

058-0021

MACON CO.

SEC. 139 BR

IXR 024-88

83

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

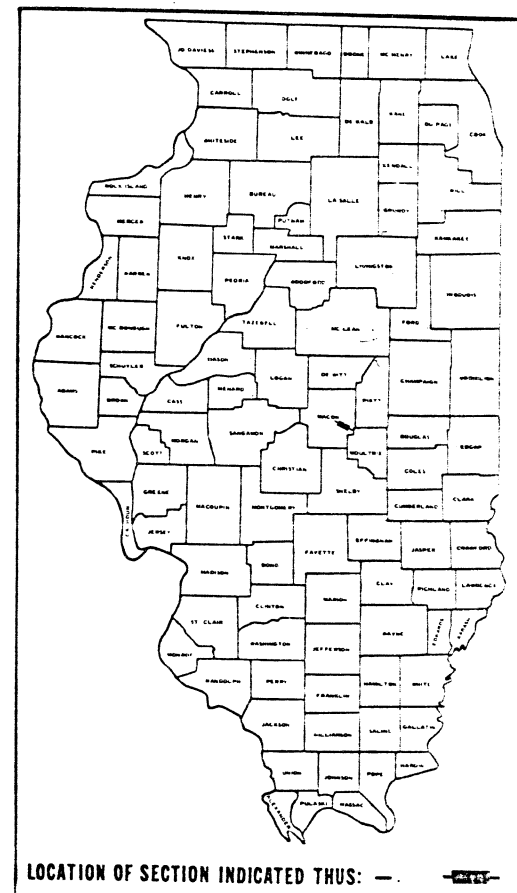
FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 2

PLAN 1"=20'
PROFILE HORIZ. 1"=20'
PROFILE VERT. 1"=5'
CROSS SECTIONS 1"=10' (HORIZ.)
1"=5' (VERT.)

FA. ROUTE 79 (U.S. RTE. 36)
SECTION 139 BR
PROJ. ACBHF-79 (26)
MACON COUNTY
C95-094-88

BRIDGE SUPERSTRUCTURE REPLACEMENT

RTE.	SECTION	COUNTY	TOTAL SHEETS
79	139 BR	MACON	19
P95-110-80			



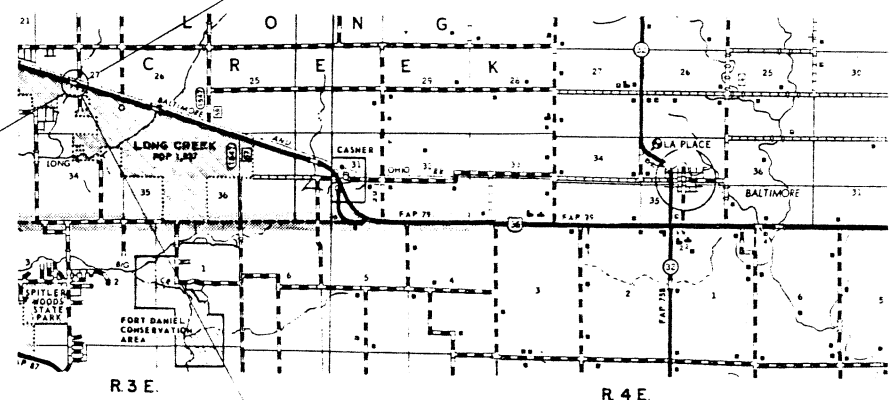
CONSULTANT LIASON BRYAN TRYGG 217-465-4161

PROJECT ENGINEER: DONALD D. BELL 309-692-4422

SQUAD LEADER: JAMES A. SIKKEMA 309-692-4422

SECTION 139 BR AND PROJ. ACBHF-79 (26) ENDS
STA. 190+40

SECTION 139 BR AND PROJ. ACBHF-79(26) BEGINS
STA 184+31

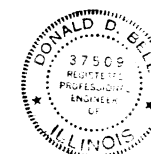


DESIGN DESIGNATION

850(09) MAJOR 3.4 (COMP-20)

SECTION 139 BR STATION 187+43.55
REPLACE EXISTING SUPERSTRUCTURE
WITH PRECAST PRESTRESSED CONCRETE
DECK BEAMS ON REHABILITATED
SUBSTRUCTURE
TOTAL & NET LENGTH OF SECTION 609.00 FEET = 0.115 MILES
TOTAL & NET LENGTH OF PROJECT 609.00 FEET = 0.115 MILES

CONTRACT NO. 44168



Donald D. Bell
DONALD D. BELL
IL. REG. PE. 37509
DATE: 3-14-88

TOLL FREE J.U.L.I.E. TELEPHONE NO.

1-800-892-0123

LONG CREEK TOWNSHIP

J.U.L.I.E. UTILITIES NON-JULIE UTILITIES

ILL. POWER TOWNSHIP OF LONG CREEK (WATER)

G.T.E.

217-864-3212

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED: _____ 19 ____

EXAMINED: _____ 5-17 19 88 DISTRICT ENGINEER

PASSED: _____ 5-17 88 ENGINEER OF PLANS AND CONTRACTS

APPROVED: _____ 5-17 88 ENGINEER OF DESIGN

DIRECTOR, DIVISION OF HIGHWAYS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED _____

DIVISION ADMINISTRATOR

MACON COUNTY

SECTION 139 BR

F.A. ROUTE 79

5-143

Benchmark Chiseled "a" on S.W. Wingwall of existing bridge, Elev. 661.17

Existing Structure: S.M. 05B-0021 built on FAP 79 (U.S. Rte. 36), Section 139BR, in 1928. Single Span @ 32'-0" long R.C. Deck Structure 39'-0" face - face curb on R.C. closed abutments. The contractor shall remove the existing superstructure in stages and provide a new superstructure consisting of PPC deck beams, W.M.S., and 1 3/4" Cl.I. Contractor shall also modify top of abut. walls & provide new approach slabs.

Traffic shall be maintained at all times utilizing stage construction.

DATE	REVISION	SECTION	COUNTY	TOTAL	SHEET
79	139BR	MACON	19	9	1
SHEETS					9

GENERAL NOTES

- 1.) A Calcium Nitrite Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.
- 2.) Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53, Grade 60.
- 3.) Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- 4.) Expansion Bolts shall consist of approved expansion anchors, providing minimum certified proof load = 4,000 lbs., and 3/4"x12" hooked bolts.
- 5.) The top surface of the beams shall be finished in accordance with Article 505.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of 1/4".
- 6.) Contractor shall remove, clean and reinstall existing Name Plate adjacent to the new Name Plate. Cost shall be incidental to Name Plates.
- 7.) See Proposal for Boring Data.

WATERWAY INFORMATION

Drainage Area = 3.19 sq. mi.		Low Grade Elev. = 661.84		@ Sta. 188+50					
Flood	Freq. Yr.	Q. C.F.S.	Opening Sq. Ft.	Nat. H.W.E.	Head-ft. Exist.	Head-ft. Prop.	Headwater Elev. Exist.	Headwater Elev. Prop.	
Design	50	653	166	652.2	0.5	0.5	652.7	652.7	
Base	100	757	171	652.4	0.7	0.7	653.1	653.1	
Overtopping									
Max. Calc.	500	979	180	652.7	1.0	1.0	653.7	653.7	

TOTAL BILL OF MATERIAL - BRIDGE

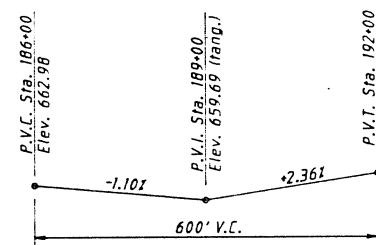
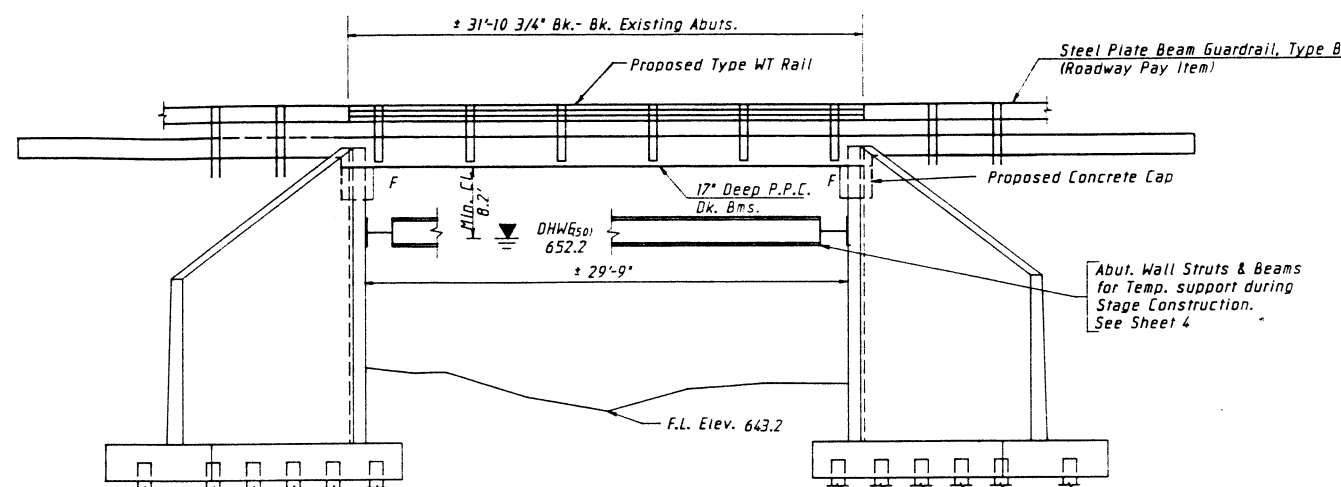
Item	Unit	Super.	Sub.	Total
Bit. Conc. Surface Course Mixture O, Cl.I.	Tons	16		16
Removal of Existing Superstructures	Each			1
Concrete Removal	Cu. Yds.		5.2	5.2
Expansion Bolts 3/4" Ø	Each		58	58
Class X Concrete	Cu. Yds.		18.3	18.3
P.P. Conc. Dk. Bm. (17" Dp.)	Sq. Ft.	1209		1209
Steel Railing Type WT	Lin. Ft.	64		64
Reinforcement Bars	Lbs.		2440	2440
Name Plates	Each			1
Portland Cement Mortar Fairing Course	Lin. Ft.	318		318
Waterproofing Membrane System	Sq. Yds.	134		134
Repair Concrete Structures	Sq. Ft.		5	5
Temporary Support System	L.S.			1
Temporary Sheet Piling	Sq. Ft.			243

