052-0025

orig & reh

136 1928 1 53

ROUTE 89, SEC. C-102 A-B-C, LEE CO.

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" " 5.	" " " "	530+00	" " 590+00
" " 6.	" " " "	590+00	" " 650+00
" " 7.	" " " "	650+00	" " 710+00
" " 8.	" " " "	710+00	" " 770+00
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" " 52	" " "	" 841+46.5 ; " 1 OF 1	
" " 52	STANDARDS 935 ; 791	" 602+40 ; " 1 & 2 OF 2	
" " 53	" 1162 ; 1177		

SUMMARY OF QUANTITIES

SECTION 102-A.

9912.3	CU. YDS.	CLASS A EXCAVATION	360	LIN. FT.	VITRIFIED TILE (6") D.S.
700	CU. YDS.	CLASS B EXCAVATION	2	EACH	CATCH BASINS
20220	CU. YDS.	BORROW EXCAVATION	588	RODS	WEDGE PULLING
422.7	CU. YDS.	CLASS A CONCRETE	120	EACH	SETTING RIGHT OF WAY MARKERS
46720	LBS.	REINFORCING STEEL	2200	LIN. FT.	VITRIFIED TILE (6") STD.

SECTION 102-B

980.9	CU. YDS.	CLASS A CONCRETE	2530	LBS.	ROCKERS AND PLATES
203	CU. YDS.	CLASS X CONCRETE	232	SQ. YDS.	P.C.C. PAVEMENT 4"
105290	LBS.	REINFORCING STEEL	4	EACH	NAME PLATES
2640	LIN. FT.	PILING - 10 TON UNTR.			
1920	LIN. FT.	PILING - 12 TON UNTR.			
3240	LIN. FT.	PILING - 15 TON UNTR.			

SECTION 102-C

53.0	CU. YDS.	CLASS X CONCRETE	11700	LBS.	STRUCTURAL STEEL
1270	LBS.	REINFORCING STEEL	1	EACH	NAME PLATE

SUMMARY OF CONCRETE

SECTION 102-A.

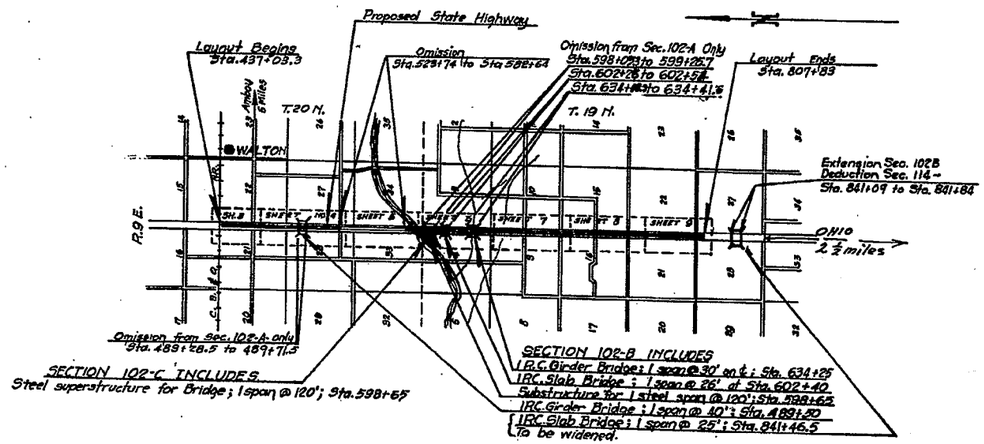
7	STD.	CULVERT	DESIGN	NO	828-1-8	13.3	CU. YDS.	SPEC. CULV. DES.	STA.	654+85	80.7 CU. YDS.
5	"	"	"	"	828-1-1	7.5	" "	" "	"	677+00	11.2 " "
1	"	"	"	"	828-3-1	1.8	" "	" "	"	688+55	18.3 " "
2	"	"	"	"	1204-2-8	13.2	" "	" "	"	692+65	32.4 " "
SPEC.	"	"	STA.		440+00	12.0	" "	" "	"	729+75	10.7 " "
"	"	"	"		441+84	4.4	" "	" "	"	748+27	13.1 " "
"	"	"	"		453+00	21.6	" "	" "	"	753+95	9.9 " "
"	"	"	"		480+00	29.4	" "	" "	"	762+80	11.1 " "
"	"	"	"		508+10	15.4	" "	" "	"	782+30	16.8 " "
"	"	"	"		584+55	67.6	" "	" "	"	807+79	18.1 " "
"	"	"	"		654+00	12.7	" "	OUTFIT OUTLETS	"	695+00	1.5 " "
								TOTAL CLASS A.			422.7 CU. YDS.

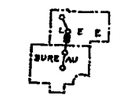
SECTION 102-B

SPECIAL	BRIDGE	DESIGN	STA.	489+50	CLASS A. 812.2 CU. YDS.	CLASS X 6.7 CU. YDS.
"	"	"	"	598+65	205.5 " "	- " "
"	"	"	"	602+40	132.4 " "	4.3 " "
"	"	"	"	634+25	331.5 " "	5.1 " "
"	"	"	"	841+46.5	99.3 " "	4.2 " "
				Totals	980.9 Cu. Yds.	20.3 Cu. Yds.

