

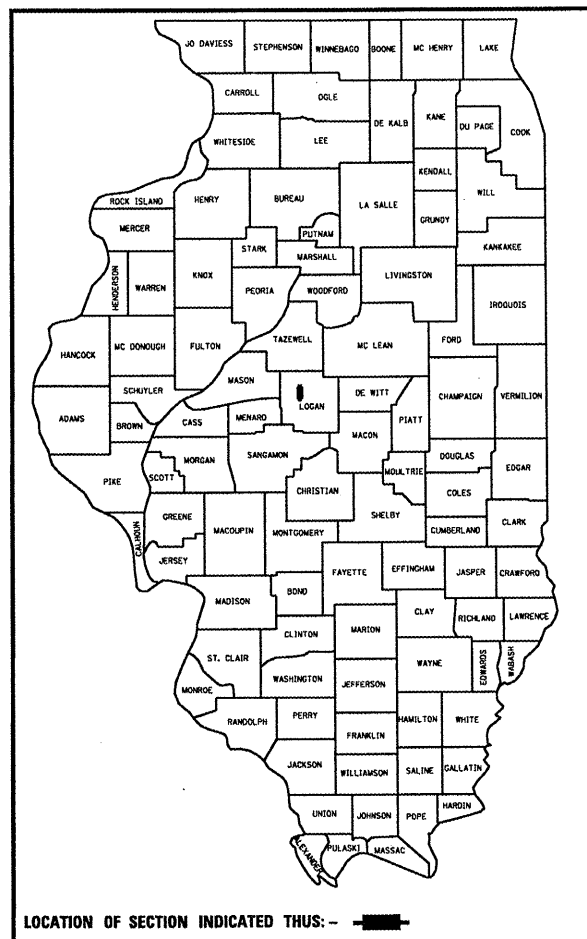
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(54-4B)-3	LOGAN	10	1

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

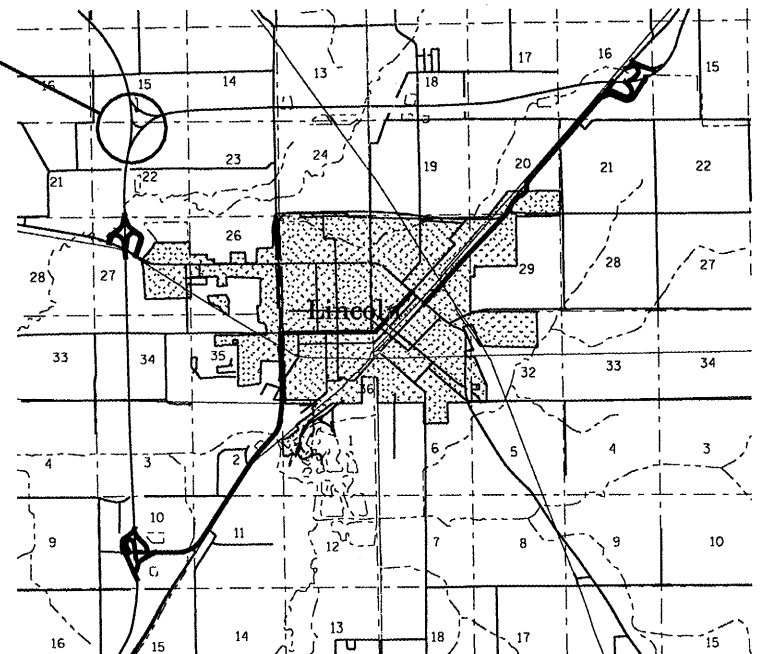
**PROPOSED
 HIGHWAY PLANS**

FAI ROUTE 55 (I-55)
 SECTION (54-4B)I-3
 PROJECT C-96-001-07
 LOGAN COUNTY

FOR INDEX OF SHEETS, SEE SHEET NO. 2



SN 054-0048
 SN 054-0049



NET LENGTH OF SECTION: 588' = 0.11 MI

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED March 24, 2006
Chris M. [Signature]
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

May 12, 2006
Mike [Signature]
 ENGINEER OF DESIGN AND ENVIRONMENT

May 12, 2006
Milton R. Sees P.E. [Signature]
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

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 OF THE STATE OF ILLINOIS

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 2 OF 10
CONTRACT 72A32

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX, GENERAL NOTES, & SIGNATURES
- 3 SUMMARY OF QUANTITIES
- 4 BRIDGE PLAN VIEW
- 5 TYPICAL BRIDGE CROSS SECTION
- 6 STAGING DETAIL
- 7-8 JOINT REPLACEMENT DETAILS
- 9 SILICONE JOINT DETAIL
- 10 BAR SPLICER DETAIL

STANDARDS

- 701101-01
- 701106-01
- 701400-02
- 701411-03
- 701446
- 702001-06

GENERAL NOTES

EPOXY CRACK SEALING SHALL BE USED FOR CRACKS IN THE POLYMER CONCRETE WHICH IS TO REMAIN IN PLACE. CRACK SEALING SHALL TAKE PLACE AFTER THE INSTALLATION OF THE NEW EXPANSION JOINT. ANY CRACKS THAT APPEAR IN THE POLYMER CONCRETE AS A RESULT OF REMOVAL OF THE EXISTING JOINT SHALL BE EPOXY SEALED AT THE CONTRACTOR'S EXPENSE.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT 6

EXAMINED March 1 20 06

[Signature]
ENGINEER OF OPERATIONS

EXAMINED March 16 20 06

[Signature]
ENGINEER OF PROGRAM IMPLEMENTATION

EXAMINED MARCH 16 20 06

[Signature]
ENGINEER OF PROGRAM DEVELOPMENT

INDEX,
GENERAL NOTES,
& SIGNATURES
C-96-001-07
LOGAN COUNTY

SUMMARY OF QUANTITIES

100% STATE
SFTY - 2A

ITEM #	DESCRIPTION	UNIT	QUANTITY
50102400	CONCRETE REMOVAL	CU YD	16.3
50300255	CONCRETE SUPERSTRUCTURE	CU YD	16.1
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2020
59000100	EPOXY CRACK SEALING	FOOT	10
67100100	MOBILIZATION	L SUM	1
70100815	TRAFFIC CONTROL AND PROTECTION, STANDARD 701446	L SUM	1
70400100	TEMPORARY CONCRETE BARRIER	FOOT	600
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	600
X0320887	POLYMER CONCRETE	CU FT	4.6
X7011420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	L SUM	1
XX004814	SILICONE JOINT SEALER, 3"	FOOT	126
Z0002600	BAR SPLICERS	EACH	24
⊙ Z0030250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2
⊙ Z0030350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2

