74589

1-18-13 LETTING ITEM 050

EFFINGHAM

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	EFFINGHAM	33	1
	ILLINOIS	CONTRACT NO. 74589		

* D7 BRIDGE REPAIRS 2013-1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED
HIGHWAY PLANS

F.A.I. ROUTE 70 (I-70)
SECTION D7 BRIDGE REPAIRS 2013-1

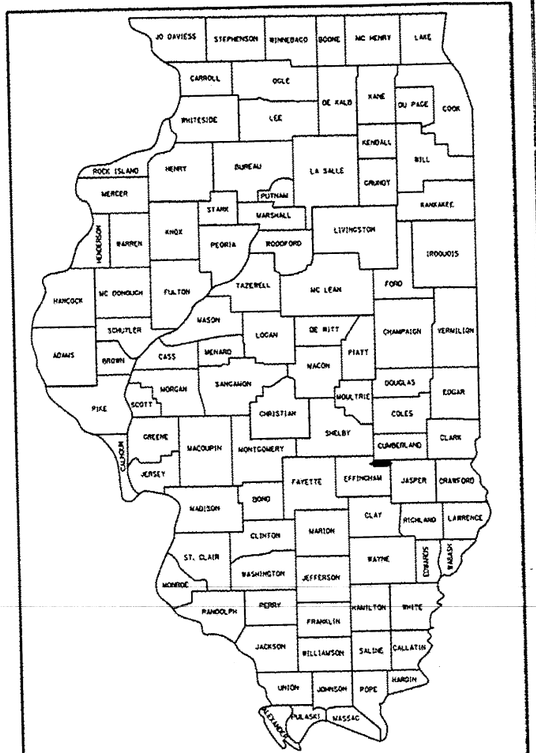
BRIDGE REPAIRS
EFFINGHAM COUNTY
C-97-116-12

FOR INDEX OF SHEETS, SEE SHEET NO. 2

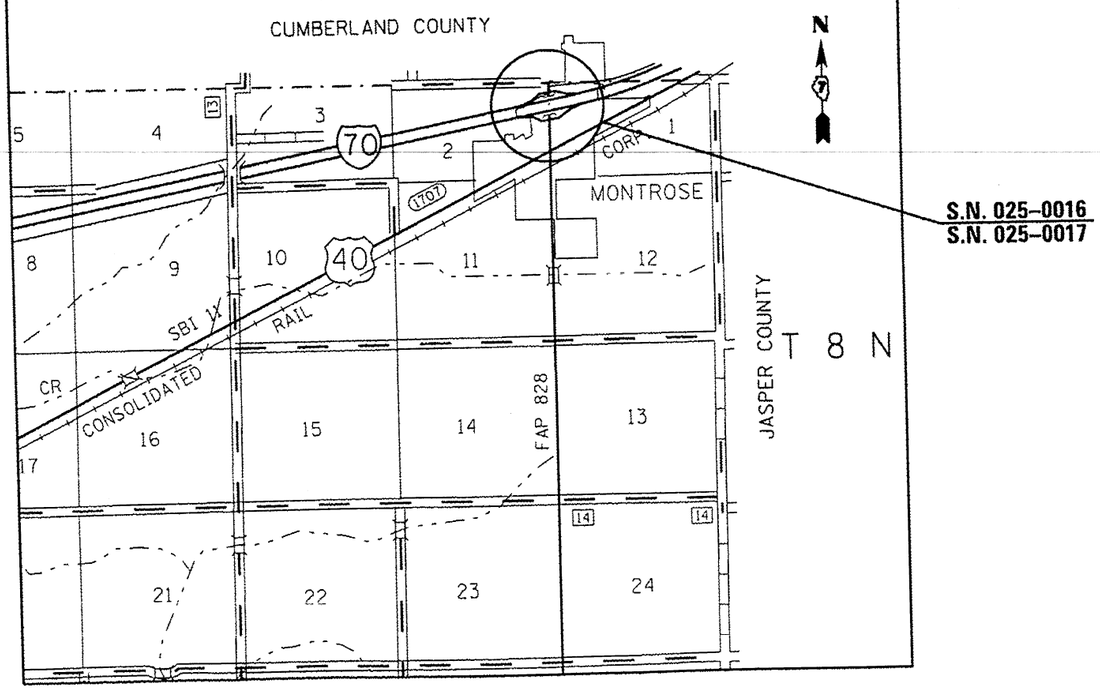
100%
08-31-2013.

ADT = 19,900 (2010)

D-97-052-12



LOCATION OF SECTION INDICATED THUS: –



S.N. 025-0016
S.N. 025-0017

100' 200' 300' — 1" = 100'
0 10' 20' 30' — 1" = 10'
0 50' 100' — 1" = 50'
0 50' 100' — 1" = 40'
0 50' 100' — 1" = 30'
0 50' 100' — 1" = 20'

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

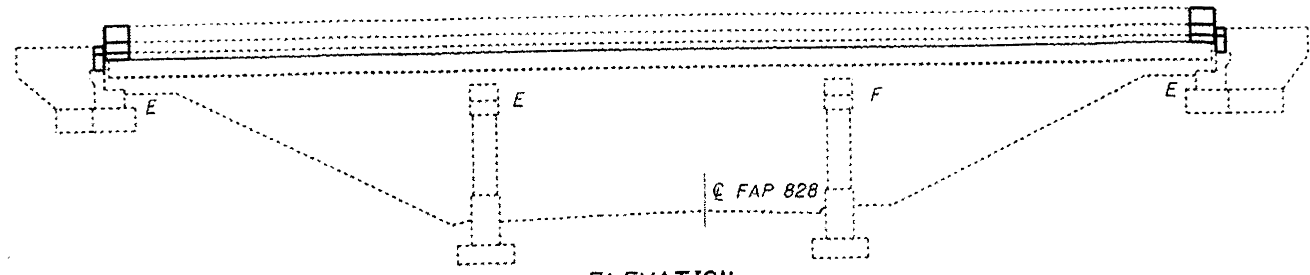
SUBMITTED Oct 23 20 12
Roger L Driskell /ccs
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
Dec 7 20 12
John D. Baranzelli P.E. /a
acting ENGINEER OF DESIGN AND ENVIRONMENT
Dec 7 20 12
William R. Frey /BL
acting DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PROJECT ENGINEER: TOM RONAN
PROJECT MANAGER: TOM RONAN
PHONE: (217)-342-8320
CONTRACT NO. 74589 025-0016(EB), 0017(WB)

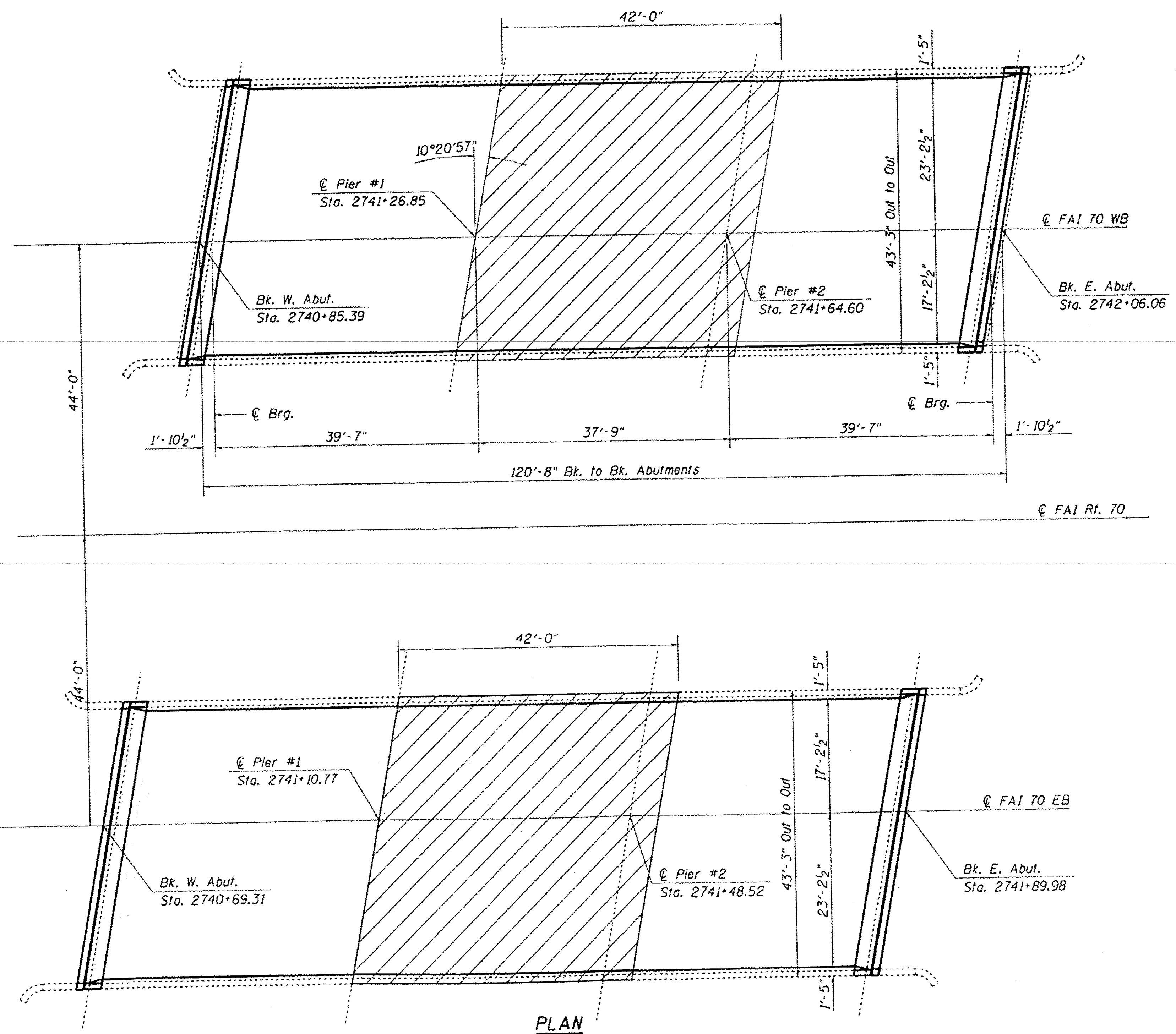
GROSS LENGTH = 556 FT. = 0.11 MILE
NET LENGTH = 556 FT. = 0.11 MILE

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

The existing three span continuous steel multi-beam dual structures were constructed in 1960 as FAI-70 section 25-5HB-5 at Sta. 2741+37.68. SN. 025-0016 carries FAI-70 (Interstate 70 Eastbound). SN. 025-0017 carries FAI-70 (Interstate 70 Westbound). The proposed project consists of new expansion joints, new elastomeric bearings, full depth deck repair and new concrete wearing surface.



ELEVATION



PLAN

DESIGN STRESSES
fc = 1400 psi.
fs = 20,000 psi. (Reinf.)
fs = 18,000 psi. (Struct.)
vc = 75 psi. (Footings)
n = 10

LICENSED STRUCTURAL ENGINEER
DAVID CARL PUZEY
081-005470
SPRINGFIELD ILLINOIS
STATE OF ILLINOIS

D. Carl Puzey 11/20/12
Expires 11/30/14

LIMITS OF PROTECTIVE SHIELD

• 07 BRIDGE REPAIRS 2013-1

FILE NAME : c:\pw_work\pwidot\stoffenmk\d0307594\074589-sht-brplnprf-025001617.dgn Default	USER NAME : stoffenmk PLOT SCALE : 40.0000 ' / in. PLOT DATE : 10/23/2012	DESIGNED - KLB DRAWN - KLB CHECKED - MEA DATE - 07/12/12	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN & ELEVATION SN. 025-0016 (EB) & 025-0017 (WB) SCALE: N/A SHEET 1 OF 13 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	EFFINGHAM	33	21
		CONTRACT NO. 74589		
		ILLINOIS FED. AID PROJECT		

GENERAL NOTES

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction 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 scope of work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Reinforcement bars designated (E) shall be epoxy coated.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. Cost included in CONCRETE REMOVAL.

Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the deck is poured at an ambient temperature other than 50°F.

Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs on as built plans.

Removal and reinstallation of guardrail sections will be necessary for construction of the expansion joints. All existing embedded anchors that are within the concrete removal area shall be cleaned and incorporated in the new construction or new approved alternatives shall be supplied and installed. This work and all materials shall be included in the contract unit price for CONCRETE SUPERSTRUCTURE.

Prior to pouring the new concrete deck, all heavy and loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

All structural steel shall conform to AASHTO Classification M-270 Gr. 36 unless otherwise noted.

TOTAL BILL OF MATERIAL

SN. 025-0016 (EB)

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	14.4
Concrete Superstructure	Cu. Yd.	14.4
Reinforcement Bars, Epoxy Coated	Pound	1960
Bar Splicers	Each	28
Preformed Joint Strip Seal	Foot	87.0
HMA Surface Removal (Deck)	Sq. Yd.	509
Bridge Deck Scarification	Sq. Yd.	509
Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2¾"	Sq. Yd.	509
Bridge Deck Grooving	Sq. Yd.	504
Protective Coat	Sq. Yd.	40
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	21
Protective Shield	Sq. Yd.	202
Elastomeric Bearing Assembly, Type I	Each	9
Elastomeric Bearing Assembly, Type II	Each	9
Jack and Remove Existing Bearings	Each	18
Furnishing and Erecting Structural Steel	Pound	1985
Anchor Bolts 1"φ	Each	72
Structural Steel Repair	Pound	135

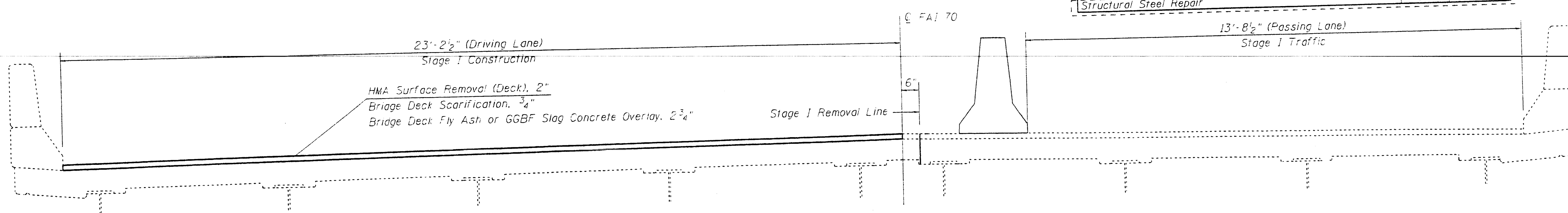
1

TOTAL BILL OF MATERIAL

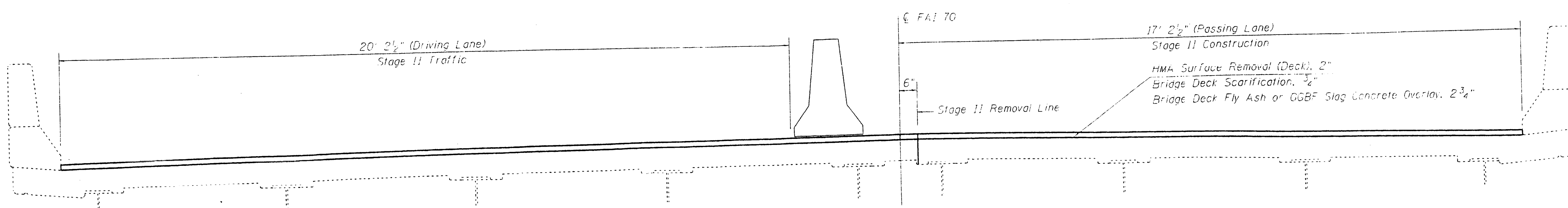
SN. 025-0017 (WB)

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	14.4
Concrete Superstructure	Cu. Yd.	14.4
Reinforcement Bars, Epoxy Coated	Pound	1960
Bar Splicers	Each	28
Preformed Joint Strip Seal	Foot	87.0
HMA Surface Removal (Deck)	Sq. Yd.	509
Bridge Deck Scarification	Sq. Yd.	509
Bridge Deck Fly Ash or GGBF Slag Concrete Overlay, 2¾"	Sq. Yd.	509
Bridge Deck Grooving	Sq. Yd.	504
Protective Coat	Sq. Yd.	40
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	21
Protective Shield	Sq. Yd.	202
Elastomeric Bearing Assembly, Type I	Each	9
Elastomeric Bearing Assembly, Type II	Each	9
Jack and Remove Existing Bearings	Each	18
Furnishing and Erecting Structural Steel	Pound	1985
Anchor Bolts 1"φ	Each	72
Structural Steel Repair	Pound	135

1



STAGE I



STAGE II

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

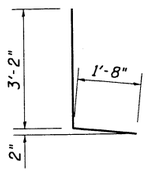
GENERAL NOTES & BILL OF MATERIALS
SN. 025-0016 (EB) & 025-0017 (WB)

SCALE: N/A | SHEET 2 OF 13 SHEETS | STA. TO STA.

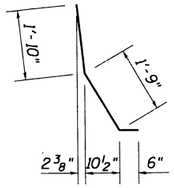
D7 BRIDGE REPAIRS 2013-1

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	*	EFFINGHAM	33	22
		CONTRACT NO. 74589		

ILLINOIS FED. AID PROJECT

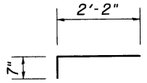


Bar d(E)



Bar d1(E)

Bar u(E)



Bar x(E)

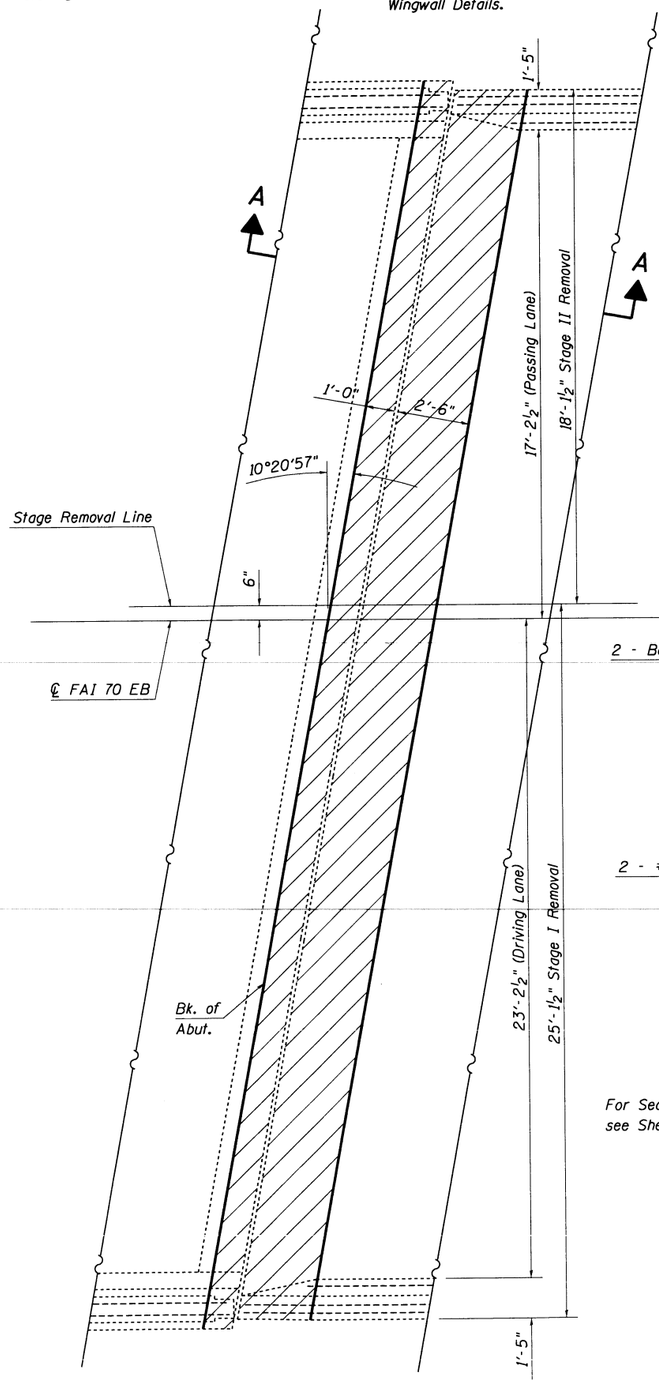
BILL OF MATERIAL

PER ABUTMENT

BAR	NUMBER OF BARS STAGE I	NUMBER OF BARS STAGE II	TOTAL	SIZE	LENGTH	SHAPE
a (E)	10		10	#5	24'-8"	——
a1(E)		10	10	#5	18'-7"	——
d (E)	3	3	6	#4	4'-10"	L
d1(E)	3	3	6	#5	4'-1"	L
h (E)	4		4	#6	24'-9"	——
h1(E)		4	4	#6	18'-7"	——
u (E)	25	19	44	#5	1'-11"	⊓
x (E)	25	19	44	#5	2'-9"	⌐
REINFORCEMENT BARS (EPOXY COATED)					POUND	980
CONCRETE REMOVAL					CU YD	7.2
CONCRETE SUPERSTRUCTURE					CU YD	7.2

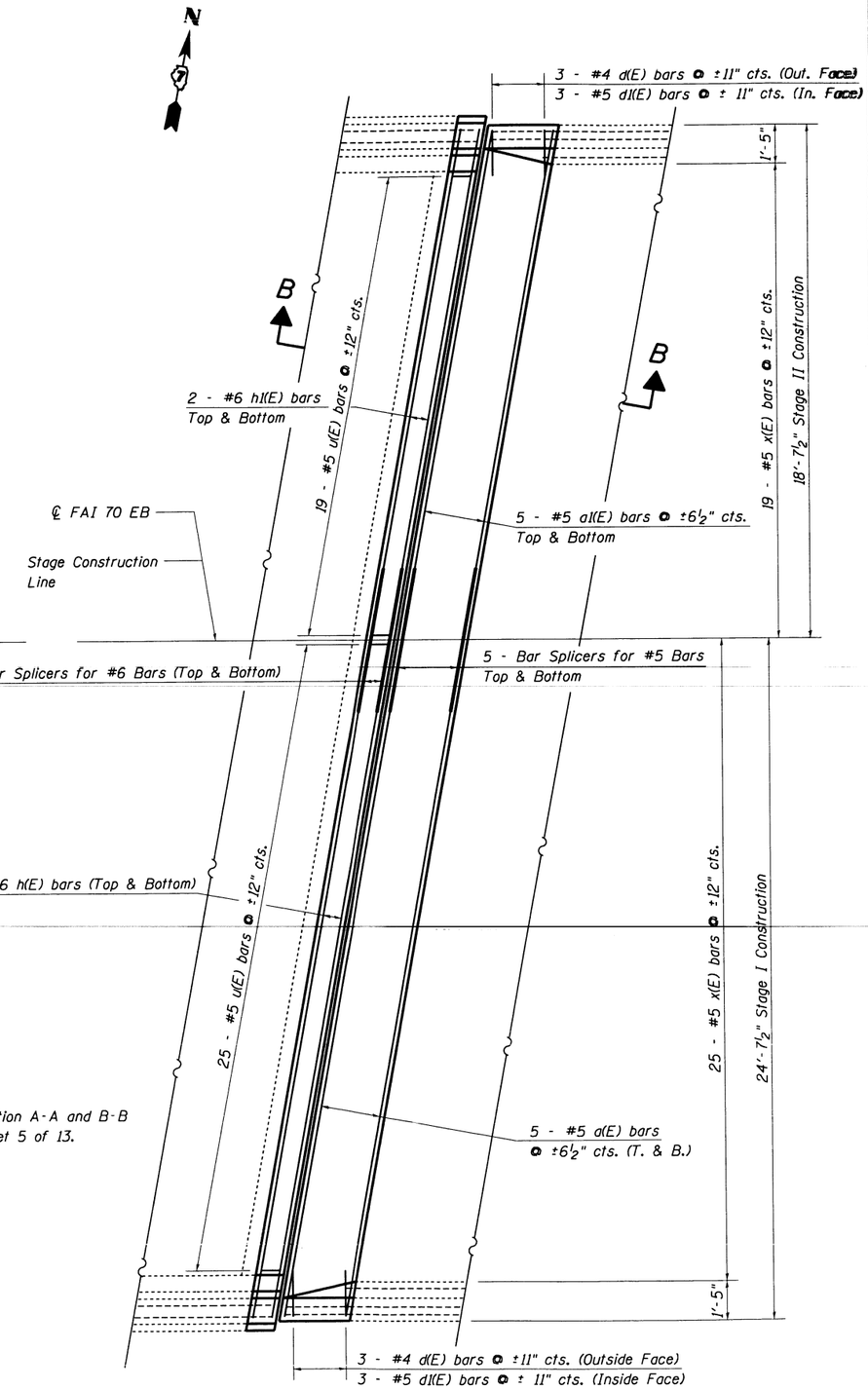
Hatching indicates removal.

See Sheet 6 of 13 for Wingwall Details.



EXISTING PARTIAL PLAN

(West Abutment shown; East Abutment similar)



PROPOSED PARTIAL PLAN

(West Abutment shown; East Abutment similar)

• D7 BRIDGE REPAIRS 2013-1

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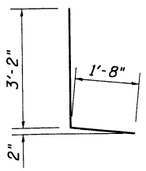
		DATE - 07/12/12	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

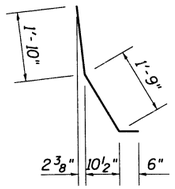
EXPANSION JOINT REPLACEMENT DETAILS
SN. 025-0016 (EB)

SCALE: N/A | SHEET 3 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	•	EFFINGHAM	33	23
		CONTRACT NO. 74589		
		ILLINOIS FED. AID PROJECT		

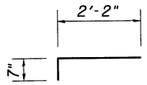


Bar d(E)



Bar d1(E)

Bar u(E)



Bar x(E)

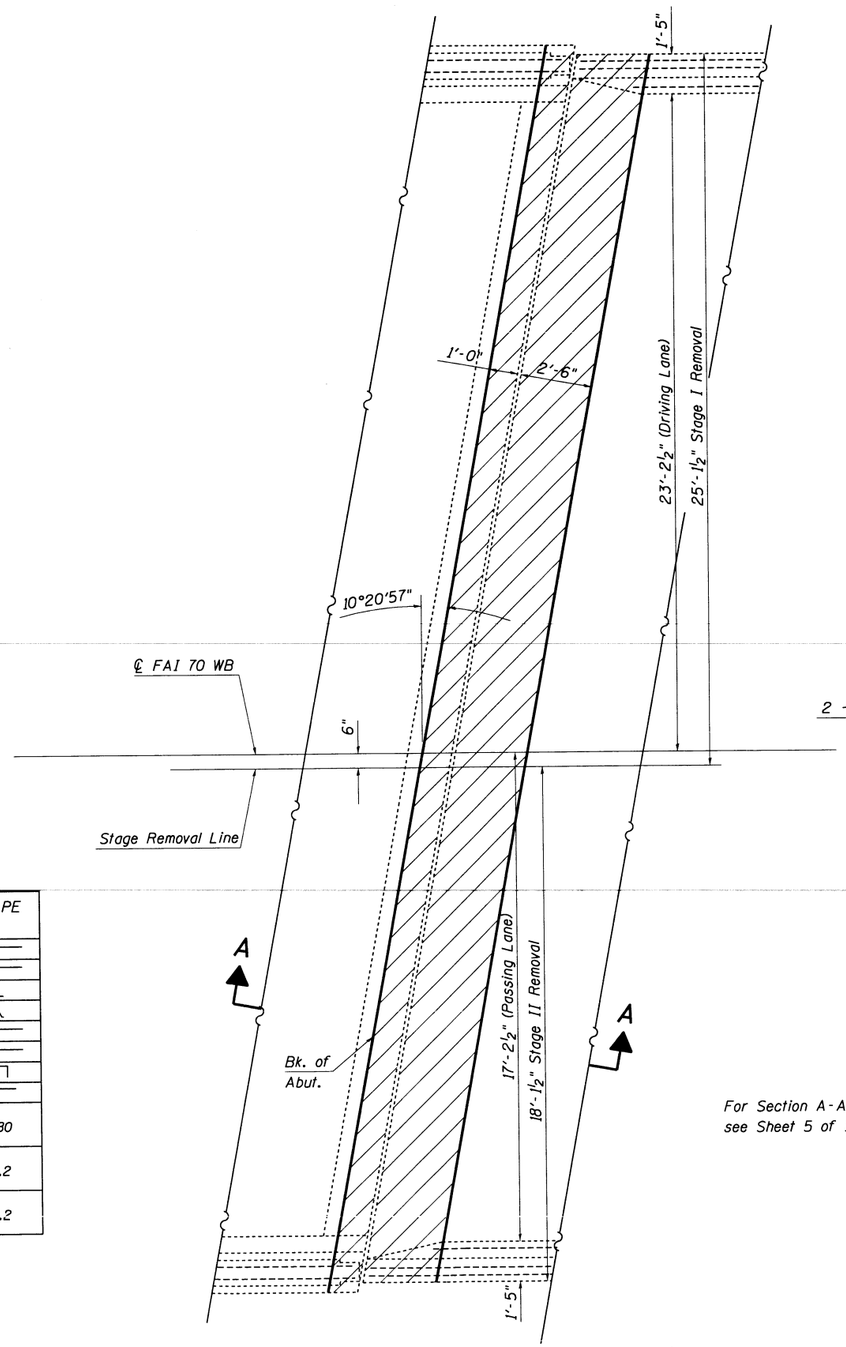
BILL OF MATERIAL

PER ABUTMENT

BAR	NUMBER OF BARS STAGE I	NUMBER OF BARS STAGE II	TOTAL	SIZE	LENGTH	SHAPE
a (E)	10		10	#5	24'-8"	——
a1(E)		10	10	#5	18'-7"	——
d (E)	3	3	6	#4	4'-10"	L
d1(E)	3	3	6	#5	4'-1"	L
h (E)	4		4	#6	24'-9"	——
h1(E)		4	4	#6	18'-7"	——
u (E)	25	19	44	#5	1'-11"	⊓
x (E)	25	19	44	#5	2'-9"	⌐
REINFORCEMENT BARS (EPOXY COATED)					POUND	980
CONCRETE REMOVAL					CU YD	7.2
CONCRETE SUPERSTRUCTURE					CU YD	7.2

Hatching indicates removal.

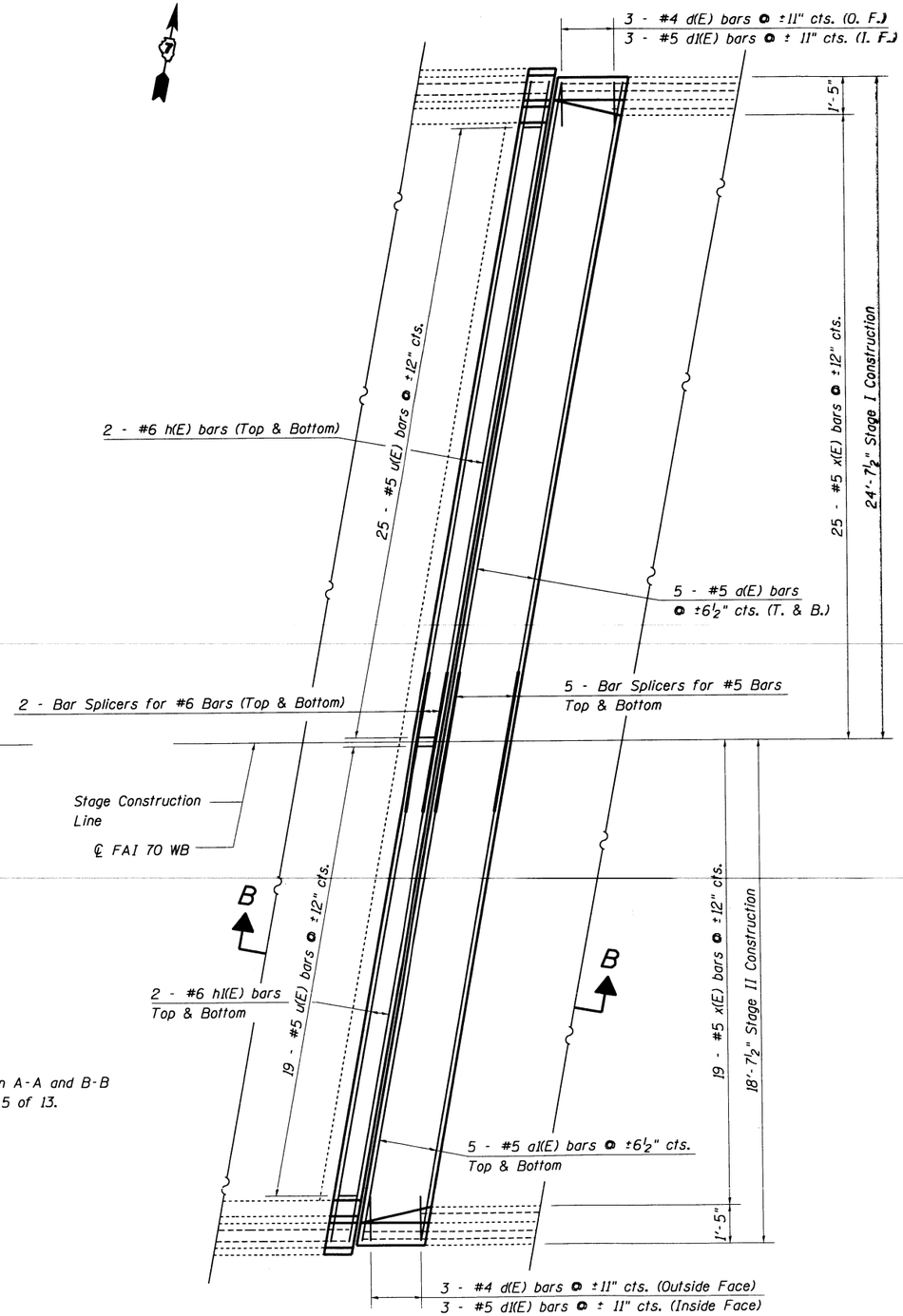
See Sheet 6 of 13 for Wingwall Details.



EXISTING PARTIAL PLAN

(West Abutment shown; East Abutment similar)

For Section A-A and B-B see Sheet 5 of 13.



PROPOSED PARTIAL PLAN

(West Abutment shown; East Abutment similar)

• D7 BRIDGE REPAIRS 2013-1

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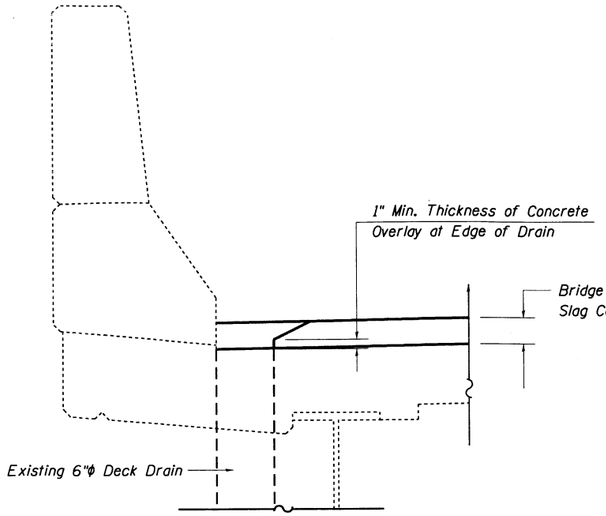
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

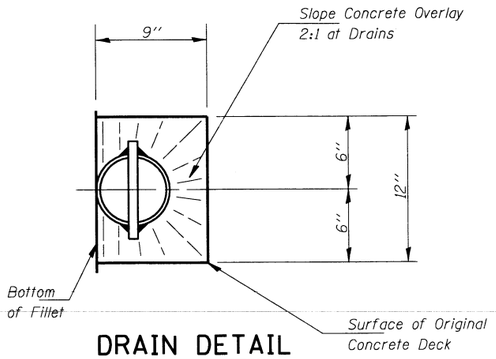
EXPANSION JOINT REPLACEMENT DETAILS
SN. 025-0017 (WB)

SCALE: N/A | SHEET 4 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	•	EFFINGHAM	33	24
		CONTRACT NO. 74589		
	ILLINOIS FED. AID PROJECT			

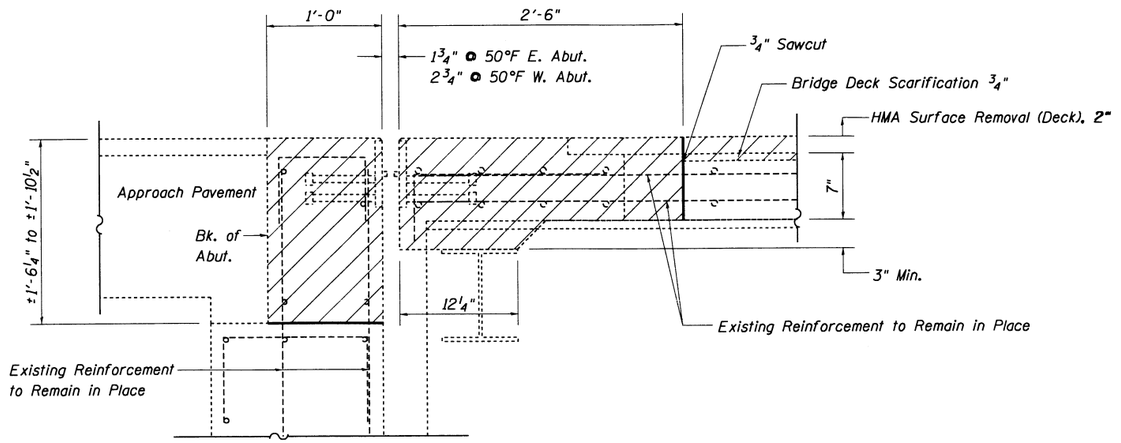


FLOOR DRAIN DETAIL



DRAIN DETAIL
TOP PLAN

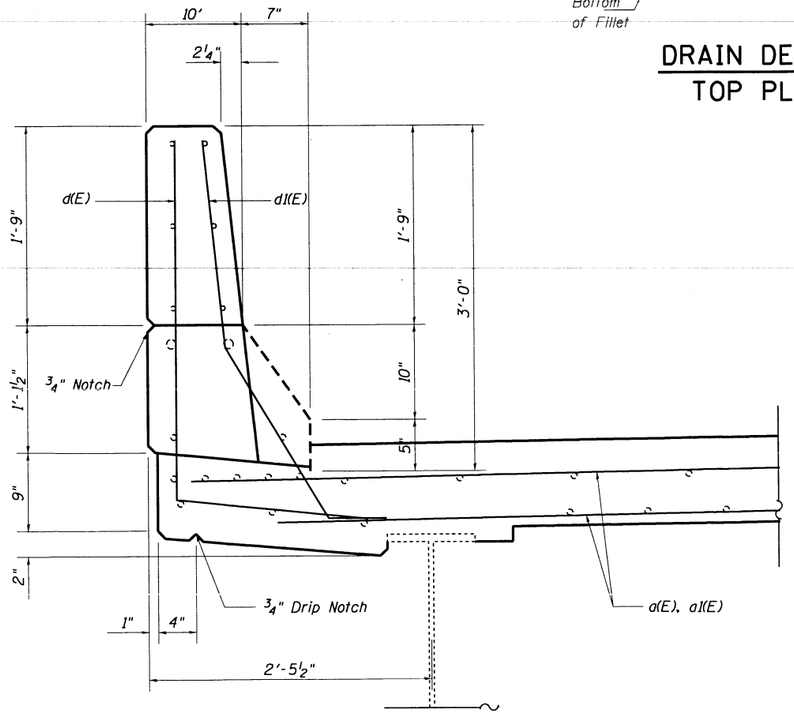
Hatching indicates removal.



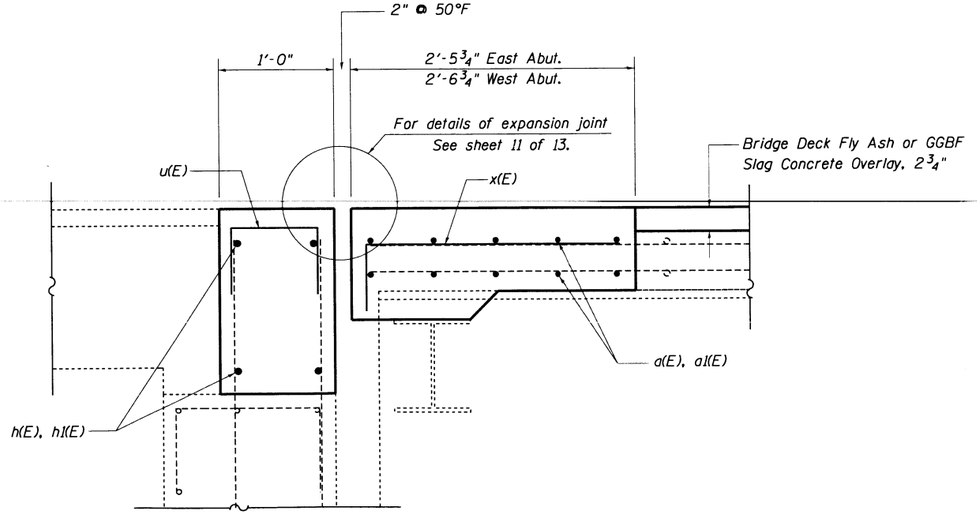
SECTION A-A
(Dimensions at Rt. L's to end of deck)

Note: Removal and disposal of the existing expansion joint is included in the cost of CONCRETE REMOVAL.

○ Existing Reinforcement
● Proposed Reinforcement



SECTION THRU PARAPET



SECTION B-B
(Dimensions at Rt. L's to end of deck)

• D7 BRIDGE REPAIRS 2013-1

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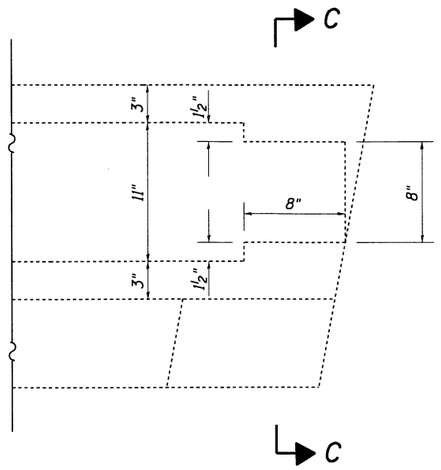
Default	PLOT DATE = 10/23/2012	DATE - 07/12/12	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

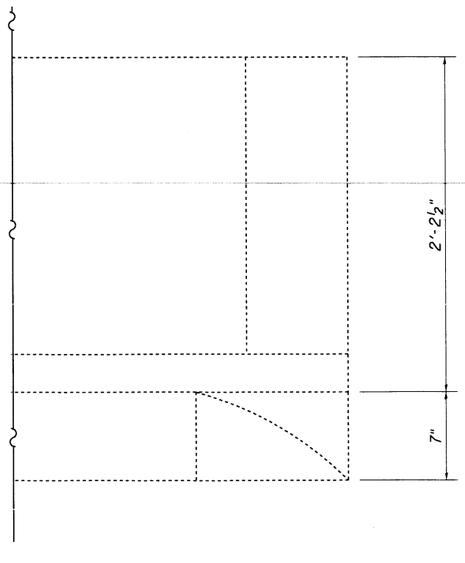
EXPANSION JOINT REPLACEMENT DETAILS
SN. 025-0016 (EB) & 025-0017 (WB)

SCALE: N/A | SHEET 5 OF 13 SHEETS | STA. | TO STA.

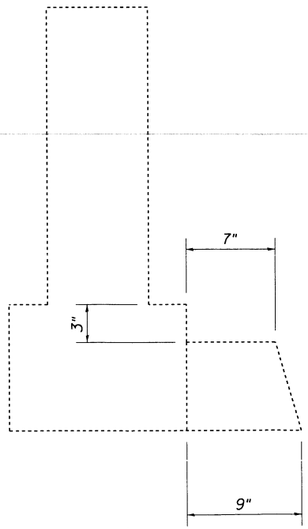
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	•	EFFINGHAM	33	25
		CONTRACT NO. 74589		
	ILLINOIS FED. AID PROJECT			



PLAN

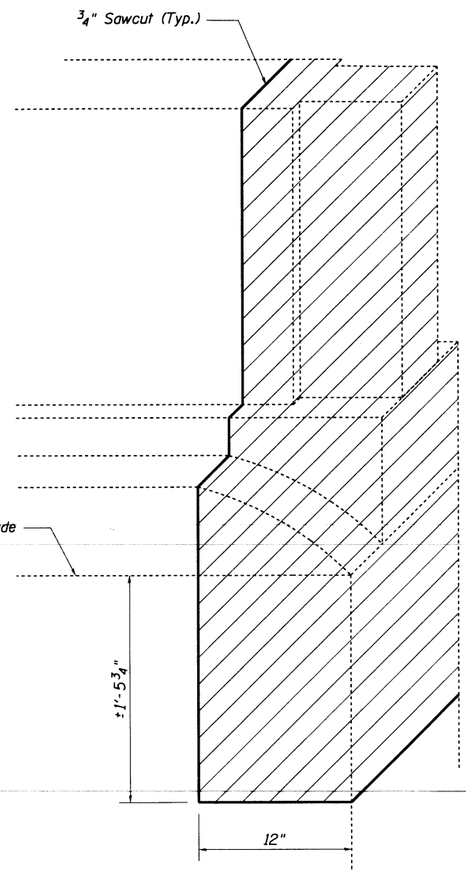


ELEVATION



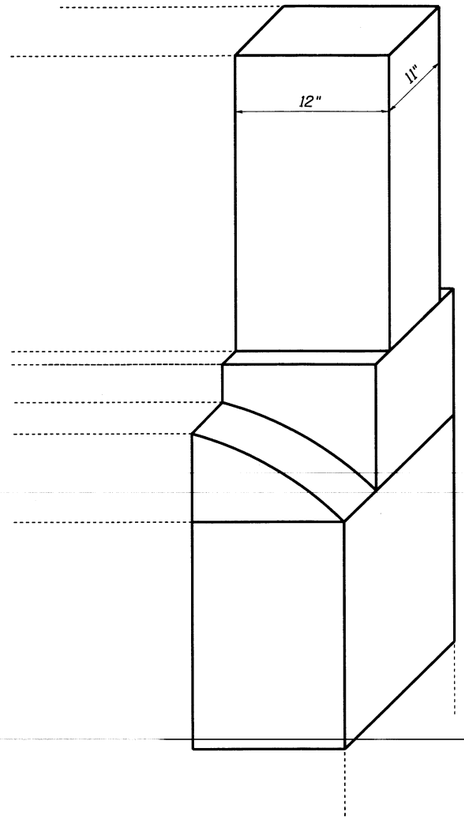
SECTION C-C

Hatching indicates Concrete Removal.



EXISTING PARTIAL PLAN

Remove the existing wingwall as indicated and replace in kind, except where noted.



PROPOSED PARTIAL PLAN

• D7 BRIDGE REPAIRS 2013-1

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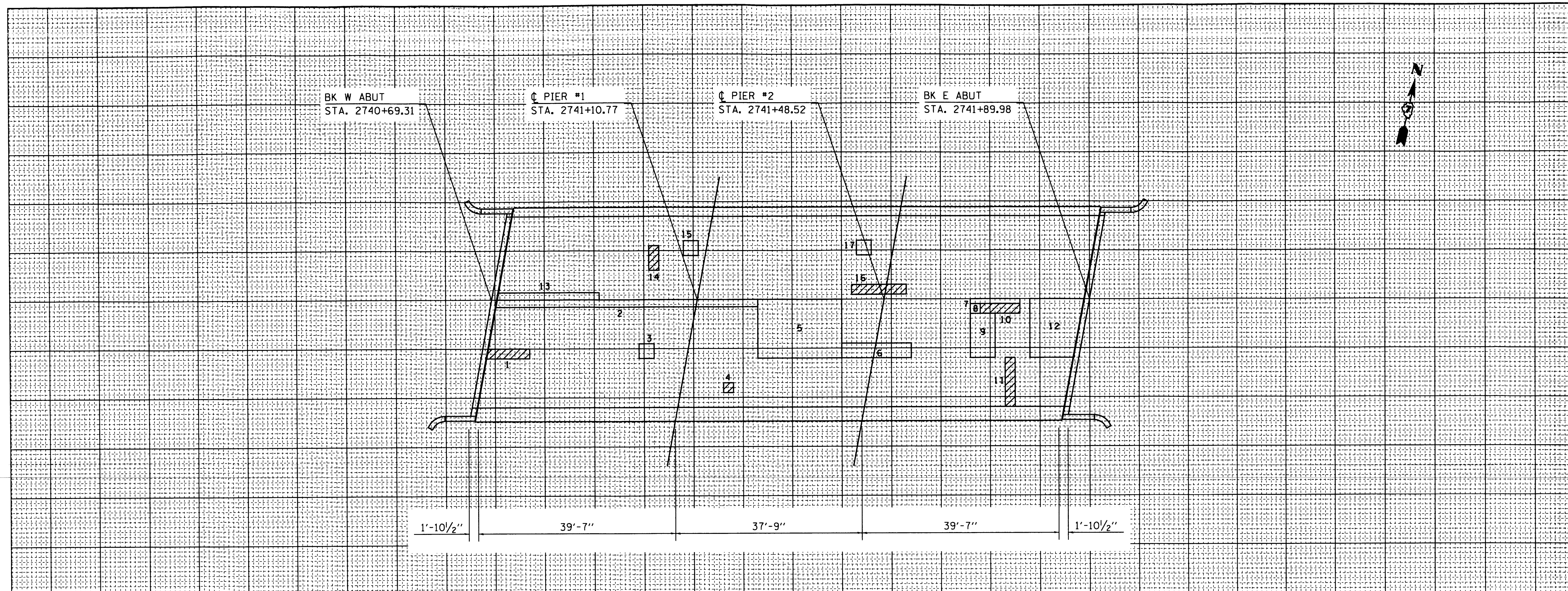
Default	PLOT DATE = 10/23/2012	DATE - 07/12/12	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WINGWALL DETAILS
SN. 025-0016 (EB) & 025-0017 (WB)

SCALE: N/A | SHEET 6 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	•	EFFINGHAM	33	26
		CONTRACT NO. 74589		
	ILLINOIS	FED. AID PROJECT		



PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	
1	8.5 x 2.0			17.0	
2	52.7 x 1.5	79.1			
3	3.0 x 3.0	9.0			
4	2.0 x 2.0		4.0		
5	17.0 x 12.0	204.0			
6	14.0 x 3.0	42.0			
7	10.0 x 1.0	10.0			
8	2.0 x 2.0	4.0			
9	5.0 x 9.0	45.0			
10	8.0 x 2.0			16.0	
11	2.0 x 10.0			20.0	
12	9.7 x 12.0	116.4			
13	20.4 x 1.5	30.6			
14	2.0 x 5.0			10.0	
15	3.0 x 3.0	9.0			
16	11.0 x 2.0			22.0	
17	3.0 x 3.0	9.0			
	TOTAL	558	4	85	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	
	PARTIAL DEPTH				
	(FOR INFORMATION ONLY)				
	558 / 9 =	62.0			
	USE	62	SQ YD		
	FULL DEPTH, TYPE 1				
	4 / 9 =	0.4			
	USE	1	SQ YD		
	FULL DEPTH, TYPE 2				
	85 / 9 =	9.4			
	USE	9	SQ YD		

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	

THE LOCATIONS AND SIZES SHOWN GRAPHICALLY ABOVE ARE APPROXIMATE. SEE THIS TABLE FOR ACTUAL SIZES.

PATCHING LEGEND
(FOR INFORMATION ONLY)

PARTIAL DEPTH

FULL DEPTH

DATE OF SURVEY: 05/22/12
SURVEY BY: KLB, MEA, ESS
METHOD OF SURVEY: VISUAL

BRIDGE DECK PATCHING
EFFINGHAM COUNTY
LOCATION
SN 025-0016

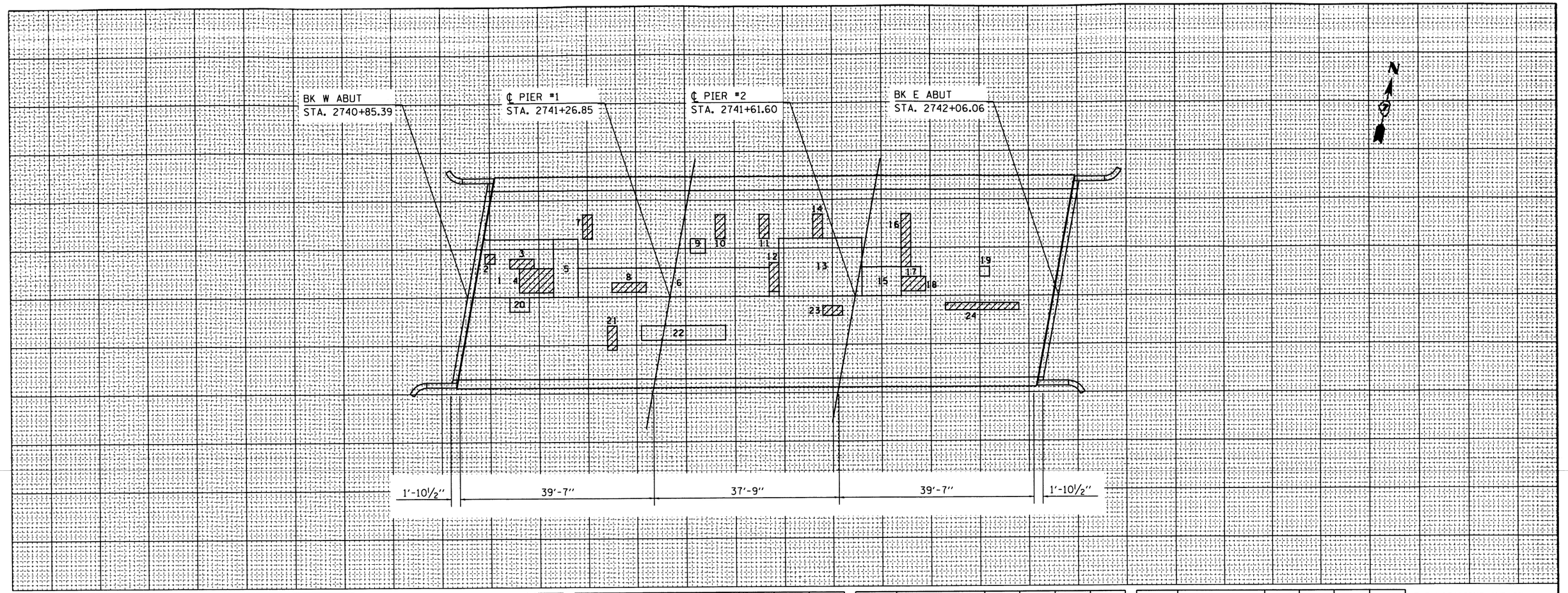
• D7 BRIDGE REPAIRS 2013-1

016

FILE NAME = c:\pw_work\pwidot\steffenmk\d0307594\0774589-sht-brpatching-025001617.dgn	USER NAME = steffenmk	DESIGNED - KLB	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK SLAB REPAIR SN. 025-0016
	PLOT SCALE = 100.0000 ' / in.	DRAWN - KLB	REVISED -		
		CHECKED - MEA	REVISED -		SCALE: N/A	SHEET NO. 7 OF 13 SHEETS	STA.	TO STA.
	PLOT DATE = 10/23/2012	DATE - 07/12/12	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	•	EFFINGHAM	33	27
		CONTRACT NO. 74589		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BRIDGE DECK PATCHING



PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	
1	15.4 x 12.0	184.8			
2	2.0 x 2.0		4.0		
3	5.0 x 2.0			10.0	
4	7.0 x 5.0			35.0	
5	5.0 x 12.0	60.0			
6	39.0 x 6.0	234.0			
7	2.0 x 5.0			10.0	
8	7.0 x 2.0			14.0	
9	3.0 x 3.0	9.0			
10	2.0 x 5.0			10.0	
11	2.0 x 5.0			10.0	
12	2.0 x 6.0			12.0	
13	17.0 x 12.0	204.0			
14	2.0 x 5.0			10.0	
15	8.0 x 6.0	48.0			
16	2.0 x 11.0			22.0	
17	4.0 x 2.0	8.0			
18	5.0 x 3.0			15.0	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) ST FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	
19	2.0 x 2.0	4.0			
20	4.0 x 3.0	12.0			
21	2.0 x 5.0			10.0	
22	17.0 x 3.0	51.0			
23	4.0 x 2.0			8.0	
24	15.0 x 1.5			22.5	
	TOTAL	815	4	189	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	
	PARTIAL DEPTH				
	(FOR INFORMATION ONLY)				
	815 / 9 =	90.5			
	USE	91	SQ YD		
	FULL DEPTH, TYPE 1				
	4 / 9 =	0.4			
	USE	1	SQ YD		
	FULL DEPTH, TYPE 2				
	189 / 9 =	20.9			
	USE	21	SQ YD		

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD TY 1) SQ FT	DECK SLAB REPAIR (FD TY 2) SQ FT	

THE LOCATIONS AND SIZES SHOWN GRAPHICALLY ABOVE ARE APPROXIMATE. SEE THIS TABLE FOR ACTUAL SIZES.

PATCHING LEGEND
(FOR INFORMATION ONLY)

PARTIAL DEPTH

FULL DEPTH

DATE OF SURVEY: 05/22/12
SURVEY BY: KLB, MEA, ESS
METHOD OF SURVEY: VISUAL

BRIDGE DECK PATCHING
EFFINGHAM COUNTY
LOCATION
SN 025-0017

• D7 BRIDGE REPAIRS 2013-1

017

FILE NAME = c:\pw_work\pwidot\steffenmk\d0307594\D7589-sht-brpatching-025001617.dgn	USER NAME = steffenmk	DESIGNED - KLB	REVISED -
		DRAWN - KLB	REVISED -
	PLOT SCALE = 100.0000 ' / in.	CHECKED - MEA	REVISED -
	PLOT DATE = 10/23/2012	DATE - 07/12/12	REVISED -

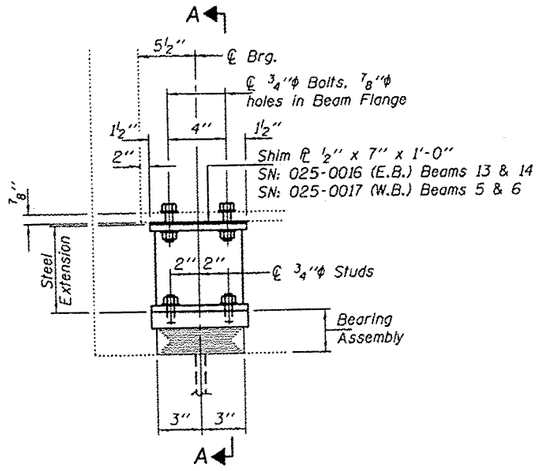
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIR
SN. 025-0017

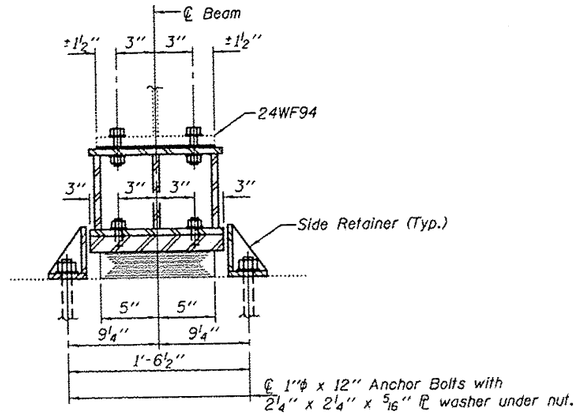
SCALE: N/A | SHEET NO. 8 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	•	EFFINGHAM	33	28
		CONTRACT NO. 74589		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BRIDGE DECK PATCHING



ELEVATION AT EAST ABUTMENT



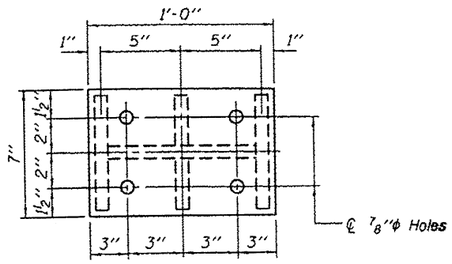
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

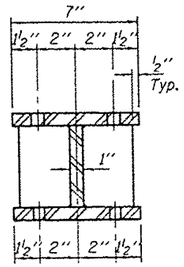
BEAM REACTIONS

R℄	(K)	12.5
R4	(K)	24.6
Imp.	(K)	7.4
R (Total)	(K)	44.5

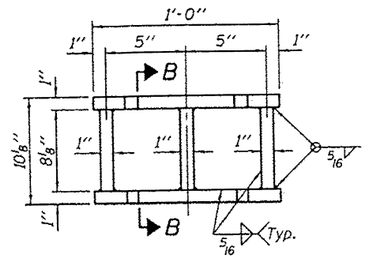
Notes:
Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.
New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
Min. jack capacity = 25 Tons.
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type I.