PROJ. 136, SEC'S. 102A-B-C, LEE COUNTY

From a point near the northeast corner of Section 21, T.20N., R.9E. of the 4th P.M. to a point near the northeast corner of Section 28, T.19N., R.9E. of the 4th P.M.





LAYOUT

Approximate scale : 1 Inch = 1 Mile
Net length of Layout : 31189.7 Ft. = 5.907 Miles

SUMMARY

STATION TO STATION		WIDTH OF ROADWAY	GROSS LENGTH ALONG TRANSIT LINE	CORRECTIONS FOR CURVES		CORRECTIONS FOR RELOCATIONS				NET LENGTH OF LAYOUT ALONG FINAL CENTER LINE	OMISSIONS				NET LENGTH TO BE IMPROVED IN FEET			ROADWAY OVER BRIDGES		SQ. YDS. OF ROADWAY		
		FT.	FT.	STA. P.I.	FT.	STATION	STATION	FEET +	FEET −	FEET	STA.	TO STA.	FT.	FT.	41 FT.	TOTAL	STATION	FT.	FT.	41 FT.	TOTAL
437+03.3	490+00	41	5296.7							5296.7	489+28.5	489+71.5	*43		5296.7	5296.7	489+50	28.0		2295.4	2295.4
490+00	590+00	41	10000.0							10000.0	529+74	582+64	5290		4110.0	4110.0				18723.3	18723.3
590+00	600+00	41	1000.0							1000.0	598+65	599+26.7	61.4		1000.0	1000.0	598+65	188.8		3998.2	3998.2
600+00	620+00	41	2000.0							2000.0	602+26	602+56	*56		2000.0	2000.0	602+40	280		8986.7	8986.7
620+00	807+83	41	18783.0							18783.0	634+02	634+41.5	39.5		18783.0	18783.0	634+25	56.8		8541.5	8541.5
TOTALS			37079.7							37079.7					31189.7	31189.7	841+46.5	27.0		141050	141050

* Omission from Sec. 102-A Only

Extension Authorized: 8-7-29 - Sec. 102-B

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

SUBMITTED Jan 10, 28
DISTRICT ENGINEER
EXAMINED
CHIEF ENGINEER
PLAN ENGINEER
ADDED Jan 10 28
CHIEF ENGINEER OF PLANS
APPROVED Jan 10 28 Frank J. White
CHIEF HIGHWAY ENGINEER
APPROVED Jan 10 28 C. Rinella
SUPERINTENDENT OF HIGHWAYS

WATERBURY 1-10-28

LEE C-102 2 136

B.M. – Spike and Washer in Poplar 75' Rt. Sta. 489+40 – Elev. 234.21
No existing structure at this site.

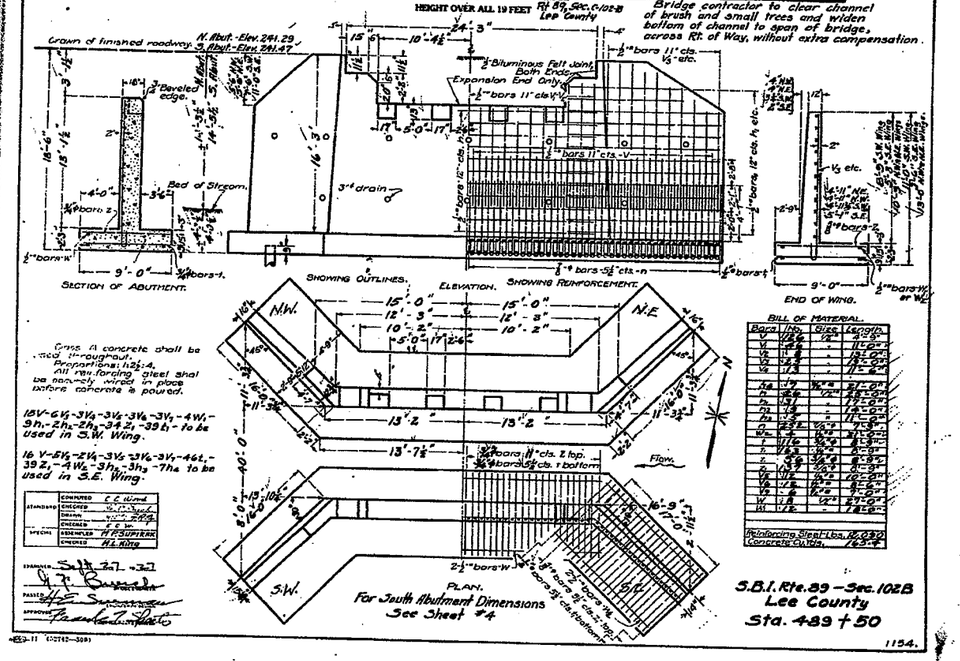
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS

R. C. ABUTMENTS FOR DECK GIRDER BRIDGE
HEIGHT OVER ALL 19 FEET — Rt 89, Sec. C-102-B, Lee County

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	ILL	136	1928	47	53

Sheet No. 3 of 4 Sheets.

Bridge contractor to clear channel of brush and small trees and widen bottom of channel to span of bridge, across Rt. of Way, without extra compensation.



Class A concrete shall be used throughout. Proportions: 1:2½:4. All reinforcing steel shall be securely wired in place before concrete is poured.

