

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

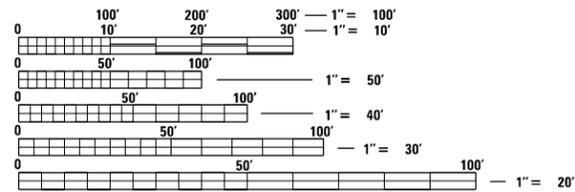
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(69-9) BP	MORGAN	7	1
		ILLINOIS	CONTRACT NO. 72M56	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROPOSED HIGHWAY PLANS

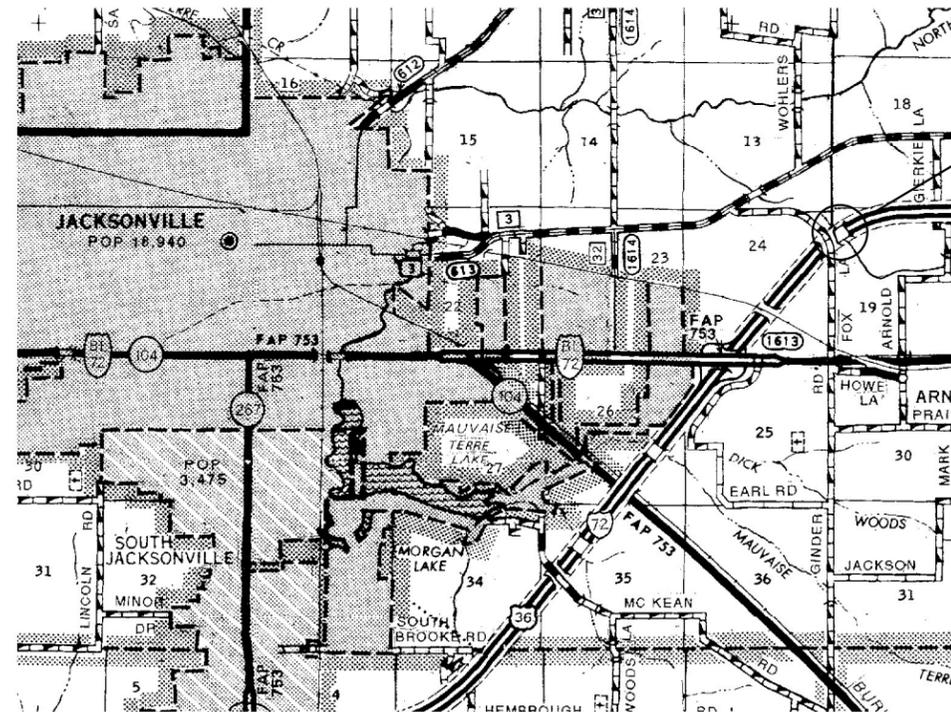
FAI ROUTE 72 (I-72)
SECTION (69-9) BP
PROJECT NHPP-WZLM(008)
BRIDGE PAINTING
MORGAN COUNTY

C-96-021-21



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 EXCAVATORS
1-800-892-0123
OR 811



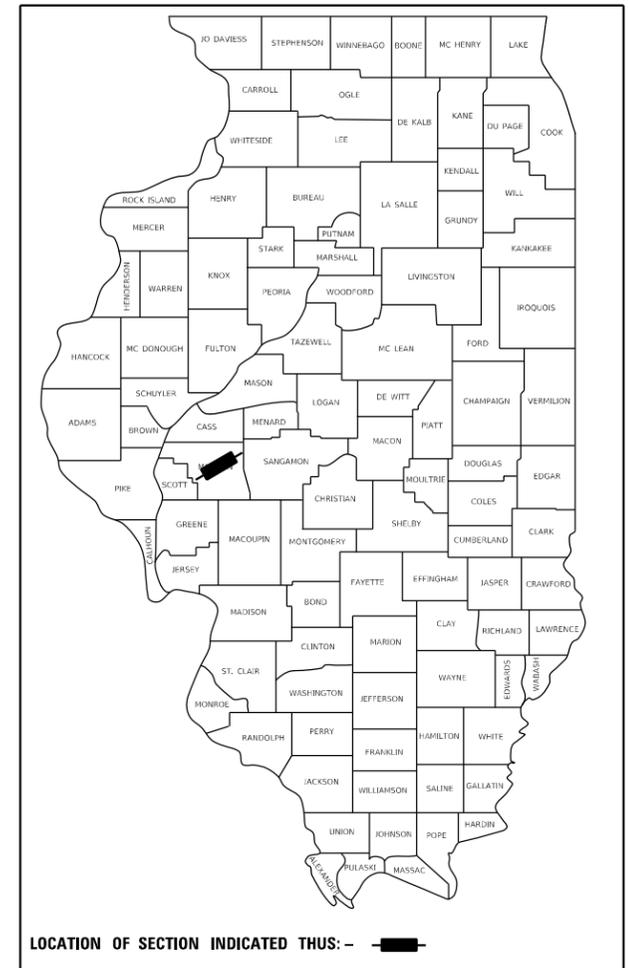
LOCATION #1 & #2
SN 069-0048 & 0049
I-72 OVER MAUVAISE TERRE CR.
1.1 MI E OF OLD US 36

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

GROSS LENGTH = 240 FT. = 0.05 MILE
NET LENGTH = 240 FT. = 0.05 MILE

CONTRACT NO. 72M56

D-96-008-21



LOCATION OF SECTION INDICATED THIS: - [black rectangle] -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED October 6, 2020