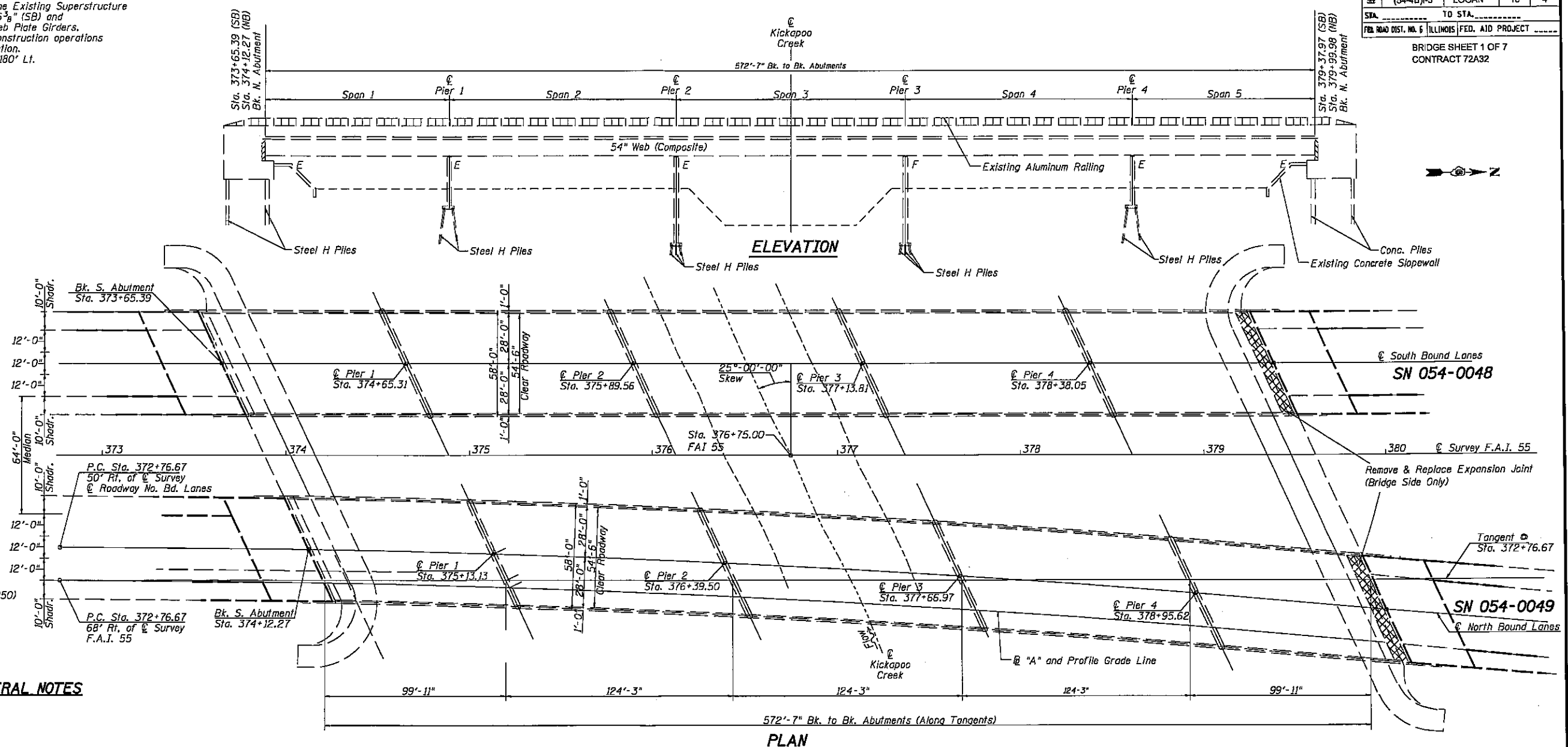
⊙SFTY-3M

SUMMARY OF
QUANTITIES
C-96-001-07
LOGAN COUNTY

Existing Structure: SN 054-0048 (SB) and 054-0049 (NB)
 Built as F.A.I.-55, Section 54-4B in 1973. The Existing Superstructure consists of a Reinforced Concrete Deck 56B'-6³/₈" (SB) and 585'-6³/₈" (NB) long and 58'-0" wide on 54" Web Plate Girders. Traffic to be maintained during repair and reconstruction operations on both structures by means of Stage Construction. B.M. # 24 - 6" Bolt Spike in 18" Cottonwood 180' Lt. Sta. 375+80, Elev. 551.83

F.A.I. DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(54-4B)-3	LOGAN	10	4

BRIDGE SHEET 1 OF 7
 CONTRACT 72A32



DESIGN SPECIFICATIONS
 1996 AASHTO with 1997 & 1998 Interims.

DESIGN STRESSES
 $f'_c = 3,500$ psi (New Concrete)
 $f_y = 60,000$ psi (New Reinforcement)
 $f_y = 50,000$ psi (New Structural Steel M270 GR50)
 $f_y = 36,000$ psi (Existing ASTM A-36 Steel)

GENERAL NOTES

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 bid price for the work.

Prior to pouring the new concrete deck, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04 of the Standard Specifications.

The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.

BILL OF MATERIAL

Item	Unit	Qty.
Conc. Rem.	Cu. Yd.	16.3
Bar Splicers	Each	24
Silicone Jt. Sealer	Feet	126
Polymer Concrete	Cu. Ft.	4.6
Concrete Superstruc.	Cu. Yd.	16.1
Reinforcement Bars, Epoxy Coated	Pound	2020

Reinforcement bars designated (E) shall be epoxy coated.

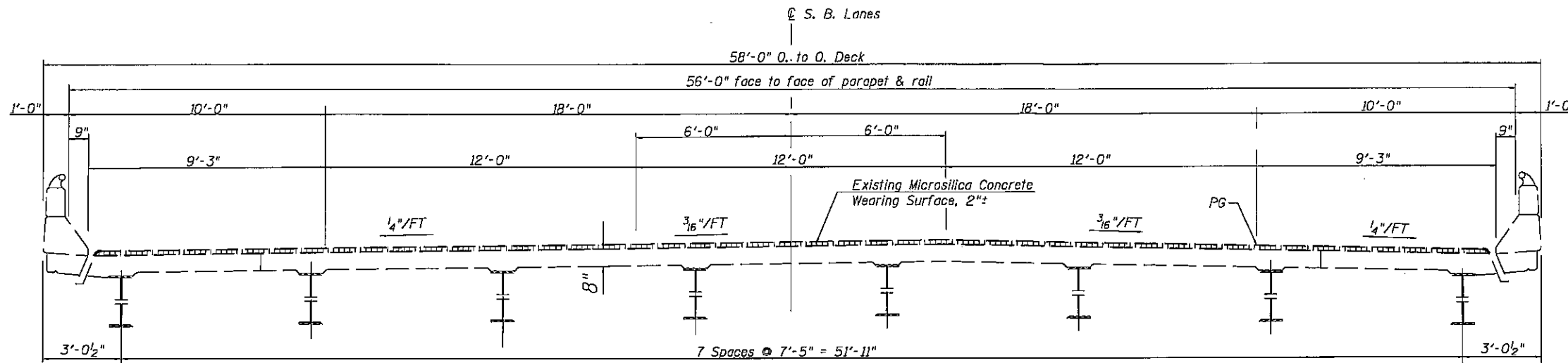
NOT TO SCALE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
GENERAL PLAN AND ELEVATION