15V-6½-3½-3½-3½-3½-4W₁-9h₁-2h₂-2h₃-34Z₁-39h₁ - to be used in S.W. Wing.

16V-5½-2½-3½-3½-3½-4W₂, -39Z₁-4W₂-3h₂-3h₃-7h₄ to be used in S.E. Wing.

BILL OF MATERIAL

Bars	No.	Size	Length
V	12	[illegible]	[illegible]
V₁	[illegible]	[illegible]	[illegible]
V₂	[illegible]	[illegible]	[illegible]
V₃	[illegible]	[illegible]	[illegible]
V₄	173	[illegible]	[illegible]
h₁	[illegible]	[illegible]	[illegible]
h₂	[illegible]	[illegible]	[illegible]
h₃	[illegible]	[illegible]	[illegible]
h₄	[illegible]	[illegible]	[illegible]
Z₁	[illegible]	[illegible]	[illegible]
W₁	[illegible]	[illegible]	[illegible]
W₂	[illegible]	[illegible]	[illegible]
Z₂	[illegible]	[illegible]	[illegible]
Z₃	[illegible]	[illegible]	[illegible]
Z₄	[illegible]	[illegible]	[illegible]
Z₅	[illegible]	[illegible]	[illegible]
Z₆	[illegible]	[illegible]	[illegible]
Z₇	[illegible]	[illegible]	[illegible]
Z₈	[illegible]	[illegible]	[illegible]
Z₉	[illegible]	[illegible]	[illegible]
W	[illegible]	[illegible]	[illegible]
W₁	[illegible]	[illegible]	[illegible]

Reinforcing Steel – Lbs. [illegible]
Concrete – Cu. Yds. [illegible]

COMPUTED	C. C. Hind
CHECKED	[illegible]
DRAWN	[illegible]
CHECKED	[illegible]
CHECKED	H. R. Supiran
CHECKED	H. L. King

S.B.I. Rte. 89 – Sec. 102B
Lee County
Sta. 489 + 50

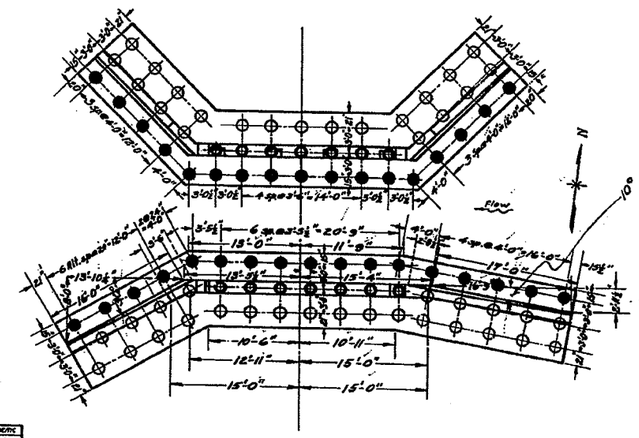
1154.

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

Sheet No. 4 of 4 Sheets.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	ILL	136	1928	47	53

Route 89, Sec. C-102-B, Lee Co.



COMPUTED	H. R. Supiran
CHECKED	H. L. King
DRAWN	H. R. Supiran
RECORD	H. L. K.

● 15 Ton untreated piling – 10" tip, 12" butt. 34 required. Estimated length = 680 lin. ft.

⊕ 12 Ton untreated piling – 10" tip, 12" butt. 14 required. Estimated length = 280 lin. ft.

⊕ 10 Ton untreated piling – 8" tip, 10" butt. 46 required. Estimated length = 630 lin. ft.

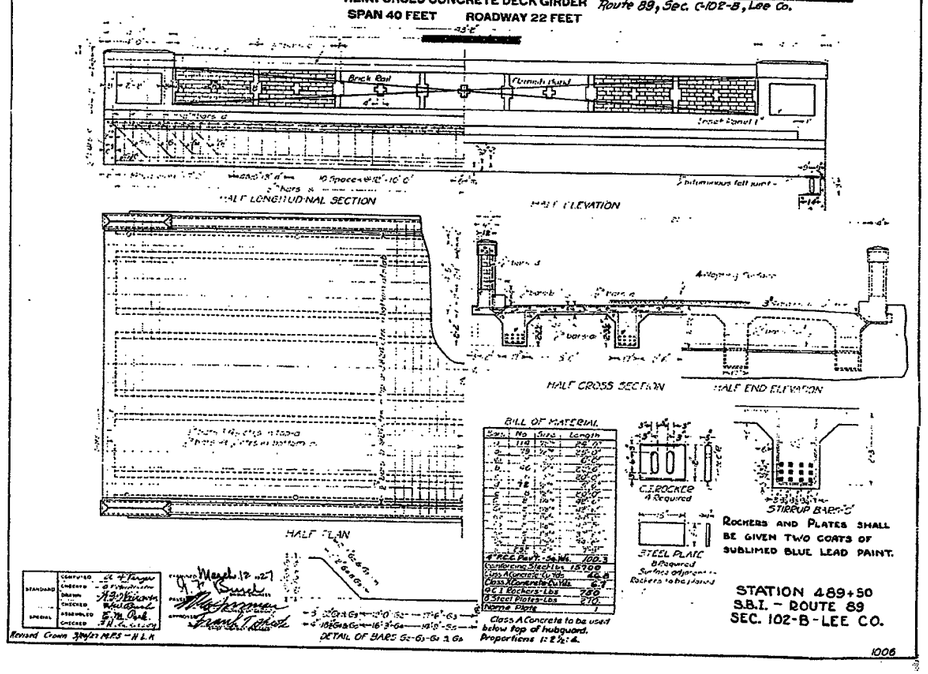
S.B.I. Rte. 89 – Sec. 102B
Lee County
Sta. 489 + 50

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

REINFORCED CONCRETE DECK GIRDER
SPAN 40 FEET ROADWAY 22 FEET

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	ILL	136	1928	47	53

Route 89, Sec. C-102-B, Lee Co.