Jeff P. Meyer
REGIONAL ENGINEER

December 4, 2020
Scott A. Etkin
ENGINEER OF DESIGN AND ENVIRONMENT

December 4, 2020
James J. ...
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

INDEX OF SHEETS

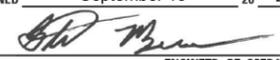
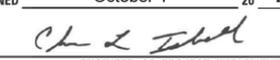
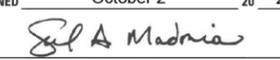
1	COVER SHEET
2	INDEX, STANDARDS, GENERAL NOTES, & SIGNATURES
3	SUMMARY OF QUANTITIES
EXISTING	BRIDGE PLANS (FOR INFORMATION ONLY)
4-7	LOCATION #1 & #2: SN 069-0048 & 0049

HIGHWAY STANDARDS

000001-07
001006
701101-05
701106-02
701400-09
701402-12
701901-08
704001-08
782006-01

GENERAL NOTES:

1. WORK SHALL CONSIST OF BLASTING AND PAINTING STRUCTURAL STEEL AT LOCATIONS DESCRIBED 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 COATS SHALL BE AS DESCRIBED IN THE SPECIAL PROVISIONS.
2. THE USE OF AIR MONITORS WILL BE REQUIRED AT LOCATIONS AS CALLED OUT IN THE SPECIAL PROVISIONS.
3. THE SSPC-QP-1 AND SSPC-QP2 PAINTING CONTRACTOR CERTIFICATIONS WILL BE REQUIRED.
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, 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	September 18 20 20
	 ENGINEER OF OPERATIONS
EXAMINED	October 1 20 20
	 ENGINEER OF PROJECT IMPLEMENTATION
EXAMINED	October 2 20 20
	 ENGINEER OF PROGRAM DEVELOPMENT

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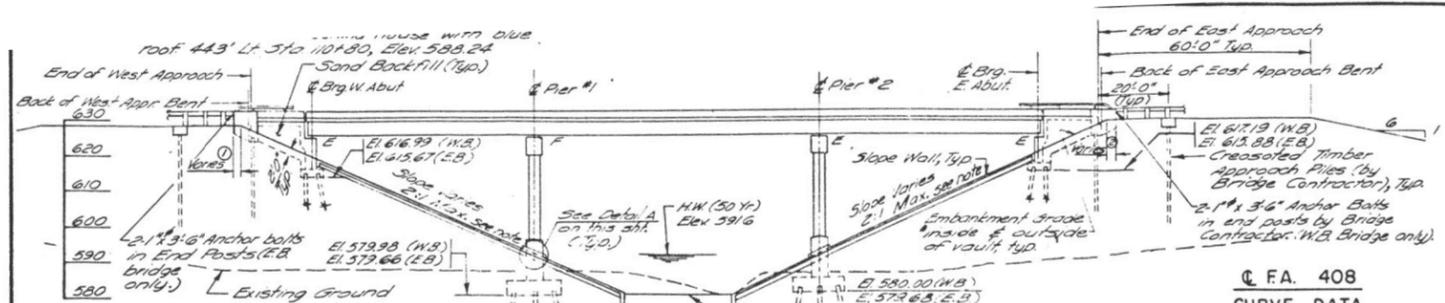
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	DRAWN -	REVISED -
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PLOT DATE = 10/6/2020	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**INDEX OF SHEETS, STANDARDS,
GENERAL NOTES, & SIGNATURES**

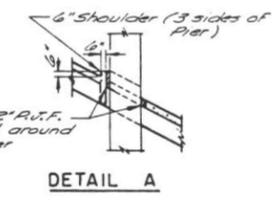
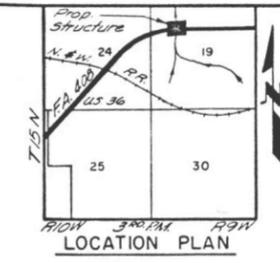
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(69-9) BP	MORGAN	7	2
			CONTRACT NO. 72M56	
		ILLINOIS FED. AID PROJECT		