GENERAL PLAN AND ELEVATION
F.A. 79 OVER TRIBUTARY TO LONG CREEK
SECTION 139 BR
STRUCTURE #05B-0021
MACON COUNTY

REVISIONS	DATE	BY	CHKD	APP'D
1	1988	JAS	GLM	JAS
2	1988	JAS	GLM	JAS
3	1988	JAS	GLM	JAS

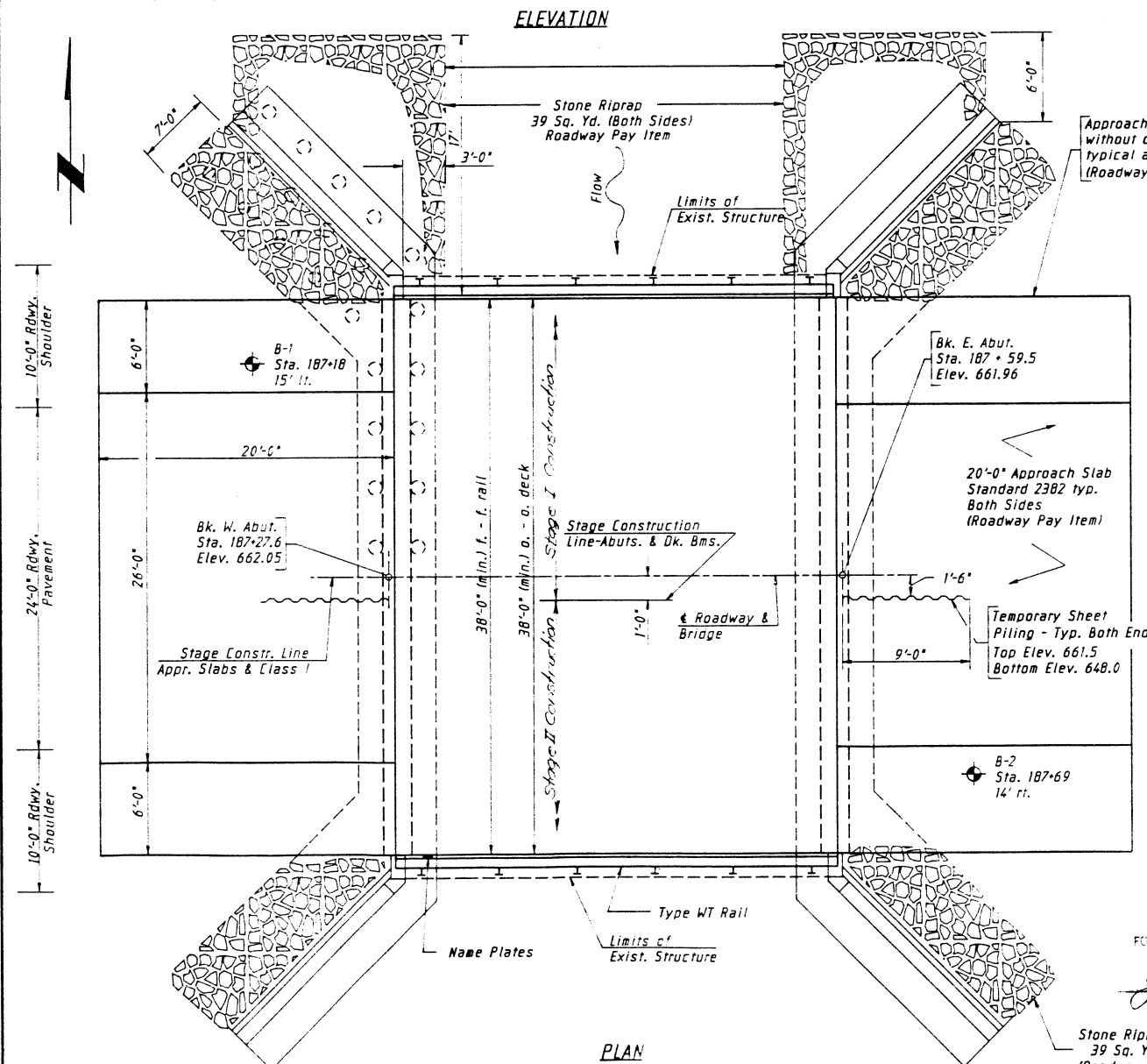
DESIGNED BY JAS
CHECKED BY GLM
DATE February 1988
JOB NO. 3-0071-003.01

Randolph & Associates, Inc.
Peoria / Decatur



PROFILE GRADE - F.A. 79

Profile applies Sta. 186+00 to Sta. 189+68

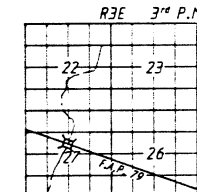


PROJECT ACBHF-79(26)

STATION 187+43
BUILT 198 BY
STATE OF ILLINOIS
F.A. 79 (ILL. RTE. 36)
SECTION 139 BR
LOADING HS-20
STR. NO. 05B-0021

NAME PLATE LETTERING

SEE STD. 2113



LOCATION MAP

DESIGN SPECS.: 1983 AASHTO Bridge Specs.
1984 AASHTO Interims.
Load Factor Design.

DESIGN LOADING: HS 20-44 (Superstructure)
25 PSF Future W.S.

DESIGN STRESSES: Field Units
f_c = 3500 psi
f_s = 60,000 psi (Reinf.)

Precast Prestressed Units
f_c = 5000 psi
f_s = 4000 psi
f_s = 270,000 psi (1/2\"/>

APPROVED FOR THE STATE OF ILLINOIS

James T. Rayburn
Engineer of Civil and Structural



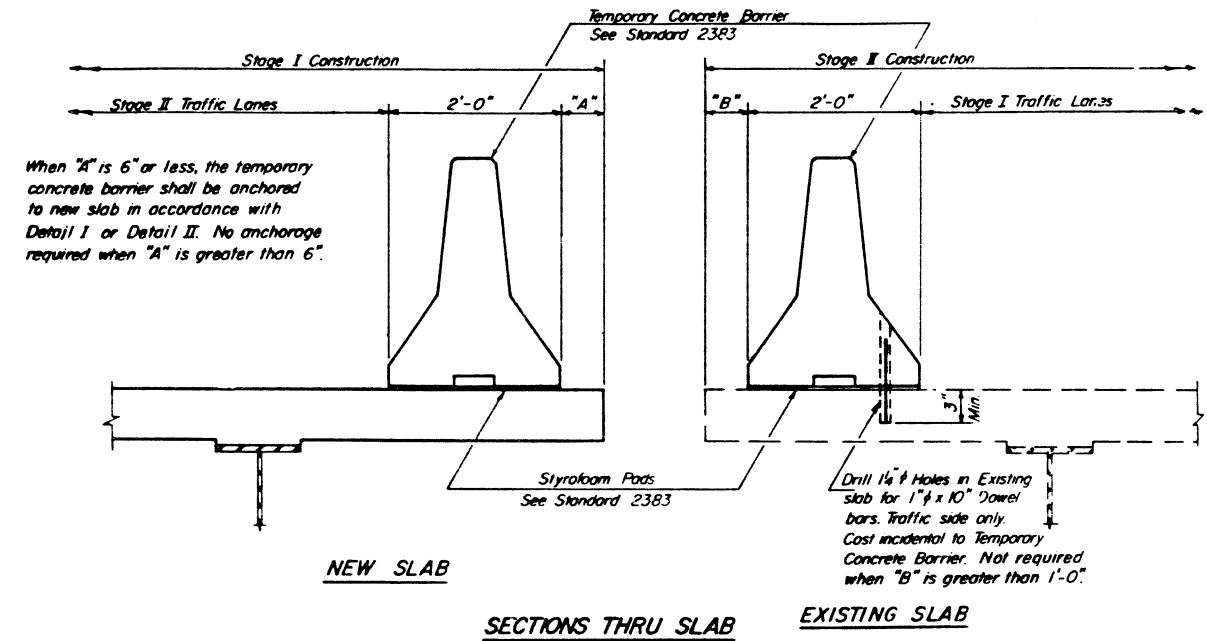
Donald D. Bell
DONALD D. BELL
ILL. REG. S.E. NO. 4544
DATE: 3-9-88

Stone Riprap - Typ. 4 Corners
39 Sq. Yd. (Total - 4 Corners)
(Roadway Pay Item)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
79	139 BR	MACON	19	11
SEE ROAD DIST. NO. 1				

SHEET NO. 3
SHEETS 9

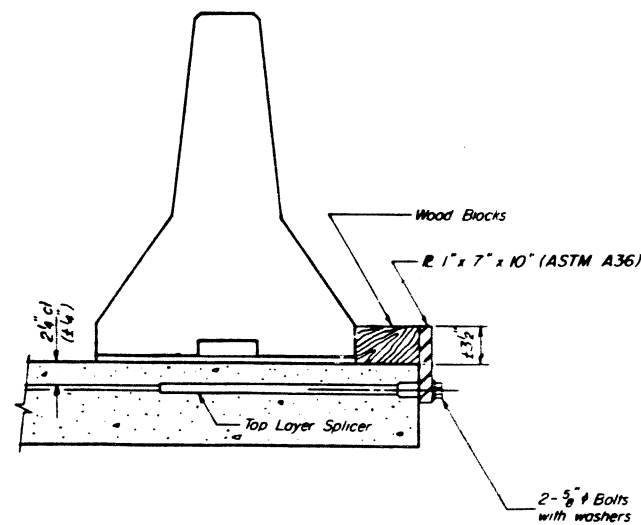


NOTES

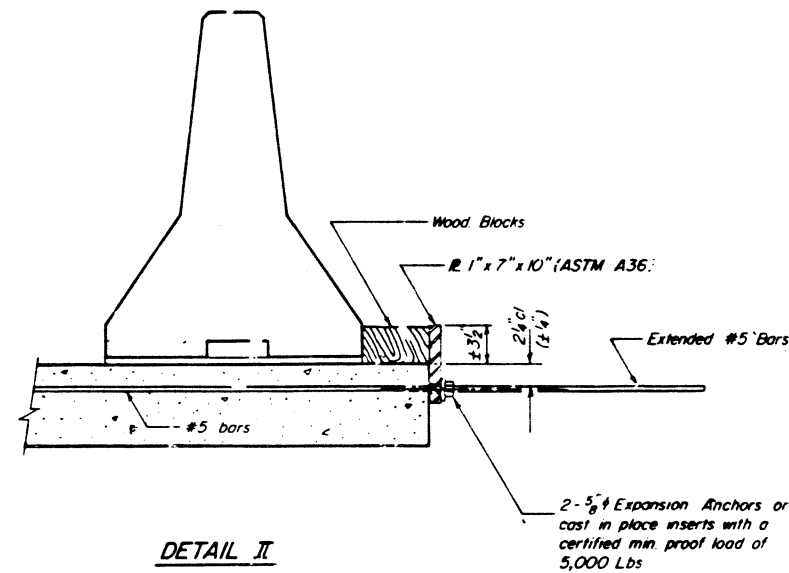
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x 10" steel PL to the top layer of couplers with 2-5/8" bolts screwed to coupler at approximate $\frac{1}{2}$ of each 10'-0" barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x 10" steel PL to the concrete slab with 2-5/8" Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate $\frac{1}{2}$ of each 10'-0" barrier panel.