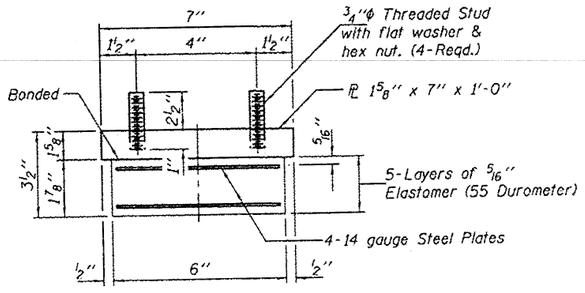
PLAN TOP AND BOTTOM PLATE



SECTION B-B

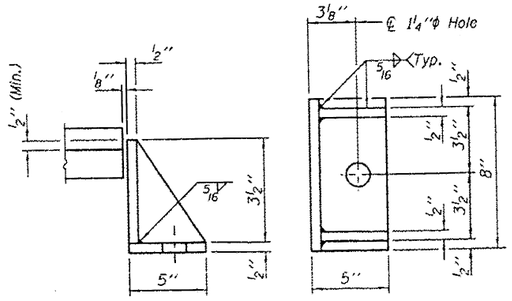


STEEL EXTENSION DETAIL



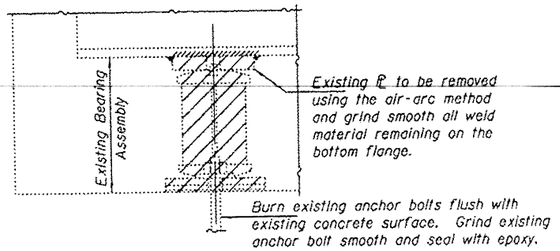
BEARING ASSEMBLY

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



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.

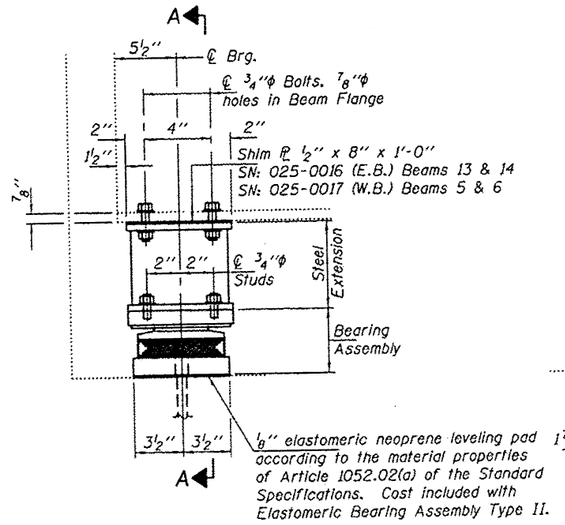
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	18
Jack and Remove Existing Bearings	Each	18
Furnishing and Erecting Structural Steel	Pound	2020
Anchor Bolts 1"ϕ	Each	36

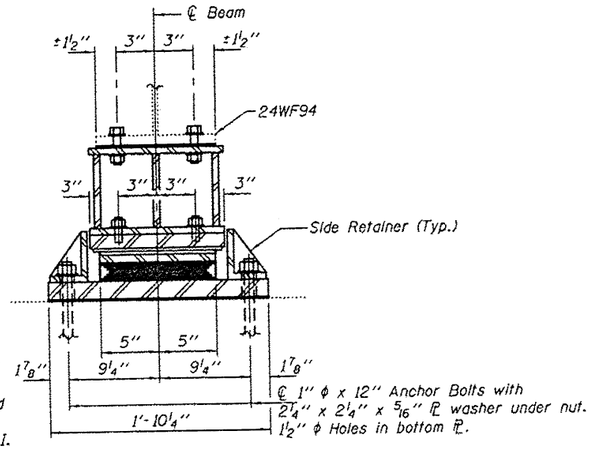
EXPIRES 11-30-2014

TYI/REPS 12-03-2008

DESIGNED -	EXAMINED	DATE - NOVEMBER 16, 2012	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BEARING REPLACEMENT DETAILS AT EAST ABUTMENT SN 025-0016 (E.B.) & 0017 (W.B.)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED -	ACTING ENGINEER OF STRUCTURAL SERVICES				70	07 BRIDGE REPAIRS 2013-1	EFFINGHAM	33	29
DRAWN - Kyle M. Steffen	PASSED	REVISED		SHEET NO. 9 OF 13 SHEETS			CONTRACT NO. 74589		
CHECKED -	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED				ILLINOIS FED. AID PROJECT			



ELEVATION AT WEST ABUTMENT



SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG.

BEAM REACTIONS

RØ	(K)	12.5
RL	(K)	24.6
Imp.	(K)	7.4
R (Total)	(K)	44.5

Notes:

Diaphragm removal and reinstallation may be required to facilitate drilling holes. Cost included with Furnishing and Erecting Structural Steel.

New steel extensions, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Min. jack capacity = 25 Tons.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

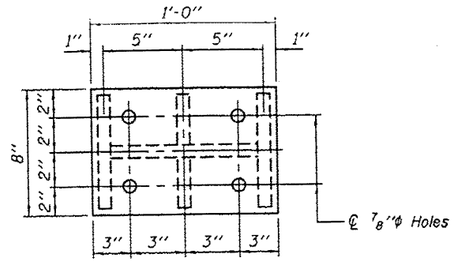
Anchor bolts for Type II bearings shall be placed in holes drilled through the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

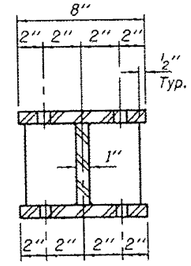
Side retainers shall be included in the cost of Elastomeric Bearing Assembly, Type II.

The ⅛" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

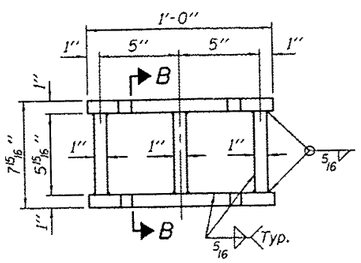
Bonding of ⅛" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



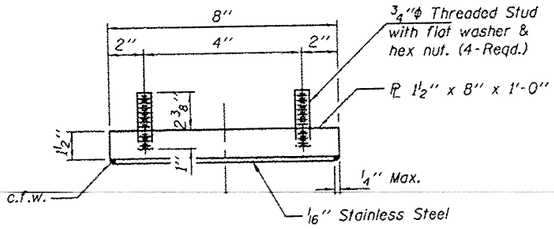
PLAN TOP AND BOTTOM PLATE



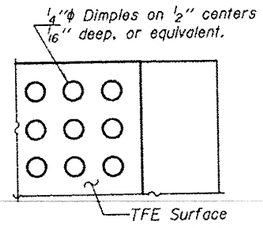
SECTION B-B



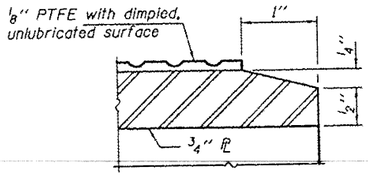
STEEL EXTENSION DETAIL



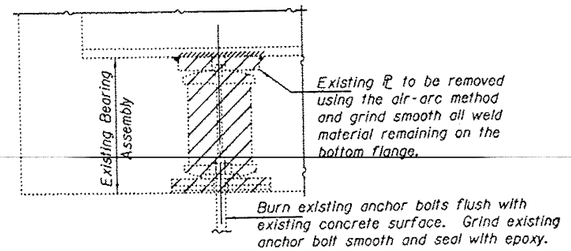
TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE

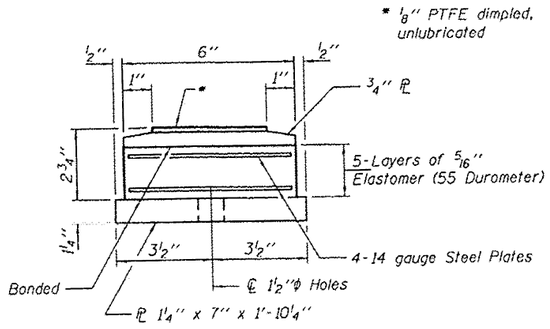


SECTION THRU PTFE

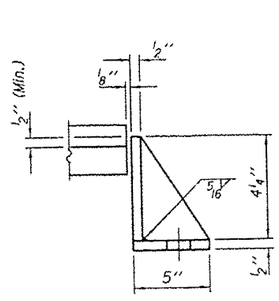


EXISTING BEARING REMOVAL DETAIL

Cost included with Jack and Remove Existing Bearings.

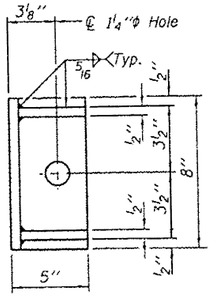


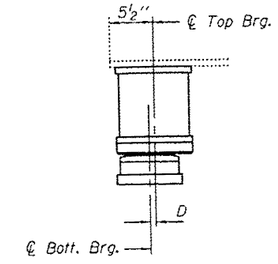
BOTTOM BEARING ASSEMBLY



SIDE RETAINER

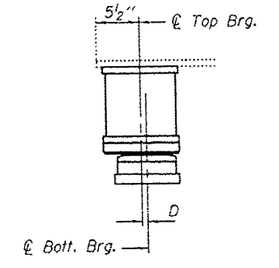
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.





BELOW 50° F.

(Move bott. brg. away from fixed brg.)



ABOVE 50° F.

(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D = ⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

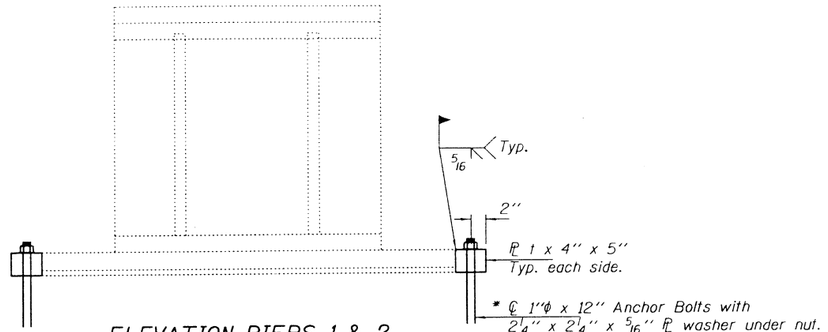
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	18
Jack and Remove Existing Bearings	Each	18
Furnishing and Erecting Structural Steel	Pound	1950
Anchor Bolts 1"ϕ	Each	36

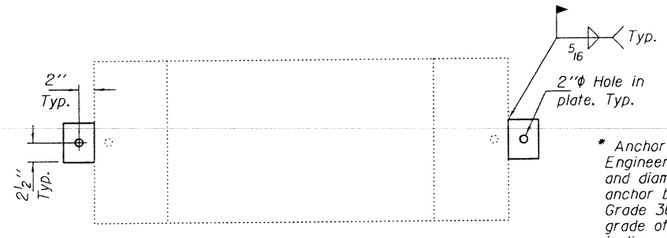
TYII/REPS 12-03-2008

DESIGNED - DAB	EXAMINED	ACTING ENGINEER OF STRUCTURAL SERVICES	DATE - NOVEMBER 16, 2012	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BEARING REPLACEMENT DETAILS AT WEST ABUTMENT SN 025-0016 (E.B.) & 0017 (W.B.)
CHECKED - ATH	PASSED	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 10 OF 13 SHEETS
DRAWN - Kyle M. Steffen			REVISED		
CHECKED - DAB ATH					

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	DT BRIDGE REPAIRS 2013-1	EFFINGHAM	33	30
		CONTRACT NO. 74589		
	ILLINOIS FED. AID PROJECT			



ELEVATION PIERS 1 & 2



PLAN PIERS 1 & 2

PIER 1

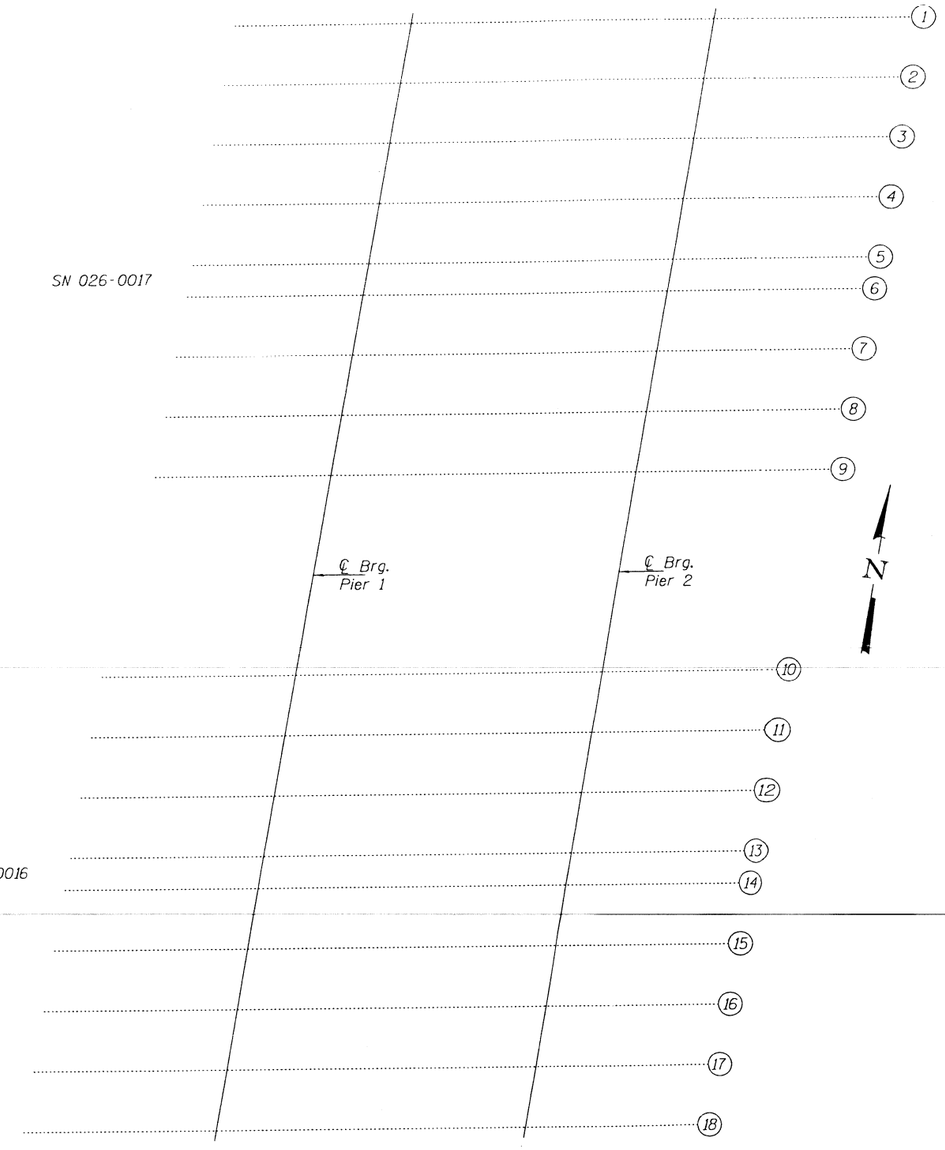
t = 1 7/8"
Beams 1 thru 4 & 7 thru 9 (SN 026-0017)
& Beams 10 thru 12 & 15 thru 18 (SN 026-0016)
t = 2 3/8"
Beams 5 & 6 (SN 026-0017)
& Beams 13 & 14 (SN 026-0016)

PIER 2

t = 7/8"
Beams 1 thru 4 & 7 thru 9 (SN 026-0017)
& Beams 10 thru 12 & 15 thru 18 (SN 026-0016)
t = 1 3/8"
Beams 5 & 6 (SN 026-0017)
& Beams 13 & 14 (SN 026-0016)

* Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Removal and reinstallation of existing diaphragms may be necessary to install new anchor bolts. Cost included with Structural Steel Repair.

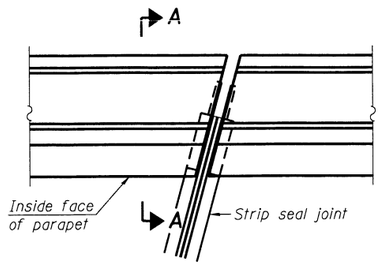


PARTIAL LOCATION SKETCH

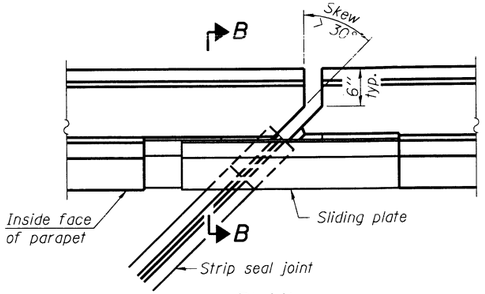
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Steel Repair	Pound	270
Anchor Bolts 1"Φ	Each	72

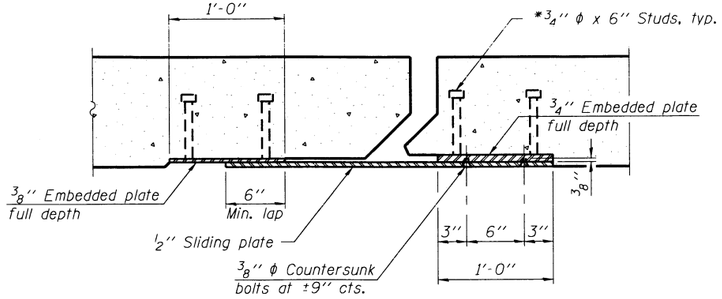
DESIGNED -	EXAMINED		DATE - FEBRUARY 26, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BEARING REPAIR DETAILS AT PIERS SN 025-0016 (E.B.) & 0017 (W.B.)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED -	ACTING ENGINEER OF STRUCTURAL SERVICES		ADDED SHEET 2/26/2013 VHV			70	07 BRIDGE REPAIRS 2013-1	EFFINGHAM	33	30A
DRAWN baliva	PASSED		REVISED		SHEET NO. 10A OF 13 SHEETS				CONTRACT NO. 74589	
CHECKED -	ACTING ENGINEER OF BRIDGES AND STRUCTURES							ILLINOIS FED. AID PROJECT		



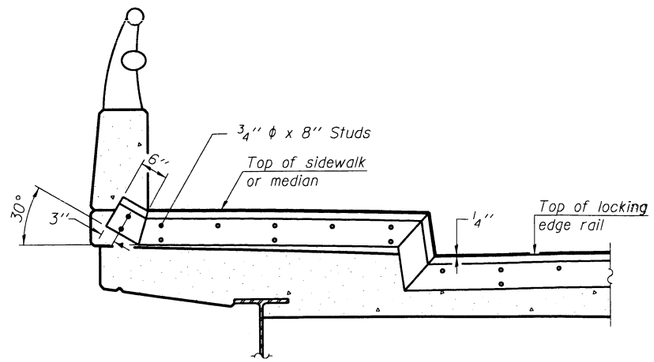
PLAN
(For skews ≤ 30°)



PLAN
(For skews > 30°)
Showing point block

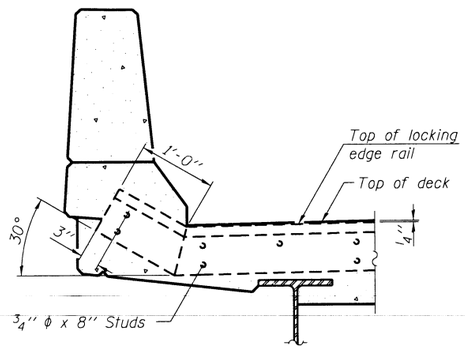


SECTION C-C

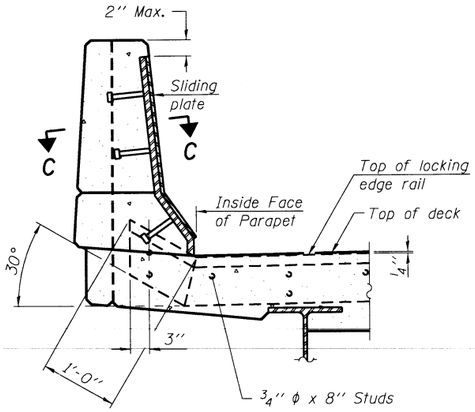


TYPICAL END TREATMENT AT SIDEWALK OR MEDIAN

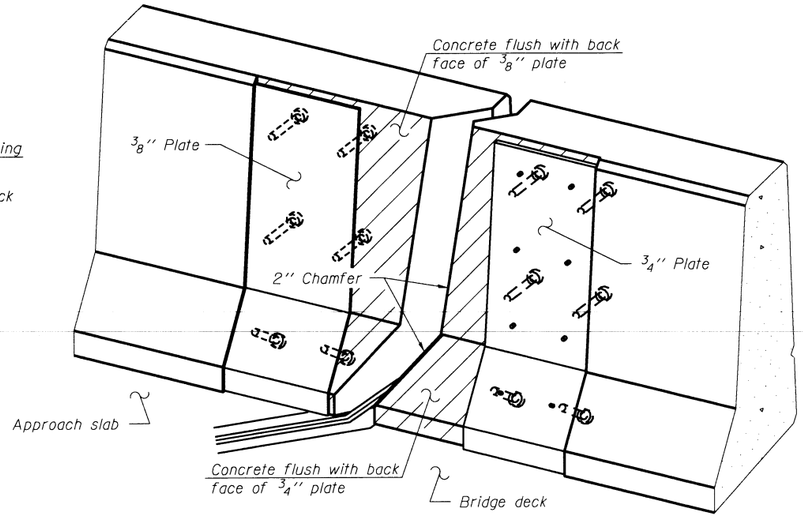
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



SECTION A-A



SECTION B-B



TRIMETRIC VIEW
(Showing back plates only)

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

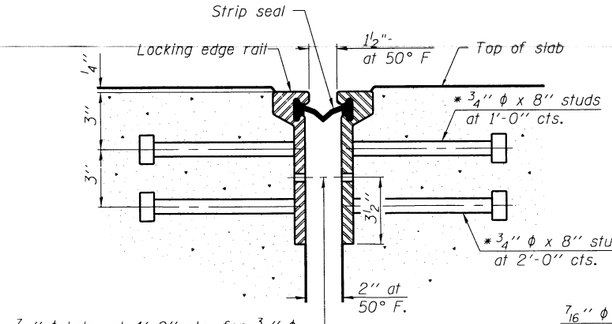
The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the ~~superstructure are based on a rolled rail expansion joint.~~ If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

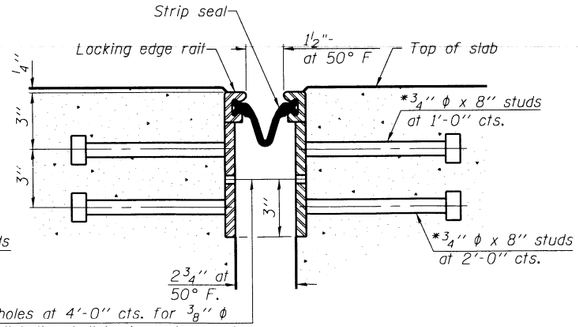
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.

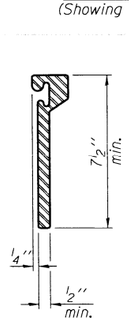


SECTION THRU ROLLED RAIL JOINT

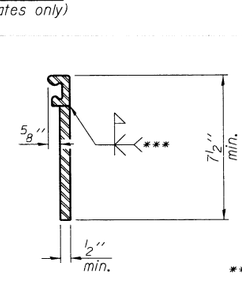


SECTION THRU WELDED RAIL JOINT

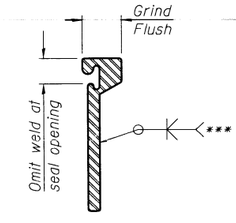
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



*** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	174.0

EJ-SSJ

1-27-12

• D7 BRIDGE REPAIRS 2013-1

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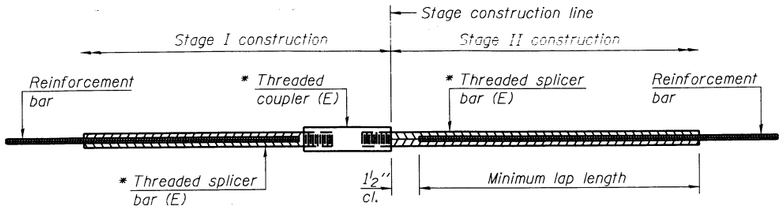
	PLOT SCALE = 40.0000 ' / in.	DRAWN - KLB	REVISED -
Default	PLOT DATE = 10/23/2012	CHECKED - MEA	REVISED -
		DATE - 07/12/12	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 025-0016 (EB) & 025-0017 (WB)

SCALE: N/A | SHEET 11 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	•	EFFINGHAM	33	31
		CONTRACT NO. 74589		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

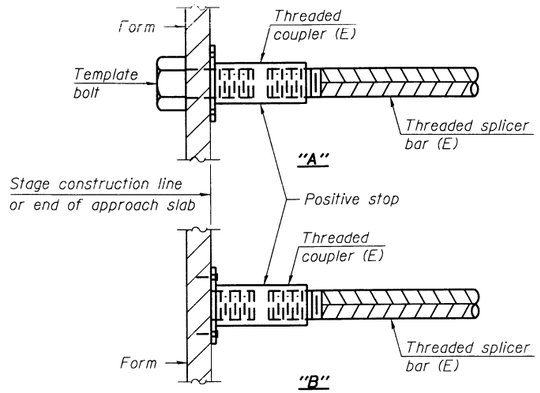
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Class C
Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1½" + thread length

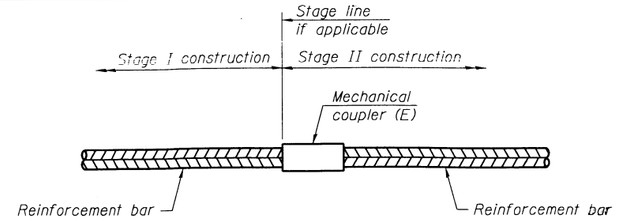
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
025-0016	#5	20	Table 3
025-0016	#6	8	Table 3
025-0017	#5	20	Table 3
025-0017	#6	8	Table 3



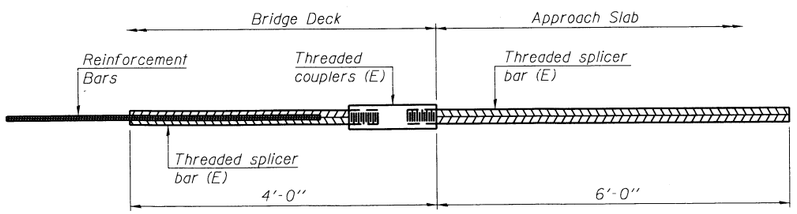
INSTALLATION AND SETTING METHODS

"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.



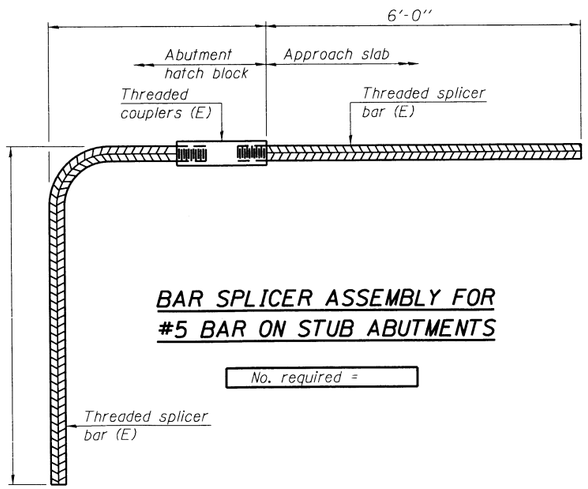
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 1-27-12

• D7 BRIDGE REPAIRS 2013-1

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	PLOT SCALE = 40.0000 ' / in.	DRAWN - KLB	REVISED -
Default	PLOT DATE = 10/23/2012	CHECKED - MEA	REVISED -
		DATE - 07/12/12	REVISED -

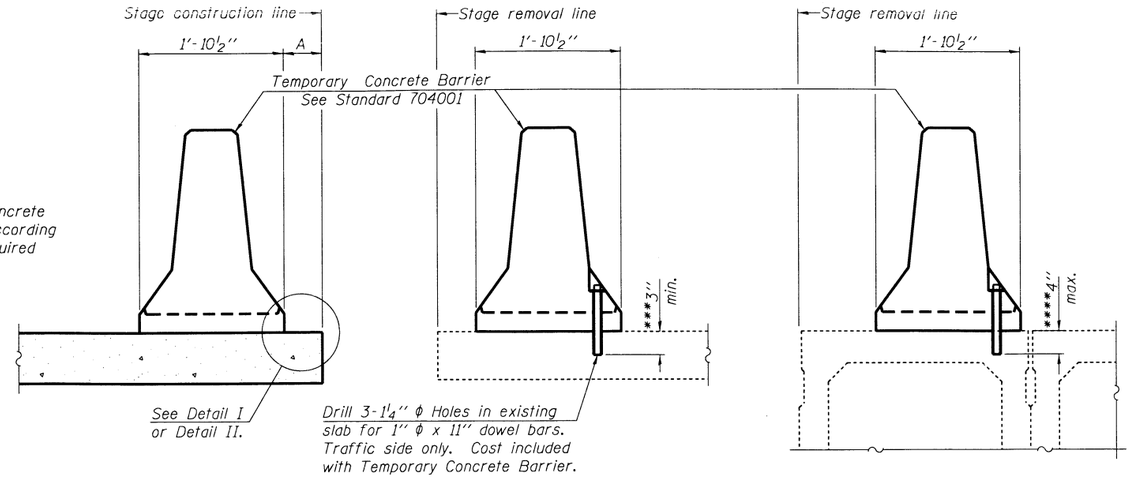
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 025-0016 (EB) & 025-0017 (WB)

SCALE: N/A | SHEET 12 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	•	EFFINGHAM	33	32
		CONTRACT NO. 74589		
	ILLINOIS FED. AID PROJECT			

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



NEW SLAB **EXISTING SLAB** **EXISTING DECK BEAM**

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel PL to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x "W" steel PL to the concrete slab or concrete wearing surface with 2-⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

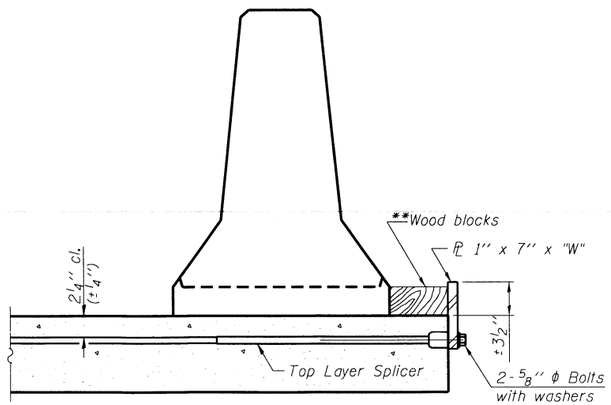
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x "W" 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.

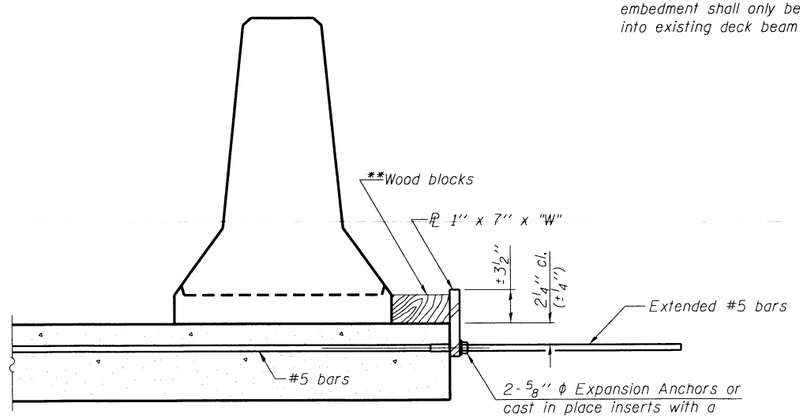
SECTIONS THRU SLAB OR DECK BEAM

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



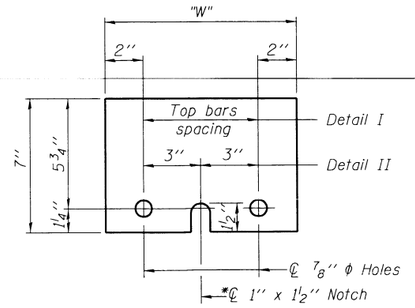
DETAIL I



DETAIL II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

"W" = Top bars spacing + 4"



STEEL RETAINER PL 1" x 7" x "W"

* Required only with Detail II

R-27 7-1-10

• D7 BRIDGE REPAIRS 2013-1

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Default	PLOT DATE = 10/23/2012	DATE - 07/12/12	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 025-0016 (EB) & 025-0017 (WB)

SCALE: N/A | SHEET 13 OF 13 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	•	EFFINGHAM	33	33
		CONTRACT NO. 74589		
	ILLINOIS FED. AID PROJECT			

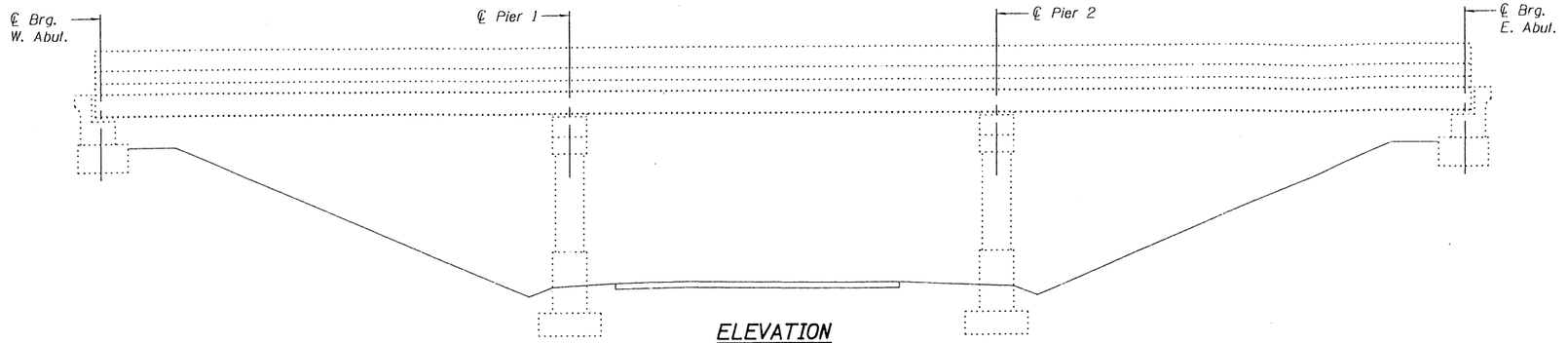
UNIT Copy

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
-		Effingham		-
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

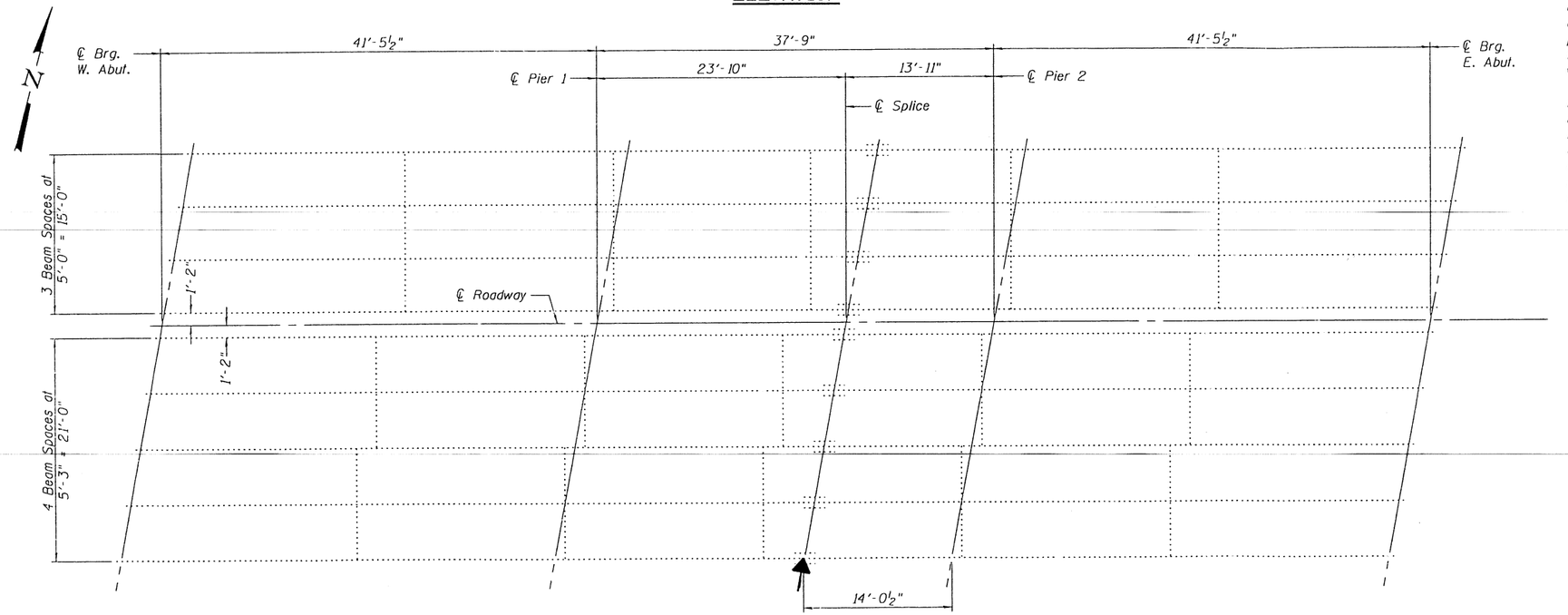
SHEET NO. 1
2 SHEETS

Contract Number: - - -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



GENERAL NOTES

Cost of removal and/or re-installation of all members necessary to complete the work as detailed on the plans and as specified in the Special Provisions shall be included in the cost of Beam Straightening.

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

After the new beam is in its final position and/or beam straightening operations have been completed, the Engineer in the field shall check to see that the top flange is tight against the slab. If not, the Contractor shall inject epoxy between the existing concrete deck and the top flange of the beam. See Special Provision "Epoxy Injection".

Grind existing nicks, gouges and shallow cracks in the damaged beams as detailed. Ground surfaces shall be inspected for cracks using magnetic particle testing prior to initiating any beam straightening operations. Cost included with Beam Straightening. Any cracks that cannot be removed by grinding approximately ¼" deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Ground surfaces shall be spot cleaned and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Cost of grinding, testing and spot painting included with Beam Straightening.

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.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Beam Straightening	L.S.	1

PLAN

Impact → Location of Beam Straightening

DESIGNED	Victor H. Velez	March 27, 2006
CHECKED	A. Carl Finney	
DRAWN		
CHECKED	VHV/DCP	

EXAMINED John A. Morris DCA
ENGINEER OF STRUCTURAL SERVICES

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
RALPH E. ANDERSON
081-004625
LICENSED STRUCTURAL ENGINEER
SPRINGFIELD

Expires: November 30, 2006

PLAN AND ELEVATION
F.A.I. RT. 70
EFFINGHAM COUNTY
SN 025-0016

SLT-97-001-06

025-0016

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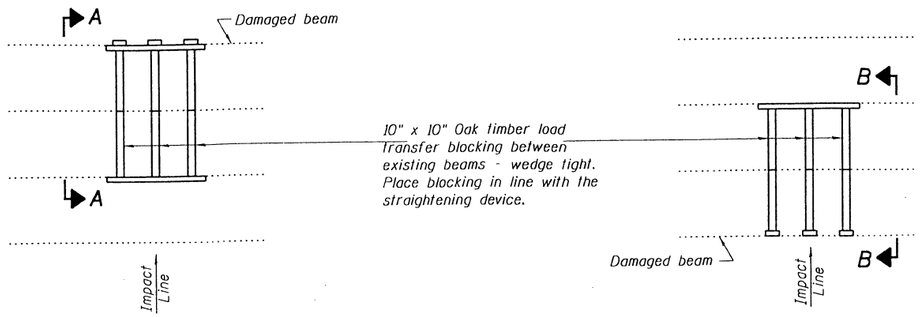
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Effingham	-	-
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

SHEET NO. 2
2 SHEETS

Contract Number: - - -

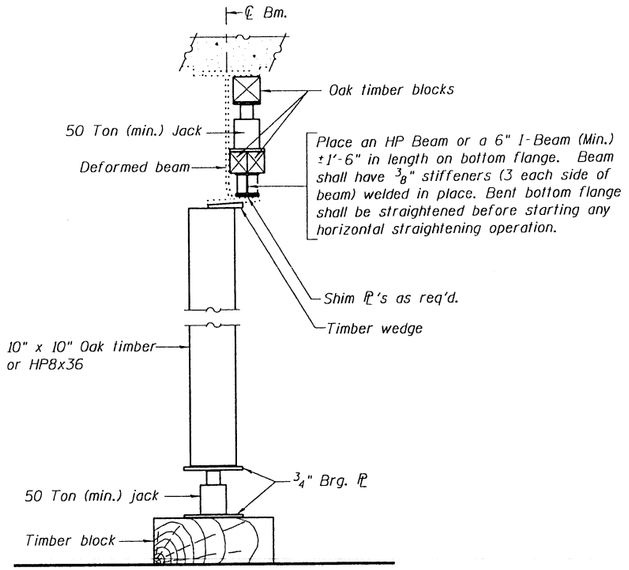


PULLING DEVICE

PUSHING DEVICE

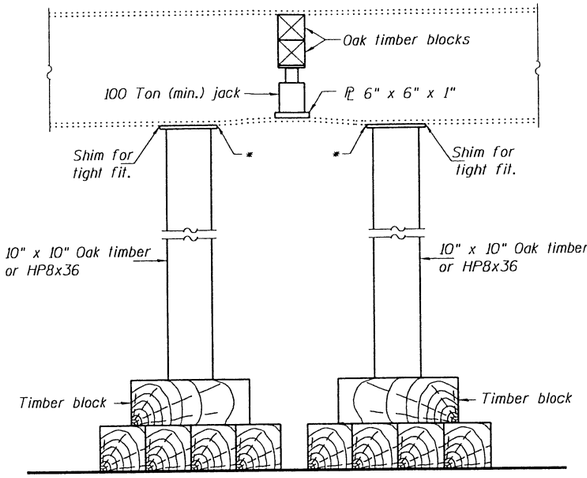
PARTIAL PLANS
SUGGESTED BEAM STRAIGHTENING METHODS

Straightening force shall be maintained on all load transfer blocking during beam straightening.



SUGGESTED VERTICAL STRAIGHTENING DETAIL

(To correct flange rotation.)

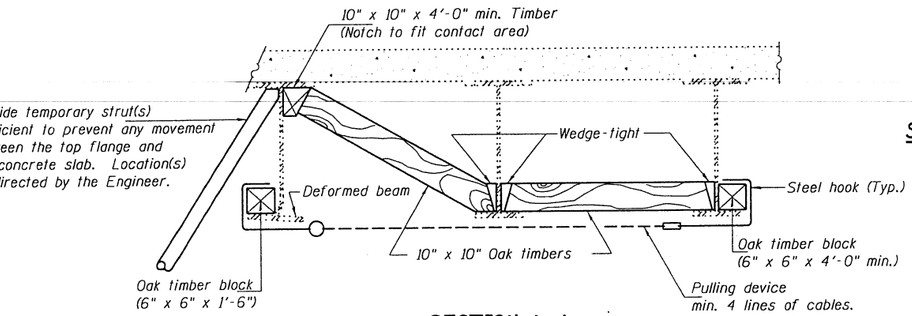


SUGGESTED VERTICAL STRAIGHTENING DETAIL

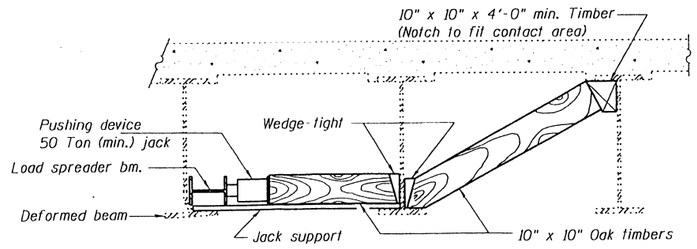
(To correct localized vertical flange deformations.)

* Edge of plate shall line up with edge of deformation.

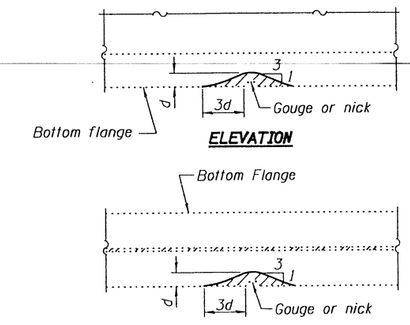
Note:
Braces and jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



SECTION A-A

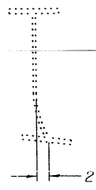


SECTION B-B



GRINDING DETAIL

Grind existing nicks, gouges and shallow cracks in the damaged beams as detailed. Ground surfaces shall be inspected for cracks using magnetic particle testing prior to initiating any beam straightening operations. Any cracks that cannot be removed by grinding approximately 1/4" deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Ground surfaces shall be spot cleaned and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Cost of grinding, testing and spot painting included with Beam Straightening.



EXISTING DEFORMATION TO BE STRAIGHTENED

(Looking West)
(Approximate max. deflections)

DESIGNED	V.H.V.
CHECKED	D.C.P.
DRAWN	Drew Christopher
CHECKED	V.H.V. D.C.P.

March 27, 2006

EXAMINED John A. Morris
ENGINEER OF STRUCTURAL SERVICES

PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

BEAM STRAIGHTENING DETAILS
F.A.I. RT. 70
EFFINGHAM COUNTY
SN 025-0016

REP-1 1-14-2005
SLT-97-001-06

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#109 8-27-93 EFFINGHAM I&R copy (25-8B & 25-5HB-5)BR #109

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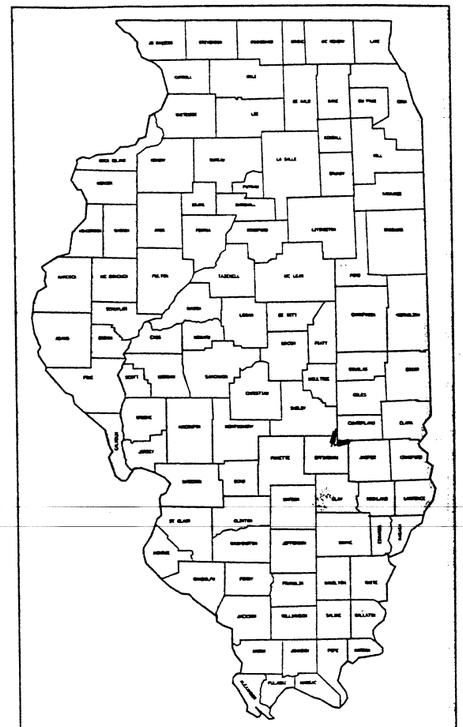
7-29-94

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(25-8B)BR	EFFINGHAM		1
70	(25-5)BR			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO. IM-000S(27)		

D-97-009-92



LOCATION OF SECTION INDICATED THUS: ▬▬

INDEX OF SHEETS

THE FOLLOWING STANDARDS ARE CONSIDERED TO BE A PART OF THESE PLANS AND ARE INCLUDED AFTER SHEET NO. 13:

1686-4	SYMBOLS AND ABBREVIATIONS
2298-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2299-13	DESIGN OF TRAFFIC CONTROL DEVICES
2300-3	FLAGMAN TRAFFIC CONTROL SIGN
2307-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2308-6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2313-5	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2314-6	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2316-3	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2397-1	TYPICAL APPLICATION OF RAISED REFLECTIVE PAVEMENT MARKERS
2419	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
PLANS FOR PROPOSED
FEDERAL AID INTERSTATE HIGHWAY

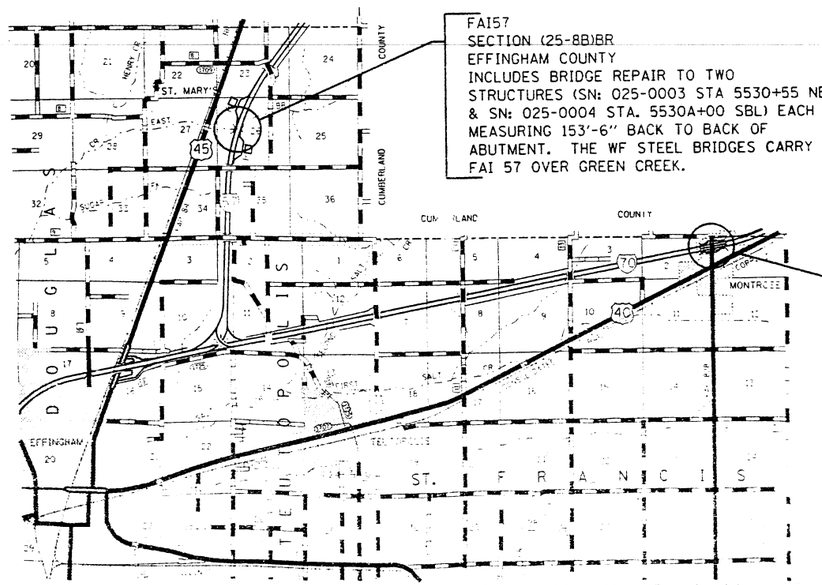
F.A.I. ROUTE 57 & F.A.I. ROUTE 70

PROJECT IM-000S(27)

SECTION (25-8B & 25-5HB-5)BR

EFFINGHAM COUNTY

C-97-042-92



FAI57
SECTION (25-8B)BR
EFFINGHAM COUNTY
INCLUDES BRIDGE REPAIR TO TWO STRUCTURES (SN: 025-0003 STA 5530+55 NBL & SN: 025-0004 STA. 5530A+00 SBL) EACH MEASURING 153'-6" BACK TO BACK OF ABUTMENT. THE WF STEEL BRIDGES CARRY FAI 57 OVER GREEN CREEK.

FAI 70
SECTION (25-5HB-5)BR
EFFINGHAM COUNTY
INCLUDES BRIDGE REPAIR WORK ON TWO STRUCTURES (SN: 025-0016 EBL & SN: 025-0017 WBL) AT STA. 2741+37.68 EACH MEASURING 120'-8" BACK TO BACK OF ABUTMENT. THE WF STEEL BRIDGES CARRY FAI 70 OVER FAP 828 AT THE MONTROSE INTERCHANGE.

SUBMITTED April 6 19 93
M. A. Jaqué
DISTRICT ENGINEER

EXAMINED 19
ENGINEER OF PLANS AND CONTRACTS

PASSED JUNE 1 19 93
ENGINEER OF DESIGN

APPROVED JUNE 1 19 93
DIRECTOR, DIVISION OF HIGHWAYS

GROSS LENGTH OF PROJECT= 548.33 LIN. FT. = 0.104 MILES
NET LENGTH OF PROJECT= 548.33 LIN. FT. = 0.104 MILES

CONTRACT NO. 94339

7-115

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS; THE "THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JULY 1, 1988; THE "STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS", ADOPTED APRIL 1, 1989; THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS", ADOPTED APRIL 1, 1993; AND THE SPECIAL PROVISIONS INCLUDED WITH THE PROPOSAL.

THE PROPOSED PROJECT IS LOCATED ON FAI 57 NBL AND SBL OVER GREEN CREEK APPROXIMATELY 1.5 MILES SOUTH OF THE EFFINGHAM-SHELBY COUNTY LINE AND ON FAI 70 EBL AND WBL OVER FAP 828 AT THE MONTROSE INTERCHANGE.

THE WORK ON THE FOUR BRIDGES IN SECTION (25-8B & 25-5HB-5)BR INCLUDES REMOVAL OF THE EXISTING ASBESTOS WATERPROOFING SYSTEMS, PARTIAL AND FULL DEPTH PATCHING OF THE EXISTING BRIDGE DECKS, EXPANSION JOINT REPLACEMENT OF THE STRUCTURES AT MONTROSE, ABUTMENT REPAIR, INSTALLATION OF WATERPROOFING MEMBRANE SYSTEMS AND OTHER INCIDENTAL WORK NECESSARY TO COMPLETE THIS SECTION.

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

ALL STRUCTURAL STEEL SHALL BE AASHTO M 222 EXCEPT EXPANSION JOINT PLATES AND ATTACHED BARS WHICH SHALL BE AASHTO M 183. THE CALCULATED WEIGHT OF THE STRUCTURAL STEEL IS 6960 POUNDS.

AFTER FABRICATION ALL SURFACES OF THE STEEL PLATES SHALL BE GIVEN ONE SHOP COAT OF THE ZINC-SILICATE AND VINYL PAINT SYSTEM. THE COST SHALL BE CONSIDERED INCIDENTAL TO "FURNISHING AND ERECTING STRUCTURAL STEEL".

FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS OR GIRDERS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE PIER SUPPORTS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

NEW REINFORCEMENT BARS SHALL BE EPOXY COATED WITH BAR SPLICERS FOR STAGE CONSTRUCTION. THE COST OF THE BAR SPLICERS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE FOR REINFORCEMENT BARS (EPOXY COATED). THE ESTIMATED QUANTITY OF BAR SPLICERS REQUIRED FOR THIS PROJECT IS 48. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53, GRADE 60.

EXISTING REINFORCEMENT BARS THAT ARE TO REMAIN IN PLACE SHALL BE THOROUGHLY CLEANED TO THE SATISFACTION OF THE ENGINEER AND INCORPORATED INTO THE NEW CONCRETE.

PRIOR TO POURING THE NEW CONCRETE ~~FOR THE~~ EXPANSION JOINTS, ALL LOOSE RUST, LOOSE MILL SCALE, LOOSE PAINT AND ALL OTHER FOREIGN MATERIAL SHALL BE REMOVED FROM THR EMBEDDED PORTIONS OF FLANGES OF STRINGERS. THE REMOVAL SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE REQUIREMENTS OF THE SSPC SURFACE PREPARATION SPECIFICATIONS SP-3 FOR POWER TOOL CLEANING. THE COST SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE FOR CONCRETE REMOVAL.

EXISTING HANDRAIL POSTS WHICH MUST BE REMOVED TO ACCOMPLISH NEW CONSTRUCTION SHALL BE SALVAGED, STORED AND REINSTALLED IN THIEP ORIGINAL CONFIGURATION. THE COST SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE FOR CONCRETE REMOVAL.

EPOXY PAVEMENT MARKING - LINE 4" SHALL BE USED AT GREEN CREEK. IT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND AS DETERMINED BY THE ENGINEER. THE TOTAL QUANTITY CALCULATED CONSISTS OF 1426 LINEAL FEET OF YELLOW AND 668 LINEAL FEET OF WHITE.

THERMOPLASTIC PAVEMENT MARKING - LINE 4" SHALL BE USED AT MONTROSE. IT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARDS AND AS DETERMINED BY THE ENGINEER. THE TOTAL QUANTITY CALCULATED CONSISTS OF 1426 LINEAL FEET OF YELLOW AND 668 LINEAL FEET OF WHITE.

RAISED REFLECTIVE PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD 2397. ALL MARKERS SHALL BE MONO-DIRECTIONAL CRYSTAL COLORED AND REINSTALLLED IN THEIR EXISTING LOCATIONS AND AT THEIR EXISTING SPACING.

THE BASE COURSE WIDENING SHALL, AT THE CONTRACTORS OPTION, BE CONSTRUCTED OF EITHER PORTLAND CEMENT CONCRETE 8 INCHES THICK, OR BITUMINOUS CONCRETE 10 INCHES THICK. THE WIDENING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF EITHER SECTION 305 OR 306 OF THE STANDARD SPECIFICATIONS. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR BASE COURSE WIDENING, WHICH PRICE SHALL INCLUDE PAYMENT FOR SAWING, REMOVING AND EXCAVATING MATERIAL NECESSARY TO COMPLETE THE CONSTRUCTION OF THE WIDENING TAPERS AND WIDENING.

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57 70	(25-8B)BR (25-5-BR	EFFINGHAM	13	2
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		

SUMMARY OF QUANTITIES

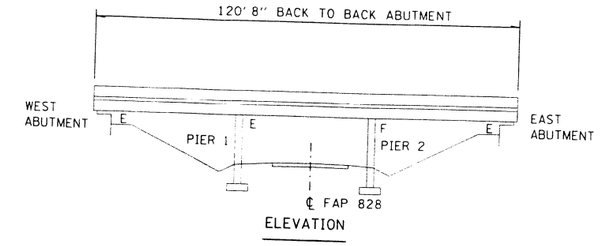
	CODE NO	ITEM	UNIT	TOTAL QUANTITIES	SFTY 20 GREEN CREEK NBL	SFTY 20 GREEN CREEK SBL	SFTY 20 MONTROSE EBL	SFTY 20 MONTROSE WBL
					CONSTRUCTION TYPE CODE			
**	T5010200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	LIN FT	3332			1666	1666
**	T5040100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	23	9	10	2	2
**	T5070100	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	23	9	10	2	2
**	T5150200	EPOXY PAVEMENT MARKING - LINE 4"	LIN FT	2094	1047	1047		
•	Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	48	16	23	2	7
•	Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	83	6	77		
•	Z0016200	DECK SLAB REPAIR (PARTIAL)	SQ YD	163	20	69	34	40
	Z0020500	EPOXY PAVEMENT MARKING REMOVAL	LIN FT	1650	825	825		
	Z0075100	THERMOPLASTIC PAVEMENT MARKING REMOVAL	LIN FT	3004			1502	1502
	Z0077500	WATERPROOFING MEMBRANE SYSTEM	SQ YD	2402	673	673	528	528
	30650700	BASE COURSE WIDENING	SQ YD	978	122	122	360	374
	40600820	BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D, CLASS I, TYPE 1	TON	202	57	57	44	44
	50102400	CONCRETE REMOVAL	CU YD	22.8			11.4	11.4
	50300120	PREFORMED JOINT SEAL 2 1/2"	LIN FT	88			44	44
	50300130	PREFORMED JOINT SEAL 4"	LIN FT	88			44	44
	50400300	CLASS X CONCRETE	CU YD	22.8			11.4	11.4
	50401245	FORMED CONCRETE REPAIR (DEPTH EQUAL TO OR LESS THAN 5")	SQ FT	144	61	48	14	21
	50401250	FORMED CONCRETE REPAIR (DEPTH GREATER THAN 5")	SQ FT	3	3			
	50700400	FURNISHING AND ERECTING STRUCTURAL STEEL	LBs	6960			3480	3480
	50701000	JACK AND REPOSITION BEARINGS	EACH	23	12	11		
	51200200	REINFORCEMENT BARS, EPOXY COATED	POUND	2700			1350	1350
	61701113	BITUMINOUS CONCRETE SURFACE REMOVAL (ASBESTOS)	SQ YD	2402	673	673	528	528
	64700090	TEMPORARY PAVEMENT MARKING	LIN FT	5238	996	996	1623	1623
	64800420	TRAFFIC CONTROL AND PROTECTION, STANDARD 2419	EACH	4	1	1	1	1
	64801005	TRAFFIC CONTROL AND PROTECTION, STANDARD 2316 (SPECIAL)	EACH	4	1	1	1	1

** Specialty items

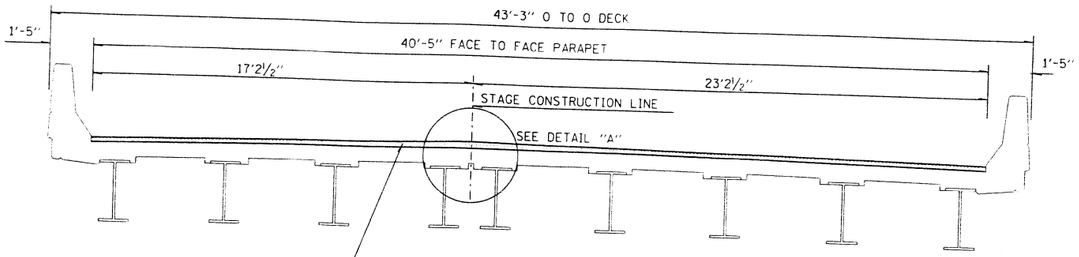
• A FACTOR OF 2.0 HAS BEEN APPLIED TO ALL QUANTITIES CALCULATED ON THE DELAMTECT PATCHING SURVEY.