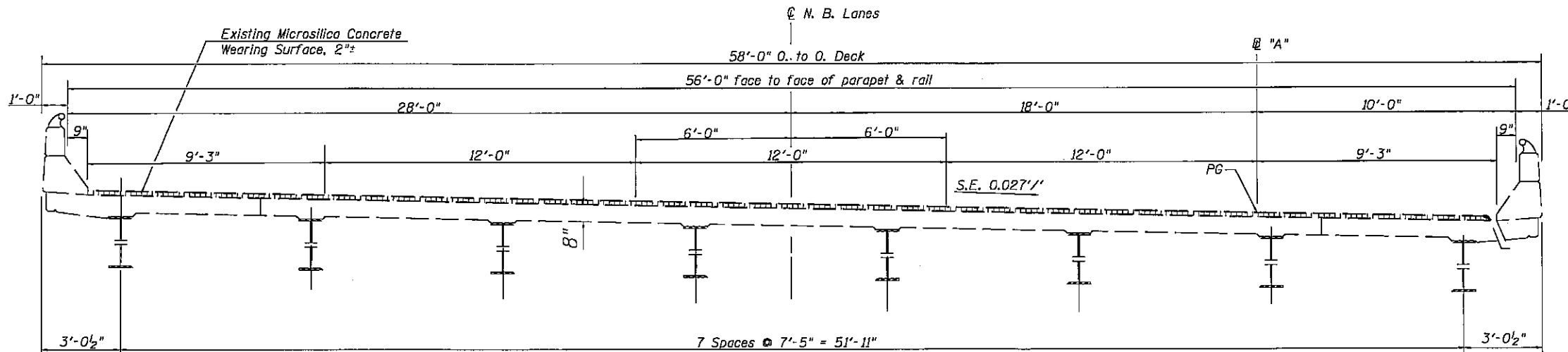
F.A.I. ROUTE 55 OVER
 KICKAPOO CREEK
 LOGAN COUNTY
 SECTION (54-4B)-3
 STATION 376+75.00
 STRUCTURE No. 054-0048 &
 STRUCTURE No. 054-0049

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(54-48)-3	LOGAN	10	5
STA. _____ TO STA. _____		FED. ROAD DIST. NO. 6 ILLINOIS FED. AID PROJECT _____		

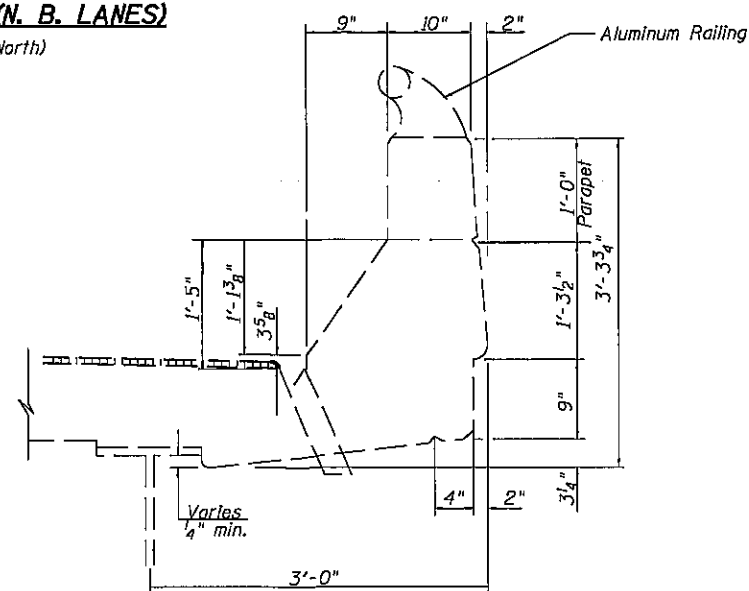
BRIDGE SHEET 2 OF 7
CONTRACT 72A32



CROSS SECTION (S. B. LANES)
(Looking North)



CROSS SECTION (N. B. LANES)
(Looking North)



TYPICAL CURB SECTION

NOT TO SCALE

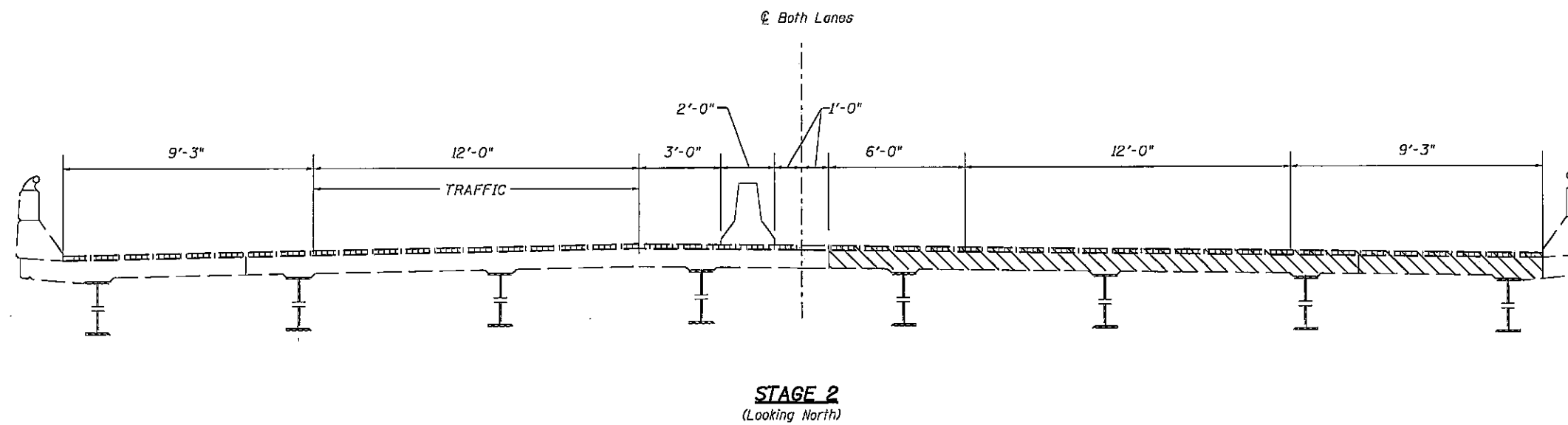
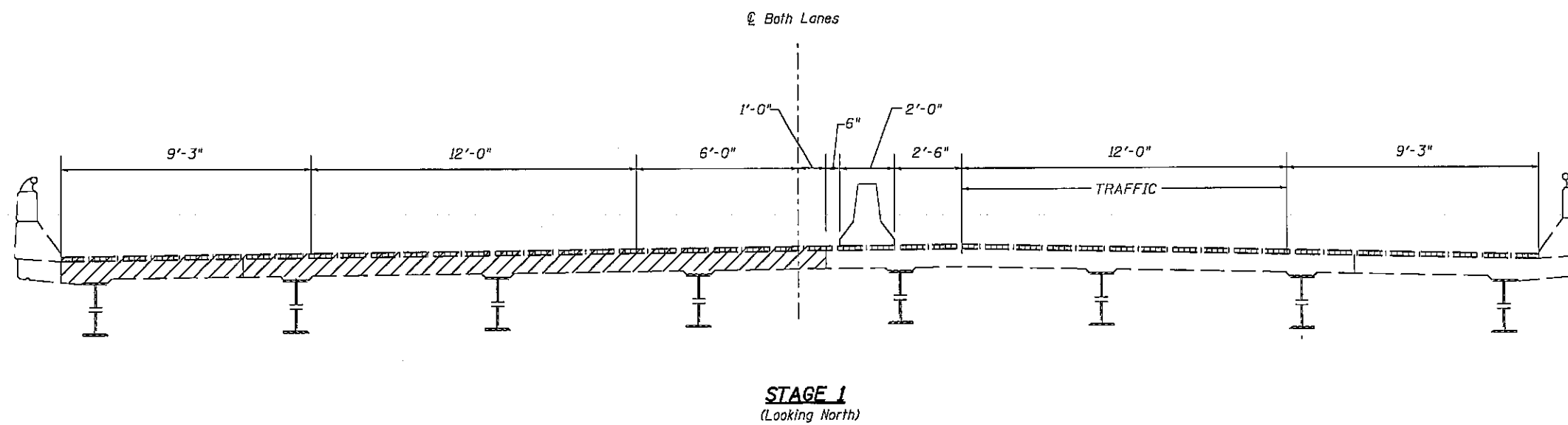
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

