

040

07-12-2019 LETTING ITEM 040

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

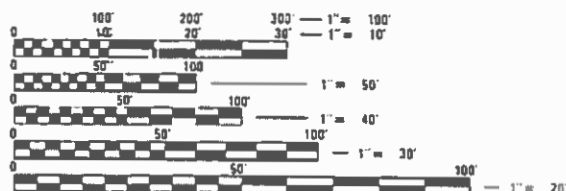
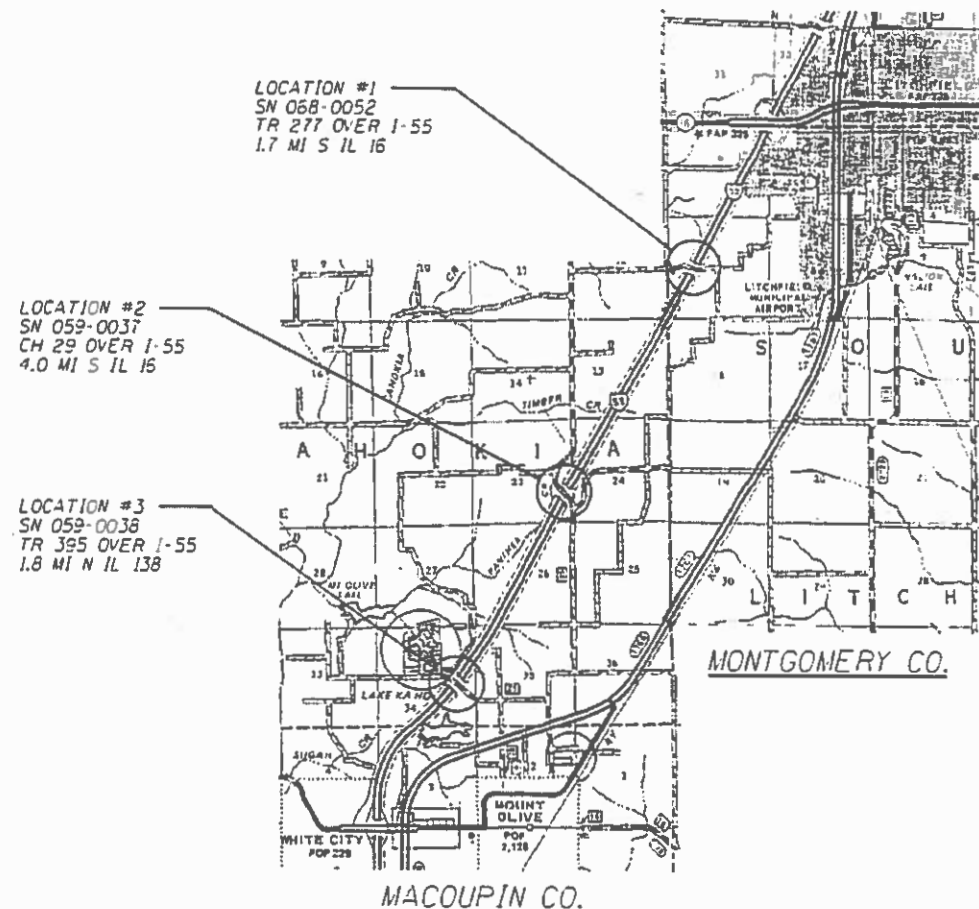
F.A.I. REF.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(59-2, 68-1) BP		14	1
Contract No. 72K77			MACOUPIN & MONTGOMERY	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROPOSED BRIDGE PAINTING

FAI 55 (I-55)
SECTION (59-2, 68-1) BP
PROJECT NHPP-LXLK(756)
BRIDGE PAINTING
MACOUPIN & MONTGOMERY COUNTIES

C-96-111-18



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. 72K77

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 30 October 2018
[Signature]
REGIONAL ENGINEER

June 14 2019
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

June 14 2019
[Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION 3

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

0-01373-6003	0-01373-6003
NHPP 90/10	NHPP 90/10

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	BRIDGE -RURAL	BRIDGE -RURAL
				0047	0047
				MONTGOMERY	MACOUPIN
67100100	MOBILIZATION	L SUM	1	0.33	0.67
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	6	2	4
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	90	30	60
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1800	600	1200
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	1800	600	1200
70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	6	2	4
70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	6	2	4
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
Z0007103	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 3	L SUM	1	0	1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1	0
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1	0	1
Z0010503	CLEANING AND PAINTING STEEL BRIDGE NO. 3	L SUM	1	0	1

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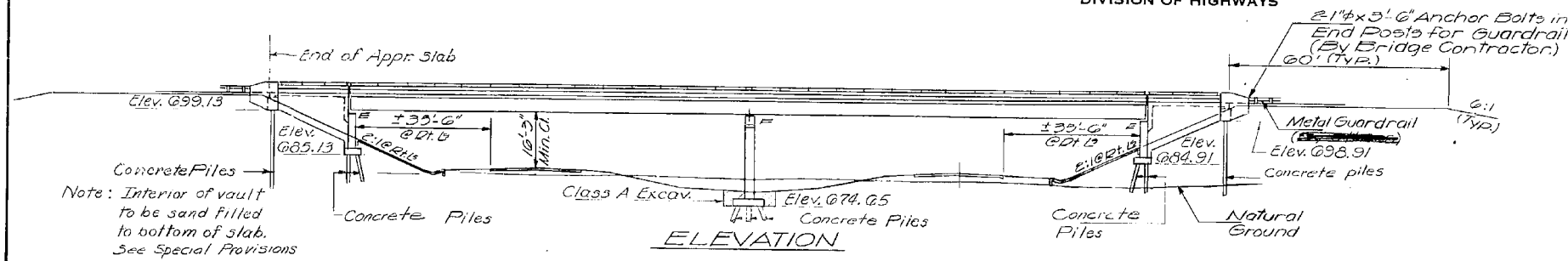
REV. - MS

USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES				F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -						55	(59-2, 68-1) BP	*	14	3
PLOT DATE = 5/28/2019	CHECKED -	REVISED -		SCALE:	SHEET	OF	SHEETS	STA.	TO STA.	* MACOUPIN, MONTGOMERY CONTRACT NO. 72K77		
	DATE -	REVISED -		ILLINOIS FED. AID PROJECT								

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

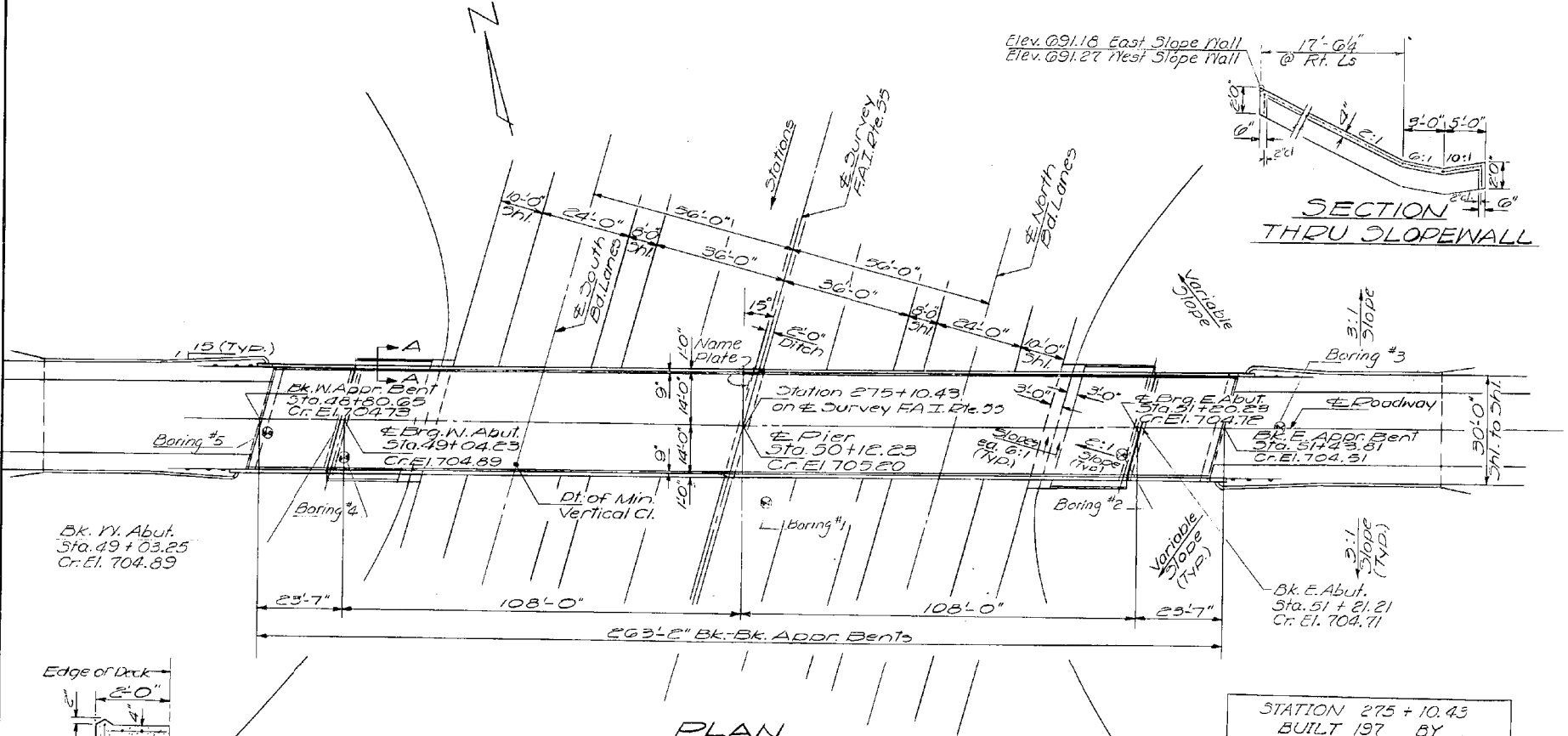
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. /
55	(59-2, 68-1) BP	* MACOUPIN, MONTGOMERY	14	4	44 SHEETS

B.M. #20 Log Bolt in Power Pole
E90' Lt. Sta. 274+00 El. 680.22



GENERAL NOTES

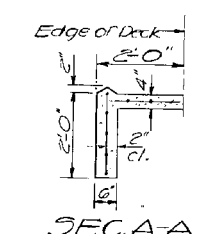
All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
The basic Lead Silico Chromate paint system shall be used for shop and field painting of structural steel.
Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top 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"x6" mesh, weighing 58# per 100 sq.ft.
Class A Excavation for structures includes excavation for slope wall.
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
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.
Fasteners shall be high strength bolts; bolts 3/8" φ; open holes 1/16" φ, unless noted.
The contractor shall drive 3 concrete test piles 1 each of pier, west abutment and east approach bent. All in permanent locations as directed by Engineer before ordering the remainder of piles.
Concrete piles at appr. bent shall be driven in holes prepared through the embankment in accordance with Article 513.09(c) of the Standard Specifications



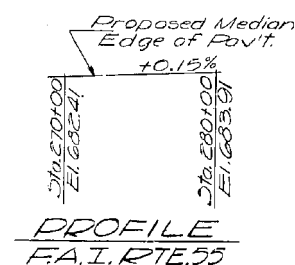
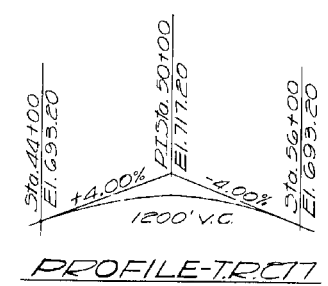
TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Class A Excavation for Structures	Cu. Yds.		60	60
Protective Coat	Sq. Yds.	980		980
Class X Concrete	Cu. Yds.	257.0	192.1	449.1
* Structural Steel	Lump Sum			1
Stud Shear Connectors	Each	1248		1248
Aluminum Railing	Lin. Ft.	510		510
Reinforcement Bars	Lbs.	63390	21190	84580
** Bridge Seat Sealant	Lump Sum			1
Sand Backfill	cu yds			330
Concrete Piles	Lin Ft		2117	2117
Test Pile Concrete	Each		3	3
Name Plates	Each		1	1
Slope Wall (4")	Sq. Yds.		276	276