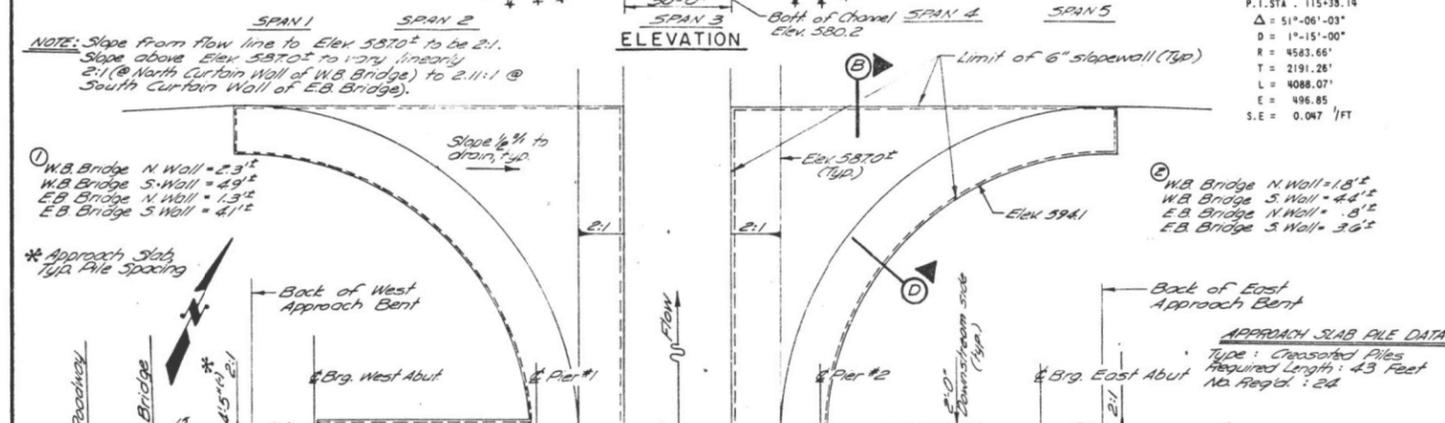


FA. 408
CURVE DATA

P.I. STA.	115+39.19
Δ	51°-06'-03"
D	1°-15'-00"
R	4583.66'
T	2191.28'
L	4088.07'
E	496.85'
S.E.	0.047 1/ft



- GENERAL NOTES**
- SPECIFICATIONS: THE STATE OF ILLINOIS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JANUARY 2, 1971 SHALL APPLY.
 - CONCRETE: CLASS X CONCRETE SHALL BE USED THROUGHOUT. 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.
 - ALL REINFORCEMENT BARS SHALL BE LAPPED 24 DIAMETERS UNLESS OTHERWISE SHOWN.
 - SLOPE WALL SHALL BE REINFORCED WITH WELDED WIRE FABRIC 6"x6" MESH WEIGHING 58# PER 100 SQ. FT.
 - All structural steel shall be ASTM A-368 unpainted except exp. jt. angles and attached bars which shall be ASTM A-36 and shop pointed two cools of basic lead oil chr. paint. CALCULATED WEIGHT OF STRUCTURAL STEEL: 386,480 LBS.
 - FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 3/4" OPEN HOLES 1/2" UNLESS OTHERWISE NOTED. SEE SPECIAL PROVISIONS.
 - SLOPE 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. SEE SPECIAL PROVISIONS.
 - ANCHOR BOLTS SHALL BE SET BEFORE BOLTING CROSS FRAMES OVER SUPPORTS.
 - PROTECTIVE COAT SHALL NOT BE APPLIED TO SURFACES TO WHICH WATERPROOFING MEMBRANE SYSTEM IS APPLIED.
 - TEST PILES - THE CONTRACTOR SHALL DRIVE ONE TEST PILE IN EACH ABUTMENT AND PIER IN THE PERMANENT POSITION SHOWN IN THE PLANS IN ACCORDANCE WITH ARTICLE 513.15 OF THE STANDARD SPECIFICATIONS BEFORE ORDERING THE REMAINDER OF PILES.
 - 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 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS.
 - THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ABUTMENTS.
 - FOR LIMITS AND QUANTITIES OF EXCAVATION FOR UNSUITABLE MATERIAL TO BE REPLACED WITH PRODUCE GRANULAR EMBANKMENT, SPECIAL SEE ROADWAY PLANS.



STATION 110+30
BUILT 197 BY
STATE OF ILLINOIS
FA. RT. 408 SEC. 69-9B
FA. PROJ. EBF:EBFG-408-2(22)
LOADING HS 20

NAME PLATE DATA
(See STA. 2113)

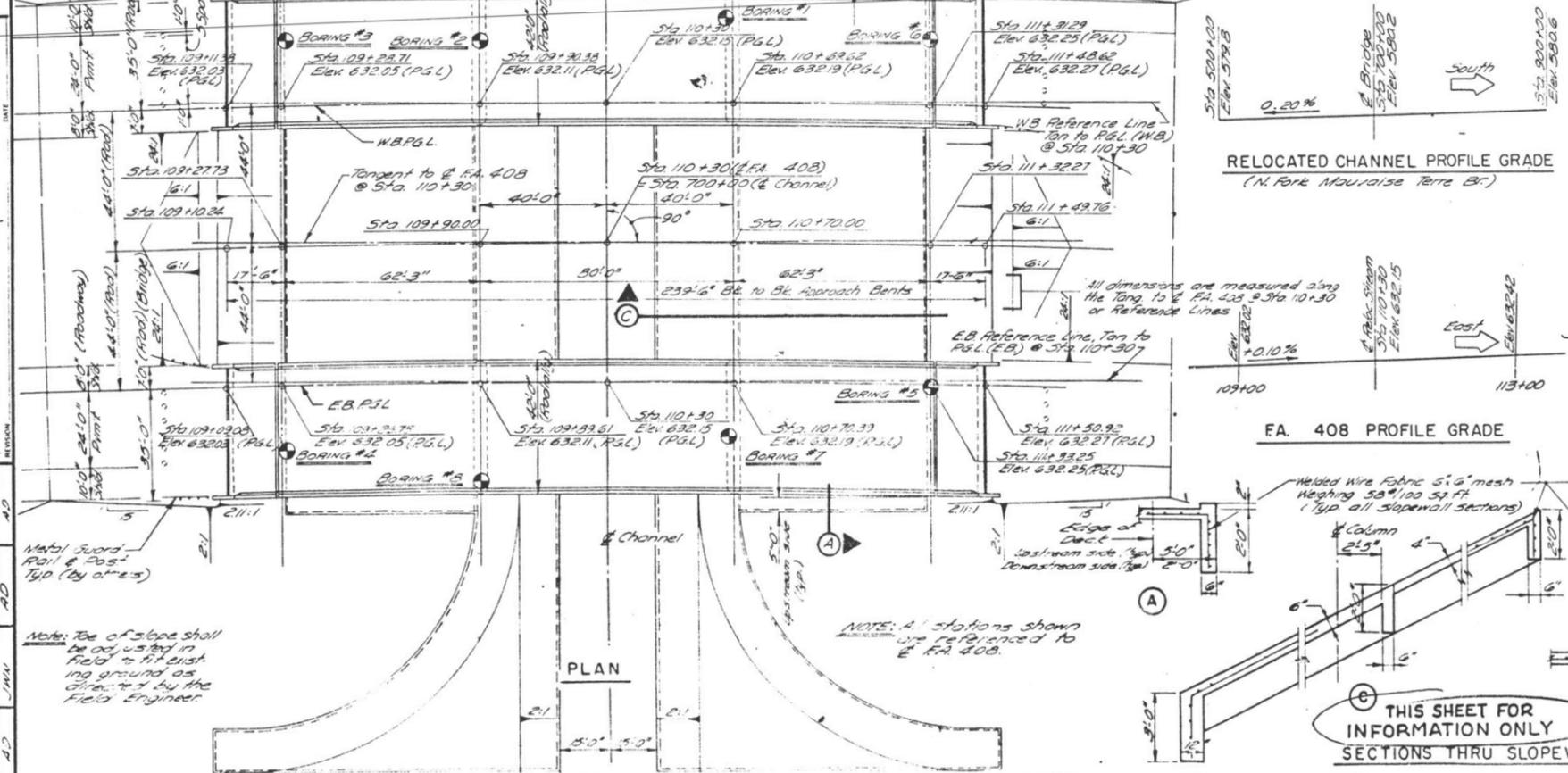
APPROACH SLAB PILE DATA
Type: Creosoted Piles
Required Length: 43 Feet
No. Req'd: 24