F.A.I. ROUTE 55 OVER
KICKAPOO CREEK
LOGAN COUNTY
SECTION (54-48)-3
STATION 376+75.00
STRUCTURE No. 054-0048 &
STRUCTURE No. 054-0049

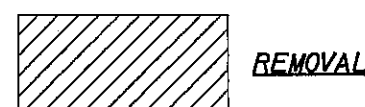
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	54-4B1-3	LOGAN	10	6
STA.	TO STA.			
FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

BRIDGE SHEET 3 OF 7
CONTRACT 72A32



Notes:

The contractor may elect to close either the left or right side of the bridges first. The concrete barrier shall be tapered as outlined in the special provisions and shall terminate at the edge of pavement on the closed side of the bridge.



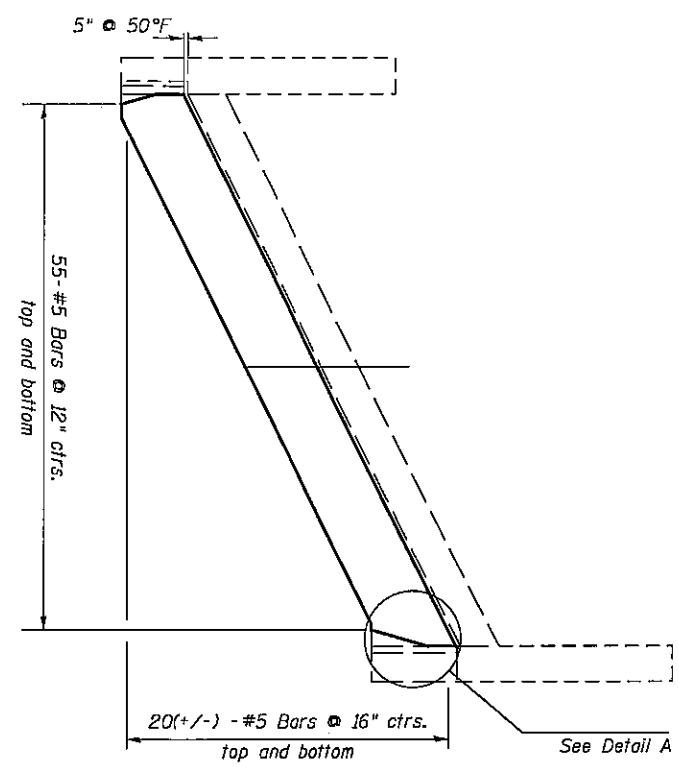
NOT TO SCALE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

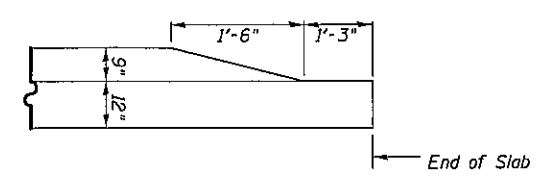
STAGING DETAIL

F.A.I. ROUTE 55 OVER
KICKAPOO CREEK
LOGAN COUNTY
SECTION 54-4B1-3
STATION 376+75.00
STRUCTURE No. 054-0048 &
STRUCTURE No. 054-0049

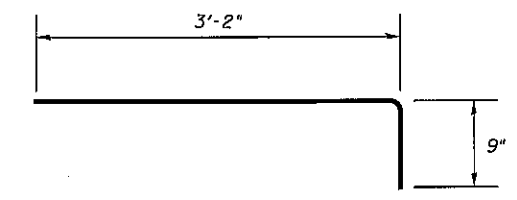
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(54-4B)I-3	LOGAN	10	7
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. 6 ILLINOIS FED. AID PROJECT _____				
BRIDGE SHEET 4 OF 7 CONTRACT 72A32				