* Calculated plan weight of Structural Steel 203080 lbs..
** Abutments Only



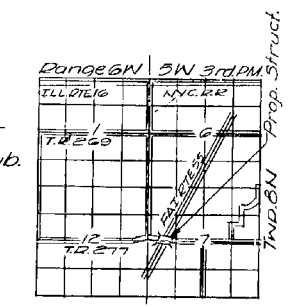
DESIGNED Stanley Shon Tran Lin	APRIL 2 1970
CHECKED R. J. Williams	EXAMINED [Signature]
DRAWN jacob	PASSED [Signature]
CHECKED S. J. [Signature]	APPROVED [Signature]



DESIGN STRESSES

$f_c = 1200$ psi - Deck Slab
 $f_c = 1400$ psi - Gurb. Forapet, Sub.
 $f_b = 20,000$ psi - Reinf.
 $f_b = 20,000$ psi - Struct.
 $v_c = 75$ psi - Ftgs.
 $n = 10$

Allowable $4\Delta \leq \frac{1}{1200}$
LOADING HS15-44



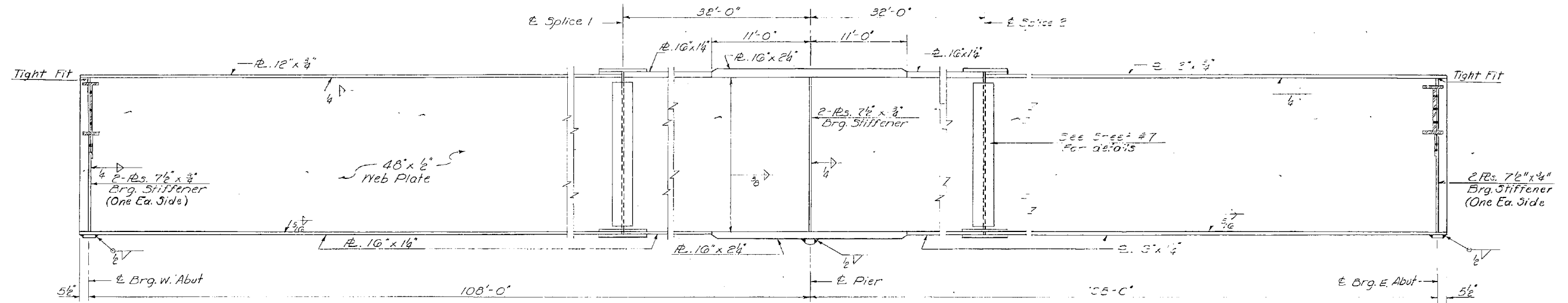
GENERAL PLAN & ELEVATION
PROJ. I-55-2(36) 51
TRCT1 OVER F.A.I. RTE. 55
F.A.I. ROUTE 55
SECTION 08-1HB
MONTGOMERY COUNTY
STATION 275+10.43

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Author: Macoupin & Montgomery\jacobshon

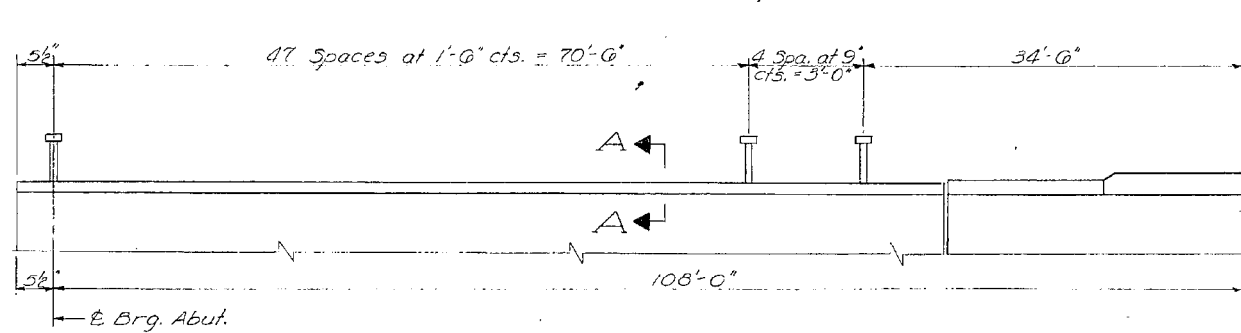
USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS, SN 068-0052 (FOR INFORMATION ONLY)	F.A.I. RTE. 55	SECTION (59-2, 68-1) BP	COUNTY * MACOUPIN, MONTGOMERY	TOTAL SHEETS 14	SHEET NO. 4
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -	SCALE:	SHEET OF SHEETS STA. TO STA.	CONTRACT NO. 72K77 ILLINOIS FED. AID PROJECT				
PLOT DATE = 5/28/2019	CHECKED -	REVISED -							

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

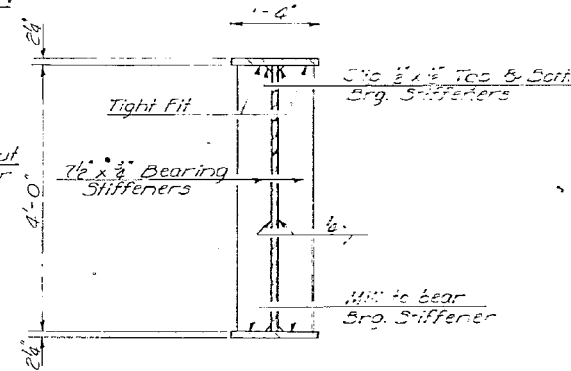
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F.A.I. 55	68-1HB	MONTGOMERY	35	15	14 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



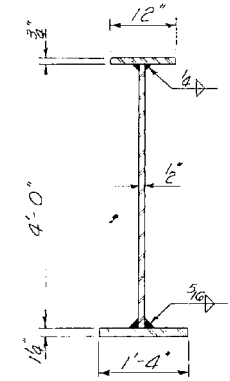
GIRDER ELEVATION



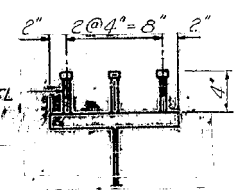
SHEAR CONNECTOR ELEVATION
(3/2 stud shear connectors req'd. Ea. Girder)



SECTION AT PIER



TYPICAL GIRDER SECTION
(Except Section From Splice to Pier)



SEC. A-A

Work this sheet with sheets #7 & #8.

DESIGNED Stanley Skenton, Inc.	EXAMINED <i>[Signature]</i> APR 2 1970
CHECKED R. u. matthei	PASSED <i>[Signature]</i>
DRAWN jacobson	APPROVED <i>[Signature]</i> RICHARD F. GOLTMAN CHIEF HIGHWAY ENGINEER
CHECKED S. R. RUM	

STRUCTURAL DETAILS
F.A.I. RT. 55 SEC. 68-1HB
MONTGOMERY COUNTY
STA. 275 + 10.43

MODEL: D:\dwg\11\OPERATIONS\Bridges\Bridges.dwg, C:\DWG72K77 - 155.dwg, Macoupin & Montgomery\planstruct.dwg

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -
PLOT DATE = 5/28/2019	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

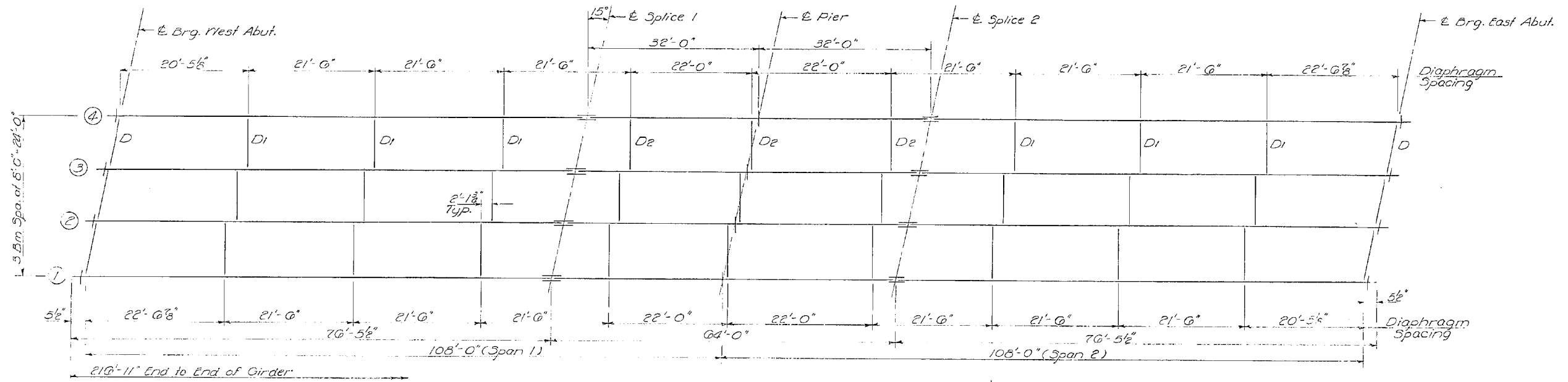
EXISTING PLANS, SN 068-0052
(FOR INFORMATION ONLY)

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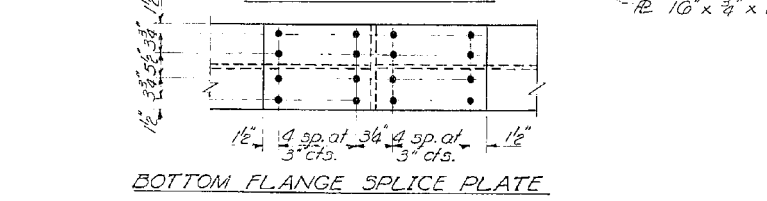
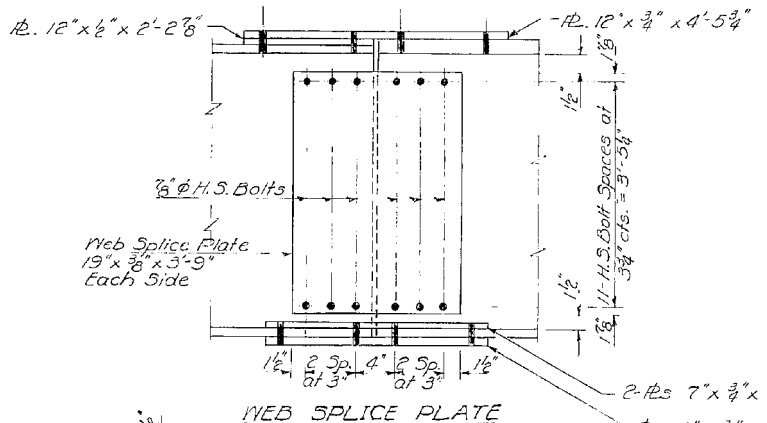
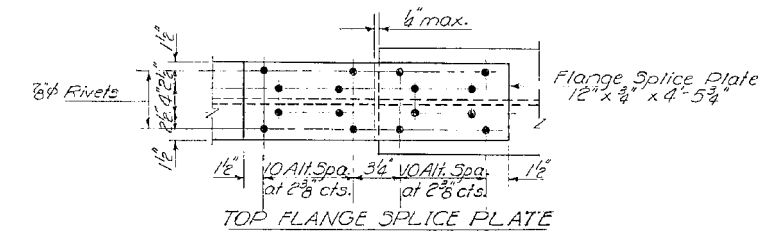
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55	(59-2, 68-1) BP	*	14	5
* MACOUPIN, MONTGOMERY			CONTRACT NO. 72K77	
ILLINOIS		FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

