

064

01-18-2019 LETTING ITEM 064

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FAI ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(68-4) BP	MONTGOMERY	16	1
		ILLINOIS	CONTRACT NO. 72K72	

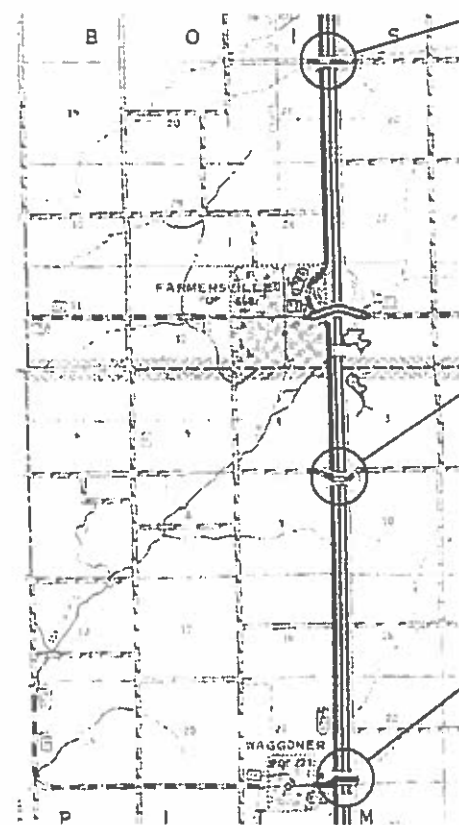
D-96-058-18

FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROPOSED BRIDGE PAINTING

FAI ROUTE 55 (I-55)
SECTION (68-4) BP
PROJECT NHPP-4Q94(355)
BRIDGE PAINTING
MONTGOMERY COUNTY

C-96-106-18



LOCATION #1
SN 068-0036
TR 17 OVER I-55 & 55 WFR
3 MI S OF SANGAMON CO.

LOCATION #2
SN 068-0040
TR 37 OVER I-55 & 55 WFR
1.5 MI S OF FARMERSVILLE INT.

LOCATION #3
SN 068-0041
CH 16 OVER OVER I-55 & 55 WFR
EAST EDGE OF WAGGONER



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

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

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 10 October 2018

[Signature] REGIONAL ENGINEER

Dec 7 2018

[Signature] ENGINEER OF DESIGN AND ENVIRONMENT

Dec 7 2018

[Signature] DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

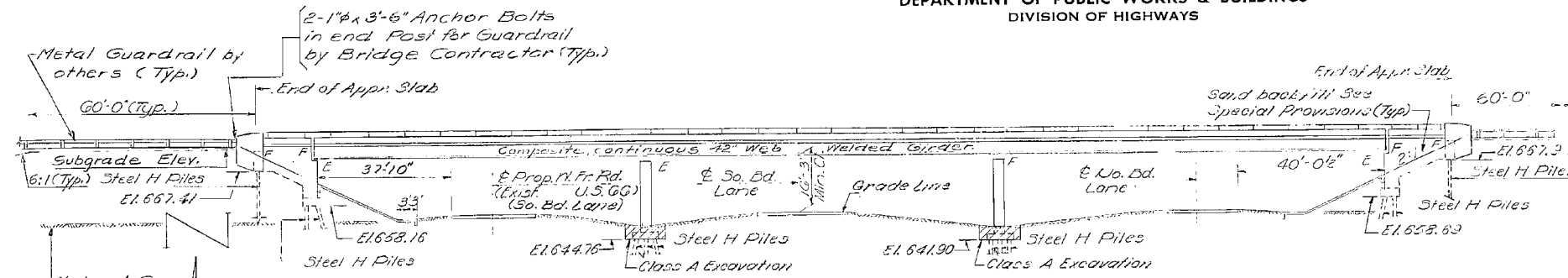
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OF THE STATE OF ILLINOIS

CONTRACT NO. 72K72

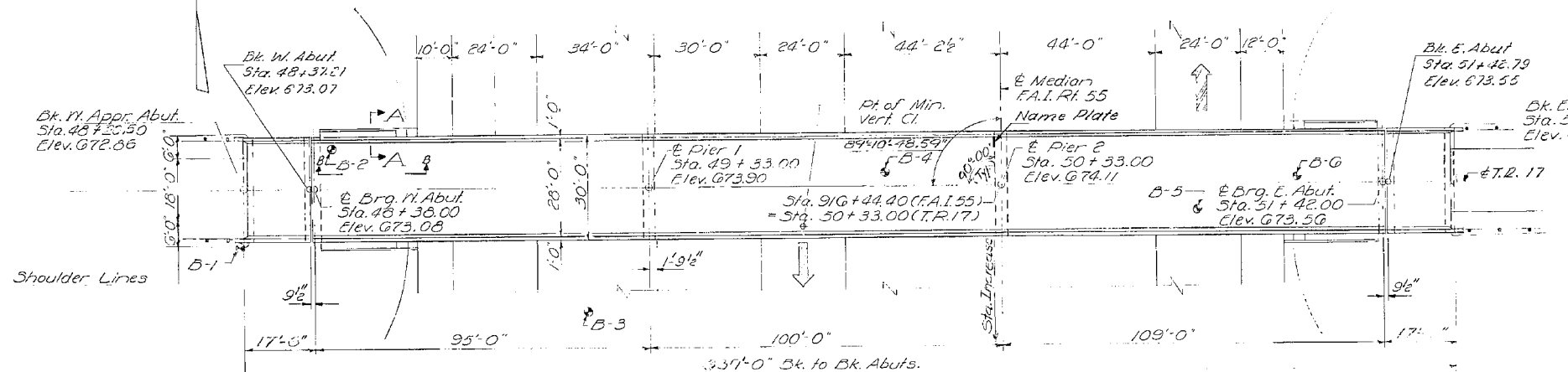
B.M. #12 a Cut on West Headwall
Sta. 913+70 Elev. 643.14

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
F.A.I. 55	68-5HB-1	Montgomery	31	8	13 SHEETS
FED. ROAD DIST. NO. 7	ILL. PROJ. 1-55-2(30)	FED. AID PROJECT			



ELEVATION



PLAN

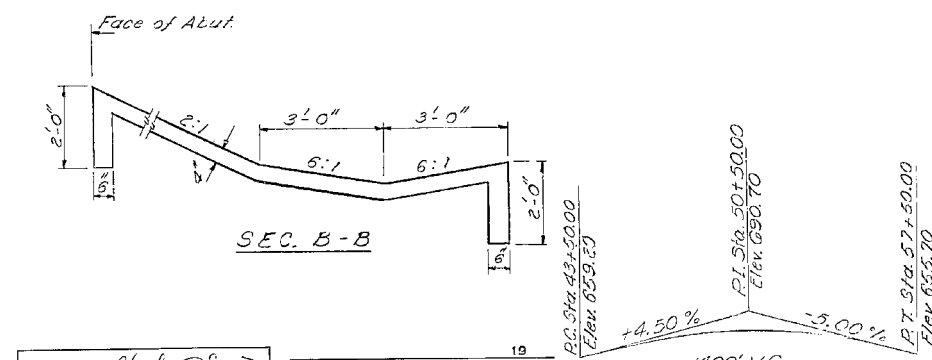
GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
Fasteners shall be high strength bolts. Bolts 3/4" dia. holes 1/8" dia. unless otherwise noted.
Calculated weight of Structural Steel - 290,600 Lbs.
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 bms 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 lb per 100 sq. ft.
The Contractor shall drive 2 steel (10BP42) test piles in permanent locations at Pier 1 & East Abutment as directed by the Engineer.
The concrete rail section above the mandatory const. joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Mandrail Concrete.
Class A Excavation for structures include excavation for slope wall.
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

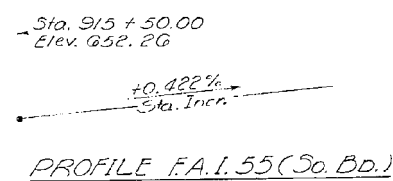
TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Sand Backfill	Cu. Yd.		122	122
Class A Excavation for Structures	Cu. Yd.		120	120
Protective Coat	Sq. Yd.	1250		1250
Class X Concrete	Cu. Yd.	317.3	203.9	521.2
Structural Steel	L.S.	1		1
Stud Shear Connectors	Ea.	1164		1164
Aluminum Railing	Lin. Ft.		668	668
Reinforcement Bars	Lbs.	82950	28770	111720
Steel Piles (10BP42)	Lin. Ft.		1535	1535
Test Piles Steel (10BP42)	Ea.		2	2
Name Plates	Ea.		1	1
Slope Wall (4')	Sq. Yd.		290	290
* Bridge Seat Sealant	L.S.		1	1

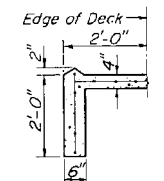
* At Abutments



SEC. B-B



PROFILE F.A.I. 55 (So. Bd.)

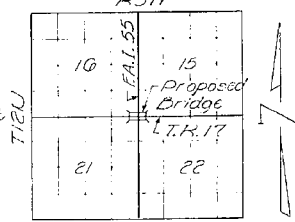


SECTION A-A

DESIGN STRESSES

$f_c = 1200$ p.s.i. (Deck Slab)
 $f_c = 1400$ p.s.i. (Sub. For. & Cur. L. & Appr. Slab)
 $f_s = 20000$ p.s.i. (Rein. F.)
 $f_s = 20000$ p.s.i. (Struct.)
 $v_c = 25$ p.s.i. (Figs.)
 $n = 10$
Allow. 25' in. for future P.S.
 $L/A = 4/11000$ Composite

LOADING HS15-44



LOCATION SKETCH

GENERAL PLAN & ELEVATION
PROJ. 1-55-2(30) 73
TR. 17 OVER F.A.I. RT. 55
F.A.I. RT. 55 SEC. 68-5HB-1
MONTGOMERY COUNTY
STA. 916+44.59 (F.A.I. 55)

DESIGNED	Checked: P. Sined	EXAMINED	
CHECKED	CHEW, T. A. I. F. A.	PASSED	W. E. Bunn
DRAWN	J. Kessler	APPROVED	Richard H. Hollerman
CHECKED	CHEW, T. A. I. F. A.		

1400' V.C.
PROFILE T.R. 17

STATION 916+44.59
BUILT BY
STATE OF ILLINOIS
F.A.I. RT. 55 SEC. 68-5HB-1
F.A. PROJ. 1-55-2(30)
LOADING HS15-44

NAME PLATE
(See Std. 2113-1)

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	DRAWN -	REVISED -
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PLOT DATE = 10/5/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

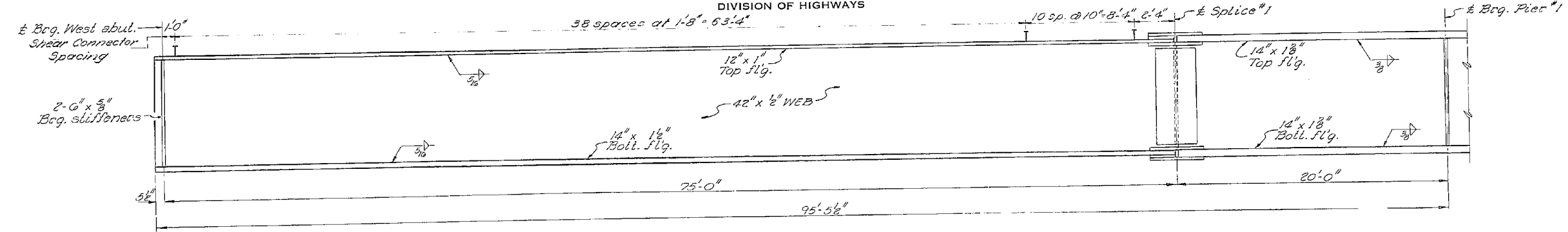
EXISTING PLANS, SN 068-0036
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

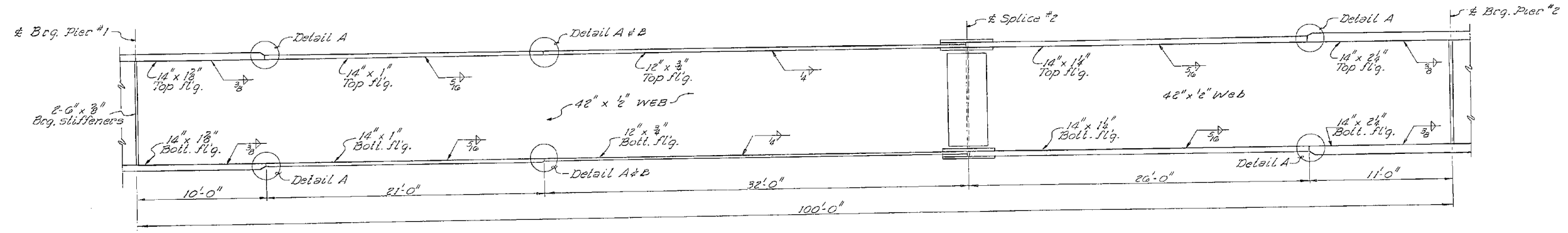
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55	(68-4) BP	MONTGOMERY	16	3
CONTRACT NO. 72K72				
ILLINOIS FED. AID PROJECT				

