MOULTRIE CO. SEC. 1(BR-2,BR-3) I&R 2-7-86

#133

070-0041

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

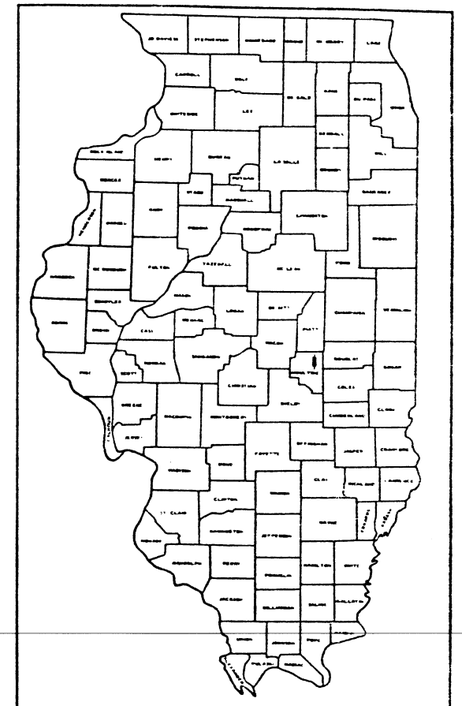
RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.S.659	(BR-2,BR-3)	MOULTRIE	46	1
F.H.W.A. REG.	ILLINOIS	PROJECT BRS-659(103)		

P-95-077-80

SCALES { PLAN / PROFILE HORIZ. / PROFILE VERT. / CROSS SECTIONS

F.A.S. ROUTE 659, SECTION 1 (BR-2,BR-3)
MOULTRIE COUNTY
PROJECT BRS-659(103)

C-95-009-86
BRIDGE REPLACEMENT



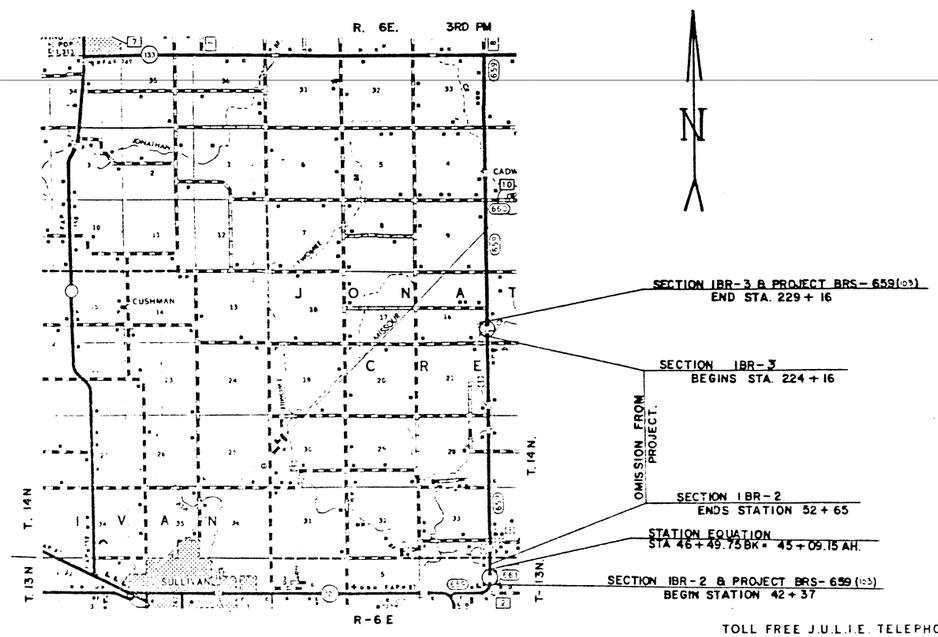
LOCATION OF SECTION INDICATED THUS: —

FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4

INDEX OF SHEETS

STANDARDS

STD. NO.	DESCRIPTION
1686-4	SYMBOLS & ABBREVIATIONS
1744-4	RIGHT OF WAY MARKERS
2113-2	NAMEPLATE FOR BRIDGES
2135	PERMANENT SURVEY MARKERS (Bronze Tablet)
2230-14	STEEL PLATE BEAM GUARD RAIL (2-Sheets)
2298-7	TRAFFIC CONTROL (2-Sheets)
2299-10	TRAFFIC CONTROL
2300-3	FLAGMAN TRAF. CONTROL SIGN
2301-5	TYP. APPLICATION TRAFFIC CONTROL
2303-6	TYP. APPLICATION TRAFFIC CONTROL
2305-5	TYP. APPLICATION TRAFFIC CONTROL
2306-6	TYP. APPLICATION TRAFFIC CONTROL
2307-6	TYP. APPLICATION TRAFFIC CONTROL
2308-4	TYP. APPLICATION TRAFFIC CONTROL (2 Sheets)
2323-5	PAVEMENT JOINTS
2324-6	BRIDGE APPROACH SHOULDER PAVEMENT
2336-3	TRAFFIC BARRIER TERMINAL, TY. 1 & 1A
2341-1	TRAFFIC BARRIER TERMINAL, TY. 6
2381	TEMP. EROSION CONTROL SYSTEMS
2382-1	BRIDGE APPROACH PAVEMENT
2362-1	CONCRETE HEADWALL FOR PIPE DRAINS



GROSS LENGTH OF SECTION & PROJECT = 218,670 FT.
NET LENGTH OF SECTIONS = [1BR-2 = 1168.6 FT. = 0.2213 MILES; 1BR-3 = 500.0 FT. = 0.0947 MILES]
NET LENGTH OF PROJECT = 1668.6 FT. = 0.316 MILES

TOLL FREE J.U.L.I.E. TELEPHONE NO.
1-800-892-0123

EAST TWP. — 1BR-2

JONATHAN CREEK TWP. — 1BR-3

DESIGN DESIGNATION
1600(06) MAJOR COLLECTOR

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED December 6 19 85
DISTRICT ENGINEER
EXAMINED 1-2 19 86
PASSED 1-2 19 86
ENGINEER OF POLICY AND CONTRACTS
APPROVED 1-2 19 86
ENGINEER OF BRIDGES
DIRECTOR DIVISION OF HIGHWAYS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ADMINISTRATOR DATE

CN 12340

CONTRACT NO. 40553

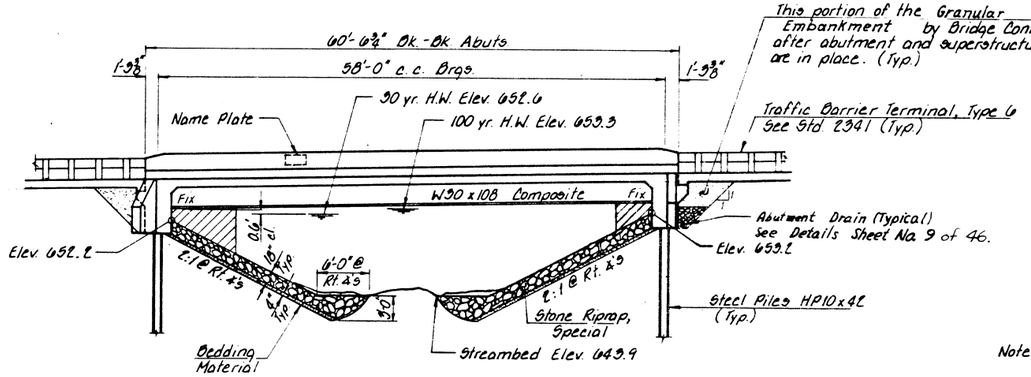
070-0041 70-71
MOULTRIE COUNTY SECTION 1(BR-2,BR-3) F.A.S. ROUTE 659

5-133

T.B.M. No. 13 – Chiseled "□" on North Headwall on pipe culvert North of bridge. Rt. Sta. 228+50 ± Elev. 659.35
Existing Structure No. 070-0010 – Single span I-beam bridge with concrete deck on closed timber abuts. 44' bk.-bk. abuts., 25'o.o. deck. To be removed. No salvage. Traffic to be detoured during construction.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 659	1 BR-3	MOULTRIE	46	22
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