BILL OF MATERIAL

Bars	No.	Size	Length
[illegible]	[illegible]	[illegible]	[illegible]
4" RCC Pavt. – Sq. Yds.			100.3
Conforming Steel – Lbs.			18700
Cast Aluminum – Cu. Yds.			4.4
Class A Concrete – Cu. Yds.			6.7
4 C.I. Rockers – Lbs.			720
12 Steel Plates – Lbs.			210
Chrome Plating			7

Class A Concrete to be used below top of hubguard. Proportions 1:2½:4.

DETAIL OF BARS G-G1-G2 & G3

ROCKERS AND PLATES SHALL BE GIVEN TWO COATS OF SUBLIMED BLUE LEAD PAINT.

STATION 489+50
S.B.I. – ROUTE 89
SEC. 102-B-LEE CO.

1006

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	ILL	136	1928	47	53

Route 89, Sec. C-102-B, Lee Co.

22'-0"

STA. 489+50
S.B.I. – ROUTE 89
SEC. 102-B-LEE CO.

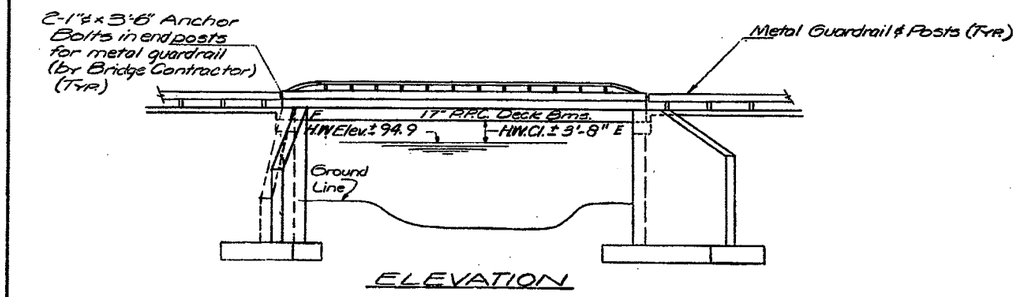
1006-0

B.M: Top of northwest wingwall-existing bridge. Elev. 100.00
Existing Structure: Built as 381.89 Sec. 102B Sta. 489+50 in 1929. Superstr. is R.C. Deck Girder. Substr is R.C. Closed Abut.
Superstructure to be removed in stages by Bridge Contr. No. Salvage.

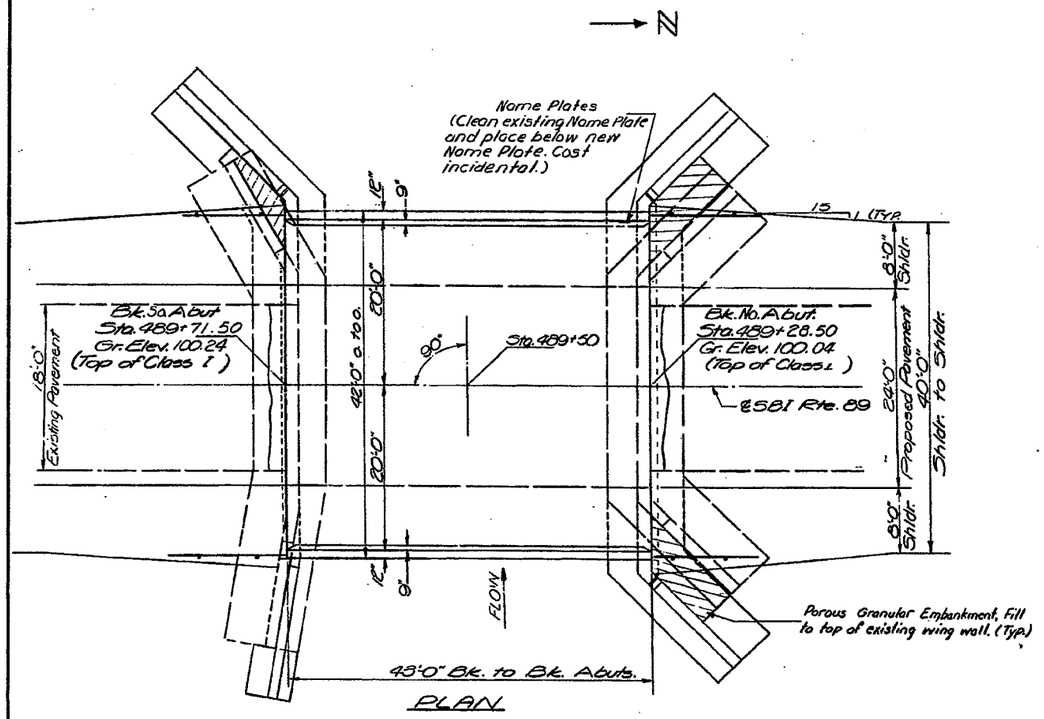
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 27	102BR	LEE	10	3
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 1
8 SHEETS



ELEVATION



PLAN

STATION 489+50
REBUILT 19 BY
STATE OF ILLINOIS
S.B.I. RT. 89 SEC. 102-BR

LOADING H520

NAME PLATE
See Std. 2113

GENERAL NOTES

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

All structural steel shall be shop painted with 2 coats of basic lead silico chromate paint.