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
68-51B-1	No. 1	Montgomery	31	13
SHEET NO. 6 13 SHEETS				

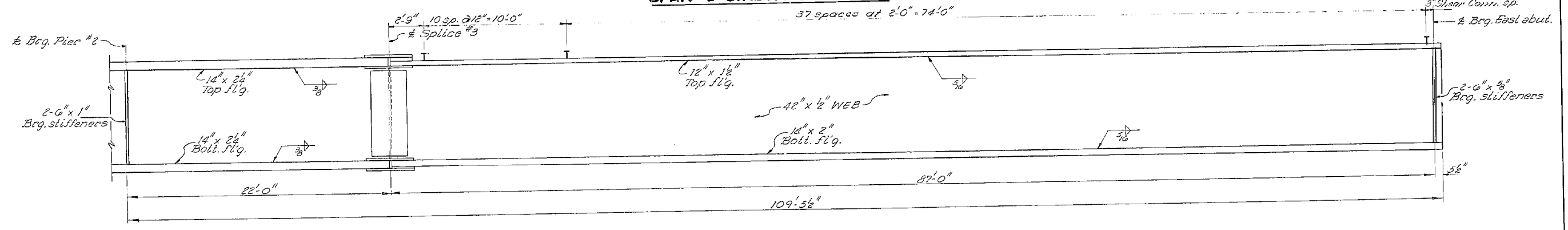
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



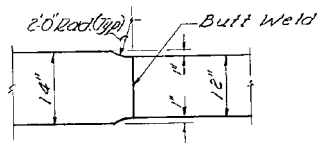
SPAN 1 GIRDER ELEVATION



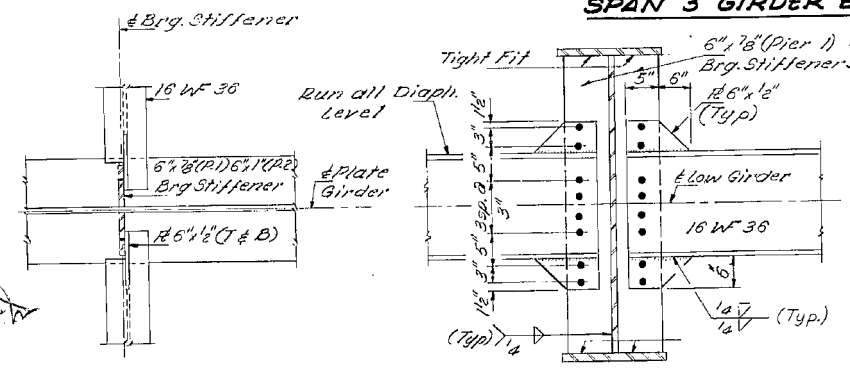
SPAN 2 GIRDER ELEVATION



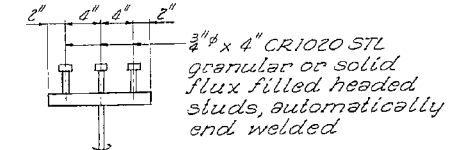
SPAN 3 GIRDER ELEVATION



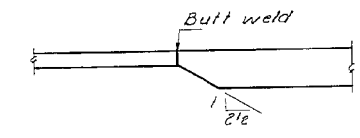
DETAIL B



DIAPHRAGM D2
No. Req'd 6



SHEAR CONNECTORS



DETAIL A

DESIGNED	Charles P. [Signature]	EXAMINED	[Signature]
CHECKED	J.H. [Signature]	PASSED	[Signature]
DRAWN	J. Mullerix	APPROVED	[Signature]
CHECKED	J.H. [Signature]		

GIRDER ELEVATIONS
F.A.I. RT. 55 SEC. 68-51B-1
MONTGOMERY COUNTY
STATION 916 + 44.59

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	DRAWN -	REVISED -
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PLOT DATE = 10/5/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 068-0036
(FOR INFORMATION ONLY)

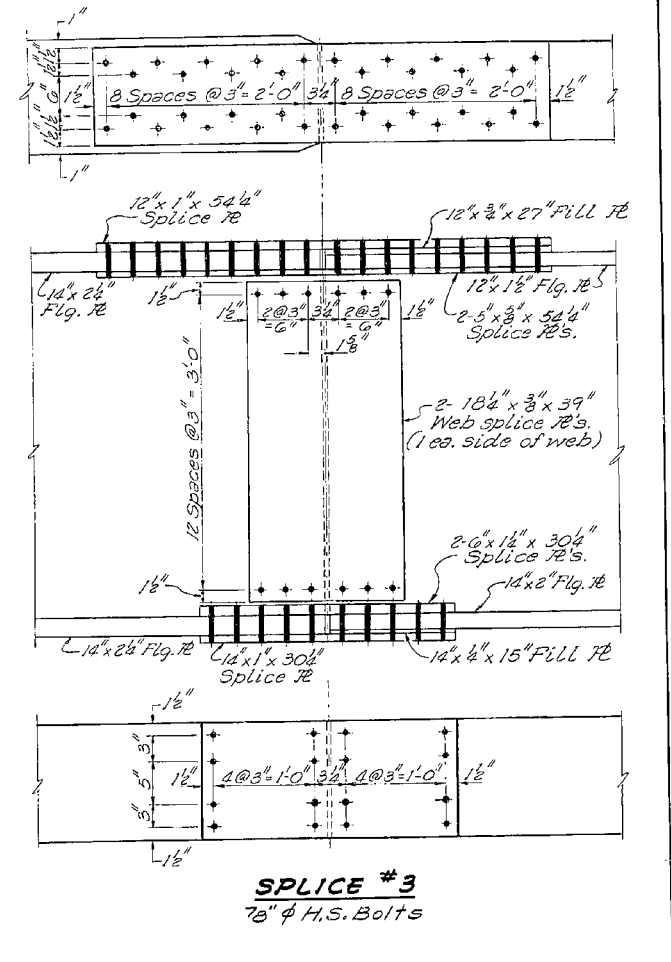
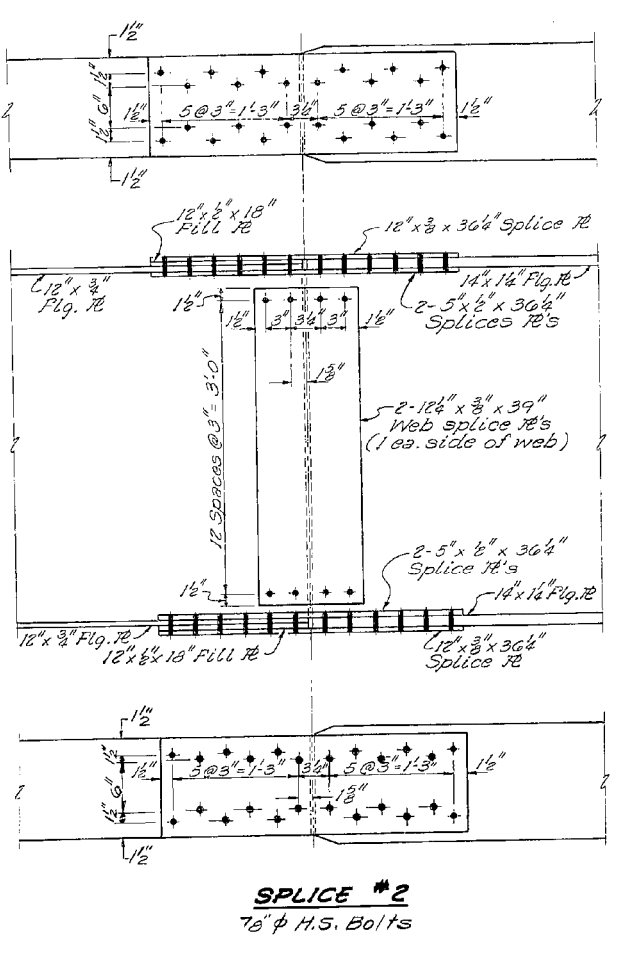
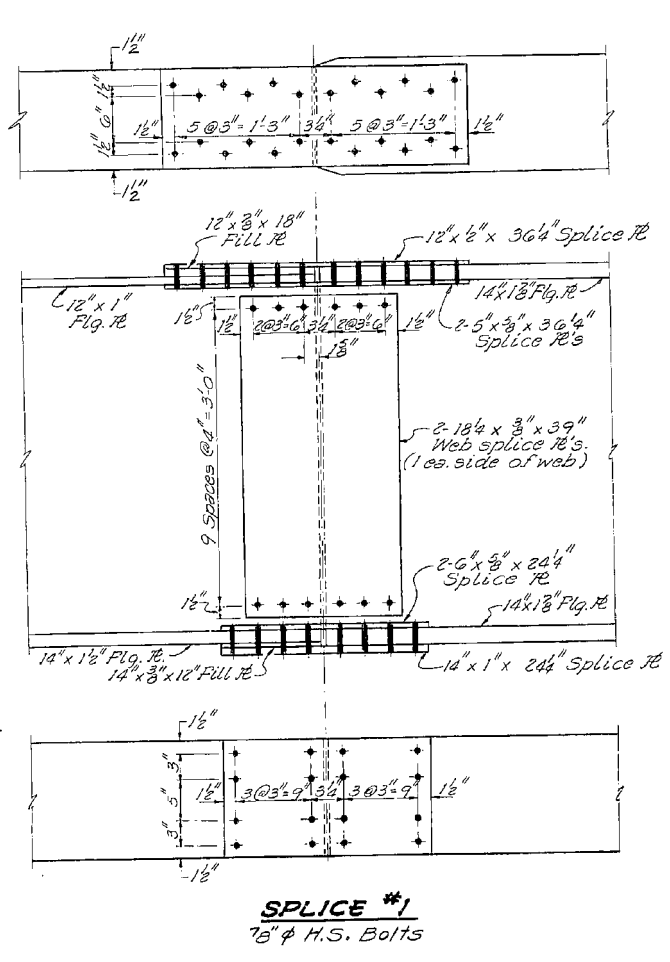
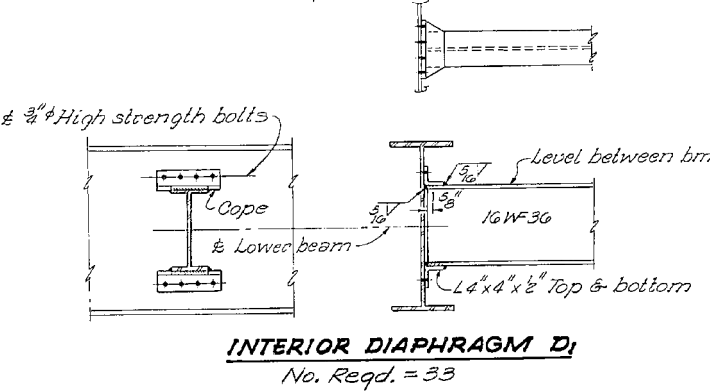
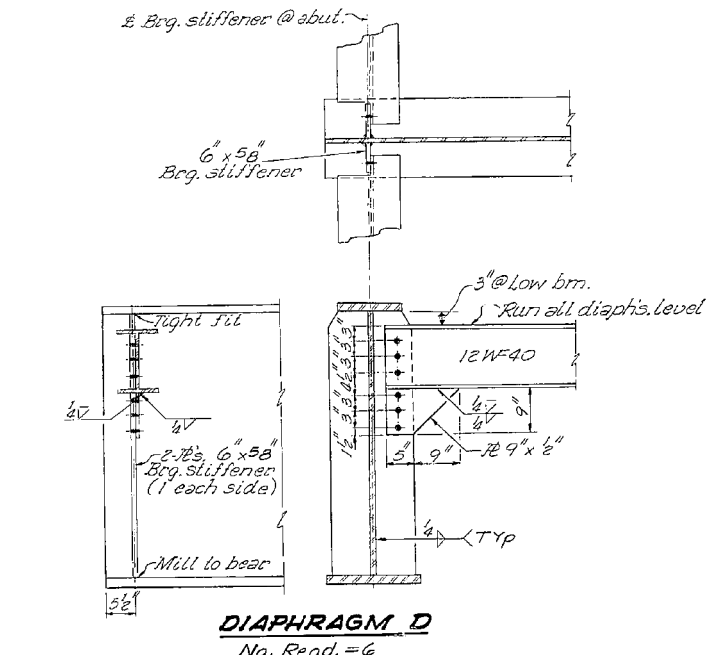
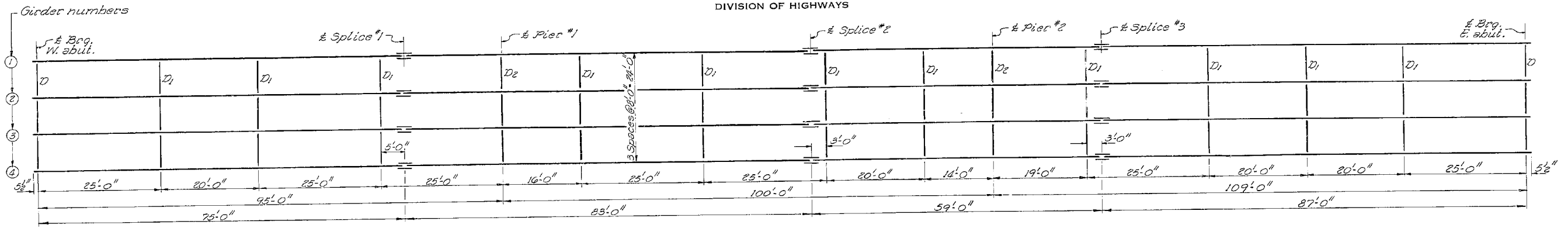
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(68-4) BP	MONTGOMERY	16	4
CONTRACT NO. 72K72				
ILLINOIS FED. AID PROJECT				