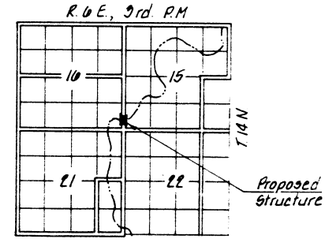
Sheet 1 of 9



ELEVATION

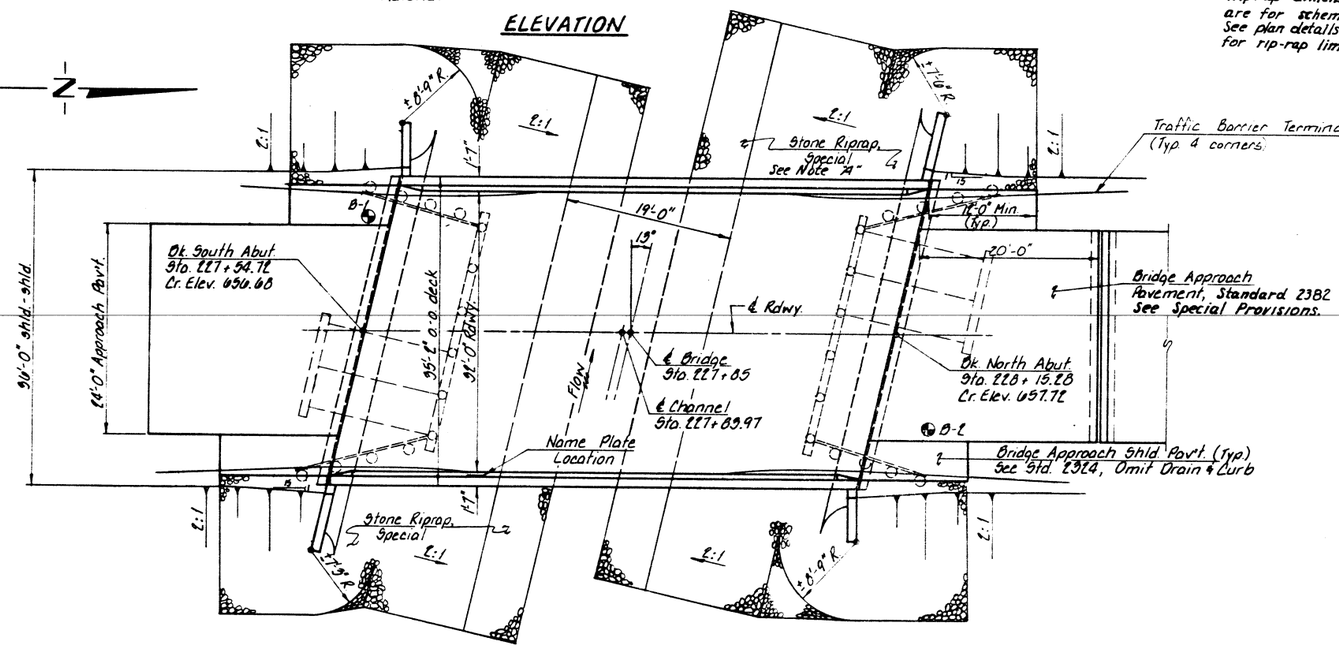
This portion of the Granular Embankment by Bridge Contractor after abutment and superstructure are in place. (Typ.)

Traffic Barrier Terminal, Type 6 See Std. 2341 (Typ.)



LOCATION PLAN

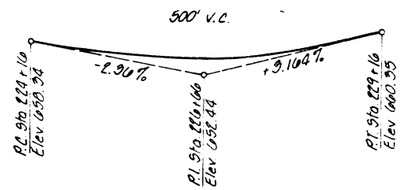
Note "A":
Riprap dimensions shown on this sheet are for schematic purposes only. See plan details and standard cross-sections for rip-rap limits and configuration.



INDEX OF SHEETS

STATION 227+85
BUILT 198_ BY
STATE OF ILLINOIS
F.A.S. RT. 659 SEC. 1 BR-3
PROJ. BRS-659(103) LOADING H520
STR. NO. 070-0041

LETTERING FOR NAME PLATE
See Std. 2119



PROFILE GRADE

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Class X Concrete	Cu. Yd.	79.9	22.1	102.0
Reinforcement Bars	Pound	1,510	3,300	4,810
Reinforcement Bars (Epoxy Coated)	Pound	14,660		14,660
Structural Steel	L.Sum	0.5		0.5
Stud Shear Connectors	Each	810		810
Name Plates	Each	1		1
Floor Drains	Each	6		6
Protective Coat	Sq. Yd.	204		204
Steel Piles HP10 x 42	Lin. Ft.		429	429
Test Pile Steel HP10 x 42	Each		1	1
Stone Riprap, Special	Sq. Yd.			475
Removal of Existing Structures No. 2	Each			1
Structure Excavation	Cu. Yd.			75
Permanent Bench Marks	Each		1	1

WATERWAY INFORMATION

Drainage Area = 17.6 Sq. Mi. Low Grade Elev. 654.8 (E.) 655.9 (P.) @ Sta. 226+30

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head Ft. Exist.	Head Ft. Prop.	Headwater Elev Exist.	Headwater Elev Prop.
Design	50	1,579	287	309	652.6	0.66	0.12	653.26	652.72
Base	100	2,013	315	347	653.3	1.30	0.42	654.60	653.72
Overtopping									
Max. Calc.	500	2,504		370	654.0		1.12		655.12

DESIGN STRESSES

f'_c = 3,500 psi. (Class X Concrete)
f_y = 60,000 psi. (Reinforcement Bars) } LOAD FACTOR DESIGN
f_y = 50,000 psi. (Structural Steel)
n = 9 (Composite)
LOADING H520-44
DESIGN SPECIFICATIONS: AASHTO 1983 & 1984 Interims
25#/Sq. Ft. included in dead load for future wearing surface.

Fred J. Stone for
ILLINOIS STRUCTURAL NO. 2994

REGISTERED STRUCTURAL ENGINEER 2994 ILLINOIS

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Thomas T. Hayenga

JONATHAN CREEK

GENERAL PLAN & ELEVATION
F.A.S. ROUTE 659 SECTION 1 BR-3
MOULTRIE COUNTY
STATION 227+85
STRUCTURE NO. 070-0041

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED M.B. CHECKED R.M.B.
DRAWN M.G. DATE 2-4-85 NO. 1920

Rev. 1-8-86

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.S. 659	1 BR-3	MOULTRIE	46	23
FED. ROAD DIST. NO. 7		ILLINOIS PROJECT		

Sheet 2 of 3

GENERAL NOTES

See Proposal for Boring Data.

Fasteners shall be high strength bolts (AASHTO M 164, Type 3). Bolts 3/4" ϕ, open holes 15/16" ϕ, unless otherwise noted.

Calculated weight of Structural Steel = 94,710 Pounds

All structural steel shall be AASHTO M 222 and shall be used in the bare, unpainted condition.

Field welding of construction accessories will not be permitted to the bottom flange of beams. Field welding in other areas will be permitted only when approved by the Engineer.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness, Zone 2. These Components are the wide flange beams.

Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53, Grade 60.

Layout of stone riprap slope walls may be varied in the field to suit ground conditions as directed by the Engineer.

The Contractor shall drive one steel test pile in a permanent location at the South abutment as directed by the Engineer before ordering the remainder of the piles.

The Contractor shall remove the existing timber deadmen and 3/4" ϕ steel tie rods that will interfere with construction prior to driving the piles. This work shall be included in the contract unit price for REMOVAL OF EXISTING STRUCTURES.