It shall be the responsibility of the Contractor to verify all dimensions and conditions existing in the field prior to construction and ordering of materials.

For Waterproofing Membrane System see Special Provisions.

The concrete rail section above deck beams shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.

Expansion bolts shall consist of self drilling expansion anchors and ¾" ø x 9" hooked bolts.

Back surface of the new abutment and wing walls shall be waterproofed above the top of the footings

Expansion guards which are not cast in the precast unit shall be fabricated and erected in accordance with Article 503.07(c) of the Standard Specifications and are included in quantity of structural steel.

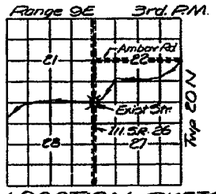
The top surfaces of the beams shall be finished in accordance with Art. 505.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Removal of Existing Superstructure	Each	1		1
Concrete Removal	Cu. Yds.		5	5
Class X Concrete	Cu. Yds	12.9	113.9	126.8
Aluminum Railing	Lin. Ft.	80		80
Reinforcement Bars	Lbs.	1380	11240	12620
Portland Cement Mortar Fairing	Lin. Ft	551		551
Waterproofing Memb. Syst.	Sq. Yds	194		194
Preformed Jt. Sealer	Lin. Ft.	45		45
Pav't. Removal and P.C.C. Replacement Type I (10")	Sq. Yds.	8		8
Precast Prestressed Concrete Deck Beams (17")	Sq. Ft	1779		1779
Protective Coat	Sq. Yds.	32		32
Expansion Bolts ¾" ø	Each		155	155
Temporary Guardrail	Lin. Ft.	43		43
Structural Steel	Lbs.	2800		2800
Name Plates	Each	1		1
Bituminous Concrete Surface Course Class I	Tons	23		23
Untreated Piles (up to 30')	Lin. Ft.		660	660
Test Pile (Timber)	Each		1	1
Porous Granular Embankment	Cu. Yds.		60	60

WATERWAY INFORMATION

Drainage Area,	174.5 Sq. Mi.
Character, Rolling, sand, wooded	
Present Opening	360.5 Sq. Ft.
Reqd. Opening	360.5 Sq. Ft.
Proposed Opening	360.5 Sq. Ft.
Q(50)	1221 cfs.



LOCATION SKETCH

FIELD UNITS

fc = 1400 psi (Super) (Sub)
fs = 20000 psi (Reinf.)
vc = 75 psi (Footing)
n = 10

PRECAST PRESTRESSED UNITS

fc = 5000 psi.
fci = 4000 psi.
fs = 270,000 psi.
fsi = 189,000 psi.

LOADING H520-44

DESIGNED	J. M. Patel
CHECKED	
DRAWN	FERNANDO
CHECKED	

NOVEMBER 24 1961
EXAMINED
PASSED
APPROVED

GENERAL PLAN & ELEVATION
S.B.I. RTE. 89 SEC. 102-BR
LEE COUNTY
STA. 489+50

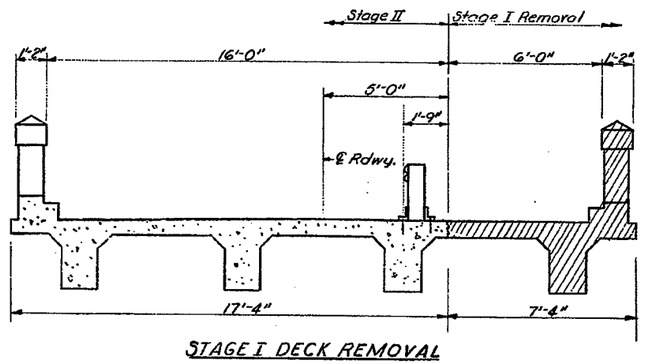
STATE OF ILLINOIS 2287

K & E CO. 19-1283

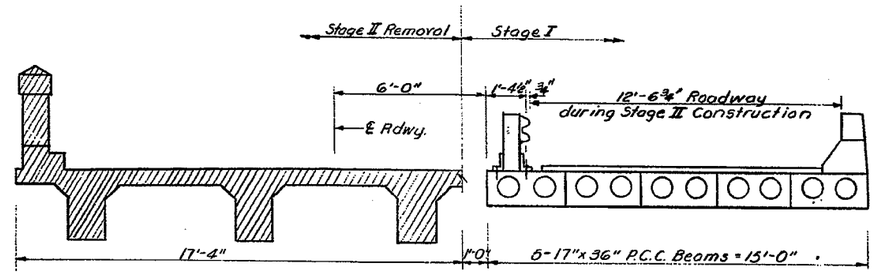
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. P.A. 27	102BR	LEE	10	4
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