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 55	1-2-11B-1	Montgomery	31	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 7
13 SHEETS



Note: For diaphragm D2 detail, see sheet # 6

DESIGNED	Chris Green	EXAMINED	April 12 1972
CHECKED	SHEW, T, 41FA	APPROVED	Richard J. Goltzman
DRAWN	J. Mullerix LH	CHIEF HIGHWAY ENGINEER	
CHECKED	SHEW, T, 41FA		

DIAPHRAGM LAYOUT & SPLICE DETAILS
F.A.I. RT. 55 SEC. 68-5HB-1
MONTGOMERY COUNTY
STATION 916 + 44.59

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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

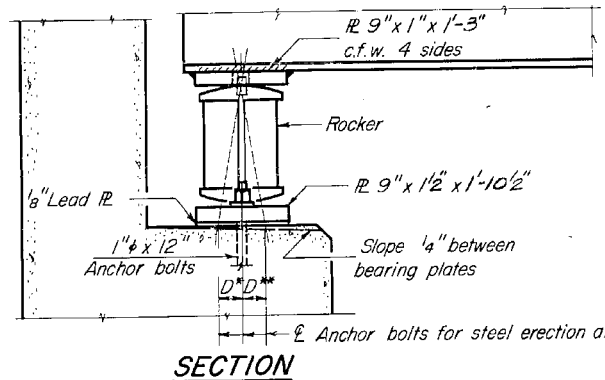
EXISTING PLANS, SN 068-0036
(FOR INFORMATION ONLY)

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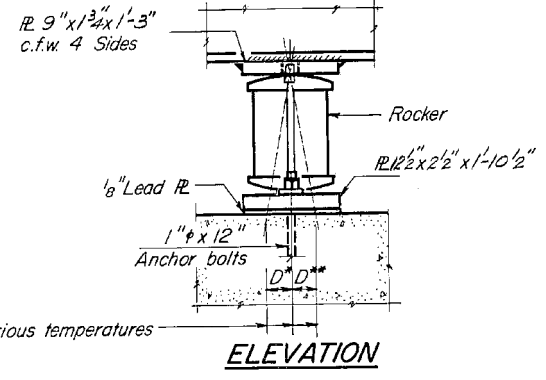
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55	(68-4) BP	MONTGOMERY	16	5
ILLINOIS			CONTRACT NO. 72K72	
FED. AID PROJECT				

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

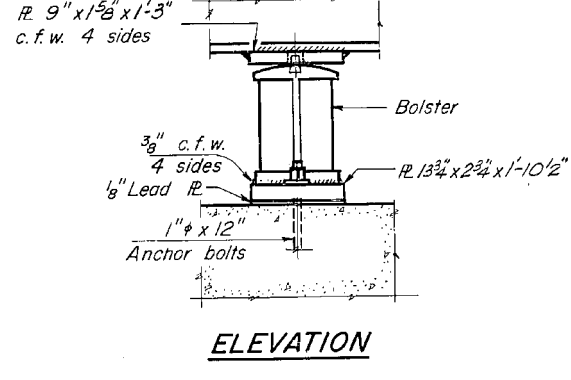
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SHEET NO. 8				
13 SHEETS				



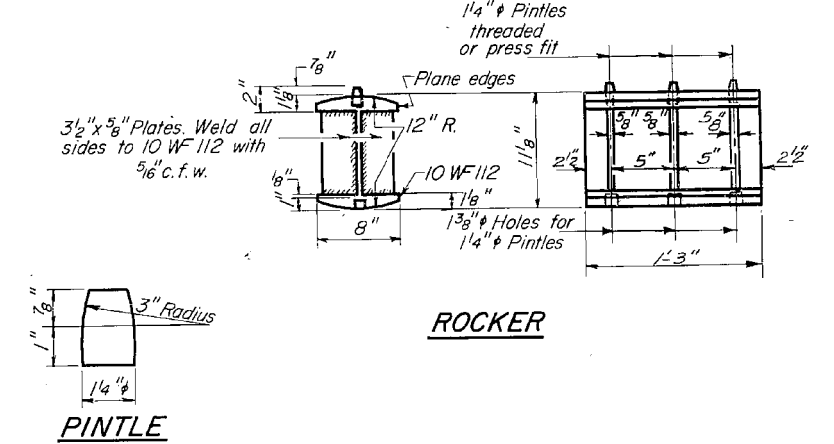
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ELEVATION

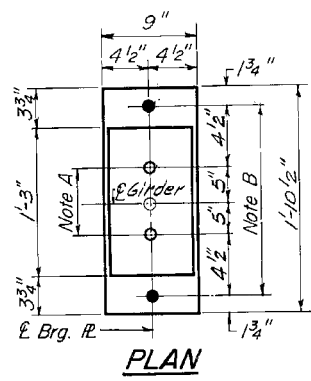


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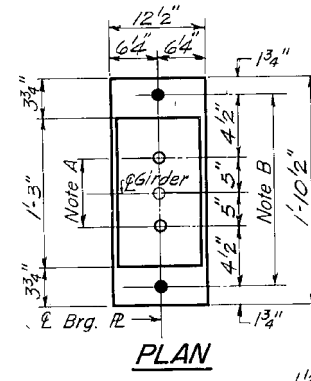


ROCKER

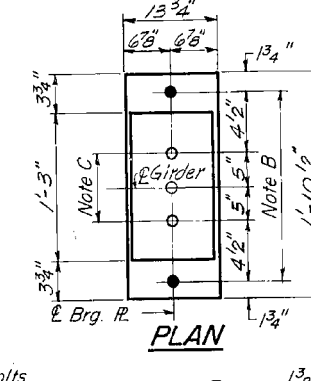
PINTLE



PLAN AT ABUTMENTS

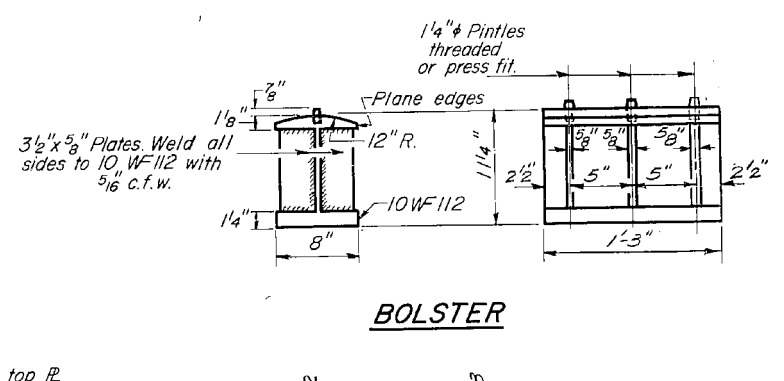


PLAN AT PIER 1



PLAN AT PIER 2

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



BOLSTER

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

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

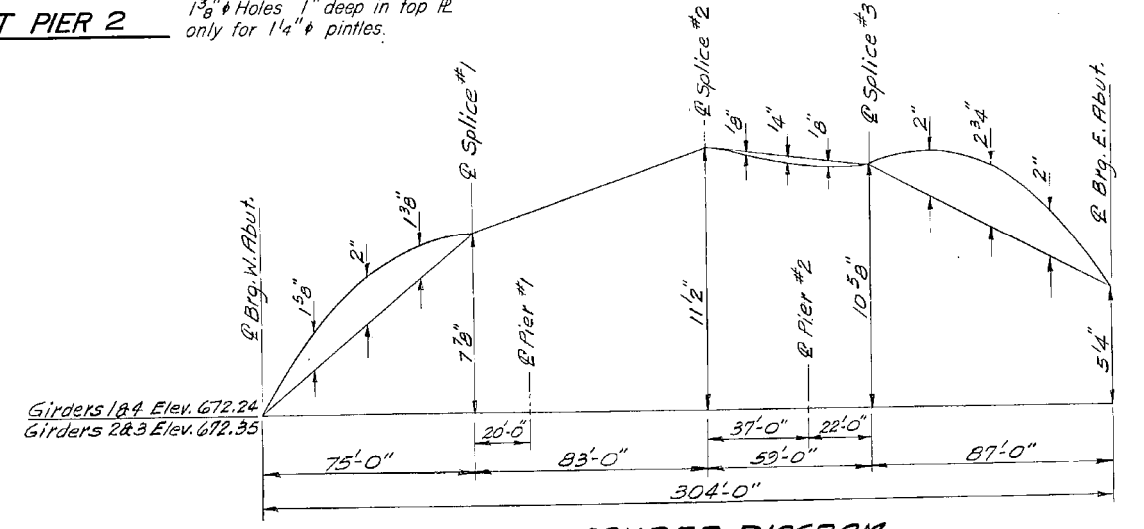
BEARING ASSEMBLY DETAILS

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.

MOMENT TABLE

	0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.6 Span 3
I _s (in ⁴)	17842	28368	11312	33953	24415
I _c (in ⁴)	42050				51631
S _s (in ³)	949.0	1240.1	520.1	1460.4	1242.5
S _c (in ³)	1235.7				1547.2
I _e (in ⁴)	1.018		0.998		1.063
M ₁₂ (k)	712.0	976.3	127.5	1263.8	1010.0
f ₁₂ (ksi)	9.01	9.45	2.94	10.38	9.76
S ₁₂ (in ³)	0.36		0.36		0.36
M ₁₂ (k)	261.6	320.6	94.7	390.1	357.2
M ₁₂ (k)	678.2	556.2	416.6	621.0	792.3
M _{imp} (k)	154.0	126.3	92.5	137.9	168.8
Total (k)	1093.8	1003.1	603.8	1149.0	1318.3
f ₁₂ (ksi)	10.62	9.71	13.93	9.44	10.22
f ₁₂ Total (ksi)	19.63	19.16	16.87	19.82	19.98
VR (k)	39.4		38.8		40.4



CAMBER DIAGRAM

REACTION TABLE

	W. Abut.	Pier 1	Pier 2	E. Abut.
R ₁ +S ₁ (k)	51.8	143.4	164.2	62.4
R ₂ (k)	34.8	54.0	57.2	35.4
Imp. (k)	7.9	12.3	12.7	7.5
R _{TOTAL} (k)	94.5	209.7	234.1	105.3

BEARING DETAILS
F.A.I. RT. 55 SEC. 68-5H-1
MONTGOMERY COUNTY
STA. 916 + 44.59

DESIGNED: Charles P. Green
CHECKED: SHEN, T.R.A.F.A.
DRAWN: P.G. Barnett L.H.
CHECKED: SHEN, T.R.A.F.A.