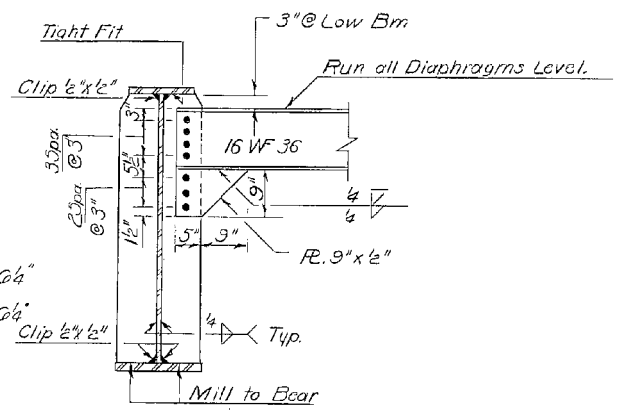
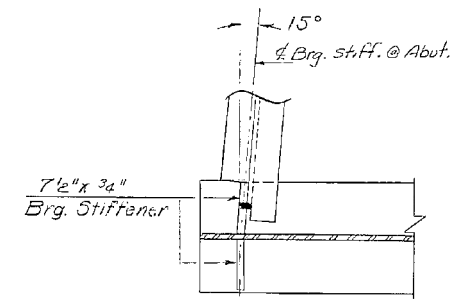
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 7 14 SHEETS
55	68-11B	MONTGOMERY	35	16	
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT					



PLAN

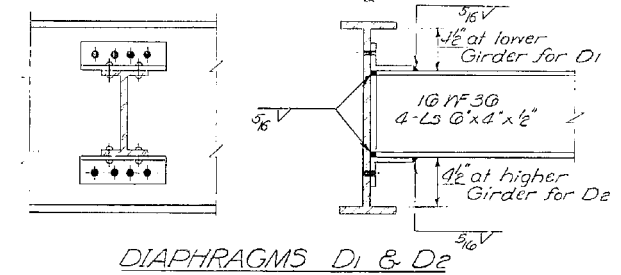


DETAIL OF SPLICE



DIAPHRAGM D
6 D Req'd.

Run all diaphragms level.



DIAPHRAGMS D1 & D2
18 D1 Required
9 D2 Required

Note: Work this sheet with Sheets #6 & #8.

STRUCTURAL STEEL
F.A.I. RT. 55 SEC. 68-11B
MONTGOMERY COUNTY
STA. 275 + 10.43

DESIGNED	stankyskumtow	EXAMINED	APRIL 2 1970
CHECKED	R. u. mather	PASSED	Richard A. Holterman
DRAWN	jacobs F.C.	APPROVED	Richard A. Holterman
CHECKED	S.R. R. u. m	CHIEF HIGHWAY ENGINEER	

USER NAME	= dudleybm	DESIGNED	-	REVISED	-
PLOT SCALE	= 100.0000' / in.	DRAWN	-	REVISED	-
PLOT DATE	= 5/28/2019	CHECKED	-	REVISED	-
		DATE	-	REVISED	-

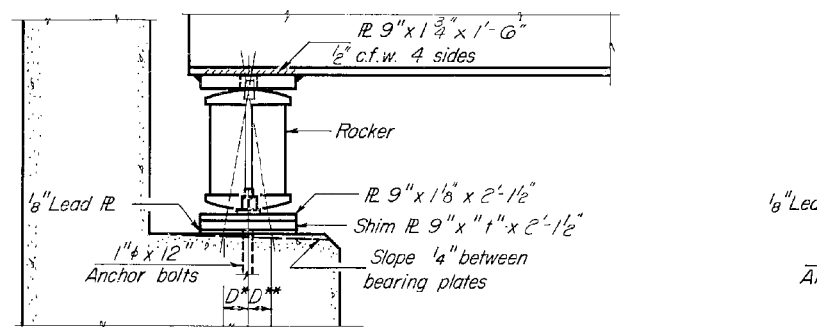
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 068-0052
(FOR INFORMATION ONLY)

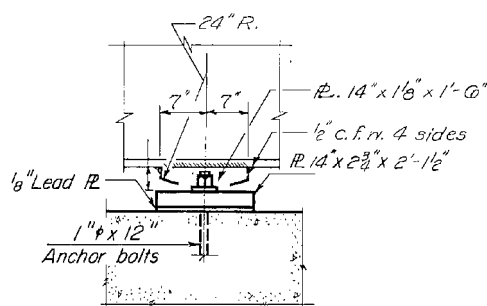
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(59-2, 68-1) BP	*	14	6
* MACOUPIN, MONTGOMERY			CONTRACT NO. 72K77	
ILLINOIS FED. AID PROJECT				

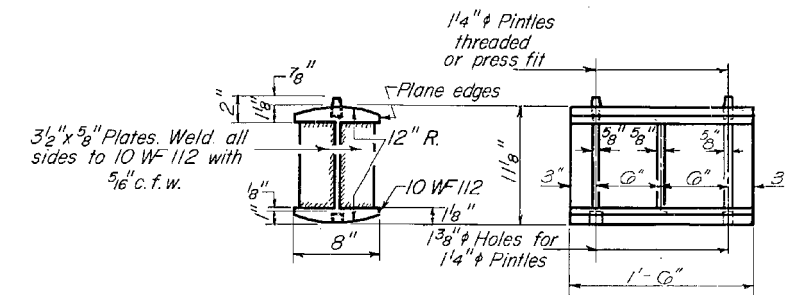
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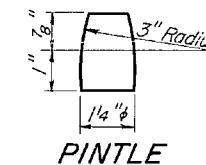
SECTION



ELEVATION



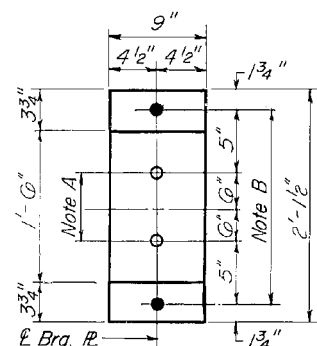
ROCKER



PINTLE

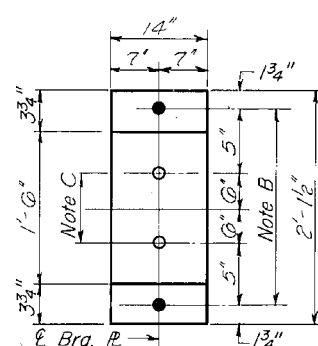
"I" DIMENSIONS

	G-4	G-3	G-2	G-1
M. Abut.	0	1/8"	0	0
Pier	0	0	0	0
E. Abut.	0	0	1/4"	0



PLAN AT ABUTMENT

NOTE A
1 3/8" Holes - 1" deep in top PL for pintles. Thread or press fit pintles into bottom PL.



PLAN AT PIER

NOTE B
1 1/2" Holes for 1" anchor bolts. 2 1/2" x 2 1/2" x 5/16" R. Washers under nut.

NOTE C
1 3/8" Holes 1" deep in top PL only for 1 1/4" pintles.

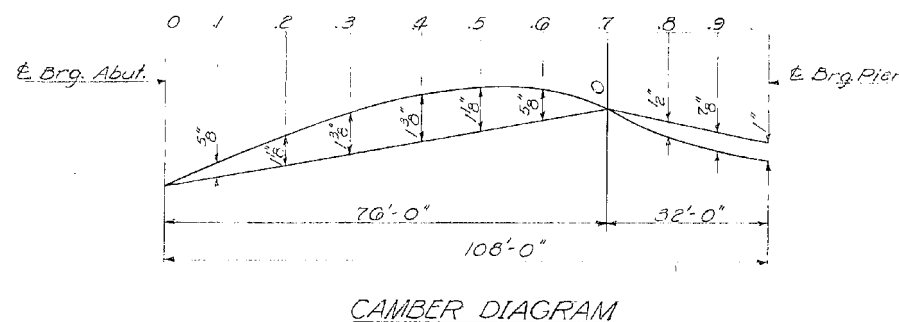
BEARING ASSEMBLY DETAILS

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

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

TOP OF WEB ELEVATIONS

Location	Girder	G-4	G-3	G-2	G-1
E. Brg. West Abut.		704.05	704.17	704.10	704.01
E. Splice 1		704.31	704.44	704.44	704.30
E. Brg. Pier		704.19	704.32	704.32	704.19
E. Splice 2		704.24	704.38	704.39	704.20
E. Brg. East Abut.		703.83	703.98	704.00	703.88



MOMENT TABLE - Symmetrical Composite 2 Span (Composite in Positive Moment Areas Only)

	0.4 Sp. 1	Pier
I_s (in ⁴)	200,768	50,089
I_c (in ⁴)	52,019	
S_s (in ³)	1,029	1,908
S_c (in ³)	1,381	
\bar{Q} (in)	1.01	1.37
M_e (k)	700.00	-1,782.54
f_{s_e} (ksi)	8.17	11.21
$S_{\bar{Q}}$ (in ³)	0.30	
M_{s_e} (k)	300.70	-492.80
M_{s_c} (k)	750.59	-608.21
M_{imp} (k)	101.38	-143.00
TOTAL (k)	1,218.73	-1,304.07
$f_{s_{e+imp}}$ (ksi)	10.59	8.21
$f_{s_{TOTAL}}$ (ksi)	18.70	19.42
VR (k)	40.00	

REACTION TABLE -

	Abut.	Pier
R_R (k)	38.03	142.09
R_{e+imp} (k)	50.03	108.72
$Imp.$ (k)	7.50	13.05
R TOTAL (k)	95.62	263.86

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 $\frac{1}{2}$ impact shear range.

Work this sheet with Sheets #6 & #7.

BEARINGS
F.A.I.R.T. 55 SEC. 68-1HB
MONTGOMERY COUNTY
STA. 275 + 10.43

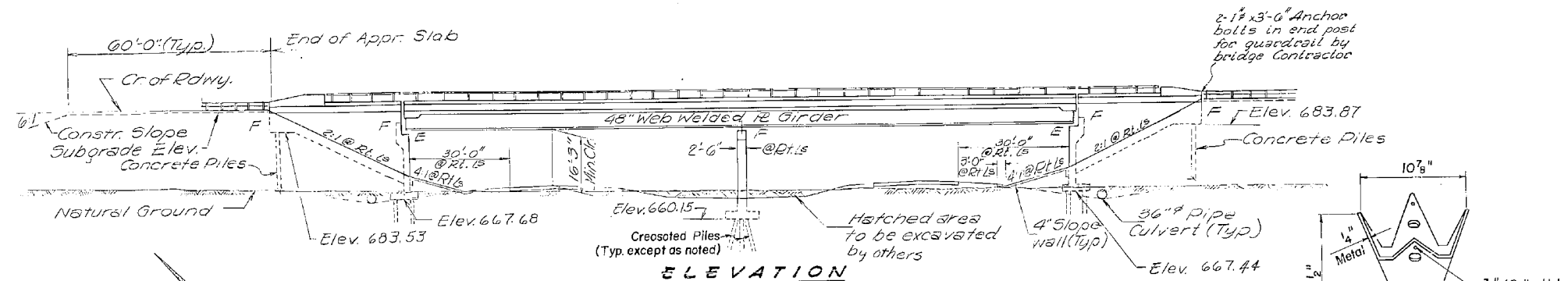
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CHECKED [Signature]	PASSED [Signature]	
DRAWN P.G. Barnett	APPROVED [Signature]	
CHECKED S. [Signature]		