**NORTH ABUTMENT PLAN
SHOWING EXISTING REINFORCEMENT**

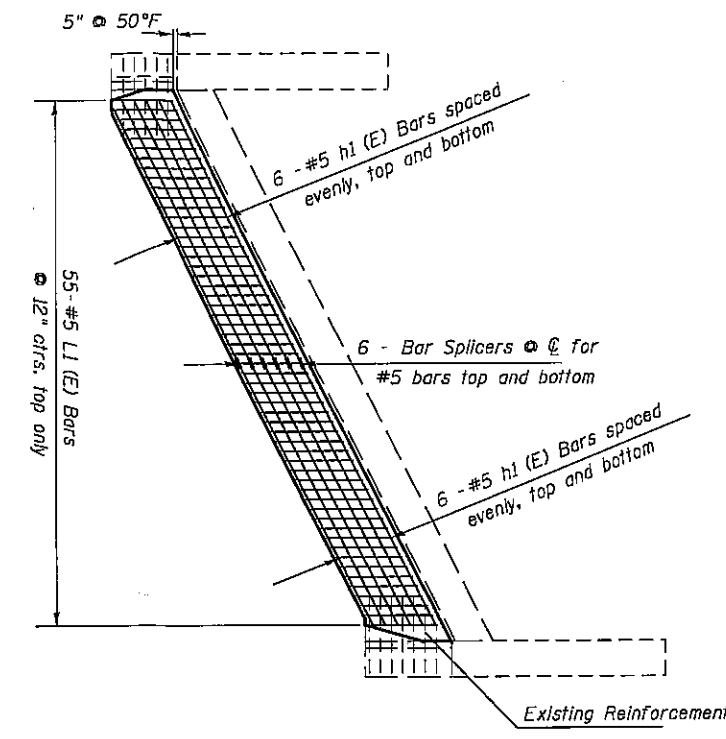


DETAIL A

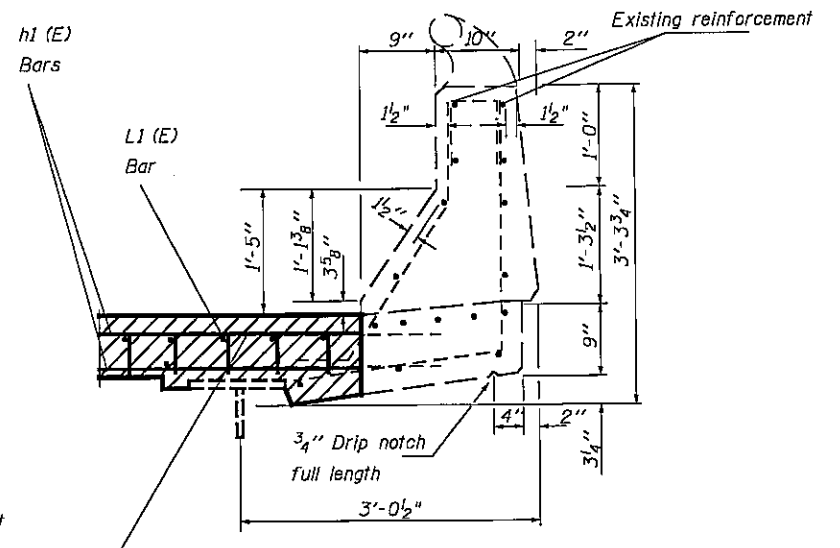


L(E) BAR DETAIL

* Existing longitudinal reinforcement shall be cleaned, straightened and incorporated into the new construction. Existing transverse reinforcement may be cut and removed.

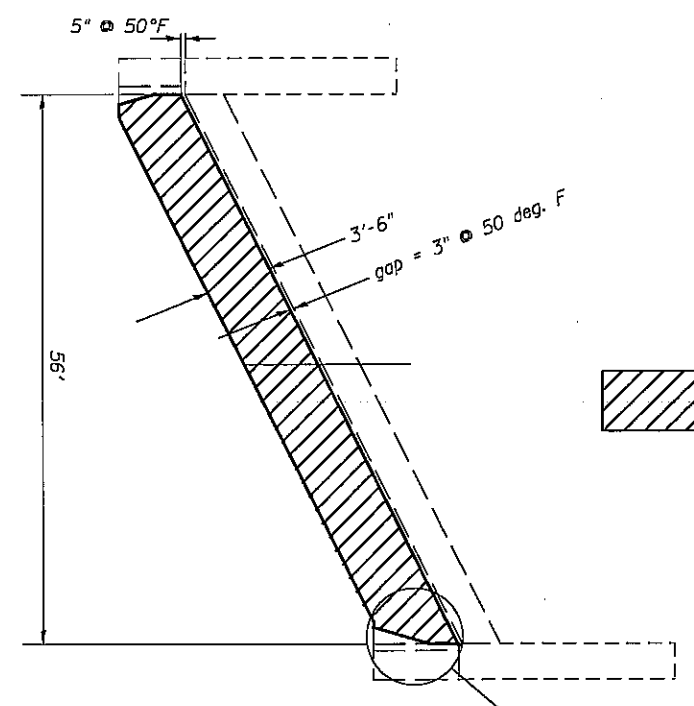


**NORTH ABUTMENT PLAN
SHOWING PROPOSED REINFORCEMENT**

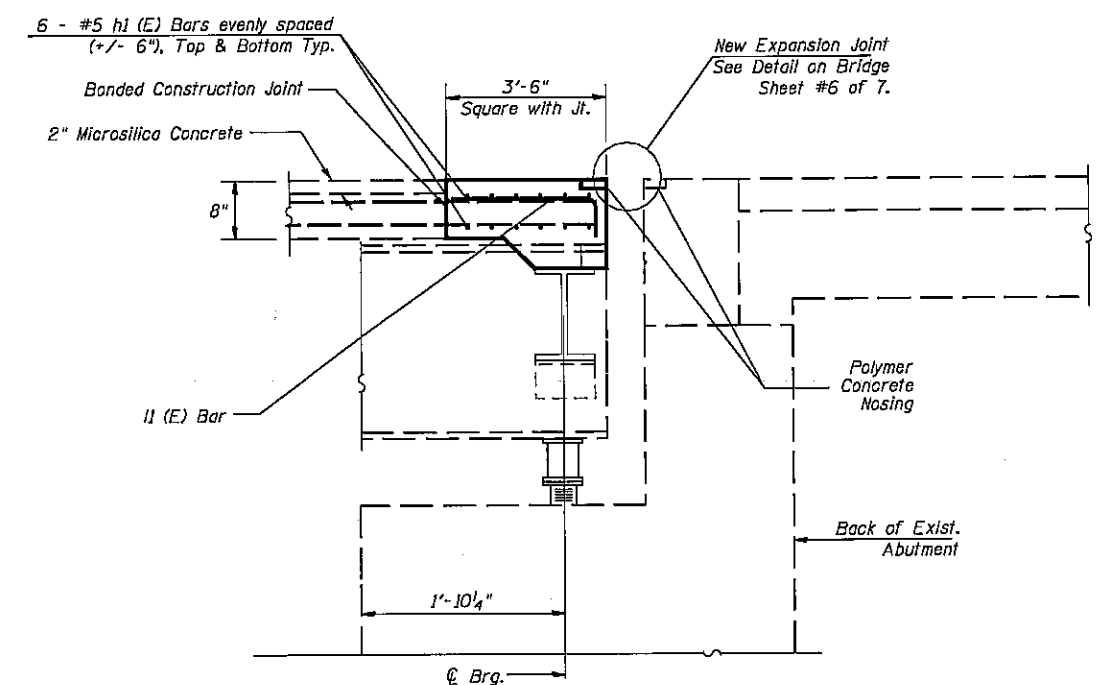


SECTION THRU PARAPET

Existing transverse bars protruding from parapet shall be a minimum of 24" long after cut-off



**NORTH ABUTMENT PLAN
SHOWING CONCRETE REMOVAL &
SUPERSTRUCTURE DIMENSIONS**



TYPICAL SECTION THRU ABUTMENT
(Dimensions measured at Rt. Ls.)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h1 (E)	24	#5	30'-0"	—
L1 (E)	55	#5	3'-11"	┌
Silicone Jt. Sealer		Feet	61.8	
Polymer Concrete		Cu. Ft.	2.25	
Concrete Superstruc.		Cu. Yd.	8.05	
Reinforcement Bars, Epoxy Coated		Pound	996	

Reinforcement bars designated (E) shall be epoxy coated.