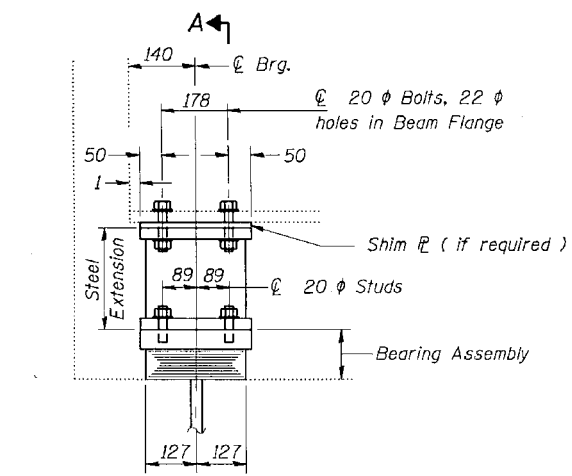
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APPROVED: [Signature]

I-2-B 9-1-65

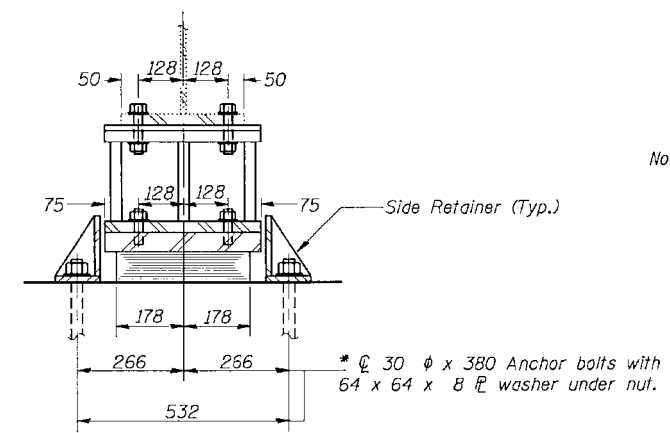
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	68-5RS	MONT.	71	61
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SHEET 3 OF 4



ELEVATION AT E. ABUTMENT

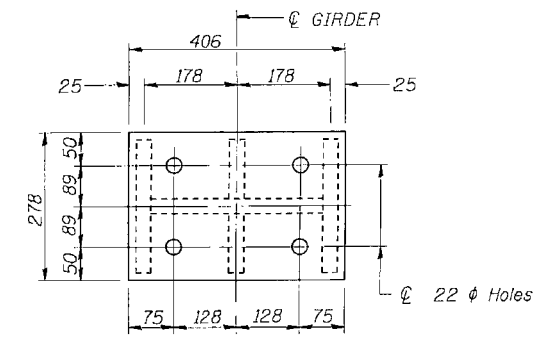


SECTION A-A

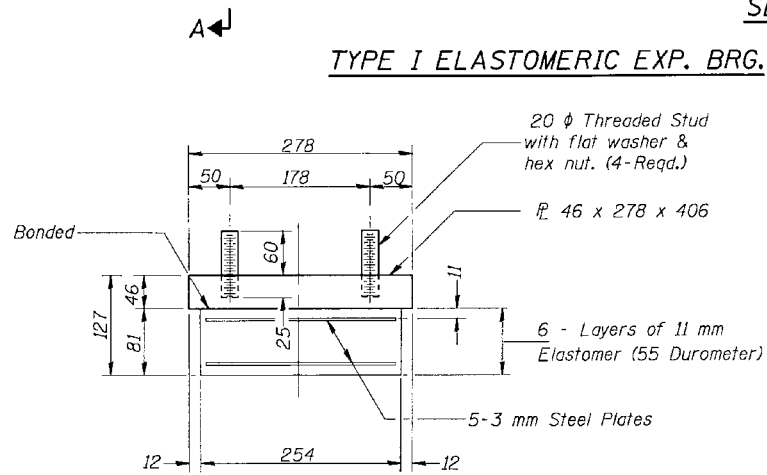
GIRDER REACTIONS

R _P	(KN)	277.57
R _L	(KN)	157.47
Imp.	(KN)	33.36
R (Total)	(KN)	468.40

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 8 OF 8 for structure no.068-0037 for Anchor Bolt installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.



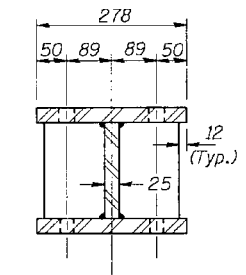
PLAN TOP AND BOTTOM PLATE



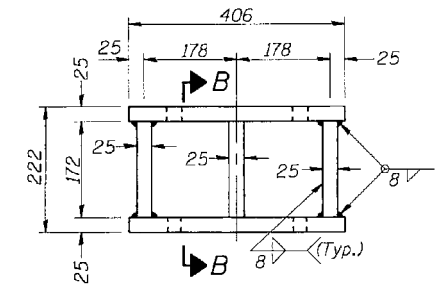
BEARING ASSEMBLY

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

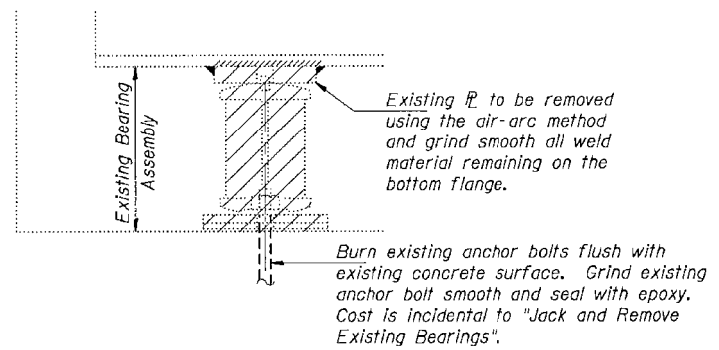
This sheet for bearing replacement at east abutment.



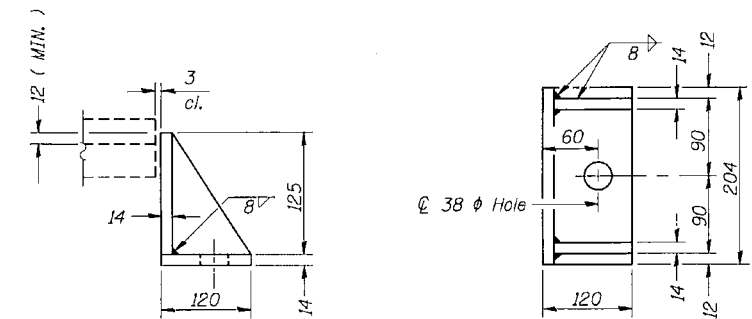
SECTION B-B



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	4

REVISIONS	
NAME	DATE
CMS	11-21

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING REPLACEMENT DETAILS
S.N. 068-0036
SECTION 68-5RS
T.R. 17 OVER F.A.I.-55
MONTGOMERY COUNTY
DRAWN BY
CHECKED BY
DATE

NOTE: UNLESS OTHERWISE SHOWN ALL DIMENSIONS ARE IN MILLIMETERS.

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 PLANS, SN 068-0036
(FOR INFORMATION ONLY)

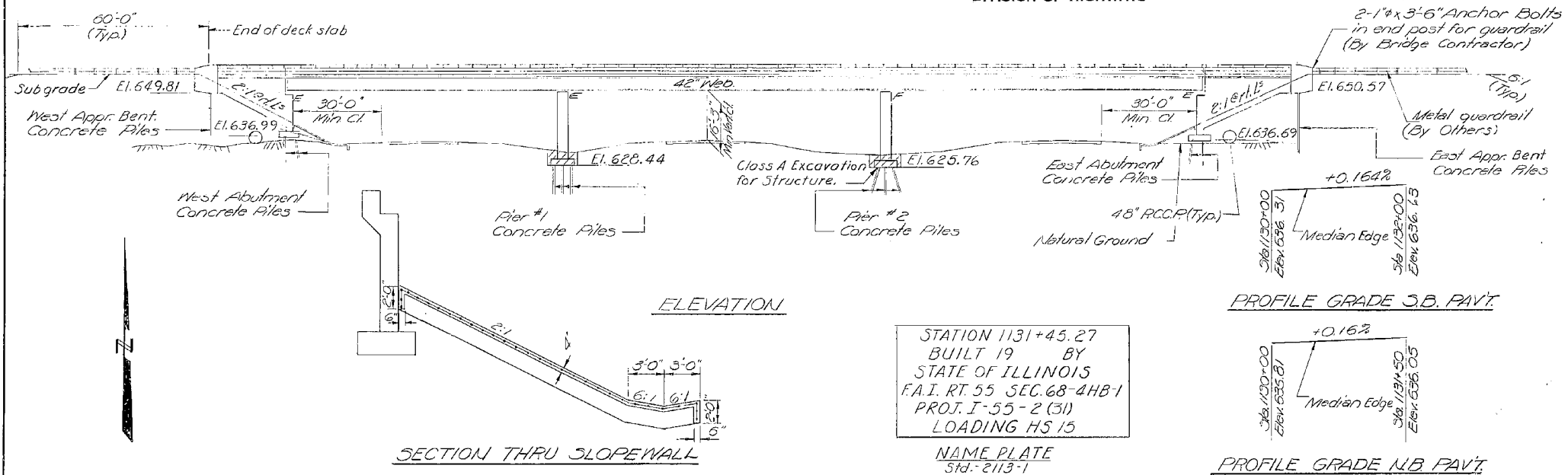
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(68-4) BP	MONTGOMERY	16	7
			CONTRACT NO. 72K72	
			ILLINOIS FED. AID PROJECT	

BM #28 Top of Conc. ROW Marker on West
ROW @ Sta 1127+40 Elevation 632.87

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

FIGURE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. /
S. I. FAI P.A. 55	68-4HB	Montgomery	32	8	18 SHEETS
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT: 155 2(31)69					



SECTION THRU SLOPEWALL

STATION 1131+45.27
BUILT 19 BY
STATE OF ILLINOIS
F.A.I. RT. 55 SEC. 68-4HB-1
PROJ. I-55-2(31)
LOADING HS 15
NAME PLATE
Sta. 2113-1

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

Fasteners shall be High strength bolts. Bolts $\frac{3}{8}$ " ϕ ; open holes $\frac{1}{16}$ " ϕ ; unless otherwise noted.

Calculated weight of Structural Steel = 241390 lbs.

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.

The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class A Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

The Basic Lead Silico Chromate paint system shall be used for shop and field painting of structural steel.

The Contractor shall drive two concrete test piles in a permanent location One of West Abut. and One of Pier #2 as directed by the Engineer before ordering the remainder of piles.

An alternate strand pattern using Extra High Strength Prestressing strand (270 KSI.) is permitted.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

Class A Excavation for structures includes excavation for slope wall.

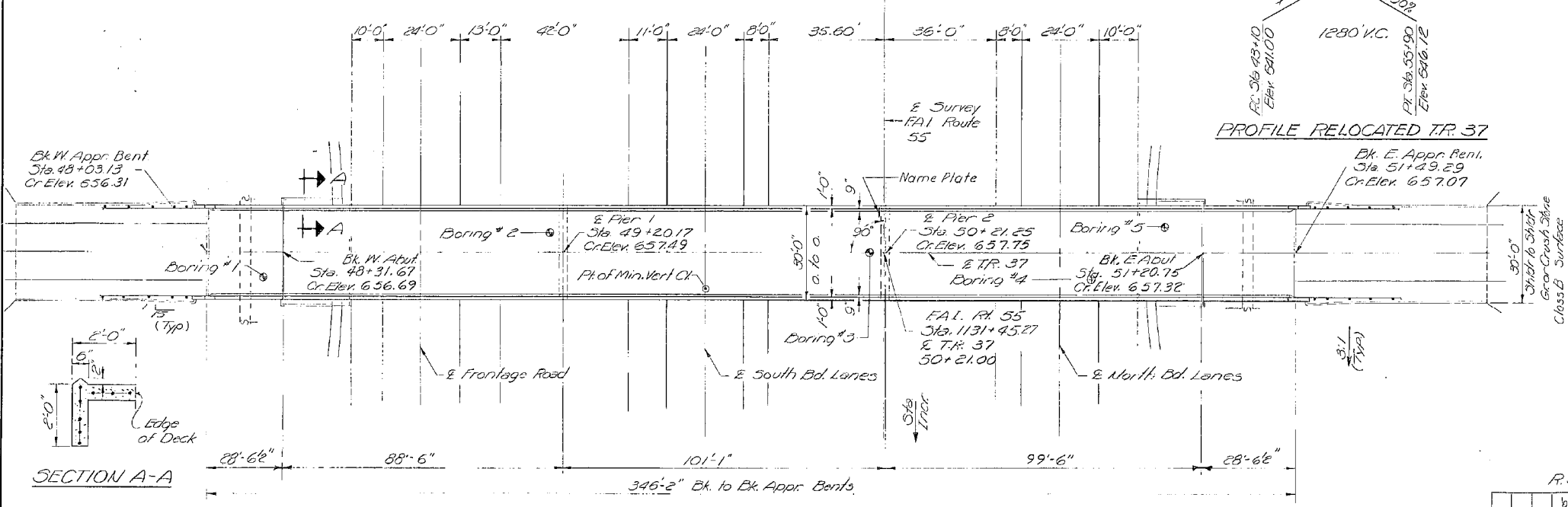
Concrete piles at Approach Bents shall be driven in holes precored through the embankment in accordance with Article 513.09(c) of the Standard Specifications.

The Contractor is cautioned against overdriving and damaging the concrete piles.