I-2-B 9-1-65

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

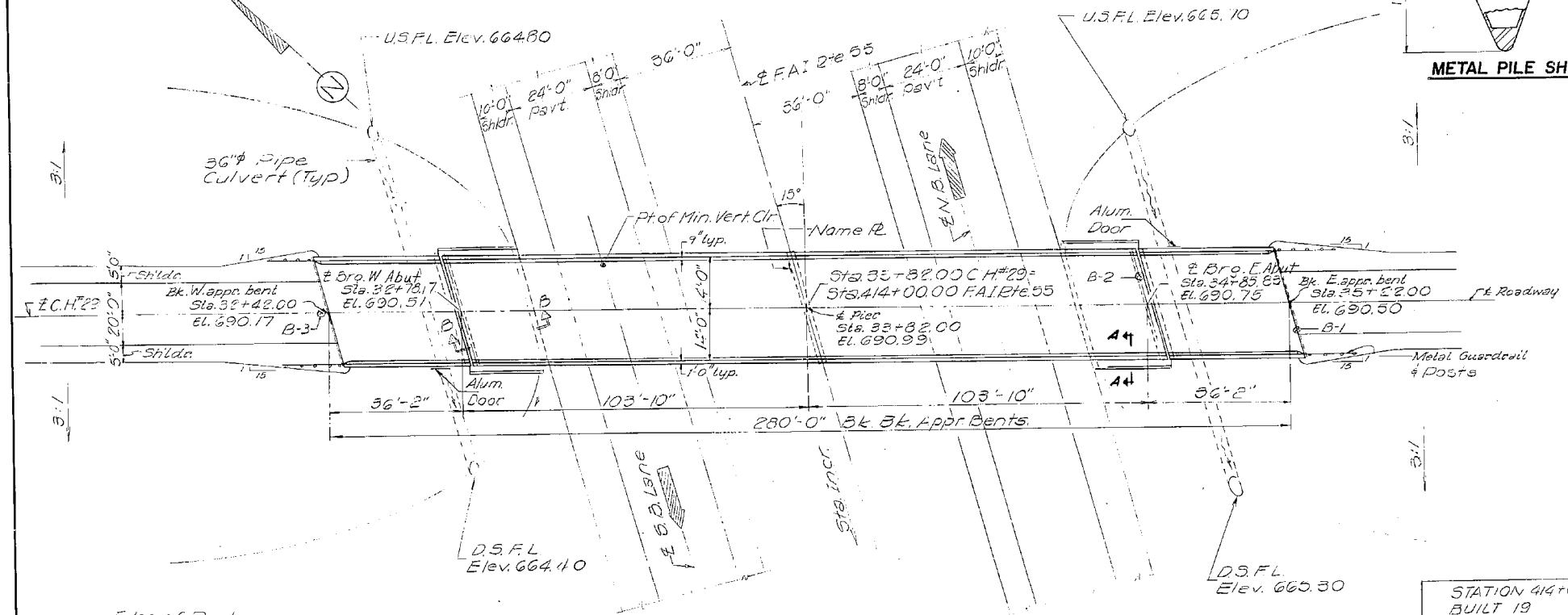
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
59-118	118	MACOUPIN	35	11
SHEET NO. 1 14 SHEETS				

B.M. # 27 - 8" Boat spike in power pole
400' Lt. Sta. 398+00 (ML) Elev. 669.82



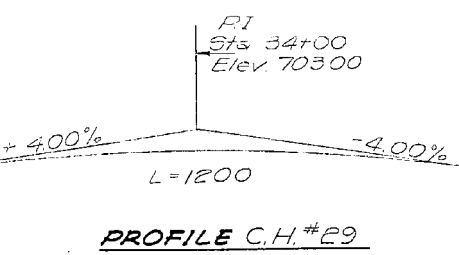
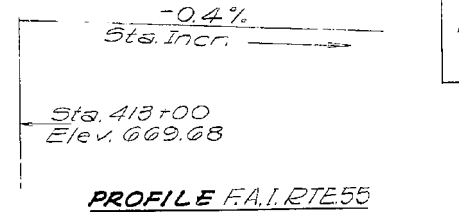
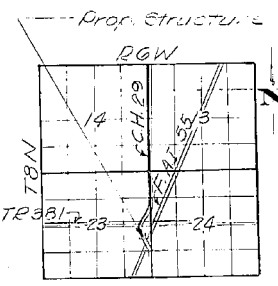
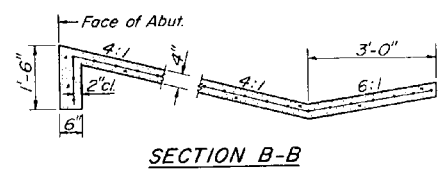
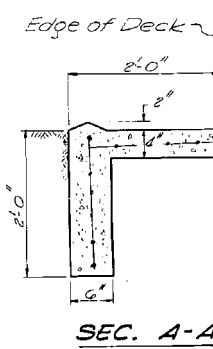
GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
Fasteners shall be high strength bolts. Bolts 3/4" Ø; open holes 13/16", unless otherwise noted.
The basic lead Silico chromate paint system shall be used for shop and field painting of structural steel.
Field welding of construction accessories will not be permitted in the bottom flange of beams or girders nor on 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 cross frames over supports.
Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 58# per 100 sq. ft.
Class A Excavation for structures includes excavation for slope wall.
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
An alternate strand pattern using Extra High Strength Prestressing strand (270 k.s.i.) is permitted.
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.
The contractor shall drive one concrete test pile at West Approach Abutment, one timber test pile at pier, both in permanent locations as directed by the Engineer before ordering the remainder of piles.
Calculated Plan Wt. of Structural Steel = 185,980 lbs.
Timber piles shall be fitted with metal shoes.



TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Class A Excav. for Structure	Cu Yds		57	57
Protective Coat	Sq Yds	1045		1045
Class X Concrete	Cu Yds	271.0	237.0	508.0
F&E P.P.C. T-Bms (36")	Lin. Ft.	272		272
Structural Steel	LS	1		1
Stud Shear Connector	Ea	1080		1080
Aluminum Railing	Lin. Ft.	518		518
Reinforcement Bars	Lbs.	60870	18450	79320
Name Plates	Ea.		1	1
Slope wall (4")	Sq. Yds		190	190
Preformed Joint Sealer	Lin. Ft.	62		62
Concrete Piles	Lin. Ft.		585	585
Test Piles (Concrete)	Ea.		1	1
Creosoted Piles (20.1 to 38')	Lin. Ft.		1836	1836
Test Piles (Timber)	Ea.		1	1
Metal Shoes	Ea.		58	58



STATION 44+00
BUILT 19 84
STATE OF ILLINOIS
F.A.I. RTE 55 SEC. 59-2HB-2
F.A. PROJ. I-55-2(25)
LOADING HS15

NAME PLATE
See Std. 2113

PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi.
 $f'_c = 4,000$ psi.
 $f'_s = 248,000$ psi. Strands 7/16"
 $f'_s = 173,600$ psi. Strands 7/8"

DESIGN STRESSES FIELD UNITS

$f_c = 1,200$ psi. (Deck Slab) 1,400 psi. (Parapet, Curb & Sub)
 $f_s = 20,000$ psi. (Reinf.)
 $f_s = 20,000$ psi. (Struct.)
 $u_c = 75$ psi. (Footings)
 $n = 10$
Allowable $\leq \frac{L}{1200}$
Allow 25% for future Wear. Surf.
LOADING HS15-44

GENERAL PLAN & ELEVATION

C.H. # 29 OVER F.A.I. RTE 55
PROJ. I-55-2(25) 48
F.A.I. RTE 55 SEC. 59-2HB-2
MACOUPIN COUNTY
STA. 414+00.00 (F.A.I. 55)
STA. 33+82.00 (C.H. # 29)

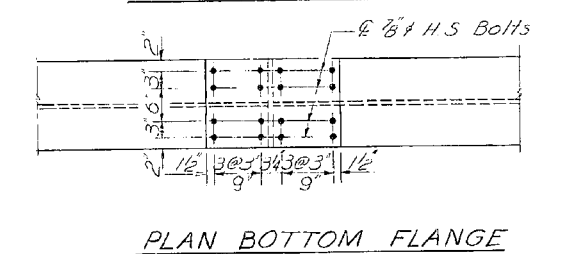
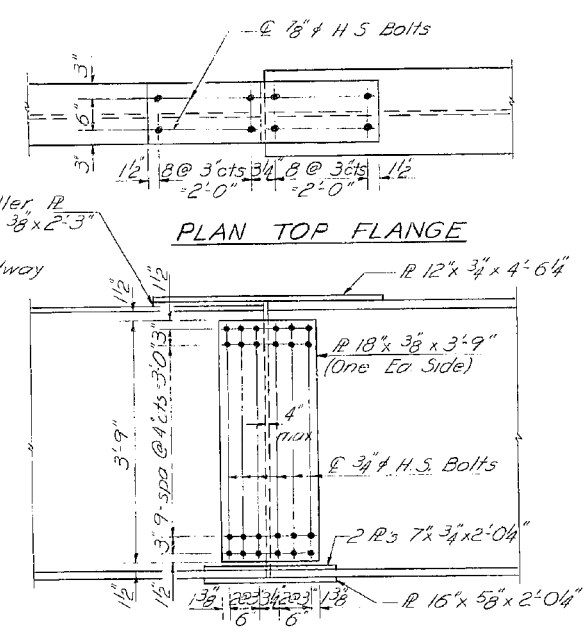
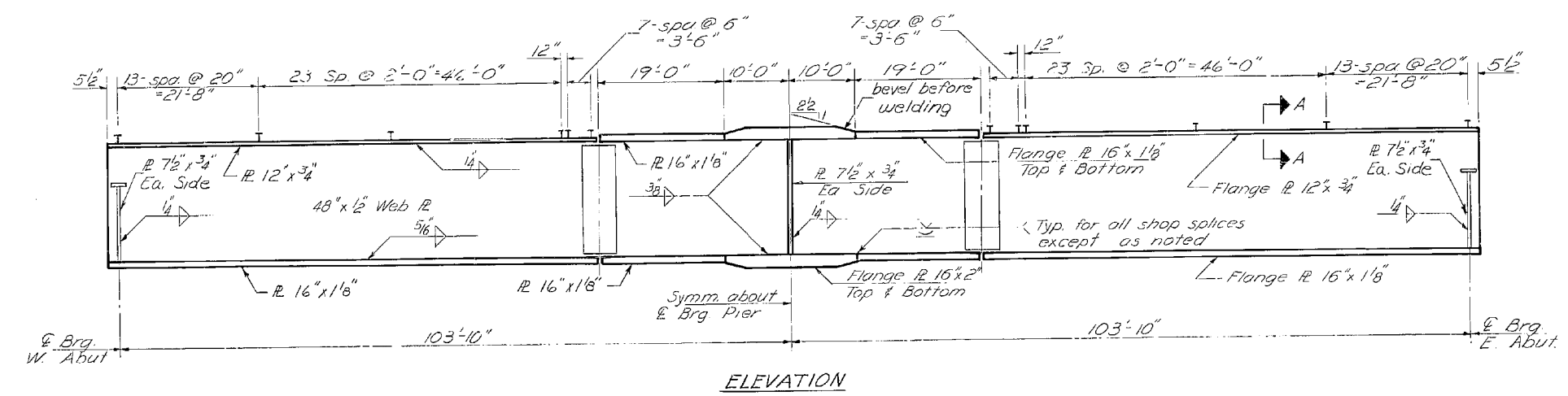
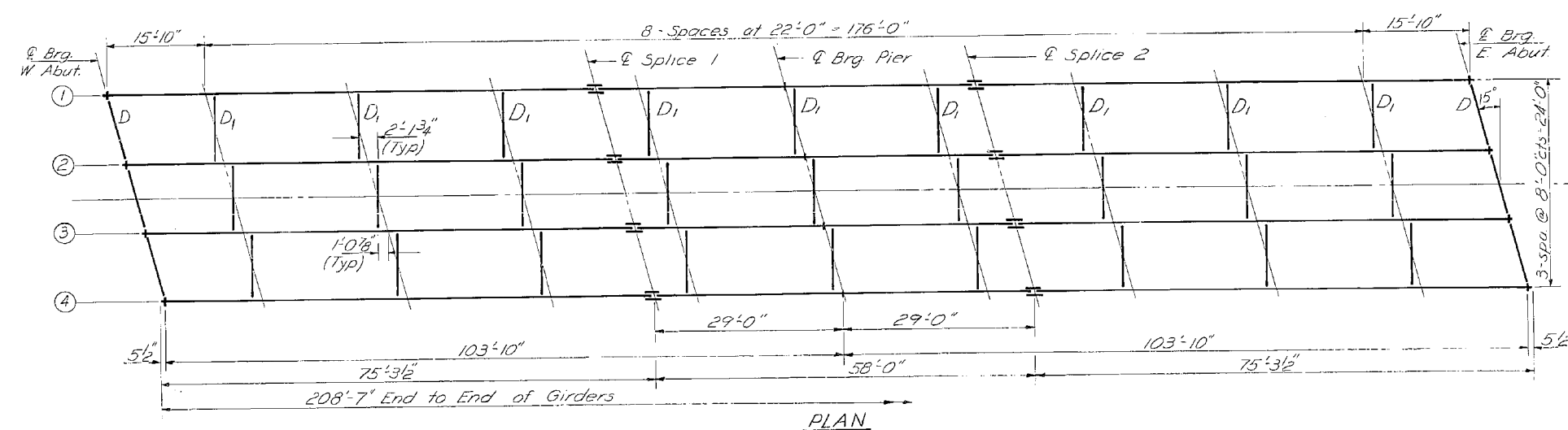
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CHECKED: [Signature]
DRAWN: FM
CHECKED: [Signature]
EXAMINED: [Signature]
PASSED: [Signature]
APPROVED: [Signature]