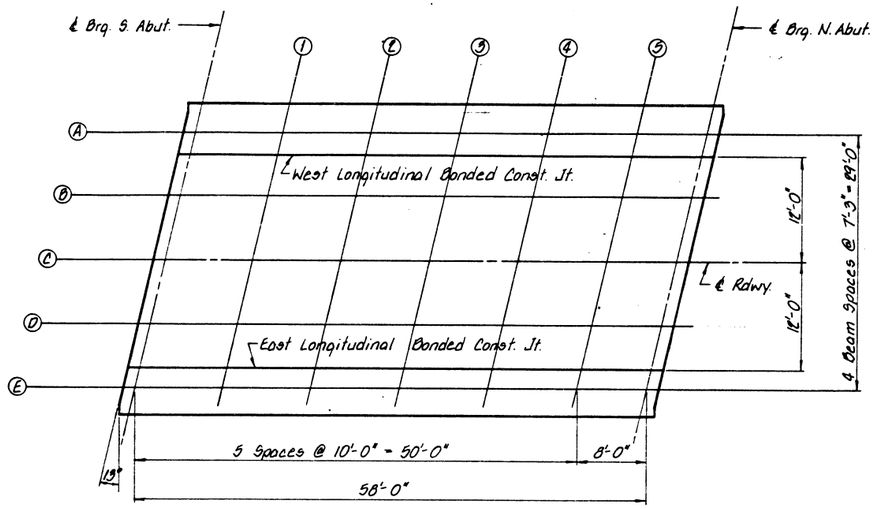
GENERAL NOTES
F.A.S. ROUTE 659 SECTION 1 BR-3
MOULTRIE COUNTY
STATION 227 + 85
STRUCTURE NO. 070-0041

COLLINS AND RICE
CONSULTING ENGINEERS

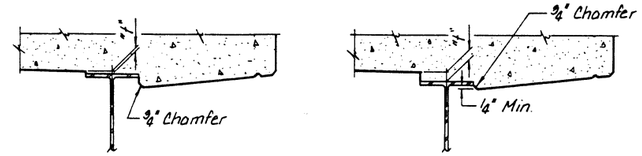
DESIGNED M.B. CHECKED R.M.B.
DRAWN M.G. DATE 2-4-85 NO. 1920

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 659	1 BR-9	MOULTRIE	46	24
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			

Sheet 9 of 9



PLAN



AT MINIMUM FILLET

AT MAXIMUM FILLET

FILLET HEIGHT "t"

To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown, minus slab thickness, equals the fillet height "t" above top flanges of beams.

BEAM A

LOCATION	STATION	OFFSET	T	Adj.
℄ Brg. S. Abut.	227+59.35	14.50'	656.522	656.522
1.	+64.35	↑	6.671	6.737
2.	+74.35	↑	6.831	6.943
3.	+84.35	↑	7.002	7.129
4.	+94.35	↑	7.184	7.289
5.	228+04.35	↑	7.377	7.431
℄ Brg. N. Abut.	228+17.35	14.50'	657.539	657.539

WEST LONGITUDINAL BONDED CONST. JT.

LOCATION	STATION	OFFSET	T	Adj.
℄ Brg. S. Abut.	227+58.77	12.00'	656.554	656.554
1.	+68.77	↑	6.702	6.768
2.	+78.77	↑	6.861	6.975
3.	+88.77	↑	7.032	7.159
4.	+98.77	↑	7.213	7.318
5.	228+08.77	↑	7.405	7.459
℄ Brg. N. Abut.	228+16.77	12.00'	657.507	657.507

BEAM B

LOCATION	STATION	OFFSET	T	Adj.
℄ Brg. S. Abut.	227+57.67	7.25'	656.612	656.612
1.	+67.67	↑	6.759	6.825
2.	+77.67	↑	6.917	7.029
3.	+87.67	↑	7.086	7.213
4.	+97.67	↑	7.266	7.371
5.	228+07.67	↑	7.458	7.512
℄ Brg. N. Abut.	228+15.67	7.25'	657.619	657.619

BEAM C

LOCATION	STATION	OFFSET	T	Adj.
℄ Brg. S. Abut.	227+56.00	0'	656.702	656.702
1.	+66.00	↑	6.847	6.913
2.	+76.00	↑	7.003	7.115
3.	+86.00	↑	7.170	7.297
4.	+96.00	↑	7.349	7.454
5.	228+06.00	↑	7.538	7.592
℄ Brg. N. Abut.	228+14.00	0'	657.697	657.697

BEAM D

LOCATION	STATION	OFFSET	T	Adj.
℄ Brg. S. Abut.	227+54.99	7.25'	656.566	656.566
1.	+64.99	↑	6.709	6.775
2.	+74.99	↑	6.863	6.975
3.	+84.99	↑	7.029	7.150
4.	+94.99	↑	7.205	7.310
5.	228+04.99	↑	7.393	7.447
℄ Brg. N. Abut.	228+12.99	7.25'	657.551	657.551

EAST LONGITUDINAL BONDED CONST. JT.

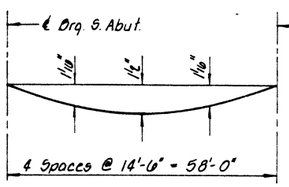
LOCATION	STATION	OFFSET	T	Adj.
℄ Brg. S. Abut.	227+53.23	12.00'	656.476	656.476
1.	+63.23	↑	6.619	6.685
2.	+73.23	↑	6.772	6.884
3.	+83.23	↑	6.936	7.063
4.	+93.23	↑	7.111	7.216
5.	228+03.23	↑	7.297	7.351
℄ Brg. N. Abut.	228+11.23	12.00'	657.454	657.454

BEAM E

LOCATION	STATION	OFFSET	T	Adj.
℄ Brg. S. Abut.	227+52.65	14.50'	656.429	656.429
1.	+62.65	↑	6.570	6.636
2.	+72.65	↑	6.722	6.834
3.	+82.65	↑	6.886	7.013
4.	+92.65	↑	7.061	7.166
5.	228+02.65	↑	7.246	7.300
℄ Brg. N. Abut.	228+10.65	14.50'	657.403	657.403

T = Theoretical Grade Elevations

Adj = Theoretical Grade Elevations Adjusted for Dead Load Deflection.



DEAD LOAD DEFLECTION DIAGRAM*

(Includes weight of concrete only)

*Note:
These deflections are not to be used in the field if the Engineer is working from the grade elevations adjusted for dead load deflections as shown.

SLAB ELEVATIONS

F.A.S. ROUTE 659 SECTION 1 BR-9
MOULTRIE COUNTY
STATION 227 + 85
STRUCTURE NO. 070-0041

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED M.B. CHECKED R.M.B.
DRAWN M.G. DATE 2-4-85 NO. 1920

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 659	1 BR-3	MOULTRIE	46	25
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