PROFILE GRADE J.B. PAV'T

PROFILE GRADE N.B. PAV'T

PROFILE RELOCATED TR. 37



SECTION A-A

PLAN

DESIGN STRESSES

PRECAST PRESTRESSED UNITS

$f_c = 5000$ psi.
 $f_{ci} = 4000$ psi.
 $f_s = 248,000$ psi. (Strands)
 $f_{si} = 173,600$ psi. (Strands)

FIELD UNITS

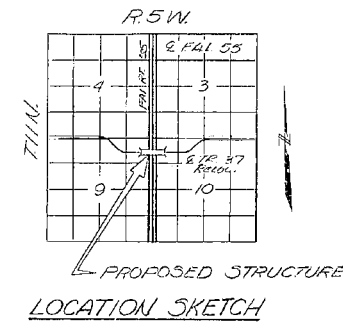
$f_c = 1200$ psi. (Deck Slab)
 $f_c = 1400$ psi. (Curb, Parapet, Sub)
 $f_s = 20,000$ psi. (Reinf.)
 $f_s = 20,000$ psi. (Struct.)
 $f_c = 75$ psi. (Flgs.)
 $n = 10$
Allowable % Deflection $\frac{1}{1600}$

LOADING HS 15-44

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Class A Excavation for Struct.	Cu. Yds.		130	130
Protective Coat	Sq. Yds.	1280		1280
Class Y Concrete	Cu. Yds.	324.7	237.4	562.1
Structural Steel	L.S.			L.S.
Stud Shear Connectors	Each	1944		1944
Aluminum Rolling	Lin. Ft.	682		682
Reinforcement Bars	Lbs.	74530	35620	109950
Concrete Piles	Lin. Ft.		1677	1677
Test Piles (Concrete)	Each		2	2
Name Plates	Each		1	1
Slope Wall (4")	Sq. Yds.		208	208
* Bridge Seat Sealant	L.S.			L.S.
Precast Prestressed Concrete T-Beams (36")	Lin. Ft.	164.3		164.3

* Applied @ Abutments only



GENERAL PLAN & ELEVATION
TR. 37 OVER FAI RT. 55
PROJ. I-55-2(31)69
FAI RT. 55 SEC. 68-4HB-1
MONTGOMERY COUNTY
STA. 1131+45.27

DESIGNED: D.A. Ryan
CHECKED: Ruc. S. R.
DRAWN: DRR
CHECKED: Ruc. S. R.

APRIL 24 1970

EXAMINED: [Signature]
PASSED: [Signature]
APPROVED: [Signature]

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	DRAWN -	REVISED -
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PLOT DATE = 10/5/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 068-0040
(FOR INFORMATION ONLY)

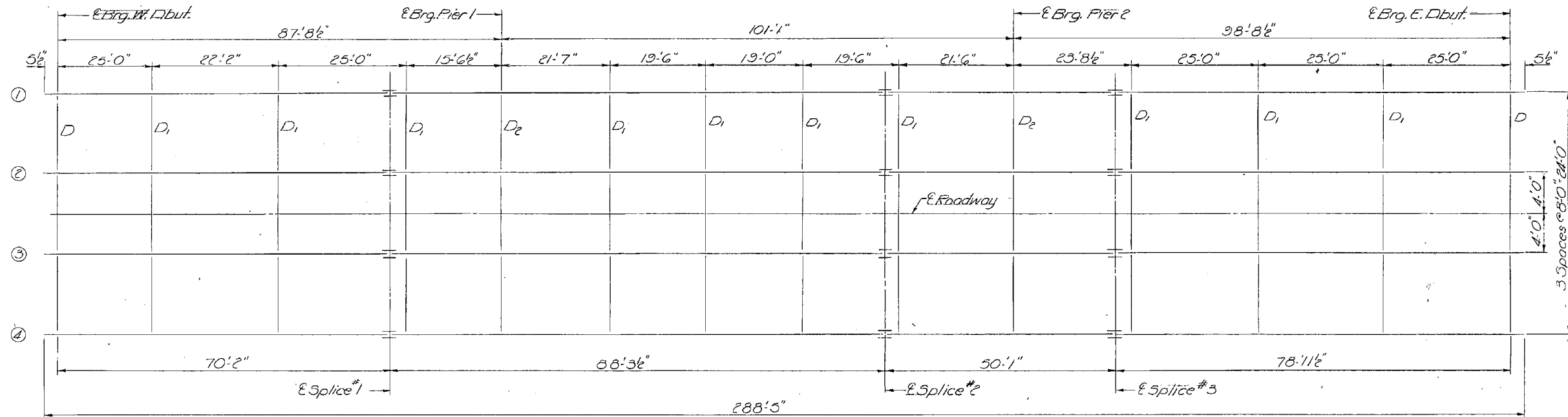
SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(68-4) BP	MONTGOMERY	16	9
CONTRACT NO. 72K72				
ILLINOIS FED. AID PROJECT				

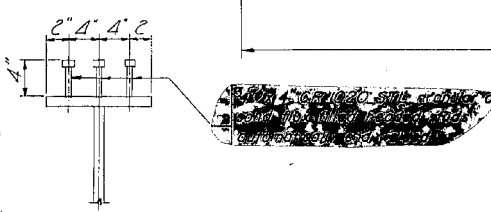
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	68-4B	Montgomery	32	13
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

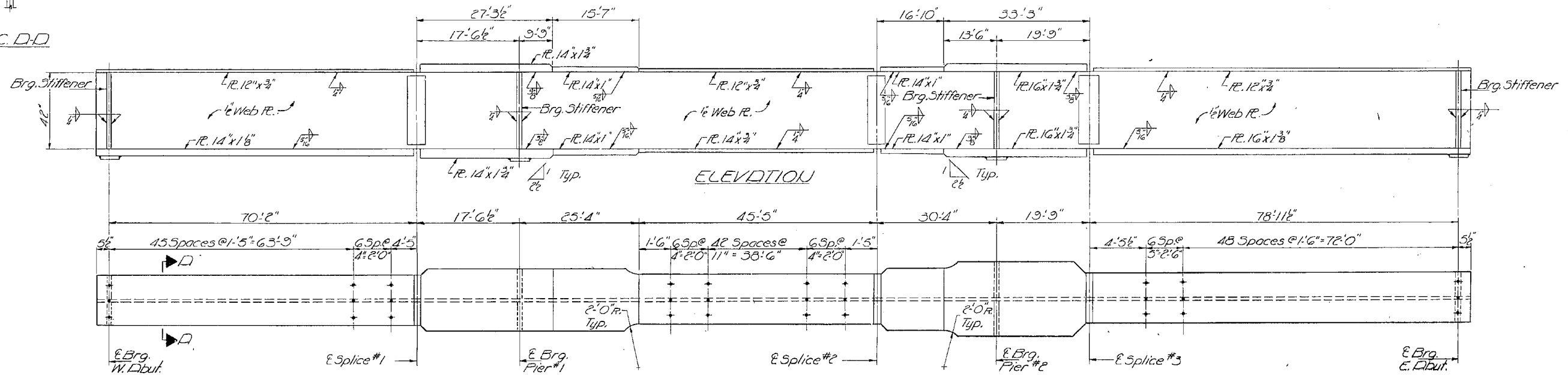
SHEET NO. 6
18 SHEETS



FRAMING PLAN



SEC. D-D



ELEVATION

DESIGNED	D.A.R. ga	APPROVED	April 24 1970
CHECKED	Rao. G. K.	EXAMINED	[Signature]
DRAWN	J.D.	PASSED	[Signature]
CHECKED	Rao. G. K.	APPROVED	Richard H. Hollerman CHIEF HIGHWAY ENGINEER

PLAN
Showing Stud Spacing

STRUCTURAL STEEL
E.L.L. PL. 55 SEC. 68-4B-1
MONTGOMERY COUNTY
STD. 1131+45.27

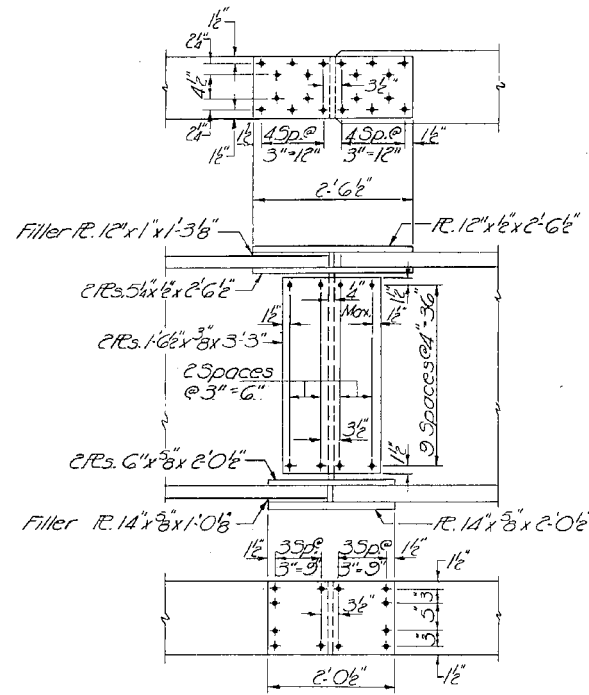
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PLOT SCALE = 100.0000' / in.	DRAWN -	REVISED -		SCALE:	SHEET	OF SHEETS	55	(68-4) BP	MONTGOMERY	16	10
PLOT DATE = 10/5/2018	CHECKED -	REVISED -		TO STA.	TO STA.	ILLINOIS	FED. AID PROJECT				
	DATE -	REVISED -					CONTRACT NO. 72K72				

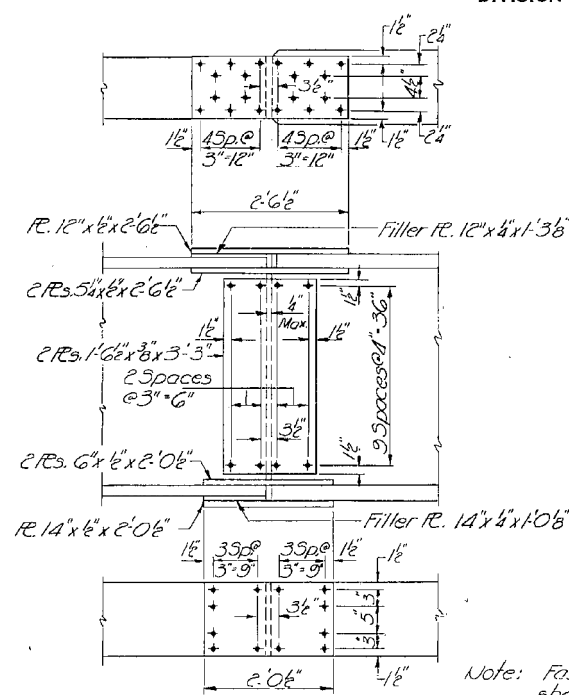
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	68-4HB-1	Montgomery	32	14
FED. ROAD DIST. NO. 7		ILLINOIS		FED. AID PROJECT

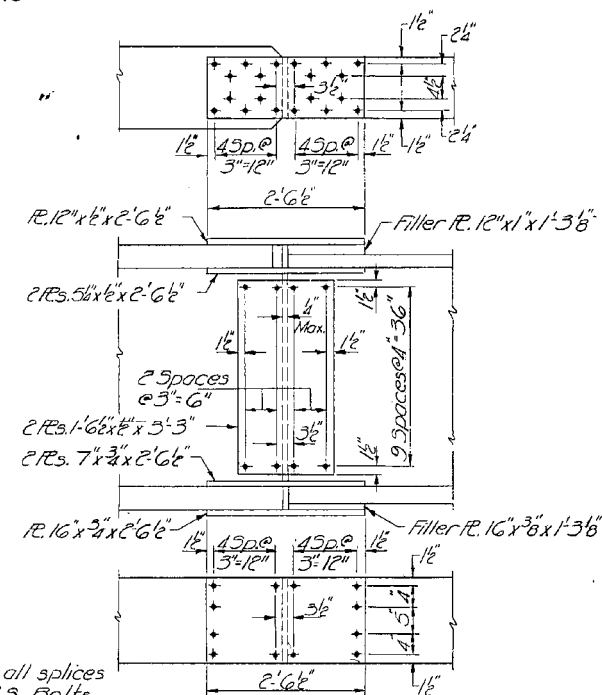
SHEET NO. 7
18 SHEETS



FIELD SPICE #1



FIELD SPICE #2



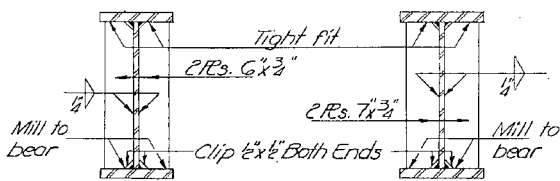
FIELD SPICE #3

Note: Fasteners for all splices shall be 7/8" H.S. Bolts.

