01-20-2017 LETTING ITEM 035

70B71

VERMILION

35

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-12B)I	VERMILION	51	1
	ILLINOIS	CONTRACT NO. 70B71		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

FAI ROUTE 74 /(I–74)
SECTION (92–12B)I
PROJECT ACNHPP-0074(322)
THIN CONCRETE OVERLAY VERMILION RIVER
SOUTH OF DANVILLE
VERMILION COUNTY

C–95–008–16

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4–7

CURRENT TRAFFIC DATA STR. 092–0015	
2016 ADT	= 13,500
2026 ADT	= 14,200
PU+PC %	= 71.7
SU %	= 3.8
MU%	= 24.4

100%
12-2-2017

DESIGN DESIGNATION
FEDERAL–AID INTERSTATE

100′ 200′ 300′ — 1″= 100′
10′ 20′ 30′ — 1″= 10′
50′ 100′ — 1″= 50′
50′ 100′ — 1″= 40′
50′ 100′ — 1″= 30′
50′ 100′ — 1″= 20′

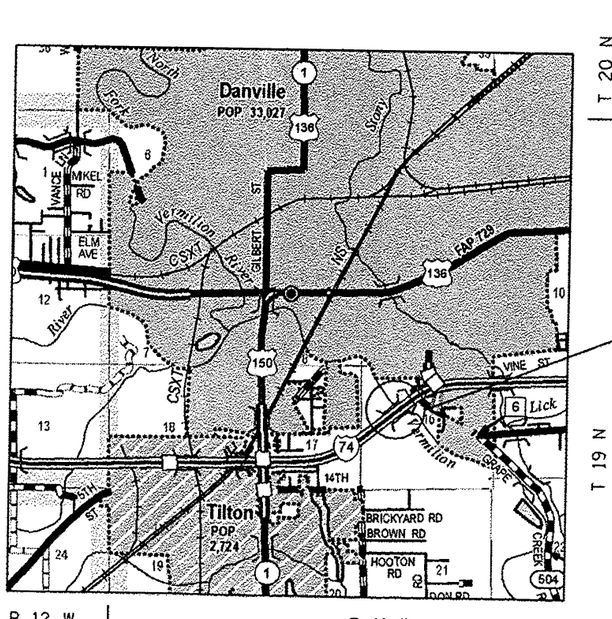
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

TOWNSHIP: DANVILLE

PROJECT ENGINEER: TIM BRANDENBURG
217–465–4181

CONTRACT NO. 70B71 092-0014 092-0015 (EB)



GROSS LENGTH = 1,500.00 FT. = 0.284 MILE
NET LENGTH = 1,500.00 FT. = 0.284 MILE

D–95–008–16



LOCATION OF SECTION INDICATED THUS:–

EXISTING S.N. 092-0015
F.A.I. 74 (I-74)
VERMILION RIVER
STATION 1992+54
BRIDGE DECK REPAIR

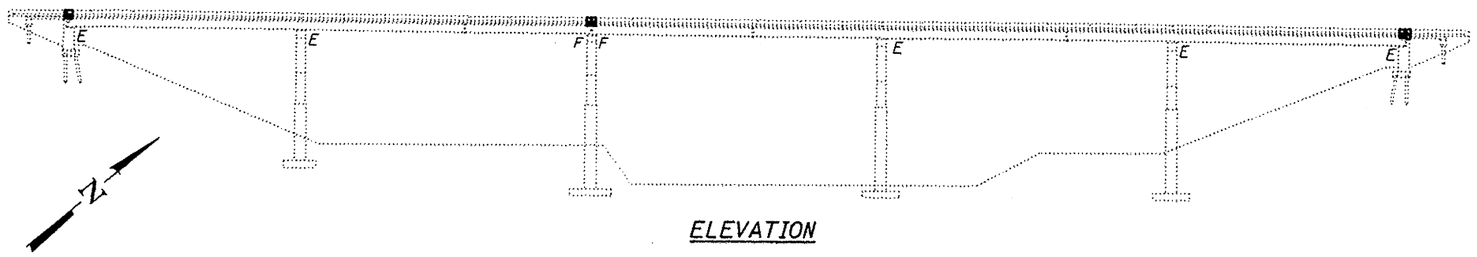
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED October 9 20 16
Brenda A. James
REGION THREE ENGINEER
Dec 9 20 16
Nauveen M. Addis, P.E. for
ENGINEER OF DESIGN AND ENVIRONMENT
Dec 9 20 16
Omer Osman, P.E. for
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

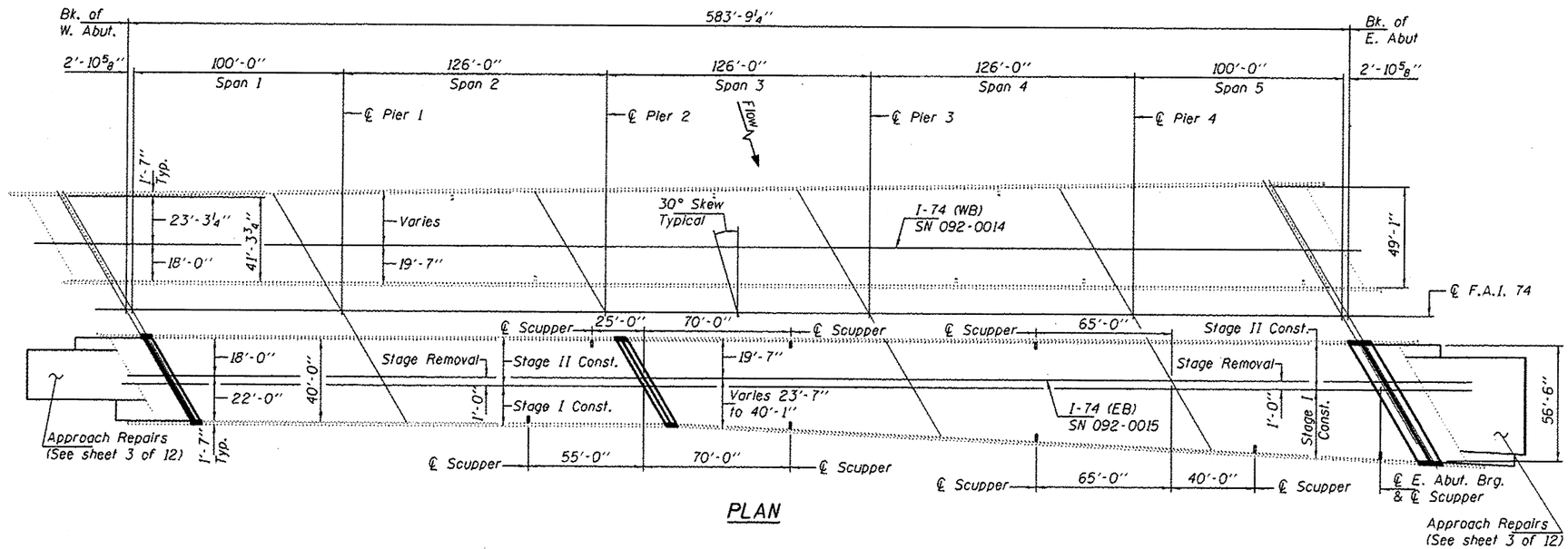
PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

Existing structures 092-0014 & 092-0015 were built in 1963 as F.A.I. 74, Section 92-12B at Station 1992+54. Each structure consisted of five continuous spans of two steel plate girders with steel floorbeams and reinforced concrete deck superstructure with double column piers and vaulted abutments. Overall length is 583'-9¼" and clear roadway width is 30'-0". In 1990 the structures were reconstructed as F.A.I. 74, Section (92-12B)BR. The superstructures and decks were removed and replaced with 45" Web ℄ Girders. Structure 092-0014 has 7 girders spaced for a clear roadway width of 41'-3¾" West Abutment and 49'-1" East Abutment. Structure 092-0015 Spans 1 & 2 have 6 girders spaced for a 40'-0" clear roadway width. Spans 3, 4, & 5 have 8 girders spaced for a 56'-6" clear roadway at the East Abutment. A fixed 1¾" P.J.S. Joint was placed at Pier 2. The existing abutments and piers were widened to support the new 7½" reinforced concrete slabs.

Work shall be completed with Stage Construction.



ELEVATION



PLAN

GENERAL NOTES

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

Reinforcement bars designated (E) shall be epoxy coated.

Expansion joints shall be fabricated and installed according to the manufacturer's recommendations and as approved by the Engineer.

Expansion joints shall be fabricated to conform to the existing cross slopes of the bridge.

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 the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

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.

Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

Prior to pouring the new concrete deck, all heavy or 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.

Synthetic fibers shall be added to the Bridge Deck Latex Concrete Overlay. See special provisions.

Cost of removal and 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 with Furnishing and Erecting Structural Steel.

Diaphragm connection holes shall be 15/16"ϕ for ¾"ϕ bolts. Two hardened washers shall be required at diaphragm connections.

Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the GBSP "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type I. Cost included with Furnishing & Erecting Structural Steel.

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

Deck survey performed by hand sounding on August 25, 2015. No delaminated areas were found thus no full-depth patching is required. Should areas for full-depth patching be identified after Bridge Deck Scarification, the R.E. should show them on the General Plan & Elevation sheet.

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	42.8
Concrete Superstructure	Cu. Yd.	48.3
Structural Steel Removal	Pound	710
Furnishing & Erecting Structural Steel	Pound	740
Reinforcement Bars, Epoxy Coated	Pound	8000
Bar Splicers	Each	62
Modular Expansion Joint, 6"	Foot	69
Preformed Joint Strip Seal	Foot	97
Mechanical Splicers	Each	292
Bridge Deck Scarification, ¾"	Sq. Yd.	3381
Bridge Deck Latex Concrete Overlay, 2¾"	Sq. Yd.	3381
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	2384
Drainage Scuppers to be Adjusted	Each	8
Polymer Concrete	Cu. Ft.	5.5
* Protective Coat	Sq. Yd.	114
* Diamond Grinding (Bridge Section)	Sq. Yd.	3268

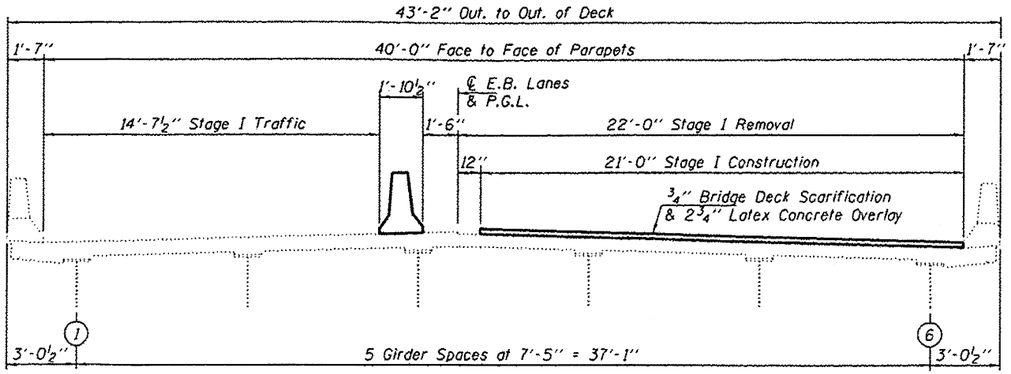
* On new concrete superstructure only

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

EXPIRES 11-30-2018

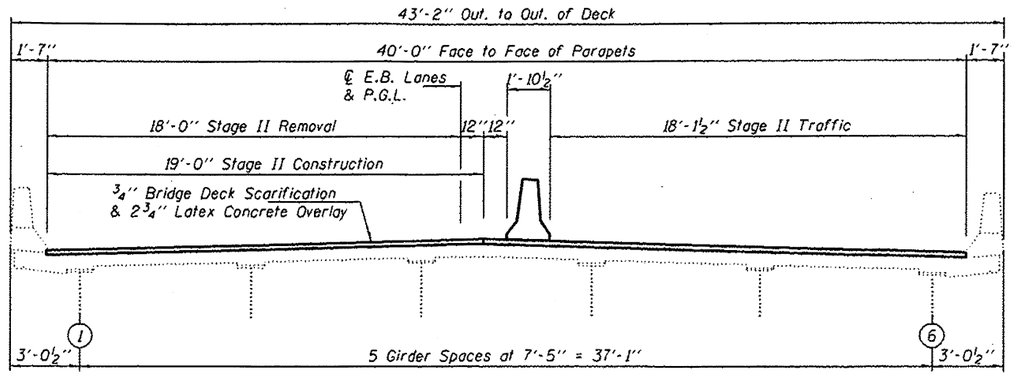
DESIGNED		PASSED		DATE	DECEMBER 1, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PLAN AND ELEVATION FAI 74 OVER THE VERMILION RIVER SN 092-0015 SHEET NO. 1 OF 12 SHEETS
CHECKED				REVISED			
DRAWN	Steffed			REVISED			
CHECKED	SMR		ACTING ENGINEER OF BRIDGES AND STRUCTURES				

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-12B)I	VERMILION	51	1
		CONTRACT NO. 70871		
	ILLINOIS FED. AID PROJECT			



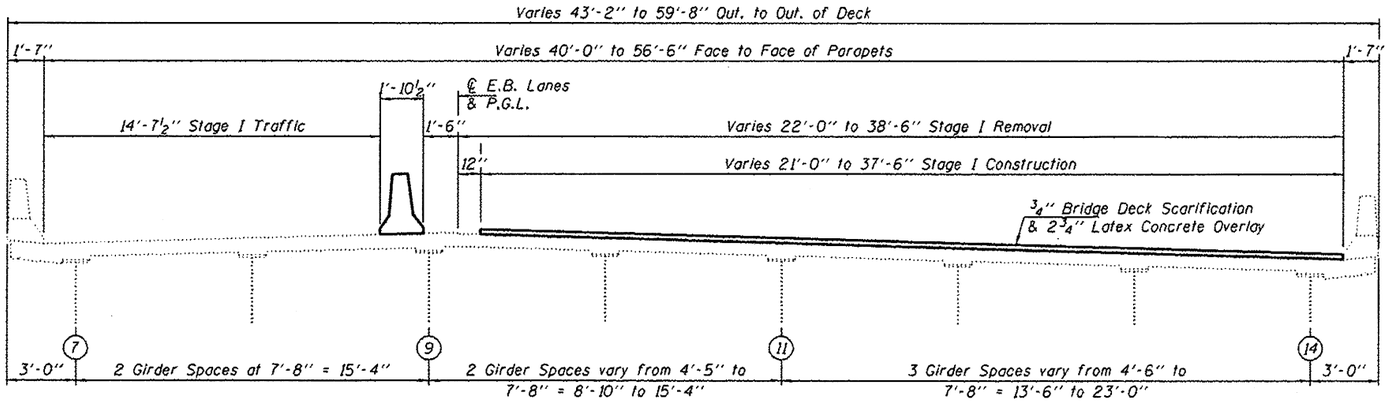
STAGE I CONSTRUCTION DETAILS FOR SPANS 1 & 2

(Looking East)



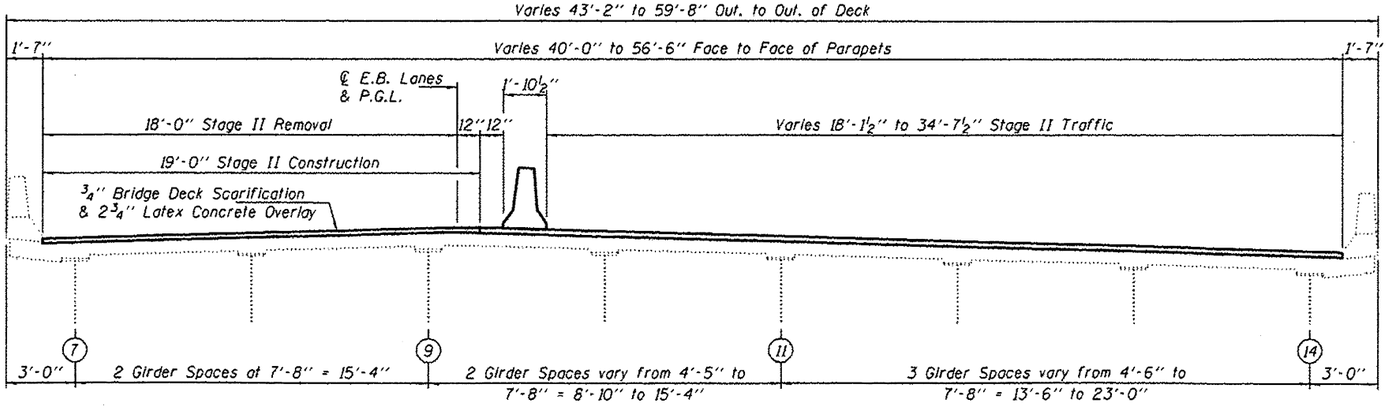
STAGE II CONSTRUCTION DETAILS FOR SPANS 1 & 2

(Looking East)



STAGE I CONSTRUCTION DETAILS FOR SPANS 3 THRU 5

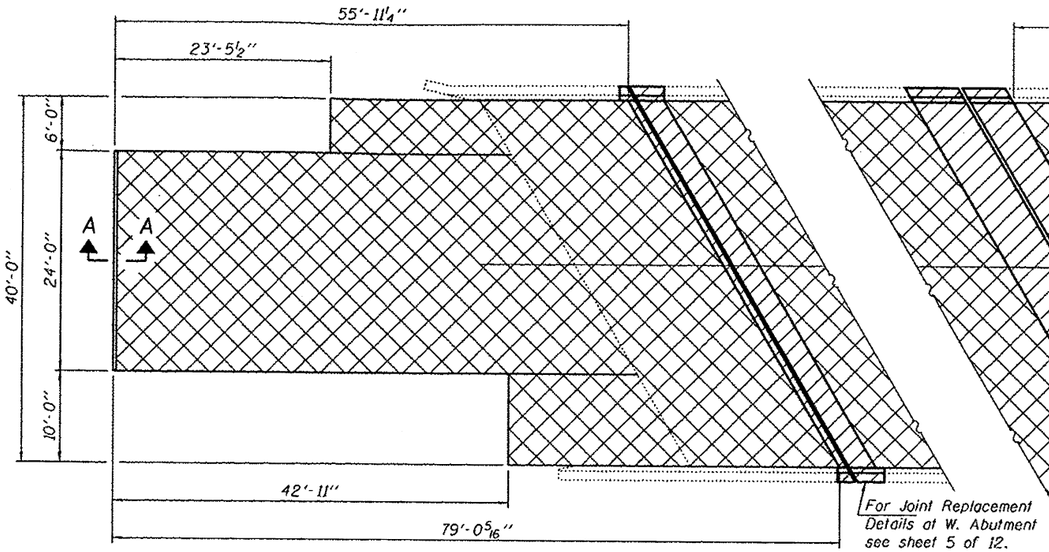
(Looking East)



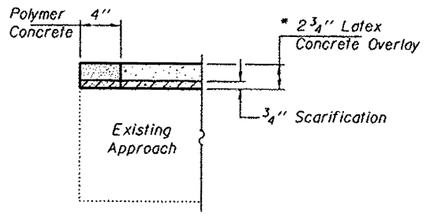
STAGE II CONSTRUCTION DETAILS FOR SPANS 3 THRU 5

(Looking East)

DESIGNED SMR	PASSED	DATE DECEMBER 1, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGING DETAILS SN 092-0015 (E.B.)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED JGY					74	192-12B1	VERMILION	51	17
DRAWN Steffen		REVISED							
CHECKED SMR JGY	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 2 OF 12 SHEETS			CONTRACT NO. 70871		
						ILLINOIS	FED. AID PROJECT		

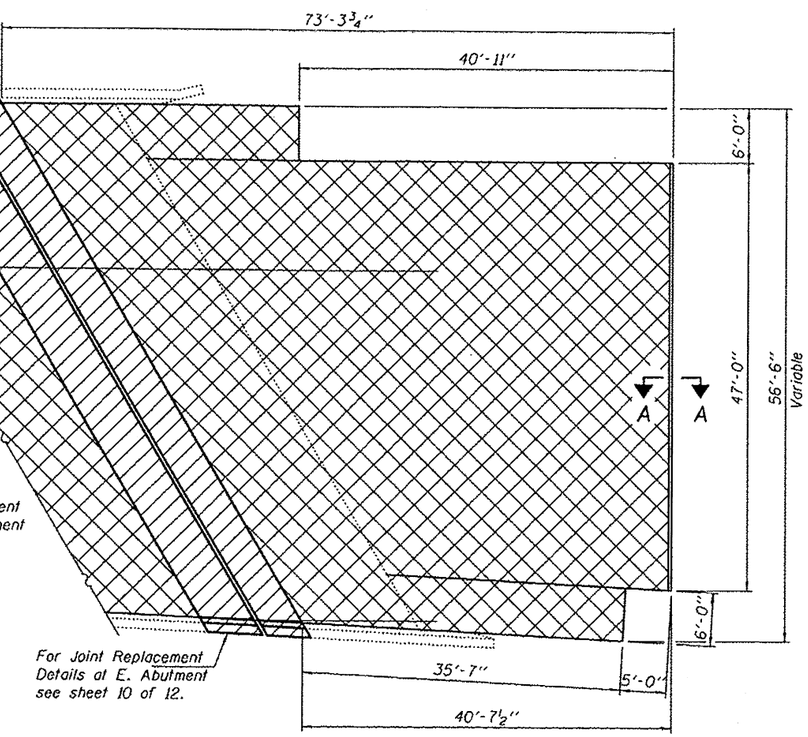


WEST APPROACH OVERLAY DETAILS



SECTION A-A

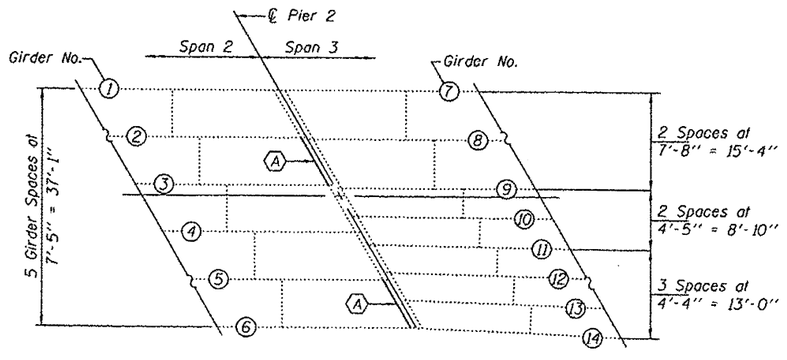
* Prior to ¼" Diamond Grooving.



EAST APPROACH OVERLAY DETAILS

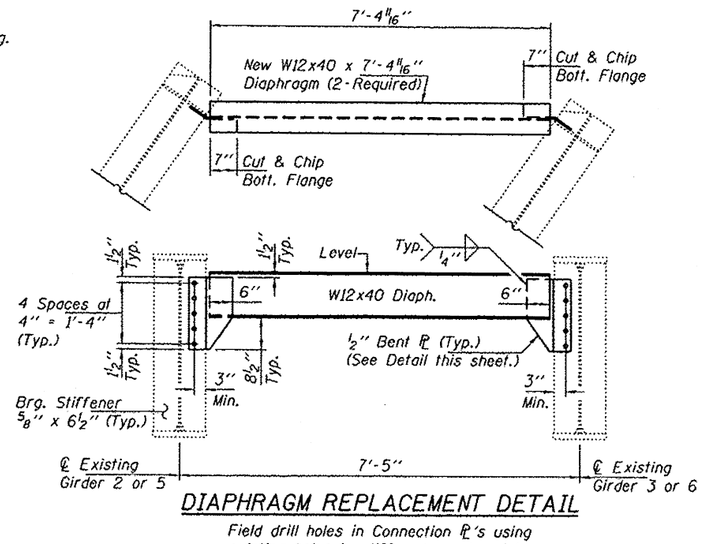
N

Cross-hatched areas indicate: Scarification, ¾"; Latex Concrete Overlay, * 2¾"; and Bridge Deck Grooving.



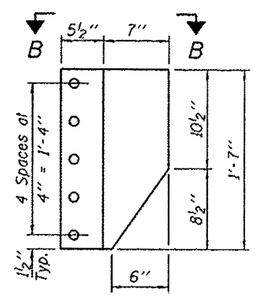
PARTIAL FRAMING PLAN

(A) - Remove & Replace Existing W12x40 Diaphragm and Connection ℄'s.



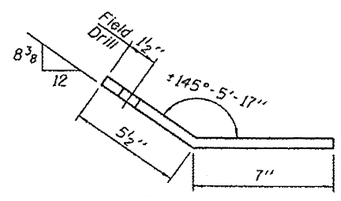
DIAPHRAGM REPLACEMENT DETAIL

Field drill holes in Connection ℄'s using existing holes in stiffeners as template.



BENT ℄ DETAILS

Bent ℄ ½" x 1'-0 3/8" x 1'-7" (4-Required)



VIEW B-B

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Steel Removal	Pound	710
Furnishing & Erecting Structural Steel	Pound	740
Bridge Deck Scarification, ¾"	Sq. Yd.	3381
Bridge Deck Latex Concrete Overlay, 2¾"	Sq. Yd.	3381
Bridge Deck Grooving	Sq. Yd.	3268
Polymer Concrete	Cu. Ft.	5.5

DESIGNED	SMR		
CHECKED	JGY		
DRAWN	Steffen		
CHECKED	SMR JGY		

PASSED — ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE DECEMBER 1, 2016

REVISED

REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

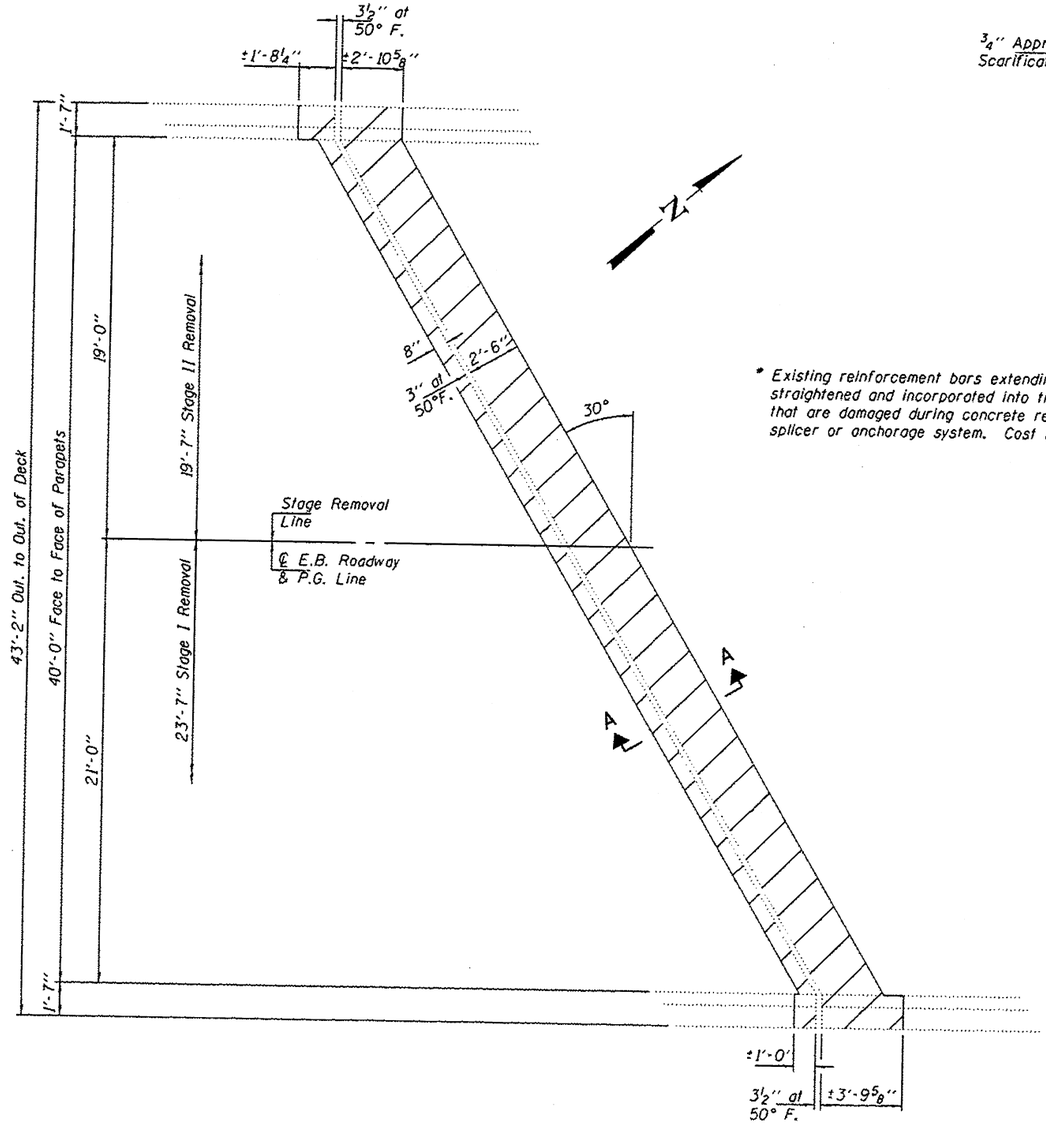
APPROACH OVERLAY AND DIAPHRAGM REPLACEMENT DETAILS
SN 092-0015 (E.B.)

SHEET NO. 3 OF 12 SHEETS

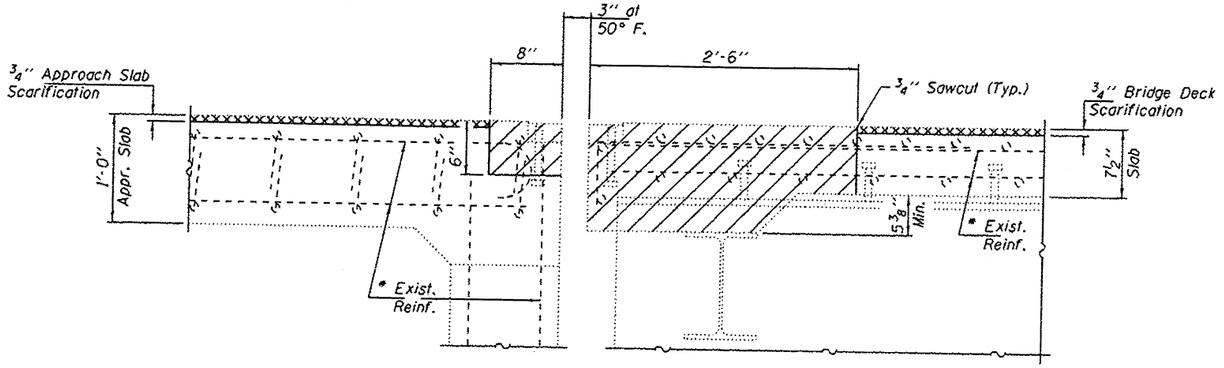
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-12B)I	VERMILION	51	18

CONTRACT NO. 70B71

ILLINOIS FED. AID PROJECT

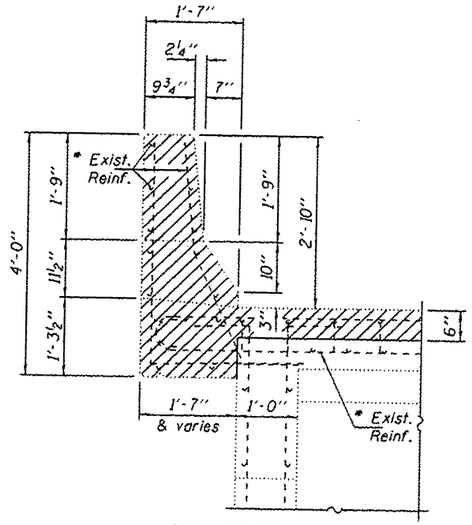


CONCRETE REMOVAL AT WEST ABUTMENT

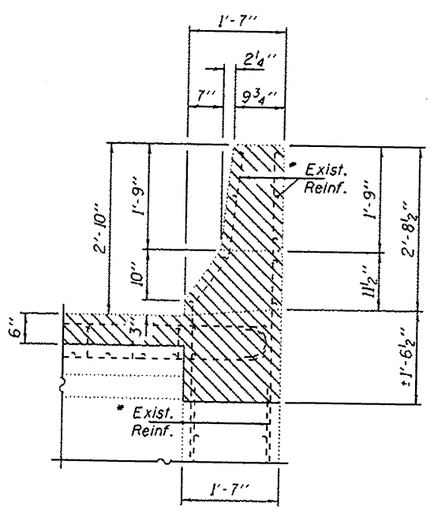


SECTION A-A
(Near ℄ Roadway)
(Dims. at RT L's to end of deck)

* 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 shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.



SECTION THRU NORTH APPROACH PARAPET

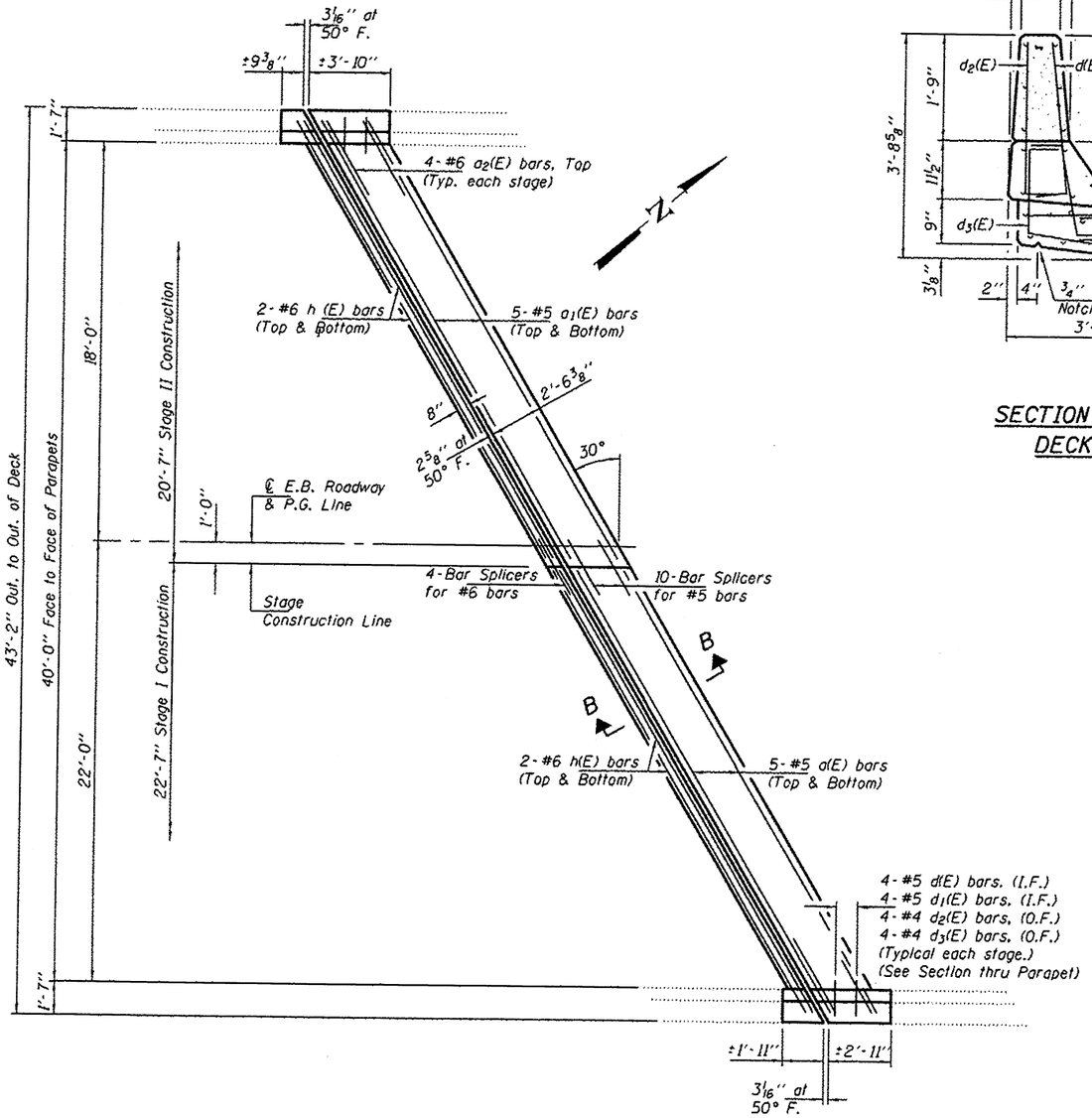


SECTION THRU SOUTH APPROACH PARAPET

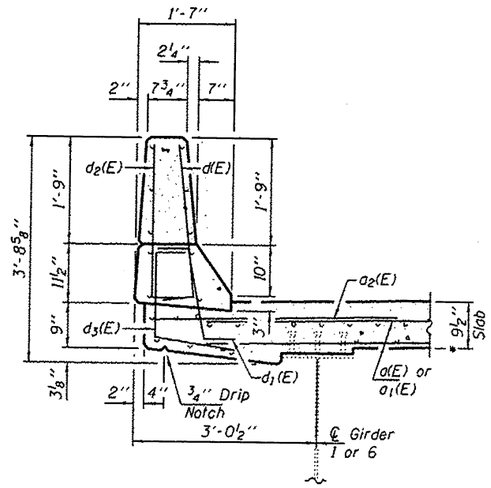
Notes:
Hatched areas indicate Concrete Removal.
For Bridge Deck Parapet Dimensions and Details and Bill of Material, see sheet 5 of 12.

DESIGNED SMR	PASSED	DATE DECEMBER 1, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED JGY	A Carl Puzey	REVISED	WEST ABUTMENT JOINT REMOVAL DETAILS
DRAWN Steffen	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED	SN 092-0015 (E.B.)
CHECKED SMR JGY			SHEET NO. 4 OF 12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-12B)I	VERMILION	51	19
		CONTRACT NO. 70B71		
	ILLINOIS FED. AID PROJECT			

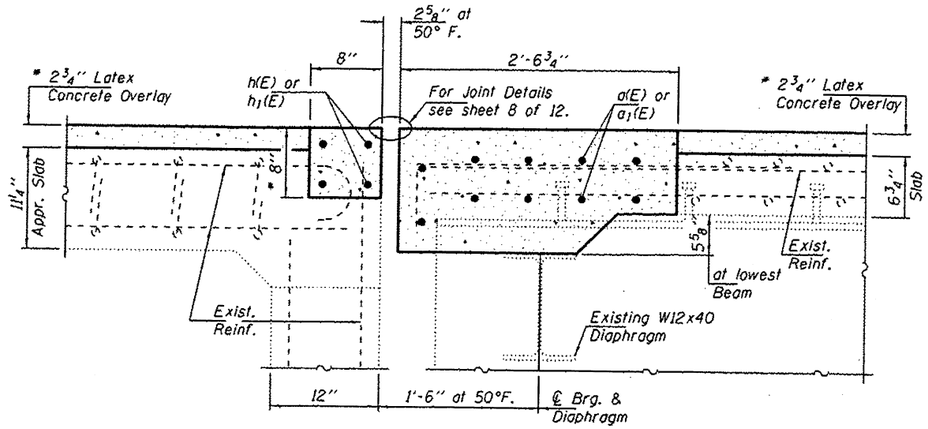


CONCRETE REPLACEMENT AT WEST ABUTMENT



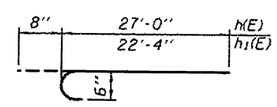
SECTION THRU BRIDGE DECK PARAPET

* Prior to 1/4" Diamond Grinding.

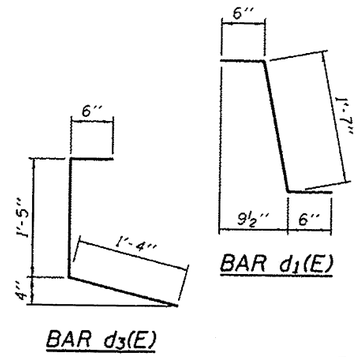


SECTION B-B

(Near ℄ Roadway)
(Dims. at RT L's to end of deck)

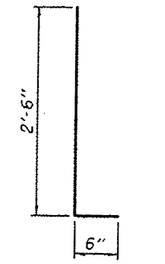


BARS h(E) & h1(E)

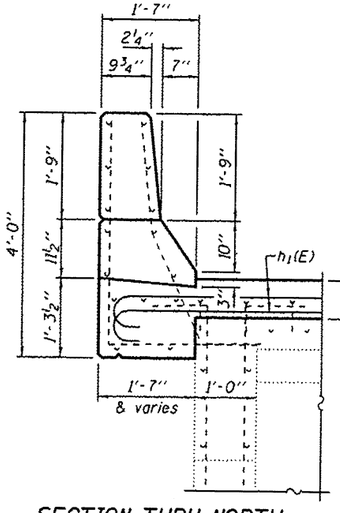


BAR d3(E)

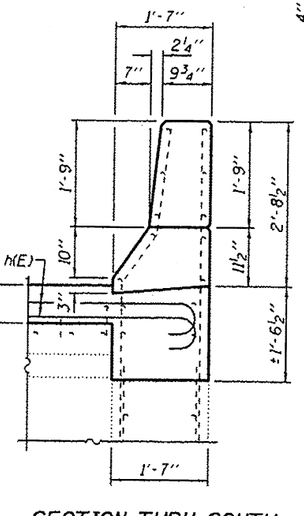
BAR d1(E)



BARS d(E) & d2(E)



SECTION THRU NORTH APPROACH PARAPET



SECTION THRU SOUTH APPROACH PARAPET

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	10	#5	24'-5"	
a1(E)	10	#5	22'-1"	
a2(E)	8	#6	4'-0"	
d(E)	8	#5	3'-0"	
d1(E)	8	#5	2'-7"	
d2(E)	8	#4	3'-0"	
d3(E)	8	#4	3'-3"	
h(E)	4	#6	26'-8"	
h1(E)	4	#6	24'-0"	
Concrete Removal			Cu. Yd.	7.2
Concrete Superstructure			Cu. Yd.	8.4
Bar Splicers			Each	14
Reinforcement Bars, Epoxy Coated			Pound	920

DESIGNED	SMR		
CHECKED	JGY		
DRAWN	Steffen		
CHECKED	SMR JGY		

PASSED — ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE DECEMBER 1, 2016

REVISED

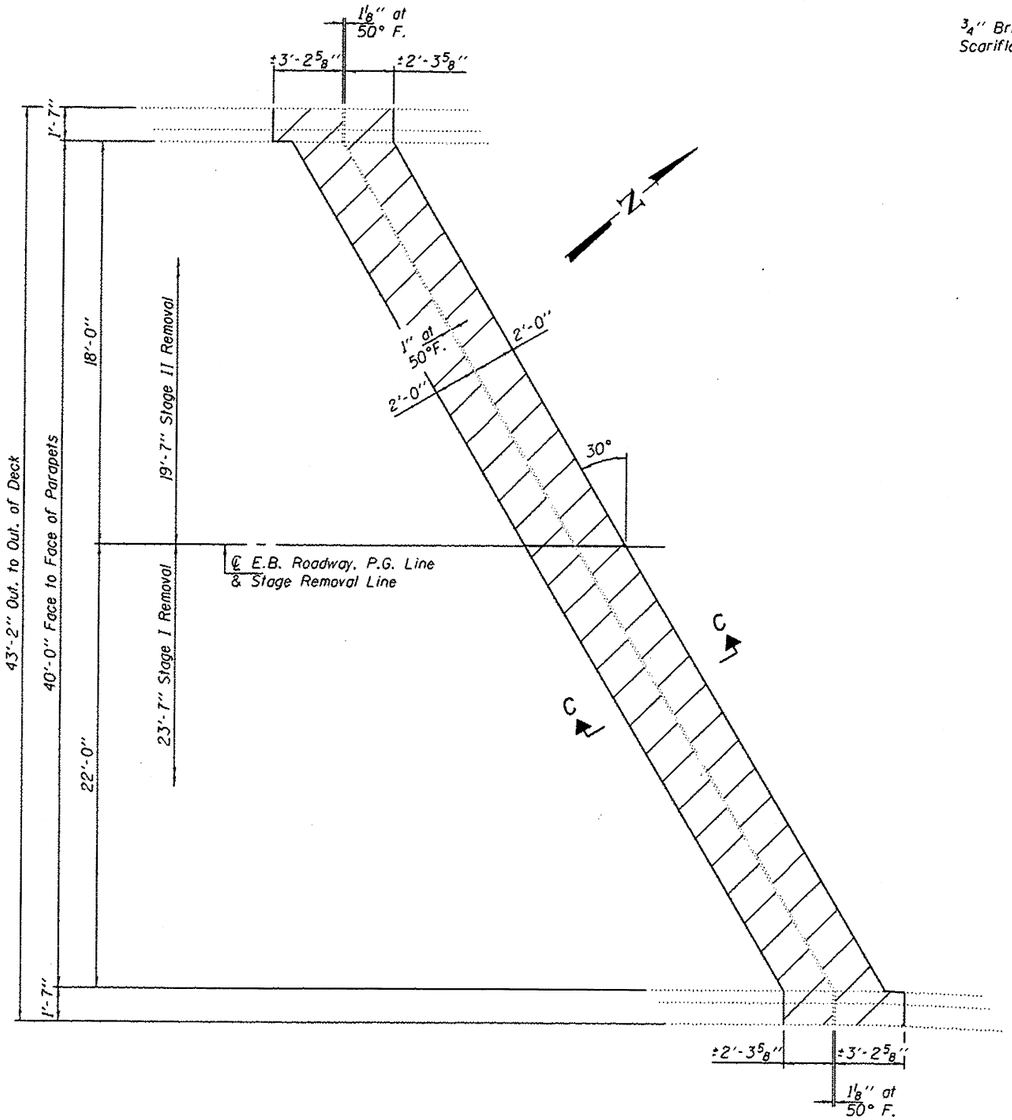
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

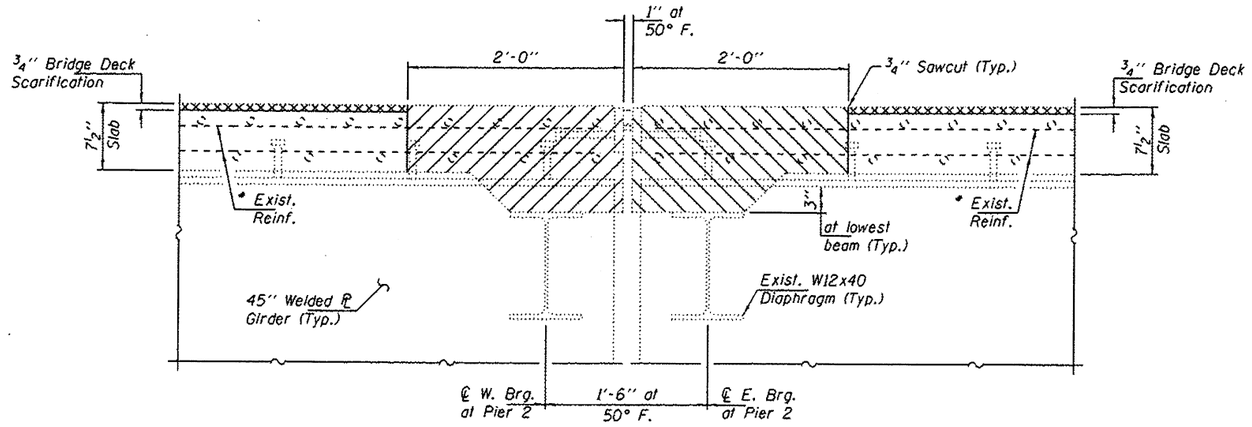
WEST ABUTMENT JOINT REPLACEMENT DETAILS
SN 092-0015 (E.B.)

SHEET NO. 5 OF 12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B1	VERMILION	51	20
		CONTRACT NO. 70871		
	ILLINOIS FED. AID PROJECT			



CONCRETE REMOVAL AT PIER 2



SECTION C-C

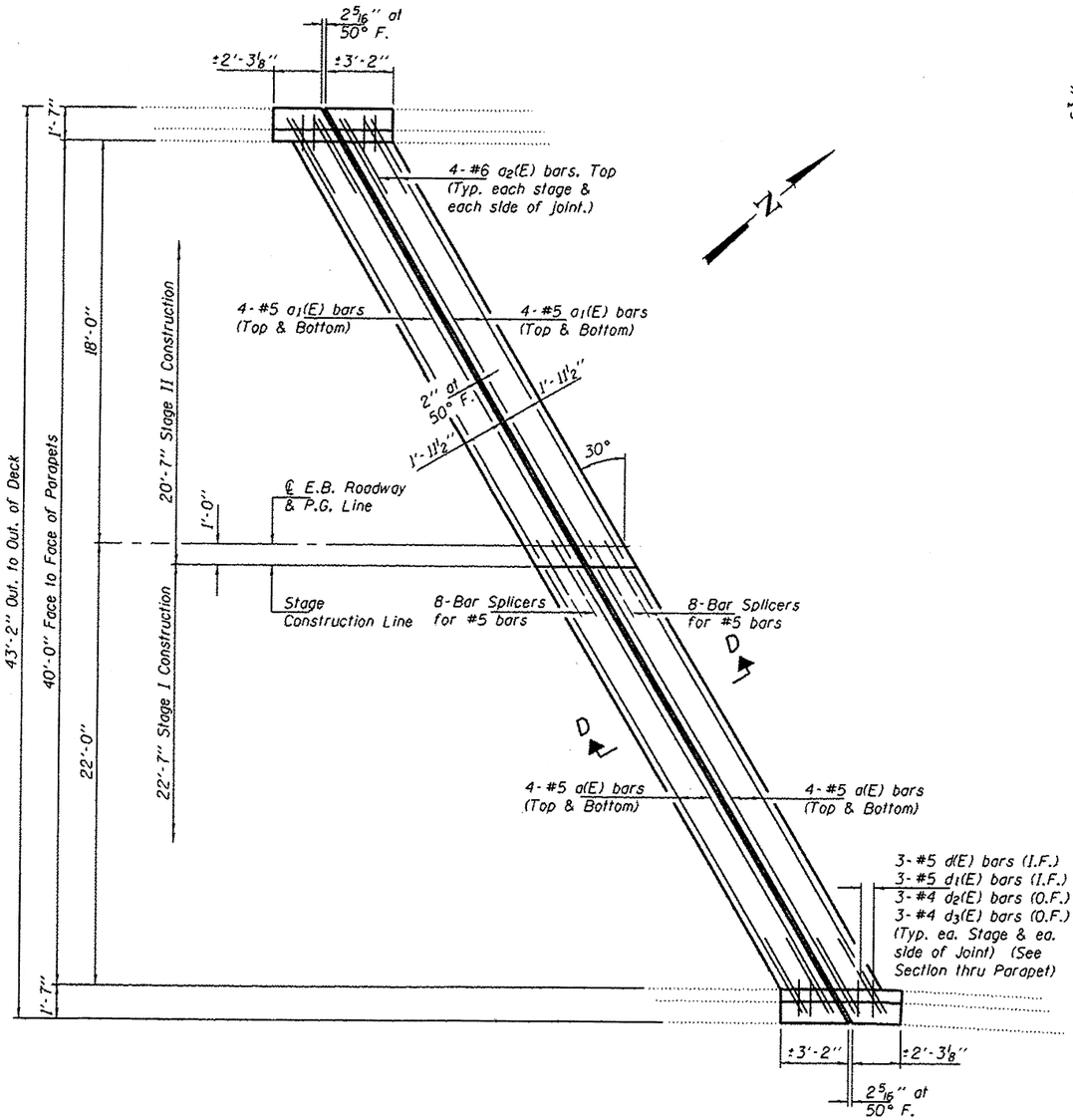
(Near ℄ Roadway)
(Dims. at RT L's to end of deck)

* 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 shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

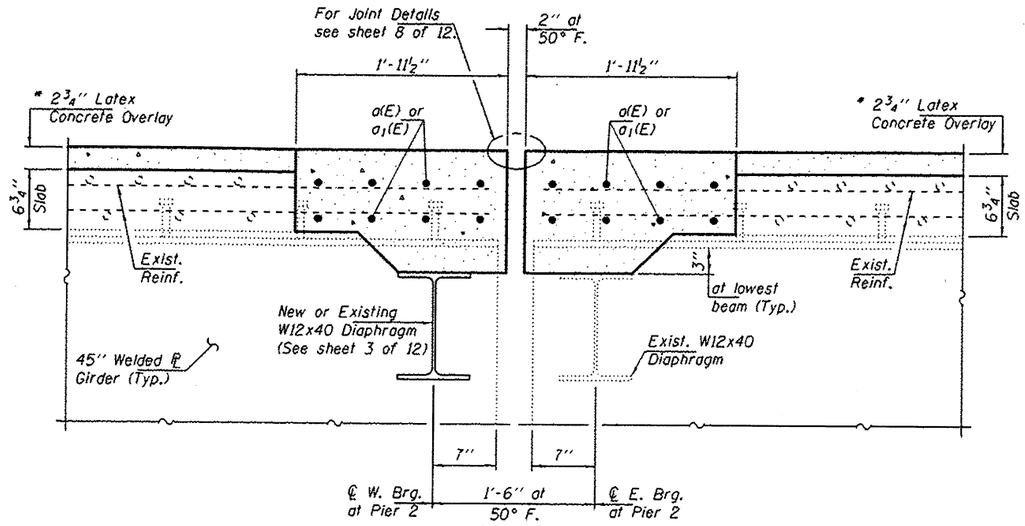
Notes:
Hatched areas indicate Concrete Removal.
For Bridge Deck Parapet Dimensions and Details and Bill of Material, see sheet 7 of 12.

DESIGNED SMR	PASSED	DATE DECEMBER 1, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 2 JOINT REMOVAL DETAILS SN 092-0015 (E.B.)
CHECKED JGY	A. Carl Preston	REVISED		SHEET NO. 6 OF 12 SHEETS
DRAWN Steffen	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		
CHECKED SMR JGY				

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
14	(92-12B)I	VERMILION	51	21
		CONTRACT NO. 70871		
ILLINOIS FED. AID PROJECT				



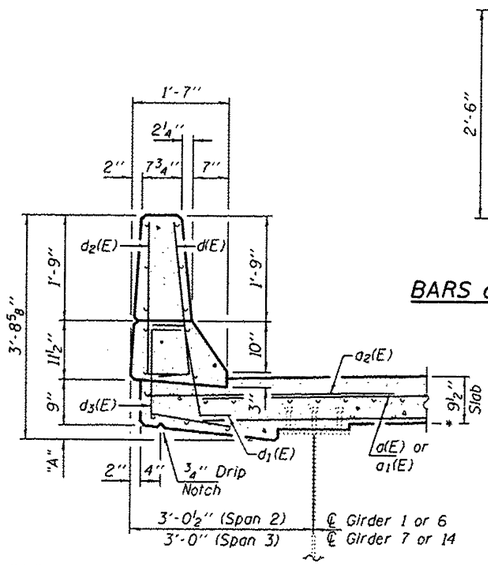
CONCRETE REPLACEMENT AT PIER 2



* Prior to 1/4" Diamond Grinding.

SECTION D-D

(Near ℄ Roadway)
(Dims. at RT L's to end of deck)

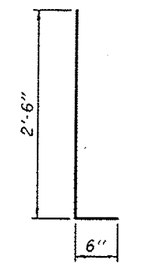


DIMENSION "A"

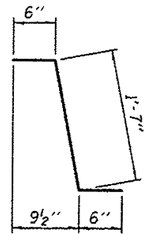
SPAN	PARAPET	Dim. "A"
2	North	3 1/8"
2	South	3 1/8"
3	North	3 7/8"
3	South	3"

SECTION THRU BRIDGE DECK PARAPET

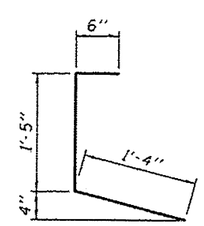
(See Table for Dim. "A")



BARS d(E) & d2(E)



BAR d1(E)

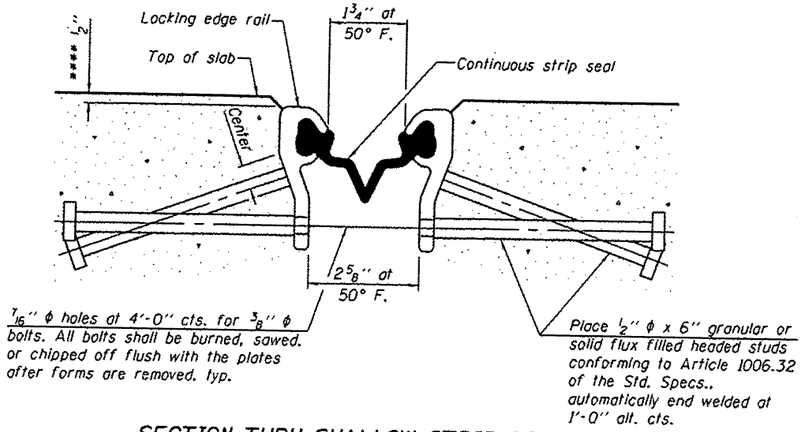


BAR d3(E)

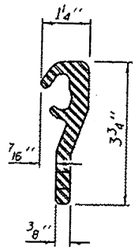
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	16	#5	24'-5"	
a1(E)	16	#5	22'-1"	
a2(E)	16	#6	4'-0"	
d(E)	12	#5	3'-0"	
d1(E)	12	#5	2'-7"	
d2(E)	12	#4	3'-0"	
d3(E)	12	#4	3'-3"	
Concrete Removal			Cu. Yd.	9.2
Concrete Superstructure			Cu. Yd.	10.0
Bar Splicers			Each	16
Reinforcement Bars, Epoxy Coated			Pound	990

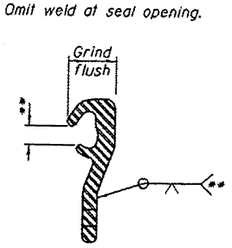
DESIGNED SMR	PASSED	DATE DECEMBER 1, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 2 JOINT REPLACEMENT DETAILS SN 092-0015 (E.B.)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED JGY		REVISED			14	192-128H	VERMILION	51	22
DRAWN Steffen	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 7 OF 12 SHEETS			CONTRACT NO. 70871		
CHECKED SMR JGY							ILLINOIS FED. AID PROJECT		



SECTION THRU SHALLOW STRIP SEAL JOINT AT WEST ABUTMENT

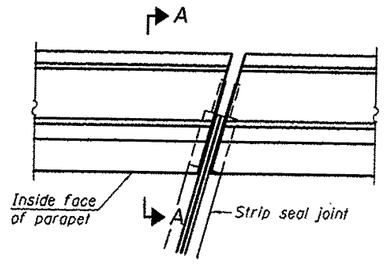


LOCKING EDGE RAIL

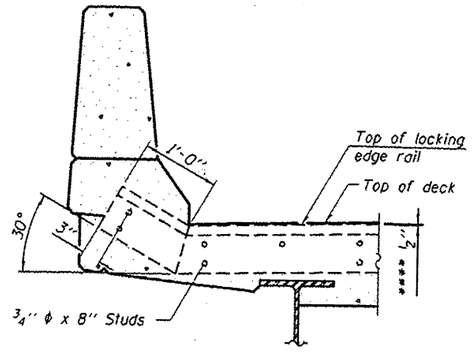


LOCKING EDGE RAIL SPLICE

SHALLOW DEPTH LOCKING EDGE RAILS

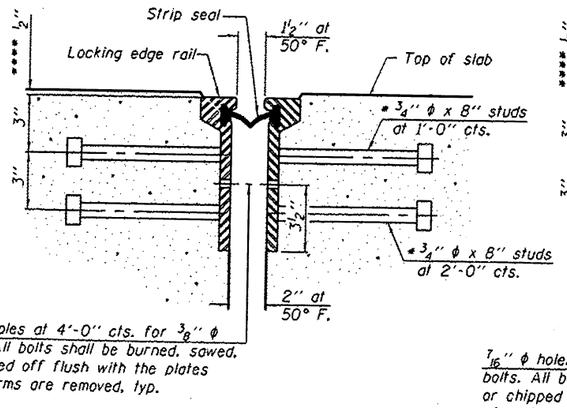


PLAN
(For skews ≤ 30°)

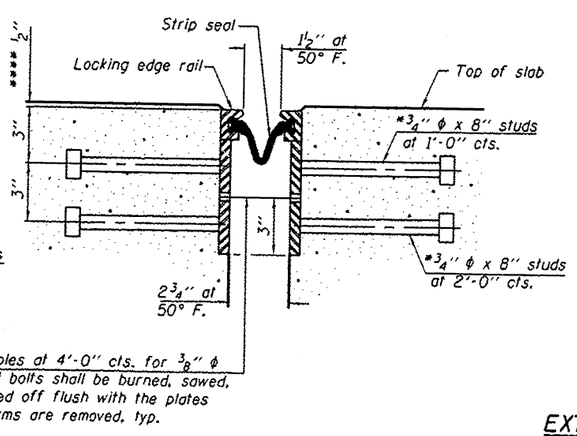


SECTION A-A

**** Prior to 1/4" Diamond Grinding.

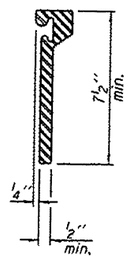


SECTION THRU ROLLED RAIL JOINT AT PIER 2

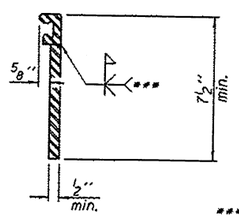


SECTION THRU WELDED RAIL JOINT AT PIER 2

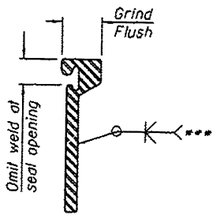
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



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.

NORMAL DEPTH LOCKING EDGE RAILS

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.

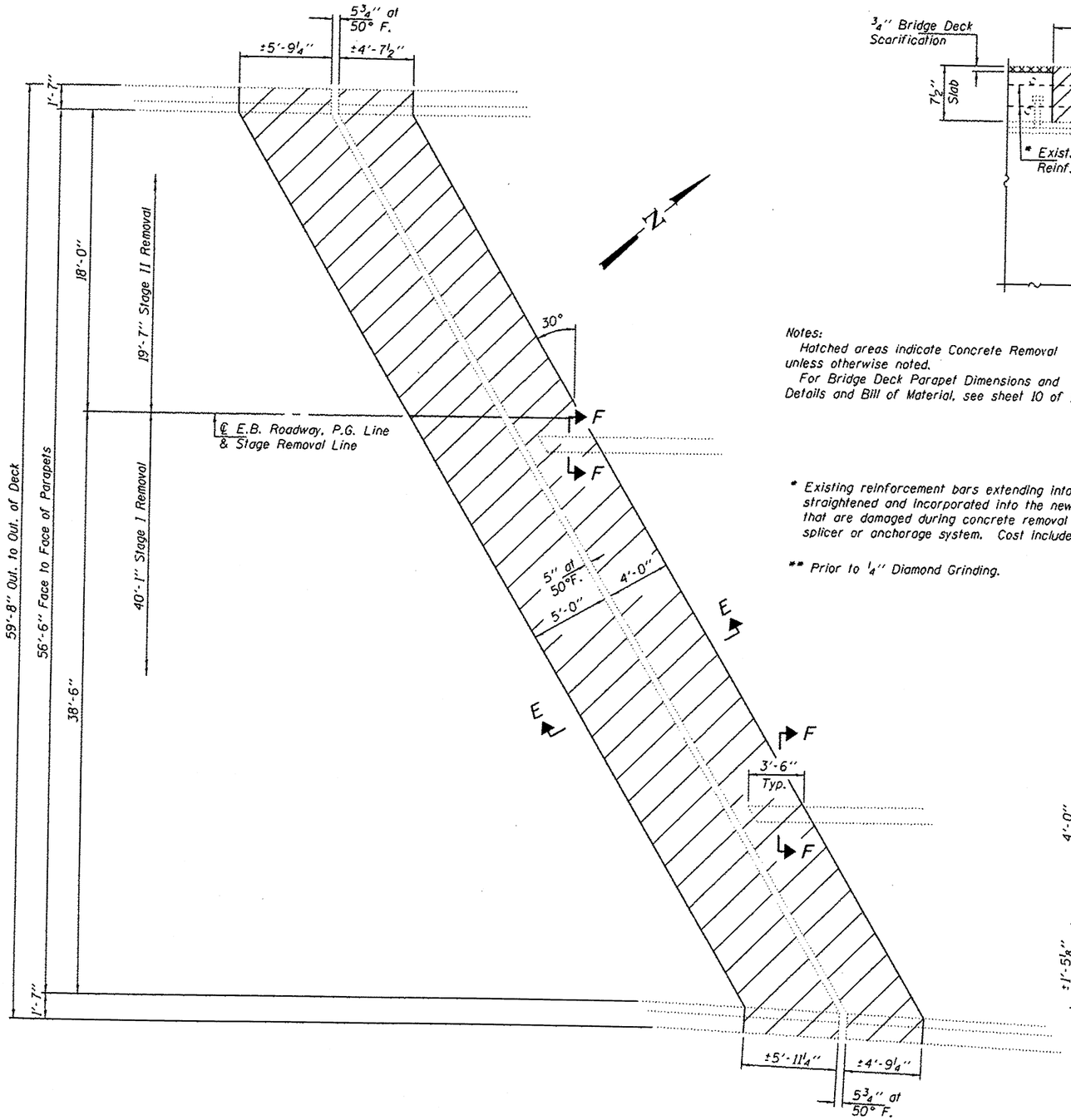
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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.

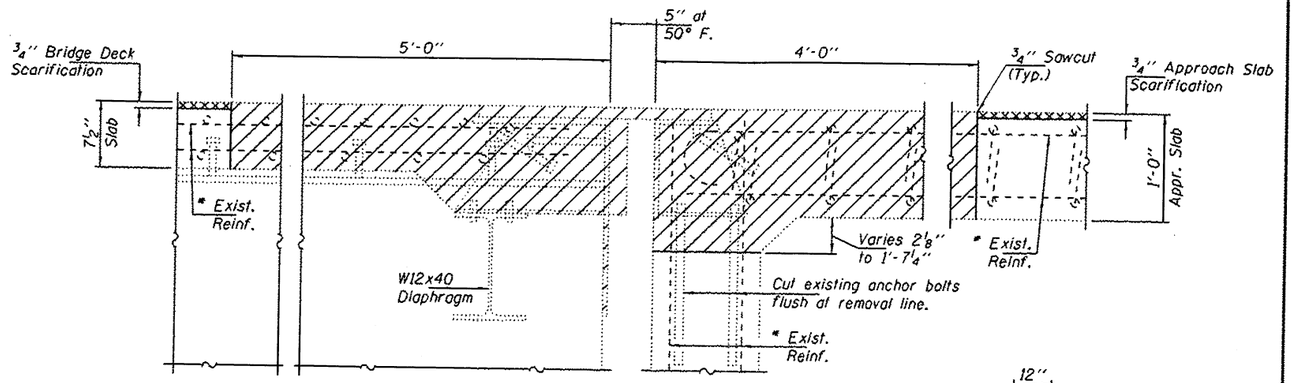
BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	97

DESIGNED SMR	PASSED	DATE DECEMBER 1, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PREFORMED JOINT STRIP SEAL DETAILS SN 092-0015 (E.B)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED JGY	A Carl Puzey	REVISED			14	192-12B,1	VERMILION	51	23
DRAWN Steffen	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 8 OF 12 SHEETS			CONTRACT NO. 70B71		
CHECKED SMR JGY							ILLINOIS FED. AID PROJECT		



CONCRETE REMOVAL AT EAST ABUTMENT

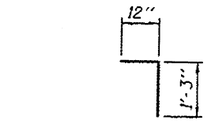


SECTION E-E
(Near ℄ Roadway)
(Dims. at RT L's to end of deck)

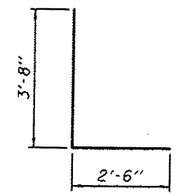
Notes:
Hatched areas indicate Concrete Removal unless otherwise noted.
For Bridge Deck Parapet Dimensions and Details and Bill of Material, see sheet 10 of 12.

* 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 shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

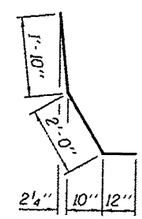
** Prior to 1/4" Diamond Grinding.



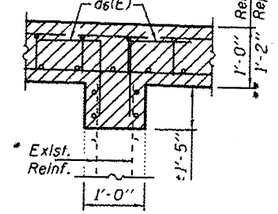
BAR $d_6(E)$



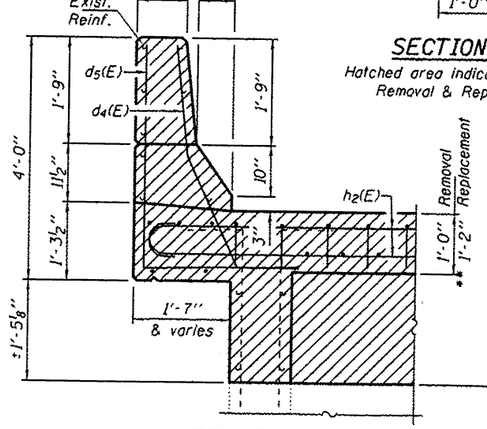
BAR $d_5(E)$



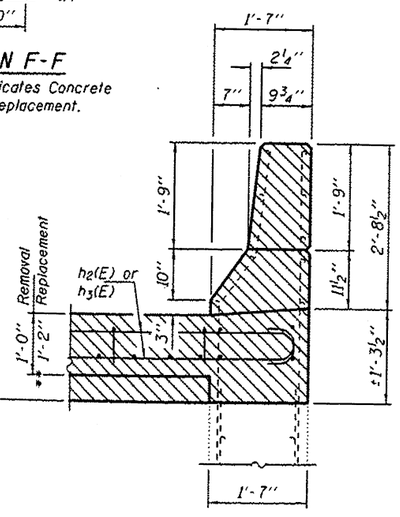
BAR $d_4(E)$



SECTION F-F
Hatched area indicates Concrete Removal & Replacement.

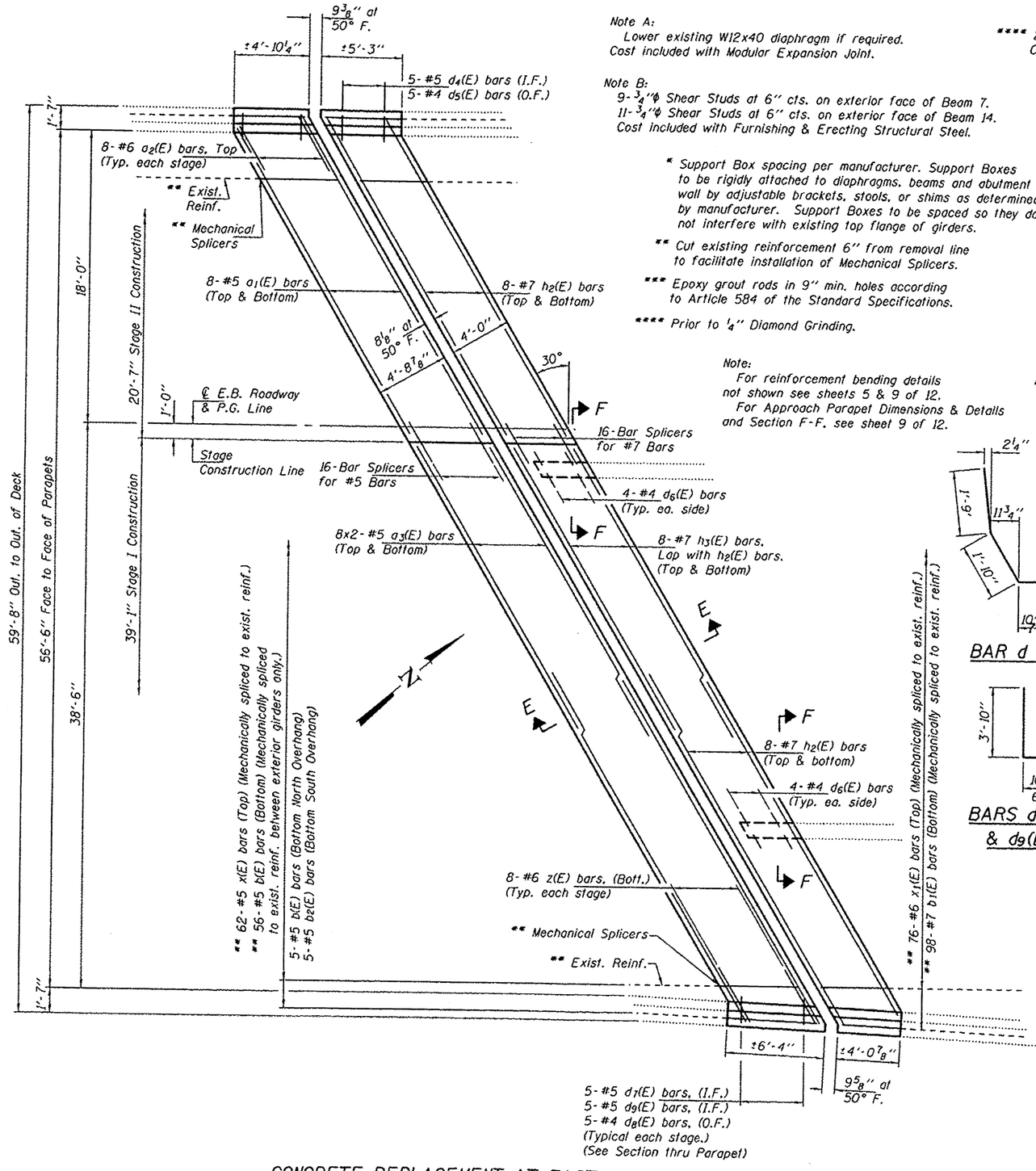


SECTION THRU NORTH APPROACH PARAPET
Hatched area indicates Concrete Removal & Replacement.



SECTION THRU SOUTH APPROACH PARAPET
Hatched area indicates Concrete Removal & Replacement.

DESIGNED SMR	PASSED	DATE DECEMBER 1, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EAST ABUTMENT JOINT REMOVAL DETAILS SN 092-0015 (E.B.)	F.A.I. RTE. 74
CHECKED JGY	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 9 OF 12 SHEETS	SECTION (92-12B)I
DRAWN Steffen		REVISED			COUNTY VERMILION
CHECKED SMR JGY					TOTAL SHEETS 51
					SHEET NO. 24
					CONTRACT NO. 70871
					ILLINOIS FED. AID PROJECT



CONCRETE REPLACEMENT AT EAST ABUTMENT

Note A:
Lower existing W12x40 diaphragm if required. Cost included with Modular Expansion Joint.

Note B:
9-3/4"ϕ Shear Studs at 6" cts. on exterior face of Beam 7.
11-3/4"ϕ Shear Studs at 6" cts. on exterior face of Beam 14.
Cost included with Furnishing & Erecting Structural Steel.

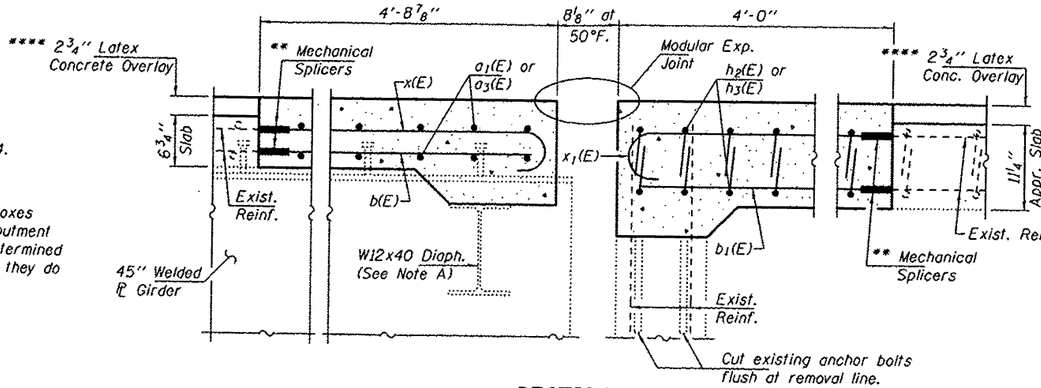
* Support Box spacing per manufacturer. Support Boxes to be rigidly attached to diaphragms, beams and abutment wall by adjustable brackets, stools, or shims as determined by manufacturer. Support Boxes to be spaced so they do not interfere with existing top flange of girders.

** Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers.

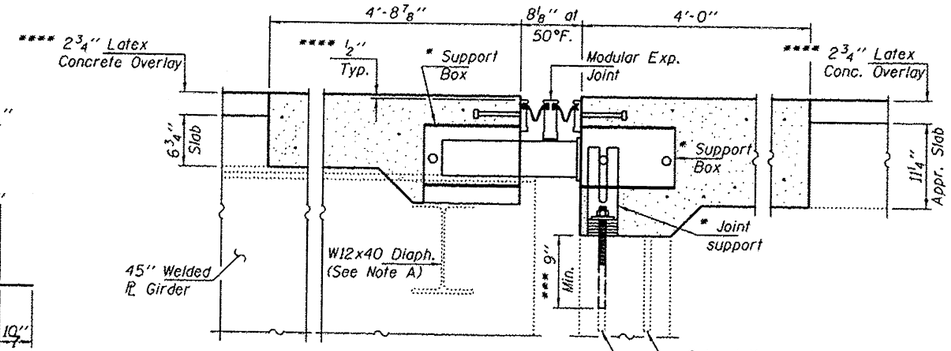
*** Epoxy grout rods in 9" min. holes according to Article 584 of the Standard Specifications.

**** Prior to 1/4" Diamond Grinding.

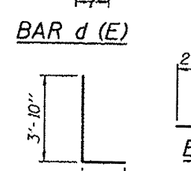
Note:
For reinforcement bending details not shown see sheets 5 & 9 of 12.
For Approach Parapet Dimensions & Details and Section F-F, see sheet 9 of 12.



SECTION E-E
(Modular Joint not shown for clarity.)

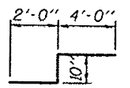


SECTION E-E
(Reinforcement not shown for clarity.)

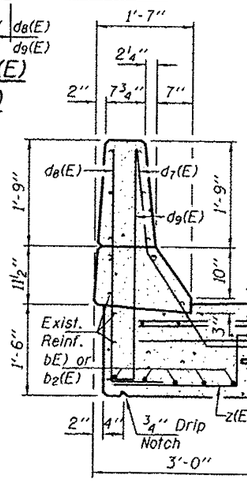


BAR d (E)

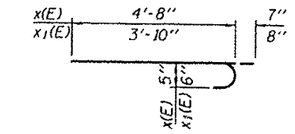
BARS d8(E) & d9(E)



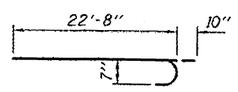
BAR z(E)



SECTION THRU BRIDGE DECK PARAPET



BARS x(E) & x1(E)



BAR h2(E)

MIN. BAR LAPS
#5 Bars = 3'-6"
#7 Bars = 4'-8"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1(E)	16	#5	22'-1"	
a2(E)	16	#6	4'-0"	
a3(E)	32	#5	23'-9"	
b(E)	61	#5	4'-9"	
b1(E)	98	#7	4'-4"	
b2(E)	5	#5	6'-0"	
d4(E)	10	#5	4'-10"	L
d5(E)	10	#4	6'-2"	L
d6(E)	16	#4	2'-3"	⌐
d7(E)	10	#5	4'-5"	L
d8(E)	10	#4	4'-8"	⌐¬
d9(E)	10	#5	4'-4"	⌐¬
h2(E)	32	#7	23'-6"	⌒
h3(E)	16	#7	27'-2"	
x(E)	62	#5	5'-3"	⌒
x1(E)	76	#6	4'-6"	⌒
zE)	16	#6	6'-10"	⌐
Concrete Removal			Cu. Yd.	26.4
Concrete Superstructure			Cu. Yd.	29.9
Bar Splicers			Each	32
Mechanical Splicers			Each	292
Reinforcement Bars, Epoxy Coated			Pound	6090

Bars indicated thus 8 x 2-#5 etc. indicates 8 lines of bars with 2 lengths per line.

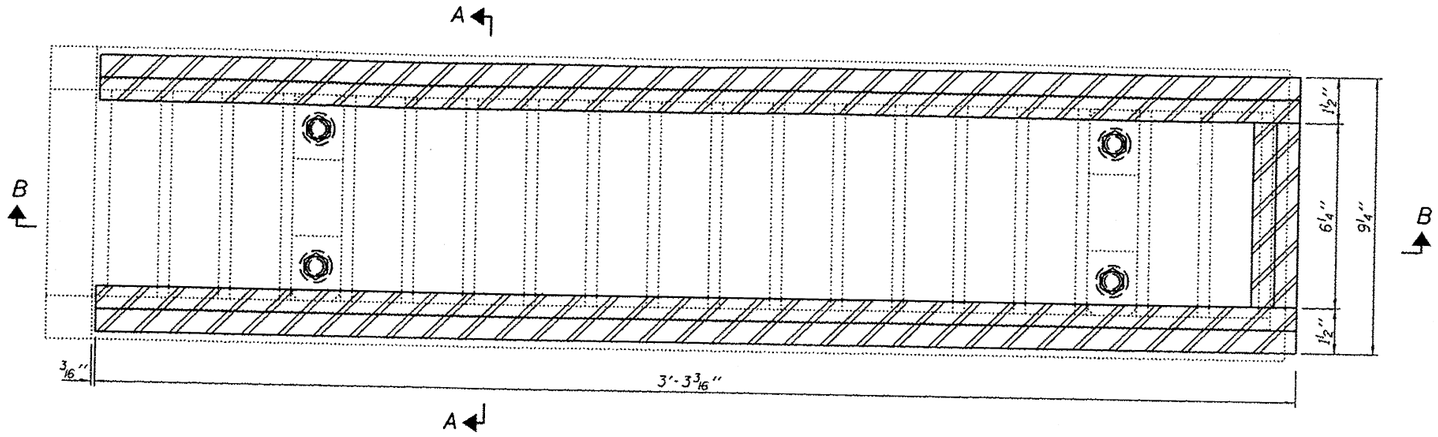
DESIGNED	SMR		
CHECKED	JGY		
DRAWN	Steffen		
CHECKED	SMR JGY		

PASSED — ACTING ENGINEER OF BRIDGES AND STRUCTURES
DATE DECEMBER 1, 2016
REVISED
REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT MODULAR EXPANSION JOINT DETAILS
SN 092-0015 (E.B.)
SHEET NO. 10 OF 12 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-12B)H	VERMILION	51	
		CONTRACT NO. 70B7		
	ILLINOIS FED. AID PROJECT			



PLAN

NOTES

See sheet 1 of 12 for scupper locations.

All structural steel shall be AASHTO M270 Grade 36. The adjusting scupper ring and ¾"ϕ pipe sleeve spacers shall be galvanized.

Bolts shall be ½"ϕ AASHTO M164 Type 1, mechanically galvanized.

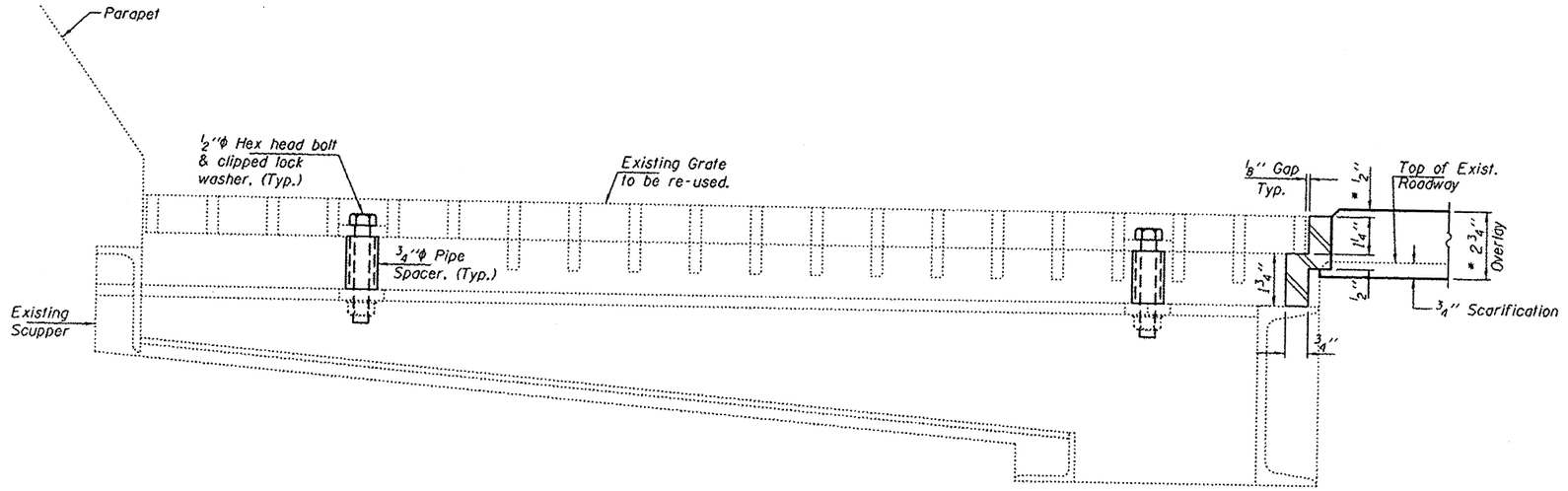
Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based at the unit price bid for the work.

Shop plans for proposed adjusting scupper ring shall be submitted for approval prior to fabrication.

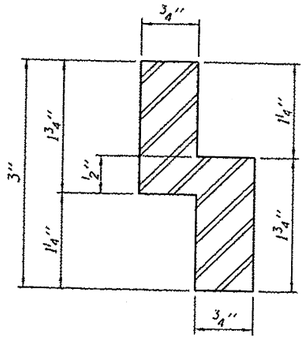
Contractor shall ensure that no damage is done to existing grates to be reused.

Cost of all labor and materials necessary to remove existing grates, clean existing scuppers, install adjusting scupper rings and reinstalling grates is included in the cost per unit each for Drainage Scuppers to be Adjusted.

- Adjusting Scupper Ring

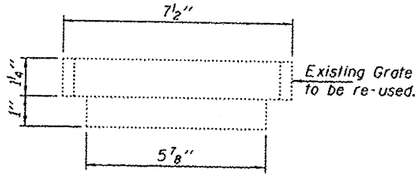


SECTION B-B

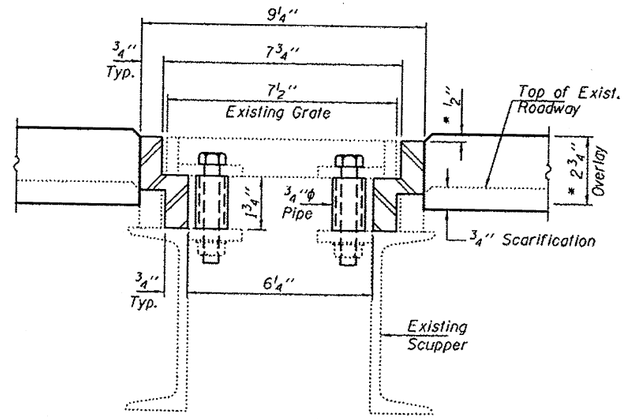


ADJUSTING SCUPPER RING

* Prior to ¼" Diamond Grinding.



SECTION C-C

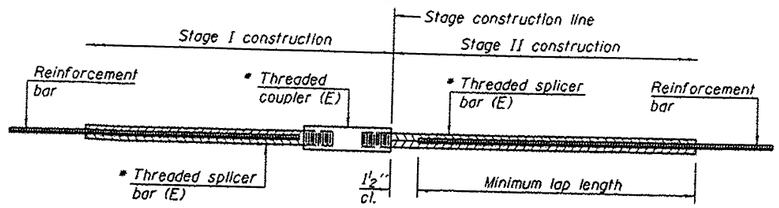


SECTION A-A

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers to be Adjusted	Each	8

DESIGNED SMR	PASSED	DATE DECEMBER 1, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DRAINAGE SCUPPER ADJUSTMENT DETAILS SN 092-0015 (E.B.)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED JGY	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 11 OF 12 SHEETS	74	092-1281I	VERMILION	51	26
DRAWN Steffen		REVISED					CONTRACT NO. 70B71		
CHECKED SMR JGY							ILLINOIS FED. AID PROJECT		

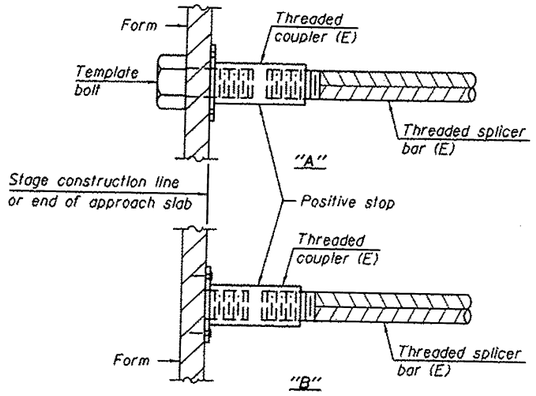


STANDARD BAR SPLICER ASSEMBLY

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

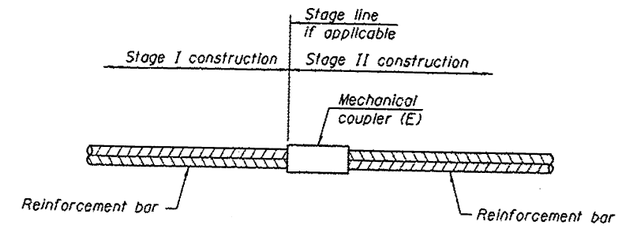
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
West Abutment	#5	10	3'-6"
West Abutment	#6	4	4'-0"
Pier 2	#5	16	3'-6"
East Abutment	#5	16	3'-6"
East Abutment	#7	16	4'-8"



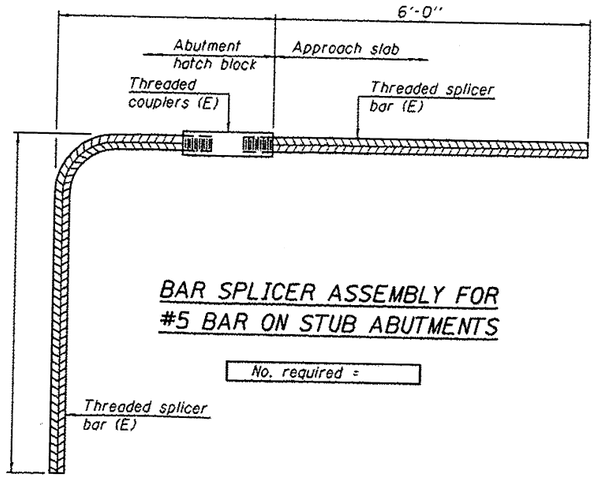
INSTALLATION AND SETTING METHODS

"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
East Abutment	#5	118
East Abutment	#6	76
East Abutment	#7	98



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.

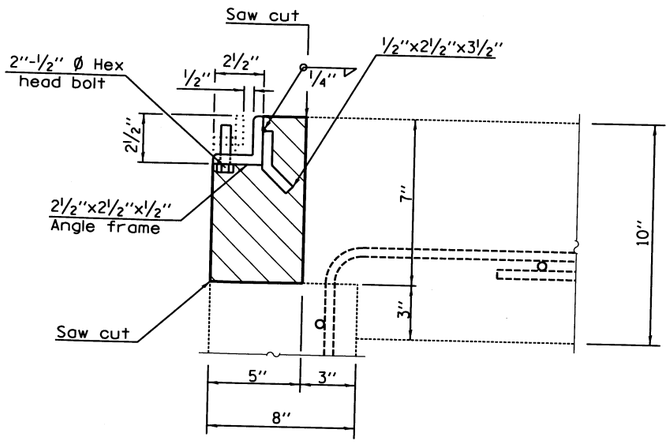
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 6-8-15

DESIGNED SMR	PASSED	DATE DECEMBER 1, 2016	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS SN 092-0015 (E.B.)	F.A.I. RTE. 14
CHECKED JGY	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED		SHEET NO. 12 OF 12 SHEETS	SECTION 192-12B11
DRAWN Steffen		REVISED			COUNTY VERMILION
CHECKED SMR JGY					TOTAL SHEETS 51
					SHEET NO. 27
					CONTRACT NO. 70871
					ILLINOIS FED. AID PROJECT

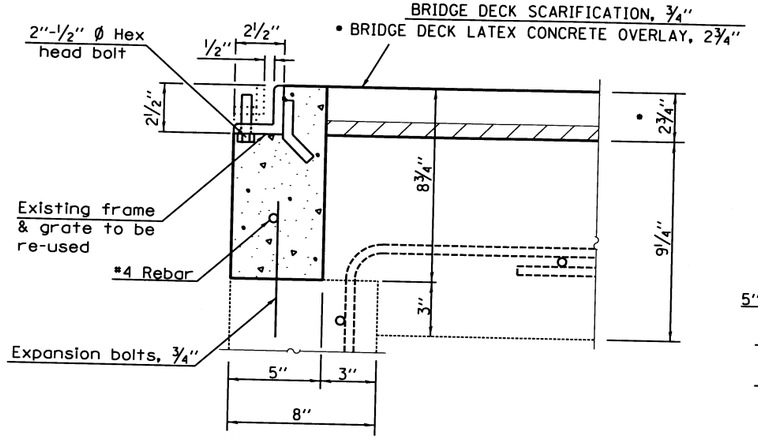
DETAIL FOR INLET BOXES TO BE ADJUSTED (SPECIAL)

S.N. 092–0015



DETAIL "A" – EXISTING

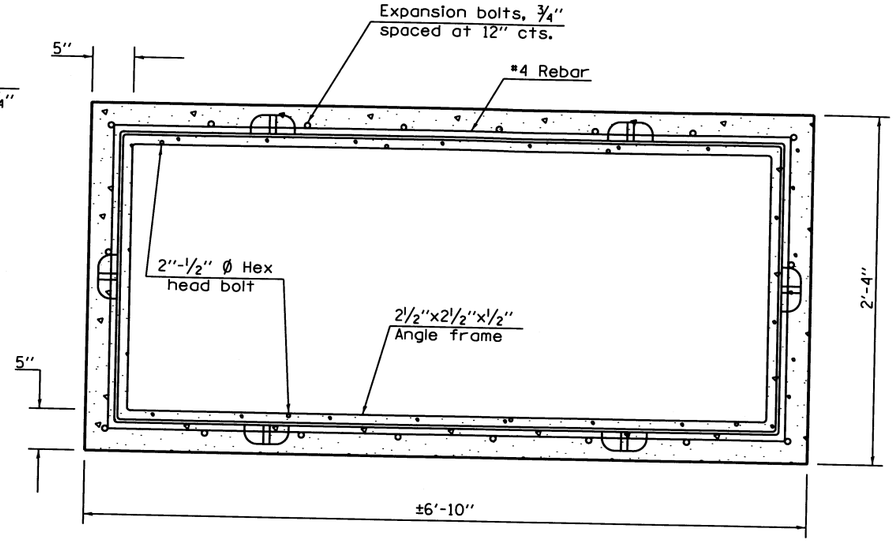
Concrete Removal



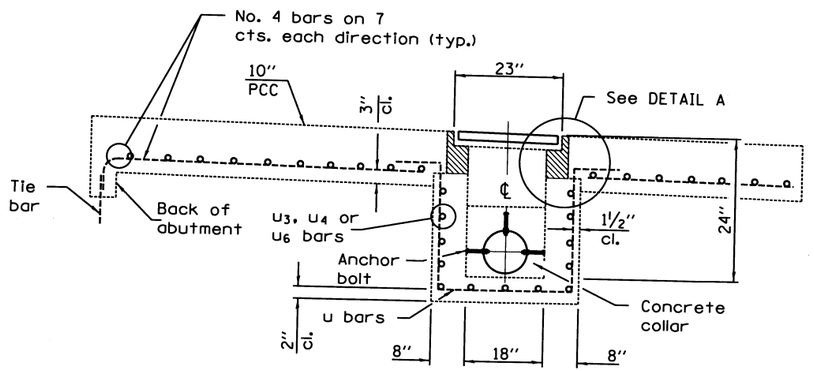
DETAIL "A" – PROPOSED

Class S.I. Concrete

• PRIOR TO 1/4" DIAMOND GRINDING

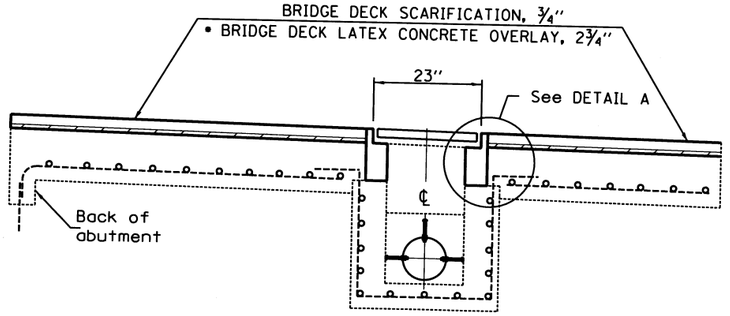


PLAN – PROPOSED
(GRATING OMITTED FOR CLARITY)



EXISTING PROFILE

BRIDGE APPROACH SHOULDER PAVEMENT AND DRAIN



PROPOSED PROFILE

BRIDGE APPROACH SHOULDER PAVEMENT AND DRAIN

NOTES:

EXPANSION BOLTS SHALL EXTEND A MINIMUM OF 4" INTO THE PROPOSED CONCRETE.

ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF SECTION 602.

THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR "INLET BOXES TO BE ADJUSTED (SPECIAL)" WHICH SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIAL NECESSARY TO COMPLETE THE WORK.

ESTIMATED QUANTITIES

ITEM	UNIT	TOTAL
CONCRETE REMOVAL	CU YD	0.13
REINFORCEMENT BARS (EPOXY)	POUND	11.4
CLASS S.I. CONCRETE	CU YD	0.17
EXPANSION BOLTS, 3/4"	EACH	18.0

BILL OF MATERIALS

ITEM	UNIT	TOTAL
INLET BOXES TO BE ADJUSTED (SPECIAL)	EACH	1.0

FILE NAME = pw:\\IL084EBIDINTEG.illinois.gov:PWIDOT\Documents\IDOT Offices\District 5\Projects\D570B71\Data\Structures\D570B71-sht-Repair	USER NAME = showleres	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
$MODELNAME$	PLOT DATE = 9/30/2016	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INLET BOX TO BE ADJUSTED
S.N. 092–0015

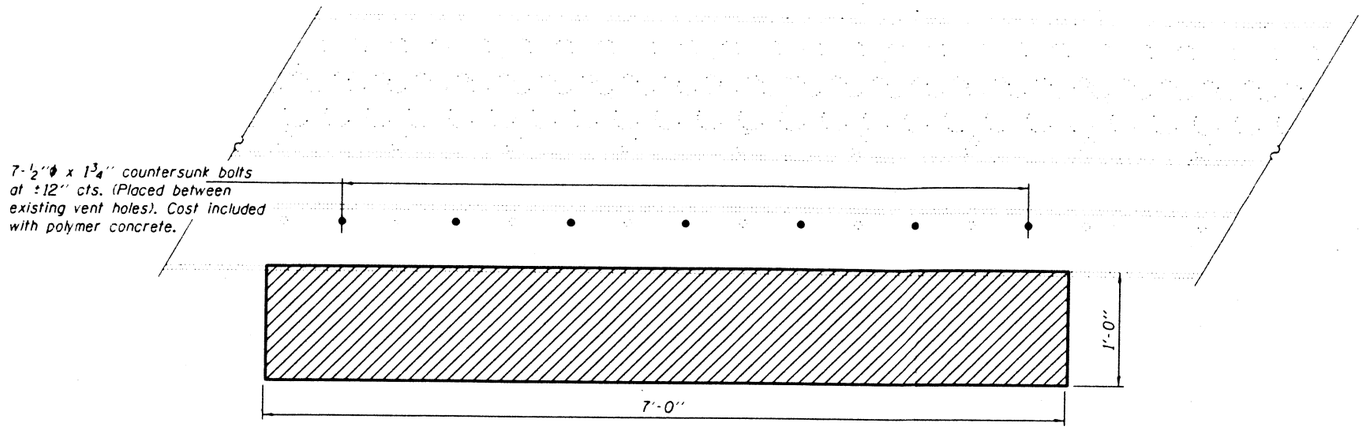
SCALE: | SHEET 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS
74	(92-12B)I	VERMILION	51
		CONTRACT NO.	70B71
	ILLINOIS	FED. AID PROJECT	

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 the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

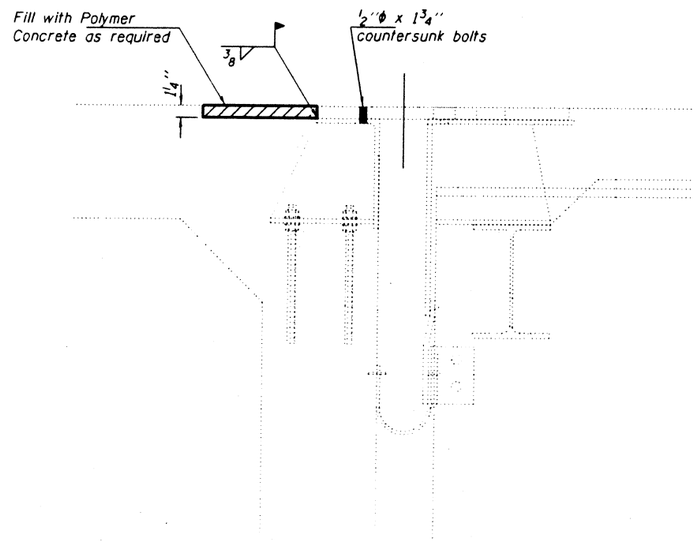
The deck surface shall have its final finish tined according to Section 703.3.5.5 of the Standard Specifications. Cost included with Polymer Concrete.



PARTIAL PLAN AT REPAIR

Hatched area indicates Polymer Concrete. (As required).

Loose concrete in area to be patched is to be removed. Patch areas to be squared off to provide clean edges. Cost included with polymer concrete.



SECTION AT EAST ABUTMENT

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

EXPIRES 11-30-2014

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Polymer Concrete	Cu. Ft.	0.7

DESIGNED Victor H. Keliz	EXAMINED Trent A. Dolt ACTING ENGINEER OF STRUCTURAL SERVICES	DATE SEPTEMBER 5, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED [signature]	PASSED [signature] ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED	
DRAWN baliva		REVISED	
CHECKED DAB VHU			

JOINT REPAIR DETAILS
SN 092-0015

SHEET NO. 1 OF 1 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74		VERMILION		
		CONTRACT NO.		
		ILLINOIS FED. AID PROJECT		

7003 VERMILION I&R #171

3/12/2008

6-13-08 Letting, Item 171

F.A.I. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	*	VERMILION	12	1
F.A.U. RTE.	ILLINOIS	PROJECT		

* D5 SCOUR MITIGATION 2008-1 CONTRACT NO. 70013

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROPOSED HIGHWAY PLANS

99.51.
11-29-08

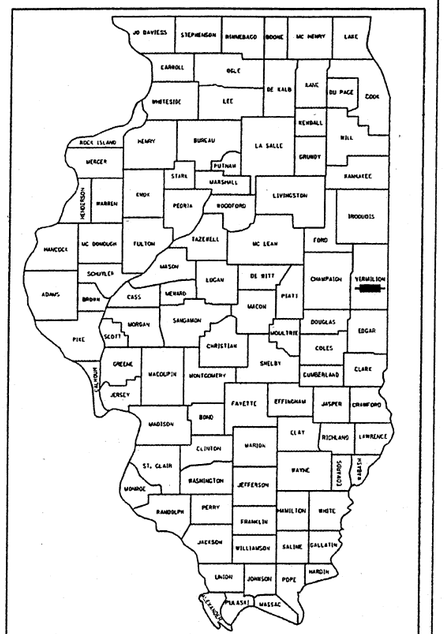
F.A.I. ROUTE 74
SECTION D5 SCOUR MITIGATION 2008-1
VERMILION COUNTY

C-95-047-99

VARIOUS DISTRICT WIDE SCOUR MITIGATION

FOR INDEX OF SHEETS, SEE SHEET NO. 2
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4

D-95-019-99



LOCATION OF SECTION INDICATED THUS: —

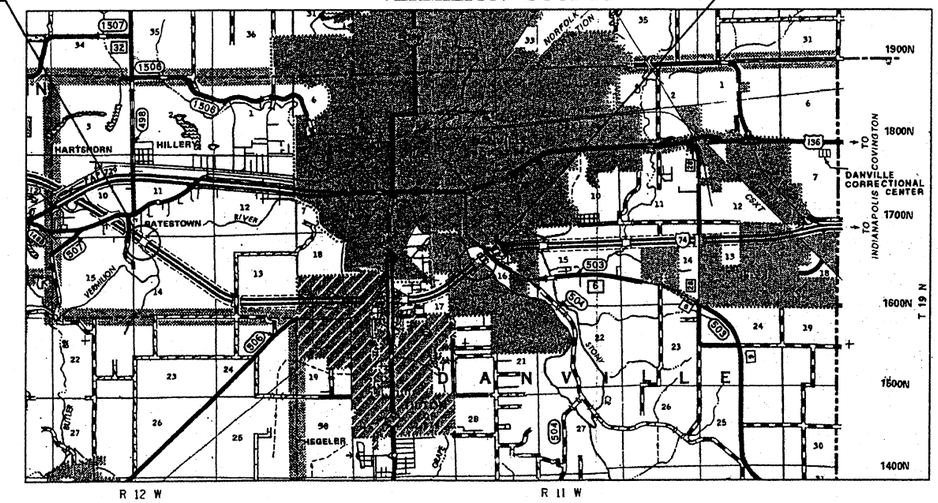
SECTION: D-5 SCOUR MITIGATION
LOCATION NO. 1

S.N. 092-0006 (EB) &
S.N. 092-0007 (WB)
STATION 1755+16.00

SECTION: D-5 SCOUR MITIGATION
LOCATION NO. 2

S.N. 092-0014 (WB) &
S.N. 092-0015 (EB)
STATION 1992+54.00

VERMILION COUNTY



N

SCALE
0 1 2 3 4 5 MILES
0 5000 10000 15000 20000 25000 FEET

TOTAL LENGTH OF SECTION & PROJECT = N.A.
NET LENGTH OF SECTION & PROJECT = N.A.

CURRENT ADT /DESIGN ADT

CURRENT ADT 20,500 (2005) - LOCATION #1
CURRENT ADT 27,600 (2005) - LOCATION #2

DESIGN DESIGNATION

N/A

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

PROJECT ENGINEER: TIM BRANDENBURG
SQUAD LEADER: EURNIE GARVER
DESIGNER: BRIAN HOGAN
(217)465-4181

CONTRACT NO. 70013

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 3/12 20 08
Joseph E. Crowe
DEPUTY DIRECTOR OF HIGHWAYS, REGION THREE ENGINEER
May 9 20 08
Erich E. Hamm
Interim ENGINEER OF DESIGN AND ENVIRONMENT
May 9 20 08
Christine M. Reed
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

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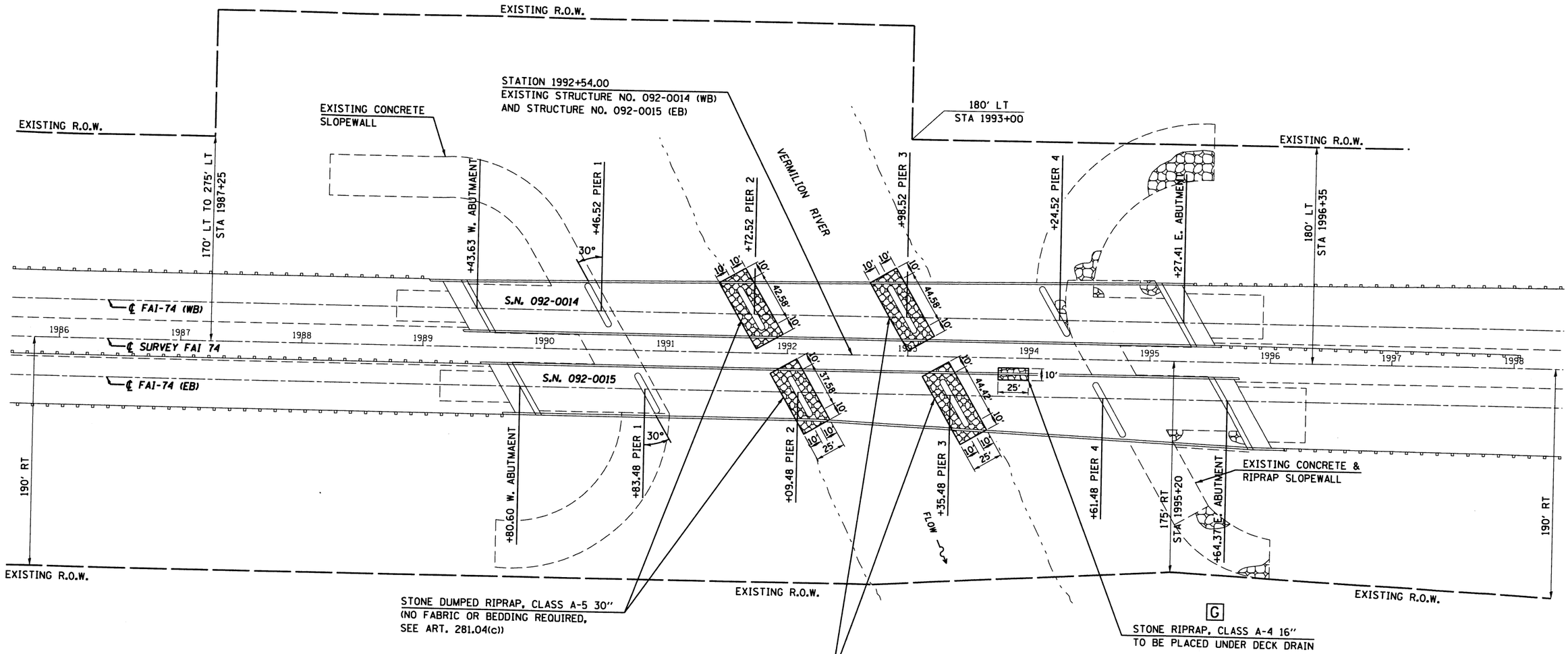
092-0014 & -0015

3/12/2008

F.A.I. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	*	VERMILION	12	7
F.H.W.A. REG.	ILLINOIS	PROJECT		

* D5 SCOUR MITIGATION 2008-1 CONTRACT NO. 70013

S.N. 092-0014 (WESTBOUND LANES)
S.N. 092-0015 (EASTBOUND LANES)



SCOUR REPAIR SCHEDULE

LOCATION	FABRIC AREA(SY)	REPAIR AREA(SY)	TYPE OF REPAIR	RIPRAP THICKNESS(IN)	BEDDING THICKNESS(IN)	RIPRAP ESTIMATED TONS
PIER #2 (S)	0.0	153.0	A-5	30	0	195.0
PIER #2 (N)	0.0	153.0	A-5	30	0	195.0
G	28.0	28.0	A-4	16	6	19.0
PIER #3 (S)	0.0	156.5	A-5	30	0	200.0
PIER #3 (N)	0.0	156.5	A-5	30	0	200.0

NOTE:
UNDER NO CIRCUMSTANCES ARE THE BRIDGE PIER FOOTINGS TO BE UNCOVERED.

1"=40'
0' 10' 20' 30' 40' 80' 120'

ILLINOIS DEPARTMENT OF TRANSPORTATION
PLAN SHEET
S.N. 092-0014 & S.N. 092-0015
F.A.I. ROUTE 74
SECTION D5 SCOUR MITIGATION 2008-1
VERMILION COUNTY
SCALE: N/A
DRAWN BY: CADD
DATE: 02-07-08
CHECKED BY

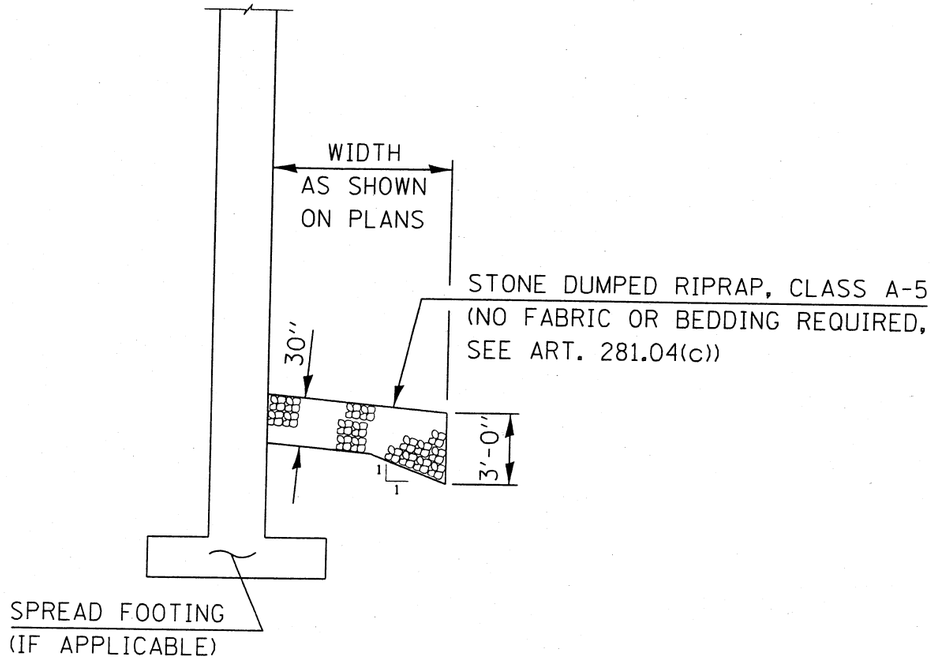
c:\projects\d501999 (v8)\scours\scours.dgn

3/13/2008

F.A.I. ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	*	VERMILION	12	9
F.A.U.M.A. REG.	ILLINOIS	PROJECT		

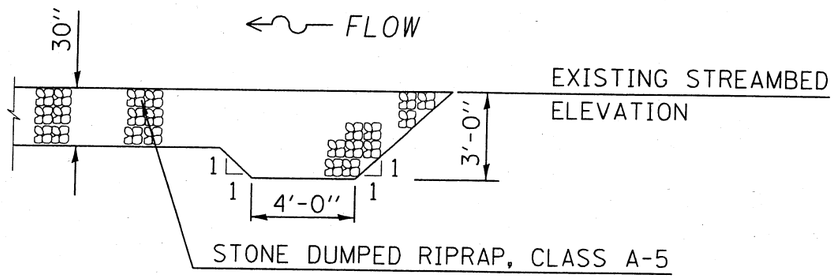
* D5 SCOUR MITIGATION 2008-1 CONTRACT NO. 70013

TYPICAL DETAIL FOR RIPRAP AT ABUTMENT OR PIER



NOTE:
UNDER NO CIRCUMSTANCES ARE THE BRIDGE PIER FOOTINGS TO BE UNCOVERED.

TYPICAL DETAIL FOR UPSTREAM EDGE OF RIPRAP



ILLINOIS DEPARTMENT OF TRANSPORTATION

DETAILS

F.A.I. ROUTE 74
SECTION D5 SCOUR MITIGATION 2008-1
VERMILION COUNTY

SCALE: N/A
DATE: 02-07-08

DRAWN BY: CADD
CHECKED BY

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VERMILION SEC. (92-12B) BR I&R [redacted]

092-0014 & 0015

SQUAD LEADER: S.A. Lockey PROJECT ENGINEER: D.L. PIPER

95%
10-17-92

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

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	(92-12B) BR	VERMILION	187	1
F.A.P. RTE.	ILLINOIS	PROJECT ACIR-74-6(129)216		

D-95-026-89

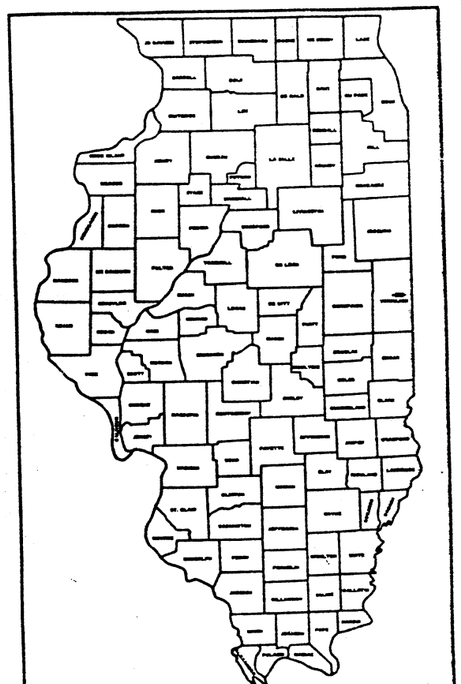
FOR INDEX OF SHEETS, SEE SHEET NO. 7
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 9-12 (INCL.)

SCALES { PLAN 1"= 20'
PROFILE HOR. 1"=20'
PROFILE VERT. 1"= 2'
CROSS-SECTIONS VARIES

RE: George R Davis
Contractor: O'NEIL Brothers
Started: 6-18-90
Completed: 10-14-94

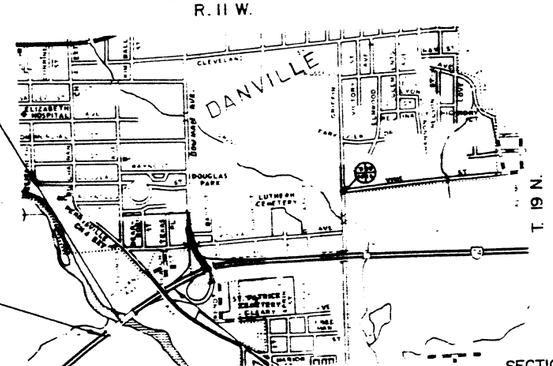
F.A.I. ROUTE 74
SECTION (92-12B) BR
VERMILION COUNTY
PROJECT: ACIR-74-6(129)216
C-95-077-89

BRIDGE REPLACEMENT



LOCATION OF SECTION INDICATED THUS: —

Existing Structure : Structures 092-0014 + 092-0015 were built in 1963 as F.A.I. 74 Section 92-12B. Each structure consist of five continuous spans of two steel plate girders with steel floor beams and reinforced concrete deck superstructure with double column piers and vaulted abutments. Overall length is 583'-9 1/4", and clear roadway width is 30'-0". The structures are located at ℄ Station 1992+54.00 across the Vermilion River.



SECTION (92-12B)BR℄ PROJECT
BEGINS STATION 1988+60

SECTION (92-12B)BR℄ PROJECT
ENDS STATION 2001+95

TOTAL LENGTH OF SECTION (92-12B) BR AND PROJECT = 1,335.00 feet = 0.253 miles
NET LENGTH OF SECTION (92-12B) BR AND PROJECT = 1,335.00 feet = 0.253 miles

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 28 19 92
DISTRICT ENGINEER

EXAMINED 3-30 19 92
ENGINEER OF PLANS AND CONTRACTS

PASSED 3-30 19 92
ENGINEER OF DESIGN

APPROVED 3-30 19 92
DIRECTOR DIVISION OF HIGHWAYS

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR DATE

DESIGN DESIGNATION
IRREG (96) TRUNK 6/12 (COMP-6-( )-)

CONTRACT NUMBER 90045

092-0014 (WB) 0015 (EB)

5-154

VERMILION SEC. (92-12B)BR I&R MAY 4, 1990 #221

RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 74	(92-12B)BR	VERMILION	137	1

D-95-026-89

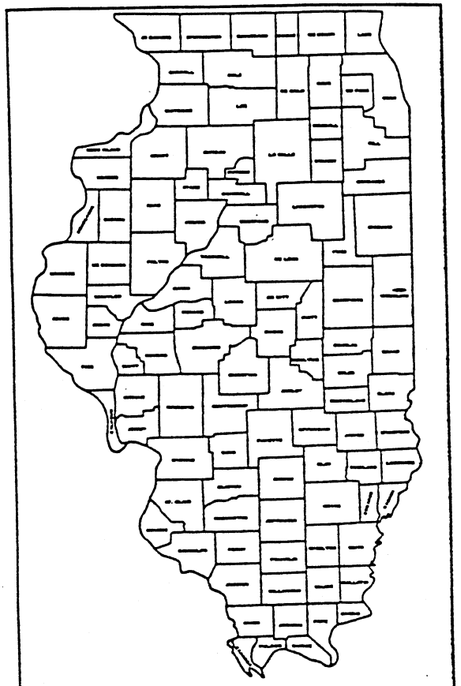
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED FEDERAL AID INTERSTATE HIGHWAY

FOR INDEX OF SHEETS, SEE SHEET NO. 7
FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 9-12 (INCL.)