GENERAL NOTES & SUMMARY OF QUANTITIES

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(25-8B)BR	EFFINGHAM	13	8
70	(25-5)BR			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		

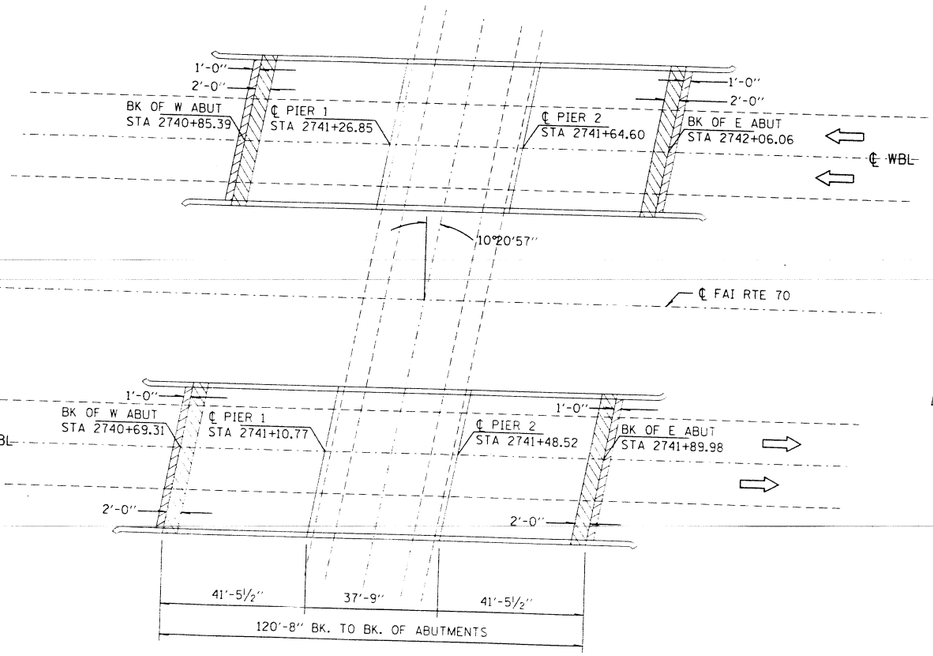


ELEVATION

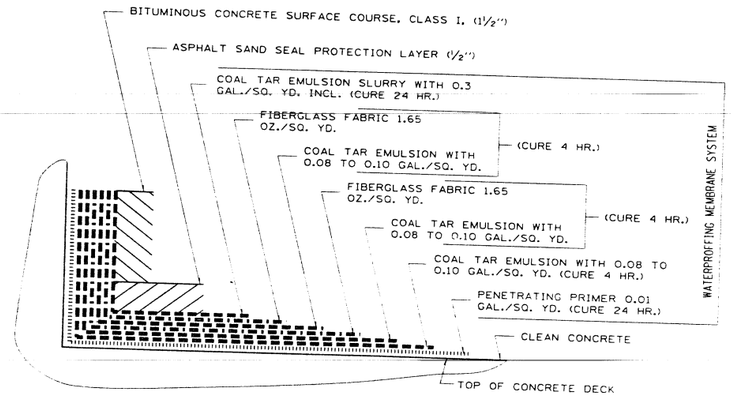


CROSS SECTION

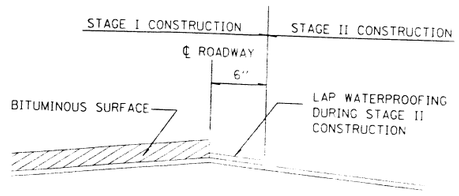
EXISTING ASBESTOS WATERPROOFING SYSTEM TO BE REMOVED AND REPLACED WITH WATERPROOFING MEMBRANE SYSTEM.



PLAN



DETAIL OF DECK SURFACING



PROPOSED DETAIL "A"

NOTE: HATCHED AREAS INDICATE EXISTING EXPANSION JOINTS TO BE REMOVED AND REPLACED. SEE SHEETS 10 & 11 FOR DETAILS.

ITEM	UNIT	NBL	SBL
BITUMINOUS CONCRETE SURFACE REMOVAL (ASBESTOS)	SQ YD	528	528
WATERPROOFING MEMBRANE SYSTEM	SQ YD	528	528
BITUMINOUS CONC SURFACE COURSE MIX D, CL I, TY 1	TON	44	44

GENERAL PLAN & ELEVATION
FAI ROUTE 70
SECTION (25-5HB-5)BR
EFFINGHAM COUNTY
MONTROSE INTERCHANGE

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	I25-8B(BR	EFFINGHAM	13	9
70	I25-5-BR			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		

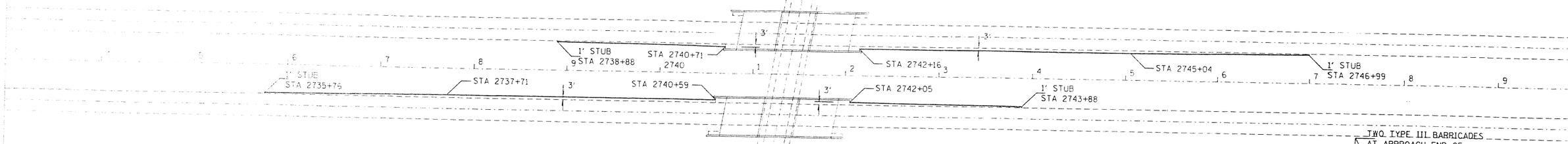
STAGE I MONTROSE

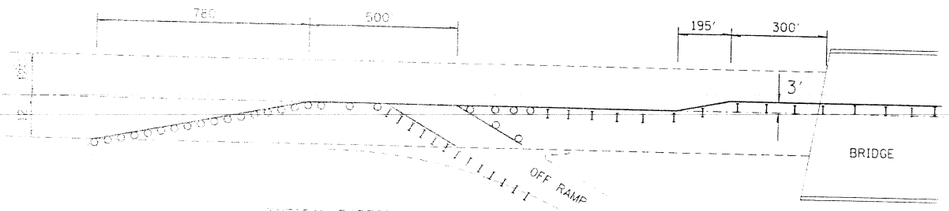
1) PLACE TRAFFIC CONTROL STD. 2316 TO CLOSE EAST AND WEST BOUND PASSING LANES
2) REMOVE SHOULDER AND CONSTRUCT BASE COURSE WIDENING ADJACENT TO EAST AND WEST BOUND PASSING LANES
3) REMOVE THERMOPLASTIC PAVEMENT MARKING LINE AT EDGE OF PAVEMENT AND PLACE TEMPORARY MARKING LINE AT EDGE OF PASSING LANE WIDENING
4) SWITCH TRAFFIC CONTROL TO CLOSE EAST AND WEST BOUND DRIVING LANES
5) CONSTRUCT STAGE I ON EAST AND WEST BOUND STRUCTURES IN THE DRIVING LANES
6) REMOVE SHOULDER AND CONSTRUCT BASE COURSE WIDENING ADJACENT TO EAST AND WEST BOUND DRIVING LANES
7) REMOVE THERMOPLASTIC PAVEMENT MARKING LINE AT EDGE OF PAVEMENT AND PLACE TEMPORARY MARKING LINE AT EDGE OF DRIVING LANE WIDENING

BASE COURSE WIDENING

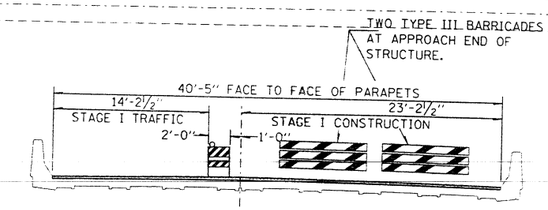
MONTROSE - EBL
RT STA 2735+76 TO RT STA 2743+88 180 SQ YD

MONTROSE - WBL
LT STA 2738+88 TO LT STA 2746+99 180 SQ YD
TOTAL 360 SQ YD





TYPICAL BARRICADE PLACEMENT
FOR STAGE I EBL & WBL
(NOT TO SCALE)



CROSS SECTION
EBL - LOOKING EAST & WBL - LOOKING WEST

TRAFFIC CONTROL & PROTECTION STD 2316

MONTROSE - EBL	1 EACH
MONTROSE - WBL	1 EACH

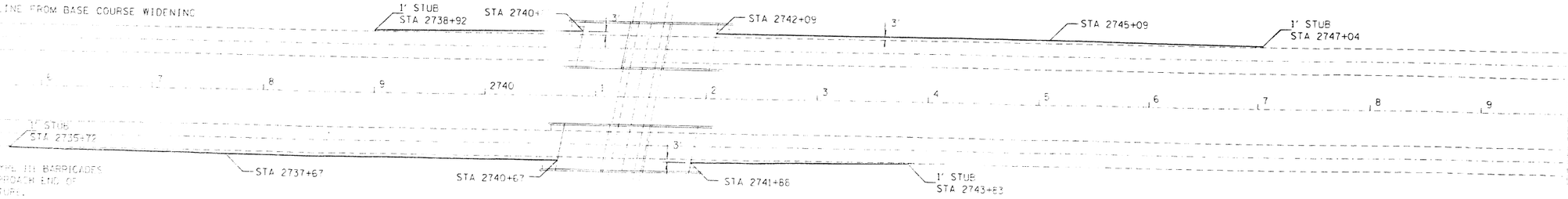
TRAFFIC CONTROL & PROTECTION STD 2419

MONTROSE - EBL STAGE I	1 EACH
MONTROSE - WBL STAGE I	1 EACH

STAGE I

STAGE II

1) SWITCH TRAFFIC CONTROL TO CLOSE EAST AND WEST BOUND PASSING LANES
2) CONSTRUCT STAGE II ON EAST AND WEST BOUND STRUCTURES IN THE PASSING LANES
3) REMOVE ALL TRAFFIC CONTROL
4) PLACE THERMOPLASTIC PAVEMENT MARKING LINE AT PAVEMENT EDGES
5) REMOVE TEMPORARY MARKING LINE FROM BASE COURSE WIDENING



CROSS SECTION
EBL - LOOKING EAST & WBL - LOOKING WEST

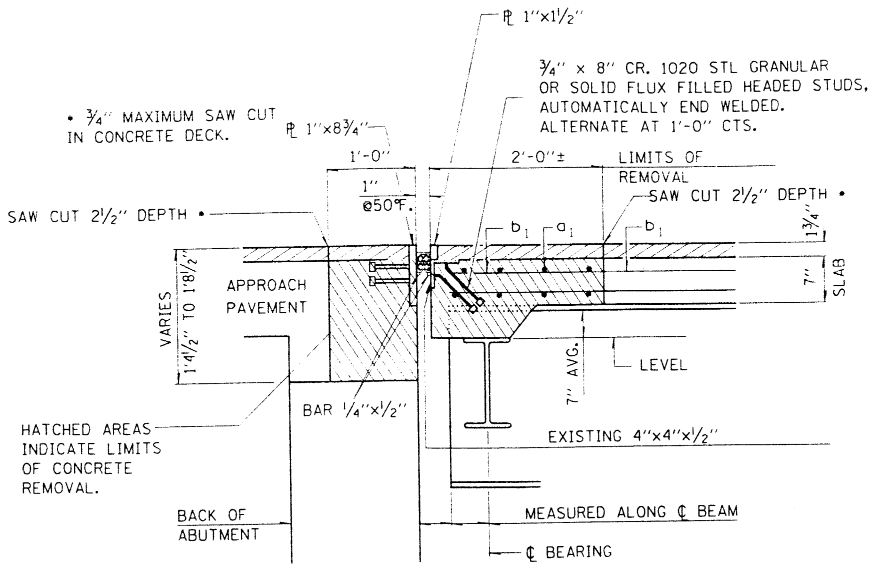
BASE COURSE WIDENING

MONTROSE - EBL
RT STA 2735+72 TO RT STA 2743+88 187 SQ YD

MONTROSE - WBL
LT STA 2738+92 TO LT STA 2747+04 187 SQ YD
TOTAL 374 SQ YD

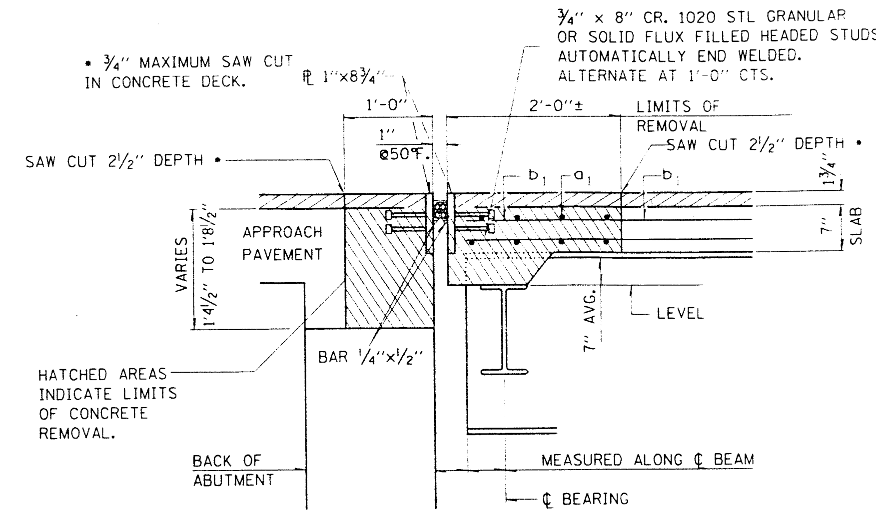
STAGE II

STAGE CONSTRUCTION DETAILS - MONTROSE



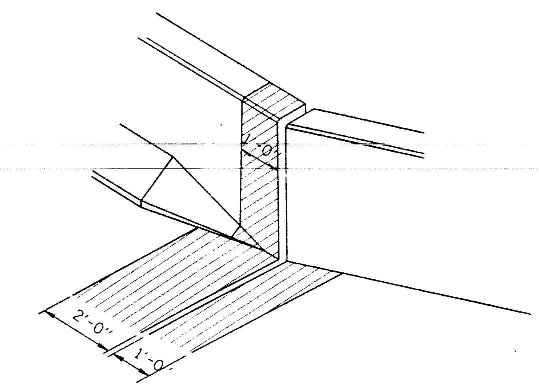
EXISTING ABUTMENT AT ℄ ROADWAY

@ RT. ANGLES

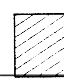


EXISTING ABUTMENT AT SHOULDER

@ RT. ANGLES



PROPOSED END TREATMENT AT PARAPET


CONCRETE REMOVAL

BILL OF MATERIAL, ONE STRUCTURE

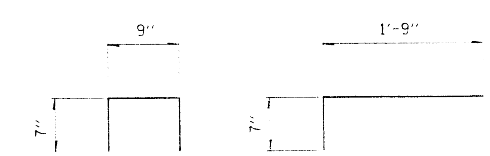
ITEM	UNIT	EAST ABUTMENT	WEST ABUTMENT	TOTAL
CONCRETE REMOVAL	CU. YD.	5.7	5.7	11.4
PREFORMED JOINT SEAL 2 1/2″	LIN. FT.	44		44
PREFORMED JOINT SEAL 4″	LIN. FT.		44	44
CLASS X CONCRETE	CU. YD.	5.7	5.7	11.4
FURNISHING AN ERECTING STRUCTURAL STEEL	POUND	1740	1740	3480
REINFORCEMENT BARS, EPOXY COATED	POUND	675	675	1350

(ONE STRUCTURE)

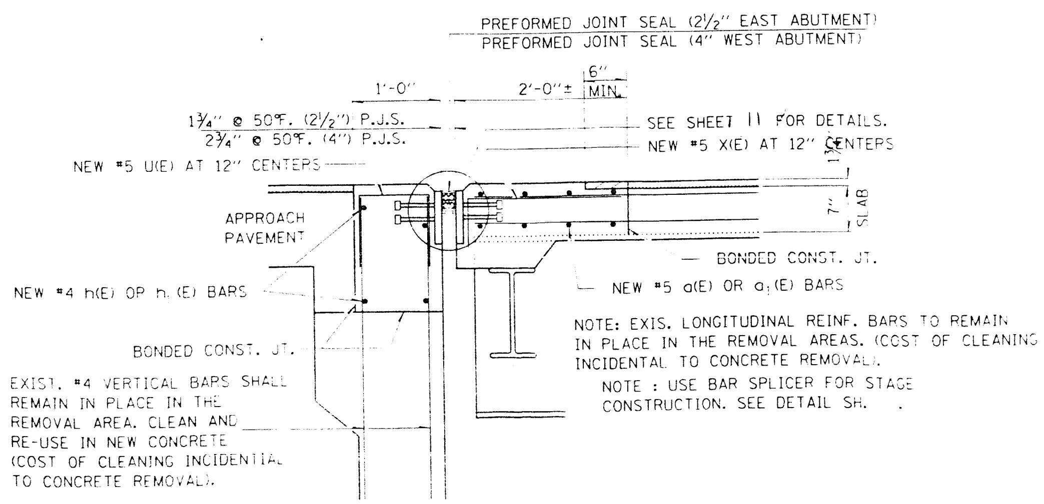
BAR LIST, ONE ABUTMENT

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)-STAGE I	8	#5	24′-10″	
a(E)-STAGE II	8	#5	18′-9″	
h(E)-STAGE I	4	#4	23′-10″	
h(E)-STAGE II	4	#4	17′-9″	
u(E)-STAGE I	25	#5	1′-11″	
u(E)-STAGE II	19	#5	1′-11″	
x(E)-STAGE I	26	#5	2′-4″	
x(E)-STAGE II	20	#5	2′-4″	

(E) DENOTES EPOXY COATED



BAR U(E) BAR X(E)

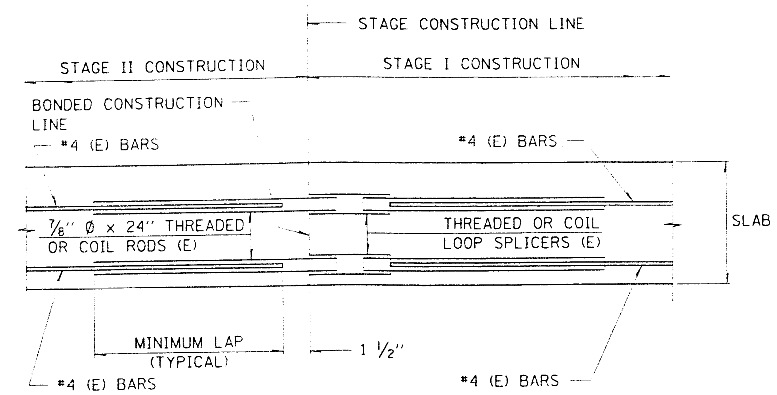


PROPOSED ABUTMENT

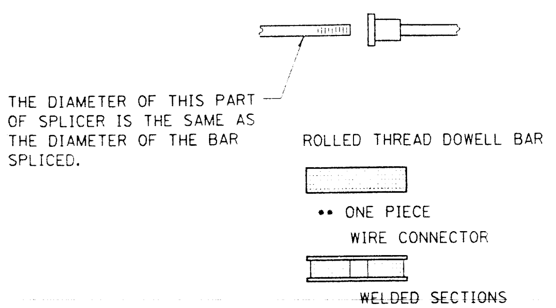
@ RT. ANGLES

SECTION AT ABUTMENTS - MONTROSE INTERCHANGE

D17
TK REV: 12/22/92
ZF 1d(116,5)D700992DA.DGN:1
03/22/93
LEVELS ON
GEOPAK FILE

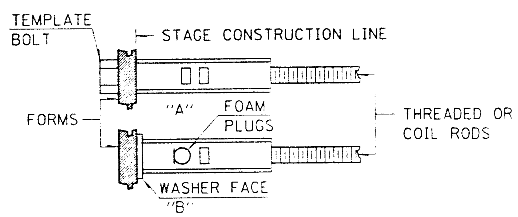


TYPICAL SECTION AT ABUTMENT



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 METAL FORMS.
(E): INDICATES EPOXY COATING.

NOTES

THE ESTIMATED QUANTITY OF BAR SPLICERS REQUIRED FOR THIS PRJOECT IS 48.

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 TO OR GREATER THAN THAT OF THE LAPPED REINFORCEMENT BARS.

ALL REINFORCEMENT BARS SHALL BE LAPPED AND TIED TO THE SPLICER RODS. SPLICER (COUPLER) ASSEMBLY IN THE SLAB SHALL BE EPOXY COATED IN ACCORDANCE WITH 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 SPLICER (COUPLER) ASSEMBLY SATISFIES THE FOLLOWING REQUIREMENTS:

1. MINIMUM CAPACITY
(TENSION IN KIPS) = 1.25 x fy x At

2. MINIMUM •PULL-OUT STRENGTH
(TENSION IN KIPS) = 1.25 x fs ALLOW x At

WHERE fy = YIELD STRENGTH OF LAPPED REINFORCEMENT BARS IN KSI.
fs ALLOW = ALLOWABLE TENSILE STRESS IN LAPPED REINFORCED BARS IN KSI (SERVICE LOAD)
At = TENSILE STRESS IN AREA OF LAPPED REINFORCEMENT BARS.
• = 28 DAY CONCRETE

TYPICAL SPLICER (COUPLER) ASSEMBLY SIZES:

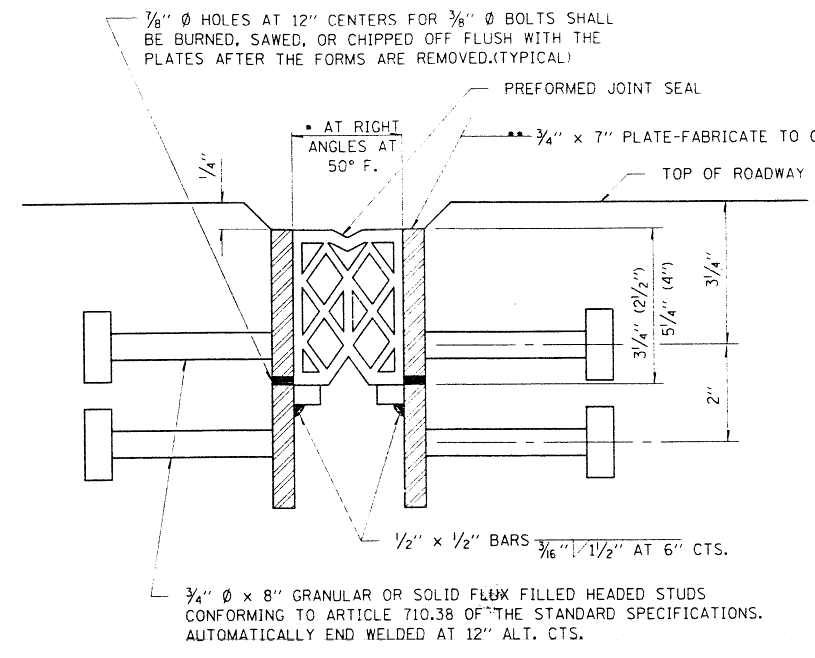
IN SLABS: #5 BAR LAP WITH 3/4" Ø SPLICER (COUPLER) x 2'-0" SPLICER RODS — MINIMUM CAPACITY = 23.0 KIPS-TENSION; MINIMUM PULL-OUT STRENGTH = 9.2 KIPS - TENSION

GENERAL NOTES FOR PREFORMED JOINT SEAL

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		

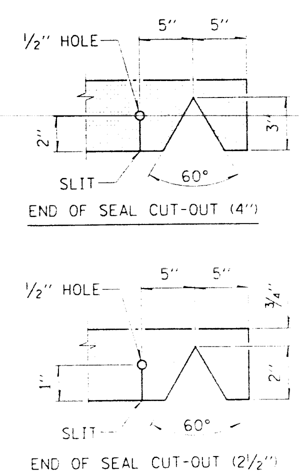
AFTER FABRICATION ALL SURFACES OF THE STEEL PLATES SHALL BE PAINTED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF ARTICLE 509.04 OF THE STANDARD SPECIFICATIONS.

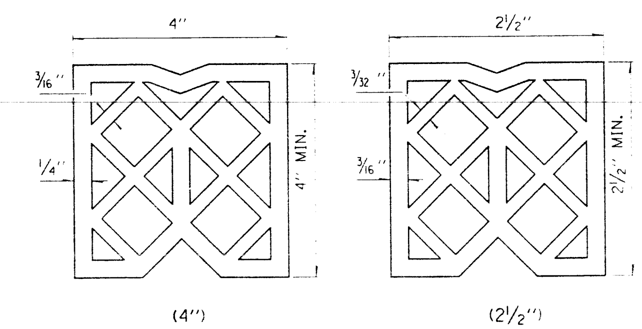
JOINT OPENINGS SHALL BE ADJUSTED IN ACCORDANCE WITH ARTICLE 503.07 (c) OF THE STANDARD SPECIFICATIONS.



• 1 3/4" AT 50° (2 1/2")
2 3/4" AT 50° (4")

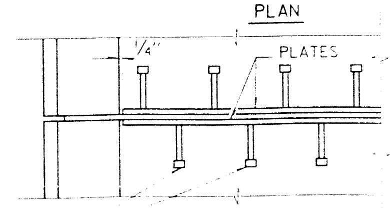
•• FURNISH IN SEGMENTS OF 25 FT. MAXIMUM LENGTH. MAXIMUM SPACE BETWEEN INSTALLED SEGEMENTS SHALL BE 3/16". SEAL SPACE WITH SILICONE SEALANT SUITABLE FOR STRUCTURAL STEEL.



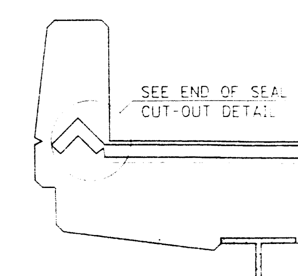


PREFORMED JOINT SEALS

PLAN



3/4" Ø x 8" GRANULAR OR SOLID FLUX FILLLED HEADED STUDS CONFORMING TO ART. 710.38 OF THE STD. SPEC'S. AUTOMATICALLY END WELDED AT 12" ATLERNATE CENTERS.



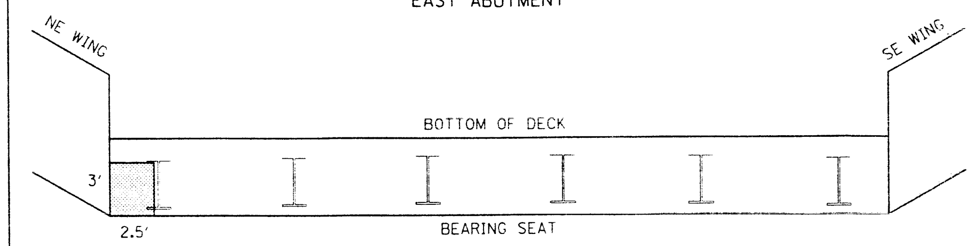
SECTION

TYPICAL SEAL TREATMENTS AT PARAPET

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57 70	(25-8B)BR (25-5-BR)	EFFINGHAM	13	11
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		

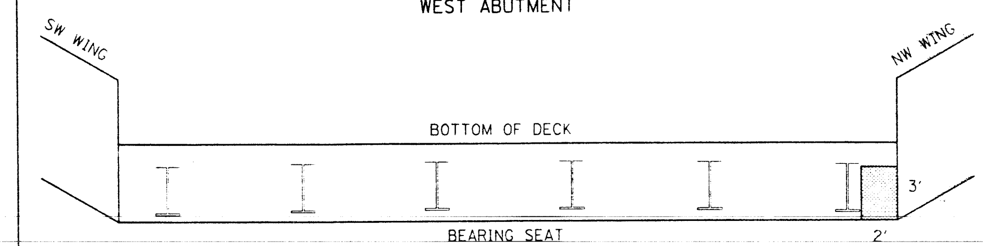
EASTBOUND LANE

EAST ABUTMENT



FORMED CONCRETE REPAIR =< 5" - 8 SQ FT

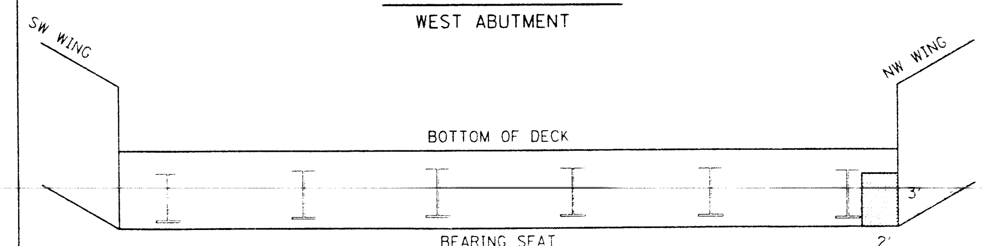
WEST ABUTMENT



FORMED CONCRETE REPAIR =< 5" - 6 SQ FT

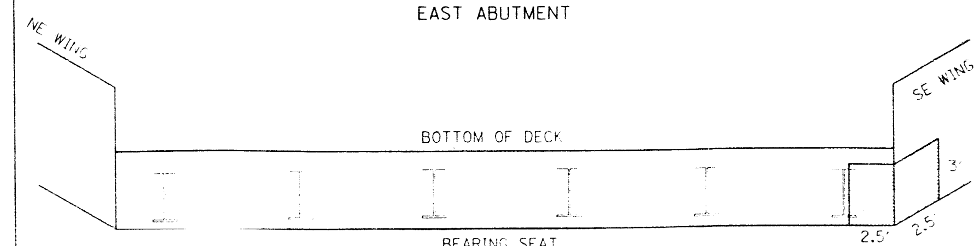
WESTBOUND LANE

WEST ABUTMENT



FORMED CONCRETE REPAIR =< 5" - 6 SQ FT

EAST ABUTMENT

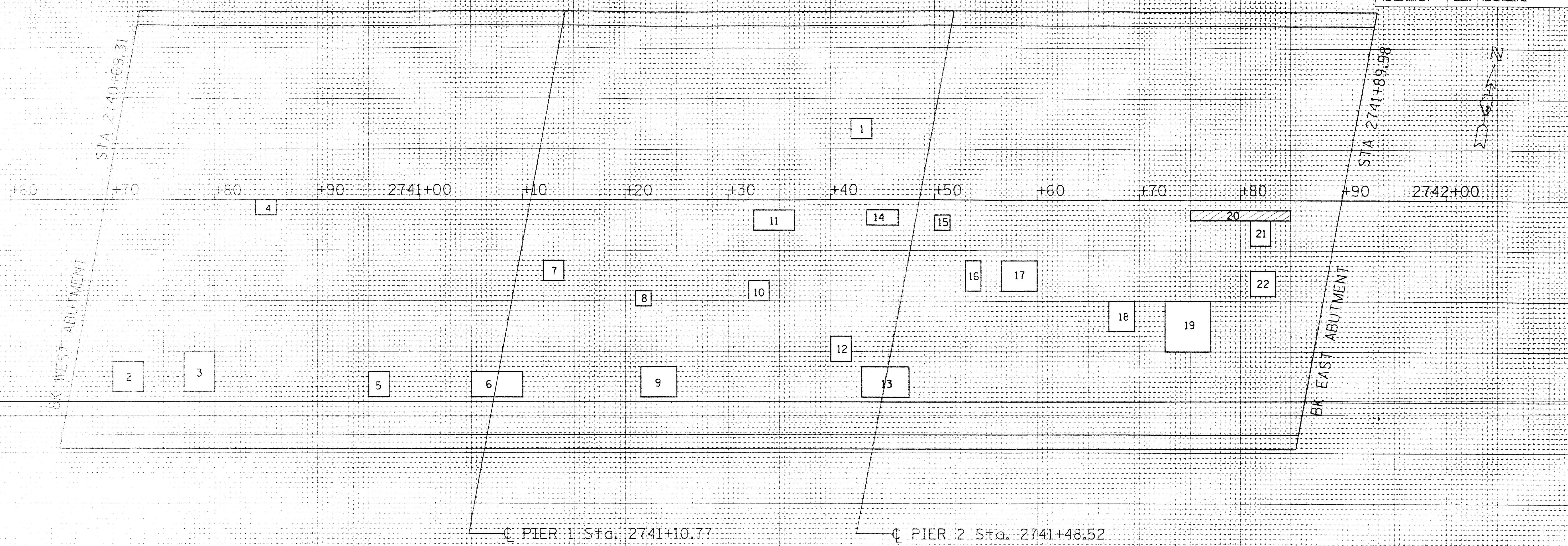


FORMED CONCRETE REPAIR =< 5" -15 SQ FT

▭ - DENOTE REPAIRS FORMED CONCRETE

PREFORMED JOINT DETAILS AND FORMED CONCRETE REPAIR - MONTROSE

FAI RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57 70	(25-8B)BR (25-5-BR	EFFINGHAM	13	12
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		



PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	
1	2'×2'	4.0			
2	3'×3'	9.0			
3	3'×4'	12.0			
4	2'×1½'	3.0			
5	2'×2½'	5.0			
6	5'×2½'	12.5			
7	2'×2'	4.0			
8	1½'×1½'	2.3			
9	3½'×3'	10.5			
10	2'×2'	4.0			
11	4'×2'	8.0			
12	2'×2½'	5.0			
13	4½'×2½'	11.3			
14	3'×1½'	4.5			
15	1½'×1½'	2.3			
16	1½'×3'	4.5			
17	3½'×3'	10.5			
18	2½'×3'	7.5			
19	4½'×5'	22.5			

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	
20	10'×1'		10.0		
21	2'×2½'	5.0			
22	2½'×2½'	6.3			
	TOTAL	153.7	10.0		

PARTIAL DEPTH
153.7/9 = 17.1
USE 17 SQ YD

FULL DEPTH, TYPE 1
10.0/9 = 1.1
USE 1 SQ YD

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	

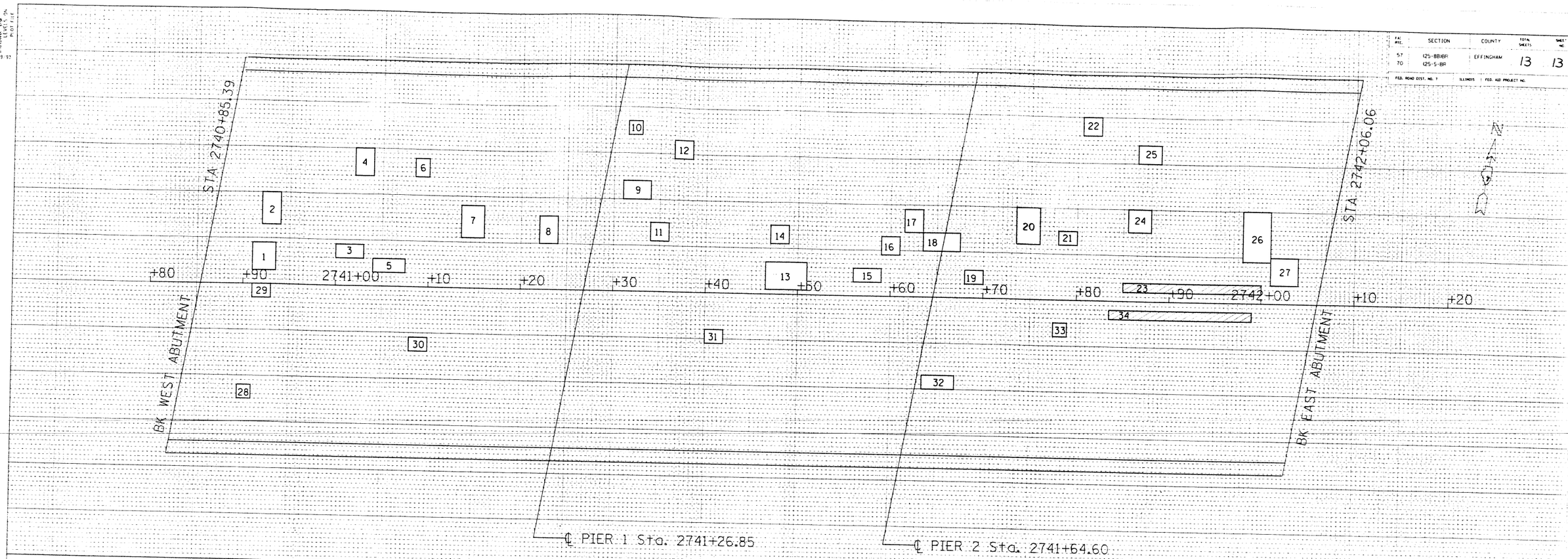
SURVEY COMPLETED

05/13/92 **L.E.W. & J.C.W.**
DATE

F.A.I. 70 E.B.L.
SECTION (25-5HB-5)BR
EFFINGHAM COUNTY
STA. 2741+37.68
MONTROSE INTERCHANGE
SN: 025-0016

DELAMTECT SURVEY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	125-8B/8R	EFFINGHAM	13	13
70	125-5-BR			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT NO.		



PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	
1	2½' x 3 '	7.5			
2	2' x3½'	7.0			
3	3' x1½'	4.5			
4	2' x3 '	6.0			
5	3½' x1½'	5.3			
6	1½' x2 '	3.0			
7	2½' x3½'	8.8			
8	2' x3 '	6.0			
9	3' x2 '	6.0			
10	1½' x1½'	2.3			
11	2' x2 '	4.0			
12	2' x2 '	4.0			
13	4½' x3 '	13.5			
14	2' x2 '	4.0			
15	3' x1½'	4.5			
16	2' x2 '	4.0			
17	2' x2½'	5.0			
18	4' x2 '	8.0			
19	2' x1½'	3.0			

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	
20	2½' x4 '	10.0			
21	2' x1½'	3.0			
22	2' x2 '	4.0			
23	15' x1 '		15.0		
24	2½' x2½'	6.3			
25	2½' x2 '	5.0			
26	3' x5½'	16.5			
27	3' x3 '	9.0			
28	1½' x1½'	2.3			
29	2' x1½'	3.0			
30	2' x1½'	3.0			
31	2' x1½'	3.0			
32	3½' x1½'	5.3			
33	1½' x1½'	2.3			
34	15½' x1 '		15.5		
	TOTAL	179.1	30.5		

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	

PARTIAL DEPTH
179.1/9 = 19.9
USE 20 SQ YD

FULL DEPTH, TYPE 1
30.5/9 = 3.4
USE 4 SQ YD

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	

PATCH NO.	SIZE	DECK SLAB REPAIR (PART DEPTH) SQ FT	DECK SLAB REPAIR (FD-TY1) SQ FT	DECK SLAB REPAIR (FD-TY2) SQ FT	

SURVEY COMPLETED

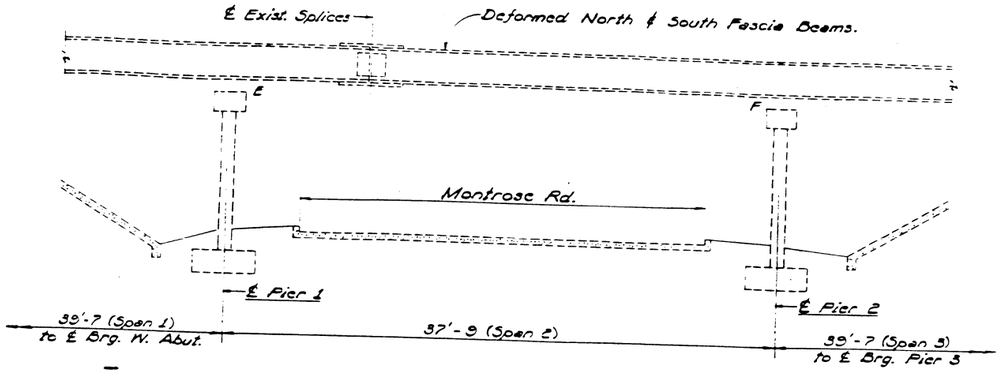
05/13/92 (DATE) **L.E.W. & J.C.W.**

F.A.I. 70 W.B.L.
SECTION (25-5HB-5)BR
EFFINGHAM COUNTY
STA. 2741+37.68
MONTROSE INTERCHANGE
SN: 025-0017

DELAMTECT SURVE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

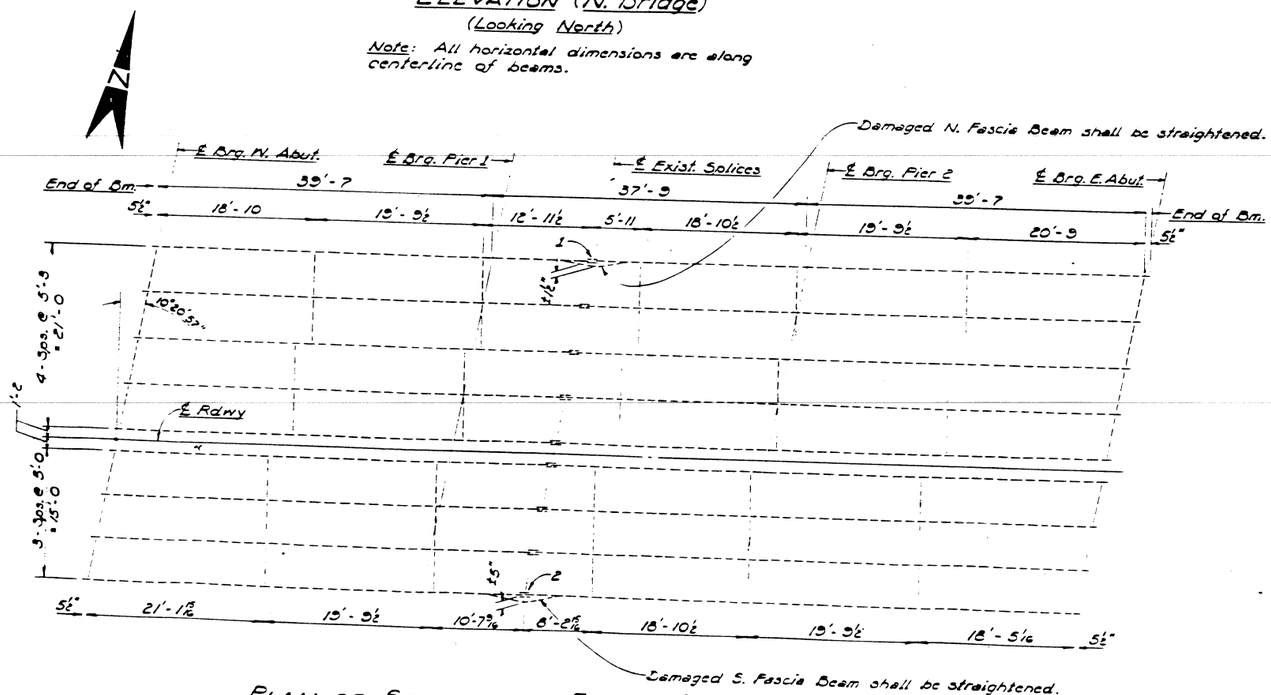
SHEET NO 1
2 SHEETS



ELEVATION (N. Bridge)

(Looking North)

Note: All horizontal dimensions are along centerline of beams.



PLAN OF STRUCTURAL FRAME (N. Bridge)

1 - Existing bottom flange splice plate shall be replaced. For details see Sheet 2.

2 - Existing web and bottom flange splice plates shall be replaced with new plates after damaged beams are straightened. For details see Sheet 2.

DESIGNED	L. Enger
CHECKED	[illegible]
DRAWN	R. B. Carbonell
CHECKED	V.P.

Sept 20 1988
EXAMINED O. J. Rohrer
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-183.

All new high strength bolts shall be AASHTO Classification M-164.

Holes may be subpunched or subdrilled 1/16" ϕ and reamed to 13/16" ϕ for ¾" ϕ H.S. bolts and to 1⅛" ϕ for ⅞" ϕ H.S. bolts in the field, after new steel is properly fitted into position.

All metal to metal contact surfaces shall be free of paint or lacquer.

Oil and all loose paint shall be removed from the damaged beams in the areas of impact.

The three coat lead and chromate free alkyd paint system shall be used for field painting structural steel. The color of the final finish coat shall be aluminum for interior structural steel and interstate green for exterior structural steel.

All areas of paint damage in the repair areas shall be cleaned by Method II prior to painting as specified above.

The damaged beams shall be mechanically straightened. No heat will be used to facilitate the straightening process. See Special Provisions.

The Contractor shall have his method of straightening approved by the Engineer prior to ordering materials and installation.

All materials used in the straightening of the beams shall be included in the pay item, "Beam Straightening."

Grind existing nicks, gouges and shallow cracks in the damaged beams as shown by the detail on Sheet 2. Cost is incidental to "Beam Straightening." Ground surfaces shall be inspected for cracks by using Liquid Dye Penetrant. Any crack that cannot be removed by grinding approximately ¼" deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition.

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.

Traffic Control shall be determined by the District.

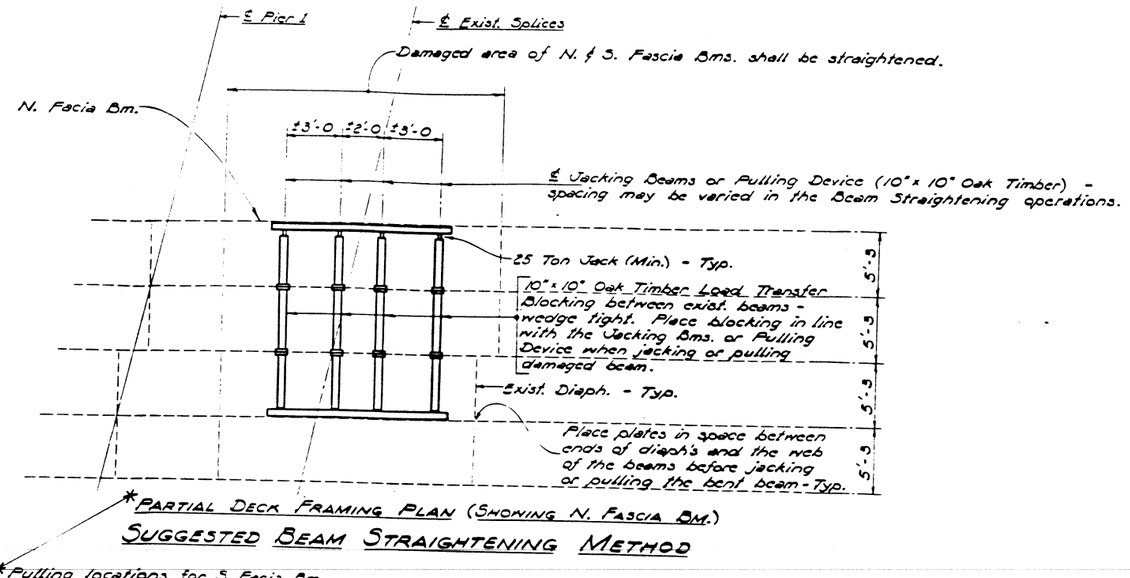
TOTAL BILL OF MATERIAL

Item	Unit	Total
Beam Straightening	Lump Sum	L.S.
Traffic Control	Lump Sum	L.S.

BEAM STRAIGHTENING
I-70 OVER MONTROSE RD.
F.A.I. RT. 70 SEC. 25-5HB-5
EFFINGHAM COUNTY
STA. 2741 + 37.68

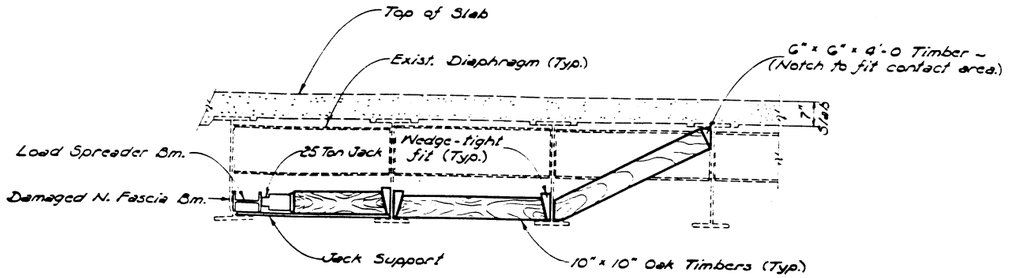
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 2
2 SHEETS

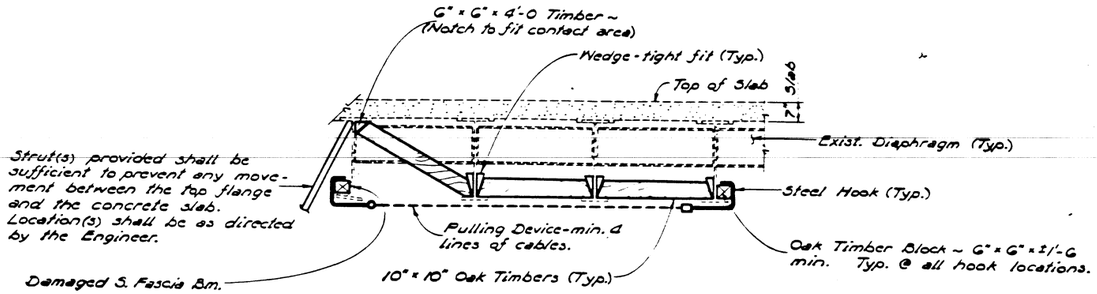


PARTIAL DECK FRAMING PLAN (SHOWING N. FASCIA BM.)

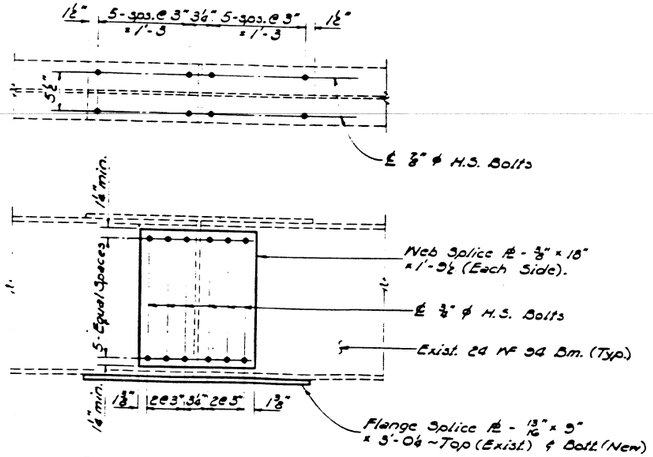
SUGGESTED BEAM STRAIGHTENING METHOD



ELEVATION
(For North Fascia Beam)



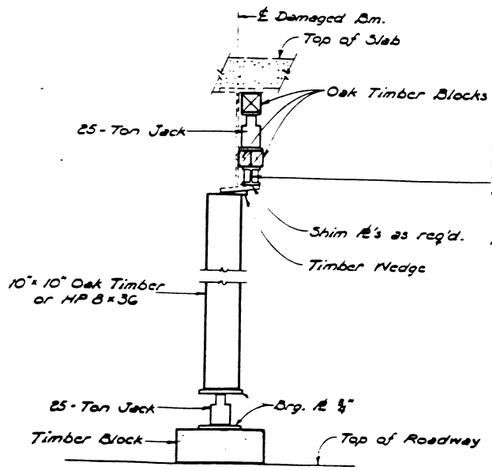
ELEVATION
(For South Fascia Beam)



SPLICE DETAIL

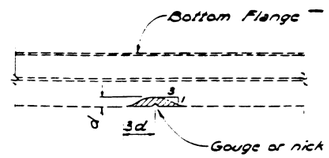
Req'd: 2 Pl's - 13/16" x 9" x 3'-0¼"
2 Pl's - ⅜" x 18" x 2'-1½"

Cost is incidental to "Beam Straightening."



ELEVATION VIEW
(For Vertical Jacking)

Place an HP Bm. or a 6" I-Bm. min. ±'-6 in length on Bottom Flange. Beam shall have ⅜" stiffeners (3 ea. side of Bm.) welded in place. Bent Bott. Flange shall be straightened before starting the Horizontal Jacking operations, or as directed by the Engineer in the field.



GRINDING DETAIL PLAN

DESIGNED A. Engez
CHECKED Kenneth P. Stutz
DRAWN r. b. carbonell
CHECKED K.P.S.

Sept 20 1988
EXAMINED O.J. Rohrer
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

F.A.I. RT. 70 SEC. 25-5HB-5
EFFINGHAM COUNTY
STA. 2741 + 37.68

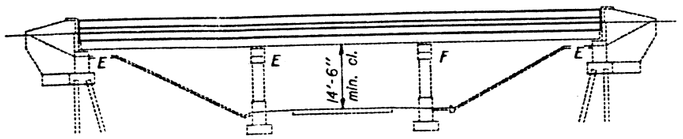
(025-0012 N.B.)

Bench Mark: None

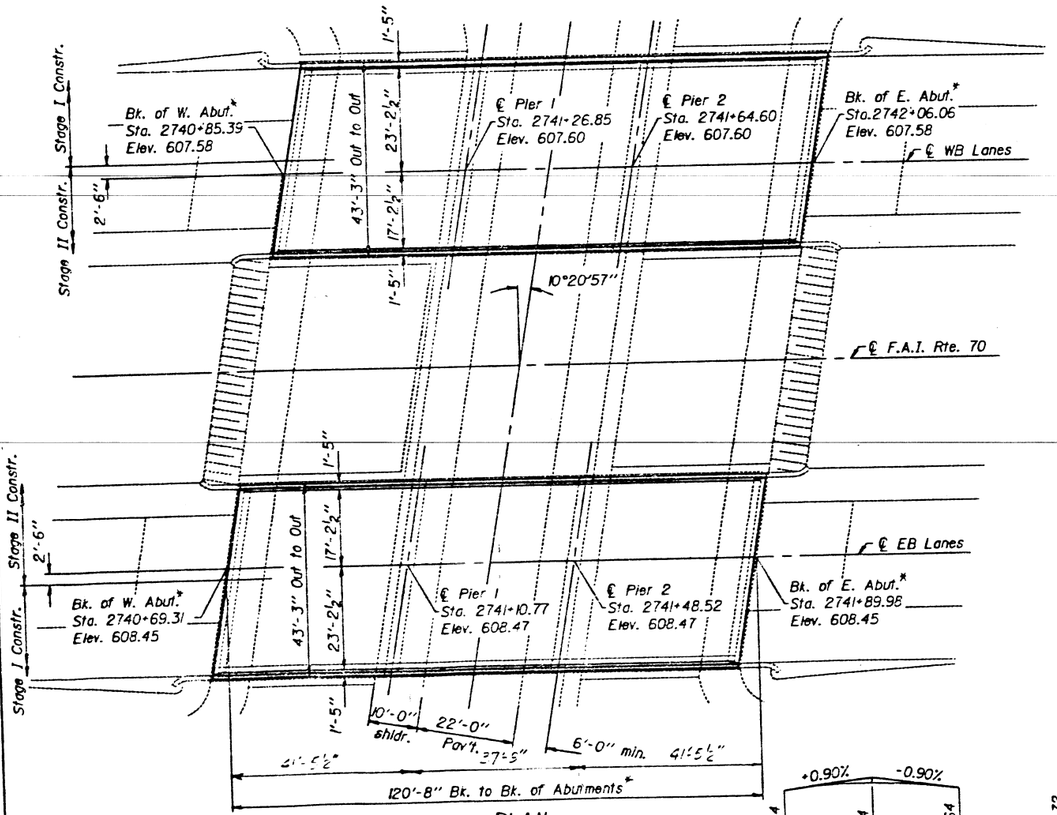
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 1
F.A.I. F.A. 70	4	EFFINGHAM	44	29	12 SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

Existing Structure: Str. No. 025-0016(EB) and Str. No. 025-0017(WB) were constructed in 1960 as part of F.A.I. Rte. 70. In 1976 the structures had waterproofing membrane system installed, bituminous overlay placed, the longitudinal joints were eliminated, abutment expansion joints were reconstructed and some partial depth patching of the decks was accomplished. The structures consist of 3-span cast-in-place concrete decks on steel beams supported by column bent piers and pile bent abutments. Face to face of safety walks is 39'-0" and Bk. to Bk. of abutments is 120'-8". Traffic to be maintained utilizing stage construction.
No salvage.

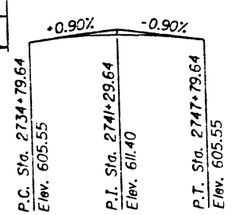


ELEVATION

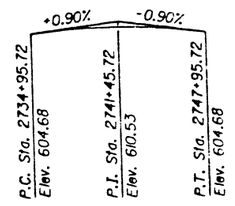


PLAN

*Existing Abuts.



PROFILE GRADE (EB)
(Top of existing concrete deck without Class I)



PROFILE GRADE (WB)
(Top of existing concrete deck without Class I)

GENERAL NOTES

Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42, or M-52 Grade 60.

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.

Expansion joint plates and attaching bars shall be shop painted with the zinc-silicate primer.

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

The Contractor shall take care not to damage existing wide flange beams when making transverse or longitudinal saw cuts.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Bituminus Conc. Surface Course, Class I	Ton	31.6		31.6
Concrete Removal	Cu. Yd.	101.1		101.1
Floor Drains	Each	16		16
Protective Coat	Sq. Yd.	202		202
Class X Conc. Superstructure	Cu. Yd.	121.9		121.9
Structural Steel	Lbs.	7170		7170
Reinforcement Bars	Lbs.	20730	730	21460
Reinforcement Bars (Epoxy Coated)	Lbs.	9260		9260
Waterproofing Membrane System	Sq. Yd.	374		374
Preformed Joint Seal (2½")	Lin. Ft.	176		176
Repair Conc. Structures	Sq. Ft.	71		71
Deck Slab Repair, Full Depth (Type I)	Sq. Yd.	10		10
Deck Slab Repair, Partial Depth	Sq. Yd.	34		34

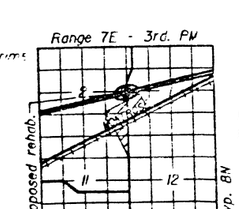
DESIGN SPECIFICATIONS

1983 AASHTO and 1984, 1985, & 1986 Interims

LOADING HS20-44 & ALT.
(new construction)

DESIGN STRESSES
(new portion)

FIELD UNITS
f'_c = 3,500 psi
f_c = 1,400 psi
f_y = 60,000 psi (reinf.)
f_s = 20,000 psi (reinf.)