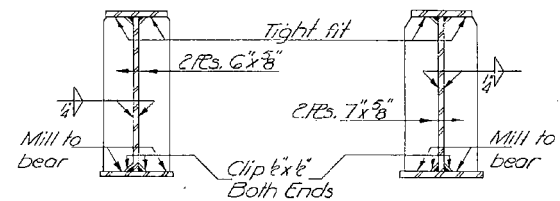
* TOP OF WEB ELEVATIONS

Location	Girder	164	263
E. Brg. W. Abut.		655.89	655.99
E. Field Splice #1		656.49	656.59
E. Brg. Pier #1		656.53	656.63
E. Field Splice #2		656.88	656.98
E. Brg. Pier #2		656.83	656.93
E. Field Splice #3		656.86	656.96
E. Brg. E. Abut.		656.52	656.62

* For fabrication only

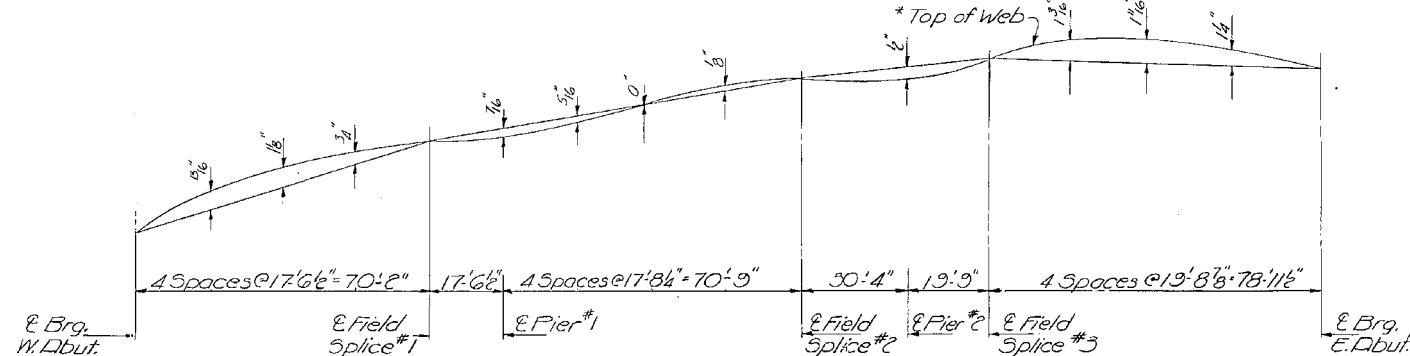


PIER #1
BEDRING STIFFENERS



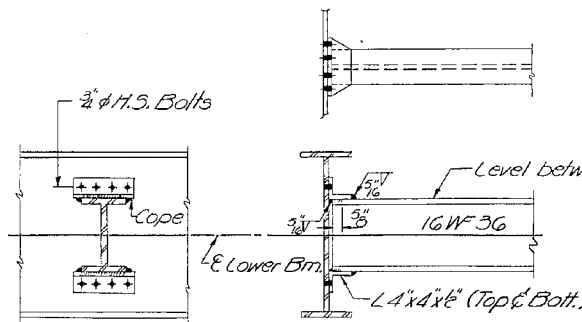
WEST ABUT.
BEDRING STIFFENERS

DESIGNED	D.A. Ryan	EXAMINED	APRIL 24 1970 C. H. Mummery
CHECKED	Rao. G. K.	PASSED	H. E. Bowman
DRAWN	J.D.	APPROVED	Richard H. Gilleman
CHECKED	Rao. G. K.		

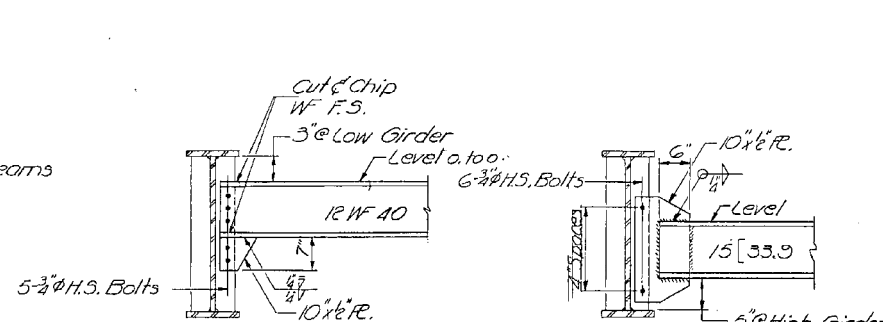


COMBER DIAGRAM

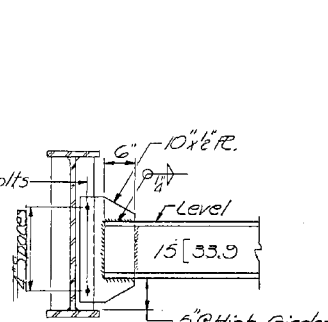
* For Top of Web Elevations of Splices & Bearings see table on this sheet.



INTERIOR DIAPHRAGM D1
30 Required



DIAPHRAGM D
6 Required



DIAPHRAGM D2
6 Required

INTERIOR GIRDER REACTION TABLE

	West Abut.	Pier 1	Pier 2	East Abut.
R _P (K)	44.69	136.24	192.46	52.04
R _L (K)	34.31	52.56	55.07	34.89
Imp. (K)	8.06	11.94	12.23	7.77
R _T Total (K)	87.06	200.54	219.76	94.70

INTERIOR GIRDER MOMENT TABLE

	0.45p.1	Pier 1	0.55p.2	Pier 2	0.65p.3
I _s (in ⁴)	14048	26534	11974	29884	19988
I _c (in ⁴)	55142		28478		42262
S _s (in ³)	743	1166	531	1314	946
S _c (in ³)	1006		785		1272
Q (K/ft)	0.972	1.330	0.972	1.345	1.003
M ₂ (K)	534	1196	210	1493	711
f _s (ksi)	8.62	12.31	4.74	13.64	9.01
S ₂ (K/ft)	0.358		0.358		0.358
M ₂ (K)	215		144		283
M ₂ (K)	601	475	531	533	694
M _{imp} (K)	136	108	120	120	157
Total (K)	952	583	795	653	1134
f _s (ksi)	11.96	6.00	12.18	5.96	10.69
f _s Total (ksi)	19.98	18.31	16.92	19.60	19.70
VR (K)	38.53	48.51	39.44	45.34	39.61

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 impact shear range.

STRUCTURAL STEEL DETAILS
FDI, RT 55 SEC. 68-4HB-1
MONTGOMERY COUNTY
STD. 1131-45.27

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		DRAWN	-	REVISED	-
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PLOT DATE	= 10/5/2018	DATE	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 068-0040
(FOR INFORMATION ONLY)

SCALE: SHEET OF SHEETS STA. TO STA.

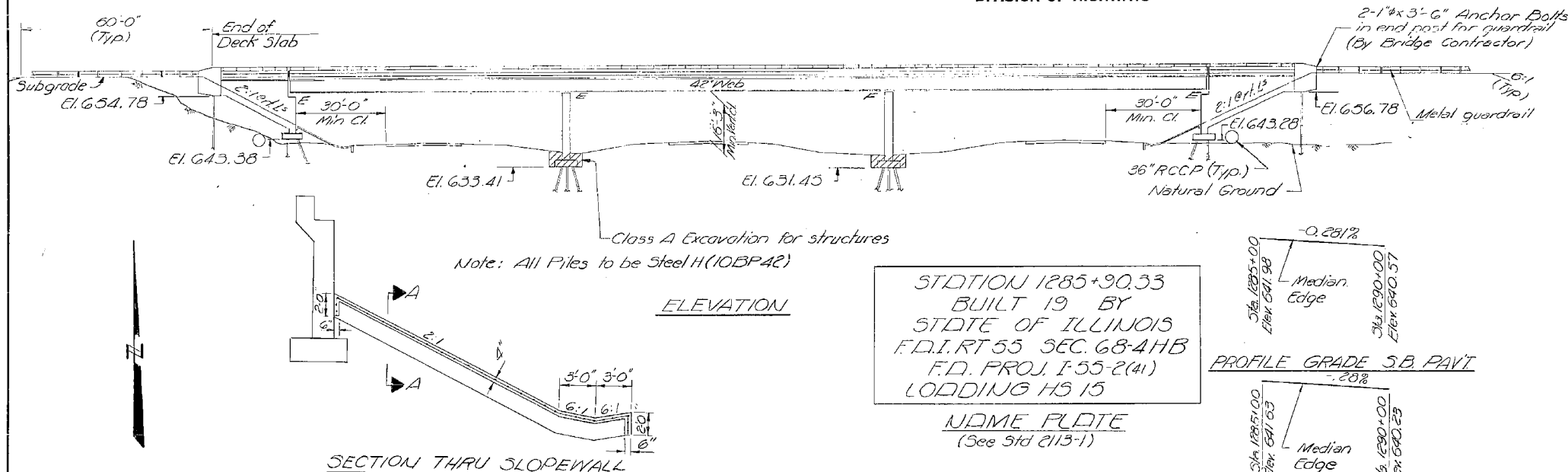
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(68-4) BP	MONTGOMERY	16	11
CONTRACT NO. 72K72			ILLINOIS FED. AID PROJECT	

BM #41 a cut on headwall West of Existing South Bound Lanes at Station 1288+25 Elev. 639.86

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

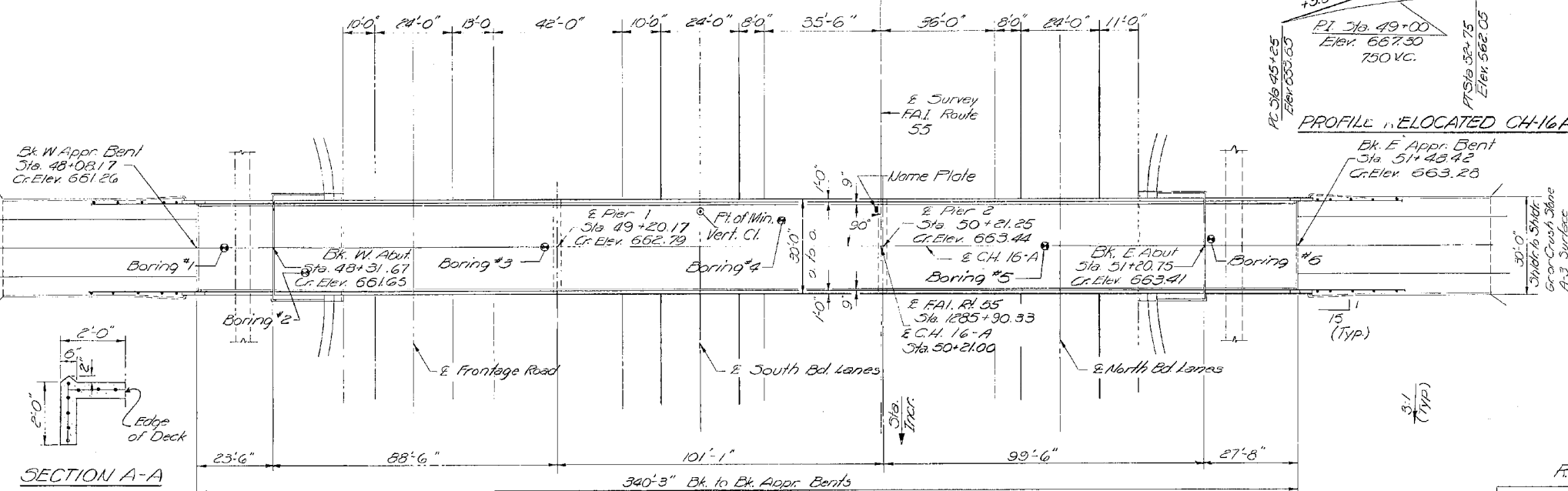
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI RT. 55	68-4HB	Mont.	44	12

20 SHEETS



GENERAL NOTES
All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
Fasteners shall be high strength bolts. Bolts 7/8"; open holes 15/16", unless otherwise noted.
Calculated weight of Structural Steel = 241,390 Lbs.

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" x 6" mesh, weighing 58# per 100 sq.ft.
The Contractor shall drive two steel test piles in a permanent location: One at the West Abut. and One at Pier 2 as directed by the Engineer before ordering the remainder of piles.
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.
An alternate strand pattern using Extra High Strength Prestressing strand (270 k.s.i.) is permitted.



TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Class D Excavation for Struct.	Cu. Yds.		110	110
Protective Coat	Sq. Yds.	1260		1260
Class X Concrete	Cu. Yds.	518.7	234.2	552.9
Structural Steel	L.S.	L.S.		L.S.
Stud Shear Connectors	Each	1944		1944
Aluminum Railing	Lin. Ft.	670		670
Reinforcement Bars	Lbs.	73380	34780	108160
Steel Piles 10BP42	Lin. Ft.		3935	3935
Test Piles (Steel 10BP42)	Each		2	2
Name Plates	Each		1	1
Slope Wall (4")	Sq. Yds.		210	210
* Bridge Seat Sealant	L.S.			L.S.
Precast Prestressed Concrete I Beams (36")	Lin. Ft.	146.5		146.5

* Applied at Abutments only.