TOTAL BILL OF MATERIAL

Item	Unit	Super Struc.	Sub Struc.	Total
Structure Excavation	cu yds.		942	942
Class X Concrete	cu yds.	6497	11276	17773
Structural Steel	lump sum		1	1
Stud Shear Connectors 3/4" φ	each	4212		4212
Reinforcement Bars	lbs.	166660	114060	280720
Name Plates	each			2
Aluminum Rolling	lin. ft.	986		986
Slope Wall (6")	sq. yds.			4090
Slope Wall (4")	sq. yds.			2670
Protective Coat	sq. yds.	324	20	344
WATERPROOFING MEMBRANE SYSTEM	sq. yds.	2038		2038
Bit. Concrete Surface Course Class I	tons	178		178
Preformed Joint Sealer, 2 1/2"	lin. ft.	84		84
Neoprene Exp Joint (2")	lin. ft.	84		84
Furnishing Steel Piles (10 HP 42)	lin. ft.		6866	6866
Driving Steel Piles (10 HP 42)	lin. ft.		6866	6866
Test Pile Steel	each		8	8
Furnishing Creosoted Piles (Over 36")	lin. ft.	1032		1032
Driving Timber Piles	lin. ft.	1032		1032
Sand Backfill	cu. yds.		300	300

RELOCATED CHANNEL PROFILE GRADE
(N. Fork Mauvaise Terre Br.)

FA. 408 PROFILE GRADE



WATERWAY DATA:

CHANNEL AREA	12.1 SQ. FEET
CHANNEL VELOCITY	1.21 CFS
FLOOD FREQUENCY	50 YEARS
REQ'D. OPENING	600 SQ. FT.
PROP. OPENING	600 SQ. FT.
N.W. ELEV. (50 YRS)	591.6
L.W. ELEV.	581.2
ORDINARY FLOW ELEV.	582.2
DISCHARGE	1800 CFS
CREAT. NO.	374

① WORK TO BE DONE BY PAVING CONTRACTOR

- DESIGN NOTES**
- DESIGN LOADING: HS 20 AND ALLOWANCE FOR 25 P.S.F. FUTURE WEARING SURFACE.
 - DESIGN STRESSES:
 - f_c = 1,400 P.S.I. EXCEPT AS FOLLOWS:
 - f_c = 1,200 P.S.I. FOR DECK SLABS
 - f_c = 1,000 P.S.I. FOR CONC. IN CONTACT WITH EARTH
 - f_s = 27,000 P.S.I. - A-368 STRUCTURAL STEEL (WELDED)
 - f_s = 20,000 P.S.I. - REINFORCEMENT STEEL
 - f_s = 75 P.S.I. - ALLOWABLE STEEL IN FOOTING
 - ALLOWABLE LIVE LOAD DEFLECTION = 1/2000 (COMPOSITE)
 - DESIGN SPECIFICATIONS: AASHTO 1994 AS APPLICABLE.

GENERAL PLAN AND ELEVATION
FA. 408 OVER N. FORK MAUVAISE TERRE BR.
FA. 408 MORGAN CO.
SECTION 69-9B
STATION 110+30

THIS SHEET FOR INFORMATION ONLY
SECTIONS THRU SLOPEWALL

CLARK, DITZ AND ASSOCIATES - ENGINEERS, INC. Sheet No. 1 of 22

Rev. General Note No. 5 7-29-73 J.D.