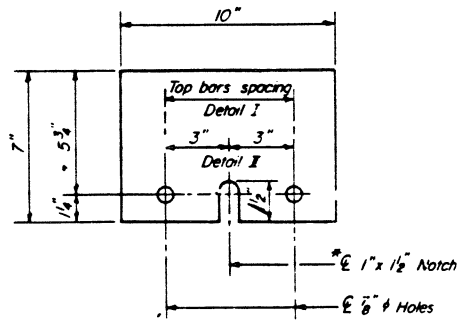
Cost of anchorage is incidental to Temporary Concrete Barrier.



The 1" x 7" x 10" Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



The 1" x 7" x 10" Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



1" x 7" x 10"

* Required only with Detail II

TEMPORARY CONCRETE BARRIER FOR
STAGE CONSTRUCTION

F.A. 79 OVER TRIBUTARY TO LONG CREEK

SECTION 139 BR

STRUCTURE #058-0021

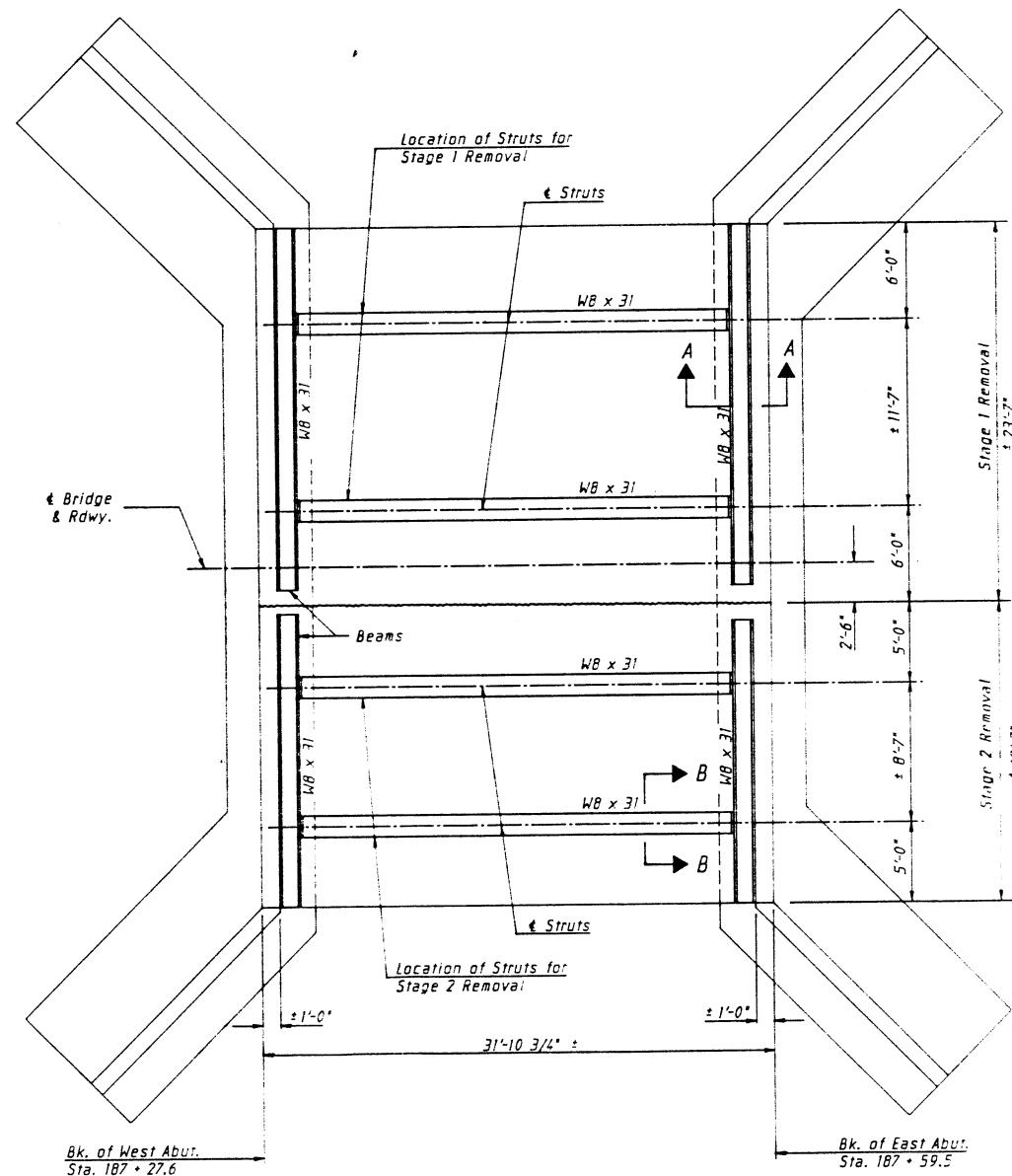
MACON COUNTY

R-27 6-15-83

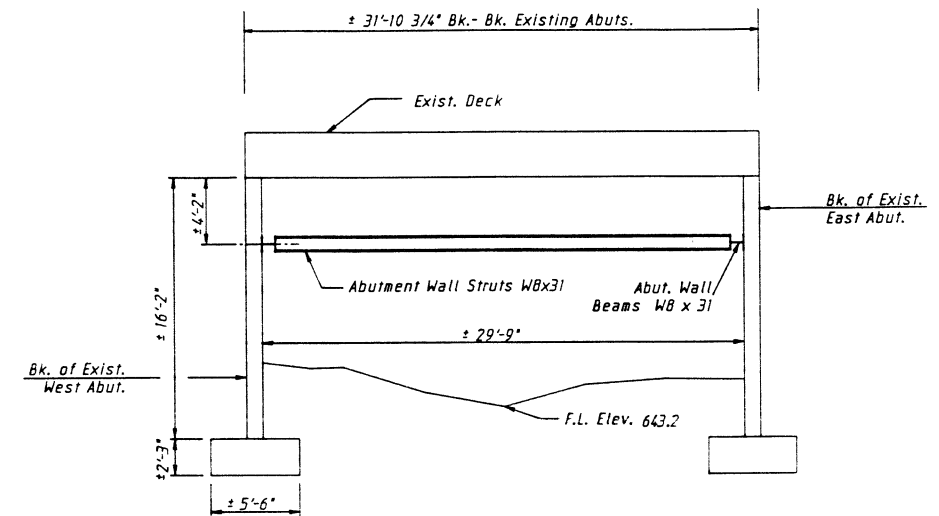
REVISIONS
DATE JAN 1988
BY 3-0071-003.01

Randolph & Associates, Inc.
Peoria / Decatur

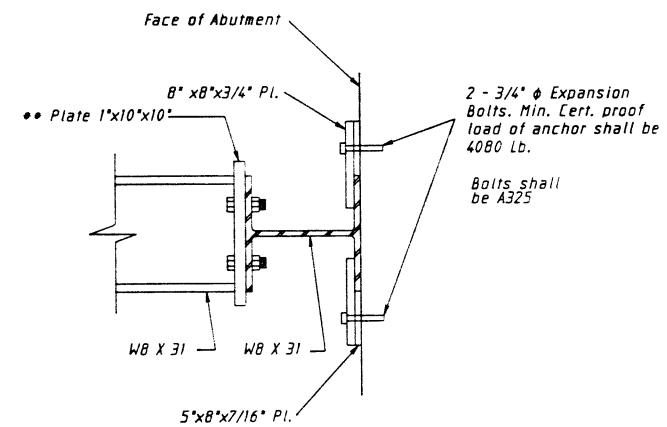
DESIGNED	CHECKED	DATE
JAS	JAS	008



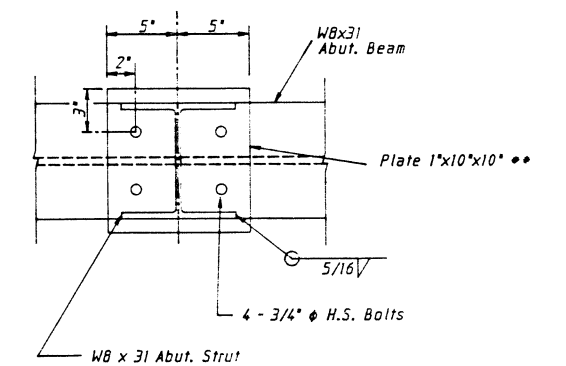
PLAN



SECTION THRU EXISTING DECK



SECTION A-A



SECTION B-B

NOTES:

1. Before any removal of the existing structure takes place, the abutment support struts and beams for Stage 1 Removal shall be in place. After Stage 1 construction is complete, the abutment support struts and beams shall be moved to the proper position before Stage 2 Removal.

2. Length for W8x31 abutment support struts and beams shall be determined in the field by the Contractor before ordering material.

TEMPORARY SUPPORT DETAILS
F.A. 79 OVER TRIBUTARY TO LONG CREEK
SECTION 139 BR
STRUCTURE #058-0021
MACON COUNTY

REVISIONS		SURVEYED DLH
DATE	139BR.B4	DRAWN JAS
DATE	February 1988	CHECKED JAS
DATE	3-0071-003.01	DESIGNED JAS
		CHECKED DOR

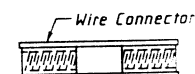
R Randolph & Associates, Inc.
Peoria / Decatur

The diameter of this bar is the same diameter as the bar spliced.

ROLLED THREAD DOWEL BAR



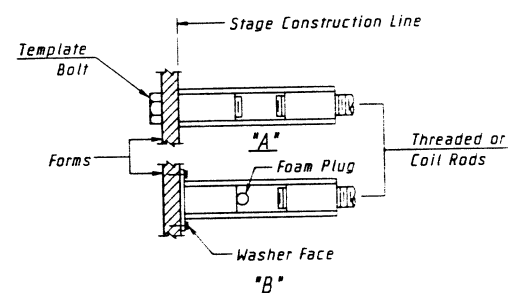
****ONE PIECE**



WELDED SECTIONS

SPLICER ALTERNATIVES

• Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used



INSTALLATION AND SETTING METHODS

- *A* Set splicer by means of a template bolt.
 B Set splicer by nailing to wood forms or cementing to steel forms