SCALES { PLAN 1" = 20' PROFILE HOR. 1" = 20' PROFILE VERT. 1" = 2' CROSS-SECTIONS VARIES

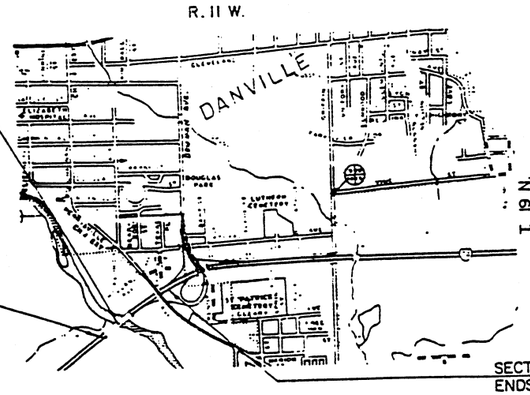
F.A.I. ROUTE 74
SECTION (92-12B) BR
VERMILION COUNTY
PROJECT: ACIR-74-6(129)216
C-95-077-89

BRIDGE REPLACEMENT



LOCATION OF SECTION INDICATED THUS: —

Existing Structure: Structures 092-0014 + 092-0015 were built in 1963 as F.A.I. 74 Section 92-12B. Each structure consist of five continuous spans of two steel plate girders with steel floor beams and reinforced concrete deck superstructure with double column piers and vaulted abutments. Overall length is 583'-9-1/4", and clear roadway width is 30'-0". The structures are located at ℄ Station 1992+54.00 across the Vermilion River.



SECTION (92-12B)BR & PROJECT BEGINS STATION 1988+60

SECTION (92-12B)BR & PROJECT ENDS STATION 2001+95

TOTAL LENGTH OF SECTION (92-12B)BR AND PROJECT = 1,335.00 feet = 0.253 miles
NET LENGTH OF SECTION (92-12B)BR AND PROJECT = 1,335.00 feet = 0.253 miles

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 28 1990 — DISTRICT ENGINEER
EXAMINED 3.30 1990 — ENGINEER OF PLANS AND CONTRACTS
PASSED 3.30 1990 — ENGINEER OF DESIGN
APPROVED 3.30 1990 — DIRECTOR DIVISION OF HIGHWAYS

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

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

DESIGN DESIGNATION
12660 (96) TRUNK 6.12 (COMP-6-( )-)

CONTRACT NUMBER 90045

AS REVISED

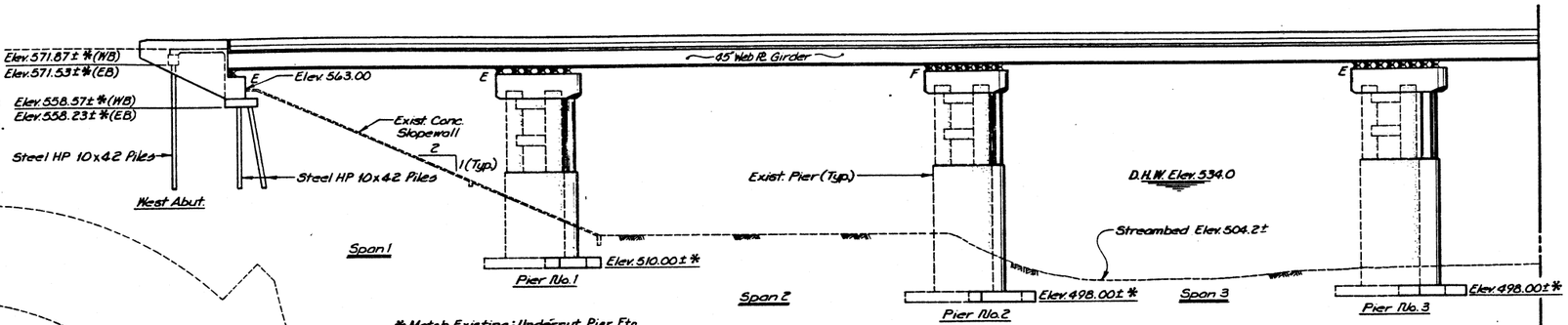
SQUAD LEADER: S.A. Lackey PROJECT ENGINEER: D.L. PIPER

VERMILION COUNTY SECTION (92-12B)BR F.A.I. ROUTE 74

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I-74	*	Vermilion	137	55
STA.		TO STA.		
FED. ROAD DIST. NO.		ILL. DIVISION	PROJECT	
*(92-12B)BR		Dwg. No. 1 of 45		

BENCHMARK: PERMANENT SURVEY MARKER ON CENTERLINE, STA. 1996+38.45, ELEVATION 567.63.

EXISTING STRUCTURE: STRUCTURES 092-0014 & 092-0015 WERE BUILT IN 1963 AS FAI 74, SECTION 92-12B. REPAIRS PERFORMED IN 1977 INCLUDED DECK PATCHING, EXPANSION DEVICE RECONSTRUCTION, & INSTALLATION OF WATERPROOFING MEMBRANE SYSTEM AND BITUMINOUS OVERLAY. EACH STRUCTURE CONSISTS OF FIVE CONTINUOUS SPANS OF TWO STEEL PLATE GIRDERS WITH STEEL FLOORBEAMS AND REINFORCED CONCRETE DECK SUPERSTRUCTURE WITH DOUBLE COLUMN PIERS AND VAULTED ABUTMENTS. OVERALL LENGTH IS 583'-9¼" AND CLEAR ROADWAY WIDTH IS 30'-0". TRAFFIC TO BE MAINTAINED BY BUILDING CROSSOVERS AND WORKING ON ONLY ONE BRIDGE AT A TIME. HANDRAIL TO BE SALVAGED. BRIDGE CONTRACTOR TO STOCKPILE ON STATE R.O.W. FOR REMOVAL BY DISTRICT MAINTENANCE FORCES. SALVAGE NAMEPLATE & INCORPORATE INTO NEW CONSTUCTION.



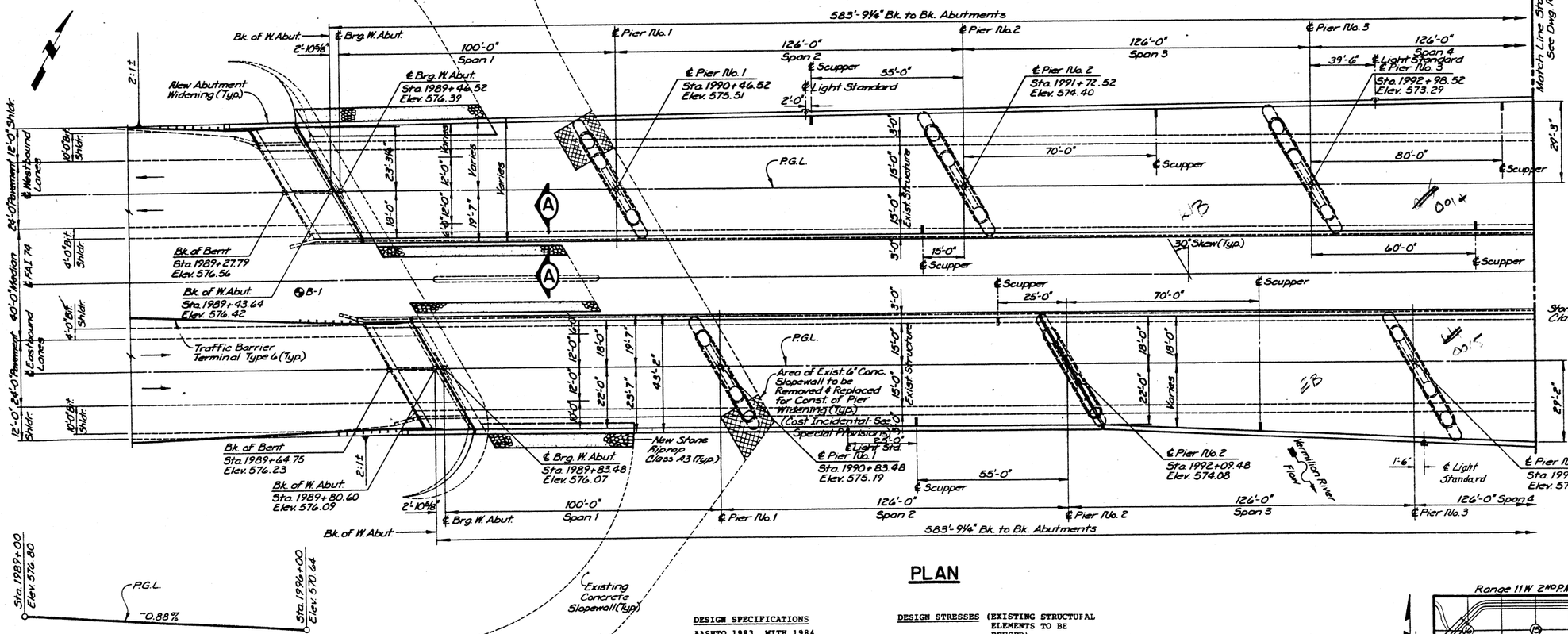
* Match Existing; Undercut Pier Ftg. Elev. 6', place 6" of Seal Coat Conc. immediately after last lift of excavation is removed. See Cofferdams on Dwg. No. 45.

ELEVATION

(WB Shown, EB Similar)

LEGEND

F = Fixed Bearing
E = Expansion Bearing
P.G.L. = Profile Grade Line
⊕ = Boring Location



PLAN

SECTION A-A

FAI 74 PROFILE GRADE

(Along ℄ Pavement)

DESIGN SPECIFICATIONS
AASHTO 1983, WITH 1984 THRU 1988 INTERIMS

LOADING
HS20-44 & ALTERNATE MILITARY, WITH ALLOWANCE FOR 25 psf FUTURE WEARING SURFACE

DESIGN STRESSES (NEW CONSTRUCTION)
f'_c = 3,500 psi
f_y = 60,000 psi (REINF. BARS)
f_y = 50,000 psi STRUCT. STL. FLANGES) M223 GR. 50 COMPOSITE HYBRID GIRDER
36,000 psi (STRUCT. STL. WEB) M183

DESIGN STRESSES (EXISTING STRUCTUFAL ELEMENTS TO BE REUSED)
f'_c = 3,500 psi
f_y = 40,000 psi (REINF. BARS)
f_s = 20,000 psi (REINF. BARS)

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	RDP	8-89

STATION 1992+54.00
BUILT 199_ BY
STATE OF ILLINOIS
FAI RTE. 74 SECTION (92-12B)BR
F.A. PROJ. ACIR-74-6(129)
LOADING HS20 & ALT.
STR. NO. 092-0014

WESTBOUND

STATION 1992+54.00
BUILT 199_ BY
STATE OF ILLINOIS
FAI RTE. 74 SECTION (92-12B)BR
F.A. PROJ. ACIR-74-6(129)
LOADING HS20 & ALT.
STR. NO. 092-0015

EASTBOUND

NEW NAME PLATES (1 EA. REQ'D)

(SEE STD. 2113)

Note:
Salvage Existing Name Plates & Mount Adjacent to New Name Plates on New Parapet as shown on Std. 2113. The cost of Salvaging & Incorporating Exist. Name Plates into New Work is Incidental.



LOCATION SKETCH

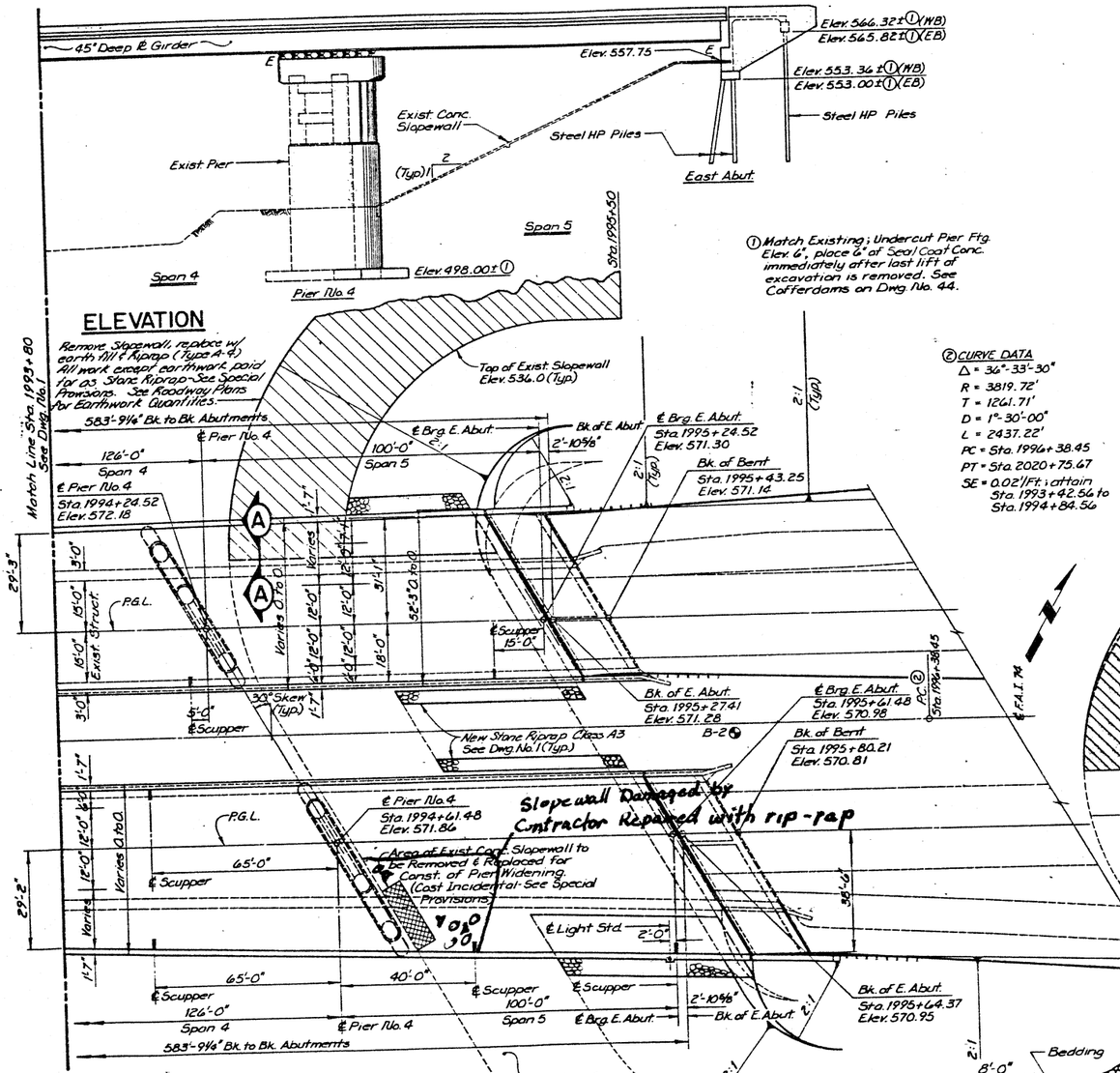
GENERAL PLAN & ELEVATION

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	56
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg No. 2 of 45		

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
SAND BACKFILL	CU.YD.	-	301	301
REMOVAL OF EXIST. SUPERSTRUCTURE NO. 1	EACH	1	-	1
REMOVAL OF EXIST. SUPERSTRUCTURE NO. 2	EACH	1	-	1
CONCRETE REMOVAL	CU.YD.	-	188	188
EXPANSION BOLTS, 3/4"Ø	EACH	-	1,787	1,787
BRIDGE HANDRAIL REMOVAL	LIN.FT.	2,327	-	2,327
STRUCTURE EXCAVATION	CU.YD.	-	499.5	499.5
COFFERDAM EXCAVATION	CU.YD.	-	1968.5	1968.5
COFFERDAM (PIER 2)	EACH	-	2	2
COFFERDAM (PIER 3)	EACH	-	2	2
COFFERDAM (PIER 4)	EACH	-	2	2
PREFORMED JOINT SEAL, 1 3/4"	LIN.FT.	49	-	49
NEOPRENE EXPANSION JOINT, 4"	LIN.FT.	98	-	98
CLASS X CONCRETE SUPERSTRUCTURE	CU.YD.	1,678.5	-	1,678.5
PROTECTIVE COAT	SQ.YD.	6,710	432	7,142
DRAINAGE SCUPPERS	EACH	14	-	14
CLASS X CONCRETE	CU.YD.	-	2,033.2	2,033.2
FURNISHING & ERECTING STRUCT. STL.	L.SUM	1	-	1
STUD SHEAR CONNECTORS	EACH	16,266	-	16,266
REINFORCEMENT BARS	LBS.	-	25,073	25,073
REINFORCEMENT BARS (EPOXY CTD.)	LBS.	468,530	203,576	672,106
FURNISHING STEEL PILES, HP12x53	LIN.FT.	-	1,740	1,740
DRIVING STEEL PILES	LIN.FT.	-	1,740	1,740
TEST PILE STEEL HP12x53	EACH	-	1	1
NAME PLATES	EACH	2	-	2
STONE RIPRAP, CLASS A4	SQ.YD.	-	1,249	1,249
STONE RIPRAP, CLASS A3	SQ.YD.	-	548	548
EPOXY CRACK SEALING	LIN.FT.	-	4	4
EPOXY MORTAR REPAIR	CU.FT.	-	6	6
FILTER FABRIC FOR USE W/RIPRAP	SQ.YD.	-	1249	1,249
FLOATING BRGS. GUIDED EXP. 100^k	EACH	28	-	28
FLOATING BRGS. GUIDED EXP. 300^k	EACH	43	-	43
FLOATING BRGS. FIXED 125^k	EACH	14	-	14
FLOATING BRGS. FIXED 300^k	EACH	7	-	7
REINFORCED NEOPRENE EXP. JT. TREATMENT	LF	132	-	132
SEAL COAT CONCRETE	CU.YD.	—	31.5	31.5
ROCK EXCAVATION FOR STRUCTURES	CU.YD.	—	216.1	216.1



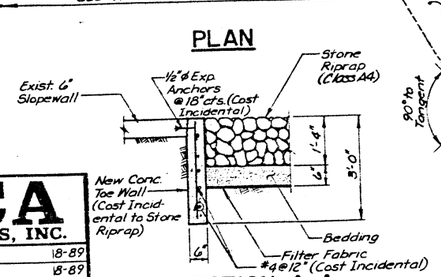
LEGEND

New Stone Riprap (A4)

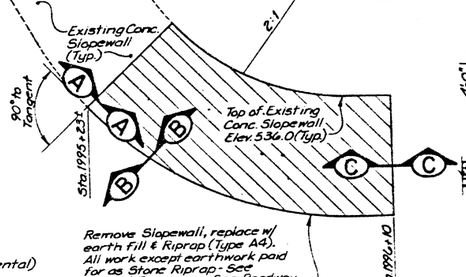
Exist. Conc. Slopewall to be Removed

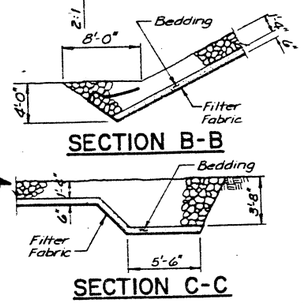
PLAN

(SHOWING MINIMUM EMBANKMENT FOR ABUTMENT WIDENING)



SECTION A-A





SECTION B-B

SECTION C-C

NOTES

1. SEE PROPOSAL FOR BORING DATA.
2. FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 3/4"Ø, OPEN HOLES 13/16"Ø, UNLESS OTHERWISE NOTED.
3. CALCULATED WEIGHT OF STRUCTURAL STEEL = 727,006 LBS. (M183) AND 921,449 LBS. (M223 GR 50).
4. ALL STRUCTURAL STEEL SHALL BE SHOP AND FIELD PAINTED WITH THE ZINC SILICATE AND VINYL PAINT SYSTEM. SEE NOTE 14 FOR COLOR.
5. FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF 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.
6. ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.
7. THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE TENSION FLANGES, WEBS, AND ALL SPLICE PLATE MATERIAL OF THE STEEL GIRDERS.
8. REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 or M-53 GRADE 60.
9. THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE WIDENING OF THE EAST ABUTMENTS.
10. 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.
11. EXPANSION BOLTS SHALL CONSIST OF APPROVED EXPANSION ANCHORS, PROVIDING MINIMUM CERTIFIED PROOF LOAD = 4,080 LBS., AND 3/4" ø X 12" HOOKED BOLTS.
12. BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8 INCH. ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING THE BEARING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS.
13. THE CONTRACTOR SHALL DRIVE ONE STEEL HP TEST PILE IN A PERMANENT LOCATION AT EACH ABUTMENT AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF THE PILES.
14. THE PAINT COLOR OF THE FINAL FINISH COAT SHALL BE MUNSELL STD. NO. 10Y 7/1 LIGHT GREY FOR ALL STRUCTURAL STEEL EXCEPT THE OUTSIDE FACE AND BOTTOM FLANGE OF FASCIA BEAMS SHALL BE 7.5G 4/8 INTERSTATE GREEN.
15. LAYOUT OF SLOPE PROTECTION SYSTEM MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.
16. ROADWAY EXPANSION GUARDS SHALL BE ASSEMBLED IN THE PROPER POSITION WITH THE ENDS IN PLACE AND SHALL BE LEFT ASSEMBLED FOR SHOP INSPECTION.
17. THE ROADWAY EXPANSION PLATES SHALL BE FLAME CUT AS PROVIDED IN ARTICLE 507.04(1) OF THE STANDARD SPECIFICATIONS.
18. FOR PLAN AND DETAILS OF COFFERDAMS, SEE DWG. NO. 45.
19. ON SHEETS 83 THRU 88 INCLUSIVE, ALL LONGITUDINAL JOINTS ON PARAPETS SHOWN AS CONSTRUCTION JOINTS SHALL BE INTERPRETED AND CONSTRUCTED AS BONDED CONSTRUCTION JOINTS.

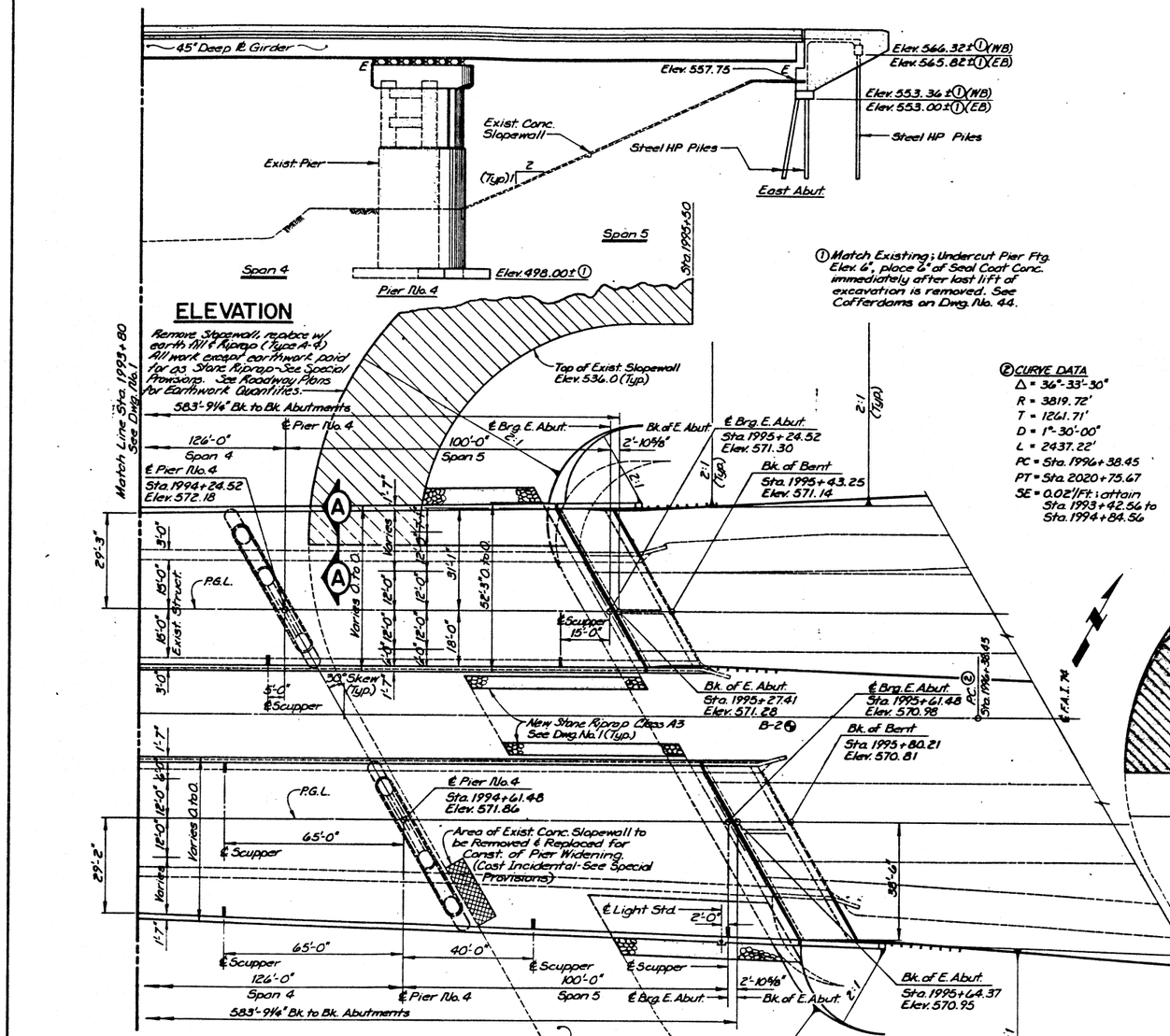
GENERAL PLAN & ELEVATION CONT.

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	RDP	8-89

Revised 4/29/90

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	56
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 2 of 45		



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
SAND BACKFILL	CU.YD.	-	301	301
REMOVAL OF EXIST. SUPERSTRUCTURE NO. 1	EACH	1	-	1
REMOVAL OF EXIST. SUPERSTRUCTURE NO. 2	EACH	1	-	1
CONCRETE REMOVAL	CU.YD.	-	188	188
EXPANSION BOLTS, 3/4"Ø	EACH	-	1,787	1,787
BRIDGE HANDRAIL REMOVAL	LIN.FT.	2,327	-	2,327
STRUCTURE EXCAVATION	CU.YD.	-	539	539
COFFERDAM EXCAVATION	CU.YD.	-	2,145	2,145
COFFERDAM (PIER 2)	EACH	-	2	2
COFFERDAM (PIER 3)	EACH	-	2	2
COFFERDAM (PIER 4)	EACH	-	2	2
PREFORMED JOINT SEAL, 1 3/4"	LIN.FT.	49	-	49
NEOPRENE EXPANSION JOINT, 4"	LIN.FT.	98	-	98
CLASS X CONCRETE SUPERSTRUCTURE	CU.YD.	1,678.5	-	1,678.5
PROTECTIVE COAT	SQ.YD.	6,710	432	7,142
DRAINAGE SCUPPERS	EACH	14	-	14
CLASS X CONCRETE	CU.YD.	-	2,033.2	2,033.2
FURNISHING & ERECTING STRUCT. STL.	L.SUM	1	-	1
STUD SHEAR CONNECTORS	EACH	16,266	-	16,266
REINFORCEMENT BARS	LBS.	-	25,073	25,073
REINFORCEMENT BARS (EPOXY CTD.)	LBS.	468,530	203,576	672,106
FURNISHING STEEL PILES, HP12x53	LIN.FT.	-	1,740	1,740
DRIVING STEEL PILES	LIN.FT.	-	1,740	1,740
TEST PILE STEEL HP12x53	EACH	-	4	4
NAME PLATES	EACH	2	-	2
STONE RIPRAP, CLASS A4	SQ.YD.	-	1,249	1,249
STONE RIPRAP, CLASS A3	SQ.YD.	-	548	548
EPOXY CRACK SEALING	LIN.FT.	-	4	4
EPOXY MORTAR REPAIR	CU.FT.	-	6	6
FILTER FABRIC FOR USE W/RIPRAP	SQ.YD.	-	1,249	1,249
FLOATING BRGS. GUIDED EXP. 100K	EACH	28	-	28
FLOATING BRGS. GUIDED EXP. 300K	EACH	43	-	43
FLOATING BRGS. FIXED 125K	EACH	14	-	14
FLOATING BRGS. FIXED 300K	EACH	7	-	7
REINFORCED NEOPRENE EXP. JT. TREATMENT	LF	132	-	132

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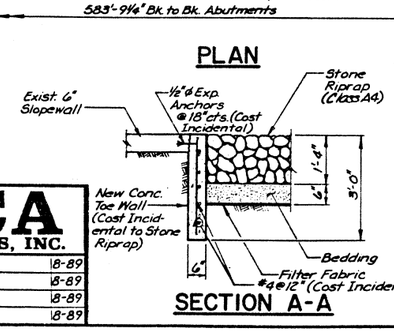
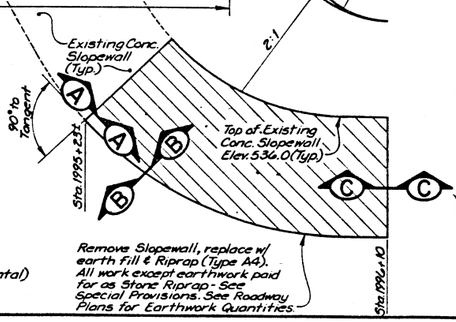
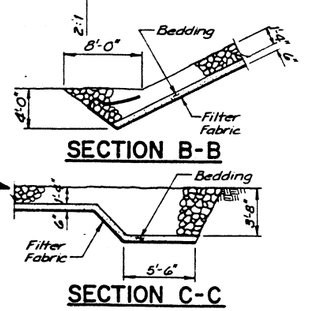
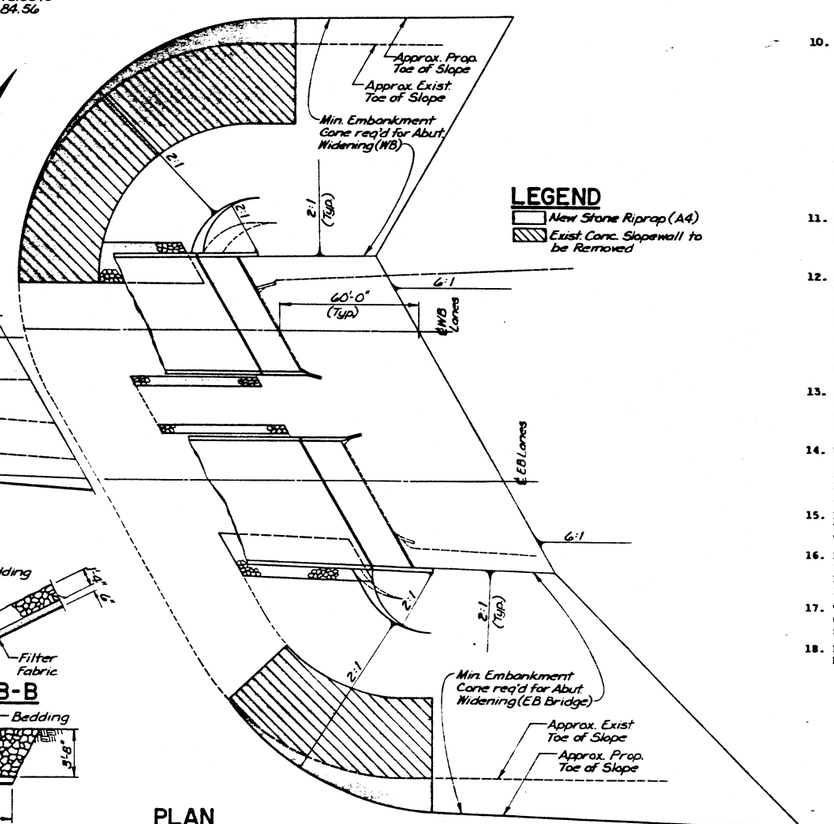








PLAN
(SHOWING MINIMUM EMBANKMENT FOR ABUTMENT WIDENING)

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	RDP	8-89

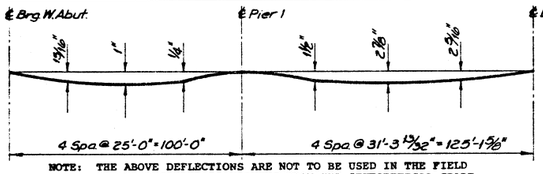
GENERAL PLAN & ELEVATION CONT.

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
FAI-74	*	Vermilion	137	57
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg.No. 3 of 45		

GIRDER 1

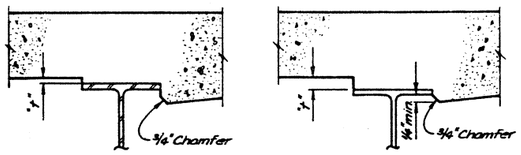
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+71.05	-16.542	575.893	575.893
℄ Brg. W. Abut.	1989+73.93	-16.542	575.867	575.867
a	1989+83.93	-16.542	575.779	575.816
b	1989+93.93	-16.542	575.691	575.758
c	1990+03.93	-16.542	575.603	575.688
d	1990+13.93	-16.542	575.515	575.604
e	1990+23.93	-16.542	575.427	575.506
f	1990+33.93	-16.542	575.339	575.397
g	1990+43.93	-16.542	575.251	575.282
h	1990+53.93	-16.542	575.163	575.170
i	1990+63.93	-16.542	575.075	575.070
℄ Pier 1	1990+73.93	-16.542	574.987	574.987
j	1990+83.93	-16.542	574.899	574.924
k	1990+93.93	-16.542	574.811	574.877
l	1991+03.93	-16.542	574.723	574.839
m	1991+13.93	-16.542	574.635	574.798
n	1991+23.93	-16.542	574.547	574.748
o	1991+33.93	-16.542	574.459	574.685
p	1991+43.93	-16.542	574.371	574.606
q	1991+53.93	-16.542	574.283	574.510
r	1991+63.93	-16.542	574.195	574.396
s	1991+73.93	-16.542	574.107	574.266
t	1991+83.93	-16.542	574.019	574.122
u	1991+93.93	-16.542	573.931	573.968
℄ Brg. Pier 2	1991+99.06	-16.542	573.884	573.884
℄ Pier 2	1991+99.93	-16.542	573.878	573.878



NOTE: THE ABOVE DEFLECTIONS ARE NOT TO BE USED IN THE FIELD IF THE ENGINEER IS WORKING FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS" AS SHOWN ON THIS DWG.

DEAD LOAD DEFLECTION DIAGRAM

(INCLUDES WEIGHT OF CONCRETE ONLY)



AT MINIMUM FILLET AT MAXIMUM FILLET

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

FILLET HEIGHTS

GIRDER 2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+75.33	-9.125	575.995	575.995
℄ Brg. W. Abut.	1989+78.21	-9.125	575.969	575.969
a	1989+88.21	-9.125	575.881	575.919
b	1989+98.21	-9.125	575.793	575.862
c	1990+08.21	-9.125	575.705	575.793
d	1990+18.21	-9.125	575.617	575.709
e	1990+28.21	-9.125	575.529	575.610
f	1990+38.21	-9.125	575.441	575.501
g	1990+48.21	-9.125	575.353	575.385
h	1990+58.21	-9.125	575.265	575.272
i	1990+68.21	-9.125	575.177	575.172
℄ Pier 1	1990+78.21	-9.125	575.089	575.089
j	1990+88.21	-9.125	575.001	575.027
k	1990+98.21	-9.125	574.913	574.981
l	1991+08.21	-9.125	574.825	574.945
m	1991+18.21	-9.125	574.737	574.905
n	1991+28.21	-9.125	574.649	574.857
o	1991+38.21	-9.125	574.561	574.796
p	1991+48.21	-9.125	574.473	574.717
q	1991+58.21	-9.125	574.385	574.620
r	1991+68.21	-9.125	574.297	574.505
s	1991+78.21	-9.125	574.209	574.373
t	1991+88.21	-9.125	574.121	574.227
u	1991+98.21	-9.125	574.033	574.072
℄ Brg. Pier 2	1992+03.34	-9.125	573.986	573.986
℄ Pier 2	1992+04.21	-9.125	573.980	573.980

GIRDER 4

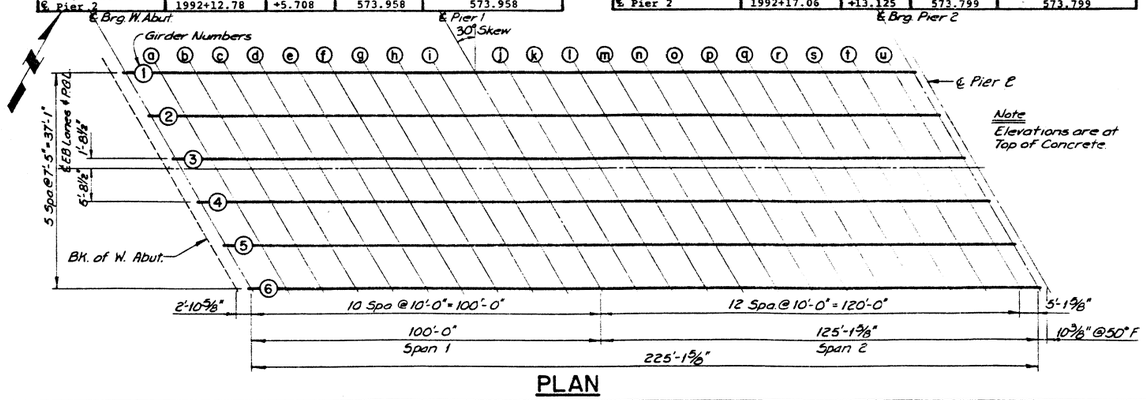
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+83.90	+5.708	575.972	575.972
℄ Brg. W. Abut.	1989+86.78	+5.708	575.947	575.947
a	1989+96.78	+5.708	575.859	575.897
b	1990+06.78	+5.708	575.771	575.840
c	1990+16.78	+5.708	575.683	575.771
d	1990+26.78	+5.708	575.595	575.687
e	1990+36.78	+5.708	575.507	575.588
f	1990+46.78	+5.708	575.419	575.479
g	1990+56.78	+5.708	575.331	575.363
h	1990+66.78	+5.708	575.243	575.250
i	1990+76.78	+5.708	575.155	575.150
℄ Pier 1	1990+86.78	+5.708	575.067	575.067
j	1990+96.78	+5.708	574.979	575.005
k	1991+06.78	+5.708	574.891	574.959
l	1991+16.78	+5.708	574.803	574.923
m	1991+26.78	+5.708	574.715	574.883
n	1991+36.78	+5.708	574.627	574.835
o	1991+46.78	+5.708	574.539	574.774
p	1991+56.78	+5.708	574.451	574.695
q	1991+66.78	+5.708	574.363	574.598
r	1991+76.78	+5.708	574.275	574.483
s	1991+86.78	+5.708	574.187	574.351
t	1991+96.78	+5.708	574.099	574.205
u	1992+06.78	+5.708	574.011	574.050
℄ Brg. Pier 2	1992+11.91	+5.708	573.964	573.964
℄ Pier 2	1992+12.78	+5.708	573.958	573.958

GIRDER 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+79.61	-1.708	576.073	576.073
℄ Brg. W. Abut.	1989+82.49	-1.708	576.047	576.047
a	1989+92.49	-1.708	575.959	575.998
b	1990+02.49	-1.708	575.871	575.941
c	1990+12.49	-1.708	575.783	575.871
d	1990+22.49	-1.708	575.695	575.787
e	1990+32.49	-1.708	575.607	575.689
f	1990+42.49	-1.708	575.519	575.579
g	1990+52.49	-1.708	575.431	575.463
h	1990+62.49	-1.708	575.343	575.350
i	1990+72.49	-1.708	575.255	575.250
℄ Pier 1	1990+82.49	-1.708	575.167	575.167
j	1990+92.49	-1.708	575.079	575.105
k	1991+02.49	-1.708	574.991	575.059
l	1991+12.49	-1.708	574.903	575.023
m	1991+22.49	-1.708	574.815	574.984
n	1991+32.49	-1.708	574.727	574.935
o	1991+42.49	-1.708	574.639	574.874
p	1991+52.49	-1.708	574.551	574.795
q	1991+62.49	-1.708	574.463	574.699
r	1991+72.49	-1.708	574.375	574.584
s	1991+82.49	-1.708	574.287	574.452
t	1991+92.49	-1.708	574.199	574.306
u	1992+02.49	-1.708	574.111	574.150
℄ Brg. Pier 2	1992+07.62	-1.708	574.064	574.064
℄ Pier 2	1992+08.49	-1.708	574.059	574.059

GIRDER 5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+88.18	+13.125	575.813	575.813
℄ Brg. W. Abut.	1989+91.06	+13.125	575.788	575.788
a	1990+01.06	+13.125	575.699	575.738
b	1990+11.06	+13.125	575.611	575.681
c	1990+21.06	+13.125	575.523	575.612
d	1990+31.06	+13.125	575.435	575.528
e	1990+41.06	+13.125	575.347	575.429
f	1990+51.06	+13.125	575.259	575.319
g	1990+61.06	+13.125	575.171	575.204
h	1990+71.06	+13.125	575.083	575.091
i	1990+81.06	+13.125	574.995	574.991
℄ Pier 1	1990+91.06	+13.125	574.908	574.908
j	1991+01.06	+13.125	574.819	574.845
k	1991+11.06	+13.125	574.731	574.800
l	1991+21.06	+13.125	574.643	574.763
m	1991+31.06	+13.125	574.555	574.724
n	1991+41.06	+13.125	574.467	574.676
o	1991+51.06	+13.125	574.379	574.614
p	1991+61.06	+13.125	574.291	574.536
q	1991+71.06	+13.125	574.203	574.439
r	1991+81.06	+13.125	574.115	574.324
s	1991+91.06	+13.125	574.027	574.192
t	1992+01.06	+13.125	573.939	574.046
u	1992+11.06	+13.125	573.851	573.890
℄ Brg. Pier 2	1992+16.19	+13.125	573.805	573.805
℄ Pier 2	1992+17.06	+13.125	573.799	573.799



PLAN

P.G.L.

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+80.60	0.000	576.090	576.090
℄ Brg. W. Abut.	1989+83.48	0.000	576.065	576.065
a	1989+93.48	0.000	575.977	576.016
b	1990+03.48	0.000	575.889	575.959
c	1990+13.48	0.000	575.801	575.889
d	1990+23.48	0.000	575.713	575.805
e	1990+33.48	0.000	575.625	575.707
f	1990+43.48	0.000	575.537	575.597
g	1990+53.48	0.000	575.449	575.481
h	1990+63.48	0.000	575.361	575.368
i	1990+73.48	0.000	575.273	575.268
℄ Pier 1	1990+83.48	0.000	575.185	575.185
j	1990+93.48	0.000	575.097	575.123
k	1991+03.48	0.000	575.009	575.077
l	1991+13.48	0.000	574.921	575.041
m	1991+23.48	0.000	574.833	575.002
n	1991+33.48	0.000	574.745	574.953
o	1991+43.48	0.000	574.657	574.892
p	1991+53.48	0.000	574.569	574.813
q	1991+63.48	0.000	574.481	574.716
r	1991+73.48	0.000	574.393	574.602
s	1991+83.48	0.000	574.305	574.470
t	1991+93.48	0.000	574.217	574.324
u	1992+03.48	0.000	574.129	574.163
℄ Brg. Pier 2	1992+08.61	0.000	574.082	574.082
℄ Pier 2	1992+09.48	0.000	574.076	574.076

GIRDER 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+92.46	+20.542	575.621	575.621
℄ Brg. W. Abut.	1989+95.34	+20.542	575.596	575.596
a	1990+05.34	+20.542	575.507	575.544
b	1990+15.34	+20.542	575.419	575.486
c	1990+25.34	+20.542	575.331	575.416
d	1990+35.34	+20.542	575.243	575.332
e	1990+45.34	+20.542	575.155	575.234
f	1990+55.34	+20.542	575.067	575.125
g	1990+65.34	+20.542	574.979	575.010
h	1990+75.34	+20.542	574.891	574.898
i	1990+85.34	+20.542	574.803	574.799
℄ Pier 1	1990+95.34	+20.542	574.716	574.716
j	1991+05.34	+20.542	574.627	574.652
k	1991+15.34	+20.542	574.539	574.605
l	1991+25.34	+20.542	574.451	674.567
m	1991+35.34	+20.542	574.363	574.526
n	1991+45.34	+20.542	574.275	574.476
o	1991+55.34	+20.542	574.187	574.413
p	1991+65.34	+20.542	574.099	574.335
q	1991+75.34	+20.542	574.011	574.238
r	1991+85.34	+20.542	573.923	574.124
s	1991+95.34	+20.542	573.835	573.994
t	1992+05.34	+20.542	573.747	573.850
u	1992+15.34	+20.542	573.659	573.697
℄ Brg. Pier 2	1992+20.47	+20.542	573.612	573.612
℄ Pier 2	1992+21.34	+20.542	573.607	573.607

ESCA CONSULTANTS, INC.

DESIGNED BY:	KMR	7-89
DRAWN BY:	WEM	7-89
CHECKED BY:	JAG	9-89
APPROVED BY:	RDP	9-89

TOP OF SLAB ELEVATIONS (EB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	58
STA		TO STA		
FED. ROAD DIST NO	ILLINOIS	PROJECT		
*(92-12B)BR		Dwg. No. 4 of 45		

GIRDER 7

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
℄ Pier 2	1991+99.91	-16.583	573.878	573.878
℄ Brg. Pier 2	1992+00.77	-16.583	573.870	573.870
a	1992+10.77	-16.583	573.782	573.854
b	1992+20.77	-16.583	573.694	573.832
c	1992+30.77	-16.583	573.606	573.797
d	1992+40.77	-16.583	573.518	573.746
e	1992+50.77	-16.583	573.430	573.678
f	1992+60.77	-16.583	573.342	573.591
g	1992+70.77	-16.583	573.254	573.486
h	1992+80.77	-16.583	573.166	573.365
i	1992+90.77	-16.583	573.078	573.232
j	1993+00.77	-16.583	572.990	573.092
k	1993+10.77	-16.583	572.902	572.954
l	1993+20.77	-16.583	572.814	572.828
℄ Pier 3	1993+25.91	-16.583	572.769	572.769
m	1993+35.91	-16.583	572.681	572.674
n	1993+45.91	-16.583	572.608	572.611
o	1993+55.91	-16.583	572.564	572.590
p	1993+65.91	-16.583	572.521	572.573
q	1993+75.91	-16.583	572.477	572.552
r	1993+85.91	-16.583	572.433	572.522
s	1993+95.91	-16.583	572.389	572.480
t	1994+05.91	-16.583	572.346	572.426
u	1994+15.91	-16.583	572.302	572.364
v	1994+25.91	-16.583	572.258	572.296
w	1994+35.91	-16.583	572.214	572.230
x	1994+45.91	-16.583	572.171	572.172
℄ Pier 4	1994+51.91	-16.583	572.145	572.145
y	1994+61.91	-16.583	572.101	572.115
z	1994+71.91	-16.583	572.057	572.098
aa	1994+81.91	-16.583	572.013	572.086
bb	1995+91.91	-16.583	571.936	572.037
cc	1995+01.91	-16.583	571.848	571.968
dd	1995+11.91	-16.583	571.760	571.884
ee	1995+21.91	-16.583	571.672	571.785
ff	1995+31.91	-16.583	571.584	571.671
gg	1995+41.91	-16.583	571.496	571.543
℄ Brg. E. Abut.	1995+51.91	-16.583	571.408	571.408
Bk. E. Abut.	1995+54.80	-16.583	571.383	571.383

LONGITUDINAL BONDED CONSTR. JOINT A

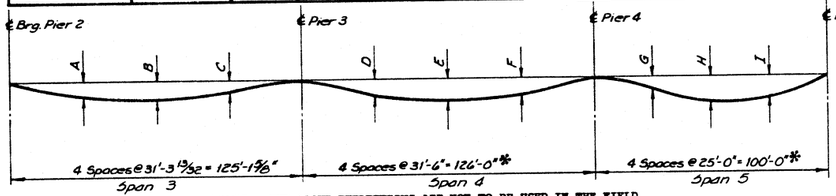
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
℄ Pier 2	1992+02.55	-12.00	573.950	573.950
℄ Brg. Pier 2	1992+03.42	-12.00	573.944	573.944
a	1992+13.42	-12.00	573.856	573.928
b	1992+23.42	-12.00	573.768	573.906
c	1992+33.42	-12.00	573.680	573.871
d	1992+43.42	-12.00	573.592	573.821
e	1992+53.42	-12.00	573.504	573.752
f	1992+63.42	-12.00	573.416	573.665
g	1992+73.42	-12.00	573.328	573.560
h	1992+83.42	-12.00	573.240	573.439
i	1992+93.42	-12.00	573.152	573.306
j	1993+03.42	-12.00	573.064	573.167
k	1993+13.42	-12.00	572.976	573.028
l	1993+23.42	-12.00	572.888	572.902
℄ Pier 3	1993+28.55	-12.00	572.841	572.841
m	1993+38.55	-12.00	572.753	572.746
n	1993+48.55	-12.00	572.683	572.686
o	1993+58.55	-12.00	572.626	572.652
p	1993+68.55	-12.00	572.569	572.621
q	1993+78.55	-12.00	572.512	572.587
r	1993+88.55	-12.00	572.454	572.543
s	1993+98.55	-12.00	572.397	572.488
t	1994+08.55	-12.00	572.340	572.421
u	1994+18.55	-12.00	572.283	572.345
v	1994+28.55	-12.00	572.226	572.264
w	1994+38.55	-12.00	572.169	572.184
x	1994+48.55	-12.00	572.111	572.113
℄ Pier 4	1994+54.55	-12.00	572.078	572.078
y	1994+64.55	-12.00	572.020	572.035
z	1994+74.55	-12.00	571.963	572.004
aa	1994+84.55	-12.00	571.906	571.978
bb	1994+94.55	-12.00	571.817	571.918
cc	1995+04.55	-12.00	571.729	571.849
dd	1995+14.55	-12.00	571.641	571.766
ee	1995+24.55	-12.00	571.553	571.666
ff	1995+34.55	-12.00	571.465	571.552
gg	1995+44.55	-12.00	571.377	571.425
℄ Brg. E. Abut.	1995+54.55	-12.00	571.290	571.290
Bk. E. Abut.	1995+57.44	-12.00	571.265	571.265

GIRDER 8

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
℄ Pier 2	1992+04.32	-8.917	573.983	573.983
℄ Brg. Pier 2	1992+05.20	-8.917	573.977	573.977
a	1992+15.20	-8.917	573.889	573.961
b	1992+25.20	-8.917	573.801	573.938
c	1992+35.20	-8.917	573.713	573.904
d	1992+45.20	-8.917	573.625	573.853
e	1992+55.20	-8.917	573.537	573.785
f	1992+65.20	-8.917	573.449	573.698
g	1992+75.20	-8.917	573.361	573.593
h	1992+85.20	-8.917	573.273	573.471
i	1992+95.20	-8.917	573.185	573.339
j	1993+05.20	-8.917	573.097	573.199
k	1993+15.20	-8.917	573.009	573.061
l	1993+25.20	-8.917	572.921	572.935
℄ Pier 3	1993+30.33	-8.917	572.874	572.874
m	1993+40.33	-8.917	572.785	572.779
n	1993+50.33	-8.917	572.715	572.718
o	1993+60.33	-8.917	572.650	572.676
p	1993+70.33	-8.917	572.585	572.637
q	1993+80.33	-8.917	572.520	572.595
r	1993+90.33	-8.917	572.455	572.543
s	1994+00.33	-8.917	572.390	572.480
t	1994+10.33	-8.917	572.325	572.405
u	1994+20.33	-8.917	572.260	572.321
v	1994+30.33	-8.917	572.194	572.232
w	1994+40.33	-8.917	572.129	572.145
x	1994+50.33	-8.917	572.064	572.066
℄ Pier 4	1994+56.33	-8.917	572.026	572.026
y	1994+66.33	-8.917	571.960	571.975
z	1994+76.33	-8.917	571.895	571.936
aa	1994+86.33	-8.917	571.826	571.898
bb	1994+96.33	-8.917	571.738	571.838
cc	1995+06.33	-8.917	571.650	571.769
dd	1995+16.33	-8.917	571.562	571.686
ee	1995+26.33	-8.917	571.474	571.587
ff	1995+36.33	-8.917	571.386	571.472
gg	1995+46.33	-8.917	571.298	571.345
℄ Brg. E. Abut.	1995+56.33	-8.917	571.210	571.210
Bk. E. Abut.	1995+59.22	-8.917	571.185	571.185

GIRDER 9

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
℄ Pier 2	1992+08.76	-1.250	574.063	574.063
℄ Brg. Pier 2	1992+09.63	-1.250	574.058	574.058
a	1992+19.63	-1.250	573.969	574.026
b	1992+29.63	-1.250	573.881	573.990
c	1992+39.63	-1.250	573.793	573.945
d	1992+49.63	-1.250	573.705	573.887
e	1992+59.63	-1.250	573.617	573.814
f	1992+69.63	-1.250	573.529	573.727
g	1992+79.63	-1.250	573.441	573.625
h	1992+89.63	-1.250	573.353	573.510
i	1992+99.63	-1.250	573.265	573.386
j	1993+09.63	-1.250	573.177	573.256
k	1993+19.63	-1.250	573.089	573.128
l	1993+29.63	-1.250	573.001	573.011
℄ Pier 3	1993+34.76	-1.250	572.955	572.955
m	1993+44.76	-1.250	572.867	572.865
n	1993+54.76	-1.250	572.782	572.792
o	1993+64.76	-1.250	572.697	572.729
p	1993+74.76	-1.250	572.612	572.669
q	1993+84.76	-1.250	572.528	572.604
r	1993+94.76	-1.250	572.443	572.530
s	1994+04.76	-1.250	572.358	572.445
t	1994+14.76	-1.250	572.273	572.349
u	1994+24.76	-1.250	572.189	572.246
v	1994+34.76	-1.250	572.104	572.138
w	1994+44.76	-1.250	572.019	572.032
x	1994+54.76	-1.250	571.934	571.935
℄ Pier 4	1994+60.76	-1.250	571.884	571.884
y	1994+70.76	-1.250	571.798	571.814
z	1994+80.76	-1.250	571.714	571.756
aa	1994+90.76	-1.250	571.627	571.700
bb	1995+00.76	-1.250	571.539	571.640
cc	1995+10.76	-1.250	571.451	571.571
dd	1995+20.76	-1.250	571.363	571.487
ee	1995+30.76	-1.250	571.275	571.388
ff	1995+40.76	-1.250	571.187	571.273
gg	1995+50.76	-1.250	571.099	571.146
℄ Brg. E. Abut.	1995+60.76	-1.250	571.011	571.011
Bk. E. Abut.	1995+63.65	-1.250	570.986	570.986



NOTE: THE ABOVE DEFLECTIONS ARE NOT TO BE USED IN THE FIELD IF THE ENGINEER IS WORKING FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS" AS SHOWN ON THIS DWG.

DEAD LOAD DEFLECTION DIAGRAM

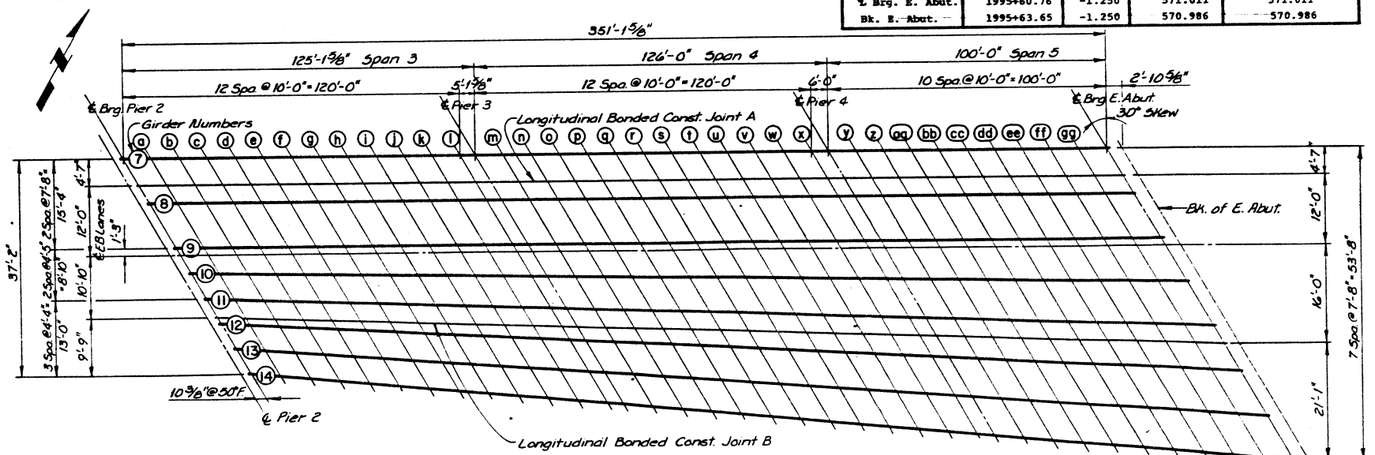
(INCLUDES WEIGHT OF CONCRETE ONLY)

* Spacing Varies for Flared Beams (⑫ thru ⑭)

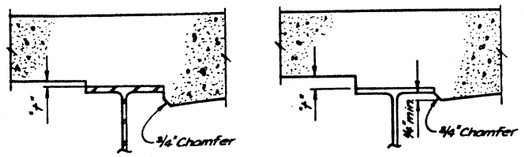
DIMENSIONS

GIRDER NO.	SPAN 3	SPAN 4	SPAN 5
⑩	4 Spa. @ 31'-5 7/16" = 125'-3 3/8"	4 Spa. @ 31'-8 5/32" = 126'-8 5/8"	4 Spa. @ 25'-1 9/16" = 100'-6 1/2"
⑪	4 Spa. @ 31'-7 1/2" = 126'-6"	4 Spa. @ 31'-10 1/16" = 127'-4 1/2"	4 Spa. @ 25'-3 1/4" = 101'-1"
⑫	4 Spa. @ 31'-9 3/16" = 127'-2 1/2"	4 Spa. @ 32'-0 1/16" = 128'-1"	4 Spa. @ 25'-5" = 101'-8"
⑬	4 Spa. @ 31'-11 13/16" = 127'-11 1/4"	4 Spa. @ 32'-2 7/16" = 128'-9 3/4"	4 Spa. @ 25'-6 7/16" = 102'-2 3/4"
⑭	4 Spa. @ 32'-2" = 128'-8"	4 Spa. @ 32'-4 5/16" = 129'-5 1/2"	4 Spa. @ 25'-8 1/2" = 102'-10"

GIRDER NO.	A	B	C	D	E	F	G	H	I
⑦, ⑧	2 3/8"	2 15/16"	1 5/8"	3/8"	1 1/16"	5/8"	11/16"	1 11/16"	1 3/16"
⑨	1 13/16"	2 3/8"	1 5/16"	3/8"	1 1/16"	3/16"	11/16"	1 1/16"	1 3/16"
⑩, ⑪	2 1/16"	2 5/8"	1 1/2"	3/8"	1 5/16"	1/2"	13/16"	1 5/8"	1 7/16"
⑫, ⑬									
⑭									



PLAN



AT MINIMUM FILLET

AT MAXIMUM FILLET

FILLET HEIGHTS

TO DETERMINE "t"

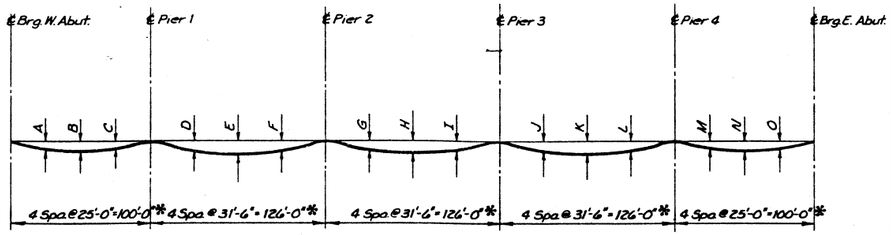
AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE BEAMS SHALL BE TAKEN AT INTERVALS SHOWN ABOVE. THESE ELEVATIONS SUBTRACTED FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION" SHOWN ON THIS DWG., MINUS SLAB THICKNESS, EQUALS THE FILLET HEIGHTS "t" ABOVE TOP FLANGE OF BEAMS.

ESCA
CONSULTANTS, INC.

DESIGNED BY:	KMR	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JAG	9-89
APPROVED BY:	RDP	9-89

TOP OF SLAB ELEVATIONS (EB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)



NOTE: THE ABOVE DEFLECTIONS ARE NOT TO BE USED IN THE FIELD IF THE ENGINEER IS WORKING FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS" AS SHOWN ON THIS DWG.

DEAD LOAD DEFLECTION DIAGRAM

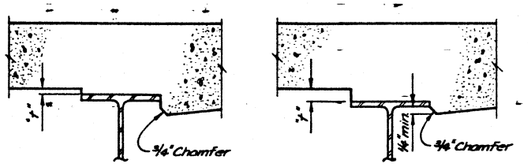
(INCLUDES WEIGHT OF CONCRETE ONLY)

* Spacing Varies for Flared Beams (15 thru 17)

GIRDER NO.	SPAN 1	SPAN 2	SPAN 3	SPAN 4	SPAN 5
15	4 Spa. @ 24'-9 7/16" = 99'-2 3/4"	4 Spa. @ 31'-3 13/16" = 125'-0 1/2"	4 Spa. @ 31'-3 13/16" = 125'-0 1/2"	4 Spa. @ 31'-3 13/16" = 125'-0 1/2"	4 Spa. @ 24'-9 7/16" = 99'-2 3/4"
16	4 Spa. @ 24'-10 7/16" = 99'-5 3/4"	4 Spa. @ 31'-4 1/16" = 125'-4 1/4"	4 Spa. @ 31'-4 1/16" = 125'-4 1/4"	4 Spa. @ 31'-4 1/16" = 125'-4 1/4"	4 Spa. @ 24'-10 7/16" = 99'-5 3/4"
17	4 Spa. @ 24'-11 1/4" = 99'-9"	4 Spa. @ 31'-5 1/16" = 125'-8 1/4"	4 Spa. @ 31'-5 1/16" = 125'-8 1/4"	4 Spa. @ 31'-5 1/16" = 125'-8 1/4"	4 Spa. @ 24'-11 1/4" = 99'-9"

DIMENSIONS

GIRDER NO.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
15	13/16"	1 1/16"	7/16"	3/8"	1 3/16"	3/4"	7/8"	1 7/16"	3/8"	5/8"	1 3/16"	5/8"	9/16"	1 1/4"	1 1/16"
16, 17	3/4"	7/8"	3/8"	3/8"	1 5/16"	3/4"	13/16"	1 5/16"	1/16"	9/16"	1 1/8"	5/8"	1/2"	1 3/16"	1"
18	1 5/16"	1"	7/16"	13/16"	1 1/2"	1 1/16"	13/16"	1 3/8"	3/4"	3/4"	1 3/8"	3/4"	9/16"	1 5/16"	1 1/8"
19, 20, 21	1 1/8"	1 5/16"	9/16"	13/16"	1 1/2"	1 1/16"	3/4"	1 7/16"	3/4"	13/16"	1 1/2"	13/16"	9/16"	1 5/16"	1 1/8"



AT MINIMUM FILLET — AT MAXIMUM FILLET

TO DETERMINE "t"

AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE BEAMS SHALL BE TAKEN AT INTERVALS SHOWN BELOW. THESE ELEVATIONS SUBTRACTED FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS" SHOWN ON THIS DWG., MINUS SLAB THICKNESS, EQUALS THE FILLET HEIGHTS "t" ABOVE TOP FLANGE OF BEAMS.

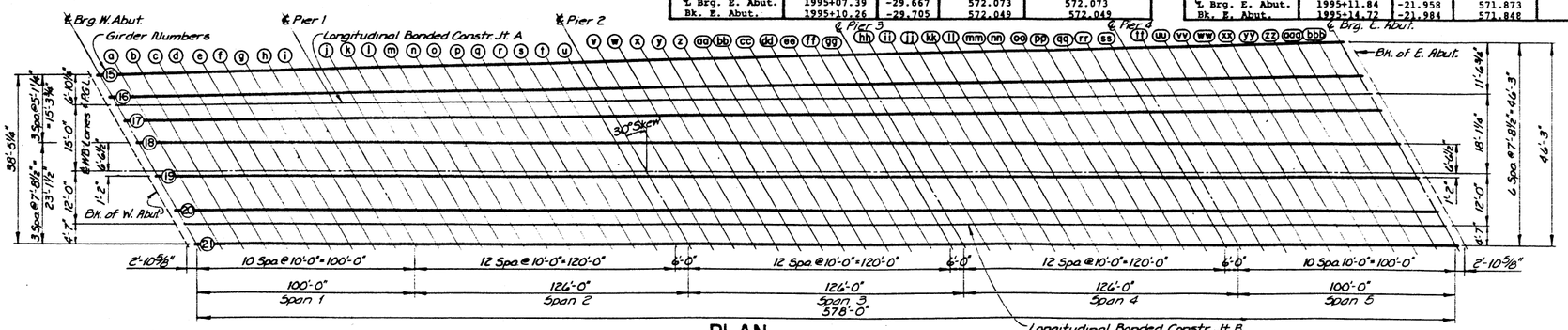
FILLET HEIGHTS

GIRDER 15

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+31.04	-21.815	576.135	576.135
℄ Brg. W. Abut.	1989+33.90	-21.854	576.109	576.109
a	1989+43.82	-21.989	576.019	576.054
b	1989+53.74	-22.124	575.929	575.995
c	1989+63.67	-22.260	575.839	575.924
d	1989+73.59	-22.395	575.748	575.841
e	1989+83.51	-22.530	575.658	575.745
f	1989+93.43	-22.665	575.568	575.639
g	1990+03.35	-22.800	575.478	575.526
h	1990+13.28	-22.935	575.388	575.413
i	1990+23.20	-23.071	575.298	575.305
℄ Pier 1	1990+33.12	-23.206	575.208	575.208
j	1990+43.04	-23.341	575.117	575.128
k	1990+52.96	-23.476	575.027	575.059
l	1990+62.89	-23.611	574.937	574.996
m	1990+72.81	-23.746	574.847	574.931
n	1990+82.73	-23.882	574.757	574.861
o	1990+92.65	-24.017	574.667	574.780
p	1991+02.57	-24.152	574.577	574.687
q	1991+12.50	-24.287	574.487	574.583
r	1991+22.42	-24.422	574.396	574.469
s	1991+32.34	-24.557	574.306	574.350
t	1991+42.26	-24.693	574.216	574.234
u	1991+52.18	-24.828	574.126	574.127
℄ Pier 2	1991+58.14	-24.909	574.072	574.072
v	1991+68.06	-25.044	573.982	573.996
w	1991+77.98	-25.179	573.892	573.930
x	1991+87.90	-25.314	573.802	573.868
y	1991+97.82	-25.449	573.711	573.804
z	1992+07.75	-25.585	573.621	573.733
aa	1992+17.67	-25.720	573.531	573.651
bb	1992+27.59	-25.855	573.441	573.557
cc	1992+37.51	-25.990	573.351	573.451
dd	1992+47.43	-26.125	573.261	573.337
ee	1992+57.36	-26.260	573.171	573.219
ff	1992+67.28	-26.396	573.081	573.103
gg	1992+77.20	-26.531	572.990	572.995
℄ Pier 3	1992+83.15	-26.612	572.936	572.936
hh	1992+93.08	-26.747	572.846	572.853
ii	1993+03.00	-26.882	572.756	572.781
jj	1993+12.92	-27.017	572.666	572.714
kk	1993+22.84	-27.153	572.576	572.648
ll	1993+32.76	-27.288	572.486	572.577
mm	1993+42.69	-27.423	572.397	572.497
nn	1993+52.61	-27.558	572.388	572.487
oo	1993+62.53	-27.693	572.379	572.465
pp	1993+72.45	-27.828	572.370	572.435
qq	1993+82.37	-27.964	572.361	572.401
rr	1993+92.30	-28.099	572.352	572.369
ss	1994+02.22	-28.234	572.343	572.345
℄ Pier 4	1994+08.17	-28.315	572.337	572.337
tt	1994+18.09	-28.450	572.328	572.339
uu	1994+28.01	-28.585	572.319	572.351
vv	1994+37.94	-28.720	572.310	572.369
ww	1994+47.86	-28.856	572.301	572.385
xx	1994+57.78	-28.991	572.292	572.393
yy	1994+67.70	-29.126	572.283	572.389
zz	1994+77.62	-29.261	572.274	572.371
aaa	1994+87.55	-29.396	572.242	572.317
bbb	1994+97.47	-29.531	572.158	572.199
℄ Brg. E. Abut.	1995+07.39	-29.667	572.073	572.073
Bk. E. Abut.	1995+10.26	-29.705	572.049	572.049

GIRDER 16

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+33.98	-16.724	576.215	576.215
℄ Brg. W. Abut.	1989+36.85	-16.750	576.189	576.189
a	1989+46.80	-16.840	576.100	576.130
b	1989+56.75	-16.930	576.010	576.066
c	1989+66.69	-17.020	575.921	575.992
d	1989+76.64	-17.110	575.832	575.909
e	1989+86.59	-17.201	575.742	575.814
f	1989+96.54	-17.291	575.653	575.710
g	1990+06.49	-17.381	575.563	575.602
h	1990+16.43	-17.471	575.474	575.493
i	1990+26.38	-17.561	575.384	575.389
℄ Pier 1	1990+36.33	-17.651	575.295	575.295
j	1990+46.28	-17.741	575.206	575.217
k	1990+56.23	-17.831	575.116	575.149
l	1990+66.17	-17.921	575.027	575.085
m	1990+76.12	-18.011	574.937	575.020
n	1990+86.07	-18.102	574.848	574.950
o	1990+96.02	-18.192	574.759	574.870
p	1991+05.96	-18.282	574.669	574.779
q	1991+15.91	-18.372	574.580	574.677
r	1991+25.86	-18.462	574.490	574.566
s	1991+35.81	-18.552	574.401	574.449
t	1991+45.76	-18.642	574.311	574.334
u	1991+55.70	-18.732	574.222	574.226
℄ Pier 2	1991+61.67	-18.786	574.168	574.168
v	1991+71.62	-18.876	574.079	574.089
w	1991+81.57	-18.966	573.990	574.024
x	1991+91.52	-19.057	573.900	573.962
y	1992+01.46	-19.147	573.811	573.897
z	1992+11.41	-19.237	573.721	573.826
aa	1992+21.36	-19.327	573.632	573.744
bb	1992+31.31	-19.417	573.542	573.651
cc	1992+41.26	-19.507	573.453	573.546
dd	1992+51.20	-19.597	573.364	573.435
ee	1992+61.15	-19.687	573.274	573.319
ff	1992+71.10	-19.777	573.185	573.205
gg	1992+81.05	-19.868	573.095	573.099
℄ Pier 3	1992+87.02	-19.922	573.042	573.042
hh	1992+96.96	-20.012	572.952	572.959
ii	1993+06.91	-20.102	572.863	572.886
jj	1993+16.86	-20.192	572.773	572.819
kk	1993+26.81	-20.282	572.684	572.752
ll	1993+36.76	-20.372	572.595	572.680
mm	1993+46.70	-20.462	572.529	572.623
nn	1993+56.65	-20.552	572.499	572.591
oo	1993+66.60	-20.642	572.468	572.549
pp	1993+76.55	-20.733	572.438	572.498
qq	1993+86.50	-20.823	572.408	572.445
rr	1993+96.44	-20.913	572.377	572.393
ss	1994+06.39	-21.003	572.347	572.349
℄ Pier 4	1994+12.36	-21.057	572.329	572.329
tt	1994+22.31	-21.147	572.298	572.308
uu	1994+32.26	-21.237	572.268	572.299
vv	1994+42.20	-21.327	572.237	572.294
ww	1994+52.15	-21.417	572.207	572.288
xx	1994+62.10	-21.507	572.176	572.273
yy	1994+72.05	-21.598	572.146	572.248
zz	1994+82.00	-21.688	572.116	572.209
aaa	1994+91.94	-21.778	572.045	572.116
bbb	1995+01.89	-21.868	571.959	571.998
℄ Brg. E. Abut.	1995+11.84	-21.958	571.873	571.873
Bk. E. Abut.	1995+14.72	-21.984	571.848	571.848



PLAN

ESCA CONSULTANTS, INC.

DESIGNED BY:	KMR	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JAG	9-89
APPROVED BY:	RDP	9-89

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	60
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 6 of 45		

TOP OF SLAB ELEVATIONS (WB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	61
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR			Dwg. No. 7 of 45	

LONGITUDINAL BONDED CONSTR. JOINT A

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+34.99	-14.985	576.242	576.242
℄ Brg. W. Abut.	1989+37.86	-15.000	576.217	576.217
a	1989+47.83	-15.054	576.128	576.158
b	1989+57.80	-15.107	576.039	576.094
c	1989+67.77	-15.161	575.950	576.022
d	1989+77.74	-15.215	575.861	575.938
e	1989+87.71	-15.269	575.773	575.844
f	1989+97.67	-15.322	575.684	575.741
g	1990+07.64	-15.376	575.595	575.634
h	1990+17.61	-15.430	575.506	575.525
i	1990+27.58	-15.483	575.417	575.422
℄ Pier 1	1990+37.55	-15.537	575.320	575.328
j	1990+47.52	-15.591	575.240	575.250
k	1990+57.49	-15.644	575.151	575.183
l	1990+67.46	-15.698	575.062	575.120
m	1990+77.43	-15.752	574.973	574.056
n	1990+87.40	-15.806	574.804	574.986
o	1990+97.36	-15.859	574.795	574.907
p	1991+07.33	-15.913	574.706	574.817
q	1991+17.30	-15.967	574.618	574.715
r	1991+27.27	-16.020	574.529	574.605
s	1991+37.24	-16.074	574.440	574.488
t	1991+47.21	-16.128	574.351	574.373
u	1991+57.18	-16.181	574.262	574.266
℄ Pier 2	1991+63.16	-16.214	574.209	574.209
v	1991+73.13	-16.267	574.120	574.131
w	1991+83.10	-16.321	574.031	574.065
x	1991+93.07	-16.375	573.942	574.004
y	1992+03.04	-16.429	573.854	573.940
z	1992+13.01	-16.482	573.765	573.869
aa	1992+22.97	-16.536	573.676	573.788
bb	1992+32.94	-16.590	573.587	573.695
cc	1992+42.91	-16.643	573.498	573.591
dd	1992+52.88	-16.697	573.409	573.480
ee	1992+62.85	-16.751	573.320	573.366
ff	1992+72.82	-16.804	573.232	573.252
gg	1992+82.79	-16.858	573.143	573.147
℄ Pier 3	1992+88.77	-16.890	573.089	573.089
hh	1992+98.74	-16.944	573.001	573.007
ii	1993+08.71	-16.998	572.912	572.935
jj	1993+18.68	-17.052	572.823	572.869
kk	1993+28.65	-17.105	572.734	572.802
ll	1993+38.61	-17.159	572.645	572.731
mm	1993+48.58	-17.213	572.585	572.679
nn	1993+58.55	-17.266	572.545	572.637
oo	1993+68.52	-17.320	572.504	572.584
pp	1993+78.49	-17.374	572.463	572.524
qq	1993+88.46	-17.427	572.422	572.460
rr	1993+98.43	-17.481	572.382	572.397
ss	1994+08.40	-17.535	572.341	572.343
℄ Pier 4	1994+14.38	-17.567	572.316	572.316
tt	1994+24.35	-17.621	572.276	572.286
uu	1994+34.32	-17.675	572.235	572.266
vv	1994+44.29	-17.728	572.194	572.251
ww	1994+54.26	-17.782	572.153	572.234
xx	1994+64.22	-17.836	572.113	572.210
yy	1994+74.19	-17.889	572.072	572.174
zz	1994+84.16	-17.943	572.031	572.125
aaa	1994+94.13	-17.997	571.947	572.018
bbb	1995+04.10	-18.050	571.860	571.899
℄ Brg. E. Abut.	1995+14.07	-18.104	571.773	571.773
Bk. E. Abut.	1995+16.95	-18.120	571.748	571.748

GIRDER 17

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+36.93	-11.620	576.293	576.293
℄ Brg. W. Abut.	1989+39.80	-11.646	576.268	576.268
a	1989+49.77	-11.691	576.179	576.209
b	1989+59.75	-11.736	576.091	576.146
c	1989+69.72	-11.781	576.002	576.074
d	1989+79.70	-11.826	575.914	575.991
e	1989+89.67	-11.871	575.825	575.897
f	1989+99.64	-11.916	575.737	575.795
g	1990+09.62	-11.961	575.648	575.687
h	1990+19.59	-12.006	575.560	575.579
i	1990+29.56	-12.051	575.471	575.476
℄ Pier 1	1990+39.54	-12.097	575.383	575.383
j	1990+49.51	-12.142	575.294	575.305
k	1990+59.49	-12.187	575.205	575.238
l	1990+69.46	-12.232	575.116	575.174
m	1990+79.43	-12.277	575.028	575.111
n	1990+89.41	-12.322	574.939	575.041
o	1990+99.38	-12.367	574.850	574.962
p	1991+09.36	-12.412	574.762	574.872
q	1991+19.33	-12.457	574.673	574.770
r	1991+29.30	-12.502	574.584	574.660
s	1991+39.28	-12.547	574.495	574.544
t	1991+49.25	-12.592	574.407	574.429
u	1991+59.23	-12.637	574.318	574.322
℄ Pier 2	1991+65.21	-12.664	574.265	574.265
v	1991+75.18	-12.709	574.176	574.187
w	1991+85.16	-12.754	574.087	574.122
x	1991+95.13	-12.800	573.999	574.060
y	1992+05.10	-12.845	573.910	573.997
z	1992+15.08	-12.890	573.821	573.926
aa	1992+25.05	-12.935	573.733	573.845
bb	1992+35.03	-12.980	573.644	573.752
cc	1992+45.00	-13.025	573.555	573.648
dd	1992+54.97	-13.070	573.466	573.538
ee	1992+64.95	-13.115	573.378	573.423
ff	1992+74.92	-13.160	573.289	573.310
gg	1992+84.90	-13.205	573.200	573.204
℄ Pier 3	1992+90.88	-13.232	573.147	573.147
hh	1993+00.85	-13.277	573.058	573.065
ii	1993+10.83	-13.322	572.970	572.993
jj	1993+20.80	-13.367	572.881	572.927
kk	1993+30.78	-13.412	572.792	572.860
ll	1993+40.75	-13.458	572.704	572.789
mm	1993+50.72	-13.503	572.645	572.738
nn	1993+60.70	-13.548	572.593	572.685
oo	1993+70.67	-13.593	572.541	572.621
pp	1993+80.65	-13.638	572.489	572.550
qq	1993+90.62	-13.683	572.437	572.475
rr	1994+00.59	-13.728	572.386	572.401
ss	1994+10.57	-13.773	572.334	572.336
℄ Pier 4	1994+16.55	-13.800	572.303	572.303
tt	1994+26.52	-13.845	572.251	572.261
uu	1994+36.50	-13.890	572.199	572.230
vv	1994+46.47	-13.935	572.147	572.204
ww	1994+56.45	-13.980	572.095	572.176
xx	1994+66.42	-14.025	572.044	572.141
yy	1994+76.39	-14.070	571.992	572.094
zz	1994+86.37	-14.116	571.934	572.027
aaa	1994+96.34	-14.161	571.847	571.919
bbb	1995+06.32	-14.206	571.760	571.799
℄ Brg. E. Abut.	1995+16.29	-14.250	571.674	571.674
Bk. E. Abut.	1995+19.17	-14.263	571.648	571.648

GIRDER 18

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+39.86	-6.542	576.347	576.347
℄ Brg. W. Abut.	1989+42.74	-6.542	576.322	576.322
a	1989+52.74	-6.542	576.234	576.269
b	1989+62.74	-6.542	576.146	576.211
c	1989+72.74	-6.542	576.058	576.143
d	1989+82.74	-6.542	575.970	576.062
e	1989+92.74	-6.542	575.882	575.967
f	1990+02.74	-6.542	575.794	575.863
g	1990+12.74	-6.542	575.706	575.753
h	1990+22.74	-6.542	575.618	575.641
i	1990+32.74	-6.542	575.530	575.534
℄ Pier 1	1990+42.74	-6.542	575.442	575.442
j	1990+52.74	-6.542	575.354	575.365
k	1990+62.74	-6.542	575.266	575.302
l	1990+72.74	-6.542	575.178	575.242
m	1990+82.74	-6.542	575.090	575.182
n	1990+92.74	-6.542	575.002	575.115
o	1991+02.74	-6.542	574.914	575.037
p	1991+12.74	-6.542	574.826	574.947
q	1991+22.74	-6.542	574.738	574.843
r	1991+32.74	-6.542	574.650	574.730
s	1991+42.74	-6.542	574.562	574.611
t	1991+52.74	-6.542	574.474	574.494
u	1991+62.74	-6.542	574.386	574.387
℄ Pier 2	1991+68.74	-6.542	574.333	574.333
v	1991+78.74	-6.542	574.245	574.258
w	1991+88.74	-6.542	574.157	574.194
x	1991+98.74	-6.542	574.069	574.133
y	1992+08.74	-6.542	573.981	574.071
z	1992+18.74	-6.542	573.893	574.002
aa	1992+28.74	-6.542	573.805	573.922
bb	1992+38.74	-6.542	573.717	573.830
cc	1992+48.74	-6.542	573.629	573.726
dd	1992+58.74	-6.542	573.541	573.614
ee	1992+68.74	-6.542	573.453	573.499
ff	1992+78.74	-6.542	573.365	573.385
gg	1992+88.74	-6.542	573.277	573.280
℄ Pier 3	1992+94.74	-6.542	573.224	573.224
hh	1993+04.74	-6.542	573.136	573.145
ii	1993+14.74	-6.542	573.048	573.079
jj	1993+24.74	-6.542	572.960	573.018
kk	1993+34.74	-6.542	572.872	572.957
ll	1993+44.74	-6.542	572.787	572.893
mm	1993+54.74	-6.542	572.716	572.831
nn	1993+64.74	-6.542	572.645	572.758
oo	1993+74.74	-6.542	572.574	572.672
pp	1993+84.74	-6.542	572.503	572.577
qq	1993+94.74	-6.542	572.431	572.478
rr	1994+04.74	-6.542	572.360	572.380
ss	1994+14.74	-6.542	572.289	572.292
℄ Pier 4	1994+20.74	-6.542	572.246	572.246
tt	1994+30.74	-6.542	572.175	572.186
uu	1994+40.74	-6.542	572.104	572.138
vv	1994+50.74	-6.542	572.033	572.095
ww	1994+60.74	-6.542	571.962	572.051
xx	1994+70.74	-6.542	571.890	571.999
yy	1994+80.74	-6.542	571.819	571.933
zz	1994+90.74	-6.542	571.738	571.842
aaa	1995+00.74	-6.542	571.650	571.730
bbb	1995+10.74	-6.542	571.562	571.605
℄ Brg. E. Abut.	1995+20.74	-6.542	571.474	571.474
Bk. E. Abut.	1995+23.63	-6.542	571.449	571.449

P.G.L.

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+43.64	0.000	576.416	571.279
℄ Brg. W. Abut.	1989+46.52	0.000	576.391	576.391
a	1989+56.52	0.000	576.303	576.347
b	1989+66.52	0.000	576.215	576.297
c	1989+76.52	0.000	576.127	576.233
d	1989+86.52	0.000	576.039	576.155
e	1989+96.52	0.000	575.951	576.060
f	1990+06.52	0.000	575.863	575.953
g	1990+16.52	0.000	575.775	575.837
h	1990+26.52	0.000	575.687	575.720
i	1990+36.52	0.000	575.599	575.609
℄ Pier 1	1990+46.52	0.000	575.511	575.511
j	1990+56.52	0.000	575.423	575.433
k	1990+66.52	0.000	575.335	575.369
l	1990+76.52	0.000	575.247	575.310
m	1990+86.52	0.000	575.159	575.251
n	1990+96.52	0.000	575.071	575.185
o	1991+06.52	0.000	574.983	575.107
p	1991+16.52	0.000	574.895	575.017
q	1991+26.52	0.000	574.807	574.913
r	1991+36.52	0.000	574.719	574.799
s	1991+46.52	0.000	574.631	574.681
t	1991+56.52	0.000	574.543	574.566
u	1991+66.52	0.000	574.455	574.459
℄ Pier 2	1991+72.52	0.000	574.402	574.402
v	1991+82.52	0.000	574.314	574.323
w	1991+92.52	0.000	574.226	574.257
x	1992+02.52	0.000	574.138	574.197
y	1992+12.52	0.000	574.050	574.137
z	1992+22.52	0.000	573.962	574.070
aa	1992+32.52	0.000	573.874	573.993
bb	1992+42.52	0.000	573.786	573.902
cc	1992+52.52	0.000	573.698	573.799
dd	1992+62.52	0.000	573.610	573.686
ee	1992+72.52	0.000	573.522	573.570
ff	1992+82.52	0.000	573.434	573.455
gg	1992+92.52	0.000	573.346	573.349
℄ Pier 3	1992+98.52	0.000	573.293	573.293
hh	1993+08.52	0.000	573.205	573.215
ii	1993+18.52	0.000	573.117	573.150
jj	1993+28.52	0.000	573.029	573.092
kk	1993+38.52	0.000	572.941	573.033
ll	1993+48.52	0.000	572.853	572.967
mm	1993+58.52	0.000	572.765	572.890
nn	1993+68.52	0.000	572.677	572.799
oo	1993+78.52	0.000	572.589	572.696
pp	1993+88.52	0.000	572.501	572.582
qq	1993+98.52	0.000	572.413	572.464
rr	1994+08.52	0.000	572.325	572.348
ss	1994+18.52	0.000	572.237	572.241
℄ Pier 4	1994+24.52	0.000	572.184	572.184
tt	1994+34.52	0.000	572.096	572.106
uu	1994+44.52	0.000	572.008	572.042
vv	1994+54.52	0.000	571.920	571.983
ww	1994+64.52	0.000	571.832	571.923
xx	1994+74.52	0.000	571.744	571.854
yy	1994+84.52	0.000	571.656	571.773
zz	1994+94.52	0.000	571.568	571.675
aaa	1995+04.52	0.000	571.480	571.562
bbb	1995+14.52	0.000	571.392	571.437
℄ Brg. E. Abut.	1995+24.52	0.000	571.304	571.304
Bk. E. Abut.	1995+27.41	0.000	571.279	571.279

ESCA CONSULTANTS, INC.

DESIGNED BY:	KMR	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JAG	9-89
APPROVED BY:	RDP	9-89

TOP OF SLAB ELEVATIONS (WB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	62
STA		TO STA		
FED ROAD DIST NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg No. 8 of 25		

GIRDER 19

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+44.31	1.167	576.391	576.391
℄ Brg. W. Abut.	1989+47.19	1.167	576.366	576.366
a	1989+57.19	1.167	576.278	576.323
b	1989+67.19	1.167	576.190	576.273
c	1989+77.19	1.167	576.102	576.209
d	1989+87.19	1.167	576.014	576.131
e	1989+97.19	1.167	575.926	576.036
f	1990+07.19	1.167	575.838	575.929
g	1990+17.19	1.167	575.750	575.813
h	1990+27.19	1.167	575.662	575.696
i	1990+37.19	1.167	575.574	575.585
℄ Pier 1	1990+47.19	1.167	575.486	575.486
j	1990+57.19	1.167	575.398	575.408
k	1990+67.19	1.167	575.310	575.344
l	1990+77.19	1.167	575.222	575.286
m	1990+87.19	1.167	575.134	575.227
n	1990+97.19	1.167	575.046	575.161
o	1991+07.19	1.167	574.958	575.083
p	1991+17.19	1.167	574.870	574.993
q	1991+27.19	1.167	574.782	574.889
r	1991+37.19	1.167	574.694	574.775
s	1991+47.19	1.167	574.606	574.657
t	1991+57.19	1.167	574.518	574.542
u	1991+67.19	1.167	574.430	574.435
℄ Pier 2	1991+73.19	1.167	574.378	574.378
v	1991+83.19	1.167	574.290	574.299
w	1991+93.19	1.167	574.202	574.233
x	1992+03.19	1.167	574.114	574.173
y	1992+13.19	1.167	574.026	574.113
z	1992+23.19	1.167	573.938	574.046
aa	1992+33.19	1.167	573.850	573.969
bb	1992+43.19	1.167	573.762	573.878
cc	1992+53.19	1.167	573.674	573.775
dd	1992+63.19	1.167	573.586	573.662
ee	1992+73.19	1.167	573.498	573.545
ff	1992+83.19	1.167	573.410	573.431
gg	1992+93.19	1.167	573.322	573.325
℄ Pier 3	1992+99.19	1.167	573.269	573.269
hh	1993+09.19	1.167	573.181	573.191
ii	1993+19.19	1.167	573.093	573.126
jj	1993+29.19	1.167	573.005	573.068
kk	1993+39.19	1.167	572.917	573.008
ll	1993+49.19	1.167	572.828	572.942
mm	1993+59.19	1.167	572.740	572.865
nn	1993+69.19	1.167	572.652	572.774
oo	1993+79.19	1.167	572.563	572.670
pp	1993+89.19	1.167	572.475	572.556
qq	1993+99.19	1.167	572.387	572.437
rr	1994+09.19	1.167	572.298	572.321
ss	1994+19.19	1.167	572.210	572.213
℄ Pier 4	1994+25.19	1.167	572.157	572.157
tt	1994+35.19	1.167	572.068	572.078
uu	1994+45.19	1.167	571.980	572.014
vv	1994+55.19	1.167	571.892	571.955
ww	1994+65.19	1.167	571.803	571.894
xx	1994+75.19	1.167	571.715	571.825
yy	1994+85.19	1.167	571.626	571.742
zz	1994+95.19	1.167	571.538	571.645
aaa	1995+05.19	1.167	571.450	571.532
bbb	1995+15.19	1.167	571.362	571.407
℄ Brg. E. Abut.	1995+25.19	1.167	571.274	571.274
Bk. E. Abut.	1995+28.08	1.167	571.249	571.249

GIRDER 20

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+48.76	8.875	576.232	576.232
℄ Brg. W. Abut.	1989+51.64	8.875	576.207	576.207
a	1989+61.64	8.875	576.119	576.164
b	1989+71.64	8.875	576.031	576.113
c	1989+81.64	8.875	575.943	576.050
d	1989+91.64	8.875	575.855	575.971
e	1990+01.64	8.875	575.767	575.877
f	1990+11.64	8.875	575.679	575.769
g	1990+21.64	8.875	575.591	575.654
h	1990+31.64	8.875	575.503	575.536
i	1990+41.64	8.875	575.415	575.425
℄ Pier 1	1990+51.64	8.875	575.327	575.327
j	1990+61.64	8.875	575.239	575.249
k	1990+71.64	8.875	575.151	575.185
l	1990+81.64	8.875	575.063	575.126
m	1990+91.64	8.875	574.975	575.067
n	1991+01.64	8.875	574.887	575.001
o	1991+11.64	8.875	574.799	574.924
p	1991+21.64	8.875	574.711	574.833
q	1991+31.64	8.875	574.623	574.729
r	1991+41.64	8.875	574.535	574.616
s	1991+51.64	8.875	574.447	574.497
t	1991+61.64	8.875	574.359	574.382
u	1991+71.64	8.875	574.271	574.275
℄ Pier 2	1991+77.64	8.875	574.218	574.218
v	1991+87.64	8.875	574.130	574.139
w	1991+97.64	8.875	574.042	574.073
x	1992+07.64	8.875	573.954	574.013
y	1992+17.64	8.875	573.866	573.953
z	1992+27.64	8.875	573.778	573.887
aa	1992+37.64	8.875	573.690	573.809
bb	1992+47.64	8.875	573.602	573.718
cc	1992+57.64	8.875	573.514	573.615
dd	1992+67.64	8.875	573.426	573.503
ee	1992+77.64	8.875	573.338	573.386
ff	1992+87.64	8.875	573.250	573.271
gg	1992+97.64	8.875	573.162	573.165
℄ Pier 3	1993+03.64	8.875	573.109	573.109
hh	1993+13.64	8.875	573.021	573.032
ii	1993+23.64	8.875	572.933	572.967
jj	1993+33.64	8.875	572.845	572.908
kk	1993+43.64	8.875	572.757	572.849
ll	1993+53.64	8.875	572.666	572.780
mm	1993+63.64	8.875	572.575	572.699
nn	1993+73.64	8.875	572.483	572.606
oo	1993+83.64	8.875	572.392	572.499
pp	1993+93.64	8.875	572.301	572.382
qq	1994+03.64	8.875	572.201	572.260
rr	1994+13.64	8.875	572.118	572.141
ss	1994+23.64	8.875	572.027	572.031
℄ Pier 4	1994+29.64	8.875	571.972	571.972
tt	1994+39.64	8.875	571.881	571.891
uu	1994+49.64	8.875	571.790	571.823
vv	1994+59.64	8.875	571.698	571.761
ww	1994+69.64	8.875	571.607	571.698
xx	1994+79.64	8.875	571.516	571.626
yy	1994+89.64	8.875	571.426	571.543
zz	1994+99.64	8.875	571.338	571.445
aaa	1995+09.64	8.875	571.250	571.333
bbb	1995+19.64	8.875	571.162	571.207
℄ Brg. E. Abut.	1995+29.64	8.875	571.074	571.074
Bk. E. Abut.	1995+32.53	8.875	571.049	571.049

LONGITUDINAL BONDED CONSTR. JOINT B

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+50.57	+12.000	576.167	576.167
℄ Brg. W. Abut.	1989+53.45	+12.000	576.142	576.142
a	1989+63.45	+12.000	576.054	576.099
b	1989+73.45	+12.000	575.966	576.048
c	1989+83.45	+12.000	575.878	575.985
d	1989+93.45	+12.000	575.790	575.906
e	1990+03.45	+12.000	575.702	575.812
f	1990+13.45	+12.000	575.614	575.704
g	1990+23.45	+12.000	575.526	575.589
h	1990+33.45	+12.000	575.438	575.472
i	1990+43.45	+12.000	575.350	575.360
℄ Pier 1	1990+53.45	+12.000	575.262	575.262
j	1990+63.45	+12.000	575.174	575.184
k	1990+73.45	+12.000	575.086	575.120
l	1990+83.45	+12.000	574.998	575.061
m	1990+93.45	+12.000	574.910	575.002
n	1991+03.45	+12.000	574.822	574.936
o	1991+13.45	+12.000	574.734	574.859
p	1991+23.45	+12.000	574.646	574.768
q	1991+33.45	+12.000	574.558	574.664
r	1991+43.45	+12.000	574.470	574.551
s	1991+53.45	+12.000	574.382	574.433
t	1991+63.45	+12.000	574.294	574.317
u	1991+73.45	+12.000	574.206	574.210
℄ Pier 2	1991+79.45	+12.000	574.153	574.153
v	1991+89.45	+12.000	574.065	574.074
w	1991+99.45	+12.000	573.977	574.008
x	1992+09.45	+12.000	573.889	573.949
y	1992+19.45	+12.000	573.801	573.888
z	1992+29.45	+12.000	573.713	573.822
aa	1992+39.45	+12.000	573.625	573.744
bb	1992+49.45	+12.000	573.537	573.654
cc	1992+59.45	+12.000	573.449	573.550
dd	1992+69.45	+12.000	573.361	573.438
ee	1992+79.45	+12.000	573.273	573.321
ff	1992+89.45	+12.000	573.185	573.206
gg	1992+99.45	+12.000	573.097	573.101
℄ Pier 3	1993+05.45	+12.000	573.045	573.045
hh	1993+15.45	+12.000	572.957	572.967
ii	1993+25.45	+12.000	572.869	572.902
jj	1993+35.45	+12.000	572.781	572.843
kk	1993+45.45	+12.000	572.691	572.783
ll	1993+55.45	+12.000	572.599	572.713
mm	1993+65.45	+12.000	572.507	572.631
nn	1993+75.45	+12.000	572.414	572.536
oo	1993+85.45	+12.000	572.322	572.428
pp	1993+95.45	+12.000	572.229	572.311
qq	1994+05.45	+12.000	572.137	572.188
rr	1994+15.45	+12.000	572.045	572.067
ss	1994+25.45	+12.000	571.952	571.962
℄ Pier 4	1994+31.45	+12.000	571.897	571.897
tt	1994+41.45	+12.000	571.804	571.814
uu	1994+51.45	+12.000	571.712	571.746
vv	1994+61.45	+12.000	571.620	571.683
ww	1994+71.45	+12.000	571.527	571.618
xx	1994+81.45	+12.000	571.435	571.545
yy	1994+91.45	+12.000	571.345	571.462
zz	1995+01.45	+12.000	571.257	571.364
aaa	1995+11.45	+12.000	571.169	571.252
bbb	1995+21.45	+12.000	571.081	571.126
℄ Brg. E. Abut.	1995+31.45	+12.000	570.993	570.993
Bk. E. ABut.	1995+34.34	+12.000	570.968	570.968

GIRDER 21

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATIONS	THEORETICAL GRADE ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	1989+53.21	16.583	575.998	575.998
℄ Brg. W. Abut.	1989+56.09	16.583	576.023	576.023
a	1989+66.09	16.583	575.935	575.979
b	1989+76.09	16.583	575.847	575.927
c	1989+86.09	16.583	575.759	575.863
d	1989+96.09	16.583	575.671	575.784
e	1990+06.09	16.583	575.583	575.689
f	1990+16.09	16.583	575.495	575.583
g	1990+26.09	16.583	575.407	575.468
h	1990+36.09	16.583	575.319	575.352
i	1990+46.09	16.583	575.231	575.241
℄ Pier 1	1990+56.09	16.583	575.143	575.143
j	1990+66.09	16.583	575.055	575.065
k	1990+76.09	16.583	574.967	575.000
l	1990+86.09	16.583	574.879	574.941
m	1990+96.09	16.583	574.791	574.881
n	1991+06.09	16.583	574.703	574.814
o	1991+16.09	16.583	574.615	574.736
p	1991+26.09	16.583	574.527	574.645
q	1991+36.09	16.583	574.439	574.542
r	1991+46.09	16.583	574.351	574.429
s	1991+56.09	16.583	574.263	574.312
t	1991+66.09	16.583	574.175	547.198
u	1991+76.09	16.583	574.087	574.091
℄ Pier 2	1991+82.09	16.583	574.035	574.035
v	1991+92.09	16.583	573.947	573.955
w	1992+02.09	16.583	573.859	573.889
x	1992+12.09	16.583	573.771	573.828
y	1992+22.09	16.583	573.683	573.767
z	1992+32.09	16.583	573.595	573.700
aa	1992+42.09	16.583	573.507	573.622
bb	1992+52.09	16.583	573.419	573.531
cc	1992+62.09	16.583	573.331	573.428
dd	1992+72.09	16.583	573.243	573.317
ee	1992+82.09	16.583	573.155	573.201
ff	1992+92.09	16.583	573.067	573.087
gg	1993+02.09	16.583	572.979	572.982
℄ Pier 3	1993+08.09	16.583	572.926	572.926
hh	1993+18.09	16.583	572.838	572.848
ii	1993+28.09	16.583	572.750	572.782
jj	1993+38.09	16.583	572.662	572.722
kk	1993+48.09	16.583	572.571	572.659
ll	1993+58.09	16.583	572.479	572.589
mm	1993+68.09	16.583	572.386	572.507
nn	1993+78.09	16.583	572.294	572.412
oo	1993+88.09	16.583	572.201	572.305
pp	1993+98.09	16.583	572.109	572.187
qq	1994+08.09	16.583	572.017	572.066
rr	1994+18.09	16.583	571.924	571.946
ss	1994+28.09	16.583	571.832	571.835
℄ Pier 4	1994+34.09	16.583	571.776	571.776
tt	1994+44.09	16.583	571.684	571.694
uu	1994+54.09	16.583	571.592	571.624
vv	1994+64.09	16.583	571.499	571.560
ww	1994+74.09	16.583	571.407	571.494
xx	1994+84.09	16.583	571.314	571.421
yy	1994+94.09	16.583	571.227	571.339
zz	1995+04.09	16.583	571.139	571.242
aaa	1995+14.09	16.583	571.051	571.130
bbb	1995+24.09	16.583	570.963	571.006
℄ Brg. E. Abut.	1995+34.09	16.583	570.875	570.875
Bk. E. ABut.	1995+36.98	16.583	570.850	570.850

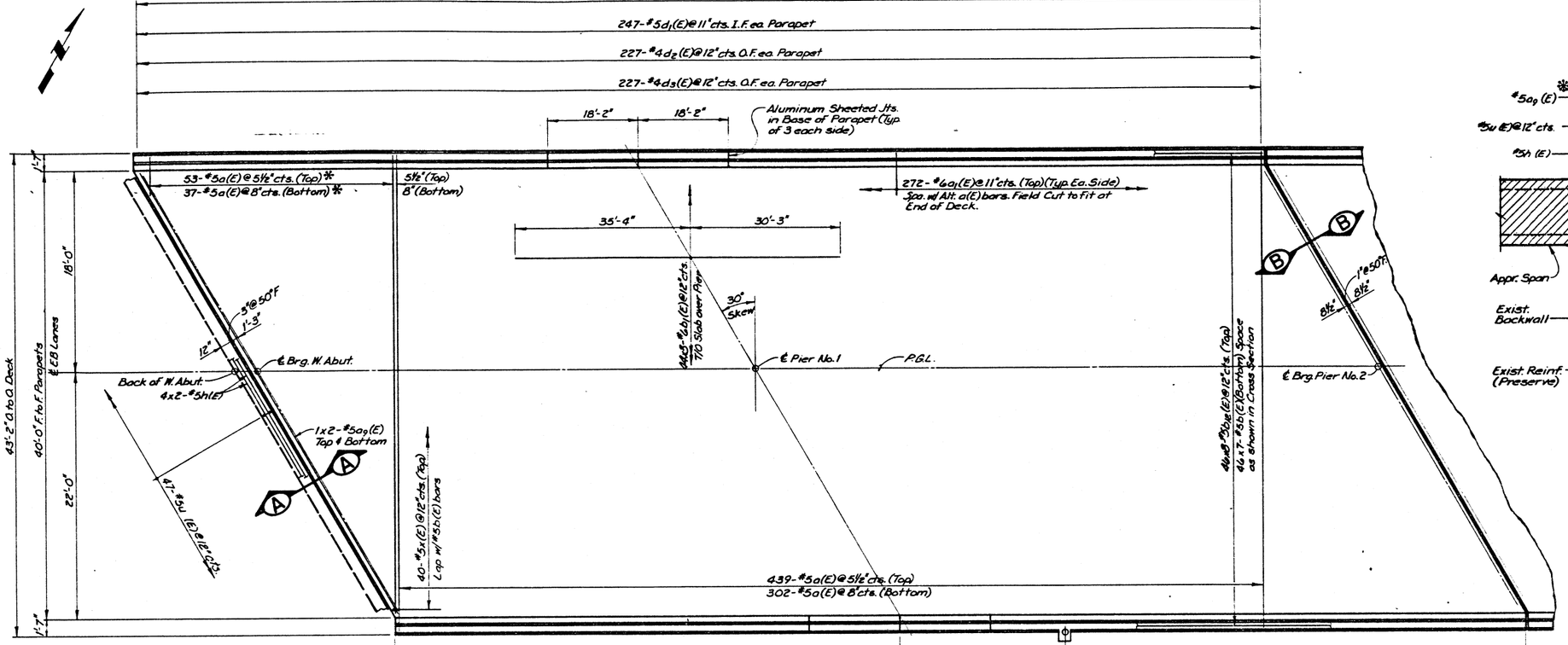
ESCA
CONSULTANTS, INC.

DESIGNED BY:	KMR	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JAG	9-89
APPROVED BY:	RDP	9-89

TOP OF SLAB ELEVATIONS (WB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

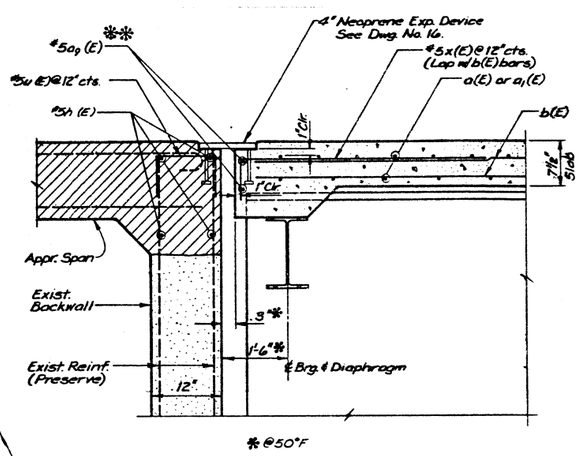
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
FAI-74	*	Vermilion	137	63
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg No. 9 of 45		



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

MIN. BAR LAP
#5 1'-8"
#6 2'-0"

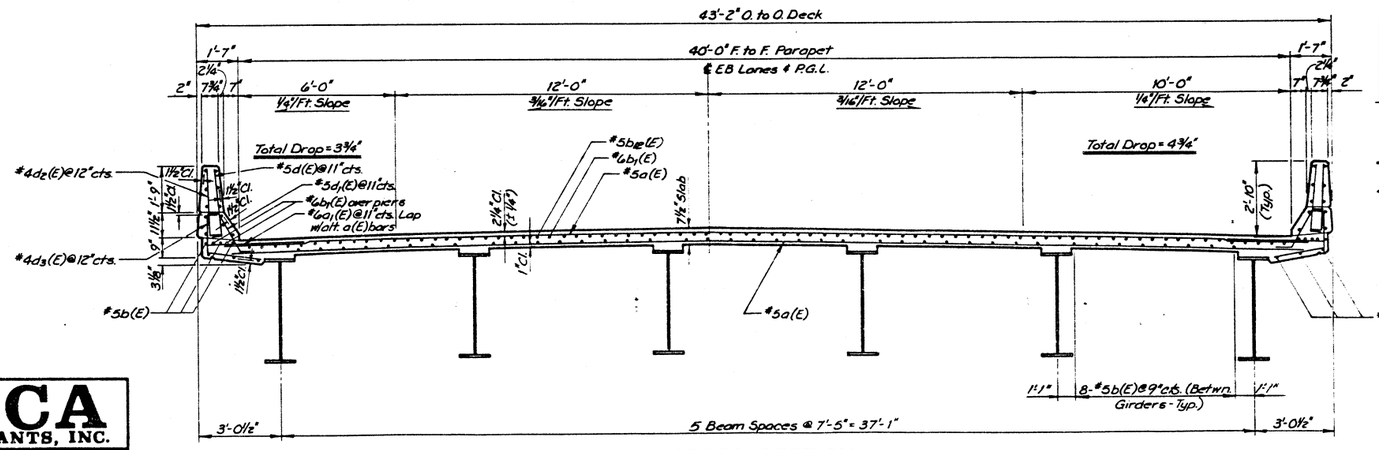
PLAN



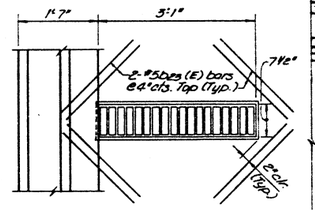
*@50°F

SECTION A-A

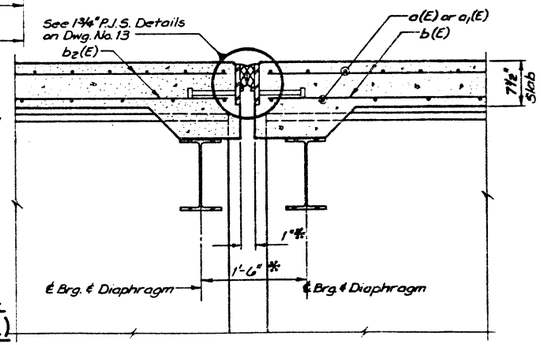
** Place a9(E) bars in back of Anchor Bolts as shown if required to maintain 1" clr. (1½"-⅛"). Anchor Bolts should be tied to a9 (E) bars.



CROSS SECTION
(LOOKING EAST)



REINFORCEMENT DETAIL AT SCUPPERS (TYPICAL)



*@50°F.

SECTION B-B

NOTES

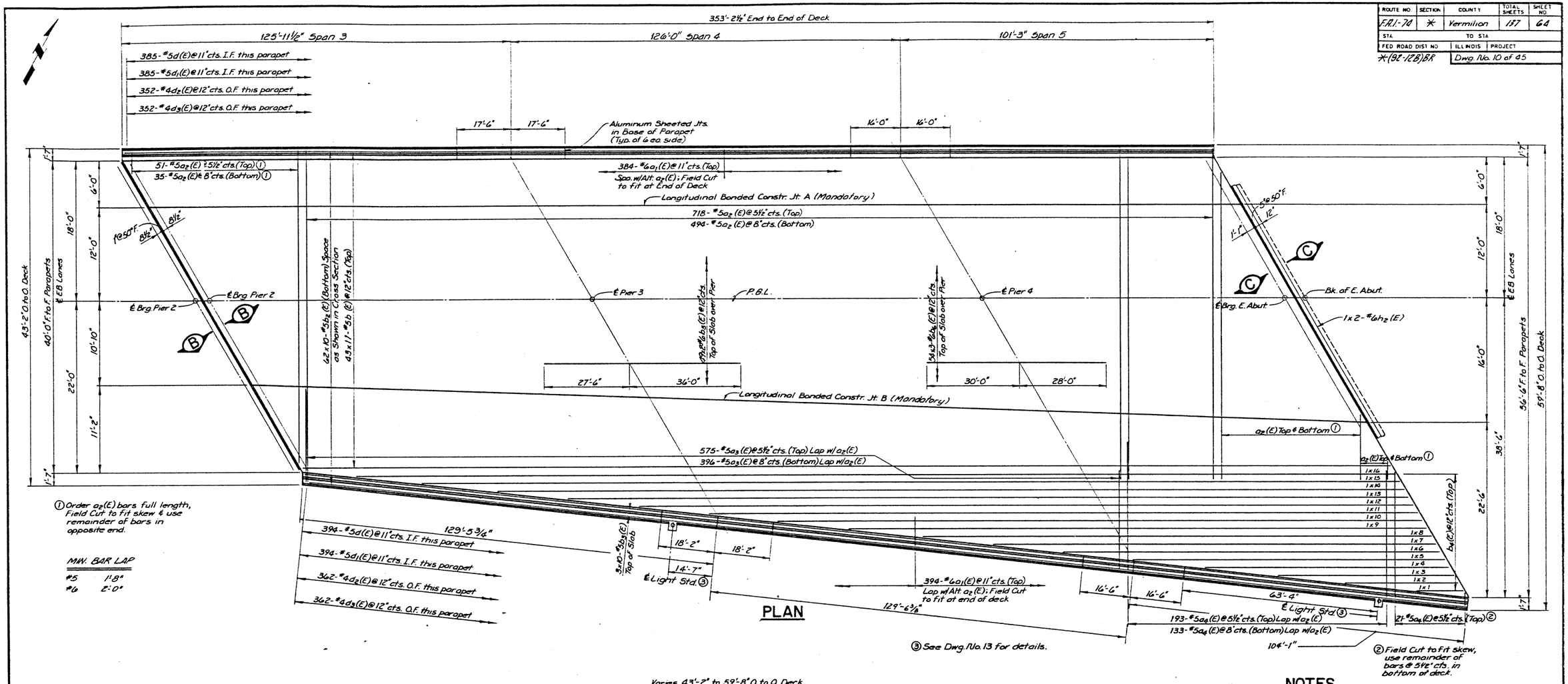
1. BARS INDICATED THUS: 46x7-#5, ETC., INDICATES 46 LINES OF BARS WITH 7 LENGTHS PER LINE.
2. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
3. ONLY ALUMINUM SHEETED JOINTS IN PARAPETS ARE SHOWN ON THIS DWG. LOCATION OF ALL OTHER PARAPET JOINTS IS SHOWN ON DWG. NO. 14.
4. CUT REINFORCING BARS TO MISS DRAINAGE SCUPPERS.

ESCA
CONSULTANTS, INC.

DESIGNED BY:	RDP	7-89
DRAWN BY:	WEM	7-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

SPANS 1 & 2
SUPERSTRUCTURE (EB)
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	64
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 10 of 45		



① Order a2(E) bars full length, Field Cut to fit skew & use remainder of bars in opposite end.

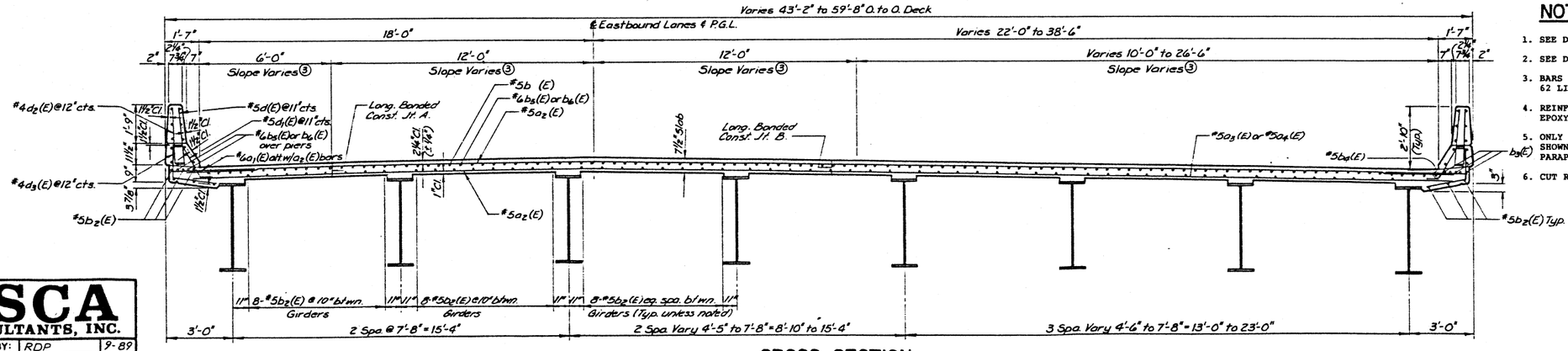
MIN. BAR LAP

#5	1'-8"
#6	2'-0"

PLAN

③ See Dwg. No. 13 for details.

② Field Cut to fit skew, use remainder of bars @ 5½"cts. in bottom of deck.



③ See Superelevation Data on Dwg. No. 2.

CROSS SECTION
(LOOKING EAST)

NOTES

1. SEE DWG. NO. 9 FOR SECTION B-B & REINF. @ SCUPPERS.
2. SEE DWG. NO. 12 FOR SECTION C-C.
3. BARS INDICATED THUS: 62x10-#5, ETC., INDICATES 62 LINES OF BARS WITH 10 LENGTHS PER LINE.
4. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
5. ONLY ALUMINUM SHEETED JOINTS IN PARAPETS ARE SHOWN ON THIS DWG. LOCATION OF ALL OTHER PARAPET JOINTS IS SHOWN ON DWG. NO. 14.
6. CUT REINFORCING BARS TO MISS DRAINAGE SCUPPERS.

SPANS 3,4&5 SUPERSTRUCTURE (EB) (CONTINUED)

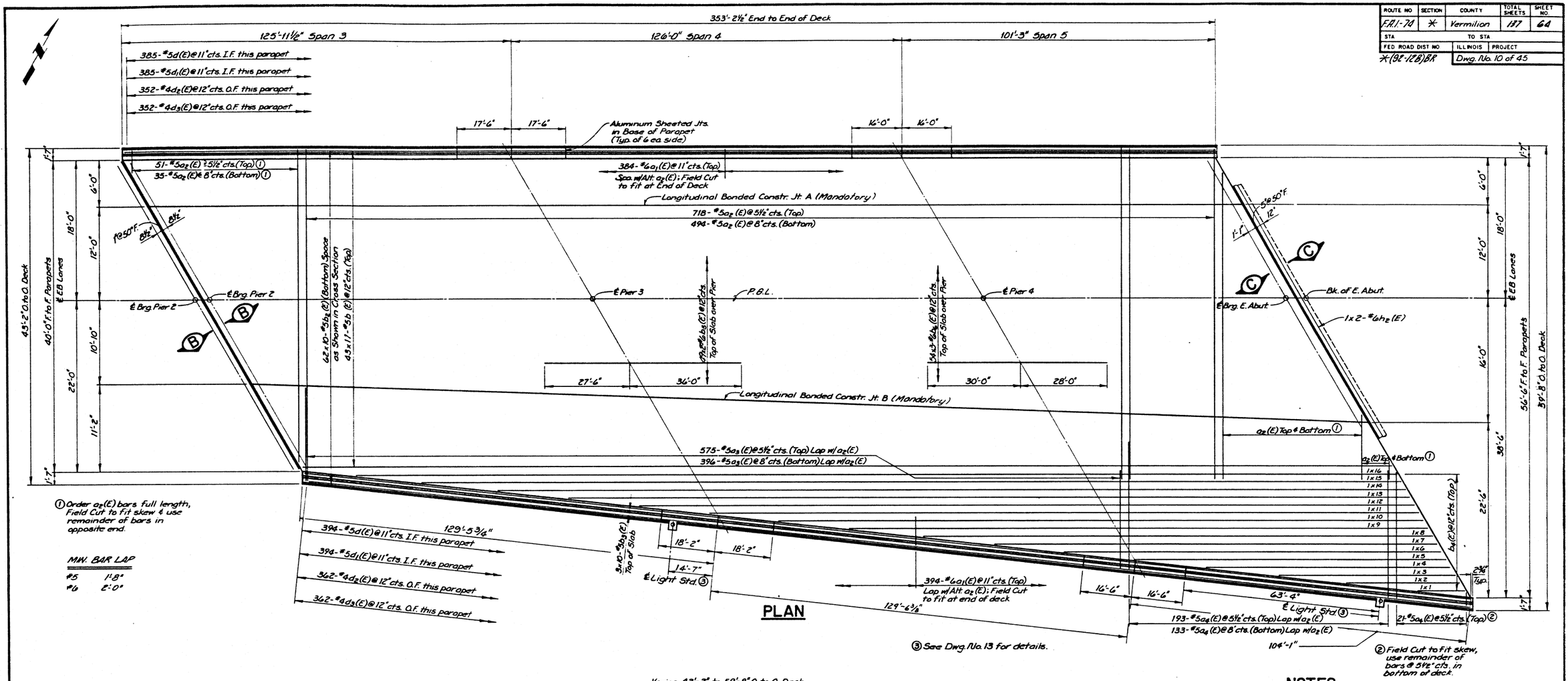
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

Revised 4/24/90

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	64
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 10 of 45		



① Order a2(E) bars full length, Field Cut to fit skew & use remainder of bars in opposite end.

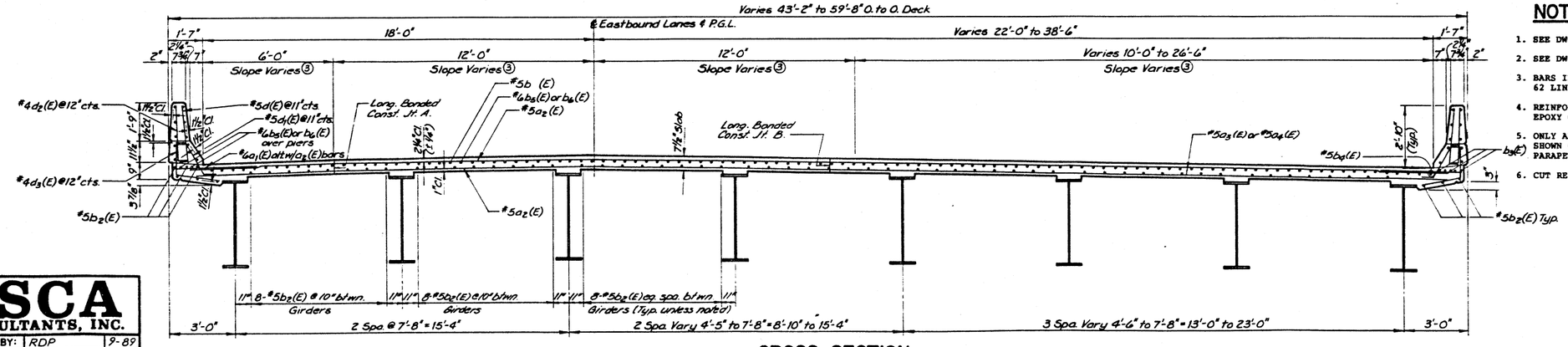
MIN. BAR LAP

#5	1'-8"
#6	2'-0"

PLAN

③ See Dwg. No. 13 for details.