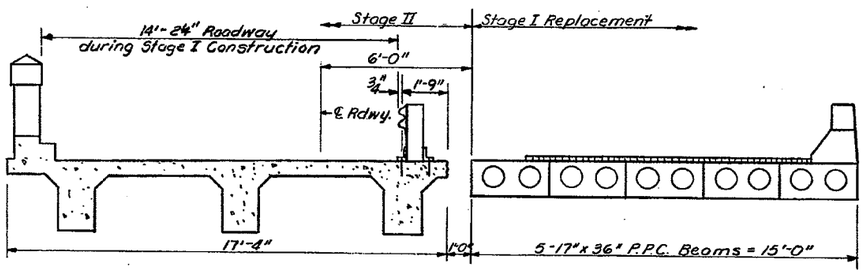
SHEET NO. 2
8 SHEETS



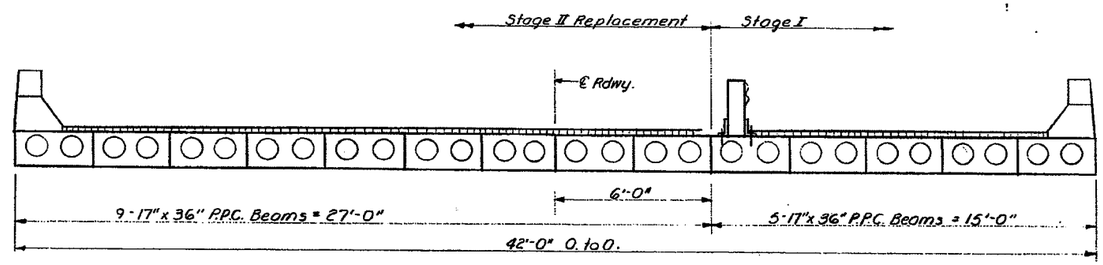
STAGE I DECK REMOVAL



STAGE II DECK REMOVAL

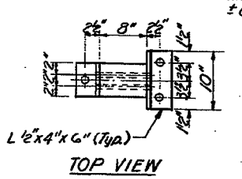


STAGE I DECK REPLACEMENT

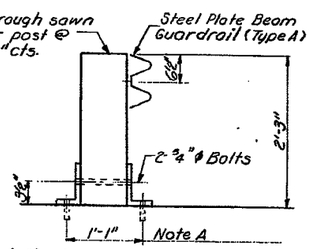


STAGE II DECK REPLACEMENT

ALL SUPERSTRUCTURE VIEWS LOOKING NORTH

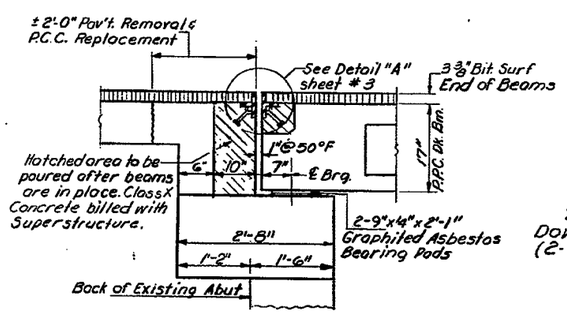


TOP VIEW

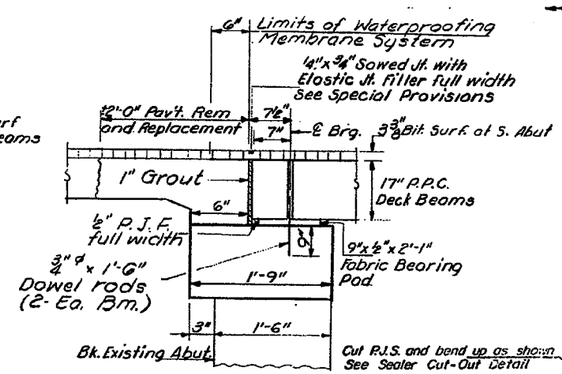


Note A: Temporary Guardrail Anchors
Stage I: 3-¾"ϕ Self-drilling expansion bolts in existing deck
Stage II: 3-¾"ϕ x 6" bolts cast in deck beam. Burn flush after guardrail removal.

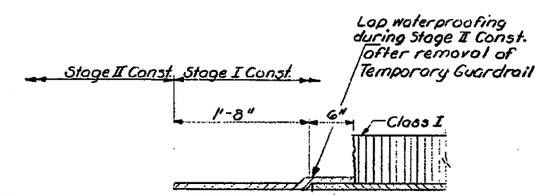
TEMPORARY GUARDRAIL DETAIL
See Special Provisions



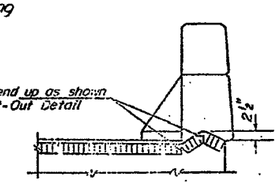
SECTION THRU NORTH ABUT.
AT ℄ RDWY.