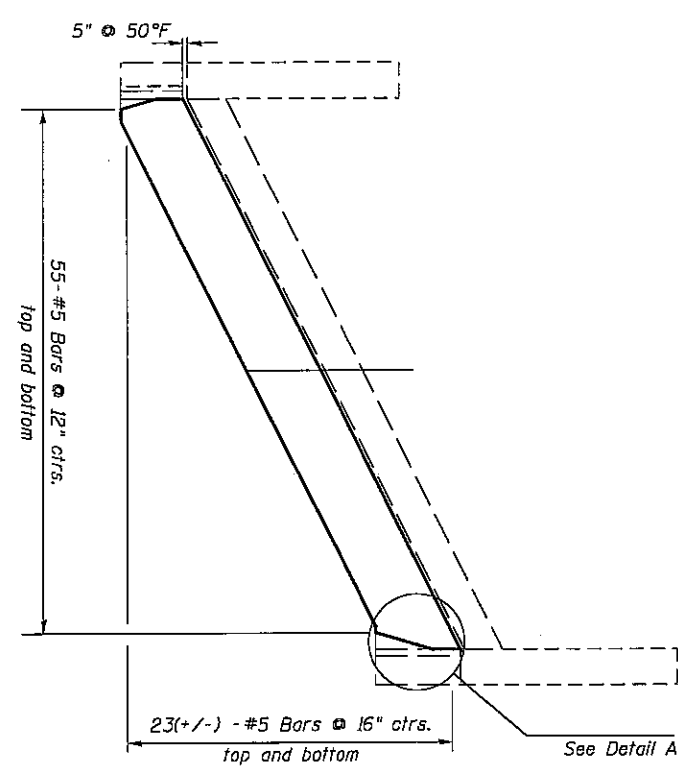
NOT TO SCALE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**SUPERSTRUCTURE NORTH ABUT.
SOUTH BOUND LANES**

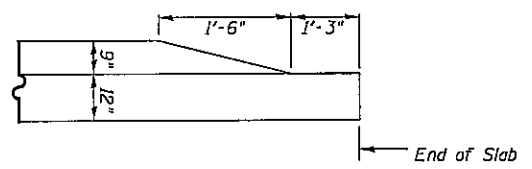
LOGAN COUNTY
SECTION (54-4B)I-3
STATION 376+75.00
STRUCTURE No. 054-0048
JOINT REPLACEMENT DETAIL

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(54-4B)I-3	LOGAN	10	8
STA.		TO STA.		
FED. ROAD DIST. NO. 6 ILLINOIS FED. AID PROJECT				

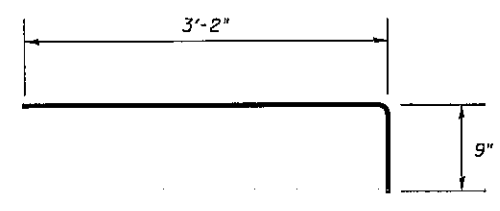
BRIDGE SHEET 6 OF 7
CONTRACT 72A32



**NORTH ABUTMENT PLAN
SHOWING EXISTING REINFORCEMENT**

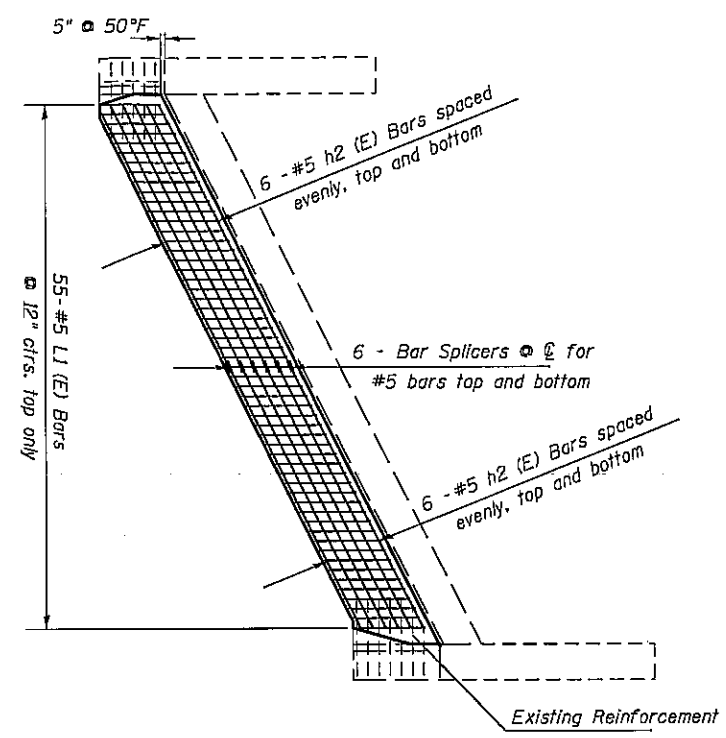


DETAIL A

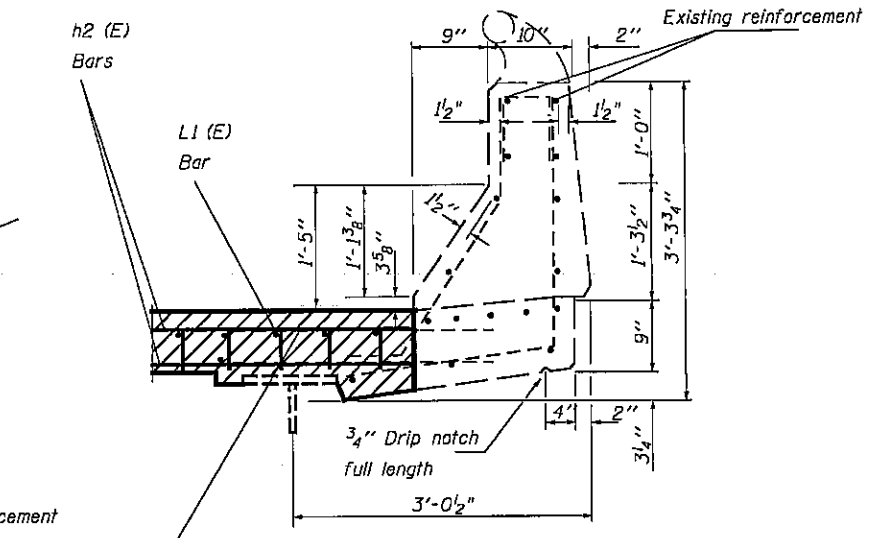


L(E) BAR DETAIL

* Existing longitudinal reinforcement shall be cleaned, straightened and incorporated into the new construction. Existing transverse reinforcement may be cut and removed.