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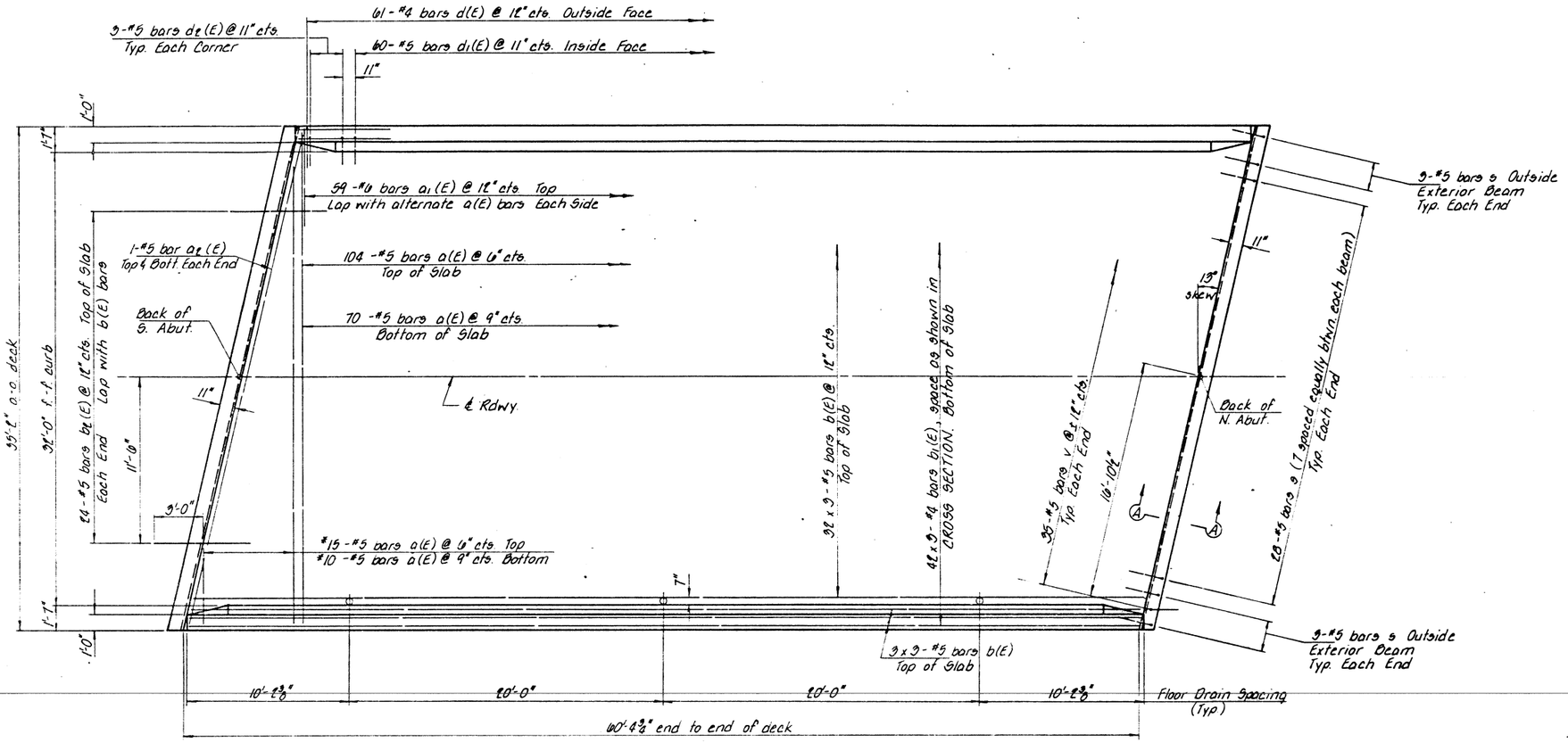
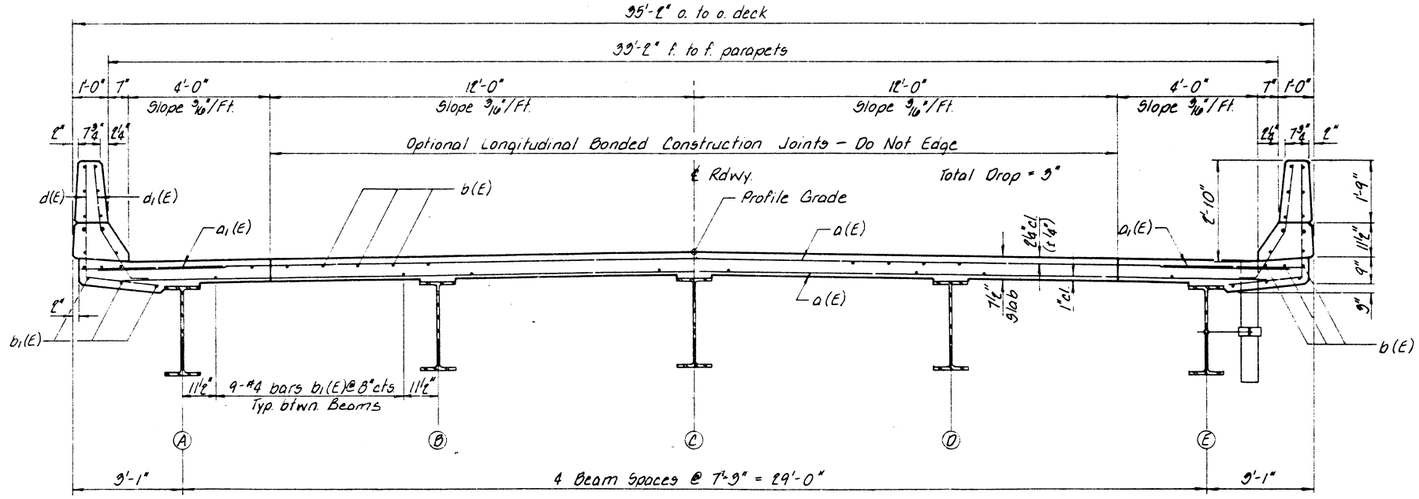


PLAN

*Order a(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.



CROSS SECTION

LOOKING NORTH

MIN. BAR LAPS

#4	1'-5"
#5	1'-9"
#8	3'-8"

BILL OF MATERIAL ~ SUPERSTRUCTURE

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	179	#5	33'-0"	——
a1(E)	118	#6	4'-0"	——
a2(E)	4	#5	35'-5"	——
a3	8	#6	35'-9"	——
a4	4	#4	10'-9"	——
a5	4	#4	20'-8"	——
a6	5	#6	7'-1"	——
a7	4	#6	2'-10"	——
b(E)	126	#5	21'-3"	——
b1(E)	126	#4	21'-0"	——
b2(E)	48	#5	6'-0"	——
b3(E)	8	#8	31'-10"	——
d(E)	122	#4	4'-11"	L
d1(E)	120	#5	3'-11"	L
d2(E)	12	#5	4'-2"	L
e(E)	48	#4	14'-9"	——
V	70	#5	3'-3"	⌐
s	68	#5	3'-10"	⌐
s1	68	#4	8'-1"	⌐

Class X Concrete	Cu. Yd	79.9
Reinforcement Bars	Pound	1,510
Reinf. Bars (Epoxy Coated)	Pound	14,660
Protective Coat	Sq. Yd	264
Floor Drains	Each	6

Notes:
Bars indicated thus 32x3-#5 etc. indicates 32 lines of bars with 3 lengths per line.
Reinforcement bars designated (E) shall be epoxy coated.
See sheet 5 for SECTION A-A.

Work this sheet with sheet 5.

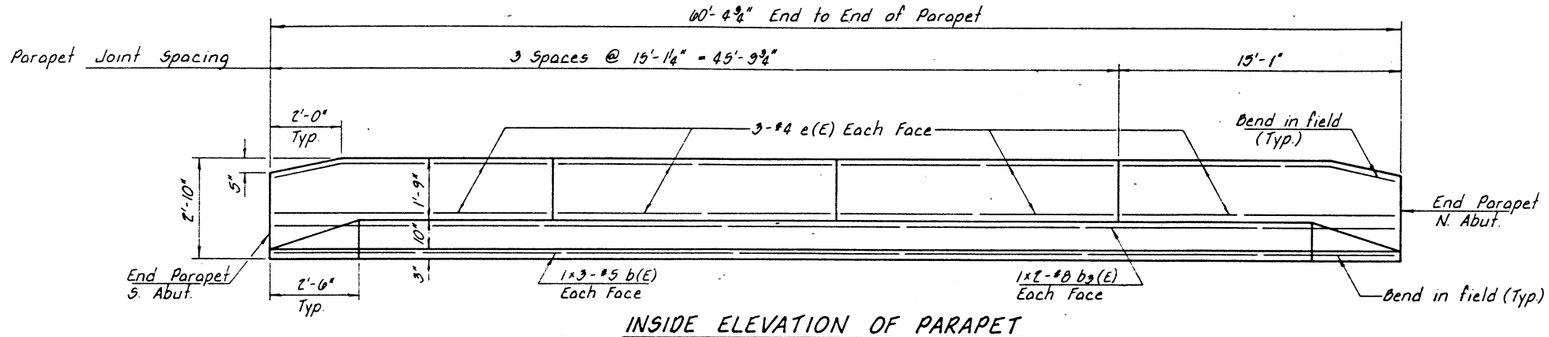
SUPERSTRUCTURE
F.A.S. ROUTE 659 SECTION 1 BR-3
MOULTRIE COUNTY
STATION 227+85
STRUCTURE NO. 070-0041

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED M.B. CHECKED R.M.B.
DRAWN M.G. DATE 2-4-85 NO. 1920

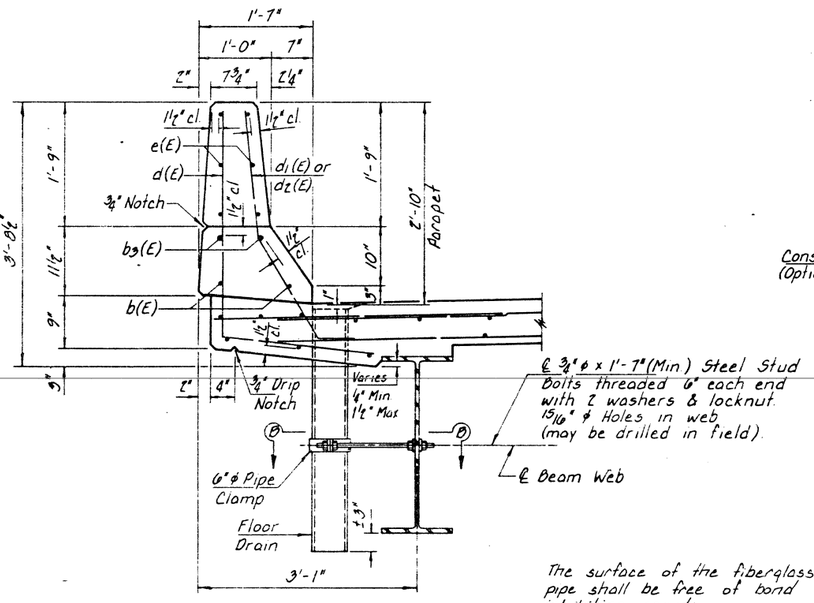
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 659	1 BR-3	MOULTRIE	46	26
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