② Field Cut to fit skew, use remainder of bars @ 5½" cts. in bottom of deck.



③ See Superelevation Data on Dwg. No. 2.

CROSS SECTION
(LOOKING EAST)

NOTES

1. SEE DWG. NO. 9 FOR SECTION B-B & REINF. @ SCUPPERS.
2. SEE DWG. NO. 12 FOR SECTION C-C.
3. BARS INDICATED THUS: 62x10-#5, ETC., INDICATES 62 LINES OF BARS WITH 10 LENGTHS PER LINE.
4. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
5. ONLY ALUMINUM SHEETED JOINTS IN PARAPETS ARE SHOWN ON THIS DWG. LOCATION OF ALL OTHER PARAPET JOINTS IS SHOWN ON DWG. NO. 14.
6. CUT REINFORCING BARS TO MISS DRAINAGE SCUPPERS.

SPANS 3,4&5
SUPERSTRUCTURE (EB)
(CONTINUED)
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ESCA
CONSULTANTS, INC.

DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	65
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 11 of 45		

100'-8"
628-#5d1(E)@11"cts. I.F. this parapet
628-#5d1(E)@11"cts. I.F. this parapet
576-#4d2(E)@12"cts. O.F. this parapet
576-#4d3(E)@12"cts. O.F. this parapet
125'-0½"
125'-0½"
⑤ See Dwg. No. 13 for details.
℄ Light Std. ⑤
℄ Light Std. ⑤
41'-9"
55'-8"
17'-0" 17'-0" 17'-6" 17'-6" 17'-6" 17'-6"
3x18-#5b8(E) Top of Slab
1x4-b8(E) Top
1x6-b8(E) Top
1x8-b8(E) Top
1x10-b8(E) Top
1x12-b8(E) Top
52-#5a4(E)@5½"cts. (Top) ①
36-#5a4(E)@8"cts. (Bottom) ①
654-#5a4(E)@5½"cts. (Top) Lap w/a8(E)
450-#5a4(E)@8"cts. (Top) Lap w/a8(E)
654-#5a8(E)@5½"cts. (Top)
450-#5a8(E)@8"cts. (Bottom)
606-#5a7(E)@5½"cts. (Top) Lap w/a8(E)
417-#5a7(E)@8"cts. (Bottom) Lap w/a8(E)
606-#5a8(E)@5½"cts. (Top)
417-#5a8(E)@8"cts. (Bottom)
Longitudinal Bonded Constr. Jt. A (Mandatory)
44'-5⅛" O. to O. Deck
41'-3¼" F. to F. Parapets
℄ WB Lanes
23'-3¼"
18'-0"
12'-0"
6'-0"
1'-7"
1'-7"
6'-3⅛"
15'-0"
3"@50"F
1'-3"
12"
1x2-#5a9(E) Top & Bottom
4x2-#5h12
Back of W. Abut.
℄ Brg. W. Abut.
48-#5u1(E)@12"cts.
45x27-#5a4(E)@12"cts. (Top)
42-#5u1(E)@12"cts. (Top) Lap w/#5b7(E) bars
34x18-#5b7(E) (Bottom) Spaces as shown in Cross Section
#4b5(E) or b6(E)@12"cts. Top of Slab over Pier
45x25-#5b8(E)@12"cts. Top of Slab over Pier
43-#5b10(E)@12"cts. Top of Slab over Pier
30'-3" 32'-0"
31'-6" 32'-0"
32'-0" 31'-6"
℄ Pier 1
P.B.L.
℄ Pier 2
℄ Pier 3
Optional Transverse Bonded Constr. Jt.
29'-6"
First Pour Ⓐ Second Ⓐ Pour
Longitudinal Bonded Constr. Jt. B (Optional)
656-#6a1(E)@11"cts. (Top) (Typ. ea. side)
Lap w/Alt. a5(E), a6(E), or a7(E)
Field Cut to fit at end of deck
17'-0" 17'-0"
17'-6" 17'-6"
17'-6" 17'-6"
Alum. Sheeted Jt. in Base of Parapet (Typ. of 12 ea. side)

① Order a4(E) bars full length. Field cut to fit skew & use remainder of bars in opposite end.

634-#5d(E)@11"cts. I.F. this parapet
634-#5d1(E)@11"cts. I.F. this parapet
581-#4d2(E)@12"cts. O.F. this parapet
581-#4d3(E)@12"cts. O.F. this parapet
101'-5⅜" Span 1
126'-0" Span 2
126'-0" Span 3
126'-0" Span 4
580'-8⅜" End to End Deck

Ⓐ At least three days shall have elapsed since completion of the first pour before the second pour can be commenced. The first pour concrete shall have attained a minimum compressive strength of 3000 psi, prior to commencing the second pour.

Face to Face Parapets Varies 41'-3¼" to 49'-1"
℄ WB Lanes & P.G.L.
1'-7" 2¼" 2" 7¾" 7" 1'-7" 2¼" 7" 7¾" 2"
6'-0" ⅛"/Ft. & Varies ③
12'-0" ⅜"/Ft. & Varies ③
12'-0" ⅜"/Ft. & Varies ③
Varies 11'-3¼" to 19'-1" ⅛"/Ft.
#4d2(E)@12"cts.
#4d3(E)@12"cts.
#5b8(E)
#5d(E)@11"cts.
#5d1(E)@11"cts.
#6b1(E) or b2(E) over piers
#6a1(E)@11"cts. Lap w/alt. a5(E), a6(E) or a7(E) bars
#5b6(E) or b8(E)
#6b3(E) or b10(E)
#5a5(E)
7¼" Slab
2¼" Cl. (Typ.)
1¼" Cl.
Long. Banded Const. Jt. B
Long. Banded Const. Jt. A
#5a6(E) or #5a7(E)
#5b8(E)
2'-10" (Typ.)
#5b7(E)
#5b7(E) Typ.
3"
11¼" 8-#5b7(E) @ 10" (Btwn. Girders - Typ. unless noted) 11¼"
3'-0"
3 Spaces @ 7'-8½" = 23'-11½"
11" 8-#5b7(E) eq. spa. (Typ. btwn. Flared Girders) 11"
3 Spaces Vary ②
3'-0"
Varies 44'-5¼" to 52'-3" O. to O. Deck

③ See Superelevation Data on Dwg. No. 2.

CROSS SECTION
(LOOKING WEST)

② 3 Spaces @ 5'-1¼" = 15'-3¾" @ ℄ Brg. W. Abut.
3 Spaces @ 7'-8½" = 23'-11½" @ ℄ Brg. E. Abut.

MIN. BAR LAP
#5 1'-8"
#6 2'-0"
(Vary laps of a4(E) such that no ℄ splice is located within 8'-0" of ℄ of any pier).

NOTES

1. SEE DWG. NO. 12 FOR CONTINUATION OF PLAN VIEW.
2. SEE DWG. NO. 9 FOR SECTION A-A & REINF. @ SCUPPERS.
3. BARS INDICATED THUS: 54x18-#5, ETC., INDICATES 54 LINES OF BARS WITH 18 LENGTHS PER LINE.
4. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
5. ONLY ALUMINUM SHEETED JOINTS IN PARAPETS ARE SHOWN ON THIS DWG. LOCATION OF ALL OTHER PARAPET JOINTS IS SHOWN ON DWG. NO. 15.
6. CUT REINFORCEMENT BARS TO MISS DRAINAGE SCUPPERS.

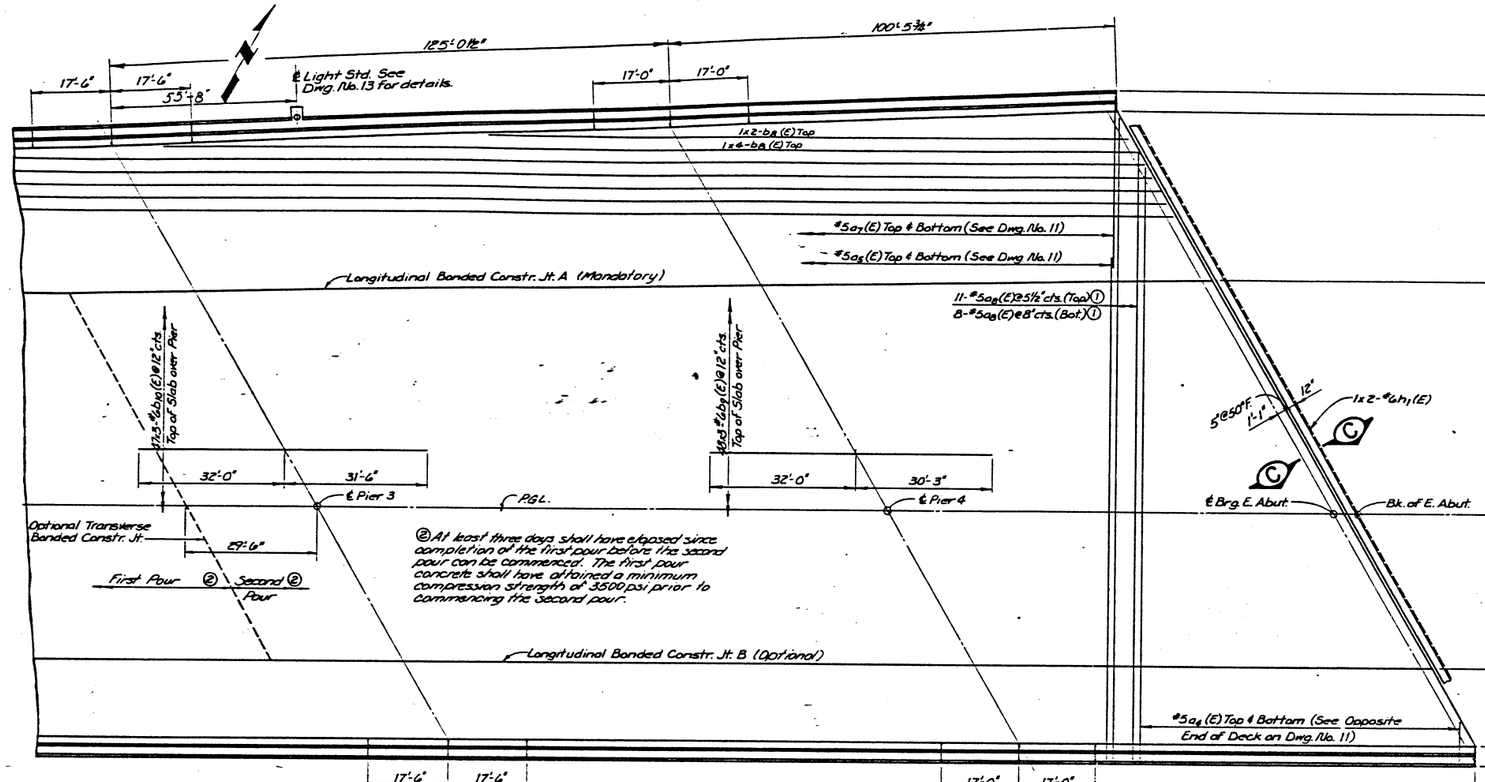
ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

28180

SUPERSTRUCTURE (WB)
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

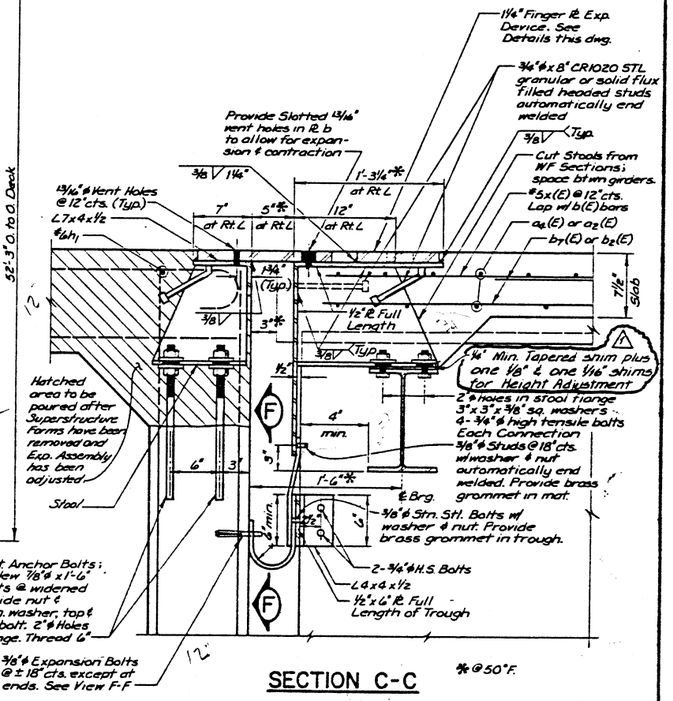
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
FAI-74	*	Vermilion	137	66A
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-128)BR		Dwg. No. 12 of 45		



① Field Cut to fit skew.

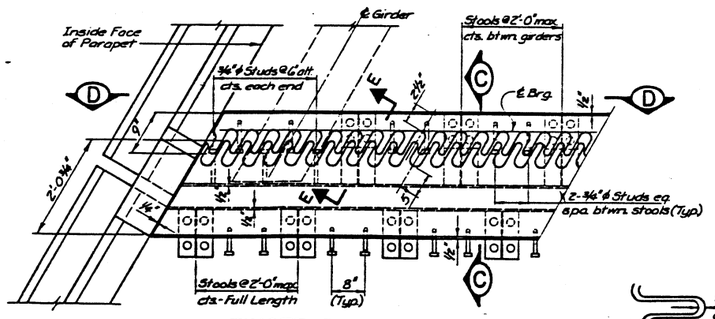
NOTES

1. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
2. ONLY ALUMINUM SHEETED JOINTS IN PARAPETS ARE SHOWN ON THIS DWG. LOCATION OF ALL OTHER PARAPET JOINTS IS SHOWN ON DWG. NO. 15.
3. SEE DWG. NO. 9 FOR REINFORCEMENT AT SCUPPERS.

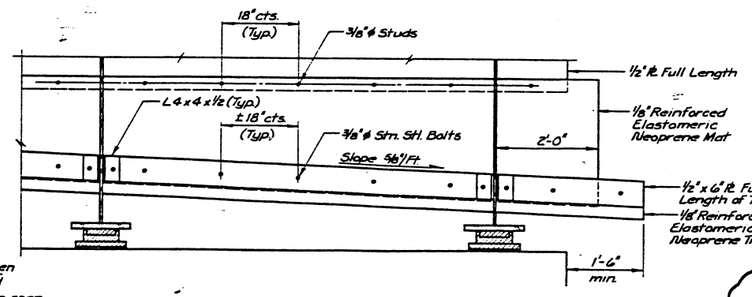


SECTION C-C

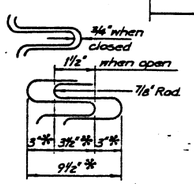
*@ 50°F.



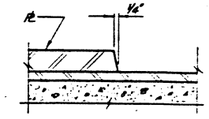
FINGER PLATE EXP. DEVICE PLAN



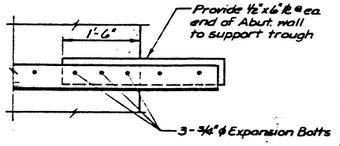
SECTION D-D



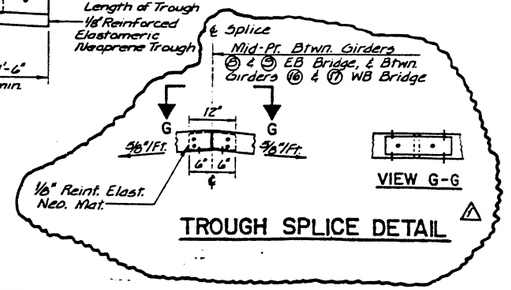
DETAIL 1



SECTION E-E



SECTION F-F



TROUGH SPLICE DETAIL △

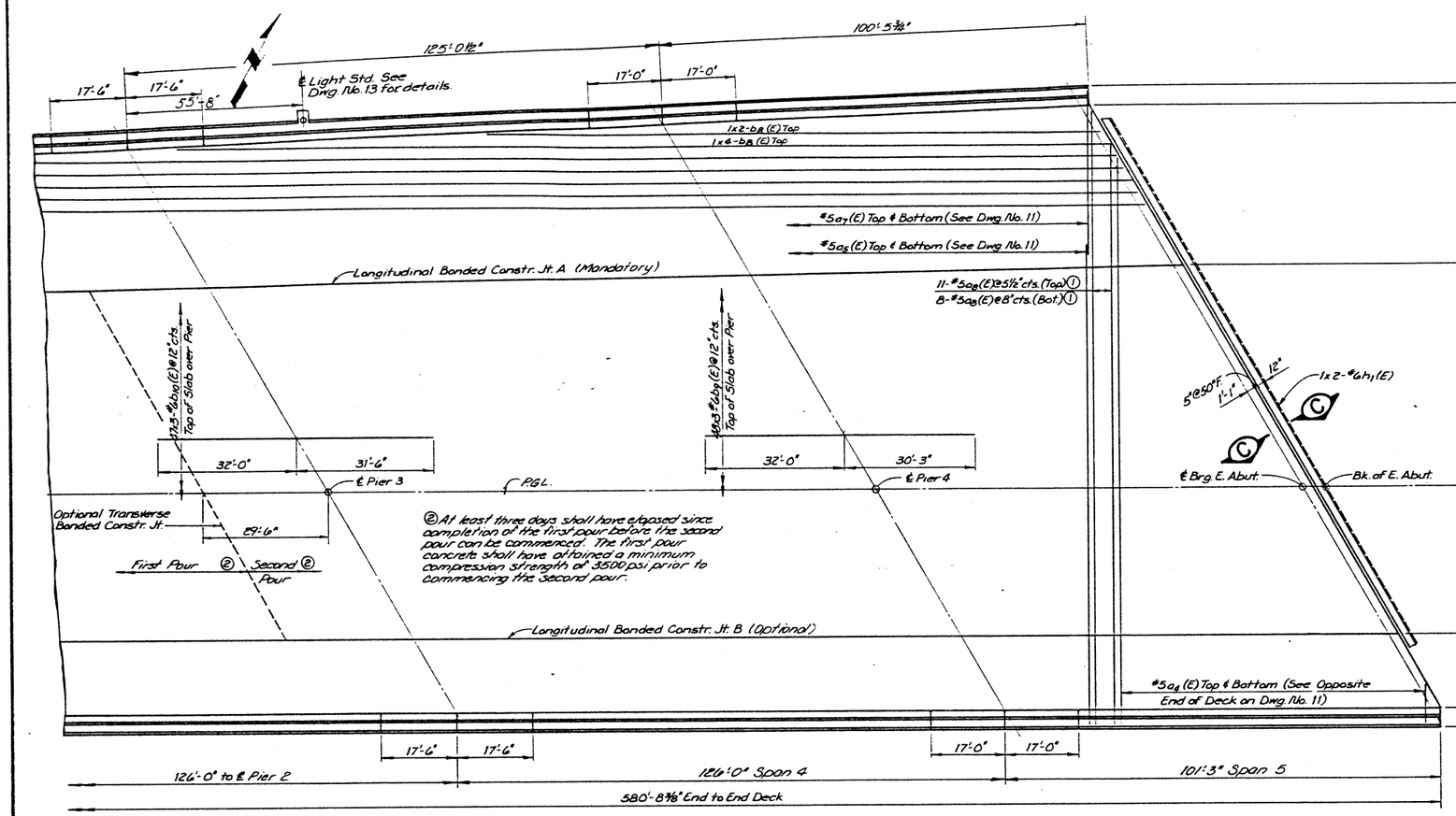
AS REVISED

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

SUPERSTRUCTURE (WB)
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-128)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

△ Revised 8/22/90 RDP Revised 4/24/90

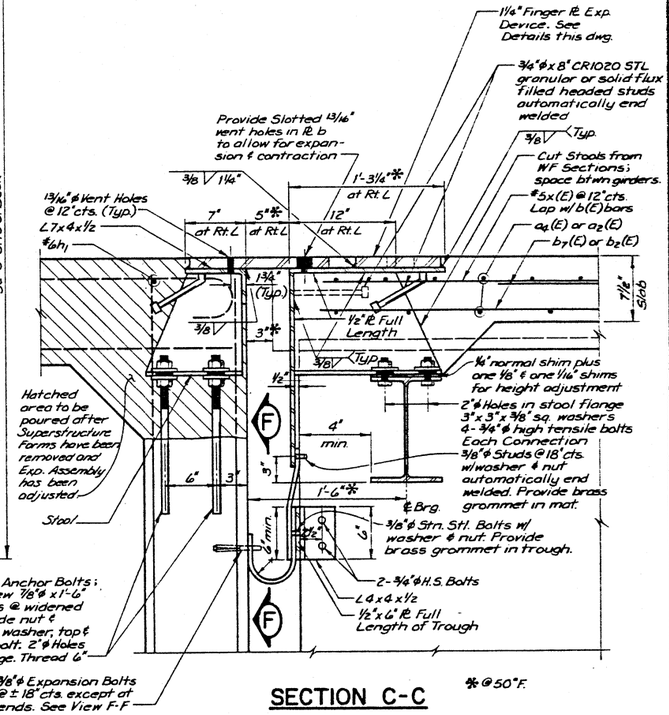
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	GG
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 12 of 45		



① Field Cut to fit skew.

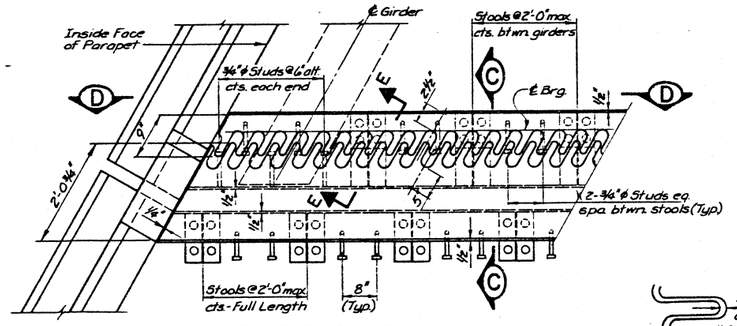
NOTES

1. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
2. ONLY ALUMINUM SHEETED JOINTS IN PARAPETS ARE SHOWN ON THIS DWG. LOCATION OF ALL OTHER PARAPET JOINTS IS SHOWN ON DWG. NO. 15.
3. SEE DWG. NO. 9 FOR REINFORCEMENT AT SCUPPERS.

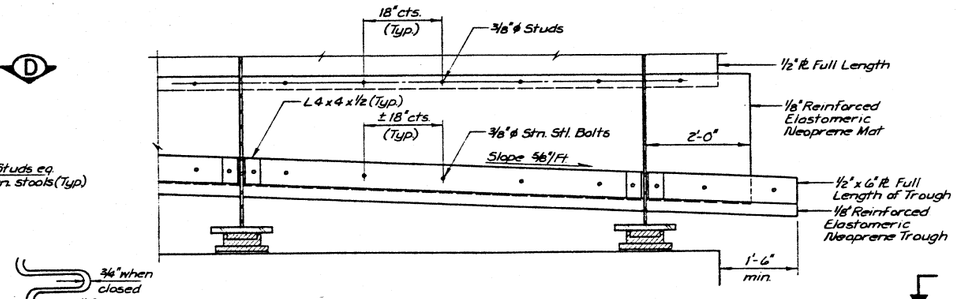


SECTION C-C

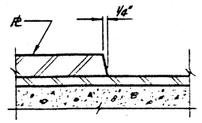
*@50°F.



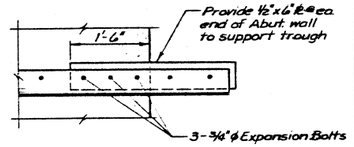
FINGER PLATE EXP. DEVICE PLAN



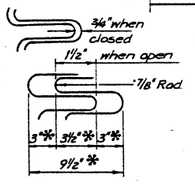
SECTION D-D



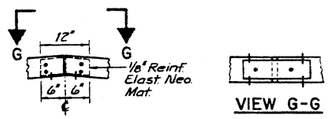
SECTION E-E



SECTION F-F



DETAIL 1



TROUGH SPLICE DETAIL NEAR CENTER GIRDER

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

SUPERSTRUCTURE (WB)

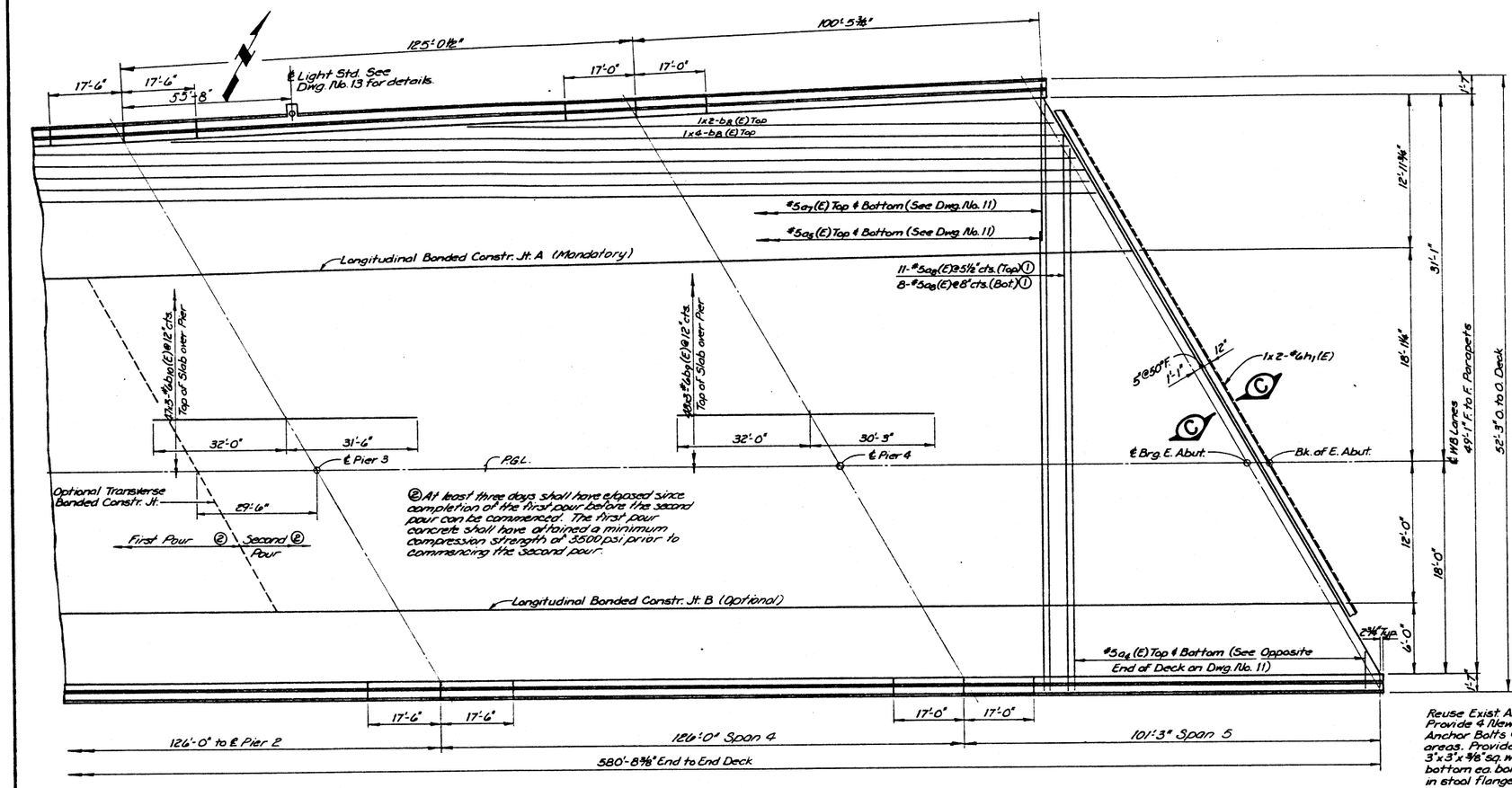
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

Revised 4/24/90

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	66
STA		TO STA		
FED ROAD DIST NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 12 of 45		

NOTES

1. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
2. ONLY ALUMINUM SHEETED JOINTS IN PARAPETS ARE SHOWN ON THIS DWG. LOCATION OF ALL OTHER PARAPET JOINTS IS SHOWN ON DWG. NO. 15.
3. SEE DWG. NO. 9 FOR REINFORCEMENT AT SCUPPERS.



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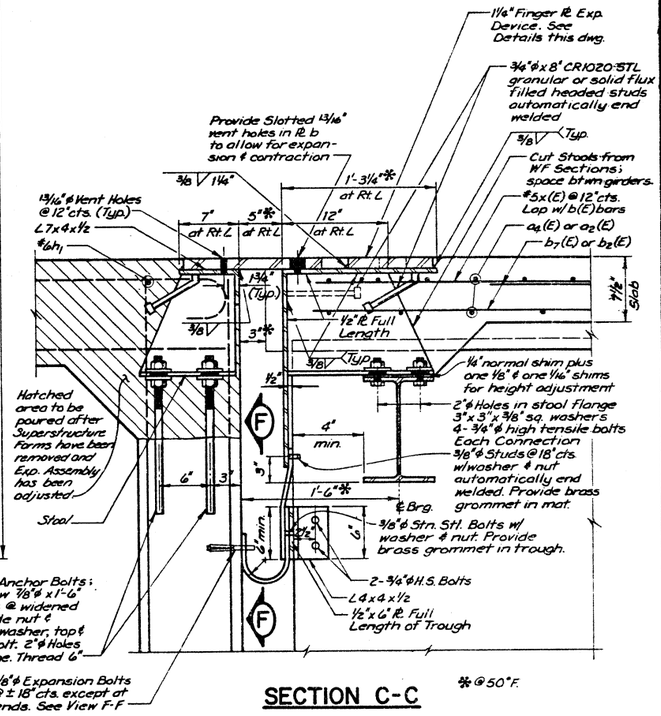
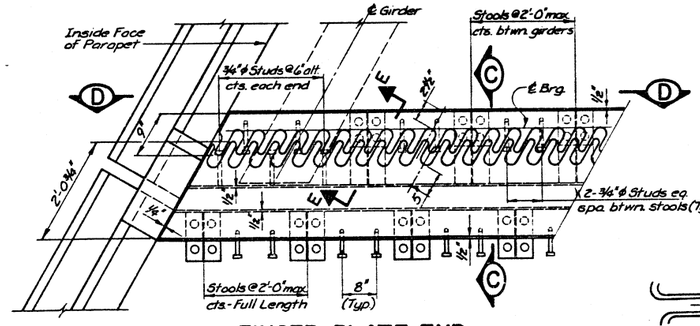
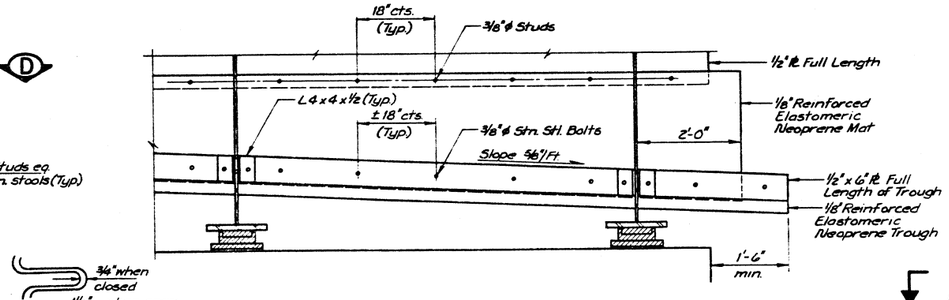


SECTION C-C

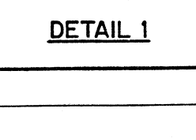
*@ 50°F.



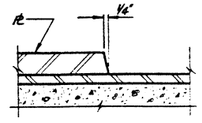
FINGER PLATE EXP. DEVICE PLAN



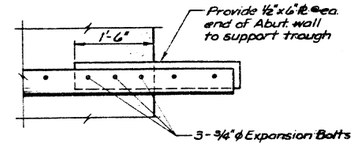
SECTION D-D



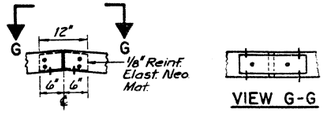
DETAIL 1



SECTION E-E



SECTION F-F



TROUGH SPLICE DETAIL NEAR CENTER GIRDER

VIEW G-G

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

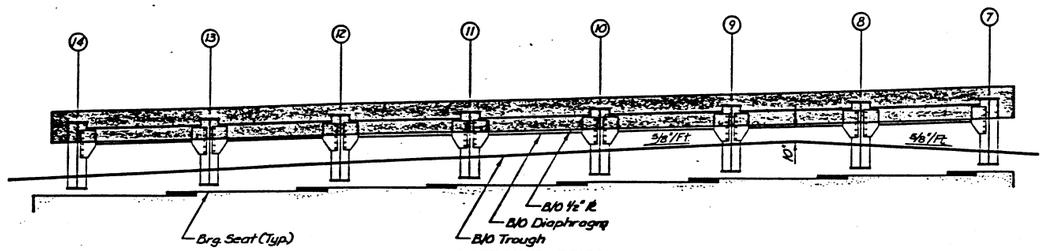
SUPERSTRUCTURE (WB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

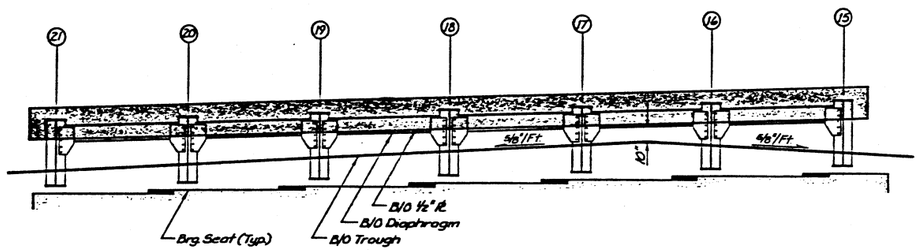
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I-74	*	Vermilion	137	66B
STA		TO STA		
FED ROAD DIST NO	ILLINOIS	PROJECT		

Dwg. No. 12.1 of 65

*(92-12B)BR



EASTBOUND BRIDGE,
LOOKING WEST
AT EAST ABUTMENT



WESTBOUND BRIDGE,
LOOKING WEST
AT EAST ABUTMENT

ELEVATIONS SHOWING TROUGH AT FINGER PLATE

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	8-90
DRAWN BY:	GGB	8-90
CHECKED BY:	WEM	8-90
APPROVED BY:	RDP	8-90

AS REVISED

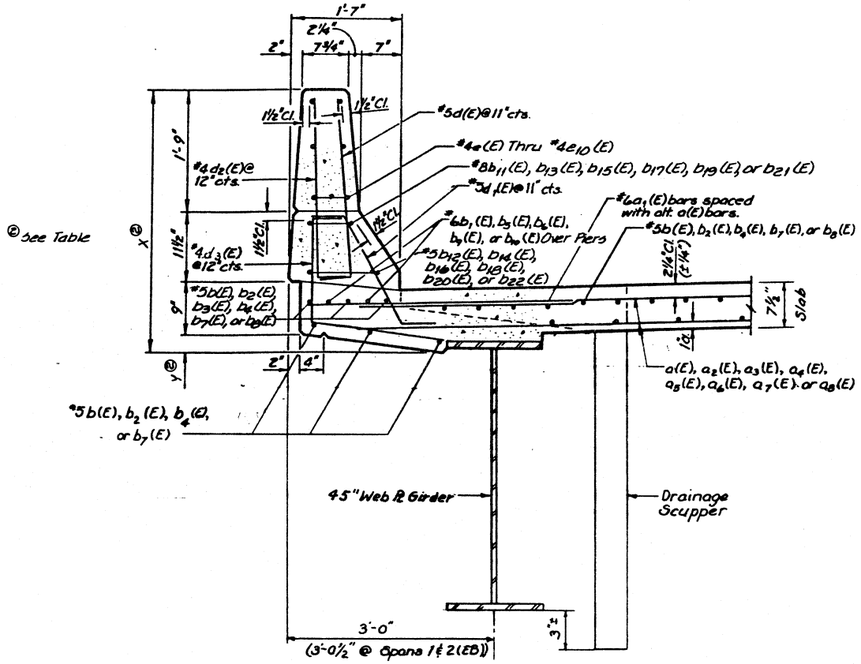
⚠ This Dwg. Added 8/22/90 RDP

⚠

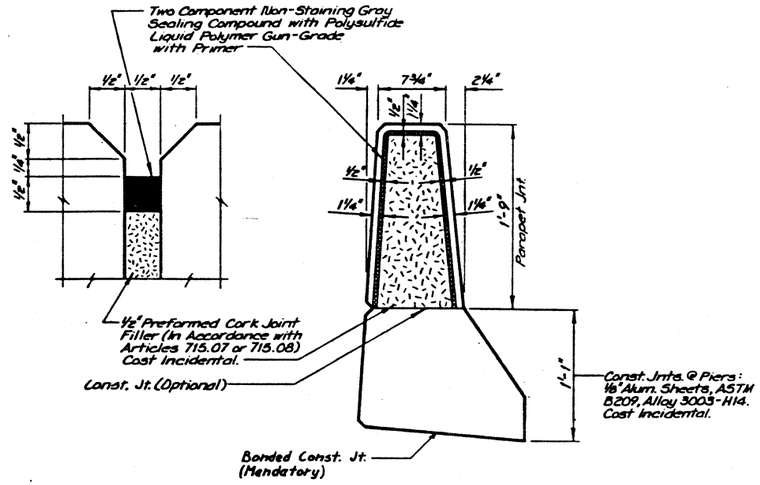
SUPERSTRUCTURE DETAILS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I.-74	*	Vermilion	137	67
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg No. 13 of 45		

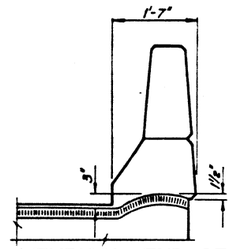


SECTION THRU PARAPET



DETAILS OF PARAPET JOINT

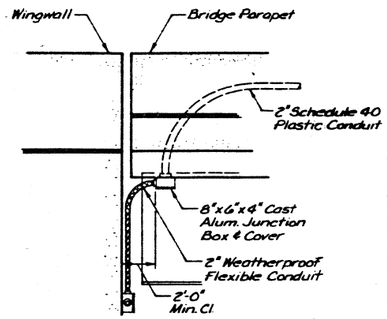
(See Dwg. No's 14 & 15 for Locations of These Joints)



TYPICAL END OF SEAL TREATMENT

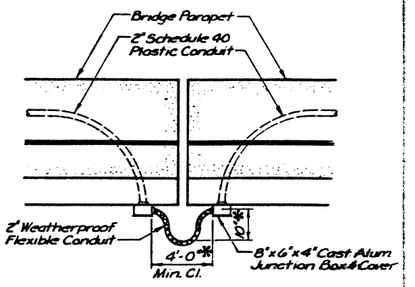
NOTES

1. SEE DWG. NOS. 17 & 18 FOR SCUPPER DETAILS.
2. SEE DWG. NO. 16 FOR DETAILS OF NEOPRENE JOINT.



AT ABUTMENTS

S. Corner, W. Abut. EB Lanes Shown;
S. Corner E. Abut. EB Lanes
N. Corner W. Abut. WB Lanes &
N. Corner E. Abut. WB Lanes Similar.



AT SOUTH PARAPET, EB LANES
PIER 2

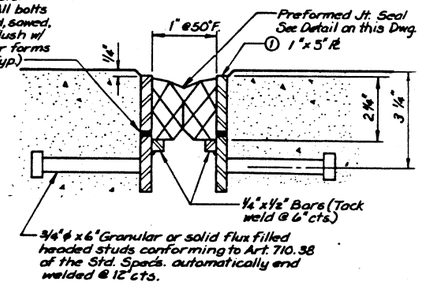
Note
Cost of Plastic & Flexible Conduit, Junction Boxes, & Anchor Bolts is incidental to Class X Concrete Superstructure.

FLEXIBLE CONDUIT DETAILS

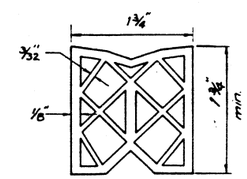
Note
After Fabrication All Surfaces of the Stl. R's shall be given One Shop Coat of the Zinc Silicate & Vinyl Paint System.

7/16"ø Holes @ 12" cts. - For ⅞"ø Bolts. All bolts shall be burned, sawed, or chipped off flush w/ the plates after forms are removed (Typ.)

① Furnish in segments of 20 Ft. maximum length. Maximum space between installed segments shall be 9/16". Seal space with Silicone Sealant suitable for Structural Steel.



SECTION AT PIER 2 (EB)

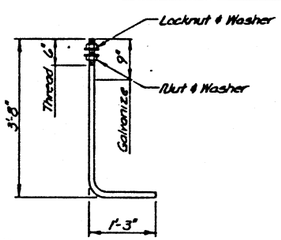


PREFORMED JOINT SEAL (1¾")

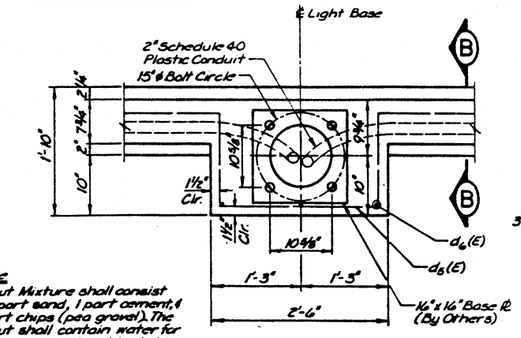
ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

TABLE OF X & Y DIMENSIONS

LOCATION	X	Y
SPANS 1 & 2 EB	3'-8 5/8"	3 1/8"
SPANS 3, 4, & 5 EB, N. SIDE	3'-9 3/8"	3 7/8"
SPANS 3, 4, & 5 EB, S. SIDE	3'-8 1/2"	3"
WB, N. SIDE	3'-9 3/8"	3 7/8"
WB, S. SIDE	3'-8 1/2"	3"

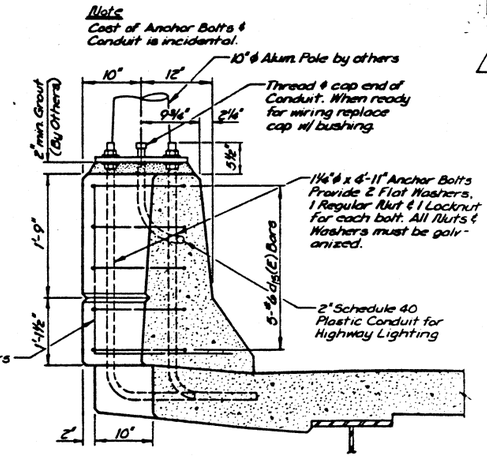


1¼"ø ANCHOR BOLT



Note
Grout Mixture shall consist of 1 part sand, 1 part cement, & 1 part chips (pea gravel). The grout shall contain water for a 1" slump, cost incidental to Pole.

PLAN



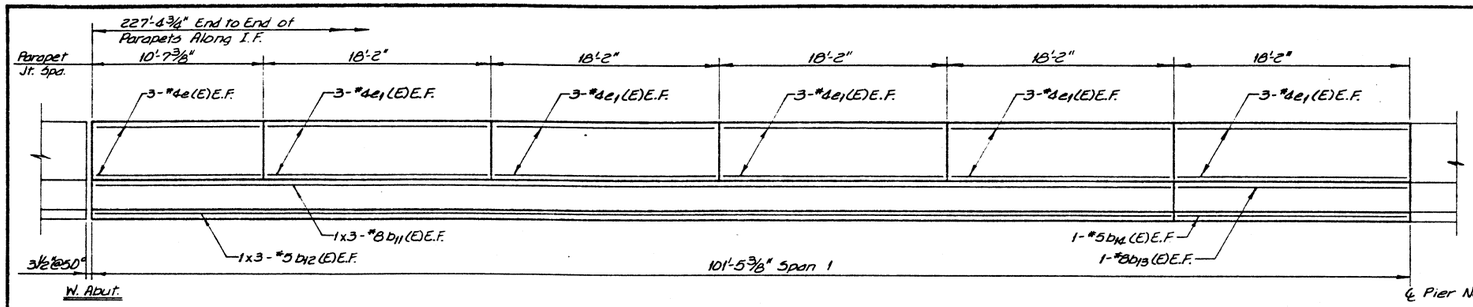
SECTION B-B

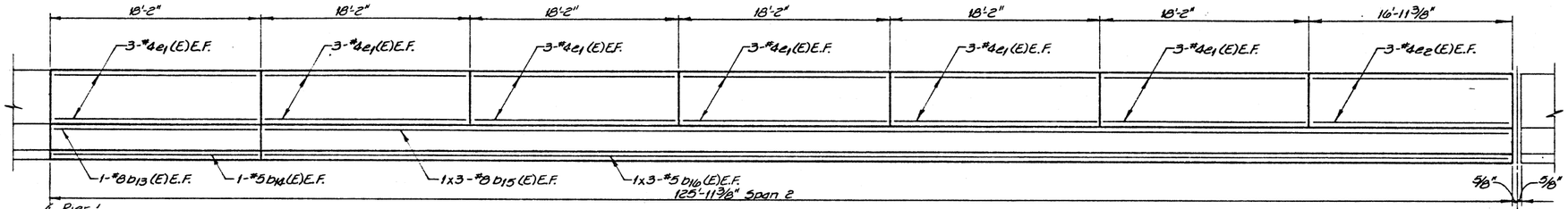
DETAIL OF LIGHT STANDARD

SUPERSTRUCTURE DETAILS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

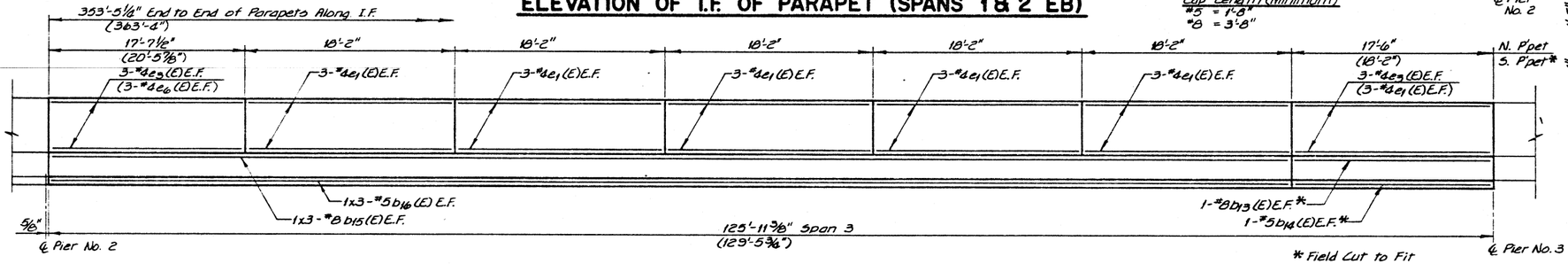
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	68
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 14 of 45		



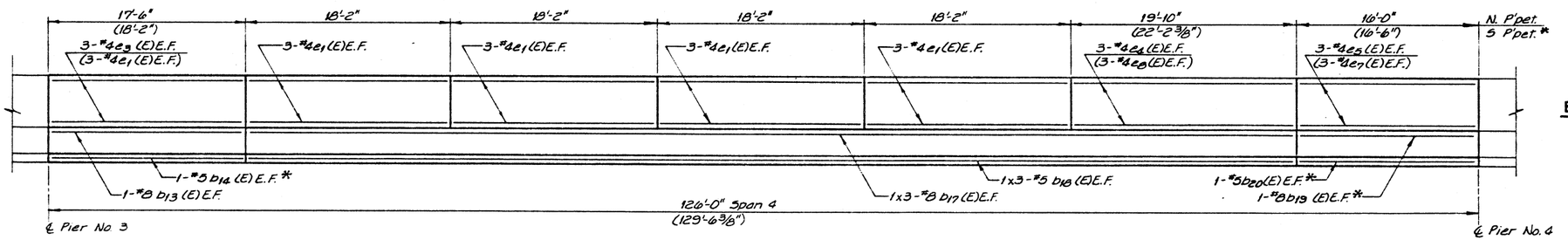


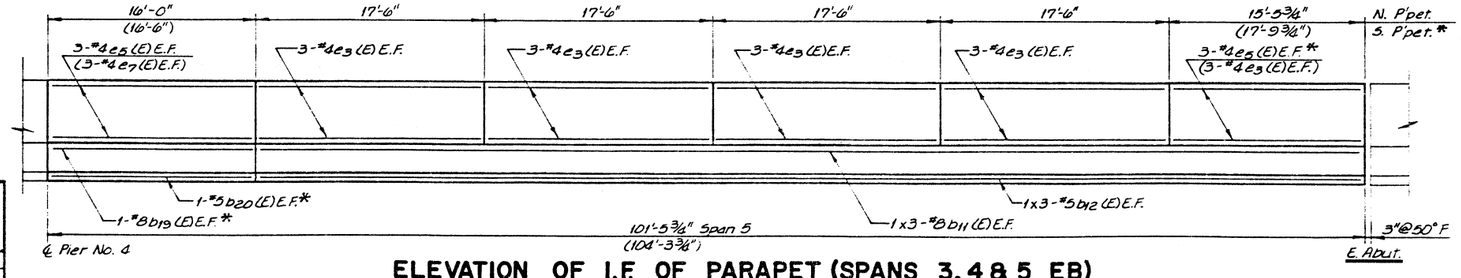
ELEVATION OF I.F. OF PARAPET (SPANS 1 & 2 EB)

Lap Length (Minimum)
#5 = 1'-8"
#8 = 3'-8"



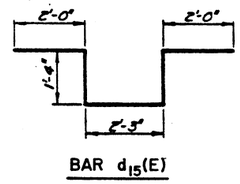
* Field Cut to Fit





ELEVATION OF I.F. OF PARAPET (SPANS 3, 4 & 5 EB)

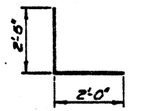
*Note: Dimensions and Bar Callouts Noted ( ) are for South Parapet Which is Flared. Field Cut Bars to Fit Where Req'd.



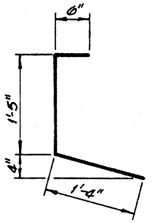
BAR d_{15}(E)



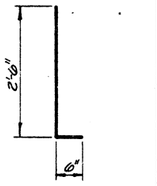
BAR x(E)



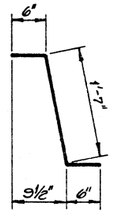
BAR d_{14}(E)



BAR d_3(E)



BARS d(E) & d_2(E)



BAR d_1(E)

BAR BENDING DETAILS

NOTES

1. BARS INDICATED THUS: 1x3-#8, ETC., INDICATES 1 LINE OF BARS WITH 3 LENGTHS PER LINE.
2. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

BILL OF MATERIAL (EB)

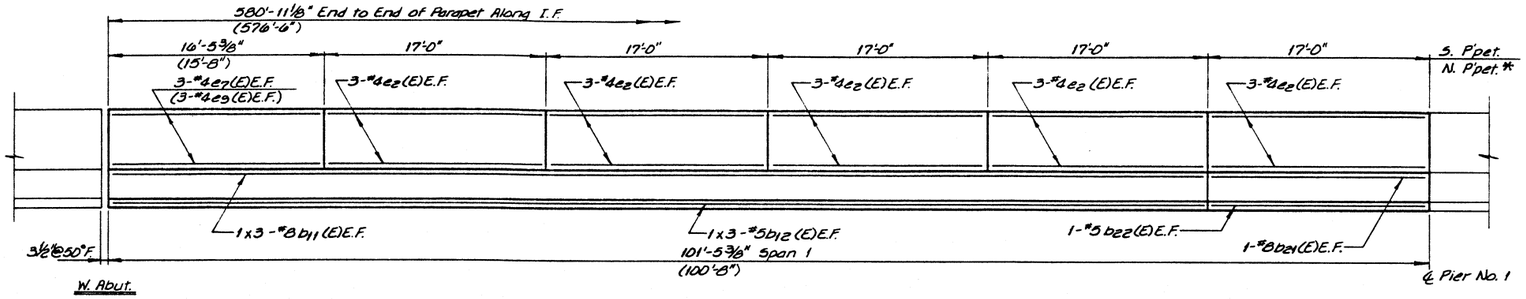
Bar	No.	Size	Length	Shape
a(E)	831	#5	40'-10"	
a_1(E)	1312	#6	41'-0"	
a_2(E)	1298	#5	41'-8"	
a_3(E)	971	#5	12'-4"	
a_4(E)	347	#5	16'-4"	
a_9(E)	4	#5	24'-10"	
b(E)	795	#5	34'-2"	
b_1(E)	132	#6	23'-6"	
b_2(E)	620	#5	37'-8"	
b_3(E)	30	#5	38'-2"	
b_4(E)	136	#5	23'-4"	
b_5(E)	98	#6	32'-9"	
b_6(E)	162	#6	20'-8"	
b_{11}(E)	24	#8	32'-7"	
b_{12}(E)	392	#5	30'-6"	
b_{13}(E)	16	#8	17'-10"	
b_{14}(E)	16	#5	17'-10"	
b_{15}(E)	24	#8	40'-5"	
b_{16}(E)	24	#5	38'-4"	
b_{17}(E)	12	#8	34'-11"	
b_{18}(E)	12	#5	32'-10"	
b_{19}(E)	8	#8	15'-8"	
b_{20}(E)	8	#5	15'-8"	
b_{23}(E)	56	#5	2'-0"	
d(E)	1273	#5	3'-0"	⌐ L
d_1(E)	1273	#5	2'-7"	⌐ L
d_2(E)	1168	#4	3'-0"	L
d_3(E)	1168	#4	3'-3"	⌐ L
d_{14}(E)	9	#6	4'-5"	L
d_{15}(E)	15	#6	8'-11"	⌐ L ⌐
e(E)	12	#4	10'-4"	
e_1(E)	252	#4	17'-10"	
e_2(E)	12	#4	16'-8"	
e_3(E)	72	#4	17'-2"	
e_4(E)	6	#4	19'-6"	
e_5(E)	18	#4	15'-8"	
e_6(E)	6	#4	20'-2"	
e_7(E)	12	#4	16'-2"	
e_8(E)	6	#4	21'-10"	
x(E)	40	#5	4'-1"	⌐ T

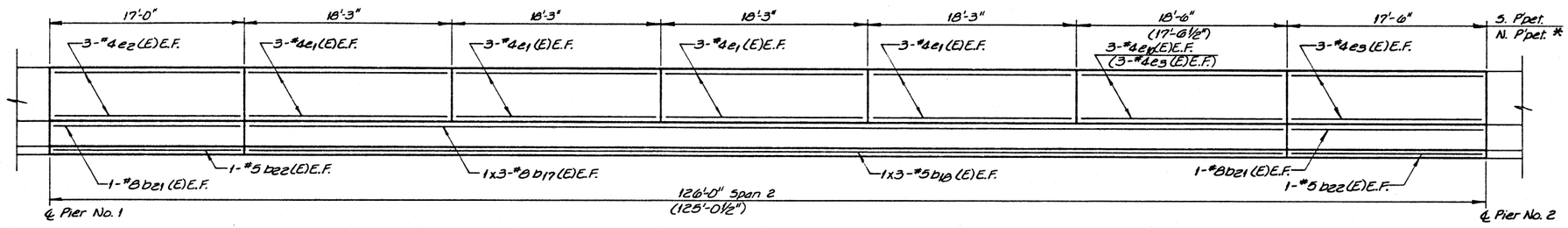
Item	Unit	Quantity
Class X Conc. Super.	Cu. Yds.	839.4
Scuppers	Ea.	7
Reinf. Bars (Epoxy Ctd.)	Lbs.	228,660
Preformed Jt. Seal 1 3/4"	Lin. Ft.	49
Neoprene Exp. Jt. 4"	Lin. Ft.	48

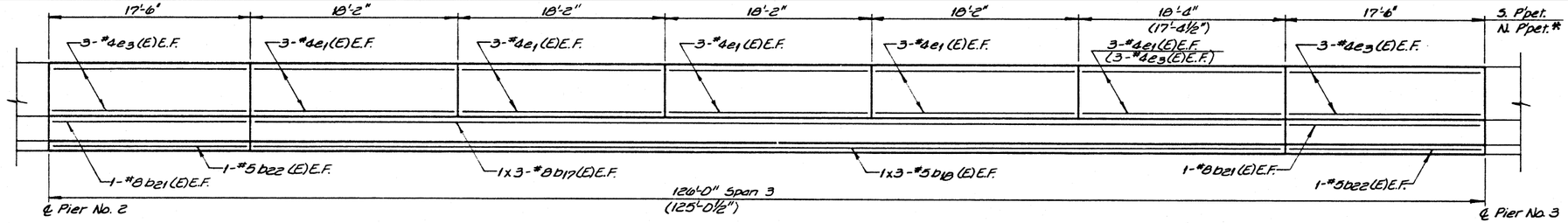
ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	8-89
DRAWN BY:	GGB	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	RDP	8-89

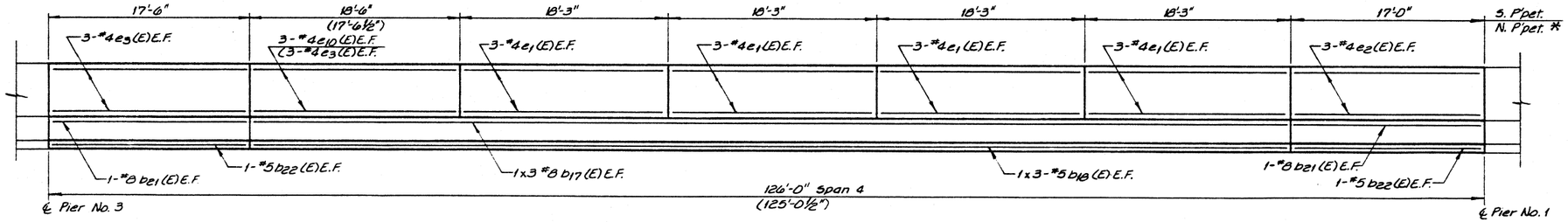
SUPERSTRUCTURE DETAILS (EB)

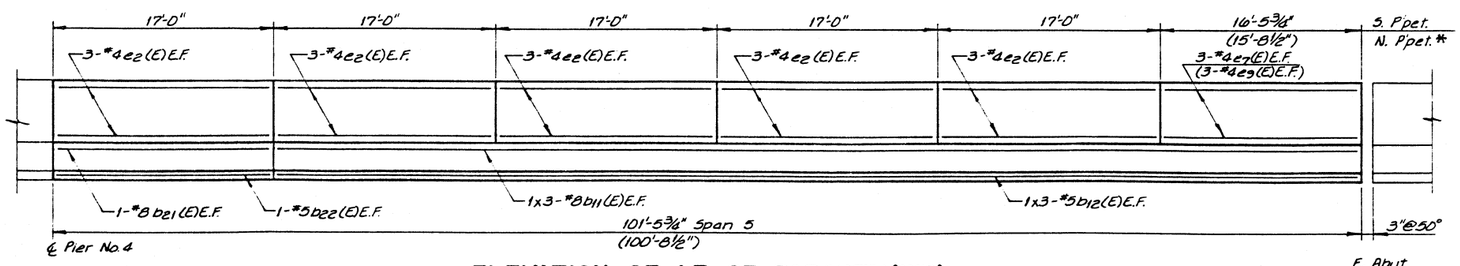
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)











ELEVATION OF I.F. OF PARAPET (WB)

*Note: Dimensions and Bar Callouts Noted ( ) are for North Parapet Which is Flared. Field Cut Bars to Fit Where Req'd.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	69
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 15 of 45		

NOTES

1. BARS INDICATED THUS: 1x3-#8, ETC., INDICATES 1 LINE OF BARS WITH 3 LENGTHS PER LINE.
2. REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

BILL OF MATERIAL (WB)

Bar	No.	Size	Length	Shape
a_1(E)	1312	#6	4'-0"	—
a_4(E)	88	#5	42'-5"	—
a_5(E)	2127	#5	40'-3"	—
a_6(E)	1104	#5	9'-6"	—
a_7(E)	1023	#5	13'-4"	—
a_8(E)	19	#5	41'-5"	—
a_9(E)	4	#5	28'-10"	—
b_7(E)	972	#5	34'-2"	—
b_8(E)	96	#5	33'-11"	—
b_9(E)	276	#6	22'-1"	—
b_{10}(E)	276	#6	22'-6"	—
b_{11}(E)	24	#8	32'-7"	—
b_{12}(E)	24	#5	30'-6"	—
b_{17}(E)	36	#8	34'-11"	—
b_{18}(E)	36	#5	32'-10"	—
be_1(E)	32	#8	16'-9"	—
be_2(E)	32	#5	16'-9"	—
b_4(E)	1215	#5	23'-4"	—
be_3(E)	56	#5	2'-0"	—
d(E)	1262	#5	3'-0"	L
d_1(E)	1262	#5	2'-7"	⌐
d_2(E)	1157	#4	3'-0"	L
d_3(E)	1157	#4	3'-3"	⊏
d_{14}(E)	6	#6	4'-5"	L
d_{15}(E)	10	#6	8'-11"	⊔
e_1(E)	150	#4	17'-10"	—
e_2(E)	144	#4	16'-8"	—
e_3(E)	66	#4	17'-2"	—
e_7(E)	12	#4	10'-2"	—
e_9(E)	12	#4	13'-2"	—
e_{10}(E)	12	#4	18'-2"	—
x(E)	42	#5	4'-4"	⌐

Item	Unit	Quantity
Class X Conc. Super.	Cu. Yds.	839.1
Neoprene Exp. Jt. 4"	Lin. Ft.	50
Reinf. Bars (Epoxy Ctd.)	Lbs.	239,870
Scuppers	Ea.	7

BAR LAPS

#5 Bars = 1'-8"
#8 Bars = 3'-8"

DESIGNED BY:	RDP	7-89
DRAWN BY:	GGB	7-89
CHECKED BY:	JRF	7-89
APPROVED BY:	RDP	7-89

ESCA CONSULTANTS, INC.

SUPERSTRUCTURE DETAILS (WB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	70
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 16 of 45		

Joint Size	"C" at 50°F	"D" at 50°F
2	2"	1½" min
2½	2½"	1⅞" min
4	3"	2½" min

INSTALLATION NOTES

Use anchor blocks and continuous seal as anchor bolt location templates.

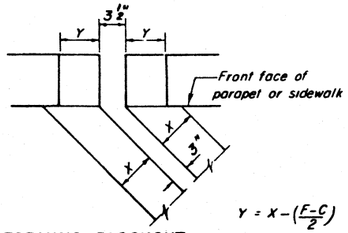
1. Install sponge mandrels into positions shown to form flap convolution.
2. Install parapet or sidewalk piece (trim roadway flap to fit before applying epoxy).
3. Install continuous seal in roadway.
4. Install anchor blocks as indicated.

NOTE A_ Maximum spacing of anchor bolts shall be 12" centers.

SKEW LIMITATIONS

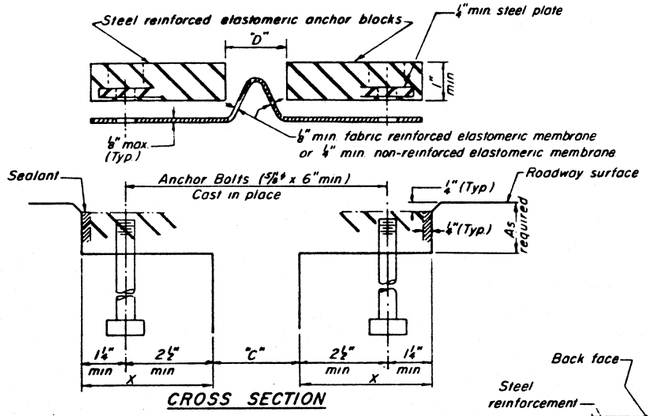
The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews.

For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1½" from centerline of anchor studs to edge of parapet opening. The anchor blocks and the elastomeric membrane shall also be installed to the top of the parapet with the anchor studs spaced at ±12" cts.

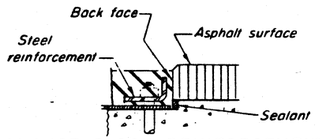


$Y = X - \left(\frac{F-C}{2}\right)$

FORMING BLOCKOUT SKETCH



CROSS SECTION



ANCHOR BLOCK REINFORCEMENT with ASPHALT SURFACE

GENERAL NOTES

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions.

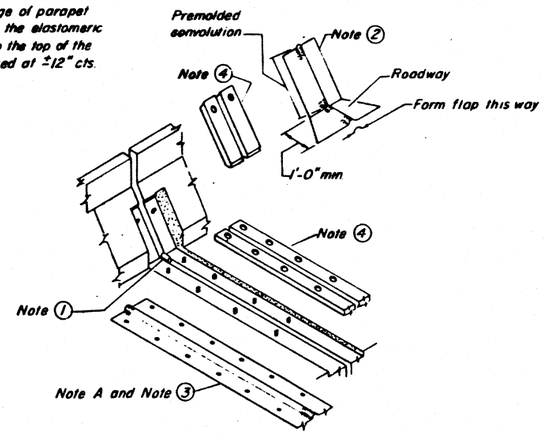
The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" to return to its molded position upon joint closure.

The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

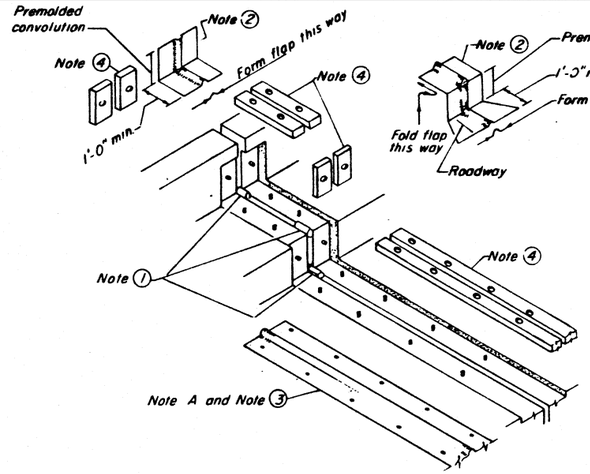
The convolution length shall be such that the extended length will not be greater than the manufactured length when the joint is fully expanded in its design range and will not protrude above the anchor blocks when the joint is fully compressed.

Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

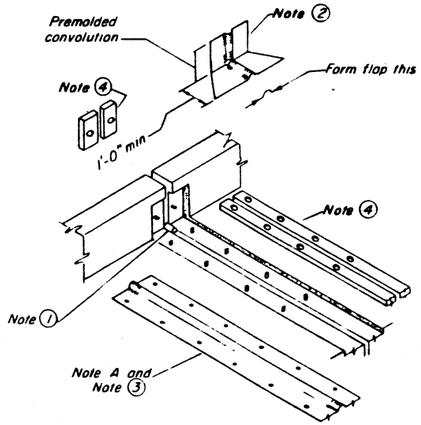
The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.



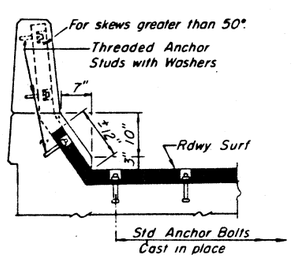
AT PARAPET



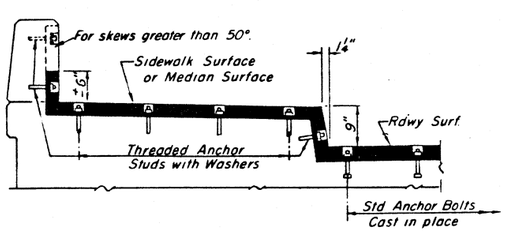
AT SIDEWALK or MEDIAN



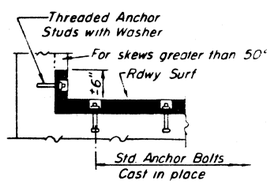
AT WALL



AT PARAPET



AT SIDEWALK or MEDIAN



AT WALL

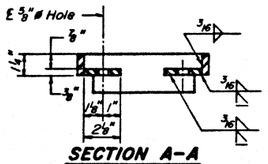
TYPICAL END TREATMENTS

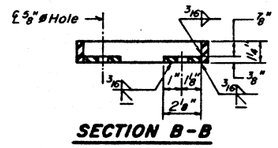
ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

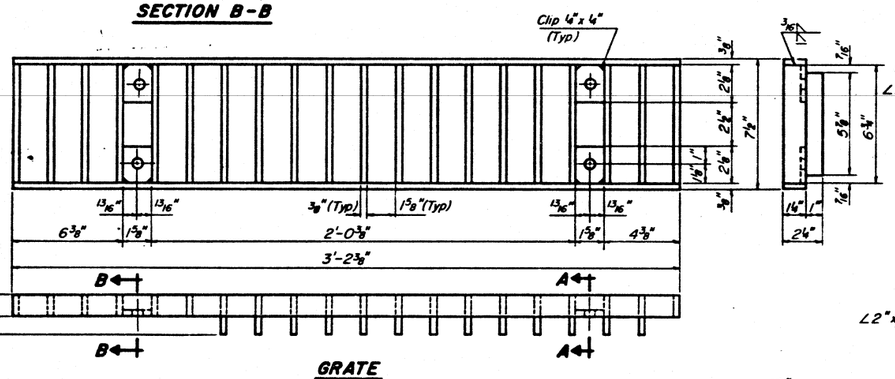
NEOPRENE EXPANSION JOINT

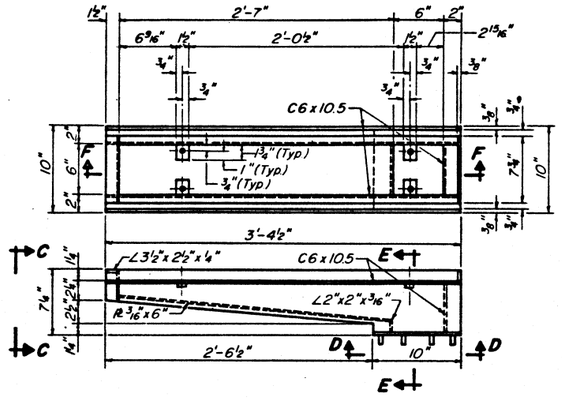
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)I
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

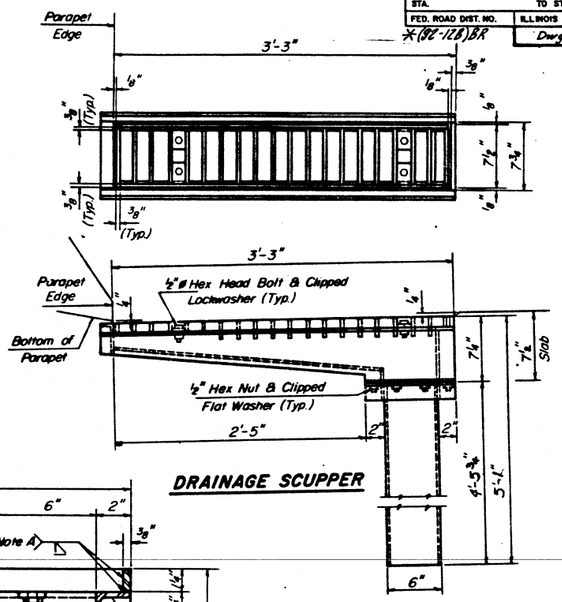
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	71
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
* (92-12B)BR			Dwg. No. 17 of 45	

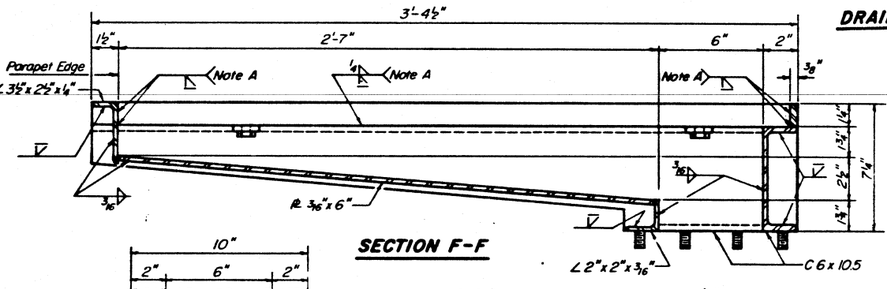




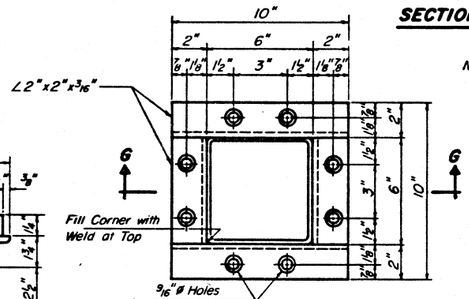


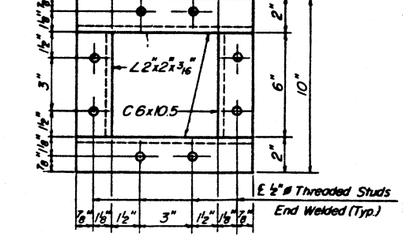


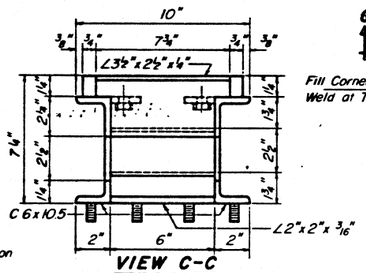


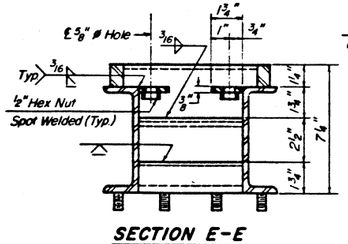


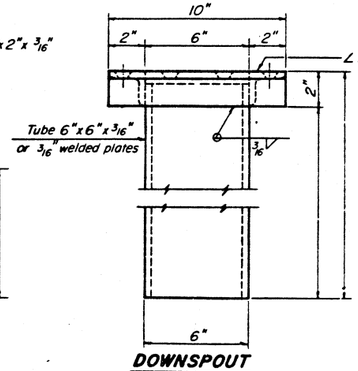
Note A: Surface of welds shall be recessed 1/16" Max. or placed flush with inside face of bars to provide clearance for Grate.

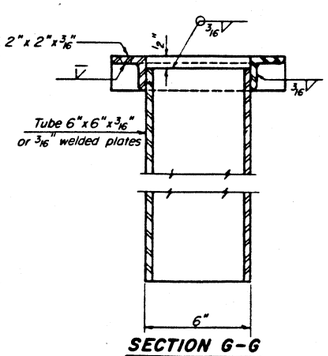












Notes:

Hollow structural steel tubing shall conform to the requirements of A.S.T.M. designation A-500 Grade B, or A-501 Structural Steel Tubing.

All other shapes, plates and bars shall conform to the requirements of A.A.S.H.T.O.: M 183.

Bolts, studs, washers and nuts shall conform to the requirements of A.S.T.M.: A-307.

The Grate, Frame, and Downspout shall be galvanized after shop fabrication in accordance with A.A.S.H.T.O.: M-111 & A.S.T.M.: A-385.

All bolts, washers and nuts shall be galvanized in accordance with A.A.S.H.T.O.: M 232.

Cost of the Grate, Frame, Downspout, Bolts, Washers and Nuts including complete installation of Scupper shall be paid for at the unit bid price for "DRAINAGE SCUPPERS".

BILL OF MATERIAL

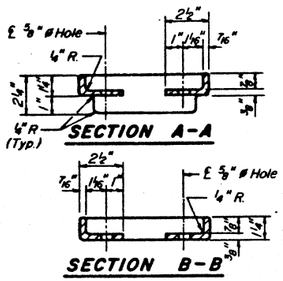
ITEM	UNIT	QUANTITY
Drainage Scupper	Each	14

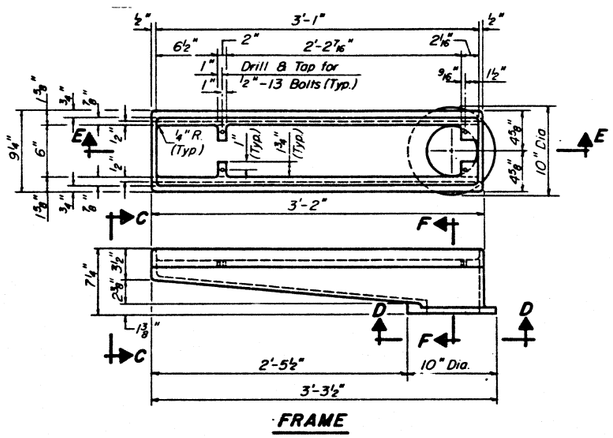
ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

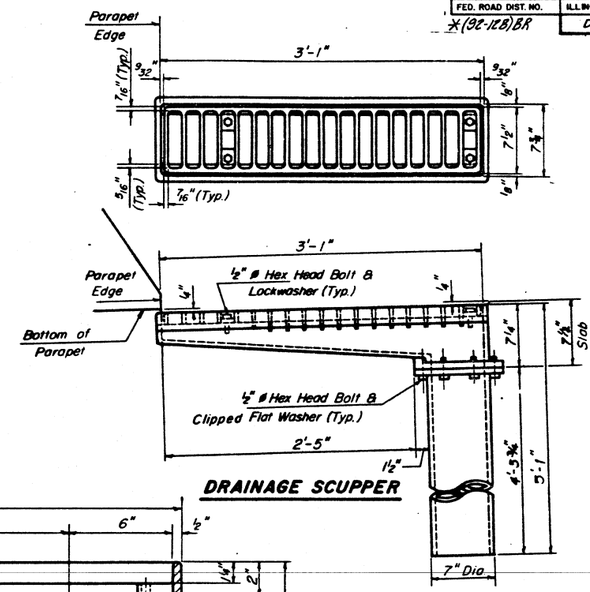
STEEL DRAINAGE SCUPPER

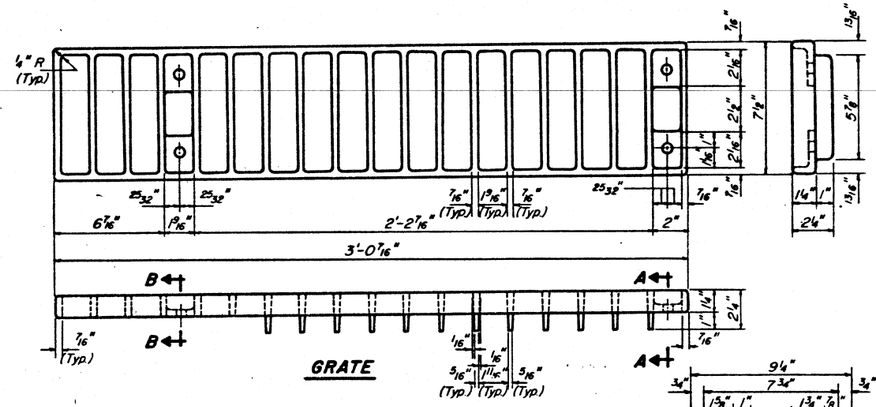
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)I
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

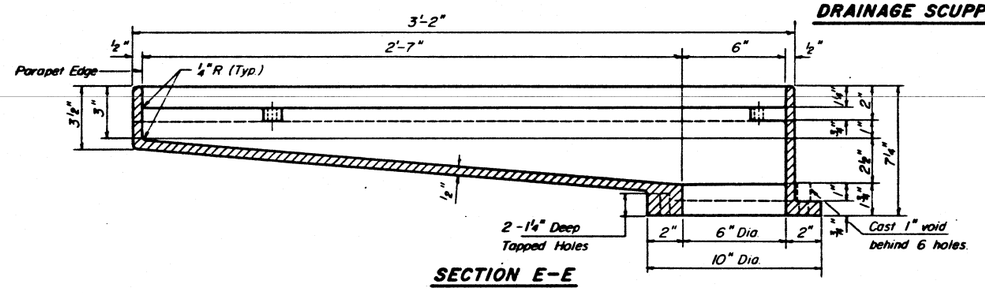
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	72
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)B,R		Dwg. No. 18 of 45		

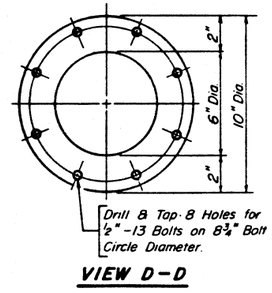


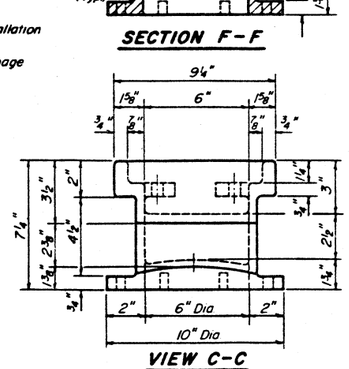


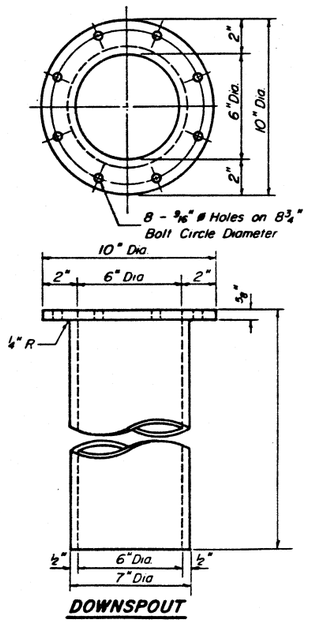












Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO: M-105, Class 30.

Bolts and washers shall conform to the requirements of A.S.T.M.: A-307.

All bolts and washers shall be galvanized in accordance with A.A.S.H.T.O.: M-232.

As an alternate bolts and washers may be stainless steel conforming to the requirements of A.S.T.M.: A-193. Type 304.

Cost of the Grate, Frame, Downspout, bolts and washers including complete installation of Scupper shall be paid for at the unit bid price for "DRAINAGE SCUPPERS".

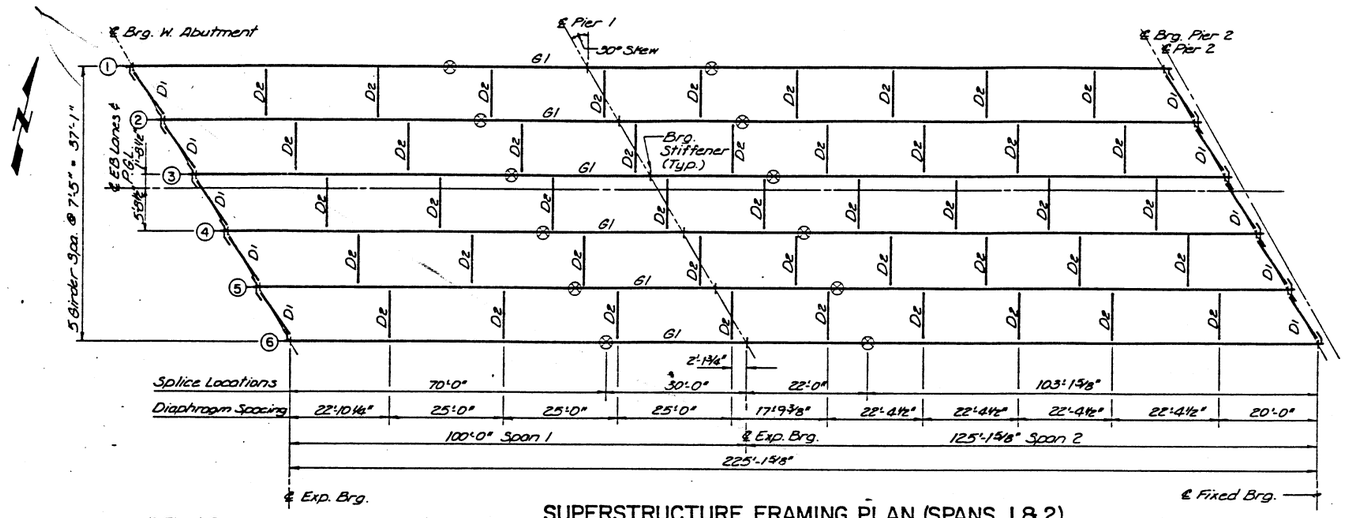
The Contractor may use at his option steel drainage scuppers or cast iron drainage scuppers.

ESCA
CONSULTANTS, INC.

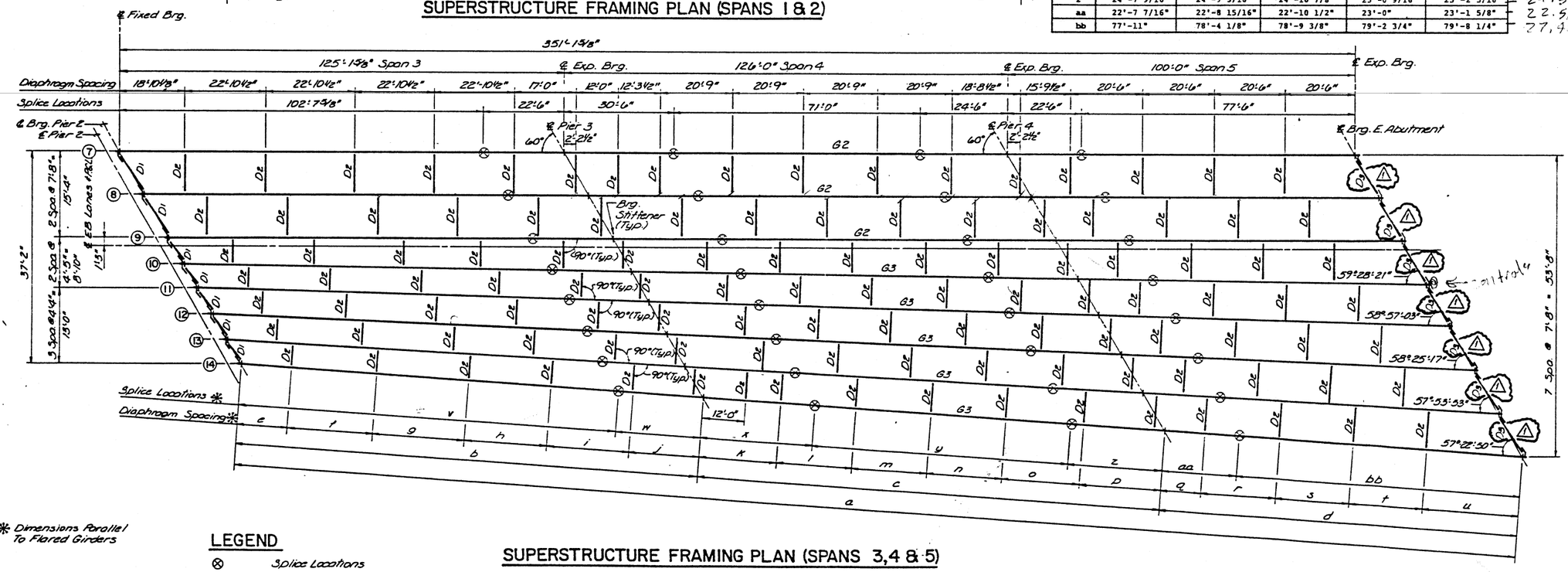
DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

ALTERNATE-CAST IRON DRAINAGE SCUPPER

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)I
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)



SUPERSTRUCTURE FRAMING PLAN (SPANS 1 & 2)



* Dimensions Parallel To Flared Girders

SUPERSTRUCTURE FRAMING PLAN (SPANS 3,4 & 5)

LEGEND

⊗ Splice Locations

D1, D2, etc. Diaphragm Type

G1, G2, etc. Girder Type

GIRDER DIMENSIONS *

Girder	10	11	12	13	14
a	353'-0 5/16"	354'-11 3/8"	356'-11 3/8"	358'-11 3/4"	361'-0 1/2"
b	125'-9 3/4"	126'-6"	127'-2 1/2"	127'-11 1/4"	128'-8"
c	126'-8 1/8"	127'-4 1/2"	128'-1"	128'-9 3/4"	129'-6 1/2"
d	100'-6 1/2"	101'-1"	101'-8"	102'-2 3/4"	102'-10"
e	16'-3 9/16"	16'-3 3/4"	16'-5 5/8"	16'-5 15/16"	16'-7 1/4"
f	22'-10 1/2"	23'-0"	23'-1 1/2"	23'-3"	23'-4 5/8"
g	22'-10 1/2"	23'-0"	23'-1 1/2"	23'-3"	23'-4 5/8"
h	22'-10 1/2"	23'-0"	23'-1 1/2"	23'-3"	23'-4 5/8"
i	22'-10 1/2"	23'-0"	23'-1 1/2"	23'-3"	23'-4 5/8"
j	18'-0 1/8"	18'-2 5/16"	18'-2 7/8"	18'-5 1/16"	18'-6 1/8"
k	23'-3 3/8"	23'-3 7/8"	23'-6"	23'-6 5/8"	23'-8 7/16"
l	20'-9"	20'-10 5/16"	20'-11 3/4"	21'-1 1/8"	21'-2 9/16"
m	20'-9"	20'-10 5/16"	20'-11 3/4"	21'-1 1/8"	21'-2 9/16"
n	20'-9"	20'-10 5/16"	20'-11 3/4"	21'-1 1/8"	21'-2 9/16"
o	20'-9"	20'-10 5/16"	20'-11 3/4"	21'-1 1/8"	21'-2 9/16"
p	20'-4 3/4"	20'-7 1/4"	20'-8 3/16"	20'-10 3/4"	20'-11 7/8"
q	14'-1 5/16"	14'-1"	14'-2 5/16"	14'-2 1/8"	14'-3 3/8"
r	20'-6"	20'-7 5/16"	20'-8 11/16"	20'-10 1/16"	20'-11 1/2"
s	20'-6"	20'-7 5/16"	20'-8 11/16"	20'-10 1/16"	20'-11 1/2"
t	20'-6"	20'-7 5/16"	20'-8 11/16"	20'-10 1/16"	20'-11 1/2"
u	24'-11 1/8"	25'-2 1/8"	25'-3 1/2"	25'-6 1/2"	25'-8"
v	103'-2 1/4"	103'-9"	104'-4"	104'-11 1/8"	105'-6 3/8"
w	22'-7 7/16"	22'-8 15/16"	22'-10 1/2"	23'-0"	23'-1 5/8"
x	30'-8"	30'-10"	31'-0 1/16"	31'-2 3/16"	31'-4 5/16"
y	71'-4 9/16"	71'-9 1/4"	72'-2 1/8"	72'-7"	73'-0"
z	24'-7 9/16"	24'-9 3/16"	24'-10 7/8"	25'-0 9/16"	25'-2 5/16"
aa	22'-7 7/16"	22'-8 15/16"	22'-10 1/2"	23'-0"	23'-1 5/8"
bb	77'-11"	78'-4 1/8"	78'-9 3/8"	79'-2 3/4"	79'-8 1/4"

102.6167
22.5137 > 53.0187
30.5
79.9896
24.5104 > 47.0208
22.5104
77.4896

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	73A
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR			Dwg. No. 19 of 95	

NOTES

1. See Dwgs. 21, 22, 23 & 24 for Additional Structural Steel Details.

DESIGNED BY:	AMR/RDP 8-89
DRAWN BY:	CJG 8-89
CHECKED BY:	JAF 8-89
APPROVED BY:	RDP 8-89

ESCA CONSULTANTS, INC.

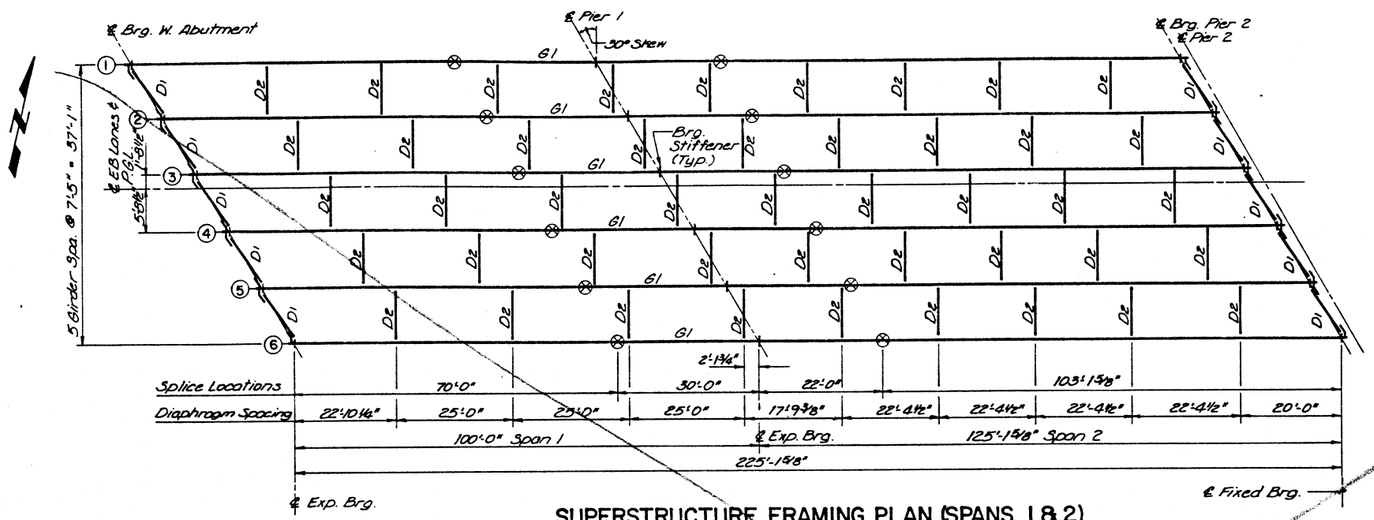
OK

AS REVISED

STEEL FRAMING PLAN (EB)
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

1 Revised 8/22/90 RDP

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I.-74	*	Vermilion	137	73
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-128)BR		Dwg No. 19 of 95		



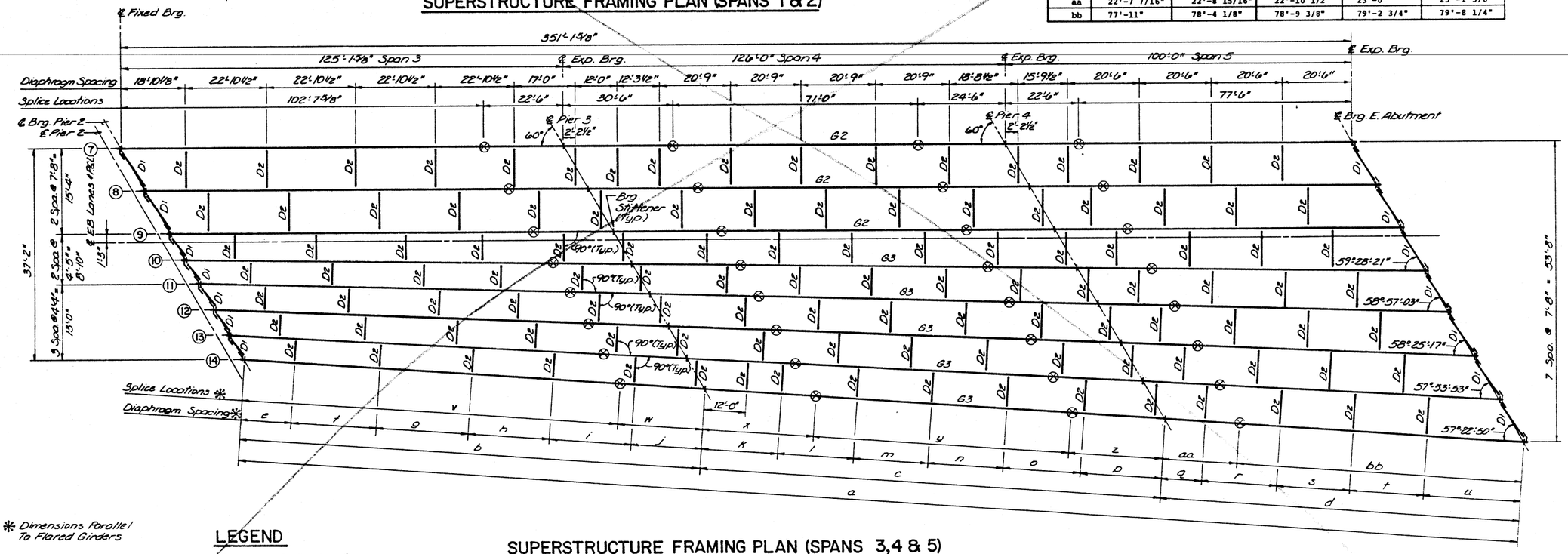
SUPERSTRUCTURE FRAMING PLAN (SPANS 1 & 2)

GIRDER DIMENSIONS *

Girder	10	11	12	13	14
a	353'-0 5/16"	354'-11 3/8"	356'-11 3/8"	358'-11 3/4"	361'-0 1/2"
b	125'-9 3/4"	126'-6"	127'-2 1/2"	127'-11 1/4"	128'-8"
c	126'-8 1/8"	127'-4 1/2"	128'-1"	128'-9 3/4"	129'-6 1/2"
d	100'-6 1/2"	101'-1"	101'-8"	102'-2 3/4"	102'-10"
e	16'-3 9/16"	16'-3 3/4"	16'-5 5/8"	16'-5 15/16"	16'-7 1/4"
f	22'-10 1/2"	23'-0"	23'-1 1/2"	23'-3"	23'-4 5/8"
g	22'-10 1/2"	23'-0"	23'-1 1/2"	23'-3"	23'-4 5/8"
h	22'-10 1/2"	23'-0"	23'-1 1/2"	23'-3"	23'-4 5/8"
i	22'-10 1/2"	23'-0"	23'-1 1/2"	23'-3"	23'-4 5/8"
j	18'-0 1/8"	18'-2 5/16"	18'-2 7/8"	18'-5 1/16"	18'-6 1/8"
k	23'-3 3/8"	23'-3 7/8"	23'-6"	23'-6 5/8"	23'-8 7/16"
l	20'-9"	20'-10 5/16"	20'-11 3/4"	21'-1 1/8"	21'-2 9/16"
m	20'-9"	20'-10 5/16"	20'-11 3/4"	21'-1 1/8"	21'-2 9/16"
n	20'-9"	20'-10 5/16"	20'-11 3/4"	21'-1 1/8"	21'-2 9/16"
o	20'-9"	20'-10 5/16"	20'-11 3/4"	21'-1 1/8"	21'-2 9/16"
p	20'-4 3/4"	20'-5 1/4"	20'-8 3/16"	20'-10 3/4"	20'-11 7/8"
q	14'-1 5/16"	14'-1"	14'-2 5/16"	14'-2 1/8"	14'-3 3/8"
r	20'-6"	20'-7 5/16"	20'-8 11/16"	20'-10 1/16"	20'-11 1/2"
s	20'-6"	20'-7 5/16"	20'-8 11/16"	20'-10 1/16"	20'-11 1/2"
t	20'-6"	20'-7 5/16"	20'-8 11/16"	20'-10 1/16"	20'-11 1/2"
u	24'-11 1/8"	25'-2 1/8"	25'-3 1/2"	25'-6 1/2"	25'-8"
v	103'-2 1/4"	103'-9"	104'-4"	104'-11 1/8"	105'-6 3/8"
w	22'-7 7/16"	22'-8 15/16"	22'-10 1/2"	23'-0"	23'-1 5/8"
x	30'-8"	30'-10"	31'-0 1/16"	31'-2 3/16"	31'-4 5/16"
y	71'-4 9/16"	71'-9 1/4"	72'-2 1/8"	72'-7"	73'-0"
z	24'-7 9/16"	24'-9 3/16"	24'-10 7/8"	25'-0 9/16"	25'-2 5/16"
aa	22'-7 7/16"	22'-8 15/16"	22'-10 1/2"	23'-0"	23'-1 5/8"
bb	77'-11"	78'-4 1/8"	78'-9 3/8"	79'-2 3/4"	79'-8 1/4"

NOTES

1. See Dwgs. 21, 22 & 24 for Additional Structural Steel Details.



SUPERSTRUCTURE FRAMING PLAN (SPANS 3,4 & 5)

* Dimensions Parallel To Flared Girders

LEGEND

⊗ Splice Locations

D1, D2, etc. Diaphragm Type

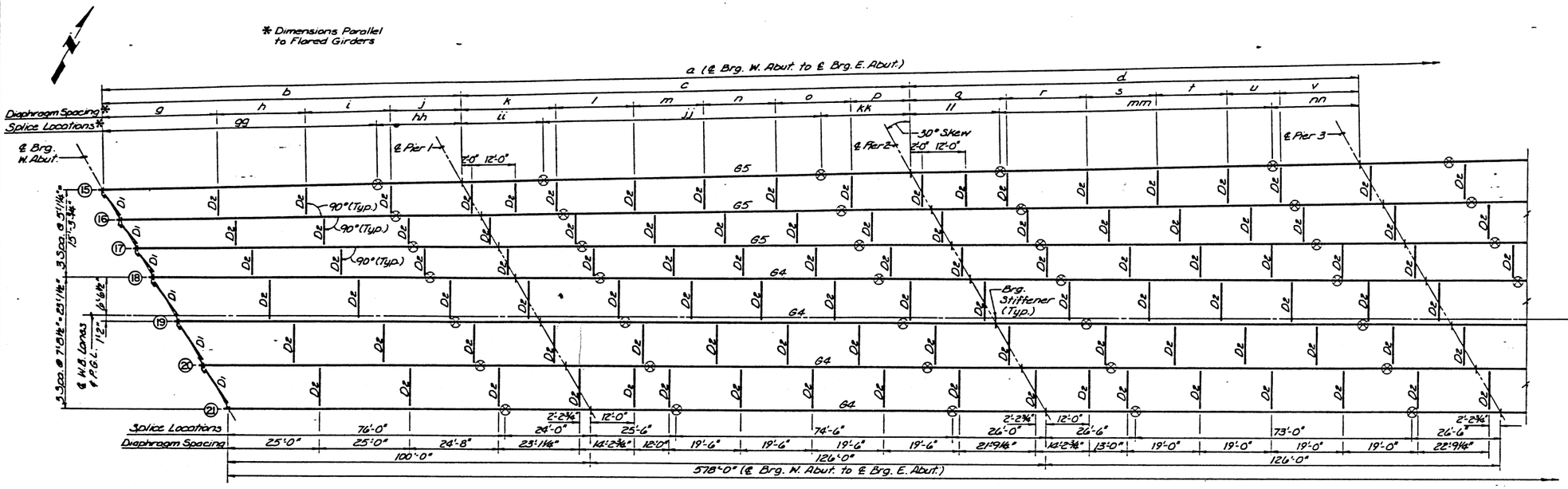
G1, G2, etc. Girder Type

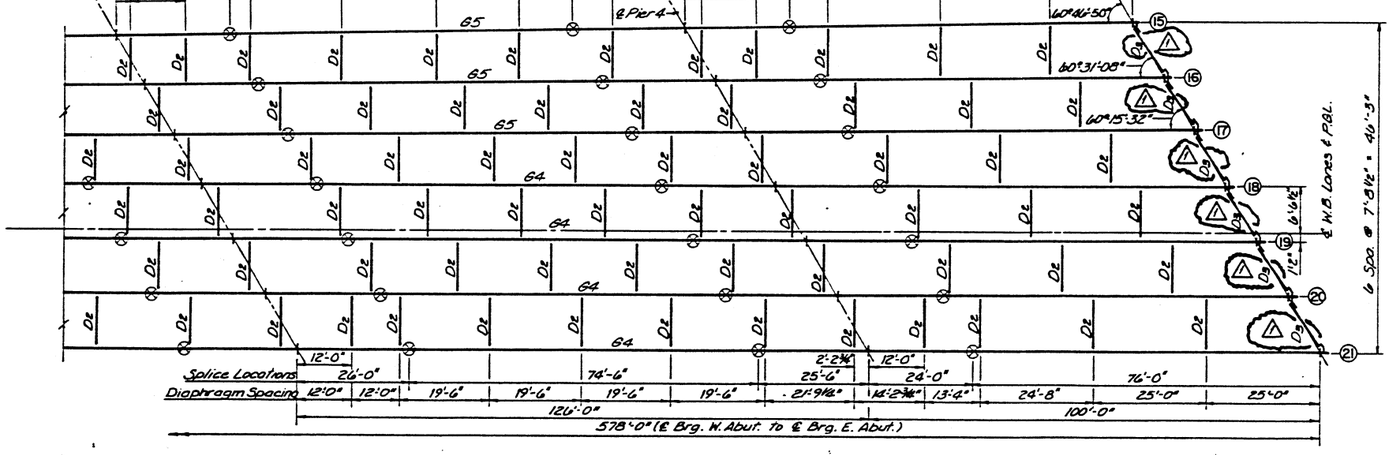
ESCA CONSULTANTS, INC.		
DESIGNED BY:	KMR/ADP	8-89
DRAWN BY:	CJG	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	ADP	8-89

STEEL FRAMING PLAN (EB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-128)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	74A
STA		TO STA		
FED ROAD DIST NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 20 of 45		





NOTES

1. See Dwg. No's. 21, 23 & 24 for Additional Structural Steel Details.

GIRDER DIMENSIONS*

Girder	15	16	17	Girder	15	16	17
a	573'-6 1/2"	575'-0 3/16"	576'-6"	x	19'-3 5/16"	19'-3 7/8"	19'-4 1/2"
b	99'-2 3/4"	99'-5 13/16"	99'-8 7/8"	y	19'-3 5/16"	19'-3 7/8"	19'-4 1/2"
c	125'-0 5/16"	125'-4 3/16"	125'-8 1/16"	z	19'-3 5/16"	19'-3 7/8"	19'-4 1/2"
d	125'-0 5/16"	125'-4 3/16"	125'-8 1/16"	aa	19'-3 5/16"	19'-3 7/8"	19'-4 1/2"
e	125'-0 5/16"	125'-5 3/16"	125'-8 1/16"	bb	19'-9"	19'-9 3/4"	19'-10 1/8"
f	99'-2 3/4"	99'-5 13/16"	99'-8 7/8"	cc	29'-3 15/16"	29'-4 11/16"	29'-5 7/8"
g	27'-9 1/4"	27'-10"	27'-11 1/16"	dd	24'-6 1/2"	24'-7 1/4"	24'-8"
h	24'-10 7/16"	24'-11 1/4"	25'-0"	ee	24'-10 7/16"	24'-11 1/4"	25'-0"
i	24'-6 1/2"	24'-7 3/4"	24'-8"	ff	20'-5 7/8"	20'-6 5/8"	20'-7"
j	22'-0 9/16"	22'-1 5/16"	22'-1 13/16"	gg	75'-5"	75'-7 5/16"	75'-9 5/8"
k	27'-0 3/8"	27'-1 1/8"	27'-2 3/16"	hh	23'-9 3/4"	23'-10 1/2"	23'-11 1/4"
l	19'-4 13/16"	19'-5 3/8"	19'-6"	ii	25'-3 5/8"	25'-4 7/16"	25'-5 3/16"
m	19'-4 13/16"	19'-5 3/8"	19'-6"	jj	73'-11 1/8"	74'-1 3/8"	74'-3 11/16"
n	19'-4 13/16"	19'-5 3/8"	19'-6"	kk	25'-9 5/8"	25'-10 3/8"	25'-11 3/16"
o	19'-4 13/16"	19'-5 3/8"	19'-6"	ll	26'-3 9/16"	26'-4 3/8"	26'-5 3/16"
p	20'-4 3/4"	20'-5 1/2"	20'-5 15/16"	mm	72'-5 1/4"	72'-7 1/2"	72'-9 3/4"
q	28'-4 3/16"	28'-5"	28'-6 1/16"	nn	26'-3 9/16"	26'-4 3/8"	26'-5 3/16"
r	18'-10 13/16"	18'-11 3/8"	19'-0"	oo	25'-9 5/8"	25'-10 3/8"	25'-11 3/16"
s	18'-10 13/16"	18'-11 3/8"	19'-0"	pp	73'-11 1/8"	74'-1 3/8"	74'-3 11/16"
t	18'-10 13/16"	18'-11 3/8"	19'-0"	qq	25'-3 11/16"	25'-4 7/16"	25'-5 3/16"
u	18'-10 13/16"	18'-11 3/8"	19'-0"	rr	23'-9 3/4"	23'-10 1/2"	23'-11 1/4"
v	21'-0 13/16"	21'-1 5/8"	21'-2"	ss	75'-5"	75'-7 5/16"	75'-9 5/8"
w	28'-2 1/8"	28'-2 7/8"	28'-4"				

SUPERSTRUCTURE FRAMING PLAN

LEGEND

⊗	Splice Location
D1, D2, etc.	Diaphragm Type
G1, G2, etc.	Girder Type

ESCA CONSULTANTS, INC.		
DESIGNED BY:	KMR/RDP	8-89
DRAWN BY:	CJB	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	RDP	8-89

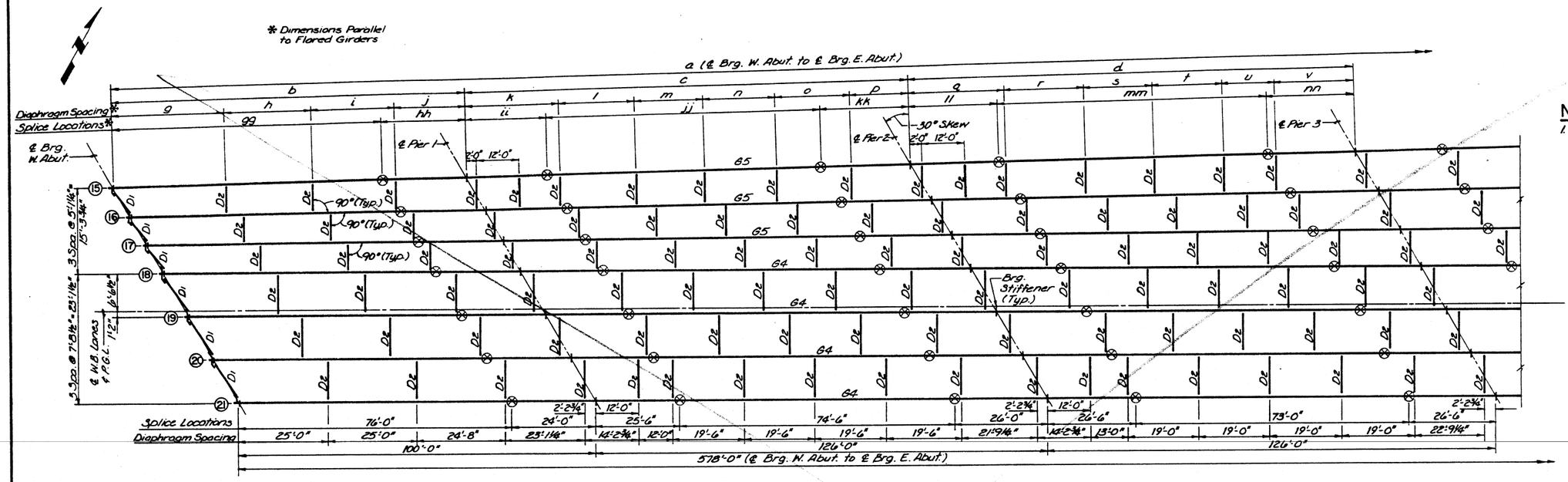
AS REVISED

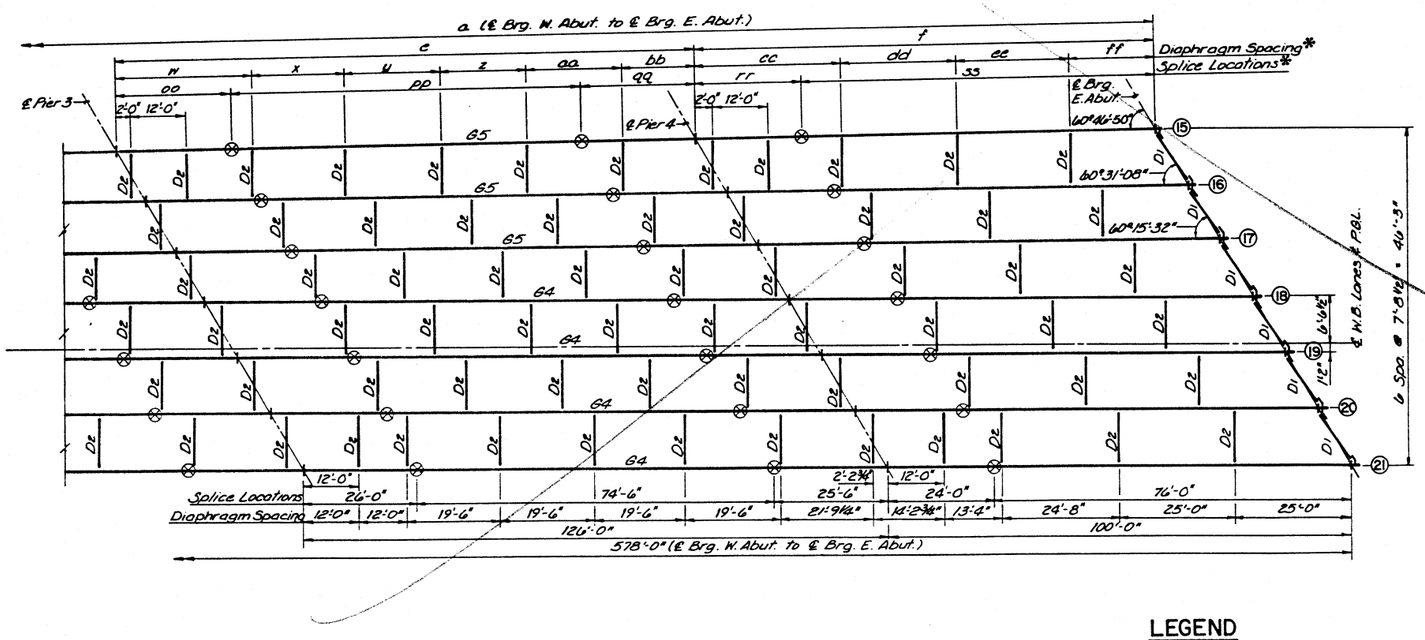
⚠ Revised 8/22/90 RDP

STEEL FRAMING PLAN (WB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	74
STA		TO STA		
FED ROAD DIST NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 20 of 45		





NOTES

1. See Dwg. No's. 21, 23 & 24 for Additional Structural Steel Details.

GIRDER DIMENSIONS*

Girder	15	16	17	Girder	15	16	17
a	573'-6 1/2"	575'-0 3/16"	576'-6"	x	19'-3 5/16"	19'-3 7/8"	19'-4 1/2"
b	99'-2 3/4"	99'-5 13/16"	99'-8 7/8"	y	19'-3 5/16"	19'-3 7/8"	19'-4 1/2"
c	125'-0 5/16"	125'-4 3/16"	125'-8 1/16"	z	19'-3 5/16"	19'-3 7/8"	19'-4 1/2"
d	125'-0 5/16"	125'-4 3/16"	125'-8 1/16"	aa	19'-3 5/16"	19'-3 7/8"	19'-4 1/2"
e	125'-0 5/16"	125'-5 3/16"	125'-8 1/16"	bb	19'-9"	19'-9 3/4"	19'-10 1/8"
f	99'-2 3/4"	99'-5 13/16"	99'-8 7/8"	cc	29'-3 15/16"	29'-4 11/16"	29'-5 7/8"
g	27'-9 1/4"	27'-10"	27'-11 1/16"	dd	24'-6 1/2"	24'-7 1/4"	24'-8"
h	24'-10 7/16"	24'-11 1/4"	25'-0"	ee	24'-10 7/16"	24'-11 1/4"	25'-0"
i	24'-6 1/2"	24'-7 3/4"	24'-8"	ff	20'-5 7/8"	20'-6 5/8"	20'-7"
j	22'-0 9/16"	22'-1 5/16"	22'-1 13/16"	gg	75'-5"	75'-7 5/16"	75'-9 5/8"
k	27'-0 3/8"	27'-1 1/8"	27'-2 3/16"	hh	23'-9 3/4"	23'-10 1/2"	23'-11 1/4"
l	19'-4 13/16"	19'-5 3/8"	19'-6"	ii	25'-3 5/8"	25'-4 7/16"	25'-5 3/16"
m	19'-4 13/16"	19'-5 3/8"	19'-6"	jj	73'-11 1/8"	74'-1 3/8"	74'-3 11/16"
n	19'-4 13/16"	19'-5 3/8"	19'-6"	kk	25'-9 5/8"	25'-10 3/8"	25'-11 3/16"
o	19'-4 13/16"	19'-5 3/8"	19'-6"	ll	26'-3 9/16"	26'-4 3/8"	26'-5 3/16"
p	20'-4 3/4"	20'-5 1/2"	20'-5 15/16"	mm	72'-5 1/4"	72'-7 1/2"	72'-9 3/4"
q	28'-4 3/16"	28'-5"	28'-6 1/16"	nn	26'-3 9/16"	26'-4 3/8"	26'-5 3/16"
r	18'-10 13/16"	18'-11 3/8"	19'-0"	oo	25'-9 5/8"	25'-10 3/8"	25'-11 3/16"
s	18'-10 13/16"	18'-11 3/8"	19'-0"	pp	73'-11 1/8"	74'-1 3/8"	74'-3 11/16"
t	18'-10 13/16"	18'-11 3/8"	19'-0"	qq	25'-3 11/16"	25'-4 7/16"	25'-5 3/16"
u	18'-10 13/16"	18'-11 3/8"	19'-0"	rr	23'-9 3/4"	23'-10 1/2"	23'-11 1/4"
v	21'-0 13/16"	21'-1 5/8"	21'-2"	ss	75'-5"	75'-7 5/16"	75'-9 5/8"
w	28'-2 1/8"	28'-2 7/8"	28'-4"				

SUPERSTRUCTURE FRAMING PLAN

LEGEND

⊗	Splice Location
D1, D2, etc.	Diaphragm Type
G1, G2, etc.	Girder Type

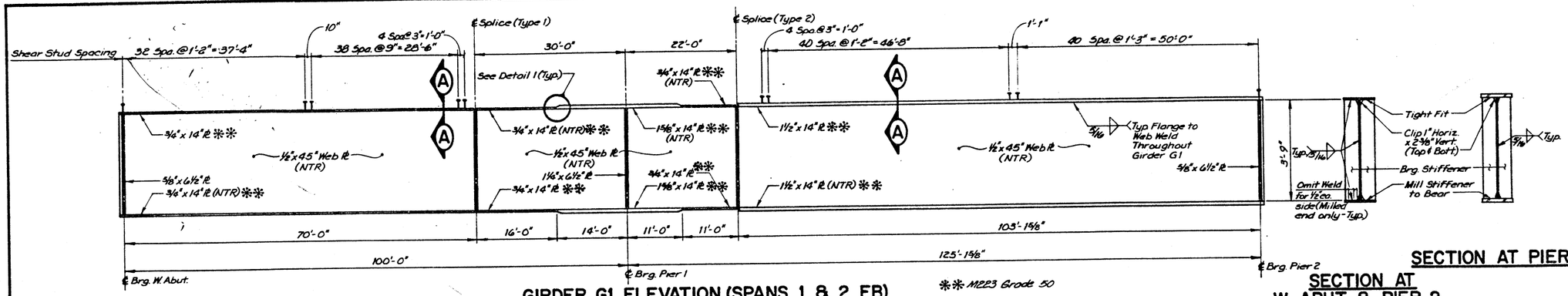
ESCA CONSULTANTS, INC.

DESIGNED BY:	KMR/RDP	8-89
DRAWN BY:	CJG	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	RDP	8-89

STEEL FRAMING PLAN (WB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	75
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 21 of 45		



GIRDER G1 ELEVATION (SPANS 1 & 2 EB)

(Girders ① thru ⑥)

** M223 Grade 50

SECTION AT PIER 1

SECTION AT W. ABUT. & PIER 2

NOTES

1. "STR" INDICATES PLATES TO WHICH NOTCH TOUGHNESS REQUIREMENTS ARE APPLICABLE.
2. SEE DWG. NO. 24 FOR ADDITIONAL STRUCTURAL STEEL DETAILS.
3. ALL FLANGE PLATES AND FLANGE SPLICE PLATES ARE M223 GRADE 50 STEEL.