NOTES

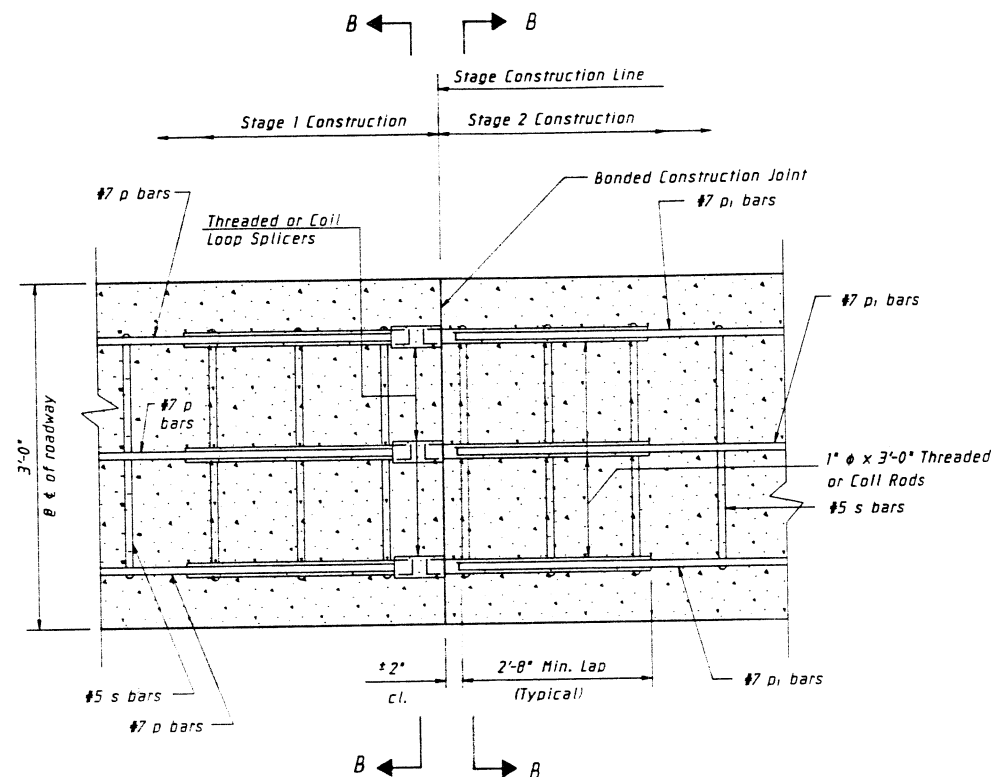
Steel Splicer (Coupler) assembly shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
 Steel Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length and have effective tensile stress area equal or greater than that of the lapped reinforcement bars.
 All reinforcement bars shall be lapped and tied to the splicer rods.
 Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed splicer (coupler) assembly satisfies the following requirements:

- Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_s$
- Minimum Pull - out Strength (Tension in kips) = $1.25 \times f_{s,allow} \times A_s$

Where f_y = Yield strength of lapped reinforcement bars in ksi
 $f_{s,allow}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_s = Tensile stress area of lapped reinforcement bars
 • 28 day concrete

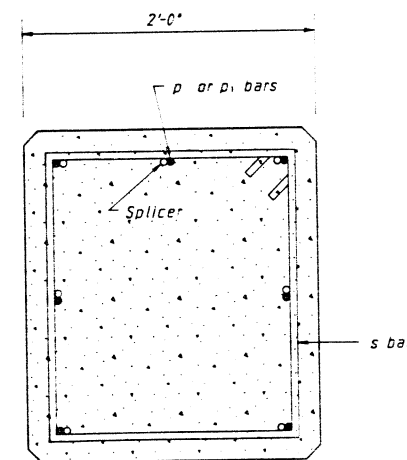
Typical Splicer (Coupler) Assembly Sizes

In Sub-structures	#7 bar lap with 1" Ø Splicer (Coupler) x 3'-5" Splicer Rods	Minimum Capacity = 45.1 kips - tension Minimum Pull - out Strength = 18.0 kips - tension
	#8 bar lap with 1 1/4" Ø Splicer (Coupler) x 4'-6" Splicer Rods	Minimum Capacity = 58.9 kips - tension Minimum Pull - out Strength = 23.5 kips - tension



SECTION THRU ABUTMENTS

No epoxy coating required



SECTION B-B

SPLICER DETAILS

No. Req'd 14 (for 2 abuts.)
 - Cost Incidental to Reinforcement Bars.

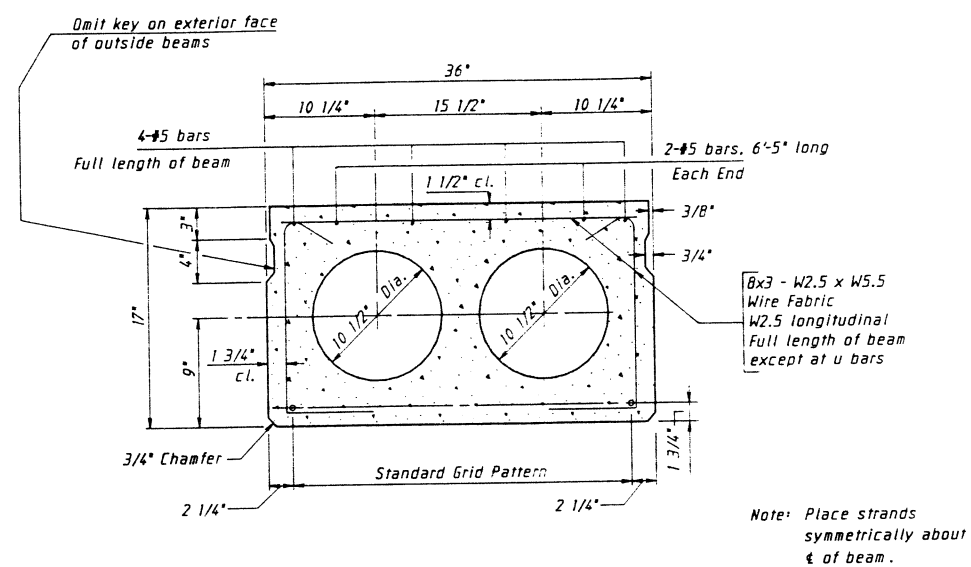
BAR SPLICER DETAILS
 F.A. 79 OVER TRIBUTARY TO LONG CREEK
 SECTION 139 BR
 STRUCTURE #058-0021
 MACON COUNTY

REVISIONS	DATE	BY	CHKD	APP'D
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2	3-0071-003.01	GLM	JAS	JAS

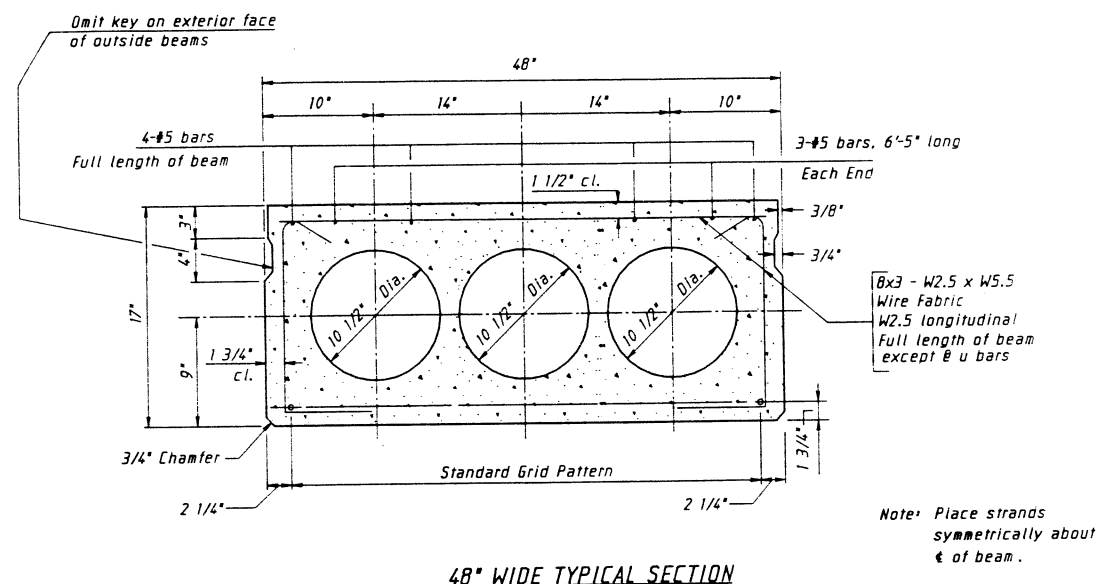
Randolph & Associates, Inc.
 Peoria / Decatur

DATE	ISSUE	SECTION	COUNTY	TOTAL	SHEET
F.A.	79	139BR	MACON	19	15
DATE	139BR.87	DATE	January 1988	JOB NO.	3-0071-003.01

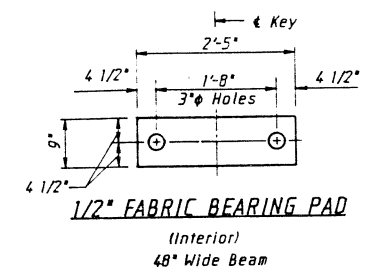
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SHEETS 9



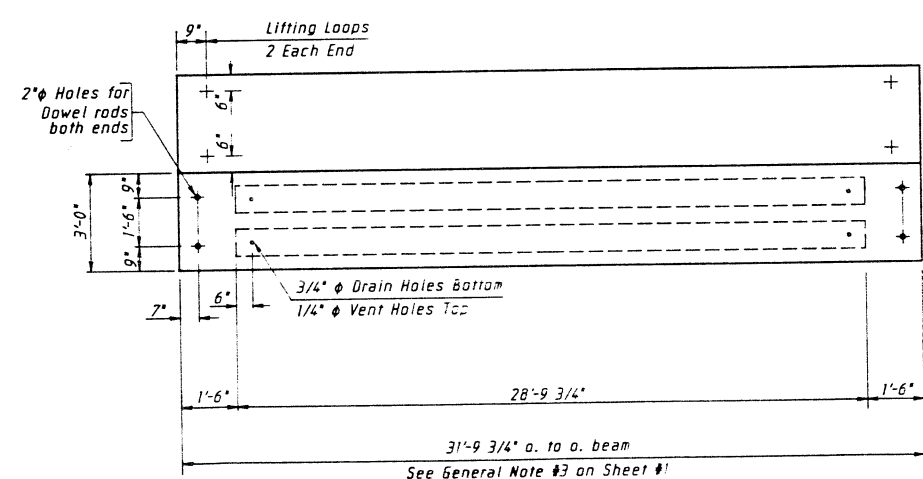
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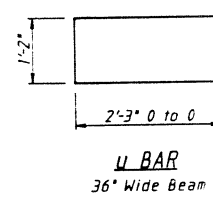
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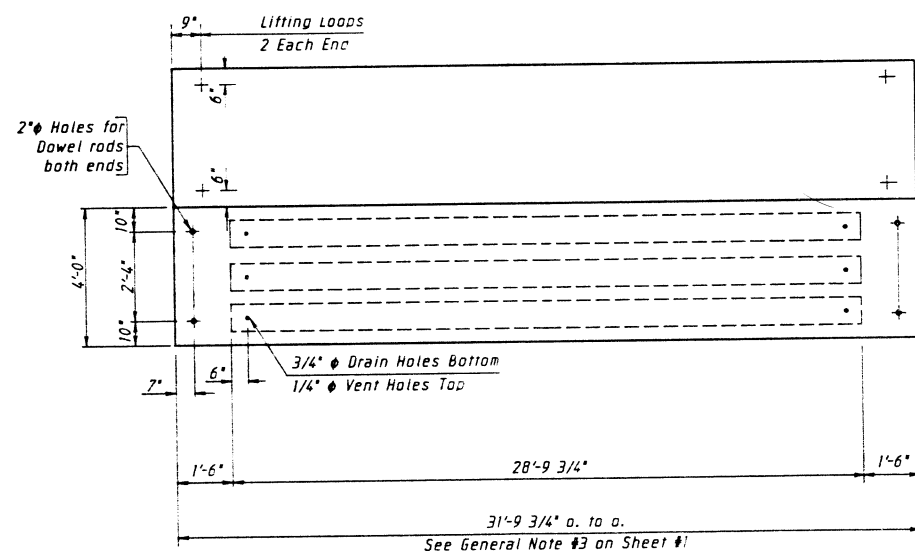
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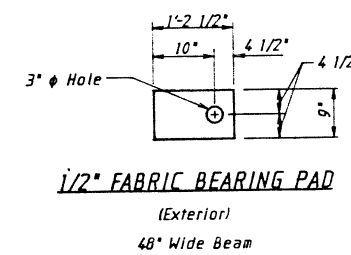
PLAN 36\"/>