LOCATION SKETCH

GENERAL PLAN
F.A.I. RTE. 70 OVER F.A.P. RTE. 828
F.A.I. RTE. 70 SEC. (25-5HB-5)II&2
EFFINGHAM COUNTY
STA. 2741+37.68
STRUCTURE NO. 025-0016(EB)
STRUCTURE NO. 025-0017(WB)

DESIGNED	[signature]
CHECKED	Victor Veliz
DRAWN	Rita Williams
CHECKED	GHP

July 21 19 85

EXAMINED [signature]
ENGINEER OF BRIDGES & STRUCTURES

PASSED
ENGINEER OF BRIDGES AND STRUCTURES

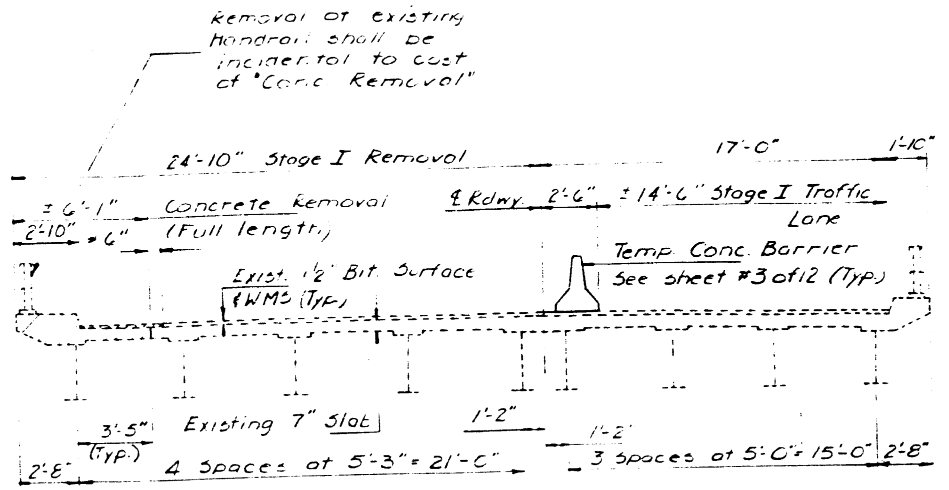
APPROVED
DIRECTOR OF HIGHWAYS

025-0016 & 0017

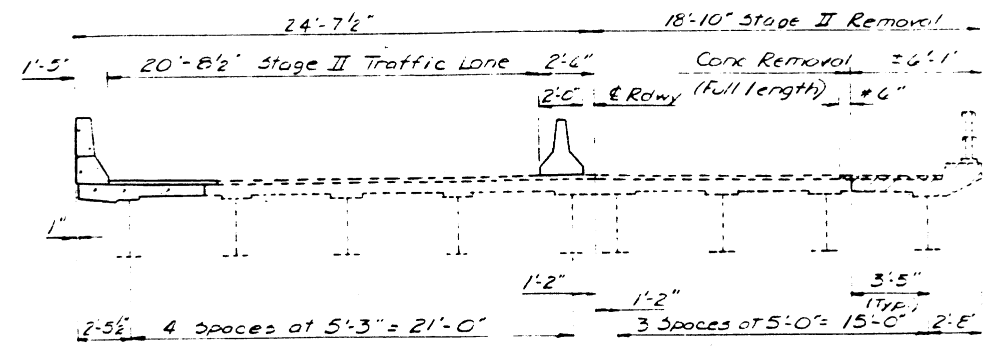
Reel 74-102

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO 2
12 SHEETS

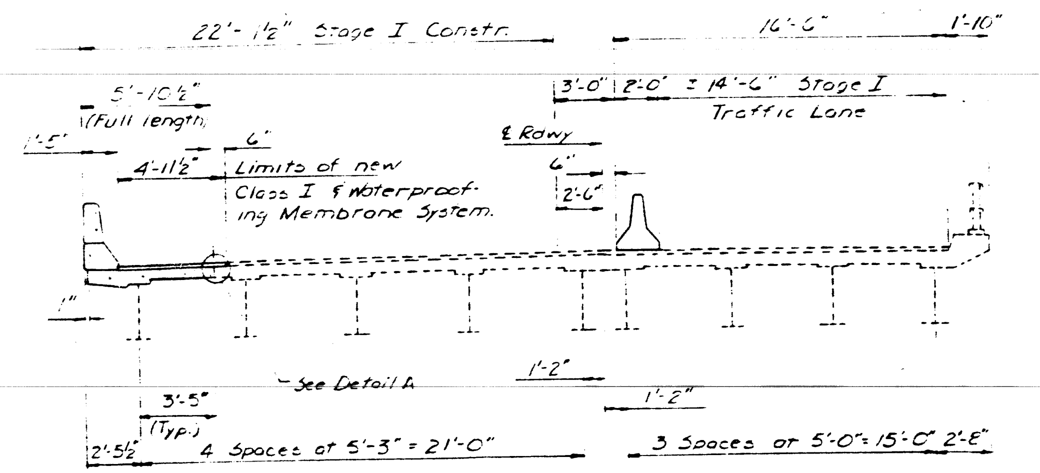


STAGE I REMOVAL

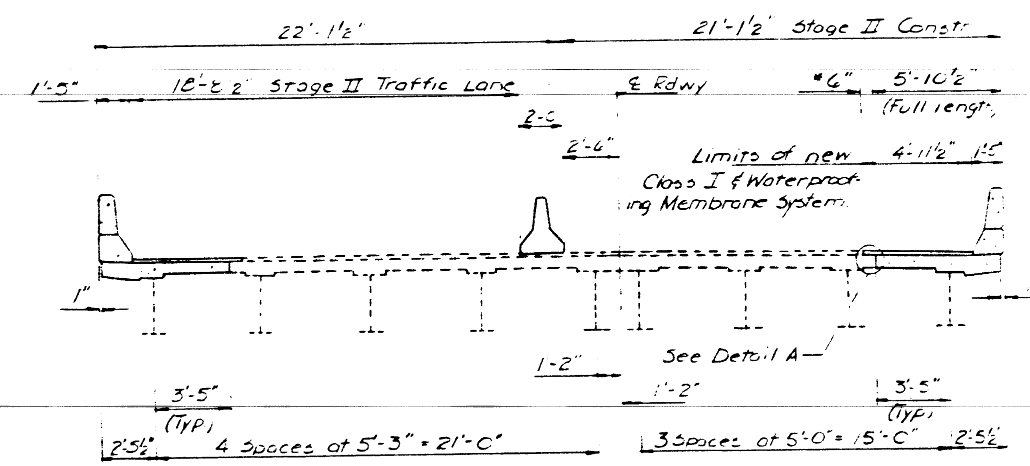


STAGE II REMOVAL

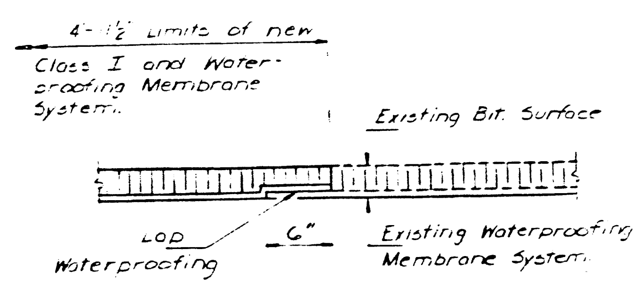
* Existing Waterproofing Membrane System to remain. The existing 6" bituminous strip is to be removed after the new portion of slab and parapet are constructed.



STAGE I CONSTRUCTION



STAGE II CONSTRUCTION



DETAIL "A"

Notes:
Hatched Areas indicates "Concrete Removal."
Reinforcement extending into removal area shall be cleaned and incorporated into the new construction, cost incidental.
For quantity of Temporary Concrete Barrier, see Roadway Plans.
All views are looking East for West Bound Structure, and looking West for East Bound Structure.

STAGE CONSTRUCTION
F.A.I. RTE. 70 SEC (25-5HB-5) I & 2
EFFINGHAM COUNTY
STATION 2741+37.68

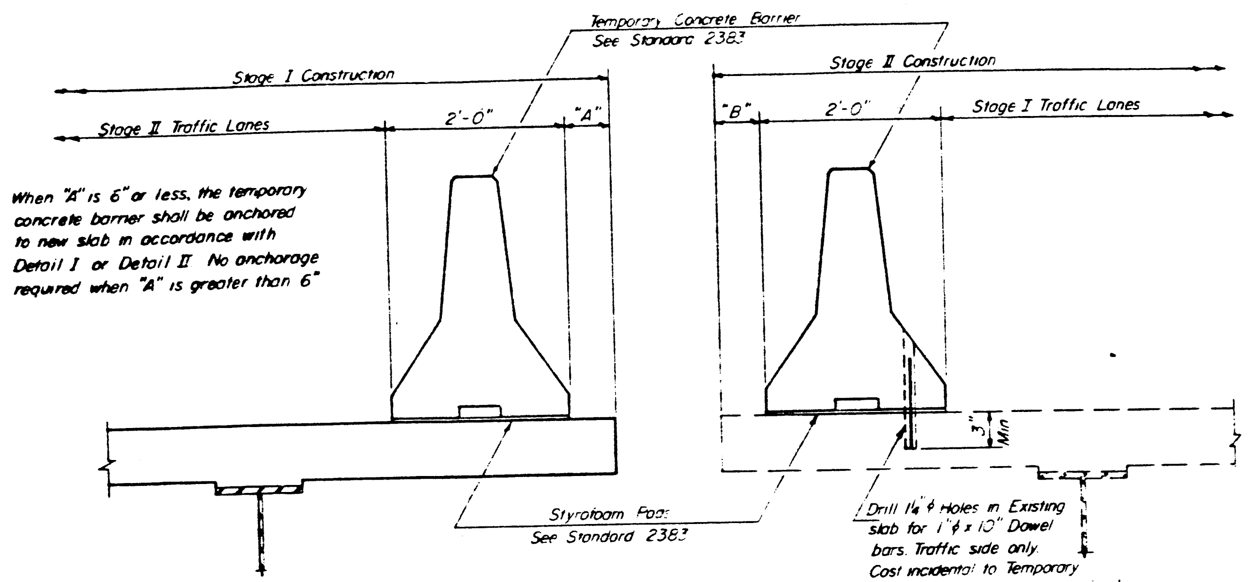
DESIGNED [signature]
CHECKED Victor Veltz
DRAWN Rita Williams
CHECKED GRP V.V.
July 21 1987
EXAMINED [signature]
PASSED James J. [signature]
APPROVED

SHEET NO. 3
12 SHEETS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	*	EFFINGHAM	44	31
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

* (25-5HB-5) I-1 & 2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



NEW SLAB

EXISTING SLAB

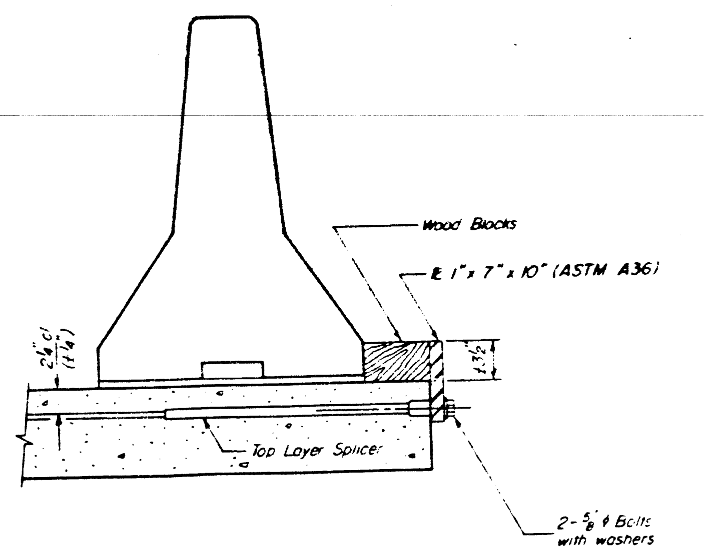
SECTIONS THRU SLAB

NOTES

Detail I - With Bar Splicer or Couplers
Connect one (1) 1" x 7" x 10" steel ℞ to the top layer of couplers with 2 - ⅝" ϕ bolts screwed to coupler at approximate ℄ of each 10'-0" barrier panel

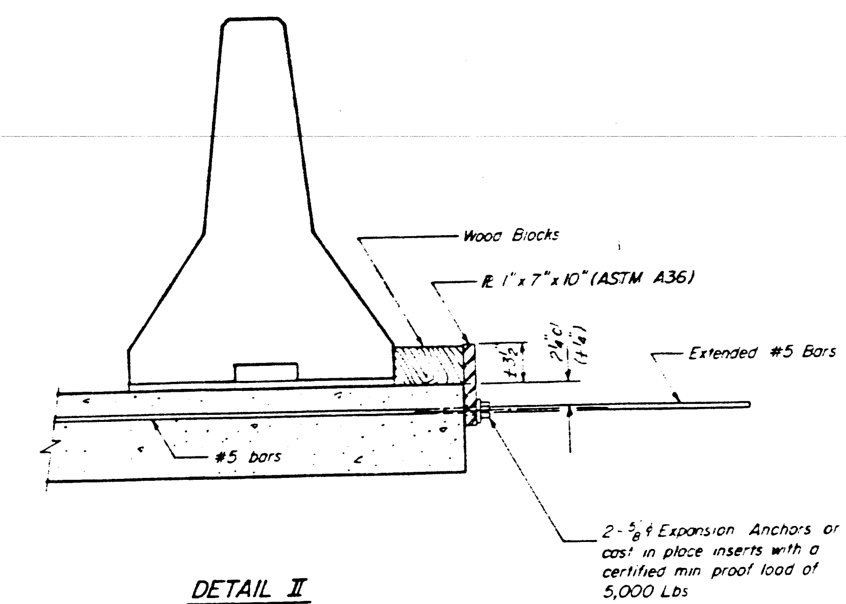
Detail II - With Extended Reinforcement Bars
Connect one (1) 1" x 7" x 10" steel ℞ to the concrete slab with 2 - ⅝" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each 10'-0" barrier panel

Cost of anchorage is incidental to Temporary Concrete Barrier.



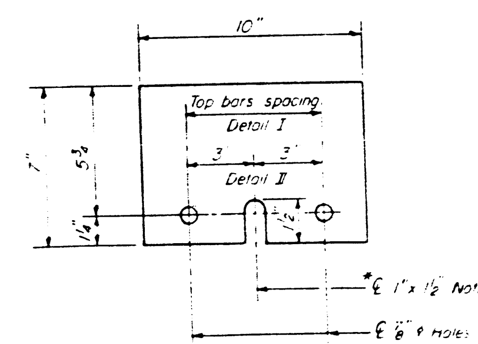
DETAIL I

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



DETAIL II

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 I

DESIGNED [signature]	EXAMINED [signature]	ENGINEER OF BRIDGE DESIGN	July 21 1987
CHECKED VICTOR VELIZ	PASSED [signature]	ENGINEER OF BRIDGES AND STRUCTURES	
DRAWN RITA WILLIAMS	APPROVED	DIRECTOR OF HIGHWAYS	
CHECKED GRA V.V			

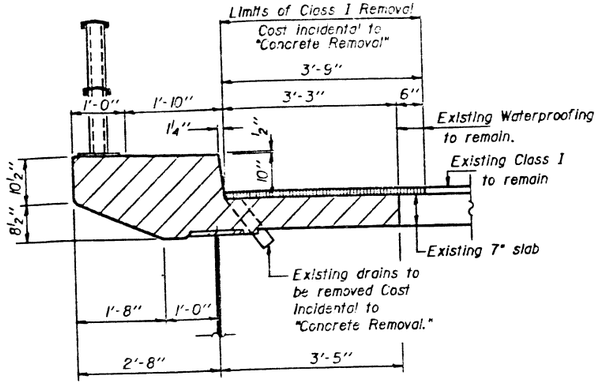
R-27 6-15-83

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
F.A.I. RTE. 70 SEC. (25-5HB-5) I & 2
EFFINGHAM COUNTY
STATION 2741 + 37.68

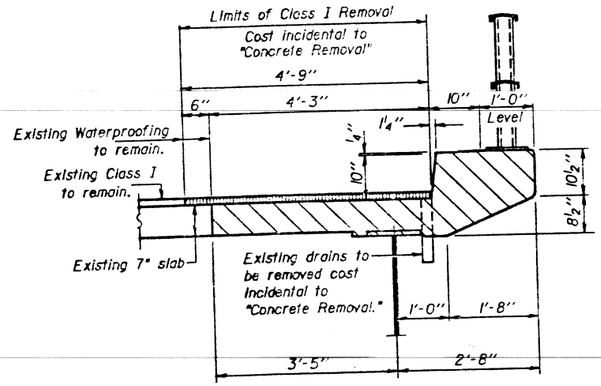
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 70	(25-5HB-5) 1 & 2	EFFINGHAM	12	32
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

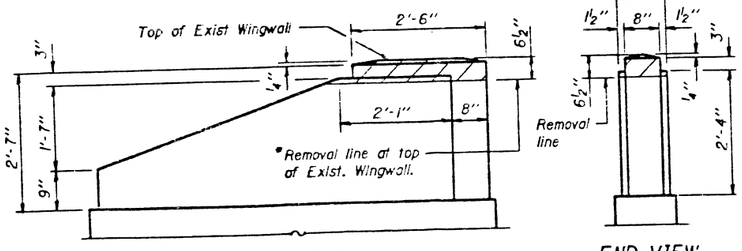
SHEET NO. 4
12 SHEETS



SECTION A-A



SECTION B-B



ELEVATION

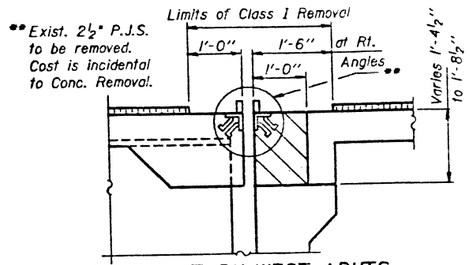
END VIEW

TOP OF WINGWALL REMOVAL DETAIL

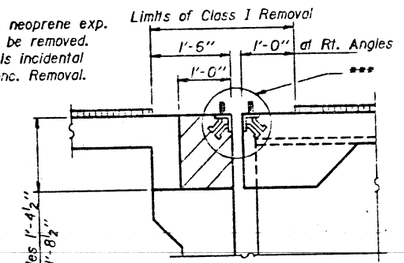
* Remove concrete, cut existing reinforcement flush and cover with 2" cement mortar to match elevation of proposed parapet.

DESIGNED	
CHECKED	VICTOR VELIZ
DRAWN	Rita Williams
CHECKED	V.V.

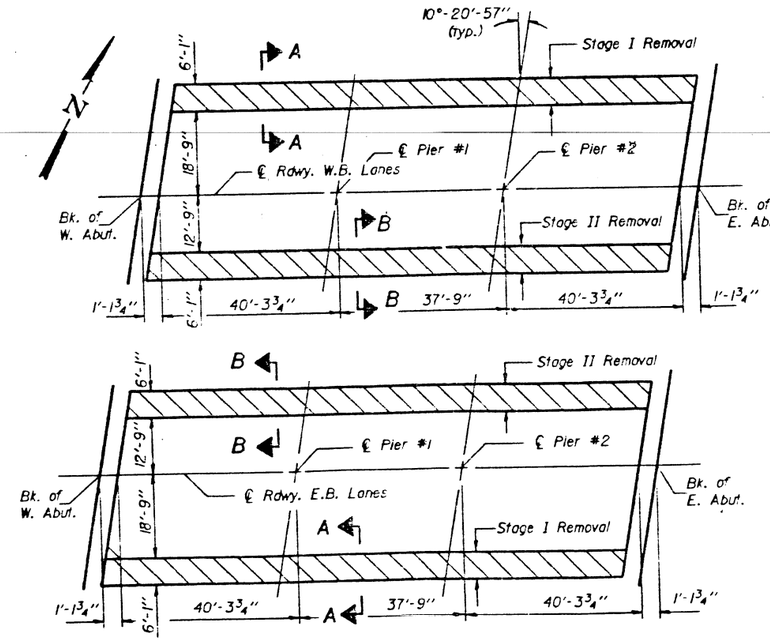
July 21 19 67
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS



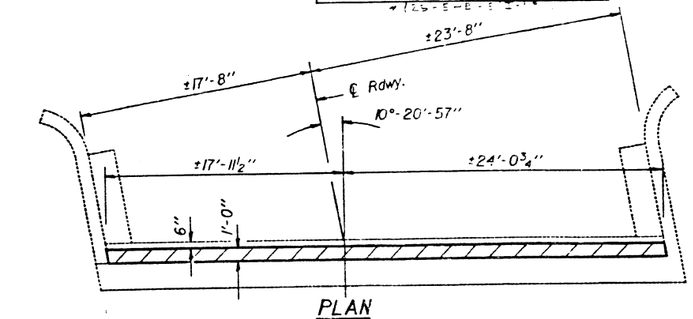
SECTION THRU WEST ABUTS.
(W. B. & E. B. Structures)



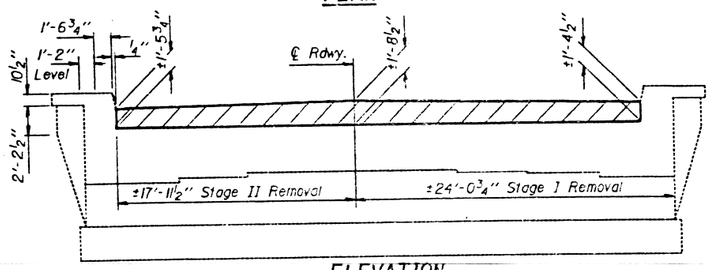
SECTION THRU EAST ABUTS.
(W. B. & E. B. Structures)



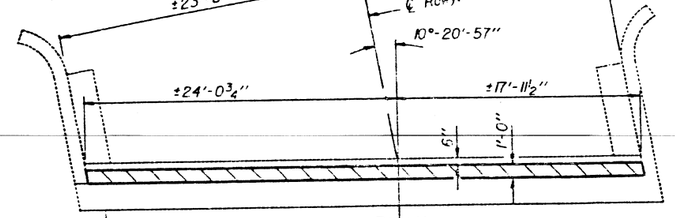
PLAN
(Superstructure Concrete Removal)



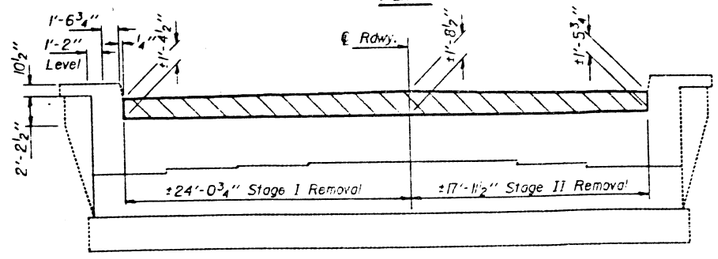
PLAN



ELEVATION
(W. Abut. - W. B. L. and E. Abut - E. B. L.)



PLAN



ELEVATION
(W. Abut. - E. B. L. and E. Abut - W. B. L.)

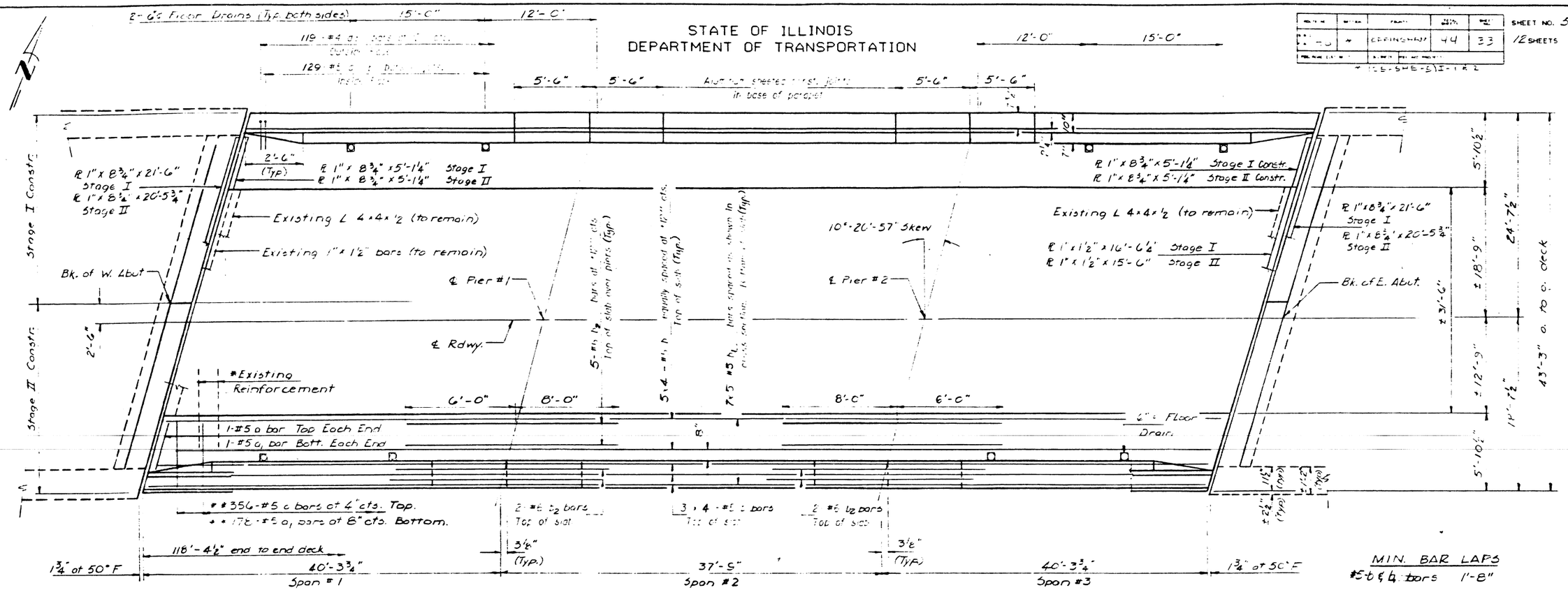
Note:
Hatched area indicates "Concrete Removal."

CONCRETE REMOVAL
F.A.I. RTE.70 SEC. (25-5HB-5) 1 & 2
EFFINGHAM COUNTY
STATION 2741+37.68

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

					SHEET NO. 5
		EFFINGHAM	44	33	12 SHEETS

* (25-5HB-5)I-2 & 2

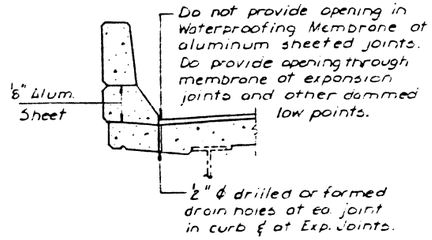


PLAN

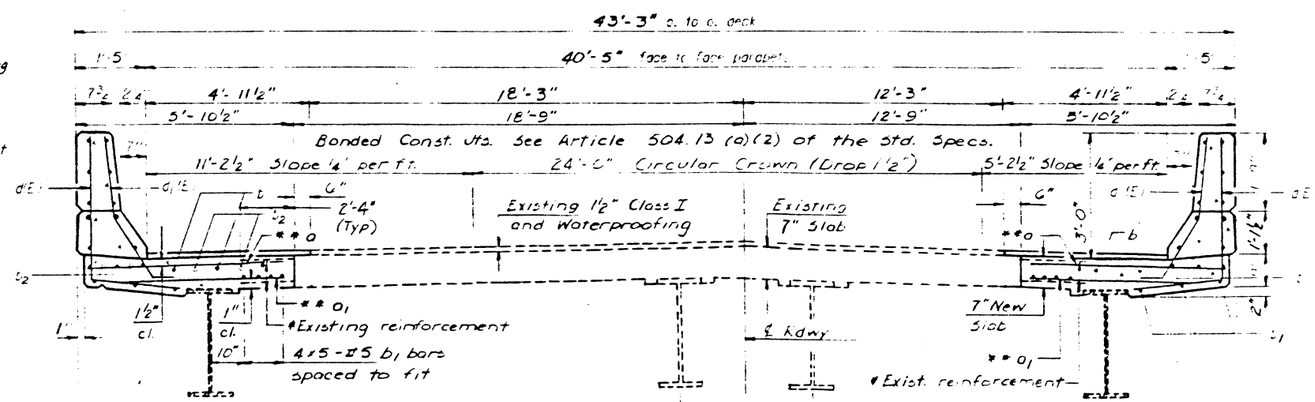
MIN. BAR LAPS
#5 & 6 bars 1'-8"

* Existing reinforcement extending into removal area shall be cut off at 2'-4" from Long Bonded Constr. Joint. Existing Reinforcement shall be cleaned, straightened, and incorporated into the new constr. Cost incidental. The Contractor, at his option, may saw cut existing concrete 2'-4" from Longitudinal Joint

** Lap alternate bars with existing rebars.



DRAIN HOLES



CROSS SECTION
(Looking East)

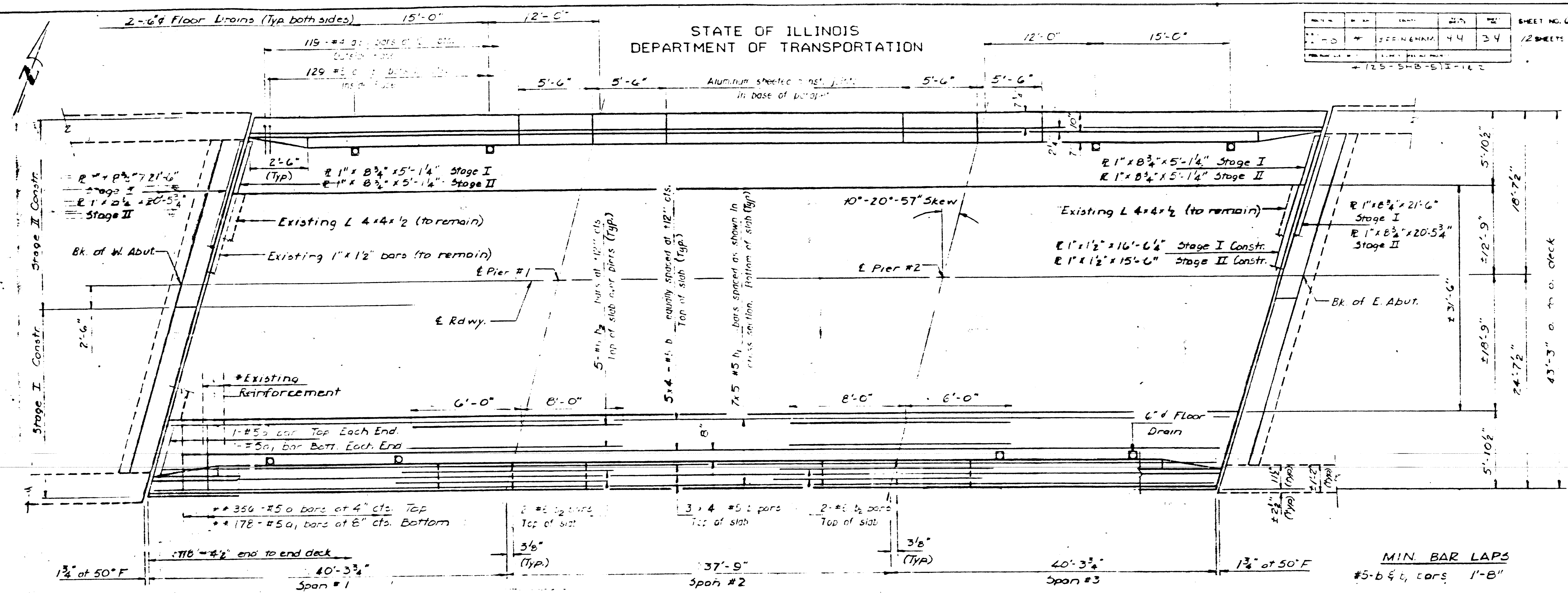
Notes: See sheet #7 of 12 for superstructure details and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3 #5 etc. indicate 20 lines of bars with 3 lengths per line.

DESIGNED	A.A. Ahmad	July 21 1987
CHECKED	VICTOR VELIZ	EXAMINED Brad D. Kaspar
DRAWN	RITA WILLIAMS	PASSED James T. Taylor
CHECKED	VV.	APPROVED

S-1-L(K15°) 12-1-83

SUPERSTRUCTURE (W.B. LANES)
F.A.I. RTE 70 SEC. (25-5HB-5)I-2
EFFINGHAM COUNTY
STATION 2741 + 37.68

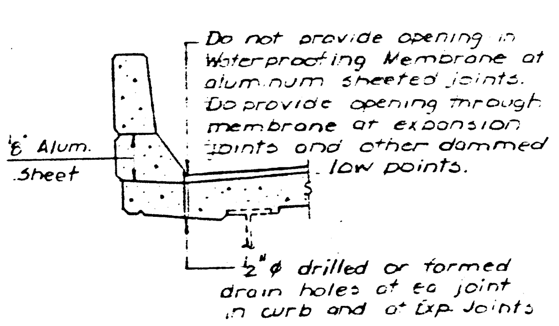
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



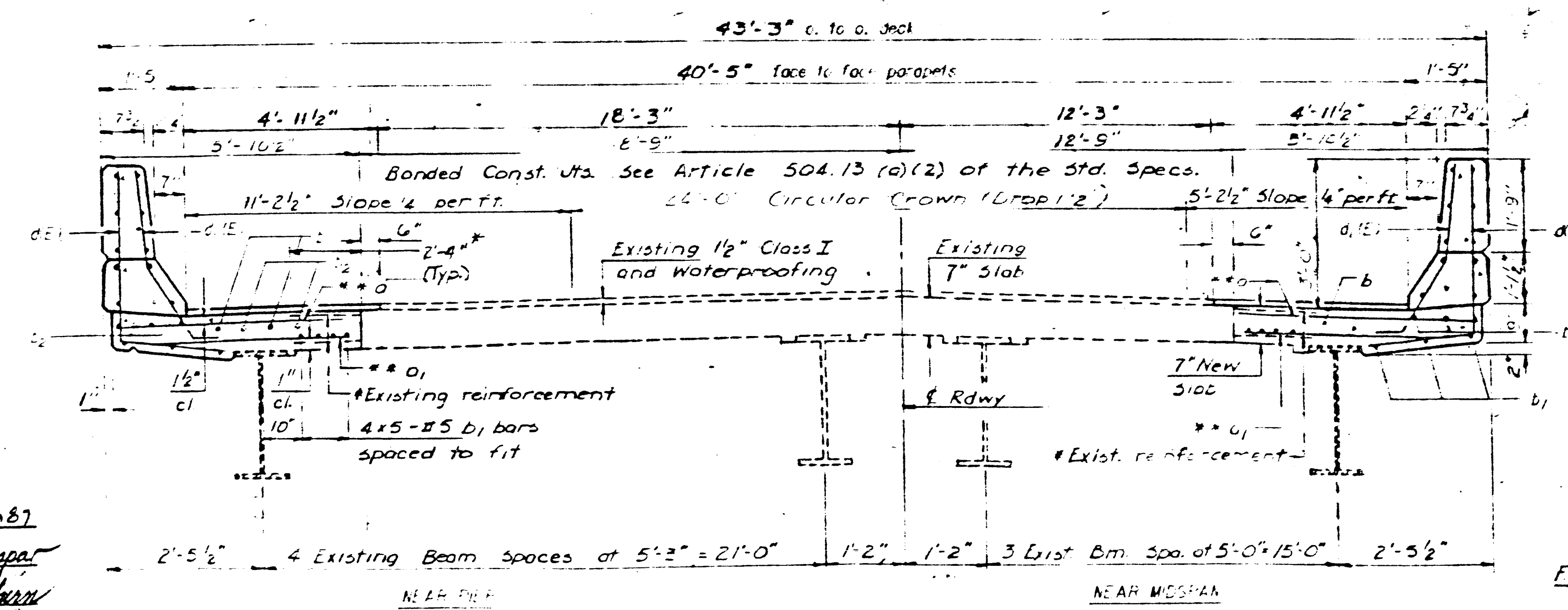
PLAN

* Existing reinforcement extending into removal area shall be cut ... of 2'-4" from Long. Bonded Constr. Joint. Existing Reinforcement shall be cleaned, straightened, and incorporated into the new constr. Cost incidental. The Contractor, at his option, may saw cut existing concrete 2'-4" from Longitudinal Joint.

** Lap alternate bars with existing rebars.



DRAIN HOLES



CROSS SECTION
Looking West

Notes: See sheet #7 of 12 for superstructure details and Bill of Material.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3 - #5 etc. indicates 20 lines of bars with 3 lengths per line.

DESIGNED	[signature]
CHECKED	VICTOR VELIZ
DRAWN	RITA WILLIAMS
CHECKED	GRA V.V.

July 21 1987
EXAMINED [signature]
PASSED [signature]
APPROVED

S-1-L(15°) 12-1-83

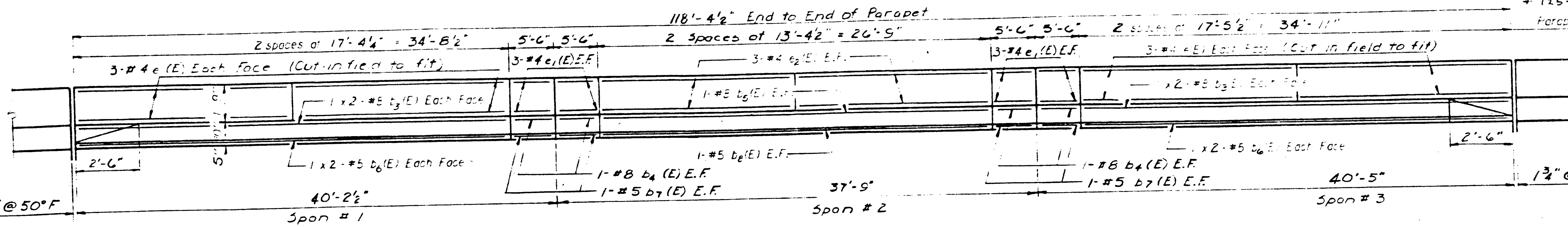
SUPERSTRUCTURE (E.B. LANES)
F.A.I. RTE. 70 SEC. (25-5HB-5)I1
EFFINGHAM COUNTY
STATION 2741 + 37.68

SHEET NO. 6 / 12 SHEETS — EFFINGHAM 44 34 — (25-5HB-5)I-1&2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

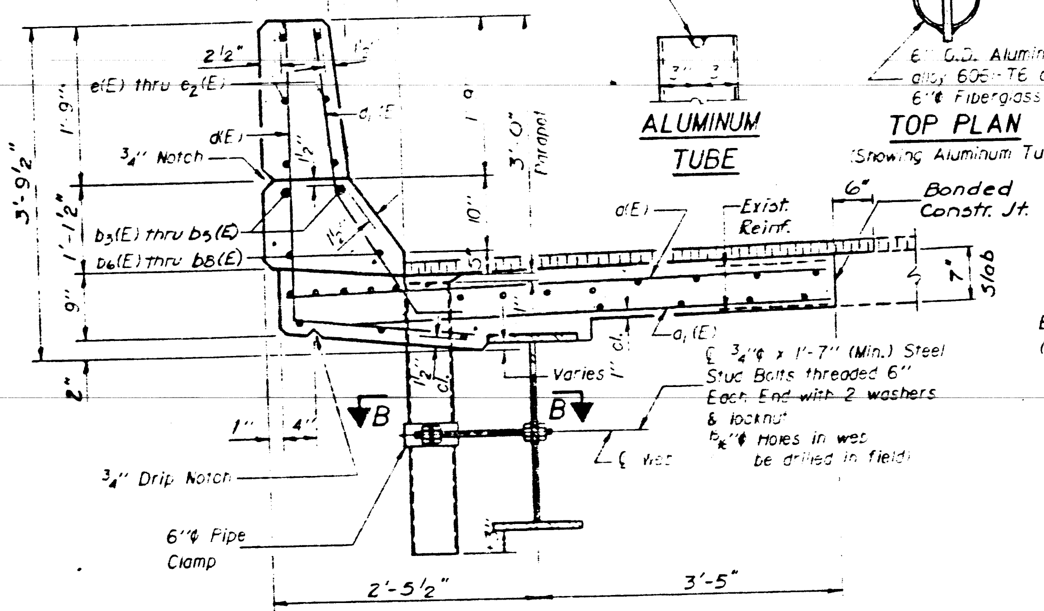
SHEET NO. 7 — 12 SHEETS

F.A.I. 70 — EFFINGHAM — 125-5HB-5 I & 2



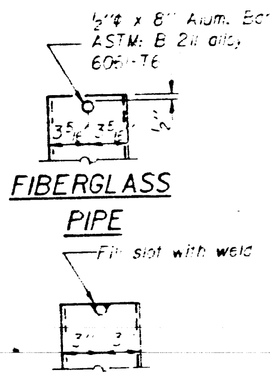
INSIDE ELEVATION OF PARAPET

MIN. BAR LAPS
#5 Bars = 1'-8"
#8 Bars = 3'-8"



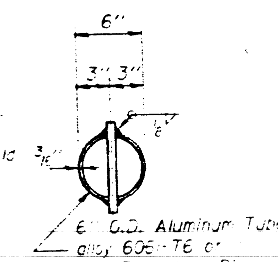
* Dimension as required by Pipe Clamp

SECTION THRU PARAPET

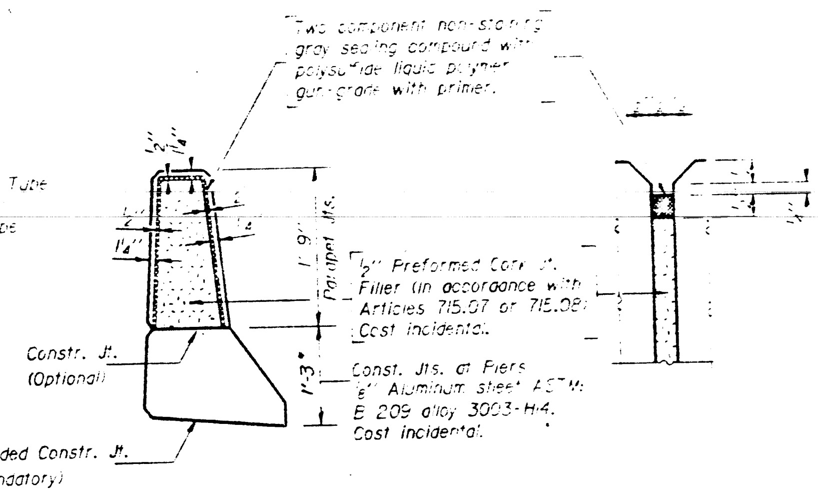


FIBERGLASS PIPE

ALUMINUM TUBE



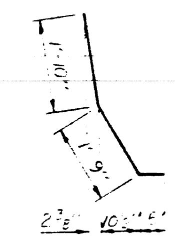
TOP PLAN
(Showing Aluminum Tube)



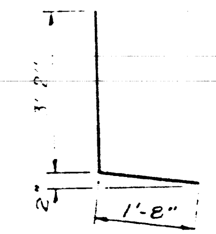
PARAPET JOINT DETAILS

Notes:
The exterior surfaces of the fiberglass pipe shall be painted with one coat of Aluminum paint.

Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.



BAR d_1(E)



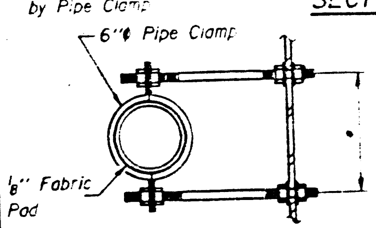
BAR d(E)

TWO STRUCTURES
SUPERSTRUCTURE
BILL OF MATERIAL

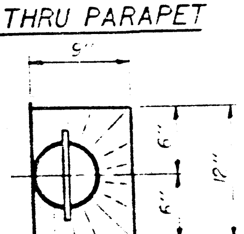
Bar	No.	Size	Length	Shape
[illegible]	1432	#5	5'-6"	——
[illegible]	720	#5	2'-9"	——
b	128	#5	30'-10"	——
b_1	140	#5	25'-0"	——
b_2	56	#6	14'-0"	——
b_3(E)	32	#8	19'-1"	——
b_4(E)	32	#5	5'-3"	——
b_5(E)	8	#8	26'-6"	——
b_6(E)	32	#5	18'-4"	——
b_7(E)	32	#5	5'-3"	——
b_8(E)	8	#5	26'-6"	——
d(E)	476	#4	4'-10"	L
d_1(E)	516	#5	4'-1"	L
e(E)	96	#4	17'-4"	——
e_1(E)	96	#4	5'-3"	——
e_2(E)	48	#4	13'-1"	——
Reinforcement Bars		Lbs.	20,730	
Reinforcement Bars (Epoxy Coated)		Lbs.	9,260	
Class X Concrete Superstructure		Cu. Yds.	121.9	
Concrete Removal		Cu. Yds.	101.1	

Reinforcement bars designated (E) shall be epoxy coated.

119.1



SECTION B-B



TOP PLAN

DESIGNED	[signature]
CHECKED	VICTOR VELTZ
DRAWN	RITA WILLIAMS
CHECKED	[initials] V.V.

July 21 1987
EXAMINED [signature]
PASSED [signature]
APPROVED

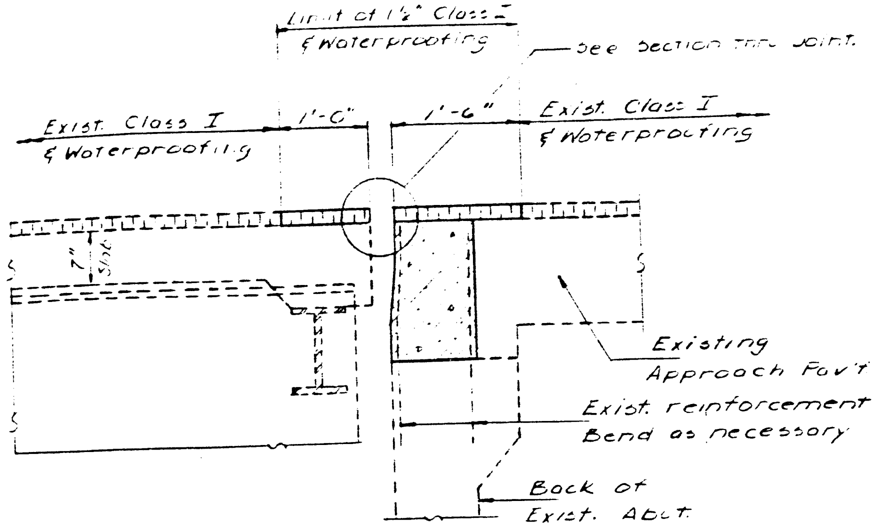
TWO SUPERSTRUCTURES DETAILS
F.A.I. RTE. 70 SEC. (25-5HB-5) I & 2
EFFINGHAM COUNTY
STATION 2741 + 37.68

S-2-D 12-1-83

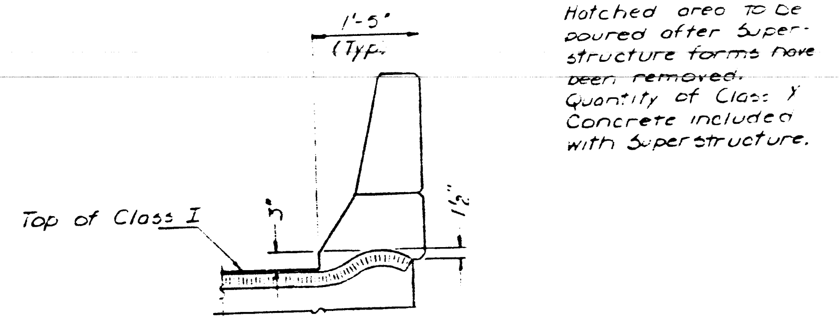
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

	70	4	EFFINGHAM	44	36

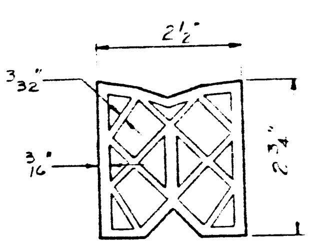
SHEET NO. 6
12 SHEETS



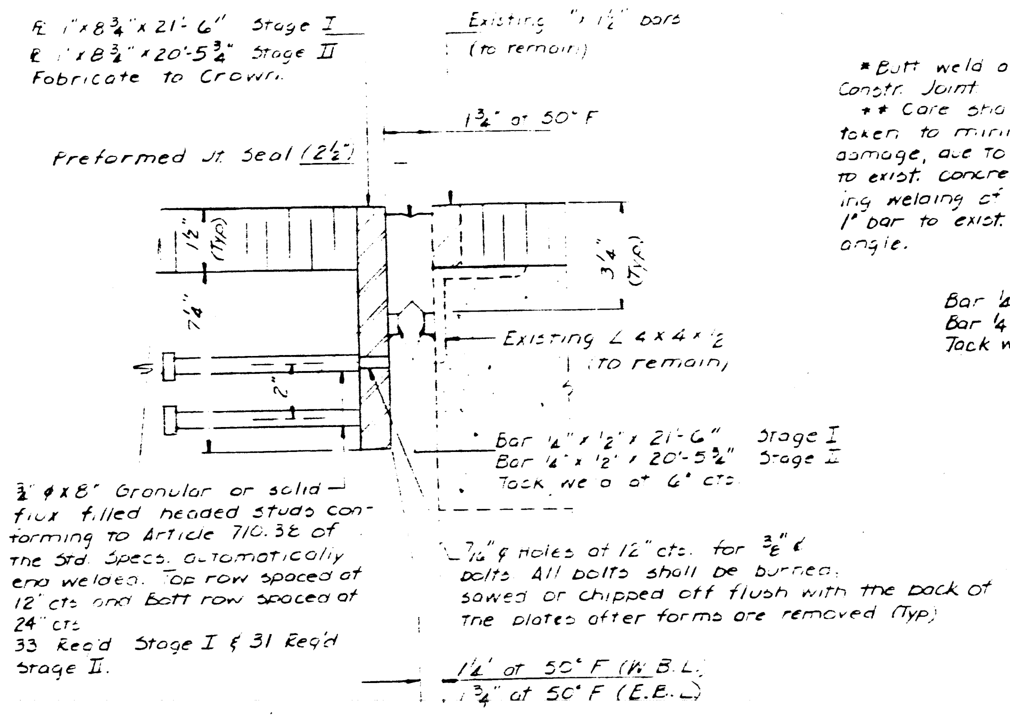
SECTION THRU ABUT.
at ℄ Roadway
W. Abuts. (Looking South)
E. Abuts. (Looking North)



TYPICAL END OF SEAL TREATMENT

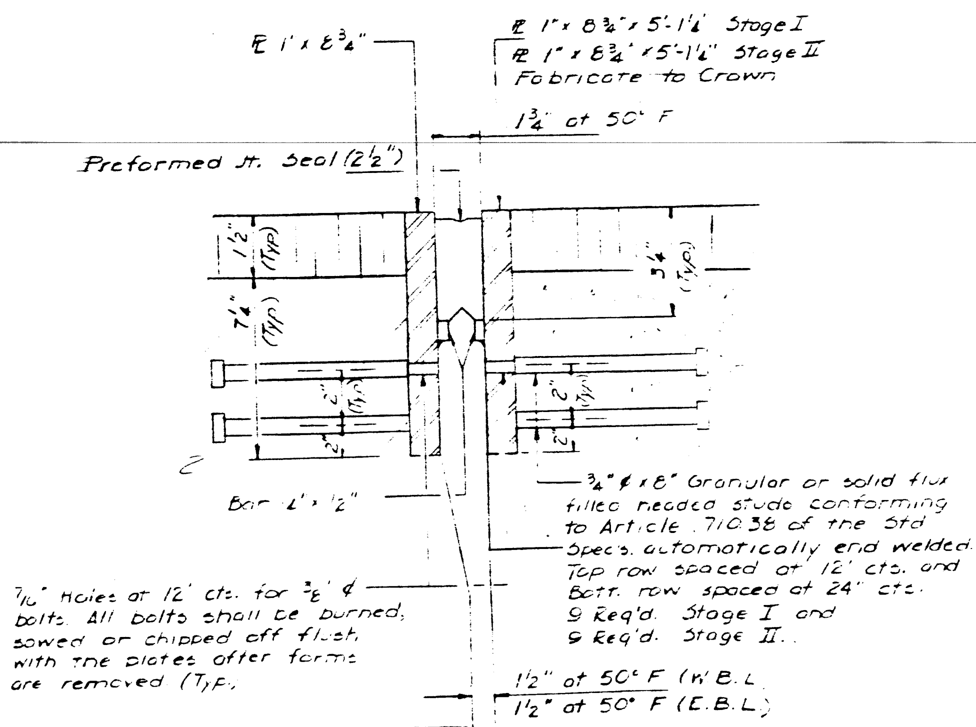


PREFORMED JOINT SEAL (2½")



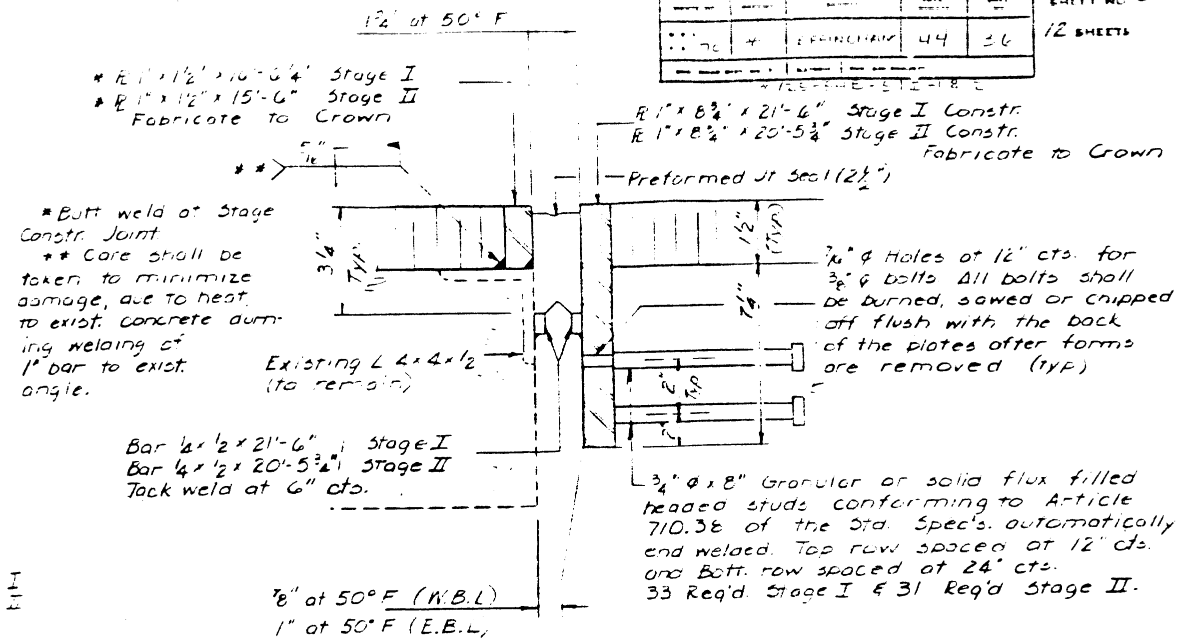
℘ 1"x 8¾" x 21'-6" Stage I
℘ 1"x 8¾" x 20'-5¾" Stage II
Fabricate to Crown
Existing 1" x 1½" bars (to remain)
1¾" at 50° F
Preformed Jt. Seal (2½")
1½" (Typ.)
7¼"
2"
3¼" (Typ.)
Existing ∠ 4 x 4 x ½ (to remain)
Bar ¼" x ½" x 21'-6" Stage I
Bar ¼" x ½" x 20'-5¾" Stage II
Tack weld at 6" cts.
¾" ∅ x 8" Granular or solid flux filled headed studs conforming to Article 710.38 of the Std. Specs. automatically end welded. Top row spaced at 12" cts. and Bott. row spaced at 24" cts. 33 Req'd Stage I & 31 Req'd Stage II.
7/16" ∅ Holes at 12" cts. for 3/8" ∅ bolts. All bolts shall be burned, sawed or chipped off flush with the back of the plates after forms are removed (Typ.)
1½" at 50° F (W.B.L.)
1¾" at 50° F (E.B.L.)

SECTION THRU JOINT AT ℄ ROADWAY
(West Abutments; W.B. Lane & E.B. Lane
(Looking North)



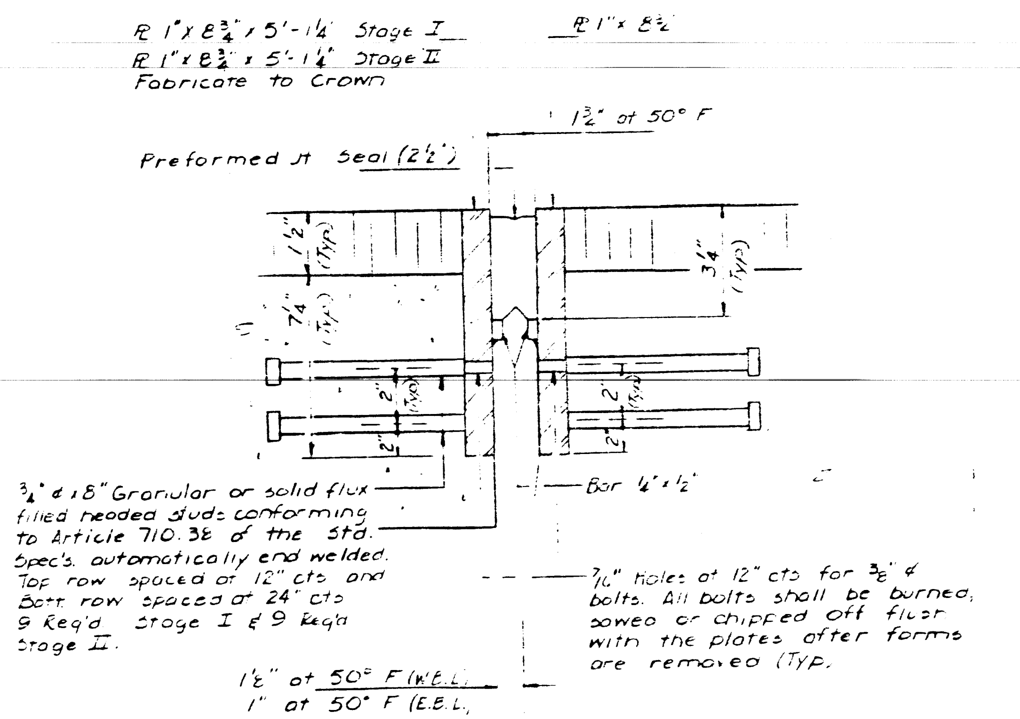
℘ 1" x 8¾"
℘ 1" x 8¾" x 5'-1¼" Stage I
℘ 1" x 8¾" x 5'-1¼" Stage II
Fabricate to Crown
1¾" at 50° F
Preformed Jt. Seal (2½")
1½" (Typ.)
7¼" (Typ.)
3¼" (Typ.)
2"
Bar ¼" x ½"
¾" ∅ x 8" Granular or solid flux filled headed studs conforming to Article 710.38 of the Std. Specs. automatically end welded. Top row spaced at 12" cts. and Bott. row spaced at 24" cts. 9 Req'd. Stage I and 9 Req'd. Stage II.
7/16" Holes at 12" cts. for 3/8" ∅ bolts. All bolts shall be burned, sawed or chipped off flush with the plates after forms are removed (Typ.)
1½" at 50° F (W.B.L.)
1½" at 50° F (E.B.L.)

SECTION THRU JOINT AT SHOULDER
(West Abutments) W.B. Lane & E.B. Lane
(Looking North)



1½" at 50° F
* ℘ 1" x 1½" x 10'-6¼" Stage I
* ℘ 1" x 1½" x 15'-6" Stage II
Fabricate to Crown
℘ 1" x 8¾" x 21'-6" Stage I Constr.
℘ 1" x 8¾" x 20'-5¾" Stage II Constr.
Fabricate to Crown
Preformed Jt. Seal (2½")
* Butt weld at Stage Constr. Joint
** Care shall be taken to minimize damage, due to heat, to exist. concrete during welding of 1" bar to exist. angle.
Existing ∠ 4 x 4 x ½ (to remain)
7/16" ∅ Holes at 12" cts. for 3/8" ∅ bolts. All bolts shall be burned, sawed or chipped off flush with the back of the plates after forms are removed (Typ.)
Bar ¼" x ½" x 21'-6" Stage I
Bar ¼" x ½" x 20'-5¾" Stage II
Tack weld at 6" cts.
¾" ∅ x 8" Granular or solid flux filled headed studs conforming to Article 710.38 of the Std. Specs. automatically end welded. Top row spaced at 12" cts. and Bott. row spaced at 24" cts. 33 Req'd. Stage I & 31 Req'd Stage II.
7/8" at 50° F (W.B.L.)
1" at 50° F (E.B.L.)

SECTION THRU JOINT AT ℄ ROADWAY
(East Abutments; W.B. Lane & E.B. Lane
(Looking North)



℘ 1" x 8¾" x 5'-1¼" Stage I
℘ 1" x 8¾" x 5'-1¼" Stage II
Fabricate to Crown
℘ 1" x 8½"
1¾" at 50° F
Preformed Jt. Seal (2½")
1½" (Typ.)
7¼" (Typ.)
3¼" (Typ.)
2" (Typ.)
Bar ¼" x ½"
¾" ∅ x 8" Granular or solid flux filled headed studs conforming to Article 710.38 of the Std. Spec's. automatically end welded. Top row spaced at 12" cts. and Bott. row spaced at 24" cts. 9 Req'd. Stage I & 9 Req'd Stage II.
7/16" Holes at 12" cts. for 3/8" ∅ bolts. All bolts shall be burned, sawed or chipped off flush with the plates after forms are removed (Typ.)
1⅛" at 50° F (W.B.L.)
1" at 50° F (E.B.L.)

SECTION THRU JOINT AT SHOULDER
(East Abutments, W.B. Lane & E.B. Lane
(Looking North)

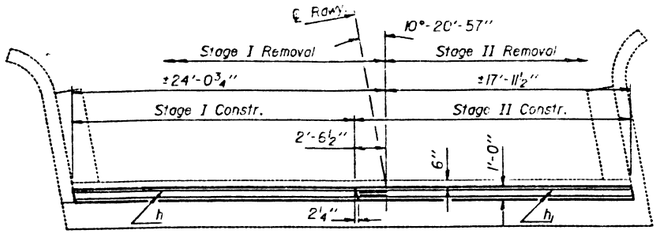
DESIGNED	[signature]
CHECKED	VICTOR VELTZ
DRAWN	RITA WILLIAMS
CHECKED	[signature]

July 21 1987
EXAMINED [signature]
PASSED James T. [signature]
APPROVED

TWO SUPERSTRUCTURES DETAILS
F.A.I. RTE 70 SEC (25-5HB-5) I & 2
EFFINGHAM COUNTY
STATION 2741 + 37.68

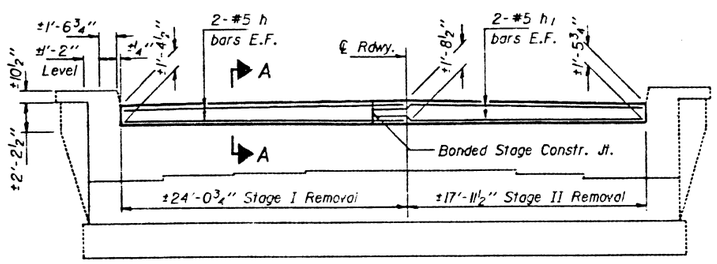
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 9
12 SHEETS

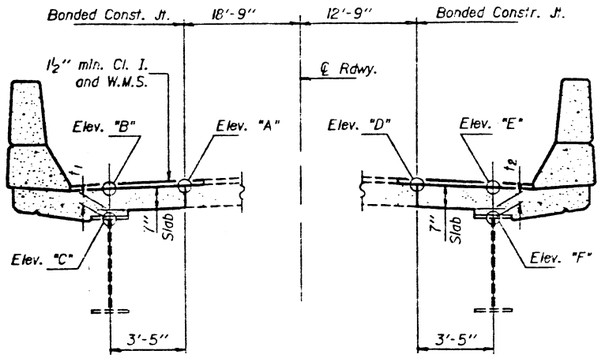


PLAN

(W. Abut. East Bound Lane & E. Abut. West Bound Lane)



ELEVATION



PARTIAL CROSS SECTION

Looking East (W. B. Lanes)
Looking West (E. B. Lanes)

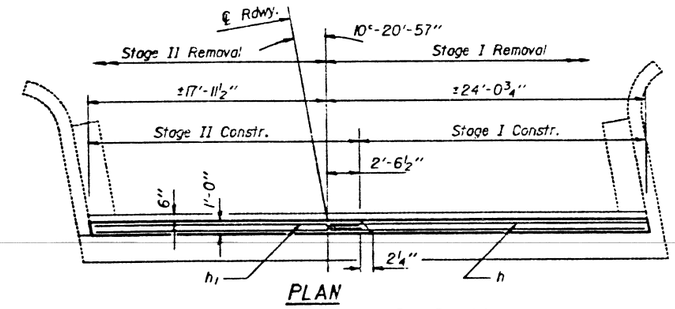
FILLET HEIGHTS

To determine "t_n": Elevations shall be taken at the top of the existing concrete slab at the Bonded Construction Joints every ten (10) feet along the length of the bridge. These elevations are designated as Elev. "A" and Elev. "D" as shown in the Partial Cross Section. The theoretical grade elevations at the existing exterior beams may be calculated as follows:

Elev. "B" = Elev. "A" - 0.07
Elev. "E" = Elev. "D" - 0.07

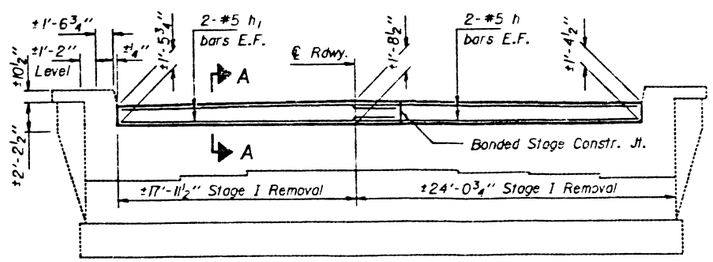
Next the elevations of the top flanges of the existing exterior beams shall be taken at the same ten (10) feet intervals as above. These elevations are designated as Elev."C" and Elev. "F". The fillet heights "t_n" are then computed as follows:

t_1 = (Elev. "B") - (Elev. "C") - 0.58 + (Dead Load Deflection)
t_2 = (Elev. "E") - (Elev. "F") - 0.58 + (Dead Load Deflection)
Where the slab thickness equals 0.58 feet.