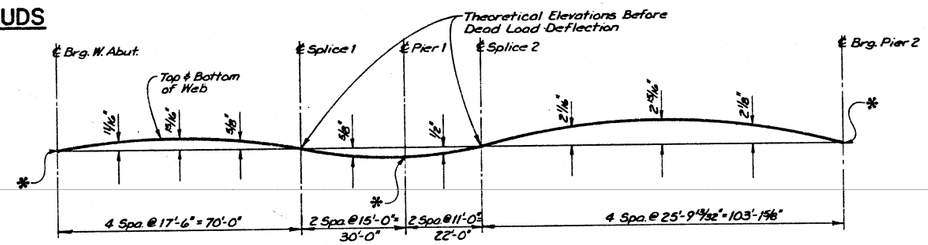
G1 TOP OF WEB ELEVATIONS

BEAM	℄ BRG. W. ABUT.	SPLICE 1	℄ PIER 1	SPLICE 2	℄ PIER 2
①	574.992	574.397	574.112	574.015	573.009
②	575.094	574.499	574.214	574.117	573.111
③	575.172	574.577	574.292	574.195	573.189
④	575.072	574.477	574.192	574.095	573.089
⑤	574.913	574.318	574.033	573.936	572.930
⑥	574.721	574.126	573.841	573.744	572.737

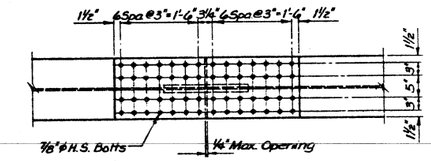
BILL OF MATERIAL-SHEAR STUDS

GIRDER	N° PER GIRDER	N° OF GIRDERS	TOTAL
G1	486	6	2,916
G2	786	3	2,358
G3	657	5	3,285
G4	1,101	4	4,404
G5	1,101	3	3,303

Total = 16,266

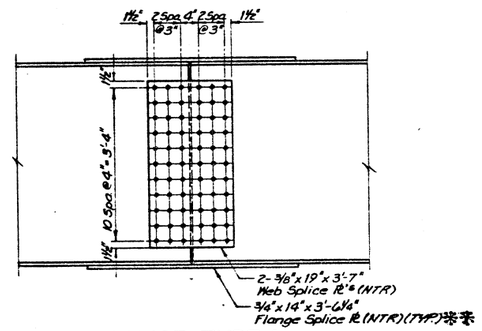


* Final Top of Web Elevations used in computing Brg. Seat Elevations.

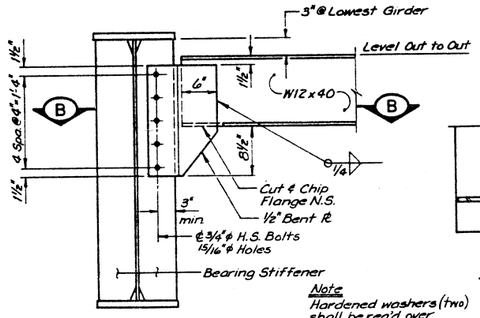


G1 CAMBER DIAGRAM

(Spans 1 & 2 EB)

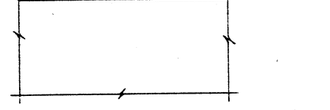


SPLICE TYPE 1

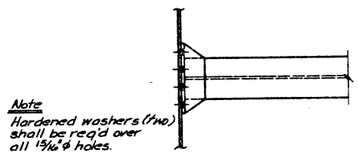


SECTION A-A

(16,140 Total Req'd)

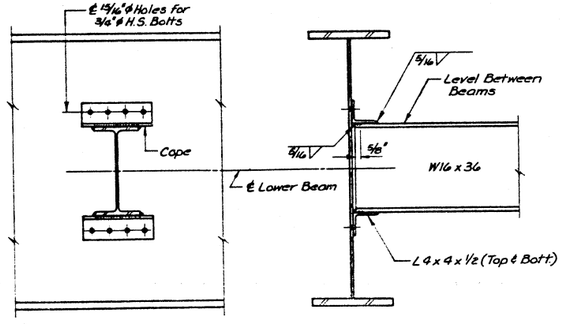


DETAIL 1



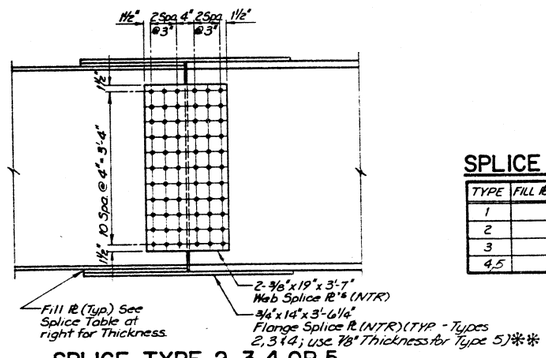
D1

SECTION B-B



D2

DIAPHRAGM CONNECTION DETAILS



SPLICE TYPE 2, 3, 4 OR 5

SPLICE TABLE

TYPE	FILL PL THICKNESS
1	0
2	3/4"
3	5/8"
4, 5	1/2"

OK

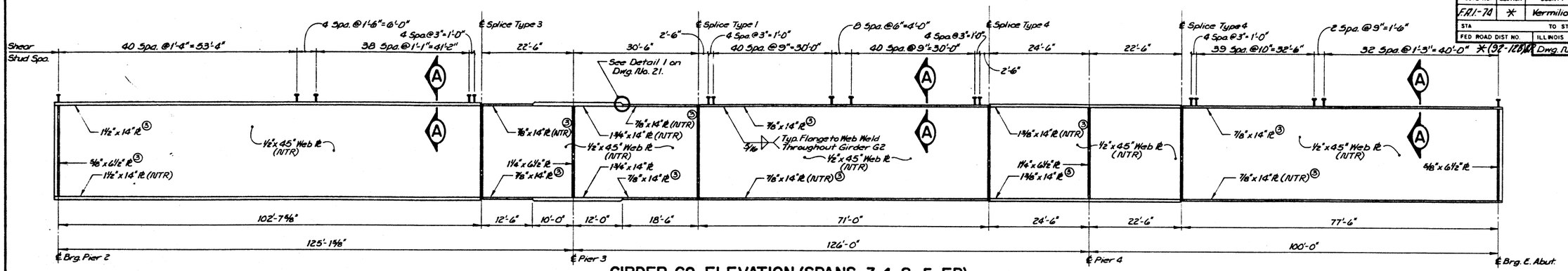
ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	76
STA		TO STA		
FED ROAD DIST NO.	ILLINOIS	PROJECT		

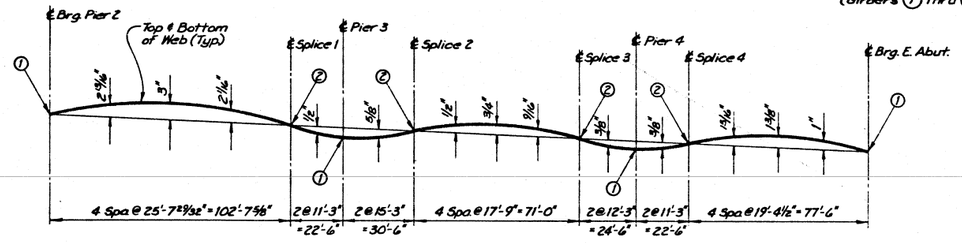
Dwg. No. 22 of 45



GIRDER G2 ELEVATION (SPANS 3,4 & 5 EB)

(Girders ⑦ thru ⑨)

③ M223 Grade 50



① Final Top of Web Elevations used in computing Bearing Seat Elevations

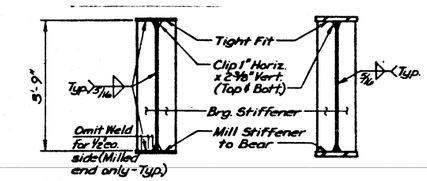
G2 CAMBER DIAGRAM

(Spans 3,4 & 5 EB; Girders ⑦ thru ⑨)

② Theoretical Elevations Before Dead Load Deflection.

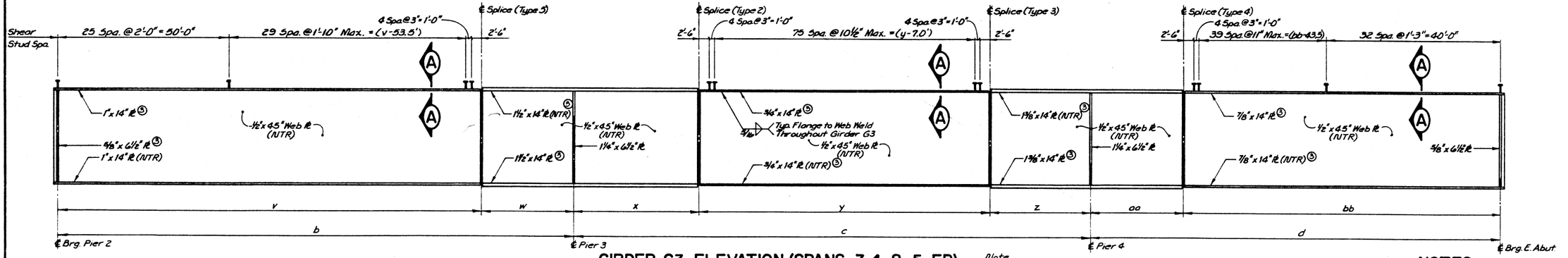
G2 TOP OF WEB ELEVATIONS

BEAM	℄ BRG. PIER 2	SPLICE 1	℄ PIER 3	SPLICE 2	SPLICE 3	℄ PIER 4	SPLICE 4	℄ BRG. E. ABUT.
⑦	573.000	572.198	571.897	571.763	571.425	571.270	571.162	570.536
⑧	573.102	572.300	571.999	571.812	571.349	571.151	571.024	570.335
⑨	573.183	572.381	572.080	571.839	571.250	571.009	570.870	570.134



AT PIER 2 & E. ABUT. AT PIERS 3,4 & 5

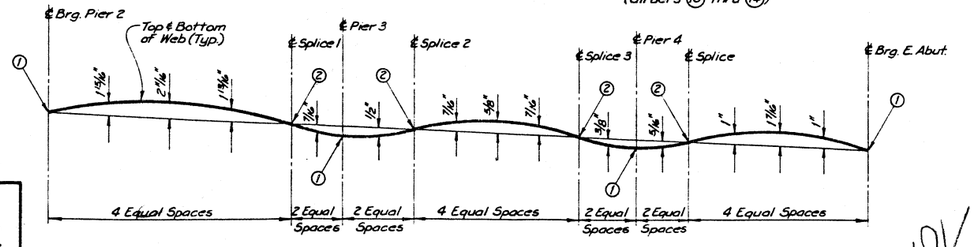
TYPICAL SECTIONS THRU G2 & G3



GIRDER G3 ELEVATION (SPANS 3,4 & 5 EB)

(Girders ⑩ thru ⑭)

Note: See Table on Dwg. No. 19 for dimensions.



① Final Top of Web Elevations used in computing Bearing Seat Elevations.

G3 CAMBER DIAGRAM

(Spans 3,4 & 5 EB; Girders ⑩ thru ⑭)

② Theoretical Elevations Before Dead Load Deflection.

G3 TOP OF WEB ELEVATIONS

BEAM	℄ BRG. PIER 2	SPLICE 1	℄ PIER 3	SPLICE 2	SPLICE 3	℄ PIER 4	SPLICE 4	℄ BRG. E. ABUT.
⑩	573.130	572.287	572.003	571.745	571.088	570.845	570.707	569.938
⑪	573.039	572.177	571.888	571.616	570.927	570.673	570.529	569.739
⑫	572.949	572.054	571.754	571.470	570.761	570.500	570.351	569.540
⑬	572.835	571.915	571.610	571.318	570.591	570.325	570.170	569.342
⑭	572.723	571.777	571.466	571.167	570.423	570.149	569.989	569.143

NOTES

1. "NTR" INDICATES PLATES TO WHICH NOTCH TOUGHNESS REQUIREMENTS APPLY.
2. SEE DWGS. 21 & 24 FOR ADDITIONAL STRUCTURAL STEEL DETAILS.
3. SEE DWG. NO. 21 FOR SECTION A-A.
4. ALL FLANGE PLATES AND FLANGE SPLICE PLATES ARE M223 GRADE 50 STEEL.

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Vermilion		
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		
	Dwg. No. 22 of 45			

G2 TOP OF WEB ELEVATIONS

BEAM	℄ BRG. PIER 2	SPLICE 1	℄ PIER 3	SPLICE 2	SPLICE 3	℄ PIER 4	SPLICE 4	℄ BRG. E. ABUT.
⑦	573.000	572.198	571.897	571.649	571.425	571.270	571.214	570.536
⑧	573.102	572.300	571.999	571.751	571.349	571.151	571.056	570.335
⑨	573.183	572.381	572.080	571.839	571.250	571.009	570.870	570.136

REVISED 9-27-90

STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER

FAI RTE. 74 SECTION (92-12B)BR

VERMILION COUNTY

STATION 1992+54.00

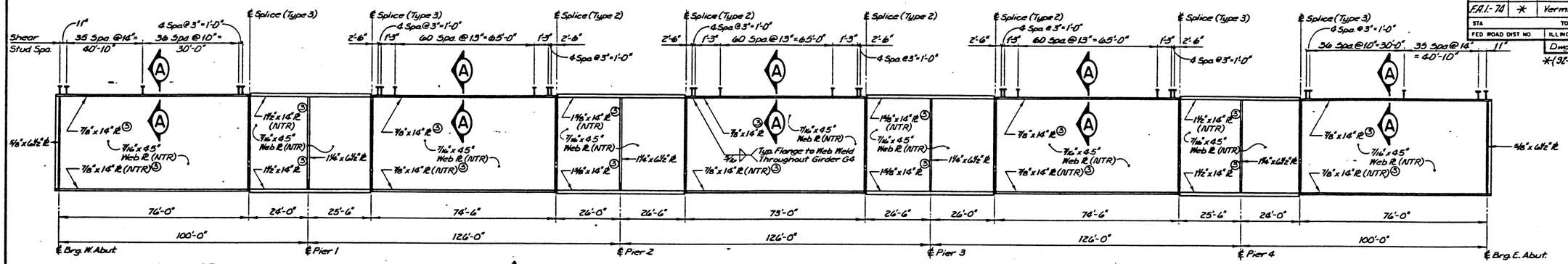
STRUCTURE NO. 092-0014(WB)

STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.- 74	*	Vermilion	137	77A
STA		TO STA		
FED. ROAD DIST NO.		ILLINOIS	PROJECT	

Dwg. No. 23 of 45

*(92-12B)BR



GIRDER G4 ELEVATION (SPANS 1-5 WB)

(Girders (15) thru (21))

⑤ M223 Grade 50 Steel

Note

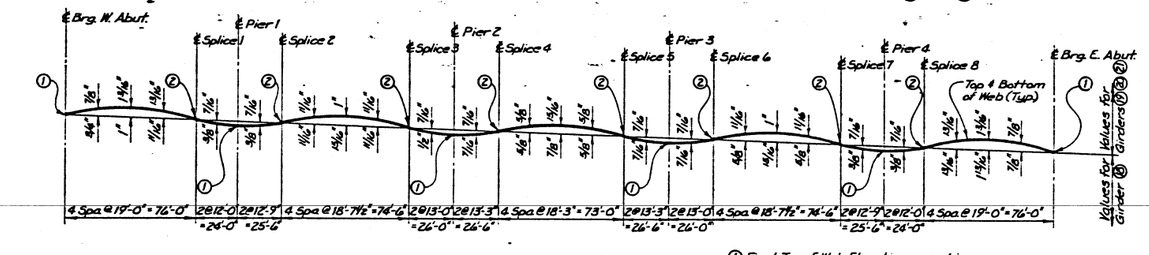
Girder G5 Elevation & Sections (Girders (16) thru (21)) same as G4 except:

1.) Longitudinal dimensions vary; see Table on Dwg. No. 20.

2.) Reduce spacing of Shear Studs shown for G4 as req'd to prevent location of end studs on top of Splice ℝ.

NOTES

1. "NTR" INDICATES PLATES TO WHICH NOTCH TOUGHNESS REQUIREMENTS APPLY.
2. SEE DWGS. 21 & 24 FOR ADDITIONAL STRUCTURAL STEEL DETAILS.
3. SEE DWG. NO. 21 FOR SECTION A-A.
4. ALL FLANGE PLATES AND FLANGE SPLICE PLATES ARE M223 GRADE 50 STEEL.

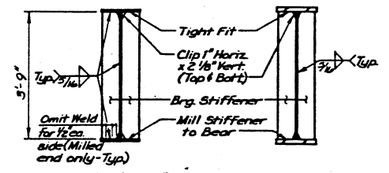


G4 CAMBER DIAGRAM

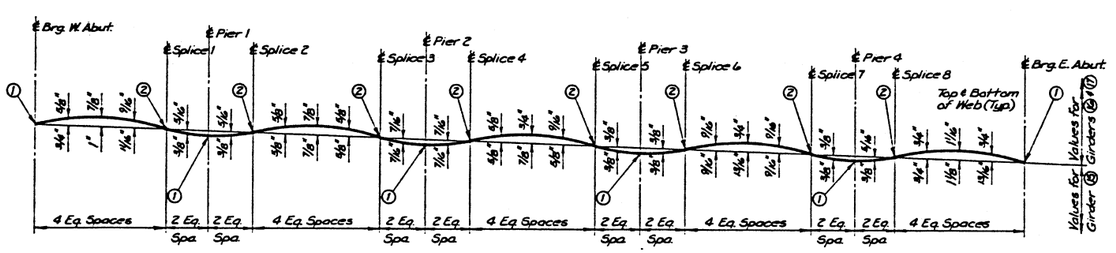
(Spans 1-5 WB; Girders (18) thru (21))

① Final Top of Web Elevations used in computing Bearing Seat Elevations.

② Theoretical Grade Elevations Before Dead Load Deflection.



SECTION AT ABUT. SECTION AT PIER



G5 CAMBER DIAGRAM

(Spans 1-5 WB; Girders (15) thru (17))

① Final Top of Web Elevations used in computing Bearing Seat Elevations.

② Theoretical Grade Elevations Before Dead Load Deflection.

G4 TOP OF WEB ELEVATIONS

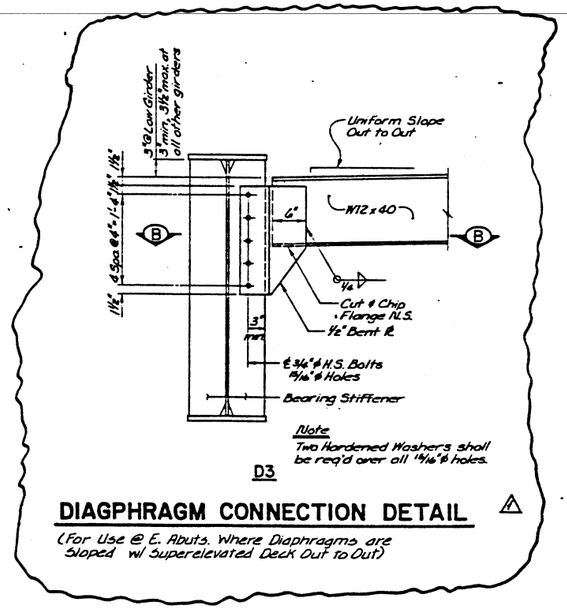
BEAM	℄ Brg. W. Abut.	Splice 1	℄ Pier 1	Splice 2	Splice 3	℄ Pier 2	Splice 4
(18)	575.437	574.808	574.557	574.385	573.729	573.448	573.271
(19)	575.481	574.861	574.601	574.429	573.775	573.493	573.313
(20)	575.322	574.702	574.442	574.271	573.614	573.333	573.153
(21)	575.138	574.518	574.258	574.087	573.431	573.150	572.970

BEAM	Splice 5	℄ Pier 3	Splice 6	Splice 7	℄ Pier 4	Splice 8	℄ Brg. E. Abut.
(18)	572.623	572.339	572.186	571.606	571.361	571.223	570.589
(19)	572.670	572.384	572.208	571.549	571.272	572.109	570.389
(20)	572.510	572.224	572.042	571.369	571.087	570.920	570.189
(21)	572.327	572.041	571.857	571.176	570.891	570.724	569.990

G5 TOP OF WEB ELEVATIONS

BEAM	℄ Brg. W. Abut.	Splice 1	℄ Pier 1	Splice 2	Splice 3	℄ Pier 2	Splice 4
(15)	575.224	574.577	574.323	574.142	573.468	573.187	573.008
(16)	575.304	574.657	574.413	574.232	573.548	573.283	573.101
(17)	575.383	574.740	574.498	574.320	573.665	573.383	573.200

BEAM	Splice 5	℄ Pier 3	Splice 6	Splice 7	℄ Pier 4	Splice 8	℄ Brg. E. Abut.
(15)	572.344	572.051	571.969	571.615	571.452	571.436	571.188
(16)	572.444	572.157	572.049	571.626	571.444	571.335	570.988
(17)	572.547	572.262	572.127	571.627	571.418	571.312	570.789



Note

Two Hardened Washers shall be req'd over all 1 1/16" ϕ holes.

D3

DIAGPHRAGM CONNECTION DETAIL ⚠

(For Use @ E. Abuts. Where Diaphragms are Sloped w/ Superelevated Deck Out to Out)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER

FAI RTE. 74 SECTION (92-12B)BR

VERMILION COUNTY

STATION 1992+54.00

STRUCTURE NO. 092-0014(WB)

STRUCTURE NO. 092-0015(EB)

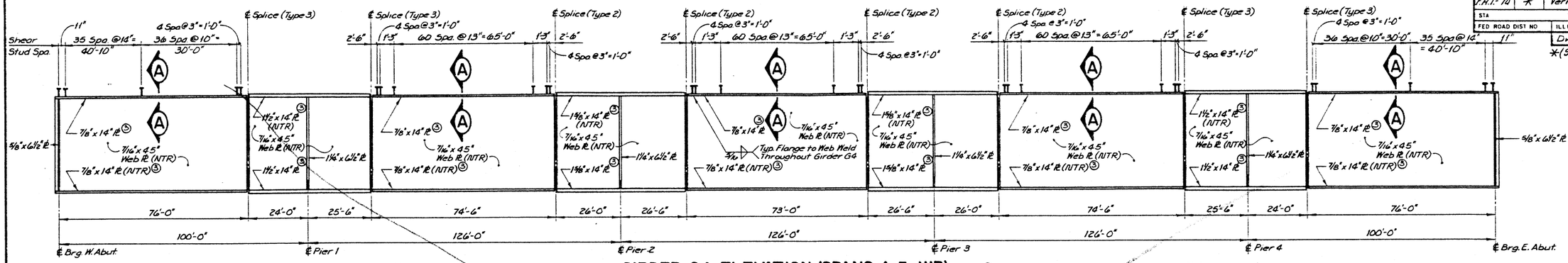
⚠ Revised 8/22/90 RDP

Revised 4/24/90

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.- 74	*	Vermilion	137	77
STA		TO STA		
FED. ROAD DIST NO.		ILLINOIS	PROJECT	

Dwg. No. 23 of 45

*(92-12B)BR



GIRDER G4 ELEVATION (SPANS 1-5 WB)

(Girders (15) thru (21))

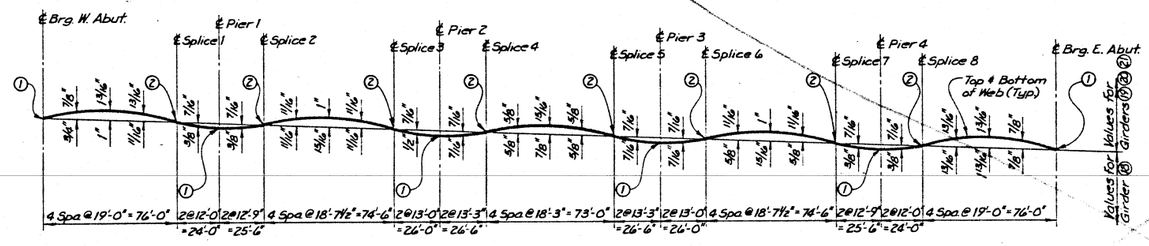
⑤ M223 Grade 50 Steel

Note

Girder G5 Elevation & Sections (Girders (18) thru (21)) same as G4 except:

1.) Longitudinal dimensions vary; see table on Dwg. No. 20.

2.) Reduce spacing of Shear Studs shown for G4 as req'd to prevent location of end studs on top of Splice PL.

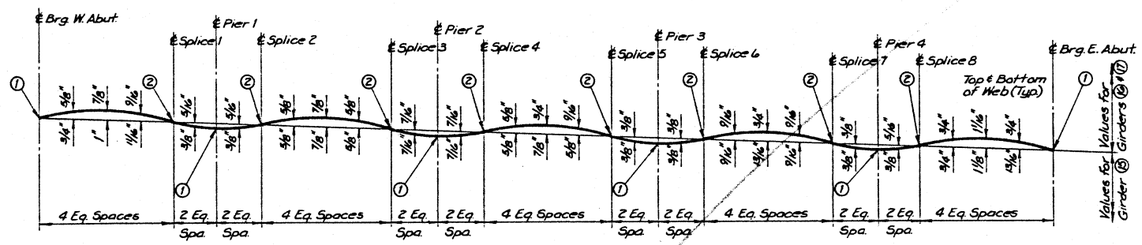


G4 CAMBER DIAGRAM

(Spans 1-5 WB; Girders (18) thru (21))

① Final Top of Web Elevations used in computing Bearing Seat Elevations.

② Theoretical Grade Elevations Before Dead Load Deflection.

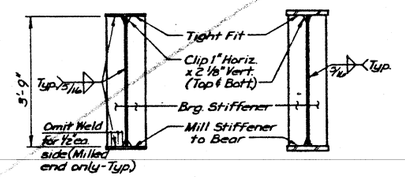


G5 CAMBER DIAGRAM

(Spans 1-5 WB; Girders (15) thru (17))

① Final Top of Web Elevations used in computing Bearing Seat Elevations.

② Theoretical Grade Elevations Before Dead Load Deflection.



SECTION AT ABUT.

SECTION AT PIER

G4 TOP OF WEB ELEVATIONS

BEAM	℄ BRG. W. ABUT.	Splice 1	℄ Pier 1	Splice 2	Splice 3	℄ Pier 2	Splice 4
(18)	575.437	574.808	574.557	574.385	573.729	573.448	573.271
(19)	575.481	574.861	574.601	574.429	573.775	573.493	573.313
(20)	575.322	574.702	574.442	574.271	573.614	573.333	573.153
(21)	575.138	574.518	574.258	574.087	573.431	573.150	572.970

BEAM	Splice 5	℄ Pier 3	Splice 6	Splice 7	℄ Pier 4	Splice 8	℄ BRG. E. ABUT.
(18)	572.623	572.339	572.186	571.606	571.361	571.223	570.589
(19)	572.670	572.384	572.208	571.549	571.272	572.109	570.389
(20)	572.510	572.224	572.042	571.349	571.087	570.920	570.189
(21)	572.327	572.041	571.857	571.176	570.891	570.724	569.990

G5 TOP OF WEB ELEVATIONS

BEAM	℄ BRG. W. ABUT.	Splice 1	℄ Pier 1	Splice 2	Splice 3	℄ Pier 2	Splice 4
(15)	575.224	574.577	574.323	574.142	573.468	573.187	573.008
(16)	575.304	574.657	574.413	574.232	573.568	573.283	573.101
(17)	575.383	574.740	574.498	574.320	573.665	573.383	573.200

BEAM	Splice 5	℄ Pier 3	Splice 6	Splice 7	℄ Pier 4	Splice 8	℄ BRG. E. ABUT.
(15)	572.344	572.051	571.969	571.615	571.452	571.436	571.188
(16)	572.444	572.157	572.049	571.626	571.444	571.335	570.988
(17)	572.547	572.262	572.127	571.627	571.418	571.312	570.789

NOTES

1. "NTR" INDICATES PLATES TO WHICH NOTCH TOUGHNESS REQUIREMENTS APPLY.
2. SEE DWGS. 21 & 24 FOR ADDITIONAL STRUCTURAL STEEL DETAILS.
3. SEE DWG. NO. 21 FOR SECTION A-A.
4. ALL FLANGE PLATES AND FLANGE SPLICE PLATES ARE M223 GRADE 50 STEEL.

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

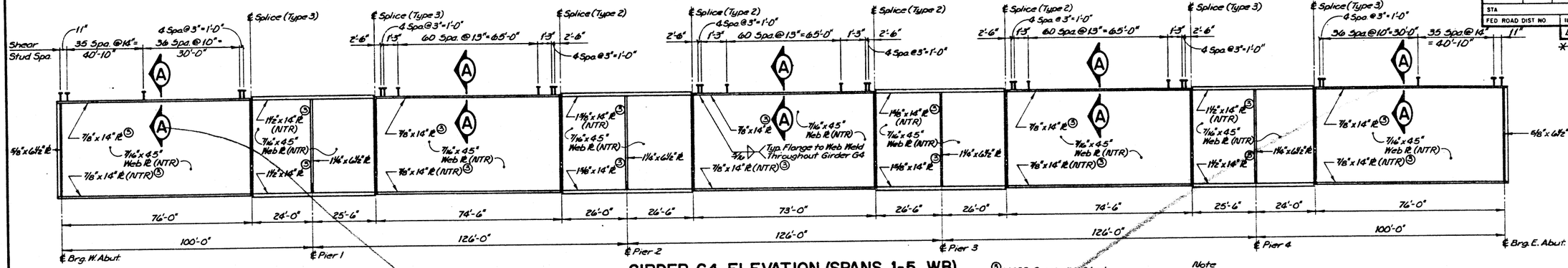
STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

Revised 4/24/90

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.- 74	*	Vermilion	137	77
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
		Dwg. No. 23 of 45		

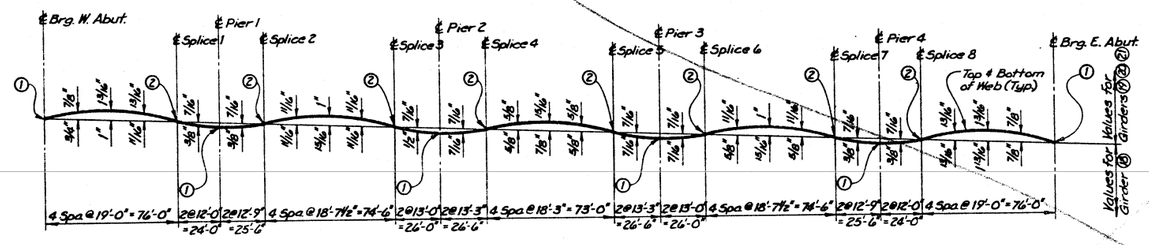
*(92-12B)BR



GIRDER G4 ELEVATION (SPANS 1-5 WB)

(Girders (18) thru (21))

⑤ M223 Grade 50 Steel

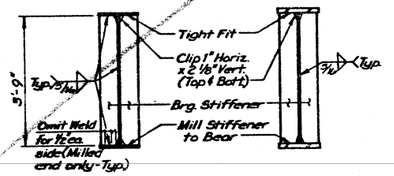


G4 CAMBER DIAGRAM

(Spans 1-5 WB; Girders (18) thru (21))

① Final Top of Web Elevations used in computing Bearing Seat Elevations.

② Theoretical Grade Elevations Before Dead Load Deflection.



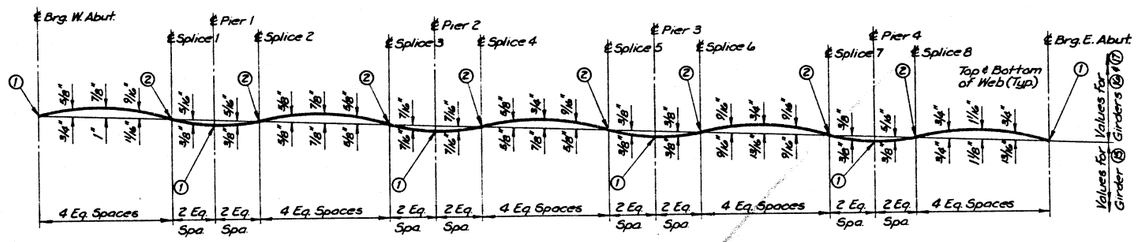
SECTION AT ABUT.

SECTION AT PIER

Note:
Girder G5 Elevation & Sections (Girders (15) thru (17)) same as G4 except:
1. *Longitudinal dimensions vary; see table on Dwg. No. 20.*
2. *Reduce spacing of Shear Studs shown for G4 as req'd to prevent location of end studs on top of Splice PL.*

NOTES

1. "NTR" INDICATES PLATES TO WHICH NOTCH TOUGHNESS REQUIREMENTS APPLY.
2. SEE DWGS. 21 & 24 FOR ADDITIONAL STRUCTURAL STEEL DETAILS.
3. SEE DWG. NO. 21 FOR SECTION A-A.
4. ALL FLANGE PLATES AND FLANGE SPLICE PLATES ARE M223 GRADE 50 STEEL.



G5 CAMBER DIAGRAM

(Spans 1-5 WB; Girders (15) thru (17))

① Final Top of Web Elevations used in computing Bearing Seat Elevations.

② Theoretical Grade Elevations Before Dead Load Deflection.

G4 TOP OF WEB ELEVATIONS

BEAM	℄ Brg. W. Abut.	Splice 1	℄ Pier 1	Splice 2	Splice 3	℄ Pier 2	Splice 4
(18)	575.437	574.808	574.557	574.385	573.729	573.448	573.271
(19)	575.481	574.861	574.601	574.429	573.775	573.493	573.313
(20)	575.322	574.702	574.442	574.271	573.614	573.333	573.153
(21)	575.138	574.518	574.258	574.087	573.431	673.150	572.970

BEAM	Splice 5	℄ Pier 3	Splice 6	Splice 7	℄ Pier 4	Splice 8	℄ Brg. E. Abut.
(18)	572.623	572.339	572.186	571.606	571.361	571.223	570.589
(19)	572.670	572.384	572.208	571.549	571.272	572.109	570.389
(20)	572.510	572.224	572.042	571.369	571.087	570.920	570.189
(21)	572.327	572.041	571.857	571.176	570.891	570.724	569.990

G5 TOP OF WEB ELEVATIONS

BEAM	℄ Brg. W. Abut.	Splice 1	℄ Pier 1	Splice 2	Splice 3	℄ Pier 2	Splice 4
(15)	575.224	574.577	574.323	574.142	573.468	573.187	573.008
(16)	575.304	574.657	574.413	574.232	573.568	573.283	573.101
(17)	575.383	574.740	574.498	574.320	573.665	573.383	573.200

BEAM	Splice 5	℄ Pier 3	Splice 6	Splice 7	℄ Pier 4	Splice 8	℄ Brg. E. Abut.
(15)	572.344	572.051	571.969	571.615	571.452	571.436	571.188
(16)	572.444	572.157	572.049	571.626	571.444	571.335	570.988
(17)	572.547	572.262	572.127	571.627	571.418	571.312	570.789

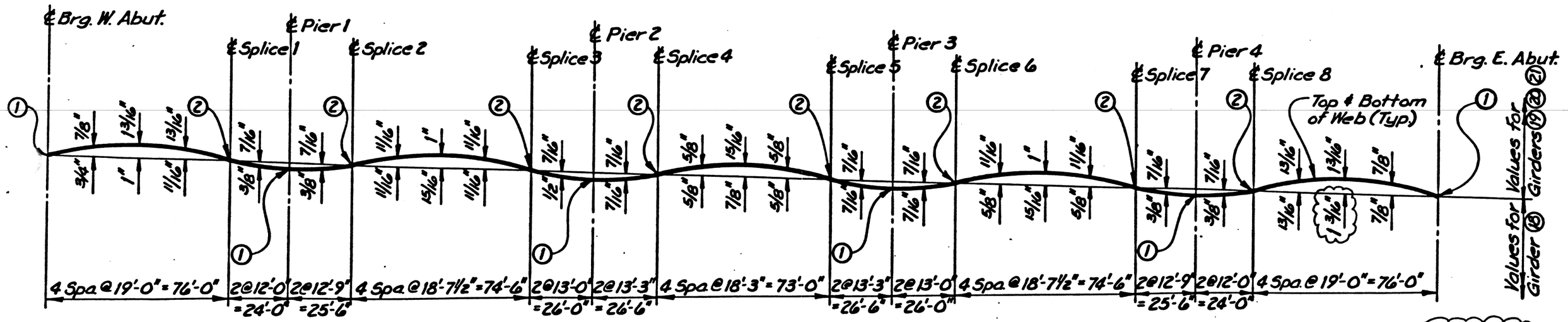
ESCA
CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Vermilion		
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		
	Dwg. No. 23 of 45			



G4 CAMBER DIAGRAM

(Spans 1-5 WB; Girders ⑱ thru ㉑)

① Final Top of Web Elevations used in computing Bearing Seat Elevations.

② Theoretical Grade Elevations Before Dead Load Deflection.

REVISED 9-27-90

STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER

FAI RTE. 74 SECTION (92-12B)BR

VERMILION COUNTY

STATION 1992+54.00

STRUCTURE NO. 092-0014(WB)

STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Vermilion		
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		
	Dwg. No. 23 of 45			

G4 TOP OF WEB ELEVATIONS

BEAM	℄ BRG. W. ABUT.	Splice 1	℄ Pier 1	Splice 2	Splice 3	℄ Pier 2	Splice 4
(18)	575.437	574.808	574.557	574.385	573.729	573.448	573.271
(19)	575.481	574.861	574.601	574.429	573.775	573.493	573.313
(20)	575.322	574.702	574.442	574.271	573.614	573.333	573.153
(21)	575.138	574.518	574.258	574.087	573.431	573.150	572.970

BEAM	Splice 5	℄ Pier 3	Splice 6	Splice 7	℄ Pier 4	Splice 8	℄ BRG. E. ABUT.
(18)	572.623	572.339	572.156	571.587	571.361	571.238	570.589
(19)	572.670	572.384	572.208	571.549	571.272	571.109	570.389
(20)	572.510	572.224	572.042	571.369	571.087	570.920	570.189
(21)	572.327	572.041	571.857	571.176	570.891	570.724	569.990

G5 TOP OF WEB ELEVATIONS

BEAM	℄ BRG. W. ABUT.	Splice 1	℄ Pier 1	Splice 2	Splice 3	℄ Pier 2	Splice 4
(15)	575.224	574.577	574.323	574.142	573.468	573.187	573.008
(16)	575.304	574.657	574.413	574.232	573.568	573.283	573.101
(17)	575.383	574.740	574.498	574.320	573.665	573.383	573.200

BEAM	Splice 5	℄ Pier 3	Splice 6	Splice 7	℄ Pier 4	Splice 8	℄ BRG. E. ABUT.
(15)	572.344	572.038	571.833	571.492	571.440	571.477	571.188
(16)	572.444	572.157	571.963	571.559	571.444	571.416	570.988
(17)	572.547	572.262	572.070	571.587	571.418	571.338	570.789

REVISED 9-27-90

STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	78
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR			Dwg. No. 24 of 45	

MOMENT TABLE

		WESTBOUND LANES - INTERIOR GIRDERS									EB LANES - SPANS 1 & 2 - INTERIOR GIRDERS		
		0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.5 Span 3	Pier 3	0.5 Span 4	Pier 4	0.6 Span 5	0.35 Span 1	Pier 1	0.6 Span 2
I_s	in^4	16214	26033	16214	28060	16214	28060	16214	26033	16214	14674	28060	26033
I_c @	in^4	28246	-	28246	-	28246	-	28246	-	28246	26565	-	40515
I_c ℄	in^4	37394	-	37394	-	37394	-	37394	-	37394	35486	-	53868
S_s	in^3	693	1084	693	1163	693	1163	693	1084	693	631	1163	1084
S_c @	in^3	849	-	849	-	849	-	849	-	849	802	-	1276
S_c ℄	in^3	921	-	921	-	921	-	921	-	921	877	-	1381
@ N.C.	k/l	0.89	0.95	0.89	0.96	0.89	0.96	0.89	0.95	0.89	0.86	0.94	0.93
M @ N.C.	l-k	552.5	1276.1	477.5	1305.5	466.2	1305.5	477.5	1276.1	552.5	455.4	1471.4	1161.0
@ C.	k/l	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.32	0.32	0.32
M @ C.	l-k	202.6	363.5	200.8	385.9	189.6	385.9	200.8	363.5	202.6	203.6	458.2	426.4
M ℄	l-k	915.3	846.6	1001.7	974.1	999.4	974.1	1001.7	846.6	915.3	840.7	770.9	1175.2
MI	l-k	203.4	188.1	199.5	194.0	199.1	194.0	199.5	188.1	203.4	186.8	171.4	233.9
5/3(M ℄+I)	l-k	1864.5	1724.5	2002.0	1946.8	1997.5	1946.8	2002.0	1724.5	1864.5	1712.5	1570.5	2348.5
M_s	l-k	3405.4	3364.1	3484.4	4729.7	3449.3	4729.7	3484.4	3364.1	3405.4	3083.0	4550.1	5116.7
f_s @ N.C.	ksi	9.57	14.05	8.22	13.40	8.02	13.40	8.22	14.05	9.57	8.66	15.18	12.78
f_s @C	ksi	2.86	4.00	2.84	3.97	2.68	3.97	2.84	4.00	2.86	3.05	4.73	4.01
f_s 5/3(℄+I)	ksi	24.30	18.98	26.09	19.98	26.03	19.98	26.09	18.98	24.30	23.43	16.20	20.41
f_s(Total)	ksi	47.75	48.14	48.30	48.54	47.75	48.30	48.30	48.14	47.75	45.68	46.96	48.36
f_s(Total)+R	ksi	48.74	48.53	49.28	48.89	48.73	48.89	49.28	48.53	48.74	46.86	47.33	49.05
V_R	k	60.0	-	54.5	-	55.1	-	54.5	-	60.0	57.1	-	51.7

EB LANES - SPANS 3, 4 & 5 - INTERIOR GIRDERS									
0.45 Span 3		Pier 3		0.5 Span 4		Pier 4		0.6 Span 5	
STRAIGHT	FLARED	STRAIGHT	FLARED	STRAIGHT	FLARED	STRAIGHT	FLARED	STRAIGHT	FLARED
26033	18136	30107	26033	16284	14674	24028	24028	16284	16284
40191	29326	-	-	28653	25185	-	-	28653	27149
53440	39591	-	-	38241	34070	-	-	38241	36736
1085	772	1241	1085	704	631	1006	1006	704	704
1270	933	-	-	876	788	-	-	876	857
1374	1025	-	-	955	868	-	-	955	944
0.95	0.74	0.98	0.79	0.89	0.72	0.94	0.78	0.89	0.73
1164.3	871.4	1527.6	1461.9	418.2	345.2	1170.6	1172.5	599.1	656.7
0.29	0.26	0.29	0.26	0.29	0.26	0.29	0.26	0.29	0.26
375.7	394.6	431.3	473.6	189.9	206.9	340.0	333.3	212.0	234.6
1218.3	724.7	911.3	749.5	1009.8	759.4	807.9	726.3	920.3	798.0
242.4	142.9	181.4	147.5	200.9	149.2	160.8	150.6	204.5	175.1
2434.5	1446.0	1821.2	1495.0	2017.8	1514.3	1614.5	1461.5	1874.1	1621.8
5166.9	3525.6	4914.1	4459.6	3413.7	2686.4	4062.6	3857.5	3491.5	3267.1
12.88	13.54	14.77	16.17	7.13	6.57	13.97	13.99	10.21	11.19
3.55	5.08	4.17	5.24	2.60	3.15	4.06	3.98	2.90	3.29
21.26	16.93	17.61	16.53	25.36	20.94	19.26	17.43	23.56	20.62
49.00	46.21	47.51	49.32	45.62	39.86	48.46	46.02	47.67	45.63
49.69	46.87	47.90	49.73	46.64	40.75	48.90	46.44	48.74	46.65
56.4	45.9	-	-	52.2	43.4	-	-	53.3	48.4

@ N.C. - MOMENT DUE TO DEAD LOADS ON NON-COMPOSITE SECTION.

M @ C. - MOMENT DUE TO DEAD LOADS ON COMPOSITE SECTION.

M ℄ - MOMENT DUE TO LIVE LOAD ON NON-COMPOSITE OR COMPOSITE SECTION.

I - LIVE LOAD IMPACT

I_s AND S_s ARE THE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED IN COMPUTING f_s (TOTAL)

I_c AND S_c ARE THE MOMENT OF INERTIA AND SECTION MODULUS OF THE COMPOSITE SECTION USED IN COMPUTING f_s (TOTAL)

V_R IS THE MAXIMUM ℄ + IMPACT SHEAR RANGE IN SPAN

M_s (APPLIED MOMENT) = 1.3 [M @ + M_s @ + 5/3 (M ℄ + I)]

f_s (TOTAL) IS THE SUM OF THE STRESSES DUE TO 1.3 [M @ + M_s @ + 5/3 (M ℄ + I)]

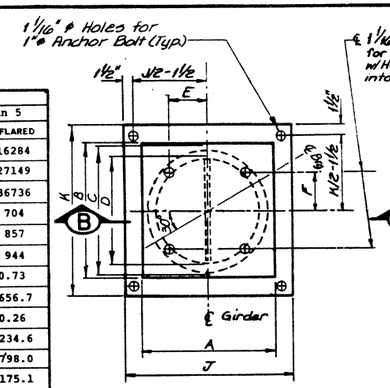
BEARING SCHEDULE

LOCATION	TYPE	VERTICAL LOAD	LATERAL LOAD	LONG. LOAD	NO. REQ'D.	A	B	C	D	E	F	G	H	I	J	K
West Abutments	Exp.	100k	5.2k	0	13	8 1/2"	10 1/2"	8 1/2"	7"	4"	4"	3"	1 1/2"	4"	19"	12"
Piers 1	Exp.	300k	11.7k	0	13	14"	15"	14"	11 1/2"	4"	4"	3 3/4"	1 1/2"	4"	19"	18"
Pier 2 WB	Fixed	300k	13k	7.5k	7	-	-	14"	11 1/2"	4"	4"	3 3/8"	1 1/2"	4"	19"	18"
Pier 2 EB	Fixed	125k	6.5k	4.5k	14	-	-	9 1/2"	7 1/2"	4"	4"	3"	1 1/2"	4"	19"	12"
Piers 3	Exp.	300k	13k	0	15	14"	15"	14"	11 1/2"	4"	4"	3 3/4"	1 1/2"	4"	19"	18"
Piers 4	Exp.	300k	11.7k	0	15	14"	15"	14"	11 1/2"	4"	4"	3 3/4"	1 1/2"	4"	19"	18"
East Abutments	Exp.	100k	5.2k	0	15	8 1/2"	10 1/2"	8 1/2"	7"	4"	4"	3"	1 1/2"	4"	19"	12"

REACTION TABLE

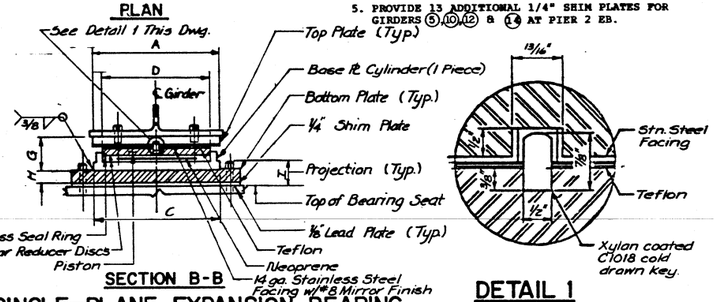
	WESTBOUND LANES - INTERIOR GIRDERS						EB LANES - SPANS 1 & 2 - INTERIOR GIRDERS			EB LANES - SPANS 3, 4, & 5 - INTERIOR GIRDERS *			
	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	E. Abut.	W. Abut.	Pier 1	Pier 2	Pier 2	Pier 3	Pier 4	E. Abut.
R @ k	42.3	151.0	151.6	151.6	151.0	42.3	39.3	171.7	62.8	62.2	171.6	146.4	43.8
R ℄ k	44.8	78.3	83.1	83.1	78.3	44.8	43.2	75.8	42.6	46.1	83.7	77.9	39.8
R_I k	10.0	17.4	16.5	16.5	17.4	10.0	9.6	16.8	8.5	9.2	16.6	15.5	8.8
R(Total) k	97.1	246.7	251.2	251.2	246.7	97.1	92.1	264.3	113.9	117.5	271.9	239.8	92.4

* Straight Beams

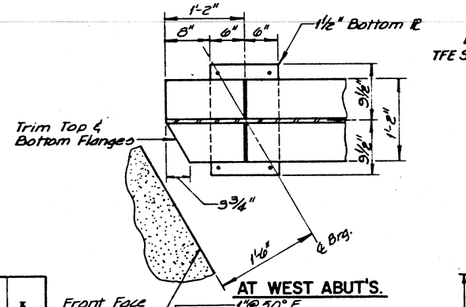


NOTES

1. THE BEARING CONFIGURATIONS AND DETAILS SHOWN ARE FOR GENERAL GUIDANCE FOR THE MANUFACTURER. SLIGHT VARIATIONS IN DIMENSIONS, ETC. WILL BE ALLOWED. SEE SPECIAL PROVISIONS.
2. BEARINGS ARE TO BE DESIGNED BY THE MANUFACTURER FOR THE MINIMUM LOADS GIVEN IN THE BEARING SCHEDULE ON THIS DWG. MANUFACTURER SHALL SUBMIT SHOP DWGS. & DESIGN CALCULATIONS TO THE ENGINEER FOR REVIEW.
3. CONTRACTOR IS RESPONSIBLE FOR ADJUSTING DIMENSIONS AS REQUIRED IN THE FIELD FOR THE ACTUAL BEARINGS USED.
4. EXPANSION BEARINGS SHALL BE SET AT 0° AT 50°F. ADJUST 1/8" PER 100 FT. OF EXPANSION PER 15°F VARIATION.
5. PROVIDE 13 ADDITIONAL 1/4" SHIM PLATES FOR GIRDERS ⑤⑩⑫ & ⑭ AT PIER 2 EB.



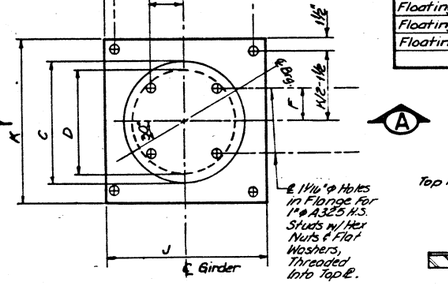
SINGLE-PLANE EXPANSION BEARING

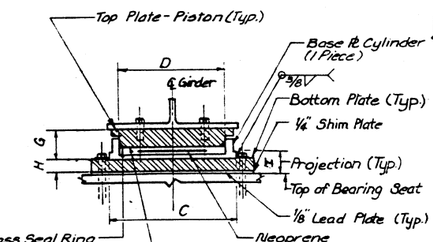


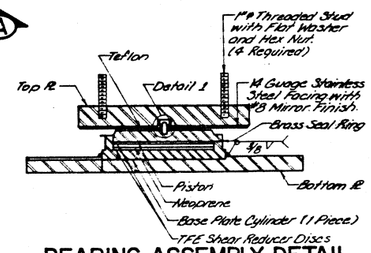
END OF GIRDER TREATMENTS

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Floating Brgs., Guided Exp. 100k	Each	28
Floating Brgs., Guided Exp. 300k	Each	43
Floating Brgs., Fixed 125k	Each	14
Floating Brgs., Fixed 300k	Each	7







BEARING ASSEMBLY DETAIL

STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	9-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		Vermilion		
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		
		Dwg. No. 24 of 45		

BEARING SCHEDULE

LOCATION	TYPE	VERTICAL LOAD	LATERAL LOAD	LONG. LOAD	NO. REQ'D.	A	B	C	D	E	F	G	H	I	J	K
West Abutments	Exp.	100^k	5.2^k	0	13	8 1/2"	10 1/2"	8 1/2"	7"	2½"	4"	3"	1 1/2"	4"	19"	12"
Piers 1	Exp.	300^k	11.7^k	0	13	14"	15"	14"	11 1/2"	4"	4"	3 3/4"	1 1/2"	4"	19"	18"
Pier 2 WB	Fixed	300^k	13^k	7.5^k	7	-	-	14"	11 1/2"	2½"	4"	3 3/8"	1 1/2"	4"	19"	18"
Pier 2 EB	Fixed	125^k	6.5^k	4.5^k	14	-	-	9 1/2"	7 1/2"	1¾"	1¾"	3"	1 1/2"	4"	19"	12"
Piers 3	Exp.	300^k	13^k	0	15	14"	15"	14"	11 1/2"	4"	4"	3 3/4"	1 1/2"	4"	19"	18"
Piers 4	Exp.	300^k	11.7^k	0	15	14"	15"	14"	11 1/2"	4"	4"	3 3/4"	1 1/2"	4"	19"	18"
East Abutments	Exp.	100^k	5.2^k	0	15	8 1/2"	10 1/2"	8 1/2"	7"	2½"	4"	3"	1 1/2"	4"	19"	12"

REVISED 9-27-90

REACTION TABLE

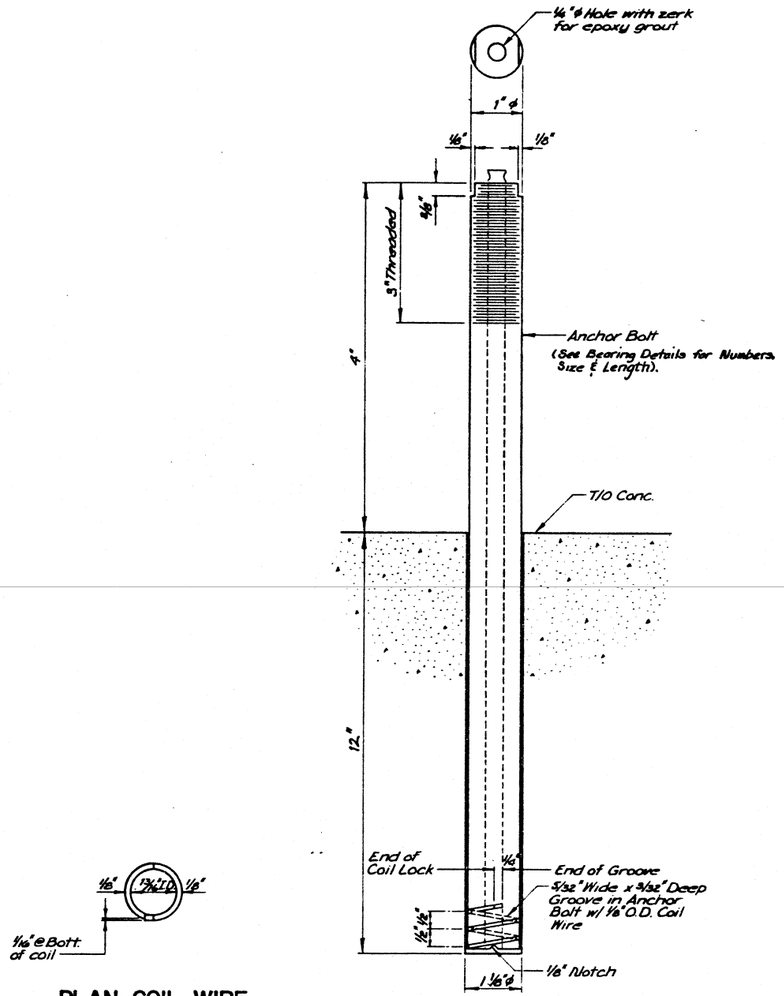
	WESTBOUND LANES - INTERIOR GIRDERS						EB LANES - SPANS 1 & 2 - INTERIOR GIRDERS			EB LANES - SPANS 3, 4, & 5 - INTERIOR GIRDERS ❋			
	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	E. Abut.	W. Abut.	Pier 1	Pier 2	Pier 2	Pier 3	Pier 4	E. Abut.
R_D k	42.3	151.0	151.6	151.6	151.0	42.3	39.3	171.7	62.8	62.2	171.6	146.4	43.8
R_L k	44.8	78.3	83.1	83.1	78.3	44.8	43.2	75.8	42.6	46.1	83.7	77.9	39.8
R_I k	10.0	17.4	16.5	16.5	17.4	10.0	9.6	16.8	8.5	9.2	16.6	15.5	8.8
R(Total) k	97.1	246.7	251.2	251.2	246.7	97.1	92.1	264.3	113.9	117.5	271.9	239.8	92.4

❋ Straight Beams

STEEL FRAMING DETAILS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	79
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 25 of 45		



PLAN-COIL WIRE

ILLINOIS COIL-LOCK ANCHOR BOLT

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

THE ANCHOR BOLT SHALL BE FABRICATED FROM COLD DRAWN OR HOT FINISHED SEAMLESS CARBON STEEL MECHANICAL TUBING CONFORMING TO ASTM A 519, GRADE 1026 AND SUPPLIED WITH HEXAGONAL NUTS AND CUT WASHERS.

THE COIL WIRE SHALL BE MADE OF ANY SUITABLE SOFT STEEL WIRE.

THE FINISHED ANCHOR BOLT SHALL BE CLEANED OF RUST AND OTHER FOREIGN MATERIALS AND WRAPPED OR PACKAGED TO PREVENT CONTAMINATION UNTIL THEY ARE INSTALLED. THE EPOXY GROUT SHALL BE A TWO-COMPONENT, EPOXY RESIN BONDING SYSTEM CONFORMING TO ASTM C881, TYPE I, GRADE 1 AND OF A CLASS SUITABLE FOR THE TEMPERATURE OF INSTALLATION.

INSTALLATION PROCEDURE FOR ILLINOIS COIL-LOCK ANCHOR BOLT

1. WITH THE COIL WIRE IN PLACE, THE BOLT SHALL BE INSERTED INTO THE HOLE AND TURNED CLOCKWISE TO A SNUG FIT IN THE HOLE. NUT AND WASHER SHALL BE PLACED ON THE BOLT. THE NUT SHALL BE TIGHTENED UNTIL THE STEEL BASE PLATE IS HELD SECURELY TO THE CONCRETE BEARING SEAT.
2. EPOXY GROUT SHALL BE PUMPED THROUGH THE ZERK FITTING WITH A PRESSURE GUN. PUMPING SHALL CONTINUE UNTIL THE EPOXY OVERFLOWS THE HOLE AROUND THE BOLT SHANK. AFTER PUMPING IS DISCONTINUED, EXCESS EPOXY SHALL BE IMMEDIATELY WIPED OFF.

ALTERNATE ANCHOR BOLTS

THE CONTRACTOR MAY USE, AT HIS OPTION, THE CAPSULE OR THE ADHESIVE CARTRIDGE TYPE ANCHOR RODS THAT HAVE BEEN PREVIOUSLY TESTED AND GIVEN A PRIOR APPROVAL BY THE DEPARTMENT. THE CONTRACTOR SHALL INSTALL THESE ANCHOR RODS IN PRE-DRILLED HOLES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND PROCEDURES.

THE CAPSULE OR THE ADHESIVE CARTRIDGE TYPE ANCHOR RODS SHALL BE A TWO PART SYSTEM COMPOSED OF:

1. A THREADED ROD STUD WITH NUT AND WASHER CONFORMING TO ASTM A307.
2. A SEALED GLASS CAPSULE OR A SEALED GLASS ADHESIVE CARTRIDGE CONTAINING PREMEASURED AMOUNTS OF THE ADHESIVE CHEMICAL.

GENERAL NOTES

1. HOLES IN THE MASONRY FOR ANCHOR BOLTS SHALL BE DRILLED THROUGH THE BASE PLATES TO THE DIAMETER AND DEPTH SHOWN OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION AFTER BEAMS OR GIRDERS HAVE BEEN ERECTED AND ADJUSTED.
2. PRIOR TO SETTING THE BOLTS, THE HOLES SHALL BE DRY AND ALL DUST AND LOOSE PARTICLES SHALL BE REMOVED BY THE USE OF COMPRESSED AIR OR VACUUMING.
3. THE ANCHOR BOLTS, FURNISHED AND INSTALLED AND INCLUDING THE EPOXY GROUT OR CAPSULES SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT BID PRICE FOR "FURNISHING AND ERECTING STRUCTURAL STEEL."

ESCA
CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	RDP	8-89

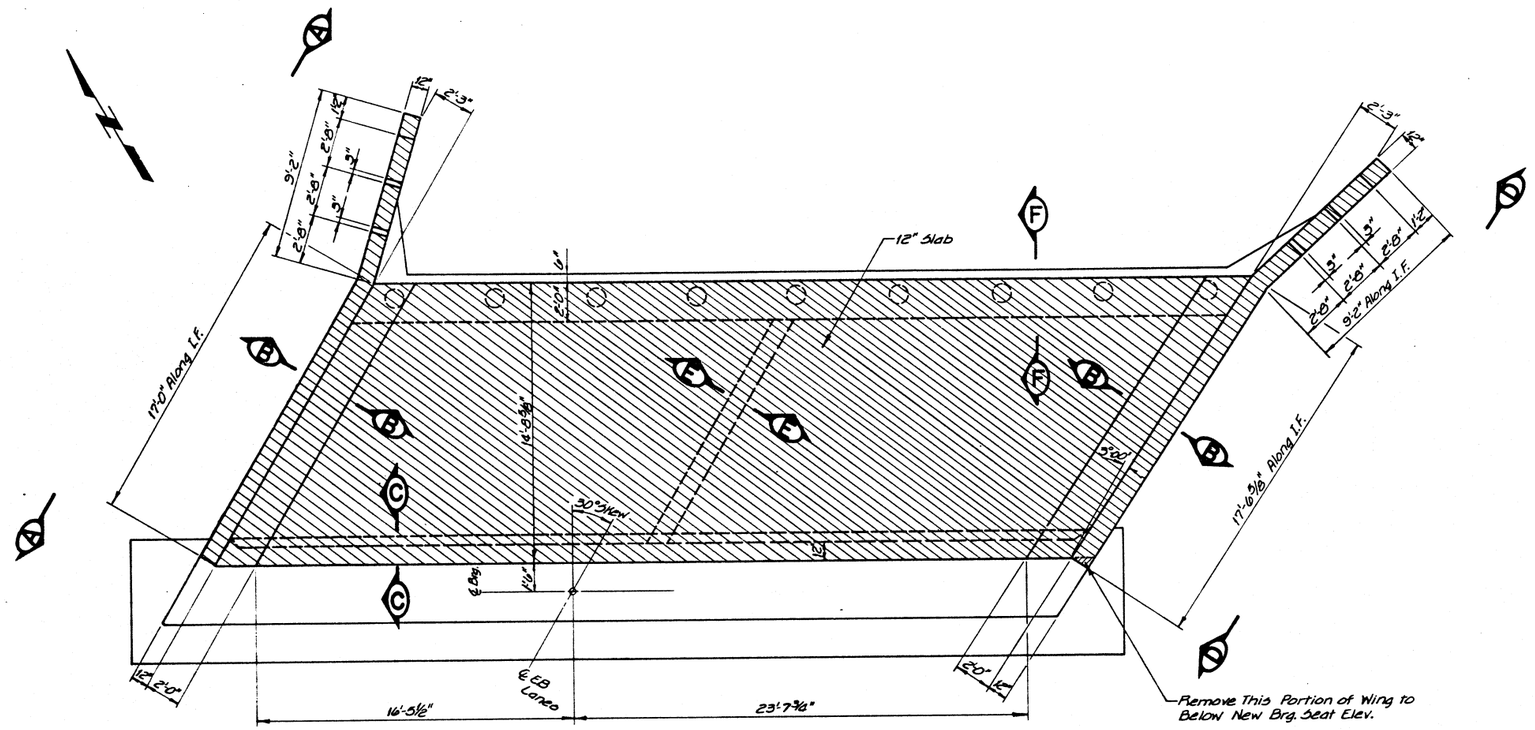
NOTE

THE ILLINOIS COIL LOCK ANCHOR BOLT IS A PROPRIETARY ITEM WHICH IS THE PROPERTY OF THE ILLINOIS DEPARTMENT OF TRANSPORTATION. USE, REPRODUCTION OR DISCLOSURE WITHOUT EXPRESS WRITTEN PERMISSION IS PROHIBITED AND PROTECTED UNDER FEDERAL COPYRIGHT LAWS. THE PRODUCTION AND THE FABRICATION OF THIS BOLT FOR USE ON HIGHWAY PROJECTS IN THE STATE OF ILLINOIS SHALL BE PERMITTED AND THERE SHALL BE NO INCURRED CHARGES OR FEES TO THE MANUFACTURER OR THE FABRICATOR FOR PRODUCING OR FABRICATING THIS BOLT.

ANCHOR BOLTS

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)I
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	80
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 26 of 45		



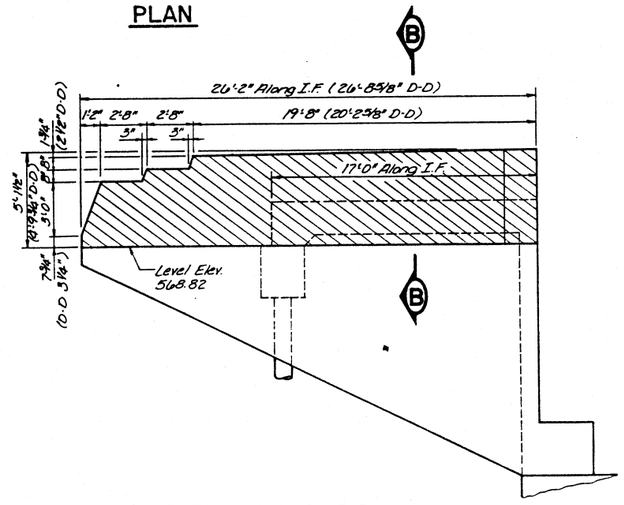
NOTES

1. SEE DWG. NO. 29 FOR EXISTING REINFORCEMENT TO BE PRESERVED AND INCORPORATED INTO NEW WORK.

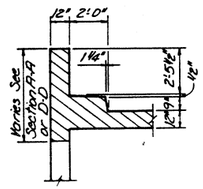
LEGEND

Concrete Removal

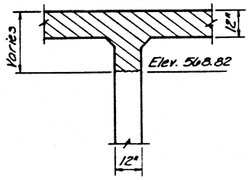
PLAN



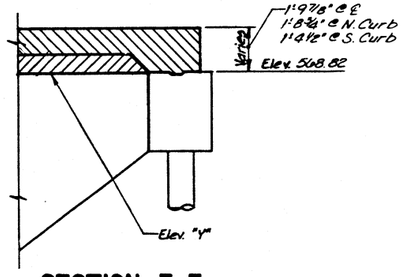
SECTION A-A & D-D
(A-A Shown, D-D Similar except as noted)



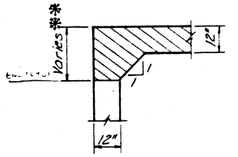
SECTION B-B



SECTION E-E



SECTION F-F



** 1'-9 3/8" @ ℄, 1'-8" @ N. Curb
1'-4 1/2" @ S. Curb

SECTION C-C

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	39.7

ESCA CONSULTANTS, INC.

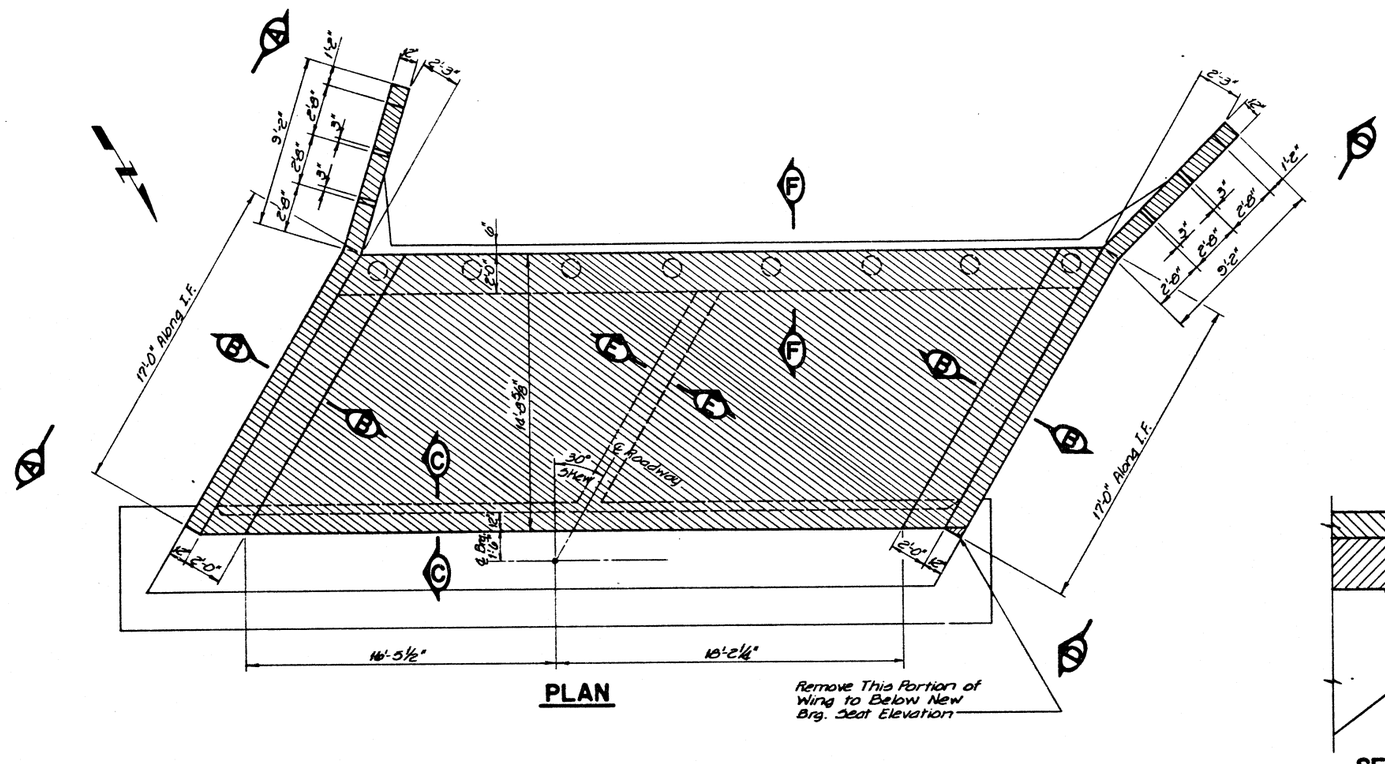
DESIGNED BY:	RDP	9-89
DRAWN BY:	GGB	9-89
CHECKED BY:	JAF	9-89
APPROVED BY:	RDP	9-89

EASTBOUND LANES
EAST ABUTMENT
CONCRETE REMOVAL
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

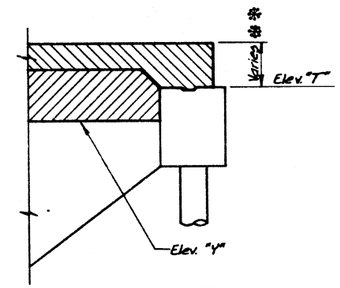
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	81
STA		TO STA		
FED ROAD DIST NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 27 of 45		

NOTES

1. SEE DWG. NOS. 31 & 35 FOR EXISTING REINFORCEMENT TO BE PRESERVED AND INCORPORATED INTO NEW WORK.



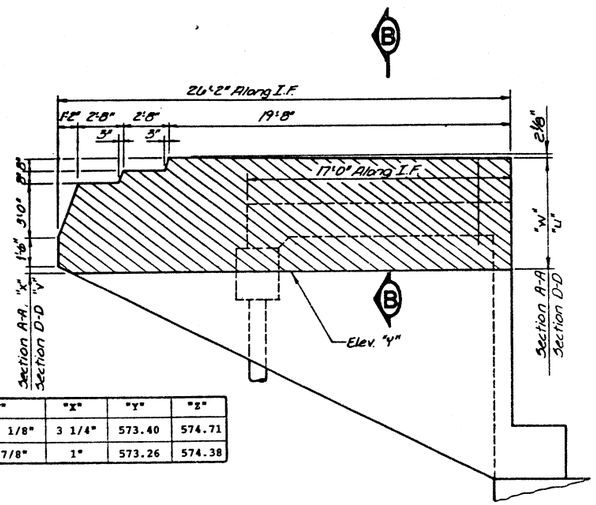
PLAN



SECTION F-F

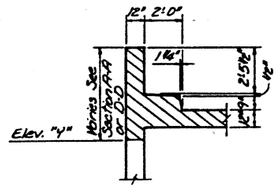
LEGEND

Concrete Removal

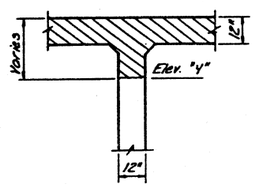


LOCATION	"T"	"U"	"V"	"W"	"X"	"Y"	"Z"
W. ABUT. WB	574.86	6'-1 3/8"	5 1/2"	5'-11 1/8"	3 1/4"	573.40	574.71
W. ABUT. EB	574.53	5'-10 7/8"	3"	5'-8 7/8"	1"	573.26	574.38

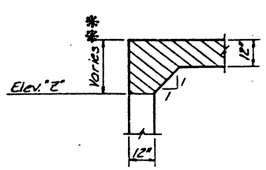
SECTION A-A & D-D
(A-A Shown, D-D Similar except as noted)



SECTION B-B



SECTION E-E



** 1'-7⅜" @ ℄, 1'-6⅜" @ N. Curb, 1'-4½" @ S. Curb.

SECTION C-C

BILL OF MATERIAL
(TWO ABUTMENTS)

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	75.9

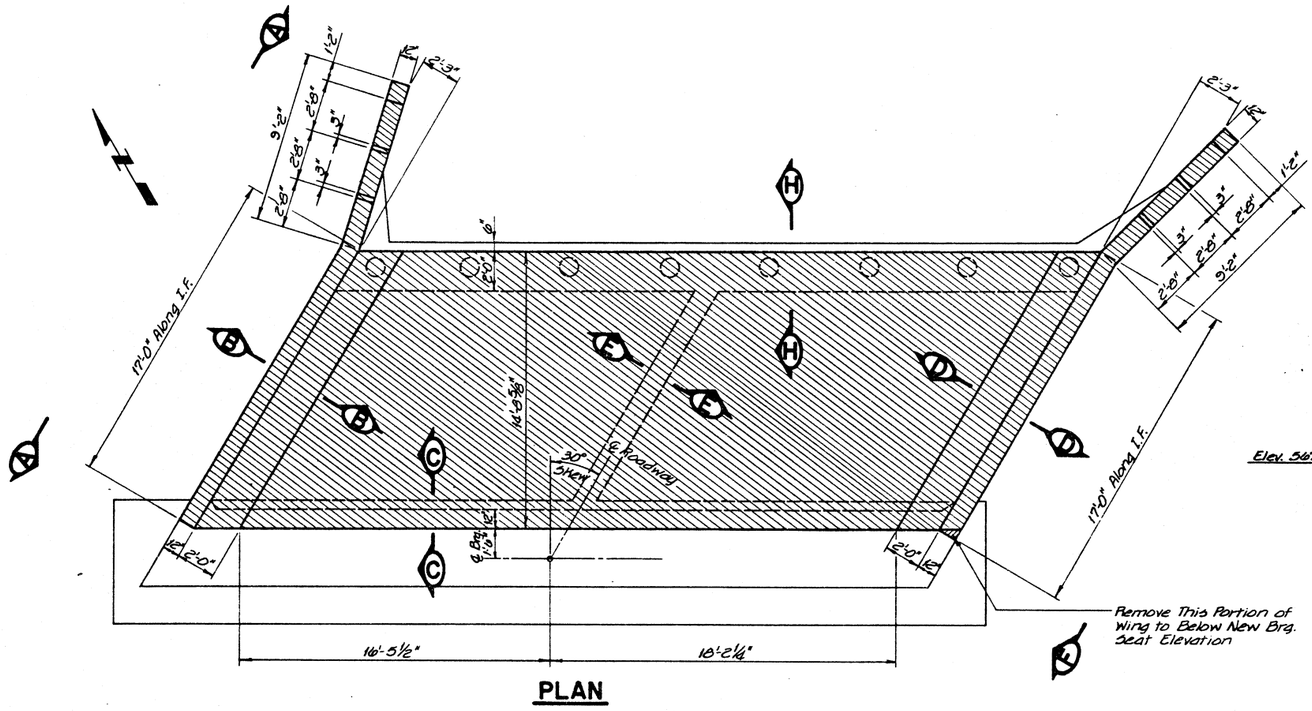
EB LANES W. ABUT. & WB LANES W. ABUT. CONCRETE REMOVAL

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

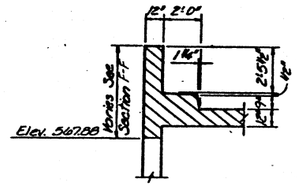
ESCA CONSULTANTS, INC.

DESIGNED BY:	ADP	9-89
DRAWN BY:	GGB	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	ADP	9-89

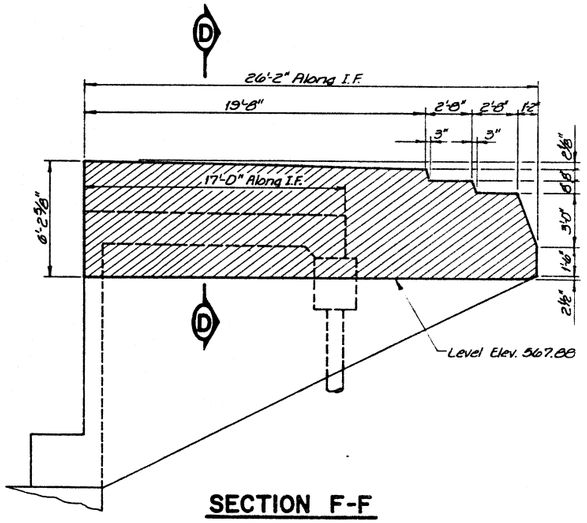
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	82
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 28 of 95		



PLAN



SECTION D-D



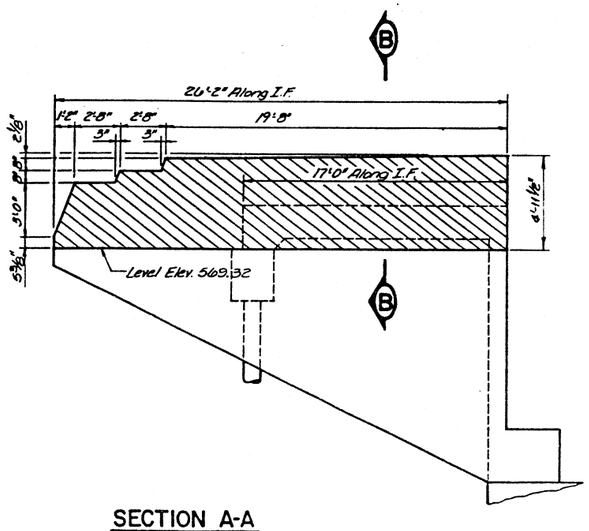
SECTION F-F

NOTES

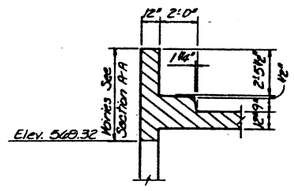
1. SEE DWG. NO. 33 FOR EXISTING REINFORCEMENT TO BE PRESERVED AND INCORPORATED INTO NEW WORK.

LEGEND

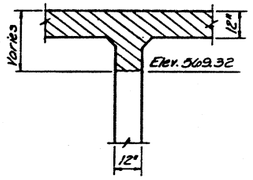
Concrete Removal



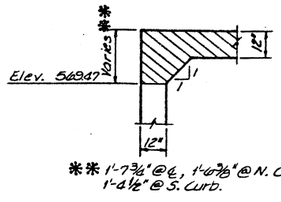
SECTION A-A



SECTION B-B

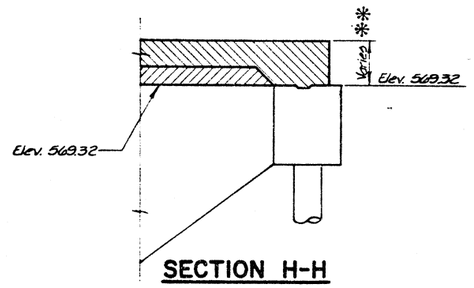


SECTION E-E



** 1'-7 3/4" @ ℄, 1'-6 3/8" @ N. Curb, 1'-6 1/2" @ S. Curb.

SECTION C-C



SECTION H-H

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	36.4

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	9-89
DRAWN BY:	GGB	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

WESTBOUND LANES EAST ABUTMENT CONCRETE REMOVAL

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

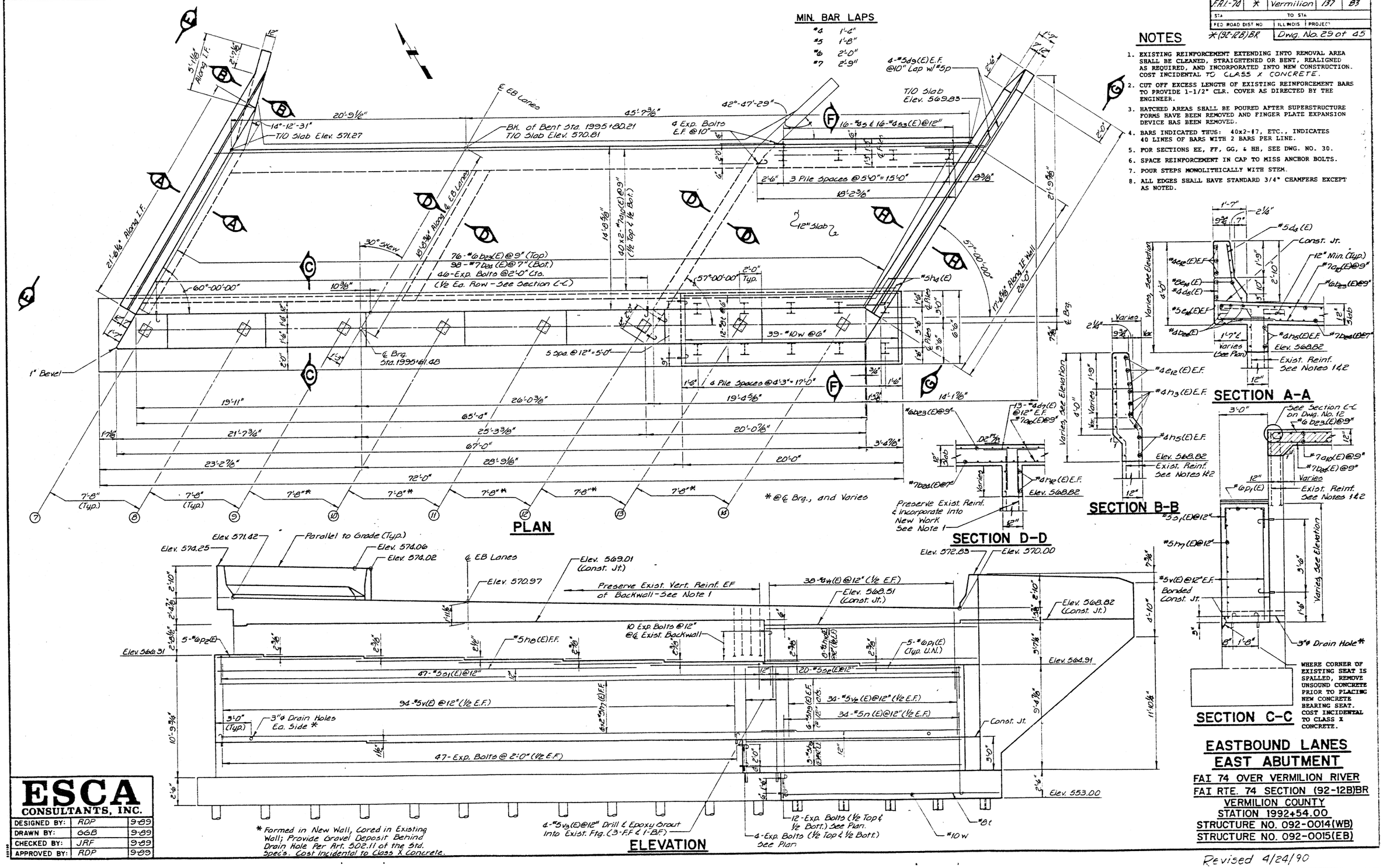
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	83
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 29 of 45		

MIN. BAR LAPS

#4	1'-4"
#5	1'-8"
#6	2'-0"
#7	2'-9"

NOTES

1. EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED OR BENT, REALIGNED AS REQUIRED, AND INCORPORATED INTO NEW CONSTRUCTION. COST INCIDENTAL TO CLASS X CONCRETE.
2. CUT OFF EXCESS LENGTH OF EXISTING REINFORCEMENT BARS TO PROVIDE 1-1/2" CLR. COVER AS DIRECTED BY THE ENGINEER.
3. HATCHED AREAS SHALL BE POURED AFTER SUPERSTRUCTURE FORMS HAVE BEEN REMOVED AND FINGER PLATE EXPANSION DEVICE HAS BEEN REMOVED.
4. BARS INDICATED THUS: 40x2-#7, ETC., INDICATES 40 LINES OF BARS WITH 2 BARS PER LINE.
5. FOR SECTIONS EE, FF, GG, & HH, SEE DWG. NO. 30.
6. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
7. POUR STEPS MONOLITHICALLY WITH STEM.
8. ALL EDGES SHALL HAVE STANDARD 3/4" CHAMFERS EXCEPT AS NOTED.



EASTBOUND LANES EAST ABUTMENT

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	9-89
DRAWN BY:	GGB	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

Revised 4/24/90

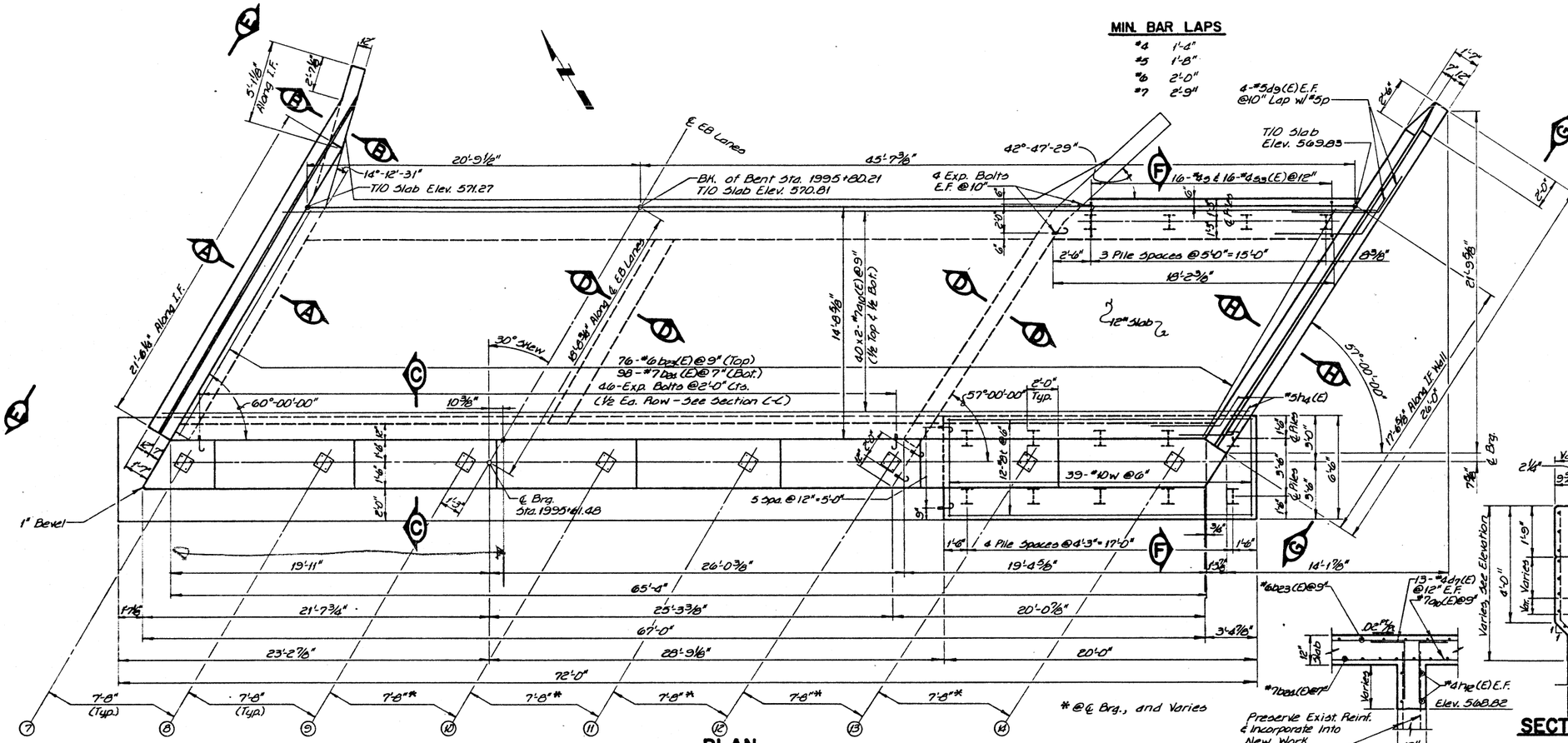
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	83
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 29 of 45		

MIN. BAR LAPS

#4	1'-4"
#5	1'-8"
#6	2'-0"
#7	2'-9"

NOTES

1. EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED OR BENT, REALIGNED AS REQUIRED, AND INCORPORATED INTO NEW CONSTRUCTION. COST INCIDENTAL.
2. CUT OFF EXCESS LENGTH OF EXISTING REINFORCEMENT BARS TO PROVIDE 1-1/2" CLR. COVER AS DIRECTED BY THE ENGINEER.
3. HATCHED AREAS SHALL BE POURED AFTER SUPERSTRUCTURE FORMS HAVE BEEN REMOVED AND FINGER PLATE EXPANSION DEVICE HAS BEEN REMOVED.
4. BARS INDICATED THUS: 40x2-#7, ETC., INDICATES 40 LINES OF BARS WITH 2 BARS PER LINE.
5. FOR SECTIONS EE, FF, GG, & HH, SEE DWG. NO. 30.
6. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
7. POUR STEPS MONOLITHICALLY WITH STEM.
8. ALL EDGES SHALL HAVE STANDARD 3/4" CHAMFERS EXCEPT AS NOTED.



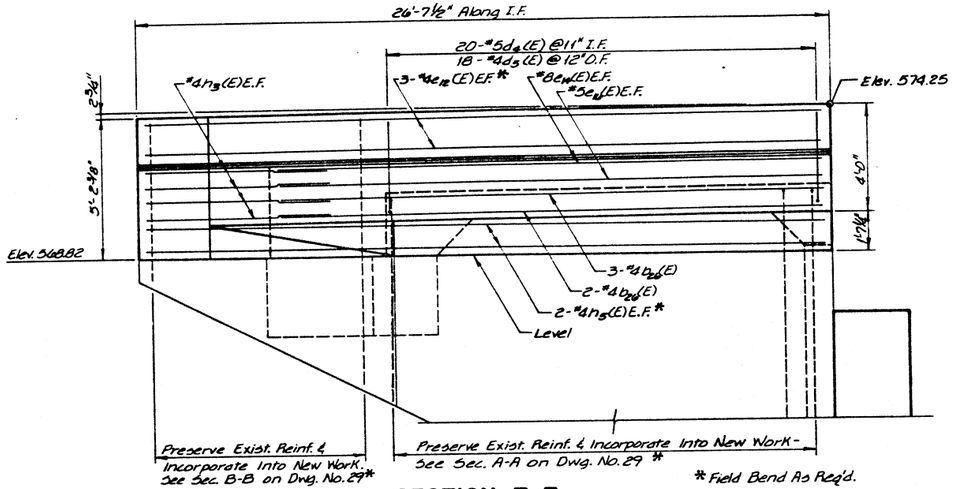
ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	9-89
DRAWN BY:	GGB	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

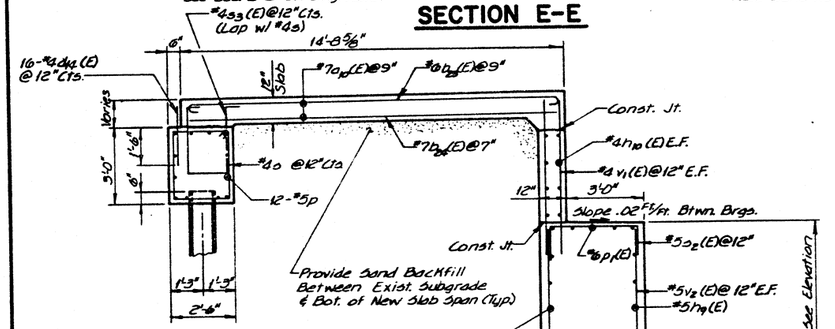
EASTBOUND LANES EAST ABUTMENT

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

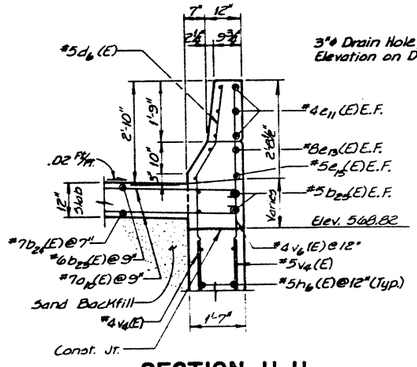
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	84
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 30 of 45		



SECTION E-E



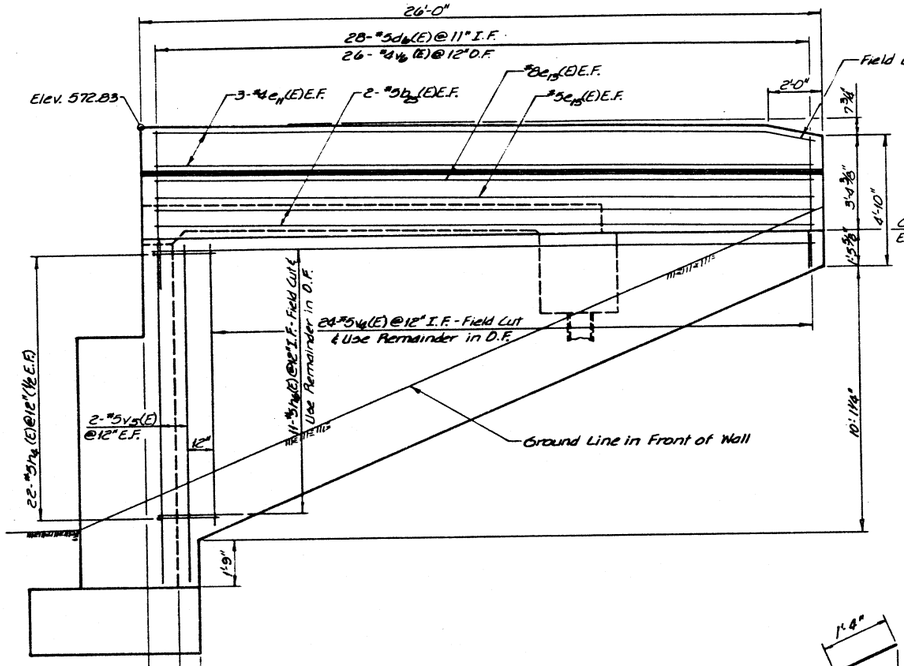
SECTION F-F



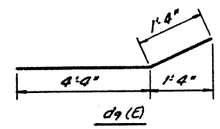
SECTION H-H

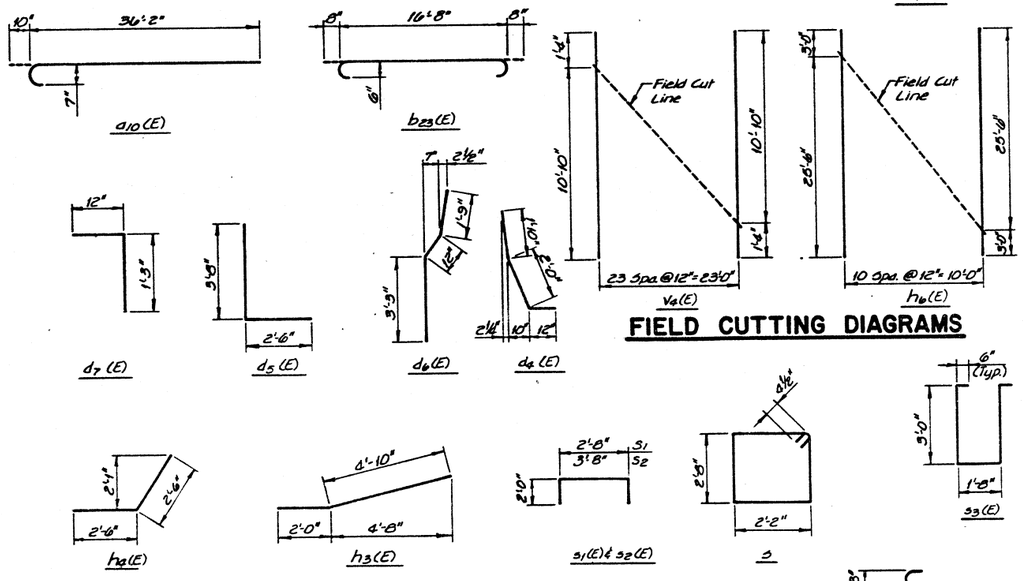
PILE DATA

	ABUTMENT	END BENT
Type	HP 12x53	HP 12x53
Capacity	Refusal	Refusal
No. Req'd.	10(9+1 Test)	4
Est. Length	51'	64'



SECTION G-G





BAR BENDING DETAILS

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	80	#7	37'0"	
b22(E)	76	#6	18'0"	
b28(E)	98	#7	16'-8"	
b25(E)	4	#5	23'-6"	
b24(E)	5	#4	21'-0"	
d9(E)	20	#5	4'-10"	
d5(E)	18	#4	6'2"	
d6(E)	28	#5	6'0"	
d7(E)	32	#4	2'-3"	
d8(E)	8	#5	5'-8"	
d14(E)	16	#4	2'-3"	
e11(E)	6	#4	25'-6"	
e12(E)	6	#4	26'-0"	
e13(E)	2	#8	23'-6"	
e14(E)	2	#8	21'-0"	
e15(E)	2	#5	23'-6"	
e16(E)	2	#5	21'-0"	
h2(E)	2	#6	34'-2"	
h3(E)	6	#4	6'10"	
h4(E)	22	#5	5'0"	
h5(E)	4	#4	28'0"	
h10(E)	11	#5	23'-6"	
h7(E)	12	#5	27'-6"	
h8(E)	1	#5	37'-6"	
h9(E)	18	#5	19'-6"	
h16(E)	8	#4	14'-4"	
h20(E)	8	#4	19'0"	
n(E)	94	#5	7'4"	6
P	12	#5	17'-6"	
P1(E)	35	#6	11'-4"	
P2(E)	5	#6	2'-11"	
S	16	#4	10'-5"	
S1(E)	47	#5	6'-0"	
S2(E)	20	#5	7'-8"	
S3(E)	10	#4	8'-8"	
t	12	#8	19'-8"	
V(E)	34	#5	6'8"	
V1(E)	36	#4	7'0"	
V2(E)	34	#5	6'-3"	
V3(E)	4	#5	10'-4"	
V4(E)	24	#5	12'-2"	
V5(E)	4	#5	13'-0"	
V6(E)	26	#4	3'-7"	
W	39	#10	8'0"	

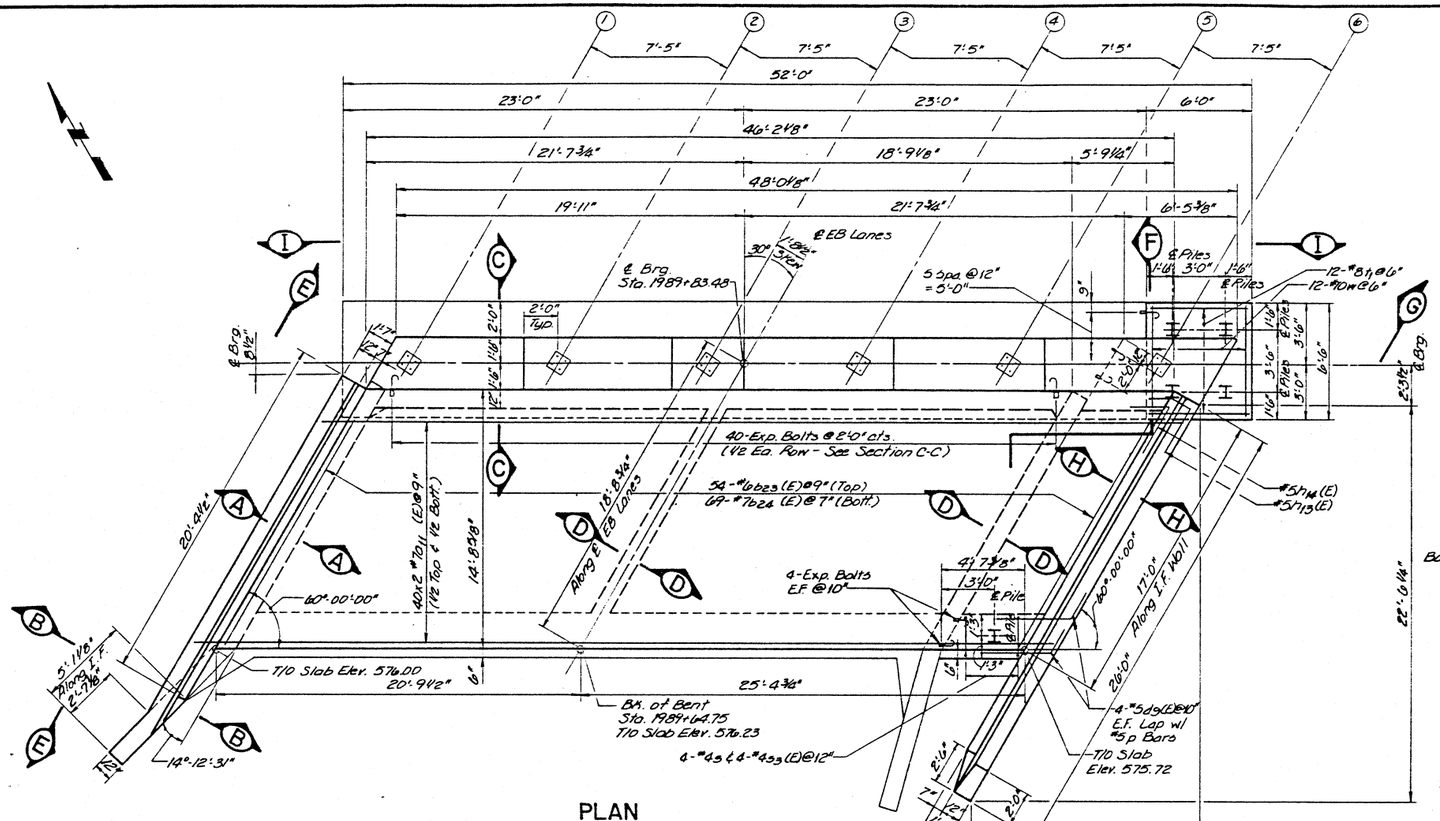
Item	Unit	Quantity
Class X Concrete	C.Y.	129.8
Reinforcement Bars	Lbs.	2,303
Reinforcement Bars (Epoxy Coated)	Lbs.	17,280
Sand Backfill	C.Y.	111
Structure Excavation	C.Y.	73
Expansion Bolts	Ea.	119
Steel Piles HP 12x53	L.F.	715
Test Pile HP 12x53	Ea.	1

EASTBOUND LANES
EAST ABUTMENT
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	9-89
DRAWN BY:	GGB	9-89
CHECKED BY:	JRF	9-89
APPROVED BY:	RDP	9-89

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	85
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 31 of 45		


7'-5" 7'-5" 7'-5" 7'-5" 7'-5" 7'-5"
52'-0"
23'-0" 23'-0" 6'-0"
46'-2⅛"
21'-7¾" 18'-9⅛" 5'-9½"
48'-0⅛"
19'-11" 21'-7¾" 6'-5⅞"
℄ EB Lanes
℄ Brg. Sta. 1989+83.48
30°
5 spa @12" = 5'-0"
℄ Piles
1'-6" 3'-0" 1'-6"
12-#8 h1 @6"
12-#10 w @6"
2'-0" Typ.
40-Exp. Bolts @2'-0" ctrs. (½ Eq. Row - See Section C-C)
54-#6 b23 (E)@9" (Top)
69-#7 b24 (E)@7" (Bolt)
#5 h16 (E)
#5 h13 (E)
Along ℄ EB Lanes
4-Exp. Bolts E.F. @10"
Along E.F. Wall
60°-00'-00"
20'-4½"
40-#7 h11 (E)@9" (½ Top & ½ Bott.)
14'-8⅜"
T/O Slab Elev. 576.00
20'-9½"
25'-4⅜"
Bk. of Bent Sta. 1989+64.75 T/O Slab Elev. 576.23
4-#6 g3 & 4-#6 g3 (E)@12"
T/O Slab Elev. 575.72
4-#5 d9 (E)@12" E.F. Lap w/ #5 p Bars
14°-12'-31"
13'-0"
22'-6¼"
PLAN

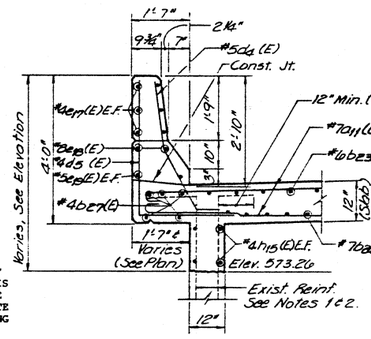
MIN. BAR LAPS
#4 1'-4"
#5 1'-8"
#6 2'-0"
#7 2'-9"

See Section A-A on Dwg. No. 9
#6 b25 (E)@9"
3'-0"
#7 h11 (E)@9"
#7 b24 (E)@7"
12" Varies
#6 p5 (E)
Exist. Reinf. See Notes 1 & 2
#5 g1 (E)@12"
#5 h17 (E)@12"
#5 g4 (E)@12" E.F.
Bonded Const. Jt.
3'-6" Varies, See Elevation
1'-8"
5"
6" 1'-8"
3"ø Drain Hole*
WHERE CORNER OF EXISTING SEAT IS SPALLED, REMOVE UNSOUND CONCRETE PRIOR TO PLACING NEW CONCRETE BEARING SEAT. COST INCIDENTAL TO CLASS X CONCRETE.
SECTION C-C

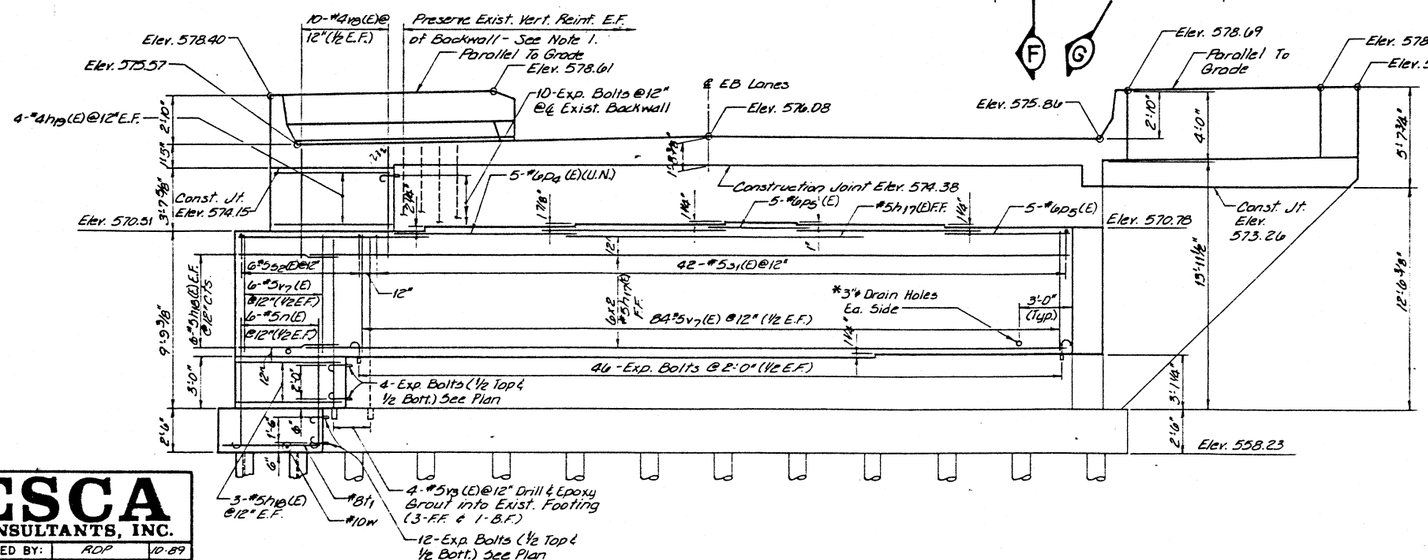
* Formed in New Wall, Cored in Existing Wall; Provide Gravel Deposit Behind Drain Hole per Art. 502.11 of the Std. Specs. Cost Incidental to Class X Concrete.

NOTES

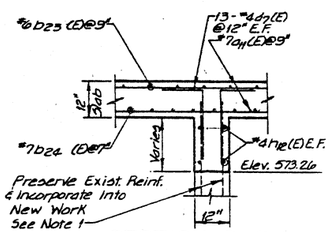
1. EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED OR BENT, REALIGNED AS REQUIRED, AND INCORPORATED INTO NEW CONSTRUCTION. COST INCIDENTAL TO CLASS X CONCRETE.
2. CUT OFF EXCESS LENGTH OF EXISTING REINFORCEMENT BARS TO PROVIDE 1-1/2" CLR. COVER AS DIRECTED BY THE ENGINEER.
3. HATCHED AREAS SHALL BE POURED AFTER SUPERSTRUCTURE FORMS HAVE BEEN REMOVED AND FINGER PLATE EXPANSION DEVICE HAS BEEN REMOVED.
4. BARS INDICATED THUS: 40x2-#7, ETC., INDICATES 40 LINES OF BARS WITH 2 BARS PER LINE.
5. FOR SECTIONS EE, FF, GG, & HH, SEE DWG. NO. 30.
6. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
7. POUR STEPS MONOLITHICALLY WITH STEM.
8. ALL EDGES SHALL HAVE STANDARD 3/4" CHAMFERS EXCEPT AS NOTED.



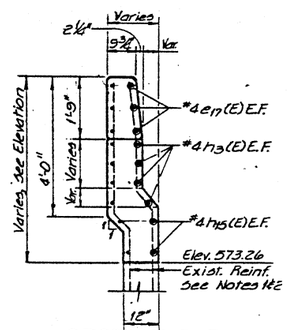
SECTION A-A



SECTION I-I



SECTION D-D



SECTION B-B

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	10-89
DRAWN BY:	CJG	10-89
CHECKED BY:	JAF	10-89
APPROVED BY:	RDP	10-89

EASTBOUND LANES
WEST ABUTMENT
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

Revised 4/24/90

O'NEIL BROTHERS CONSTRUCTION CO., INC.
EXCAVATING AND DRAINAGE

PHONE (217) 442-0253
P.O. BOX 793
DANVILLE, ILLINOIS 61834-0793

Located on Tilton Road

November 12, 1990

092-0014
– 0015
#221 MAY 4, '90

ESCA Consultants
1606 Willow View road
Suite 2 H
Urbana, IL 61801

ATTN: JIM FRENCH

RE: VERMILION COUNTY FAI ROUTE 74
SECTION (92-12B) BR
D.O.T. CONTRACT # 90045

Field measurements for the above twin bridge structures have been field verified by L. H. Loving and Associates per our instructions.

The information presented to you, pages 1 and 2, dated October 31, 1990 prepared by L. H. Loving & Associates meets with our approval in accordance with the requirement of Note 10, Plan Sheet 56 of the Contract Documents.

Yours truly,

O'NEIL BROTHERS CONSTRUCTION COMPANY, INC.

Richard A. Hall

cc: Gary Wish
Delong's Steel Fabricators
301 Dix Road
Jefferson City, MO 65102

jab

092-0014
-0015
#221 May 4,90

SUMMARY OF CHANGES ON DESIGN DRAWINGS

1. Drawing #24. Changed bearing top bolt connection locations for adequate clearance. Structural steel shop drawings and bearing shop drawings have been modified to reflect this change.

2. Drawings #22 & 23. Changed top of web elevations as noted. The original top of web elevations would have resulted in less than 3/4" fillet heights at some locations due to the combination of flared beams and transition from crowned section to full superelevation at the east end of the bridge. While the smallest fillet is normally located over the beam splice plates, the combination of flared beams and transition to superelevation created a vertical sag curve in the slab profile over the flared beams, resulting in the smallest fillets between splice plates. This was discovered by ESCA during initial shop drawing review and immediately corrected by ESCA for both bridges. All necessary changes in the shop drawings were computed by ESCA and transmitted to DeLong. The only changes to top of webs over piers occur at piers 3 & 4 for beam 15, where the 1/4" shim plates shown on Drawing #25 will now be 1/8" shim plates. Since two additional 1/8" shim plates will be provided for each bearing in accordance with note 12 on Drawing #2, this results in no changes to the substructure or bearings. All structural steel shop drawings have accounted for the changes in the top of web elevations.

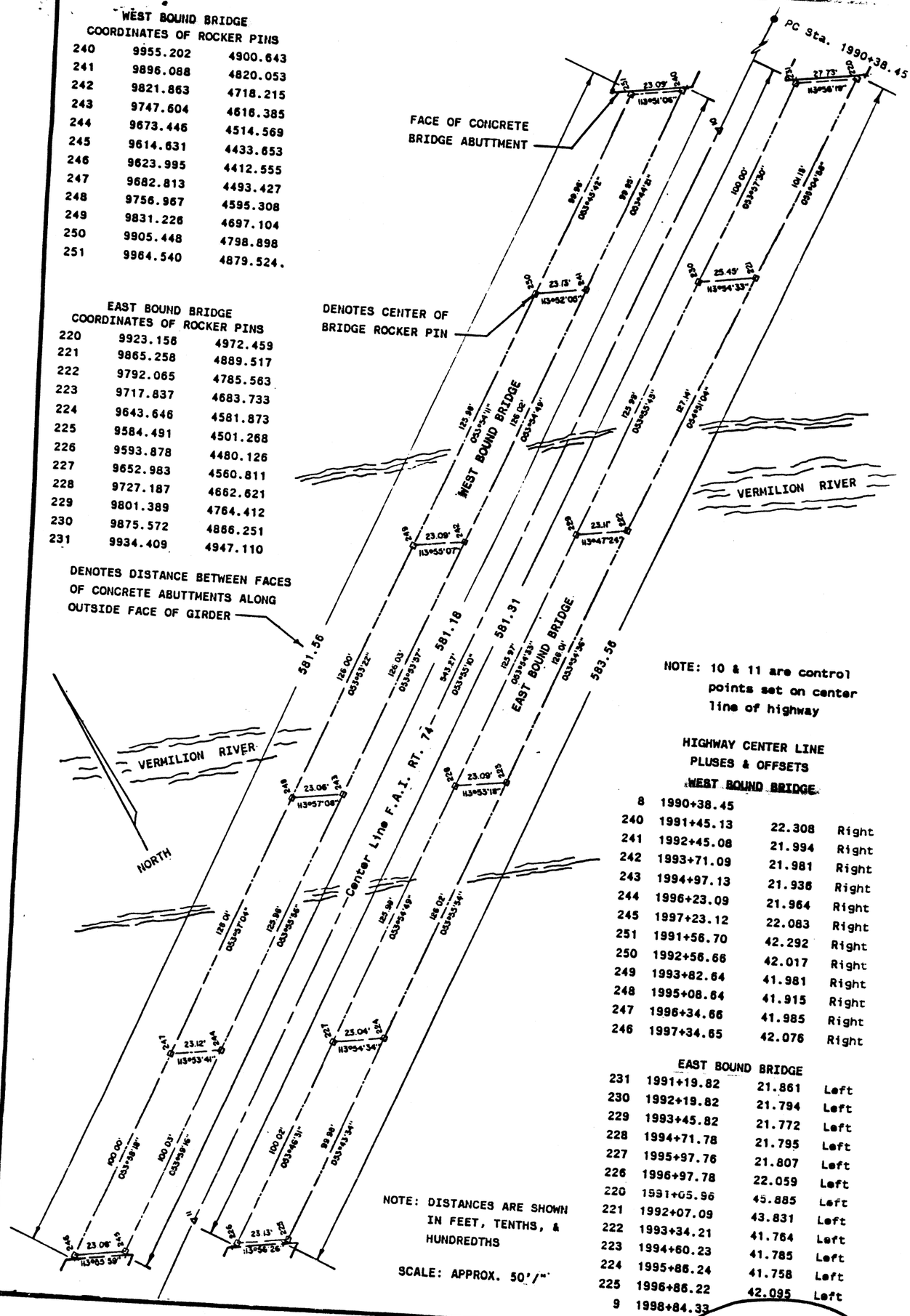
3. Drawing #23. Correction to Beam G4 camber diagram (1 3/16" instead of 1 13/16"). This change has been incorporated into the shop drawings.

WEST BOUND BRIDGE
COORDINATES OF ROCKER PINS

240	9955.202	4900.643
241	9896.088	4820.053
242	9821.863	4718.215
243	9747.604	4616.385
244	9673.446	4514.569
245	9614.631	4433.653
246	9623.995	4412.555
247	9682.813	4493.427
248	9756.967	4595.308
249	9831.226	4697.104
250	9905.448	4798.898
251	9964.540	4879.524.