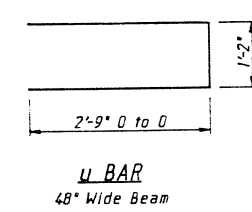
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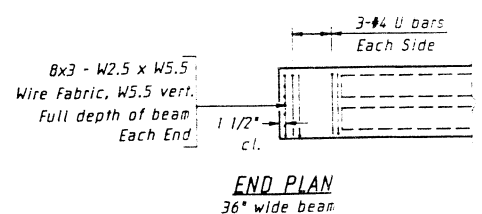
PLAN 48\"/>



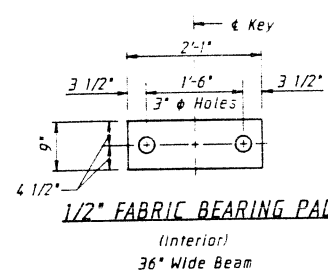
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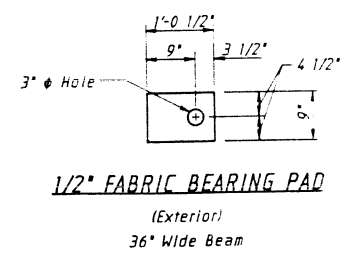
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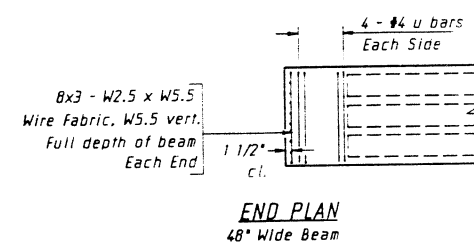
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1/2\"/>



1/2\"/>

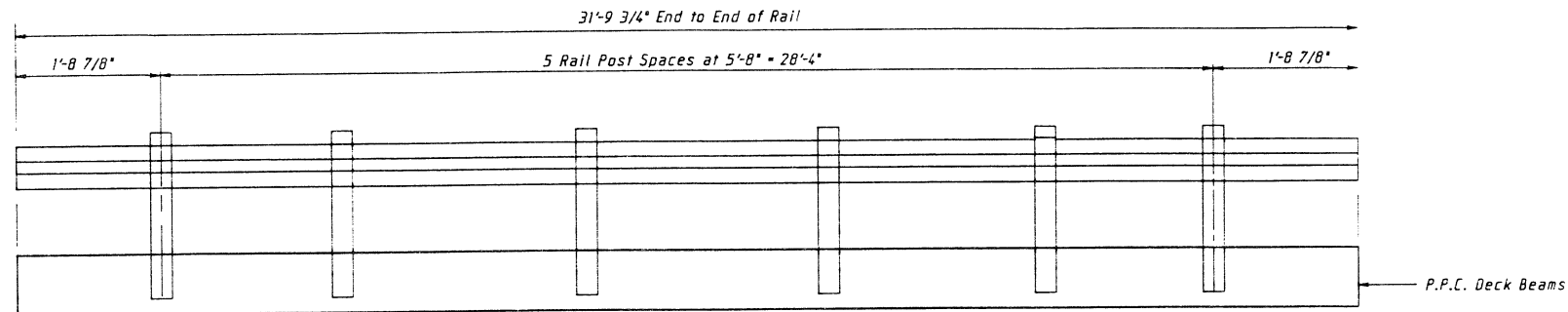


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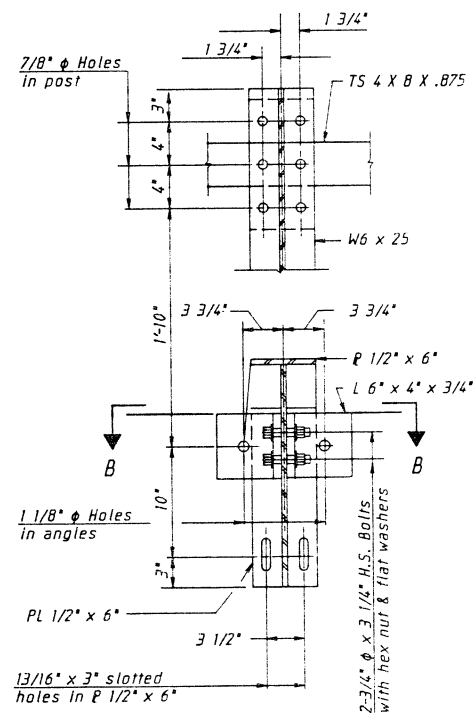
SUPERSTRUCTURE
F.A. 79 OVER TRIBUTARY TO LONG CREEK
SECTION 139 BR
STRUCTURE #058-0021
MACON COUNTY

REVISED	DATE	BY	CHKD	APPD
1	139BR.87	JAS	GLH	
2	January 1988	JAS	JAS	
3	3-0071-003.01	JAS	008	

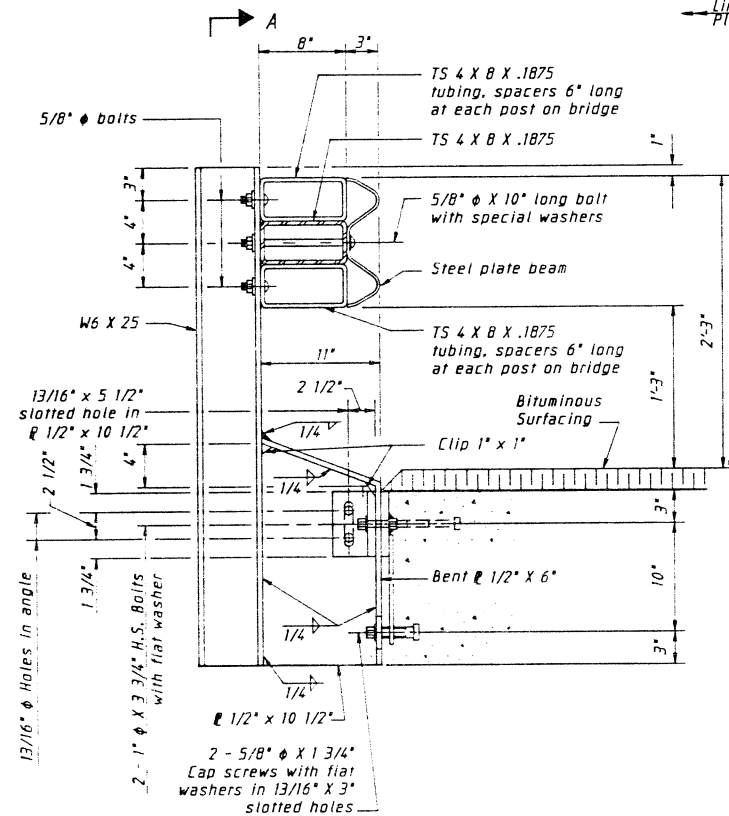
R Randolph & Associates, Inc.
 Peoria / Decatur



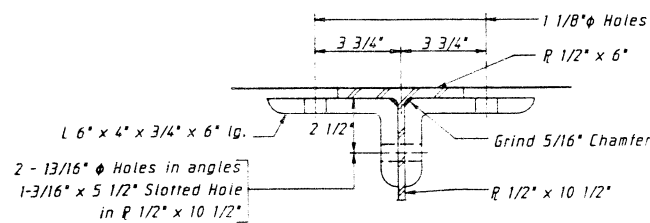
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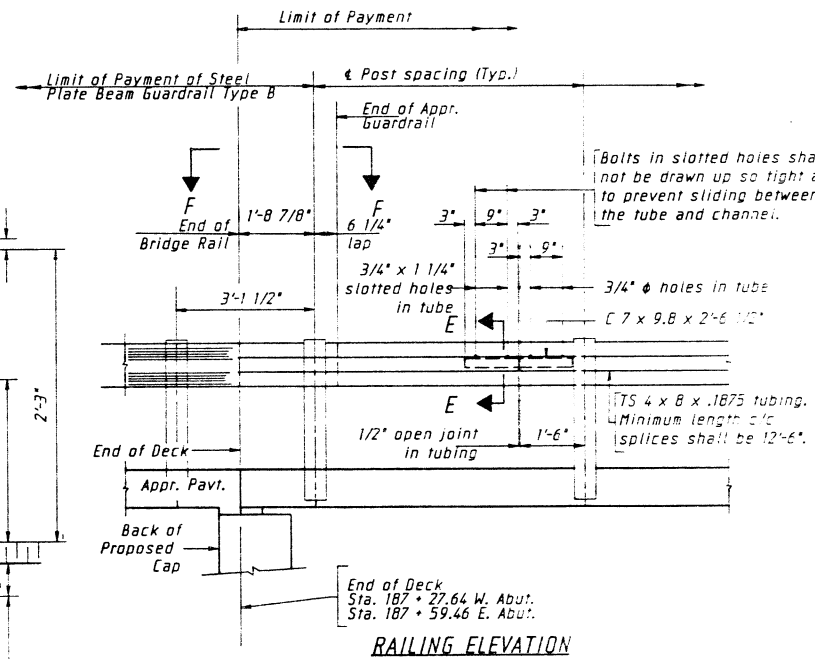
SECTION A-A