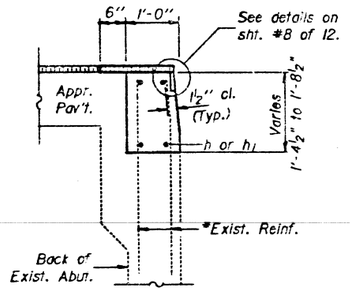


PLAN

W. Abut. West Bound Lane & E. Abut. East Bound Lane

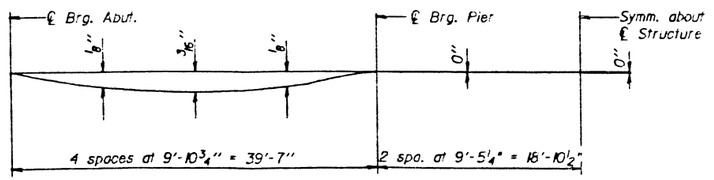


ELEVATION



SECTION A-A

* Existing reinforcement shall be cleaned and incorporated into new construction.



DEAD LOAD DEFLECTION DIAGRAM

(Wt. of concrete only)

FOUR ABUTMENTS
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h	18	#5	23'-9"	——
h_1	18	#5	20'-2"	——
Reinforcement Bars			Lbs.	730

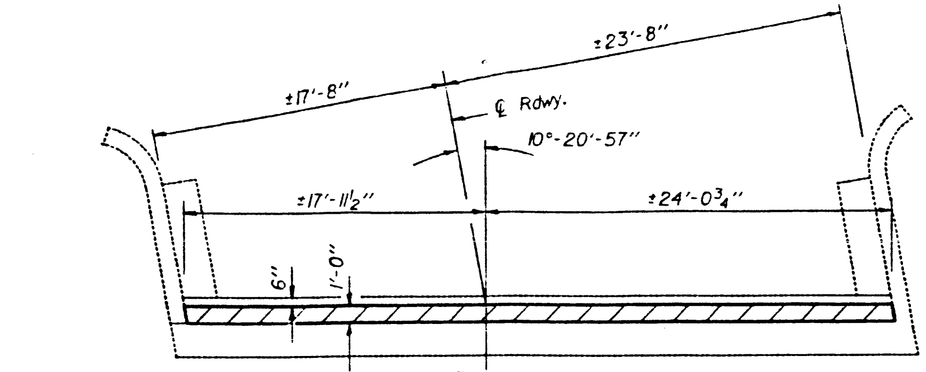
DESIGNED W. A. Williams
CHECKED VICTOR VELIZ
DRAWN Rita Williams
CHECKED V.V.

July 21 1987
EXAMINED Joseph D. Kasper — ENGINEER OF BRIDGE DESIGN
PASSED James T. Kouri — ENGINEER OF BRIDGES AND STRUCTURES
APPROVED — DIRECTOR OF HIGHWAYS

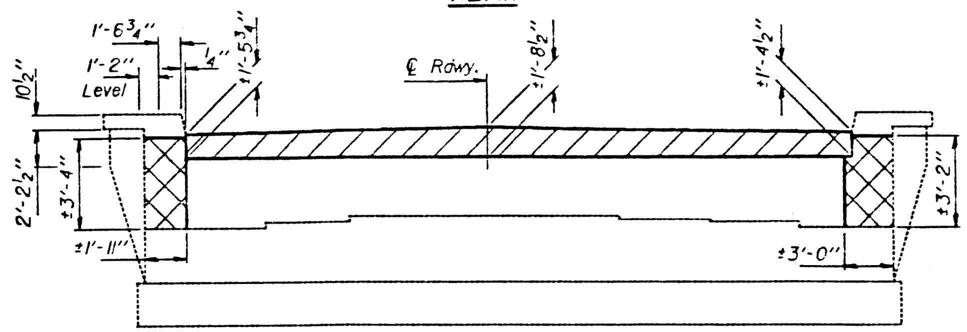
FOUR ABUTMENTS
F.A.I. RTE.70 SEC. (25-5HB-5) I I & 2
EFFINGHAM COUNTY
STATION 2741+37.68

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 10
12 SHEETS

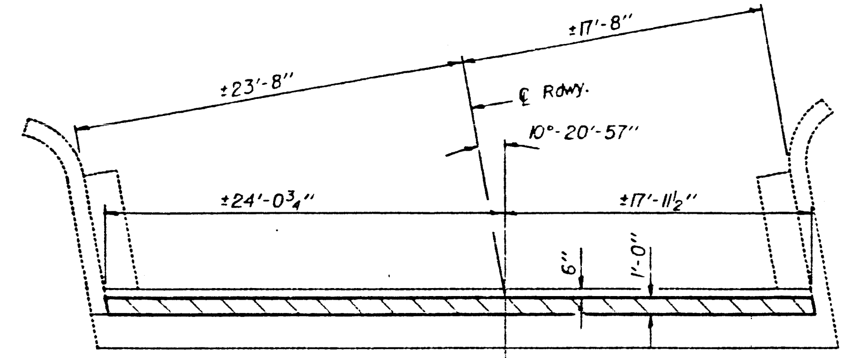


PLAN

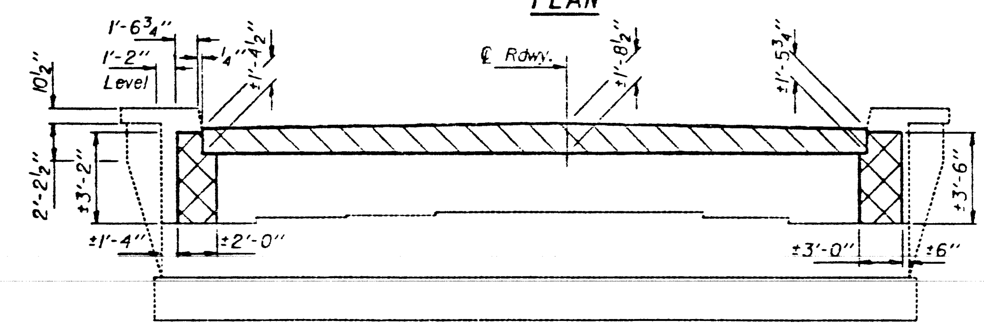


ELEVATION

West Abut. West Bound Lane (Looking West)

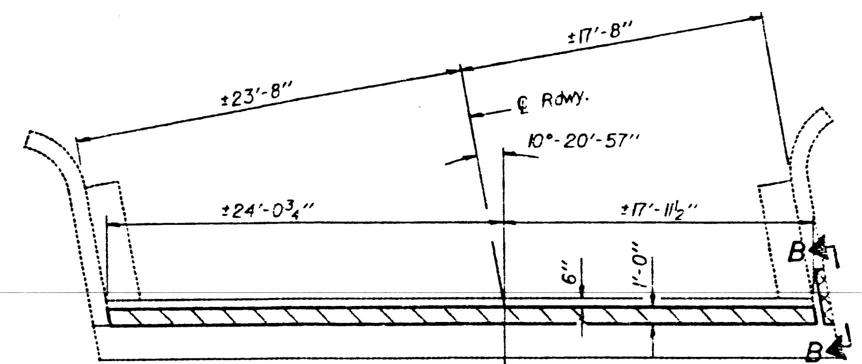


PLAN

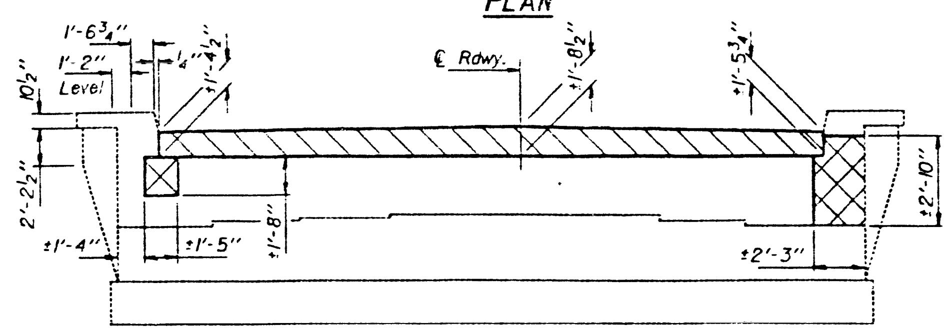


ELEVATION

West Abut. East Bound Lane (Looking West)

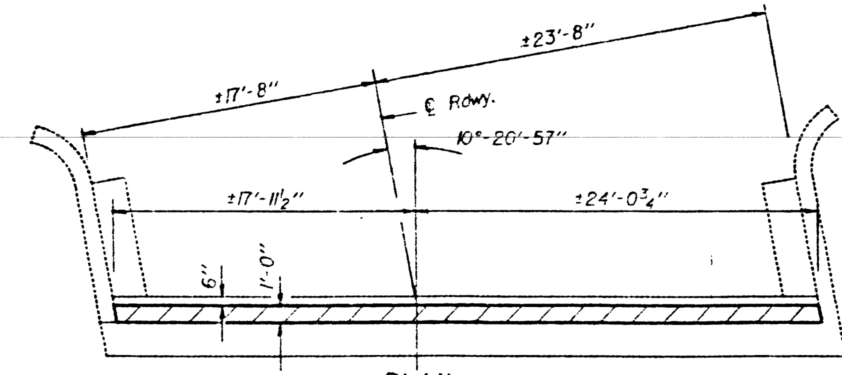


PLAN

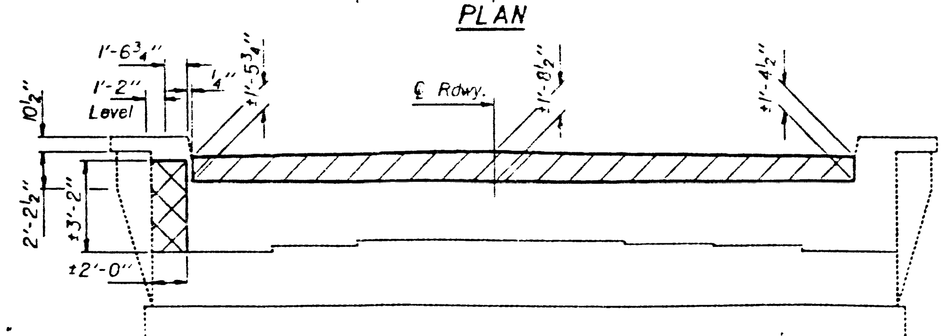


ELEVATION

East Abut. West Bound Lanes (Looking East)

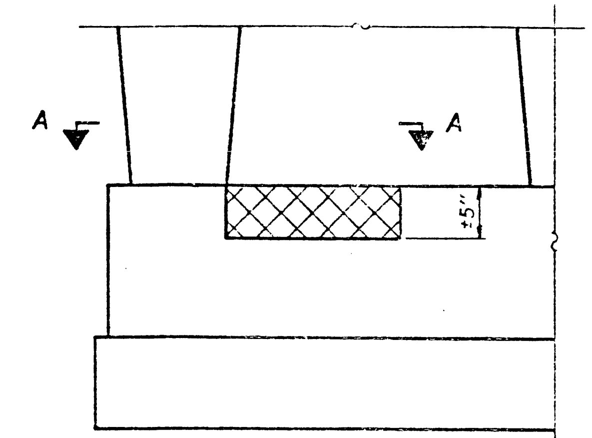


PLAN



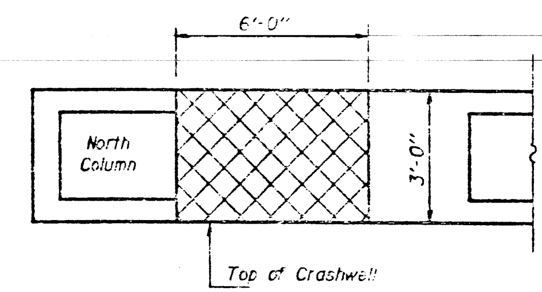
ELEVATION

East Abut. East Bound Lane (Looking East)

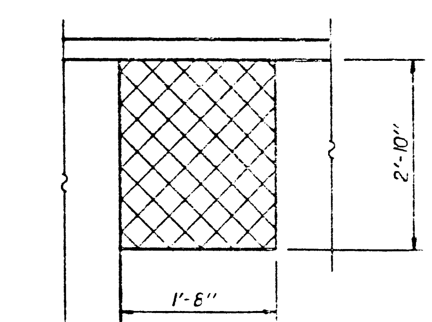


PARTIAL ELEVATION PIER #2

East Bound Lane (Looking East)



SECTION A-A



SECTION B-B

(Along Wingwall)

DESIGNED	[signature]
CHECKED	Victor Velez
DRAWN	Rita Williams
CHECKED	V.V.

July 21 1987

EXAMINED [signature]
ENGINEER OF BRIDGE DESIGN
PASSED [signature]
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

Note: Hatched area indicates "Concrete Removal." Cross-hatched area indicates "Repair Concrete Structures." Existing reinforcement shall be cleaned & incorporated in all concrete repairs.

CONCRETE REPAIR DETAILS
F.A.I. RTE.70 SEC. (25-5HB-5) I I & 2
EFFINGHAM COUNTY
STATION 2741+37.68

SECT. NO.	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 70 25-5HB-5	EFFINGHAM	57	1
FED. ROAD DIV. NO. 7	ILLINOIS	PROJECT	I-70-3(19)107

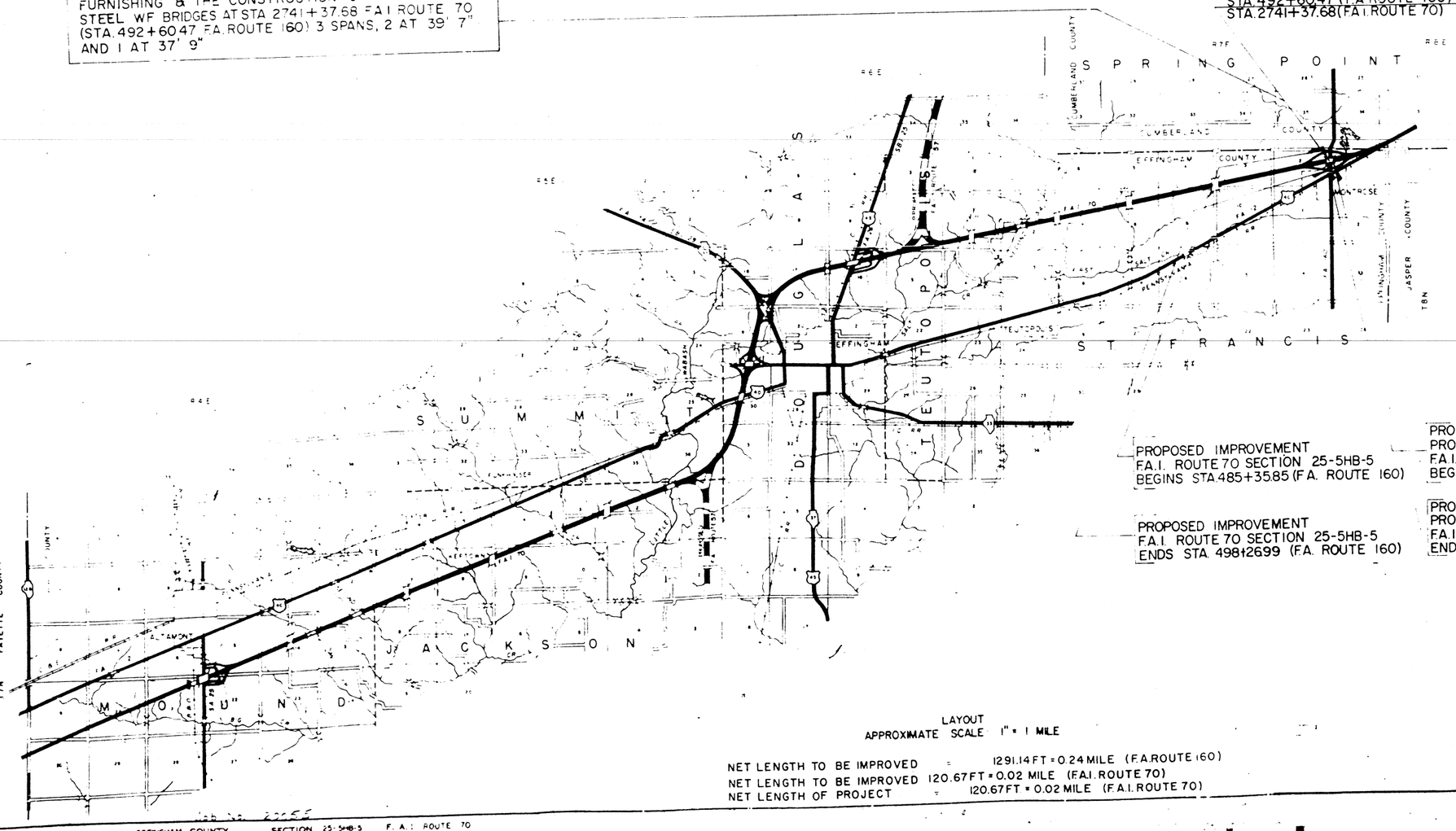
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

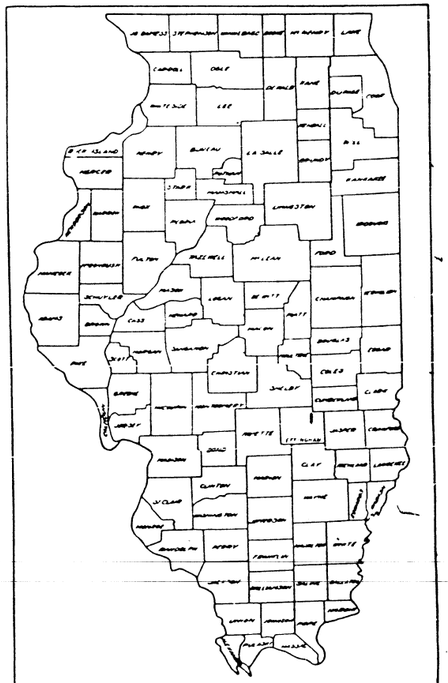
SCALES			
PLAN	1 INCH	100 FT.	
PROFILE HOR.	1 INCH	100 FT.	
PROFILE VERT.	1 INCH	10 FT.	
CROSS SECTIONS	1 INCH	5 FT.	VERT.
CROSS SECTIONS			HORIZ.

FAI ROUTE 70 SECTION 25-5HB-5
PROJECT I-70-3(19)107
EFFINGHAM COUNTY

SEC. 25-5HB-5 INCLUDES THE FABRICATING, FURNISHING & THE CONSTRUCTION OF TWO STEEL WF BRIDGES AT STA 2741+37.68 FAI ROUTE 70 (STA 492+60.47 FA ROUTE 160) 3 SPANS, 2 AT 39' 7" AND 1 AT 37' 9"

EQUALITY
STA 492+60.47 (FA ROUTE 160) =
STA 2741+37.68 (FAI ROUTE 70)





LOCATION OF SECTION INDICATED THUS:—

PROPOSED IMPROVEMENT
F.A.I. ROUTE 70 SECTION 25-5HB-5
BEGINS STA 485+35.85 (F.A. ROUTE 160)

PROJECT I-70-3(19)107
PROPOSED IMPROVEMENT
F.A.I. ROUTE 70 SECTION 25-5HB-5
BEGINS STA. 2740+77.35

PROPOSED IMPROVEMENT
F.A.I. ROUTE 70 SECTION 25-5HB-5
ENDS STA 498+26.99 (F.A. ROUTE 160)

PROJECT I-70-3(19)107
PROPOSED IMPROVEMENT
F.A.I. ROUTE 70 SECTION 25-5HB-5
ENDS STA. 2741+98.02

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

SUBMITTED [redacted]
DISTRICT ENGINEER

RECOMMENDED July 15, 1959 [redacted]
CHIEF ENGINEER OF ROAD PLANS AND SPECIFICATIONS

PASSED July 15, 1959 [redacted]
SECRETARY OF BOARD

APPROVED July 15, 1959 [redacted]
DIRECTOR OF HIGHWAYS

APPROVED July 15, 1959 [redacted]
CHIEF HIGHWAY ENGINEER

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED [redacted]
DIVISION ENGINEER

DATE [redacted]

LAYOUT
APPROXIMATE SCALE 1" = 1 MILE

NET LENGTH TO BE IMPROVED = 1291.14 FT = 0.24 MILE (F.A. ROUTE 160)
NET LENGTH TO BE IMPROVED 120.67 FT = 0.02 MILE (F.A.I. ROUTE 70)
NET LENGTH OF PROJECT = 120.67 FT = 0.02 MILE (F.A.I. ROUTE 70)

025-0016 & 0017

7-37

FAI ROUTE 70 SECTION 25-5HB-5 EFFINGHAM COUNTY
PLANS PREPARED BY
ROCHESTER & GOODELL ENGINEERS, INC.
FOR
DISTRICT 7

EXAMINED June 24 1959 Fred C. Nehren — DISTRICT ENGINEER OF DESIGN

EXAMINED June 29 1959 Harold L. Wear — Asst DISTRICT ENGINEER OF CONSTRUCTION

EXAMINED June 23 1959 C. E. Lindersen — DISTRICT ENGINEER OF MAINTENANCE

EXAMINED June 26 1959 W. H. Woelfer — DISTRICT ENGINEER OF RESEARCH & PLANNING

EXAMINED June 26 1959 Hugh Dorn — Asst DISTRICT ENGINEER OF TRAFFIC

EXAMINED June 29 1959 L. C. Bliss — DISTRICT ENGINEER

INDEX OF SHEETS
FAI ROUTE 70 SECTION 25-5HB-5 EFFINGHAM COUNTY

GENERAL NOTES
FAI ROUTE 70 SECTION 25-5HB-5 EFFINGHAM COUNTY

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," ADOPTED JANUARY 2, 1958, AND THE SPECIAL PROVISIONS.

THE WORK INCLUDED IN SECTION 25-5HB-5 CONSISTS OF FURNISHING AND FABRICATION OF THE STRUCTURAL STEEL AND HANDRAILS AND THE COMPLETE CONSTRUCTION OF TWO (2) THREE SPAN WF-BEAM BRIDGES. BOTH BRIDGES HAVING 2 SPANS 39'-7", AND 1 SPAN 37'-9" CARRYING FAI ROUTE 70 EASTBOUND AND WESTBOUND TRAFFIC OVER F.A. ROUTE 160 AT STATION 492+60.47 (STATION 2741+37.68 FAI ROUTE 70). THE CONSTRUCTION OF A 22' P.C. CONCRETE PAVEMENT FOR F.A. ROUTE 160, THE CONSTRUCTION OF FOUR (4) RAMP CONNECTIONS, THE CONSTRUCTION AND REMOVAL OF A TEMPORARY DETOUR ROAD, THE CONSTRUCTION OF A P.C. CONCRETE SIDEWALK, THE CONSTRUCTION OF A CHANNEL CHANGE, AND OTHER INCIDENTAL WORK NECESSARY TO COMPLETE THIS SECTION.

THE EARTH EXCAVATION OBTAINED FROM THE CONSTRUCTION OF FA ROUTE 160 SHALL BE USED TO CONSTRUCT THE EARTH CONE AROUND THE WEST BRIDGE ABUTMENTS ON BOTH BRIDGES, AND CONSTRUCTING THE EMBANKMENT ON THE MAIN ROADWAY FILL, FROM STATION 2741+98.02 TO STATION 2744+75 TO THE DIMENSIONS SHOWN ON THE TYPICAL GRADING SECTION. FAI ROUTE 70 CROSS SECTIONS ARE INCLUDED IN THE PLANS. THE EXACT LIMITS TO BE DETERMINED BY ENGINEER AT TIME OF CONSTRUCTION. THIS WORK IS TO BE DONE IN ACCORDANCE WITH SECTION 16 OF THE STANDARD SPECIFICATIONS AND THE SPECIAL PROVISIONS.

THIS SECTION SHALL BE SEEDED IN ACCORDANCE WITH SECTION 110 OF THE STANDARD SPECIFICATIONS. THE FOLLOWING QUANTITIES HAVE BEEN ALLOWED FOR THIS WORK:

3.4 ACRES COMPLETE SEEDING	14 TONS AGRICULTURAL GROUND LIMESTONE	700 GALLONS EMULSIFIED ASPHALT
0.3 TONS FERTILIZER NUTRIENTS	7 TONS STRAW FOR ASPHALT-COATED MULCH	

TREES SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AND SHALL BE CLASSIFIED AS TREE REMOVAL--INCH DIAMETER OF THE VARIOUS SIZES.

THE MATERIAL FROM THE CHANNEL EXCAVATION SHALL BE USED TO FILL THE EXISTING CHANNEL. ANY MATERIAL REMAINING AFTER THE EXISTING CHANNEL IS FILLED SHALL BE PLACED IN PROPOSED EMBANKMENT ADJACENT TO THE STRUCTURE. CHANNEL CHANGE CROSS SECTIONS ARE INCLUDED IN THE PLANS.

THE CONTRACTOR SHALL FURNISH AND ERECT RIGHT OF WAY MARKERS IN ACCORDANCE WITH STANDARD 1744-1 AT LOCATIONS SHOWN ON THE PLANS. 9 EACH FURNISHING AND ERECTING RIGHT OF WAY MARKERS ALLOWED FOR THIS WORK.

THE CONTRACTOR SHALL ERECT 2 INTERSTATE CONSTRUCTION SIGNS IN ACCORDANCE WITH STANDARD 2139-1 AT ROAD CROSSING INTERSTATE HIGHWAY IMPROVEMENT AS DIRECTED BY THE ENGINEER.

NO PAYMENT FOR OVERHAUL WILL BE MADE ON THIS SECTION FOR ANY MATERIAL MOVED TO OR FROM ANY SOURCE.

CONTROL OF ACCESS LINES SHOWN AS THUS ——AC——

SUMMARY OF QUANTITIES
FAI ROUTE 70 SECTION 25-5HB-5 EFFINGHAM COUNTY

CODE NO	ITEM	UNIT	QUANTITY
011201	EARTH EXCAVATION	CU YDS	30,685
012001	CHANNEL EXCAVATION	CU YDS.	2,128
020001	CLASS A EXCAVATION FOR STRUCTURES	CU YDS	233
060035	TEST PILES(STEEL) 10BP42	EACH	1
060049	CONCRETE SEALER, SPECIAL	CU YDS	3
020001	TRENCH BACKFILL	LF PT	68
01J001	TREE REMOVAL (6 IN. TO 15 IN. DIA.)	CU YDS	44
052003	CLASS X CONCRETE	EACH	239
059001	REINFORCEMENT BARS	CU YDS	704.2
101007	STONE RIPRAP SALVAGED AGGREGATE	LBS	85,980
254001	FURNISHING AND ERECTING STRUCTURAL STEEL	CU YDS	526
052001	HMA LEVEL OR OPEN	LBS	245,620
060026	FURNISHING STEEL PILES	CU YDS	46
060037	DRIVING STEEL PILES	LIN. FT.	918
061001	NAME PLATES	LIN. FT	9.8
083001	SLOPE WALL	EACH	2
030101	GRAVEL OR CRUSHED STONE SURFACE COURSE, TYPE A	SQ. YDS	827
024001	SUB-BASE GRANULAR MATERIAL, TYPE A	TONS	958
089004	PORTLAND CEMENT CONCRETE SIDEWALK (6")	TONS	1,396
048008	PORTLAND CEMENT CONCRETE PAVEMENT (10")	SQ. FT	80
089002	PORTLAND CEMENT CONCRETE SIDEWALK (4")	SQ. YDS.	3,640
026003	GRAVEL OR CRUSHED STONE SHOULDERS, TYPE B	SQ. FT	3,926
026001	GRAVEL OR CRUSHED STONE SHOULDERS, TYPE A	TONS	24
029001	GRAVEL OR CRUSHED STONE BASE COURSE, TYPE A	TONS	74
046001	BITUMINOUS MATERIALS (PRIME COAT)	TONS	485
037002	BITUMINOUS MATERIALS (COVER & SEAL COATS)	GALLONS	596
040007	BITUMINOUS CONCRETE SURFACE COURSE, SI(CLASS I-II	GALLONS	534
039003	COVER COAT AGGREGATE	TONS	37
055001	FURNISHING AND ERECTING METAL HANDRAIL	TONS	20
075160	INLET, SPECIAL WITH TYPE II FRAME	LIN. FT.	475
058028	PIPE CULVERTS TYPE 1A 15"	EACH	1
058007	PIPE CULVERTS, TYPE 1A 24"	LIN. FT	108
058074	PIPE CULVERTS, TYPE 1A (RCP CLASS III) 18"	LIN. FT	54
058080	PIPE CULVERTS, TYPE 1A (RCP CLASS III) 36"	LIN. FT	6
058103	PIPE CULVERTS, TYPE 1A (RCP CLASS III) 36"	LIN. FT.	140
102001	CALCIUM CHLORIDE APPLIED	TONS	62
110006	AGRICULTURAL GROUND LIMESTONE	TONS	72
110004	COMPLETE SEEDING	ACRES	14
111003	EMULSIFIED ASPHALT	GALLONS	3.4
110005	FERTILIZER NUTRIENTS	TONS	700
104001	FURNISHING & ERECTING RIGHT OF WAY MARKERS	EACH	0.3
018002	TREE REMOVAL (OVER 15" DIA.)	IN. DIA.	9
112002	SUPPLEMENTAL WATERING	UNITS	600
			3

CODE NO.	ITEM	UNIT	QUANTITY
027001	TOP SOIL	CU. YDS.	1,152
048019	PAVEMENT FABRIC	SQ. YDS.	3,640
082006	SIDEWALK REMOVAL	SQ. FT.	5,583
091011	PAVED DITCH, TYPE 2	LIN. FT.	75
111002	STRAW FOR ASPHALT-COATED MULCH	TONS	7
101006	SALVAGED AGGREGATE	CU. YDS.	16
Z20113	FILLING EXISTING WELLS AND CISTERNS	CU. YDS.	62
080001	CONCRETE CURB, TYPE B	LIN. FT.	188
080006	COMBINATION CONCRETE CURB AND GUTTER, TYPE B	LIN. FT.	633
080008	COMBINATION CONCRETE CURB AND GUTTER, TYPE C	LIN. FT.	1,106
039004	SEAL COAT AGGREGATE	TONS	10
112001	SODDING	SQYDS.	67
058004	PIPE CULVERTS, TYPE 1A , 15"	LIN FT	36
101002	GRAVEL OR CRUSHED STONE	TONS	235
060004	FURNISHING CREOSOTED PILES, UP TO 20'	LIN.FT.	240
060005	FURNISHING CREOSOTED PILES, 20.1'-38'	LIN.FT	288
060008	DRIVING TIMBER PILES	LIN.FT	528

CLASS X CONCRETE SCHEDULE

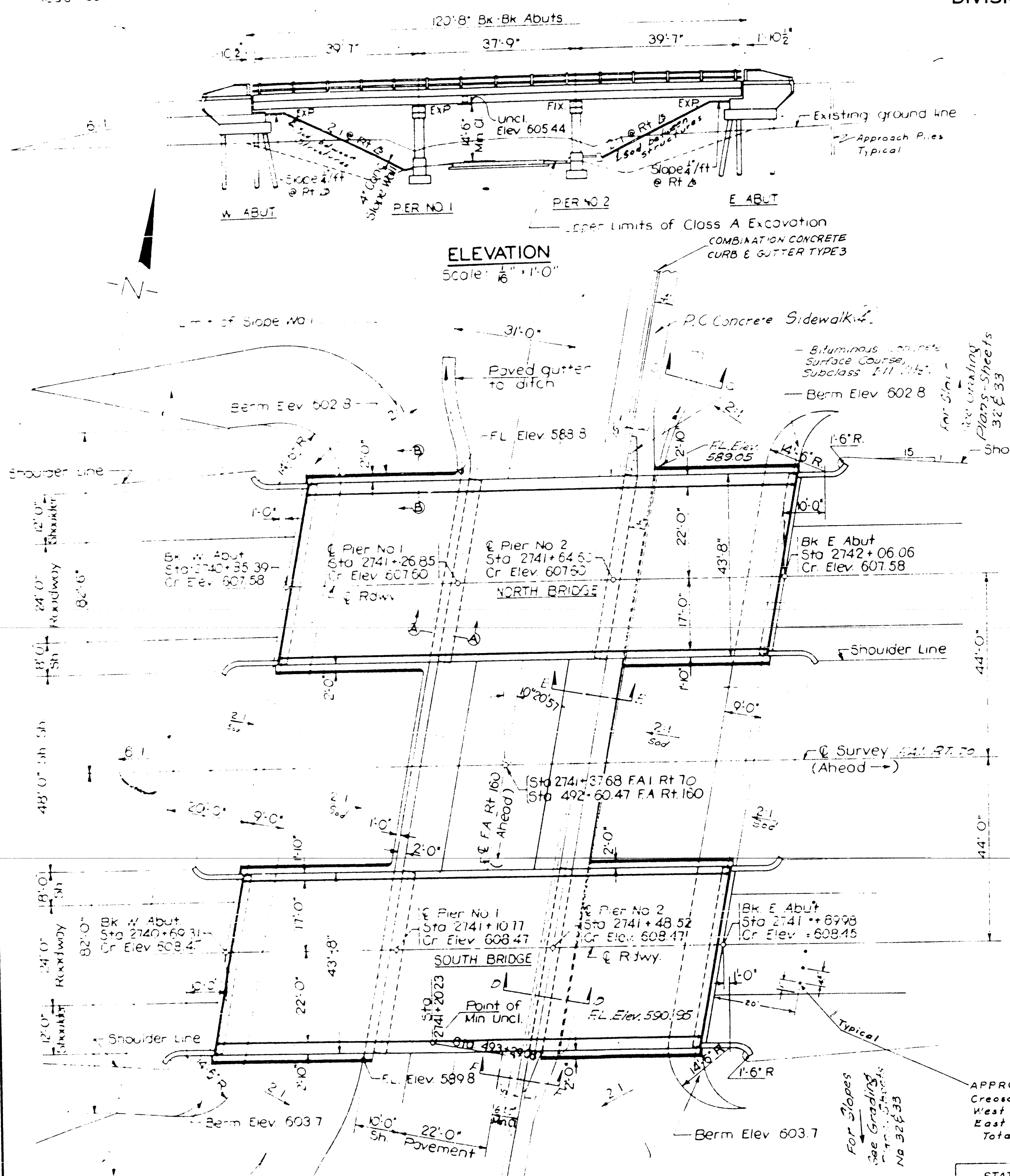
Station to Station	Paved Ditch Inlet, Type 2 Cu. Yds.	Culvert Headwall Cu. Yds.	Reinforcement Bars Lbs.	Outlet, Type 6 Curb & Gutter Cu. Yds.	Inlet, Type 6 Curb & Gutter Cu. Yds.	Handrail Concrete Cu. Yds.	Bridge Cu. Yds.
			85,550				
2741+37.68 (FAI Route 70)					1.5	4.6	667.2
Rt.486+42.04 486+54.04 (FA Route 160)		3.5	100				
490+06.26 (FA Route 160)				5.2			
Rt.490+06.28 490+30.28 (FA Route 160)		0.7	30				
Lt.491+55.00 (FA Route 160)							
494+20.00 (FA Route 160)		3.5	100				
				4.9			
Rt.494+79.53 495+03.53 (FA Route 160)					1.5		
Lt.496+66.90 496+78.90 (FA Route 160)					1.5		
Rt.496+89.99 497+01.99 (FA Route 160)							
Rt.497+25 497+29 (FA Route 160)	0.6						
0B+97.23 (Ramp "B")		3.5	100				
0C+74.93 (Ramp "C")		3.5	100				
				7.8			
Rt&Lt 2741Z+84.65 2742Z+08.65 (Frontage Rd. "Z")	0.6						
TOTALS	14.7		85,980	17.9	4.5	4.6	667.2

GRAND TOTAL CLASS "X" CONCRETE 704.9 CU. YDS.

Revised: 12/11/59 - Class X Concrete from 701.6 to 704.9 due to rise in curb from 9" to 10" - P.D.

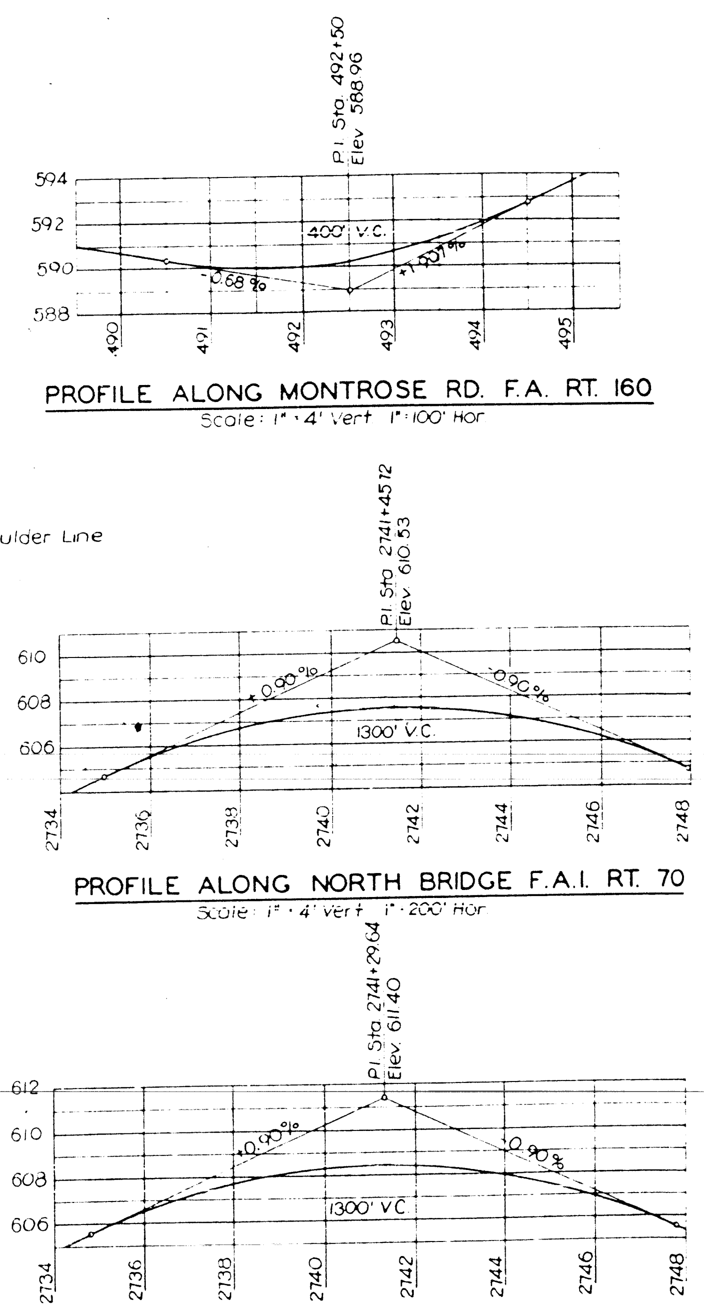
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I. Rt 70	25-5HB-5	Effingham	57	20
FED ROAD DIST NO. 7	ILLINOIS	PROJECT		



ELEVATION
Scale: 1/16" = 1'-0"

PLAN
Scale: 1/16" = 1'-0"



PROFILE ALONG MONTROSE RD. F.A. RT. 160
Scale: 1" = 4' Vert 1" = 100' Hor

PROFILE ALONG NORTH BRIDGE F.A.I. RT. 70
Scale: 1" = 4' Vert 1" = 200' Hor

PROFILE ALONG SOUTH BRIDGE F.A.I. RT. 70
Scale: 1" = 4' Vert. 1" = 200' Hor.

GENERAL NOTES

Class X Concrete shall be used throughout except in handrail end posts.

Handrail Concrete shall be used in the handrail end posts.

The concrete floor slab shall be finished in accordance with Art. 51.19 of the Standard Specifications, and shall be poured in one continuous operation between construction joints.

Rivets 3/4" ϕ, Open Holes 13/16" ϕ, unless noted.

Field connections riveted, unless noted.

All holes for splices shall be punched 11/16" ϕ and reamed to proper size (13/16" ϕ in web and 15/16" ϕ in flange) with all stringers assembled in the shop in proper position. Leave assembled in shop for inspection.

All rockers, bolsters, bearing plates, fill plates, lead plates, pintles, and anchor bolts shall be fabricated and set in accordance with Art. 51.15 of the Standard Specifications, and are included in the quantity of Structural Steel.

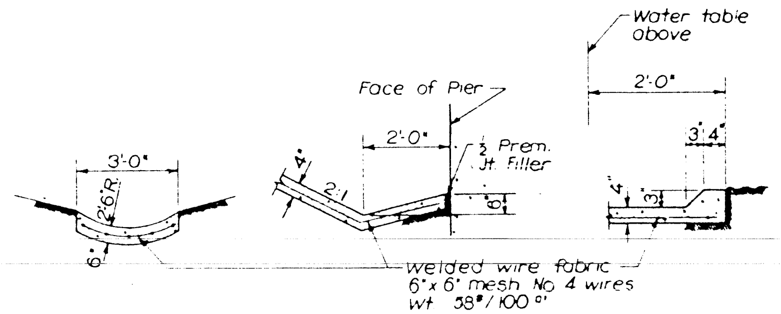
Anchor bolts shall be set before riveting diaphragms over supports.

All surfaces of the expansion guards inaccessible after erection shall receive two (2) shop coats of red lead paint except for the anchor studs. The anchor studs shall not be painted.

Except as otherwise provided, all Structural Steel shall receive one (1) shop coat of red lead paint and two (2) field coats of aluminum paint. See Art. 56.1 through 56.5 inclusive, of the Standard Specifications.

All paint shall be furnished and applied by the Contractor.

The Contractor shall drive one test pile as directed by the Engineer before ordering the remainder of the piles.



SECTION C-C SECTION A-A SECTION B-B

July 2 59
McRomine

TOTAL BILL OF MATERIAL

ITEM		SUPER	SUB	TOTAL
Class X Concrete	Cu Yds	26?.5	397.7	667.2
Handrail Concrete	Cu Yds	4.6	-	4.6
Reinforcement Bars	Lbs	47,240	38,310	85,550
Furnishing & Erecting Structural Steel	Lbs	245,620	-	245,620
Furnishing & Erecting Metal Handrail	Lin Ft	475	-	475
Name Plates	Each	2	-	2
Steel Piles (10 BP42)	Lin. Ft.	-	918	918
Test Piles -(Steel)	Each	-	1	1
Sodding	Sq. Yds	-	500	500
Class A Excavation for Structures	Cu Yds.	-	233	233
Rock Excavation for Structures	Cu Yds.	-	13	13
Concrete Gutter, Special	Lin. Ft.	-	68	68
Slope Wall	Sq. Yds.	-	827	[illegible]
Bituminous Surface Course Subclass I-11 (1½")	Tons	-	-	2
Gravel or Crushed Stone Base Course, Type A, (6")	Tons	-	-	8
Bituminous Materials (Prime Coat)	Gal.	-	-	12
Creosoted Piles	Lin. Ft.			528

APPROACH PILES: See Std. 2138
Creosoted Timber - 15 tons
West Approach - 24 ft. lgth
East Approach - 20 ft. lgth
Total - 528 lin. ft.

Note: For Sec. D-D, E-E, & F-F See Sheet No 21

STATION 2741+37.68
BUILT 19 BY
STATE OF ILLINOIS
F.A.I. RT. 70 SEC. 25-5HB-5
F.A. PROJ. I-70-3(19)
LOADING H20-S16

LETTERING FOR NAME PLATE
See Std 2113

DESIGN STRESSES

fc = 1400 p.s.i.
fs = 20,000 p.s.i. (Reinf.)
fs = 18,000 p.s.i. (Struct.)
v = 75 p.s.i. (Footings)
n = 10

Loading H20-S16-44 & Alt.

DESIGNED	VFS	EXAMINED	
CHECKED	?C	PASSED	ENGINEER OF DESIGNS AND TRAFFIC STRUCTURES
DRAWN	DDG	APPROVED	ENGINEER OF BRIDGES
CHECKED	VFS		CHIEF HIGHWAY ENGINEER

ROCHESTER AND GOODELL
ENGINEERS INCORPORATED
SALEM, ILLINOIS

HANSON COLLINS AND RICE
CONSULTING ENGINEERS
SPRINGFIELD, ILLINOIS

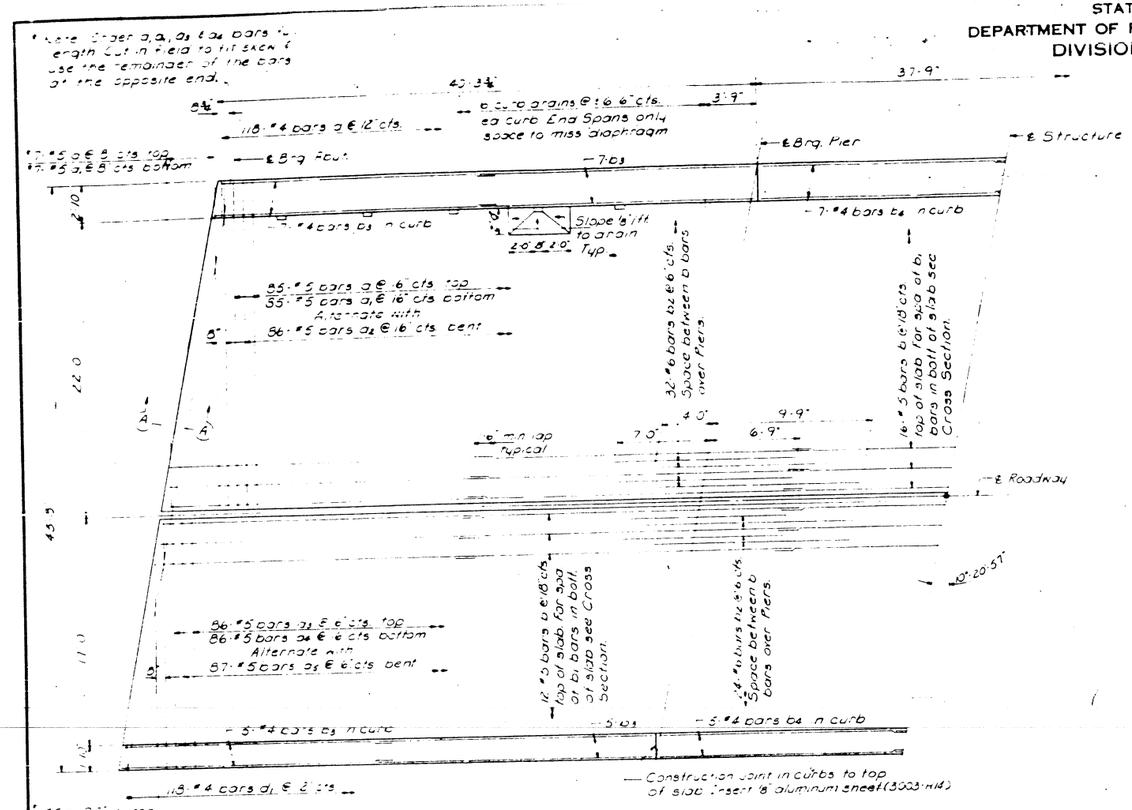
GENERAL PLAN & ELEVATION
FED. AID INTERSTATE OVER MONTROSE RD.
F.A. PROJECT
F.A.I. ROUTE 70 SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741+37.68

Revised: Changed the Cl. X Conc. Quantity - 12/11/59 - RD

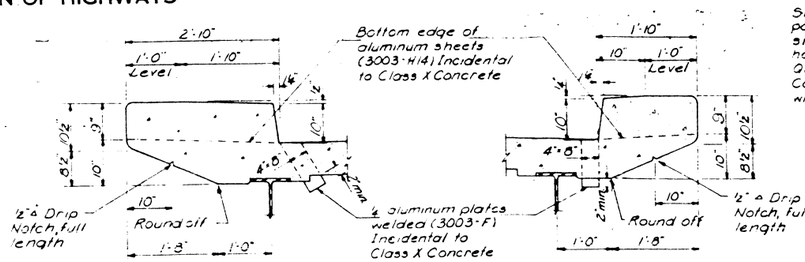
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I. Rt. 70	25-5HB-5	Effingham	57	23
F.A.I. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SHEET 2 OF 10



HALF PLAN
No Bridge Shown So Bridge Similar



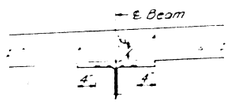
No. Curb No. Bridge, So. Curb So. Bridge

So. Curb No. Bridge, No. Curb So. Bridge

CURB & DRAIN DETAILS

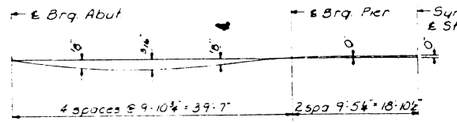
SECTION A-A

Note: See Sheet 4 of 10 for Expansion Device Details



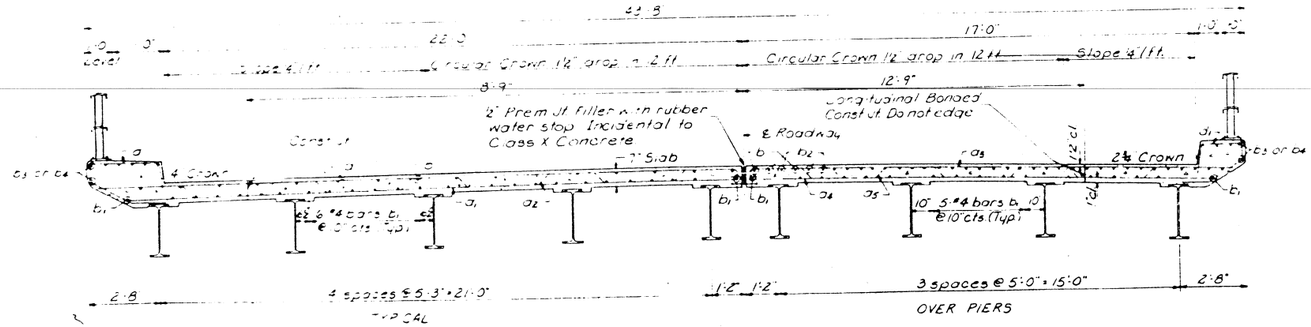
METHOD OF DETERMINING FILLET HEIGHTS "C"

After all Structural Steel has been erected, elevations of the top flanges of the beams shall be taken at intervals not to exceed 10 feet. From these elevations subtract the increment of deflection for these points, determined from the Dead Load Deflection Diagram. The elevations so attained subtracted from the theoretical grade elevations, minus floor thickness, equals the fillet heights "C" above top of beam.

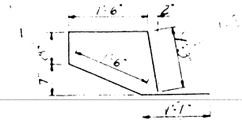


DEAD LOAD DEFLECTION DIAGRAM

W1 of Slab only



CROSS SECTION



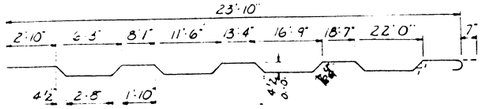
BAR d1

BAR d

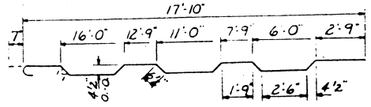
BILL OF MATERIAL
SUPERSTRUCTURE - 2 BRIDGES

BAR	NO	SIZE	LENGTH	SHAPE
a	164	#5	23'-10"	
a1	184	#5	23'-0"	
a2	172	#5	25'-9"	
a3	184	#5	17'-10"	
a4	184	#5	17'-0"	
a5	74	#5	19'-5"	
b	280	#5	24'-10"	
b1	430	#4	24'-10"	
b2	224	#6	13'-9"	
b3	96	#4	21'-0"	
b4	48	#4	19'-6"	
d	236	#4	7'-0"	D
d1	236	#4	6'-0"	D
Class X Concrete			Cu.Yds.	269.5
Reinforcement Bars			Lbs.	46,850
Structural Steel			Lbs.	245,620

All rockers, bolsters, bearing plates, fill plates, lead plates, pintles and anchor bolts are included in quantity of Structural Steel. Est. Wt. = 16490



BAR a2



BAR a5

DESIGNED	Y.F.S
CHECKED	[illegible]
DRAWN	D.J.M.
CHECKED	Y.F.S.

EXAMINED 19
PASSED
Engineer of Bridge and Traffic Structures
APPROVED
Director of Highways
Chief Engineer Highways

SLAB
FED. AID INTERSTATE OVER MONTROSE RD.
F.A. PROJECT
F.A.I. ROUTE 70 · SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741+37.68

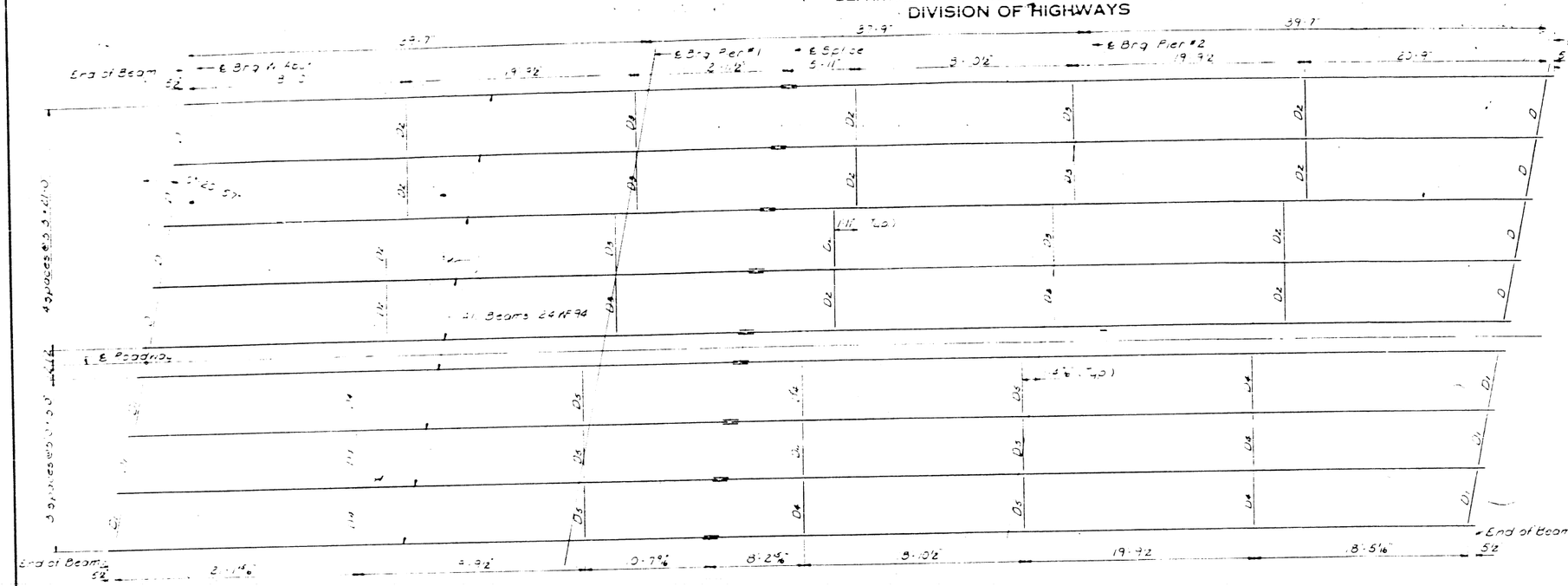
Revised: B.S. 450, N.M. - On CROSS SECTION, removed cast type handrail posts "Aluminum" & added pipe for steel handrail or bent-plate type.

Revised: Changed Dimensions & Class X Conc Quantity - 12/11/59 - RD

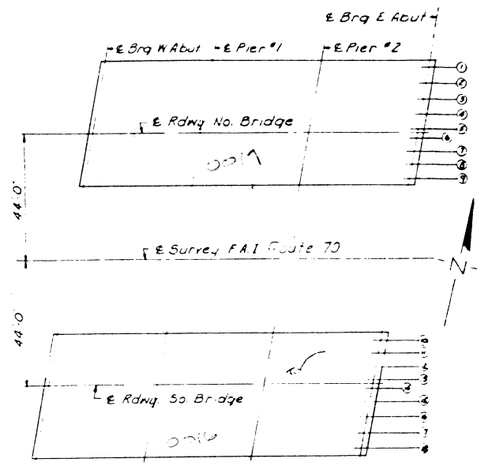
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I. Rt. 70	25-5HB-5	Effingham	57	24
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

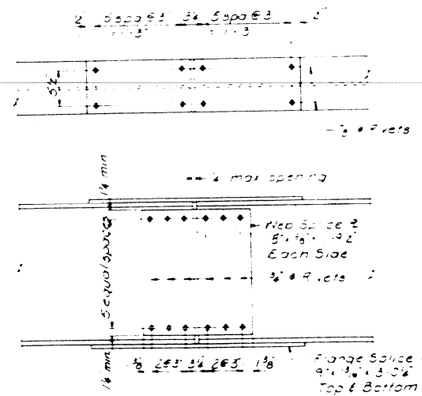
SHEET 3 OF 10



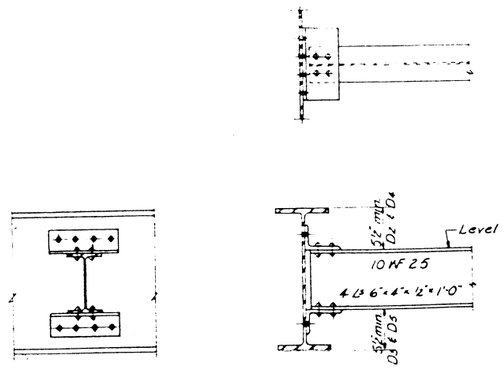
PLAN OF STRUCTURAL STEEL
No Bridge Shown, So Bridge Similar



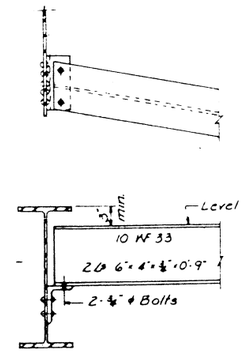
ORIENTATION SKETCH



SPLICE DETAIL



DIAPHRAGMS D2, D3, D4 & D5



DIAPHRAGMS D & D1

TABLE OF ELEVATIONS

Bm	Elev.	Bm	Elev.
1	606.66	10	607.65
2	606.77	11	607.76
3	606.88	12	607.83
4	606.96	13	607.87
5	607.00	14	607.87
6	607.00	15	607.83
7	606.96	16	607.75
8	606.89	17	607.64
9	606.78	18	607.53

Note: Beams to run level of the elevations shown.
All elevations shown are given at the top of the flanges of the beams.

DESIGNED	V.F.S.
CHECKED	JCC
DRAWN	J.J.M.
CHECKED	V.F.S.