Sheet 5 of 9



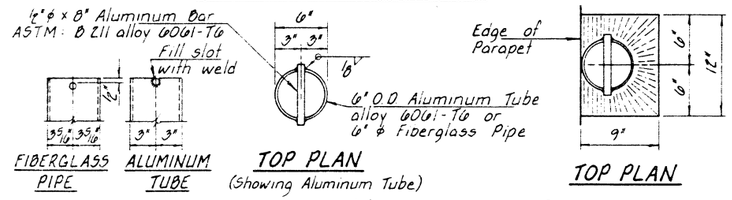
INSIDE ELEVATION OF PARAPET

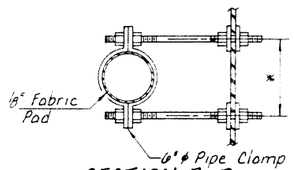
MIN. BAR LAPS
#5 ____ 1'-9"
#8 ____ 3'-8"



SECTION THRU PARAPET

The surface of the fiberglass pipe shall be free of bond inhibiting agents.





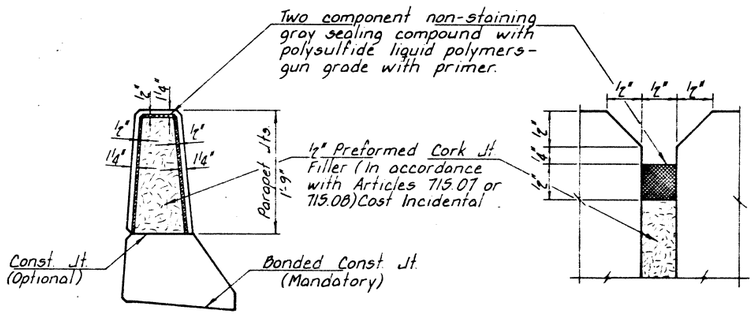
SECTION B-B

*Dimension as required by Pipe Clamp

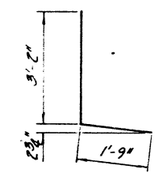
Notes:

Fiberglass Pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

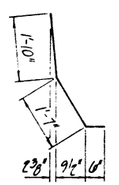
The exterior surfaces of the floor drains shall be painted with a dark maroon vinyl enamel coat. The vinyl enamel coat may be applied in the shop with spot painting only in the field. The exterior surface of the aluminum pipe shall be cleaned and given a wash coat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to painting.



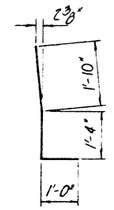
PARAPET JOINT DETAILS



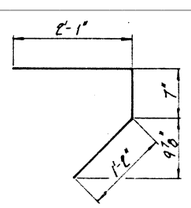
BAR d(E)



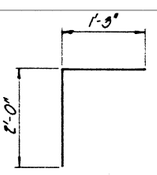
BAR d_1(E)



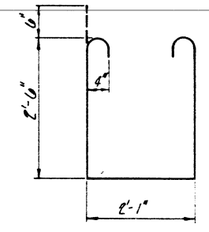
BAR d_2(E)



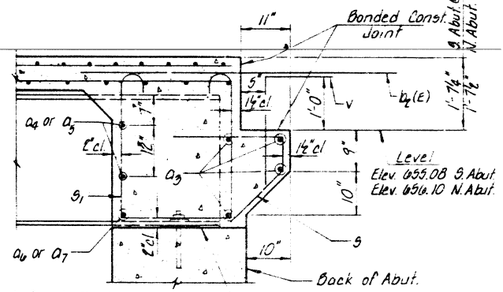
BAR 9

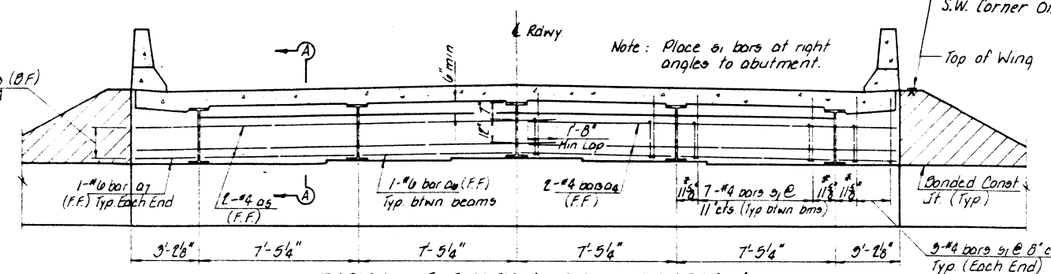


BAR V



BAR 91





TYPICAL ELEVATION OF DIAPHRAGM

(Dimensions along ℄ Abut Cap)
Bf. - Back Face
F.F. - Front Face

*℄ Abut Cap

SECTION A-A

Dimensions at right angles to abut. For spacing of b_4(E), 9 and V bars see sheet 4.
Bars indicated thus, 1x3-#5 etc. indicates 1 line of bar with 3 lengths per line.

Work this sheet with sheet 4

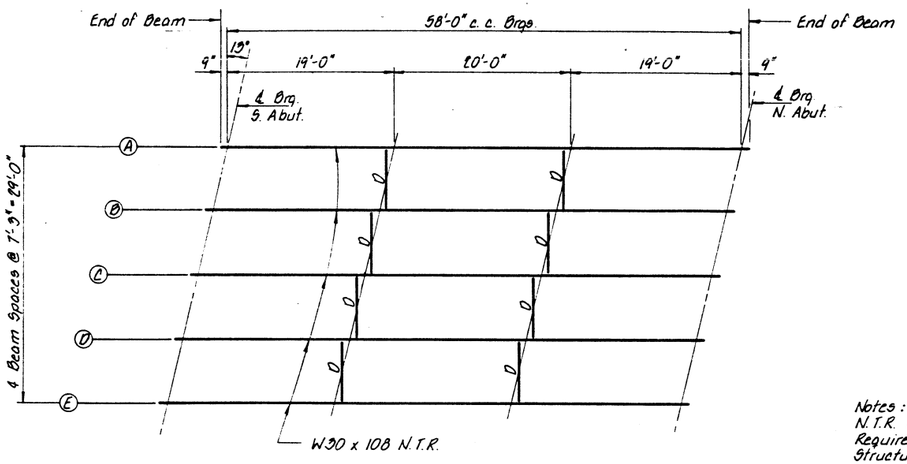
SUPERSTRUCTURE
F.A.S. ROUTE 659 SECTION 1BR-3
MOULTRIE COUNTY
STATION 227+85
STRUCTURE No. 070-0041

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED M.B. CHECKED R.M.B.
DRAWN J.B & M.G. DATE 2-4-85 NO. 1920

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 659	1 BR-3	MOULTRIE	46	27
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

Sheet 6 of 9



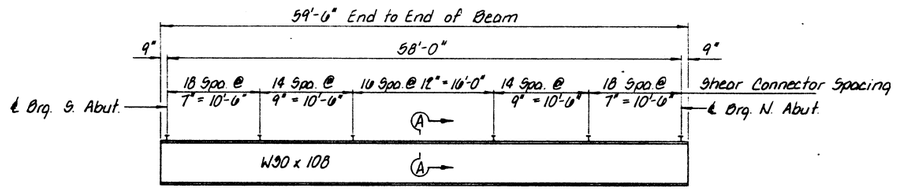
FRAMING PLAN

Notes:
N.T.R. indicates Notch Toughness Requirements, Zone 2.
Structural Steel shall be M222.