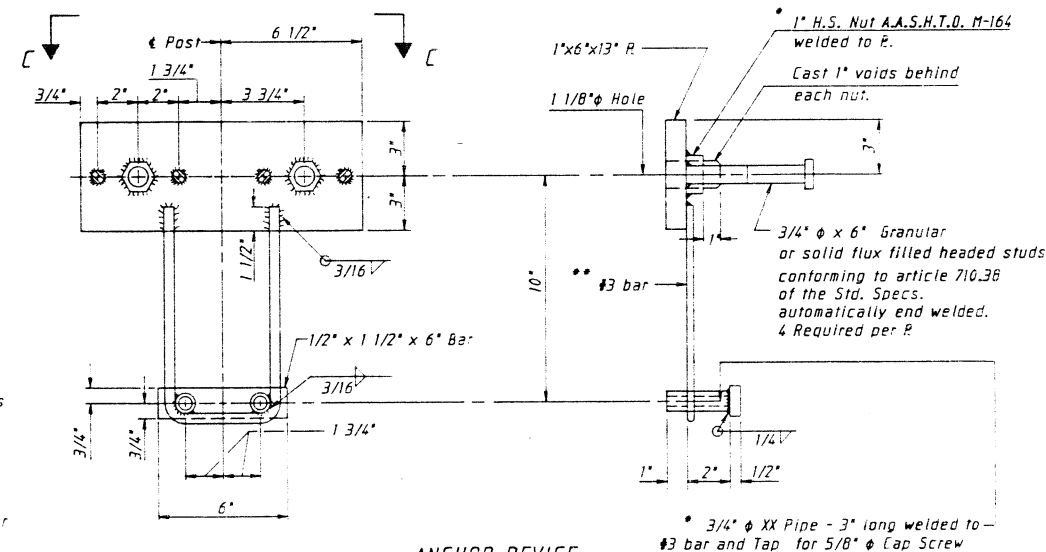
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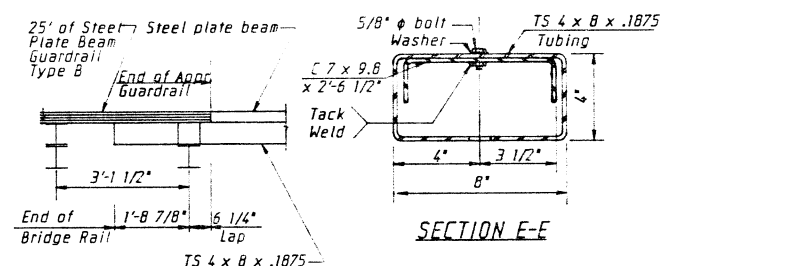
SECTION B-B



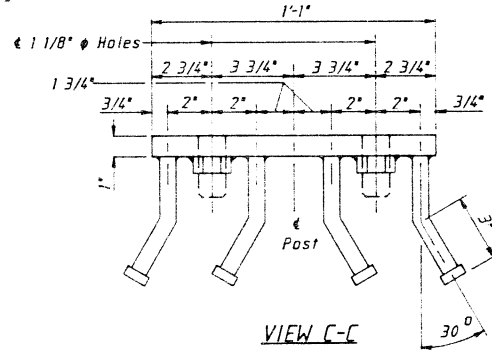
RAILING ELEVATION



ANCHOR DEVICE



SECTION E-E



VIEW C-C

RAIL
BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type WT	Lin. Ft.	64

TYPE WT RAILING
F.A 79 OVER TRIBUTARY TO LONG CREEK
SECTION 139 BR
STRUCTURE #058-0021
MACON COUNTY

REV.	DATE	BY	CHKD.	DESCRIPTION
1	1/10/88	JAS	JAS	ISSUED FOR CONSTRUCTION

REVISIONS

REV.	DATE	BY	CHKD.	DESCRIPTION
1	1/10/88	JAS	JAS	ISSUED FOR CONSTRUCTION

DRG. NO. 139BR-RR
DATE JANUARY 1988
JOB NO. 3-0071-003.01

DESIGNED BY JAS
CHECKED BY JAS
DRAWN BY HMR
CHECKED BY JAS
SURVEYED BY DLH

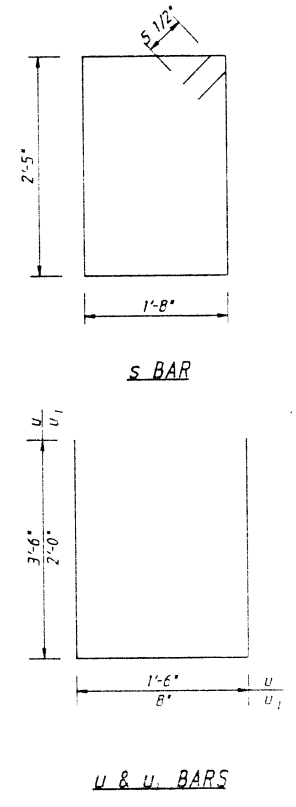
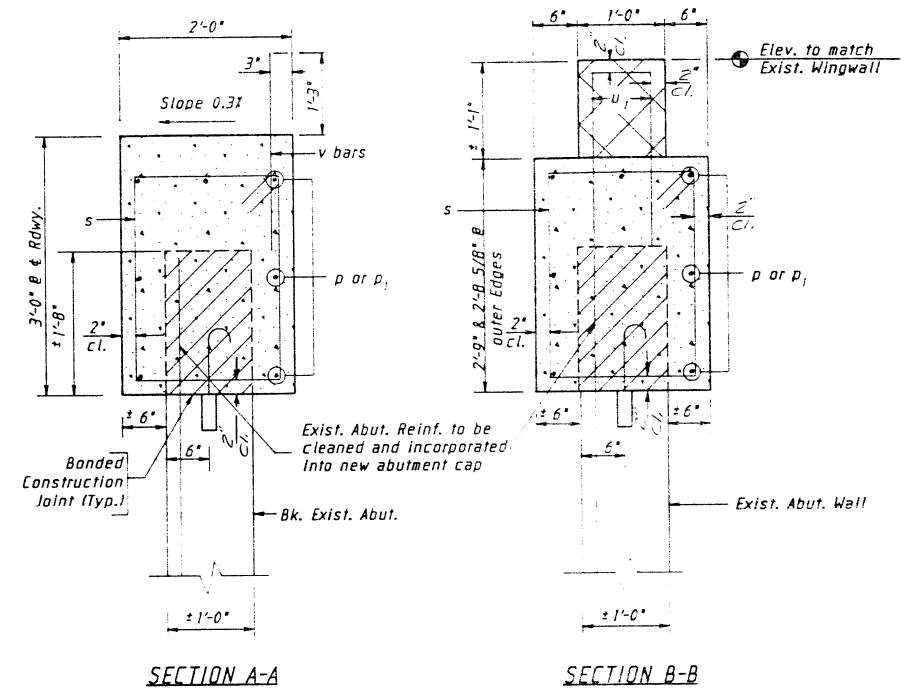
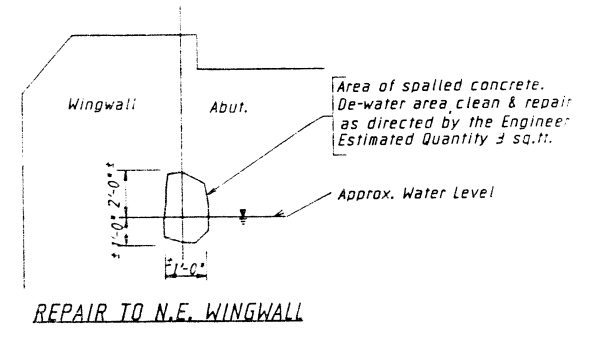
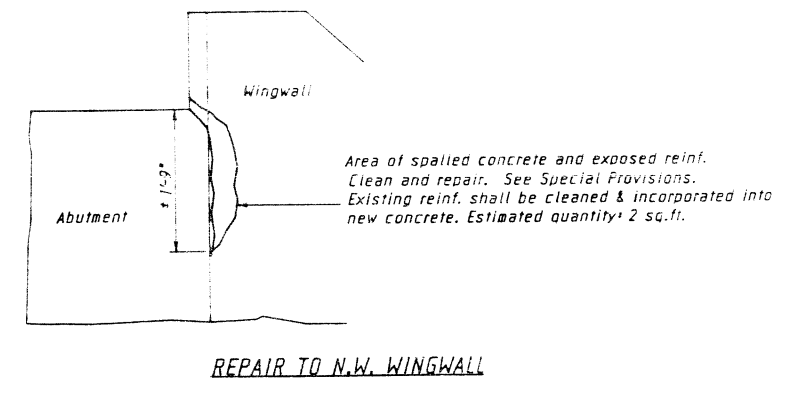
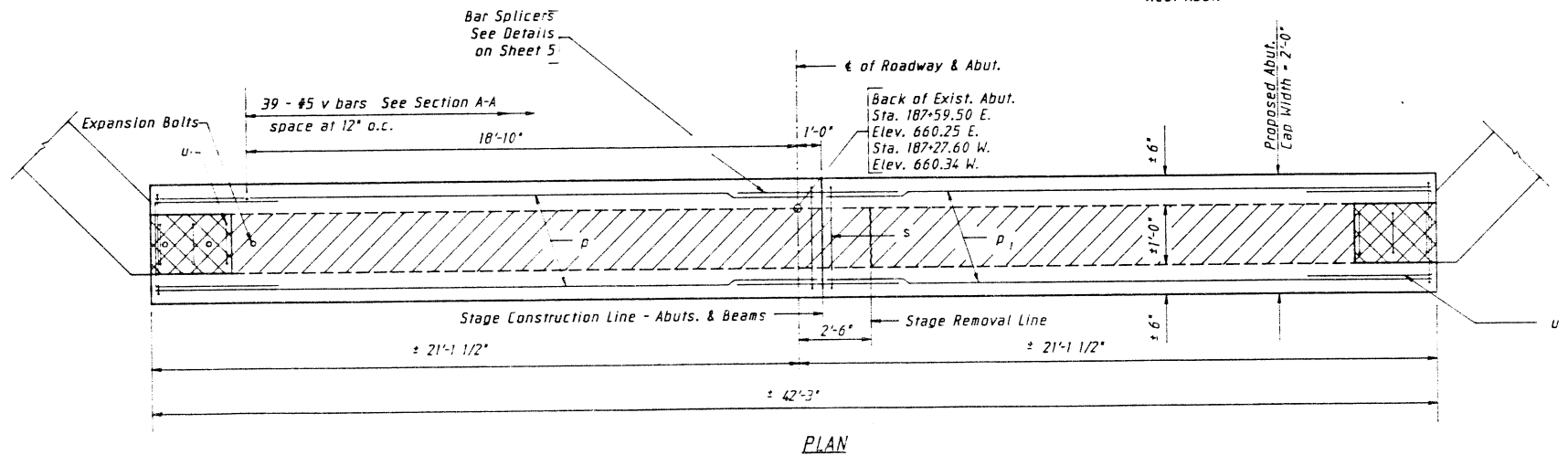
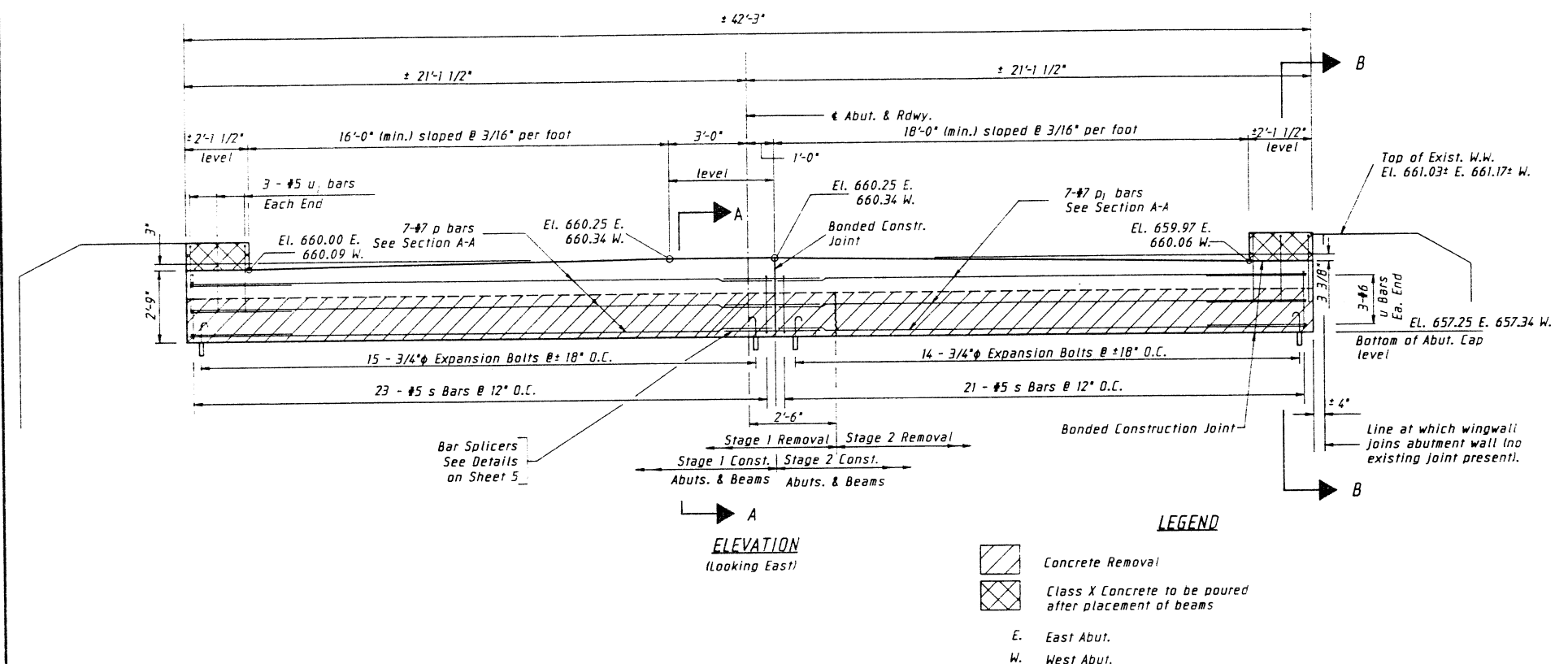
Randolph & Associates, Inc.
Peoria / Decatur