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/6/2020	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 069-0048 & 0049
(FOR INFORMATION ONLY)

SCALE: SHEET 1 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(69-9) BP	MORGAN	7	4
CONTRACT NO. 72M56			ILLINOIS FED. AID PROJECT	

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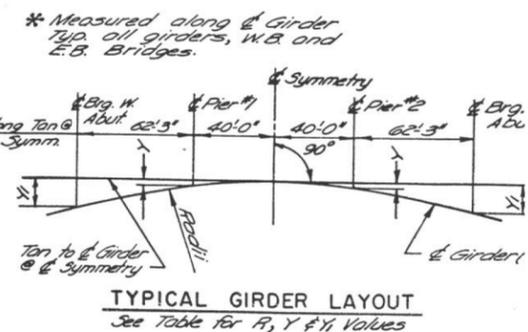
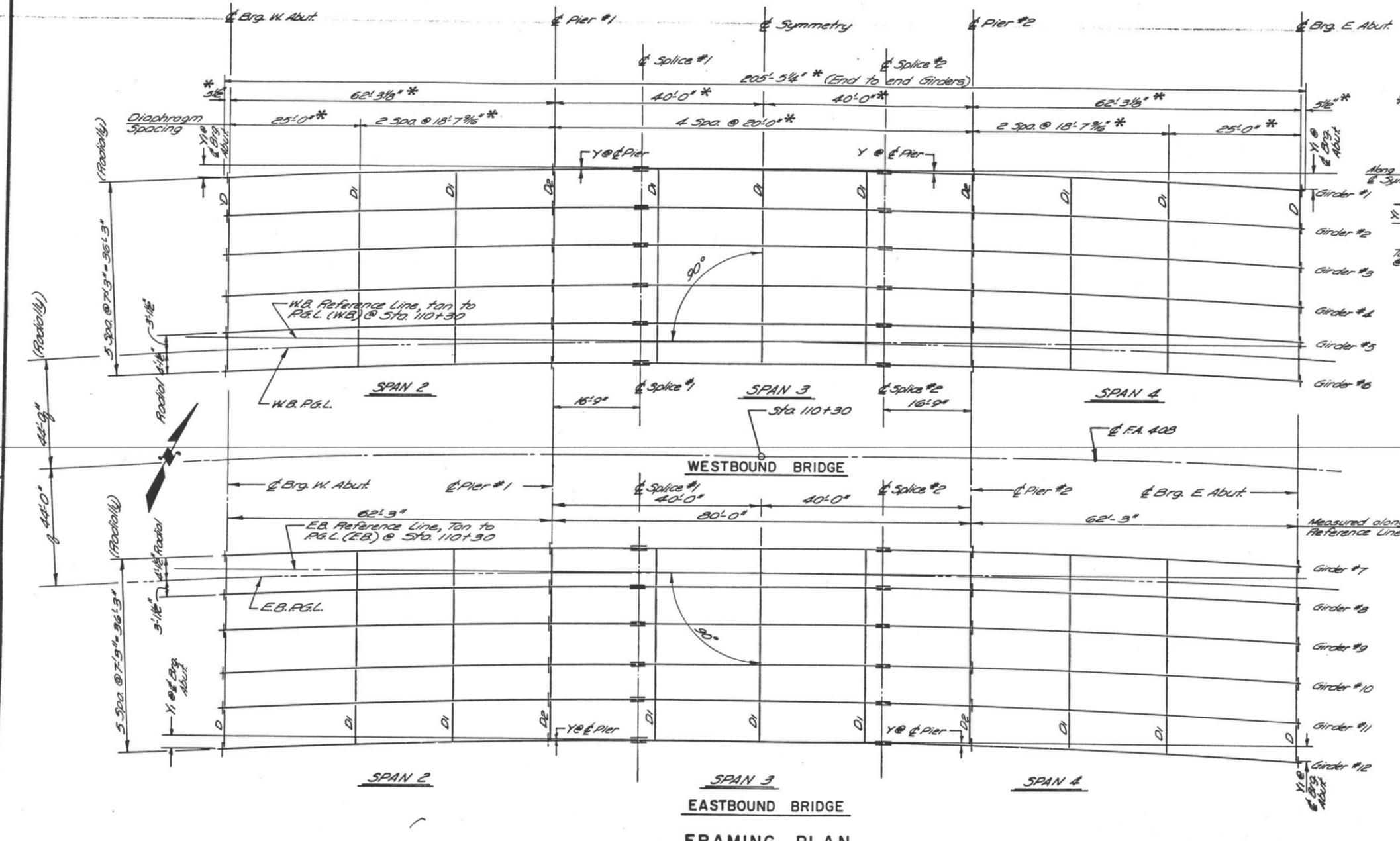


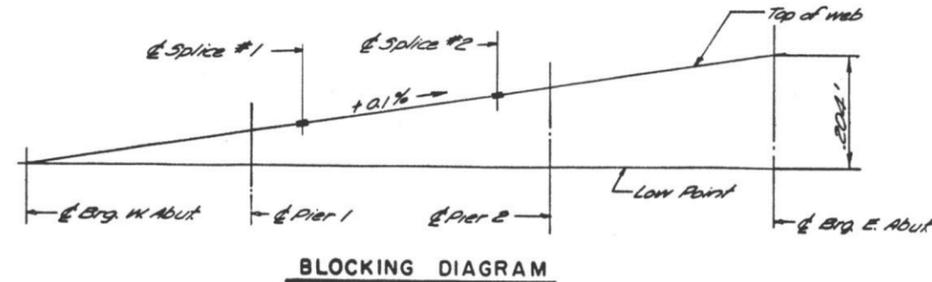
TABLE OF GIRDER GEOMETRY

Girder No	Radii (Feet)	Offsets, see Layout Above	
		Y (Feet)	Y1 (Feet)
1	4659.789	.171	1.122
2	4652.539	.171	1.124
3	4645.289	.172	1.125
4	4638.039	.172	1.127
5	4630.789	.173	1.129
6	4623.539	.173	1.131
7	4543.789	.176	1.151
8	4536.539	.176	1.152
9	4529.289	.177	1.154
10	4522.039	.177	1.156
11	4514.789	.177	1.158
12	4507.539	.177	1.160

