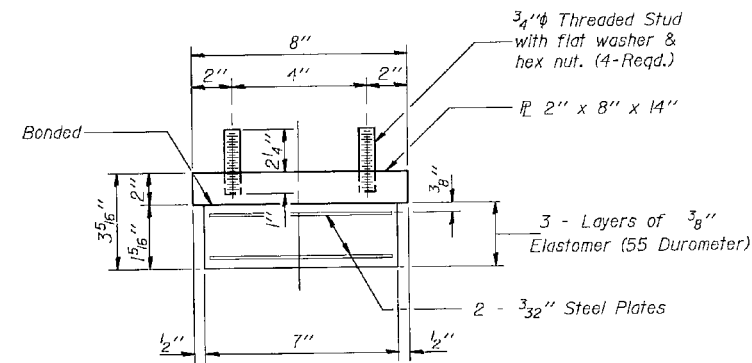


ELEVATION AT PIER 2



SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

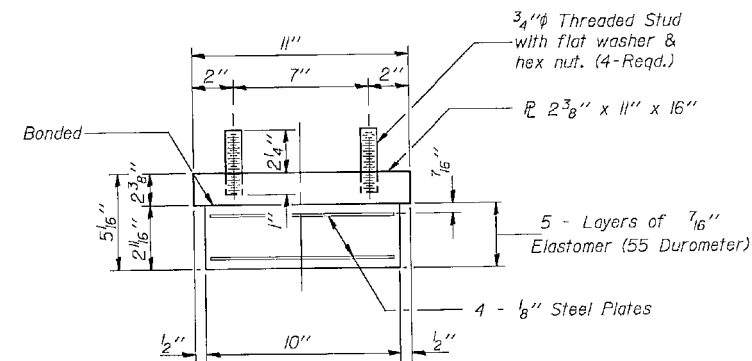


BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

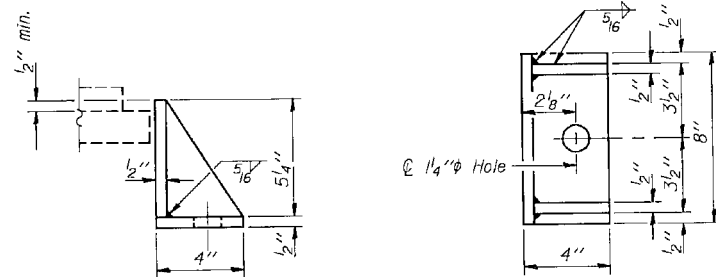
* See sheet II of IB for Anchor Bolt installation.

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

DESIGNED	Mary H. Bloxdorf	EXAMINED	<i>[Signature]</i>
CHECKED	Paul S. Johnson	PASSED	<i>[Signature]</i>
DRAWN	Paul Summer	APPROVED	<i>[Signature]</i>
CHECKED	MHB		

I-2-E1 12-1-83

BILL OF MATERIAL		
Item	Unit	Total
Elastomeric Bearing Assembly Type 1	Each	24

BEARING DETAILS
F.A. RT. 406 SEC. 54-10VB
LOGAN COUNTY
STA. 344+11.34

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

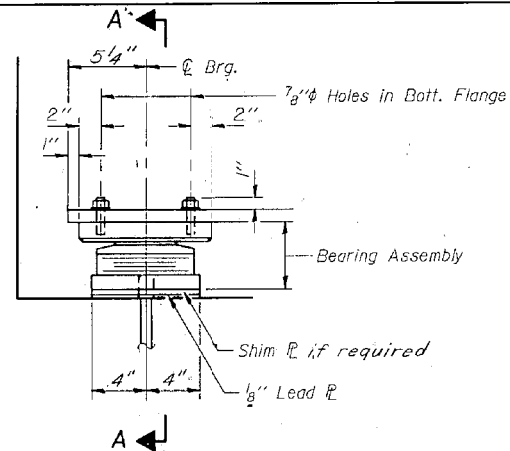
EXISTING STRUCTURE PLANS, SN 054-0076 & 0077
(FOR INFORMATION ONLY)

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(54-4,54-10) BP-1, (118) BP	LOGAN	16	15	
* FAI 55, 155, FAP 315			CONTRACT NO. 72K73	
ILLINOIS FED. AID PROJECT				

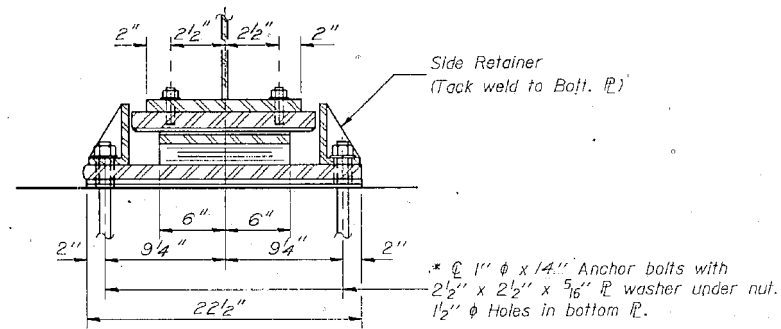
SCALE: SHEET OF SHEETS STA. TO STA.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

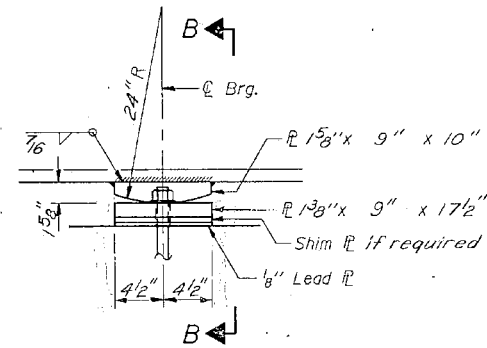
ROUTE NO.	SECTION	COUNTY	SHEET NO.	PROJECT NO.	SHEET NO. 10
FA 106	10VB	LOGAN	34	20	18 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