EAST BOUND BRIDGE
COORDINATES OF ROCKER PINS

220	9923.156	4972.459
221	9865.258	4889.517
222	9792.065	4785.563
223	9717.837	4683.733
224	9643.646	4581.873
225	9584.491	4501.268
226	9593.878	4480.126
227	9652.983	4560.811
228	9727.187	4662.621
229	9801.389	4764.412
230	9875.572	4866.251
231	9934.409	4947.110



NOTE: 10 & 11 are control points set on center line of highway

HIGHWAY CENTER LINE
PLUSES & OFFSETS

WEST BOUND BRIDGE

8	1990+38.45		
240	1991+45.13	22.308	Right
241	1992+45.08	21.994	Right
242	1993+71.09	21.981	Right
243	1994+97.13	21.936	Right
244	1996+23.09	21.964	Right
245	1997+23.12	22.083	Right
251	1991+56.70	42.292	Right
250	1992+56.66	42.017	Right
249	1993+82.64	41.981	Right
248	1995+08.64	41.915	Right
247	1996+34.66	41.985	Right
246	1997+34.65	42.076	Right

EAST BOUND BRIDGE

231	1991+19.82	21.861	Left
230	1992+19.82	21.794	Left
229	1993+45.82	21.772	Left
228	1994+71.78	21.795	Left
227	1995+97.76	21.807	Left
226	1996+97.78	22.059	Left
220	1991+05.96	45.885	Left
221	1992+07.09	43.831	Left
222	1993+34.21	41.764	Left
223	1994+60.23	41.785	Left
224	1995+86.24	41.758	Left
225	1996+86.22	42.095	Left
9	1998+84.33		

NOTE: DISTANCES ARE SHOWN IN FEET, TENTHS, & HUNDREDTHS

SCALE: APPROX. 50'/"

L. H. LOVING & ASSOCIATES
SURVEYING & MAPPING
1215 EAST MAIN STREET
DANVILLE, ILLINOIS 61832
(217) 446-4213
FAX (217) 446-8800

WORKSHEET 092-0014 0015 #221 May 4.90

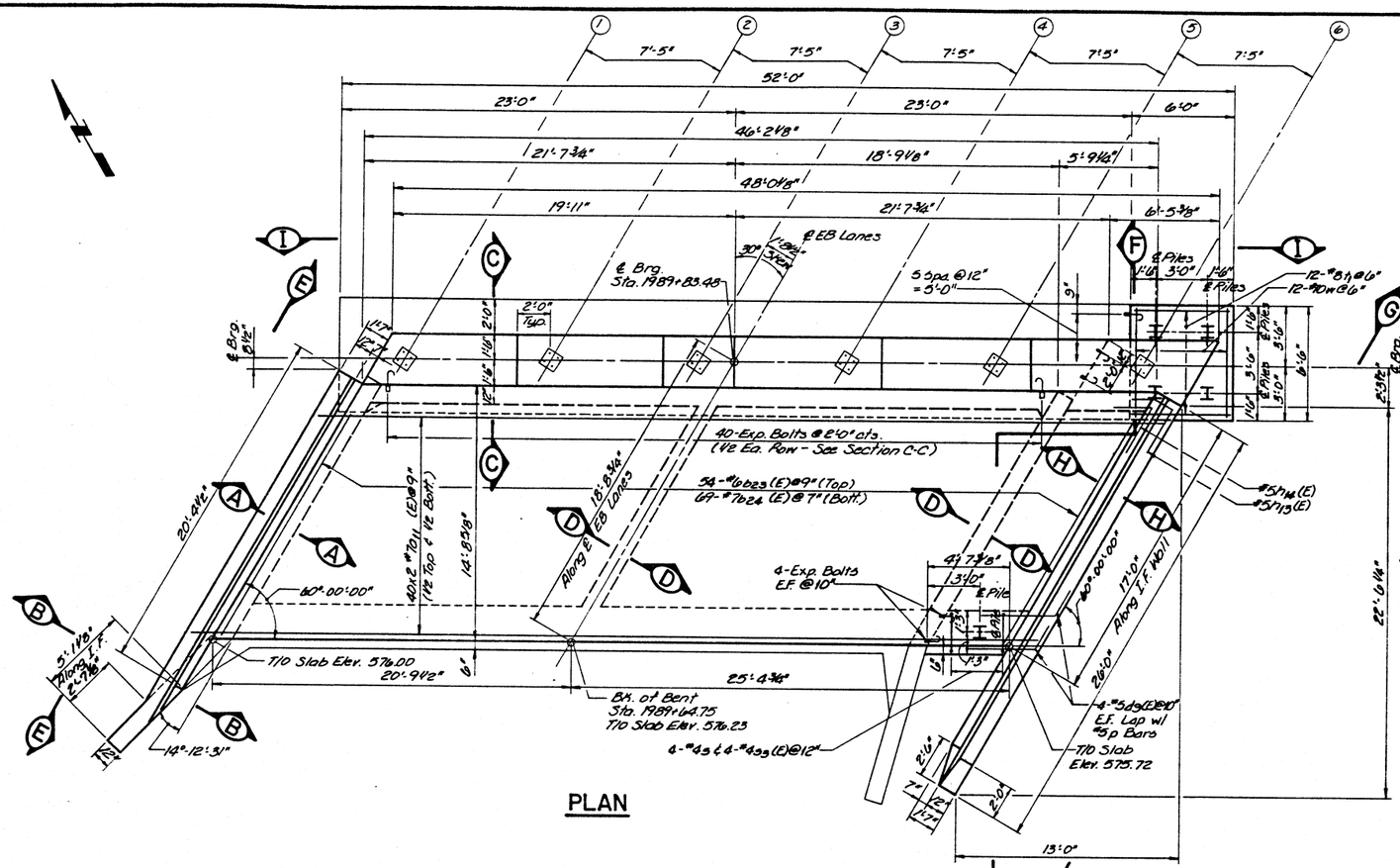
HORZONTAL MEASUREMENTS
OF THE
BRIDGES ACROSS THE VERMILION RIVER ON F.A.I. RT. 7
AT HWY. STA. 1991+05.96 - 1997+34.45

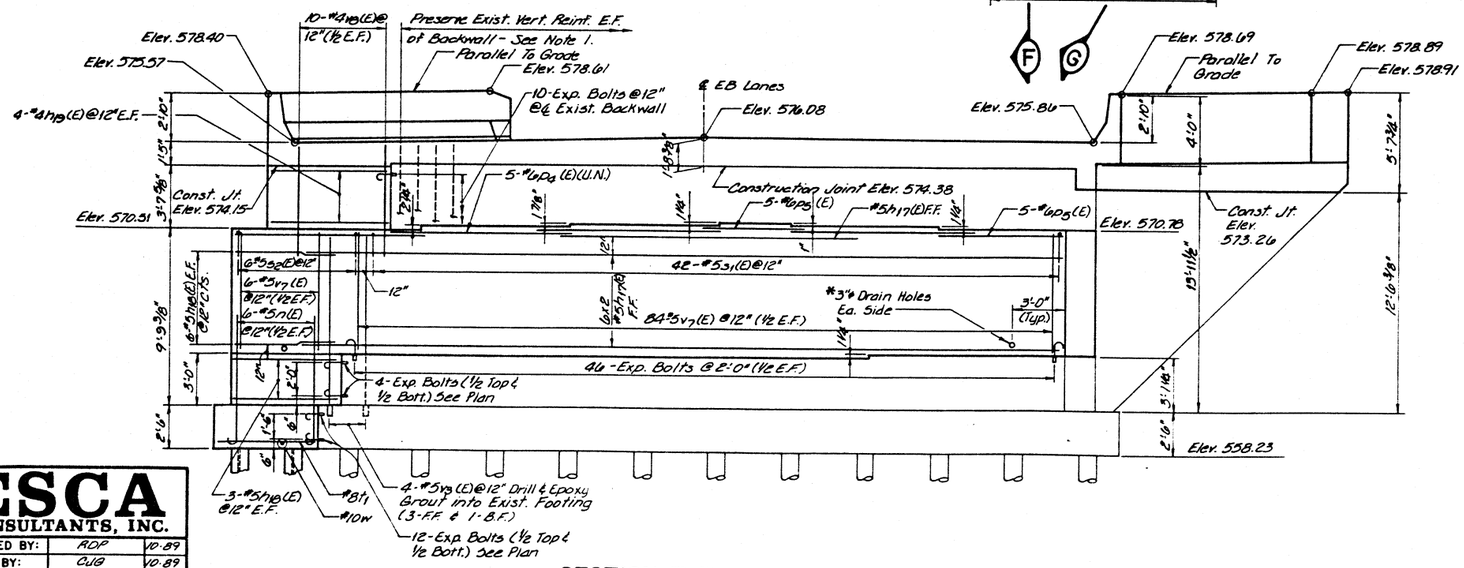
Prepared For: O'Neil Brothers Construction Co., In
DANVILLE, IL 61832

#1216-4

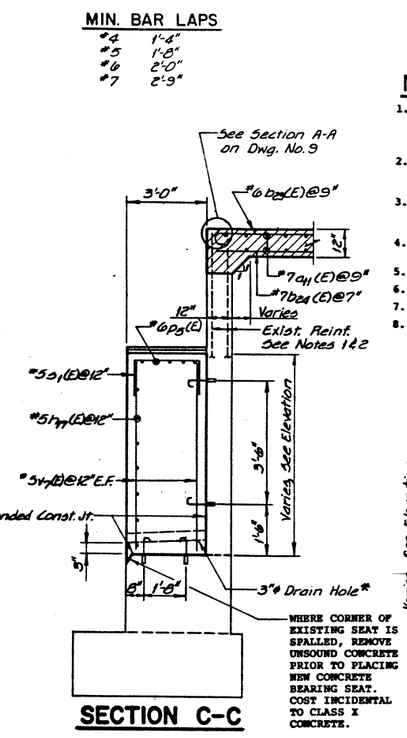
10/31/90

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	85
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR			Dwg. No. 31 of 45	





SECTION I-I



SECTION C-C

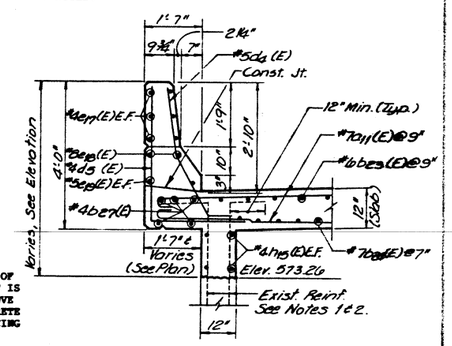
*Formed in New Wall, Cored in Existing Wall; Provide Gravel Deposit Behind Drain Hole per Art. 502.11 of the Std. Specs. Cost Incidental to Class X Concrete.

MIN. BAR LAPS

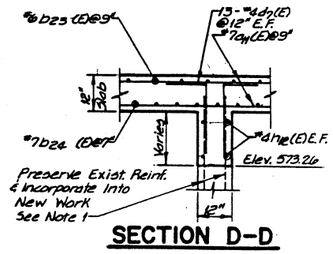
#4	1'-4"
#5	1'-8"
#6	2'-0"
#7	2'-9"

NOTES

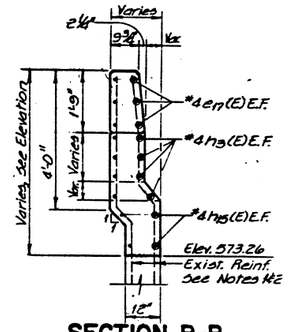
1. EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED OR BENT, REALIGNED AS REQUIRED, AND INCORPORATED INTO NEW CONSTRUCTION. COST INCIDENTAL.
2. CUT OFF EXCESS LENGTH OF EXISTING REINFORCEMENT BARS TO PROVIDE 1-1/2" CLR. COVER AS DIRECTED BY THE ENGINEER.
3. HATCHED AREAS SHALL BE POURED AFTER SUPERSTRUCTURE FORMS HAVE BEEN REMOVED AND FINGER PLATE EXPANSION DEVICE HAS BEEN REMOVED.
4. BARS INDICATED THUS: 40x2-#7, ETC., INDICATES 40 LINES OF BARS WITH 2 BARS PER LINE.
5. FOR SECTIONS EE, FF, GG, & HH, SEE DWG. NO. 30.
6. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
7. POUR STEPS MONOLITHICALLY WITH STEM.
8. ALL EDGES SHALL HAVE STANDARD 3/4" CHAMFERS EXCEPT AS NOTED.



SECTION A-A



SECTION D-D



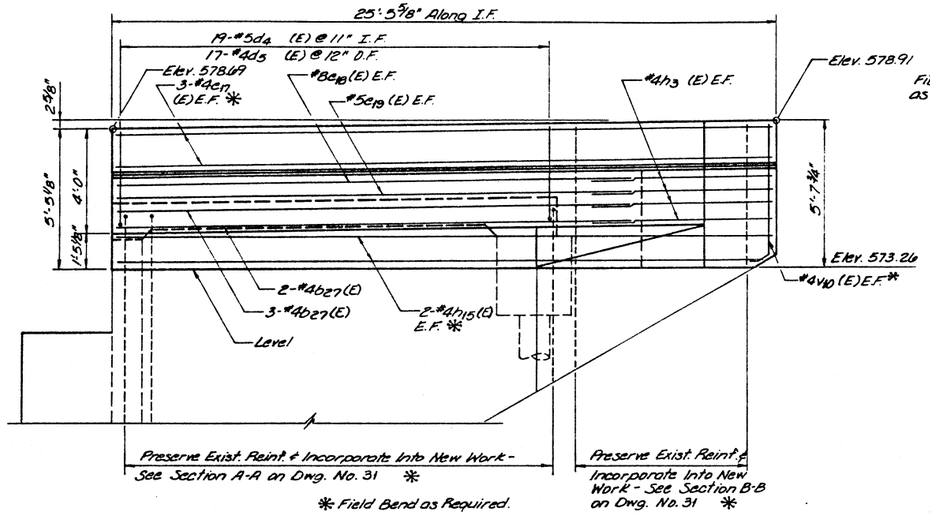
SECTION B-B

DESIGNED BY:	RDP	10-89
DRAWN BY:	CJG	10-89
CHECKED BY:	JAF	10-89
APPROVED BY:	RDP	10-89

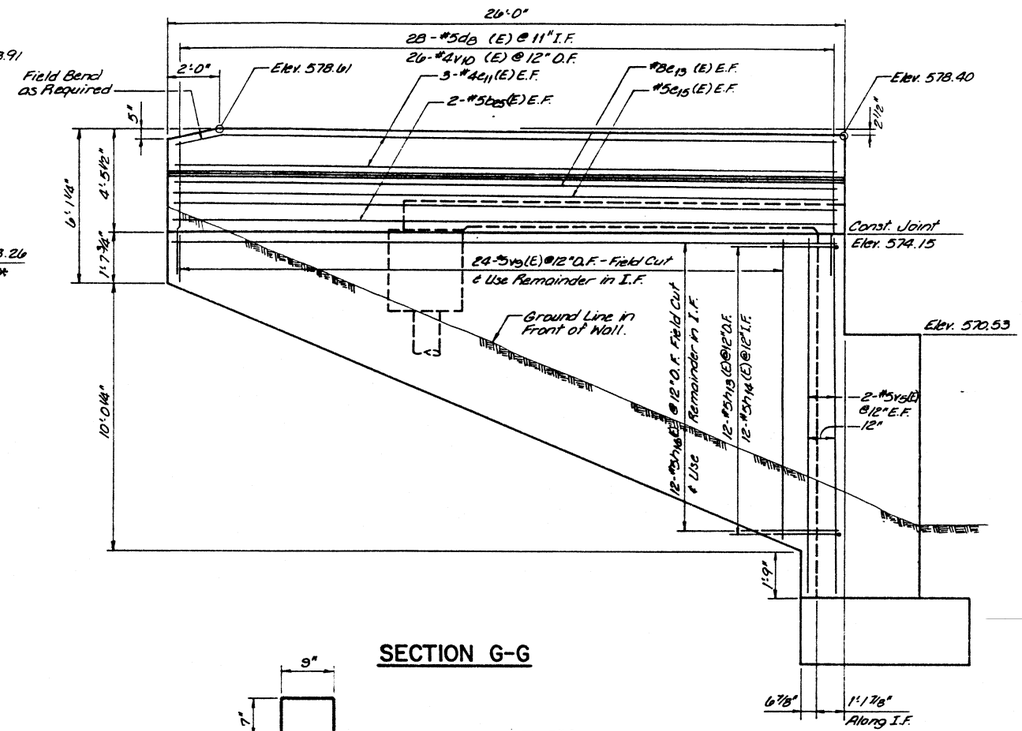
ESCA CONSULTANTS, INC.

EASTBOUND LANES
WEST ABUTMENT
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

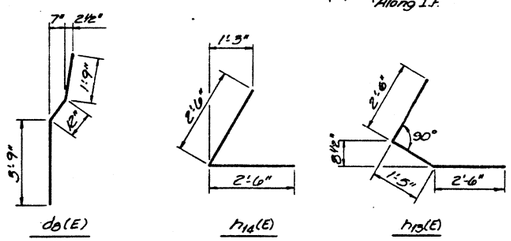
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I.-74	*	Vermilion	137	86
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 32 of 45		



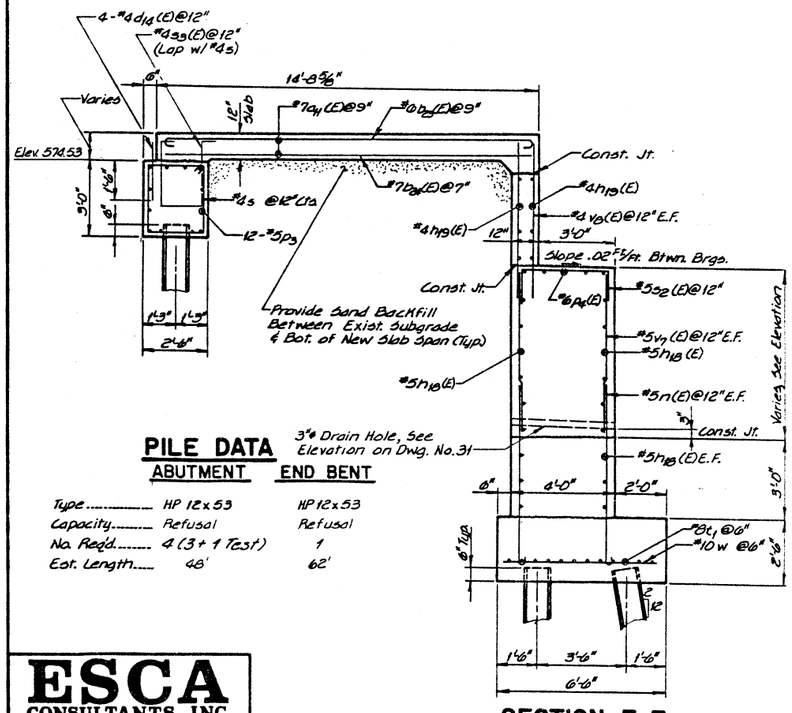
SECTION E-E



SECTION G-G



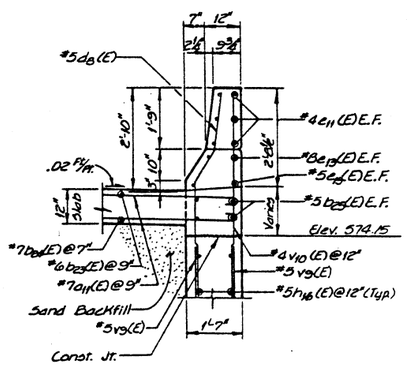
BAR BENDING DETAILS



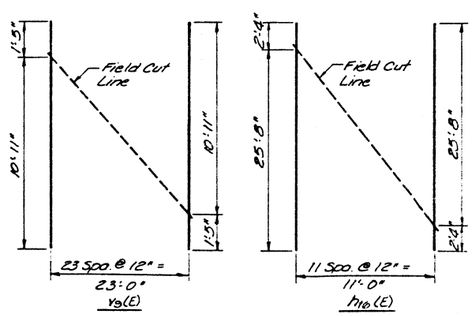
SECTION F-F

PILE DATA

	ABUTMENT	END BENT
Type	HP 12x53	HP 12x53
Capacity	Refusal	Refusal
No. Reqd.	4 (3 + 1 Test)	1
Est. Length	48'	62'



SECTION H-H



FIELD CUTTING DIAGRAM

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a11(E)	80	#7	27'-0"	
b25(E)	54	#6	18'-0"	
b27(E)	69	#7	16'-8"	
b25(E)	4	#5	25'-6"	
b24(E)	5	#4	20'-2"	
d8(E)	19	#5	4'-10"	
d5(E)	17	#4	6'-2"	
d7(E)	52	#4	2'-3"	
d8(E)	28	#5	6'-6"	
d9	8	#5	5'-8"	
d18(E)	4	#4	2'-3"	
e11(E)	6	#4	25'-6"	
e13(E)	2	#8	25'-6"	
e15(E)	2	#5	25'-6"	
e17(E)	6	#4	25'-0"	
e18(E)	2	#8	20'-2"	
e19(E)	2	#5	20'-2"	
h(E)	8	#5	24'-10"	
h3(E)	8	#4	6'-10"	
h12(E)	8	#4	14'-4"	
h13(E)	12	#5	6'-3"	
h14(E)	12	#5	5'-0"	
h15(E)	4	#4	25'-0"	
h16(E)	12	#5	28'-0"	
h17(E)	13	#5	22'-0"	
h18(E)	18	#5	6'-2"	
h19(E)	8	#4	4'-6"	
n(E)	6	#5	7'-11"	
p3	12	#5	4'-5"	
p4(E)	20	#6	11'-0"	
p5(E)	10	#6	9'-0"	
s	4	#4	10'-5"	
s1(E)	42	#5	6'-8"	
s2(E)	6	#5	7'-8"	
s3(E)	4	#4	8'-8"	
t1	12	#8	6'-2"	
u(E)	87	#5	1'-11"	
v2(E)	90	#5	6'-7"	
v8(E)	10	#4	6'-7"	
v9(E)	4	#5	10'-8"	
v5(E)	2	#5	13'-0"	
v9(E)	24	#5	12'-8"	
v10(E)	28	#4	6'-0"	
w	12	#10	8'-0"	

Item	Unit	Quantity
Class X Concrete	C.Y.	100.2
Reinforcement Bars	Lbs.	692
Reinf. Bars (Epoxy Coated)	Lbs.	12,898
Sand Backfill	C.Y.	45
Structure Excavation	C.Y.	40
Expansion Bolts	Ea.	112
Steel Piles HP12 x 53	L.F.	200
Test Pile Steel HP12x53	Ea.	1

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	10-89
DRAWN BY:	CJG	10-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

EASTBOUND LANES
WEST ABUTMENT
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

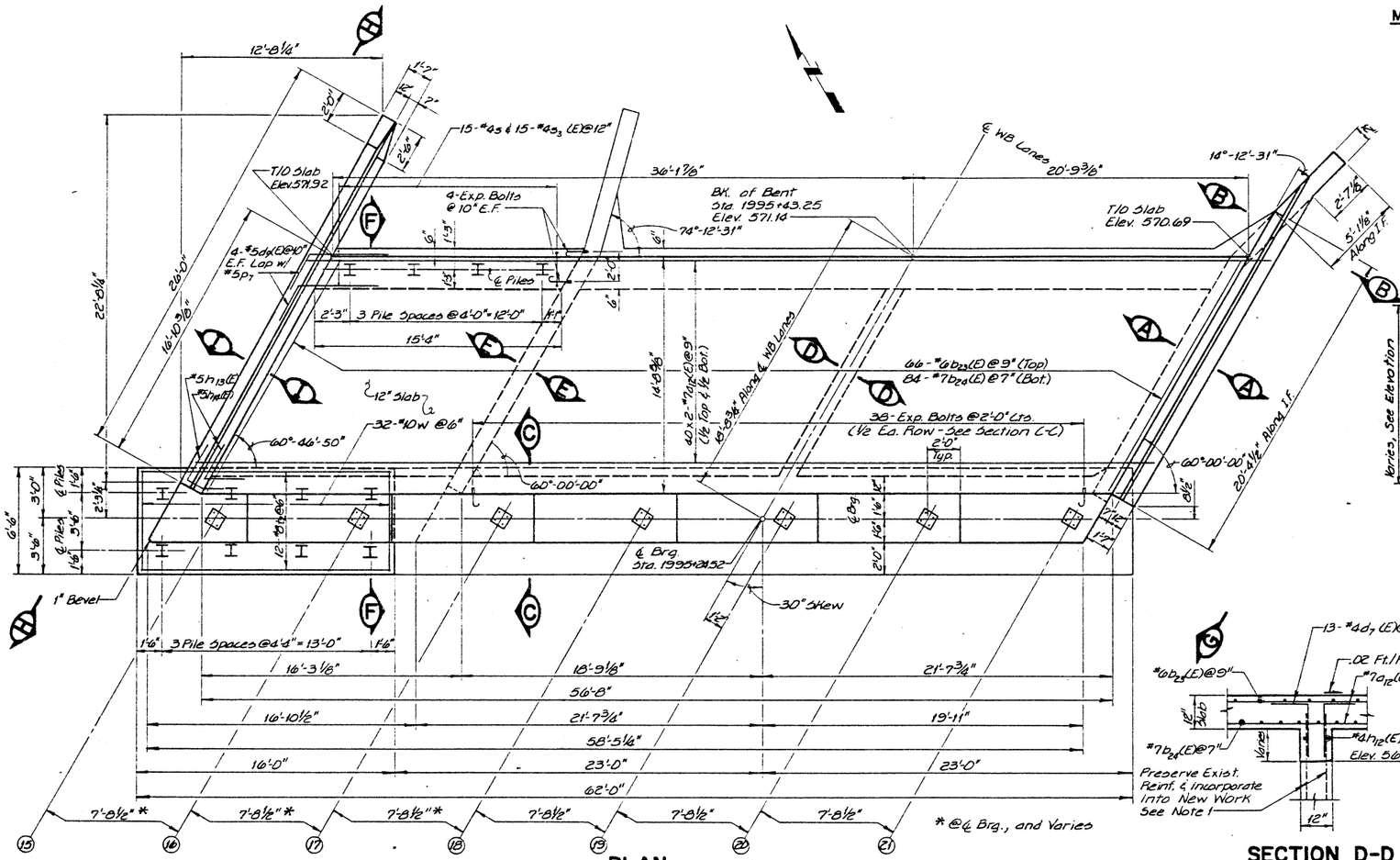
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I.-74	*	Vermilion	137	87
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 33 of 45		

MIN. BAR LAPS

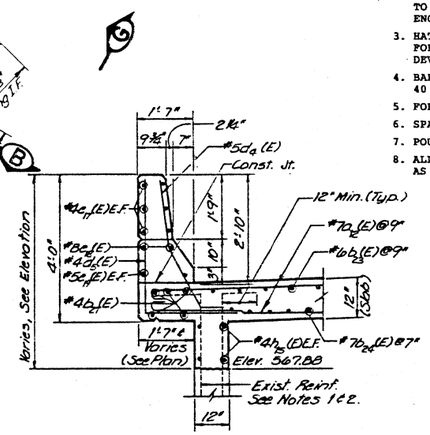
#4	1'-4"
#5	1'-8"
#6	2'-0"
#7	2'-9"

NOTES

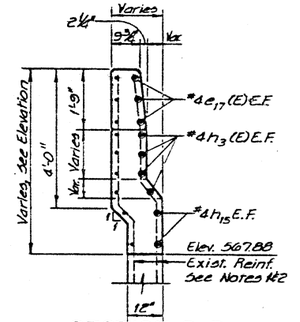
1. EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED OR BENT, REALIGNED AS REQUIRED, AND INCORPORATED INTO NEW CONSTRUCTION. COST INCIDENTAL TO CLASS X CONCRETE.
2. CUT OFF EXCESS LENGTH OF EXISTING REINFORCEMENT BARS TO PROVIDE 1-1/2" CLR. COVER AS DIRECTED BY THE ENGINEER.
3. HATCHED AREAS SHALL BE POURED AFTER SUPERSTRUCTURE FORMS HAVE BEEN REMOVED AND FINGER PLATE EXPANSION DEVICE HAS BEEN REMOVED.
4. BARS INDICATED THUS: 40x2-#7, ETC., INDICATES 40 LINES OF BARS WITH 2 BARS PER LINE.
5. FOR SECTIONS EE, FF, GG, & HH, SEE DWG. NO. 30.
6. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
7. POUR STEPS MONOLITHICALLY WITH STEM.
8. ALL EDGES SHALL HAVE STANDARD 3/4" CHAMFERS EXCEPT AS NOTED.



PLAN

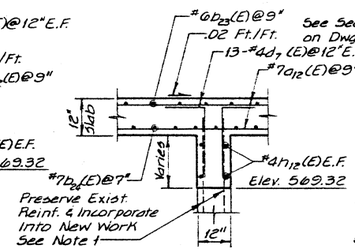


SECTION A-A

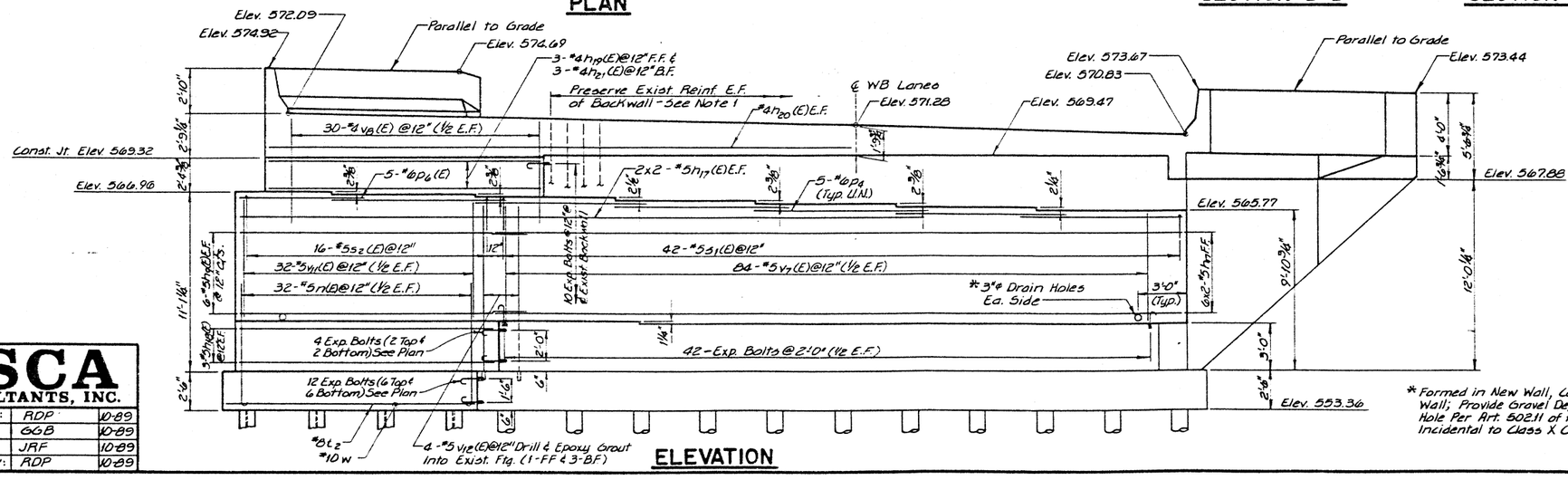


SECTION B-B

SECTION D-D

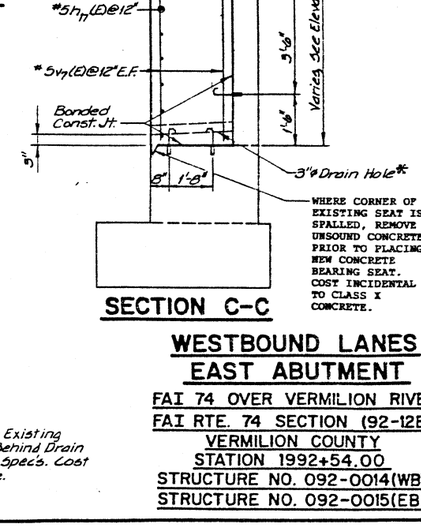


SECTION E-E



ELEVATION

* Formed in New Wall, Cored in Existing Wall; Provide Gravel Deposit Behind Drain Hole Per Art. 502.11 of the Std. Specs. Cost Incidental to Class X Concrete.



SECTION C-C

WESTBOUND LANES EAST ABUTMENT

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	10-89
DRAWN BY:	GGB	10-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

Revised 4/24/90

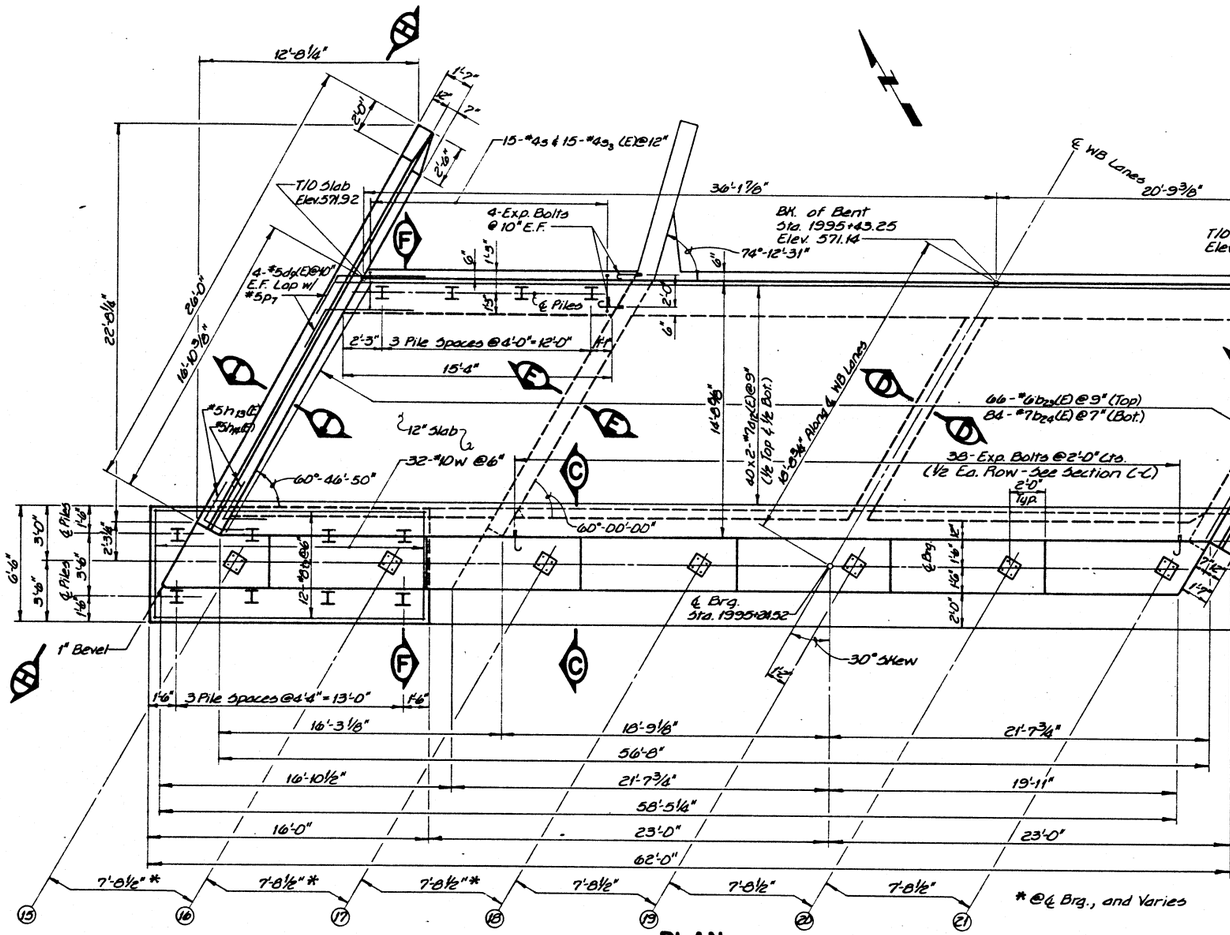
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	87
STA		TO STA		
FED ROAD DIST NO	ILLINOIS	PROJECT		
		*(92-12B)BR	Dwg. No. 33 of 45	

MIN. BAR LAPS

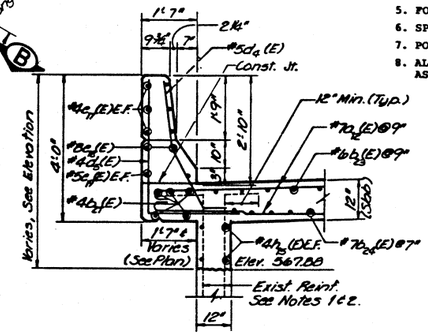
#3	1'-4"
#5	1'-8"
#6	2'-0"
#7	2'-9"

NOTES

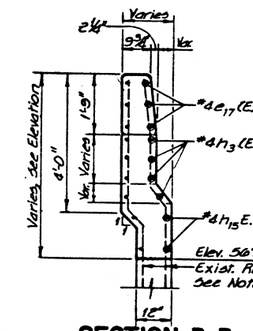
1. EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED OR BENT, REALIGNED AS REQUIRED, AND INCORPORATED INTO NEW CONSTRUCTION. COST INCIDENTAL.
2. CUT OFF EXCESS LENGTH OF EXISTING REINFORCEMENT BARS TO PROVIDE 1-1/2" CLR. COVER AS DIRECTED BY THE ENGINEER.
3. HATCHED AREAS SHALL BE POURED AFTER SUPERSTRUCTURE FORMS HAVE BEEN REMOVED AND FINGER PLATE EXPANSION DEVICE HAS BEEN REMOVED.
4. BARS INDICATED THUS: 40x2-#7, ETC., INDICATES 40 LINES OF BARS WITH 2 BARS PER LINE.
5. FOR SECTIONS EE, FF, GG, & HH, SEE DWG. NO. 30.
6. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
7. POUR STEPS MONOLITHICALLY WITH STEM.
8. ALL EDGES SHALL HAVE STANDARD 3/4" CHAMFERS EXCEPT AS NOTED.



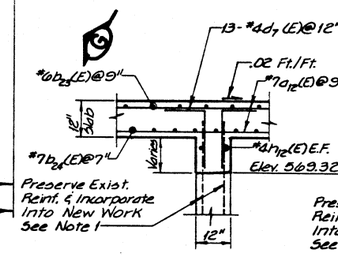
PLAN



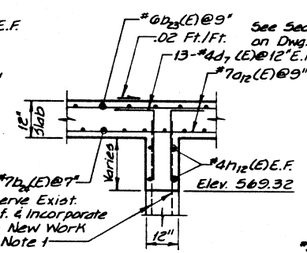
SECTION A-A



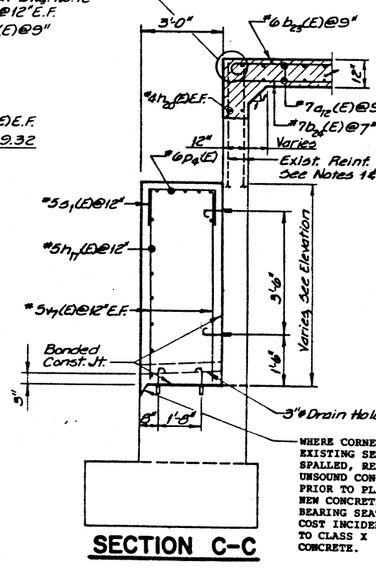
SECTION B-B



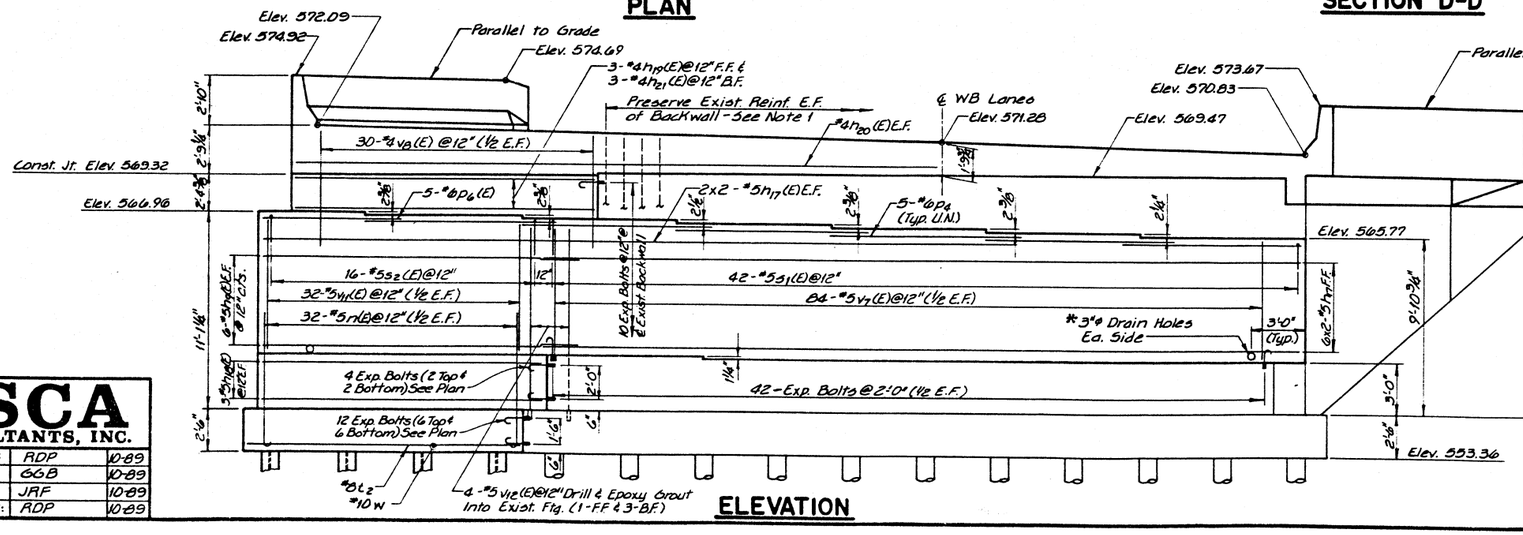
SECTION D-D



SECTION E-E



SECTION C-C



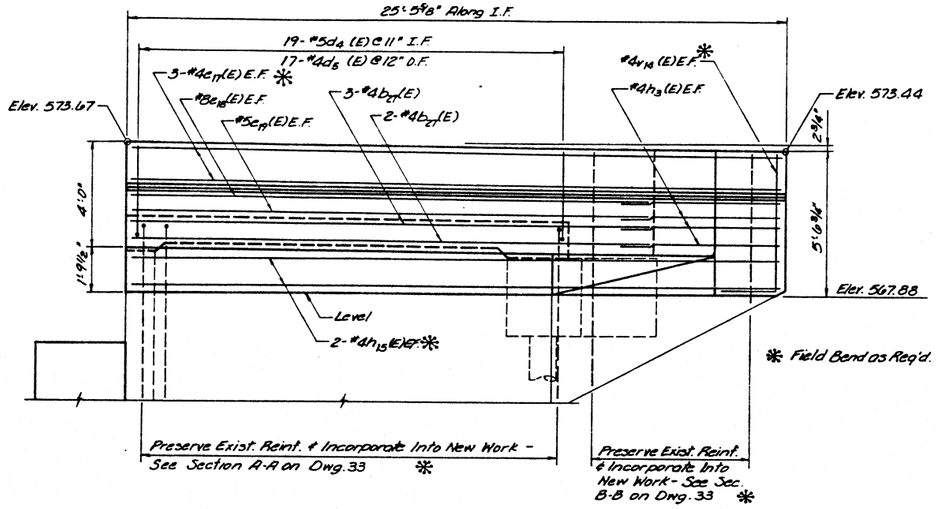
ELEVATION

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	10-89
DRAWN BY:	GGB	10-89
CHECKED BY:	JAF	10-89
APPROVED BY:	RDP	10-89

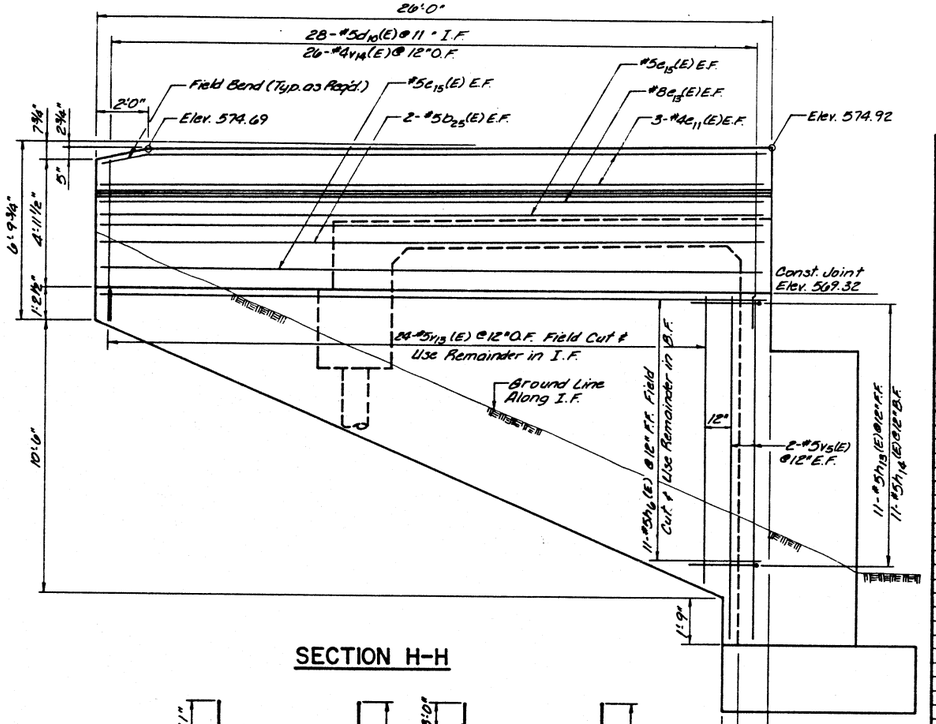
WESTBOUND LANES EAST ABUTMENT

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

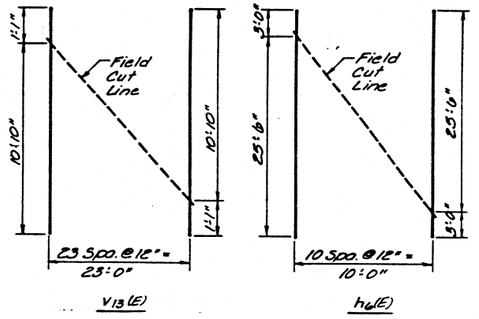
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	88
STA		TO STA		
FED ROAD DIST NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 34 of 45		



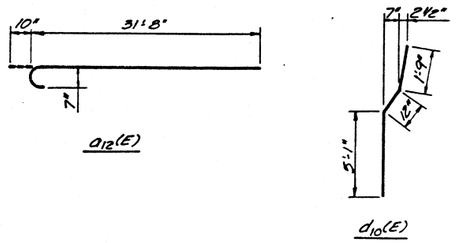
SECTION G-G



SECTION H-H



FIELD CUTTING DIAGRAM

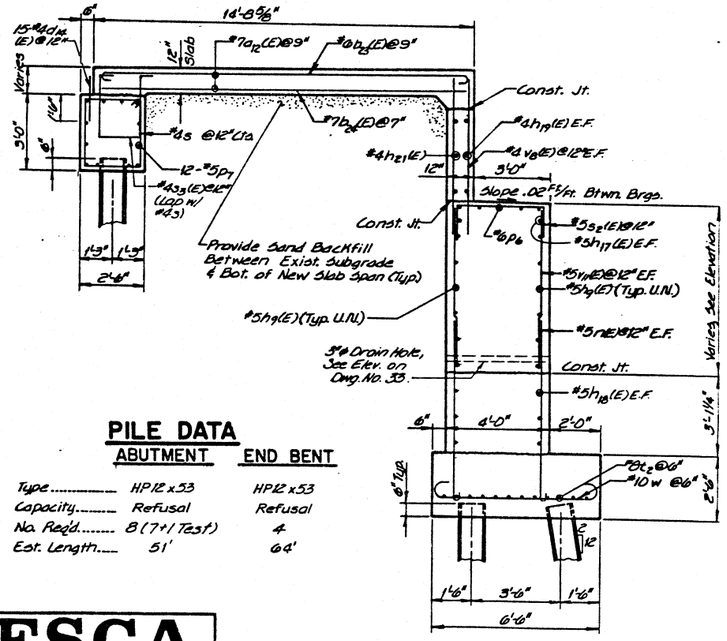


BAR BENDING DETAILS

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a12(E)	80	#7	32'-6"	
b21(E)	46	#6	18'-0"	
b22(E)	84	#7	26'-8"	
b25(E)	4	#5	25'-6"	
b26(E)	5	#4	20'-2"	
d9(E)	19	#5	4'-10"	
d6(E)	17	#4	6'-2"	
d7(E)	52	#4	2'-3"	
d10(E)	28	#5	7'-10"	
d8(E)	8	#5	3'-8"	
d14(E)	15	#4	2'-3"	
e11(E)	6	#4	25'-6"	
e18(E)	2	#8	25'-6"	
e15(E)	4	#5	25'-6"	
e17(E)	6	#4	25'-0"	
e16(E)	2	#8	20'-2"	
e19(E)	2	#5	20'-2"	
h1(E)	2	#6	30'-2"	
h3(E)	8	#3	6'-10"	
h6(E)	11	#5	28'-6"	
h9(E)	12	#5	19'-6"	
h12(E)	8	#4	14'-9"	
h13(E)	11	#5	6'-5"	
h14(E)	11	#5	5'-0"	
h15(E)	4	#4	25'-0"	
h17(E)	16	#5	22'-0"	
h18(E)	6	#5	16'-6"	
h19(E)	3	#4	15'-1"	
h20(E)	2	#4	38'-0"	
h21(E)	3	#4	16'-6"	
n(E)	32	#5	7'-11"	
P7	12	#5	15'-0"	
P4(E)	30	#6	11'-0"	
P6(E)	3	#6	8'-0"	
s3(E)	15	#4	8'-8"	
s	15	#3	10'-3"	
s1(E)	42	#5	6'-8"	
s2(E)	16	#5	7'-8"	
T2	12	#8	15'-8"	
v7(E)	84	#5	6'-7"	
v8(E)	30	#4	6'-7"	
v5(E)	4	#5	13'-0"	
v11(E)	32	#5	7'-9"	
v12(E)	4	#5	11'-3"	
v13(E)	84	#5	11'-11"	
v14(E)	28	#4	7'-9"	
W	32	#10	8'-0"	

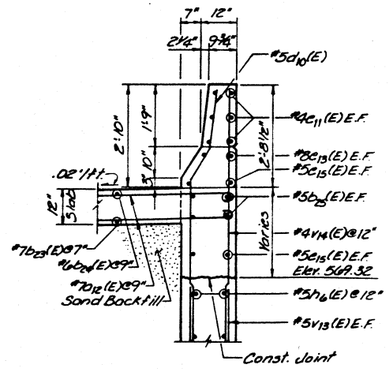
Item	Unit	Quantity
Class X Concrete	CY	140.1
Reinforcement Bars	LBS.	1,896
Reinf. Bars (Epoxy Coated)	LBS.	15,664
Sand Backfill	CY	93
Structure Excavation	CY	68
Expansion Bolts	EA.	104
Steel Piles HP12x53	L.F.	613
Test Pile Steel HP12x53	EA.	1



SECTION F-F

PILE DATA

	ABUTMENT	END BENT
Type	HP12 x 53	HP12 x 53
Capacity	Refusal	Refusal
No. Req'd.	8 (7+1 Test)	4
Est. Length	51'	64'



SECTION I-I

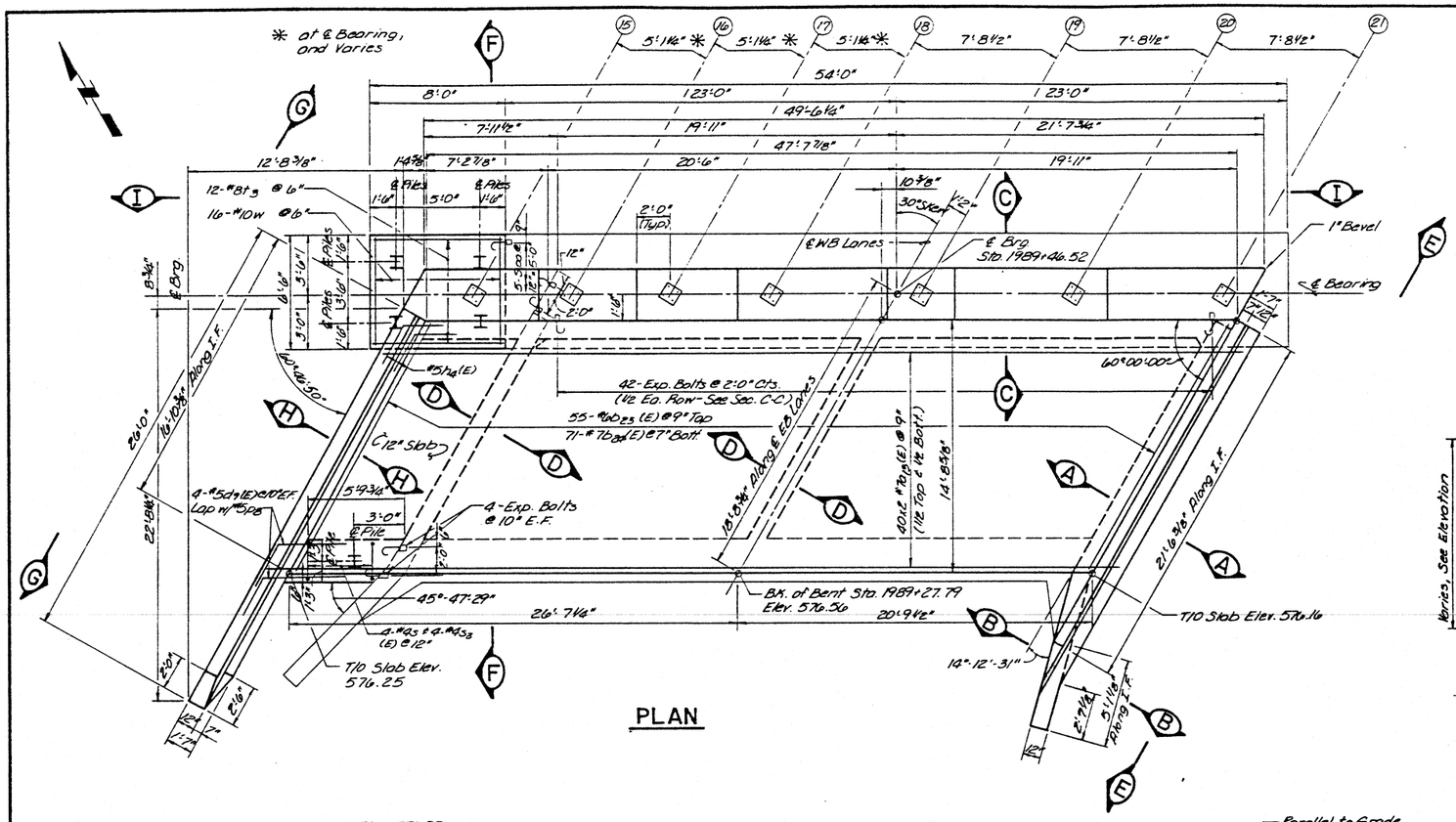
ESCA CONSULTANTS, INC.

DESIGNED BY:	ADP	10 89
DRAWN BY:	CJG	10 89
CHECKED BY:	JAF	10 89
APPROVED BY:	ADP	10 89

WESTBOUND LANES EAST ABUTMENT

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	89
STA		TO STA		
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		
*(92-12B)BR		Dwg. No. 35 of 45		

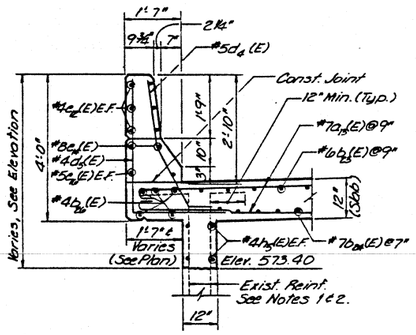


MIN. BAR LAPS

#4	1'-4"
#5	1'-8"
#6	2'-0"
#7	2'-9"

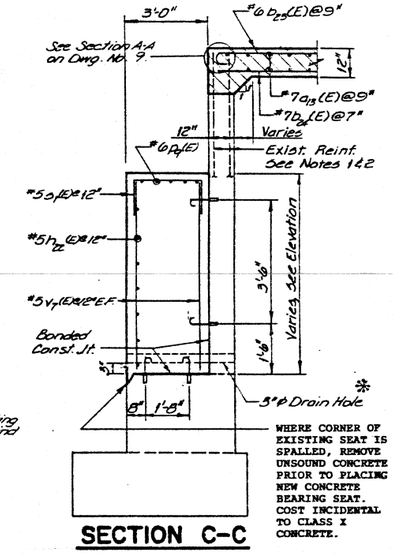
NOTES

1. EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED OR BENT, REALIGNED AS REQUIRED, AND INCORPORATED INTO NEW CONSTRUCTION. COST INCIDENTAL TO CLASS X CONCRETE.
2. CUT OFF EXCESS LENGTH OF EXISTING REINFORCEMENT BARS TO PROVIDE 1-1/2" CLR. COVER AS DIRECTED BY THE ENGINEER.
3. BATCHED AREAS SHALL BE POURED AFTER SUPERSTRUCTURE FORMS HAVE BEEN REMOVED AND FINGER PLATE EXPANSION DEVICE HAS BEEN REMOVED.
4. BARS INDICATED THUS: 40x2-#7, ETC., INDICATES 40 LINES OF BARS WITH 2 BARS PER LINE.
5. FOR SECTIONS EE, FF, GG, & HH, SEE DWG. NO. 30.
6. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
7. POUR STEPS MONOLITHICALLY WITH STEM.
8. ALL EDGES SHALL HAVE STANDARD 3/4" CHAMFERS EXCEPT AS NOTED.

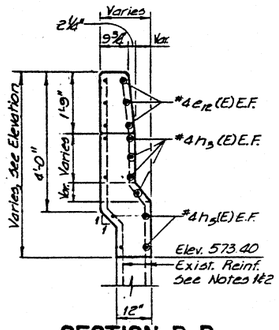


SECTION A-A

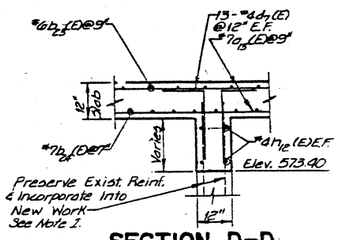
* Formed in new wall, Cored in existing wall; Provide gravel deposit behind drain hole per Art. 502.11 of the Std. Specs. Cost incidental to Class X Concrete.



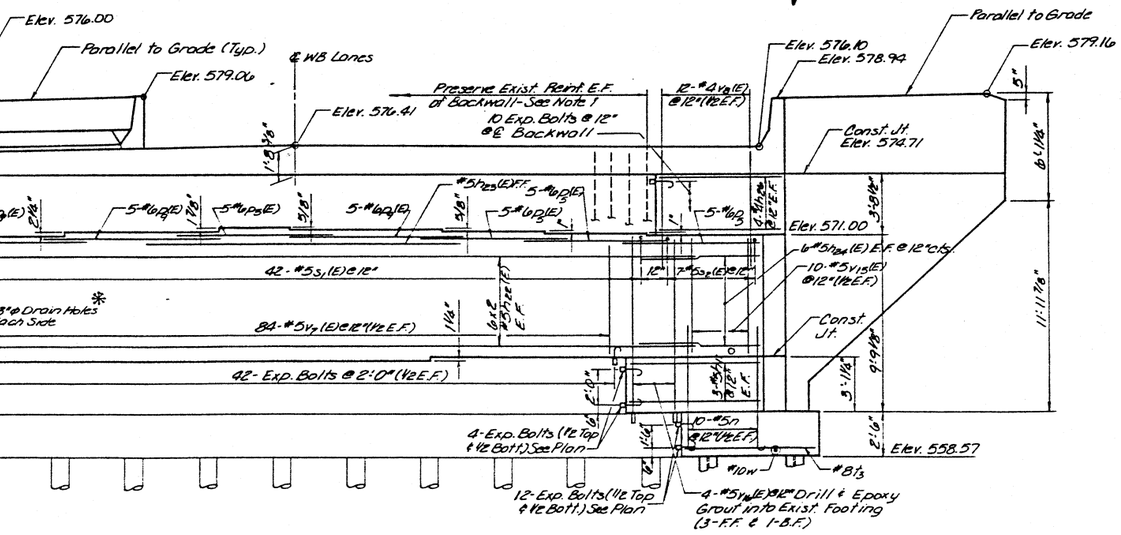
SECTION C-C



SECTION B-B



SECTION D-D



SECTION I-I

ESCA CONSULTANTS, INC.

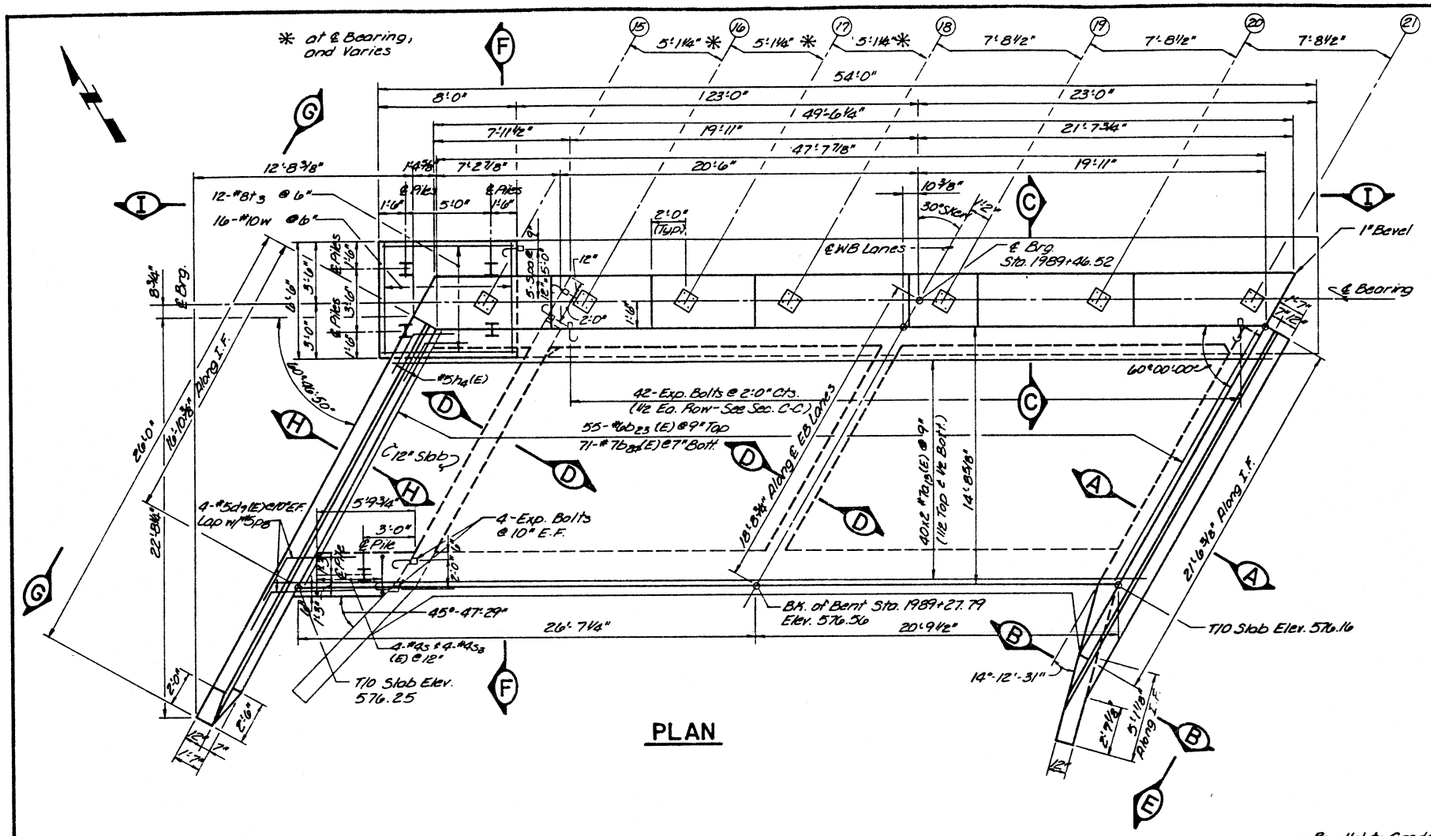
DESIGNED BY:	RDP	10-89
DRAWN BY:	CJG	10-89
CHECKED BY:	JAF	10-89
APPROVED BY:	RDP	10-89

WESTBOUND LANES
WEST ABUTMENT

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

Revised 4/24/90

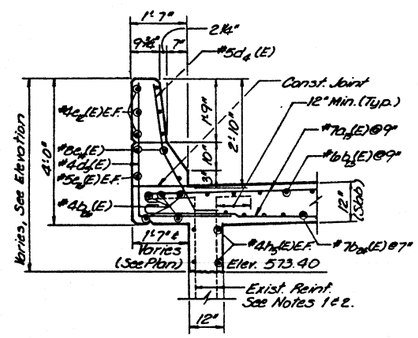
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 74	*	Vermilion	137	89
STA		TO STA		
FED ROAD DIST NO	ILLINOIS	PROJECT		
*	(92-12B)BR	Dwg No. 35 of 45		



PLAN

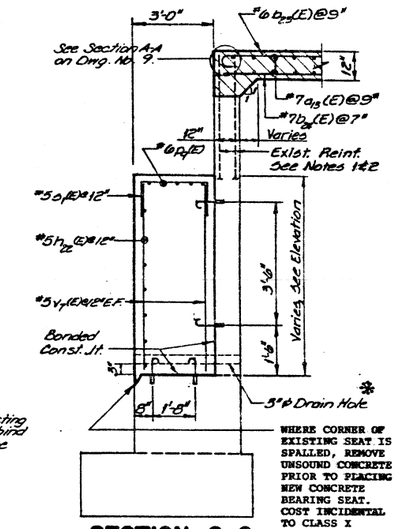
NOTES

1. EXISTING REINFORCEMENT EXTENDING INTO REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED OR BENT, REALIGNED AS REQUIRED, AND INCORPORATED INTO NEW CONSTRUCTION. COST INCIDENTAL.
2. CUT OFF EXCESS LENGTH OF EXISTING REINFORCEMENT BARS TO PROVIDE 1-1/2" CLR. COVER AS DIRECTED BY THE ENGINEER.
3. HATCHED AREAS SHALL BE POURED AFTER SUPERSTRUCTURE FORMS HAVE BEEN REMOVED AND FINGER PLATE EXPANSION DEVICE HAS BEEN REMOVED.
4. BARS INDICATED THUS: 40x2-#7, ETC., INDICATES 40 LINES OF BARS WITH 2 BARS PER LINE.
5. FOR SECTIONS EE, FF, GG, & HH, SEE DWG. NO. 30.
6. SPACE REINFORCEMENT IN CAP TO MISS ANCHOR BOLTS.
7. POUR STEPS MONOLITHICALLY WITH STEM.
8. ALL EDGES SHALL HAVE STANDARD 3/4" CHAMFERS EXCEPT AS NOTED.

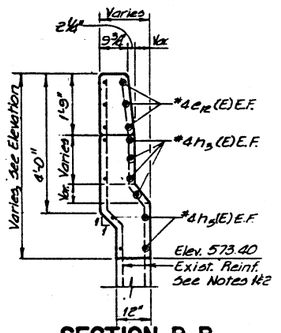


SECTION A-A

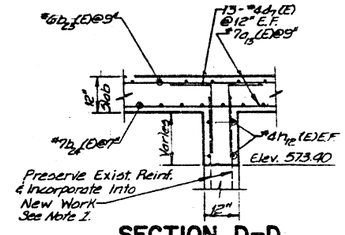
* Formed in new wall, Cored in existing wall; Provide gravel deposit behind drain hole per Art. 502.11 of the Std. Specs. Cost incidental to Class X Concrete.



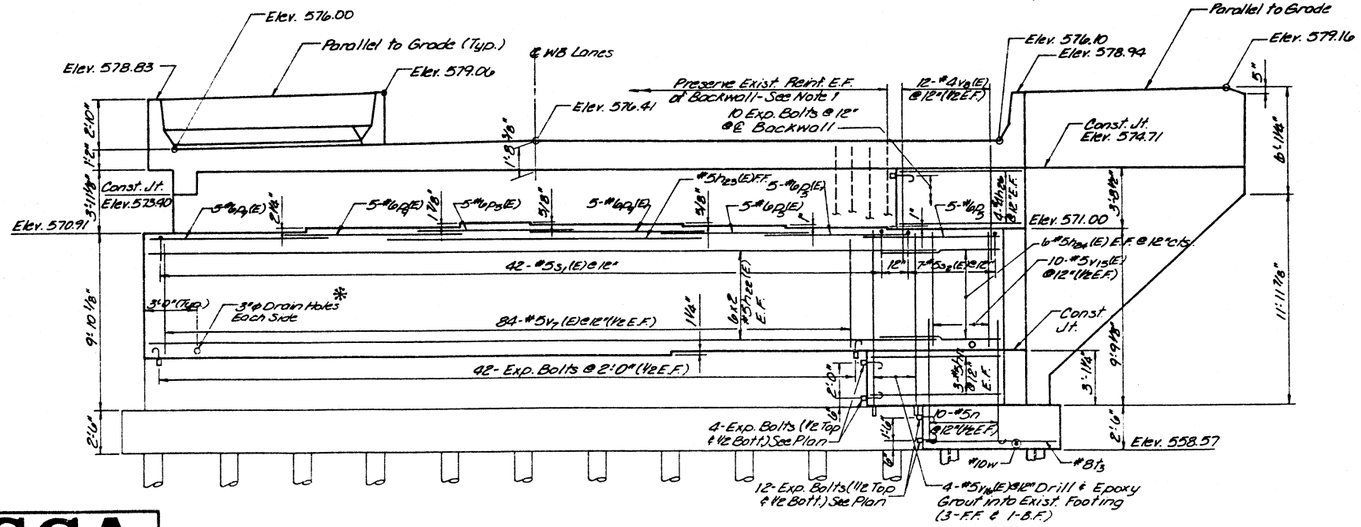
SECTION C-C



SECTION B-B



SECTION D-D



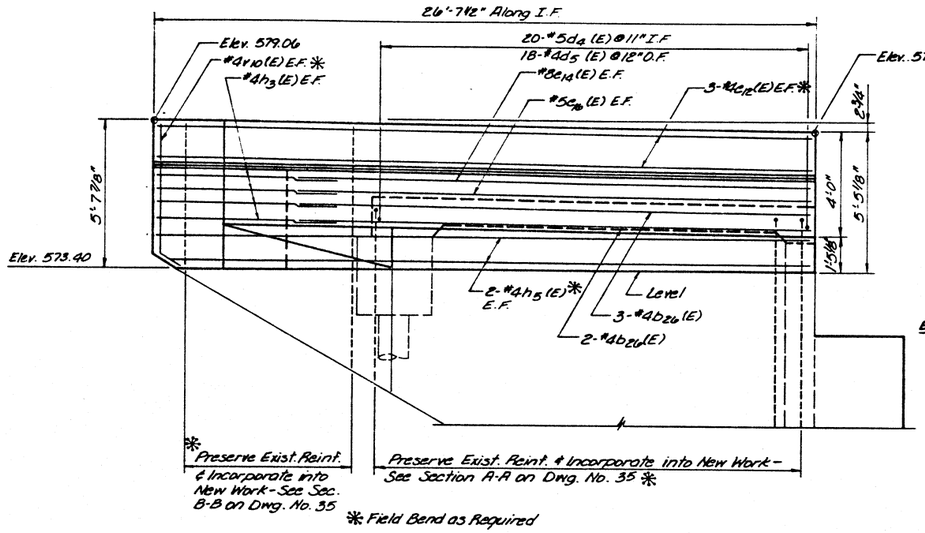
SECTION I-I

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	10-89
DRAWN BY:	CJG	10-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

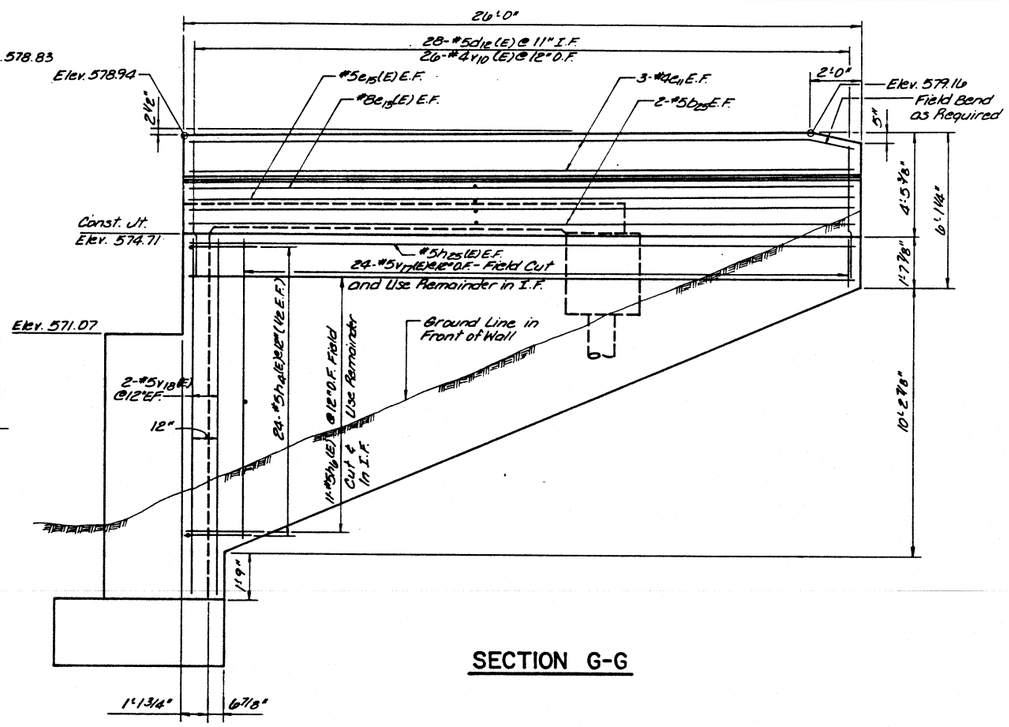
WESTBOUND LANES
WEST ABUTMENT

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

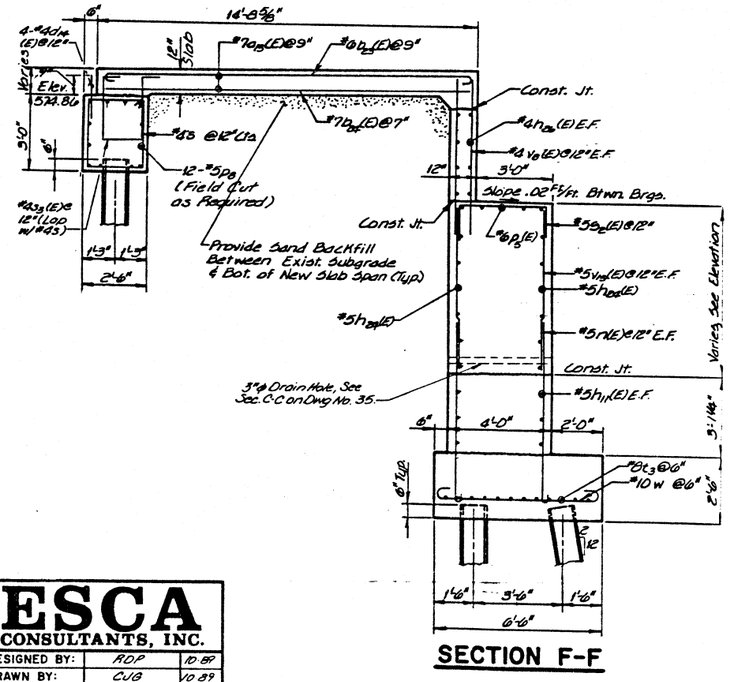
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I-74	*	Vermilion	137	130
STA		TO STA		
FED. ROAD DIST. NO.	ILLINOIS	PROJECT		
*(92-12B)BR		Dwg. No. 36 of 45		



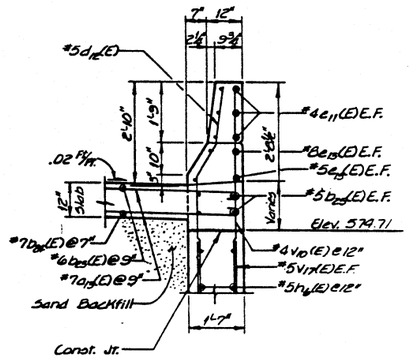
SECTION E-E



SECTION G-G



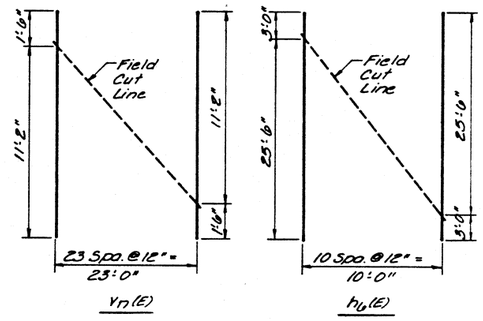
SECTION F-F



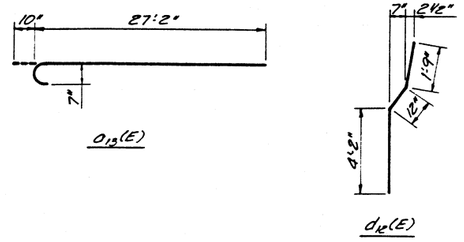
SECTION H-H

PILE DATA

	ABUTMENT	END BENT
Type	HP12x53	HP12x53
Capacity	Refusal	Refusal
No. Req'd.	4 (3+1 Test)	1
Est. Length	48'	62'



FIELD CUTTING DIAGRAM



BAR BENDING DETAILS

BILL OF MATERIAL

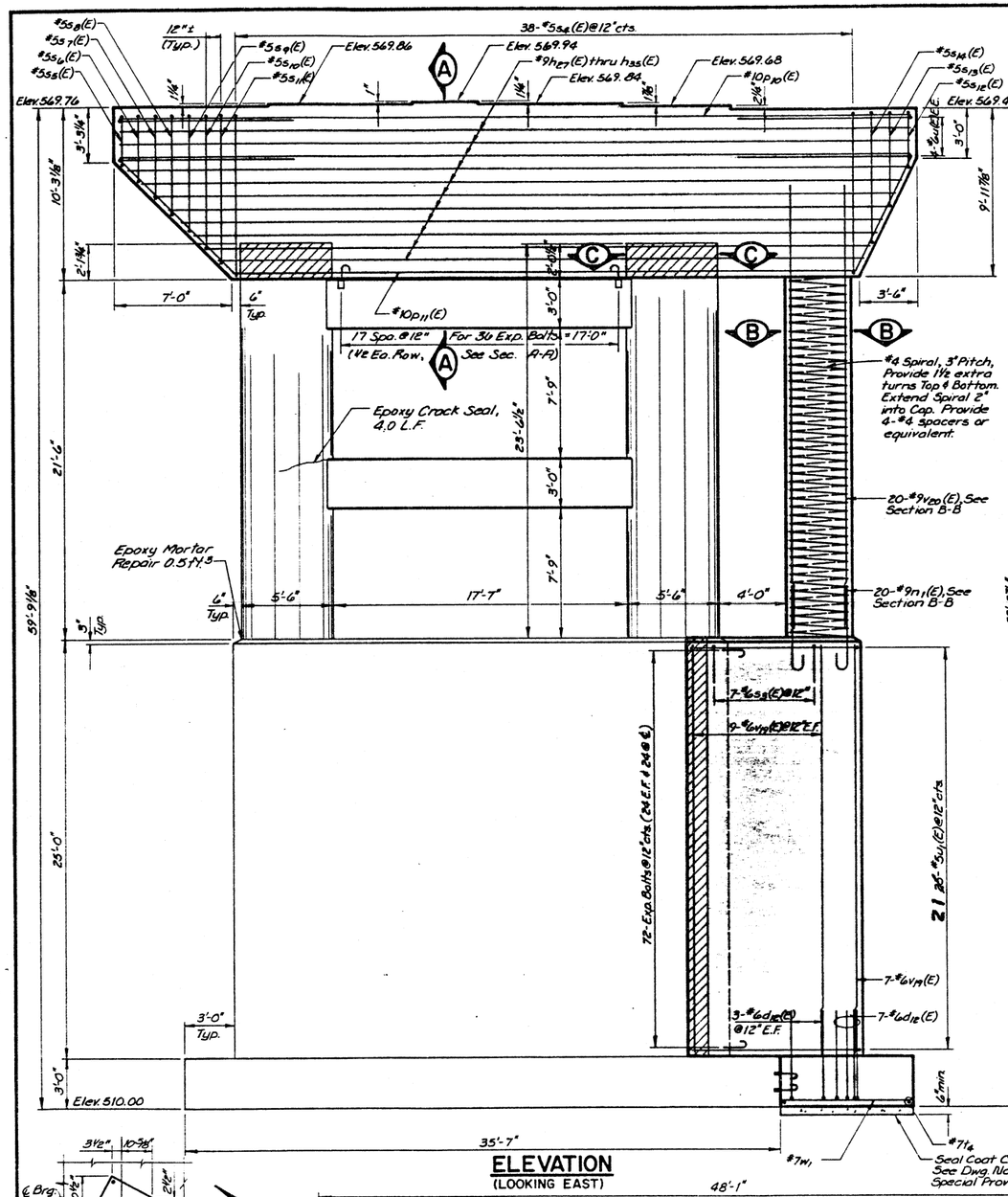
Bar	No.	Size	Length	Shape
a13(E)	80	#7	28'-0"	
b22(E)	55	#6	18'-0"	
b24(E)	71	#7	16'-8"	
b25(E)	4	#5	25'-6"	
b26(E)	5	#7	27'-0"	
d4(E)	20	#5	4'-10"	
d5(E)	18	#4	6'-2"	
d7(E)	52	#4	2'-3"	
d12(E)	28	#5	6'-11"	
d14(E)	8	#5	5'-8"	
d16(E)	4	#4	2'-3"	
d11(E)	6	#4	25'-6"	
d18(E)	6	#4	26'-0"	
d19(E)	2	#8	25'-6"	
d20(E)	2	#8	27'-0"	
d21(E)	2	#5	25'-6"	
d22(E)	2	#5	27'-0"	
h (E)	8	#5	28'-10"	
h3 (E)	8	#4	6'-8"	
h6 (E)	20	#5	5'-0"	
h9 (E)	4	#4	26'-0"	
h10 (E)	11	#5	28'-6"	
h12 (E)	8	#4	12'-4"	
h23 (E)	12	#5	23'-0"	
h23 (E)	1	#5	18'-0"	
h24 (E)	12	#5	10'-0"	
h25(E)	2	#5	25'-6"	
h27 (E)	6	#5	7'-7"	
h28 (E)	8	#4	7'-7"	
n (E)	10	#5	7'-11"	
P5 (E)	20	#6	9'-0"	
P8	12	#5	5'-6"	
P9 (E)	15	#6	10'-6"	
3	4	#4	10'-5"	
S1 (E)	42	#5	6'-8"	
S2 (E)	7	#5	7'-8"	
S3 (E)	4	#4	8'-8"	
T3	12	#8	7'-8"	
U (E)	48	#5	7'-11"	
Y7 (E)	84	#5	6'-7"	
Y8 (E)	12	#4	6'-7"	
Y15 (E)	10	#5	6'-10"	
Y10 (E)	28	#4	6'-0"	
Y14 (E)	4	#5	10'-9"	
Y17 (E)	24	#5	12'-8"	
Y18 (E)	4	#5	13'-3"	
W	16	#10	8'-0"	

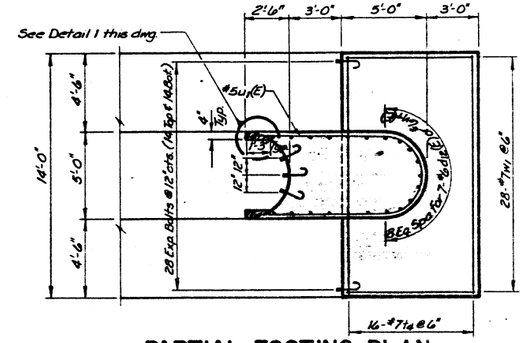
Item	Unit	Quantity
Class X Concrete	C.Y.	105.3
Reinforcement Bars	LBS.	9941
Reinf. Bars (Epoxy Coated)	LBS.	13,422
Sand Backfill	C.Y.	52
Structure Excavation	C.Y.	45
Expansion Bolts	EA.	110
Steel Piles HP 12x53	L.F.	206
Steel Test Pile HP 12x53	EA.	1

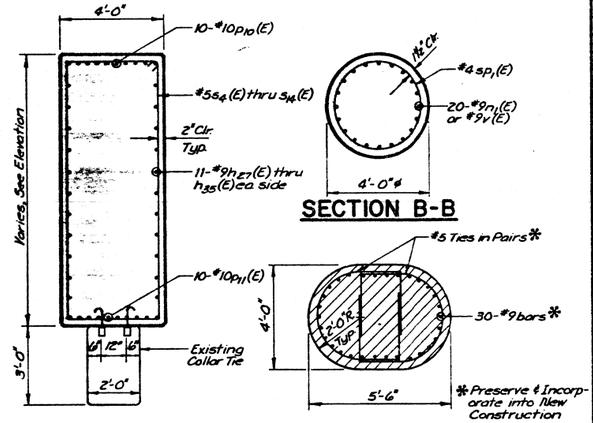
ESCA CONSULTANTS, INC.		
DESIGNED BY:	ADP	10-89
DRAWN BY:	CJG	10-89
CHECKED BY:	JAF	10-89
APPROVED BY:	ADP	10-89

WESTBOUND LANES
WEST ABUTMENT
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I.-74	*	Vermilion	137	91
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-128)BR		Dwg. No. 37 of 45		







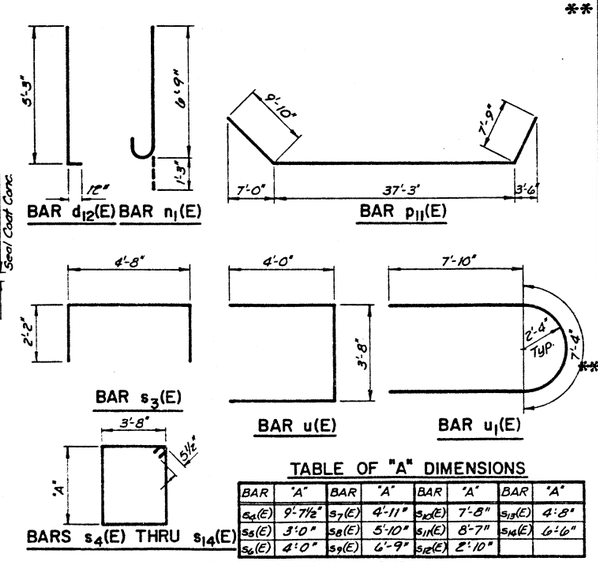
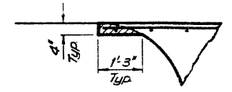


TABLE OF "A" DIMENSIONS

BAR	"A"	BAR	"A"	BAR	"A"	BAR	"A"
s_{4}(E)	9'-7½"	s_{7}(E)	4'-11"	s_{10}(E)	7'-8"	s_{13}(E)	4'-8"
s_{5}(E)	3'-0"	s_{8}(E)	5'-10"	s_{11}(E)	8'-7"	s_{14}(E)	6'-6"
s_{6}(E)	4'-0"	s_{9}(E)	6'-9"	s_{12}(E)	2'-10"		



DETAIL 1

BILL OF MATERIAL

BAR	No	SIZE	LENGTH	SHAPE
d_{12}(E)	13	#6	6'-3"	L
h_{27}(E)	6	#9	47'-6"	—
h_{28}(E)	2	#9	46'-9"	—
h_{29}(E)	2	#9	45'-6"	—
h_{30}(E)	2	#9	44'-4"	—
h_{31}(E)	2	#9	43'-2"	—
h_{32}(E)	2	#9	42'-0"	—
h_{33}(E)	2	#9	40'-10"	—
h_{34}(E)	2	#9	39'-8"	—
h_{35}(E)	2	#9	38'-6"	—
n_{1}(E)	20	#9	8'-0"	J
p_{10}(E)	10	#10	47'-7"	—
p_{11}(E)	10	#10	54'-10"	⌒
s_{3}(E)	7	#6	9'-0"	⊓
s_{4}(E)	38	#5	27'-6"	⊓
s_{5}(E)	1	#5	14'-5"	⊓
s_{6}(E)	1	#5	16'-3"	⊓
s_{7}(E)	1	#5	18'-1"	⊓
s_{8}(E)	1	#5	19'-11"	⊓
s_{9}(E)	1	#5	21'-9"	⊓
s_{10}(E)	1	#5	23'-7"	⊓
s_{11}(E)	1	#5	25'-5"	⊓
s_{12}(E)	1	#5	13'-11"	⊓
s_{13}(E)	1	#5	17'-7"	⊓
s_{14}(E)	1	#5	21'-3"	⊓
sp_{1}(E)	1	#4	21'-8"	⌇⌇⌇
t_{6}	16	#7	13'-6"	—
u(E)	8	#6	11'-8"	⊃
u_{1}(E)	25	#5	23'-0"	⊃
v_{19}(E)	25	#6	24'-8"	—
v_{20}(E)	20	#9	26'-6"	—
w1	28	#7	7'-6"	—

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	3.9
Expansion Bolts, ¾"ø	Each	136
Structure Excavation	Cu. Yds.	146
Class X Concrete	Cu. Yds.	128.2
Reinforcement Bars	Lbs.	871
Epoxy Mortar Repair	Cu. Ft.	0.5
Epoxy Crack Sealing	Lin. Ft.	4.0
Reinf. Bars (Epoxy Coated)	Lbs.	~~18,976~~ 13933

** Quantity includes the total length of Spiral (1,056'-6") and it's spacers

LEGEND

Concrete Removal

New Concrete

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JAF	10-89
APPROVED BY:	RDP	10-89

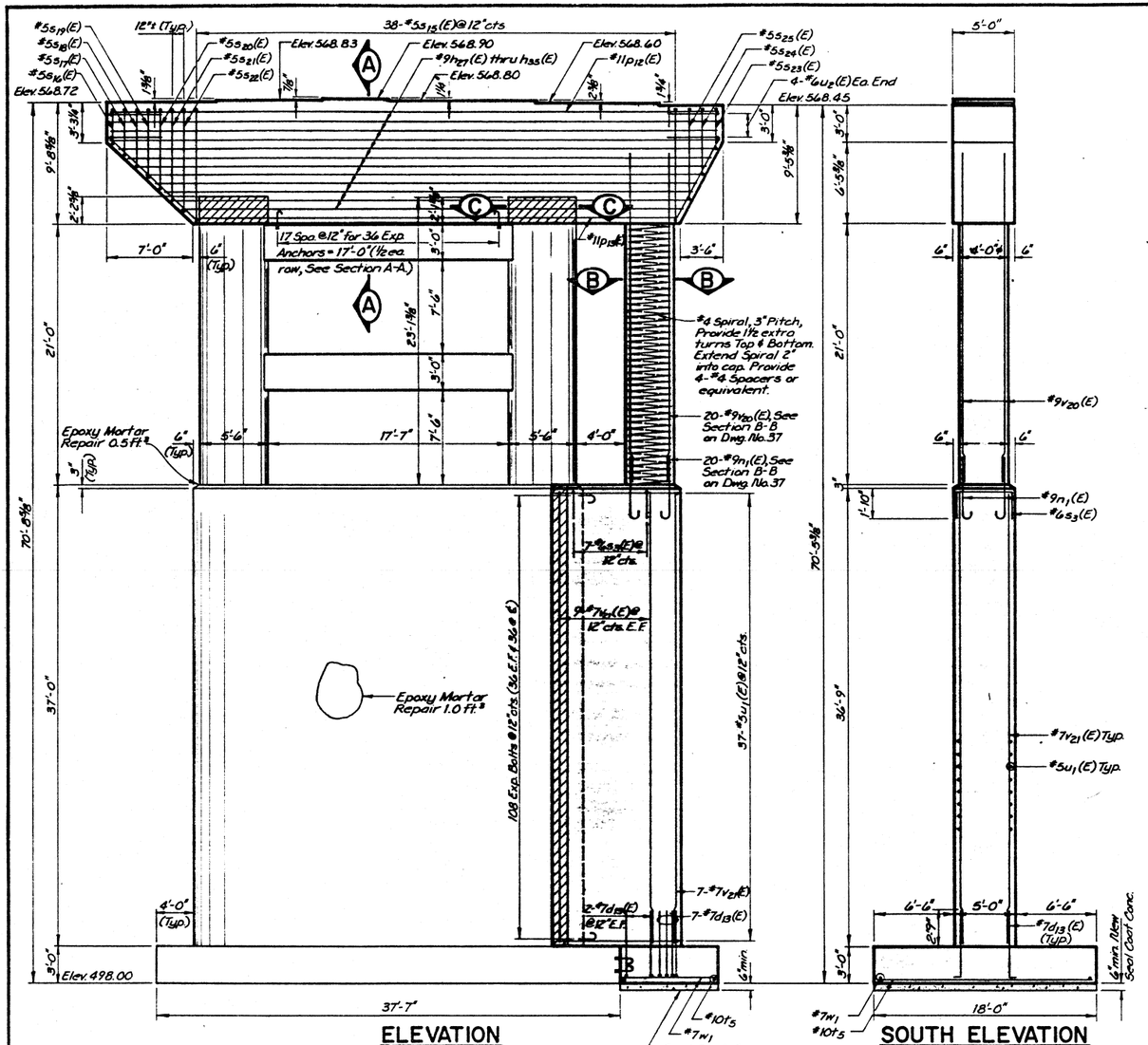
PIER 1 (EB)

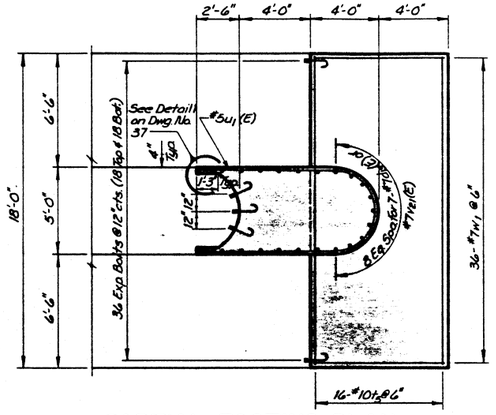
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-128)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	92
STA		TO STA		
FED. ROAD DIST NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 38 of 45		

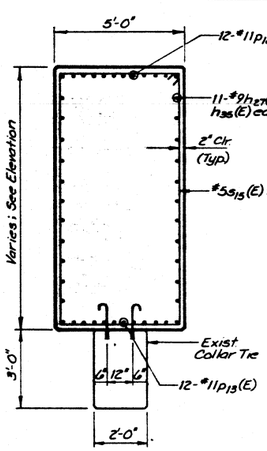
NOTES

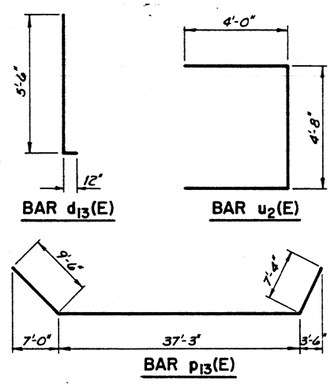
1. SEE DWG. NO. 37 FOR SECTION B-B, SECTION C-C, AND ADDITIONAL BAR BENDING DETAILS.
2. SEE DWG. NO. 45 FOR COFFERDAM DETAILS.

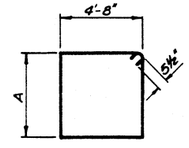




PARTIAL FOOTING PLAN







BARS s_{15}(E) THRU s_{25}(E)

BAR BENDING DETAILS

TABLE OF "A" DIMENSIONS

BAR	"A"	BAR	"A"	BAR	"A"
s15(E)	9'-1"	s19(E)	5'-10"	s23(E)	2'-10"
s16(E)	3'-0"	s20(E)	6'-9"	s24(E)	4'-8"
s17(E)	4'-0"	s21(E)	7'-8"	s25(E)	6'-6"
s18(E)	4'-11"	s22(E)	8'-7"		

BILL OF MATERIAL

BAR	N°	SIZE	LENGTH	SHAPE
d_{13}(E)	11	#7	6'-8"	L
h_{27}(E)	6	#9	47'-6"	—
h_{28}(E)	2	#9	46'-9"	—
h_{29}(E)	2	#9	45'-6"	—
h_{30}(E)	2	#9	44'-4"	—
h_{31}(E)	2	#9	43'-2"	—
h_{32}(E)	2	#9	42'-0"	—
h_{33}(E)	2	#9	40'-10"	—
h_{34}(E)	2	#9	39'-8"	—
h_{35}(E)	2	#9	38'-6"	—
n_1(E)	20	#9	8'-0"	J
p_{12}(E)	12	#11	47'-7"	—
p_{13}(E)	12	#11	54'-1"	⌒
s_3(E)	7	#6	9'-0"	⊓
s_{15}(E)	38	#5	28'-5"	□
s_{16}(E)	1	#5	16'-3"	□
s_{17}(E)	1	#5	18'-3"	□
s_{18}(E)	1	#5	20'-1"	□
s_{19}(E)	1	#5	21'-11"	□
s_{20}(E)	1	#5	23'-9"	□
s_{21}(E)	1	#5	25'-7"	□
s_{22}(E)	1	#5	27'-5"	□
s_{23}(E)	1	#5	15'-11"	□
s_{24}(E)	1	#5	19'-7"	□
s_{25}(E)	1	#5	23'-3"	□
* sp_6(E)	1	#4	21'-2"	WWWWW
t_5	16	#10	17'-6"	—
u_2(E)	8	#6	12'-8"	⊐
u_1(E)	37	#5	23'-0"	⊐
v_{21}(E)	25	#7	36'-8"	—
v_{20}(E)	20	#9	26'-6"	—
w_1	36	#7	7'-6"	—

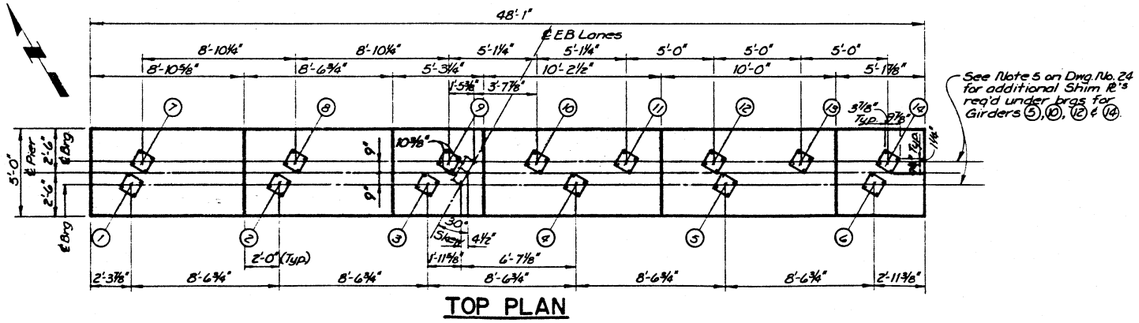
ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	4.5
Expansion Bolts, ¾"ø	Each	180
Cofferdam Excavation	Cu. Yds.	~~892~~ 895
Class X Concrete	Cu. Yds.	162.3
Reinforcement Bars	Lbs.	1757
Epoxy Mortar Repair	Cu. Ft.	1.5
* Reinf. Bars (Epoxy Coated)	Lbs.	17,364
Cofferdam (Pier 2)	Each	1
Rock EXCAVATION	CY	29.3

* Quantity includes the total length of Spiral (1024'-11") and 11's Spacers.

LEGEND

Concrete Removal

New Concrete



TOP PLAN

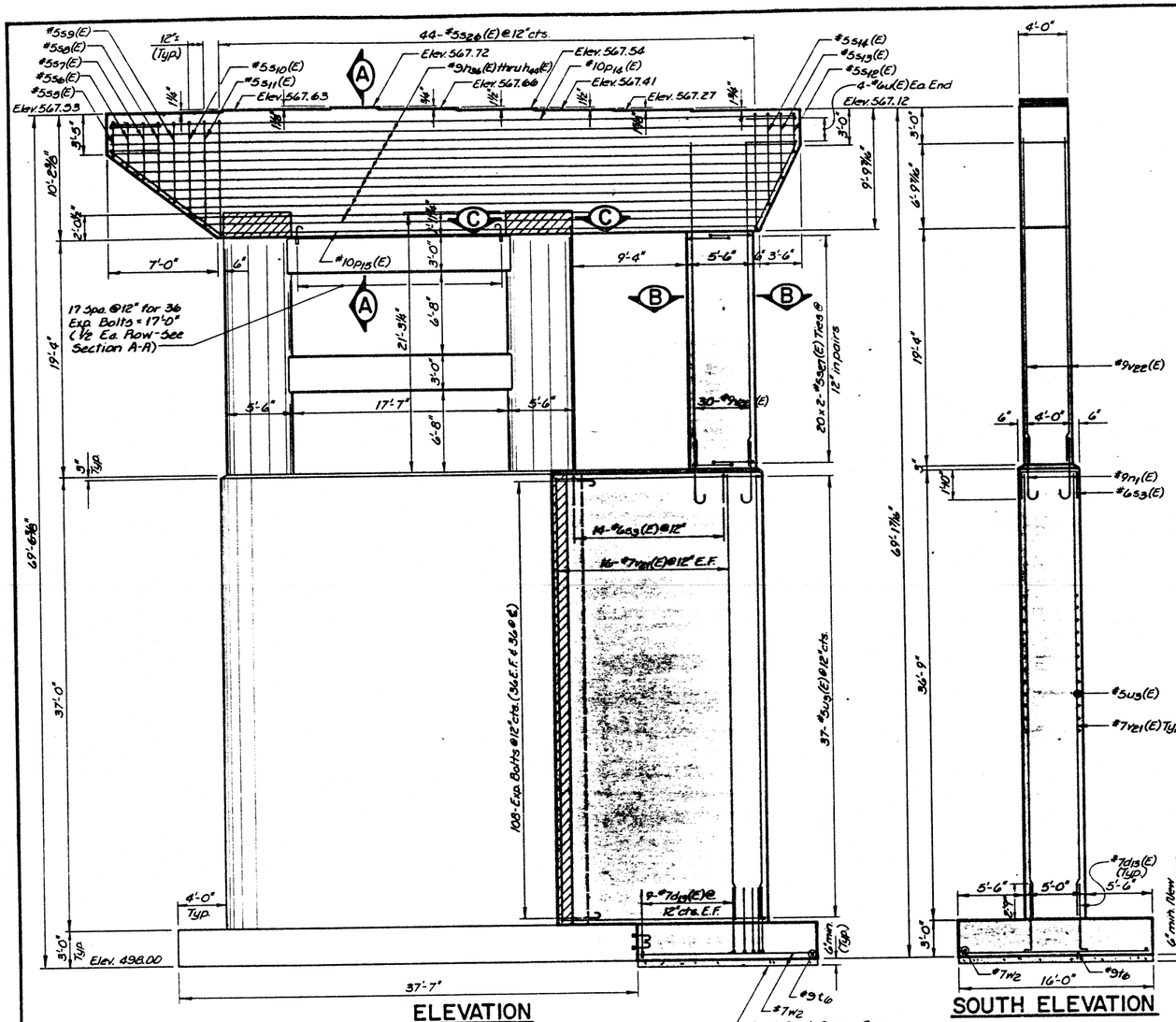
ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

PIER 2 (EB)

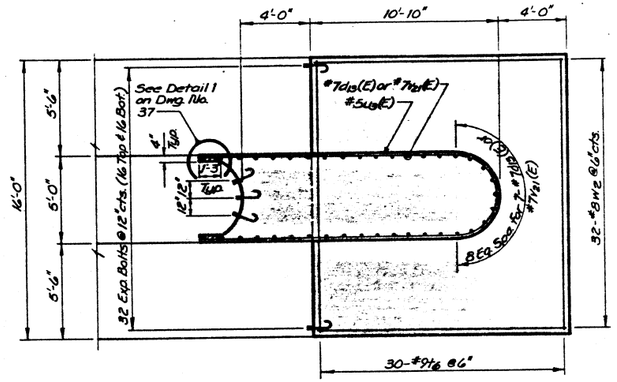
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	93
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR.		Dwg. No. 39 of 45		

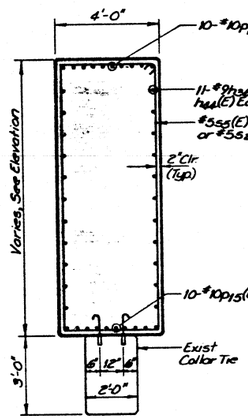


ELEVATION
(LOOKING EAST)

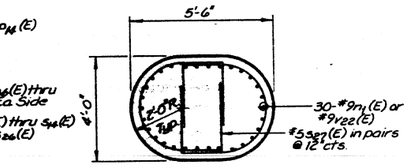
SOUTH ELEVATION



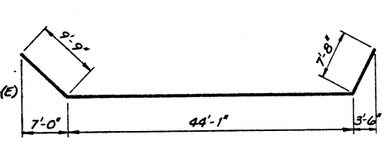
PARTIAL FOOTING PLAN



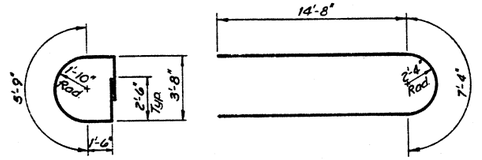
SECTION A-A



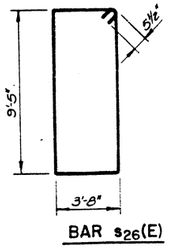
SECTION B-B



BAR P_{15}(E)



BAR S_{27}(E) BAR U_3(E)



BAR S_{26}(E)

BAR BENDING DETAILS

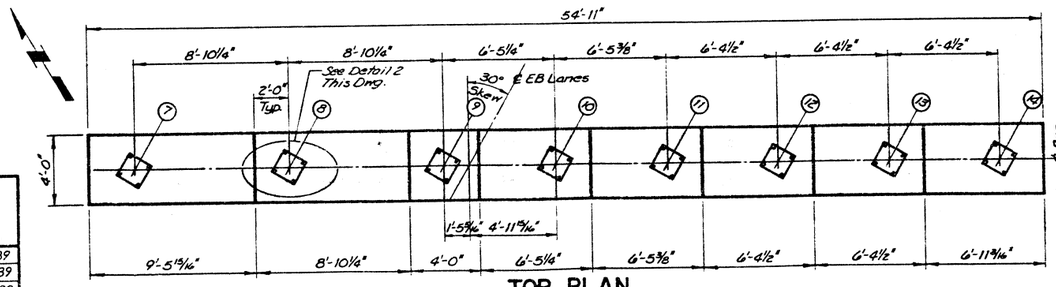
NOTES

1. SEE DWG. NO. 37 FOR SECTION C-C.
2. SEE DWG. NO. 45 FOR COFFERDAM DETAILS.
3. SEE DWGS. 37 & 38 FOR ADDITIONAL BAR BENDING DETAILS.

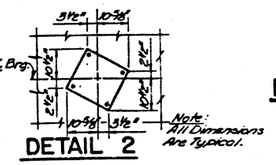
BILL OF MATERIAL

BAR	N°	SIZE	LENGTH	SHAPE
d_{13}(E)	25	#7	6'-8"	L
h_{36}(E)	6	#9	54'-7"	—
h_{37}(E)	2	#9	53'-5"	—
h_{38}(E)	2	#9	52'-3"	—
h_{39}(E)	2	#9	51'-1"	—
h_{40}(E)	2	#9	49'-11"	—
h_{41}(E)	2	#9	48'-9"	—
h_{42}(E)	2	#9	47'-7"	—
h_{43}(E)	2	#9	46'-5"	—
h_{44}(E)	2	#9	45'-3"	—
n_1(E)	30	#9	8'-0"	J
P_{14}(E)	10	#10	54'-7"	—
P_{15}(E)	10	#10	61'-6"	⌒
s_3(E)	14	#6	9'-0"	□
s_{26}(E)	44	#5	27'-1"	□
s_5(E)	1	#5	18'-3"	□
s_6(E)	1	#5	16'-3"	□
s_7(E)	1	#5	17'-3"	□
s_8(E)	1	#5	19'-11"	□
s_9(E)	1	#5	21'-9"	□
s_{10}(E)	1	#5	23'-7"	□
s_{11}(E)	1	#5	25'-5"	□
s_{12}(E)	1	#5	13'-11"	□
s_{13}(E)	1	#5	17'-7"	□
s_{14}(E)	1	#5	21'-3"	□
s_{27}(E)	40	#5	13'-9"	D
t_6	30	#9	15'-6"	—
u_1(E)	8	#6	11'-8"	—
u_3(E)	37	#5	36'-8"	—
v_{21}(E)	39	#7	36'-8"	—
v_{22}(E)	30	#9	24'-6"	—
w_2	32	#8	14'-6"	—

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	4.2
Expansion Bolts, ¾"ø	Each	176
Cofferdam Excavation	Cu. Yds.	~~233~~ 164
Class X Concrete	Cu. Yds.	139.2
Reinforcement Bars	Lbs.	2820
Reinf. Bars (Epoxy Coated)	Lbs.	19,133
Cofferdam (Pier 3)	Each	1
Rock EXCAVATION	**CY**	**60.7**



TOP PLAN



DETAIL 2

LEGEND
- Concrete Removal
- New Concrete

ESCA
CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

PIER 3 (EB)
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	94
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 40 of 45		

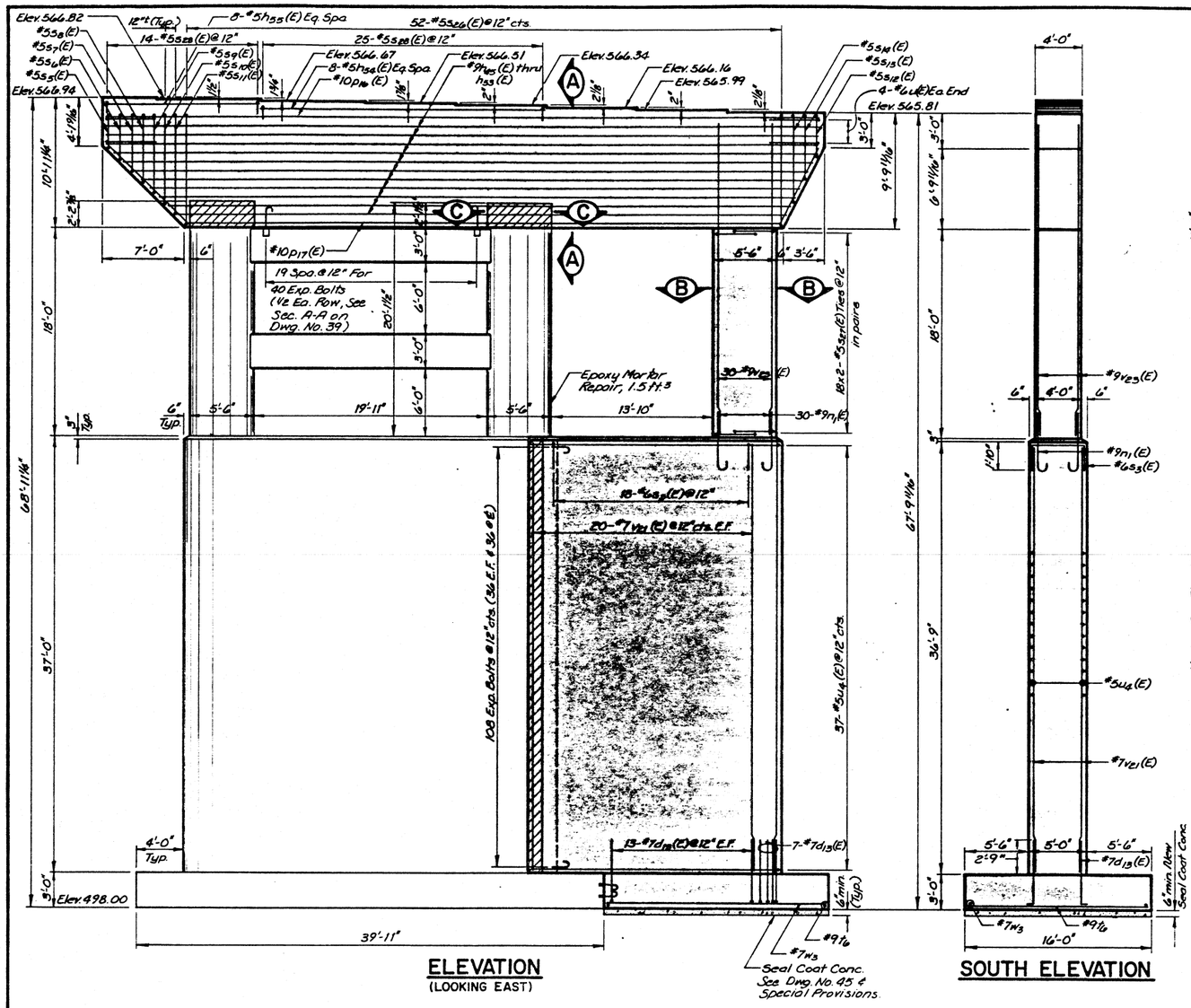
NOTES

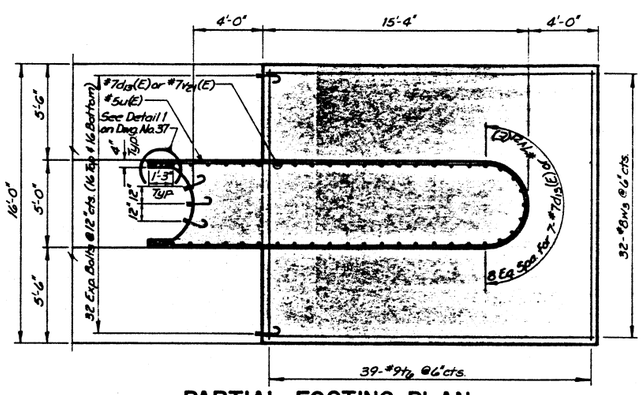
1. SEE DWG. NO. 37 FOR SECTION C-C.
2. SEE DWG. NO. 45 FOR COFFERDAM DETAILS.
3. SEE DWGS. 37, 38 & 39 FOR ADDITIONAL BAR BENDING DETAILS.

BILL OF MATERIAL

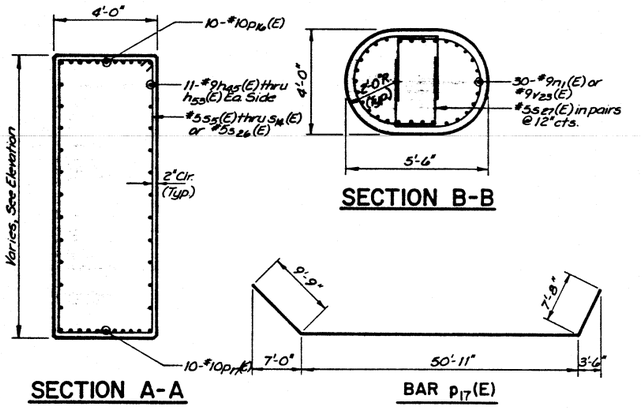
BAR	N°	SIZE	LENGTH	SHAPE
d_{13}(E)	33	#7	6'-8"	
h_{45}(E)	4	#9	61'-5"	
h_{46}(E)	2	#9	60'-3"	
h_{47}(E)	2	#9	59'-1"	
h_{48}(E)	2	#9	57'-11"	
h_{49}(E)	2	#9	56'-9"	
h_{50}(E)	2	#9	55'-7"	
h_{51}(E)	2	#9	54'-5"	
h_{52}(E)	2	#9	53'-3"	
h_{53}(E)	2	#9	52'-1"	
h_{54}(E)	8	#5	24'-0"	
h_{55}(E)	8	#5	13'-2"	
n_1(E)	30	#9	8'-0"	J
p_{16}(E)	10	#10	61'-5"	
p_{17}(E)	10	#10	68'-4"	
s_3(E)	18	#6	9'-0"	
s_{26}(E)	52	#5	27'-1"	
s_5(E)	1	#5	14'-3"	
s_6(E)	1	#5	16'-3"	
s_7(E)	1	#5	18'-1"	
s_8(E)	1	#5	19'-11"	
s_9(E)	1	#5	21'-9"	
s_{10}(E)	1	#5	23'-7"	
s_{11}(E)	1	#5	25'-5"	
s_{12}(E)	1	#5	13'-11"	
s_{13}(E)	1	#5	17'-7"	
s_{14}(E)	1	#5	21'-3"	
s_{27}(E)	34	#5	13'-9"	
s_{28}(E)	39	#5	7'-8"	
t_6	39	#9	15'-6"	
u(E)	8	#6	11'-8"	
u_4(E)	37	#5	45'-4"	
v_{21}(E)	47	#7	36'-8"	
v_{23}(E)	30	#9	23'-0"	
w_3	32	#8	19'-0"	

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	4.5
Expansion Bolts, 3/4"ø	Each	180
Cofferdam Excavation	Cu. Yds.	~~830~~ 675
Class X Concrete	Cu. Yds.	270.8
Reinforcement Bars	Lbs.	36178
Epoxy Mortar Repair	Cu. Ft.	1.5
Reinf. Bars (Epoxy Coated)	Lbs.	21,965
Cofferdam (Pier 4)	Each	1
Rock EXCAVATION	CY	76

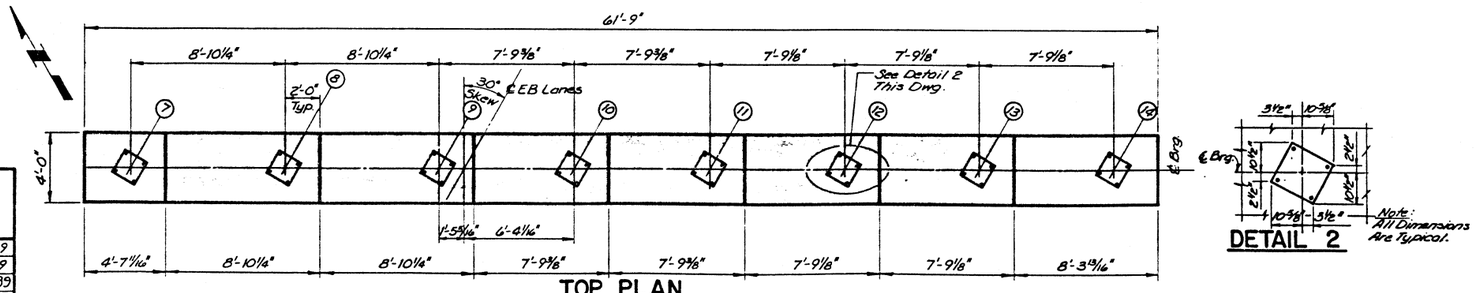




PARTIAL FOOTING PLAN



BAR BENDING DETAILS



TOP PLAN

DETAIL 2

LEGEND

Concrete Removal

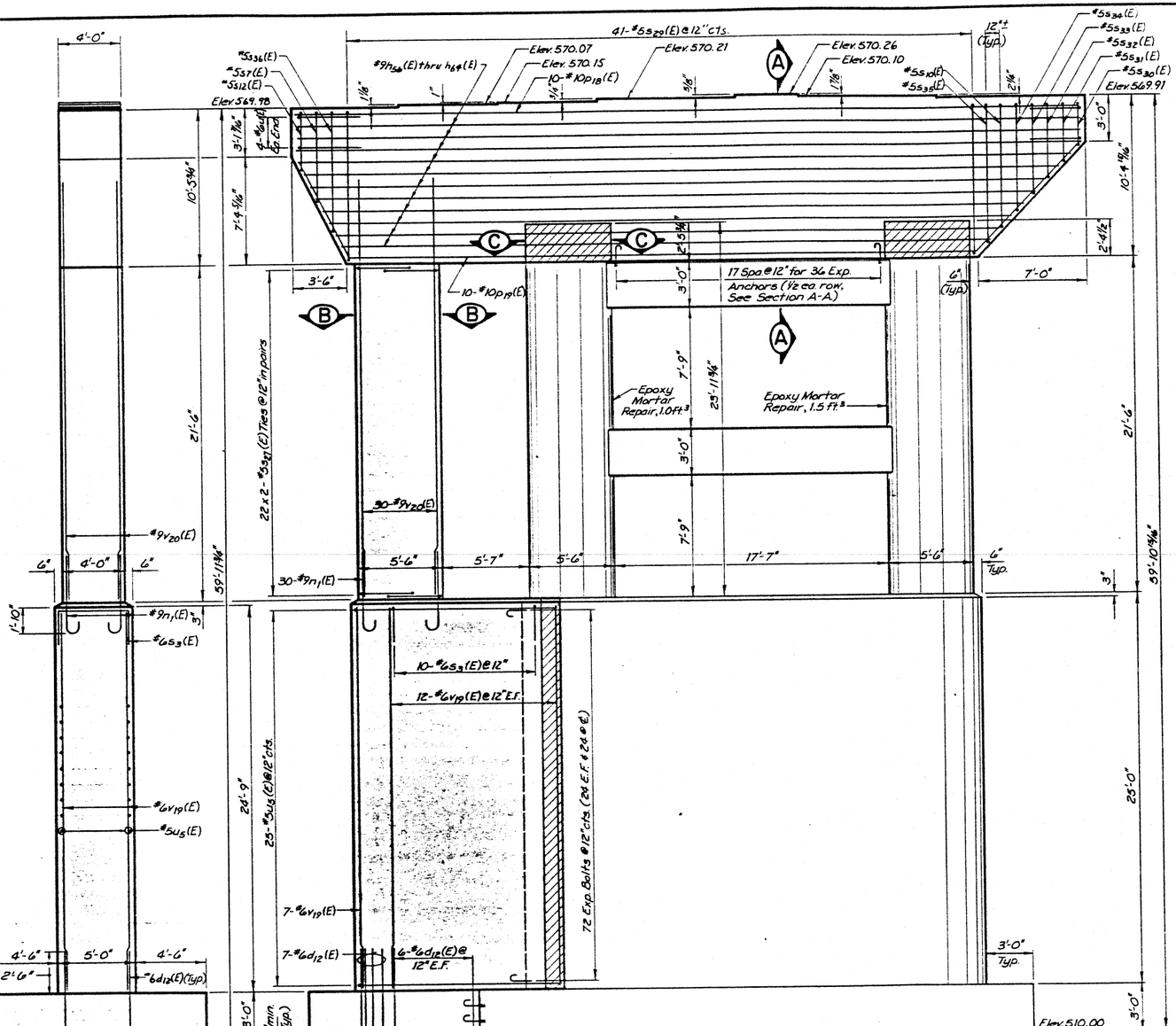
New Concrete

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

PIER 4 (EB)

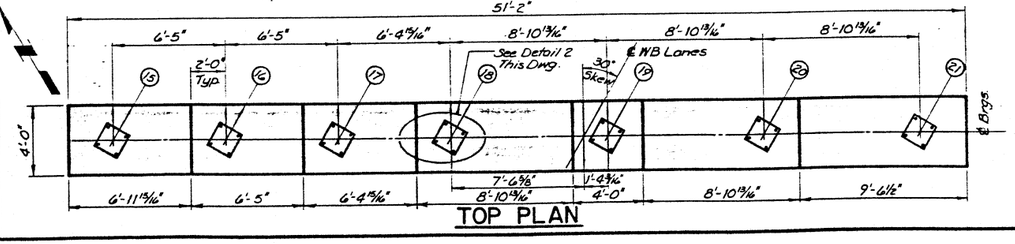
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	95
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 41 of 45		

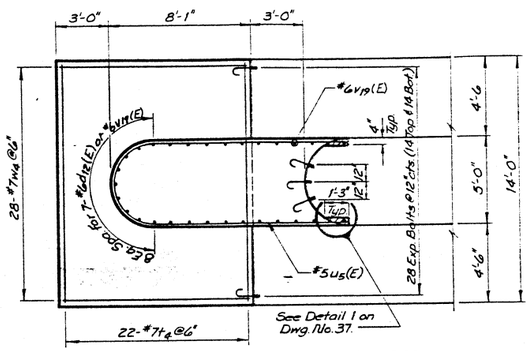


NORTH ELEVATION

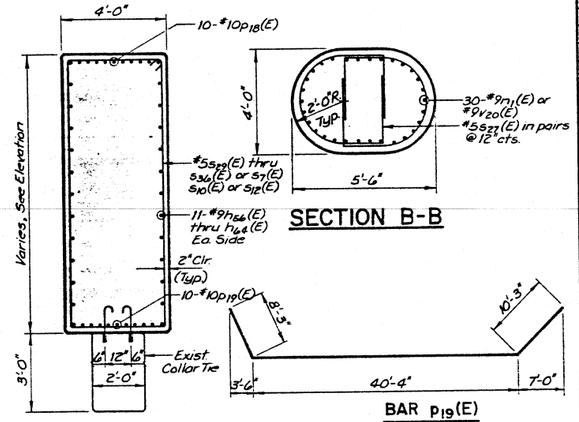
ELEVATION (LOOKING EAST)



TOP PLAN



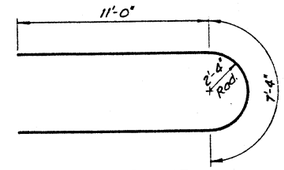
PARTIAL FOOTING PLAN



SECTION A-A

SECTION B-B

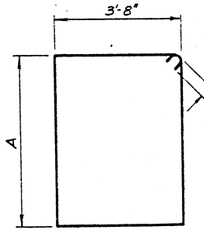
BAR p19(E)



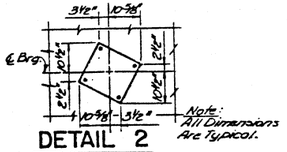
BAR u5(E)

TABLE OF "A" DIMENSIONS

BAR	"A"
s29(E)	10'-0"
s30(E)	2'-9"
s31(E)	3'-9"
s32(E)	4'-9"
s33(E)	5'-9"
s34(E)	6'-8"
s35(E)	8'-8"
s36(E)	6'-10"



BARS s29(E) THRU s36(E)



DETAIL 2

LEGEND

Concrete Removal

New Concrete

BAR BENDING DETAILS

NOTES

1. SEE DWG. NO. 37 FOR SECTION C-C.
2. SEE DWGS. 37 & 39 FOR ADDITIONAL BAR BENDING DETAILS.

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
d12(E)	19	#6	6'-3"	L
h54(E)	6	#9	50'-10"	—
h57(E)	2	#9	49'-8"	—
h58(E)	2	#9	48'-6"	—
h59(E)	2	#9	47'-4"	—
h60(E)	2	#9	46'-2"	—
h61(E)	2	#9	45'-0"	—
h62(E)	2	#9	43'-10"	—
h63(E)	2	#9	42'-8"	—
h64(E)	2	#9	41'-6"	—
n1(E)	30	#9	8'-0"	J
p18(E)	10	#10	50'-10"	—
p19(E)	10	#10	58'-10"	U
s3(E)	10	#6	9'-0"	□
s29(E)	41	#5	28'-5"	□
s30(E)	1	#5	13'-9"	□
s31(E)	1	#5	15'-9"	□
s32(E)	1	#5	17'-9"	□
s33(E)	1	#5	19'-9"	□
s34(E)	1	#5	21'-7"	□
s10(E)	1	#5	23'-7"	□
s35(E)	1	#5	25'-7"	□
s12(E)	1	#5	13'-11"	□
s7(E)	1	#5	18'-7"	□
s36(E)	1	#5	21'-11"	□
s27(E)	44	#5	13'-9"	D
t4	22	#7	13'-6"	—
u(E)	8	#6	11'-8"	⌐
u5(E)	25	#5	29'-4"	⌐
v19(E)	31	#6	24'-8"	—
v20(E)	30	#9	26'-6"	—
w4	28	#7	10'-9"	—

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	4.3
Expansion Bolts, ¾"ϕ	Each	136
Structure Excavation	Cu. Yds.	~~4.72~~ 86
Class X Concrete	Cu. Yds.	159.1
Reinforcement Bars	Lbs.	1,222
Epoxy Mortar Repair	Cu. Ft.	2.5
Reinf. Bars (Epoxy Coated)	Lbs.	16,148

ESCA CONSULTANTS, INC.