REV 5-3-71 W.H. Slope wall from 165 sq yds to 176 sq yds

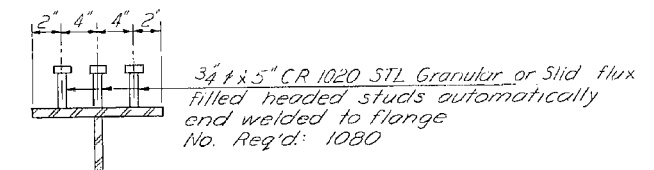
USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS, SN 059-0037 (FOR INFORMATION ONLY)	F.A.I. RTE. 55	SECTION (59-2, 68-1) BP	COUNTY * MACOUPIN, MONTGOMERY	TOTAL SHEETS 14	SHEET NO. 8
PLOT SCALE = 100,000' / in.	CHECKED -	REVISED -	SCALE:	SHEET OF SHEETS	STA.	TO STA.	ILLINOIS	FED. AID PROJECT	CONTRACT NO. 72K77
PLOT DATE = 5/28/2019	DATE -	REVISED -							

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	59-2HB-2	MACOUPIN	35	18
F.A.I. RT. 55		CONTRACT NO. 72K77		14 SHEETS

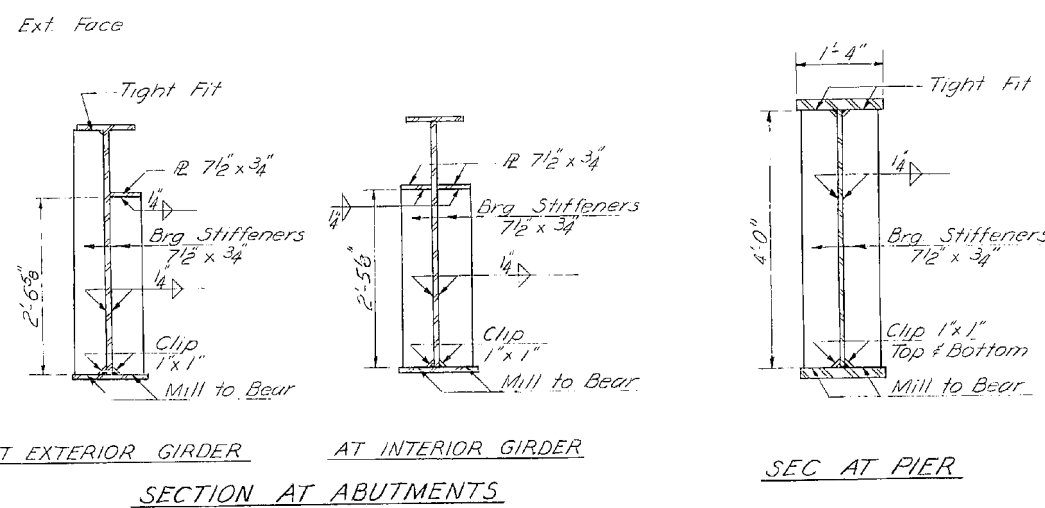


Note: For other details see sheet #9



SEC. A-A

DESIGNED <i>Ch. J. Kow</i>	EXAMINED <i>March 6 1970</i>
CHECKED <i>Keramati</i>	PASSED <i>H. E. ...</i>
DRAWN <i>R. P. Summer</i>	APPROVED <i>Richard H. ...</i>
CHECKED <i>Keramati</i>	



STRUCTURAL STEEL
AND DETAILS
F.A.I. RT. 55 SEC. 59-2HB-2
MACOUPIN COUNTY
STA. 414 + 00.00

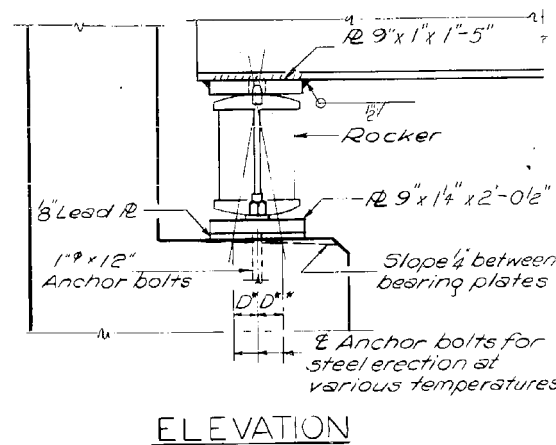
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USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		EXISTING PLANS, SN 059-0037 (FOR INFORMATION ONLY)		F.A.I. RTE. 55	SECTION (59-2, 68-1) BP	COUNTY * MACOUPIN, MONTGOMERY	TOTAL SHEETS 14	SHEET NO. 9
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -	SCALE:		SHEET OF SHEETS STA. TO STA.		CONTRACT NO. 72K77				
PLOT DATE = 5/28/2019	CHECKED -	REVISED -	ILLINOIS		FED. AID PROJECT						

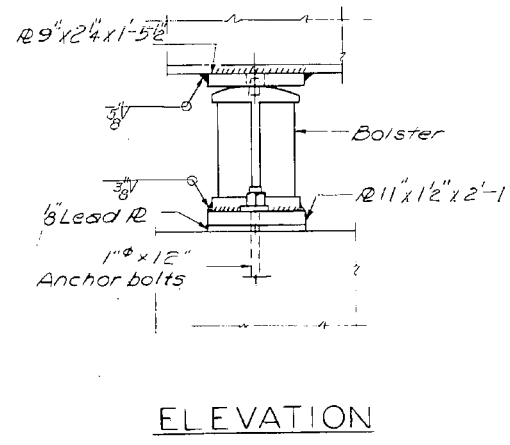
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	59-2HB-2	MACOUPIN	35	19
PER. ROAD DIST. NO. 7		ILLINOIS	PER. AIR PROJECT	

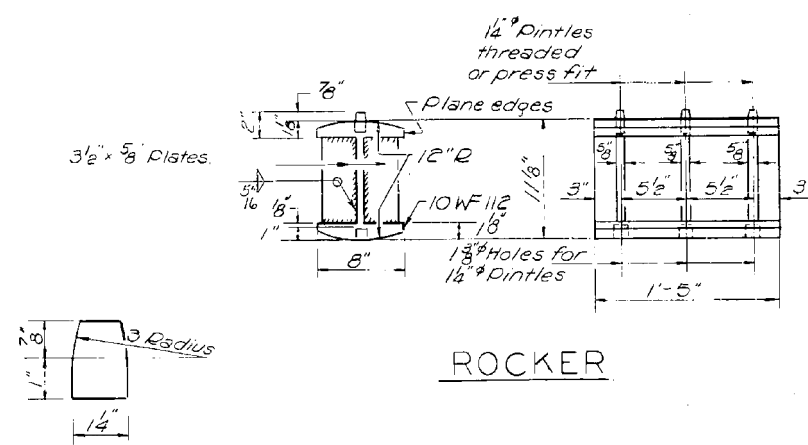
SHEET NO. 9
14 SHEETS



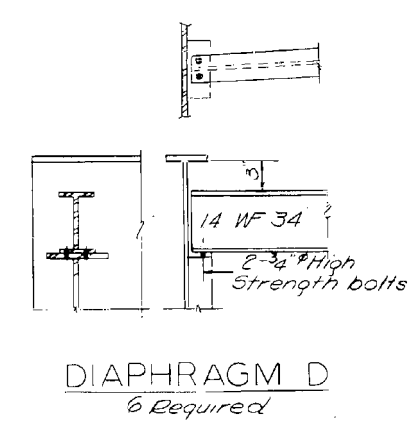
ELEVATION



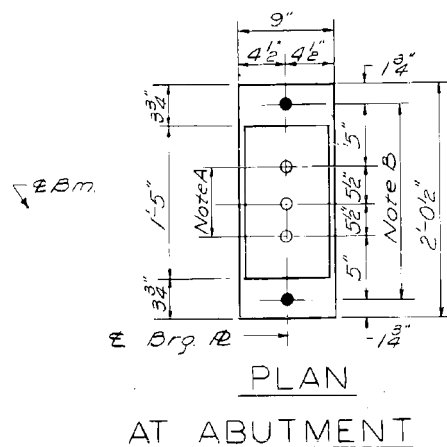
ELEVATION



PINTLE

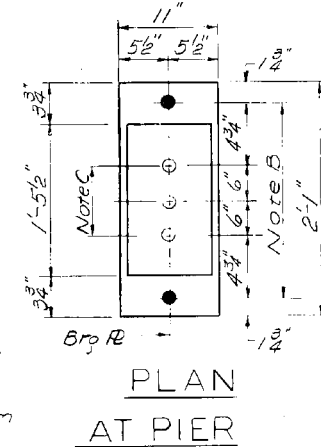


DIAPHRAGM D
6 Required



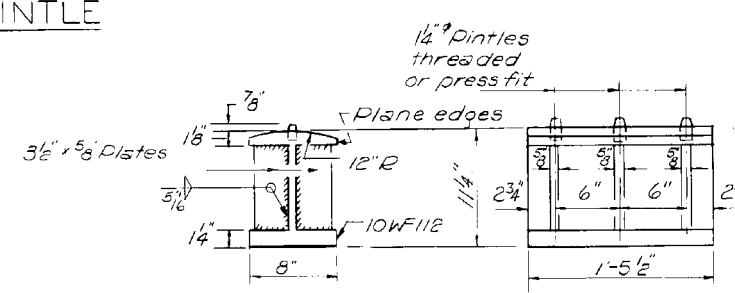
PLAN AT ABUTMENT

NOTE A
1 3/8" Holes 1" deep in top flange for pintles threaded or press fit pintles in bottom flange