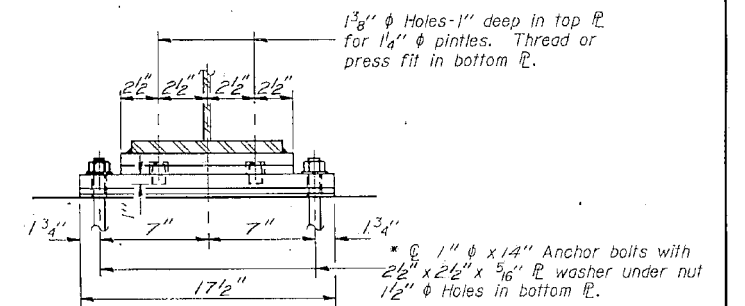
ELEVATION AT N. ABUT.



SECTION A-A



ELEVATION AT PIER 1

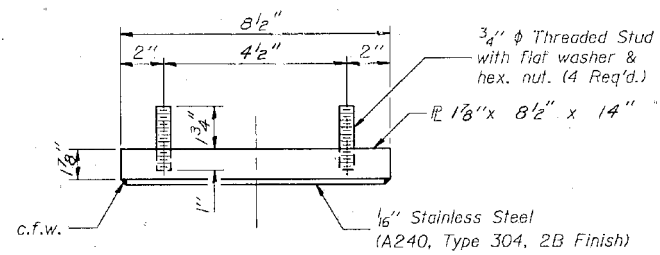


SECTION B-B

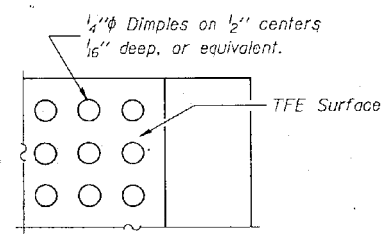
TYPE II TFE ELASTOMERIC EXP. BRG.

* Notes: Anchor bolts at fixed bearings may be built into the masonry. See sheet 11 of 18 for Anchor Bolt installation.

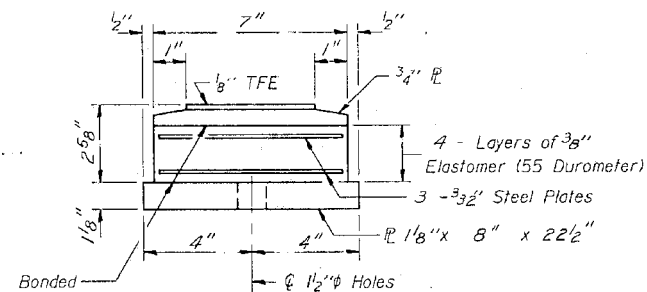
FIXED BEARING



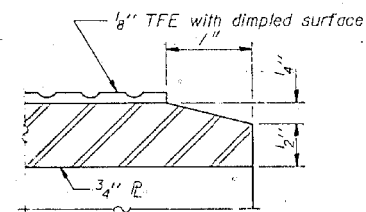
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



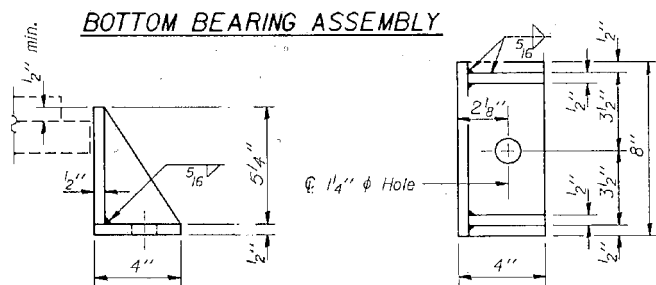
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

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 MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

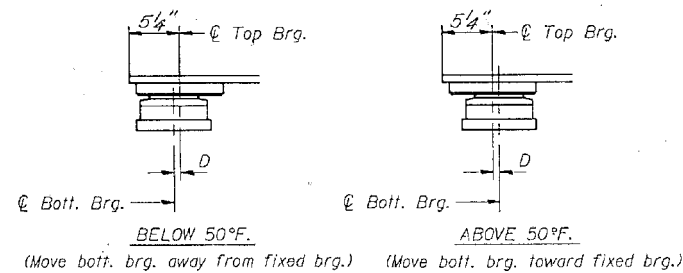


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

DESIGNED <i>Mory H. Blaxderf</i>	EXAMINED <i>Raj D. Kaspar</i>
CHECKED <i>Paul S. Johnson</i>	PASSED <i>James J. Bauern</i>
DRAWN <i>Paul Summer</i>	APPROVED _____
CHECKED <i>MHB</i>	DIRECTOR OF HIGHWAYS

I-2-E2 12-1-83



SETTING ANCHOR BOLTS AT EXP. BRG.

D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	12

BEARING DETAILS
F.A. RT.406 SEC. 54-10VB
LOGAN COUNTY
STA. 344+11.34

MODEL: Default FILE NAME: \\CENTRALDB\OPERATIONS\Bridges\Bridges\Plans_CAD\72K73 - Logan County\pahr_2019\pahrsheet.dgn

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 10/5/2018	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING STRUCTURE PLANS, SN 054-0076 & 0077
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
(54-4,54-10)	BP-1, (118) BP	LOGAN	16	16
* FAI 55, 155, FAP 315		CONTRACT NO. 72K73		
ILLINOIS FED. AID PROJECT				