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (OVERLOAD).
I_c and S_c are the moment of inertia and section modulus of the composite sections used in computing f_s (OVERLOAD).
V_R is the maximum (℄ + I) shear range in the span.
f_s (OVERLOAD) is the sum of the stresses due to M℄N.C. + M℄C. + S_s(M℄ + I).
Mo (Applied Moment) = 1.3[M℄N.C. + M℄C. + S_s(M℄ + I)].
M_U = Full plastic moment capacity for compact, braced section. The Fully Plastic Moment capacity (M_U) is computed according to AASHTO 10.48.1 & 10.50.1.1
M℄N.C. - Moment due to dead loads on non-composite section.
M℄C. - Moment due to dead loads on composite section.
M℄ - Moment due to live load on composite section.
I - Live load impact

INTERIOR BEAM MOMENT TABLE

		0.5 SPAN
I_s	(in.⁴)	4,470
I_c ℄	(in.⁴)	9,886
I_c 4	(in.⁴)	13,339
S_s	(in.³)	299
S_c ℄	(in.³)	422
S_c 4	(in.³)	466
℄ N.C.	(K/I)	0.830
M℄N.C.	(IK)	349
℄ C.	(K/I)	0.324
M℄C.	(IK)	136
M℄	(IK)	508
MIMP	(IK)	199
S_s(M℄ + I)	(IK)	1,078
Mo	(IK)	2,032
M_U	(IK)	2,691
f_s ℄ N.C.	(k.s.i.)	14.0
f_s ℄ C.	(k.s.i.)	3.9
f_s S_s(℄ + I)	(k.s.i.)	27.8
f_s (OVERLOAD)	(k.s.i.)	45.7
V_R	(K)	50.7



ELEVATION

TOP OF BEAM ELEVATIONS

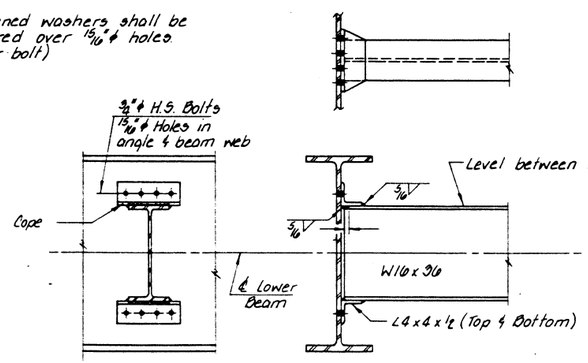
(For Fabrication Only)

LOCATION	℄ Brg. S. Abut.	℄ Brg. N. Abut.
Beam A	655.809	656.820
Beam B	655.899	656.906
Beam C	655.909	656.984
Beam D	655.853	656.838
Beam E	655.716	656.690

INTERIOR BEAM REACTION TABLE

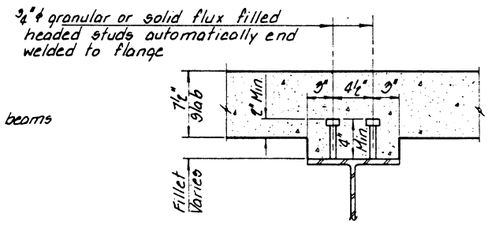
		ABUTS.
R℄N.C.-R℄C.	(K)	93.5
R4	(K)	39.8
RIMP	(K)	10.9
RTOTAL	(K)	84.2

Note: Hardened washers shall be required over 15/16"ϕ holes. (℄ per bolt)



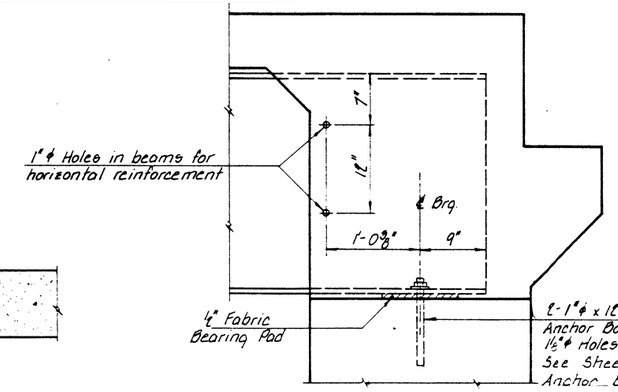
DIAPHRAGM D

8 Required

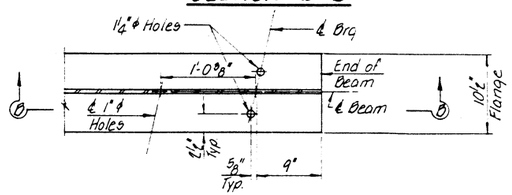


SECTION A-A

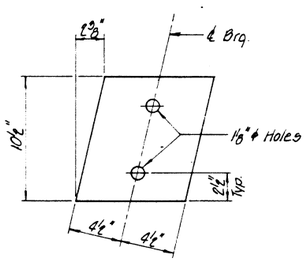
810 Required



SECTION B-B



END OF BEAM - PLAN VIEW



FABRIC BEARING PAD DETAILS

10-½" Bearing Pads Req'd.
10-⅛" Adjusting Pads Req'd.
Incidental to Structural Steel.

BEAM DETAILS

F.A.S. ROUTE 659 SECTION 1BR-3
MOULTRIE COUNTY
STATION 227+85
STRUCTURE NO. 070-0041

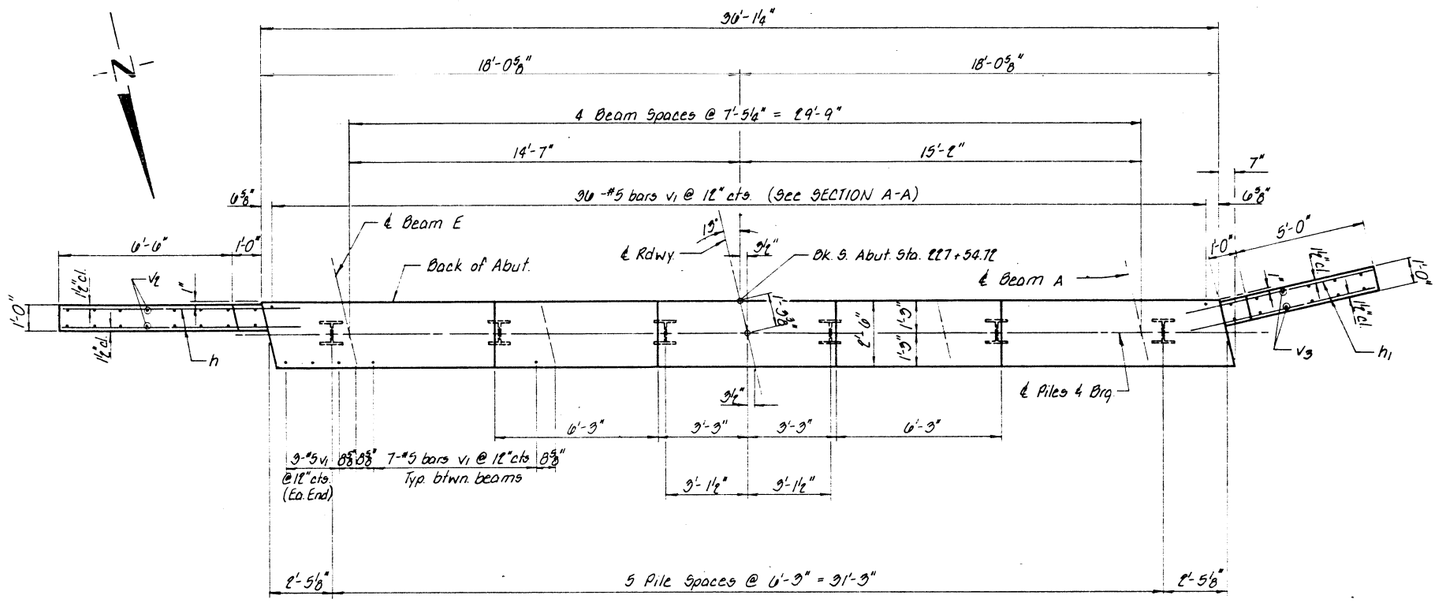
COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED M.B. CHECKED R.M.B
DRAWN M.G. DATE 2-4-85 NO. 1920