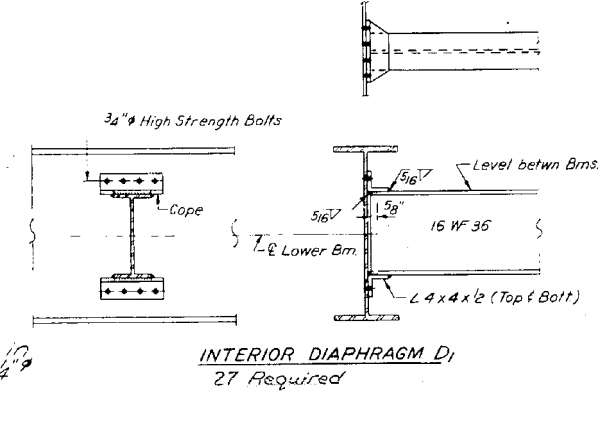
PLAN AT PIER

NOTE B
1 1/2" Holes for 1" anchor bolts 2 1/2" x 2 1/2" x 5/8" flange washers under nut



BOLSTER

NOTE C
1 3/8" Holes 1" deep in top flange only for 1/2" pintles



INTERIOR DIAPHRAGM D
27 Required

NOTES ON SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

a) D* (Side of brg. away from fixed brg.)
D* = 1/8" per each 100' of expansion for every 15° fall below the normal temperature of 50° F

D** (Side of brg. toward fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° rise above the normal temperature of 50° F

b) After beams have been erected and dimensions D* or D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

TOP OF WEB ELEVATIONS

	Bm. #1	Bm. #2	Bm. #3	Bm. #4
E Brg. W. Abut.	689.69	689.81	689.81	689.69
E Splice 1	690.03	690.15	690.15	690.03
E Brg. Pier	690.06	690.18	690.18	690.06
E Splice 2	690.10	690.22	690.22	690.10
E Brg. E. Abut.	689.95	690.07	690.07	689.95

TABLE OF MOMENT AND REACTION

Moments (Ft. - Kips)	Reactions (Kips)			
	Spans 1 & 2		Pier	Abut.
D.L.	+645	-1573	35.7	132
S.D.L.	285	-452.7	14.3	46.1
L.L.	715	-620	28.7	48.2
Imp.	158	-135.7	6.3	10.6
Total	1803	-2781.4	85	236.9

PROPERTIES

Steel Section @ .4 L	
I _s	19844. in ⁴
S _{ts}	681.5 in ³
S _{bs}	955.9 in ³
Composite Section	
I _c	49127. in ⁴
S _{tc}	4213. in ³
S _{bc}	1285. in ³

DESIGNED	C. Y. Kao
CHECKED	A. Krawinkel
DRAWN	C. E. Wilkins
CHECKED	A. Krawinkel

EXAMINED	March 6 1970
PASSED	Richard H. Holtzman
APPROVED	Richard H. Holtzman

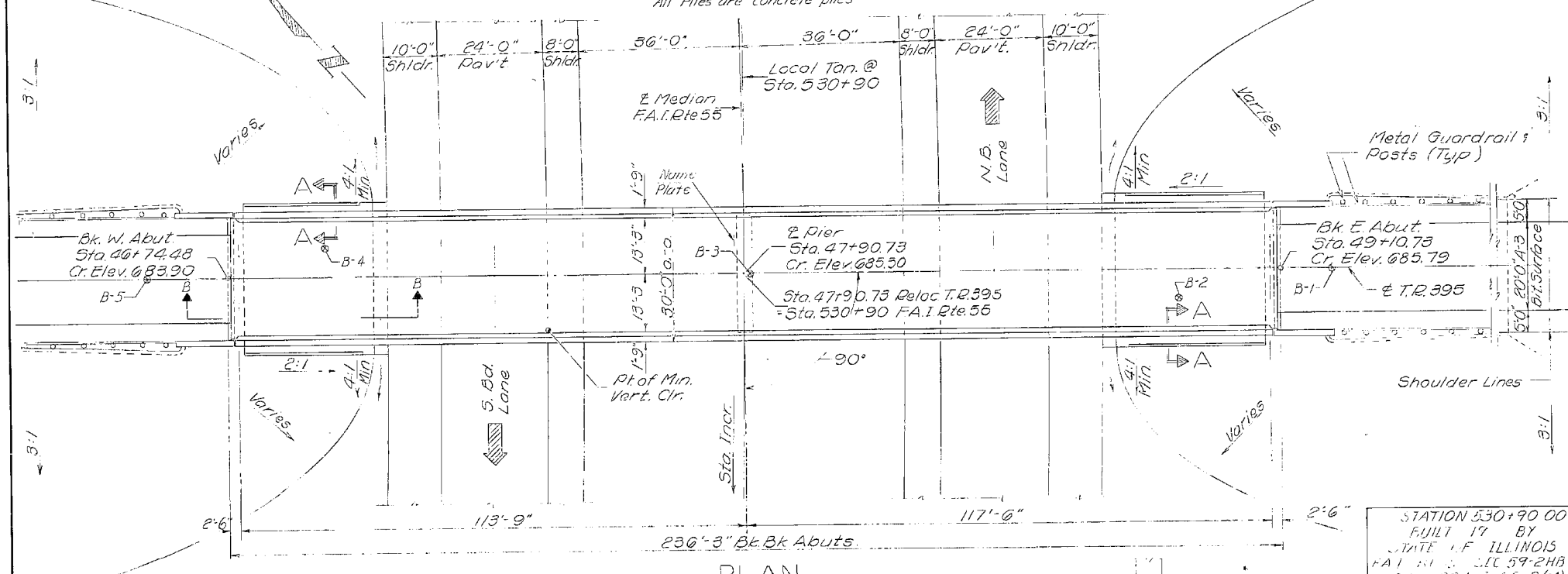
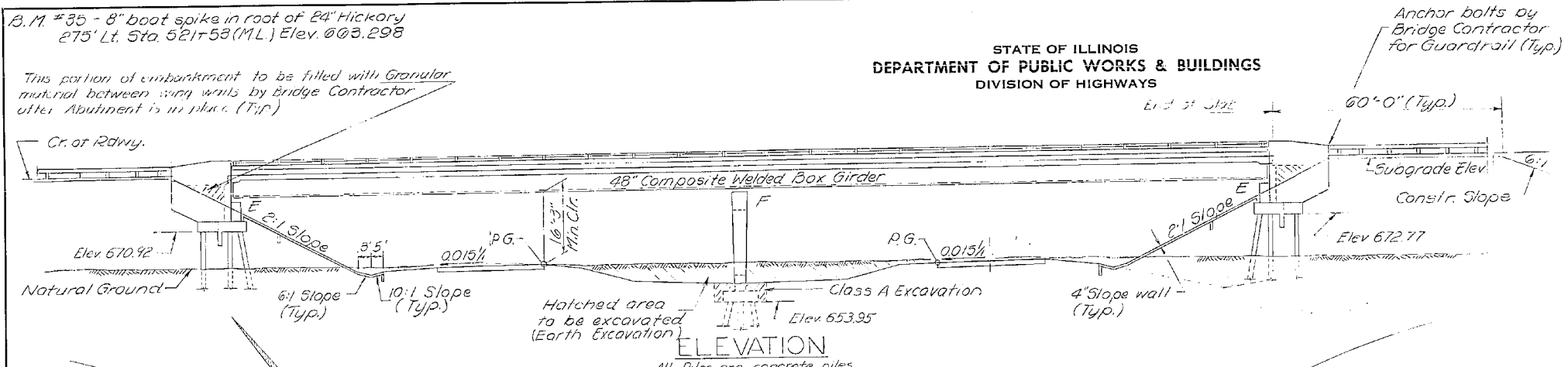
BEARING DETAIL
FAI RT. 55 SEC. 59-2HB-2
MACOUPIN COUNTY
STA. 414 +00

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	59-2HB-1	MACOUPIN	23	8
11 SHEETS				

GENERAL NOTES

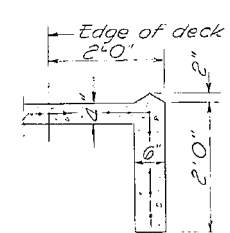
All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
Fasteners shall be bolted using high strength bolts. Bolts 3/8", open holes 1/2", unless otherwise noted.
The Basic Lead Silico Chromate paint system shall be used for shop and field painting of struct. steel.
Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor on 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.
Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58# per 100 sq.ft.
Class A Excavation for structures includes excavation for slope wall.
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.
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.
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 two concrete test piles in permanent location, one at E Abut and one at Pier, as directed by the Engineer before ordering the remainder of Piles.
The Contractor is cautioned to avoid excessive overdriving of the concrete piles since heavy driving is likely to be encountered and overdriving could result in damage to the piles.
All interior surfaces of box girders shall be given two shop coats of paint and spot paint in the field after erection is completed.



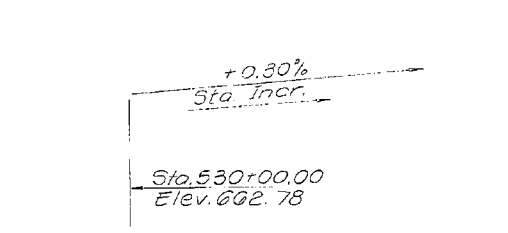
TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Class A Excavation for Structure	Cu Yds		60	60
Protective Coat	Sq Yds	885		885
Class X Concrete	Cu Yds	210.7	163.7	374.4
Structural Steel	Lump Sum	1		1
Stud Shear Connectors	Each	1560		1560
Aluminum Railings	Lin Ft	466		466
Reinforcement Bars	Lbs.	70,950	17,610	88,560
Concrete Fill	Lin Ft		1121	1121
Test Piles (Concrete)	Each		2	2
Name Plates	Each		1	1
Slope Wall (4')	Sq Yds			392

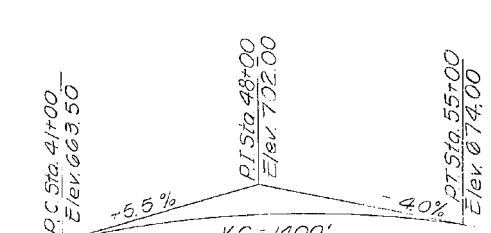
* Calculated Plan Wt. of Struct. Steel = 214,670 lbs.