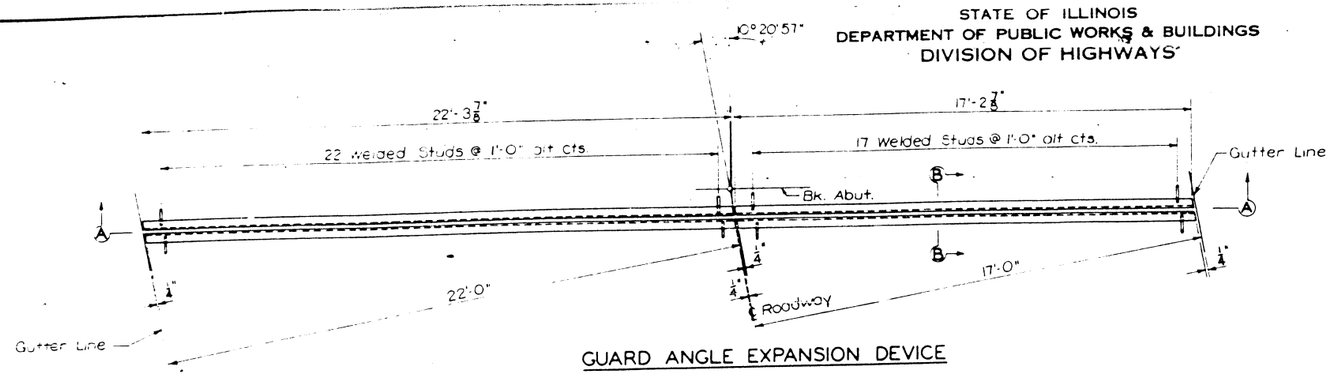
EXAMINED 19
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF BRIDGES
APPROVED
CHIEF ENGINEER DIVISION OF HIGHWAYS

STRUCTURAL STEEL
FED. AID INTERSTATE OVER MONTROSE RD.
F.A. PROJECT
F.A.I. ROUTE 70 SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741+37.68

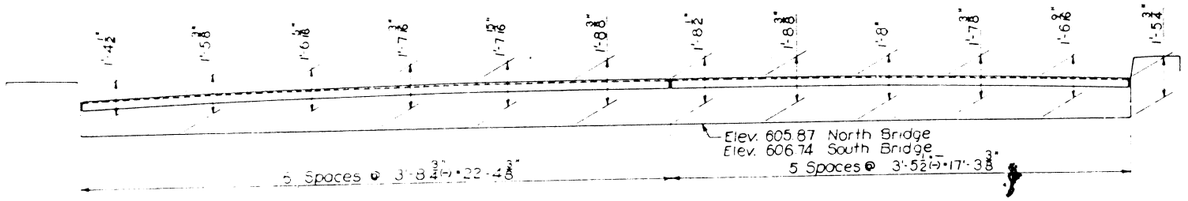
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. Rt. 70	25-5HB-5	Effingham	57	25
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SHEET 4 OF 10 SHEETS

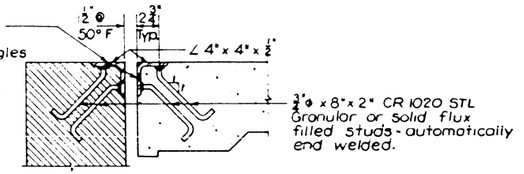


GUARD ANGLE EXPANSION DEVICE



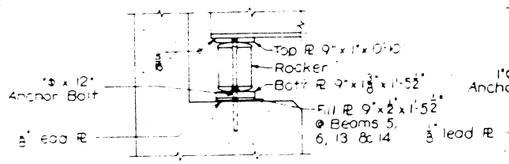
SECTION A-A

$\frac{7}{16}\Phi$ holes @ 12" cts. for $\frac{3}{8}\Phi$ bolts. All bolts shall be burned, sawed or clipped off flush with back of angles after forms are removed.

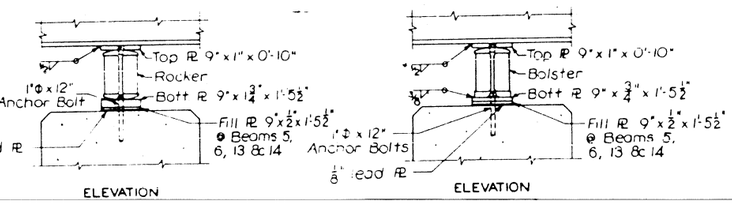


SECTION B-B

Note:
The Roadway Expansion Guards shall be fabricated to fit the roadway.
Est. Wt. = 4450 Lbs.
Included in quantity of Structural Steel on Sh. 2 of 10.

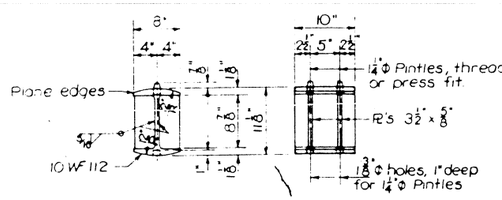


ELEVATION

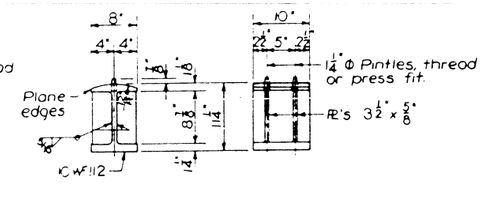


ELEVATION

ELEVATION

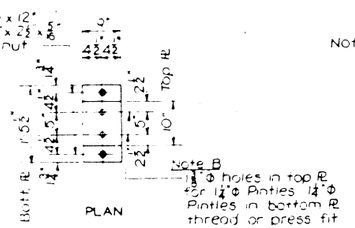


ROCKER DETAILS



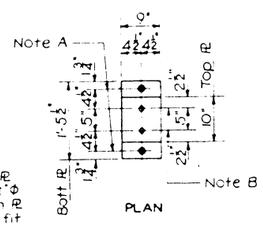
BOLSTER DETAILS

Note A
$\frac{3}{4}\Phi$ holes for 1"Φ x 12" Anchor Bolts. 2 1/2" x 2 1/2" x 5/16" PL Washer under nut



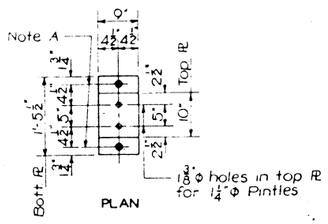
PLAN

ABUTMENTS



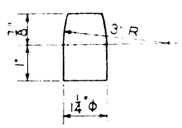
PLAN

PIER 1



PLAN

PIER 2



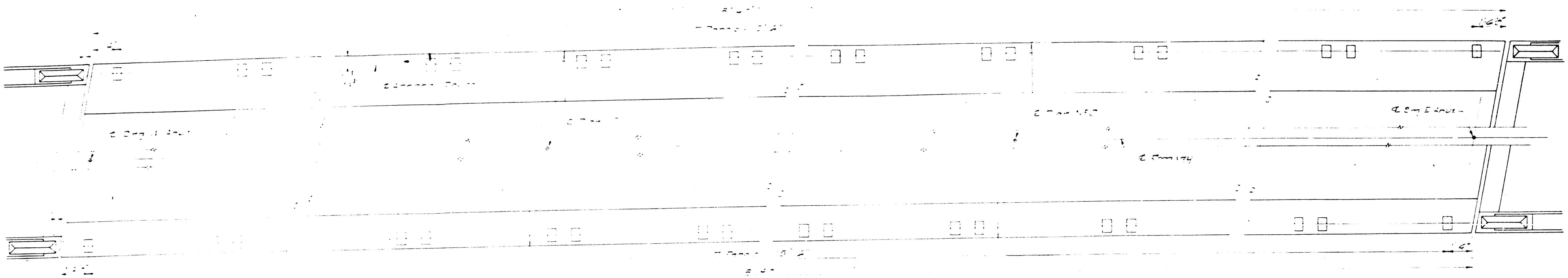
PINTLE

DESIGNED	V.F.S.
CHECKED	J.C.
DRAWN	D.D.O.
CHECKED	V.F.S.

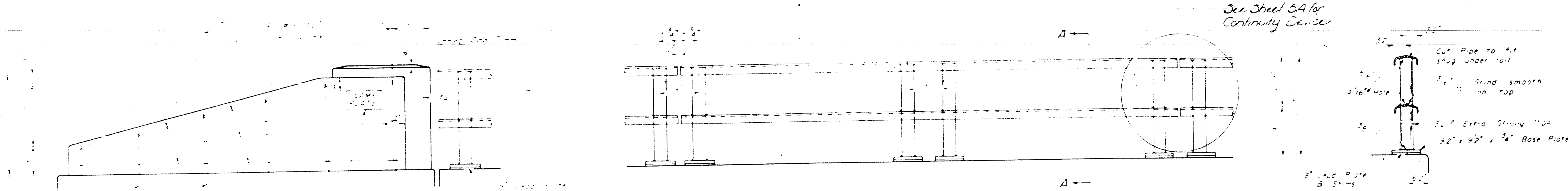
EXAMINED 19
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF BRIDGES
APPROVED
CHIEF ENGINEER DIVISION OF HIGHWAYS

EXPANSION GUARD & BEARINGS
FED. AID INTERSTATE OVER MONTROSE RD.
F.A. PROJECT
F.A.I. ROUTE 70 SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741 +37.68

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

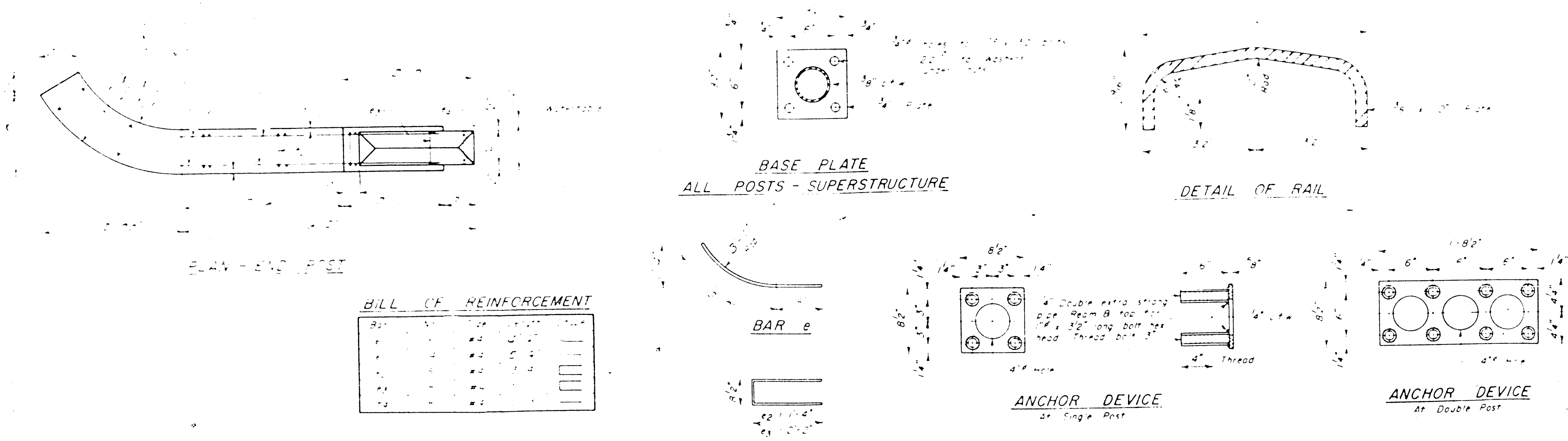


PLAN



ELEVATION TYPICAL PANEL

SECTION A-A



PLAN - END POST

BASE PLATE
ALL POSTS - SUPERSTRUCTURE

DETAIL OF RAIL

BAR e

BAR e_2 or e_3

ANCHOR DEVICE
At Single Post

ANCHOR DEVICE
At Double Post

BILL OF REINFORCEMENT

BILL OF MATERIAL

Handrail Concrete	Cu Yd	4.6
Reinforcement Bars	Lbs	390
Metal Handrail	Lin Ft	475

GENERAL NOTES

All End Posts shall be Handrail Concrete.

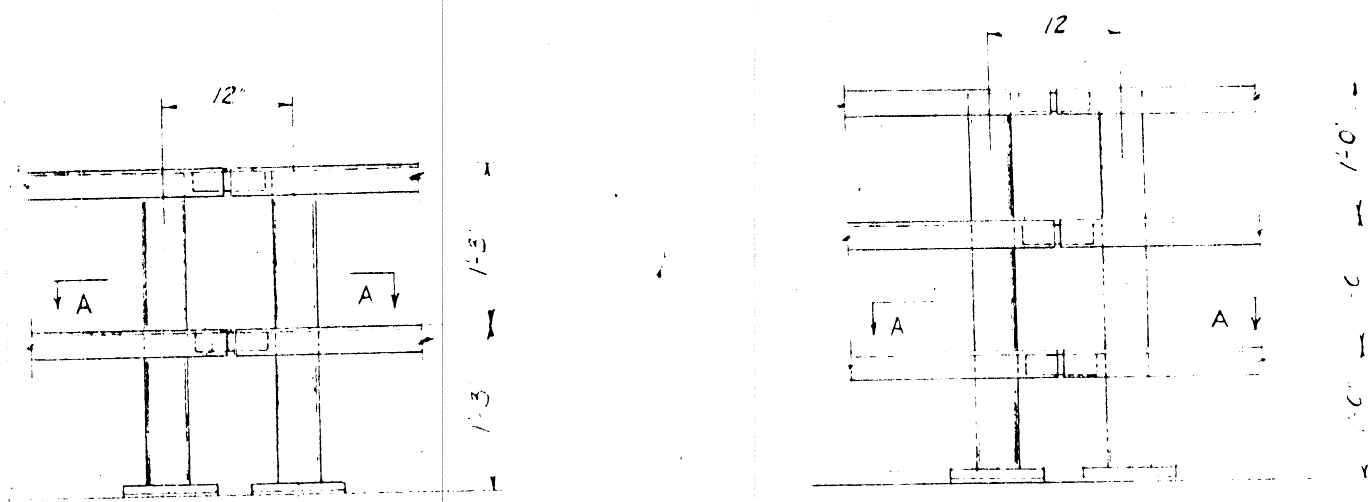
Provide 1-⅛" and 2-1/16" Shims for 50% of the Posts.

HANDRAIL
FED. AID INTERSTATE OVER MONTROSE RD.
F.A. PROJECT I-70-03 (3)
F.A.I. ROUTE 70 SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741+37.68

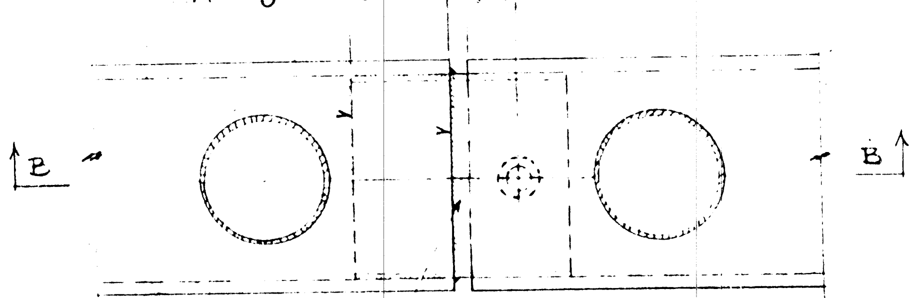
R-6

SHEET 5A
10 SHEETS

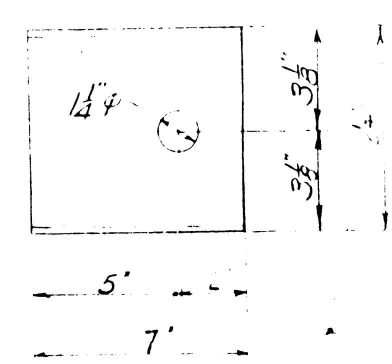
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 70	25 5HB5	Effingham	57	26A



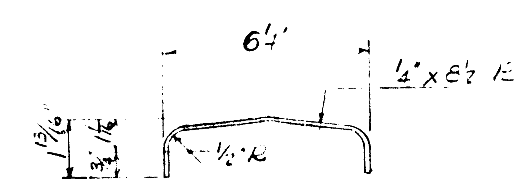
TYPICAL ELEVATION
@ PANEL JOINTS



SECTION 'A-A'

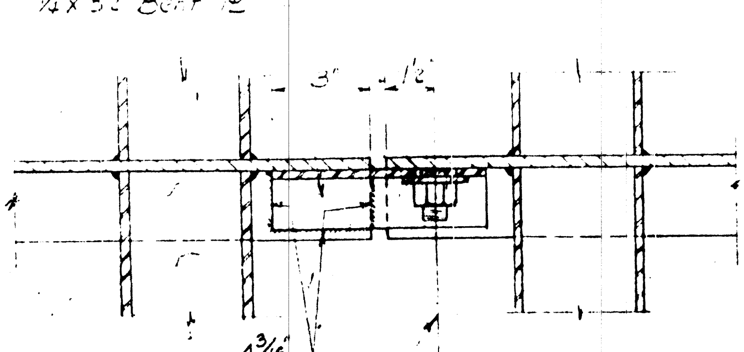


Plan



END VIEW

DETAIL 1/4" BENT ℙ



3/4"φ x 1 3/4 GRANULAR FLUX FILLED OR SOLID STUD. THREADED FULL LENGTH - AUTOMATICALLY END WELDED OR 3/4" φ x 1 3/4 FULLY THREADED STUD WELDED WITH 1/8" cfw. PROVIDE WASHER AND LOCKNUT

SECTION 'B-B'

EXAMINED Nov. 10, 1959
[signature] BRIDGE ENGINEER
PASSED [signature] ENGINEER OF DESIGN
APPROVED [signature] CHIEF HIGHWAY ENGINEER

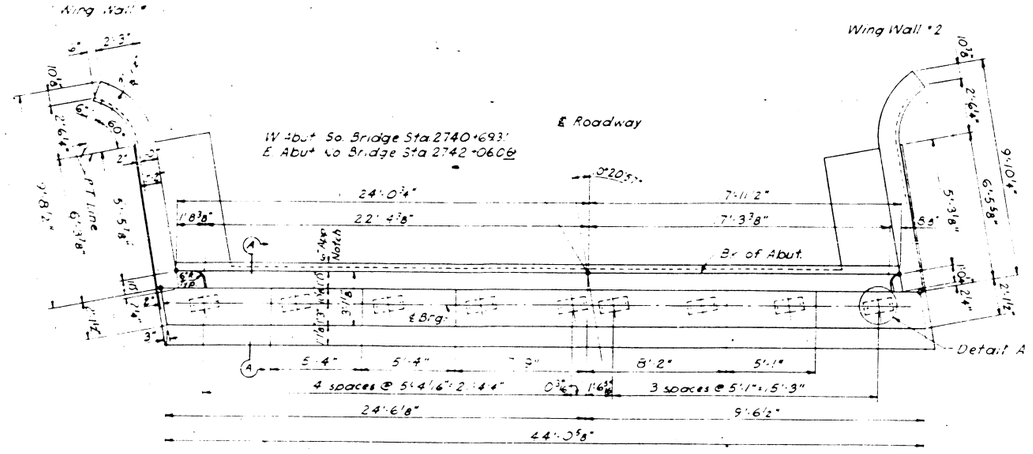
Rev. 11-30-59

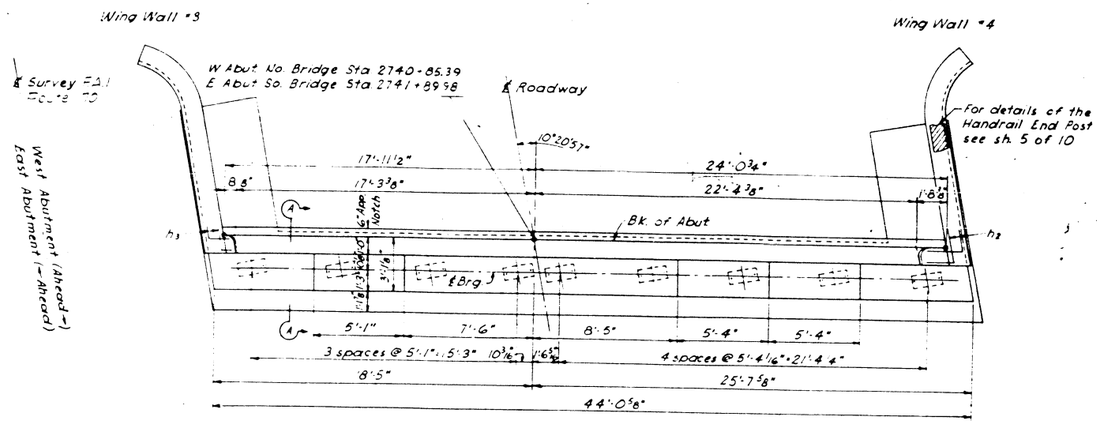
CONNECTION DETAILS
FOR BENT PLATE
RAIL PANELS

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

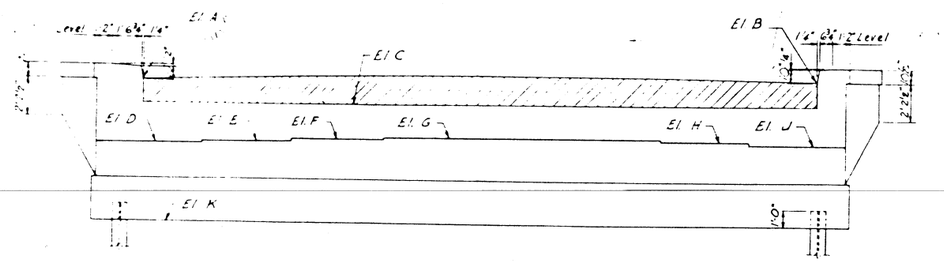
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. Rt. 70	25 SHB 5	Effingham	57	27
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

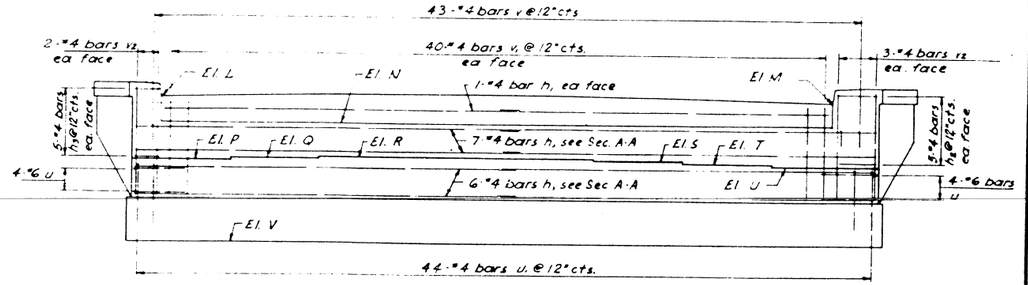
SHEET 6 OF 10



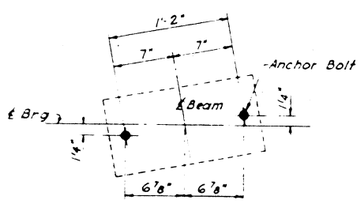


PLAN





ELEVATION
@ Rt ⅄ to ℄ Rdwy.



DETAIL A
Typical

TABLE OF ELEVATIONS

Loc Pt	W Abut S Bridge	E. Abut N Bridge	Loc Pt	W Abut N Bridge	E. Abut S Bridge
A	608.12	607.25	L	607.35	608.22
B	608.22	607.35	M	607.25	608.12
C	606.74	605.87	N	605.87	606.74
D	604.38	603.51	P	603.63	604.50
E	604.49	603.62	Q	603.74	604.61
F	604.60	603.73	R	603.81	604.68
G	604.68	603.81	S	603.73	604.60
H	604.61	603.74	T	603.62	604.49
J	604.50	603.63	U	603.51	604.38
K	599.88	599.01	V	599.01	599.88

Work this sheet with sh. 7 of 10

DESIGNED	V.F.S.
CHECKED	J.C.C.
DRAWN	T.E.B.
CHECKED	V.F.S.

EXAMINED 19
PASSED ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
APPROVED DIRECTOR OF PUBLIC WORKS AND BUILDINGS
CHIEF ENGINEER DIVISION OF HIGHWAYS

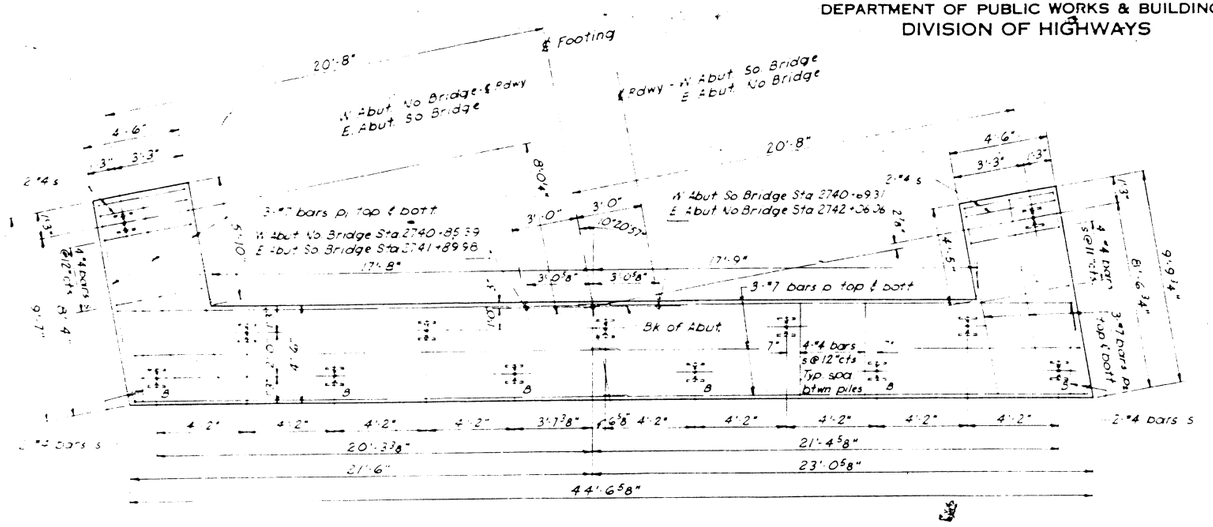
ABUTMENTS
FED. AID INTERSTATE OVER MONTROSE RD.
F. A. PROJECT
F.A.I. ROUTE 70 SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741+37.68

Revised: Changed ℄ Dimensions - 12/14/59 - RD

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

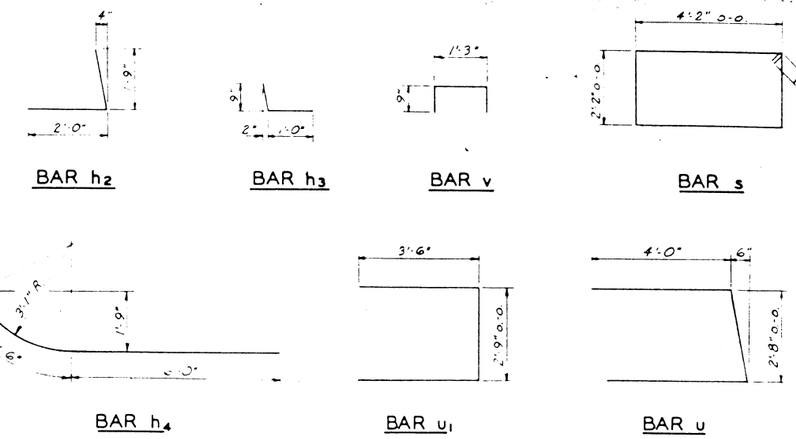
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. Rt 70	25 SHB-5	Effingham	57	28
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SHEET 7 OF 10 SHEETS

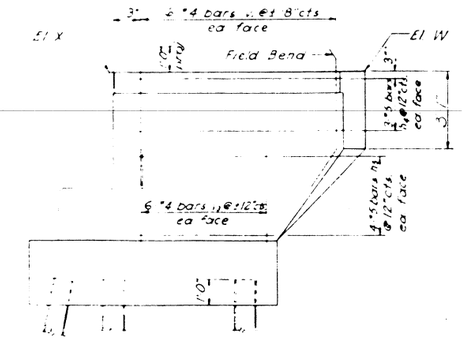


FOOTING PLAN

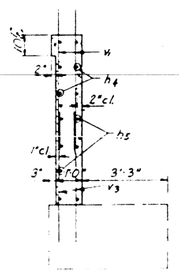
Note: Piles marked 'B' to be battered as shown in Sec A-A



PLAN



ELEVATION

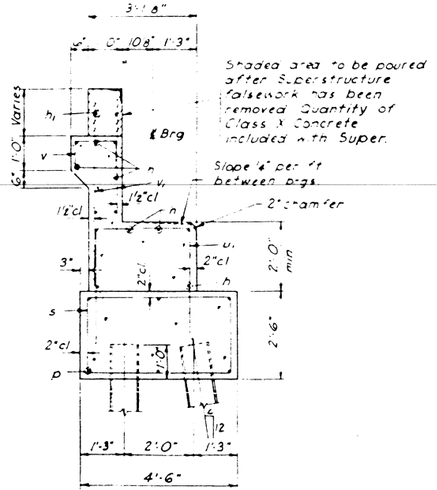


SECTION

WING WALL DETAILS

TABLE OF ELEVATIONS

	Wing W	W	X
West Abut	#1	609.33	608.33
	#2	609.06	608.07
	#3	608.13	608.20
	#4	608.11	608.12
East Abut	#1	608.11	608.12
	#2	608.13	608.20
	#3	609.06	609.07
	#4	608.98	608.89



SECTION A-A

PILE DATA

Type	10 BP 42
Min. Capacity	30 tons
Est. Length	18 ft
No. Reqd. (4 Abuts)	52*

*Includes one test pile

BILL OF MATERIAL
4 - ABUTMENTS

BAR	NO	SIZE	LENGTH	SHAPE
n	104	#4	22'-6"	——
n1	16	#4	20'-5"	——
h2	40	#4	4'-0"	⌟
h3	40	#4	2'-0"	L
h4	48	#5	9'-6"	——
h5	64	#5	6'-0"	——
p	48	#7	23'-6"	——
p1	24	#7	9'-3"	——
p2	24	#7	8'-9"	——
s	224	#4	13'-5"	□
u	32	#6	10'-8"	⊐
v	176	#4	9'-9"	⊐
w				
v1	172	#4	2'-9"	⊓
x	416	#4	5'-6"	——
x2	40	#4	6'-3"	——
x3	96	#4	5'-0"	——
Class X Concrete			Cu Yds.	170.7
Reinforcement Bars			Lbs.	12,010
Steel Piles (10BP42)			Lin. Ft.	918
Test Piles			Ea.	1

Work this sheet with sh. 6 of 10

DESIGNED	V F S
CHECKED	[illegible]
DRAWN	T E B
CHECKED	V F S

EXAMINED ____ 19
CHIEF ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
DIRECTOR OF HIGHWAYS
APPROVED
CHIEF HIGHWAY ENGINEER

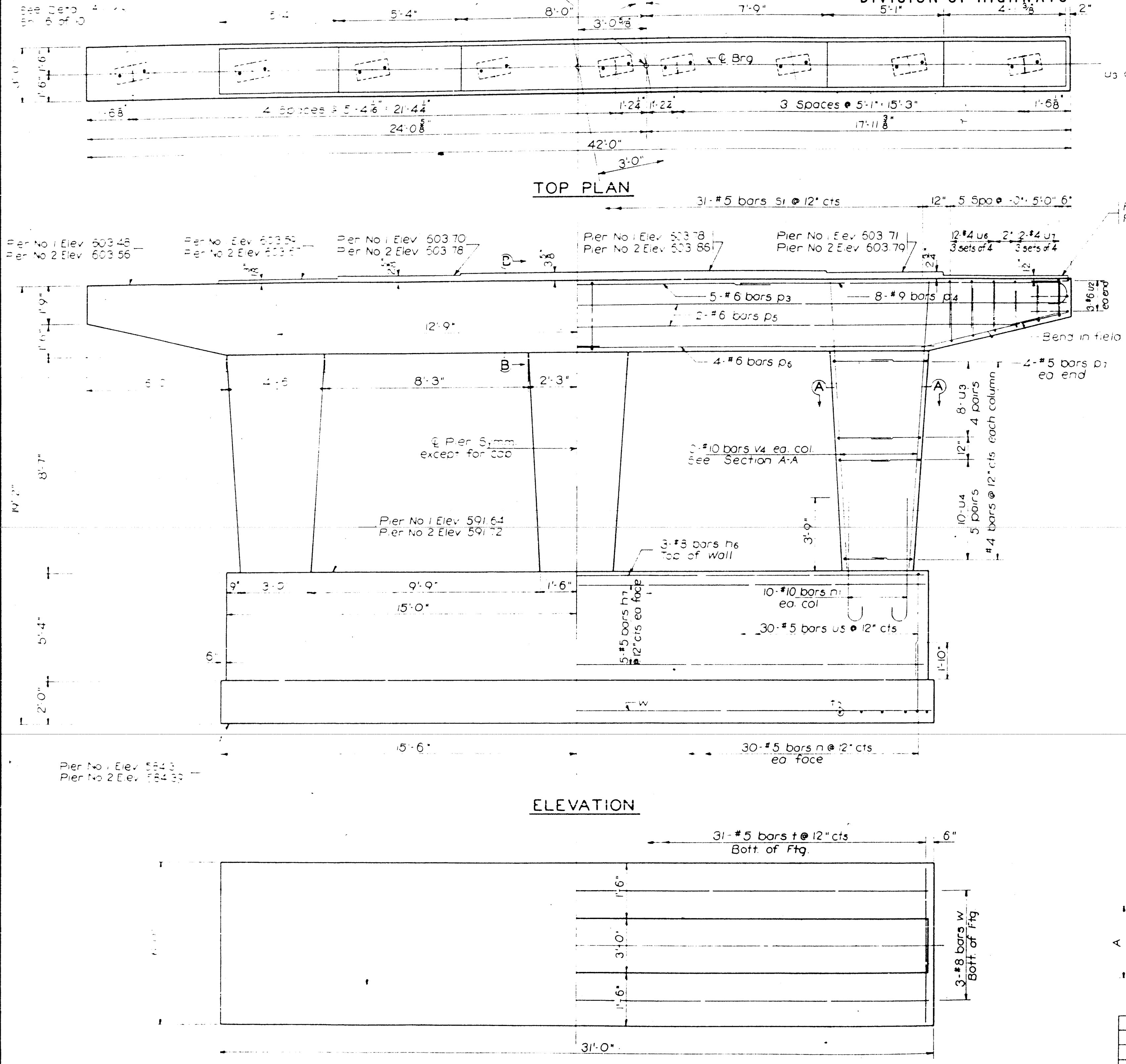
ABUTMENT DETAILS
FED. AID INTERSTATE OVER MONTROSE RD.
F. A. PROJECT
F.A.I. ROUTE 70 SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741+37.68

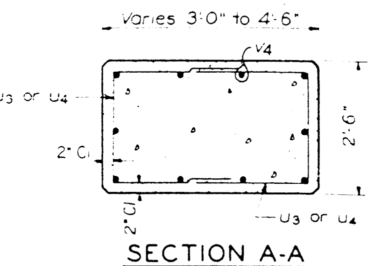
Revised: Changed Elevations, & Dimensions & 1 Quantity – IL.111/58-RD

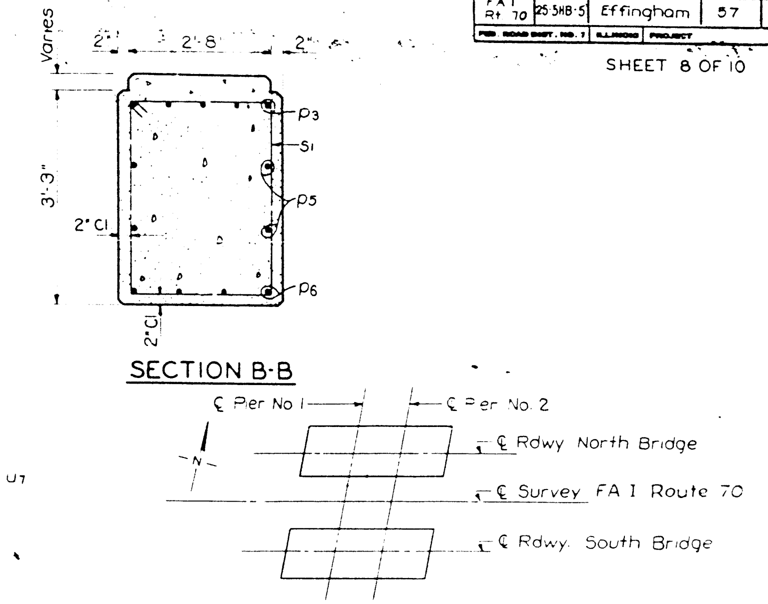
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

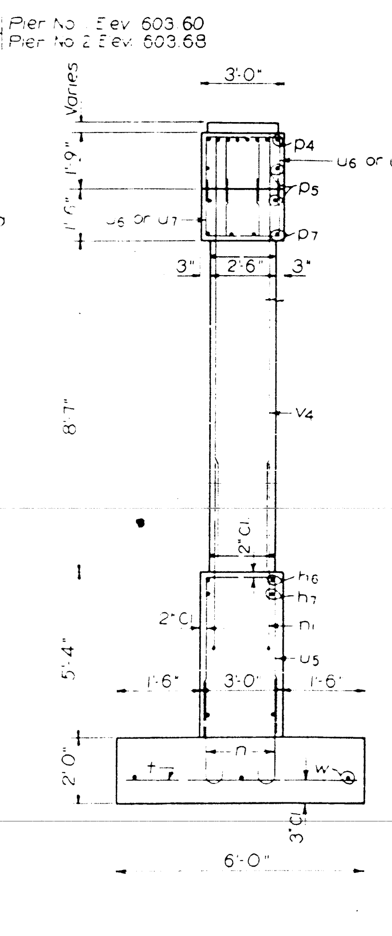
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. Rt. 70	25-5HB-5	Effingham	57	29

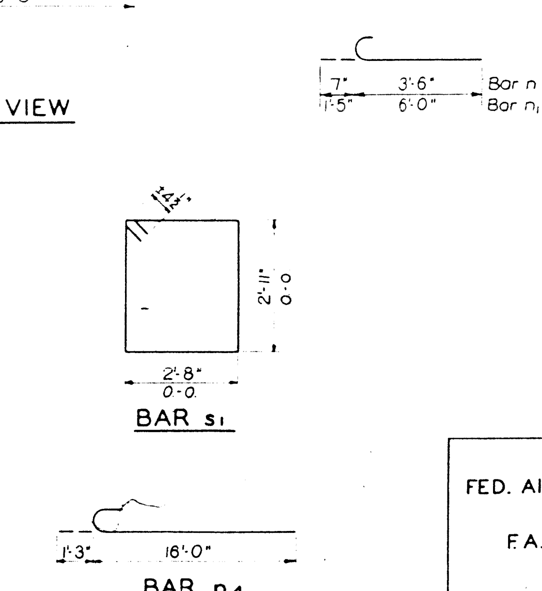
SHEET 8 OF 10











BILL OF MATERIAL
NORTH BRIDGE-PIERS 1 & 2

BAR	NO	SIZE	LENGTH	SHAPE
h6	6	#8	29'-9"	
h7	20	#5	29'-9"	
p3	10	#6	14'-0"	
p4	32	#9	17'-3"	
p5	16	#6	21'-7"	
p6	16	#6	15'-9"	
p7	16	#5	6'-3"	
s1	60	#5	11'-11"	
u2	12	#6	5'-7"	
u3	48	#4	8'-0"	
u4	60	#4	7'-4"	
u5	60	#5	12'-10"	
u6	48	#4	6'-6"	
u7	48	#4	5'-1"	
v4	60	#10	11'-7"	
w	6	#8	30'-8"	
t	62	#5	5'-8"	
n	120	#5	4'-1"	
n1	60	#10	7'-5"	

Class X Concrete Cu. Yds.	110.9
Reinforcement Bars Lbs.	13,030
Class A Excavation Cu. Yds.	95
Rock Excavation Cu. Yds.	7

BAR	A	B
U2	1'-6"	2'-7"
U3	2'-11"	2'-2"
U4	2'-7"	2'-2"
U5	5'-1"	2'-8"
U6	2'-3"	2'-0"
U7	1'-6½"	2'-0"

BAR u

DESIGNED	F.S.
CHECKED	
DRAWN	
CHECKED	

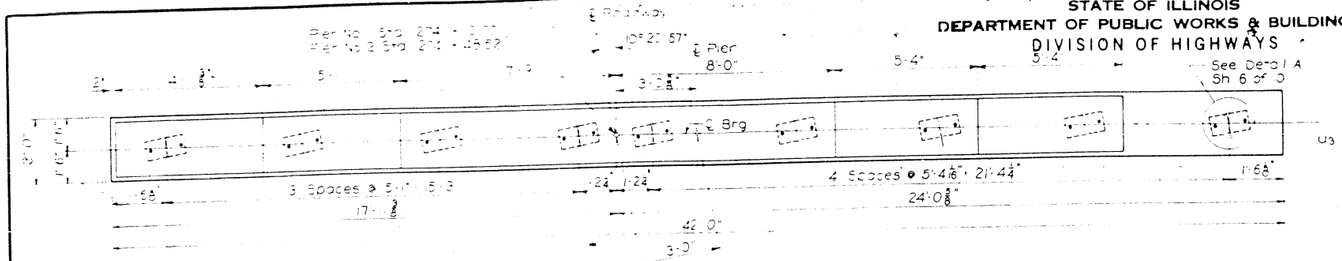
EXAMINED
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

PIERS-NORTH BRIDGE
FED. AID INTERSTATE OVER MONTROSE RD.
F.A. PROJECT
F.A.I. ROUTE 70 SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741+37.68

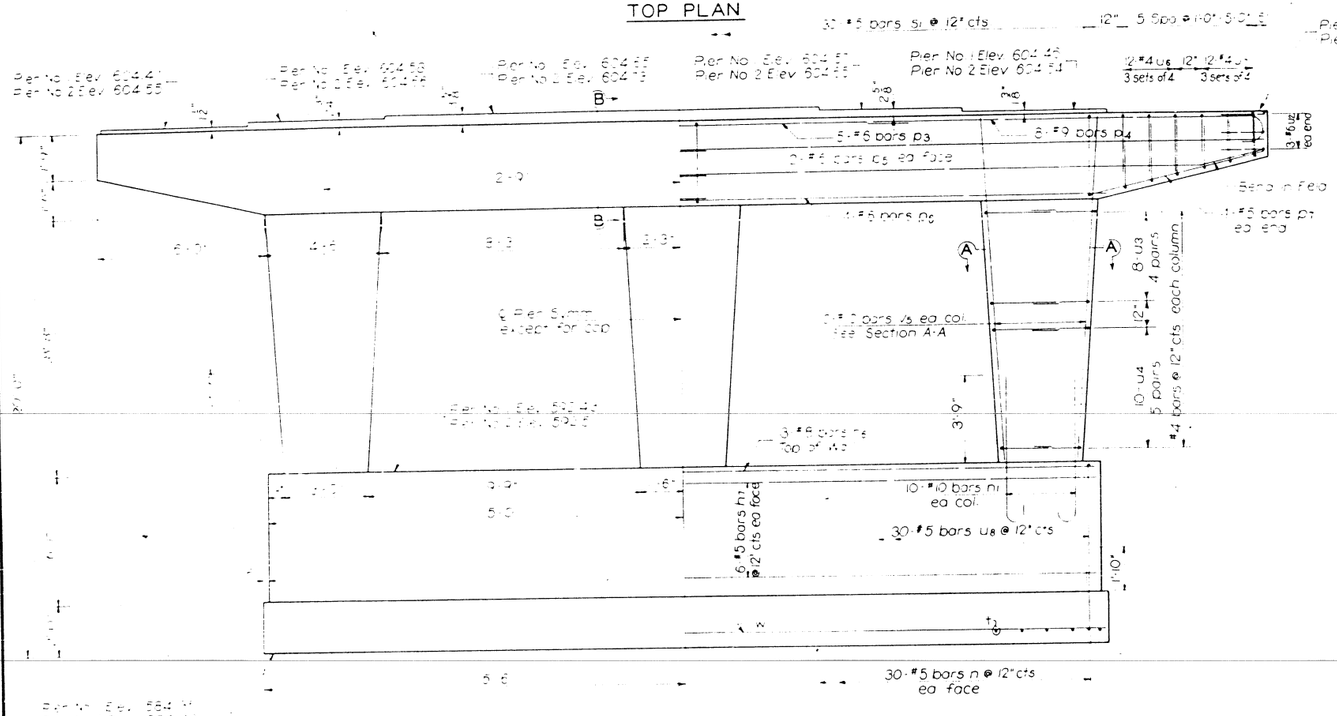
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. Rt. 70	25-5HB-5	Effingham	37	33
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

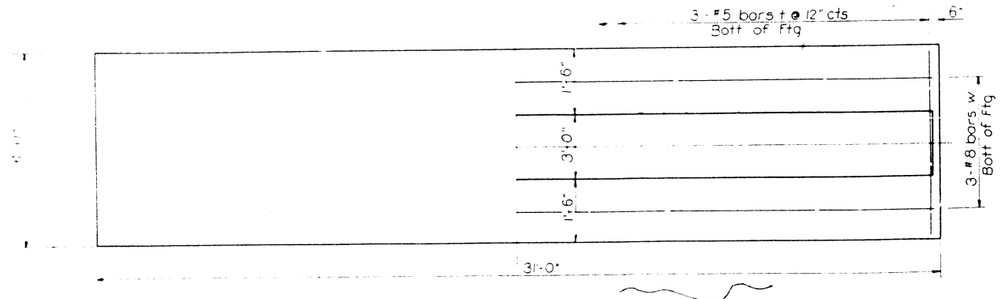
SHEET 9 OF 10 SHEETS



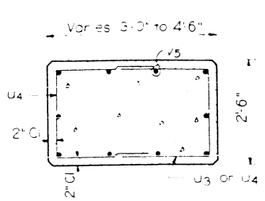
TOP PLAN



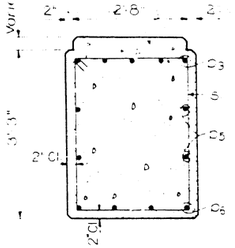
ELEVATION



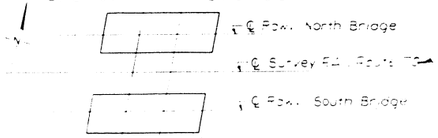
FOOTING PLAN



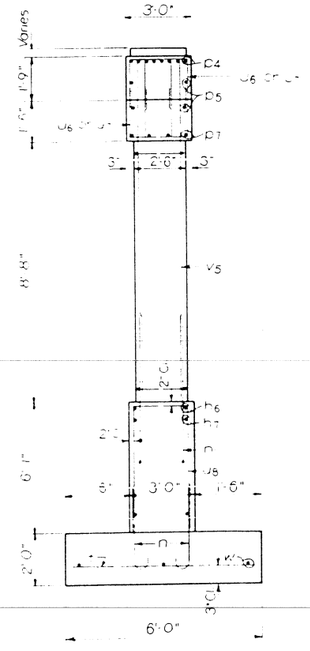
SECTION A-A



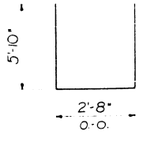
SECTION B-B



ORIENTATION SKETCH



END VIEW



BAR U8

Note:
See Sh. 8 of 10 for bar details.

BILL OF MATERIAL
SOUTH BRIDGE-PIERS 1 & 2

BAR	NO.	SIZE	LENGTH	SHAPE
h6	6	#8	29'-9"	
h7	24	#5	29'-9"	
D3	2	#6	14'-0"	
D4	32	#9	17'-3"	C
D5	4	#6	21'-7"	
D6	4	#6	15'-9"	
D7	6	#5	6'-3"	
S1	52	#5	11'-4"	
U2	2	#8	5'-7"	
U3	48	#4	8'-0"	
U4	52	#4	7'-4"	
U6	48	#4	6'-6"	
U7	48	#4	5'-7"	
U8	52	#5	14'-4"	
V5	60	#10	11'-8"	
W	6	#8	30'-8"	
t	66	#5	5'-8"	
n	30	#5	4'-1"	C
n1	52	#10	7'-5"	C
Class X Concrete		Cu Yds		116.1
Reinforcement Bars		Lbs		13,270
Class A Excavation		Cu Yds		138
Rock Excavation		Cu Yds		6

DESIGNED	K.F.C.
CHECKED	W.C.
DRAWN	D.D.D.
CHECKED	D.J.M.

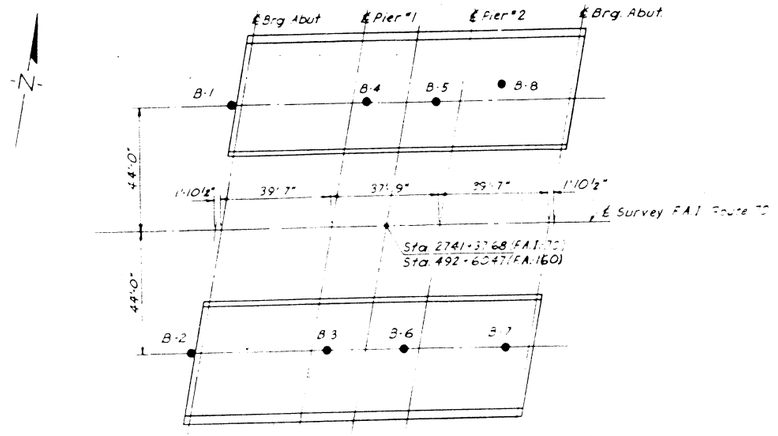
EXAMINED _____ 19
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED _____
ENGINEER OF DESIGN
APPROVED _____
CHIEF HIGHWAY ENGINEER

PIERS-SOUTH BRIDGE
FED. AID INTERSTATE OVER MONTROSE RD.
F. A. PROJECT
F.A.I. ROUTE 70 SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741+37.68

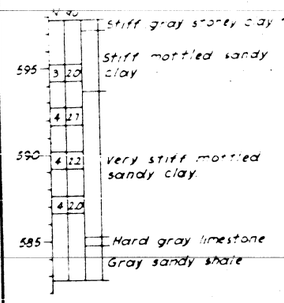
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. Rt. 70	25-5HB-5	Effingham	5	3
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SHEET 10 OF 10 SHEETS

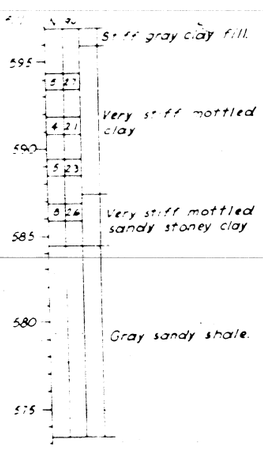


BORING LOCATION SKETCH



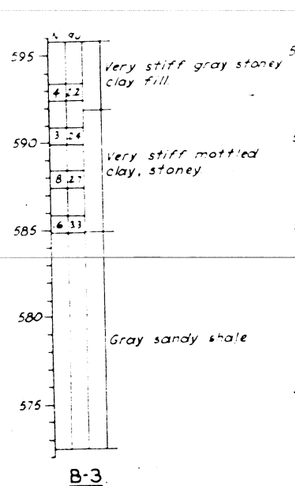
B-1

Sta. 2740+83, 44' Lt ℄



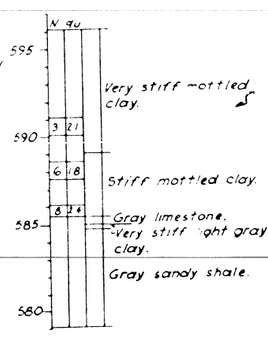
B-2

Sta. 2740+67, 48' Rt ℄



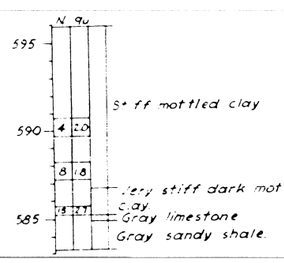
B-3

Sta. 2741+6, 44' Rt ℄



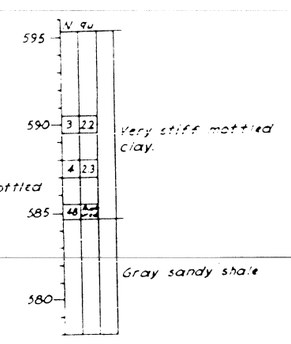
B-4

Sta. 2741+92, 44' Lt ℄



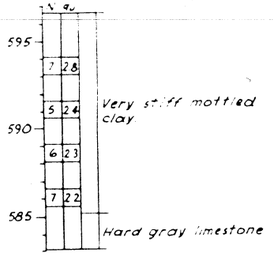
B-5

Sta. 2741+56, 44' Lt ℄



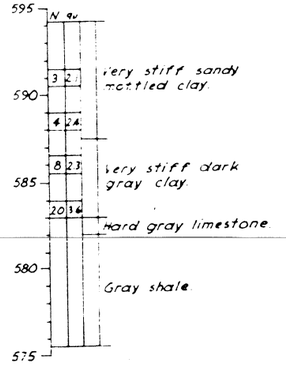
B-6

Sta. 2741+43, 41' Rt ℄



B-7

Sta. 2741+80, on ℄ of Eastbound Lane



B-8

Sta. 2741+80, 6' Lt ℄ of Westbound Lane

Note:
N = Blows per foot of penetration of sampling spoon. Hammer weight = 350 lbs. Drop = 12".
qu = Unconfined compressive strength in tons per square foot.

DESIGNED	V.F.S.
CHECKED	J.C.C.
DRAWN	T.E.B.
CHECKED	O.J.M.

19
EXAMINED
DIRECTOR OF HIGHWAYS AND TRAFFIC ENGINEER
PASSED
APPROVED
DIRECTOR OF HIGHWAYS
STATE HIGHWAY ENGINEER

BORINGS
FED. AID INTERSTATE OVER MONTROSE RD.
F. A. PROJECT
F.A.I. ROUTE 70 SECTION 25-5HB-5
EFFINGHAM COUNTY
STATION 2741+37.68

INDEX OF SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	SUMMARY OF QUANTITIES
3	SIGNATURES, GENERAL NOTES, & BRIDGE DIMENSIONS
4	TYPICAL SECTIONS & CONSTRUCTION LIMITS
5	WATERPROOFING MEMBRANE SYSTEM & DRAIN HOLE DETAILS
6-8	JOINT MODIFICATIONS FOR DECK WATERPROOFING DETAILS A-H

STANDARD 2298-4
STANDARD 2299-6
STANDARD 2300-1
STANDARD 2304-3
STANDARD 2309-3
STANDARD 2316-3

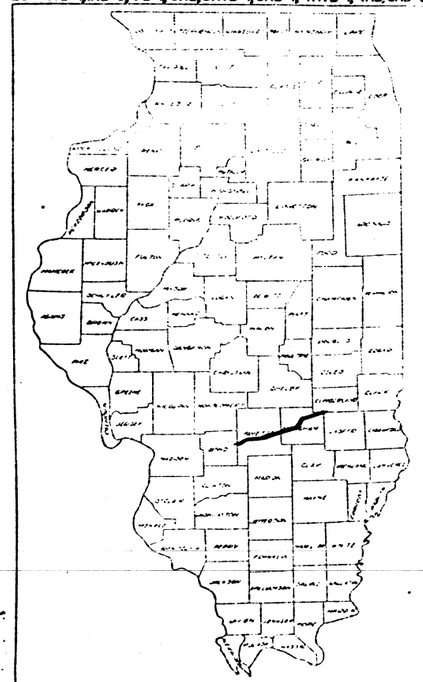
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED FEDERAL AID INTERSTATE HIGHWAY

F.A.I. ROUTE 70

F.A.I. 70 *	FAYETTE	8	1
	EFFINGHAM		

* 26-(0HVB, 0B-1, 0B-2, 0B-3, 0B-4, 2HB-2, 2VB, 2HB-4, 2B-1(2), 3B-2(2), 3HB-4, 3VB-1(2), 5HB-2, 5VB)I
25-(1VB-1, 1HB-3, 3B-1, 3HB, 3HVB-1, 3HB-1, 4HVB-1, 4HB, 5HB-5)I



LOCATION OF SECTION INDICATED THUS:—

I-70-2(146)12

FAYETTE COUNTY

SECTION (26-0HVB)I
SECTION (26-0B-1)I
SECTION (26-0B-2)I
SECTION (26-0B-3)I
SECTION (26-0B-4)I
SECTION (26-2HB-2)I
SECTION (26-2VB)I
SECTION (26-2HB-4)I
SECTION (26-3B-1(2))I
SECTION (26-3B-2(2))I
SECTION (26-3VB-1(2))I
SECTION (26-3HB-4)I

PC-97-833-73

I-70-3(83)68

FAYETTE COUNTY

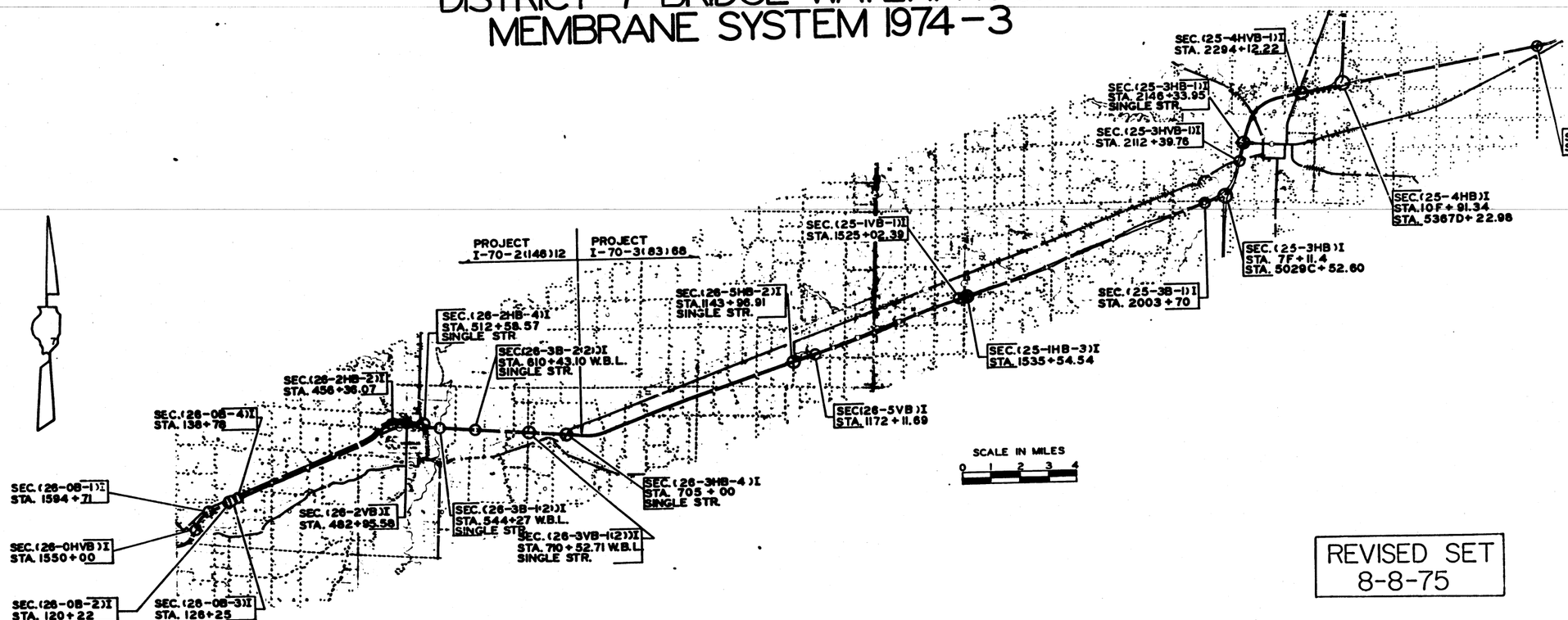
SECTION (26-5HB-2)I
SECTION (26-5VB)I

EFFINGHAM COUNTY

SECTION (25-1VB-1)I
SECTION (25-1HB-3)I
SECTION (25-3B-1)I
SECTION (25-3HB)I
SECTION (25-3HVB-1)I
SECTION (25-3HB-1)I
SECTION (25-4HVB-1)I
SECTION (25-4HB)I
SECTION (25-5HB-5)I

PC-97-834-73

DISTRICT 7 BRIDGE WATERPROOFING MEMBRANE SYSTEM 1974-3



DEPARTMENT OF TRANSPORTATION
March 19, 75 H. Stinson
March 27, 75
March 27, 75
March 27, 75
DIRECTOR OF HIGHWAYS

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ENGINEER DATE

REVISED SET
8-8-75

LENGTH OF PROJECT I-70-2(146)12 = (5115.66 FT. = 0.969 MI.)
LENGTH OF PROJECT I-70-3(83)68 = (4285.57 FT. = 0.812 MI.)
TOTAL = (9401.23 FT. = 1.781 MI.)