TOP OF WEB ELEVATIONS **

Girder Location	Westbound Bridge						Eastbound Bridge					
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12
@ Brg. W. Abut.	632.621	632.280	631.939	631.599	631.258	630.917	631.303	630.962	630.621	630.280	629.939	629.598
@ Brg. Pier #1	632.683	632.342	632.001	631.661	631.320	630.979	631.365	631.024	630.683	630.342	630.001	629.660
@ Splice #1	632.700	632.359	632.018	631.678	631.337	630.996	631.382	631.041	630.700	630.359	630.018	629.677
@ Splice #2	632.747	632.406	632.065	631.725	631.384	631.043	631.429	631.088	630.747	630.406	630.065	629.724
@ Brg. Pier #2	632.764	632.423	632.082	631.742	631.401	631.060	631.446	631.105	630.764	630.423	630.082	629.741
@ Brg. E. Abut.	632.825	632.484	632.143	631.803	631.462	631.121	631.507	631.166	630.825	630.484	630.143	629.802

** For Fabrication only (Undeformed Girder)



For Girder, Diaphragm and Splice details, see Sheet 10.
For Bearing Details, see Sheet 11.

STRUCTURAL STEEL FRAMING PLAN
FA. 408 OVER N. FORK MAUVAISE TERRE E
FA. 408 MORGAN CO.
SECTION 69-9B

DESIGNED BY	AD	CHECKED BY DATE	AD	IN CHARGE	AD
DRAWN BY	JWH	CHECKED BY DATE	AD	REVISION	AD
DATE	10/16/2020	DATE		DATE	

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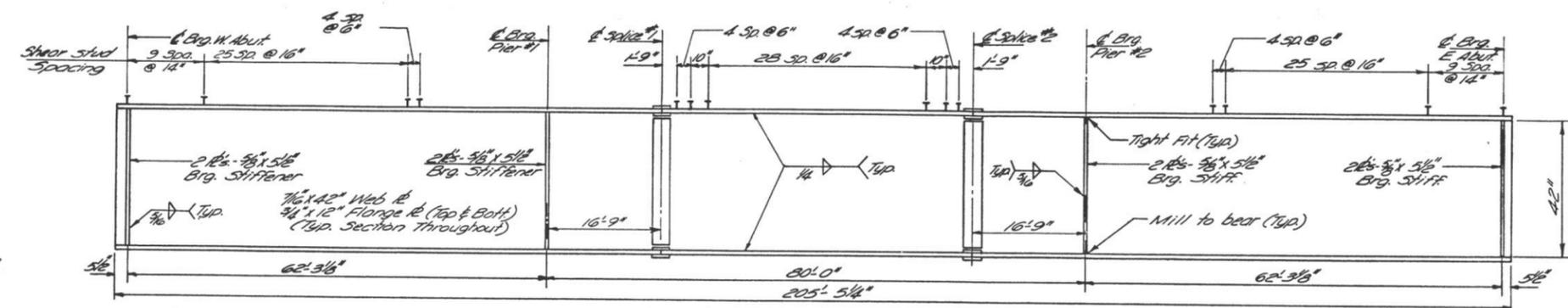
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	DRAWN -	REVISION -
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PLOT DATE = 10/16/2020	DATE -	REVISION -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

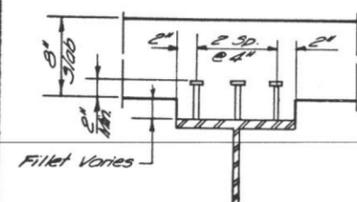
EXISTING BRIDGE PLANS, SN 069-0048 & 0049
(FOR INFORMATION ONLY)
SCALE: SHEET 2 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(69-9) BP	MORGAN	7	5
CONTRACT NO. 72M56				
ILLINOIS FED. AID PROJECT				

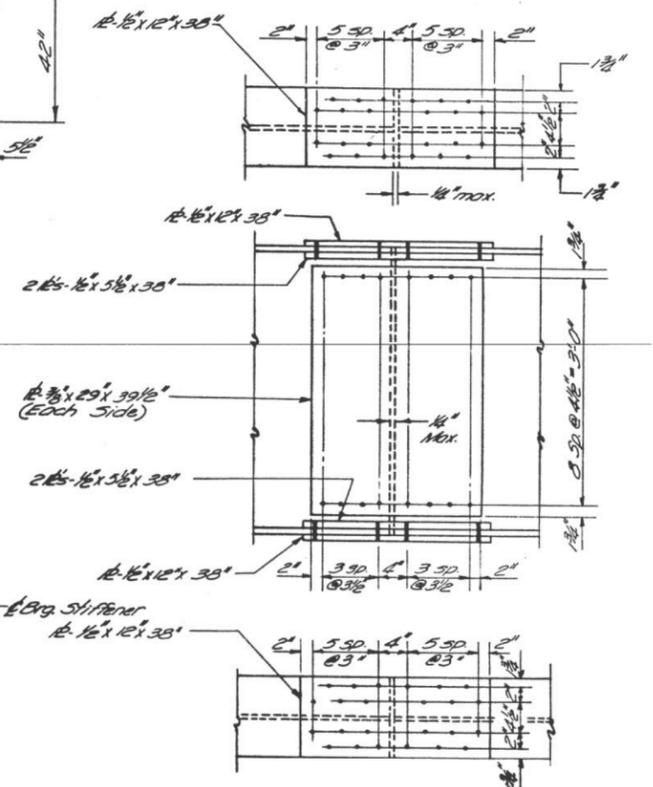
NOTE: All structural steel to be in accordance with A.S.T.M. - A-588 Specifications. (See Special Provision)