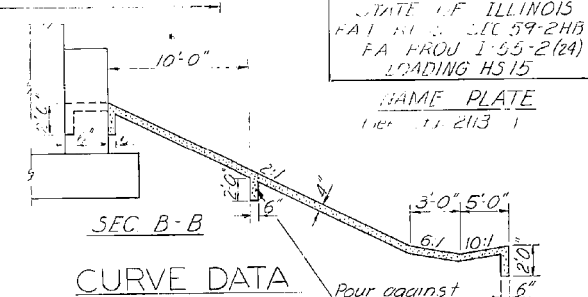
SEC. A-A



PROPOSED PROFILE FA.I. 55



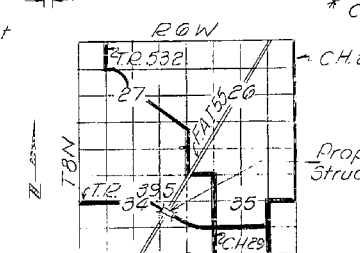
PROFILE RELOC. T.R. 395



CURVE DATA

FA.I. RTE 55
RT. Sta. 527+45.48
Δ=19°49'05"
D=0°24'00"
T=2502.20'
R=14323.95'
L=4954.51'
E=210.91'
PC=502+43.22
PT=551+97.73
S.E. Attain =
501+09.89 to 503+09.89
551+31.06 to 553+31.06
S.E. = 0.015%
Pour against undisturbed embankment

STATION 530+90.00
FILED BY
STATE OF ILLINOIS
F.A.I. SEC 59-2HB-1
FA PROJ 1-55-2(24)
LOADING HS 15
NAME PLATE
11-213-1



LOCATION PLAN

GENERAL PLAN & ELEVATION
PROJ. 1-55-2(24)45
F.A.I. RTE. 55 SEC 59-2HB-1
MACOUPIN COUNTY
STA 530+90.00

DESIGNED *Wei Hwang*
CHECKED *F. Mercado*
DRAWN *F. Mercado*
CHECKED *JH*

EXAMINED *Carl E. Thuman*
PASSED *W. B. Baumann*
APPROVED *Richard H. Holterman*

DESIGN STRESSES
fc = 1200 psi. Deck
fc = 1400 psi. Curb, Parapet & Sub.
fs = 20,000 psi. Reinforcement
fs = 20,000 psi. Structural
Kc = 75 psi. Footings
n = 10
Allow. 25' for future Wearing Surf.
LOADING HS 15-44

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 059-0038
(FOR INFORMATION ONLY)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(59-2, 68-1) BP		14	11
* MACOUPIN, MONTGOMERY			CONTRACT NO. 72K77	

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DATE: 5/28/2019

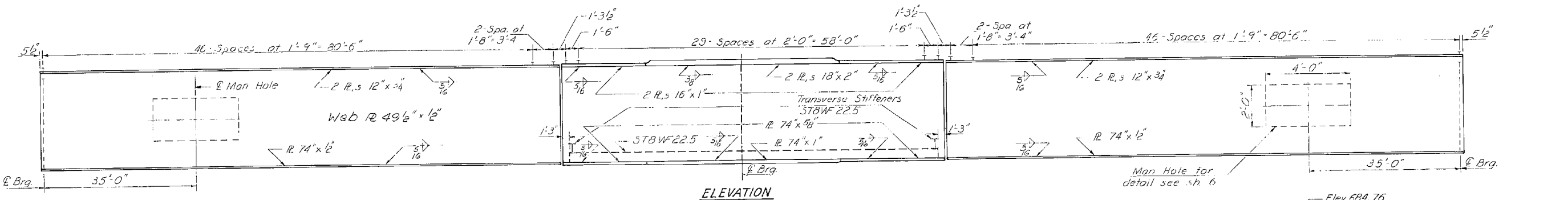
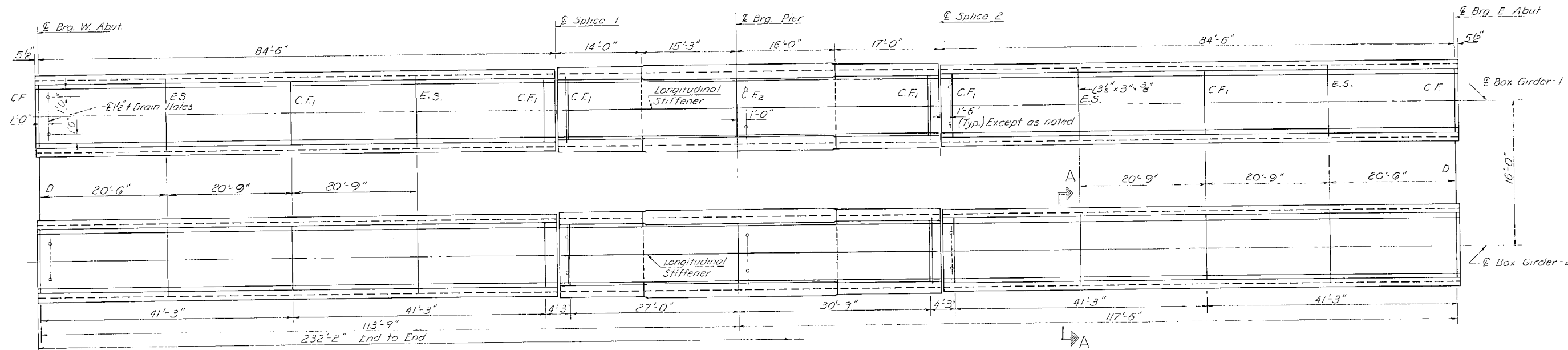
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	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 5/28/2019	DATE -	REVISED -

SCALE: SHEET OF SHEETS STA. TO STA.

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	59-2HB-1	MACOUPIN	23	12
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 5
11 SHEETS

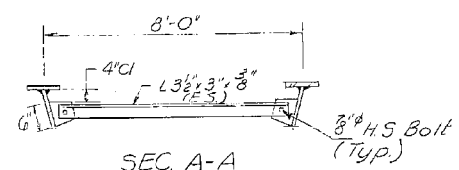
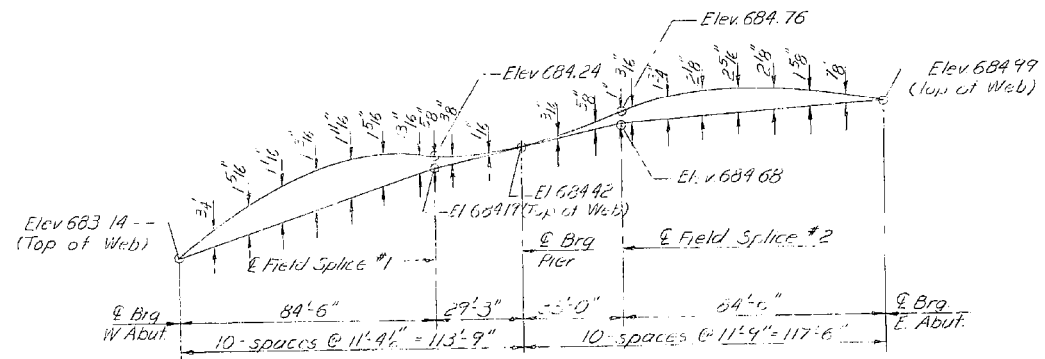


PROPERTIES

Steel Section @ .4 L	
Is	39944 in ⁴
Sts	1371 in ³
Sbs	1986 in ³
Composite Section	
Ic	100,051 in ⁴
Stc	8573 in ³
Sbc	2662 in ³

TABLE OF MOMENTS, SHEAR, & REACTIONS

DL	Moments (ft-kip)		Reaction (kips)		
	4 Spans	DL	Abut	Pier	Pier
	Steel Section				
	1549		-4927	108.8	382.4
	Composite Section				
S.D.L.	726	L.L.	-1179	44.9	81.4
L.L.	1263				
Imp.	265	Imp.	-248	9.4	17.0
Total	2254	Total	-6354	163.1	480.8
Shear (kips)					
	Abut	1/4	1/2	3/4	
S.D.L.	+324	+11.3	-9.9	-31	
L.L.	+540	+37.2	-31.4	-46.1	
Imp.	+115	+7.8	-6.6	-9.6	
Total	+979	+56.3	-47.9	-86.7	



DESIGNED *W. H. H.*
CHECKED *James Hamilton*
DRAWN *R. P. Summer*
CHECKED *JH*

EXAMINED *Richard H. Holteman*
PASSED *W. Baumann*
APPROVED *Richard H. Holteman*

STRUCTURAL STEEL
F.A.I. RT. 55 SEC. 59-2HB-1
MACOUPIN COUNTY
STA. 530+90.00

Rev. 1-21-70 W.H.

USER NAME = dudleybm	DESIGNED -	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -
PLOT DATE = 5/28/2019	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

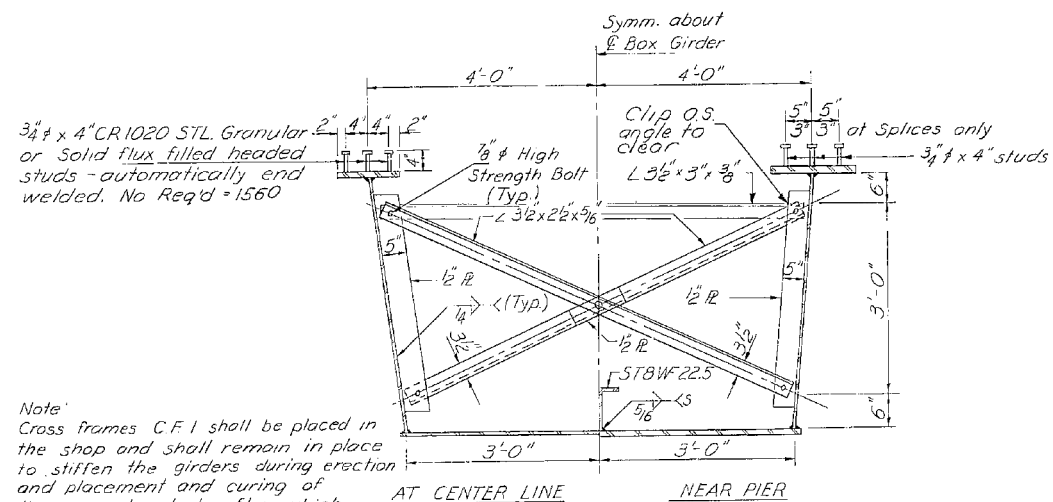
EXISTING PLANS, SN 059-0038
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(59-2, 68-1) BP	*	14	12
* MACOUPIN, MONTGOMERY		CONTRACT NO. 72K77		
ILLINOIS		FED. AID PROJECT		

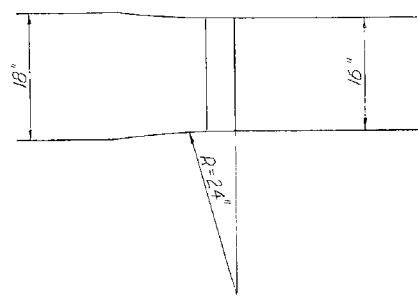
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STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

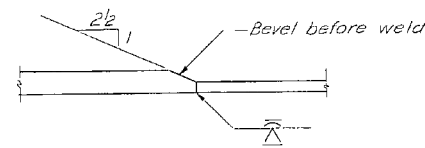


Note: Cross frames C.F. 1 shall be placed in the shop and shall remain in place to stiffen the girders during erection and placement and curing of the concrete deck, after which these cross frames along with the deck forms shall be removed and disposed of.

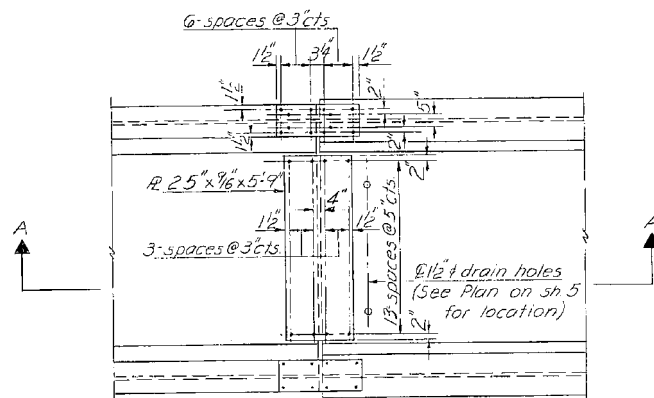
TYPICAL CROSS SECTION & C.F. 1



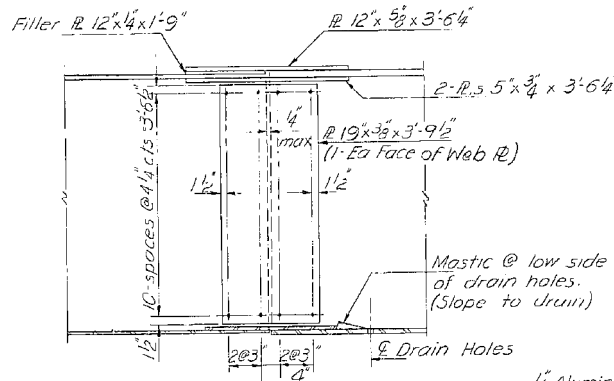
PLAN (For different R width only)



DETAIL OF SHOP FLANGE SPLICE

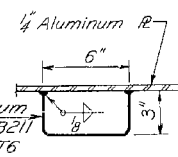


PLAN - FIELD SPLICE (Use 7/8" H.S. Bolts)



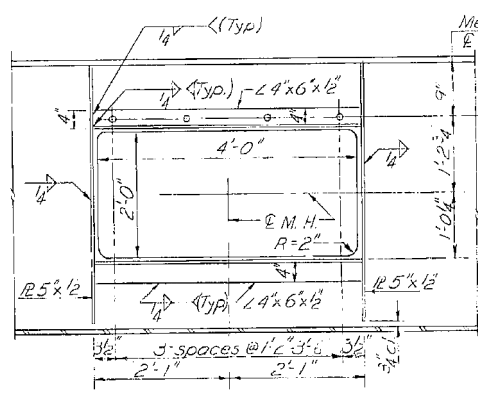
SECTION A-A

Mastic shall be placed in field after erection & painting.