025-0016 & 0017
CONTRACT NO. 30587
Revised 7/29/75
Revised 7/29/75
7-80

SECTION F.A.I. ROUTE

* 26-(0HVB, 0B-1, 0B-2, 0B-3, 0B-4, 2HB-2, 2VB, 2HB-4, 3B-1(2), 3B-2(2), 3HB-4, 3VB-1(2), 5HB-2, 5VB)I
25-(1VB-1, 1HB-3, 3B-1, 3HB, 3HVB-1, 3HB-1, 4HVB-1, 4HB, 5HB-5)I

SUMMARY OF QUANTITIES

LOCATION OF WORK

PROJECT I-70-2(146)12 — FAYETTE COUNTY — CONSTRUCTION TYPE CODE Y007

CODE NO.	ITEM	UNIT	TOTAL	0HVB)I STA.1550+00	0B-1)I STA.1594+71	0B-2)I STA. 120+22	0B-3)I STA.126+25	0B-4)I STA. 138+78	2HB-2)I STA. 456+36.07	2VB)I STA. 482+95.58	2HB-4)I STA. 512+58.57	3B-1(2)I STA. 544+27	3B-2(2)I STA. 610+43.10	3VB-1(2)I STA. 710+52.71	3HB-4)I STA. 705+00
				RURAL					SECTION (26- URBAN			RURAL			
406001	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1675	84	84	84	84	84	84	84	76	42	42	42	24
406008	BITUMINOUS CONCRETE SURFACE COURSE, CLASS I	TON	4361	262	137	143	200	248	155	175	209	380	219	177	92
501022	CONCRETE REMOVAL	CU. YD.	77.0 *	–	–	–	–	–	–	*9.2	–	–	–	*5.1	–
504003	CLASS X CONCRETE	CU. YD.	74.4 *	–	–	–	–	–	–	*8.4	–	–	–	*4.7	–
507020	FURNISHING & ERECTING STRUCTURAL STEEL, SPECIAL	POUND	38,370	–	1667	1776	–	–	817	1611	–	3798	917	3751	659
512001	REINFORCEMENT BARS	POUND	12 780	–	–	–	–	–	–	–	–	–	–	–	–
646002	ENGINEER'S FIELD OFFICE, TYPE B	EACH	1												
X04941	WATERPROOFING MEMBRANE SYSTEM	SQ. YD.	34,024	2193	914	981	1556	2047	1100	1300	1704	3639	1990	1567	800
X64701	PAVEMENT MARKING TAPE	LIN. FT	592	36	20	20	24	28	20	20	16	48	28	26	16
XZ1089	TRAFFIC CONTROL AND PROTECTION STANDARD 2316	L. SUM	1.00	.05	.05	.05	.05	.05	.05	.05	–	.06	.05	.06	–
XZ1182	NEOPRENE EXPANSION DAM	LIN FT	1944	129	103	–	206	206	80	–	133	60	60	–	–
X05250	PREFORMED JOINT SEALER 1¾"	LIN. FT	157	–	–	–	–	–	90	–	30	6	12	–	–
XZ1186	PREFORMED JOINT SEALER 2½"	LIN. FT	2,127	24	176	185	10	10	–	168	30	42	108	80	78
Z10205	DECK SLAB REPAIR (PARTIAL)	SQ. YD.	5316 *	E.B.L. 96 W.B.L. 105	25 10	15 10	– 15	105 170	120 115	145 125	– 480	– 985	– 495	– 330	– 135
XZ1014	TRAFFIC CONTROL AND PROTECTION STANDARD 2309	EACH	2	–	–	–	–	–	–	–	–	–	–	–	1

PROJECT I-70-3(83)68 — FAYETTE COUNTY / EFFINGHAM COUNTY — CONSTRUCTION TYPE CODE Y007

CODE NO.	ITEM	UNIT	TOTAL	5HB-2)I STA. 1143+96.91	5VB)I STA. 1172+11.69	1VB-1)I STA. 1525+02.39	1HB-3)I STA. 1535+54.54	3B-1)I STA. 2003+70	3HB)I STA. 7F+11.4	3HB)I STA. 5029C+52.60	3HVB-1)I STA. 2112+39.76	3HB-1)I STA. 2146+33.95	4HVB-1 STA. 2294+12.22	4HB)I STA. 5367D+22.98	4HB)I STA. 10F+91.34	5HB-5)I STA. 2741+37.68
				FAYETTE COUNTY		EFFINGHAM COUNTY: RURAL			SECTION (25 -			URBAN	RURAL			
406001	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1675	24	84	84	103	84	31	42	84	84	84	42	31	84
406008	BITUMINOUS CONCRETE SURFACE COURSE, CLASS I	TON	4361	85	152	148	191	321	74	83	129	188	278	91	76	148
501022	CONCRETE REMOVAL	CU. YD.	77.0 *	–	*4.2	*2.1	15.1	–	*5.0	*4.5	–	*2.8	*5.6	*5.2	*5.5	12.7
504003	CLASS X CONCRETE	CU. YD.	74.4 *	–	*3.8	*1.9	15.3	–	*4.9	*4.4	–	*2.5	*5.2	*5.1	*5.3	12.9
507020	FURNISHING & ERECTING STRUCTURAL STEEL, SPECIAL	POUND	38,370	–	653	324	555	6924	2205	1956	696	563	4961	1772	1957	808
512001	REINFORCEMENT BARS	POUND	12 780	–	–	–	6900	–	–	–	–	–	–	–	–	5880
646002	ENGINEER'S FIELD OFFICE, TYPE B	EACH	1													
X04941	WATERPROOFING MEMBRANE SYSTEM	SQ. YD.	34,024	732	1068	1031	1363	2791	572	609	837	1491	2354	687	597	101
X64701	PAVEMENT MARKING TAPE	LIN. FT	592	14	24	24	20	44	16	12	32	14	40	14	16	20
XZ1089	TRAFFIC CONTROL AND PROTECTION STANDARD 2316	L. SUM	1.00	–	.05	.05	.05	.06	.03	.03	.05	–	.05	.03	.03	.05
XZ1182	NEOPRENE EXPANSION DAM	LIN FT	1944	60	64	96	145	–	48 TYPE 1	88	68	166	–	98 TYPE 1-48	54 TYPE 1-51	80
X05250	PREFORMED JOINT SEALER 1¾"	LIN. FT	157	–	13	6	–	–	–	–	–	–	–	–	–	–
XZ1186	PREFORMED JOINT SEALER 2½"	LIN. FT	2,127	12	76	50	75	143	123	107	95	104	166	77	91	97
Z10205	DECK SLAB REPAIR (PARTIAL)	SQ. YD.	5316 *	– 70	108 45	80 90	65 90	170 160	74	20	110 125	90 –	140 225	60	48	40 25
XZ1014	TRAFFIC CONTROL AND PROTECTION STANDARD 2309	EACH	2	1	–	–	–	–	–	–	–	–	–	–	–	–

* NON PARTICIPATING QUANTITIES

CONCRETE REMOVAL 49.2 CU.YDS.
CLASS X CONCRETE 46.2 CU.YDS. — SEE CLASS "X" SCHEDULE PAGE # 4
DECK SLAB REPAIR (PARTIAL) 5316 SQ YDS.

FED. ROAD DIST. NO.	STATE	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I 70	*	FAYETTE EFFINGHAM	8	3

TO U.S. FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT

* 26-(10HVB, 08-1, 08-2, 08-3, 08-4, 2HB-2, 2VB, 2HB-4, 3B-1(2), 3B-2(2), 3HB-4, 3VB-1(2), 5HB-2, 5VB)I
25-(1VB-1, 1HB-3, 3B-1, 3HB, 3HVB-1, 3HB-1, 4HVB-1, 4HB, 5HB-5)I

SIGNATURES

PLANS PREPARED BY DISTRICT 7 DESIGN OFFICE

EXAMINED March 18, 1975 — W. O Cox — DISTRICT ENGINEER OF DESIGN

EXAMINED MARCH 18 1975 — R. A. Wantz — DISTRICT ENGINEER OF CONSTRUCTION

EXAMINED March 18 1975 — John D. Sills — DISTRICT ENGINEER OF LAND ACQUISITION

EXAMINED March 18 1975 — Jack E. Brack — DISTRICT ENGINEER OF MAINTENANCE

EXAMINED MARCH 18 1975 — Clinton L. Stark — DISTRICT ENGINEER OF PLANNING

EXAMINED March 18 1975 — E R Greifzu — DISTRICT ENGINEER OF TRAFFIC

EXAMINED MARCH 19 1975 — H L Wear — DISTRICT ENGINEER

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS; "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JULY 2, 1973; THE "MIMEOGRAPHED SPECIFICATIONS"; AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

THESE SECTIONS CONSIST OF FURNISHING AND PLACING A WATERPROOFING MEMBRANE SYSTEM ON 39 BRIDGE DECKS AT 23 LOCATIONS, THE CONSTRUCTION OF A BITUMINOUS CONCRETE SURFACE COURSE CLASS I, AS A WEARING SURFACE OVER THE WATERPROOFING MEMBRANE SYSTEM, THE ADJUSTMENT AND SEALING OF BRIDGE EXPANSION JOINTS, AND OTHER INCIDENTAL WORK NECESSARY TO COMPLETE THE WORK.

ANY REFERENCE TO A STANDARD IN THESE PLANS SHALL BE INTERPRETED TO MEAN THE EDITION AS INDICATED BY THE SUB-NUMBER LISTED IN THE INDEX OF SHEETS OR THE COPY OF THE STANDARD INCLUDED IN THESE PLANS.

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.

BRIDGE DIMENSION SCHEDULE

I SECTION	STATION	NO. OF STR.	DECK SLAB LENGTH	O TO O & ROADWAY WIDTH	SKEW	NO. JTS. PER STR.	DECK JOINT MODIFICATION DETAILS — USE DETAILS (SEE SHEETS 7-9)	PREFORMED JOINT SEALER	1½" X 1" STEEL BARS	NEOPRENE EXPANSION
26-0HVB	1550+00	2	328'-10⅝"	36'-0" 30'-0"	21°-42'-10"	2	W.B.L. W. ABUT. - E & D 2½" E. ABUT. E & D 2½" E.B.L. W. ABUT. - E & D 2½" E. ABUT. - E & D 2½"	6'-0⅛" 'D'		32'-2⅞"
26-0B-1	1594+71	2	102'-10½"	42'-6" 40'-0"	15°	2 & LONG.	W.B.L. W. ABUT. - A & C E. ABUT. - A & C E.B.L. W. ABUT. - A & C E. ABUT. - A & C	44'-0"	40'-10¼"	LONG. 102'-10½"
26-0B-2	120+22	2	110'-4"	42'-0" 40'-0"	25°	2	W.B.L. W. ABUT. - A & C E. ABUT. - A & C E.B.L. W. ABUT. - A & C E. ABUT. - A & C	46'-2"	43'-6½"	—
26-0B-3	126+25	2	175'-1"	42'-0" 40'-0"	40°	2	W.B.L. W. ABUT. - E & D 2½" E. ABUT. - E & D 2½" E.B.L. W. ABUT. - E & D 2½" E. ABUT. - E & D 2½"	2'-6" 'D'		51'-6"
26-0B-4	138+78	2	230'-3"	42'-0" 40'-0"	40°	2	W.B.L. W. ABUT. - E & D 2½" E. ABUT. - E & D 2½" E.B.L. W. ABUT. - E & D 2½" E. ABUT. - E & D 2½"	2'-6" 'D'	—	51'-6¼"
26-2HB-2	456+36.07	2	122'-3"	42'-6" 40'-6"	4°	2	W.B.L. W. ABUT. - B & C E. ABUT. - E & D 1¾" E.B.L. W. ABUT. - B & C E. ABUT. - E & D 1¾"	42 7½" 2'-6⅜" D'	40'-0⅜" —	— 40'-0⅜"
26-2VB	482+95.58	2	146'-3"	42'-0" 40'-0"	2°-03'-00"	2	W.B.L. W. ABUT. - B & C E. ABUT. - B & C E.B.L. W. ABUT. - B & C E. ABUT. B & C	42'-0⅜"	39'-5¾"	—
26-2HB-4	512+58.57	1	284'-0"	78'-0" 2 @ 27'-0"	35°-55'-30'	2	N. ABUT. - E & D 2½" S. ABUT. - E & D 1¾" MEDIAN JOINT (INCIDENTAL)	29'-7¾" 'D'	—	2 @ 33'-3"
26-3B-1(2)	544+27 W.B.L.	1	109'-7"	36'-0" 30'-0"	0°	5	W. ABUT. - A & C E. ABUT. - E & D 1¾" PIER 3 - E & D 2½" PIER 7&10 - H* (SEE SH. 8)	36'-0" 6'-0 'D'	29'-11½"	29'-11½"
26-3B-2(2)	610+43.10 W.B.L.	1	597'-1½"	36'-0" 30'-0"	0°	5	PIER 1 & 13 - E & D 1¾" PIER 4,7,&10 - A & C	36'-0" 6'-0" 'D'	29'-11½"	29'-11½"
26-3VB-1(2)	710+52.71 W.B.L.	1	469'-11½"	36'-0" 30'-0"	63°-04'-20"	2	W. ABUT. - H (SEE SH. 8) E. ABUT. - B & C	79'-6"	66'-3"	—
26-3HB-4	705+00	1	257'-0⅜"	33'-8" 28'-0"	30°	2	N. ABUT. - A & C S. ABUT. A & C	38'-10⅝"	32'-3⅜"	—
26-5HB-2	1143+96.91	1	235'-3¼"	33'-8" 28'-0"	20°-12'-40"	2	N ABUT. - E & D 2½" S. ABUT. - E & D 2½"	6'-0" 'D'	—	29'-9½"
26-5VB	1172+11.69	2	160'-1½"	35'-8" 30'-0"	20°-22'-20"	2	W.B.L. W. ABUT. - E & D 1¾" E. ABUT. - B & C E.B.L. W. ABUT. - E & D 1¾" E. ABUT. - B & C	38'-0½" 6'-0" 'D'	32'-0"	32'-0"
25-1VB-1	1525+02.39	2	154'-9"	35'-8" 30'-0"	19°-27'-13"	2	W.B.L. W. ABUT. - E & D 2½" E. ABUT. - B & C E.B.L. W. ABUT. - E & D 1¾" E. ABUT. - E & D 2½"	37'-10" 6'-0" 'D'	31'-9½"	31'-9½"
25-1HB-3	1535+54.54	2	130'-11⅛"	55'-8" 51'-0" 45'-0" W. TO 49'-8" E. 40'-4" W. 45'-0" E.	20°-23'-09"	2 & LONG.	W.B.L. W. ABUT. - A & C E. ABUT. - E & D 2½" LONG. JT. - G E.B.L. W. ABUT. - E & D 2½" E. ABUT. - E & D 2½" LONG. JT. - G	59'-4¾" 5'-0" 'D' 5'-0" 'D' 5'-0" 'D'	54'-4⅞" — —	54'-4⅞" 42'-11½" 47'-11⅝"
25-3B-1	2003+70	2	418'-7⅛"	35'-8" 30'-0"	0°	4	W.B.L. W. ABUT. - A & C E. ABUT. - A & C PIER 3 & 6 - H (SEE SH. 8) E.B.L. W. ABUT. - A & C E. ABUT. - A & C PIER 3 & 6 - H	35'-8"	29'-11"	—
25-3HB	7F+11.4	1	257'-9⅝"	25'-8" 20'-0"	42°-39'-27" 21°-16'-54" 29°-40'-40" 34°-43'-44"	4	W. ABUT. - A & C E. ABUT. - A & C PIER 2 - F, TYPE 1 PIER 3 - F, TYPE 1	34'-11" 27'-6⅜" — —	27'-2½" 21'-5½" — —	— — 23'-0⅛" 24'-4⅜"
#2	5029C+52.60	1	182'-7⅝"	35'-8" 30'-0"	47°-53'-59" 42°-00'-49" 44°-01'-18"	3	N. ABUT. - E & D 2½" S. ABUT. - A & C PIER 1 - F, TYPE 1	8'-5½" 'D' 48'-0" —	— 40'-4⅝" —	44'-9" — 41'-8⅜"
25-3HVB-1	2112+39.76	2	251'-0⅝"	35'-8" 30'-0"	28°-37'-00"	2	N.B.L. N. ABUT. - E & D 2½" S. ABUT. - A & C S.B.L. N ABUT. - E & D 2½" S. ABUT. - A & C	40'-7½" 6'-6" 'D'	34'-1¼"	34'-1¼"
25-3HB-1	2146+33.95	1	248'-5³⁄₁₆"	65'-8" 2 @ 27'-0"	12°-36'-00"	4	W.ABUT. - E & D 2½" E. ABUT. - B & C PIER 1 - F, TYPE 2 PIER 3 - F, TYPE 2	67'-3½" 12'-0" 'D'	2 @ 27'-7⅛"	2 @ 27'-7⅛"
25-4HVB-1	2294+12.22	2	353'-0¼"	35'-8" 30'-0"	31°-27'-10"	3	W.B.L. W. ABUT. - A & C E. ABUT. - B & C PIER 2 - H E.B.L. W. ABUT. - A & C E. ABUT. - B & C PIER 2 - H	41'-9³⁄₄"	35'-1¾"	—
25-4HB	5367D+22.98	1	206'-8"	35'-8" 30'-0"	54°-51'-32" 48°-36'-08" 50°-33'-08"	3	S. ABUT. - E & D 2½" N. ABUT. - E & D 2½" PIER 2 - F, TYPE 1	9'-9¼" 'D' 8'-6⅞" 'D' —	— — —	52'-1⅝" 45'-4⅜" 47'-2⅜"
#3										
#4	10F+91.34	1	268'-10¼"	25'-8" 20'-0"	49°-58'-56" 27°-43'-26" 40°-32'-22" 35°-50'-32"	4	S. ABUT. - E & D 2½" N. ABUT. - E & D 2½" PIER 2 - F, TYPE 1 PIER 3 - F, TYPE 1	8'-9⅜" 'D' 6'-4⅜" 'D' — —	— — — —	31'-1⅜" 22'-7½" 26'-3⅞" 24'-8⅛"
25-5HB-5	2741+37.68	2	118'-4½"	43'-8" 39'-0"	10°-20'-57"	2 & LONG.	W.B.L. W. ABUT. - A & C E. ABUT. - E & D 2½" LONG. JT. - G E.B.L. W. ABUT. - A & C E. ABUT. - E & D 2½" LONG. JT. - G	44'-4¾" 4'-9½" 'D'	39'-7½"	39'-7½"

SPECIAL FIXED JOINT DETAIL B SPECIAL

#1	25-3HB	7F+11.4				25°-32'-04" 38°-37'-43"		PIER 1 - B (SP) PIER 4 - B (SP)	28'-5¹⁄₁₆" 32'-1. 4"	22'-2" 25'-7½"	
#2	25-3HB	5029C+52.60				45°-56'-58"		PIER 2 - B (SP)	49'-7¼"	43-1³⁄₄"	
#3	25-4HB	5367D+22.98				52°-42'-03"		PIER 1 - B (SP)	58'-10¼"	49'-6"	
#4	25 4HB	10F+91.34				45°-10'-06" 31°-50'-54"		PIER 1 - B (SP) PIER 4 - B (SP)	36'-5" 30'-2¾"	28'-4½" 23'-6½"	

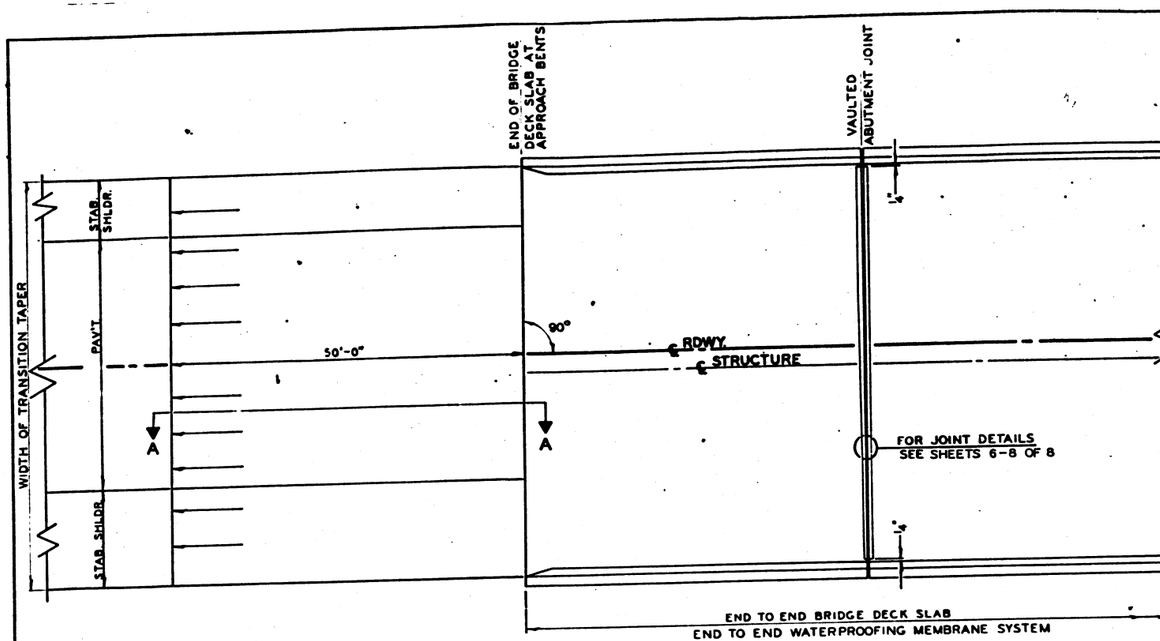
SIGNATURES, BRIDGE DIMENSIONS, & GENERAL NOTES

Rev. 8/6/75

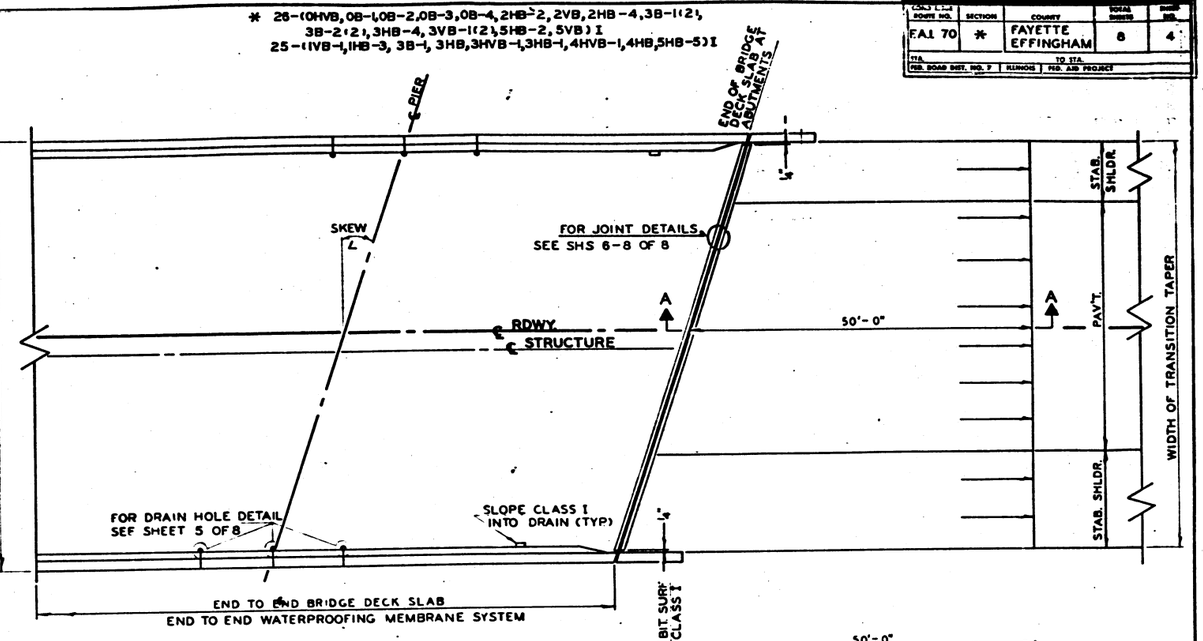
DIETZGEN NO 135 IMPERIAL

CONT. L.A. ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I 70	*	FAYETTE EFFINGHAM	8	4
STA. FED. ROAD DIST. NO. 7 ILLINOIS		TO STA. FED. AID PROJECT		

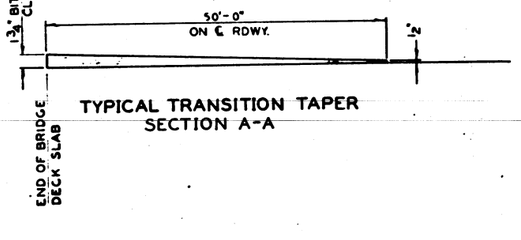
* 26-(10HVB, 08-1, 08-2, 08-3, 08-4, 2HB-2, 2VB, 2HB-4, 3B-1(2), 3B-2(2), 3HB-4, 3VB-1(2), 5HB-2, 5VB) I
25-(1VB-1, 1HB-3, 3B-1, 3HB, 3HVB-1, 3HB-1, 4HVB-1, 4HB, 5HB-5) I



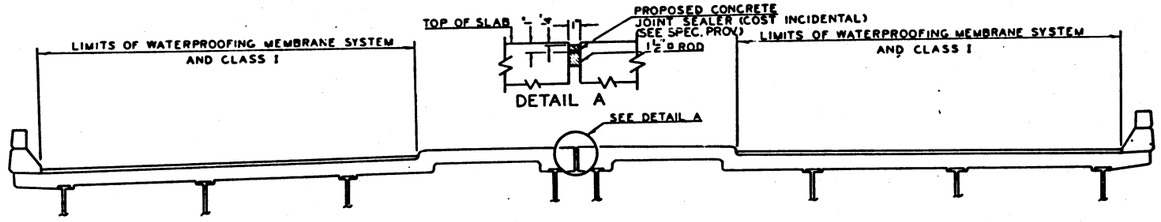
TYPICAL HALF PLAN AT RT. ∠'S
VAULTED ABUTMENT TYPE



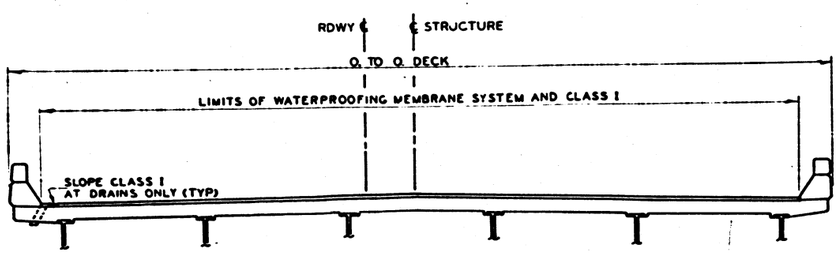
TYPICAL HALF PLAN ON SKEW
OPEN (SPILL-THRU) ABUTMENT TYPE



TYPICAL TRANSITION TAPER
SECTION A-A



TYPICAL DECK CROSS SECTION WITH MEDIAN
SEC. 26-2HB-4



TYPICAL DECK CROSS SECTION
FOR OPPOSITE DUAL STRUCTURE
ROTATE 180°

CLASS X SCHEDULE

	SECTION	CONCRETE REMOVAL	CLASS "X" CONCRETE	LOCATION
*	25-1VB-1	2.1	1.9	E. ABUT. W.B.L.
	25-1HB-3	15.1	15.3	℄ JOINT
*	25-3HB-1	2.8	2.5	E. ABUT.
*	25-4HVB-1	5.6	5.2	E. ABUT. W.B.L.
				E. ABUT. E.B.L.
*	25-3HB	4.5	4.4	PIER #1 (5029C+52.80)
*	25-3HB	2.3	2.3	PIER #1 (7F + 11.4)
*	25-3HB	2.7	2.8	PIER #4 (7F + 11.4)
*	25-4HB	5.2	5.1	PIER #1 (5367D+22.98)
*	25-4HB	3.0	2.9	PIER #1 (10F + 91+34)
*	25-4HB	2.5	2.4	PIER #4 (10F + 91+34)
	25-5HB-5	12.7	12.9	℄ JOINT
*	26-2VB	9.2	8.4	E.& W. ABUT. W.B.L.
				E.& W. ABUT. E.B.L.
*	26-3VB-1(2)	5.1	4.7	E. ABUT. W.B.L.
*	26-5VB	4.2	3.8	E. ABUT. W.B.L.
	TOTAL	77.0 CU.YD.	74.4 CU.YD.	E. ABUT. E.B.L.

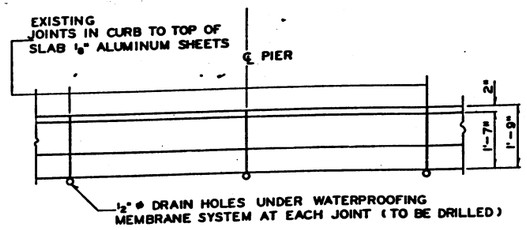
* NON-PARTICIPATING

Rev 6-5-75

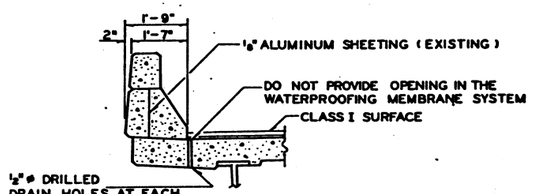
SUPERSTRUCTURE TYPICALS, CLASS X SCHEDULE, TRANSITION TAPER

BOND ISSUE ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	*	FAYETTE EFFINGHAM	8	5
F.A.I. ROAD DIST. NO. 7	ILLINOIS	TO STA. / FED. AID PROJECT		

* 26-(OHVB, 0B-1, 0B-2, 0B-3, 0B-4, 2HB-2, 2VB, 2HB-4, 3B-1(2), 3B-2(2), 3HB-4, 3VB-1(2), 5HB-2, 5VB)I
25-(1VB-1, 1HB-3, 3B-1, 3HB, 3HVB-1, 3HB-1, 4HVB-1, 4HB, 5HB-5)I



PLAN



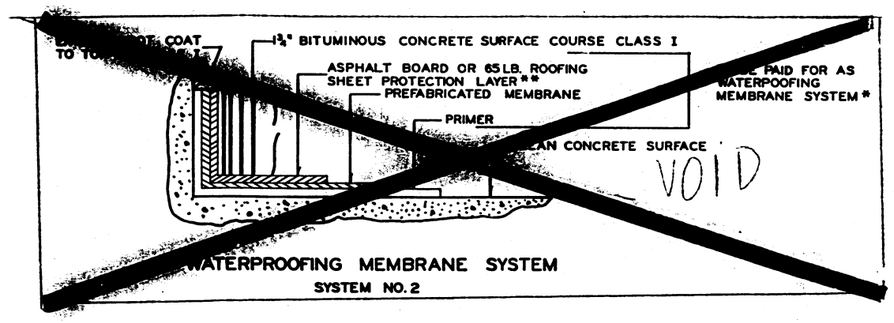
SECTION AT CURB JOINTS

DRAIN HOLES SHALL BE PROVIDED IN THE DECK AT THE BASE OF ALL ALUMINUM SHEETED JOINTS IN THE CURB OR PARAPET WHEN THE WATERPROOFING MEMBRANE SYSTEM IS SPECIFIED IN THE PLANS.

SIMILAR DRAIN HOLES SHALL ALSO BE PROVIDED AT ANY UNAVOIDABLE LOW POINT OF THE DECK THAT WOULD TEND TO POCKET WATER PENETRATING THE WATERPROOFING MEMBRANE SYSTEM.

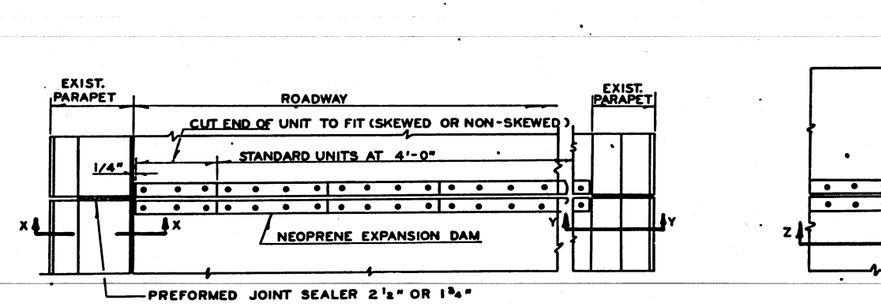
TYPICAL DRAIN HOLE DETAILS

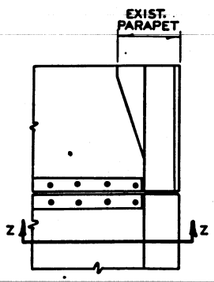
** DO NOT USE PRIMER OVER PREFABRICATED MEMBRANE; SPOT TACK PROTECTION LAYER WITH SPECIFIED MASTIC ONLY.



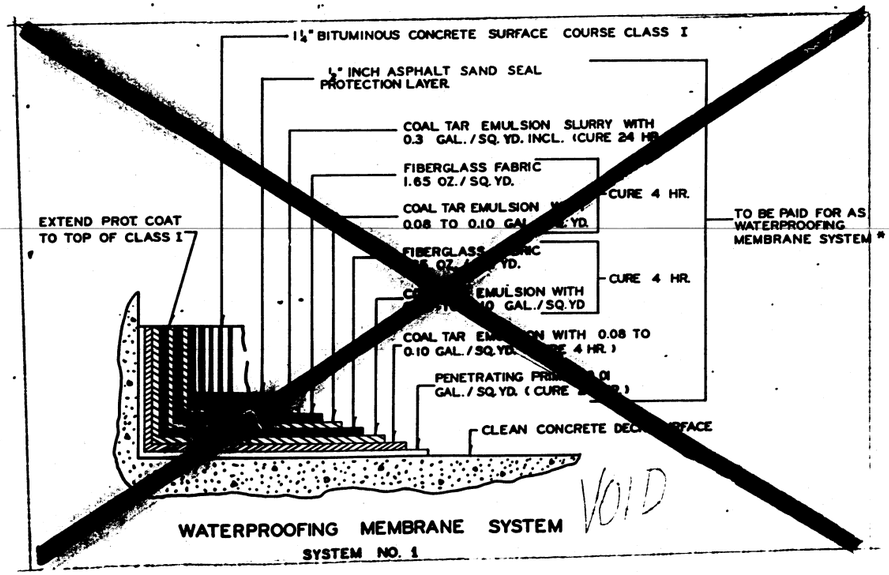
WATERPROOFING MEMBRANE SYSTEM
SYSTEM NO. 2

* SEE SPECIAL PROVISIONS





TYPICAL END SEALER TREATMENTS FOR USE WITH NEOPRENE EXPANSION DAM



WATERPROOFING MEMBRANE SYSTEM
SYSTEM NO. 1

DRAIN HOLE DETAILS & WATERPROOFING MEMBRANE SYSTEM

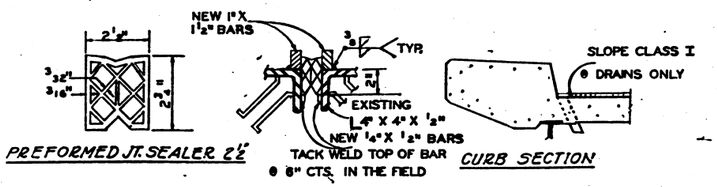
Revised 7/29/75

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 70	*	FAYETTE EFFINGHAM	8	6
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. SHEETS

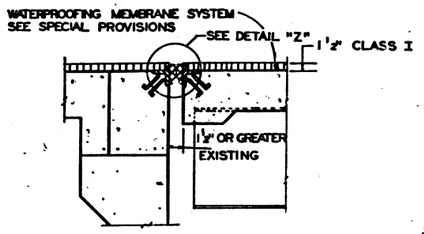
* 26-(OHVB, OB-1, OB-2, OB-3, OB-4, 2HB-2, 2VB, 2HB-4, 3B-1(2), 3B-2(2), 3HB-4, 3VB-K2), 5HB-2, 5VB)I
25-(IVB-1, IHB-3, 3B-1, 3HB, 3HVB-1, 3HB-1, 4HVB-1, 4HB, 5HB-5)I



PREFORMED JT. SEALER 2½"

DETAIL "Z"

CURB SECTION

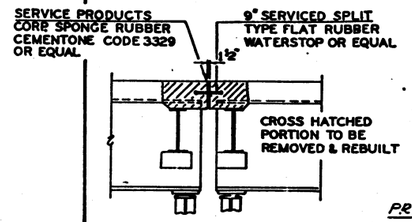


SEC. AT ABUTMENTS

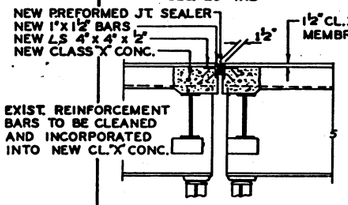
ABUTMENT JOINT MODIFICATIONS FOR DECK WATERPROOFING

EXISTING OPENING IS BETWEEN 1½" AND 2" @ 50° F. AND THE EXPANSION LENGTH AND SKEW FALLS INTO THE 2½" P.J.S. RANGE.

DETAIL - A

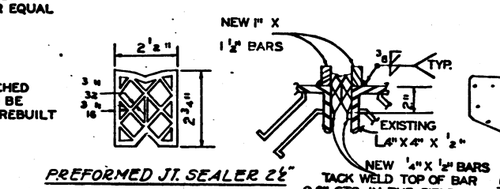


EXISTING SECTION AT FIXED PIER
SEC. 25-3HB
SEC. 25 4HB



PROPOSED SECTION AT FIXED PIER
SEC. 25-3HB
SEC. 25-4HB

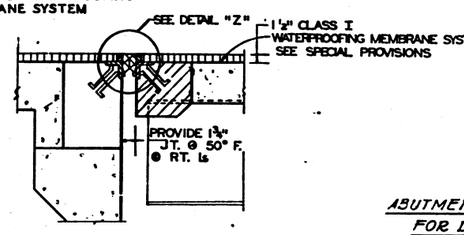
DETAIL B SPECIAL



PREFORMED JT. SEALER 2½"

DETAIL "Z"

CURB SECTION



SEC. AT ABUTMENTS

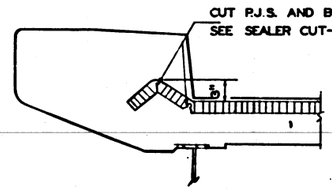
NOTES:

HATCHED AREA SHALL BE REMOVED AND REPLACED TO PROVIDE 1¾" RIGHT ANGLE JOINT @ 50° F. EXISTING REINFORCEMENT SHALL BE CLEANED & INCORPORATED INTO THE NEW CONCRETE. THE EXISTING 4"X4" X ½"L & STUDS SHALL BE CLEANED & REUSED. REMOVAL SHALL BE FROM OUT TO OUT OF SUPERSTRUCTURE.

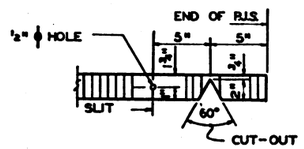
ABUTMENT JOINT MODIFICATIONS FOR DECK WATERPROOFING

EXISTING JOINT IS LESS THAN 1½" AT 50° F. AND THE EXPANSION LENGTH AND SKEW FALLS INTO THE 2½" P.J.S. RANGE, BUT THERE IS NOT ADEQUATE EXPANSION CAPACITY.

DETAIL - B



END OF SEALER TREATMENT



2½" P.J.S. CUT-OUT DETAIL

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

19

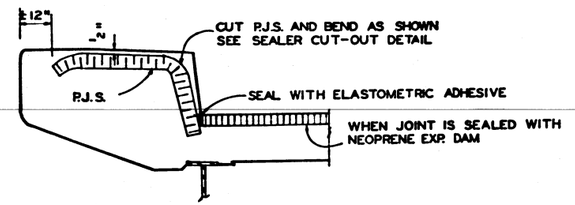
EXAMINED

PASSED

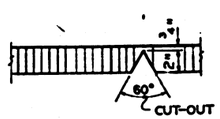
APPROVED

DIRECTOR OF HIGHWAYS

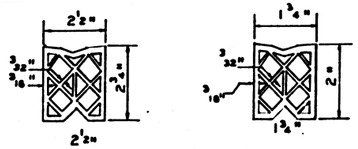
DETAIL - C



CURB SEALER TREATMENT

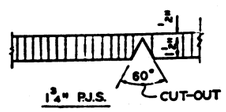


2½" P.J.S.



PREFORMED JOINT SEALERS

USE 2½" P.J.S. FOR 1" MIN. OPENING @ 50° F. AND 1¾" P.J.S. FOR ¾" MIN. OPENING @ 50° F.



1¾" P.J.S.

P.J.S. CUT-OUT DETAILS

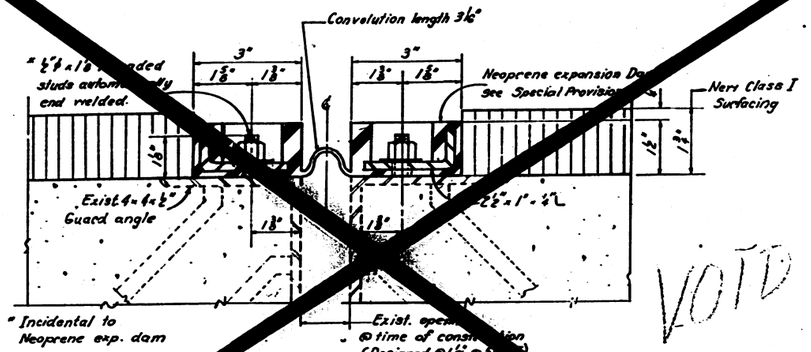
DETAIL - D

K & E CO. 10-1200

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

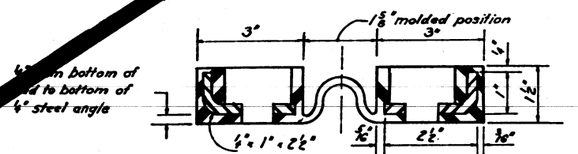
* 26-(OHVB 0B-1 0B-2 0B-3 0B-4 2HB-2 2VB 2HB-4 3B-1(2) 3B-2(2) 3HB-4 3VB-1(2) 5HB-2 5VB) I
25-(1VB-1 1HB-3 3B-1 3HB 3HVB-1 3HB-1 4HVB-1 4HB 5HB-5) I

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. 70	*	FAYETTE EFFINGHAM	8	7
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		SHEETS



VOID

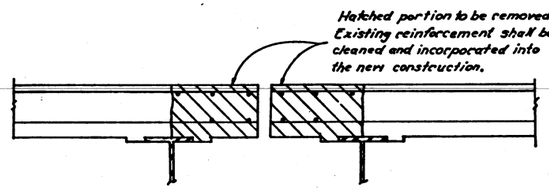
TYPICAL FOR EXIST. OPEN JT.



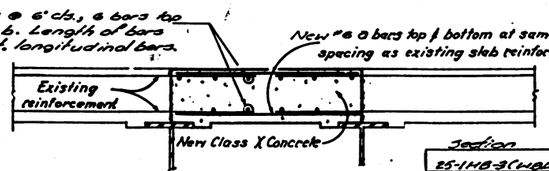
NEOPRENE EXPANSION DAM

JOINT MODIFICATIONS FOR DECK WATERPROOFING
Existing Open Joint with adequate capacity for required expansion.

DETAIL F



EXISTING LONGITUDINAL JT. CROSS SEC.



RECONSTRUCTED LONGITUDINAL JT.

BILL OF MATERIAL

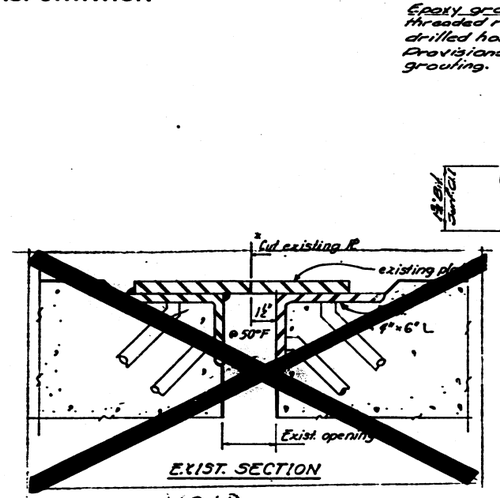
Section	Bar	No.	Size	Length	Shape
25-1HB-3(1BL)	a	374	#6	2'-0"	—
"	b	50	#6	29'-9"	—
25-1HB-3(EBL)	a	374	#6	2'-9"	—
"	b	50	#6	29'-9"	—
25-5HB-5(1BL)	a	358	#6	2'-0"	—
"	b	50	#6	24'-10"	—
25-5HB-5(EBL)	a	358	#6	2'-0"	—
"	b	50	#6	24'-10"	—
Reinforcing Bars				Lbs.	12,780

METHOD TO RECONSTRUCT LONGITUDINAL JOINT
When ℄ to ℄ outside beams or girders is 65'-0" or less

DETAIL G

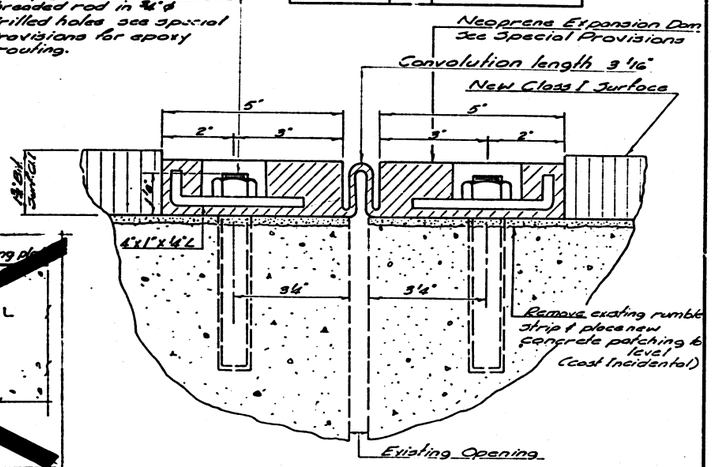
DESIGNED	
CHECKED	
DRAWN	
CHECKED	

EXAMINED
PASSED
APPROVED
DIRECTOR OF HIGHWAYS



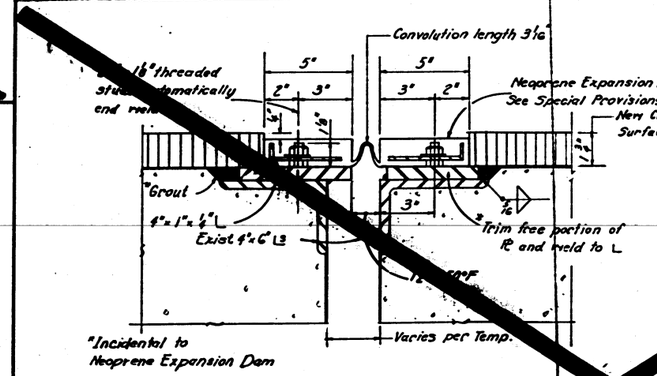
EXIST. SECTION

VOID

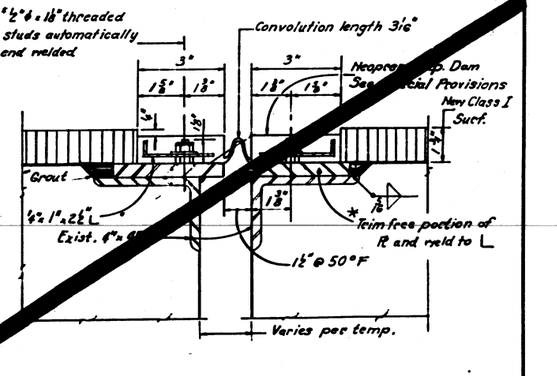


NEOPRENE EXP DAM
For exist. longitudinal joint (typ.)
Sec. 26-0B-1

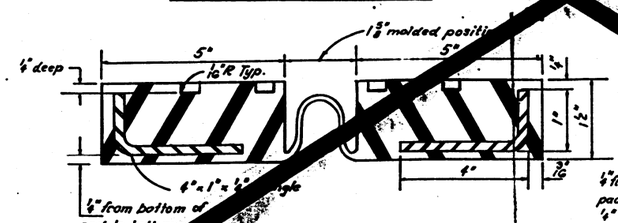
Note:
Grout shall consist of a very dry mix of 2:1 sand and P.C. mortar.



PROPOSED SECTION-TYPE 1

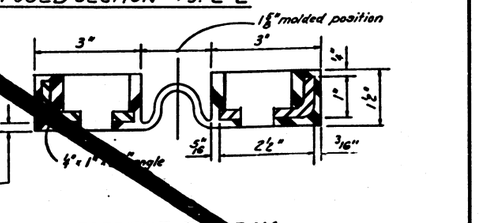


PROPOSED SECTION - TYPE 2



NEOPRENE EXP. DAM

VOID



NEOPRENE EXP. DAM

JOINT MODIFICATIONS FOR DECK WATERPROOFING
Existing Sliding Plate
Maximum Expansion Length - 220 Feet
Maximum Opening - 3"

DETAIL E

Revised 7/29/75

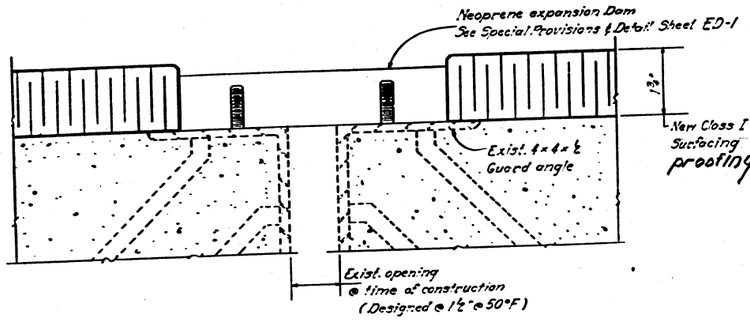
K & E CO. 10-1200

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	*	FAYETTE EFFINGHAM	8	7A
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

SHEET NO.
SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

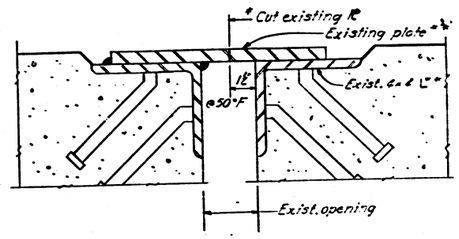
* 26-(OHVB, OB-1, OB-2, OB-3, OB-4, 2HB-2, 2VB, 2HB-4, 3B-1(2), 3B-2(2), 3VB-1(2), 3HB-4, 5HB-2, 5VB) I,
25-(1VB-1, 1HB-3, 3B-1, 3HB, 3HVB-1, 3HB-1, 4HVB-1, 4HB, 5HB-5) I



SECTION

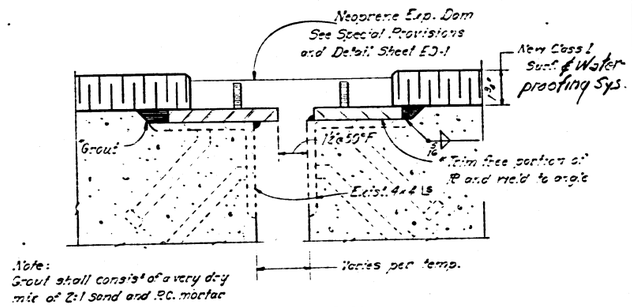
JOINT MODIFICATIONS FOR DECK WATERPROOFING
Existing Open joint with adequate capacity for required expansion
Max. Exp. length 200 Ft.

DETAIL E ~~CASE II~~



EXIST. SECTION

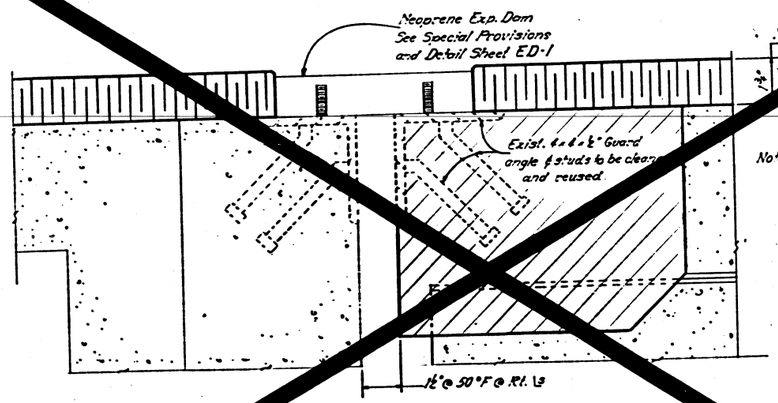
* Incidental to Neoprene Exp. Dam
** Existing plate and angle shall be adequately cleaned prior to welding.



PROPOSED SECTION

JOINT MODIFICATIONS FOR DECK WATERPROOFING
Existing sliding plate maximum expansion length = 200 Ft.

DETAIL F ~~CASE III~~



SECTION

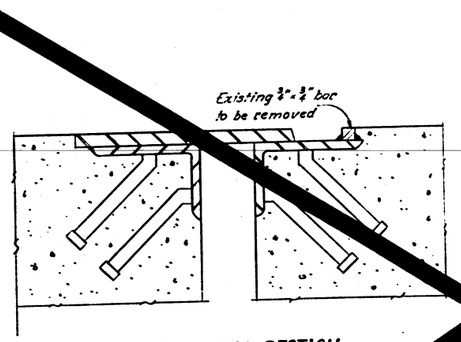
Note:
Patched area shall be removed and replaced to provide 1½" ct. angle joint @ 50°F. Existing reinforcement shall be cleaned and incorporated into the new concrete. Removal shall be from out to out of superstructure.

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

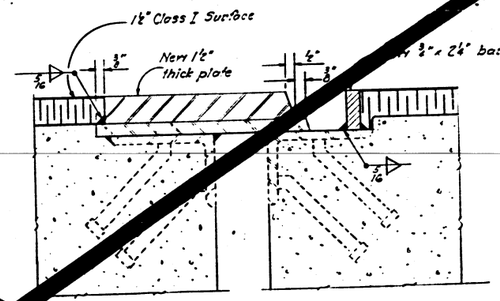
19
EXAMINED
PASSED
APPROVED

JOINT MODIFICATIONS FOR DECK WATERPROOFING
Existing open joint is less than 1½" @ 50°F and there is not adequate expansion capacity. Maximum Exp. Length = 200 feet.

CASE VII



EXISTING SECTION



PROPOSED SECTION

Note:
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.

SLIDING PLATE MODIFICATION FOR DECK WATERPROOFING
Use when expansion length is greater than 200 Ft.

CASE VIII

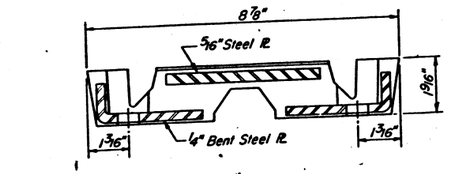
Revised 7/29/75

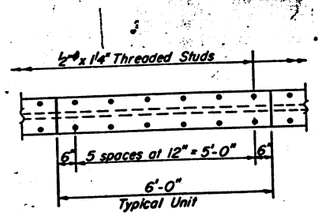
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I,70	*	FAYETTE EFFINGHAM	8	78
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT		

SHEET NO.

SHEETS

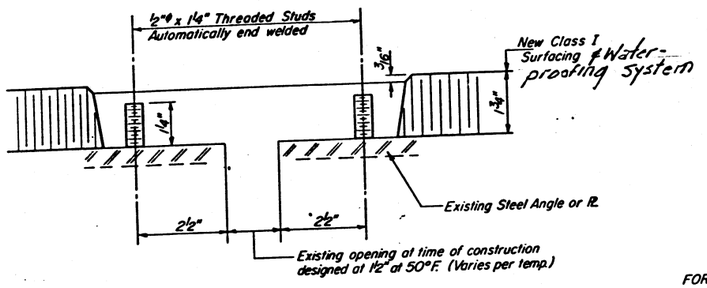
* 26-(OHVB, OB-1, OB-2, OB-3, OB-4, 2HB-2, 2VB, 2HB-4, 3B-1(2), 3B-2(2), 3VB-1(2), 3HB-4, 5HB-2, 5VB)I
25-(IVB-1, IHB-3, 3B-1, 3HB, 3HVB-1, 3HB-1, 4-HVB-1, 4HB, 5HB-5)I





PLAN

Note: Threaded studs require a clipped washer, lockwasher & hex nut.

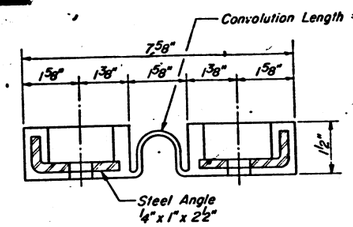


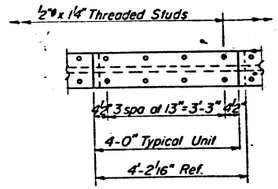
CROSS SECTION

Dimensions are at right angles

FOR EXPANSION LENGTH OF DECK = 0 to 160 Ft.

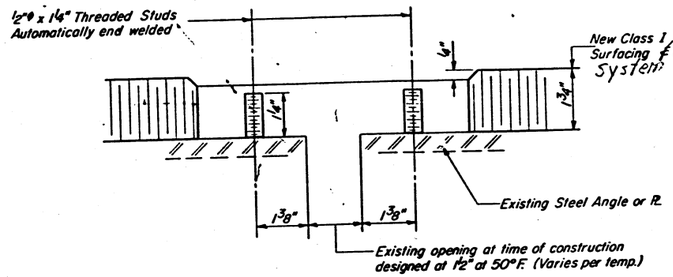
TRANSFLEX MODEL 200A
NARROW GAGE
(Structural Rubber Products Co.)





PLAN

Note: Threaded studs require a flat washer & locknut.

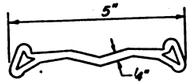


CROSS SECTION

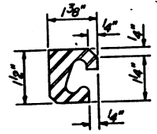
Dimensions are at right angles

FOR EXPANSION LENGTH OF DECK = 0 to 200 Ft.

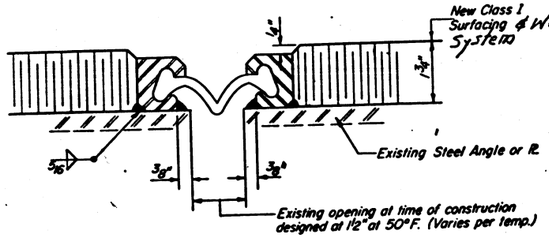
FEL-SPAN MODEL T-30-1 1/2-S
(Fel-Pro Building Products Inc.)



NEOPRENE EXTRUSION S-300
A.S.T.M D-2628 Modified



STEEL EXTRUSION-TYPE E
A.S.T.M. A-242



CROSS SECTION

Dimensions are at right angles

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

19

EXAMINED

DIVISION OF BRIDGE AND TRAFFIC OPERATIONS

PASSED

DIVISION OF

APPROVED

FOR EXPANSION LENGTH OF DECK = 0 to 200 Ft.
2" MAX. OPENING AT 50°F.

WABO-MAURER MODEL S-300E
(Watson Bowman Associates Inc.)