NOTES

- 1.) Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B Structural Steel Tubing.
- 2.) All other steel shapes and plates shall conform to the requirements of A.A.S.H.T.O. M-183 except posts and angles shall conform to A.A.S.H.T.O. M-223, Grade 50.
- 3.) Bolts, cap screws, and nuts shall conform to the requirements of A.S.T.M. designation A-307 except for high strength bolts, nuts and washers noted which shall conform to A.A.S.H.T.O. M-164.
- 4.) All bolts, nuts, cap screws, washers and lock washers shall be galvanized in accordance with A.A.S.H.T.O. M-232.
- 5.) All posts, railing, rail splices, anchor devices and angles shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O. M-111 and A.S.T.M. A-385. Galvanized rail shall not be painted.
- 6.) Railing shall be in accordance with Section 508 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per linear foot for STEEL RAILING, TYPE WT.
- 7.) All field drilled holes shall be coated with an approved zinc rich paint before erection.
- 8.) The 1/2" x 6" plates that come in contact with concrete shall receive two coats of asphalt paint conforming to Section 714.08 Type B or place 1/8" fabric bearing pads between the post and concrete.
- 9.) The 3/4" high strength bolts used to connect the 6" x 4" x 3/4" angles to the posts shall be tightened in accordance with Article 507.04 (g) (3) of the Standard Specifications. The 1" high strength bolts connecting the angles to the concrete shall be tightened to a snug fit and given an additional 1/8 turn. The 5/8" cap screws in bottom of posts shall be tightened to a snug fit only.

- * Threaded areas shall be plugged or blocked off during casting of beam
- ** Whenever the lower insert assemblies interfere with strand locations, the #3 bars shall be cut and adjusted in order to allow raising or lowering of the lower inserts. Maximum adjustment not to exceed 1/2".

DATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
79	1398R	MACON	19	17
DATE	BY	CHKD	APP'D	REV
79	JAS	JAS	JAS	JAS



BILL OF MATERIAL - TWO ABUTS.

Bars	No.	Size	Length	Shape
p	14	#7	21'-9"	—
p	14	#7	19'-9"	—
s	88	#5	9'-1"	□
u	12	#6	8'-6"	U
u	12	#5	4'-8"	U
v	78	#5	2'-6"	—

ABUTMENT DETAILS
F.A. 79 OVER TRIBUTARY TO LONG CREEK
SECTION 139 BR
STRUCTURE #058-0021
MACON COUNTY

REVISIONS	DRAWN	CHECKED	DESIGNED	APPROVED
DATE	79	79	79	79
BY	JAS	JAS	JAS	JAS
CHKD	JAS	JAS	JAS	JAS
APP'D	JAS	JAS	JAS	JAS

R Randolph & Associates, Inc.
Engineers / Architects

INDEX TO SHEETS

Sheet No.	1	Title Page
	2	Standard Cross Section No. 1218, 1230 with cover
	3	Standard 16 ft. Gravel Cross Section No. 1234
	3	Standard Gutter Section And Culvert No. 1238 with Cover
	4	Plan And Profile Sta. 0+00 To Sta. 22+00
	5	22+00 - 54+00
	6	54+00 - 118+00
	7	118+00 - 182+00
	8	182+00 - 246+00
	9	246+00 - 278+00
	10	278+00 - 342+00
	11	342+00 - 352+00
	12 To 30	Inclusive Cross Sections
	31	Standard Culvert Design No. 828-1, 828-5, 1117-7, 1204-1
	32	Special Sta. 25+85, 56+00, 63+00, 79+00
	33	93+00, 108+00, 123+23, 156+00
	34	(88+30, 183+90) 211+00, 234+00, 241+50
	35	268+00, 291+00
	35	Bridge 187+44 Sheet No. 1 of 2 Sheets
	35	237+49 - 2-2
	36	187+49 - 2-2
	37	237+49 - 1-2
	38	340+87 - 1-2 of 2
	39	Standards No. 1162 1177, 845

SUMMARY OF QUANTITIES SEC. 139 SEC. 139B

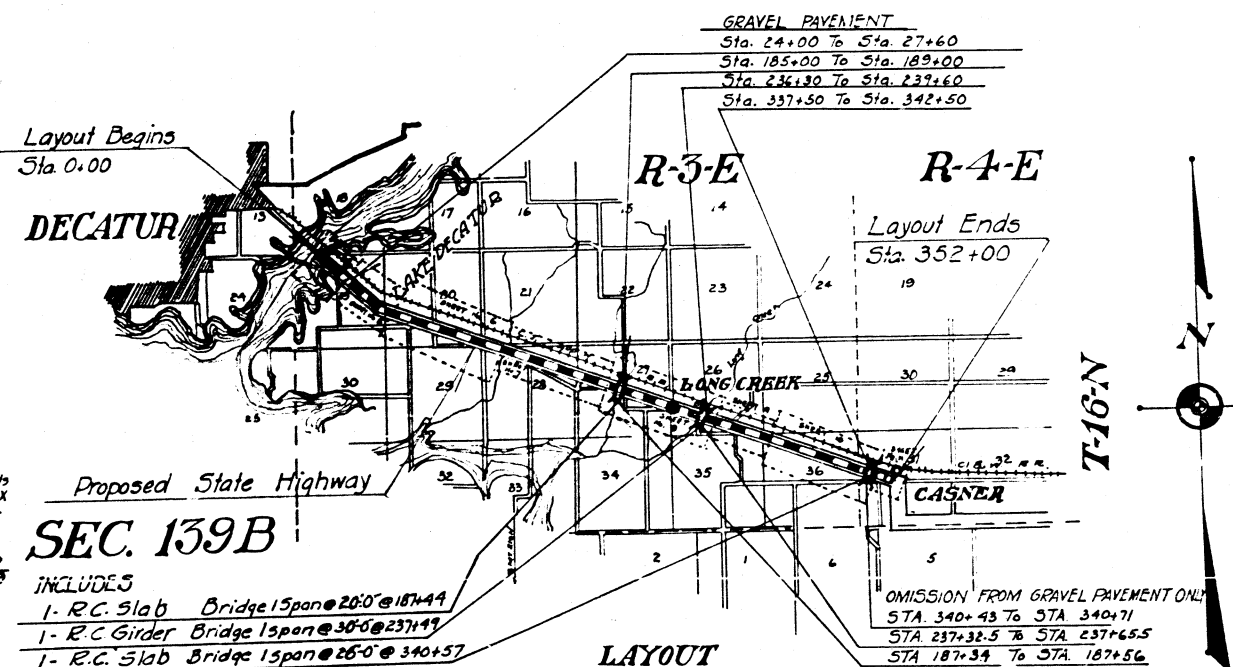
75,402	Cu. Yds. Class A Excavation	9286	Cu. Yds. Class A Concrete
71,022	Sq. Yds. Earth Shoulders	12.9	Cu. Yds. Class X Concrete
14,489	Sq. Yds. Pavement	114,800	Lbs. Reinforcing Steel
2,300	Lin. Ft. Concrete Gutter	2040	Lin. Ft. Untreated Piles-10 Ton
2,977	Cu. Yds. Class A Concrete	1360	Lin. Ft. Untreated Piles-12 Ton
26,950	Lbs. Reinforcing Steel	3680	Lin. Ft. Untreated Piles-15 Ton
96	Rods Hedge Pulling	1570	Lbs. Rockers and Plates
64	Each Setting Right Of Way Markers	3	Each Name Plates
2,679	Sq. Yds. Gravel Pavement		

SUMMARY OF CONCRETE SEC. 139 SEC. 139B

Standard Culvert Design No.	828-1-1	9.0	Cu. Yds. Class A	Special Bridge Design Sta.	187+4	227.7	3.5
828-1-3	17.1	1	828-5-3	3.1	237+49	468.6	5.1
1111-7-3	4.8	1	1204-1-1	7.6	340+57	238.3	4.3
1204-1-3	9.4						
Sta. 25+85	30.5						
36+00	9.3						
63+00	13.9						
79+00	8.3						
93+00	8.8						
108+00	9.4						
123+23	68.6						
156+00	12.4						
188+00	5.0						
188+90	5.0						
211+00	9.0						
234+00	14.7						
241+50	12.4						
268+00	12.0						
291+00	18.8						
TOTAL	2977	Cu. Yds.					

SBI Route 121 PROJ. 135 SECTION 139 AND 139B MACON CO.

From a point near the N.W. Cor. of the N.E. 1/4 of the N.W. 1/4 of Sec. 19, T-16-N, R-3-E, of the 3rd P.M.
To a point near the S.E. Cor. of the N.W. 1/4 of Sec. 31, T-16-N, R-4-E, of the 3rd P.M.