SECTION A-A

PLAN

DESIGN STRESSES

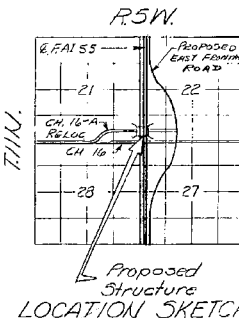
PRECAST PRESTRESSED UNITS

$f'_c = 5,000$ psi.
 $f_{ci} = 4,000$ psi.
 $f_s = 248,000$ psi. (Strands)
 $f_{si} = 173,600$ psi. (Strands)

FIELD UNITS

$f_c = 1200$ psi. (Deck Slab)
 $f_c = 1400$ psi. (Curb, Parapet, Sub)
 $f_s = 20,000$ psi. (Reinf.)
 $f_s = 20,000$ psi. (Structural)
 $f_c = 75$ psi. (Flgs)
 $n = 10$
Allowable 1/4 Deflection 4/100

LOADING HS 15-44



GENERAL PLAN & ELEVATION
F.D. PROJ. I-55-2(41) 66
CH. 16-A OVER FAI RT. 55
SECTION 68-4HB
MONTGOMERY COUNTY
STA. 1285+90.33

DESIGNED	D.A. Ryan	EXAMINED	APRIL 23 1970
CHECKED	R.O. G.K.	PASSED	W. Baumann
DRAWN	J.H.	APPROVED	Richard H. Holzman
CHECKED	R.O. G.K.		CHIEF HIGHWAY ENGINEER

MODEL: Default
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	DRAWN -	REVISED -
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PLOT DATE = 10/5/2018	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 068-0041
(FOR INFORMATION ONLY)

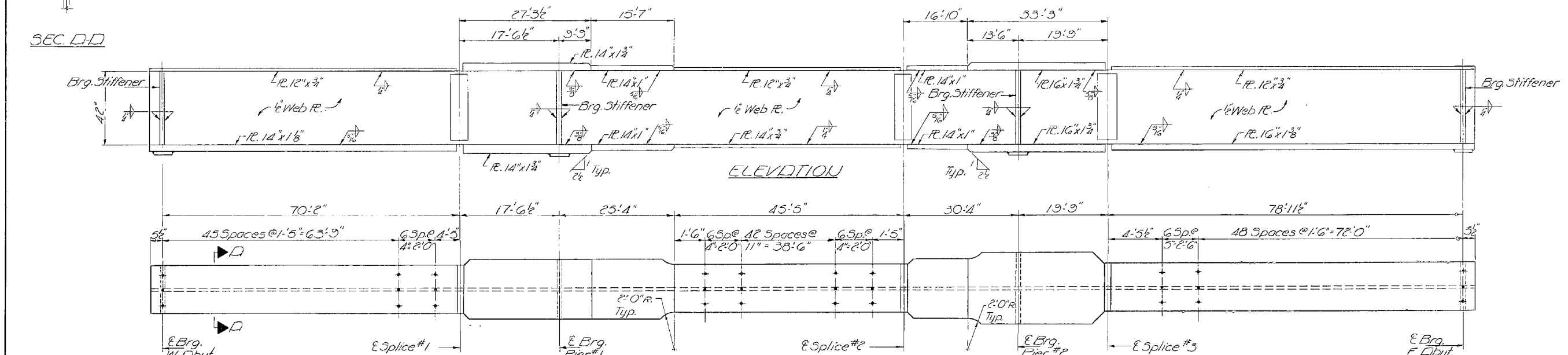
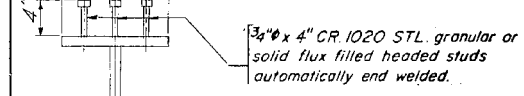
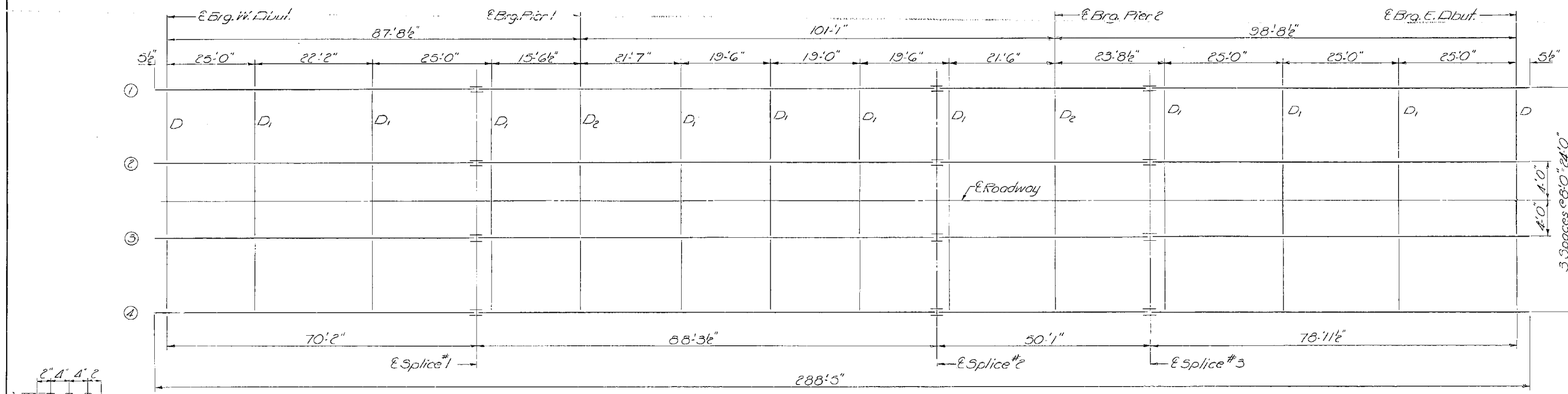
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(68-4) BP	MONTGOMERY	16	13
CONTRACT NO. 72K72				
ILLINOIS FED. AID PROJECT				

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
P.A.I. 55	68-4HB	Mont	44	18
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 7
20 SHEETS



DESIGNED <i>D.A. Ryan</i>	EXAMINED <i>[Signature]</i>
CHECKED <i>Rao.G.K</i>	PASSED <i>[Signature]</i>
DRAWN <i>J.D.</i>	APPROVED <i>[Signature]</i>
CHECKED <i>Rao.G.K</i>	DATE <i>April 22, 1979</i>

STRUCTURAL STEEL
F.D.I. RT. 55 SEC. 68-4HB
MONTGOMERY COUNTY
STD. 1285+90.33

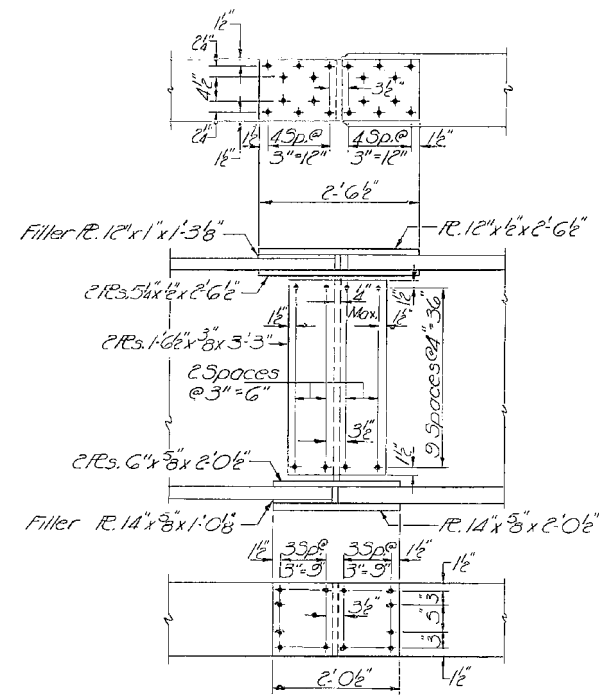
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PLOT DATE = 10/5/2018	CHECKED -	REVISED -	ILLINOIS		FED. AID PROJECT						

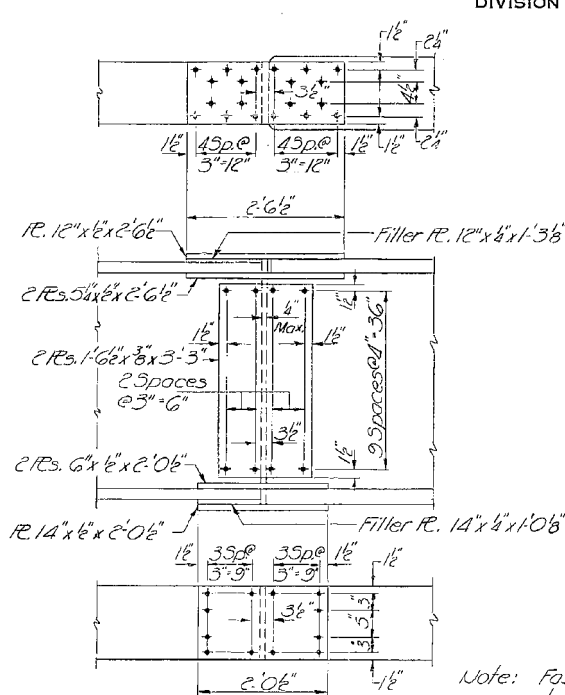
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 55	68-4HB	Mont.	44	19
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

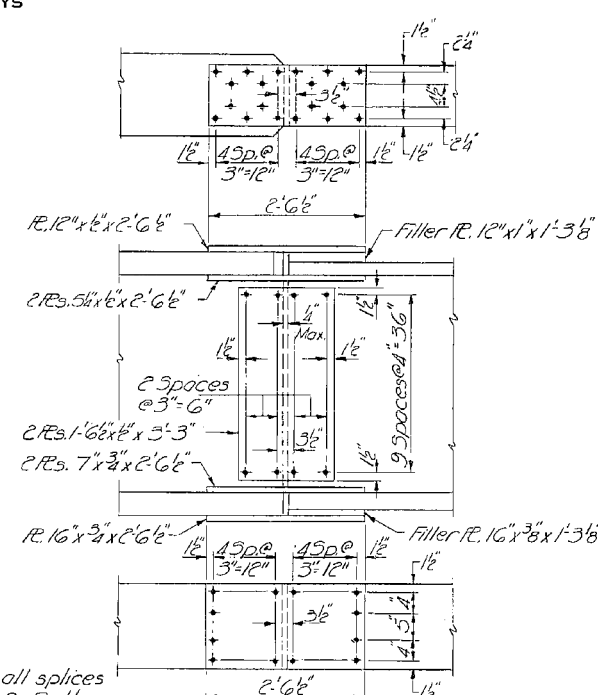
SHEET NO. 8
20 SHEETS



FIELD SPICE #1



FIELD SPICE #2



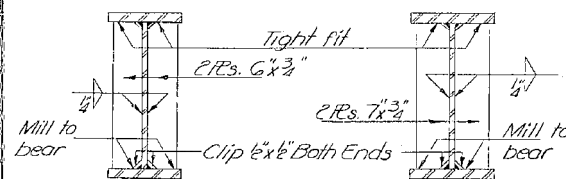
FIELD SPICE #3

Note: Fasteners for all splices shall be 7/8" H.S. Bolts.

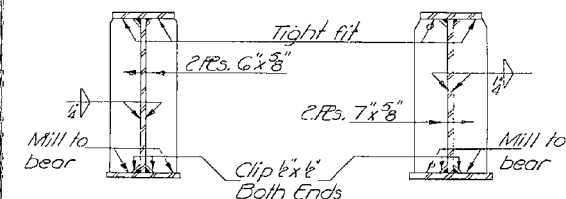
*TOP OF WEB ELEVATIONS

Location	Girder	L&A	E.S.
E Brg. W. Abut.		660.86	660.96
E Field Splice #1		661.70	661.82
E Brg. Pier #1		661.53	661.53
E Field Splice #2		662.45	662.55
E Brg. Pier #2		662.52	662.62
E Field Splice #3		662.63	662.73
E Brg. E. Abut.		662.61	662.71

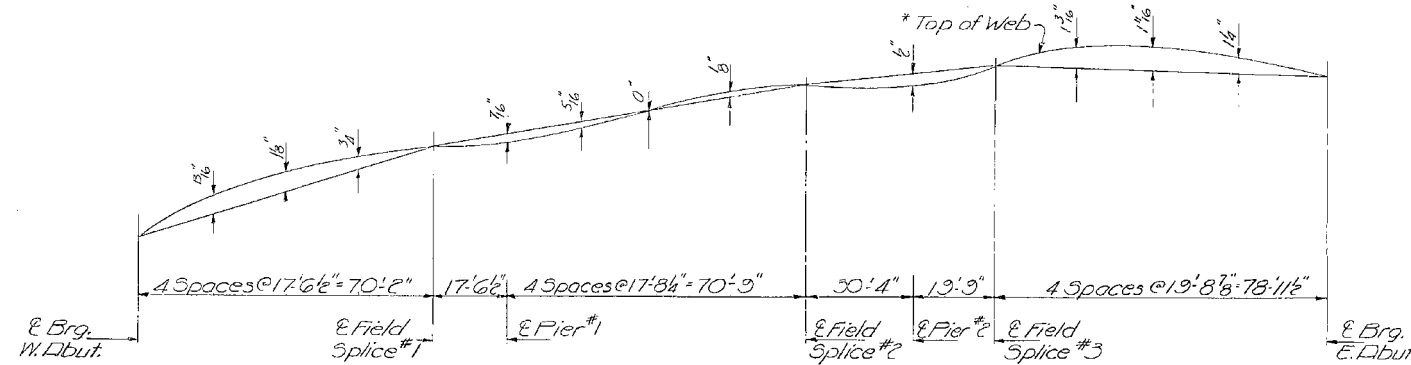
* For Fabrication only



PIER #1
BEDRING STIFFENERS



PIER #2
BEDRING STIFFENERS



CAMBER DIAGRAM

* For Top of Web Elevations at Splices & Bearings see table on this sheet.