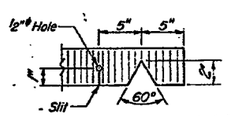
SECTION THRU SOUTH ABUT.
AT ℄ RDWY



WATERPROOFING TREATMENT



END OF SEALER TREATMENT



SEALER CUT-OUT (2½")

STAGE CONSTRUCTION & SUPERSTRUCTURE DETAILS
SBI. RT. 89 SEC. 102-BR
LEE COUNTY
STA. 489 + 50

DESIGNED	J. M. Pute
CHECKED	
DRAWN	Bev Robinson
CHECKED	

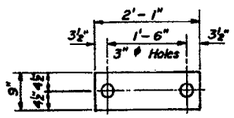
Nov. 24 1971
EXAMINED
PASSED
APPROVED Richard H. Gutterman

K & E CO. 18-1288

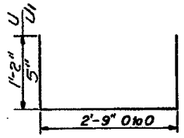
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
27	102BR	LEE	10	5

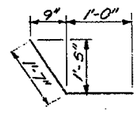
SHEET NO. 3
8 SHEETS



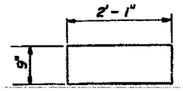
FABRIC BEARING PAD



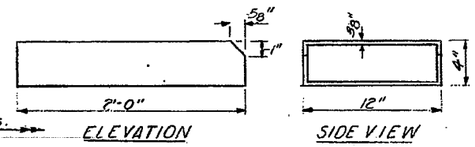
U & U1 BAR



G1 BAR

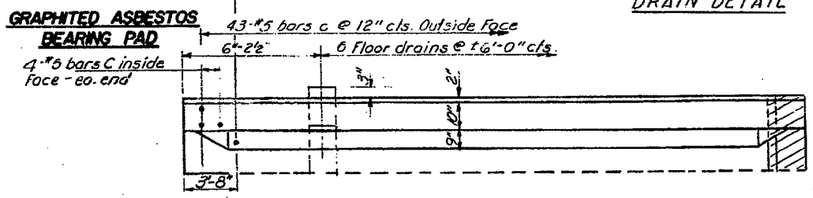


GRAPHITED ASBESTOS BEARING PAD

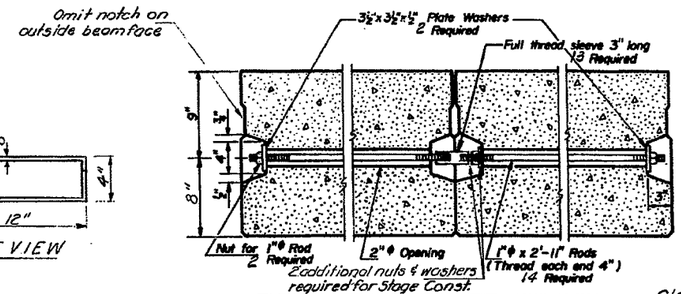


ELEVATION SIDE VIEW

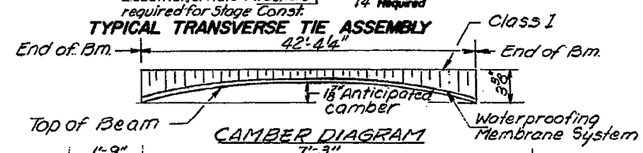
DRAIN DETAIL



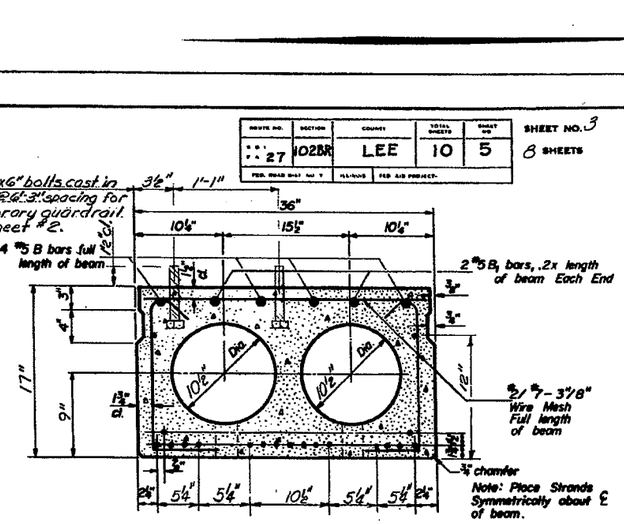
PLAN OF OUTSIDE BEAM



TYPICAL TRANSVERSE TIE ASSEMBLY

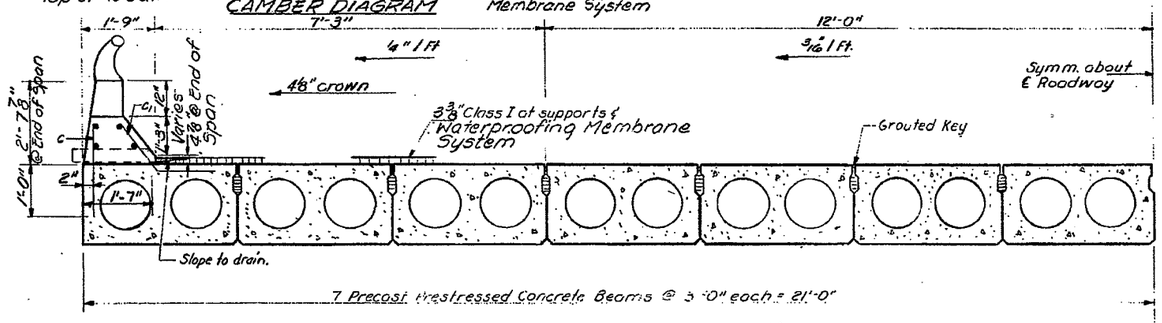


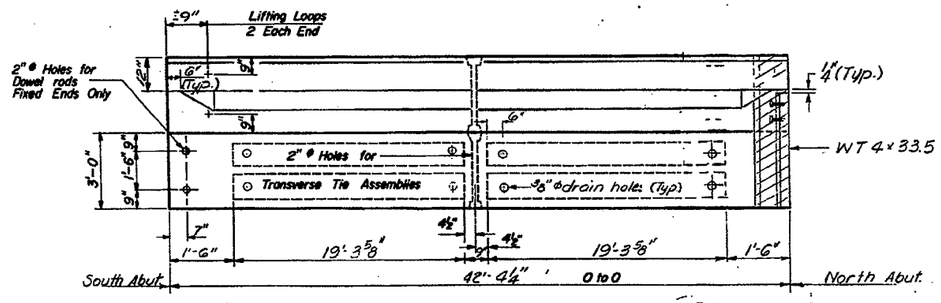
CAMBER DIAGRAM



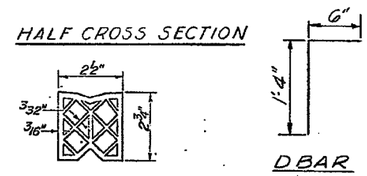
TYPICAL SECTION

19-7/16" ϕ Strands Each Strand Stressed to 21,700 lbs.
15 Strands 1⅛" up 2 Strands 3¼" up 2 Strands 12" up



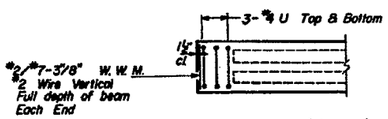


PLAN

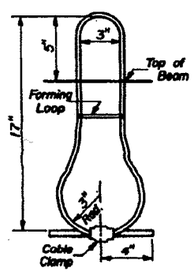


HALF CROSS SECTION

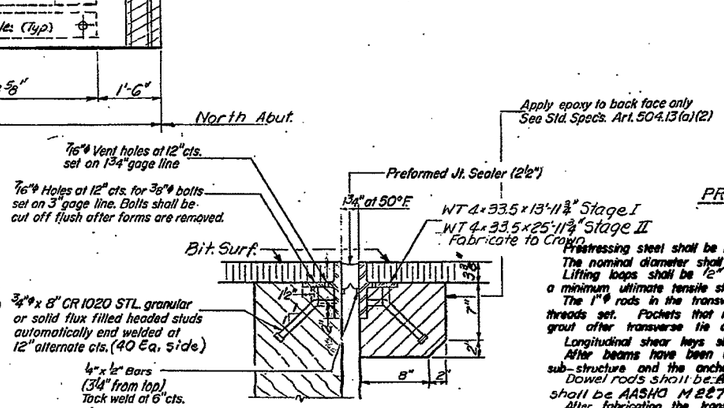
D BAR



END PLAN (FIXED)
(See Sh. #4 for end of Bm. details @ Exp. End)



LIFTING LOOP DETAIL



DETAIL "A"

PREFORMED JOINT SEALER (2½")

GENERAL NOTES

Prestressing steel shall be non-galvanized high strength, stress-relieved 7-wire strand, Grade 270.
The nominal diameter shall be 7/16" and the nominal cross-sectional area shall be 0.115 sq. in..
Lifting loops shall be ½" ϕ diameter, 6x25 class wire rope with fiber core and shall have a minimum ultimate tensile strength of 21,000 lbs.