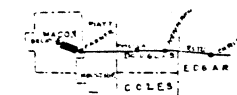
Approximate Scale 1 Inch = 1 Mile
Net Length of Layout 35,200.0 Ft. 6.667 Miles

SUMMARY

Station to Station	Gross Length Along Transit Line	Corrections For Curves	Corrections For Relocations	Net Length of Layout Along Final E	Omissions	Net Length to be Improved In Feet	Roadway Over Bridges	Square Yards of Pavement
0+00	11+00	20'	1100			1100		2444.4
11+00	22+00	20'	1100			1100		2444.4
22+00	24+00	20'	200			200		444.4
24+00	27+60	20'	360			360		640.0
27+60	185+00	20'	15,740			15,740		34,977.7
185+00	189+00	20'	400			400		672.0
189+00	234+30	20'	4730			4730		10,511.1
234+30	239+60	20'	530			530		528.0
239+60	337+50	20'	9790			9790		21,755.5
337+50	342+50	20'	500			500		839.0
342+50	352+00	20'	950			950		2111.1
TOTAL			35,200			35,200		77,367.6

* OMISSION FROM GRAVEL PVT. ONLY

State Bond Issue Route 121
Section A-139 and A-139B, Macon Co.



1177, 845

3-18

3-25

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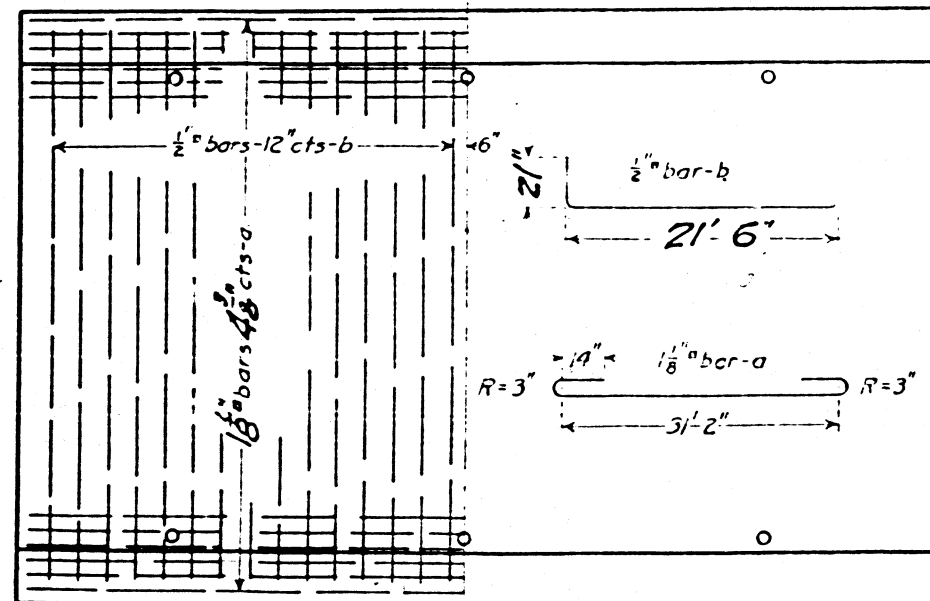
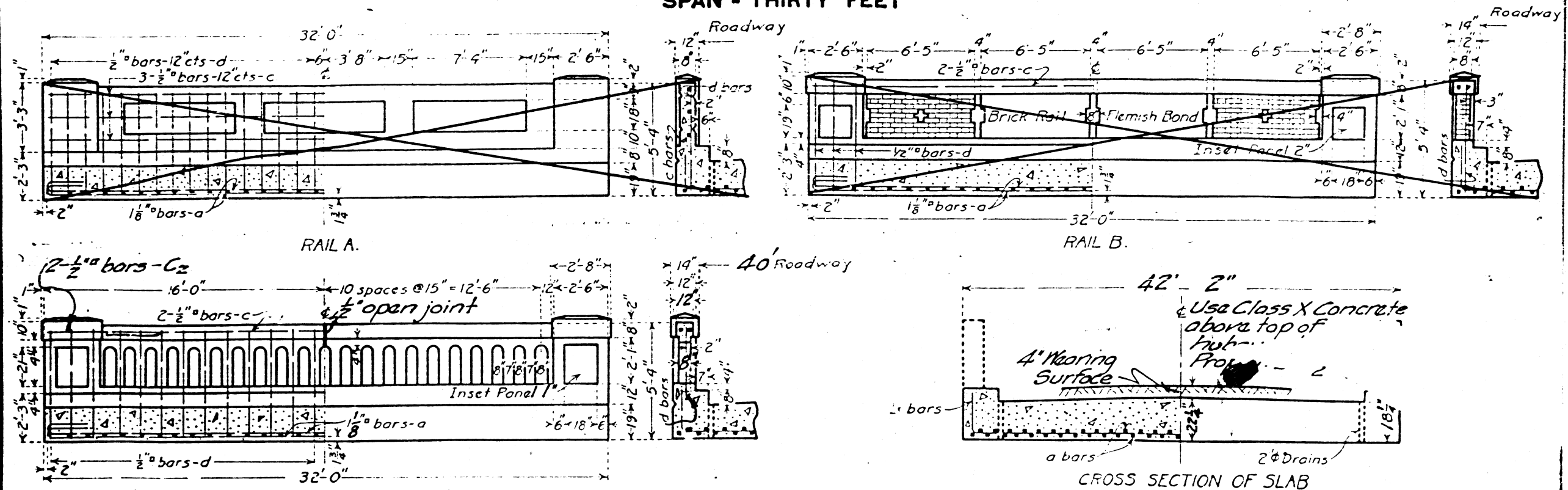
3-99

3-100

187+44
139B

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS
REINFORCED CONCRETE SLAB
SPAN - THIRTY FEET

Sheet No.
2 Sheets



BILL OF MATERIAL

	16 FT. ROADWAY.	18 FT. ROADWAY.	20 FT. ROADWAY.	24 FT. ROADWAY.	40 FT. ROADWAY.
RAIL A	Bars No Size Length	Bars No Size Length	Bars No Size Length	Bars No Size Length	Bars No Size Length
	a 49 1/8" 35'-0"	a 54 1/8" 35'-0"	a 60 1/8" 35'-0"	a 71 1/8" 35'-0"	a 87 1/8" 35'-0"
	b 30 1/2" 21'-0"	b 30 1/2" 23'-0"	b 30 1/2" 25'-0"	b 30 1/2" 29'-0"	b 30 1/2" 35'-0"
	c 6 1/2" 31'-6"	c 6 1/2" 31'-6"	c 6 1/2" 31'-6"	c 6 1/2" 31'-6"	c 6 1/2" 31'-6"
	d 64 1/2" 5'-0"	d 64 1/2" 5'-0"	d 64 1/2" 5'-0"	d 64 1/2" 5'-0"	d 64 1/2" 5'-0"
RAIL B	Steel-Lbs. 8350	Steel-Lbs. 9150	Steel-Lbs. 10110	Steel-Lbs. 11870	Steel-Lbs. 14430
	Concrete-Cu Yds. 43.3	Concrete-Cu Yds. 47.3	Concrete-Cu Yds. 51.3	Concrete-Cu Yds. 59.3	Concrete-Cu Yds. 71.3
	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6
RAIL C	Bars No Size Length	Bars No Size Length	Bars No Size Length	Bars No Size Length	Bars No Size Length
	a 49 1/8" 35'-0"	a 54 1/8" 35'-0"	a 60 1/8" 35'-0"	a 71 1/8" 35'-0"	a 87 1/8" 35'-0"
	b 30 1/2" 21'-0"	b 30 1/2" 23'-0"	b 30 1/2" 25'-0"	b 30 1/2" 29'-0"	b 30 1/2" 35'-0"
	c 4 1/2" 31'-6"	c 4 1/2" 31'-6"	c 4 1/2" 31'-6"	c 4 1/2" 31'-6"	c 4 1/2" 31'-6"
	d 12 1/2" 5'-0"	d 12 1/2" 5'-0"	d 12 1/2" 5'-0"	d 12 1/2" 5'-0"	d 12 1/2" 5'-0"
RAIL C	Steel-Lbs. 8070	Steel-Lbs. 8880	Steel-Lbs. 9030	Steel-Lbs. 11590	Steel-Lbs. 14150
	Concrete-Cu Yds. 41.6	Concrete-Cu Yds. 45.6	Concrete-Cu Yds. 49.6	Concrete-Cu Yds. 57.6	Concrete-Cu Yds. 69.6
	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6
RAIL D	Bars No Size Length	Bars No Size Length	Bars No Size Length	Bars No Size Length	Bars No Size Length
	a 49 1/8" 35'-0"	a 54 1/8" 35'-0"	a 60 1/8" 35'-0"	a 71 1/8" 35'-0"	a 87 1/8" 35'-0"
	b 30 1/2" 21'-0"	b 30 1/2" 23'-0"	b 30 1/2" 25'-0"	b 30 1/2" 29'-0"	b 30 1/2" 35'-0"
	c 4 1/2" 31'-6"	c 4 1/2" 31'-6"	c 4 1/2" 31'-6"	c 4 1/2" 31'-6"	c 4 1/2" 31'-6"
	d 52 1/2" 5'-0"	d 52 1/2" 5'-0"	d 52 1/2" 5'-0"	d 52 1/2" 5'-0"	d 52 1/2" 5'-0"
RAIL D	Steel-Lbs. 8240	Steel-Lbs. 9050	Steel-Lbs. 10000	Steel-Lbs. 11760	Steel-Lbs. 18810
	Concrete-Cu Yds. 42.6	Concrete-Cu Yds. 46.6	Concrete-Cu Yds. 50.6	Concrete-Cu Yds. 58.6	Concrete-Cu Yds. 78.6
	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6	Brick Rail-Cu Yds. 2.6
					Con. Cl. X Cu Yds. 4.9
					Normal Plate 1

Class A concrete to be used below top of hubguard USE RAIL C, 40 FT. ROADWAY.
Proportions-1 1/2 : 2 1/4.

COMPUTED	Walter J. Todd
CHECKED	W.B. McKelvey
DRAWN	W.B. McKelvey
CHECKED	W.B. McKelvey
ASSEMBLED	W.B. McKelvey
CHECKED	W.B. McKelvey

EXAMINED April 26, 1927
J. F. Bunch
BRIDGE ENGINEER
APPROVED
Frank T. Tellefsen
CHIEF HIGHWAY ENGINEER

State Bond Issue Route 121
Section 139 B Macon Co.
Station 187+44

$$z \quad z$$

*Elev East Abutment 122.33
Elev West Abutment 122.43*

1/2" Bit Felt Joint

Flow

April 26, 27

*10 Ton Untreated Pile 10" butt
8' tip 20 Req'd 300 Lin Ft.
12 Ton Untreated Pile 12" butt
10' tip 16 Req'd 320 Lin Ft.
15 Ton Untreated Pile 12" butt
10' tip 56 Req'd 1120 Lin Ft.*

Flow

15.10.77
10.4 p.

11.31

State Bond Issue Route 121
Section 139B Moran Co.
Station 137+44

April 26, 27
H. F. Burch
H. F. Burch