INTERIOR GIRDER REACTION TABLE

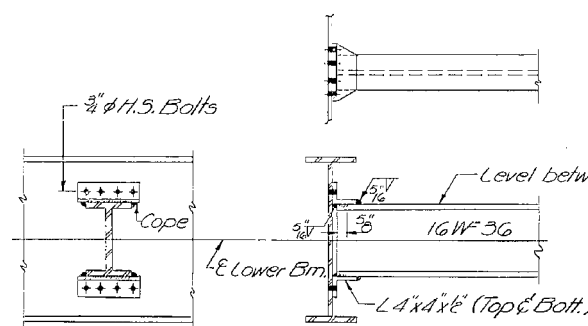
	West Abut.	Pier 1	Pier 2	East Abut.
RE (K)	44.69	136.24	152.46	52.04
RL (K)	34.31	52.36	55.07	34.89
Imp. (K)	8.06	11.94	12.23	7.77
R Total (K)	87.06	200.54	219.76	94.70

INTERIOR GIRDER MOMENT TABLE

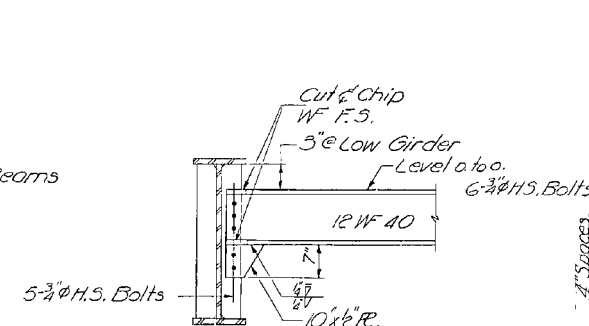
	0.45p1	Pier 1	0.55p2	Pier 2	0.65p3
I _s (in ⁴)	14048	26534	11974	22884	15288
I _c (in ⁴)	35142		28478		42222
S _s (in ³)	743	1166	331	1314	946
S _c (in ³)	1006		783		1273
Q (K/ft)	0.972	1.330	0.972	1.345	1.003
M ₀ (K)	534	1196	210	1493	711
f _{s0} (ksi)	8.62	12.31	4.74	13.64	9.01
S ₀ (K/ft)	0.358		0.358		0.358
M _{imp} (K)	215		144		283
M ₀ (K)	601	475	531	533	694
M _{imp} (K)	136	108	120	120	157
Total (K)	952	583	795	653	1134
f _{s0} (ksi)	11.36	6.00	12.18	5.96	10.62
f _s Total (ksi)	19.98	18.31	16.92	19.60	19.70
VR (K)	38.53	48.51	39.44	45.34	39.61

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.

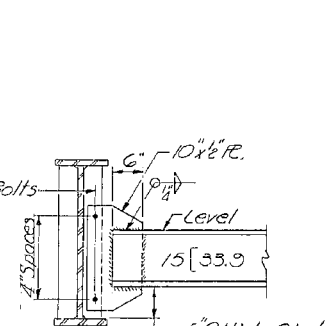
STRUCTURAL STEEL DETAILS
F.D.I. RT. 55 SEC. 68-4HB
MONTGOMERY COUNTY
STA. 1285+90.33



INTERIOR DIAPHRAGM D1
(30 Required)



DIAPHRAGM D
(6 Required)



DIAPHRAGM D2
(6 Required)

DESIGNED	D.A. Ryan	APPROVED	APRIL 22 1970
CHECKED	Rao. G.K.	EXAMINED	[Signature]
DRAWN	J.D.	PASSED	[Signature]
CHECKED	Rao. G.K.	APPROVED	[Signature]

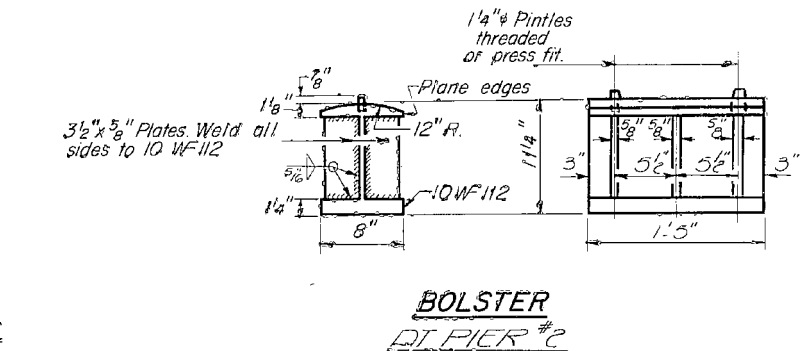
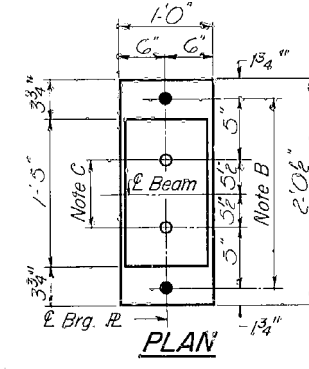
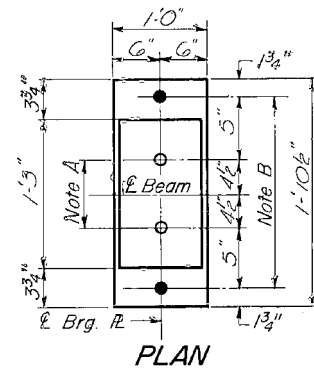
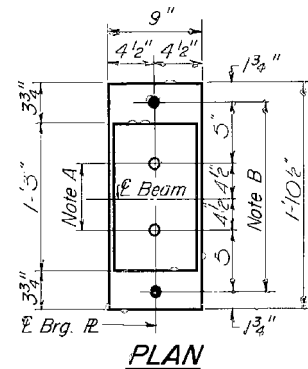
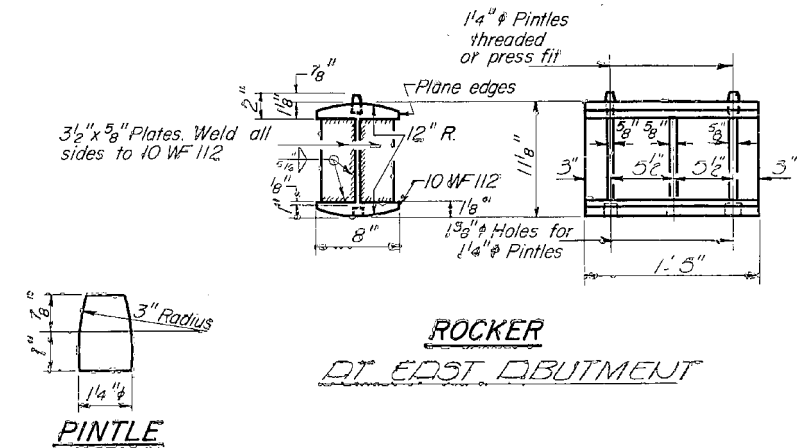
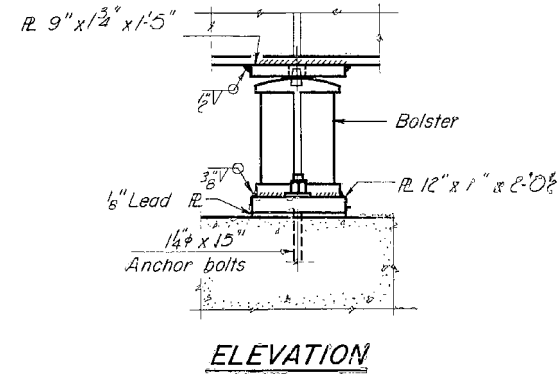
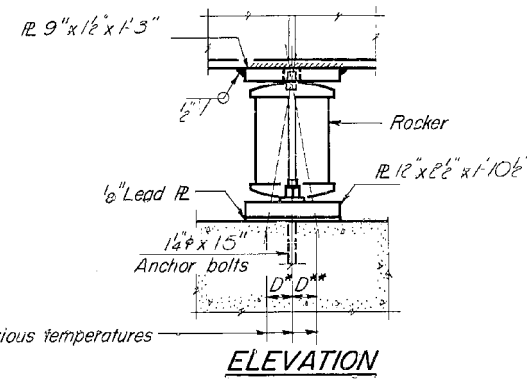
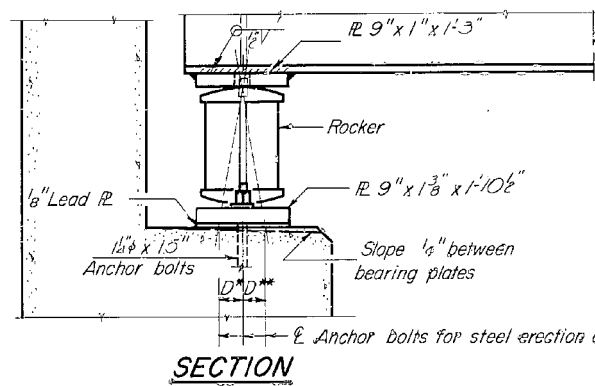
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS, SN 068-0041
(FOR INFORMATION ONLY)

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

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(68-4) BP	MONTGOMERY	16	15
CONTRACT NO. 72K72				
ILLINOIS FED. AID PROJECT				



PLAN AT WEST ABUTMENT

PLAN AT PIER #1

PLAN AT PIER #2

BOLSTER AT PIER #2

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

NOTE B
1 3/8" Holes for 1 1/4" anchor bolts. 2 1/2" x 2 1/2" x 5/16" flange washers under nut.

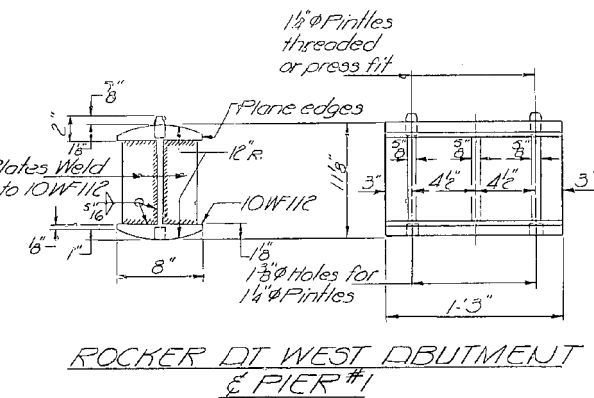
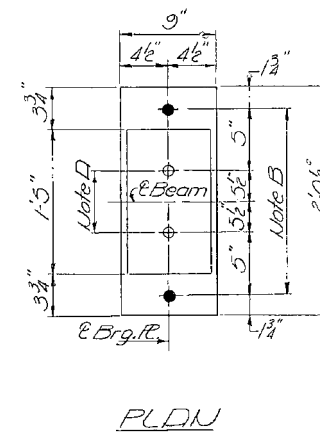
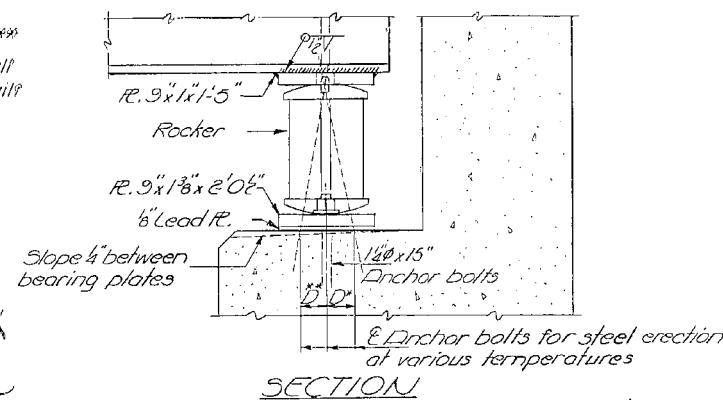
NOTE C
1 3/8" Holes 1" deep in top flange only for 1 1/4" pintles.

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.



BEARING DETAILS
F.D.I. RT. 55 SEC. 68-41B
MONTGOMERY COUNTY
STD. 1285-90.33

DESIGNED	DA Ryan
CHECKED	Rao. G.k
DRAWN	J.D.
CHECKED	Rao. G.k

APRIL 22 1970	
EXAMINED	[Signature]
PASSED	[Signature]
APPROVED	[Signature]

I-2-B 9-1-65

SECTION AT EAST ABUTMENT