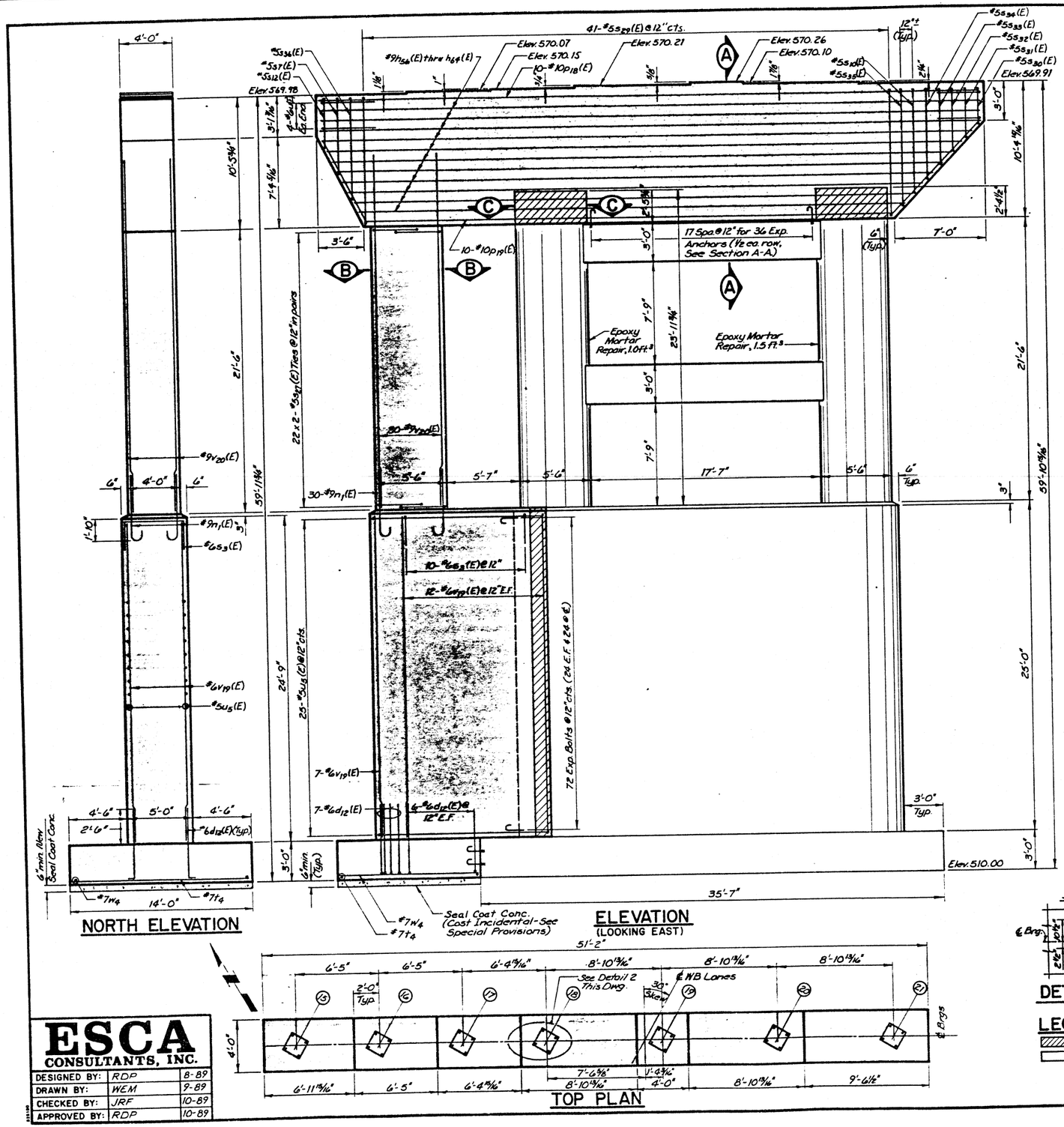
DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

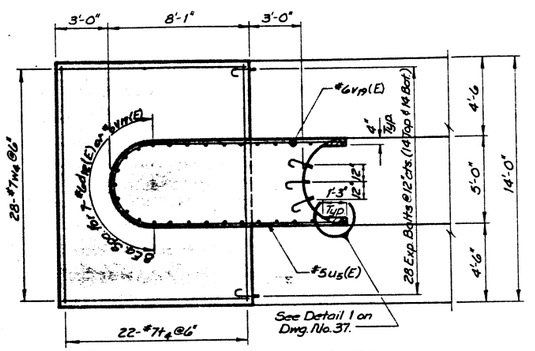
PIER 1 (WB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

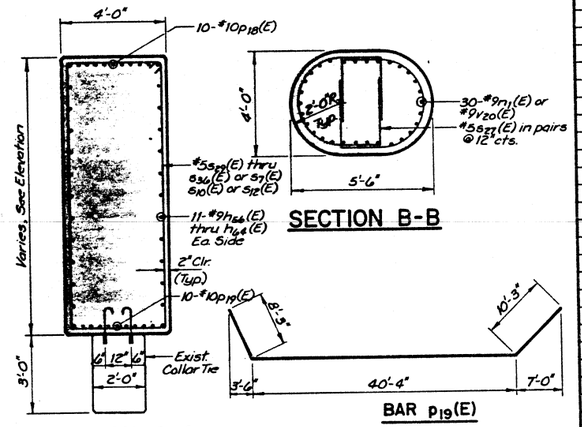
Rev. 4-24-90

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI-74	*	Vermilion	137	95
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 41 of 45		





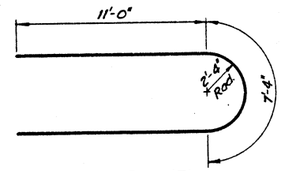
PARTIAL FOOTING PLAN



SECTION B-B

BAR $p_{19}(E)$

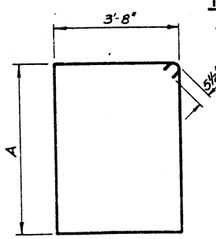
SECTION A-A



BAR $u_5(E)$

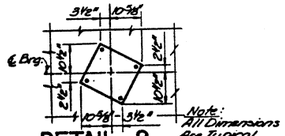
TABLE OF "A" DIMENSIONS

BAR	"A"
$s_{28}(E)$	10'-0"
$s_{29}(E)$	2'-9"
$s_{31}(E)$	3'-9"
$s_{32}(E)$	4'-9"
$s_{33}(E)$	5'-9"
$s_{34}(E)$	6'-8"
$s_{35}(E)$	8'-8"
$s_{36}(E)$	6'-10"



BARS $s_{29}(E)$ THRU $s_{36}(E)$

BAR BENDING DETAILS



DETAIL 2

LEGEND

Concrete Removal

New Concrete

NOTES

1. SEE DWG. NO. 37 FOR SECTION C-C.
2. SEE DWGS. 37 & 39 FOR ADDITIONAL BAR BENDING DETAILS.

BILL OF MATERIAL

BAR	NO	SIZE	LENGTH	SHAPE
$d_{12}(E)$	19	#6	6'-3"	L
$h_{56}(E)$	6	#9	50'-10"	—
$h_{57}(E)$	2	#9	49'-8"	—
$h_{58}(E)$	2	#9	48'-6"	—
$h_{59}(E)$	2	#9	47'-4"	—
$h_{60}(E)$	2	#9	46'-2"	—
$h_{61}(E)$	2	#9	45'-0"	—
$h_{62}(E)$	2	#9	43'-10"	—
$h_{63}(E)$	2	#9	42'-8"	—
$h_{64}(E)$	2	#9	41'-6"	—
$n_1(E)$	30	#9	8'-0"	J
$p_{18}(E)$	10	#10	50'-10"	—
$p_{19}(E)$	10	#10	58'-10"	⌐
$s_3(E)$	10	#6	9'-0"	□
$s_{29}(E)$	41	#5	28'-5"	□
$s_{30}(E)$	1	#5	13'-9"	□
$s_{31}(E)$	1	#5	15'-9"	□
$s_{32}(E)$	1	#5	17'-9"	□
$s_{33}(E)$	1	#5	19'-9"	□
$s_{34}(E)$	1	#5	21'-7"	□
$s_{10}(E)$	1	#5	23'-7"	□
$s_{35}(E)$	1	#5	25'-7"	□
$s_{12}(E)$	1	#5	13'-11"	□
$s_7(E)$	1	#5	18'-1"	□
$s_{36}(E)$	1	#5	21'-11"	□
$s_{27}(E)$	44	#5	13'-9"	D
t_4	22	#7	13'-6"	—
$u_1(E)$	8	#6	11'-8"	⌐
$u_5(E)$	25	#5	29'-4"	⌐
$v_{19}(E)$	31	#6	24'-8"	—
$v_{20}(E)$	30	#9	26'-6"	—
w_4	28	#7	10'-9"	—

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	4.3
Expansion Bolts, ¾"ϕ	Each	136
Structure Excavation	Cu. Yds.	172
Class X Concrete	Cu. Yds.	159.1
Reinforcement Bars	Lbs.	1,222
Epoxy Mortar Repair	Cu. Ft.	2.5
Reinf. Bars (Epoxy Coated)	Lbs.	~~16,168~~ 12,6
~~Rock Excavation~~	~~CY~~	~~48.2~~ Void

PIER 1 (WB)
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ESCA CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	96
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 42 of 45		

NOTES

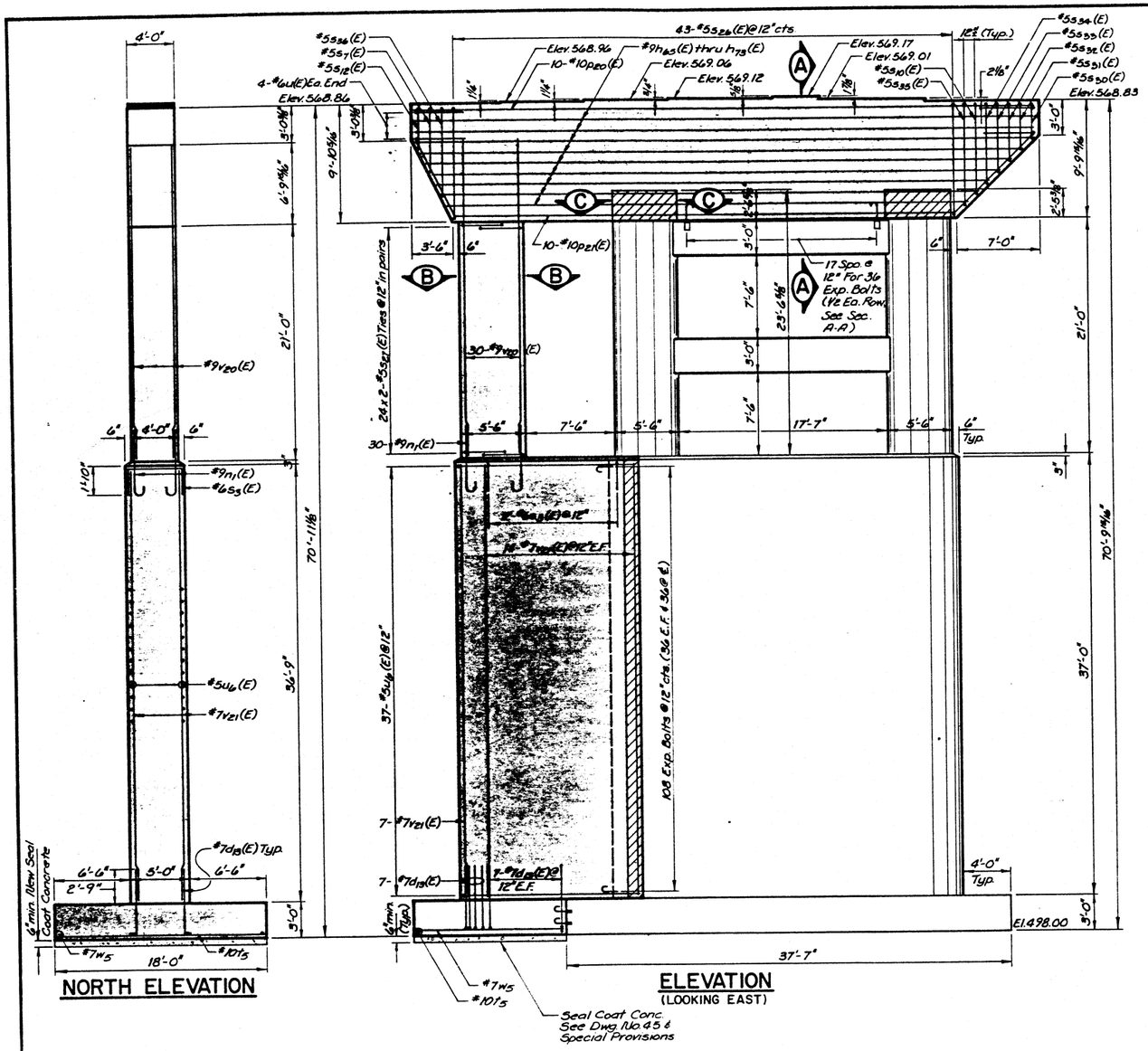
1. SEE DWG. NO. 37 FOR SECTION C-C.
2. SEE DWG. NO. 45 FOR COFFERDAM DETAILS.
3. SEE DWGS. 37, 39 & 41 FOR ADDITIONAL BAR BENDING DETAILS.

BILL OF MATERIAL

BAR	N°	SIZE	LENGTH	SHAPE
d_{15}(E)	21	#7	6'-8"	L
h_{65}(E)	6	#8	52'-9"	—
h_{66}(E)	2	#8	52'-0"	—
h_{67}(E)	2	#8	50'-9"	—
h_{68}(E)	2	#8	49'-7"	—
h_{69}(E)	2	#8	48'-5"	—
h_{70}(E)	2	#8	47'-3"	—
h_{71}(E)	2	#8	46'-0"	—
h_{72}(E)	2	#8	44'-10"	—
h_{73}(E)	2	#8	43'-8"	—
n_1(E)	30	#9	8'-0"	J
p_{20}(E)	10	#10	52'-9"	—
p_{21}(E)	10	#10	59'-8"	L
s_3(E)	12	#6	9'-0"	[
s_{26}(E)	43	#5	27'-1"	▯
s_{30}(E)	1	#5	13'-9"	▯
s_{31}(E)	1	#5	15'-9"	▯
s_{32}(E)	1	#5	17'-9"	▯
s_{33}(E)	1	#5	19'-9"	▯
s_{34}(E)	1	#5	21'-7"	▯
s_{10}(E)	1	#5	23'-7"	▯
s_{35}(E)	1	#5	25'-7"	▯
s_{12}(E)	1	#5	13'-11"	▯
s_7(E)	1	#5	18'-1"	▯
s_{36}(E)	1	#5	21'-11"	▯
s_{27}(E)	48	#5	13'-9"	▯
t_5	26	#10	17'-6"	—
u(E)	8	#6	11'-8"	U
u_6(E)	37	#5	33'-0"	U
v_{21}(E)	35	#7	34'-8"	—
v_{20}(E)	30	#9	26'-6"	—
w_5	36	#7	12'-8"	—

ITEM	UNIT	QUANTITY
Concrete Removal	Cu.Yds.	4.9
Expansion Bolts, ¾"ø	Each	180
Cofferdam Excavation	Cu.Yds.	~~364~~ 181
Class X Concrete	Cu.Yds.	205.7
Reinforcement Bars	Lbs.	2890
Reinf. Bars (Epoxy Coated)	Lbs.	~~16,074~~ 2841
Cofferdam (Per 2)	Each	1

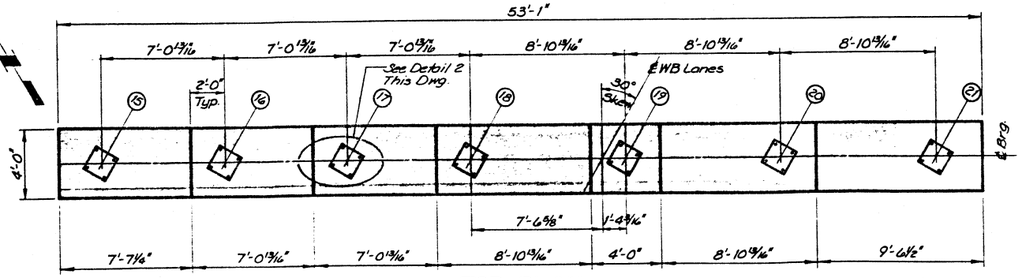
Rock EXCAVATION CY 48.2



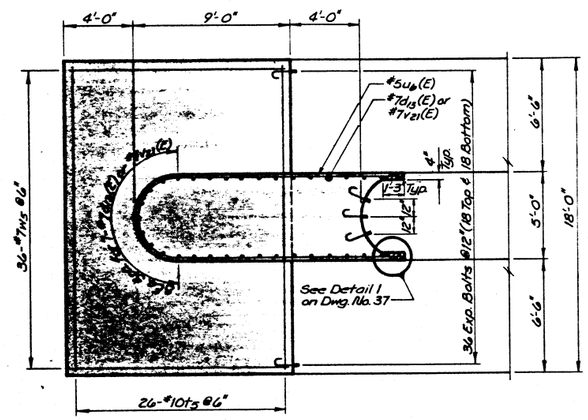
NORTH ELEVATION

ELEVATION (LOOKING EAST)

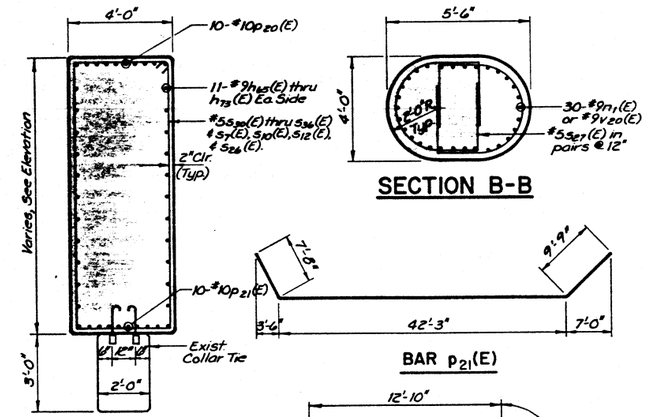
Seal Coat Conc. See Dwg. No. 45 & Special Provisions



TOP PLAN

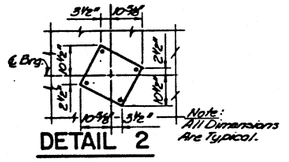


PARTIAL FOOTING PLAN



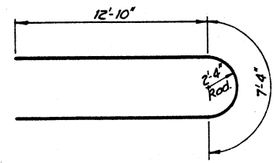
SECTION B-B

SECTION A-A



DETAIL 2

BAR p_{21}(E)



BAR u_6(E)

BAR BENDING DETAILS

LEGEND

Concrete Removal

New Concrete

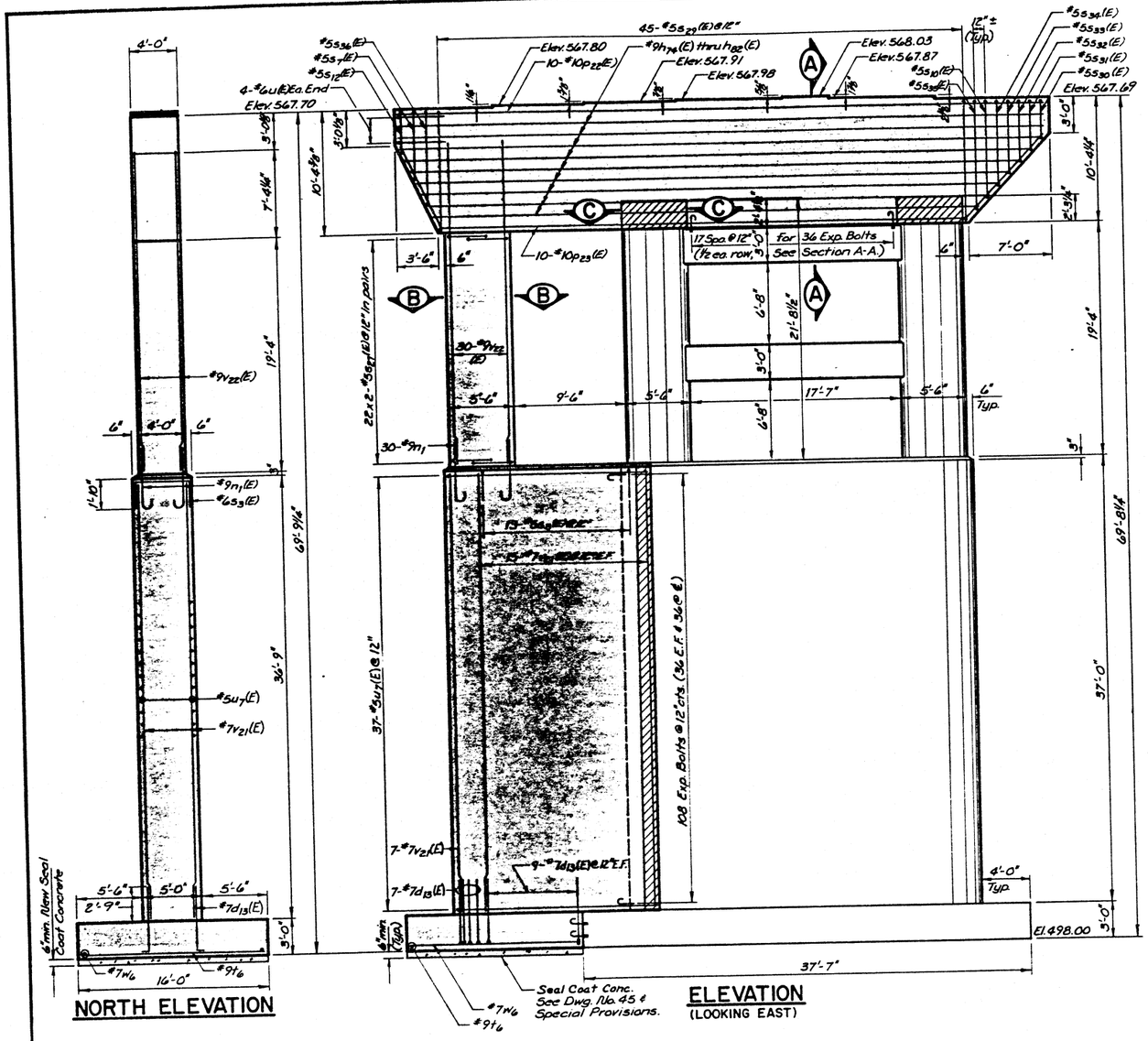
ESCA CONSULTANTS, INC.

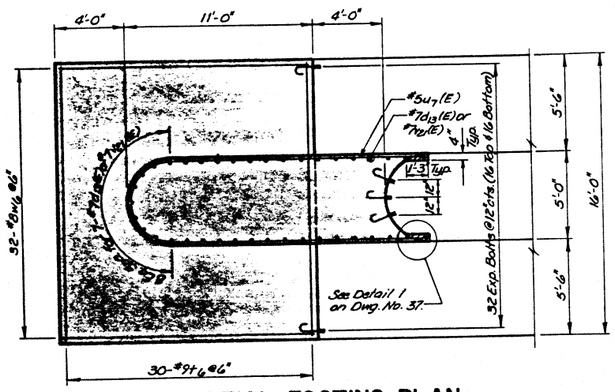
DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

PIER 2 (WB)

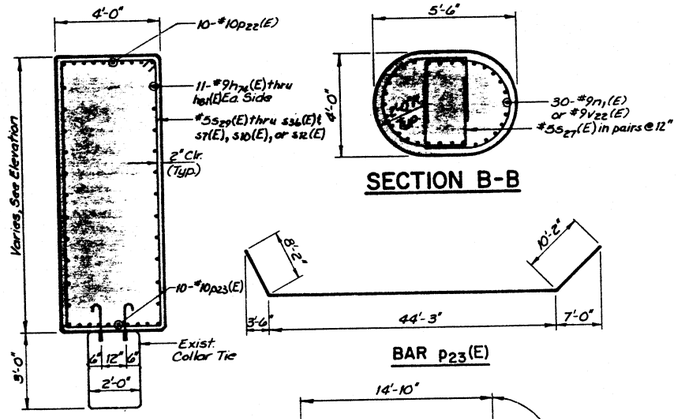
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	97
STA		TO STA		
FED ROAD DIST NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 43 of 45		





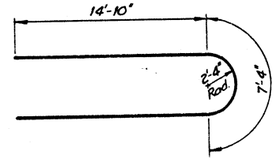
PARTIAL FOOTING PLAN



SECTION A-A

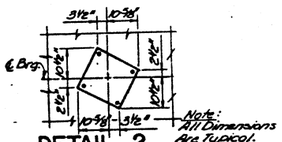
SECTION B-B

BAR p_{23}(E)



BAR u_7(E)

BAR BENDING DETAILS



DETAIL 2

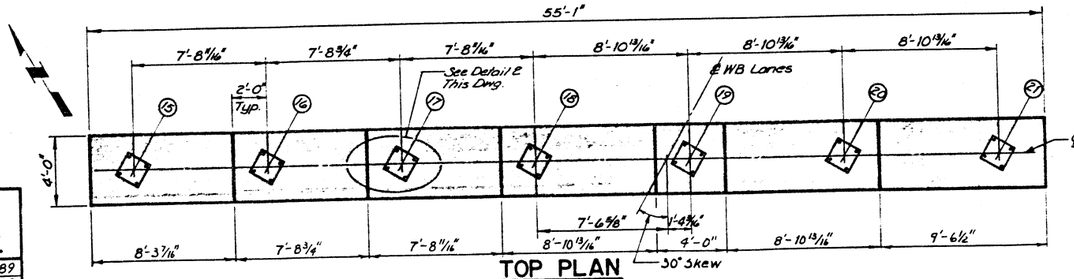
NOTES

1. SEE DWG. NO. 37 FOR SECTION C-C.
2. SEE DWG. NO. 45 FOR COFFERDAM DETAILS.
3. SEE DWGS. 37, 38, 39, & 41 FOR ADDITIONAL BAR BENDING DETAILS.

BILL OF MATERIAL

BAR	No.	SIZE	LENGTH	SHAPE
d_{13} (E)	25	#7	6'-8"	L
h_{76} (E)	6	#9	54'-9"	—
h_{75} (E)	2	#9	53'-8"	—
h_{74} (E)	2	#9	52'-6"	—
h_{77} (E)	2	#9	51'-4"	—
h_{78} (E)	2	#9	50'-2"	—
h_{79} (E)	2	#9	49'-0"	—
h_{80} (E)	2	#9	47'-10"	—
h_{81} (E)	2	#9	46'-8"	—
h_{82} (E)	2	#9	45'-6"	—
n_1 (E)	30	#9	8'-0"	L
P_{22}(E)	10	#10	54'-9"	—
P_{23}(E)	10	#10	62'-7"	L
s_3 (E)	13	#6	9'-0"	□
s_{29}(E)	45	#5	28'-3"	□
s_{30}(E)	1	#5	13'-9"	□
s_{31}(E)	1	#5	15'-9"	□
s_{32}(E)	1	#5	17'-9"	□
s_{33}(E)	1	#5	19'-9"	□
s_{34}(E)	1	#5	21'-7"	□
s_{10}(E)	1	#5	23'-7"	□
s_{35}(E)	1	#5	25'-7"	□
s_{12}(E)	1	#5	13'-11"	□
s_7 (E)	1	#5	18'-1"	□
s_{36}(E)	1	#5	21'-11"	□
s_{27}(E)	44	#5	13'-9"	D
t_4	30	#9	15'-6"	—
u (E)	8	#6	11'-8"	—
u_7(E)	37	#5	37'-0"	—
v_{21} (E)	37	#7	36'-8"	—
v_{22} (E)	30	#9	24'-6"	—
w_6	32	#8	14'-8"	—

ITEM	UNIT	QUANTITY
Concrete Removal	Cu.Yds.	4.7
Expansion Bolts, ¾"ø	Each	176
Cofferdam Excavation	Cu. Yds.	~~234~~ 192
Class X Concrete	Cu.Yds.	224.7
Reinforcement Bars	Lbs.	2,834
Reinf. Bars (Epoxy Coated)	Lbs.	19,193
Cofferdam (Pier 3)	Each	1
Rock Excavation	CY	43.4



TOP PLAN

LEGEND

Concrete Removal

New Concrete

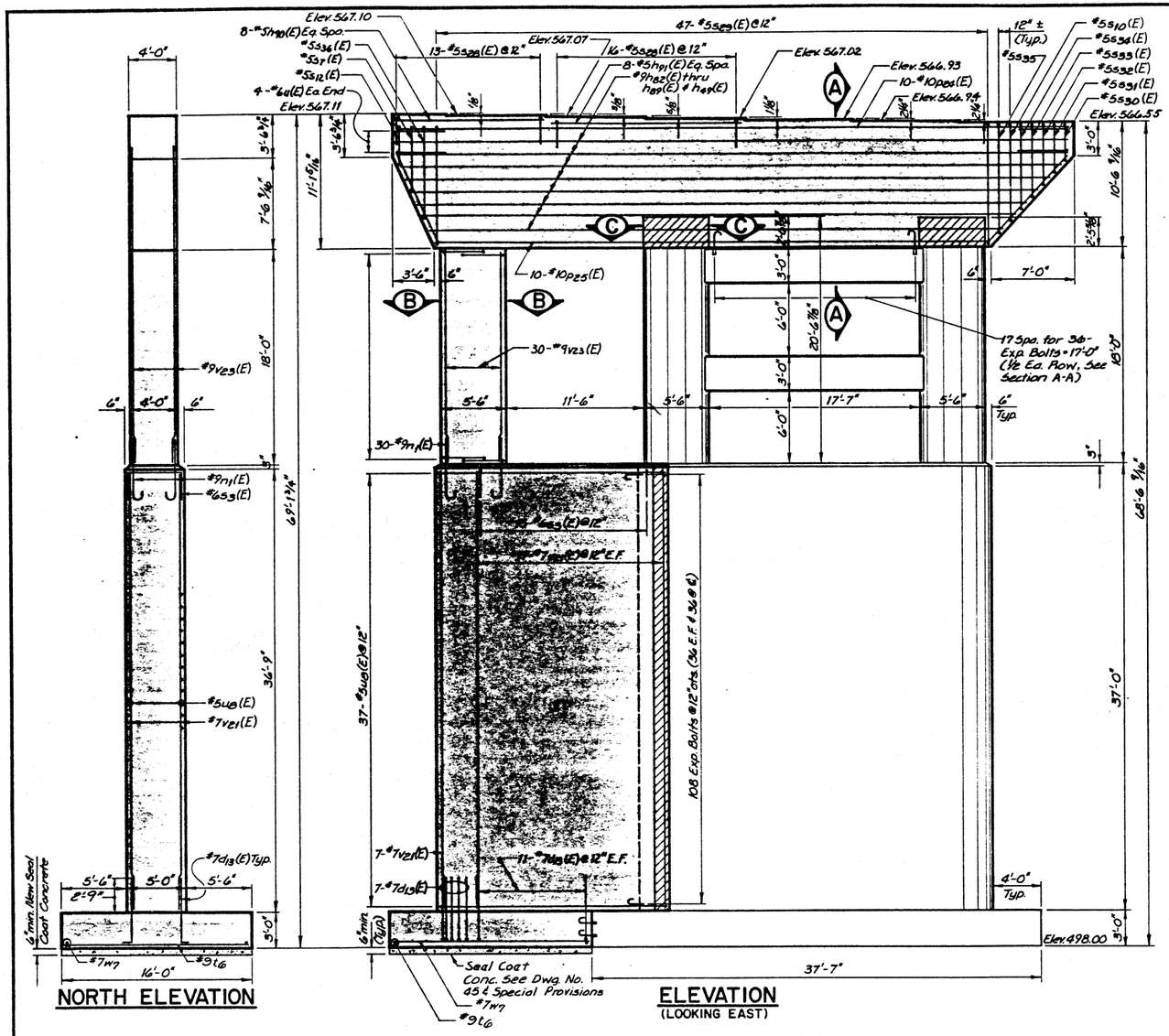
ESCA
CONSULTANTS, INC.

DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

PIER 3 (WB)

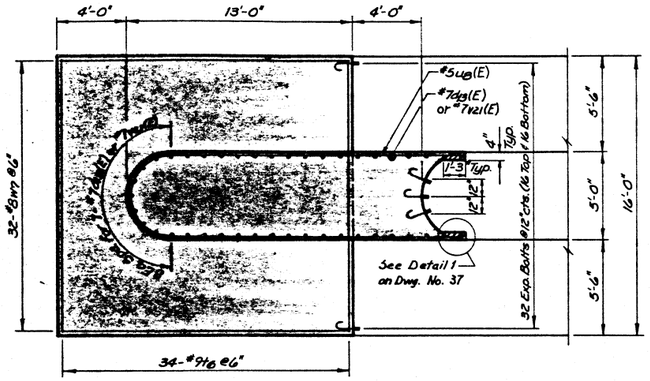
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
F.A.I.-74	*	Vermilion	137	98
STA		TO STA		
FED ROAD DIST NO		ILLINOIS	PROJECT	
*(92-12BR		Dwg. No. 44 of 45		

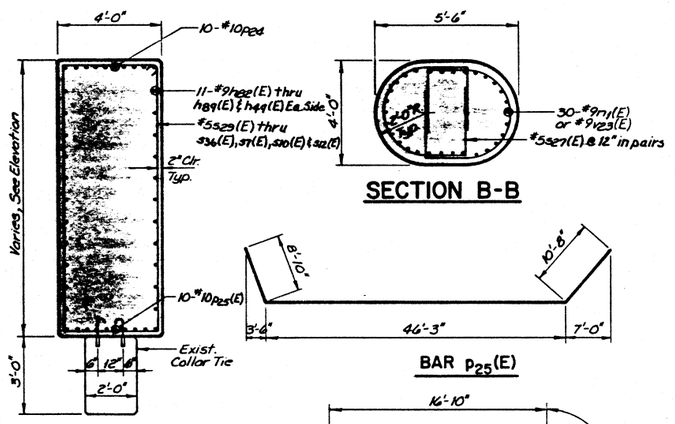


NORTH ELEVATION

ELEVATION
(LOOKING EAST)



PARTIAL FOOTING PLAN

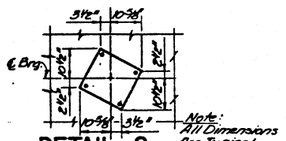


SECTION A-A

SECTION B-B

BAR p_{25}(E)

BAR u_8(E)



DETAIL 2

BAR BENDING DETAILS

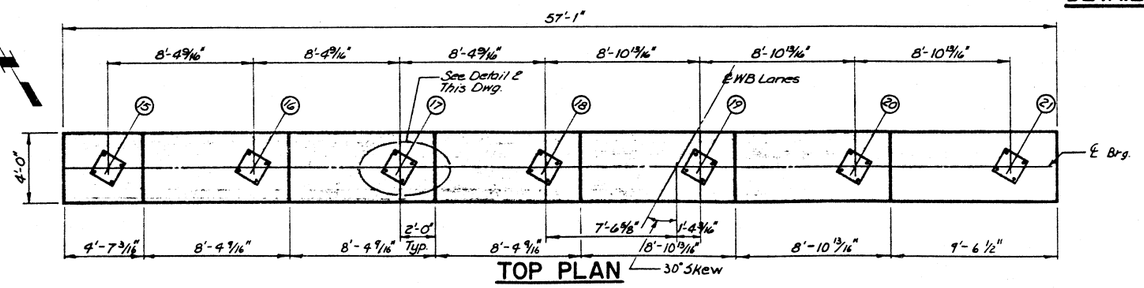
NOTES

1. SEE DWG. NO. 37 FOR SECTION C-C.
2. SEE DWG. NO. 45 FOR COFFERDAM DETAILS.
3. SEE DWG. NOS. 37 THRU 41 FOR ADDITIONAL BAR BENDING DETAILS.

BILL OF MATERIAL

BAR	N°	SIZE	LENGTH	SHAPE
d_{13}(E)	29	#7	6'-0"	L
h_{89}(E)	4	#9	56'-9"	—
h_{82}(E)	2	#9	55'-4"	—
h_{83}(E)	2	#9	54'-2"	—
h_{84}(E)	2	#9	53'-0"	—
h_{85}(E)	2	#9	51'-10"	—
h_{86}(E)	2	#9	50'-8"	—
h_{87}(E)	2	#9	49'-6"	—
h_{88}(E)	2	#9	48'-4"	—
h_{89}(E)	2	#9	47'-2"	—
h_{90}(E)	8	#5	12'-7"	—
h_{91}(E)	8	#5	17'-0"	—
n_1(E)	30	#9	8'-0"	⌊
p_{24}(E)	10	#10	56'-9"	—
p_{25}(E)	10	#10	65'-9"	⌣
s_3(E)	15	#6	9'-0"	⊤
s_{29}(E)	47	#5	28'-3"	⊓
s_{30}(E)	1	#5	13'-9"	⊓
s_{31}(E)	1	#5	15'-9"	⊓
s_{32}(E)	1	#5	17'-9"	⊓
s_{33}(E)	1	#5	19'-9"	⊓
s_{34}(E)	1	#5	21'-7"	⊓
s_{10}(E)	1	#5	23'-7"	⊓
s_{35}(E)	1	#5	25'-7"	⊓
s_{12}(E)	1	#5	13'-11"	⊓
s_7(E)	1	#5	18'-1"	⊓
s_{36}(E)	1	#5	21'-11"	⊓
s_{27}(E)	42	#5	13'-9"	D
s_{28}(E)	29	#5	7'-8"	⊓
t_6	34	#9	15'-6"	—
u (E)	8	#6	11'-8"	⊐
u_8(E)	37	#5	41'-0"	⊐
v_{21}(E)	41	#7	36'-8"	—
v_{23}(E)	30	#9	23'-0"	—
w_7	32	#8	16'-8"	—

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yds.	5.0
Expansion Bolts, 3/4"ø	Each	176
Cofferdam Excavation	Cu. Yds.	~~492~~ 43
Class X Concrete	Cu. Yds.	247.1
Reinforcement Bars	Lbs.	3,216
Reinf. Bars (Epoxy Coated)	Lbs.	20,439
Cofferdam (Pier 4)	Each	1
Rock Excavation	CY	28.6



TOP PLAN

LEGEND
- Concrete Removal
- New Concrete

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	9-89
CHECKED BY:	JRF	10-89
APPROVED BY:	RDP	10-89

PIER 4 (WB)

FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

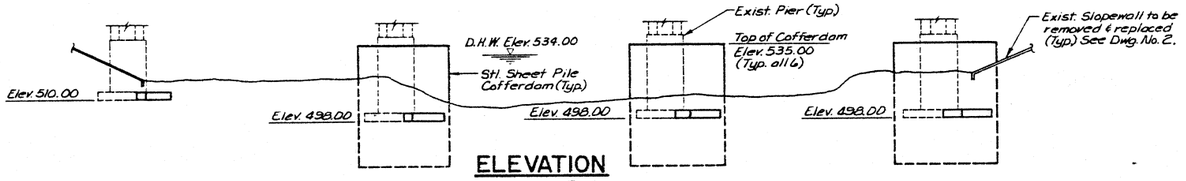
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	99
STA		TO STA		
FED. ROAD DIST. NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 45 of 45		

COFFERDAM DESIGN NOTES

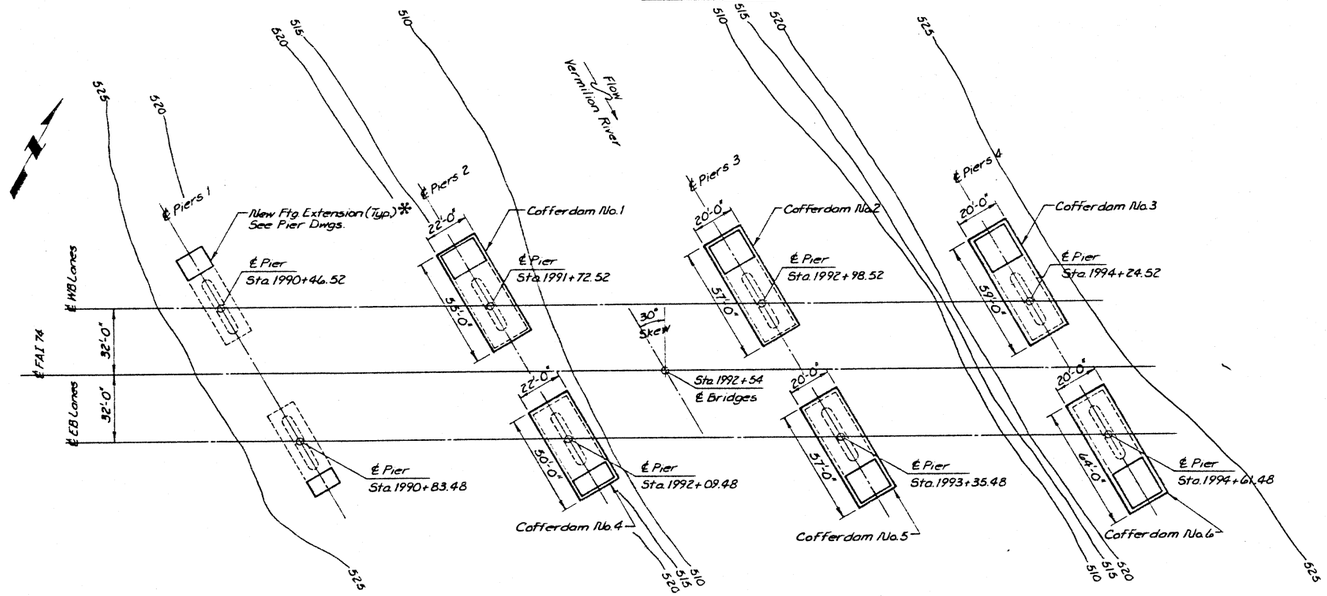
1. COFFERDAMS ARE REQUIRED FOR EB & WB BRIDGES AT PIERS 2, 3, & 4.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF STRUCTURALLY SAFE AND STABLE COFFERDAMS, AND MUST OBTAIN THE ENGINEER'S APPROVAL OF HIS DESIGN PRIOR TO COMMENCING CONSTRUCTION.
3. THE CONTRACTOR MUST CONSIDER IN HIS DESIGN:
   a) STABILITY OF THE EXISTING PIER FOUNDATION.
   b) HYDROSTATIC PRESSURES, INCLUDING THOSE RESULTING FROM COFFERDAM DEWATERING OPERATIONS.
   c) STABILITY OF FOUNDATION SHALE ON WHICH NEW FOOTINGS ARE TO BEAR. THE CONTRACTOR IS CAUTIONED THAT THIS MATERIAL WILL BECOME UNSTABLE IN A SHORT PERIOD OF TIME AFTER EXPOSURE TO WEATHER. THE CONTRACTOR IS ADVISED TO PERFORM THE COFFERDAM AND PIER WORK DURING A LOW FLOW PERIOD, WHICH MAY ALLOW DEWATERING OF COFFERDAMS PRIOR TO COMMENCING COFFERDAM EXCAVATION.
   d) IMMEDIATELY UPON EXPOSURE OF THE BEARING STRATA, 6" MINIMUM OF SEAL CONCRETE SHALL BE POURED TO PROTECT THE SHALE FROM DETERIORATION DUE TO WEATHER.
   e) ALL OTHER FACTORS WHICH RELATE TO A SAFE AND STABLE COFFERDAM SYSTEM AS WELL AS SATISFACTORY CONSTRUCTION OF THE NEW PIER WIDENING.
4. THE FOLLOWING MATERIAL PROPERTIES MUST BE MET:
   a) SHEET PILING: AASHTO M202 (ASTM A328)
   b) BRACING, WALES: AASHTO M183 (ASTM A36)

NOTES

1. COFFERDAM DIMENSIONS SHOWN ARE MINIMUM CLEAR ON INSIDE FACES.
2. SEE DWGS. 1 & 2 FOR SLOPEWALL DETAILS.
3. SEE DWGS. 37 THRU 44 FOR DETAILS OF PIER WIDENING.



ELEVATION



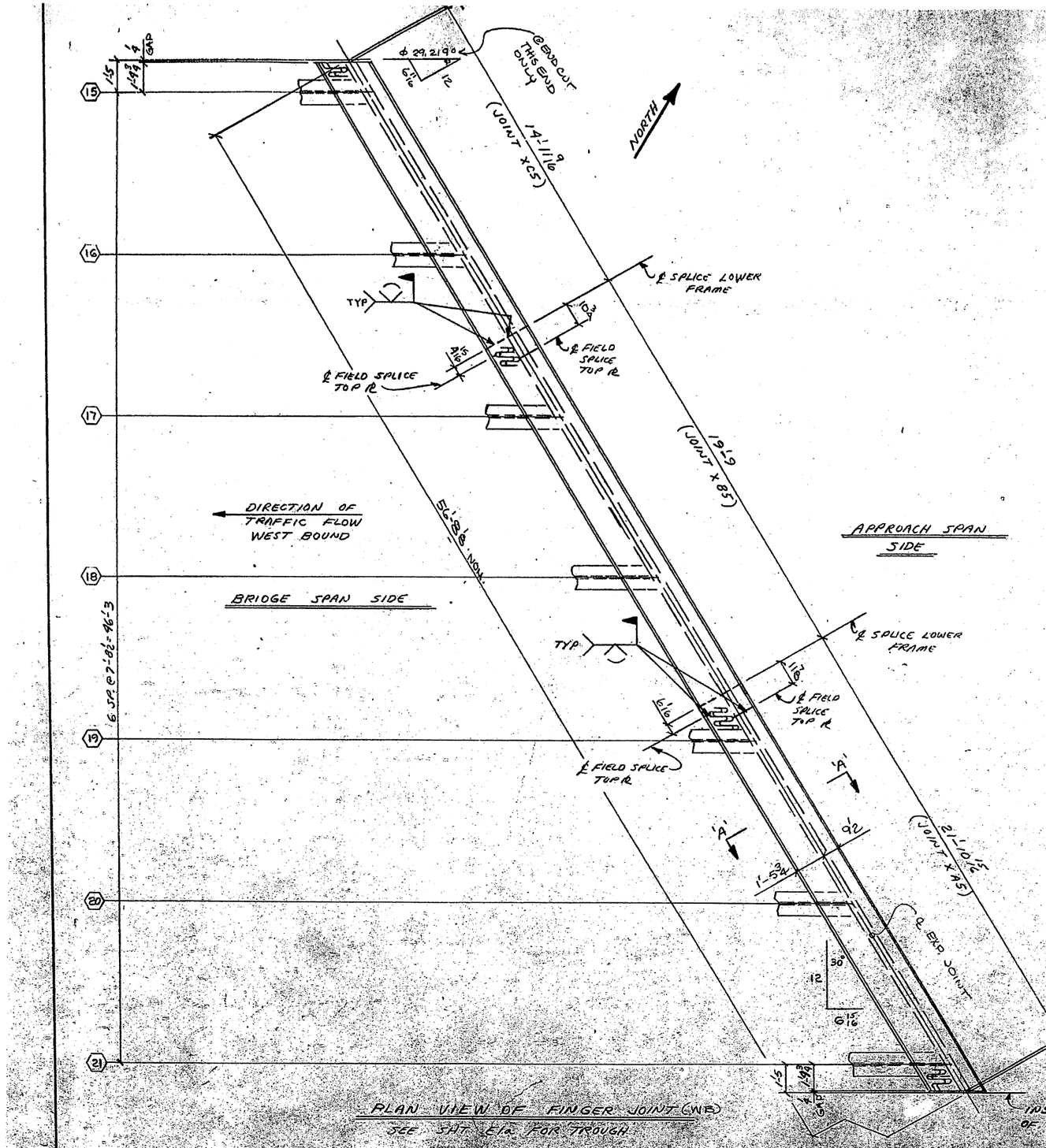
* New Shaft Widening Not Shown.

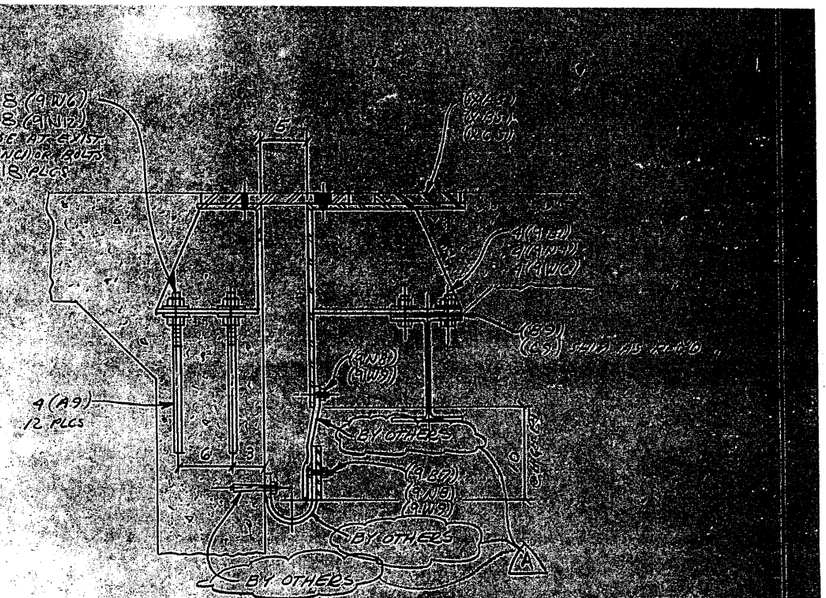
COFFERDAM LAYOUT PLAN

ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	RDP	8-89

COFFERDAMS
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

Revised 4/24/90





SECTION 'A'-'A'

NOTE:
1. DIMENSIONS ARE SHOWN ARC AT 50°F.
2. FOR LOWER TROUGH, SEE SHT ℄1a

☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ REVISE AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM

CHECKING IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR: DIMENSIONS WHICH SHALL BE VERIFIED AND CORRELATED AT THE CONSTRUCTION SITE, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, THE COORDINATION OF HIS WORK WITH THAT OF ALL SUB-CONTRACTORS, AND SATISFACTORY PERFORMANCE OF HIS WORK.

ESCA CONSULTANTS, INC.
URBANA, ILLINOIS
DATE 4/19/91 BY JRT

APPROVED
For Main Dimensions and Materials Only
APR 30 1991
Ralph E. Anderson
Engineer of Bridges & Structures

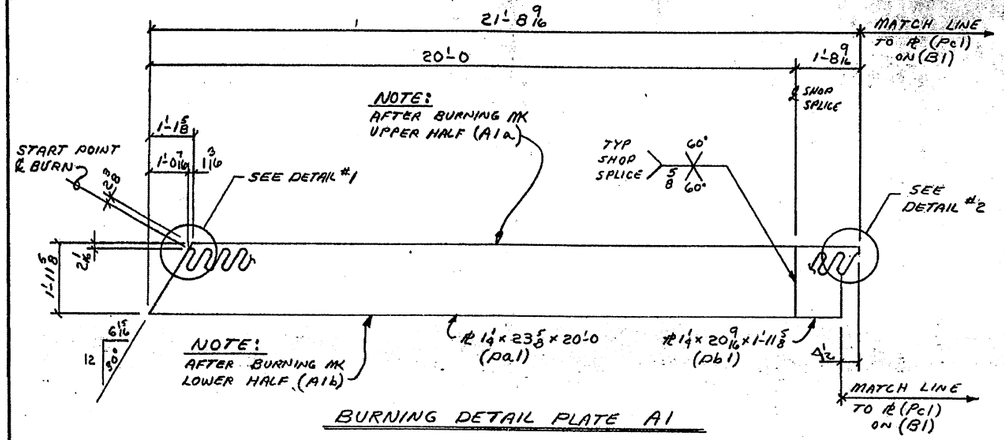
⚠ REVISED NEOPRENE 2-27-91

LEWIS ENGINEERING COMPANY
529 EDEN AVENUE - EDINA, MINNESOTA 55436 - (612) 920-0151

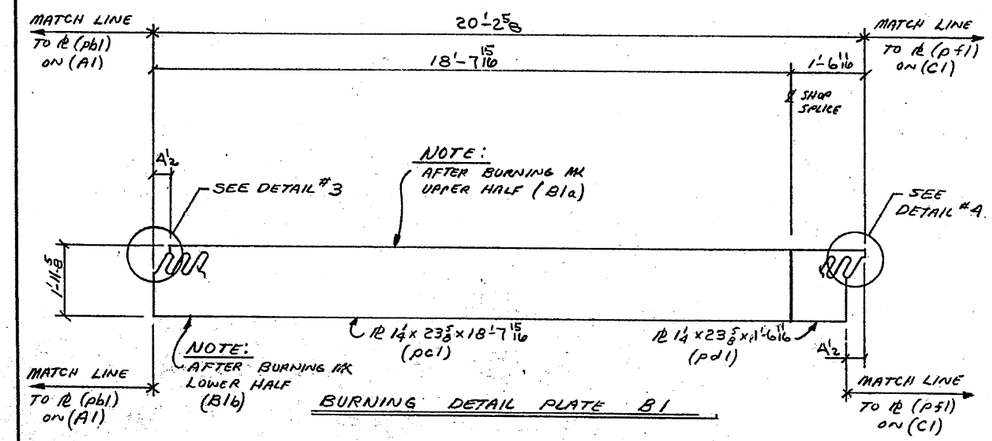
PROJECT	– STRUCTURE #092-6019 (WB)
STATE PROJECT	– C-95-077-89
FEDERAL PROJECT	– FAI ROUTE 74, SECTION (92-1 & 6) IACRL-74-6(159)2R
CUSTOMER	– DELONG'S INC.
LOCATION	– VERMILION COUNTY, ILLINOIS
DESCRIPTION	– ERECTION PLAN (WEST BOUND SIDE)

Job No. 8/93-01
Drawn By AJL
Checked By JJS
Date

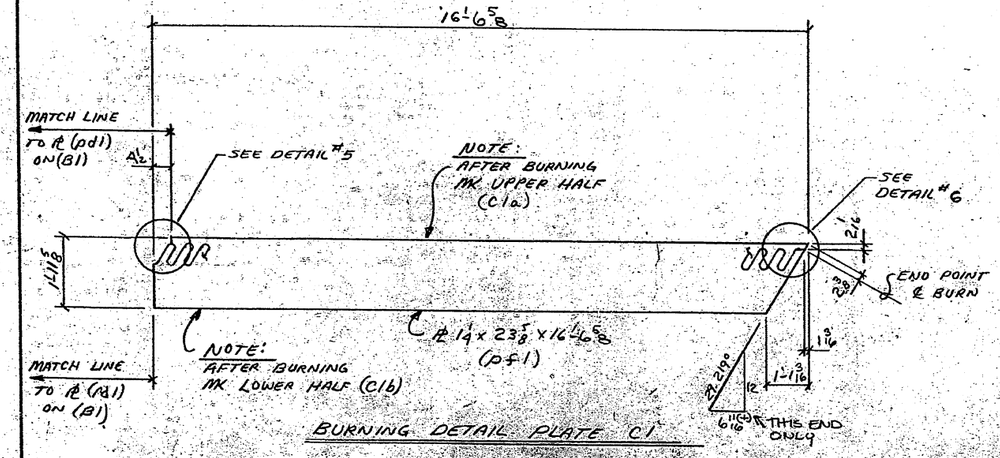
C B A 0 A B C D
TAMERAN



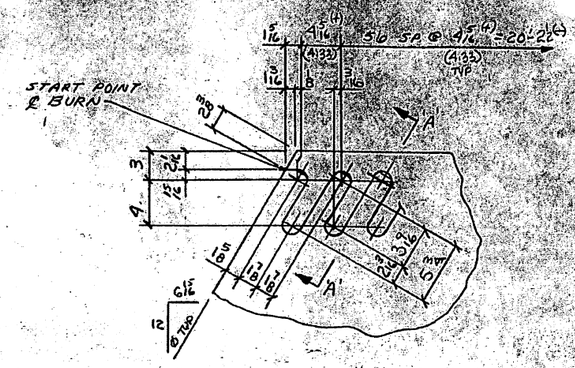
BURNING DETAIL PLATE A1



BURNING DETAIL PLATE B1

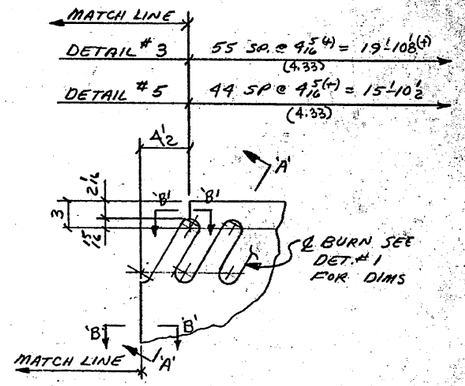


BURNING DETAIL PLATE C1



DETAIL #1

ALL DIMS ARE ON ℄ BURN.



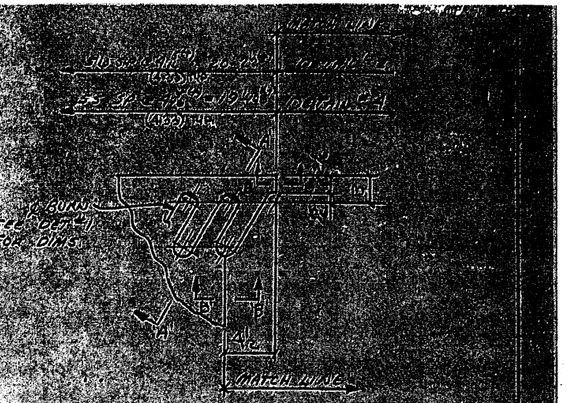
DETAIL #3 (AS NTD)

DETAIL #5 (AS NTD)

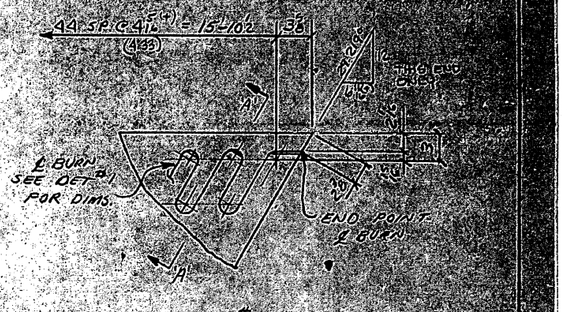
SECTION 'A'-'A'

SECTION 'B'-'B'

TYP PREP FOR FIELD WELD



DETAIL #2 (AS NTD)



DETAIL #4 (AS NTD)

DETAIL #6

NOTE:

1. SEE SHEET 5 FOR MATERIAL LIST & ASSEMBLY

APPROVED
For Main Dimensions and Materials Only
APR 30 1991
Ralph E. Dillard
Engineer of Bridges & Structures

☒ NO EXCEPTION TAKEN ☐ MAKE CORRECTIONS NOTED
☐ REJECTED ☐ REVISE AND RESUBMIT
☐ SUBMIT SPECIFIED ITEM

CHECKING IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR: DIMENSIONS WHICH SHALL BE VERIFIED AND CORRELATED AT THE CONSTRUCTION SITE; FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, THE COORDINATION OF HIS WORK WITH THAT OF ALL SUB-CONTRACTORS, AND SATISFACTORY PERFORMANCE OF HIS WORK.

ESCA CONSULTANTS, INC.
URBANA, ILLINOIS
DATE 4/19/91 BY JEF

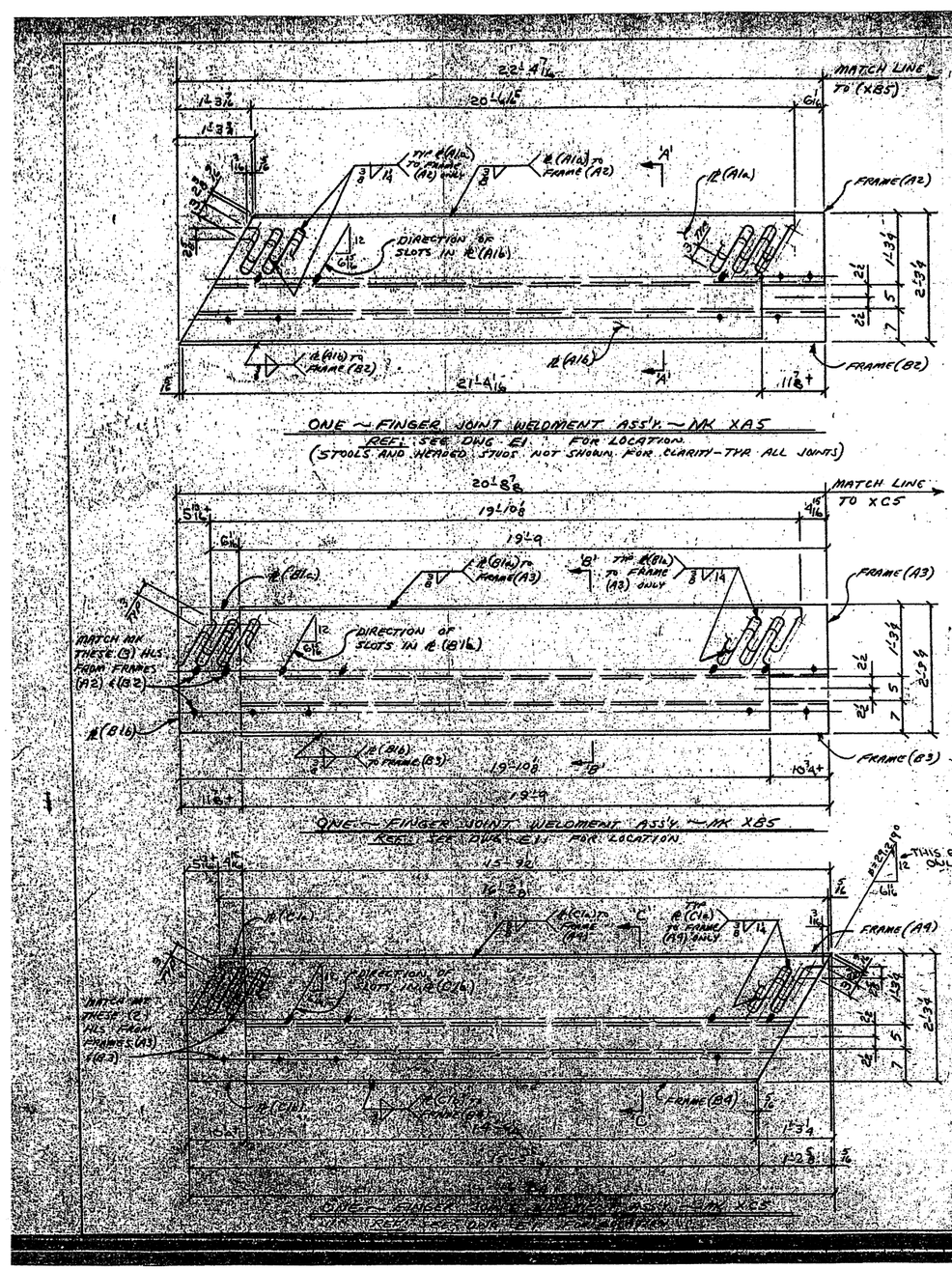
LEWIS ENGINEERING COMPANY
6229 EDEN AVENUE – EDINA, MINNESOTA 55436 – (612) 920-6161

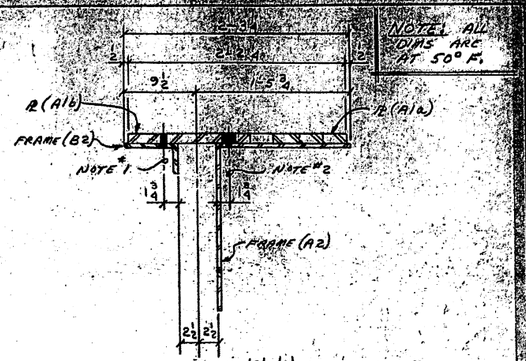
PROJECT	– STRUCTURE # 092-0019(WB)
STATE PROJECT	– C-95-077-89
FEDERAL PROJECT	– FAI ROUTE 74 SECTION (92-1)B ACIR-74-6(129) 216
CUSTOMER	– DELONG'S INC.
LOCATION	– VERMILION COUNTY ILLINOIS
DESCRIPTION	– PLATE BURNING DETAILS

Job No. 6192-C1
Drawn By: AP
Checked By:
Date:

J C B A 0 A B C D

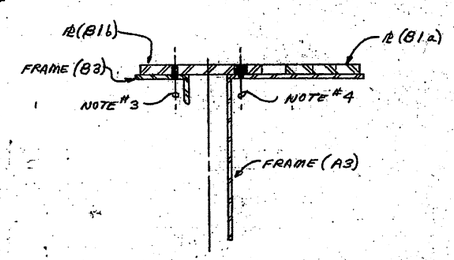
TAMERAN





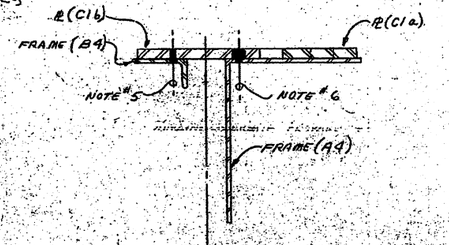
SECTION 'A'-'A'

NOTE: 1. 13/16 ϕ HOLES LOCATED IN FRAME (B2) MATCH MK TO ℄ (A1b) & THRU DRILL.
2. 13/16 ϕ HOLES LOCATED IN FRAME (A2) MATCH MK TO ℄ (A1b); THRU DRILL & SLOT ℄ (A1a) w/ 13/16 ϕ x 0-2¼ SLOT. (SEE PLAN FOR SLOT DIRECTION)



SECTION 'B'-'B' (SEE SECT A-A FOR DIMS)

NOTE: 3. 13/16 ϕ HOLES LOCATED IN FRAME (B3) MATCH MK TO ℄ (B1b) & THRU DRILL.
4. 13/16 ϕ HOLES LOCATED IN FRAME (A3) MATCH MK TO ℄ (B1b); THRU DRILL & SLOT ℄ (B1b) w/ 13/16 ϕ x 0-2¼ SLOT. (SEE PLAN FOR SLOT DIRECTION)



SECTION 'C'-'C' (SEE SECT A-A FOR DIMS)

NOTE: 5. 13/16 ϕ HOLES LOCATED IN FRAME (B4) MATCH MK TO ℄ (C1b) & THRU DRILL.
6. 13/16 ϕ HOLES LOCATED IN FRAME (A4) MATCH MK TO ℄ (C1b); THRU DRILL & SLOT ℄ (C1b) w/ 13/16 ϕ x 0-2¼ SLOT. (SEE PLAN FOR SLOT DIRECTION)
7. SEE SHT. E2 FOR GENERAL NOTES.

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11							
12	ONE	FINGER JOINT WELDMENT ASS'Y	XA5				
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24	ONE	FINGER JOINT WELDMENT ASS'Y	XB5				
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NO EXCEPTIONS TAKEN
MAKE CORRECTIONS NOTED
REJECTED
REVISE AND RESUBMIT
SUBMIT SPECIFIED ITEM

DIRECTION OF GENERAL CONFORMANCE WITH THE CONCEPT AND GENERAL CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE ACTUAL SIZES OF ALL MATERIALS, DIMENSIONS, QUANTITIES, OUTBOARDS OF THE PLANS AND SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS WHICH SHALL BE VERIFIED AND CORRELATED AT THE JOB SITE. FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, THE COORDINATION OF THE WORK OF ALL SUB-CONTRACTORS AND SATISFACTORY PERFORMANCE OF THE WORK.

ESCA CONSULTANTS, INC.

APPROVED

DATE 4/2/79

BY

LEWIS ENGINEERING COMPANY
5229 EDEN AVENUE—EDINA, MINNESOTA 55436—(612)920-8181

PROJECT — STRUCTURE #092-0019(W8)
STATE PROJECT — C-95-077-69
FEDERAL PROJECT — (FA) ROUTE 79 SECTION #92-108, ACIR-94-6(12)216
CUSTOMER — DELONG'S INC.
LOCATION — VERMILLION COUNTY, MINNESOTA
DESCRIPTION — FINGER JOINT WELDMENT

SEC. 5 | SHEET NO. 5 OF 5 | JOB NO.

C B A 0 A B C D

TAMERAN

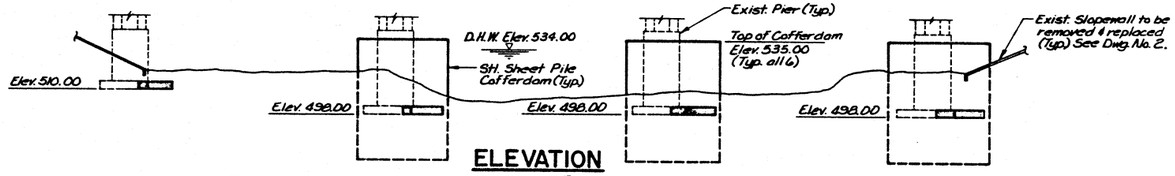
ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-74	*	Vermilion	137	99
STA		TO STA		
FED ROAD DIST NO.		ILLINOIS	PROJECT	
*(92-12B)BR		Dwg. No. 45 of 45		

COFFERDAM DESIGN NOTES

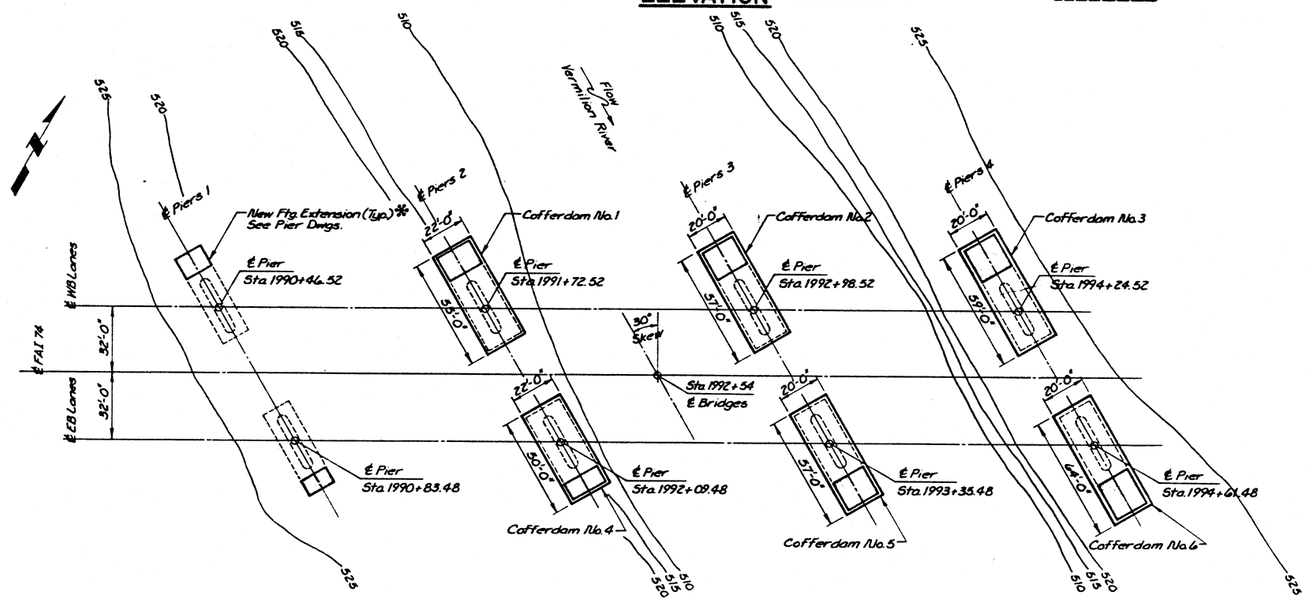
1. COFFERDAMS ARE REQUIRED FOR EB & WB BRIDGES AT PIERS 2, 3, & 4.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF STRUCTURALLY SAFE AND STABLE COFFERDAMS, AND MUST OBTAIN THE ENGINEER'S APPROVAL OF HIS DESIGN PRIOR TO COMMENCING CONSTRUCTION.
3. THE CONTRACTOR MUST CONSIDER IN HIS DESIGN:
   a) STABILITY OF THE EXISTING PIER FOUNDATION.
   b) HYDROSTATIC PRESSURES, INCLUDING THOSE RESULTING FROM COFFERDAM DEWATERING OPERATIONS.
   c) STABILITY OF FOUNDATION SHALE ON WHICH NEW FOOTINGS ARE TO BEAR. THE CONTRACTOR IS CAUTIONED THAT THIS MATERIAL WILL BECOME UNSTABLE IN A SHORT PERIOD OF TIME AFTER EXPOSURE TO WEATHER. THE CONTRACTOR IS ADVISED TO PERFORM THE COFFERDAM AND PIER WORK DURING A LOW FLOW PERIOD, WHICH MAY ALLOW DEWATERING OF COFFERDAMS PRIOR TO COMMENCING COFFERDAM EXCAVATION.
   d) IMMEDIATELY UPON EXPOSURE OF THE BEARING STRATA, 6" MINIMUM OF SEAL COAT CONCRETE SHALL BE POURED TO PROTECT THE SHALE FROM DETERIORATION DUE TO WEATHER. A THICKER SEAL TO OFFSET HYDROSTATIC PRESSURES MAY BE REQUIRED, DEPENDENT UPON THE CONTRACTOR'S DESIGN APPROACH.
   e) ALL OTHER FACTORS WHICH RELATE TO A SAFE AND STABLE COFFERDAM SYSTEM AS WELL AS SATISFACTORY CONSTRUCTION OF THE NEW PIER WIDENING.
4. THE FOLLOWING MATERIAL PROPERTIES MUST BE MET:
   a) SHEET PILING: AASHTO M202 (ASTM A328)
   b) BRACING, WALES: AASHTO M183 (ASTM A36)

NOTES

1. COFFERDAM DIMENSIONS SHOWN ARE MINIMUM CLEAR ON INSIDE FACES.
2. SEE DWGS. 1 & 2 FOR SLOPEWALL DETAILS.
3. SEE DWGS. 37 THRU 44 FOR DETAILS OF PIER WIDENING.



ELEVATION



* New Shaft Widening Not Shown.

COFFERDAM LAYOUT PLAN

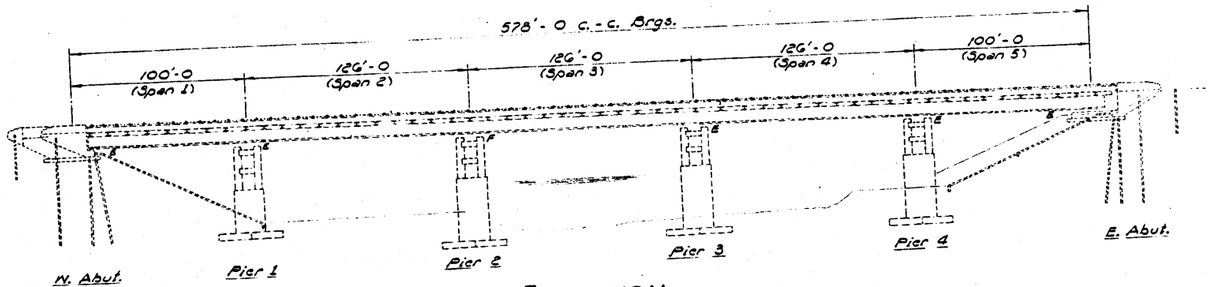
ESCA CONSULTANTS, INC.		
DESIGNED BY:	RDP	8-89
DRAWN BY:	WEM	8-89
CHECKED BY:	JRF	8-89
APPROVED BY:	RDP	8-89

COFFERDAMS

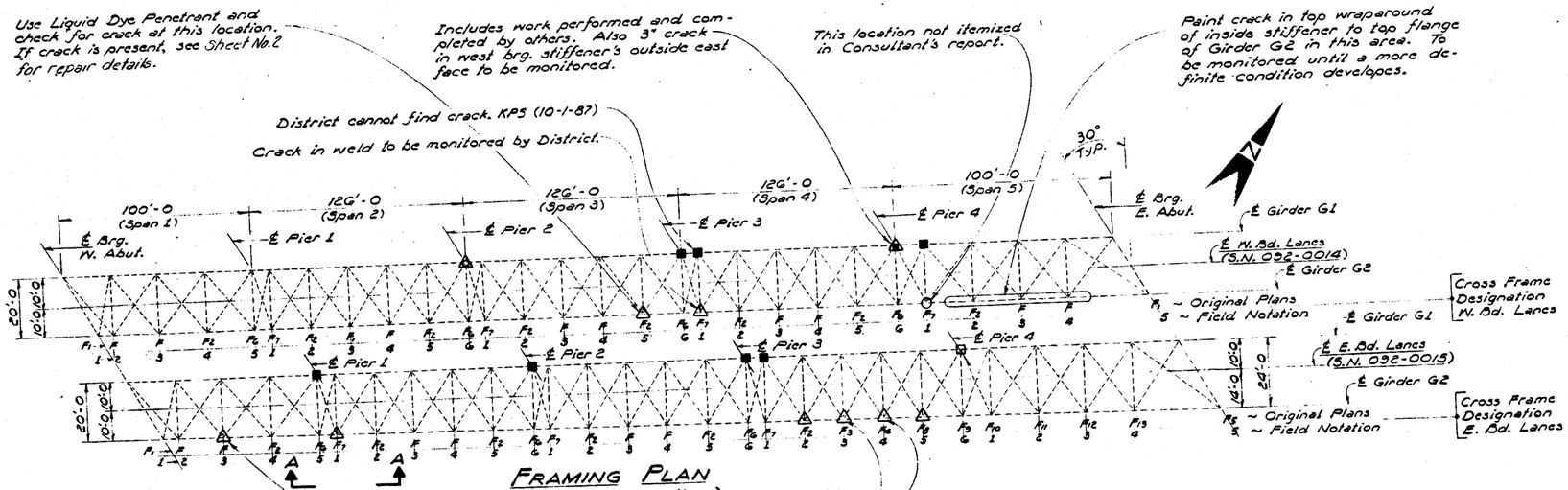
FAI 74 OVER VERMILION RIVER
FAI RTE. 74 SECTION (92-12B)BR
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014(WB)
STRUCTURE NO. 092-0015(EB)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

2 SHEETS



ELEVATION
(Looking North)



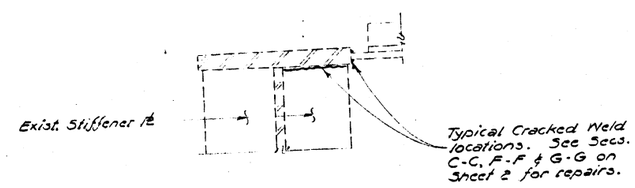
FRAMING PLAN
(Showing Repair Locations)

Note: For View A-A see Sheet 2.

RETROFIT SYMBOLS
(For Cracks in Welds)

Repairs for Contract Work

- ○ Welds in crossframe top vertical gussets to upper lateral horizontal gusset. See Cracked Weld detail this sheet.
- △ Welds in vertical web and bearing stiffeners to girder flange. (See Sheet No.2)
- □ Crack in bottom weld on stiffener - reweld.
- ■ Work performed and completed by others. Drilled holes at end of crack in welds.



TYP. CRACKED WELD DETAIL

GENERAL NOTES

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

Fasteners shall be high strength bolts (AASHTO M-164). Holes shall be subpunched or subdrilled 11/16" ϕ and reamed to 13/16" ϕ for 3/4" ϕ H.S. bolts in the field, except as noted on the plans, and after new steel is properly fitted into position.

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.

The three coat lead and chromate free alkyd paint system shall be used for field painting of Existing Structural Steel. The color of the final finished coat shall be aluminum. The three coat lead and chromate free alkyd paint system shall be used for shop and field painting of New Structural Steel. The color of the final finish coat shall be aluminum.

All costs associated with painting shall be incidental to "Furnishing and Erecting Structural Steel."

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

The Contractor shall grind all cracked welds parallel to the direction of the existing weld and not perpendicular to the weld.

Traffic Control shall be determined by the District.

TOTAL BILL OF MATERIAL

Item	Unit	Total
Furnishing & Erecting Structural Steel	Lbs.	730
Traffic Control	Lump Sum	L.S.

Structural Steel Removal, welds and weld repairs shall be incidental to "F & E Structural Steel."

BRIDGE REPAIRS
OVER VERMILION RIVER
F.A.I. RT. 74 SEC. 92-12-B-I
VERMILION COUNTY
STA. 1992 + 54

(S.N. 092-0014,0015)

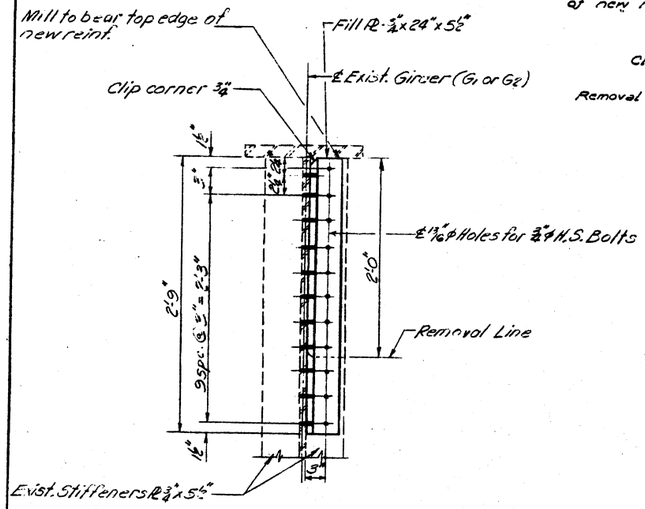
DESIGNED	[illegible]
CHECKED	S. Engez
DRAWN	r. b. carbonell
CHECKED	KPS

Sept 1 1988
EXAMINED O. J. Rohrer
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

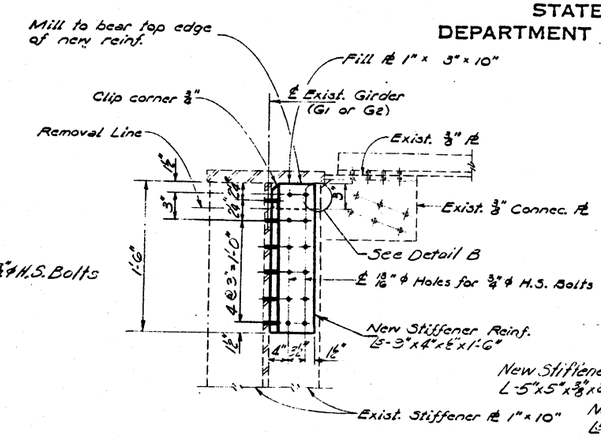
Reel DL2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

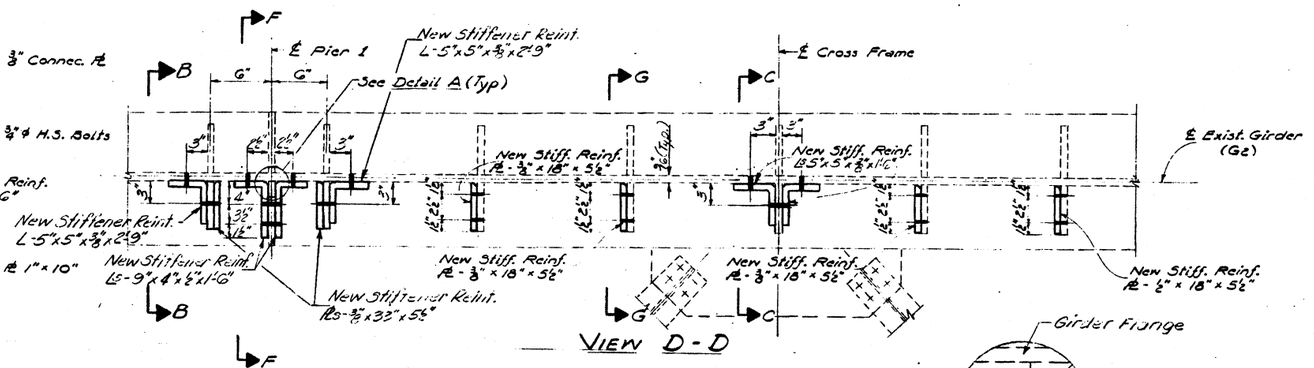
SHEET NO 2
2 SHEETS



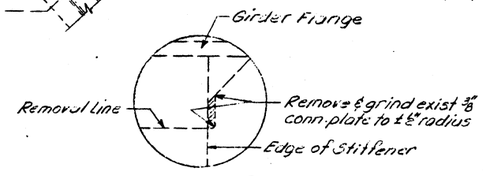
SECTION B-B



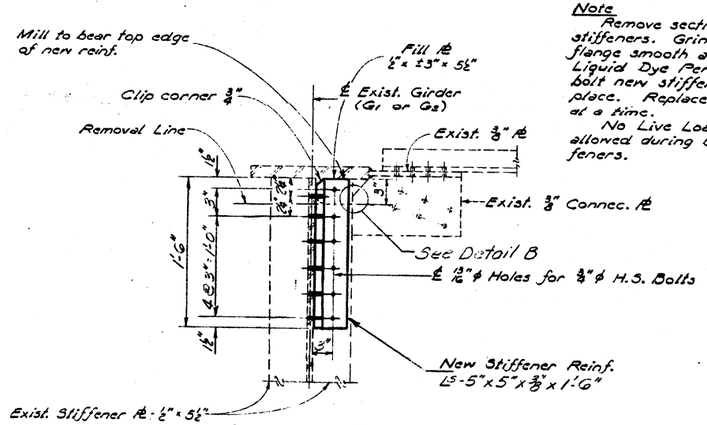
SECTION F-F
(For Bearing Stiffener at ℄ Pier 1)



VIEW D-D

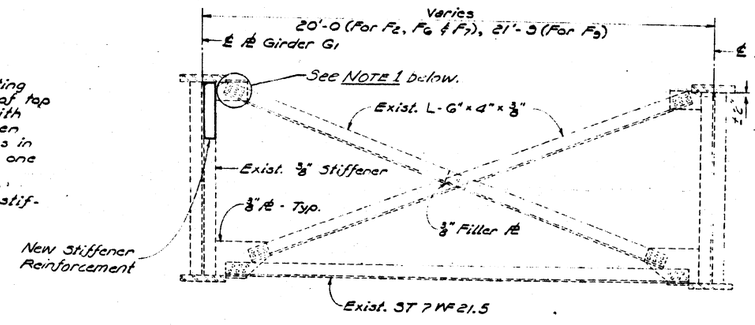


DETAIL B



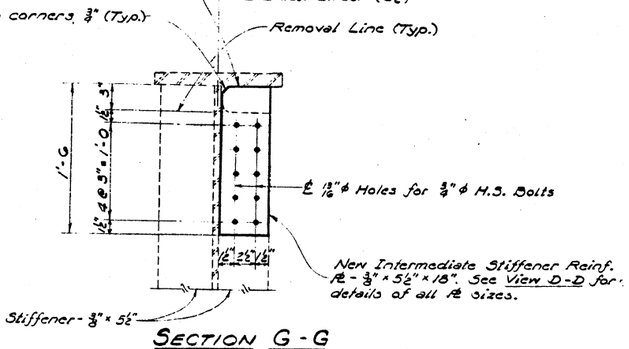
SECTION C-C

Note
Remove section of existing stiffeners. Grind bottom of top flange smooth and test with Liquid Dye Penetrant, then bolt new stiffener sections in place. Replace stiffeners one at a time.
No Live Load shall be allowed during bolting of stiffeners.

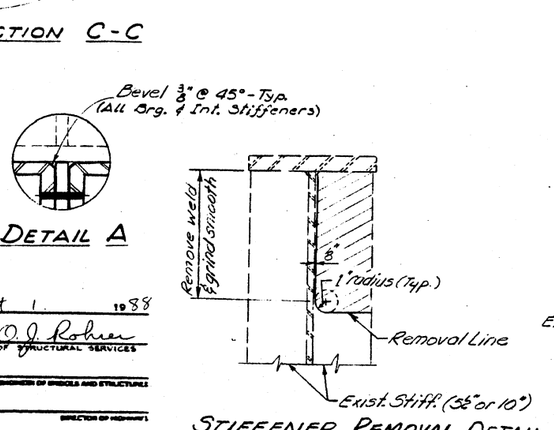


TYPICAL CROSS FRAME - ELEVATION

NOTE 1
Cross frame connections at repair locations shall be treated as follows: remove existing connection bolts, "break free" cross frame angles from connection plates, ream bolt holes as required for insertion and tightening of new ¾"ϕ H.S. Bolts.

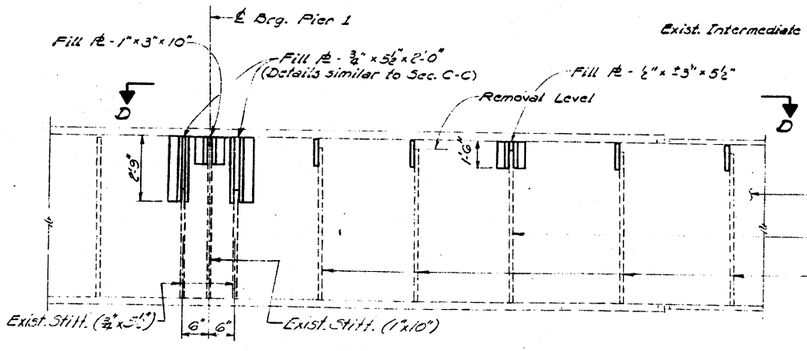


SECTION G-G
(Typical for Intermediate Stiffeners)



DETAIL A

STIFFENER REMOVAL DETAIL



VIEW A-A
New Stiffener Reinforcement.
For details see View D-D.
For location see Sheet No. 1

Notes:
All holes 1⅛" ϕ for ¾" ϕ H.S. Bolts.

All fill plates shall be cut and shaped to fit as req'd.

DESIGNED	
CHECKED	
DRAWN	n. b. carbonell
CHECKED	

Sept 1 1988
EXAMINED O. J. Rohrer
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES
APPROVED
DIRECTOR OF HIGHWAYS

F.A.I. RT. 74 SEC. 92-12-B-I
VERMILION COUNTY
STA. 1992 + 54

(092-0014,0015)

92-12 HB + HF

FOR INDEX OF SHEETS SEE SHEET NO. 4
FOR SUMMARY OF QUANTITIES SEE SHEET NO. 5

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

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

FEDERAL AID ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	1
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	I-74-6(56)218	

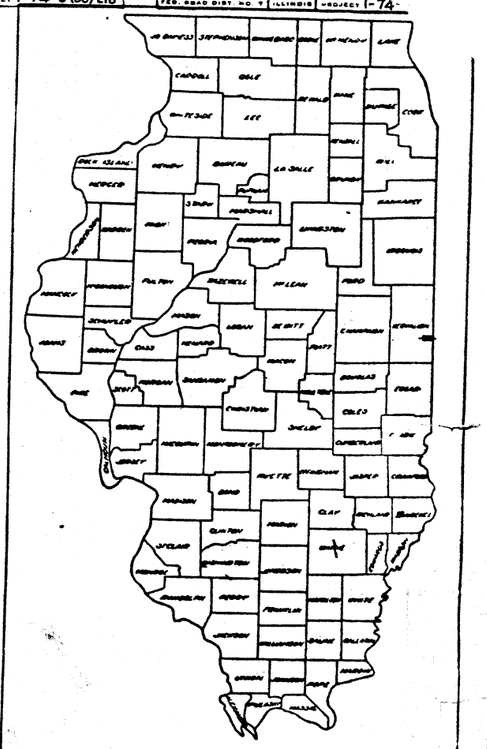
FEDERAL AID ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12F	VERMILION	16	1
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	I-74-6(56)218	

FEDERAL AID ROUTE NO.	SEC	COUNTY	TOTAL SHEETS
74	92-12 HB-1	VERMILION	14
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	I-74-

FEDERAL AID ROUTE NO.	SEC	COUNTY
74	92-12 HF-1	VERMILION
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT I-74-

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

F.A.I. ROUTE 74, SECTION 92-12B, VERMILION COUNTY
F.A.I. ROUTE 74, SECTION 92-12F, VERMILION COUNTY
PROJECT I-74-6(56) 218
F.A.I. ROUTE 74, SECTION 92-12HB-1, VERMILION COUNTY
F.A.I. ROUTE 74, SECTION 92-12HF-1, VERMILION COUNTY
PROJECT I-74-6(61)218
DESIGN CLASSIFICATION 1700-T-70



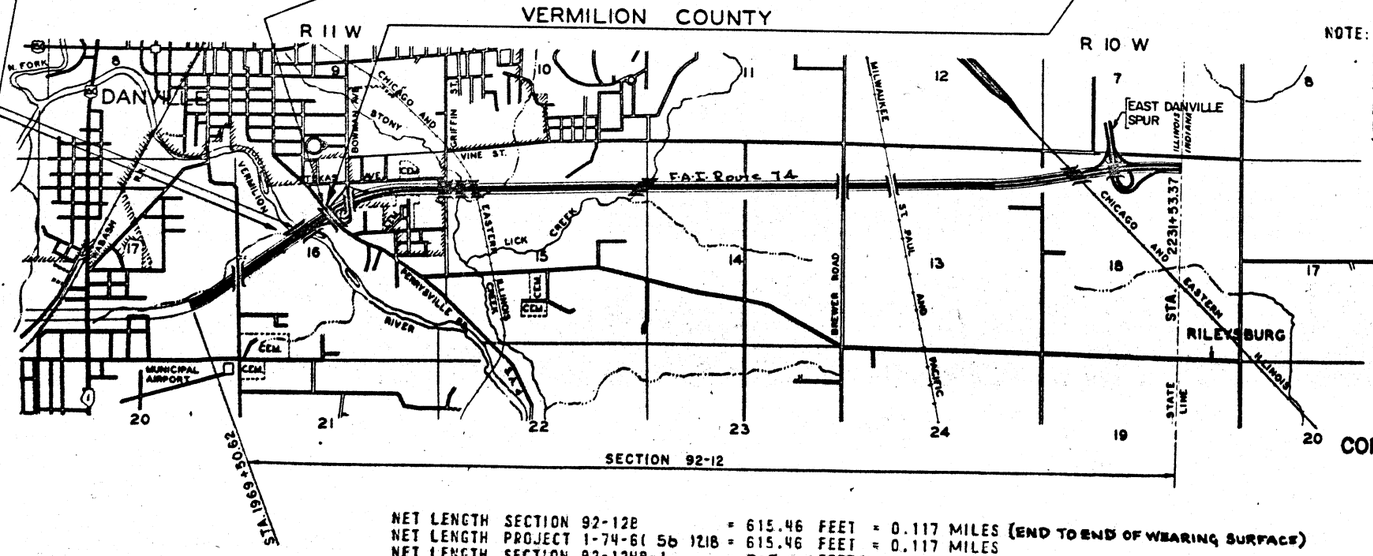
SECTION 92-12F INCLUDES FURNISHING AND FABRICATING STRUCTURAL STEEL. FURNISHING AND APPLYING SHOP COAT OF PAINT AND DELIVERY OF STRUCTURAL STEEL AS SPECIFIED BELOW.

SECTION 92-12B INCLUDES TWIN 5 SPAN CONTINUOUS WELDED PLATE GIRDER BRIDGES OVER THE VERMILION RIVER. SPANS 2 AT 100'-0" AND 3 AT 126'-0" WITH 30'-0" REINFORCED CONCRETE ROADWAY AND 2'-0 SAFETY WALKS ON REINFORCED CONCRETE PIERS AND ABUTMENTS AT STATION 1992 +54

SECTION 92-12HB-1 INCLUDES A 5 SPAN WF-BEAM GRADE SEPARATION STRUCTURE. SPANS 40'-3", 73'-4 1/2", 73'-7 7/8", 86'-2 1/2", 60'-7 1/2" WITH 28'-0" REINFORCED CONCRETE ROADWAY AND 1-4'-0" WALK, 1-2'-0" SAFETY WALK ON REINFORCED CONCRETE PIERS AND ABUTMENTS AT STATION 2001+44.74 TOGETHER WITH GRADING AND SURFACING AT THE CROSS ROAD.

SECTION 92-12HF-1 INCLUDES FURNISHING AND FABRICATING STRUCTURAL STEEL. FURNISHING AND APPLYING SHOP COAT OF PAINT AND DELIVERY OF STRUCTURAL STEEL AS SPECIFIED BELOW.

NOTE:
STRUCTURAL STEEL SHALL BE DELIVERED F.O.B. RAILWAY TEAM TRACK NEAREST THE BRIDGE SITE. EXCEPT THAT DELIVERY MAY BE F.O.B. BRIDGE SITE BY TRUCK. IF SUITABLE ARRANGEMENTS ARE MADE WITH THE CONTRACTOR FOR SECTION 92-12B.



NOTE:
STRUCTURAL STEEL SHALL BE DELIVERED F.O.B. RAILWAY TEAM TRACK NEAREST THE BRIDGE SITE. EXCEPT THAT DELIVERY MAY BE F.O.B. BRIDGE SITE BY TRUCK. IF SUITABLE ARRANGEMENTS ARE MADE WITH CONTRACTOR FOR 92-12HB-1.

APPROVED
FOR STRUCTURAL ADEQUACY
W.E. Bauman 4/26/62
Engineer of Bridges and Structures

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
SUBMITTED April 4, 1962 — J. J. Apke, District Engineer
EXAMINED MAY 1, 1962 — Division of Bridges and Structures
PASSED MAY 1, 1962 — Chief Engineer
APPROVED MAY 1, 1962 — Director of Highways
APPROVED MAY 1, 1962 — Secretary of State

NET LENGTH SECTION 92-12B = 615.46 FEET = 0.117 MILES (END TO END OF WEARING SURFACE)
NET LENGTH PROJECT I-74-6(56)218 = 615.46 FEET = 0.117 MILES
NET LENGTH SECTION 92-12HB-1 = 965.11 FEET = 0.183 MILES
NET LENGTH PROJECT I-74-6(61)218 = 965.11 FEET = 0.183 MILES
TOTAL NET LENGTH OF PROJECTS I-74-6(56)218 & I-74-6(61)218 = 1,580.57 FEET = 0.300 MILE

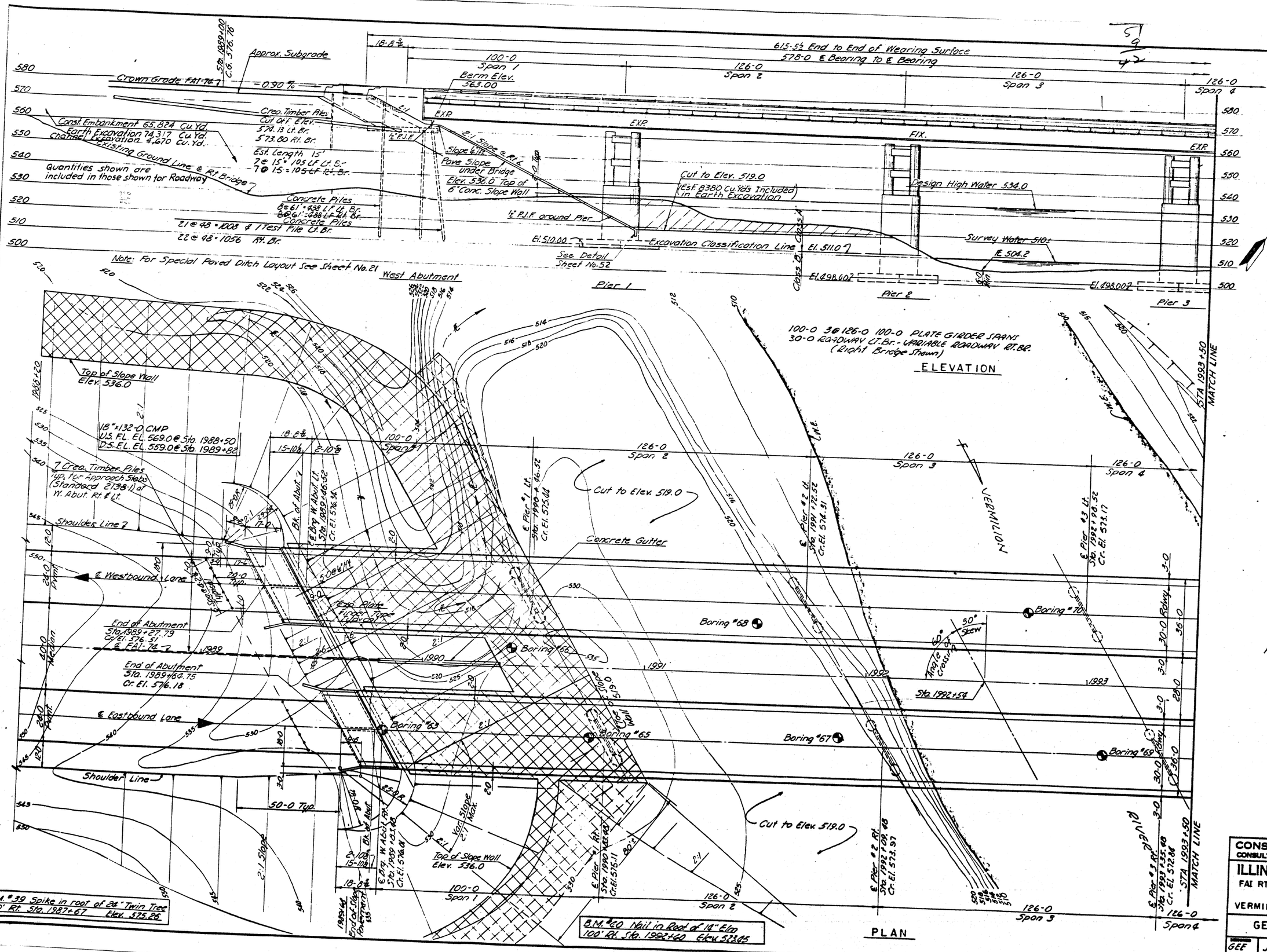
PLANS PREPARED BY
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS
360 E. GRAND AVE.
CHICAGO, ILL.

DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS
APPROVED
DIVISION ENGINEER — DATE

#67

Job No. 22429(F) & 22430(B)

Rec 5-3-62



F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12 B	VERMILION	142	18
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	
ROUTE No.	SEC.	COUNTY		
74	92-12F	VERMILION	16	4
TO STA.				

NOTE: Construct Bridge and All Elements to Angle of Skew (30°)

For Slope Wall Layout See Sheet No. 20 & 52

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS — CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12 B
VERMILION COUNTY — STA. 1992+54

GENERAL PLAN AND LOCATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GEE	JWH	WES	JWH LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	19
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		

ROUTE No.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12F	VERMILION	16	5
STA.	TO STA.			
FED. ROAD DIST. No. 7	ILLINOIS	FED. AID PROJECT		

615-5½ End to End of Wearing Surface
578-0 ℄ Bearing to ℄ Bearing
126-0 Span 4 | 100-0 Span 5 | 18-8½

Sta. 1996+00 Cr. El. 570.46

Berm Elev. 557.75

Approx. Subgrade

Crown Grade FAI-74 -0.90%

EXP. EXP.

2:1 Slope

Top of Conc. Slope Wall Elev. 536.0

Slope 6'1 ft.

Creo. Timber Piles
Cut Off El. 568.23 Lt. Br. 567.68 Rt. Br.
Est. Length 15'
7 @ 15' = 105 L.F. Lt. Br.
9 @ 15' = 135 L.F. Rt. Br.

4'-0 Min.

Design High Water 534.0±

Cut to Elev. 519.0
(Est. 1,563 Cu.Yds Included in) Earth Excavation

Survey Water 510±

Excav. Classification Line El. 511.0

Class A

Class B

El. 498.00±

Concrete Piles
8 @ 65' = 520 LF ¾ Br. 9 @ 65' = 585 LF Rt. Br. 510
Concrete Piles 22 @ 52' = 1144 L.F Lt. Br.
23 @ 52' = 1196 L.F & 1 Test Pile Rt. Br. 500

Pier 4 — East Abutment

Construction Embankment 85,901 cu.Yd.
Earth Excavation 1,563 Cu.Yd.
Obtain 65,935 Cu.Yds from R/W Sta. 2002+47 to Sta. 2007+00
16,021 Cu.Yds from Ramp "A" Sta. 4+00 to Sta. 6+23 and
19,562 Cu.Yds from Ramp "C" Sta. 9+00 to Sta. 13+34.

Quantities shown are included in those shown for Roadway.

FAI-74 CURVE DATA
Δ = 36° 33' 30"
R = 3819.72'
T = 1261.71'
L = 2437.22'
D = 1° 30' 00"
E = 202.97'
SE = 0.02 ft/ft

RAMP C CURVE DATA
Δ = 8° 27' 55"
R = 3888.59'
T = 287.79'
L = 574.53'
D = 1° 28' 29"
E = 10.63'

ELEVATION

100-0, 3 @ 126-0, 100-0 Plate Girder Spans
30'-0 Roadway Lt. Br. Var. Rdwy. Rt. Br.
(Right Bridge Shown)

STA. 1993+50 MATCH LINE

Toe of Slope Wall Elev. 519.0

Top of Slope Wall Elev. 536.0

126-0 Span 4 | 100-0 Span 5 | 18-8½ | 2-10½ | 15-10½

Cut to Elev. 519.0

Approx. Toe of Slope

Shoulder Line

50'-0 Typ.

7 Creo. Timber Piles
6 Equal Spaces
For Approach Slab (Standard 2138-1)

Boring #72 | Boring #74 | Boring #76

℄ Westbound Lane

20'-0 Typ.

End of Abutment
Sta. 1995+63.25
Cr. El. 570.97

℄ FAI-74 D = 1° 30'

End of Abutment
Sta. 1995+80.21
Cr. El. 570.68

9 Creo. Timber Piles
8 Equal Spaces
For Approach Slab (Standard 2138-1)

Boring #71 | Boring #73 | Boring #75

℄ Eastbound Lane

Curb Rad. 3,885.39'

Ramp C ℄R = 3888.59

℄ Shoulder Line

Curb P.C. 1993+82.67

Sta. 1995+61.68 ℄ Exp. ℄ Abut. Ft. Cr. El. 570.81 Back of Abut.

Sta. 1994+61.68 ℄ Pier #4 Ft. Cr. El. 511.71

Cut to Elev. 519.0

Cut to Elev. 519.0

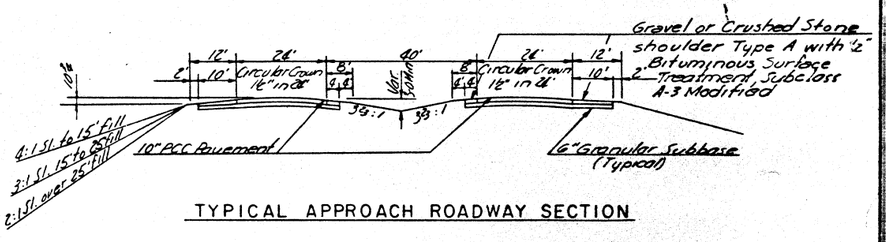
Sta. 1996+10

B.M. #41 Nail in Root of 18" Elm
150' Rt. Sta. 1985+00 Elev. 517.81

B.M. #42 Nail in Root 50" Ash
115' Lt. Sta. 1999+55 Elev. 582.83

PLAN

Scale: 1" = 20'

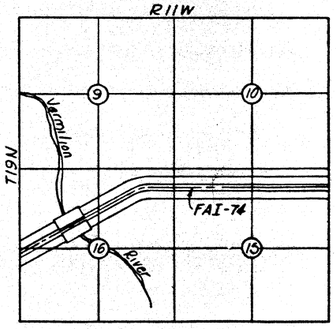


TYPICAL APPROACH ROADWAY SECTION

NOTE: Design Loading this Structure H20-S16-44 & Alternate

Construct Bridge and All Elements to Angle of Skew (30°)

For Slope Wall Layout see Sheet No. 20#52



BRIDGE LOCATION

WATERWAY INFORMATION

Drainage Area	1,280 Sq. Mi.
Waterway Req'd. by Ill. Divison of Waterways	7,500 Sq. Ft.
Waterway Provided Below Design High Water	7,680 Sq. Ft.

Note: Bridge Grade not controlled by High Water.

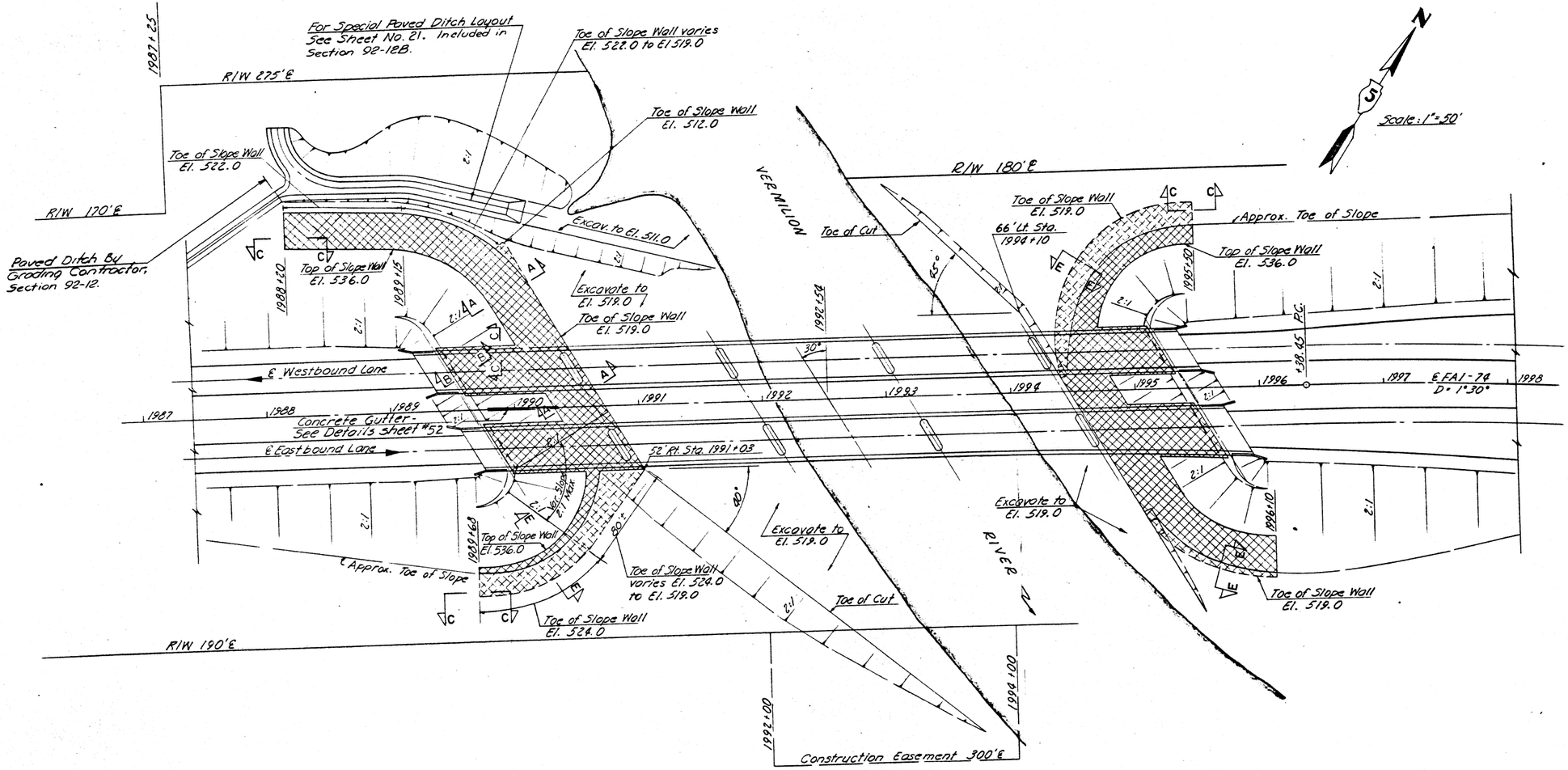
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

GENERAL PLAN AND LOCATION

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
GEE	RLF	RLF	JWH			
			LDB	HSM	1.8.62.	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	20
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.:	



PLAN

SECTION E-E

Note: For Sections A-A, B-B & C-C See Sheet #52

NOTE: Layout of Slope Walls may be varied to suit ground conditions in the field as directed by the Engineer.

SLOPE WALL 6 INCH 5,680 Sq. Yds.
(Includes 60 L.F. of Concrete Gutter)

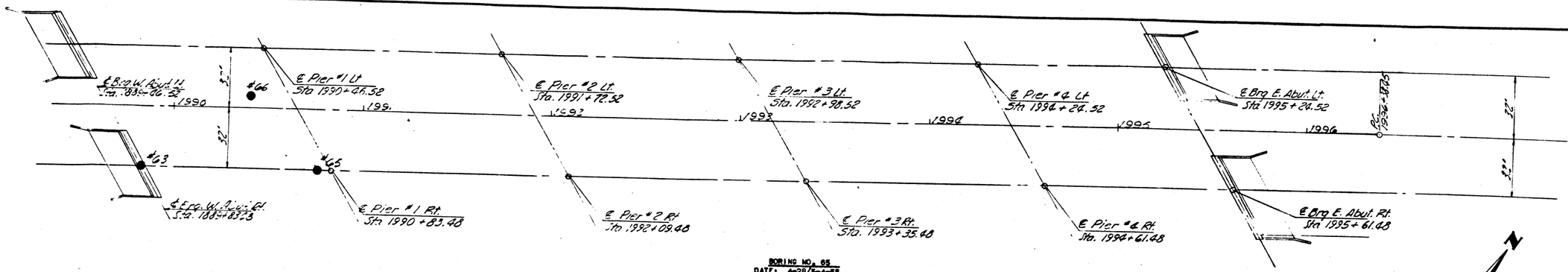
CLASS A EXCAVATION 1,750 CU. YDS.

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

SLOPE WALL LAYOUT

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE
JWH	RLF	RLF	JWH		
			LDB	HSM	1.8.62



F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	22
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	

BORING	STATION	OFFSET
63	1989+83	32'R
64	OMIT	OMIT
65	1990+75	32'R
66	1990+40	8'L

GENERAL NOTES

1950 CHICAGO BUILDING CODE SOIL CLASSIFICATIONS ARE USED.

E : ELEVATION
S : SAMPLE NUMBERS
Pr : PENETRATION IN BLOWS PER FOOT OF [illegible] HAMMER FALLING 30 INCHES
Qu : UNCONFINED COMPRESSIVE STRENGTH-[illegible]/SQ.FT.
R : RECOVERY IN FEET
SS : SPLIT SPOON-SIZE: 2"O.D. SIZE: [illegible]O.D.
M : MOIST
D : DRY
W : WET

"LOGS PREPARED BY
SOIL TESTING SERVICES, INC.
1827 N. HARLEM AVE.
CHICAGO, 35, ILL."