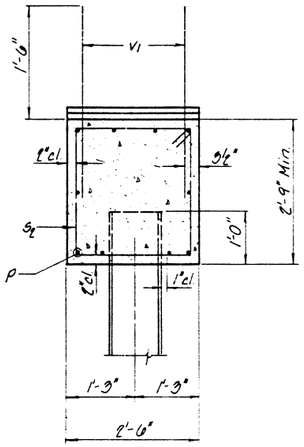
83243

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 659	1 BR-3	MOULTRIE	46	28
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

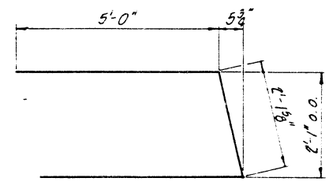
Sheet 7 of 9



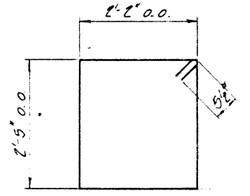
PLAN



SECTION A-A

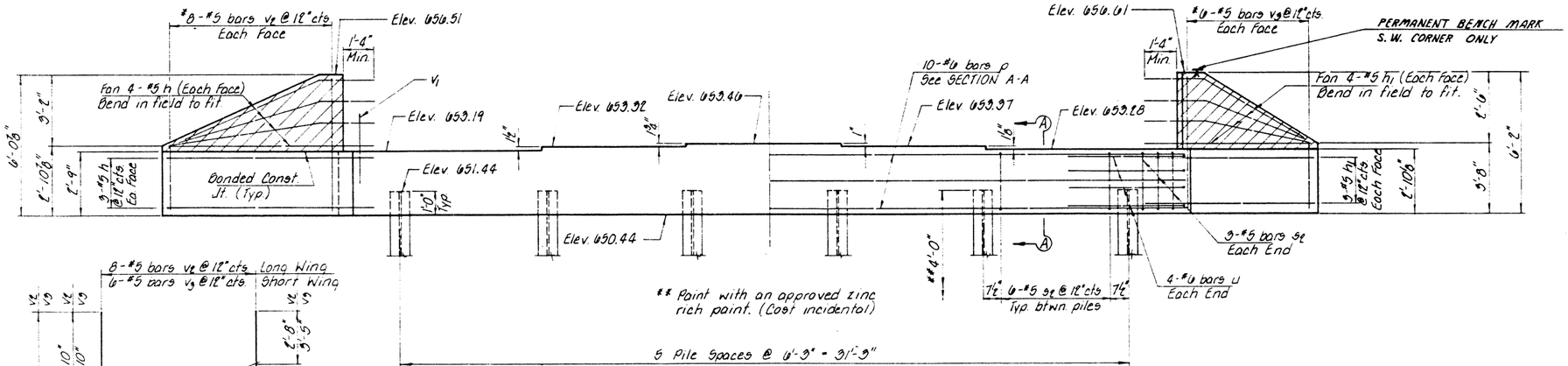


BAR U



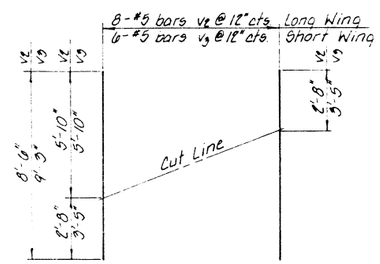
BAR S2

Note : Hatched area to be poured with deck after beams are in place. Quantity of Class X Concrete included with Superstructure.



** Paint with an approved zinc rich paint. (Cost incidental)

ELEVATION
LOOKING SOUTH



*FIELD CUTTING DIAGRAM

Order v2 & v3 bars full length. Cut to fit and use the remainder in the opposite face.

PILE DATA

Type _____ Steel HP10 x 42
No. Req'd. (1 Abut) _____ 5 + 1 Test Pile
Capacity _____ 40 Tons/Pile (Driven to 60 Ton bearing)
Est. Length _____ 39 Feet/Pile
One test pile to be driven in a permanent location at the South Abutment.

BILL OF MATERIAL ~ SOUTH ABUT.

BAR	NO	SIZE	LENGTH	SHAPE
h	14	#5	9'-0"	
h1	14	#5	7'-9"	
p	10	#6	95'-9"	
s2	36	#5	10'-1"	
u	8	#5	12'-2"	
v1	70	#5	3'-0"	
v2	8	#5	8'-6"	
v3	6	#5	9'-3"	
Class X Concrete			Cu. Yd.	11.0
Reinforcement Bars			Pound	1,650
Steel Piles HP10 x 42			Lin. Ft.	195
Test Pile Steel HP10 x 42			Each	1
Permanent Bench Marks			Each	1

SOUTH ABUTMENT

F.A.S. ROUTE 659 SECTION 1 BR-3
MOULTRIE COUNTY
STATION 227+65
STRUCTURE NO. 070-0041

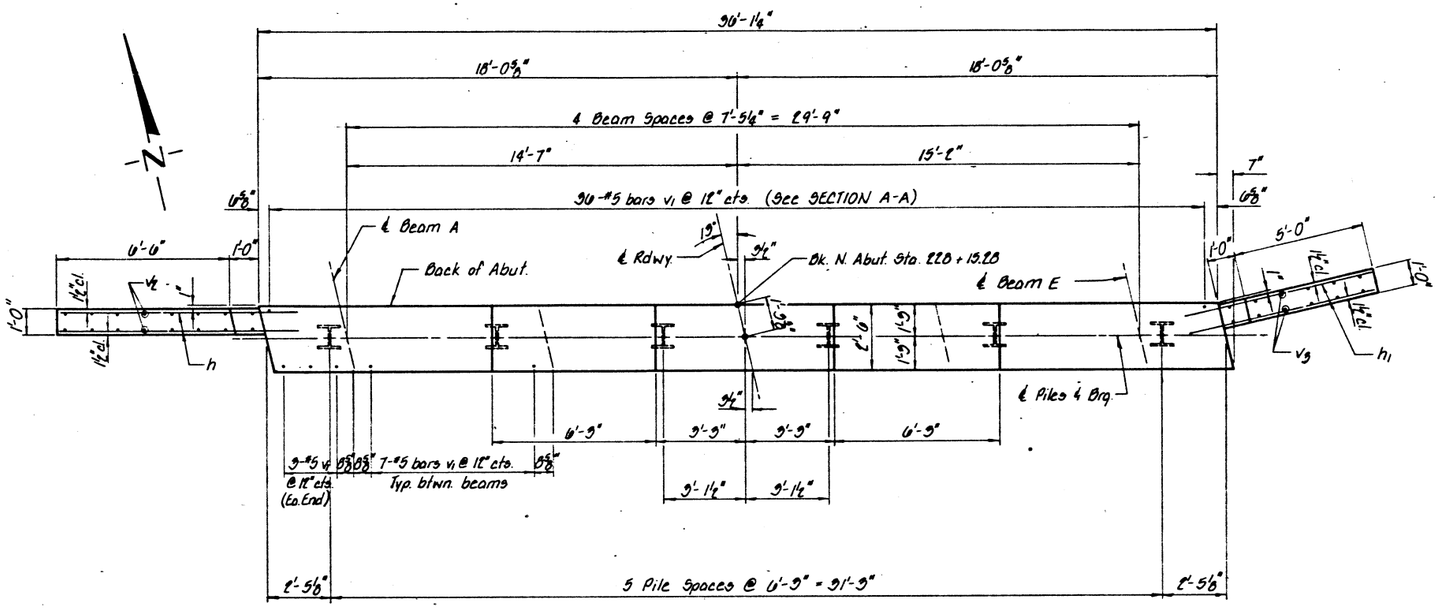
COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED M.B. CHECKED R.M.B.
DRAWN M.G. DATE 2-4-85 NO. 1920

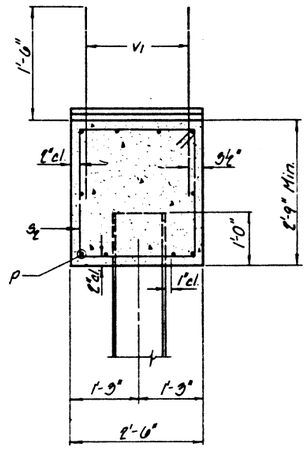
82343

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 659	1 BR-3	MOULTRIE	46	29
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