The 1" ϕ rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets that receive transverse tie bar on outside beam shall be filled with grout after transverse tie assembly is in place.
Longitudinal shear keys shall be packed with a very dry mix of 2:1 sand and P.C. mortar.
After beams have been erected, holes for the dowel anchors shall be drilled into the sub-structure and the anchor dowels shall be grouted in place.
Dowel rods shall be AASHO M227 or AASHO M31 . . Transverse tie rods shall be AASHO M227 Grade 70-80.
After fabrication, the transverse tie assemblies (tie rods, nuts, washers, and sleeves) shall be hot-dipped galvanized in accordance with AASHO Designation: M232.
Cost of reinforcement and accessories cast into the beam, of bearing pads, and of grouting longitudinal shear keys is included in unit price bid for "Precast Prestressed Concrete Deck Beams".
Drains shall be of Aluminum sheets welded ASTM: B 209 alloy 6061-T6. Cost of drains shall be incidental to Class X Concrete.

NOTE: Dimensions are at right angles.
Hatched areas to be poured after beams have been erected and joints grouted.
Ends of beams shall be aligned at the expansion joints. Any lineal variation in the beam lengths shall be placed at the fixed joint.
See End of Beam Detail for reinforcement. Sheet #4

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
b	3	#5	15'-9"	——
b1	3	#5	27'-9"	——
Precast Prestressed Concrete Deck Beams (17")			Sq. Ft.	1779
Class X Concrete			Cu. Yds.	3.5
Reinforcement Bars			Lbs.	140

For Curb & parapet details and quantities see Sheet #4.

DESIGNED	J. M. Patel
CHECKED	
DRAWN-JAMES R. CARMAIN	BKR
CHECKED	

EXAMINED Nov. 24 1971
PASSED H. E. Baumann
APPROVED Richard H. Mottorman
CHIEF HIGHWAY ENGINEER

PD-1-S 11-19-65 Rev. 5-20-68

SUPERSTRUCTURE
S.B.I. RT. 89 SEC. 102-BR
LEE COUNTY
STA. 489+50