WATER LEVELS INDICATED ON THE BORING LOGS ARE THE LEVELS MEASURED IN THE BORINGS AT THE TIMES INDICATED. IN PERVIOUS SOILS, THE INDICATED ELEVATIONS ARE CONSIDERED RELIABLE GROUND WATER LEVELS. IN IMPERVIOUS SOILS, THE ACCURATE DETERMINATION OF GROUND WATER ELEVATIONS IS NOT POSSIBLE IN EVEN SEVERAL DAYS OBSERVATION, AND ADDITIONAL EVIDENCE ON GROUND WATER ELEVATIONS MUST BE SOUGHT.

BORING NO. 63
DATE: 4-28/5-8-58
GROUND ELEVATION: +526.7'

+526.7' GROUND SURFACE

E	S	Pr	Qu	R	CLASSIFICATION
28.0	1	3	-	0.3	SILT & FINE SAND=TRACE OF CLAY=DARK BROWN=LOOSE (M)
27.2					
26.5	2	8	-	0.3	SILT=SOME SAND & CLAY BROWN=LOOSE (M) (PRESENCE OF COAL)
25.7					
25.0	3	8	1.3	0.3	
24.2					
23.5	4	10	-	0.2	
22.7					
22.0	5	9	-	0.3	SILT=SOME CLAY & SAND=TRACE OF GRAVEL=BROWN=LOOSE (M) (PRESENCE OF COAL)
21.2					
18.7					
18.0	6	4	-	0.4	
17.2					
16.7					
16.2					FINE SAND & SILT=TRACE OF CLAY & GRAVEL=BROWN LOOSE (M)
15.5	7	9	-	0.4	
14.7					WATER LEVEL=+515.7' ± HR. AFTER BORING
14.2					
13.7					
13.0	8	13'	-	0.3	SILT=SOME FINE SAND & CLAY=GRAY & VERY DENSE (D)
12.4					WATER LEVEL=+512.7' 24 HRS. AFTER CASING REMOVAL
11.8					
11.2					
11.0	9	100/3"	-	0.1	
0.87	10	SS REFUSAL WASH SAMPLE			FINE SAND & SILT=GRAY=VERY DENSE (D)
0.62	11	SS REFUSAL WASH SAMPLE			
0.37	12	SS REFUSAL WASH SAMPLE			
02.5					
01.2	13	SS REFUSAL WASH SAMPLE			
498.7	14	SS REFUSAL WASH SAMPLE			SILT & CLAY=TRACE OF SAND=GRAY=VERY DENSE
98.2	15	SS REFUSAL WASH SAMPLE			
93.7	16	SS REFUSAL WASH SAMPLE			
92.2					

END OF BORING
20' NX CASING

BORING NO. 65
DATE: 4-28/5-4-58
GROUND ELEVATION: +532.8'

+532.8' GROUND SURFACE

E	S	Pr	Qu	R	CLASSIFICATION
32.0	1	3	-	0.3	FINE TO MED. SAND=SOME SILT=DARK BROWN=LOOSE (M)
31.3					WATER LEVEL=+531.6' BEFORE CASING REMOVAL
30.5	2	5	-	0.2	
29.8					
29.0	3	8	-	0.3	
28.3					SILT=SOME SAND=TRACE OF CLAY=BROWN=LOOSE (M)
27.5	4	8	-	0.3	
26.8					WATER LEVEL=+526.8' AFTER CASING REMOVAL
26.0	5	9	-	0.3	
25.3					
24.0					
22.8					
22.0	6	26	3.0	0.4	SILT=SOME CLAY & SAND BROWN=MED. DENSE (M)
21.3					
20.8					WATER LEVEL=+520.3' 24 HRS. AFTER CASING REMOVAL
20.3					
19.5	7	39	2.8	0.3	SILT & CLAY=TRACE OF SAND=BROWN=DENSE (M)
18.8					
18.3					
17.8					
17.0	8	50	-	1.0	FINE SAND=SOME SILT=BROWN=DENSE (M)
16.3					
15.8					
15.3					
14.5	9	139	5.9	0.4	
13.8					
12.8	10	100/4"	-	0.2	
12.3					
10.3					
10.3	11	100/2"	-	0.1	
10.2					
07.8	12	SS REFUSAL WASH SAMPLE			SILT=SOME FINE SAND & CLAY=GRAY=VERY DENSE (D)
05.3	13	SS REFUSAL WASH SAMPLE			
02.8	14	SS REFUSAL WASH SAMPLE			
00.3	15	SS REFUSAL WASH SAMPLE			
497.8	16	SS REFUSAL WASH SAMPLE			
98.5					
95.3	17	SS REFUSAL WASH SAMPLE			SILT & CLAY=TRACE OF SAND=GRAY=VERY DENSE
93.8					

END OF BORING
20' NX CASING

BORING NO. 66
DATE: 5-9/10-58
GROUND ELEVATION: +531.0'

+531.0' GROUND SURFACE

E	S	Pr	Qu	R	CLASSIFICATION
30.3	1	3	-	0.3	DARK BROWN SANDY TOP SOIL=LOOSE (M)
29.5					
28.7	2	6	-	0.3	
28.0					
27.3	3	7	-	0.4	FINE TO MED. SAND=SOME SILT=TRACE OF CLAY=DARK BROWN=LOOSE (M)
26.5					
25.7	4	8	-	0.4	
25.0					FINE TO MED. SAND & SILT SOME CLAY=BROWN=LOOSE (M)
24.3	5	8	-	0.4	
23.5					WATER LEVEL=+524.5' BEFORE CASING REMOVAL
22.2					
21.0					WATER LEVEL=+522.0' AFTER CASING REMOVAL
20.3	6	18	1.1	0.8	SILT & CLAY=SOME SAND BROWN=LOOSE (M)
19.5					
19.0					
18.5					
17.7	7	15	1.2	0.4	SILT & CLAY=SOME SAND BROWN=MED. DENSE (M)
17.0					
16.5					WATER LEVEL=+516.0' 24 HRS. AFTER CASING REMOVAL
16.0					
15.3	8	54	-	0.8	SILT & CLAY=SOME FINE SAND=BROWN & GRAY=DENSE (M)
14.5					
14.0					
13.5	9	100/4"	-	0.2	
13.2					SILT=SOME FINE SAND & CLAY=BROWN & GRAY=VERY DENSE (D)
11.0					
10.8	10	175/2"	-	-	
10.8					
09.8					
09.8	11	SS REFUSAL WASH SAMPLE			SILT=SOME CLAY & SAND GRAY=VERY DENSE
07.0					
06.0	12	SS REFUSAL WASH SAMPLE			
03.5	13	SS REFUSAL WASH SAMPLE			
01.0	14	SS REFUSAL WASH SAMPLE			SILT & CLAY=SOME SAND=GRAY=VERY DENSE
498.5	15	SS REFUSAL WASH SAMPLE			
96.0	16	SS REFUSAL WASH SAMPLE			
93.5	17	SS REFUSAL WASH SAMPLE			
92.0					

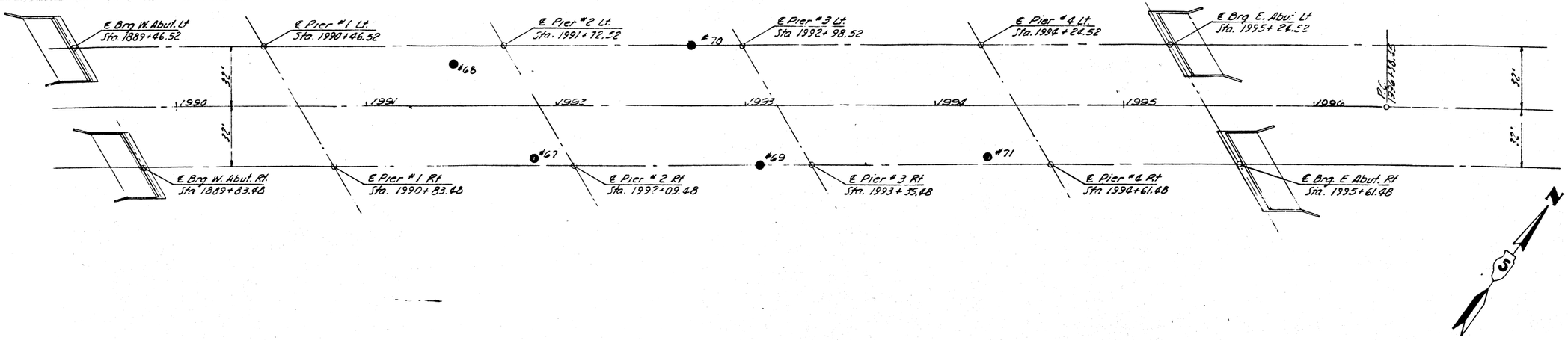
END OF BORING
17.5' NX CASING

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 OVER VERMILION RIVER
FAI 74 SECTION 92-12B
VERMILION COUNTY STA 1992+54

BORING LOGS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
			LDB	HSM	1.8.62	



F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	23
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	

BORING NO. 67
DATE: 4-29/5-9-58
GROUND ELEVATION: +520.0'

GROUND SURFACE

19.2	1	2	-	-	0.2	FINE SAND=SOME SILT=BROWN=LOOSE (M)
18.5						
17.2	2	5	-	-	0.2	
17.0						SILT & SAND=TRACE OF CLAY=BROWN=LOOSE (M)
16.2	3	8	-	-	0.3	
15.5						
14.8	4	7	-	-	0.2	
14.0						
13.2	5	8	-	-	0.2	FINE SAND=SOME SILT=BROWN=LOOSE (M)
12.5						
11.2						WATER LEVEL=+512.0' 24 HRS. AFTER CASING REMOVAL WATER LEVEL=+511.0' 1HR. AFTER BORING
10.0	6	2	-	-	0.3	MED. TO COARSE SAND=SOME SILT=BROWN=LOOSE (M)
09.7						
09.0	6A	2	-	-	0.3	FINE TO MED. SAND & SILT=BROWN & GRAY=LOOSE (M)
08.5						
08.0						ORGANIC SILT=SOME FINE SAND=DARK GRAY=LOOSE (M)
07.5	7	4	-	-	0.3	
07.0		6w				
06.5	7A	31	-	-	0.3	FINE TO MED. SAND=SOME SILT=GRAY=DENSE (M) (SLIGHTLY ORGANIC)
06.0						
05.5						
05.0						
04.4	8	124	-	-	0.4	FINE SAND & SILT=GRAY=VERY DENSE (M)
03.6						
02.5						
02.3	9	100/3"	-	-	0.1	
02.1						
01.9						
500.0						
99.9	10	150/3"	-	-	-	SILT & SAND=SOME CLAY=GRAY=VERY DENSE (D)
99.8						
97.5	11	SS REFUSAL WASH SAMPLE				
96.8						
96.0	12	SS REFUSAL WASH SAMPLE				SILT & CLAY=SOME SAND=GRAY=VERY DENSE
92.5	13	SS REFUSAL WASH SAMPLE				

END OF BORING
17.5' NX CASING

E	S	PR	Qu	R	CLASSIFICATION

BORING NO. 68
DATE: 4-29/5-8-58
GROUND ELEVATION: +523.0'

GROUND SURFACE

22.2	1	1	-	-	0.4	FINE TO MED. SAND=SOME SILT=BROWN=LOOSE (M)
21.5						
20.8	2	6	-	-	0.3	
20.0						
19.2	3	5	-	-	0.3	FINE TO MED. SAND & SILT=BROWN=LOOSE (M)
18.5						
17.8	4	9	-	-	0.3	
17.0						
16.2	5	28	-	-	0.3	FINE TO COARSE SAND=SOME SILT & GRAVEL=BROWN=MED. DENSE (M)
15.5						
14.2						
13.0						SILT=SOME FINE SAND=TRACE OF CLAY=GRAY=LOOSE (M)
12.2	4	-	-	-	0.2	
11.5						WATER LEVEL=+512.5' 24 HRS. AFTER CASING REMOVAL
11.0						WATER LEVEL=+511.5' 1 HR. AFTER BORING
10.5						FINE TO COARSE SAND & GRAVEL=SOME SILT=BROWN LOOSE (M)
09.8	7	6	0.3	0.4		
09.0						
08.5						
08.0						
07.4	8	142/8"	4.4	0.3		
06.9						SILT=SOME FINE SAND=TRACE OF CLAY=GRAY & BROWN=VERY DENSE (D)
05.5	9	100/3"	-	-	0.2	
04.1						
03.0	10	SS REFUSAL=WASH SAMPLE				SILT & FINE SAND=TRACE OF CLAY=GRAY=VERY DENSE
01.7						
500.5	11	SS REFUSAL=WASH SAMPLE				
98.0	12	SS REFUSAL=WASH SAMPLE				SILT=SOME CLAY & SAND GRAY=VERY DENSE
95.5	13	SS REFUSAL=WASH SAMPLE				
94.2						
93.0	14	SS REFUSAL=WASH SAMPLE				SILT & CLAY=TRACE OF SAND=GRAY=VERY DENSE

END OF BORING
17.5' NX CASING

E	S	PR	Qu	R	CLASSIFICATION

BORING NO. 69
DATE: 8-27-58
WAT 9 ELEVATION: +508.9'

+508.6'

						WATER
06.6						
05.6	1	15	-	-	0.7	FINE TO COARSE SAND=SOME GRAVEL=TRACE OF SILT=BROWN=MED. DENSE (W)
04.6						
04.3						
03.3	2	12	-	-	0.1	FINE TO COARSE SAND=SOME GRAVEL=TRACE OF SILT=BROWN=MED. DENSE (W)
02.3						
02.2						
01.2	3	215	-	-	0.6	SILT & CLAY=SOME FINE SAND=GRAY=VERY DENSE (D)
00.6						
					0.3	
497.5						

END OF BORING
10' NX CASING

E	S	PR	Qu	R	CLASSIFICATION

BORING NO. 70
DATE: 8-27-58
WATER ELEVATION: +508.9'

+508.9

						WATER
07.8						
06.8	1	5	-	-	0.5	FINE TO COARSE SAND SOME GRAVEL=TRACE OF SILT=BROWN=LOOSE (W)
05.8						
05.5						
05.0						
04.3	2	93	-	-	0.5	FINE TO COARSE SAND=SOME GRAVEL=TRACE OF SILT=BROWN= VERY DENSE (W)
03.3						
02.8						
01.8	3	103	-	-	0.1	SILT=SOME CLAY & FINE SAND=BROWN & GRAY=VERY DENSE (M)
00.8						
00.5						
00.3						
00.2	4	125/5"	-	-	0.3	SILT & CLAY=SOME FINE SAND=GRAY=VERY DENSE(D)
00.1						

END OF BORING
10' NX CASING

E	S	PR	Qu	R	CLASSIFICATION

BORING NO. 71
DATE: 5-7-58
GROUND ELEVATION: +523.8'

+523.8'

GROUND SURFACE

23.0	1	4	-	-	0.4	
22.3						
21.5	2	4	-	-	0.4	
20.8						
20.0	3	5	-	-	0.3	
19.3						
18.5	4	8	-	-	0.4	FINE TO MED. SAND=TRACE OF SILT=BROWN=LOOSE (M)
17.8						
17.0	5	5	-	-	0.3	
16.3						
						DRY CAVE-IN=+515.1' ½ HR & 24 HRS. AFTER BORING
13.8						
13.0	6	8	-	-	0.4	
12.3						
11.8						
11.3						
10.5	7	6	-	-	0.3	FINE TO MED. SAND & SILT=TRACE OF CLAY=BROWN=LOOSE (M)
09.8						
09.3						
08.8						
08.0	8	18	-	-	0.5	FINE TO COARSE SAND=SOME ORGANIC SILT & CLAY=BROWN & BLACK=MED. DENSE (LAMINATED) (M)
07.3						
06.8						
06.3						
05.5	9	45	-	-	0.3	
04.8						FINE TO COARSE SAND=SOME GRAVEL=TRACE OF SILT=BROWN=DENSE (M)
03.8						
03.0	10	58	-	-	0.3	
02.3						
01.8						
01.3						
01.0	11	100/6"	-	-	0.3	
00.8						
498.8						
98.7	12	100/4"	-	-	0.2	SILT=SOME CLAY & FINE SAND=GRAY=VERY DENSE (D)
98.4						
96.3						
96.0	13	150/5"	-	-	0.2	
95.8						
93.8						
93.7	14	175/5"	-	-	0.1	
93.6						

END OF BORING
27.5' NX CASING

E	S	PR	Qu	R	CLASSIFICATION

BORING	STATION	OFFSET
67	1991+88.	28'R
68	1991+50	23'L
69	1993+08	32'R
70	1992+72	32'L
71	1994+31.5	27'R

LOGS PREPARED BY SOIL TESTING SERVICES, INC. 1827 N. HARLEM AVE. CHICAGO 35, ILL.

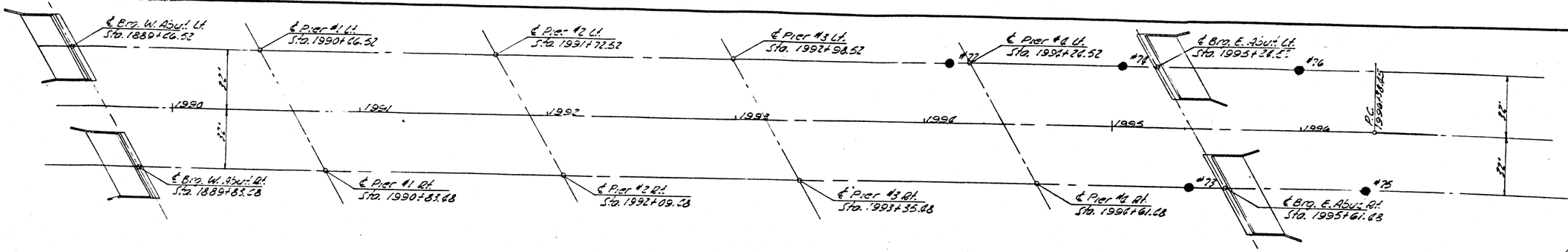
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS

F.A.I. RT. 74 OVER VERMILION RIVER
F.A.I. 74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

BORING LOGS

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
			LDB	HSM	1.8.62	



F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	24
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	

BORING NO. 72
DATE: 5-6-58
GROUND ELEVATION: +524.9'

+524.9' GROUND SURFACE

24.2	1	2	-	0.2	
23.4					
22.7	2	2	-	0.2	
21.9					
21.2	3	4	-	0.2	FINE TO MED. SAND=SOME SILT=BROWN=LOOSE (M)
20.4					
19.7	4	4	-	0.2	
18.9					
18.2	5	5	-	0.2	
17.4					
16.1					
14.9					
14.2	6	5	-	0.2	FINE TO MED. SAND=SOME SILT=TRACE OF CLAY=DARK BROWN=LOOSE (M)
13.4					
12.4					WATER LEVEL: +512.6' 4 & 24 HRS. AFTER BORING
11.7	7	8	-	0.3	
10.9					WET CAVE-IN: +512.4' 24 HRS. AFTER BORING
10.4					
09.9					
09.2	8	14	-	0.4	FINE TO COARSE SAND=SOME GRAVEL=TRACE OF SILT=BROWN=MED. DENSE (M)
08.4					
07.9					
07.4					
06.7	9	46	-	0.6	FINE TO COARSE SAND & GRAVEL=SOME SILT=BROWN DENSE (M)
05.9					
04.9					
04.2	10	52	-	0.3	
03.4					
02.4					
02.0	11	187 / 11"	-	0.3	
01.8					
499.9					
99.2	12	148 / 11"	-	0.3	SILT & FINE SAND=TRACE OF CLAY=GRAY=VERY DENSE (D)
98.5					
97.4	13	100 / 6"	-	0.2	
96.9					
94.9					
94.2	14	100 / 4"	-	0.1	

END OF BORING

E	S	PR	Qu	R	CLASSIFICATION

BORING NO. 73
DATE: 5-2/5-58
GROUND ELEVATION: +526.7'

+526.7' GROUND SURFACE

26.0	1	4	-	0.4	
25.2					
24.5	2	4	-	0.3	FINE TO MED. SAND=SOME SILT=TRACE OF CLAY=DARK BROWN=LOOSE (M)
23.7					
23.0	3	6	-	0.3	
22.2					
21.5	4	6	-	0.3	SILT & FINE SAND=TRACE OF CLAY=BROWN=LOOSE (M)
20.7					
20.0	5	6	-	0.3	
19.2					
16.7					SILT=SOME CLAY & FINE SAND=BROWN=LOOSE (M)
16.0	6	5	-	0.2	
15.2					
14.2					WATER LEVEL: +514.2' BEFORE CASING REMOVAL
13.5	7	6	-	0.4	WATER LEVEL: +513.7' 24 HRS. AFTER CASING REMOVAL
12.7					WATER LEVEL: +512.9' AFTER CASING REMOVAL
12.2					
11.7					
11.0	8	5	-	0.4	SILT=SOME CLAY & FINE SAND=BROWN=LOOSE (M)
10.2					
09.7					
09.2					
08.5	9	3	-	0.3	SILT & SAND=SOME CLAY=BROWN & GRAY=LOOSE (M)
07.7					
07.2					
06.7					
06.0	10	4	-	0.3	FINE TO MED. SAND=SOME SILT=TRACE OF CLAY=BROWN & GRAY=LOOSE (M)
05.2					
04.7					
04.2					
03.7	11	100 / 6"	-	0.4	MED. TO COARSE SAND & GRAVEL=SOME SILT=BROWN VERY DENSE (M)
02.7					
01.7					
01.3	12	175 / 10"	-	-	
00.9					
499.2	13	SS REFUSAL-WASH SAMPLE			SILT & CLAY=SOME SAND=GRAY=VERY DENSE (D)
98.7	14	SS REFUSAL-WASH SAMPLE			
94.2	15	SS REFUSAL-WASH SAMPLE			

END OF BORING
22.5' NX CASING

E	S	PR	Qu	R	CLASSIFICATION

BORING NO. 74
DATE: 4-30/5-5-58
GROUND ELEVATION: +527.9'

+527.9' GROUND SURFACE

27.2	1	4	-	0.3	
26.4					FINE TO MED. SAND=SOME SILT=DARK BROWN=LOOSE (M)
25.7	2	4	-	0.2	
24.9					WATER LEVEL: +524.6' 5 HR. AFTER BORING
24.2	3	7	-	0.2	
23.4					SILT=SOME CLAY & SAND BROWN=LOOSE (M)
22.7	4	7	-	0.3	
21.9					
21.2	5	7	-	0.3	
20.4					
17.9					FINE TO MED. SAND=& SILT=TRACE OF CLAY=BROWN=LOOSE (M)
17.2	6	9	-	0.3	
16.4					
15.9					
15.4					
14.7	7	6	-	0.2	FINE TO MED. SAND=TRACE OF SILT=BROWN=LOOSE (M)
13.9					
13.4					
12.9	8	17	-	0.4	
12.2					
11.4					
10.4					
09.7	9	22	-	0.4	FINE TO COARSE SAND=SOME GRAVEL=TRACE OF SILT=BROWN=MED. DENSE (M)
08.9					
07.9					
07.2	10	23	-	0.3	
06.4					
05.4	11	8 / 6"	-	0.1	
04.9	11A	127	-	0.2	
04.4					
03.9					
02.9	12	100 / 3"	-	0.1	SILT & SAND=TRACE OF CLAY=GRAY=VERY DENSE (D)
02.2					
01.8					
00.4	13	100 / 3"	-	0.1	SILT & CLAY=TRACE OF SAND=GRAY=VERY DENSE (D)
00.2					
497.9	14	SS REFUSAL-WASH SAMPLE			
95.4	15	SS REFUSAL-WASH SAMPLE			

END OF BORING

E	S	PR	Qu	R	CLASSIFICATION

BORING NO. 75
DATE: 4-2-58
GROUND ELEVATION: +523.9'

+523.9' GROUND SURFACE

23.2	1	4	-	0.3	DARK BROWN CLAYEY TOP SOIL=LOOSE (M)
22.4					WATER LEVEL: +521.9' BEFORE CASING REMOVAL
21.7	2	6	-	0.3	
20.9					
20.2	3	5	-	0.3	SILT & CLAY=TRACE OF SAND=BROWN=LOOSE (M)
19.4					
18.7	4	8	-	0.3	
17.9					WATER LEVEL: +517.9' AFTER CASING REMOVAL
17.2	5	7	-	0.3	
16.4					
15.1					WATER LEVEL: +513.9' 24 HRS. AFTER CASING REMOVAL
13.9	6	3	-	0.4	SILT=SOME FINE SAND & CLAY=BROWN=LOOSE (M)
13.2					
12.4					
11.6					
11.4					
10.7	7	4	-	0.3	FINE TO MED. SAND=SOME SILT=BROWN=LOOSE (M)
09.9					
09.4					
08.9					
08.2	8	21	-	0.4	FINE TO COARSE SAND & GRAVEL=TRACE OF SILT BROWN=MED. DENSE (M)
07.4					
06.9					
06.4					
05.7	9	108	-	0.3	FINE TO COARSE SAND & GRAVEL=TRACE OF SILT=BROWN=VERY DENSE (M)
04.9					
04.4					
03.9					
03.4					
03.0	10	150 / 3"	-	-	
02.7					
01.4	11	SS REFUSAL-WASH SAMPLE			SILT & CLAY=TRACE OF SAND=GRAY=VERY DENSE (D)
498.9	12	SS REFUSAL-WASH SAMPLE			
96.4	13	SS REFUSAL-WASH SAMPLE			
94.9	14	SS REFUSAL-WASH SAMPLE			

END OF BORING
20' NX CASING

E	S	PR	Qu	R	CLASSIFICATION

BORING NO. 76
DATE: 5-1-58
GROUND ELEVATION: +526.3'

+526.3' GROUND SURFACE

25.6	1	5	-	0.3	DARK BROWN TOP SOIL=LOOSE (M)
24.8					WATER LEVEL: +524.3' BEFORE CASING REMOVAL
24.1	2	7	-	0.2	
23.3					WATER LEVEL: +523.8' AFTER CASING REMOVAL
22.6					
21.8	3	9	-	0.3	
21.1	4	6	-	0.2	SILT & CLAY=TRACE OF SAND=BROWN=LOOSE (M)
20.3					
19.6	5	5	-	0.2	
18.8					
17.5					
16.3					
15.6	6	14	-	0.8	SILT=SOME FINE SAND=TRACE OF CLAY & GRAVEL=GRAY & BROWN=MED. DENSE (M)
14.8					
14.3					
13.8					
13.1	7	42	-	0.4	SILT=SOME FINE SAND=TRACE OF CLAY=GRAY=DENSE (D)
12.3					
11.8					
11.3					
10.6	8	147 / 10"	3e3	0.4	
10.0					SILT=SOME FINE SAND=TRACE OF CLAY=GRAY=VERY DENSE (D)
09.8					
09.4	9	100 / 4"	-	0.1	
08.9					
07.6					
06.3					
06.0	10	100 / 2"	-	0.1	SILT=SOME FINE SAND & CLAY=GRAY=VERY DENSE (D)
05.8					
05.4					
05.0	11	100 / 3"	-	0.1	
04.6					
03.9					
01.9					
01.6	12	100 / 3"	-	-	WASH SAMPLE
01.1					
498.9					
98.6	13	100 / 3"	-	-	WASH SAMPLE
98.2					
98.1	14	100 / 3"	-	-	WASH SAMPLE
93.8					
93.7	15	100 / 3"	-	-	WASH SAMPLE
93.6					

END OF BORING
15' NX CASING

E	S	PR	Qu	R	CLASSIFICATION

BORING	STATION	OFFSET
72	1994+13.5	32'L
73	1995+40	32'R
74	1995+04	32'L
75	1996+33	32'R
76	1995+97	32'L

LOGS PREPARED BY SOIL TESTING SERVICES, INC. 1827 N. HARLEM AVE. CHICAGO 35, ILL.

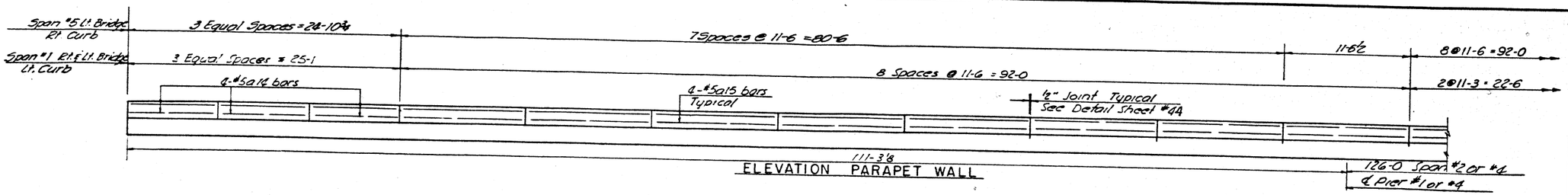
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 OVER VERMILION RIVER
FAI 74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

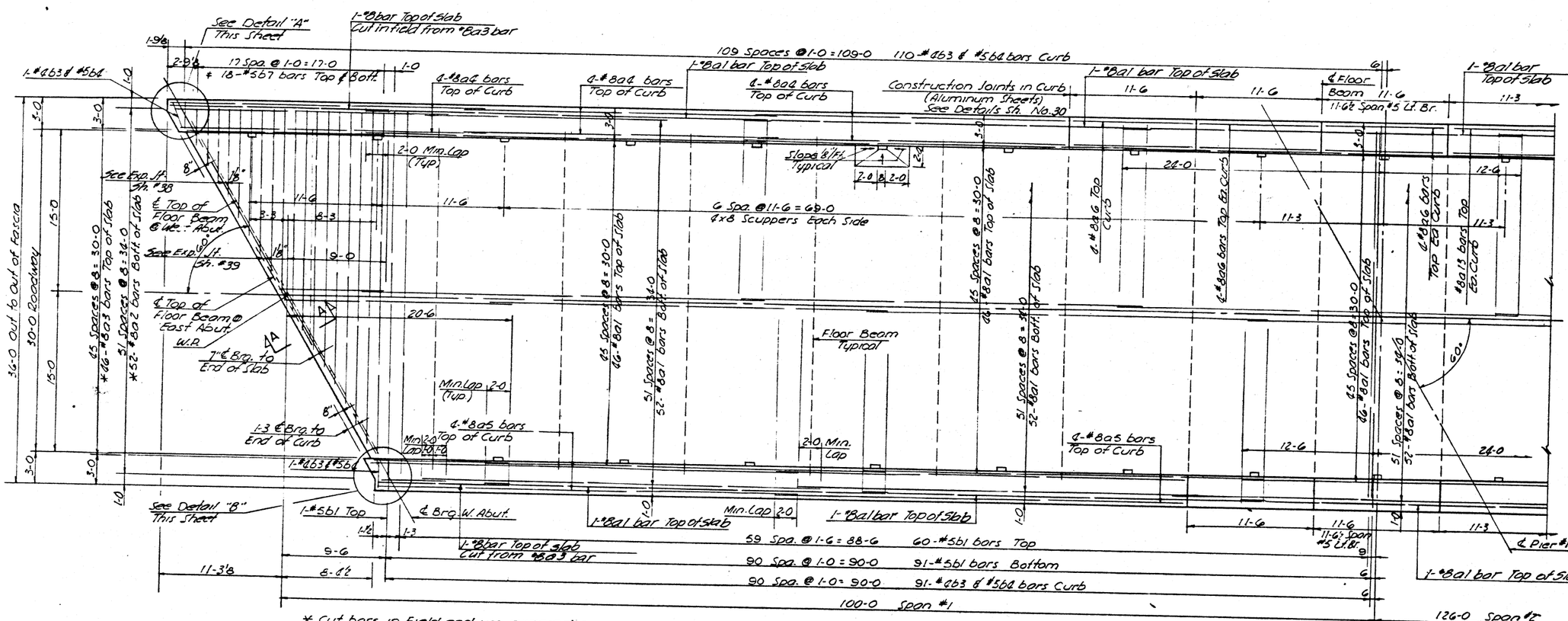
BORING LOGS

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
			LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	25
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		

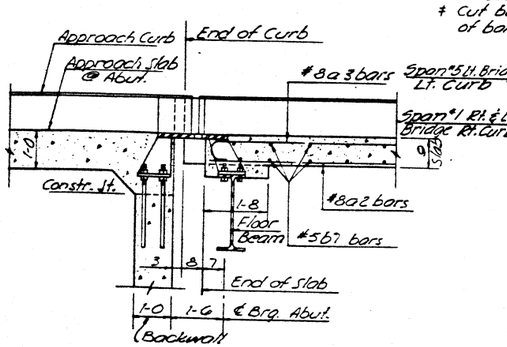


ELEVATION PARAPET WALL

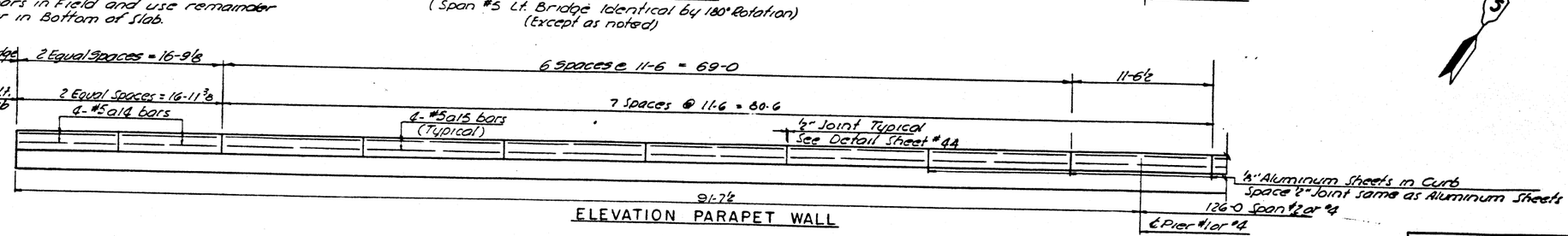


* Cut bars in Field and use remainder of bar in opposite end.
‡ Cut bars in Field and use remainder of bar in Bottom of Slab.

RIGHT & LEFT BRIDGE
(Span #5 Lt. Bridge identical by 180° Rotation)
(Except as noted)



SECTION A-A



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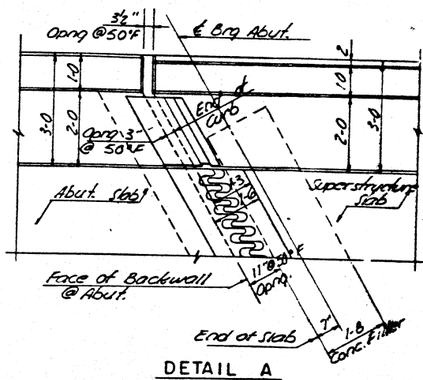
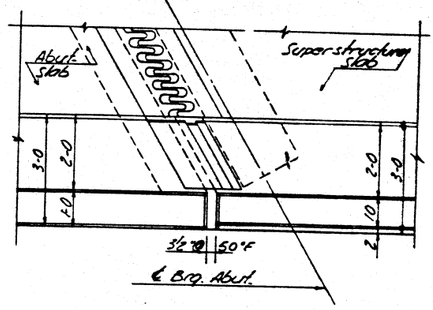


DETAIL A



DETAIL B



CONSOER, TOWNSEND & ASSOCIATES
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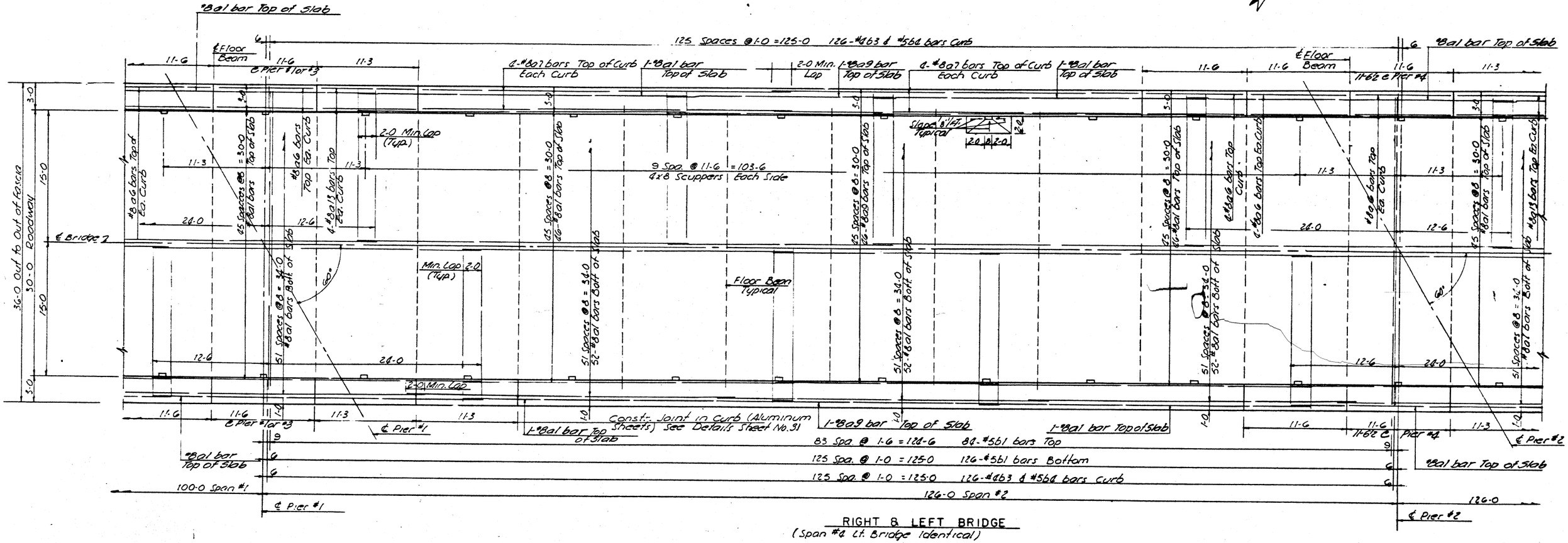
ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI -74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

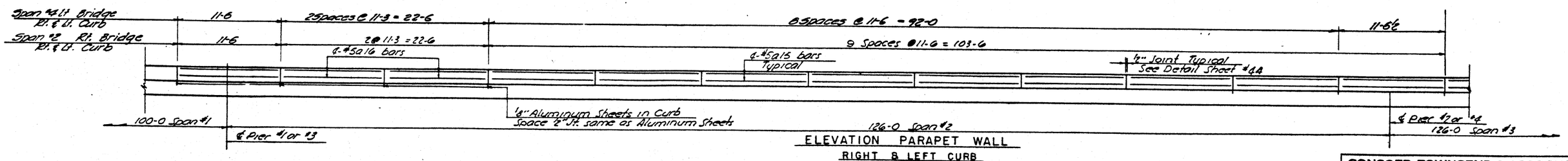
SUPERSTRUCTURE DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	SERIES
JWH	RLF	WES	JWH			
			LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	26
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PF. L	



RIGHT & LEFT BRIDGE
(Span #4 Lt. Bridge Identical)



ELEVATION PARAPET WALL
RIGHT & LEFT CURB

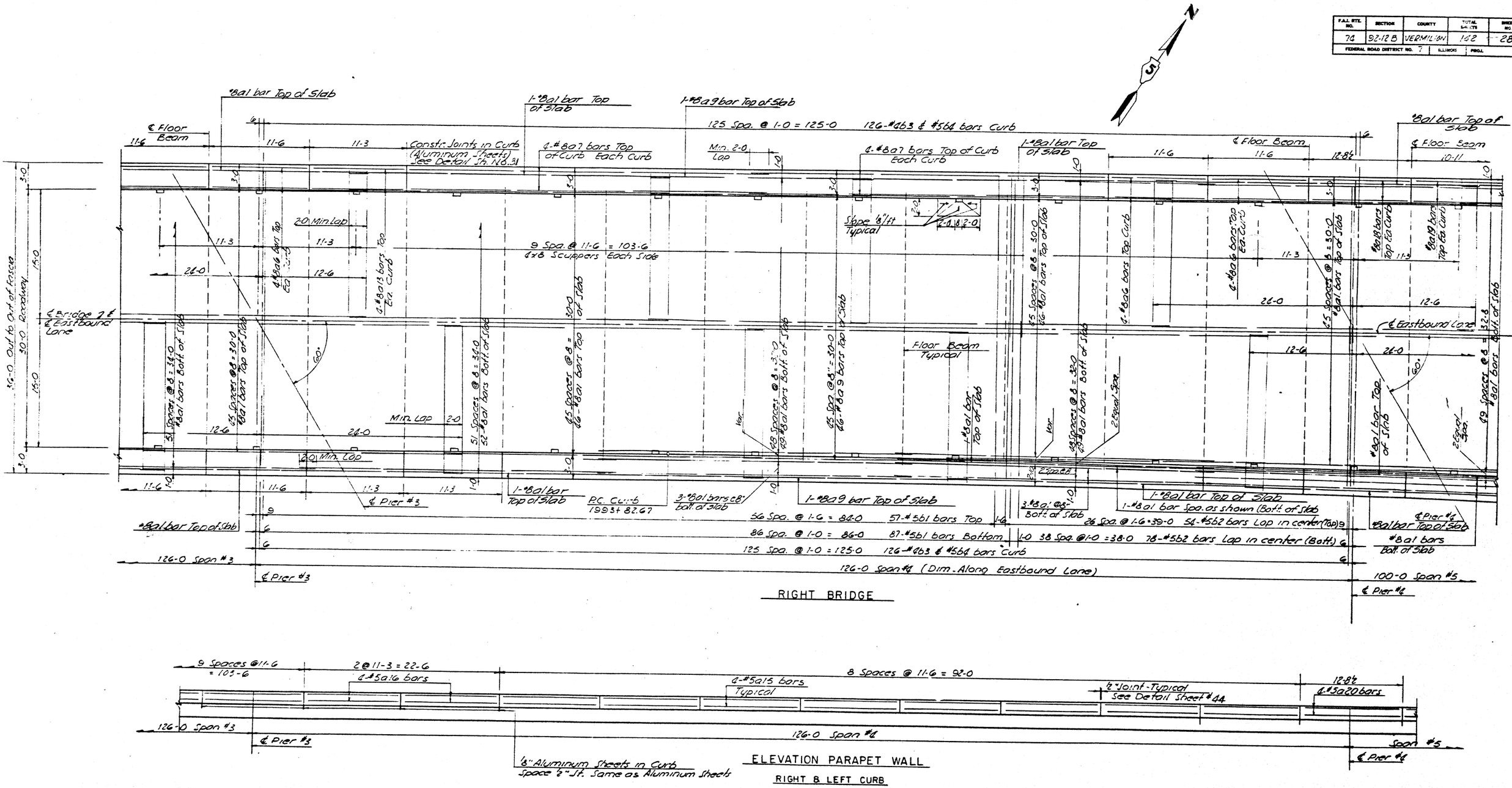
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12B
VERMILION COUNTY STA. 1992 +54

SUPERSTRUCTURE DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
JWH	RLF	WES	JWH			
			LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHTS.	SHEET NO.
74	92-12B	VERMILION	152	28
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	



CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

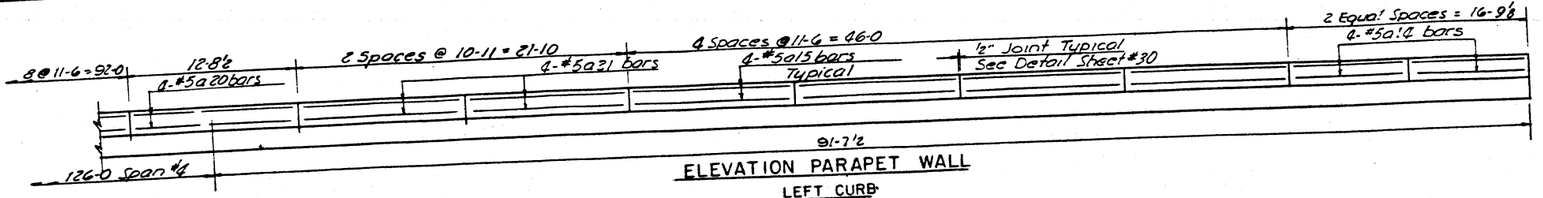
ILLINOIS DIVISION OF HIGHWAYS

FAI RT 74 BRIDGE OVER VERMILION RIVER
FAI -74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

SUPERSTRUCTURE DETAILS

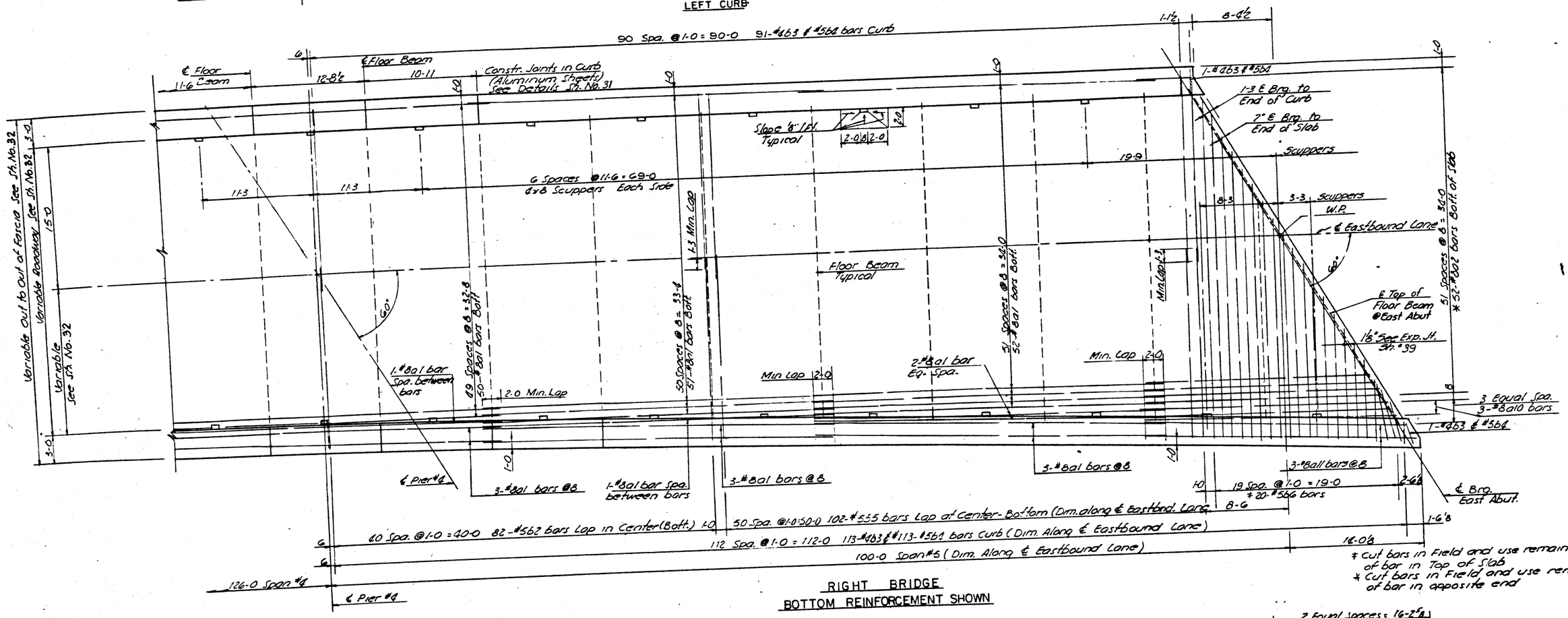
DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
JWH	RLF	WES	JWH			
			LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	29
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		



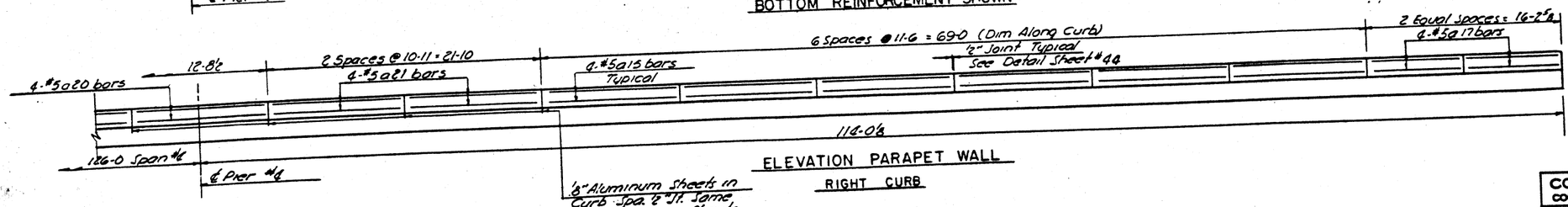
ELEVATION PARAPET WALL

LEFT CURB



RIGHT BRIDGE

BOTTOM REINFORCEMENT SHOWN



ELEVATION PARAPET WALL

RIGHT CURB

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

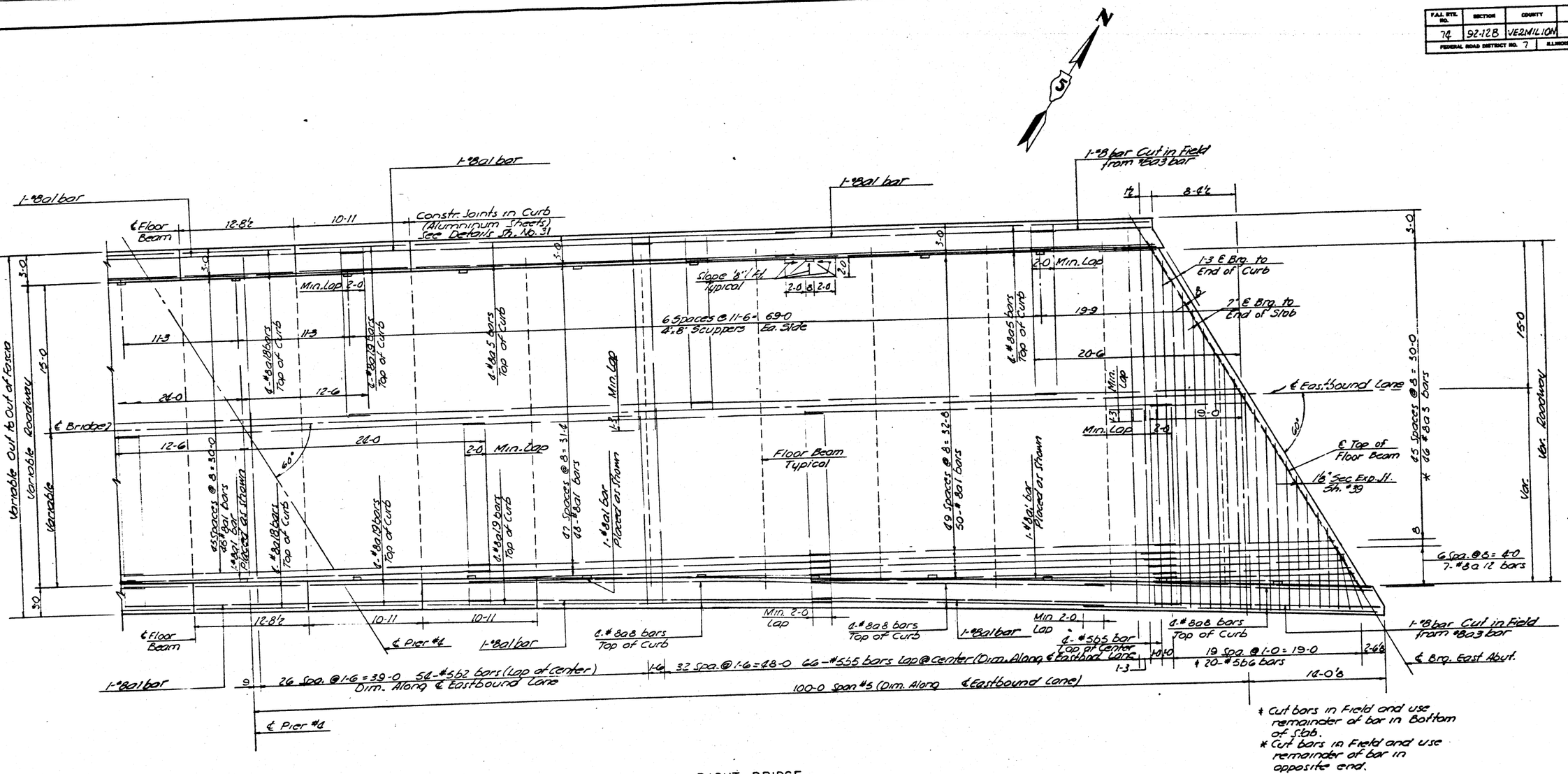
ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12B
VERMILION COUNTY STA 1992+54

SUPERSTRUCTURE DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JWH	RLF	WES	JWH			
			LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	30
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		



* Cut bars in Field and use remainder of bar in Bottom of Slab.
* Cut bars in Field and use remainder of bar in opposite end.

RIGHT BRIDGE

TOP REINFORCEMENT SHOWN

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS

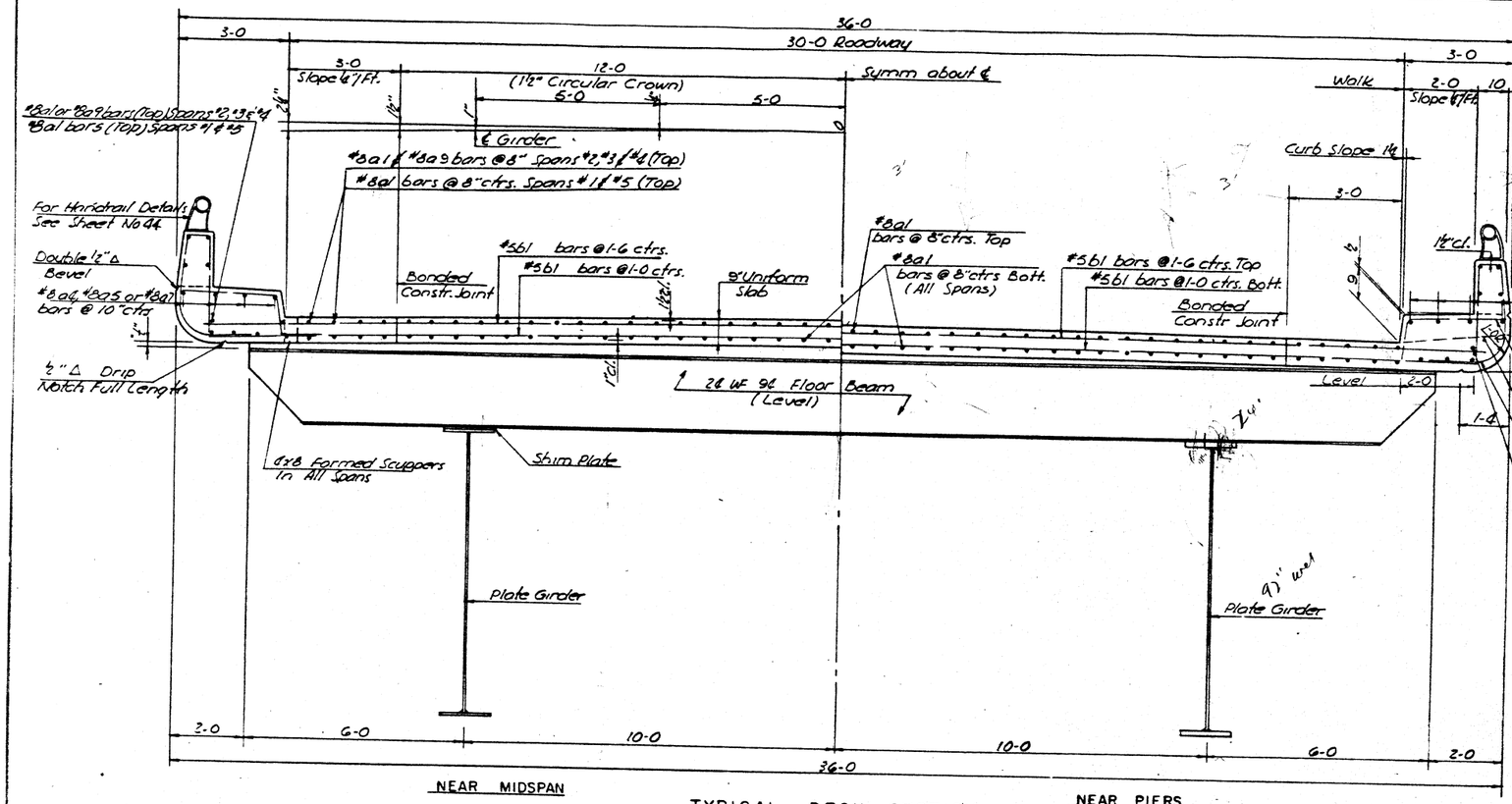
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

SUPERSTRUCTURE DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
JWH	RLF	MES	JWH LDB	HSM	2.8.62	

ROUTE No.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12F	VERMILION	16	6
STA.	TO STA.			
FED. ROAD DIST. No. 7	ILLINOIS	FED. AID PROJECT		

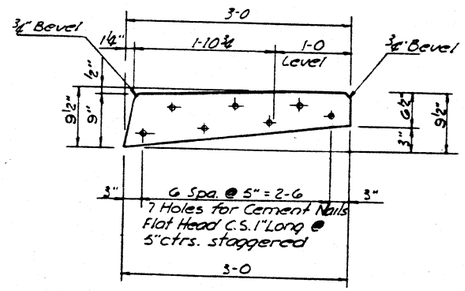
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	31
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS		PROJ.	



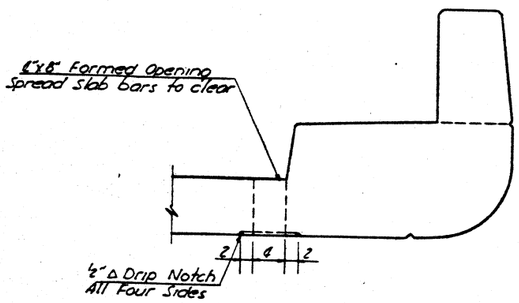
NEAR MIDSPAN

TYPICAL DECK SECTION

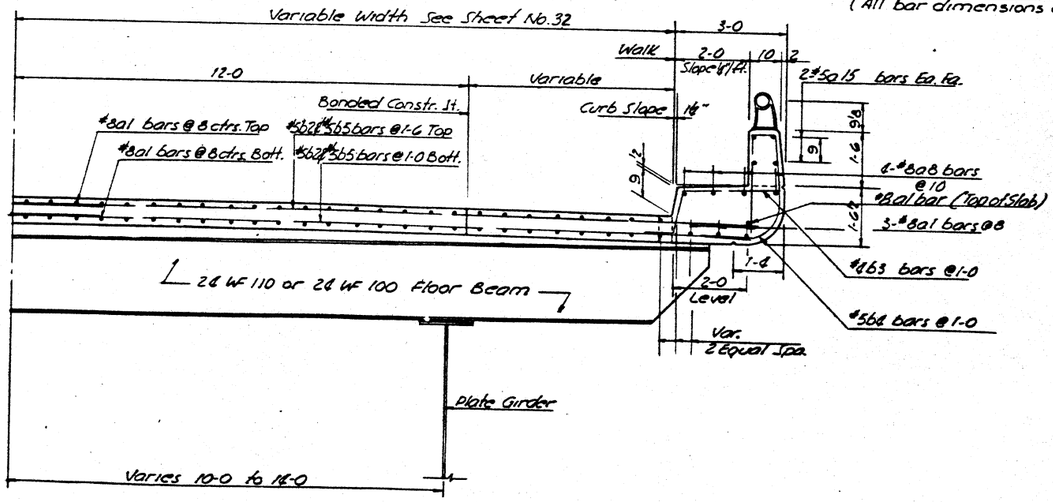
NEAR PIERS



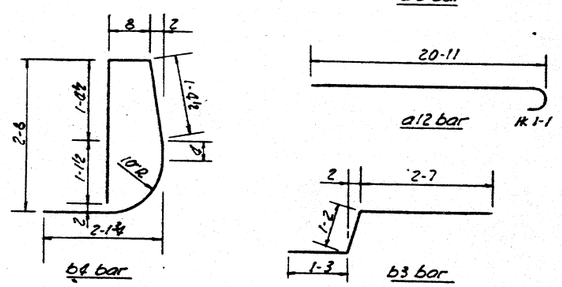
ALUMINUM SHEET DETAIL (3003-H14)
(For Location of Plates, see Deck Plan.)



SCUPPER DETAIL



HALF SECTION AT WIDENED ROADWAY SPAN NO. 5
NEAR MIDSPAN



BENDING DIAGRAMS
(All bar dimensions are out to out)

BAR SCHEDULE

Bar	No	Size	Length	Spacing	Shape
a1	3029	8	36-6	As Shown	
a2 *	104	8	31-0	8	
a3 *	96	8	32-6	8	
a4	36	8	28-10	10	
a5	32	8	38-0	10	
a6	164	8	11-3	10	
a7	96	8	21-0	10	
a8	12	8	29-6	10	
a9	288	8	28-9	8	
a10	3	8	26-6	As Shown	
a11	3	8	26-6	8	
a12	7	8	22-0	8	
a13	22	8	11-0	10	
a14	68	5	8-1	As Shown	
a15	636	5	11-2	As Shown	
a16	96	5	11-0	As Shown	
a17	8	5	7-11	As Shown	
a18	8	8	12-5	10	
a19	12	8	10-7	10	
a20	8	5	12-5	As Shown	
a21	16	5	10-7	As Shown	
b1	1650	5	34-4	As Shown	
b2	268	5	18-9	As Shown	
b3	2327	4	5-0	1-0	
b4	2327	5	7-6	1-0	D
b5	172	5	19-6	As Shown	
b6 *	20	5	38-6	1-0	
b7 *	58	5	36-6	1-0	

SUPERSTRUCTURE QUANTITIES		
Class X Concrete	1,505.0	Cu. Yds.
Reinforcement Bars	463,220	Lbs.
Protective Coat	5160	Sq. Yds.

Note: Cost of Aluminum Plates in curb and Cork Parapet Joint Material included in "Class X Concrete."
Quantities shown are for both Structures.
* Cut bars in Field and use remainder of bar in opposite End.
* Cut bars in Field and use remainder of bar in Top of Slab.

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ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

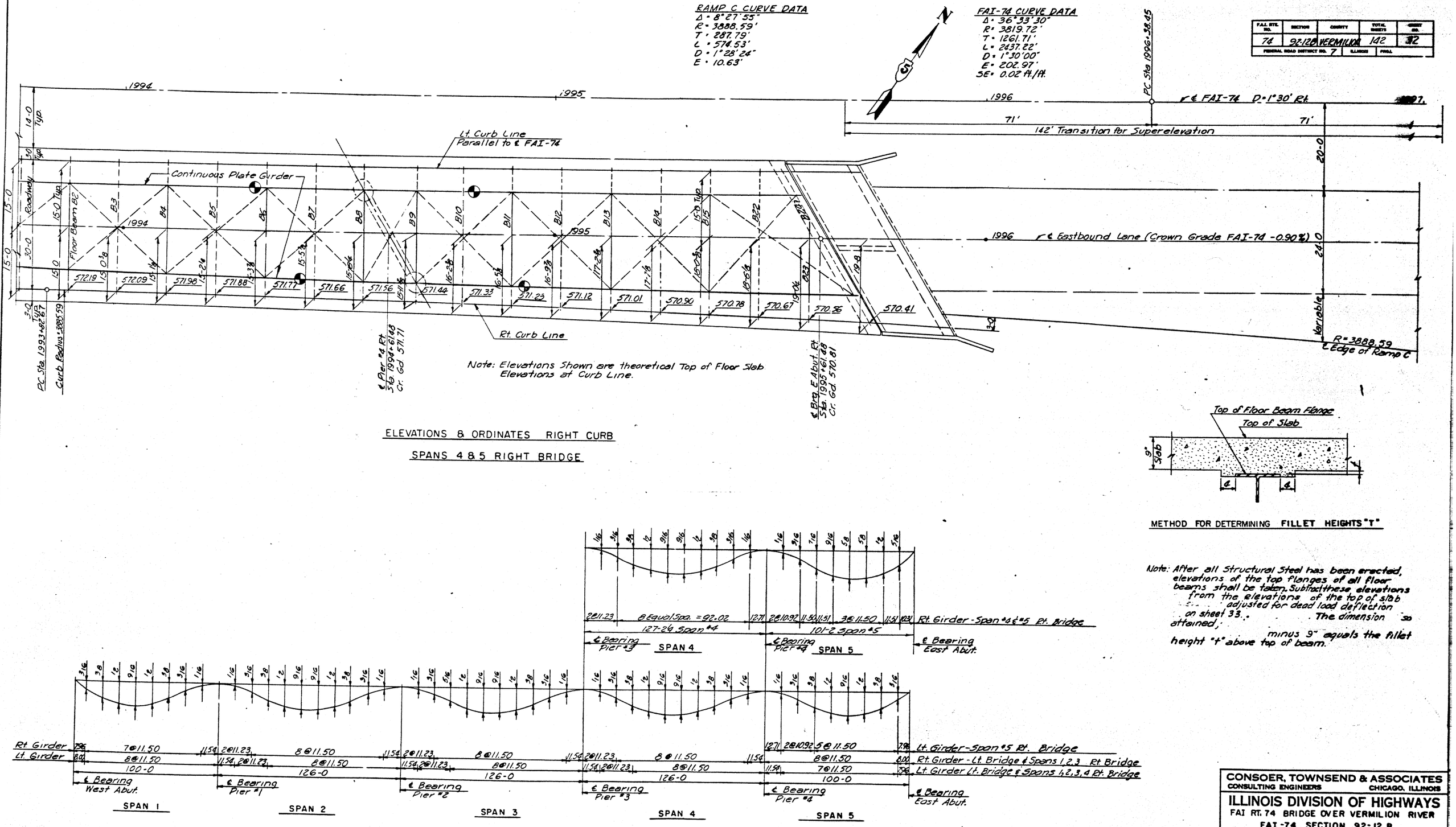
SUPERSTRUCTURE DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	APPROVED	DATE	REVISED
JWH	RLF	WES	JWH LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	32
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	FINAL		

RAMP C CURVE DATA
Δ = 8°27'55"
R = 3888.59'
T = 287.79'
L = 574.53'
D = 1°28'24"
E = 10.63'

FAI-74 CURVE DATA
Δ = 36°33'30"
R = 3819.72'
T = 1261.71'
L = 2437.22'
D = 1°30'00"
E = 202.97'
SE = 0.02 Ft./Ft.



ELEVATIONS & ORDINATES RIGHT CURB

SPANS 4 & 5 RIGHT BRIDGE

SLAB DEAD LOAD DEFLECTION
(Deflections Shown in Inches @ ℄ Floor Beam)

METHOD FOR DETERMINING FILLET HEIGHTS "T"

Note: After all Structural Steel has been erected, elevations of the top flanges of all floor beams shall be taken. Subtract these elevations from the elevations of the top of slab adjusted for dead load deflection on sheet 33. The dimension so attained, minus 9" equals the fillet height "t" above top of beam.

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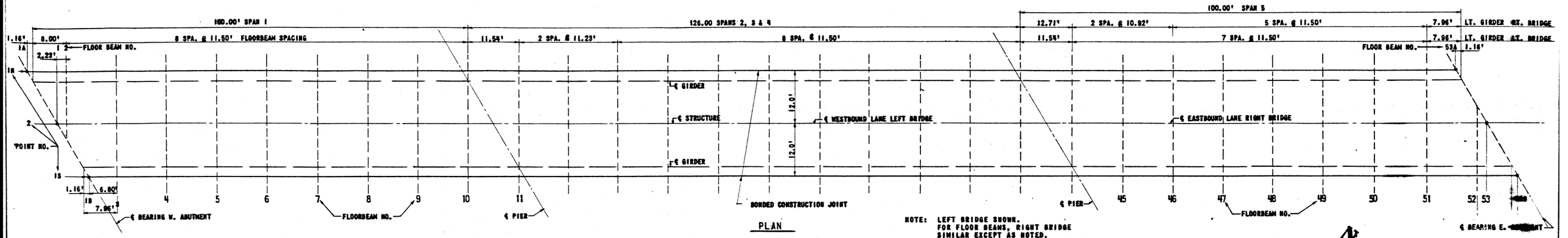
ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

SUPERSTRUCTURE DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
JH	DE	DE	JWH LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12 B	VERMILION	142	33
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	



PLAN

NOTE: LEFT BRIDGE SHOWN.
FOR FLOOR BEAMS, RIGHT BRIDGE
SIMILAR EXCEPT AS NOTED.

LEFT BRIDGE

SPAN 1

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
℄ Brg. W.Abut				
1A	1N	198939.587	576.278	576.278
1	2	198946.520	576.341	576.341
1B	1S	198953.447	576.153	576.153
2	1N	198948.747	576.196	576.212
	2	198948.747	576.321	576.325
	1S	198960.247	576.092	576.108
3	1N	Do	576.092	576.123
	2	Do	576.217	576.241
	1S	198971.747	575.989	576.020
4	1N	Do	575.989	576.031
	2	Do	576.114	576.151
	1S	198983.247	575.885	575.927
5	1N	Do	575.885	575.932
	2	Do	576.010	576.055
	1S	198994.747	575.782	575.829
6	1N	Do	575.782	575.824
	2	Do	575.907	575.952
	1S	199005.247	575.678	575.720
7	1N	Do	575.678	575.709
	2	Do	575.803	575.840
	1S	199017.747	575.575	575.606
8	1N	Do	575.575	575.591
	2	Do	575.700	575.724
	1S	199029.247	575.471	575.487
9	1N	Do	575.471	575.476
	2	Do	575.596	575.606
Pier #1	1S	199040.747	575.368	575.373
10	1N	Do	575.368	575.368
	2	Do	575.493	575.496
Pier #1	1S	199052.289	575.264	575.268
11	1N	Do	575.264	575.269
	2	Do	575.389	575.392

SPAN 2

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
	1S	199068.518	575.168	575.168
12	1N	Do	575.163	575.179
	2	Do	575.288	575.298
	1S	199074.767	575.062	575.078
13	1N	Do	575.062	575.093
	2	Do	575.187	575.211
	1S	199086.267	574.958	574.989
14	1N	Do	574.958	575.000
	2	Do	575.083	575.120
	1S	199097.767	574.855	574.897
15	1N	Do	574.855	574.902
	2	Do	574.980	575.025
	1S	199109.267	574.751	574.798
16	1N	Do	574.751	574.798
	2	Do	574.876	574.923
	1S	199120.767	574.648	574.695
17	1N	Do	574.648	574.690
	2	Do	574.773	574.818
	1S	199132.267	574.544	574.586
18	1N	Do	574.544	574.575
	2	Do	574.669	574.706
	1S	199143.767	574.441	574.472
19	1N	Do	574.441	574.457
	2	Do	574.566	574.590
	1S	199155.267	574.337	574.353
20	1N	Do	574.337	574.382
	2	Do	574.462	574.472
Pier #2	1S	199166.767	574.234	574.239
21	1N	Do	574.234	574.234
	2	Do	574.359	574.362
Pier #2	1S	199178.289	574.130	574.130
22	1N	Do	574.130	574.135
	2	Do	574.255	574.258

SPAN 3

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
	1S	199189.518	574.029	574.034
23	1N	Do	574.029	574.045
	2	Do	574.154	574.164
	1S	199200.767	573.928	573.944
24	1N	Do	573.928	573.954
	2	Do	574.053	574.074
	1S	199212.267	573.824	573.850
25	1N	Do	573.824	573.866
	2	Do	573.949	573.972
	1S	199223.767	573.721	573.763
26	1N	Do	573.721	573.768
	2	Do	573.846	573.891
	1S	199235.267	573.617	573.668
27	1N	Do	573.617	573.664
	2	Do	573.742	573.789
	1S	199246.767	573.514	573.561
28	1N	Do	573.514	573.556
	2	Do	573.639	573.684
	1S	199258.247	573.410	573.452
29	1N	Do	573.410	573.441
	2	Do	573.535	573.572
	1S	199269.747	573.307	573.336
30	1N	Do	573.307	573.323
	2	Do	573.432	573.456
	1S	199281.247	573.203	573.219
31	1N	Do	573.203	573.208
	2	Do	573.328	573.338
Pier #3	1S	199292.747	573.100	573.105
32	1N	Do	573.100	573.100
	2	Do	573.225	573.228
Pier #3	1S	199304.289	572.996	572.996
33	1N	Do	572.996	573.001
	2	Do	573.121	573.124

SPAN 4

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
	1S	199315.518	572.895	572.900
34	1N	Do	572.895	572.911
	2	Do	573.020	573.030
	1S	199326.767	572.794	572.810
35	1N	Do	572.794	572.825
	2	Do	572.919	572.943
	1S	199338.267	572.690	572.721
36	1N	Do	572.690	572.732
	2	Do	572.815	572.852
	1S	199349.767	572.587	572.629
37	1N	Do	572.587	572.636
	2	Do	572.712	572.757
	1S	199361.267	572.483	572.530
38	1N	Do	572.483	572.530
	2	Do	572.608	572.655
	1S	199372.767	572.380	572.427
39	1N	Do	572.380	572.422
	2	Do	572.505	572.550
	1S	199384.267	572.276	572.318
40	1N	Do	572.276	572.307
	2	Do	572.401	572.438
	1S	199395.747	572.173	572.204
41	1N	Do	572.173	572.189
	2	Do	572.298	572.322
	1S	199407.247	572.069	572.085
42	1N	Do	572.069	572.078
	2	Do	572.194	572.204
Pier #4	1S	199418.747	571.966	571.971
43	1N	Do	571.966	571.966
	2	Do	572.091	572.094
Pier #4	1S	199430.289	571.862	571.862
44	1N	Do	571.862	571.867
	2	Do	571.987	571.990

SPAN 5

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
	1S	199441.789	571.758	571.763
45	1N	Do	571.758	571.776
	2	Do	571.883	571.893
	1S	199453.289	571.655	571.671
46	1N	Do	571.655	571.686
	2	Do	571.780	571.804
	1S	199464.789	571.551	571.582
47	1N	Do	571.551	571.598
	2	Do	571.676	571.713
	1S	199476.289	571.448	571.490
48	1N	Do	571.448	571.495
	2	Do	571.573	571.618
	1S	199487.789	571.344	571.391
49	1N	Do	571.344	571.396
	2	Do	571.469	571.514
	1S	199498.289	571.241	571.283
50	1N	Do	571.241	571.272
	2	Do	571.366	571.392
	1S	199510.789	571.137	571.168
51	1N	Do	571.137	571.152
	2	Do	571.262	571.286
	1S	199522.289	571.034	571.050
52	2	Do	571.159	571.163
53A	1N	199517.589	571.076	571.076
53	2	199524.516	571.139	571.139
53B	1S	199531.849	570.952	570.952

RIGHT BRIDGE

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
℄ Brg. W.Abut				
1A	1N	198976.547	575.946	575.946
1	2	198983.480	576.008	576.008
1B	1S	198990.407	575.821	575.821
2	1N	198985.707	575.863	575.879
	2	198985.707	575.988	575.992
	1S	198997.207	575.760	575.776
3	1N	Do	575.760	575.791
	2	Do	575.885	575.922
	1S	199008.707	575.656	575.687
4	1N	Do	575.656	575.698
	2	Do	575.781	575.818
	1S	199020.207	575.553	575.595
5	1N	Do	575.553	575.600
	2	Do	575.678	575.723
	1S	199031.707	575.449	575.496
6	1N	Do	575.449	575.491
	2	Do	575.574	575.619
	1S	199043.207	575.346	575.388
7	1N	Do	575.346	575.377
	2	Do	575.471	575.508
	1S	199054.707	575.242	575.273
8	1N	Do	575.242	575.258
	2	Do	575.367	575.391
	1S	199066.207	575.139	575.155
9	1N	Do	575.139	575.144
	2	Do	575.264	575.276
Pier #1	1S	199077.707	575.035	575.040
10	1N	Do	575.035	575.035
	2	Do	575.160	575.163
Pier #1	1S	199089.248	574.931	574.931
11	1N	Do	574.931	574.936
	2	Do	575.056	575.059

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
	1S	199100.478	574.830	574.835
12	1N	Do	574.830	574.846
	2	Do	574.955	574.965
	1S	199111.707	574.729	574.785
13	1N	Do	574.729	574.760
	2	Do	574.854	574.878
	1S	199123.207	574.626	574.657
14	1N	Do	574.626	574.668
	2	Do	574.751	574.788
	1S	199134.707	574.522	574.564
15	1N	Do	574.522	574.569
	2	Do	574.647	574.692
	1S	199146.207	574.419	574.466
16	1N	Do	574.419	574.466
	2	Do	574.544	574.591
	1S	199157.707	574.315	574.362
17	1N	Do	574.315	574.357
	2	Do	574.440	574.485
	1S	199169.207	574.212	574.254
18	1N	Do	574.212	574.243
	2	Do	574.337	574.374
	1S	199180.707	574.108	574.139
19	1N	Do	574.108	574.124
	2	Do	574.233	574.257
	1S	199192.207	574.006	574.021
20	1N	Do	574.005	574.010
	2	Do	574.130	574.140
Pier #2	1S	199203.707	573.901	573.906
21	1N	Do	573.901	573.901
	2	Do	574.026	574.029
Pier #2	1S	199215.249	573.797	573.797
22	1N	Do	573.797	573.802
	2	Do	573.922	573.932

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
	1S	199226.478	573.696	573.701
23	1N	Do	573.696	573.712
	2	Do	573.821	573.831
	1S	199237.707	573.595	573.611
24	1N	Do	573.595	573.621
	2	Do	573.720	573.761
	1S	199249.207	573.492	573.518
25	1N	Do	573.492	573.536
	2	Do	573.617	573.656
	1S	199260.707	573.388	573.430
26	1N	Do	573.388	573.435
	2	Do	573.513	573.558
	1S	199272.207	573.285	573.332
27	1N	Do	573.285	573.332
	2	Do	573.410	573.457
	1S	199283.707	573.181	573.228
28	1N	Do	573.181	573.223
	2	Do	573.306	573.351
	1S	199295.207	573.078	573.120
29	1N	Do	573.078	573.109
	2	Do	573.203	573.240
	1S	199306.707	572.974	573.005
30	1N	Do	572.974	572.980
	2	Do	573.099	573.136
	1S	199318.207	572.871	572.887
31	1N	Do	572.871	572.876
	2	Do	572.996	573.006
	1S	199329.707	572.767	572.772
32	1N	Do	572.767	572.767
	2	Do	572.892	572.895
	1S	199341.249	572.663	572.663
33	1N	Do	572.663	572.668
	2	Do	572.788	572.791

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
	1S	199352.478	572.562	572.567
34	1N	Do	572.562	572.578
	2	Do	572.687	572.697
	1S	199363.707	572.461	572.477
35	1N	Do	572.461	572.492
	2	Do	572.586	572.610
	1S	199375.207	572.358	572.388
36	1N	Do	572.358	572.400
	2	Do	572.483	572.520
	1S	199386.707	572.256	572.296
37	1N	Do	572.256	572.301
	2	Do	572.379	572.424
	1S	199398.207	572.151	572.198
38	1N	Do	572.151	572.198
	2	Do	572.276	572.323
	1S	199409.707	572.047	572.094
39	1N	Do	572.047	572.089
	2	Do	572.172	572.217
	1S	199421.207	571.944	571.986
40	1N	Do	571.944	571.975
	2	Do	572.069	572.106
	1S	199432.707	571.840	571.871
41	1N	Do	571.840	571.856
	2	Do	571.965	571.988
	1S	199444.207	571.737	571.753
42	1N	Do	571.737	571.742
	2	Do	571.862	571.872
Pier #4	1S	199455.207	571.633	571.638
43	1N	Do	571.633	571.633
	2	Do	571.758	572.761
Pier #4	1S	199468.415	571.519	571.519
44	1N	Do	571.519	571.524
	2	Do	571.644	571.647

FLOOR BEAM NO.	POINT NO.	STATION	ELEVATION THEOR.	ELEVATION ADJUSTED
	1S	199479.332	571.421	571.426
45	1N	Do	571.421	571.437
	2	Do	571.546	571.556
	1S	199490.248	571.322	571.338
46	1N	Do	571.322	571.353
	2	Do	571.447	571.471
	1S	199501.788	571.219	571.256
47	1N	Do	571.219	571.251
	2	Do	571.344	571.384
	1S	199513.248	571.115	571.162
48	1N	Do	571.115	571.162
	2	Do	571.240	571.287
	1S	199524.748	571.012	571.068
49	1N	Do	571.012	571.058
	2	Do	571.137	571.184
	1S	199536.248	570.908	570.960
50	1N	Do	570.908	570.939
	2	Do	571.033	571.075
	1S	199547.748	570.805	570.847
51	1N	Do	570.805	570.821
	2	Do	570.930	570.958
	1S	199559.248	570.701	570.727
52	2	Do	570.826	570.833
℄ Brg. E.Abut.				
53A	1N	199554.548	570.794	570.794
53	2	199561.481	570.806	570.806
53B	1S	199570.709	570.598	570.598

NOTES:

1. THEORETICAL ELEVATION IS THE THEORETICAL TOP OF SLAB ELEVATION.
2. ADJUSTED ELEVATION IS THE THEORETICAL TOP OF SLAB ELEVATION ADJUSTED FOR THE CONCRETE DEAD LOAD DEFLECTION.

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ILLINOIS DIVISION OF HIGHWAYS

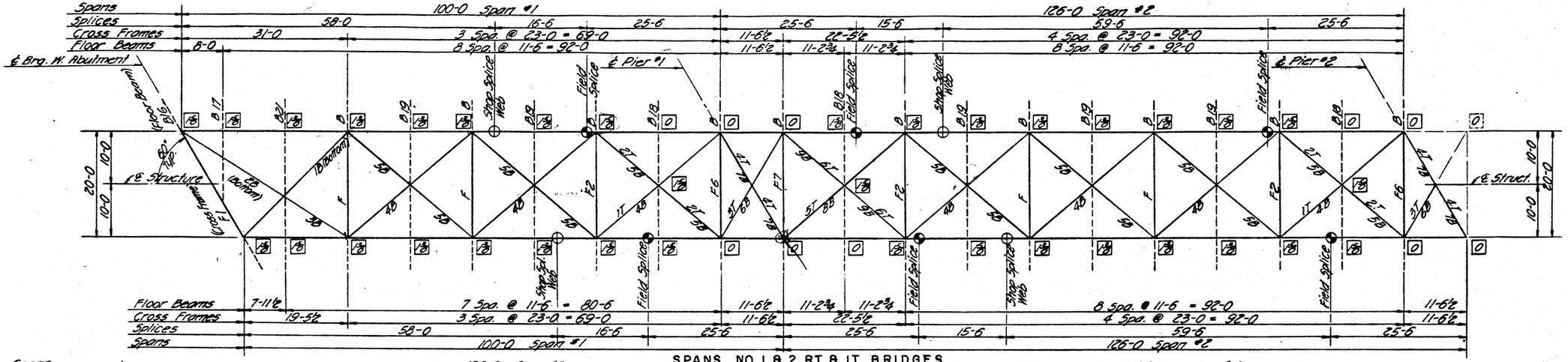
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI 74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

DECK SLAB ELEVATIONS

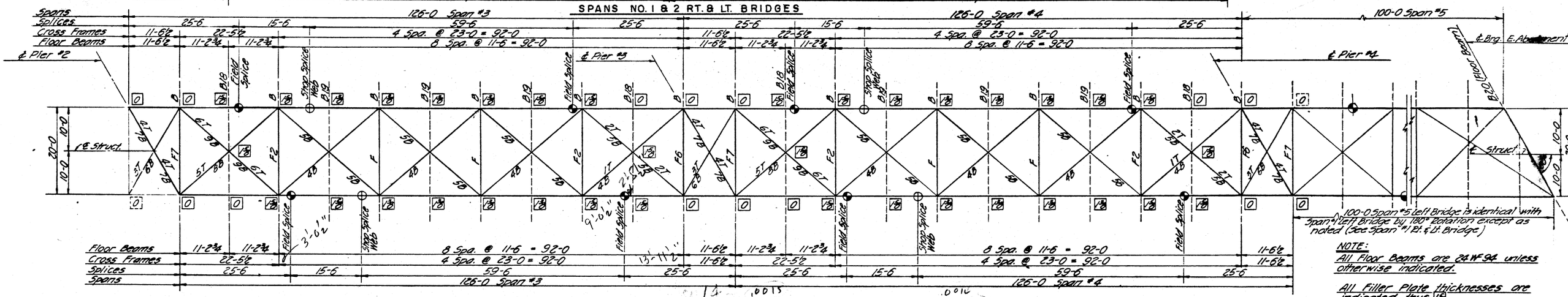
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
		EM	LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12-B	VERMILION	142	34
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	

ROUTE No.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12F	VERMILION	16	7
STA.		TO STA.		
FED. ROAD DIST. No. 7	ILLINOIS	FED. AID PROJECT		



SPANS NO. 1 & 2 RT. & LT. BRIDGES



100-0 Span #5 left Bridge is identical with Span #1 left Bridge by 180° Rotation except as noted (See Span #1 Rt. & Lt. Bridge)

NOTE:
All Floor Beams are 24 WF 94 unless otherwise indicated.

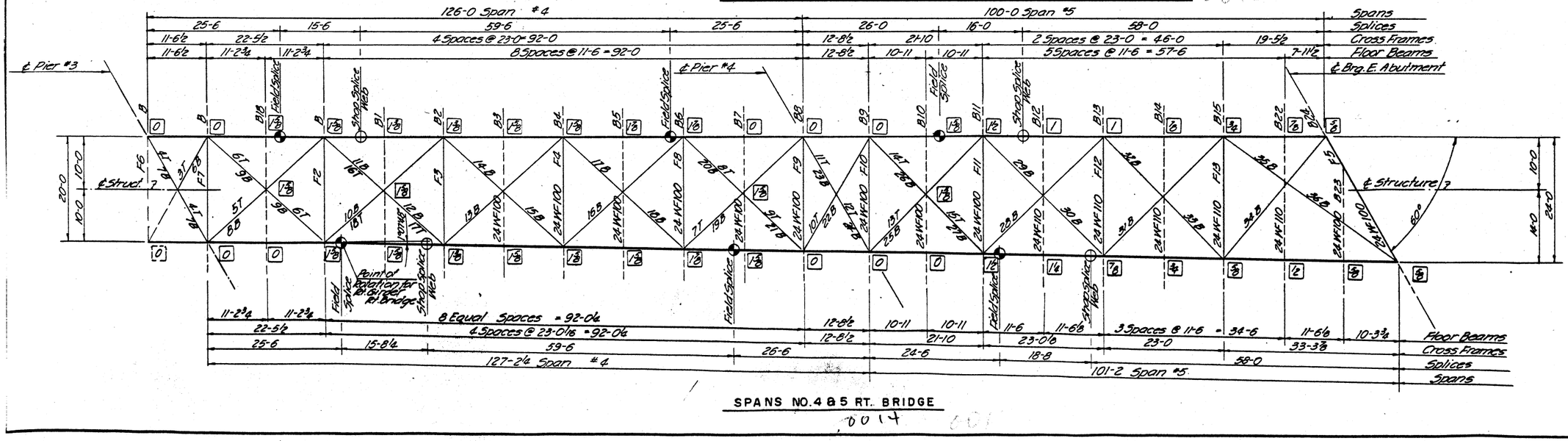
All Filler Plate thicknesses are indicated thus [⅜].

Members 3T, 4T, 10T, 11T, 12T, 6B, 7B, 22B, 23B & 24B are 5/16 WF 13.3. All other lateral cross-bracing members are 5/16 WF 10.5.

For Shop Flange Splice Locations, See Sheets #35 & #36.

All Filler Plates shall be shop tack welded at corners to Girders or to Floor Beams.

SPANS NO. 3, 4 & 5 LT. BRIDGE & SPANS NO. 3 RT. BRIDGE



SPANS NO. 4 & 5 RT. BRIDGE

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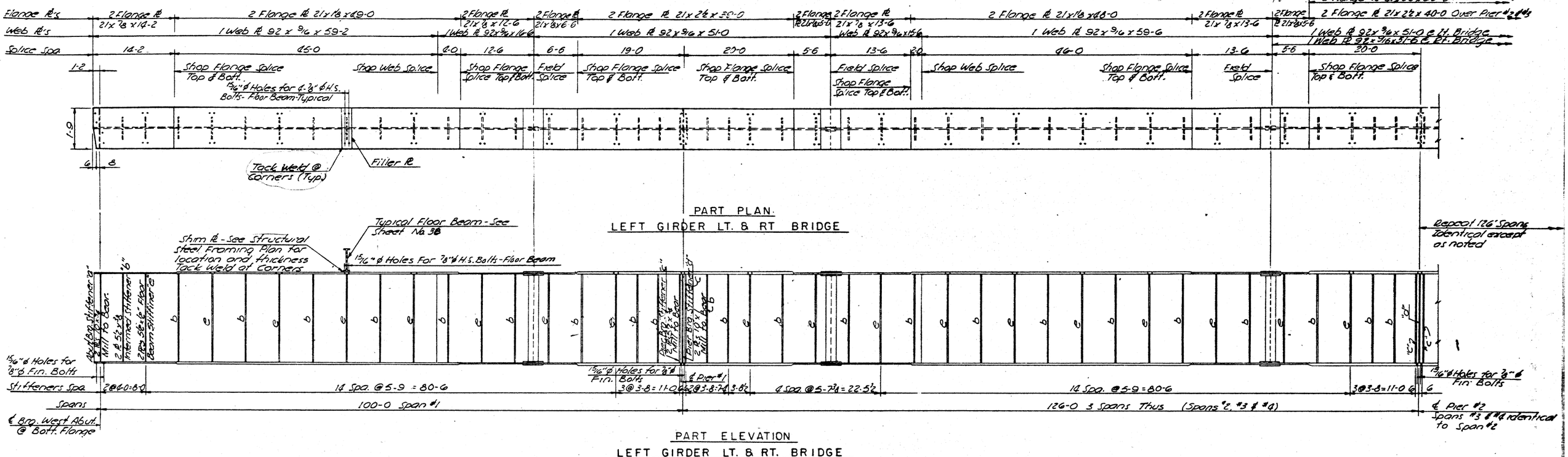
ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12-B
VERMILION COUNTY STA. 1992 + 54

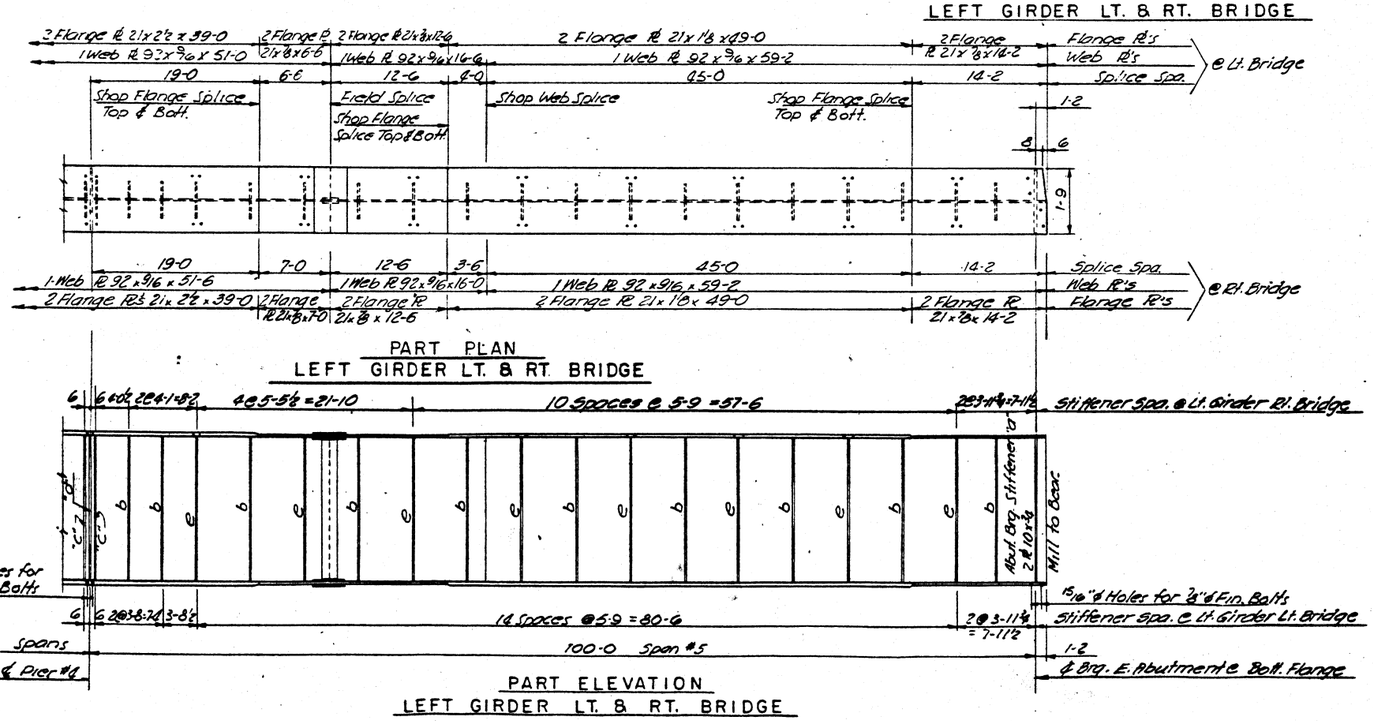
STRUCTURAL STEEL FRAMING PLAN

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
SMH	JWH	DS	JWH			
			LDB	HSM	1.8.62	

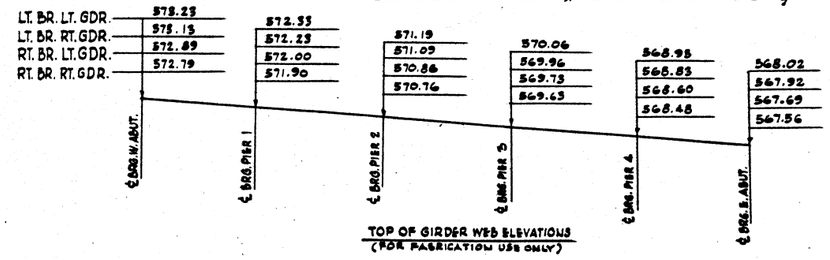
ROUTE	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12P	VERMILION	16	8

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	102	35
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	





Notes:
Gusset Plates not shown. See Structural Steel Framing Plan & Structural Steel Framing Details.
See Sheet No. 39 for Details of Field Splices and Shop Splices
Use 5/16" continuous fillet weld each side of Web for 7/8", 1 1/8" & 1 1/4" Flange R's
Use 1/2" continuous fillet weld each side of Web for 2 1/2" Flange R's
See Sheet No. 39 for Typical Stiffener Welding.



Note: Left Girder Rt. Bridge is identical to Left Girder Lt. Bridge except as noted.
See Part Plan Span #5 this Sheet.

.92
.91
.91
.91

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ILLINOIS DIVISION OF HIGHWAYS

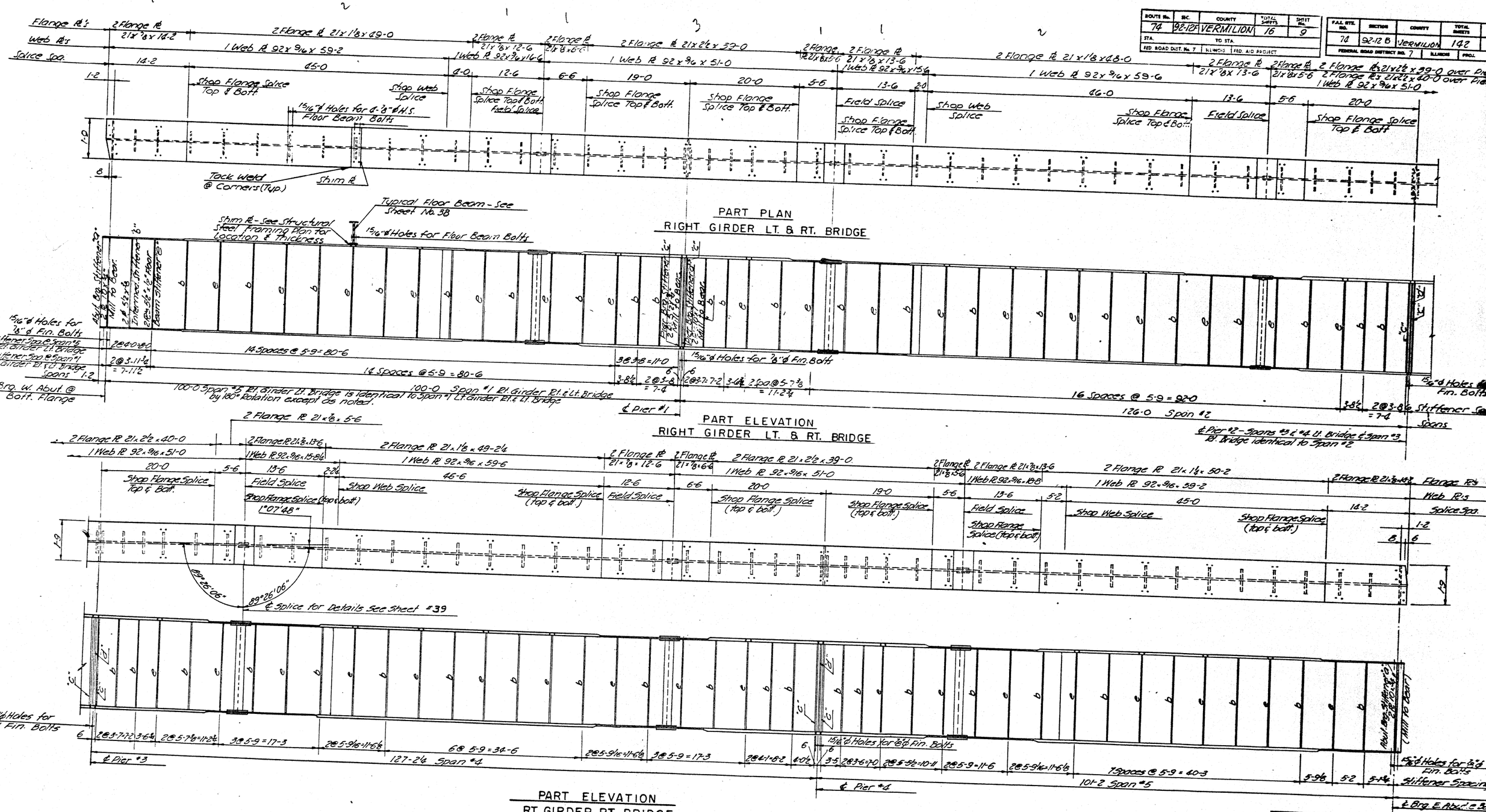
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

GIRDER DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SWH	DR	WES	JWH			
			LDB	HSM	1.8.62	

ROUTE No.	SEC.	COUNTY	TOTAL SHEETS	SHEET No.
74	92-12B	VERMILION	16	9
STA.		TO STA.		
FED. ROAD DIST. No. 7	ILLINOIS	FED. AID PROJECT		

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET No.
74	92-12 B	VERMILION	142	96
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS		PROJ.	



Notes:
Gusset Plates not shown. See Structural Framing Plan & Structural Steel Framing Details.
See Sheet No. 39 for Details of Field Splices and Shop Splices.
Use ⅜" continuous fillet weld each side of web for 18", 18" & 1¼ Flange Pl's.
Use ½" continuous fillet weld each side of web for 24" Flange Pl's See Sh. No. 39 for Typical Stiffeners Welding.

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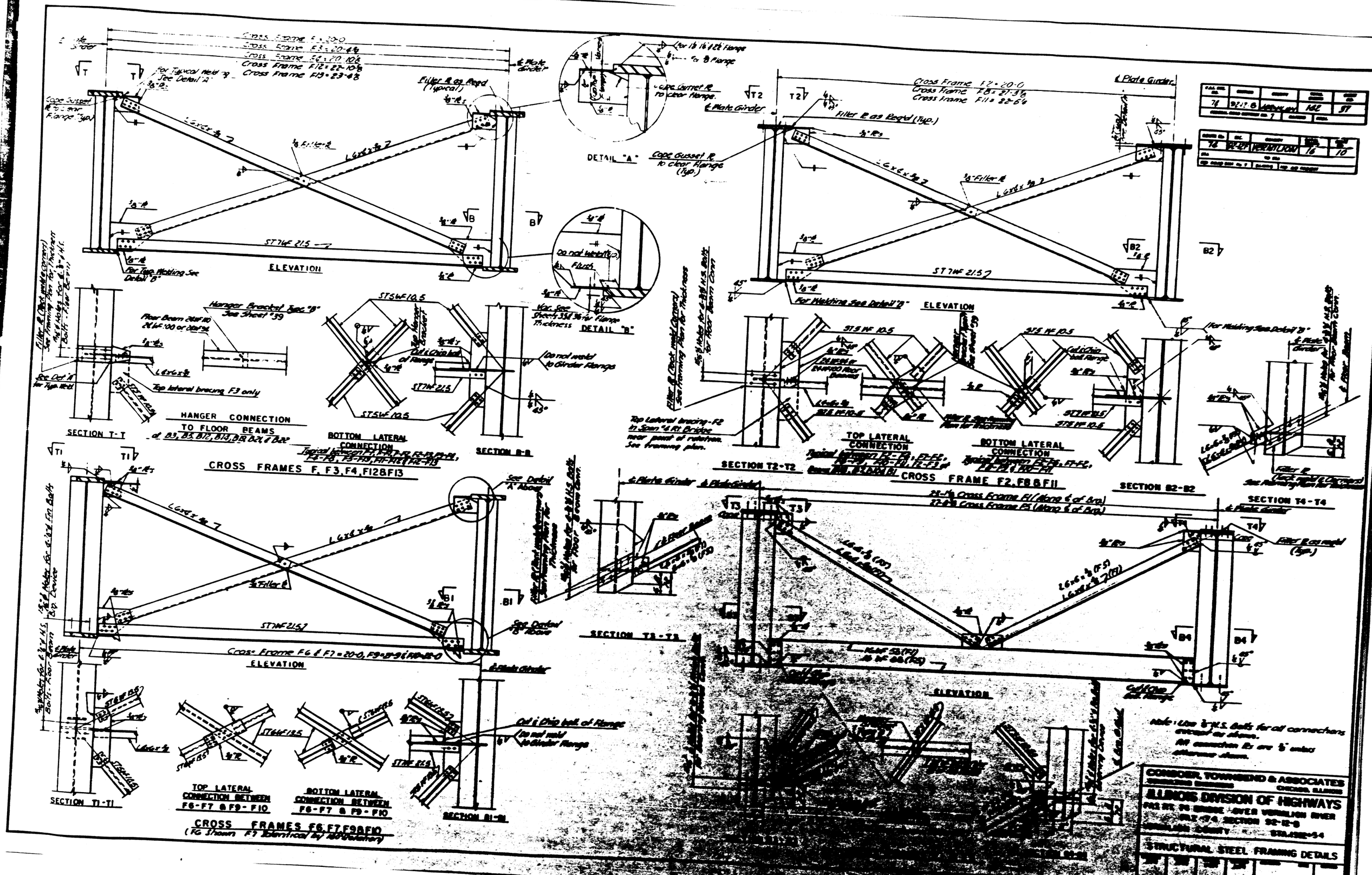
ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI -74 SECTION 92-12 B
VERMILION COUNTY — STA. 1992+54

GIRDER DETAILS

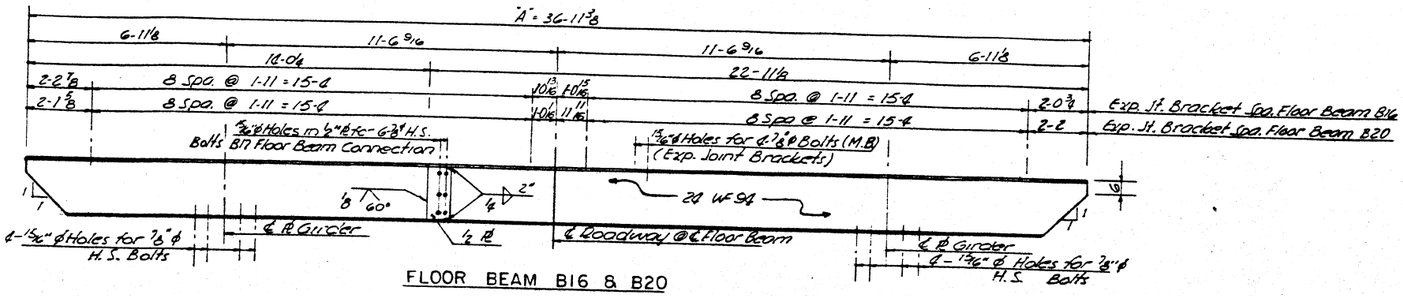
DESIGNED	DRAWN	TRACED	CHECKED	REVISIONS	DATE	ERASURES
SMH	DE	DE	JWH			
			LDB	HSM	4-8-57	



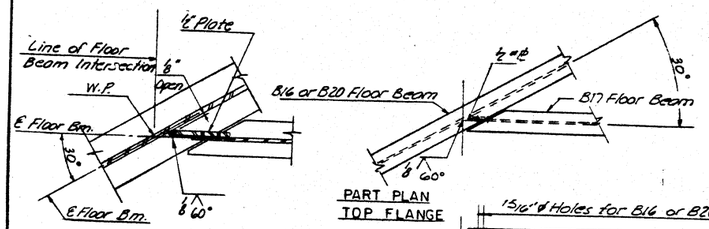
ELEVATION
DETAIL "A"
DETAIL "B"
HANGER CONNECTION TO FLOOR BEAMS
SECTION T-T
BOTTOM LATERAL CONNECTION
SECTION B-B
CROSS FRAMES F, F3, F4, F12 & F13
TOP LATERAL CONNECTION
BOTTOM LATERAL CONNECTION
SECTION T2-T2
CROSS FRAME F2, F8 & F11
SECTION B2-B2
SECTION T4-T4
SECTION T3-T3
SECTION T1-T1
TOP LATERAL CONNECTION BETWEEN F6-F7 & F9-F10
BOTTOM LATERAL CONNECTION BETWEEN F6-F7 & F9-F10
SECTION B1-B1
CROSS FRAMES F6, F7, F9 & F10
CONSOER, TOWNSEND & ASSOCIATES
ILLINOIS DIVISION OF HIGHWAYS
STRUCTURAL STEEL FRAMING DETAILS

ROUTE No.	SEC	COUNTY	SHEET CONTENTS	SHEETS No.
74	92-12F	VERMILION	16	11
STA.	TO STA.			
NEW ROAD OR BRIDGE	WIDENING	USE AND PURPOSE		

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12 B	VERMILION	142	38
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		

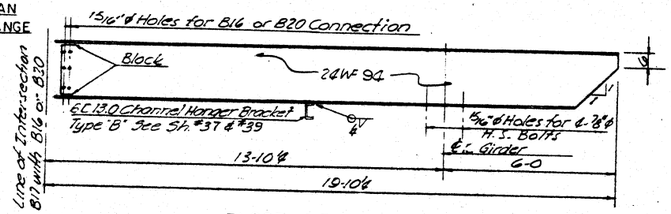


FLOOR BEAM B16 & B20

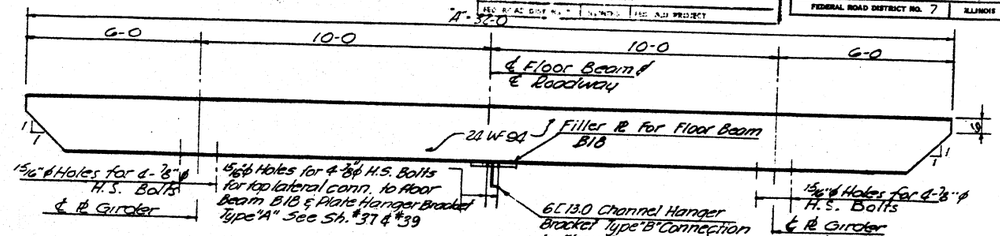


TYPICAL CONNECTIONS
B17 to B16, B17 to B20
& B23 to B24

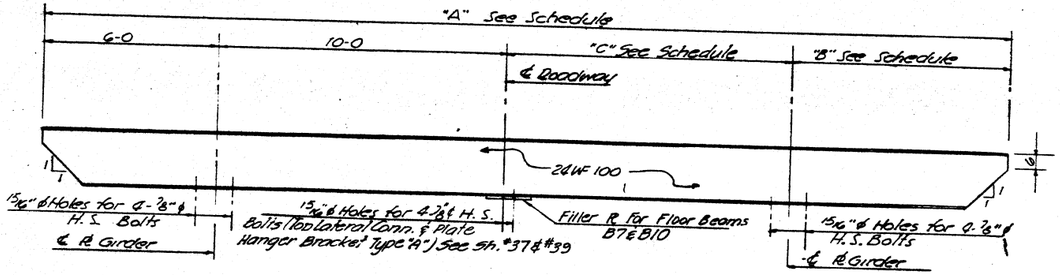
PART PLAN
TOP FLANGE



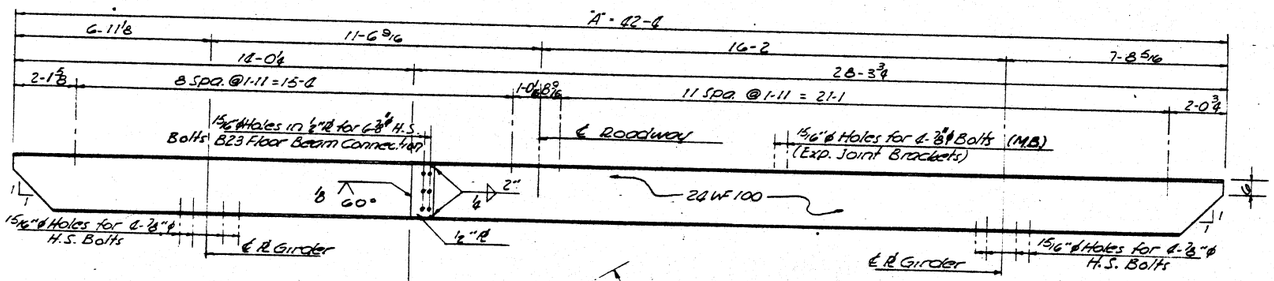
FLOOR BEAM B17



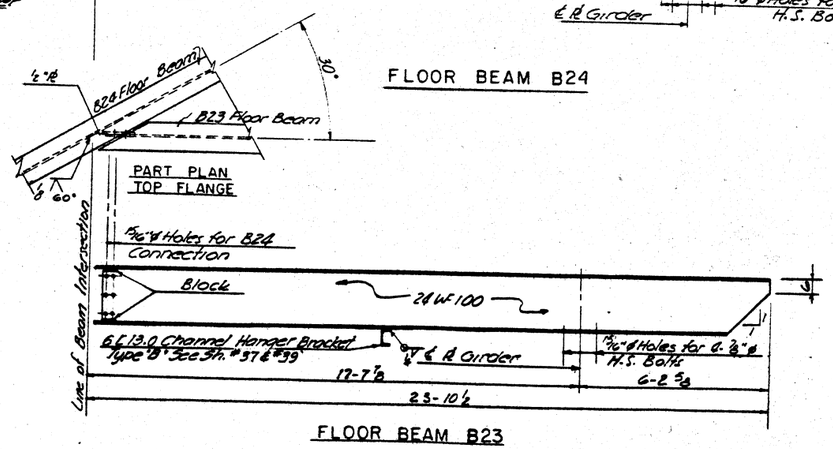
FLOOR BEAMS B, B18 & B19 & B21



FLOOR BEAMS B7 & B10

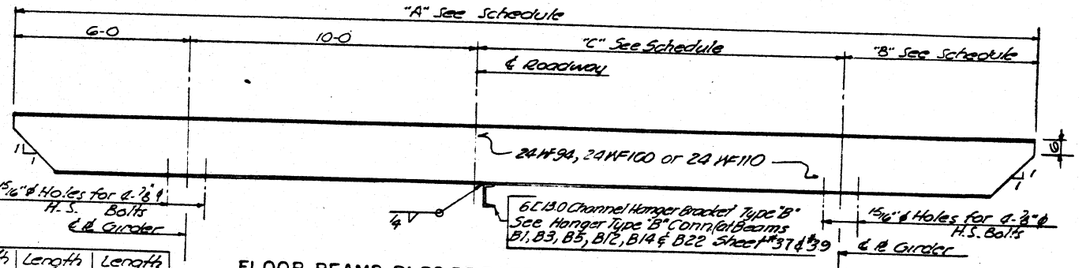


FLOOR BEAM B24



FLOOR BEAM B23

Floor Beam	Size	Length "A"	Length "B"	Length "C"
B	24 WF 94	32-0	——	——
B1	24 WF 94	32-0	5-10	10-2
B2	24 WF 94	32-0	5-7 1/4	10-4 3/4
B3	24 WF 100	32-1	5-5 1/2	10-7 1/2
B4	24 WF 100	32-1	5-2 7/8	10-10 1/8
B5	24 WF 100	32-2	5-1 1/8	11-0 7/8
B6	24 WF 100	32-4	5-0 3/8	11-3 5/8
B7	24 WF 100	32-6	4-11 5/8	11-6 3/8
B8	24 WF 100	32-8	4-11	11-9
B9	24 WF 100	33-0	5-0	12-0
B10	24 WF 100	33-3	5-0 3/8	12-2 5/8
B11	24 WF 100	33-6	5-0 3/4	12-5 1/4
B12	24 WF 110	33-10	5-2	12-8
B13	24 WF 110	34-2	5-3 1/8	12-10 5/8
B14	24 WF 110	34-7	5-5 1/8	13-1 5/8
B15	24 WF 110	35-0	5-7 5/8	13-4 1/8
B16	24 WF 94	36-11 3/8	——	——
B17	24 WF 94	——	——	——
B18	24 WF 94	32-0	——	——
B19	24 WF 94	32-0	——	——
B20	24 WF 94	36-11 3/8	——	——
B21	24 WF 94	32-0	——	——
B22	24 WF 110	35-6	5-11 5/8	19-6 3/8
B23	24 WF 100	——	——	——
B24	24 WF 100	42-6	——	——



FLOOR BEAMS B1, B2, B3, B4, B5, B6, B8, B9, B12, B13, B14, B15 & B22

Note: Tack Weld Filler Rs to Floor Beams as indicated. See Sheet #34 & #37 for size and location.

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ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12B
VERMILION COUNTY STA 1992+54

STRUCTURAL STEEL FRAMING DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
SMH	JWH	WES	JWH			
			LDB	HSM	1.8.62	

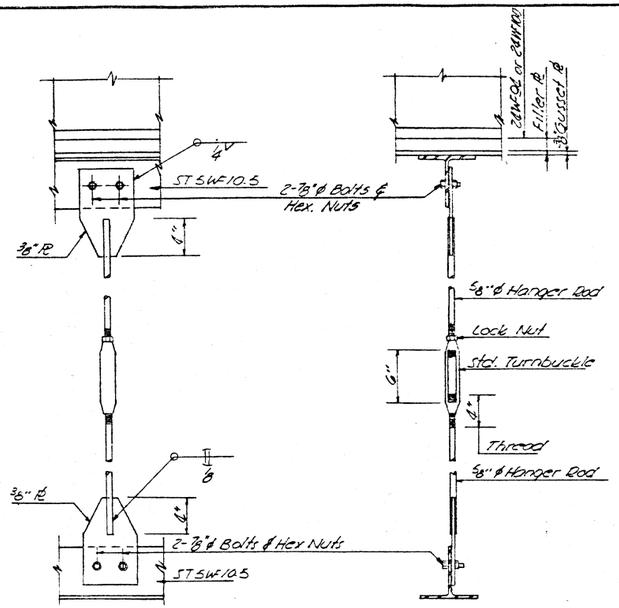
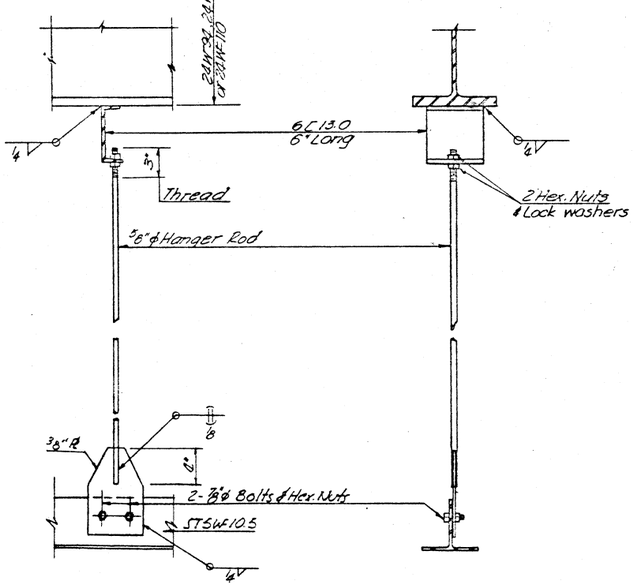


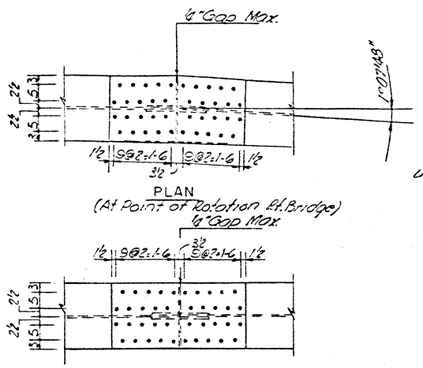
PLATE HANGER TYPE "A"

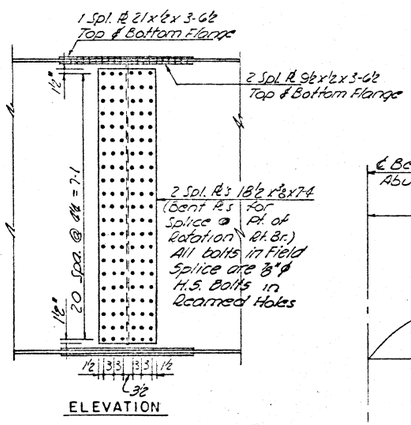
9 Required Rt. Br.
8 Required Lt. Br.
To be used at B.18 Rt. & Lt. Bridge & B1, B7 & B10 Rt. Bridge



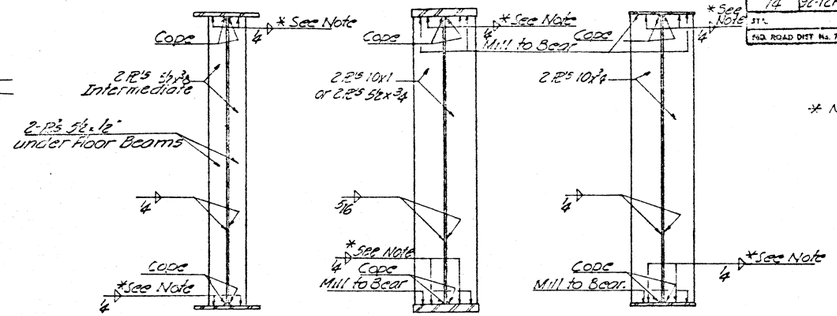
CHANNEL HANGER TYPE "B"

(To be used at B17, B19 & B21 c Rt. & Lt. Bridge & at B3, B5, B12, B14, B22 & B23 Rt. Bridge)
16 - Required Rt. Br.
17 - Required Lt. Br.