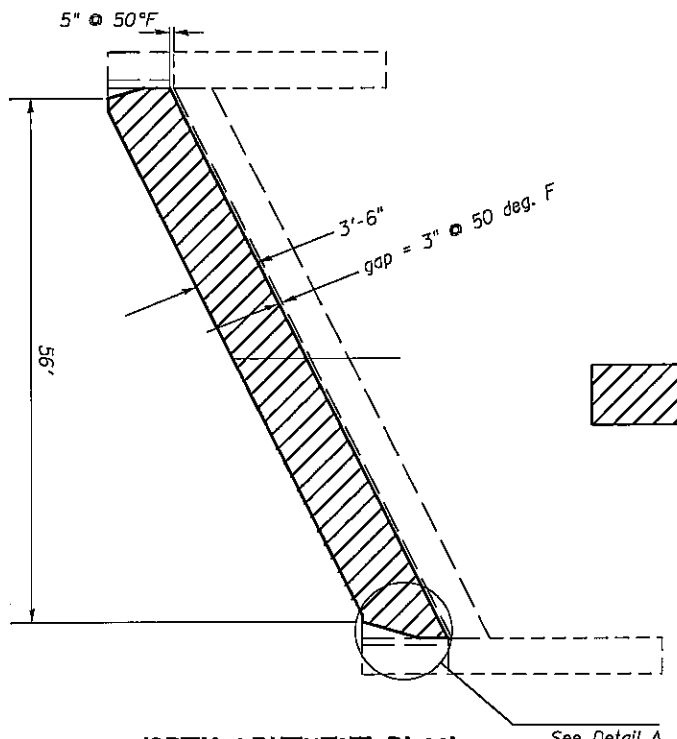


**NORTH ABUTMENT PLAN
SHOWING PROPOSED REINFORCEMENT**

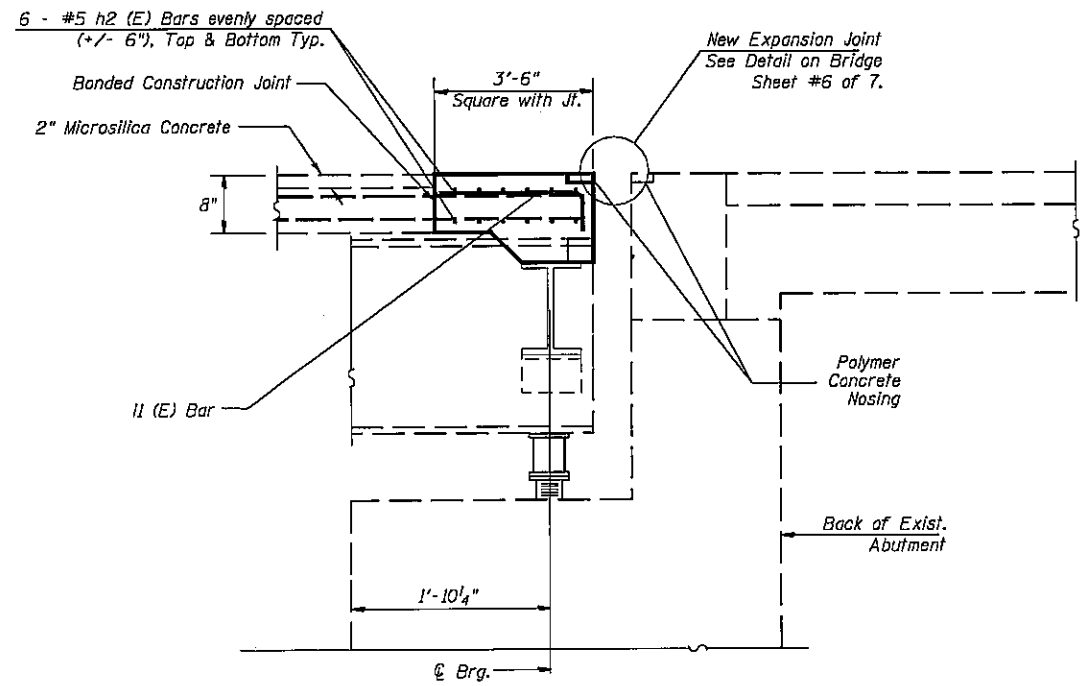


Existing transverse bars protruding from parapet shall be a minimum of 24" long after cut-off

SECTION THRU PARAPET



**NORTH ABUTMENT PLAN
SHOWING CONCRETE REMOVAL &
SUPERSTRUCTURE DIMENSIONS**



TYPICAL SECTION THRU ABUTMENT

(Dimensions measured at Rt. Ls.)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h2 (E)	24	#5	30'-11"	—
L1 (E)	55	#5	3'-11"	┌
Silicone Jt. Sealer			Feet	64.2
Polymer Concrete			Cu. Ft.	2.35
Concrete Superstruc.			Cu. Yd.	8.05
Reinforcement Bars, Epoxy Coated			Pound	1024

Reinforcement bars designated (E) shall be epoxy coated.