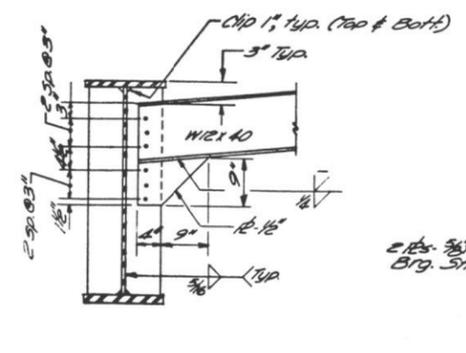
GIRDER ELEVATION
(All dimensions are along @ Girder)
(Diaphragms not shown, see Framing Plan on Sht. 9 for spacing)



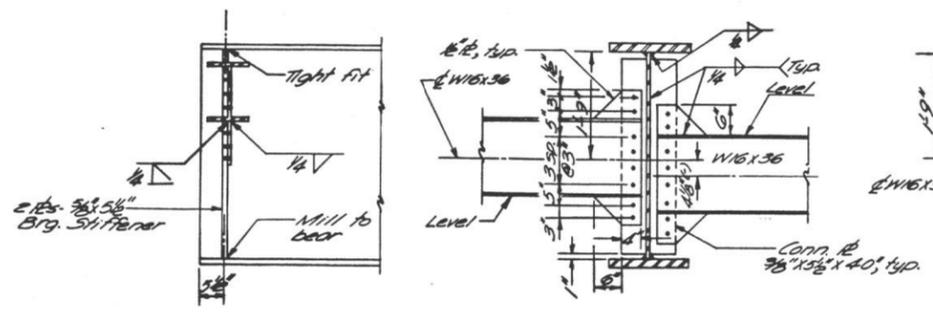
SHEAR CONNECTOR DETAILS



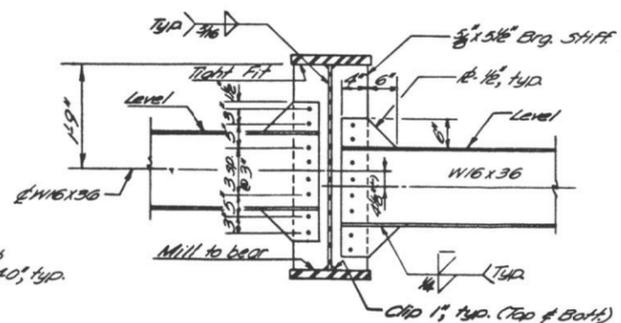
SPLICE DETAILS
(All bolts are 1\"/>



DIAPHRAGM "D"



DIAPHRAGM "D1"



DIAPHRAGM "D2"

For Framing Plan, see Sht. 9.
For Bearing Details, see Sht. 11.

STRUCTURAL STEEL DETAILS
FA. 408 OVER N. FORK MAUVAISE TERRE
FA. 408 MORGAN CO.
SECTION 69-9B

DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE
IN CHARGE	DATE
REVISION	REVISION
AD	AD