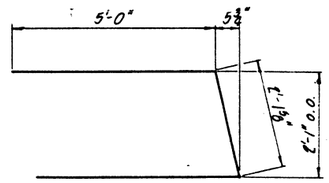
Sheet 8 of 9



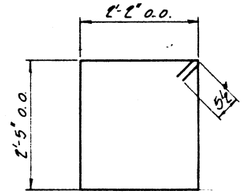
PLAN



SECTION A-A

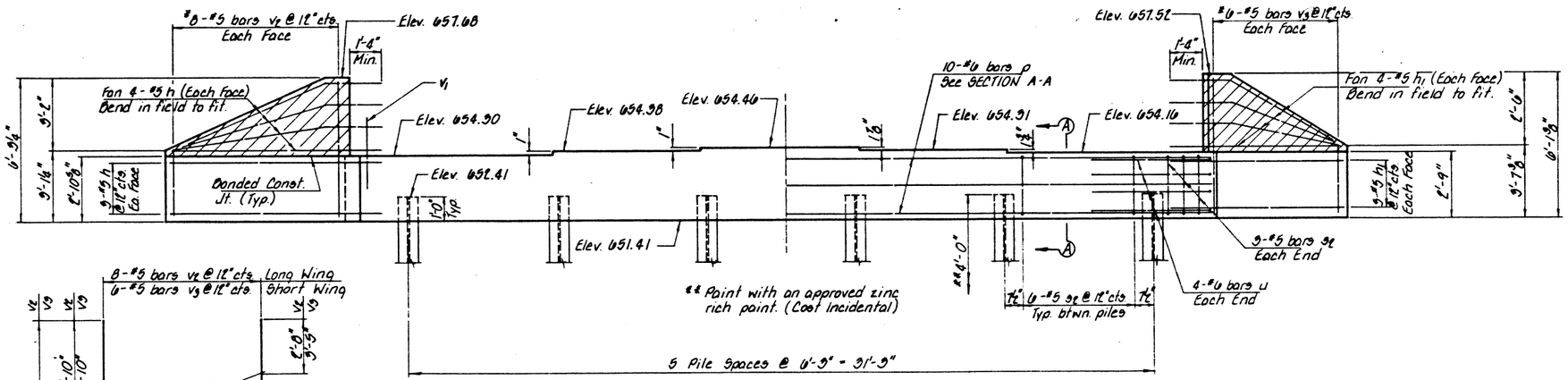


BAR U

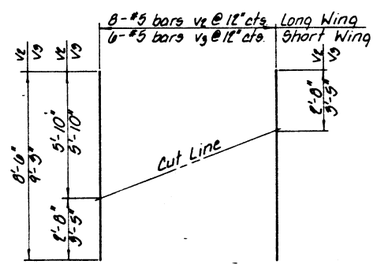


BAR 92

Note: Hatched area to be poured with deck after beams are in place. Quantity of Class X Concrete included with Superstructure.



ELEVATION
LOOKING NORTH



*FIELD CUTTING DIAGRAM

Order v2 & v3 bars full length. Cut to fit and use the remainder in the opposite face.

PILE DATA

Type _____ Steel HP10 x 42
No. Req'd. (1 Abut) _____ 6
Capacity _____ 40 Tons/Pile (Driven to 60 Ton bearing)
Est. Length _____ 39 Feet/Pile

BILL OF MATERIAL ~ NORTH ABUT.

BAR	NO	SIZE	LENGTH	SHAPE
h	14	#5	9'-0"	
h1	14	#5	7'-3"	
p	10	#6	35'-9"	
92	96	#5	10'-1"	
u	8	#6	12'-2"	
v1	70	#5	3'-0"	
v2	8	#5	8'-6"	
v3	6	#5	9'-3"	
Class X Concrete		Cu Yd	11.1	
Reinforcement Bars		Pound	1,650	
Steel Piles HP10x42		Lin. Ft.	234	

NORTH ABUTMENT
F.A.S. ROUTE 659 SECTION 1 BR-3
MOULTRIE COUNTY
STATION 227+85
STRUCTURE NO. 070-0041

COLLINS AND RICE
CONSULTING ENGINEERS

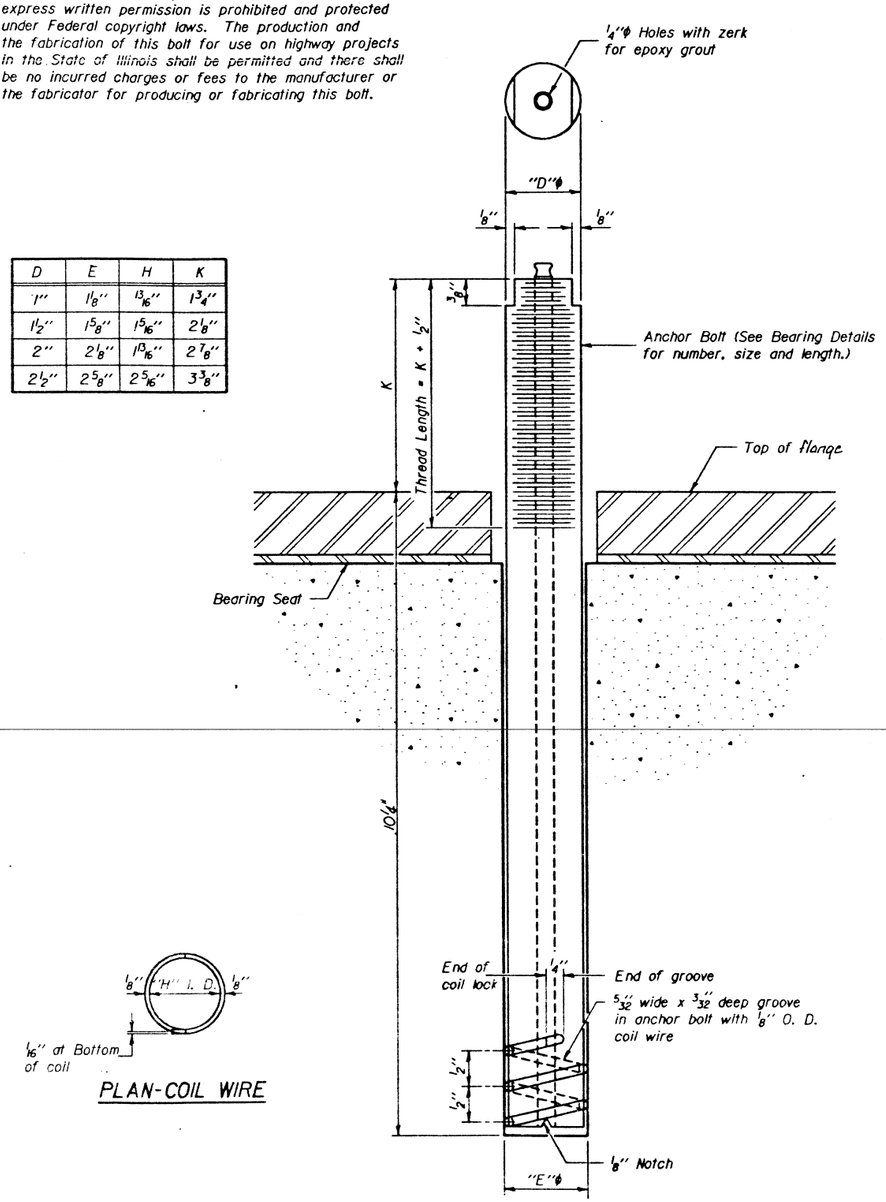
DESIGNED M.B. CHECKED R.M.B.
DRAWN M.G. DATE 2-4-85 NO 1980

62343

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.S. 659	1 BR-3	MOULTRIE	46	30
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

Sheet 9 of 9

D	E	H	K
1"	1 1/8"	13/16"	1 3/4"
1 1/2"	1 5/8"	15/16"	2 1/8"
2"	2 1/8"	1 3/16"	2 7/8"
2 1/2"	2 5/8"	2 5/16"	3 3/8"



ILLINOIS COIL-LOCK ANCHOR BOLT

PLAN-COIL WIRE

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system comforming to ASTM C881, Type I, Grade I and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

ANCHOR BOLT DETAILS
F.A.S. ROUTE 659 SECTION 1BR-3
MOULTRIE COUNTY
STATION 227+85
STRUCTURE NO. 070-0041

COLLINS AND RICE
CONSULTING ENGINEERS

DESIGNED M.B. CHECKED R.M.B.
DRAWN M.G. DATE 2-1-85 NO 1920