NOT TO SCALE

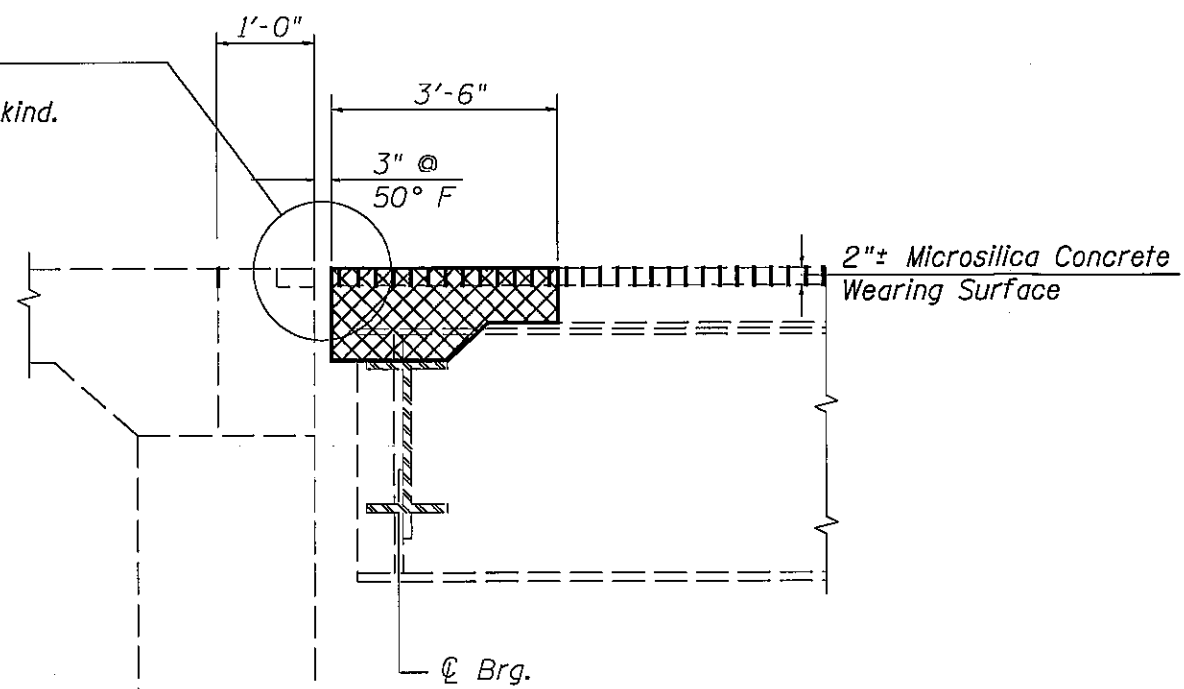
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SUPERSTRUCTURE NORTH ABUT.
NORTH BOUND LANES

LOGAN COUNTY
SECTION (54-4B)I-3
STATION 376+75.00
STRUCTURE No. 054-0049
JOINT REPLACEMENT DETAIL

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	154-4B1-3	LOGAN	10	9
STA. _____		TO STA. _____		
FED. ROAD DIST. NO. 6		ILLINOIS FED. AID PROJECT _____		

BRIDGE SHEET 6 OF 7
CONTRACT 72A32

Existing Silicone Joint Sealer/
Polymer Concrete Nosing Joint
to be removed and replaced in kind.
See detail on this sheet

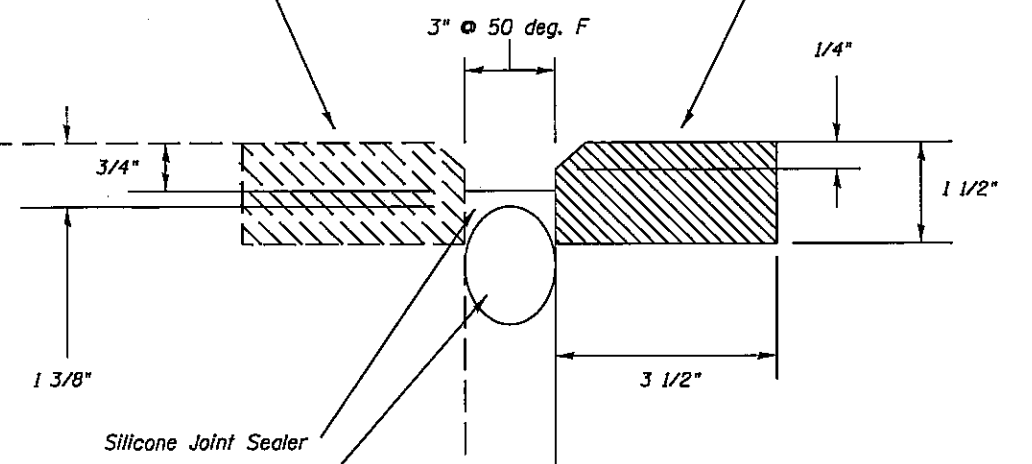


JOINT DETAIL

Polymer Concrete Nosing to remain in place
(Shall be cleaned before installation of new
silicone joint sealer as per special provisions)

Polymer Concrete Nosing
to be replaced

APPROACH SLAB

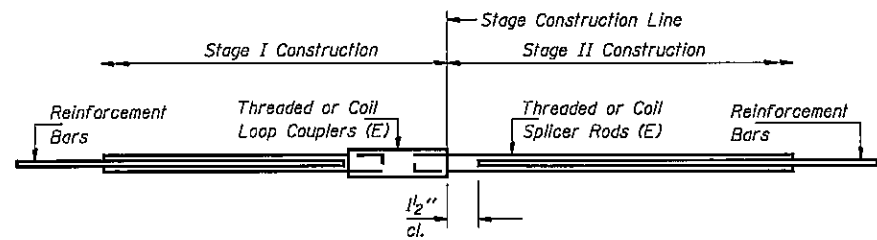


SILICONE JOINT SEALER DETAIL
(North Abutment)

Backer rod having a diameter
25% greater than joint opening
at time of installation.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
SILICONE JOINT DETAIL

F.A.I. ROUTE 55 OVER
KICKAPOO CREEK
LOGAN COUNTY
SECTION (54-4B)I-3
STATION 376+75.00
STRUCTURE No. 054-0048 &
STRUCTURE No. 054-0049



SPLICER DETAIL

Bar Size	No. Assemblies Required	Location
#5	24	DECK

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

The diameter of this part is equal or larger than the diameter of bar spliced.

ROLLED THREAD DOWEL BAR



**** ONE PIECE**

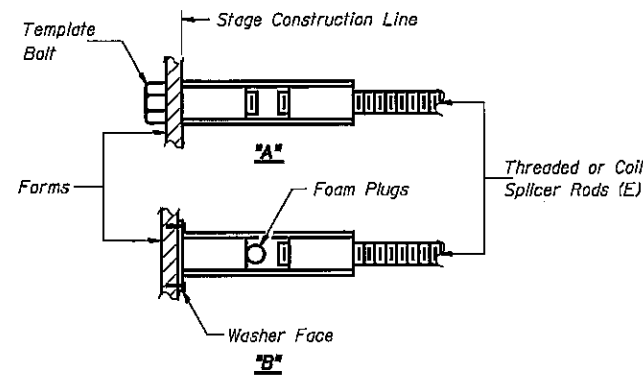
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

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



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length. All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

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 bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_1$
- ② Minimum *Pull-out Strength (Tension in kips) = $1.25 \times f_{s_{allow}} \times A_1$

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_1 = Tensile stress area of lapped reinforcement bars.

* = 28 day concrete

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#5	2'-0"	23.0	9.2
#6	2'-7"	33.1	13.3
#7	3'-5"	45.1	18.0
#8	4'-6"	58.9	23.6

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."