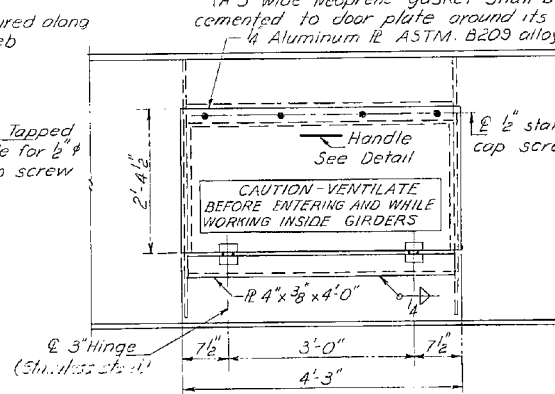


HANDLE DETAIL

(A 3" wide Neoprene gasket shall be cemented to door plate around its three edges) 1/4" Aluminum R ASTM B209 alloy 6061-T6 (Cost to be incidental)



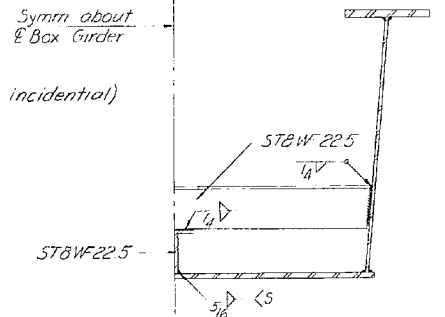
INSIDE VIEW



OUTSIDE VIEW

DETAIL OF MANHOLES

(Manholes shall be put in inside Web of each Box)



SEC. AT TRANSVERSE STIFFENER

STRUCTURAL STEEL DETAIL
F.A.I. RT. 55 SEC. 59-2HB-1
MACOUPIN COUNTY
STA. 530+90.00

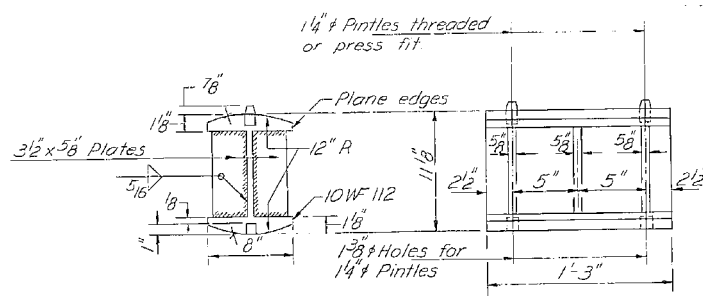
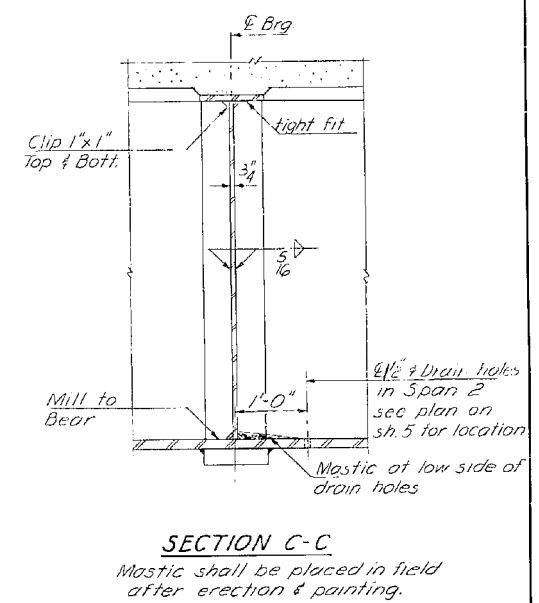
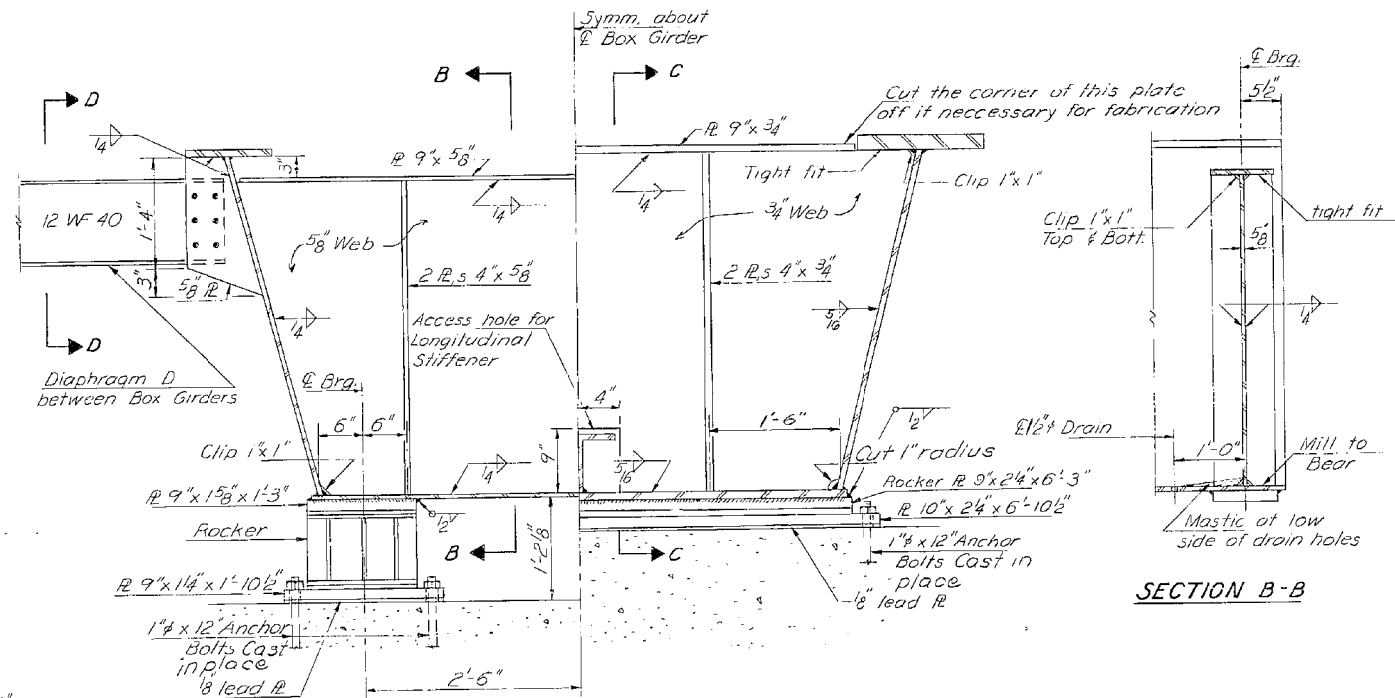
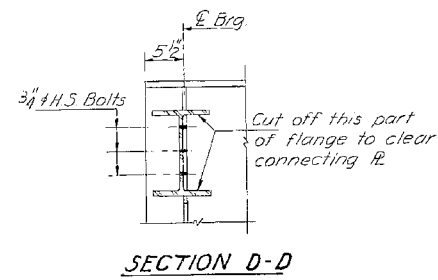
DESIGNED	W. Hsiang	EXAMINED	Richard H. Motterman
CHECKED	James Hamilton	PASSED	W. Baumann
DRAWN	R. P. Summer	APPROVED	Richard H. Motterman
CHECKED	JH		

Rev. 1-21-70 W.H.

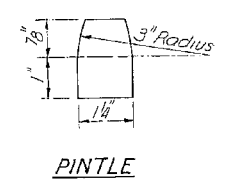
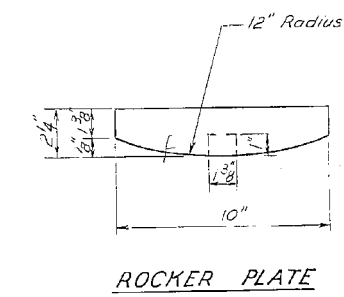
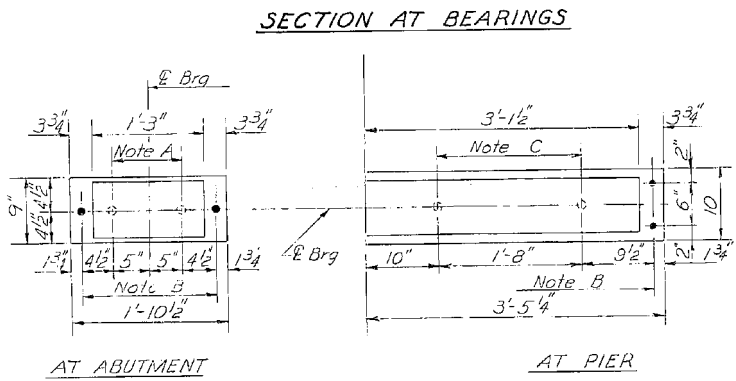
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USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		EXISTING PLANS, SN 059-0038 (FOR INFORMATION ONLY)		F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 100,0000' / in.	DRAWN -	REVISED -					55	(59-2, 68-1) BP	*	14	13
PLOT DATE = 5/28/2019	CHECKED -	REVISED -					* MACOUPIN, MONTGOMERY		CONTRACT NO. 72K77		
	DATE -	REVISED -					ILLINOIS		FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



AT ABUTMENT & C.F. AT PIER & C.F.2



NOTE A
1 3/8 inch Holes - 1 inch deep in top R for pintles. Thread or press fit pintles into bottom R.

NOTE B
1 1/2 inch Holes for 1 inch anchor bolts. 2 1/2 x 2 1/2 x 5/16 inch R washers under nut.

NOTE C
1 3/8 inch Holes 1 inch deep in Rocker R for 1/4 inch pintles. Thread or press fit pintles into bottom R.

DESIGNED <i>W. H. ...</i>	EXAMINED <i>W. E. ...</i>
CHECKED <i>James Hamilton</i>	PASSED <i>W. E. ...</i>
DRAWN <i>R. P. Summer</i>	APPROVED <i>Richard H. ...</i>
CHECKED <i>JH</i>	

BEARING DETAILS
F.A.I. RT. 55 SEC. 59-2HB-1
MACOUPIN COUNTY
STA. 530+90.00

MODEL: Default; FILE: \\nas01.cop.stateillinois.gov\projects\59-2HB-1\55_paint\Macoupin & Montgomery\plansheet.dgn

USER NAME = dudleybm	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		EXISTING PLANS, SN 059-0038 (FOR INFORMATION ONLY)		F.A.I. RTE. 55	SECTION (59-2, 68-1) BP	COUNTY *	TOTAL SHEETS 14	SHEET NO. 14
PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -					* MACOUPIN, MONTGOMERY		CONTRACT NO. 72K77		
PLOT DATE = 5/28/2019	CHECKED -	REVISED -					ILLINOIS		FED. AID PROJECT		
	DATE -	REVISED -			SCALE: SHEET OF SHEETS STA. TO STA.						