NEOPRENE EXPANSION DAMS

Added 8/6/75

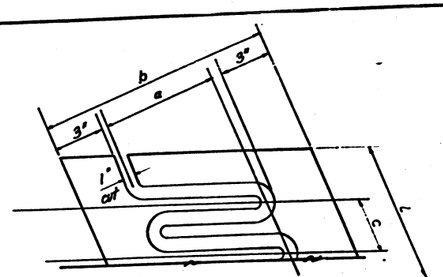
ED-1 6-13-75

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

26-(OHVB 08-1,08-2,08-3,08-4,2HB-2 2VB,2HB-4, 3B-1(2), 3B-2(2), 3HB-4, 3VB-1(2), 5HB-2, 5VB) I
25-(1VB-1,1HB-3,3B-1,3HB,3HVB-1,3HB-1,4HVB-1,4HB,5HB-5) I

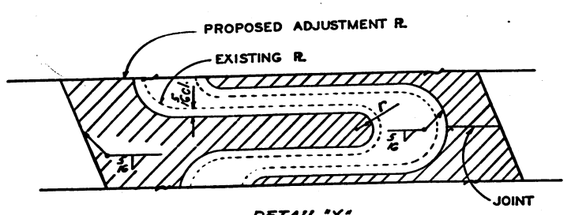
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. F.A. 70	*	FAYETTE EFFINGHAM	8	8
FED. ROAD DIST. NO. 9	ILLINOIS	FED. AID PROJECT:		

SHEET NO. SHEETS



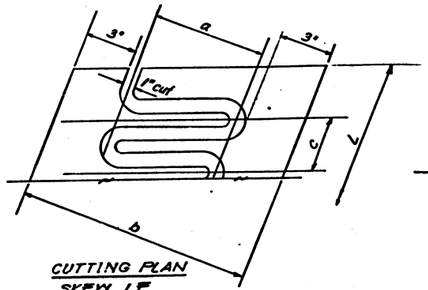
CUTTING PLAN-SKEW RF

ADJUSTMENT PLATES SHALL BE FLAME CUT; ALL BURRS GROUND SMOOTH AND TOP EDGES OF FINGERS ROUNDED AS SHOWN

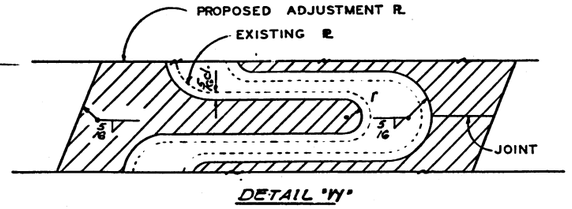


DETAIL "Y"

(SHOWING OPTIONAL JOINT)



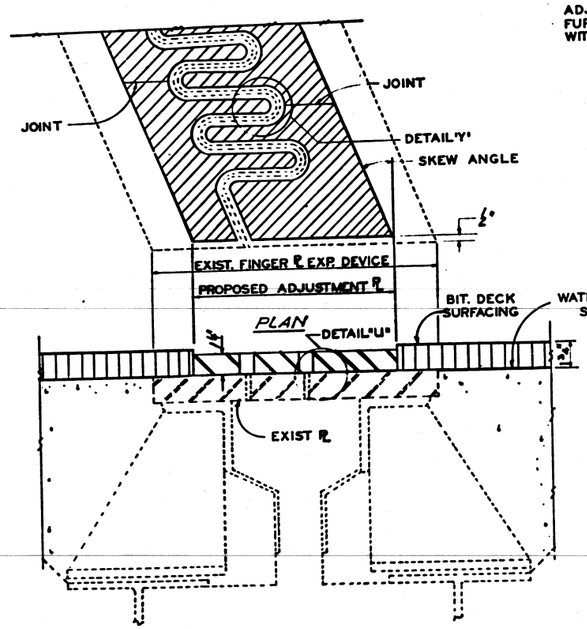
CUTTING PLAN SKEW LF



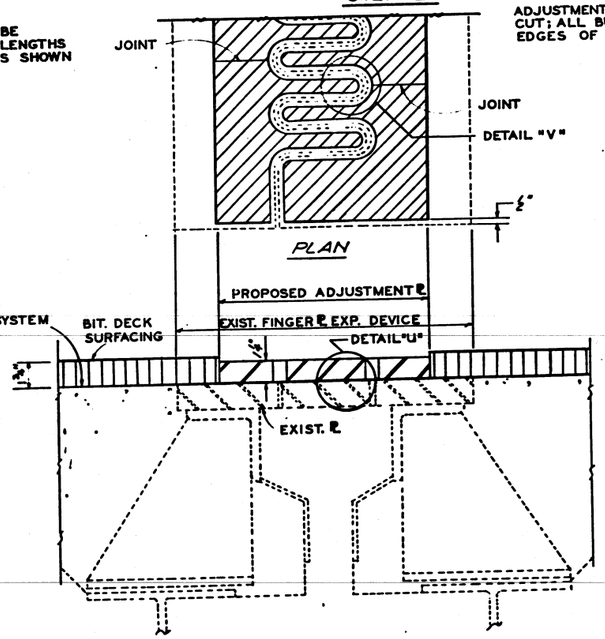
DETAIL "W"

(SHOWING OPTIONAL JOINT)

NOTE:
ADJUSTMENT PLATES MAY BE FURNISHED IN CONVENIENT LENGTHS WITH JOINTS POSITIONED AS SHOWN

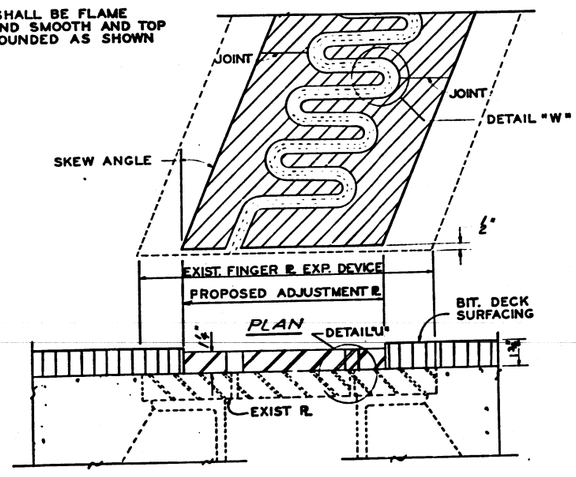


EXIST. SEC. THRU EXP. JOINT
(Skew RF)



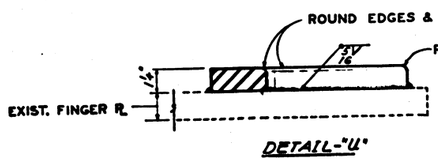
EXIST. SEC. THRU EXP. JOINT
(Skew 0°)

ADJUSTMENT PLATES SHALL BE FLAME CUT; ALL BURRS GROUND SMOOTH AND TOP EDGES OF FINGERS ROUNDED AS SHOWN

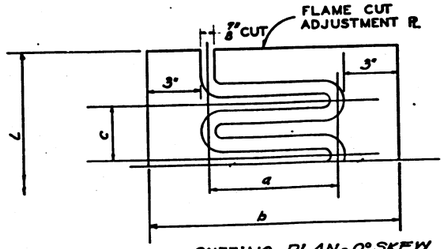


EXIST. SEC. THRU EXP. JOINT
(Skew LF)

WATERPROOFING MEMBRANE SYSTEM SEE SPECIAL PROVISIONS (TYP.)

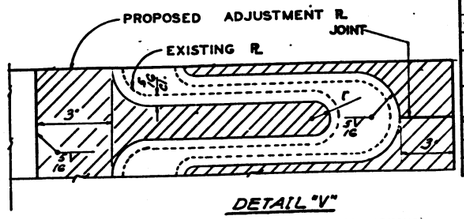


DETAIL-"U"



CUTTING PLAN-0° SKEW

ADJUSTMENT PLATES SHALL BE FLAME CUT; ALL BURRS GROUND AND TOP EDGE OF FINGERS ROUNDED AS SHOWN



DETAIL "V"

(SHOWING OPTIONAL JOINT)

SCHEDULE OF MATERIAL
ADJUSTMENT PLATES

FAI RT	Bridge STA.	SEC.	COUNTY	Plate Location	Plate dimensions a	b	c	r	L	Skew angle
70	544+27	263B-K2)	FAYETTE	PIER 7(WBL)	7 3/4"	14 5/8"	4 1/2"	1 1/16"	29'-10"	0°
70	544+27	263B-K2)	FAYETTE	PIER 10(WBL)	7 3/4"	14 5/8"	4 1/2"	1 1/16"	29'-10"	0°
70	710+52.71	263VB-(2)	FAYETTE	W.ABUT(WBL)	6 1/8"	13 1/16"	9 5/8"	9/16"	2 PLS @ 32'-11"	8°04'20" LT
70	2003+70	25-3B-1	EFFINGHAM	PIER 3(EBL)	5 1/8"	12 1/8"	4"	1 1/16"	29'-10"	0°
70	2003+70	25-3B-1	EFFINGHAM	PIER 6(EBL)	5 1/4"	12 1/8"	4"	1 1/16"	29'-10"	0°
70	2003+70	25-3B-1	EFFINGHAM	PIER 3(WBL)	5 1/4"	12 7/8"	4"	1 1/16"	29'-10"	0°
70	2003+70	25-3B-1	EFFINGHAM	PIER 6(WBL)	5 1/4"	12 7/8"	4"	1 1/16"	29'-10"	0°
70	2294+22.22	25-4HVB-1	EFFINGHAM	PIER 2(EBL)	5 7/8"	12 3/4"	5 5/8"	1 1/16"	2 PLS @ 17'-5 3/8"	3°27'-10" LT
70	2294+12.22	25-4HVB-1	EFFINGHAM	PIER 2(WBL)	5 7/8"	12 3/4"	5 5/8"	1 1/16"	2 PLS @ 17'-5 3/8"	3°27'-10" LT

NOTE: FABRICATE ADJUSTMENT PLATES TO EXISTING CROWN, 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.

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

19

EXAMINED

PASSED

APPROVED

DIRECTOR OF HIGHWAYS

FINGER PLATE MODIFICATIONS FOR DECK WATERPROOFING

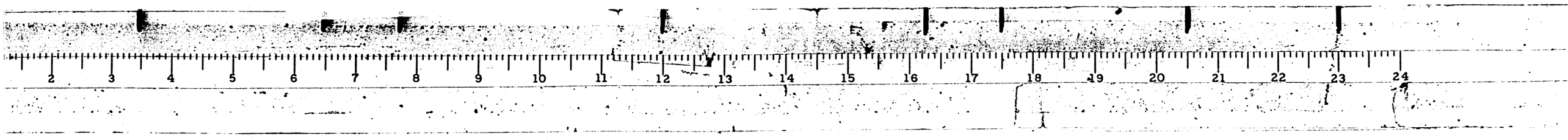
DETAIL- H

Rev. 4-5-75

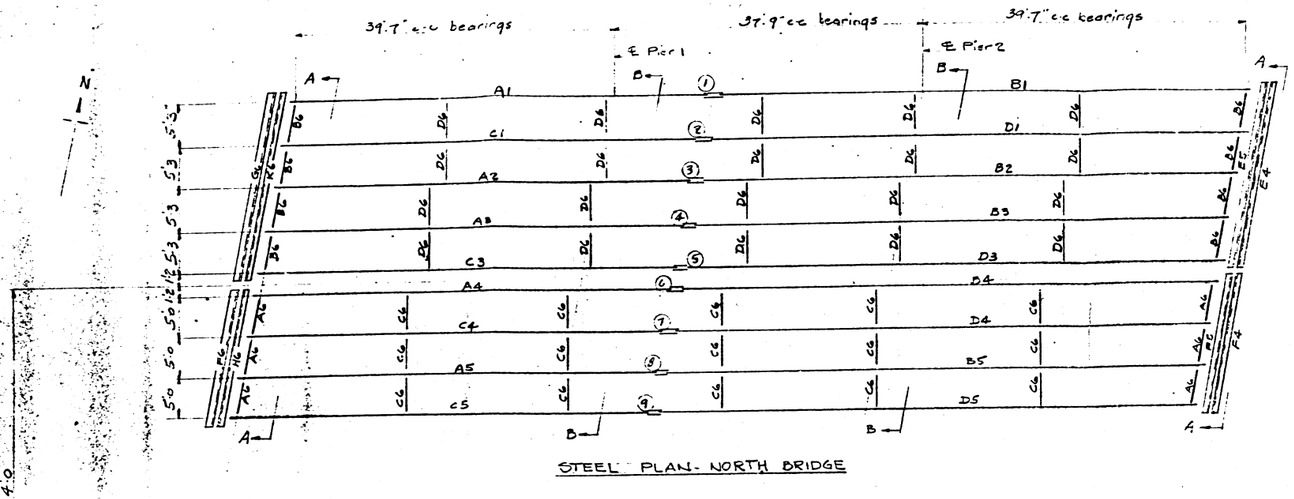
K & E CO. 10-1206

RT. FRI 70

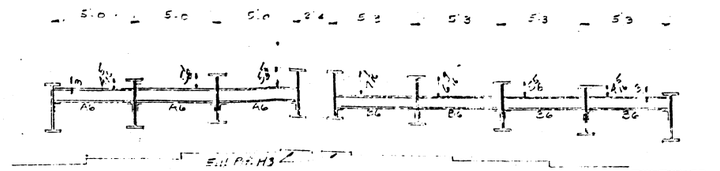
SEC. 255HB5



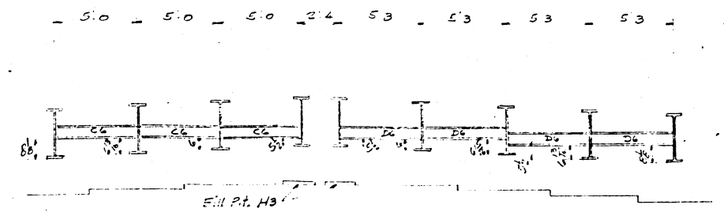
Reel 11
and 7-37



STEEL PLAN - NORTH BRIDGE

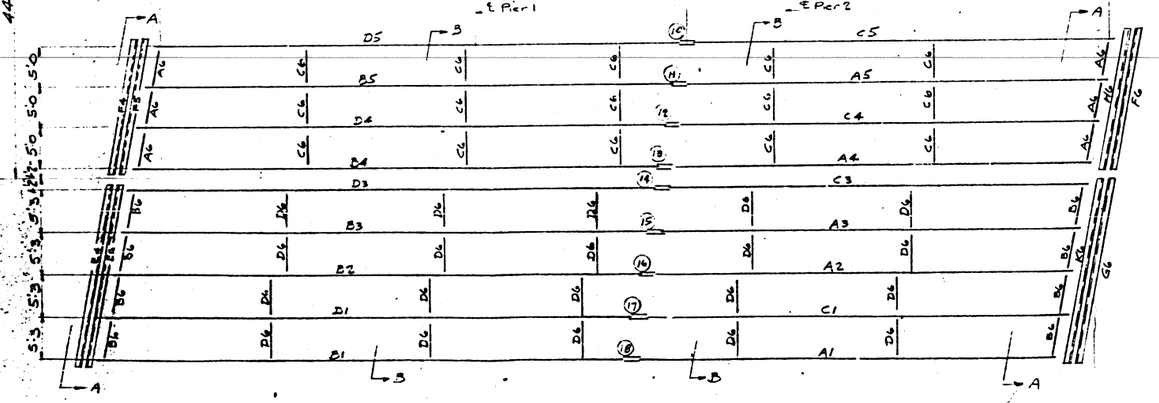


SECT. AA AT ABUTMENTS



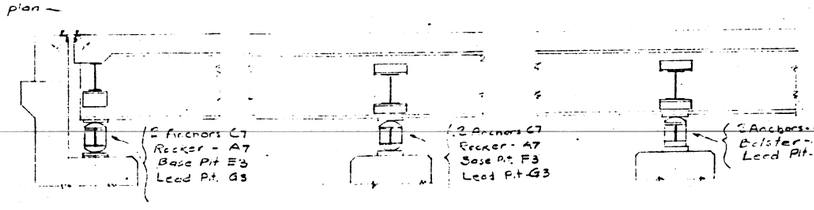
SECT. BB AT PIERS

FILE SET



STEEL PLAN - SOUTH BRIDGE

See plan



SECT AT ABUTS. EXP.

SECT AT PIER 1 EXP.

SECT AT PIER 2 FIX

FILE SET

Proj. I-70-3(19) 107
F.A.I. Route 70
Section 25-5HB-5
Effingham County

Cont. # 5368

APPROVED
For Main Dimensions and Loads Only
APR 14 1960
Engineer of Bridge & Traffic Structures

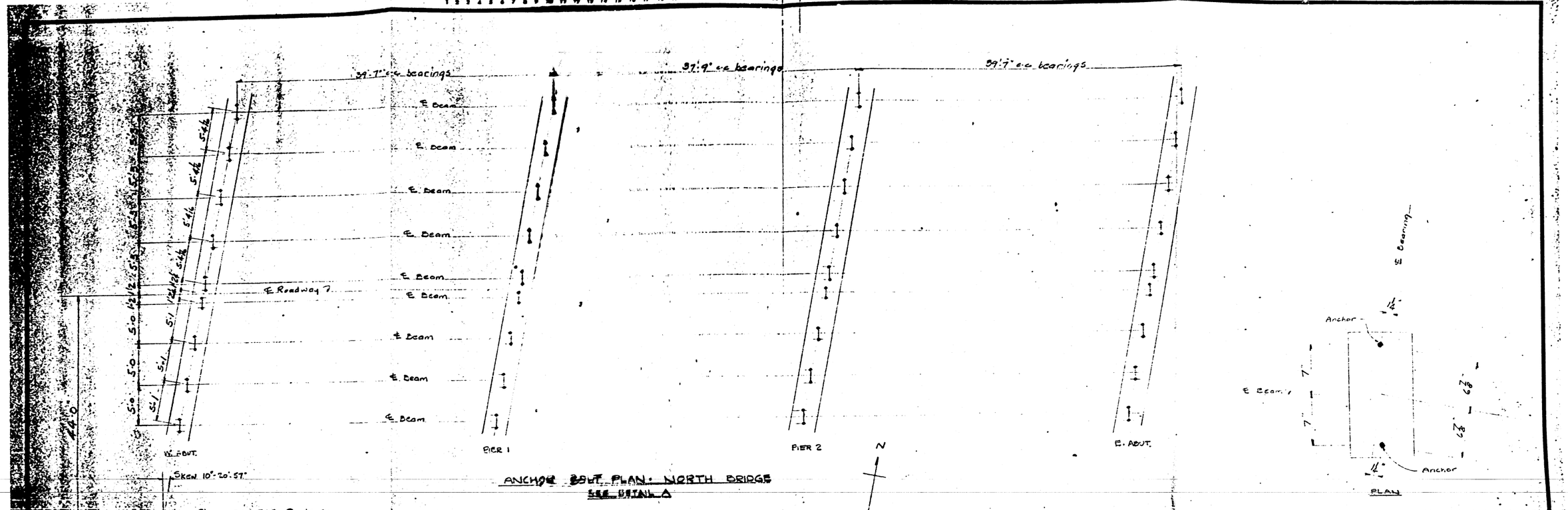
VINCENNES STEEL
Div. of Industrial Enterprises Inc.
Vincennes, Ind.

BRIDGE AT STA 2741 + 37.68
FAI ROUTE 70 - SECT 25.5HB-5
AT MONTROSE
EFFINGHAM COUNTY ILL.
SOLD TO HOWELL ASPHALT CO.

Drawn	Checked	Approved	Revised
2-4-60	2-9-60		

Edge Distance–
Contact Surfaces – Shop– Field–
Paint
Holes–
Rivets–

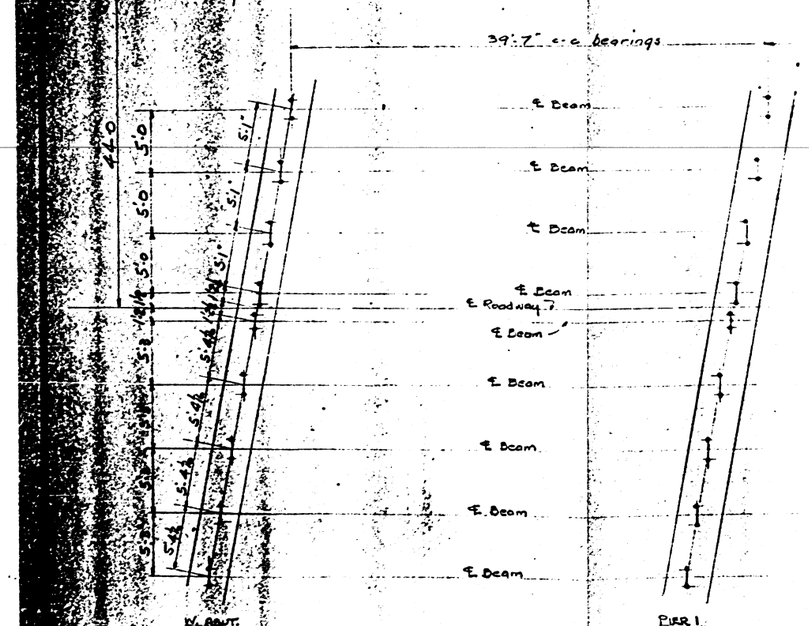
Cont. No. 5368 Sh. E1 of 2



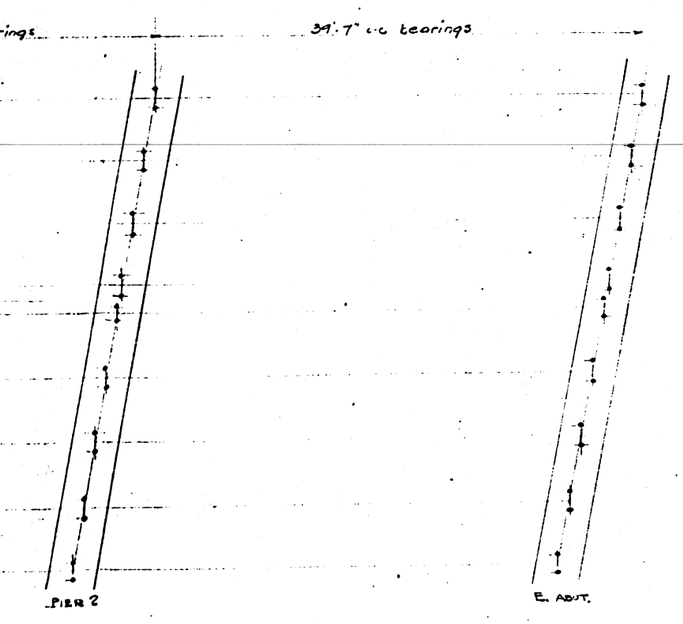
ANCHOR BOLT PLAN: NORTH BRIDGE
SEE DETAIL A

DETAIL A TYPICAL

NOTE - ANCHORS TO BE SET IN ACCORDANCE WITH ART. 511.5 OF THE STANDARD SPECIFICATIONS



ANCHOR BOLT PLAN: SOUTH BRIDGE
SEE DETAIL A



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Engineer of Bridge & Traffic Structures

Edge Distance–	
Contact Surfaces Shop– Field–	
Paint	
Holes–	
Rivets–	

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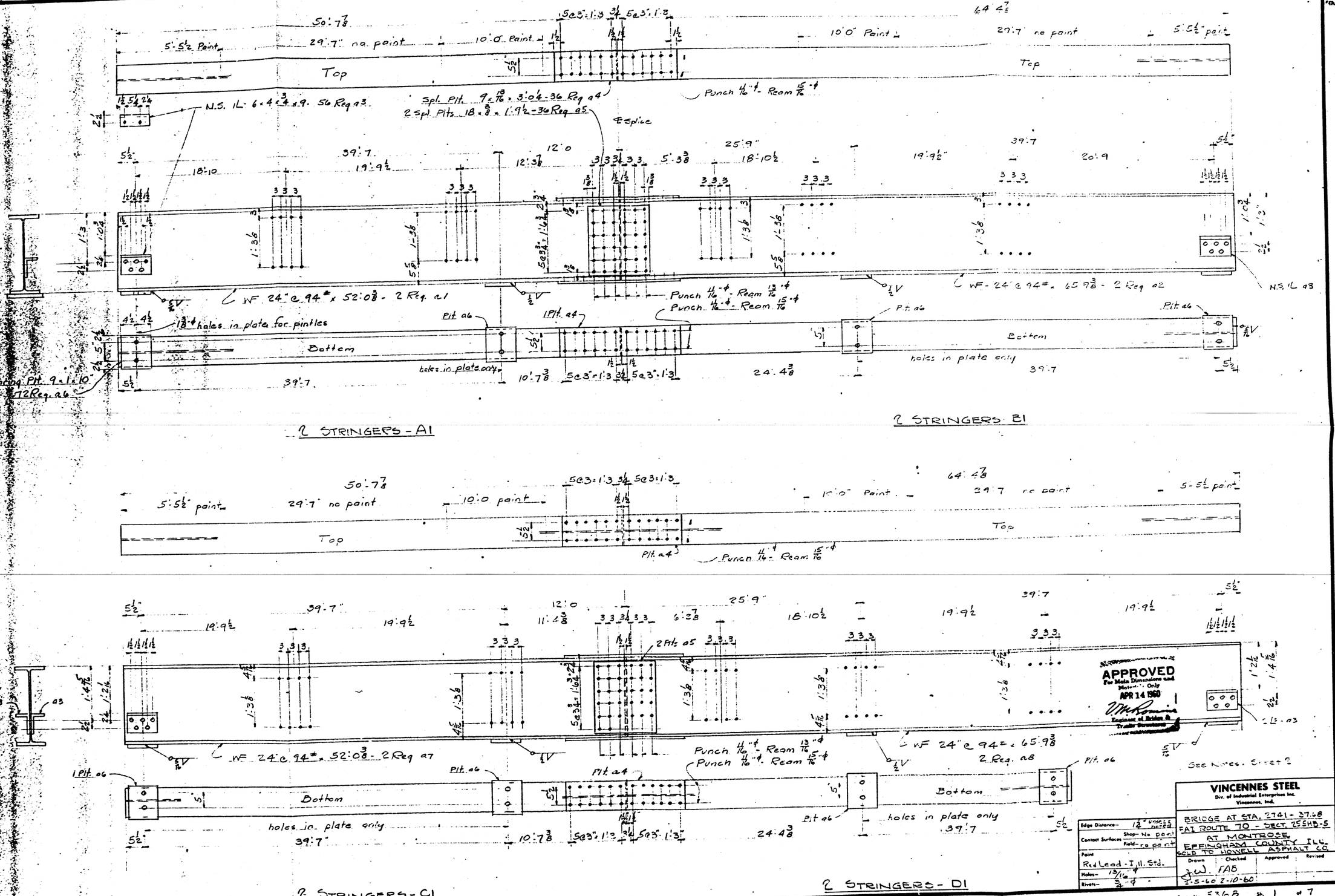
Div. of Industrial Enterprises Inc.
Vincennes, Ind.

BRIDGE AT STA. 2741 + 37.68
FAI ROUTE 70 - SECT. 25-5HD-5
AT MONTROSE
EFFINGHAM COUNTY ILL.
SOLD TO HOWELL ASPHALT CO.

Drawn	Checked	Approved	Revised
JW. 3-28-60			

Contr. No. 5368 Sh. E-L of 2



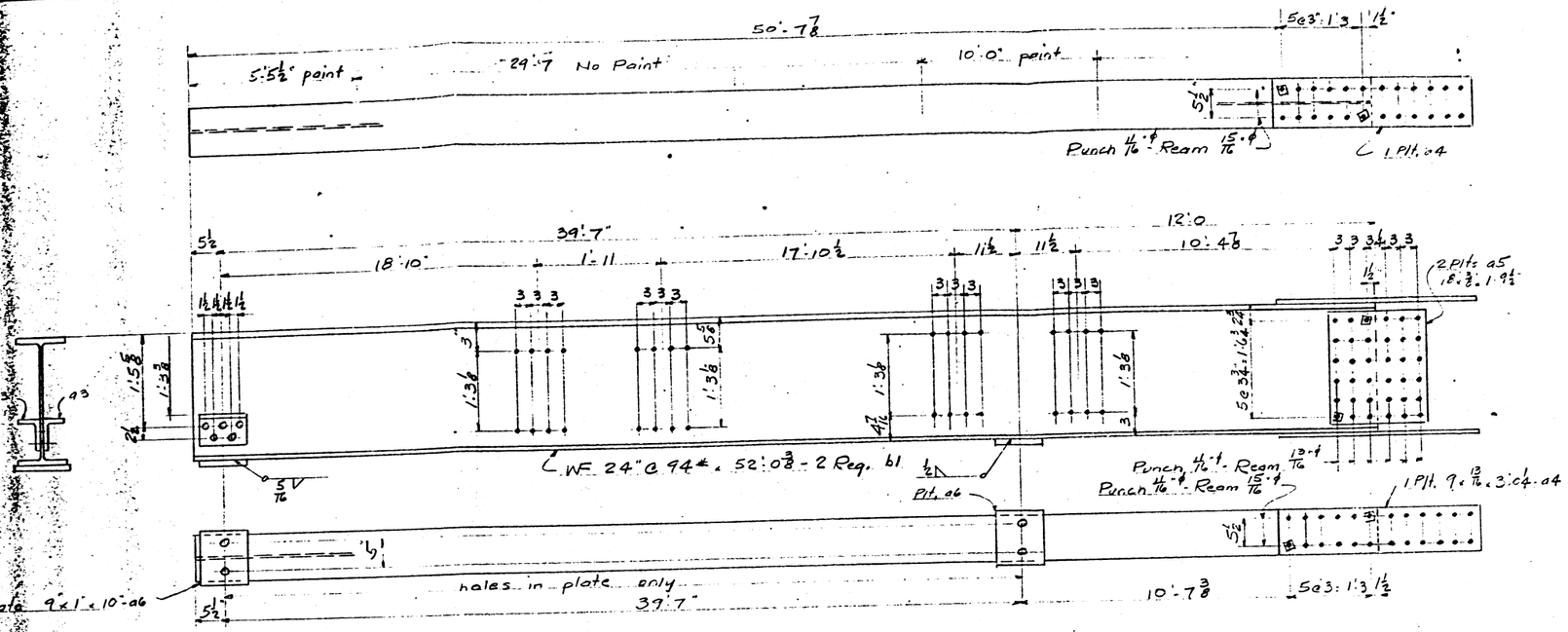
Edge Distance	1½" min. 2" pref.
Contact Surfaces	Shop - No paint; Field - no paint
Paint	Red Lead - Ill. Std.
Holes	13/16"ϕ
Rivets	¾"ϕ

VINCENNES STEEL
Div. of Industrial Enterprises Inc.
Vincennes, Ind.

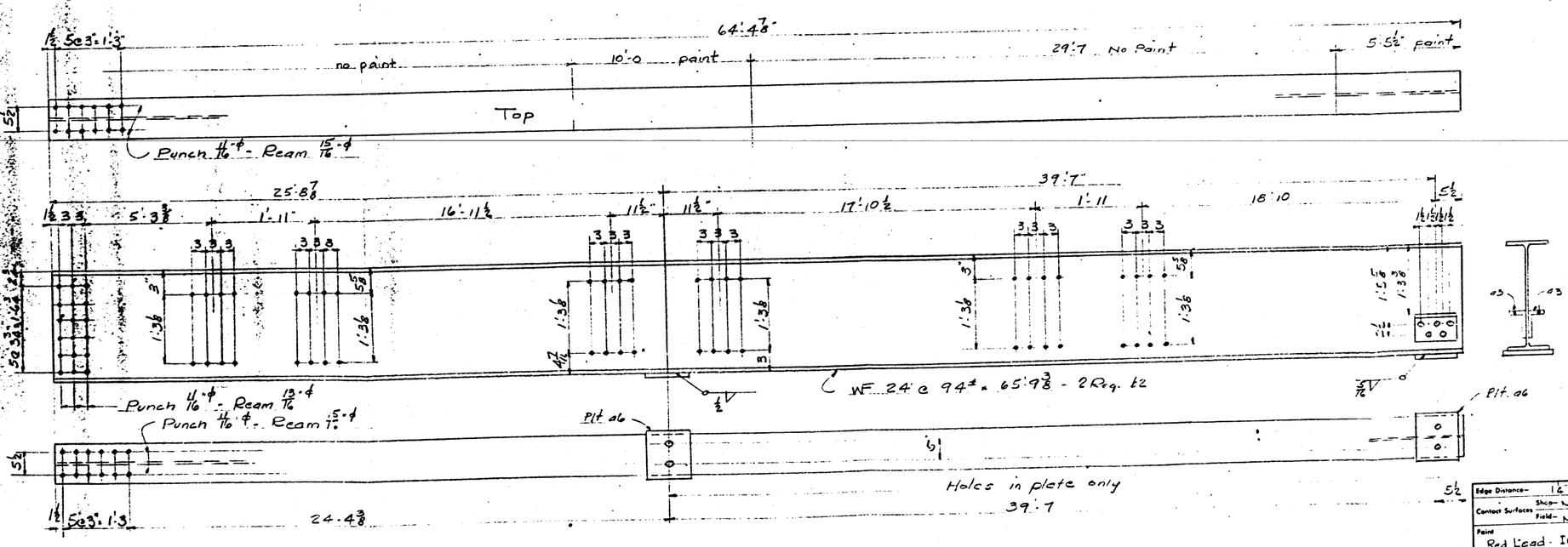
BRIDGE AT STA. 2741 - 37.68
FAI ROUTE 70 - SECT. 25SHD-5
AT MONTROSE
EFFINGHAM COUNTY ILL.
SOLD TO HOWELL ASPHALT CO.

Drawn	Checked	Approved	Revised
J.W.	FAB		
7-5-60	7-10-60		

Contr. No. 5368 Sh. 1 of 7



2 STRINGERS - A2



2 STRINGERS - B2

SHOP NOTE -

All holes for splices shall be subpunched and reamed with the stringers assembled in the shop in proper position. (See sheet E1)

Beams may be assembled with or without diaphragms in place. Leave assembled for shop inspection before painting.

All pieces shall be matchmarked as shown on sheet E1 in circles.

Set splice plates flush with ends of beams and bolt for shipment.

Do not paint Tops of Stringers except where noted.

Machine finished surfaces shall be coated with lacquer as soon as practicable after being accepted.

All plates must be flat.

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APR 14 1960
Engineer of Bridges & Traffic Structures

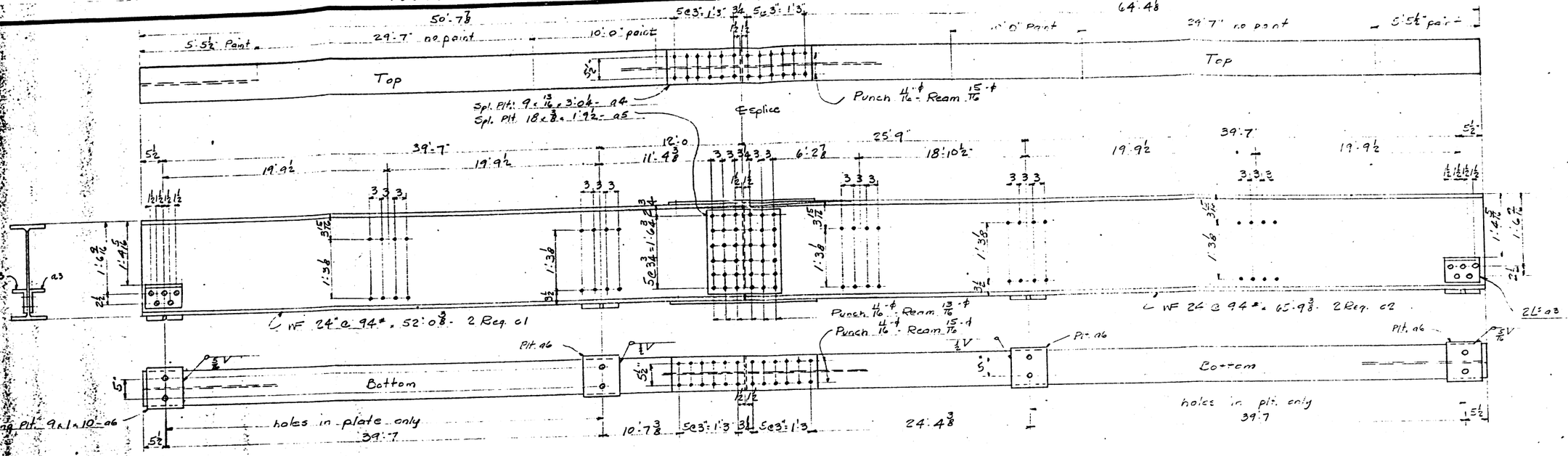
Edge Distance	1½"
Contact Surfaces	Shop- No Paint Field- No Paint
Paint	Red Lead - Ill. Std.
Holes	13/16" ϕ
Rivets	⅞" ϕ

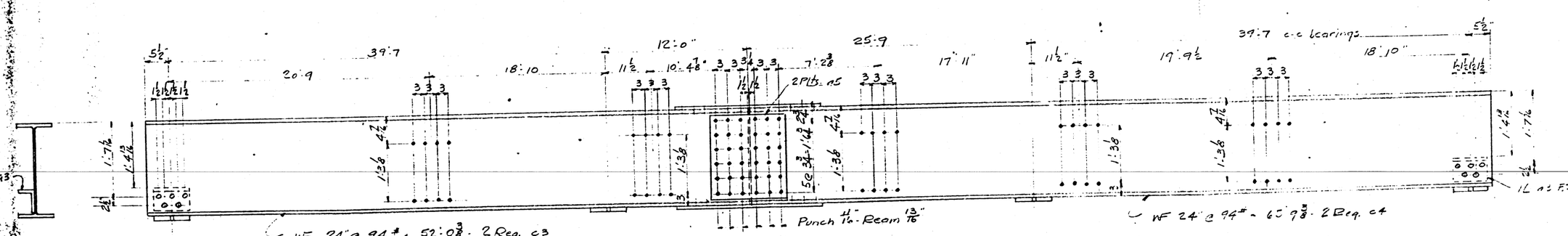
VINCENNES STEEL
Div. of Industrial Enterprises Inc.
Vincennes, Ind.

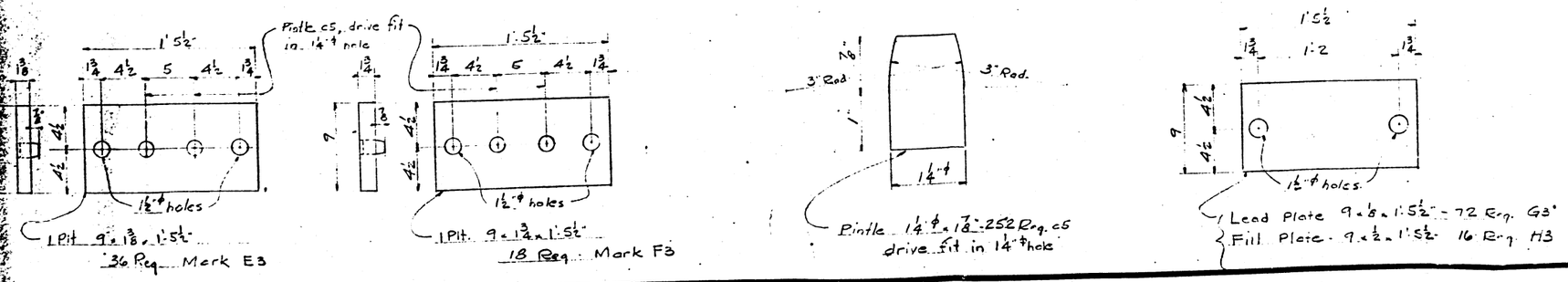
BRIDGE AT STATION 2741-37.05
FAI ROUTE 70 - SECT. 25SHD-5
AT MONTROSE
EFFINGHAM COUNTY ILL.
SOLD TO HOWELL ASPHALT CO.

Drawn	Checked	Approved	Revised
JW	FAB		
2-2-60	2-10-60		

Cont. No. 5366 Sh. 2 of 7







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For Main Dimensions and Loads
APR 14 1960
Engineer of Bridges & Trestle Structures

See Notes - Sheet 2

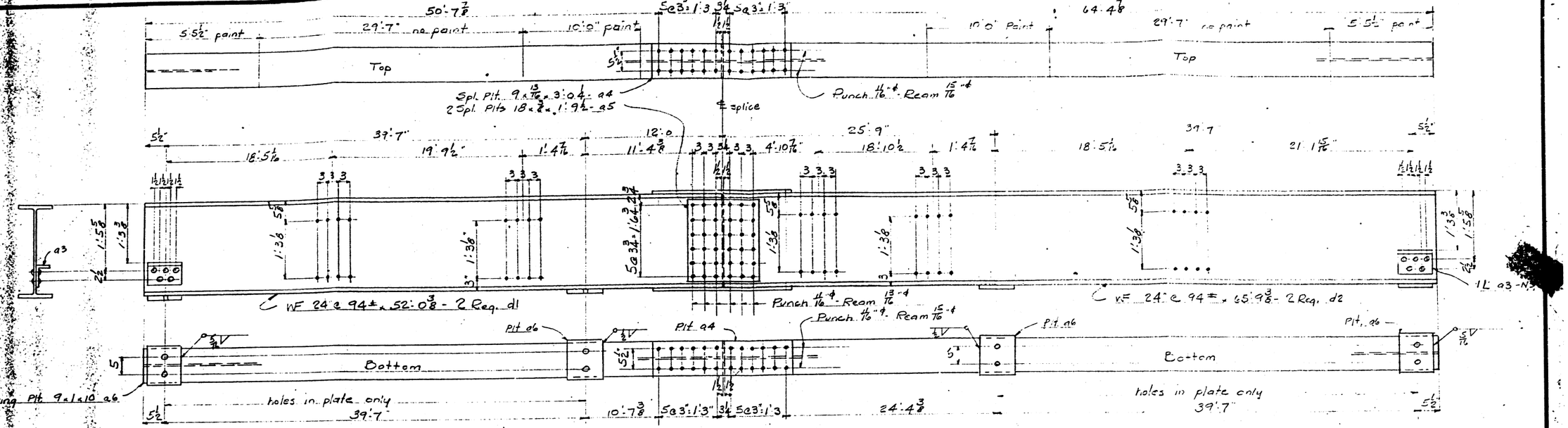
VINCENNES STEEL
Div. of Industrial Enterprises Inc.
Vincennes, Ind.

BRIDGE AT STA. 2741 - 37.68
FAI ROUTE 70 - SECT. 25-5HD-5
AT MONTROSE
EFFINGHAM COUNTY ILL.
SOLD TO HOWELL ASPHALT CO.

Drawn	Checked	Approved	Revised
JW	FAB		
2-8-60	2-10-60		

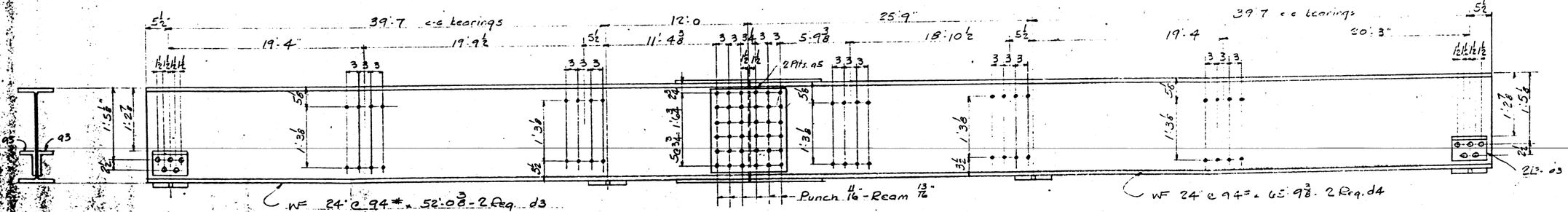
Edge Distance— 1 1/4"
Contact Surfaces— Shop— no paint / Field— no paint
Paint— Red Lead - Ill. Std.
Holes— 13/16"
Rivets— 3/4"

Cont. No. 5368 Sh. 3 of 7



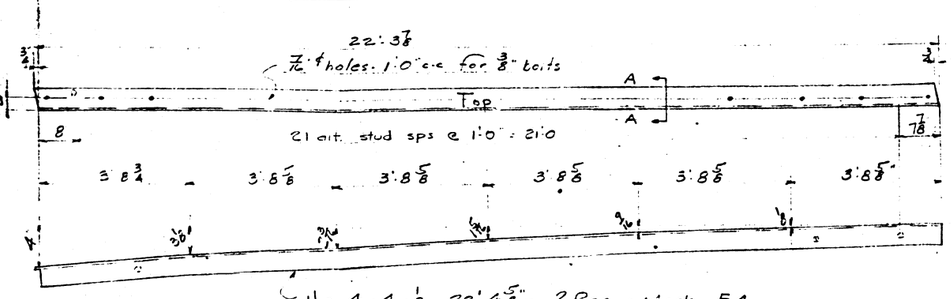
2 STRINGERS - A4

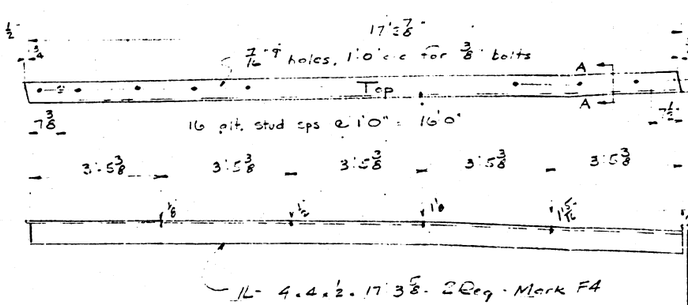
2 STRINGERS - B4



2 STRINGERS - C4
(TOP AND BOTTOM SAME AS A4)

2 STRINGERS - D4
(TOP AND BOTTOM SAME AS B4)





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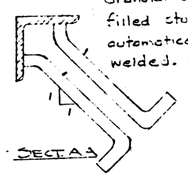
APR 14 1960
Engineer of Bridges & Traffic Structures

Edge Distance	1 1/4"
Contact Surfaces	Shop - No Paint Field - No Paint
Paint	Red Lead - Ill. Sta.
Holes	15/16" ϕ
Rivets	3/4" ϕ



3/4" ϕ - 2 CR 10 20 ST-L Granular or solid flux filled studs - automatically end welded. Do Not Paint

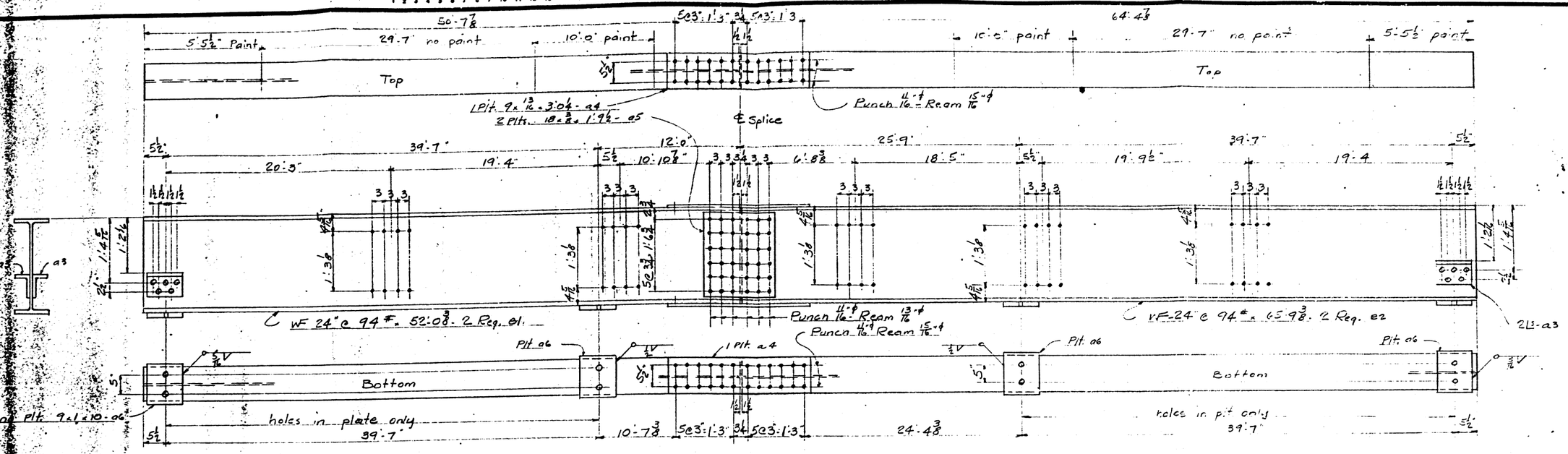
See notes - sheet 2

VINCENNES STEEL
Div. of Industrial Enterprises Inc.
Vincennes, Ind.

BRIDGE AT STA. 2741 + 37.46
FAI ROUTE 70 - SECT. 25 MR-1
AT MONTROSE
EFFINGHAM COUNTY ILL.
SOLD TO HOWELL ASPHALT CO.

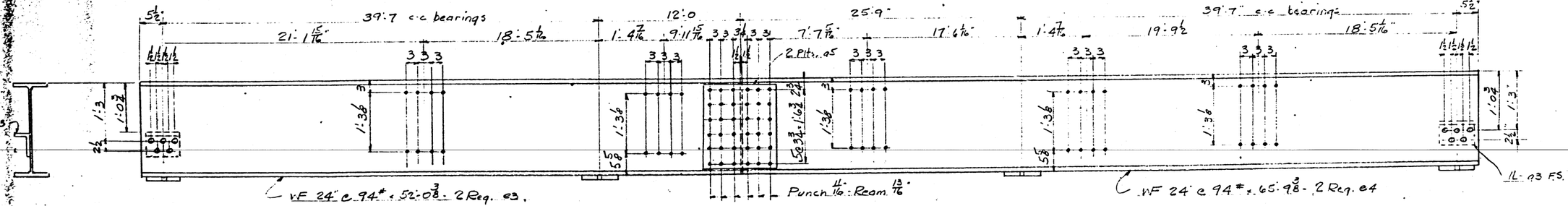
Drawn	Checked	Approved	Revised
W	FAB		
2-8-60	2-10-60		

Cont. No. 5368 Sh. 4 of 7



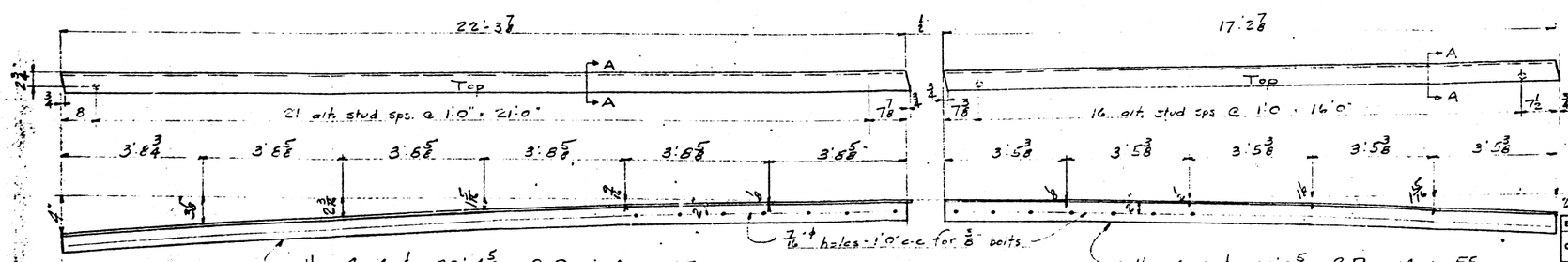
2 STRINGERS - A5

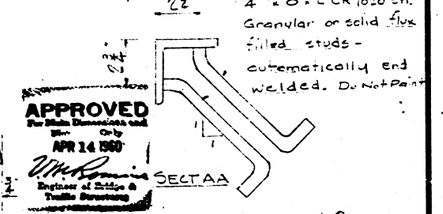
2 STRINGERS - B5



2 STRINGERS - C5
(TOP AND BOTTOM SAME AS A5)

2 STRINGERS - D5
(TOP AND BOTTOM SAME AS B5)





¾ x 8 x 2 CR 10-20 stl. Granular or solid flux filled studs - automatically end welded. Do Not Paint

See notes - sheet 2

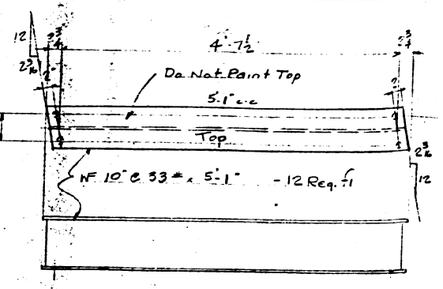
Edge Distance	1¼
Contact Surfaces	Shop - No Paint; Field - No Paint
Paint	Red Lead - T11 Std.
Holes	13/16 - ℄
Rivets	7/8 - ℄

VINCENNES STEEL
Div. of Industrial Enterprises Inc.
Vincennes, Ind.

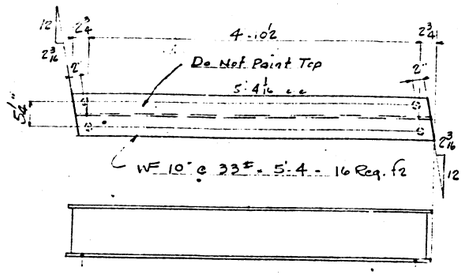
BRIDGE AT STA. 274+37.66
FAI ROUTE 70 - SECT 25.5HB-5
AT MONTROSE
EFFINGHAM COUNTY ILL.
SOLD TO HOWELL ASPHALT CO.

Drawn	Checked	Approved	Revised
JW	FAB		
2-10-60	2-10-60		

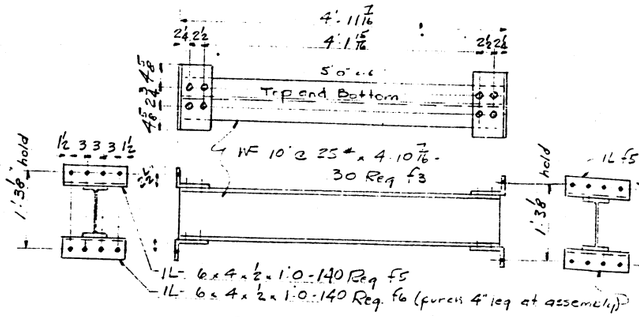
Contr. No. 5368 Sh. 5 of 7



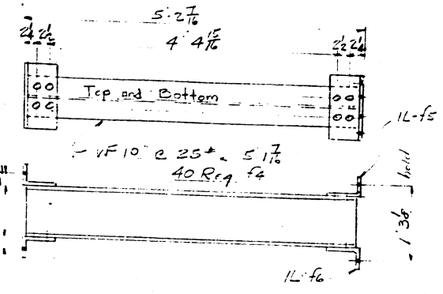
12 DIAPHRAGMS - A6



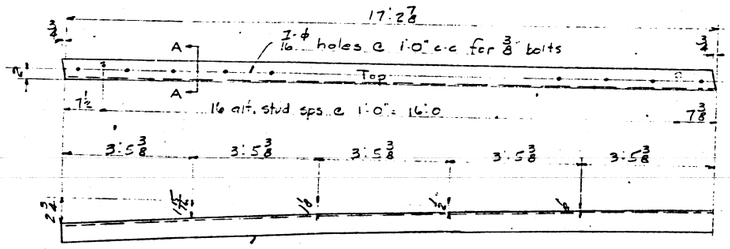
16 DIAPHRAGMS - B6

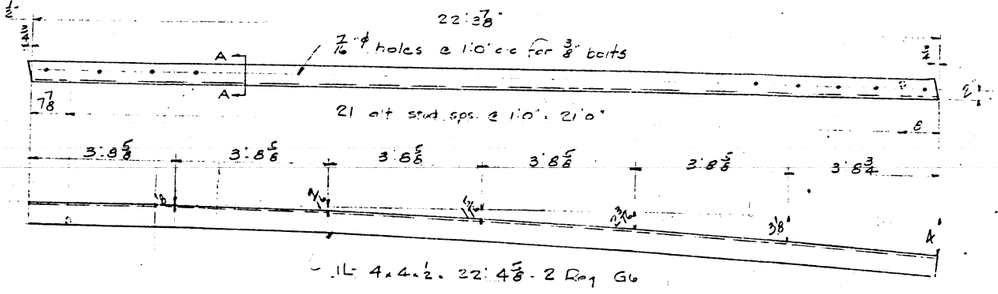


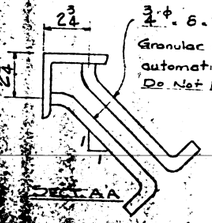
30 DIAPHRAGMS - C6



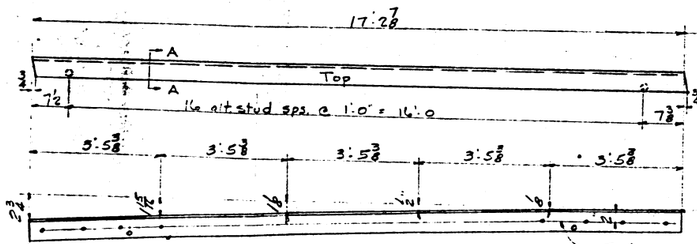
40 DIAPHRAGMS - D6

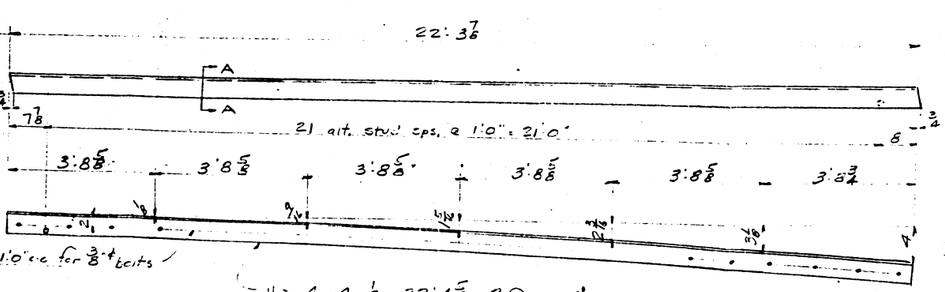






¾ ϕ x 6-2 CRICO STL
Granulac or solid flux filled studs - automatically end welded.
Do Not Paint studs





APPROVED
For Main Dimensions and Minor Only
APR 14 1960
Engineer of Bridge & Traffic Structures

Edge Distance-	1¼"
Contact Surfaces-	Shop- No Paint Field- No Paint
Paint	Red Lead - Ill Std.
Holes-	15/16" ϕ
Rivets-	⅞" ϕ

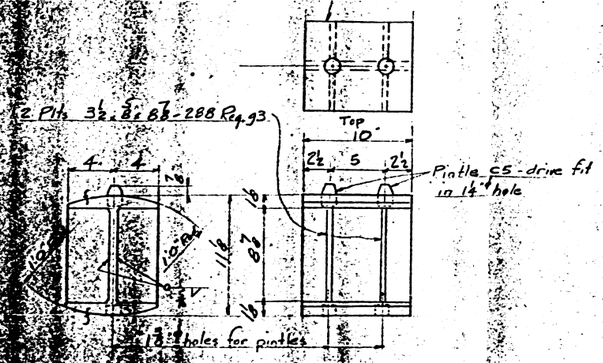
VINCENNES STEEL
Div. of Industrial Enterprises Inc.
Vincennes, Ind.

BRIDGE AT STA. 2741+ 57.68
FAI ROUTE 70 SECT 25-5HB-5
AT MONTROSE
EFFINGHAM COUNTY ILL.
SOLD TO HOWELL ASPHALT CO.

Drawn	Checked	Approved	Revised
J.J.	FAB		
2-10-60			

Contr. No. 5368 Sh. 6 of 7

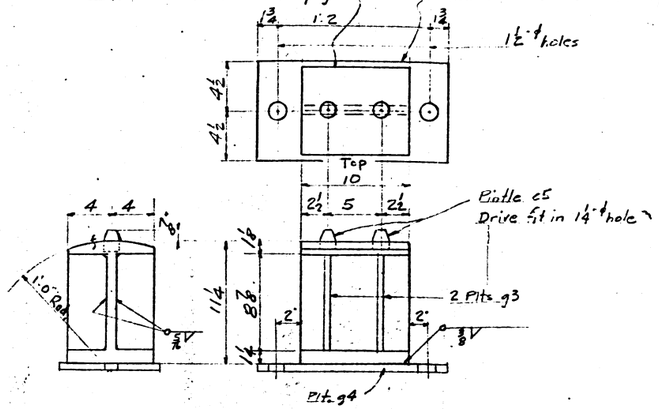
WF 10"@ 112#×10'-54 Req'd g1



54 ROCKERS - A7

WF 10"@ 112#×10'-18 Req'd g2

1 Plt. 9"×¾"×1'-5½"-18 Req'd g4

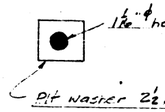


18 BOLSTERS - B7

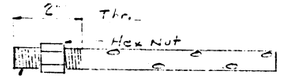
Note - pay weights are used on furnishing rivets and Mach. Bolts as specified

FIELD BOLT LIST # 5368

SEND	SIZE	KIND	REQ'D	LOCATION	GRIP
118	¾×2½	High Strength	112	Diaphragms A6 and B6	1⅜
495	¾×2½	High Strength	480	Diaphragms C6-D6	1⅛
330	¾×3	High Strength	320	Diaphragms C6-D6	1⅜
670	¾×2¾	High Strength	648	Web Splice Plates	1⅝
892	⅞×3¼	High Strength	864	Flange Splice Plates	1⅜
3226	¾" hardened steel washers for ¾" H.S. Bolts				
1780	⅞" hardened steel washers for ⅞" H.S. Bolts				
144	Anchors 1"ϕ×1'-0" - C7				
144	Washers 2½"×⅝"×2½" - W7				



Plt Washer 2½"×⅝"×2½" - 144 Req. W7
Ship with bolts



Swedged Anchor 1"ϕ×1'-0" - 144 Req - C7
Ship with bolts

APPROVED
For Main Dimensions and Materials Only
APR 14 1960
Engineer of Bridges & Trestle Structures

See notes - Sheet 2

Edge Distance—	1¼
Contact Surfaces — Shop—	no paint
Contact Surfaces — Field—	no paint
Paint	Red Lead - Ill. Std.
Holes—	- noted
Rivets—	—

VINCENNES STEEL
Div. of Industrial Enterprises Inc.
Vincennes, Ind.

BRIDGE AT STA 27+61 + 37+68
FAI ROUTE 70 - SECT 25-5H8-S
AT MONTROSE
EFFINGHAM COUNTY ILL
SOLD TO HOWELL ASPHALT CO.

Drawn	Checked	Approved	Revised
JW	FAB		
2-9-60	2-10-60		

Contr. No. 5368 Sh 7 of 7