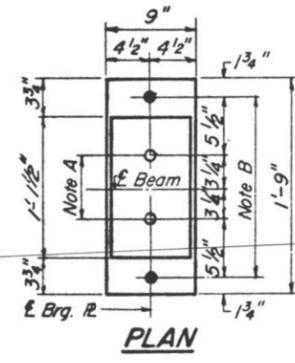
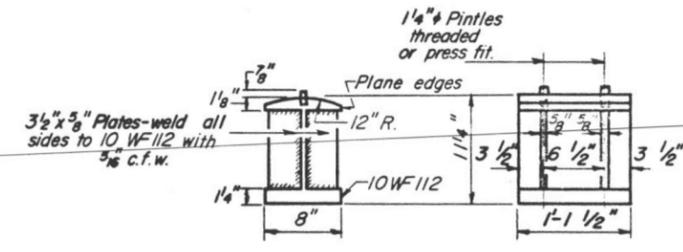
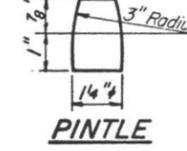
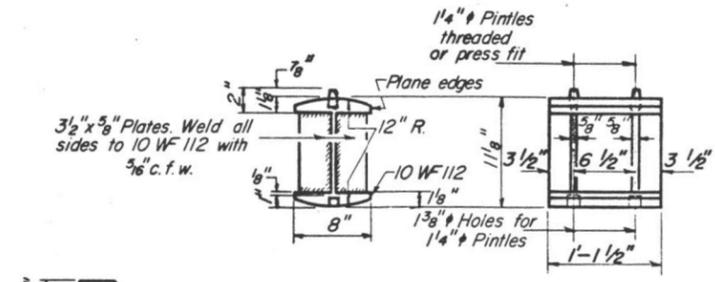
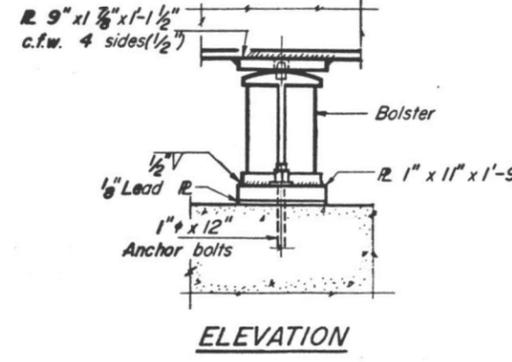
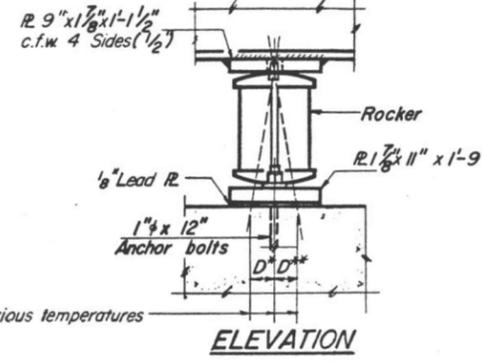
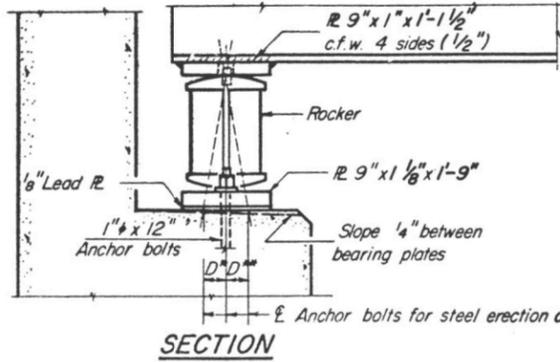
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 069-0048 & 0049
(FOR INFORMATION ONLY)
SCALE: SHEET 3 OF 4 SHEETS STA. TO STA.

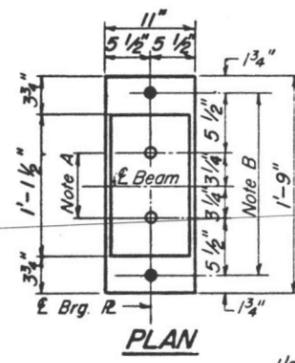
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(69-9) BP	MORGAN	7	6
			CONTRACT NO. 72M56	
ILLINOIS FED. AID PROJECT				

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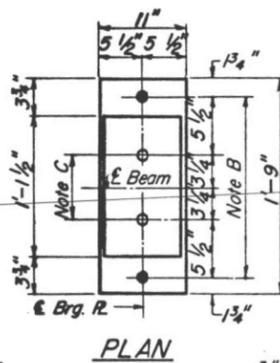
PLAN AT ABUTMENT

NOTES: For Shim Plates Requirements at each Bearing see General Note 12 on sheet No. 1. All Bearing material to be in accordance with A-588 Specifications.



PLAN AT PIER 2

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



PLAN AT PIER 1

NOTE B: 1 1/2 inch diameter holes for 1 inch diameter anchor bolts. 2 1/2 x 2 1/2 x 5 1/8 inch radius washers under nut.

NOTE C: 1 3/8 inch diameter holes 1 inch deep in top R only for 1 1/4 inch diameter pintles.

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.

BEARING ASSEMBLY DETAILS

REACTION TABLE

	Abut.	Pier
R @ k	20.2	70.3
Rc @ k	10.1	31.9
R @ k	39.4	51.3
I @ k	10.6	13.3
Rl @ k	80.3	166.8

MOMENT & SHEAR TABLE (COMPOSITE IN POSITIVE MOMENT AREA ONLY)

	.4 L2 or L4	.5 L3	Pier
I _s (in ⁴)	10927	10927	10927
S _s (in ³)	502.4	502.4	502.4
Q (K/m)	.89	.89	.89
M _s @ (K)	228.7	250.9	457.2
f _s @ (ksi)	5.46	5.99	10.92
I _c n=10	27760	27760	
Sc n=10	712.0	712.0	
I _c n=30	20,812	20,812	
Sc n=30	651.0	651.0	
M _c @	123.4	159.9	168.1
f _s S @ (ksi)	2.27	2.95	4.02
M _u + I	607.9	682.3	377.7
f _s @ + I	10.25	11.50	9.02
f _s total (ksi)	17.98	20.44	23.96
V _r	45.5		

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. V_r is the maximum 1/2 + impact shear range in span used to determine shear connector spacing.

For Framing Plan, see Sht. 9. For Girder Details, see Sht. 10.

BEARINGS
F.A. 408 OVER N FORK MALVAISE TERRE BR.
F.A. 408 MORGAN CO.
SECTION 69-9B
STATION 110 + 30

MODEL: D:\dudley\... FILE NAME: C:\OPERATIONS\bridge\bridgeplans_CAD\72M56_0690018_0049_painting\brnsect.dgn

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 10/6/2020	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 069-0048 & 0049
(FOR INFORMATION ONLY)

SCALE: SHEET 4 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(69-9) BP	MORGAN	7	7
CONTRACT NO. 72M56				
ILLINOIS FED. AID PROJECT				