FIELD SPLICE



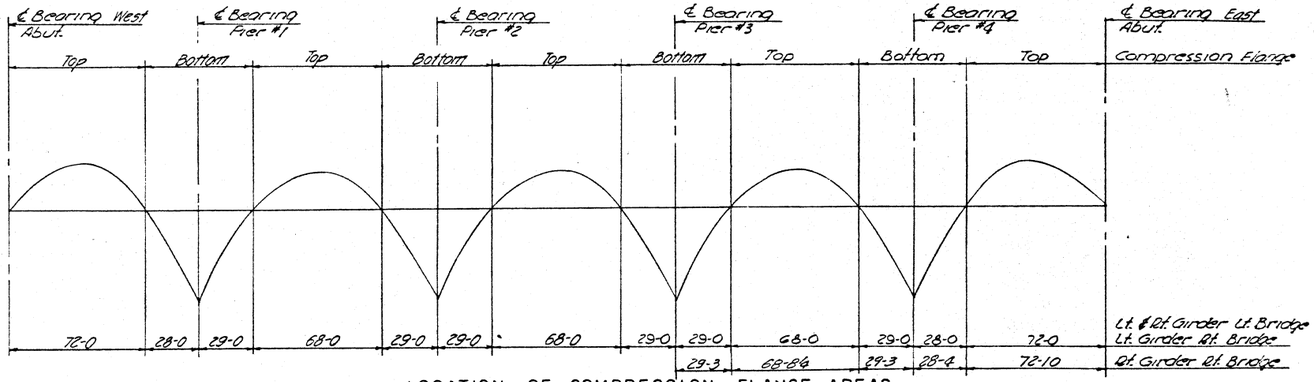
TYPICAL INTERMEDIATE & FLOOR BEAM STIFFENER

BEARING STIFFENER AT PIER

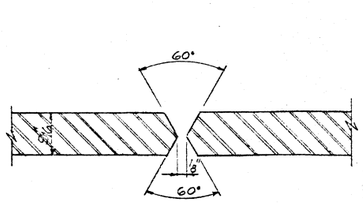
BEARING STIFFENER AT ABUTMENTS

STIFFENERS

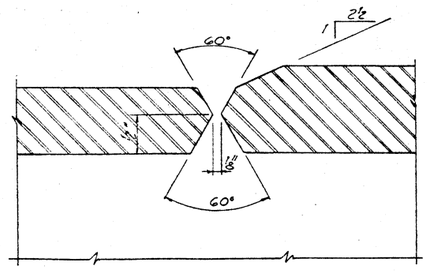
* Note: Weld Stiffeners to compression flange of girder with 4" fillet Weld both sides. See sketch for compression flange areas.



LOCATION OF COMPRESSION FLANGE AREAS



WEB SHOP WELD



FLANGE SHOP WELD

TYPICAL WELDS

SHOP SPLICE

COMPUTED WEIGHT OF
STRUCTURAL STEEL 1,465,560 LBS.

(The above Quantities are for right and left Bridges included.)

ROUTE No.	SEC.	COUNTY	TOTAL SHEETS	SHEET No.
74	92-12A	VERMILION	16	12
ST.	TO STA.			
FED. ROAD DIST. No. 7	ILLINOIS	FED. AID PROJECT		

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET No.
74	92-12 B	VERMILION	142	39
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		

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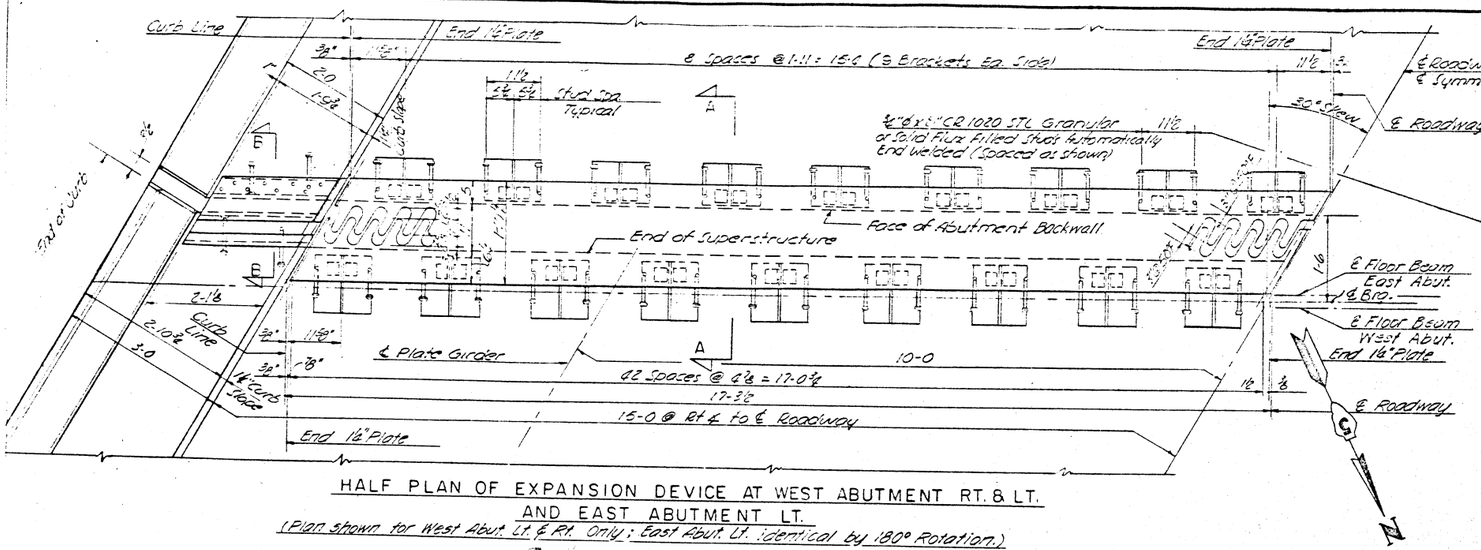
ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

STRUCTURAL STEEL DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SMH	JWH	WES	JWH	HSM	1.8.62	
			LDB			

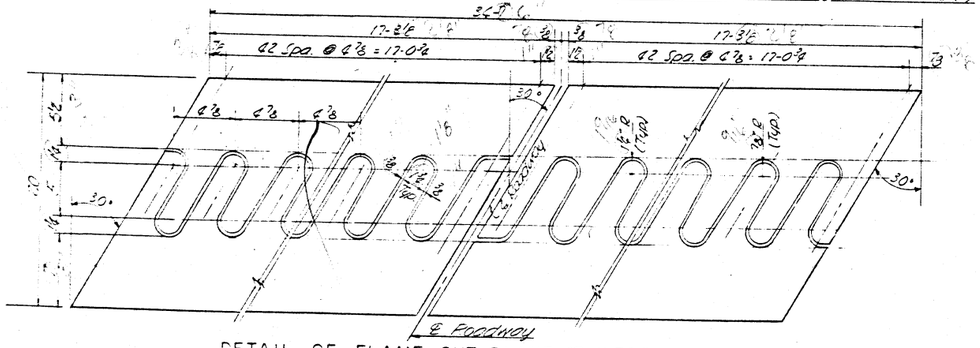
FAI RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	192	170
FEDERAL AID DISTRICT NO.		ILLINOIS	PROJ.	

74	92-12A	VERMILION	16	13



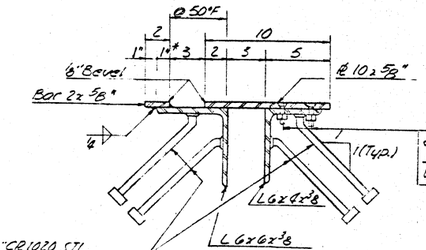
HALF PLAN OF EXPANSION DEVICE AT WEST ABUTMENT RT. & LT. AND EAST ABUTMENT LT.

(Plan shown for West Abut. Lt. & Rt. Only; East Abut. Lt. identical by 180° Rotation.)

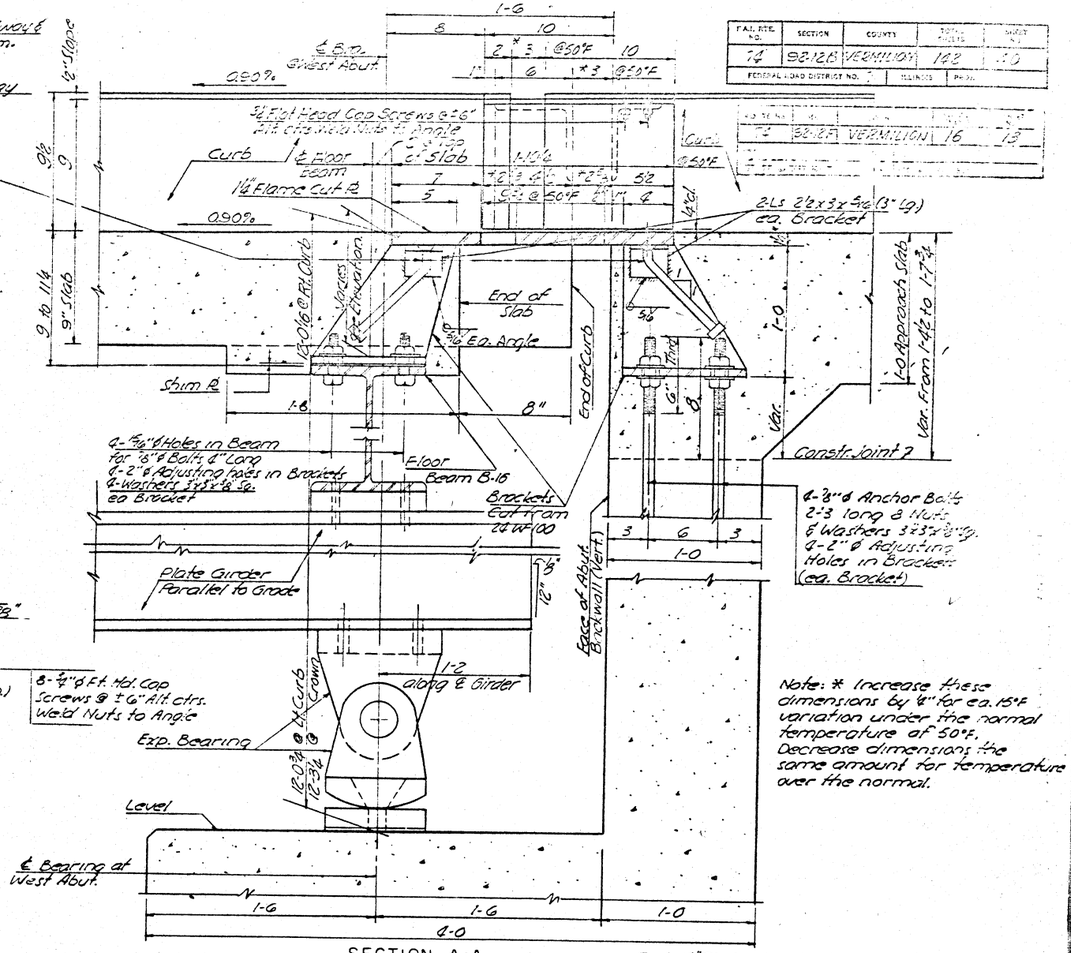


DETAIL OF FLAME CUT PLATE AT WEST ABUT. RT. & LT. AND EAST ABUTMENT LT.

(Plate shall be matched marked)



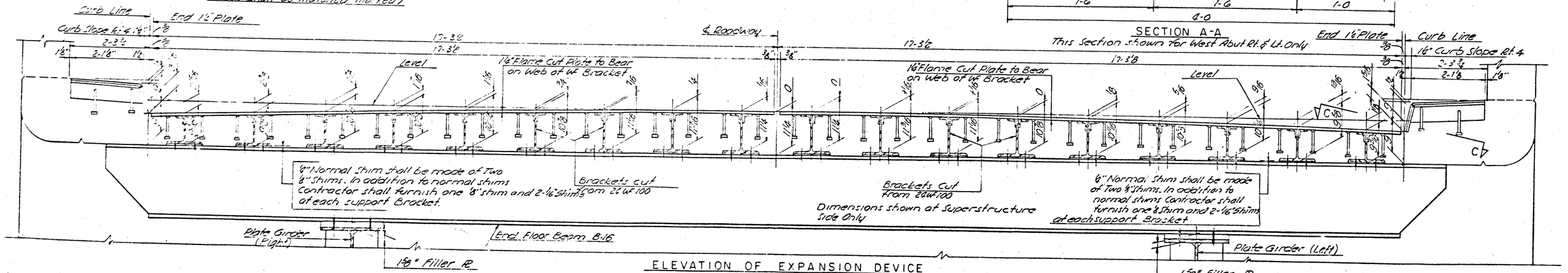
SECTION B-B



SECTION A-A

This Section shown for West Abut Rt. & Lt. Only

Note: * Increase these dimensions by ¼" for ea. 15°F variation under the normal temperature of 50°F. Decrease dimensions the same amount for temperature over the normal.



ELEVATION OF EXPANSION DEVICE AT WEST ABUT. RT. & LT.

Note: For Section C-C See Sheet #41

COMPUTED WEIGHT OF JOINT DEVICE AT WEST ABUT. RT. & LT.

STRUCTURAL STEEL 11,620 LBS.

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

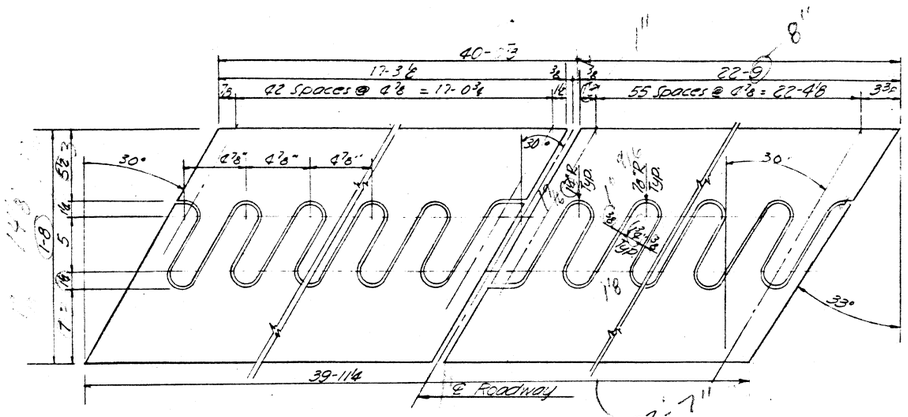
ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

STRUCTURAL STEEL EXP. JOINT DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.T.	J.T.	WES	JWH			
			LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	132	41
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		

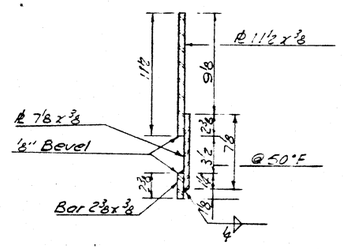
74	92-12F	VERMILION	16	14



DETAIL OF FLAME CUT PLATE

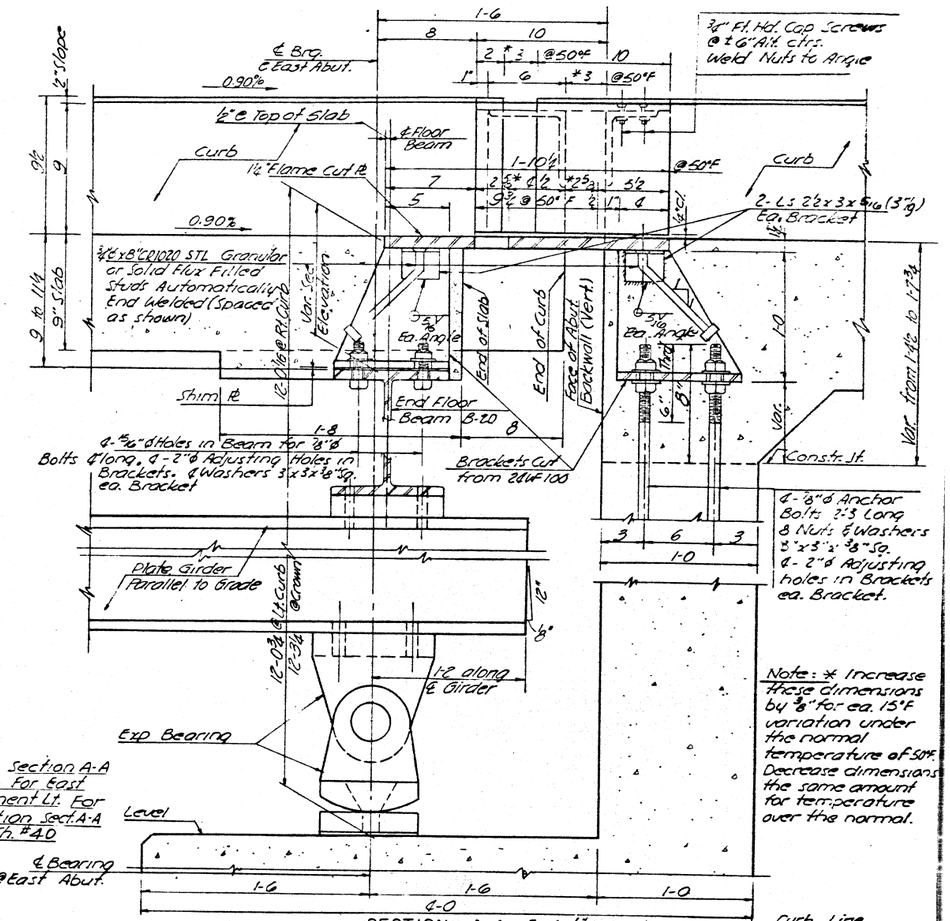
AT EAST ABUTMENT RIGHT

(Plate shall be matched marked)

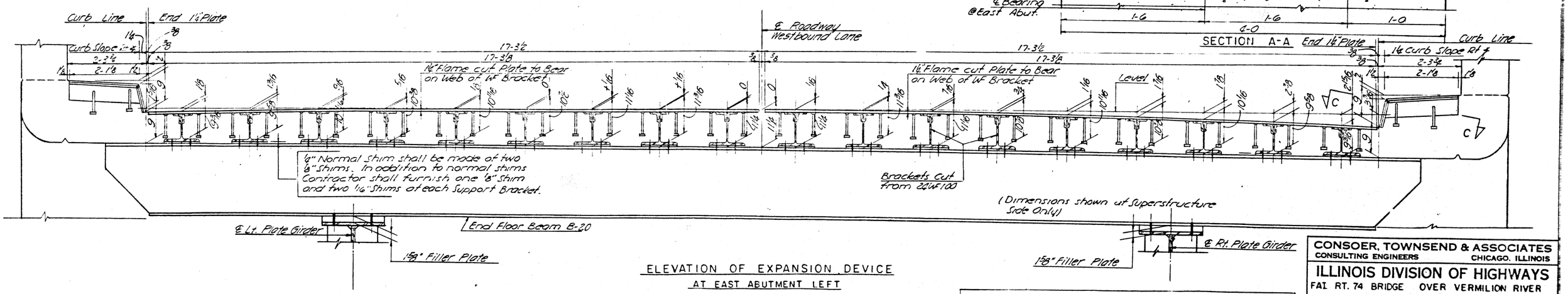


SECTION C-C

Section C-C Shown this Sheet and Sheet No. 40



SECTION A-A



ELEVATION OF EXPANSION DEVICE

AT EAST ABUTMENT LEFT

COMPUTED WEIGHT OF JOINT DEVICE AT EAST ABUTMENT LEFT

STRUCTURAL STEEL 5810 LBS

CONSOER, TOWNSEND & ASSOCIATES

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ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER

FAI - 74 SECTION 92-12 B

VERMILION COUNTY STA. 1992+54

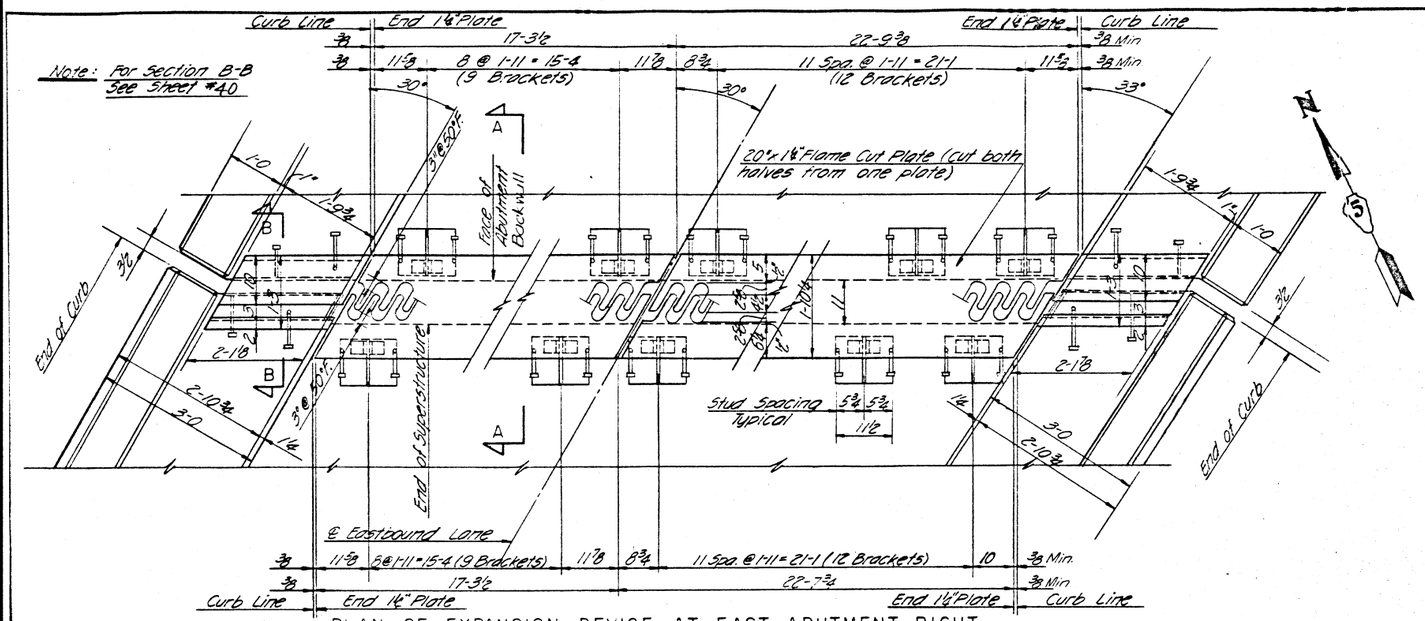
STRUCTURAL STEEL EXP JOINT DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.T.	J.T.	WBS	JWH			
			LDB	HSM	1.8.62	

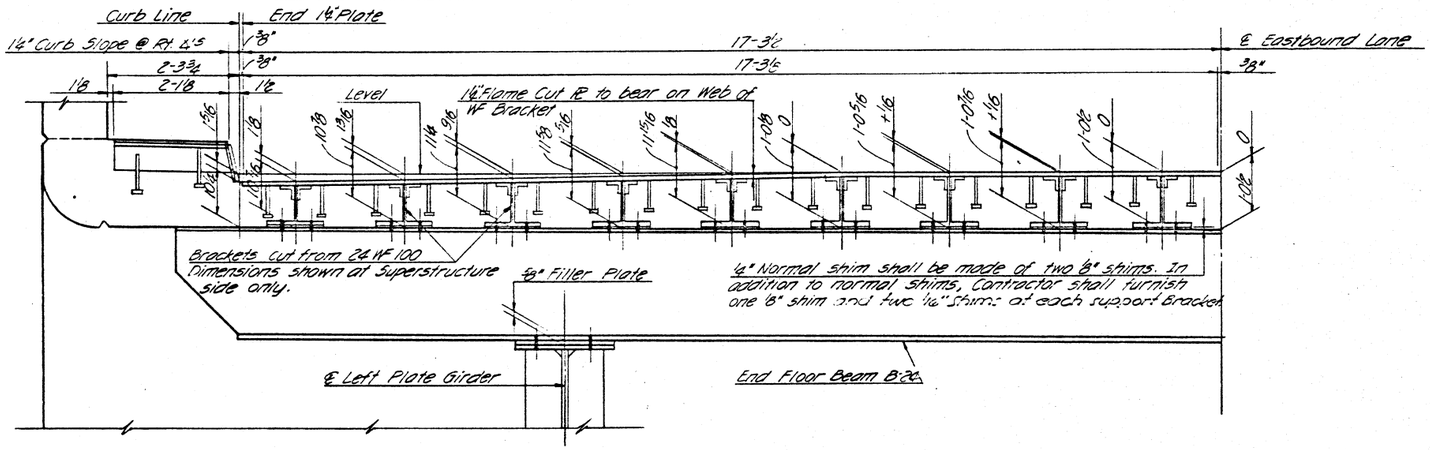
74	92-12F	VERMILION	16	15

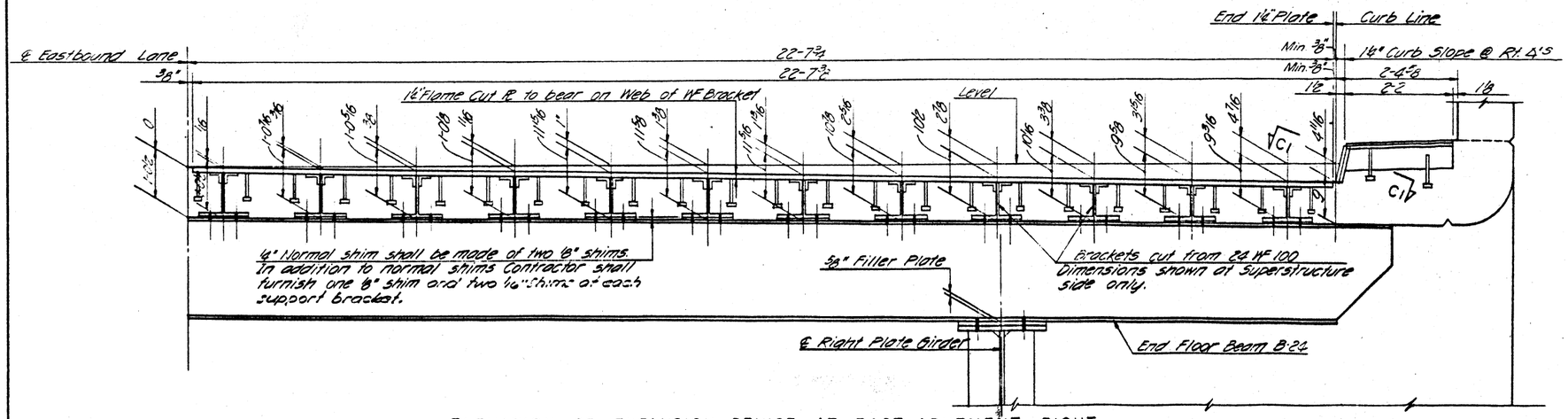
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
74	92-12 B	VERMILION	142	42
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PT. ROJ.		

Note: For Section B-B See Sheet #40

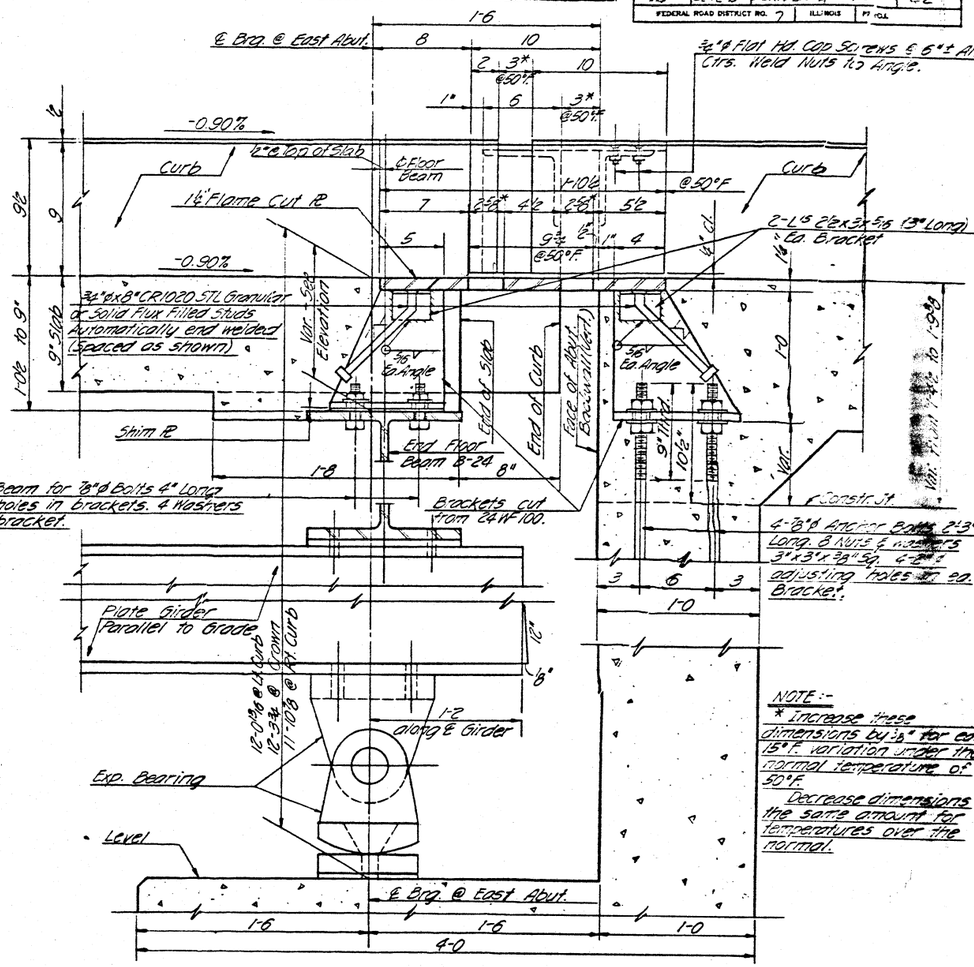


PLAN OF EXPANSION DEVICE AT EAST ABUTMENT RIGHT



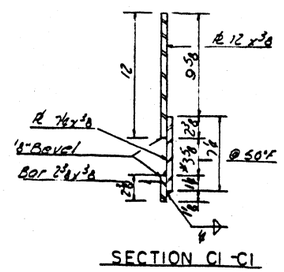


ELEVATION OF EXPANSION DEVICE AT EAST ABUTMENT RIGHT



SECTION A-A
East Abutment Right

COMPUTED WEIGHT OF JOINT DEVICE AT EAST ABUTMENT RIGHT
STRUCTURAL STEEL 6,700 LBS.



SECTION C1-C1

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

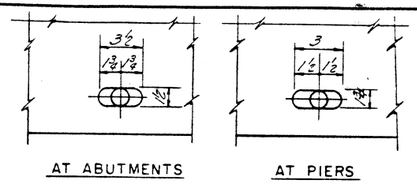
ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12 B
VERMILION COUNTY STA. 1990+54

STRUCTURAL STEEL EXP. JOINT DETAILS

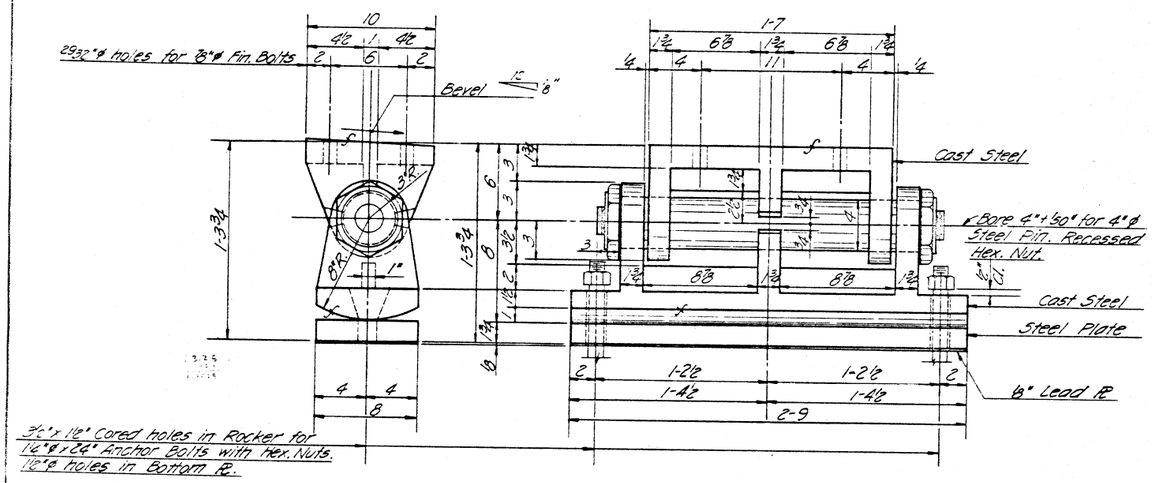
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
JT	JT	DS	JAH			
			LDB	HSM		

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12 B	VERMILION	122	43
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	

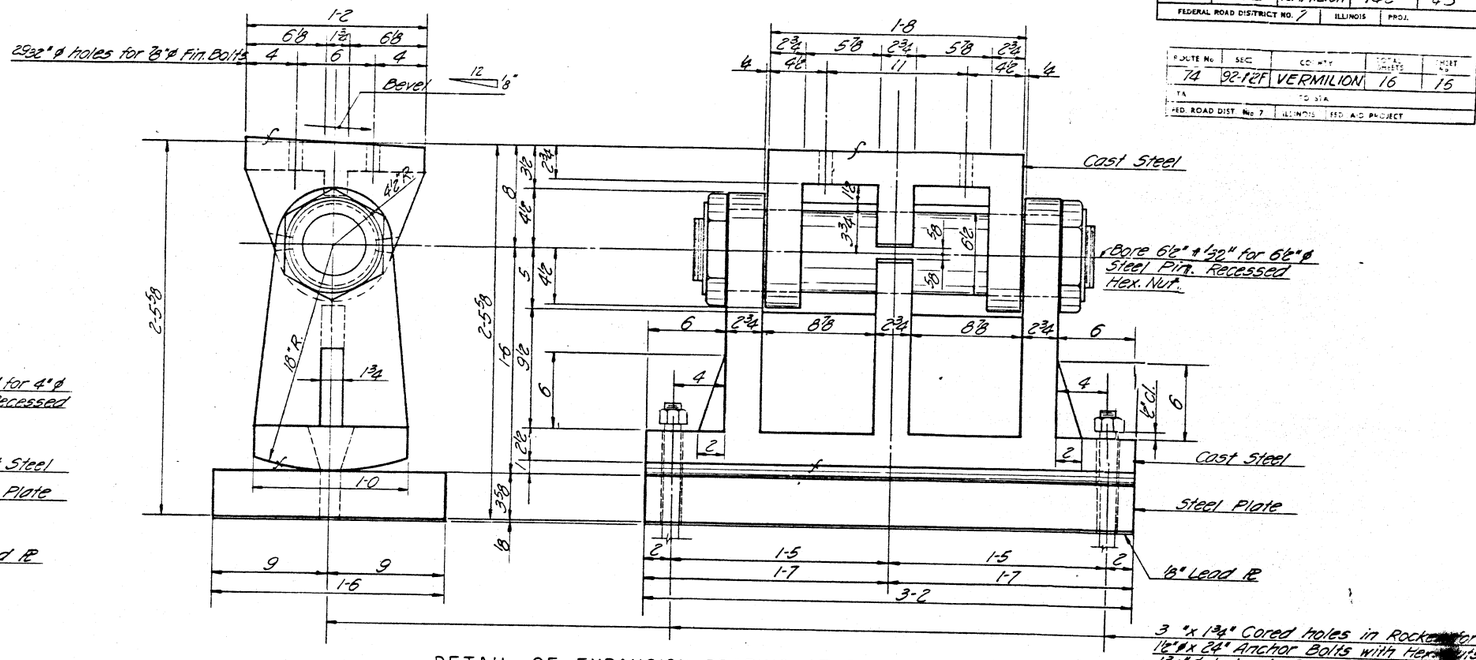
ROUTE No.	SECT.	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12CF	VERMILION	16	15
F.A.	TO STA.			
FED. ROAD DIST. No. 7	ILLINOIS	FED. AID PROJECT		



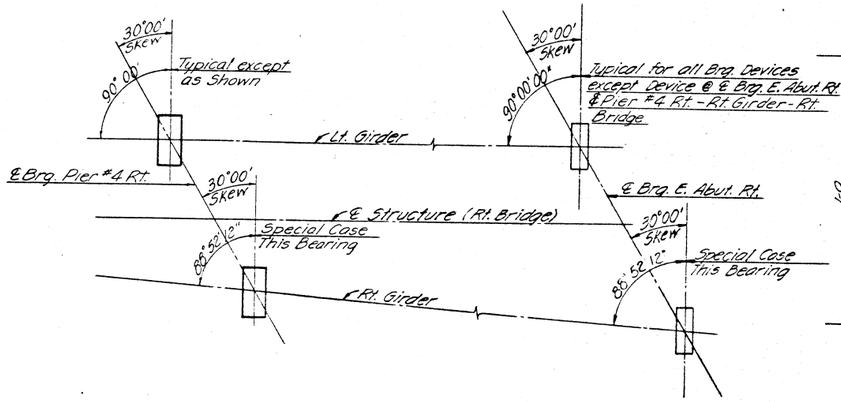
PLAN OF CORED HOLES



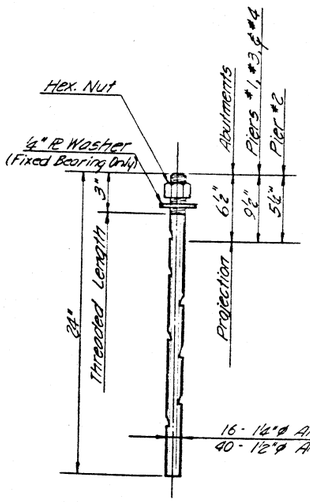
DETAIL OF EXPANSION BEARING AT ABUTMENTS
(8 Required)
(Wgt. @ 680 Lbs. Ea.)



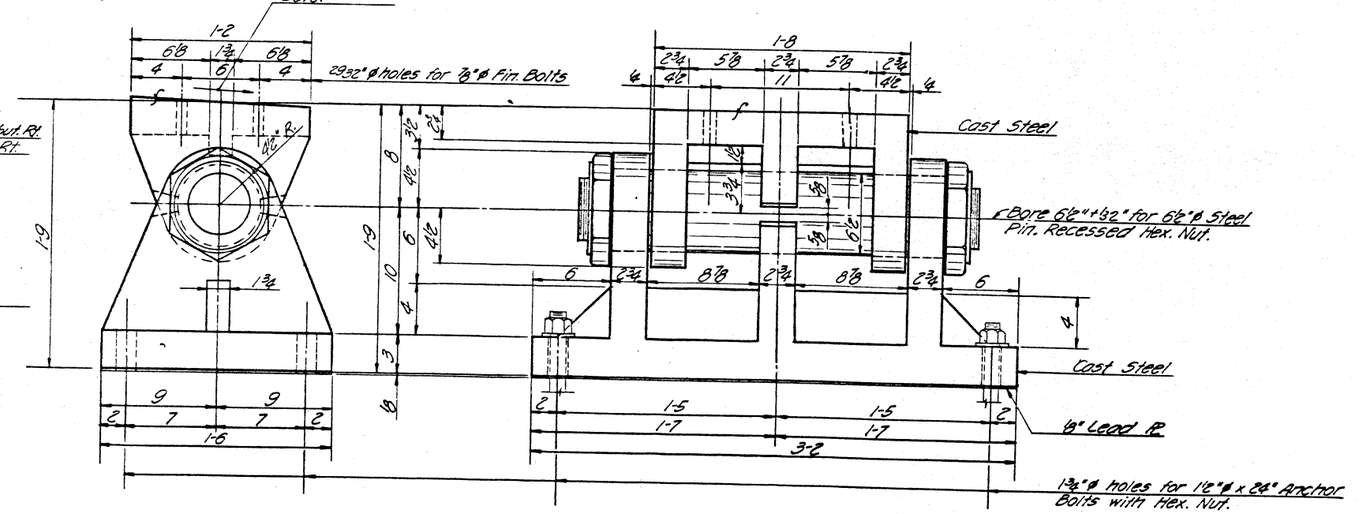
DETAIL OF EXPANSION BEARING AT PIERS NO. 1, 3 & 4
(12 Required)
(Wgt. @ 2320 Lbs. Ea.)



BEARING DEVICE LAYOUT
(Pier #4 & East Abutment Rt. Bridge Shown)



ANCHOR BOLTS
(56 Required)



DETAIL OF FIXED BEARING AT PIER NO. 2
(4 Required)
(Wgt. @ 1750 Lbs. Ea.)

COMPUTED WEIGHT OF BEARING DEVICES
STRUCTURAL STEEL 40,280 LBS.
The above quantities are for Right & Left Bridges.

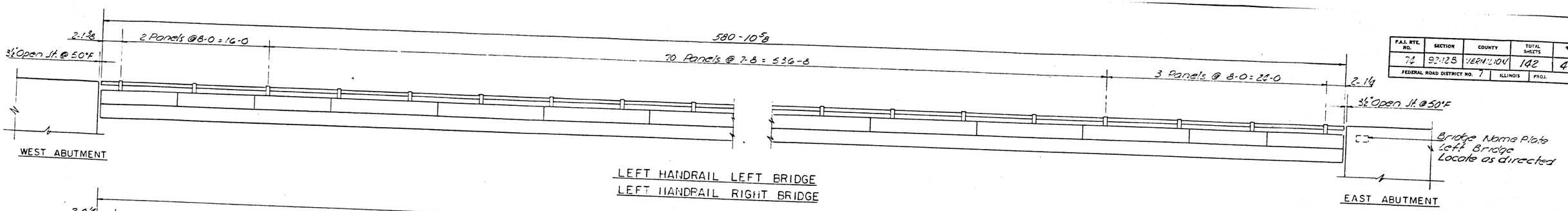
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

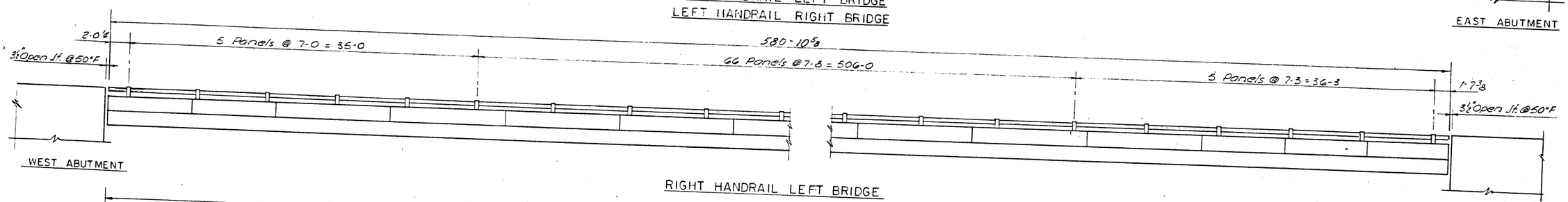
STRUCTURAL STEEL BEARING DEVICES

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SMH	DS	DS	JWH			
			LDB	HSM	1.8.62	

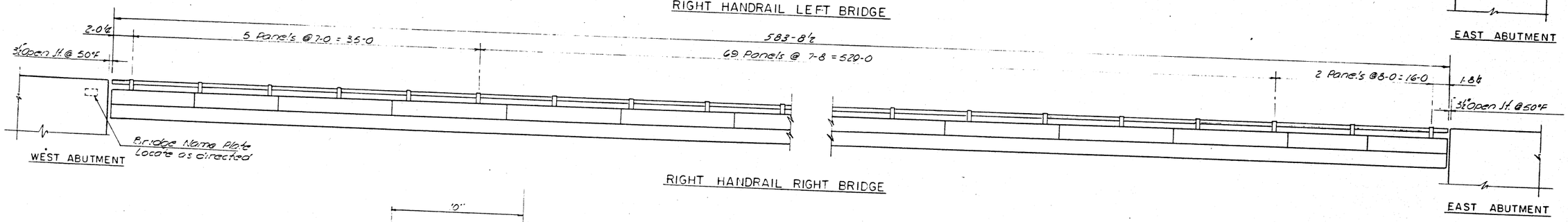
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	44
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	



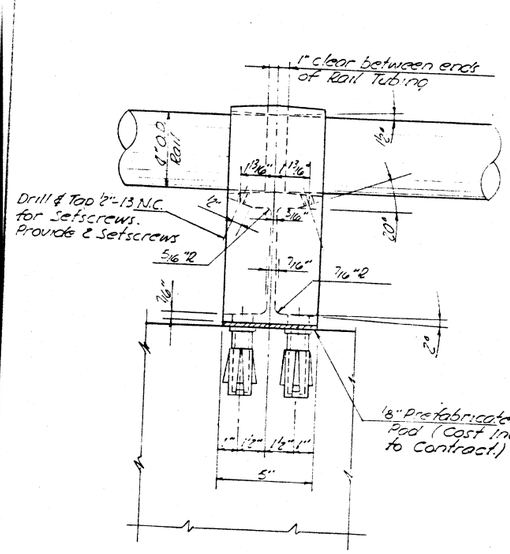
LEFT HANDRAIL LEFT BRIDGE
LEFT HANDRAIL RIGHT BRIDGE



RIGHT HANDRAIL LEFT BRIDGE



RIGHT HANDRAIL RIGHT BRIDGE


1" clear between ends of Rail Tubing
2'-0" Rail
Drill & Tap ⅜"-13 N.C. for Setscrews. Provide 2 Setscrews
⅝"
⅜"-13 N.C.
⅝"
⅜"
⅝"
⅝"
⅜"
⅝"
⅜"
⅝"
⅜

F.A.I. RTE. NO.	SECTION	COUNTY	TO... SHEET
74	92-12B	VERMILION	142
FEDERAL ROAD DISTRICT NO. 7	ILL. NO. 5		

For Brace See Sheet No. 48

WINGWALL "B" & "C"

WINGWALL "A" & "D"

PART SECTION H1-H1
Wingwalls B, C, & E Reinforcing Shown

HALF PLAN
Slab Reinforcing Shown

Note: West Abut. Lt., West Abut. Rt., East Abut Lt. Shown

HALF SECTION H1-H1
(Reinforcing Shown)
For Location Section H1-H1 See Sheet No. 46
For Section V1-V1 See Sheet No. 51

SECTION H2-H2
For Location Section H2-H2 See Sheet No. 46

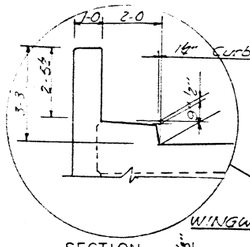
CONSOER, TOWNSEND & ASS
CONSULTING ENGINEERS CHIC

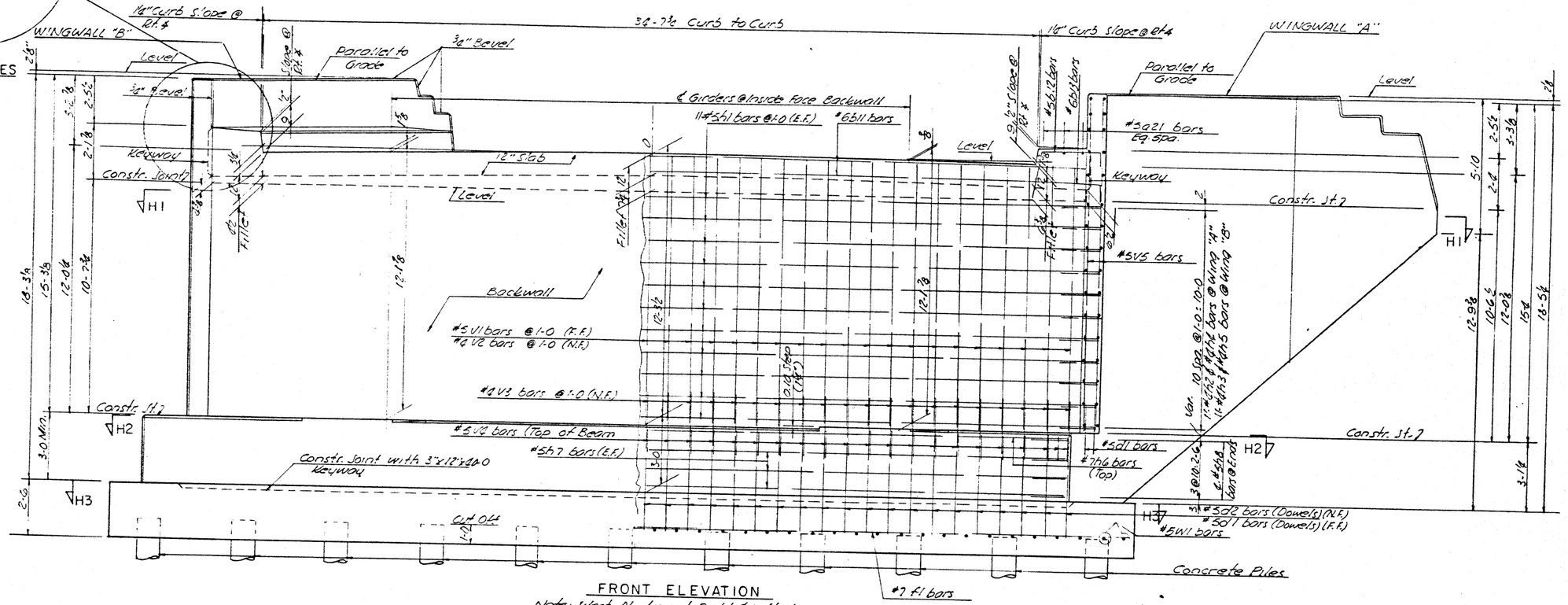
ILLINOIS DIVISION OF HI
FAI RT. 74 BRIDGE OVER VERMI
FAI - 74 SECTION 92-12
VERMILION COUNTY STA.

ABUTMENTS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED
J.T.	J.T.	WES	JWH	
			LDB	HSM

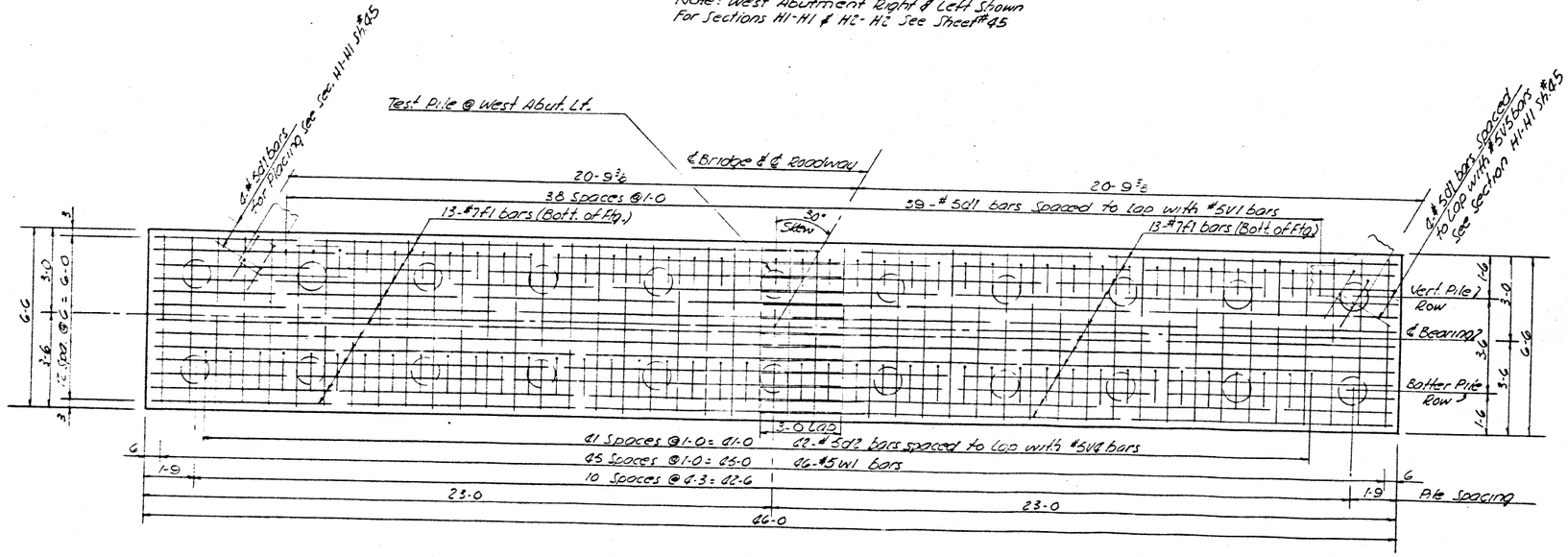
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12 B	VERMILION	142	46
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		





FRONT ELEVATION

Note: West Abutment Right & Left Shown
For Sections H1-H1 & H2-H2 See Sheet #45



SECTION H3 - H3

Note: West Abutment Right & Left Shown

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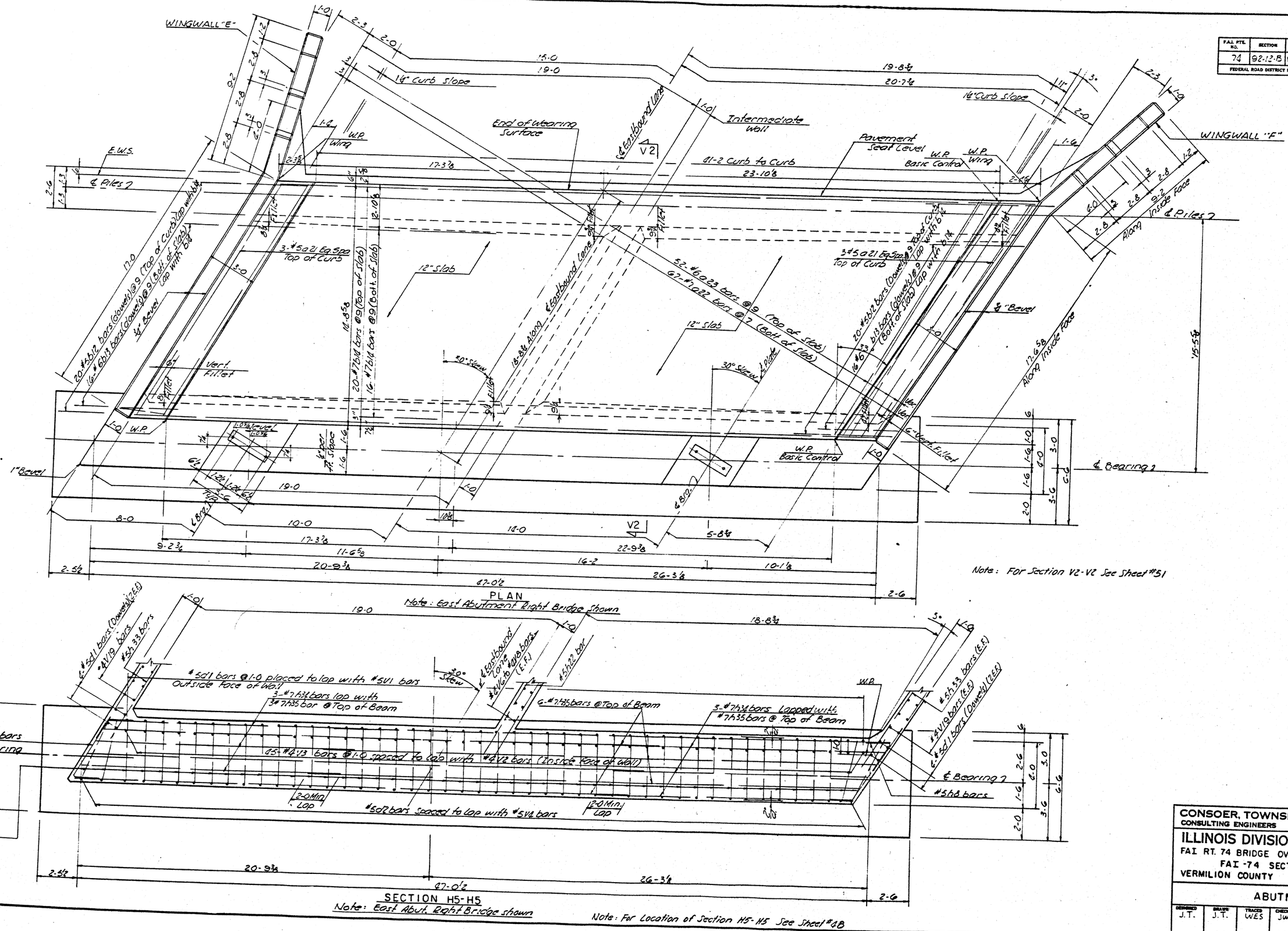
ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

ABUTMENTS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.T.	J.T.	WES	JWH			
			LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12-B	VERMILION	142	47
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS		



CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

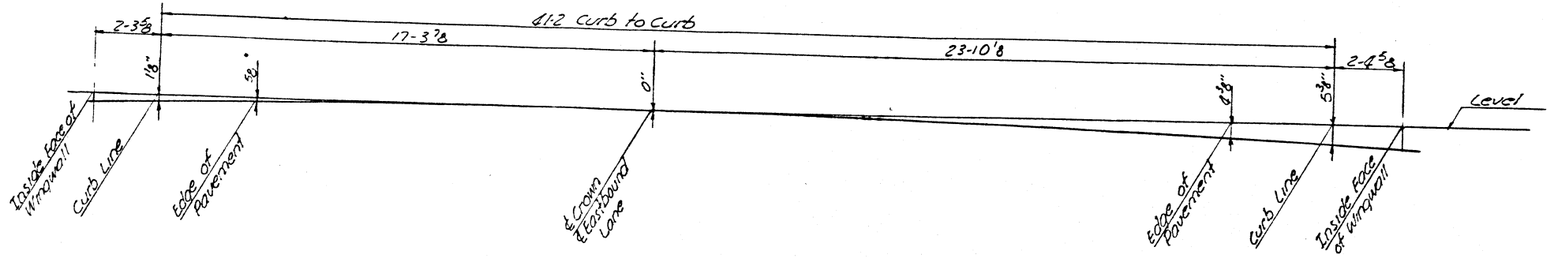
ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

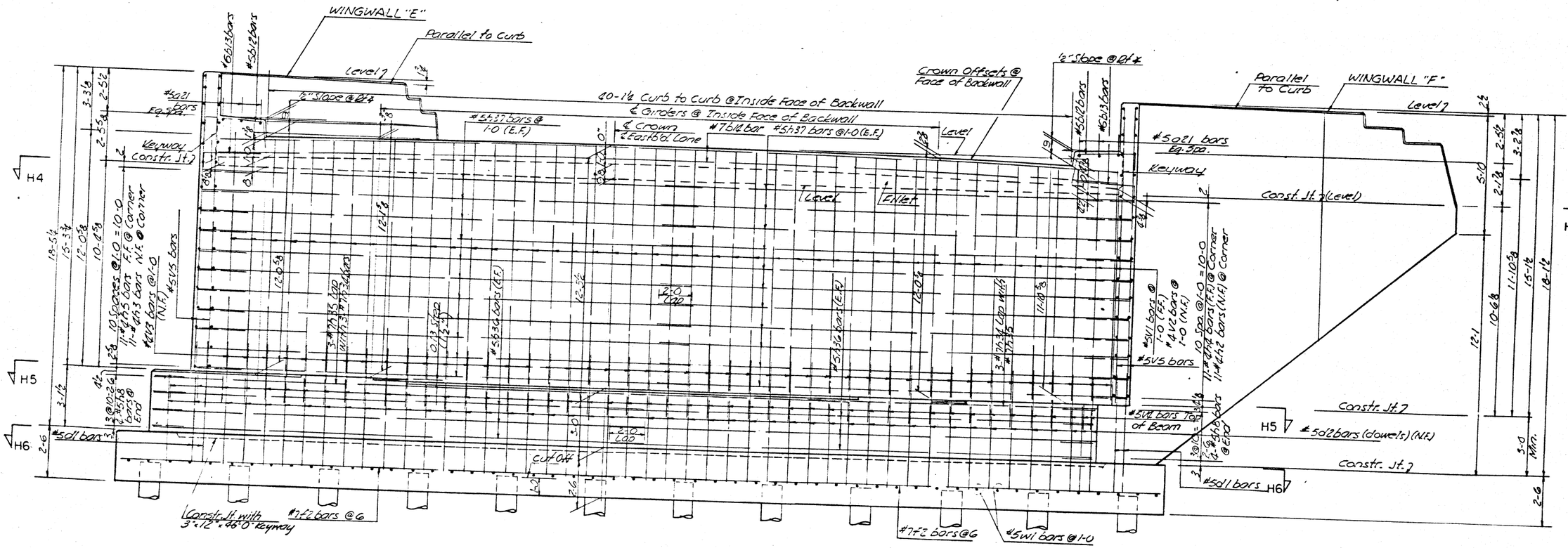
ABUTMENTS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.T.	J.T.	WES	JWH.			
			LDB	HSM	4.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	48
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	FHWA	



CROWN OFFSETS AT END OF WEARING SURFACE
East Abutment – Right Bridge shown
For Additional Offsets see Sheet #47



FRONT ELEVATION
East Abutment – Right Bridge shown
For Sections H4-H4 & H6-H6 See Sheet #49
For Section H5-H5 See Sheet #47

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

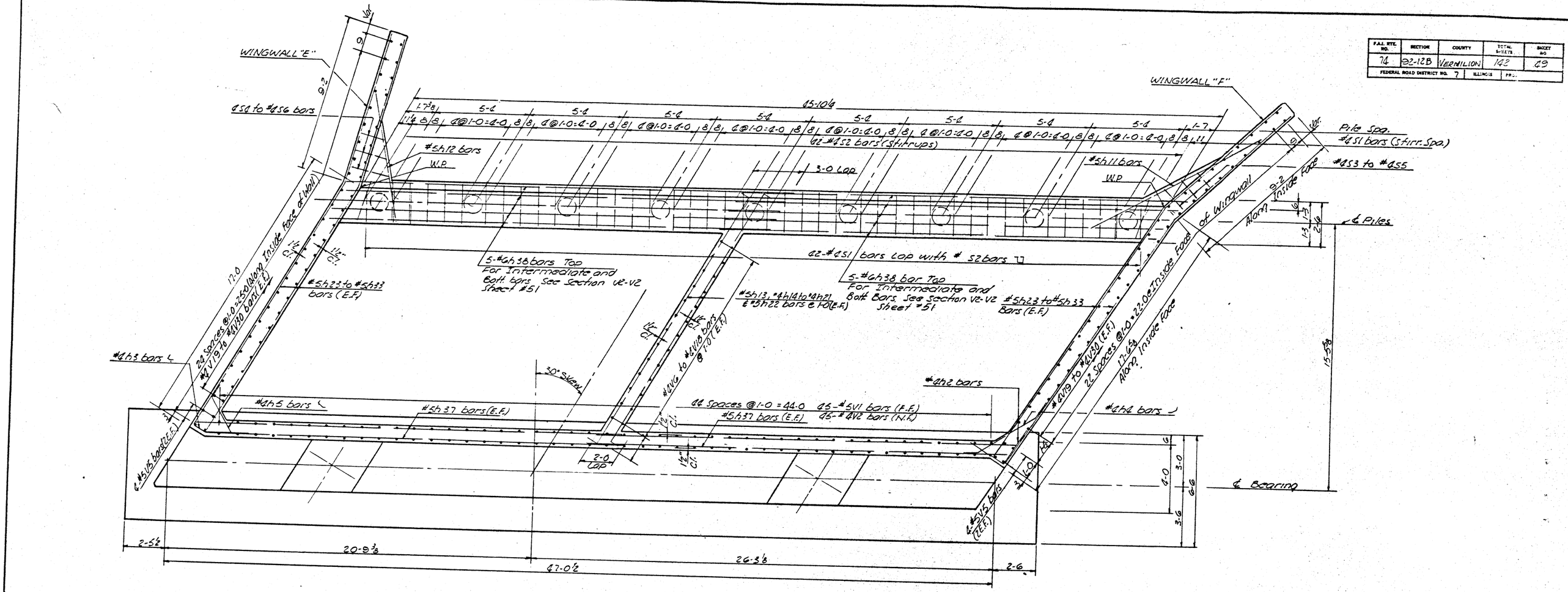
ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

ABUTMENTS

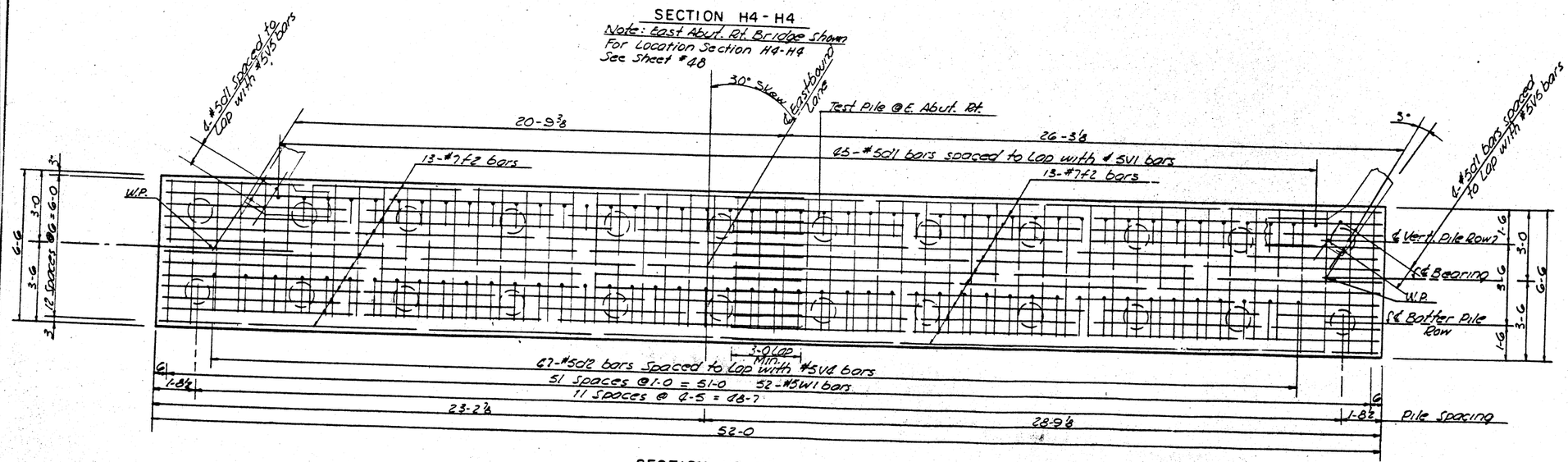
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.T.	J.T.	WES	JWH			
			LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	49
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		



SECTION H4-H4

Note: East Abut. Rt. Bridge Shown For Location Section H4-H4 See Sheet #48



SECTION H6-H6

For Location Section H6-H6 See Sheet #48

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER

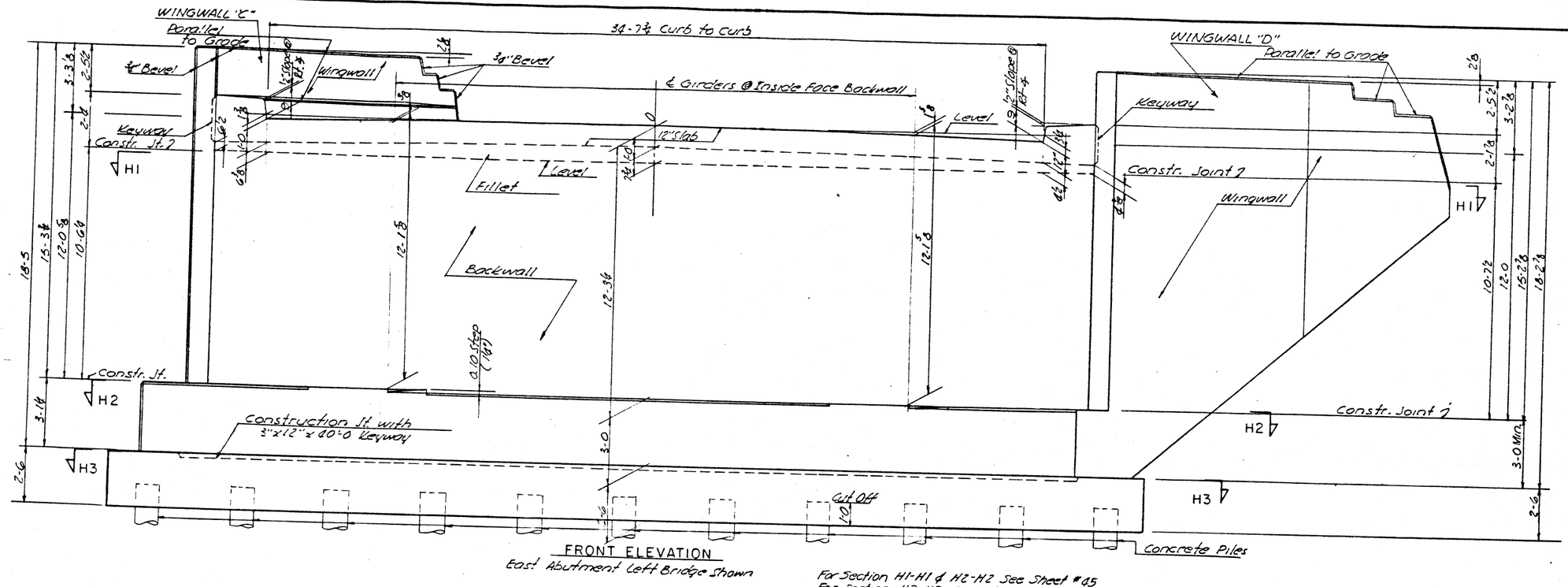
FAI - 74 SECTION 92-12 B

VERMILION RIVER STA. 1992+54

ABUTMENTS

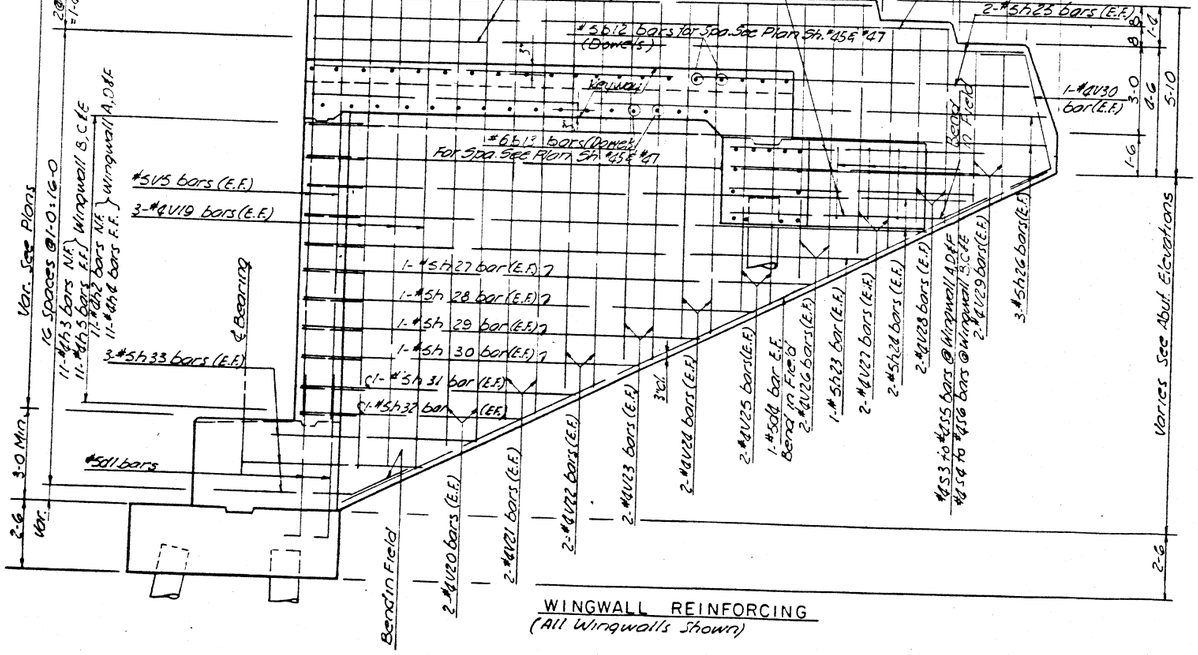
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.T.	J.T.	WES	JWH. LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	122	50
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	

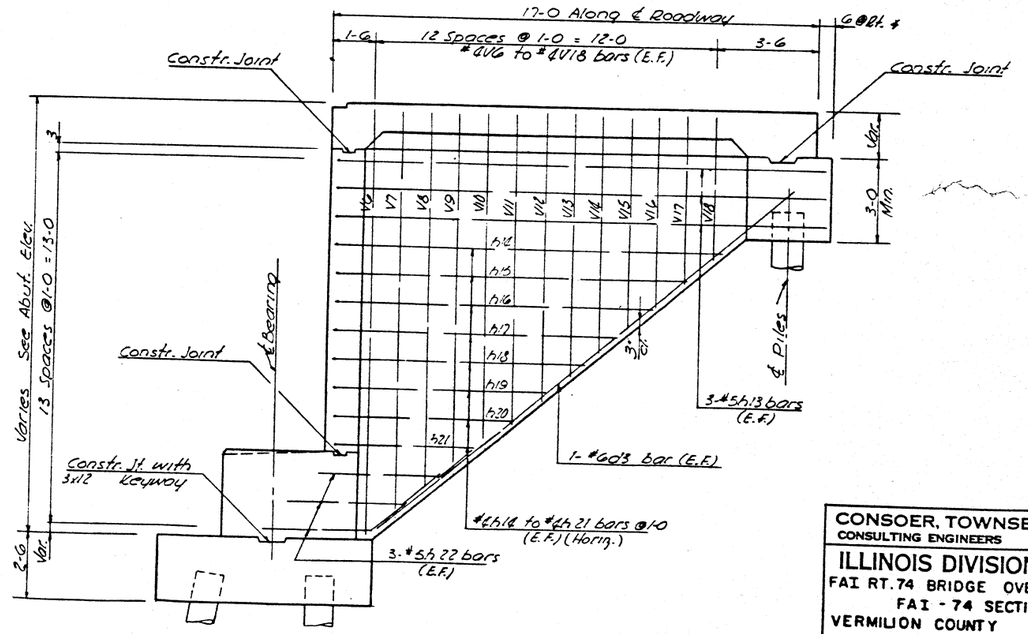


FRONT ELEVATION
East Abutment Left Bridge Shown

For Section H1-H1 & H2-H2 See Sheet #45
For Section H3-H3 See Sheet #46



WINGWALL REINFORCING
(All Wingwalls Shown)



INTERMEDIATE WALL REINFORCING
(Typical)

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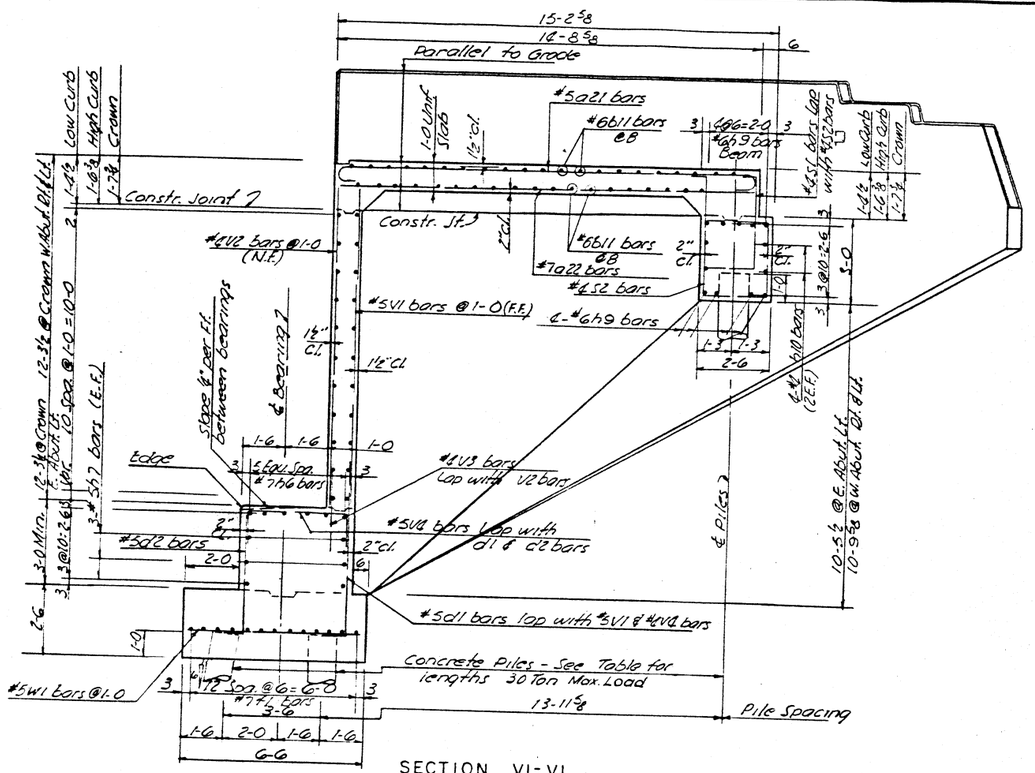
ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

ABUTMENTS

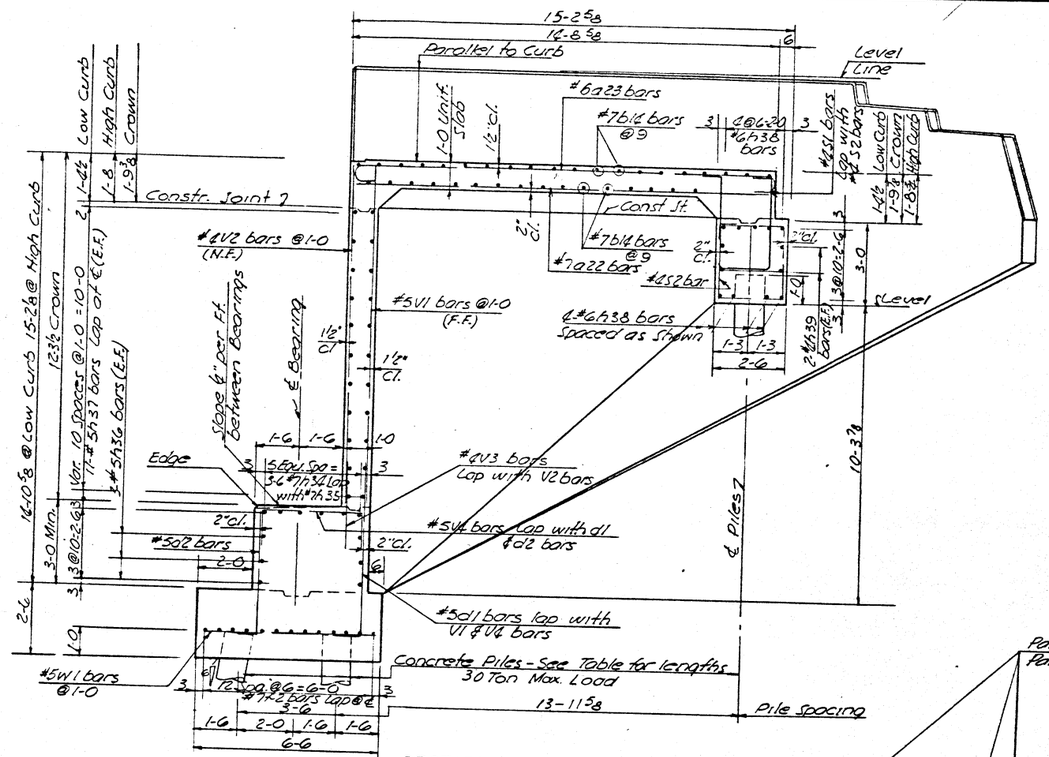
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.T.	J.T.	WES	JWH			
			LDB	HSM	1.8.62	



SECTION VI-VI

West Abut. Rt. & Lt. & East Abut Left shown

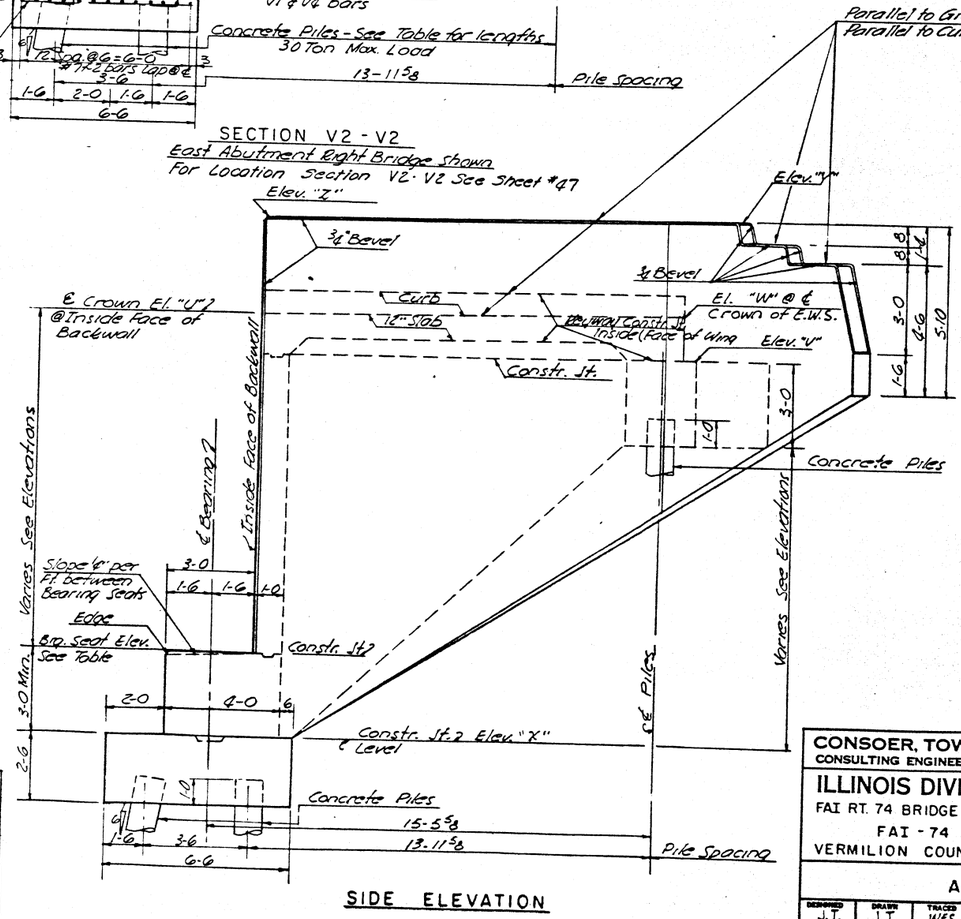
For Location VI-VI See Sheet #45



SECTION V2 - V2

East Abutment Right Bridge shown

For Location Section V2-V2 See Sheet #47



SIDE ELEVATION

ESTIMATED LENGTHS & QUANTITIES OF CONCRETE PILES			
Abutment	Piles at Footing	Piles at Wing Cap Beam	Total
West Abut. Rt.	22 @ 48 = 1056 Lin. Ft.	8 @ 61 = 488 Lin. Ft.	1544 Lin. Ft.
West Abut. Lt.	21 @ 48 = 1008 Lin. Ft.	8 @ 61 = 488 Lin. Ft.	1496 Lin. Ft.
East Abut. Rt.	23 @ 52 = 1196 Lin. Ft.	9 @ 65 = 585 Lin. Ft.	1781 Lin. Ft.
East Abut. Lt.	22 @ 52 = 1144 Lin. Ft.	8 @ 65 = 520 Lin. Ft.	1664 Lin. Ft.
TOTAL FOR FOUR ABUT.			6485 Lin. Ft.
Test Pile @ West Abutment Left			One Each
Test Pile @ East Abutment Right			One Each

TABLE OF ELEVATIONS

Abutment	Abutment Elevation					Wingwall "A"		Wingwall "B"		Wingwall "C"		Wingwall "D"		Wingwall "E"		Wingwall "F"		Brg. Seat Elev. (Top of Conc.)			
	Eberm Elev.	U	V	W	X	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	A	B	C	D
West Abut. Rt.	563.00	576.02	576.53	576.18	560.73	579.30	579.16	579.17	578.99												
West Abut. Lt.	563.00	576.36	576.86	576.51	561.07	579.69	579.51	579.51	579.33											563.83	563.73
East Abut. Rt.	557.75	570.79	568.82	570.66	555.50													566.17	566.07		
East Abut. Lt.	557.75	571.12	569.32	570.97	555.86					574.10	574.28	573.92	574.10	573.79	573.94	573.82	573.63			558.63	558.50
																		558.96	558.86		

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	122	51
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER

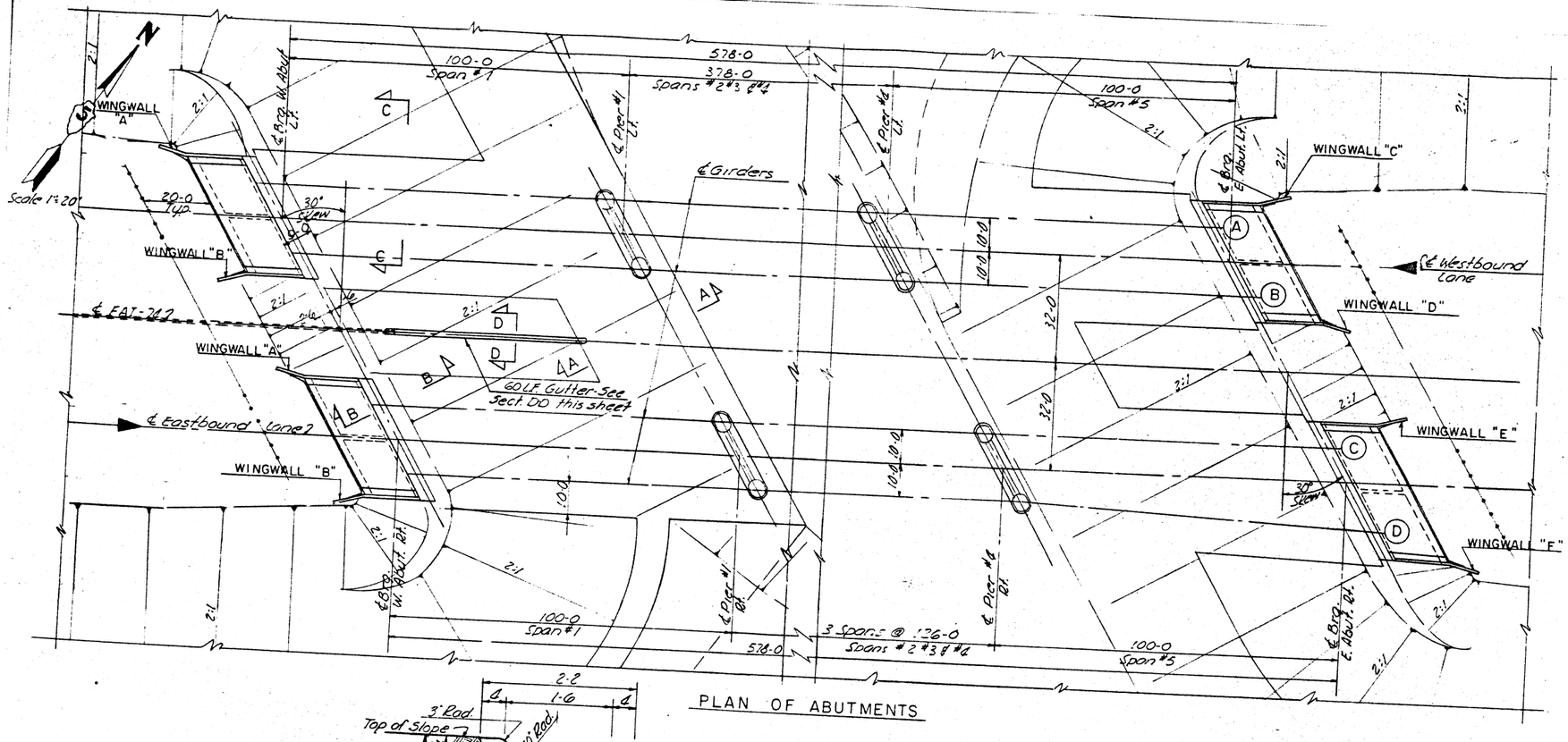
FAI - 74 SECTION 92-12 B

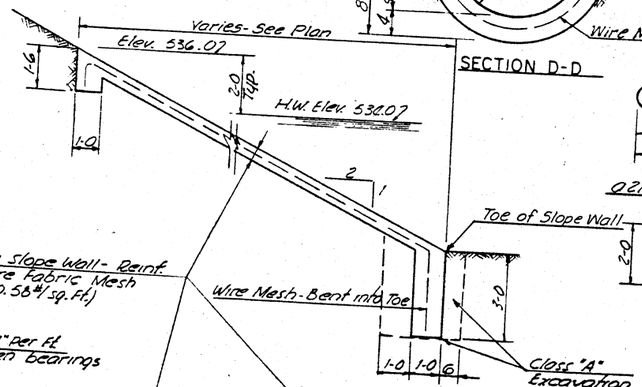
VERMILION COUNTY STA. 1992+54

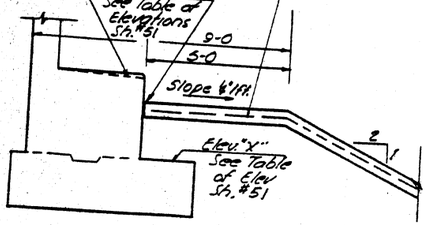
ABUTMENTS

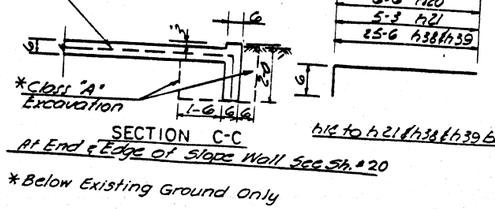
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.T.	J.T.	WES	JWH			
			LDB	HSM	1.8.62	

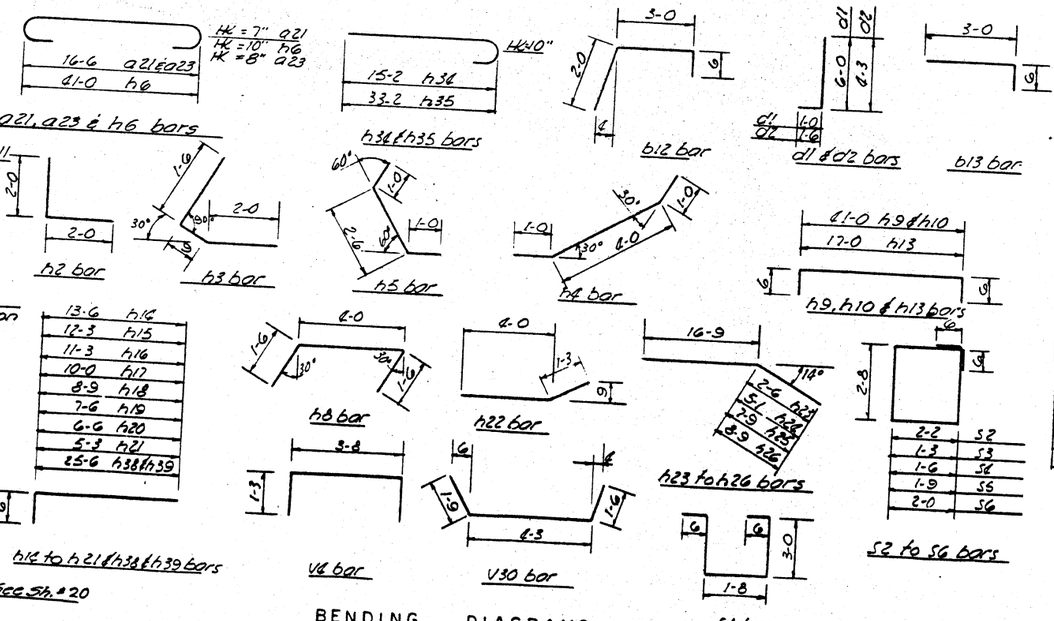
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	103	52
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	FED. AID.		











BENDING DIAGRAMS

Note: All bar dimensions are Out to Out

BAR SCHEDULE

Bar	No.	Size	Length	Spacing	Shape
a21	162	5	17-8	9	
a23	281	7	16-6	7	
a23	52	6	17-10	9	
b11	120	6	39-2	8	
b12	172	5	5-6	As Shown	
b13	140	6	3-6	As Shown	
b14	36	7	22-9	9	
d1	191	5	7-0	1-0	
d2	173	5	5-9	1-0	
d3	8	6	19-0	As Shown	
d4	16	5	27-3	As Shown	
f1	78	7	28-3	6	
f2	26	7	27-3	6	
h1	66	5	20-6	1-0	
h2	44	4	4-0	1-0	
h3	44	4	4-3	1-0	
h4	44	4	6-0	1-0	
h5	44	4	4-6	1-0	
h6	18	7	22-8	As Shown	
h7	18	5	21-0	10	
h8	32	5	7-0	10	
h9	27	6	22-0	As Shown	
h10	12	4	22-0	10	
h11	16	5	11-0	As Shown	
h12	16	5	8-0	As Shown	
h13	28	5	18-0	1-0	
h14	8	4	16-0	1-0	
h15	8	4	12-9	1-0	
h16	8	4	11-9	1-0	
h17	8	4	10-6	1-0	
h18	8	4	9-3	1-0	
h19	8	4	8-0	1-0	
h20	8	4	7-0	1-0	
h21	8	4	5-9	1-0	
h22	28	5	5-3	1-0	
h23	32	5	19-3	As Shown	
h24	48	5	21-10	As Shown	
h25	32	5	28-6	As Shown	
h26	88	5	25-6	1-0	
h27	16	5	16-9	1-0	
h28	16	5	15-6	1-0	
h29	16	5	13-9	1-0	
h30	16	5	11-9	1-0	
h31	16	5	9-9	1-0	
h32	16	5	7-9	1-0	
h33	48	5	7-0	1-0	
h34	6	7	16-0	As Shown	
h35	6	7	34-0	As Shown	
h36	12	5	26-3	10	
h37	44	5	26-0	1-0	
h38	18	6	26-0	As Shown	
h39	8	4	26-0	10	

Bar	No.	Size	Length	Spacing	Shape
V1	162	5	11-10	1-0	
V2	162	4	11-10	1-0	
V3	162	4	2-6	1-0	
V4	176	5	6-3	As Shown	
V5	32	5	15-0	1-0	
V6	8	4	15-0	1-0	
V7	8	4	14-2	1-0	
V8	8	4	13-4	1-0	
V9	8	4	12-6	1-0	
V10	8	4	11-8	1-0	
V11	8	4	10-10	1-0	
V12	8	4	10-0	1-0	
V13	8	4	9-2	1-0	
V14	8	4	8-4	1-0	
V15	8	4	7-6	1-0	
V16	8	4	6-8	1-0	
V17	8	4	5-10	1-0	
V18	8	4	5-0	1-0	
V19	48	4	16-9	1-0	
V20	32	4	15-9	1-0	
V21	32	4	14-9	1-0	
V22	32	4	13-9	1-0	
V23	32	4	12-9	1-0	
V24	32	4	11-9	1-0	
V25	32	4	10-9	1-0	
V26	32	4	9-9	1-0	
V27	32	4	8-0	1-0	
V28	32	4	7-0	1-0	
V29	32	4	5-3	1-0	
V30	16	4	7-6	As Shown	
S1	153	4	8-8	As Shown	
S2	153	4	10-8	As Shown	
S3	4	4	8-10	1-0	
S4	8	4	9-4	1-0	
S5	8	4	9-10	1-0	
S6	4	4	10-4	1-0	
W1	190	5	6-0	1-0	

ABUTMENT QUANTITIES

Class 'A' Concrete	526.9	Cu. Yds.
Reinforcement Steel	62,760	Lbs.

Note: The above quantities are for four Abutments.

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI-74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

ABUTMENTS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.T.	J.T.	IVES	JWH			
			LDB	HSM	1.8.62	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	162	53
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		

WEST ABUTMENT LT.

EAST ABUTMENT LT.

WEST ABUTMENT RT.

EAST ABUTMENT RT.

GENERAL LAYOUT PLAN OF ABUTMENTS - BEARING SEAT STEPS & ELEVATIONS

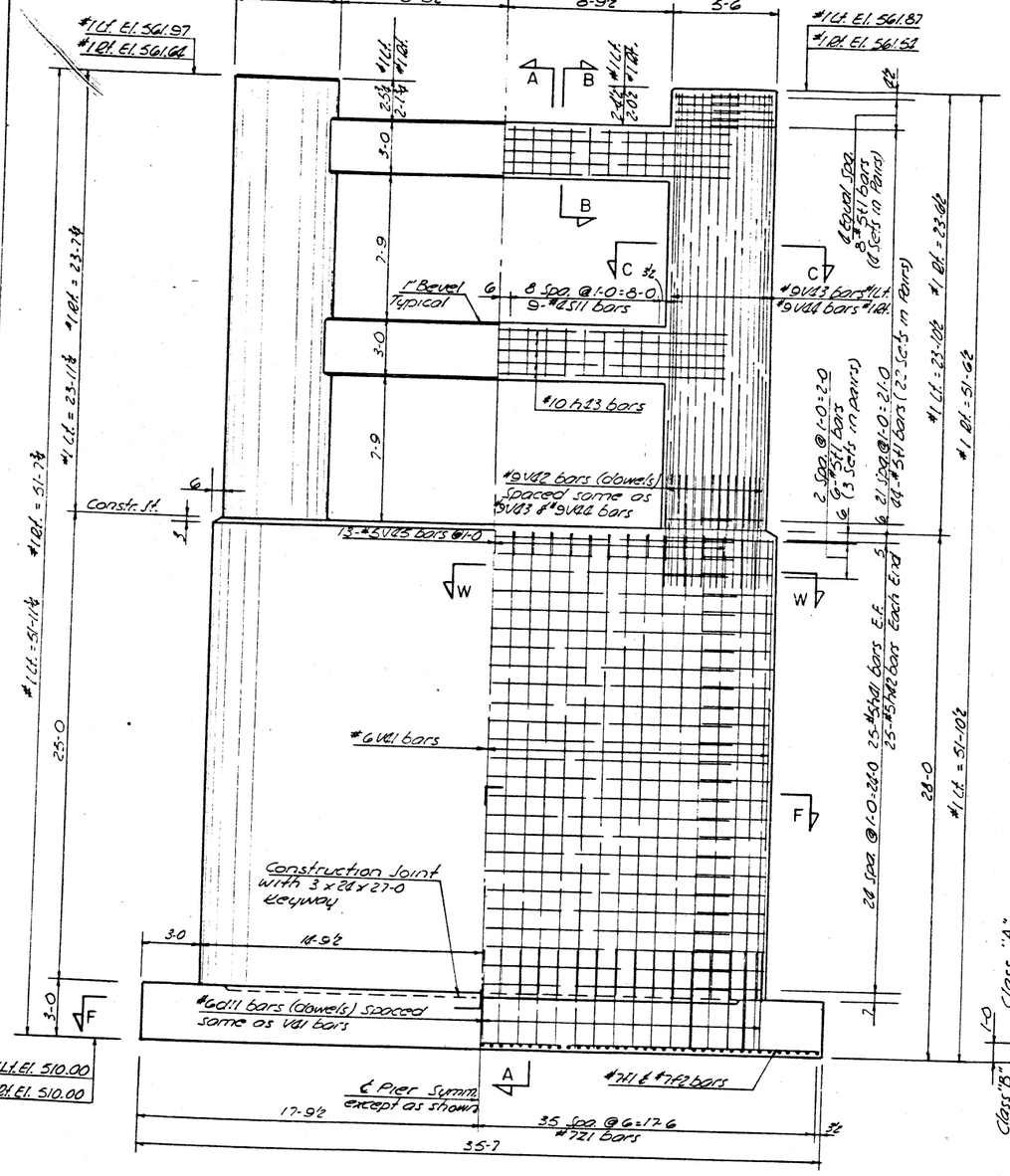
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12 B
VERMILION COUNTY STA. 1992+54

ABUTMENTS

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
J.T.	J.T.	WEB	JWH			
			LDB	HSM	1-8-62	

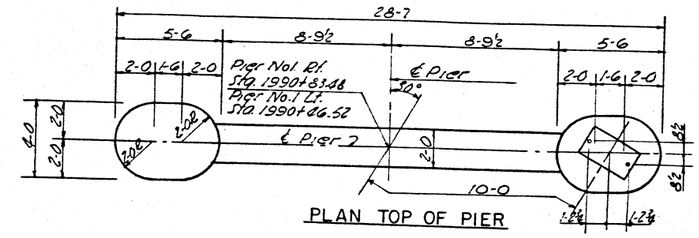
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12 B	VERMILION	142	54
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	



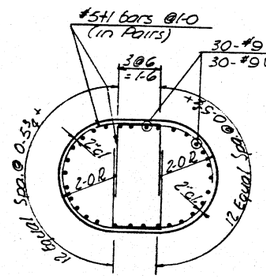
ELEVATION

Pier #1 Right Bridge shown
Pier #1 Lt. Bridge indentical except as shown

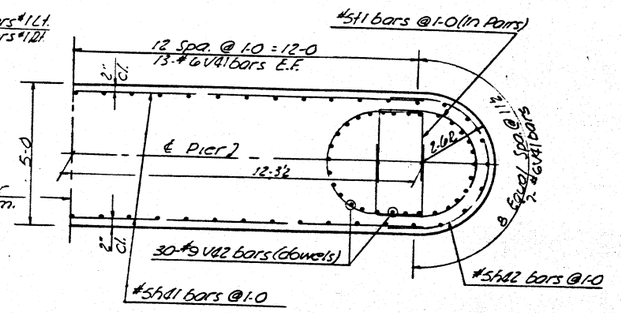
SECTION A-A



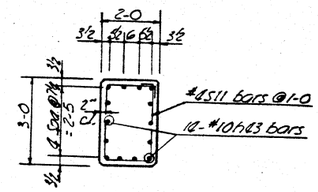
PLAN TOP OF PIER



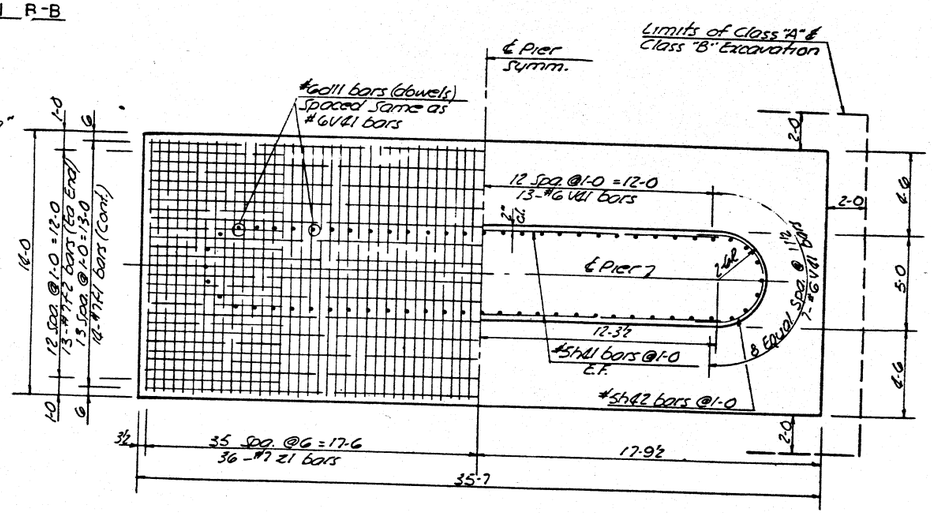
SECTION C-C



SECTION W-W



SECTION B-B



SECTION F-F

Maximum Footing Pressure 8100 psf
(A.A.S.H.O. Group II Loading)

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

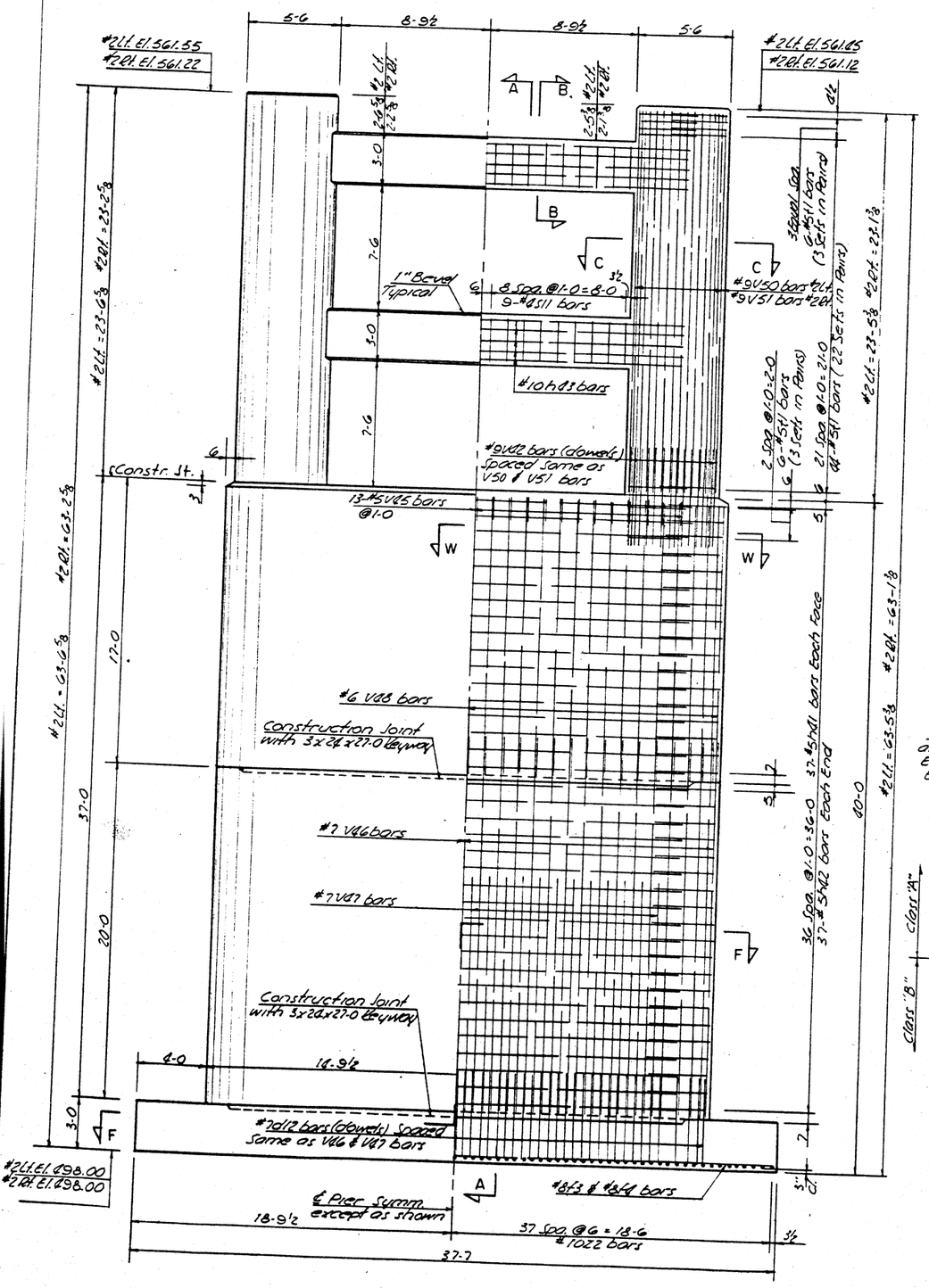
ILLINOIS DIVISION OF HIGHWAYS

FAI RT 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12B
VERMILION COUNTY STA. 1992 +54

PIER NO. 1

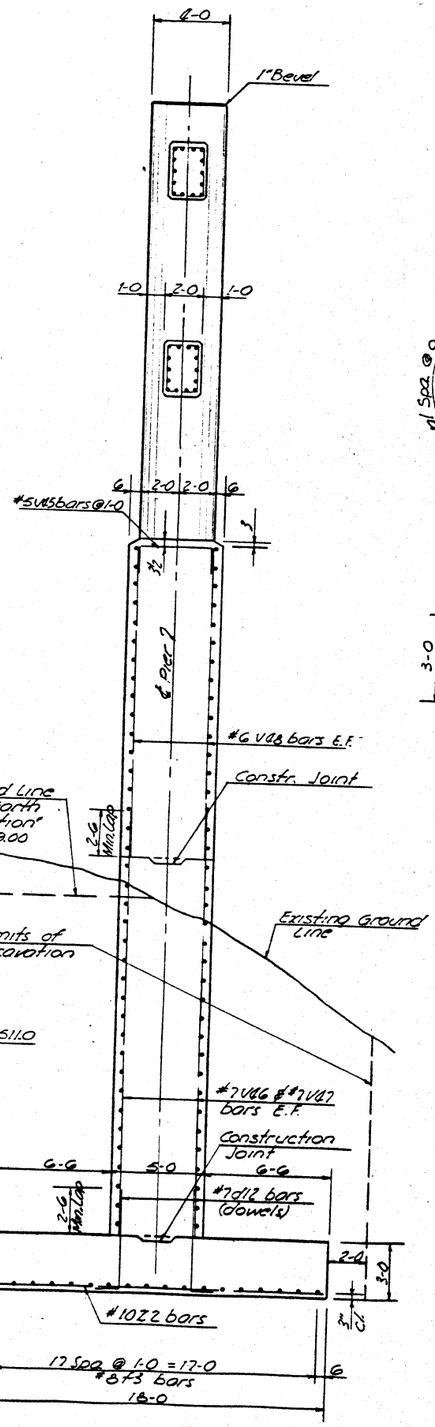
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SMH	RLF	WES	JWH	LDB	HSM	1.8.62

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	55
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		

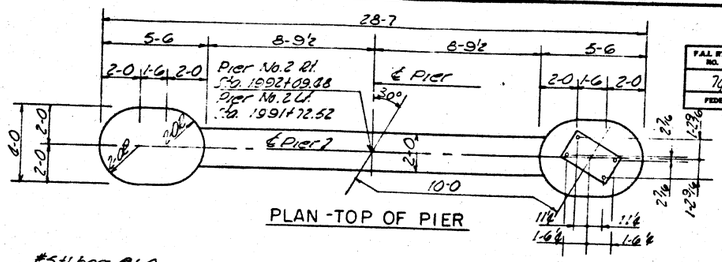


ELEVATION

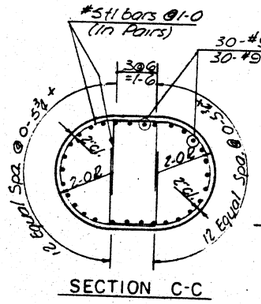
Pier #2 Right Bridge shown
Pier #2 Left Bridge identical except as shown



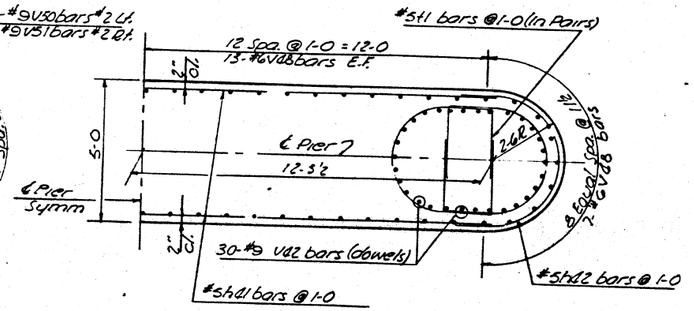
SECTION A-A



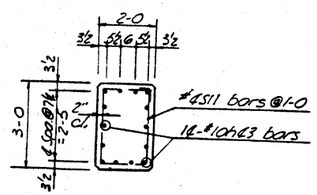
PLAN - TOP OF PIER



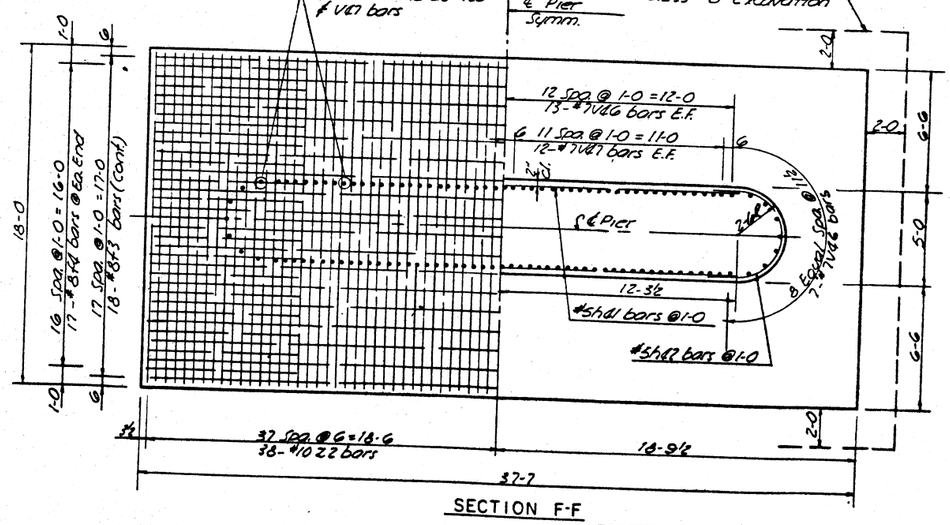
SECTION C-C



SECTION W-W



SECTION B-B



SECTION F-F

Maximum Footing Pressure 8100 psf
(A.A.S.H.O. Group II Loading)

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS — CHICAGO, ILLINOIS

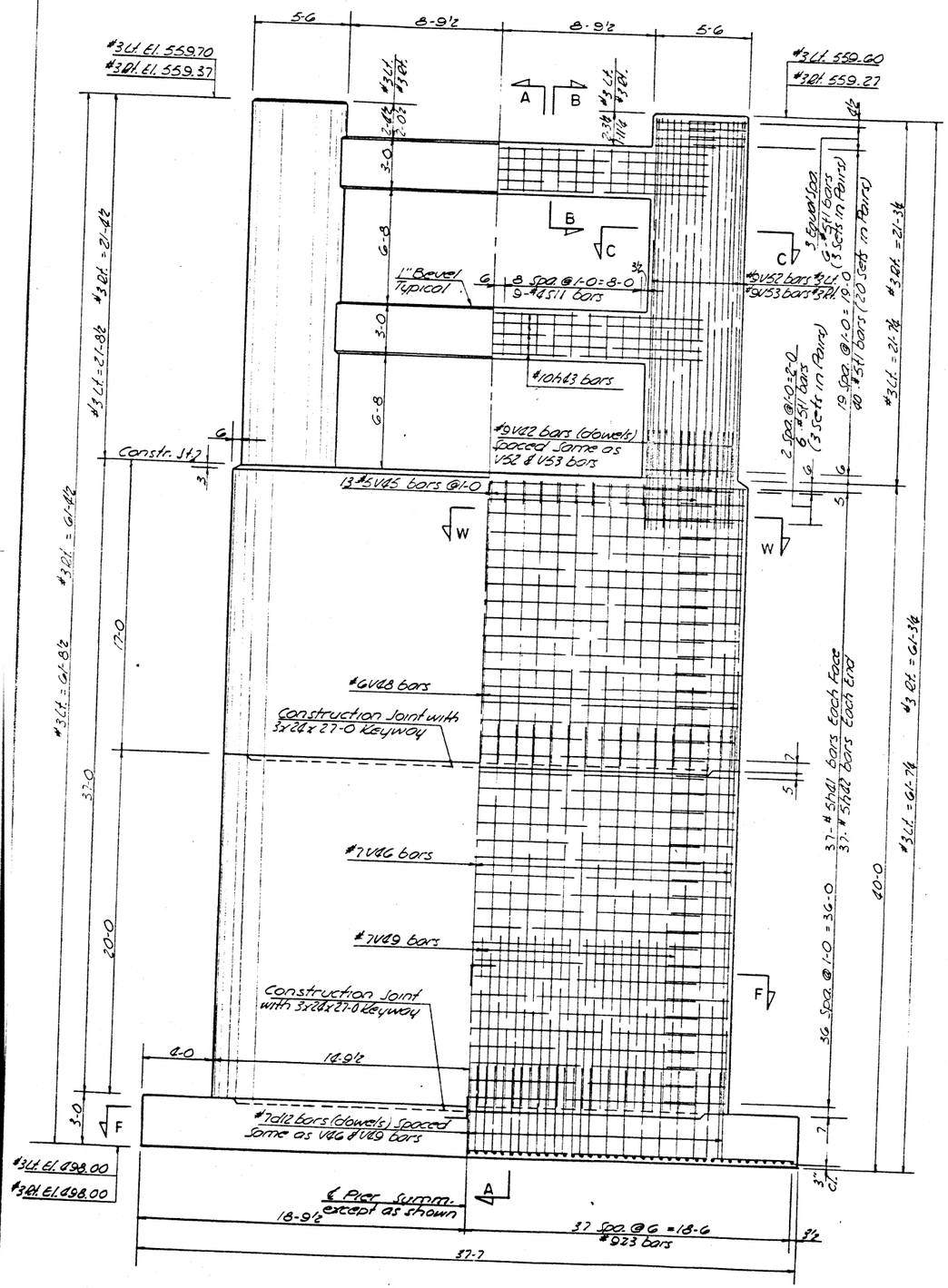
ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI -74 SECTION 92-12B
VERMILION COUNTY — STA. 1992+54

PIER NO. 2

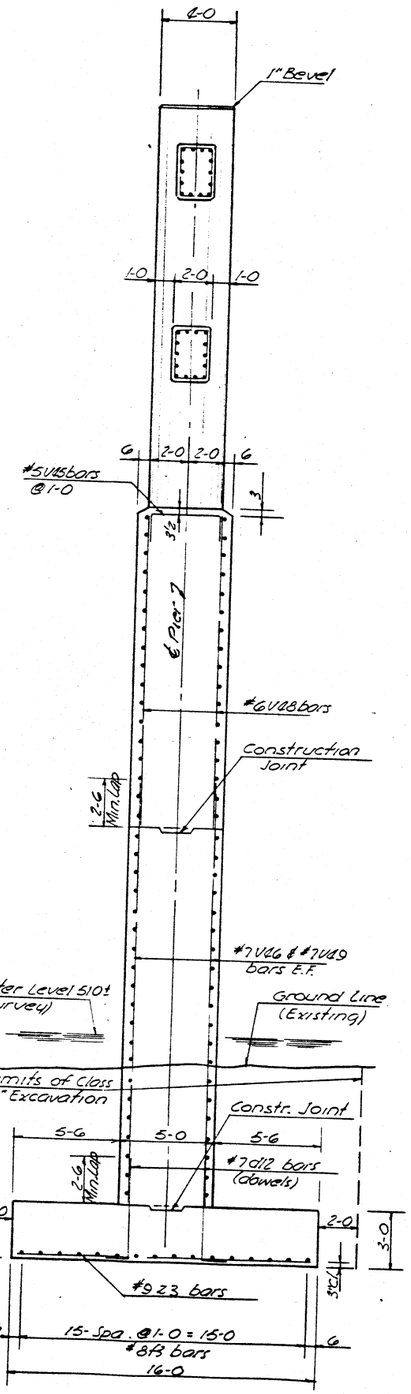
DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	DELETED
SMH	ZLF	WFS	JWH			
			LDB	HSM	1.8.82	

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	56
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	

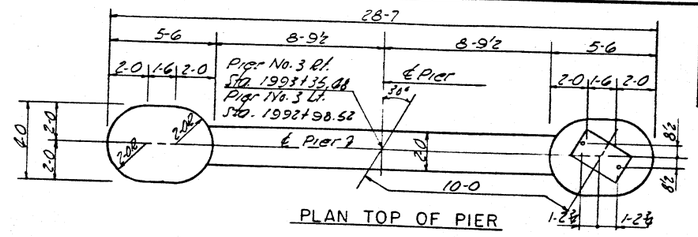


ELEVATION

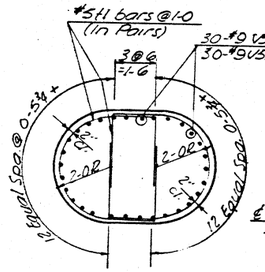
Pier #3 Right Bridge shown
Pier #3 Left Bridge identical except as shown



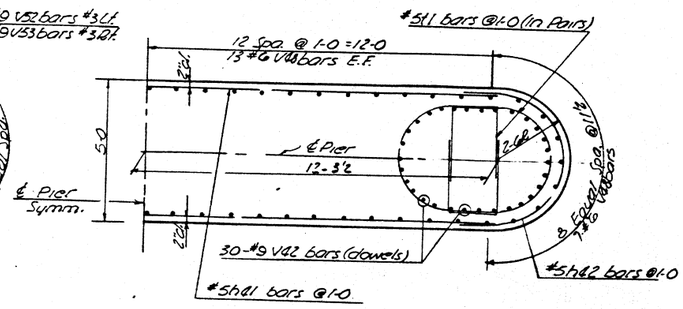
SECTION A-A



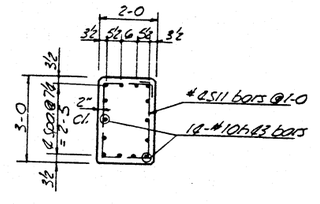
PLAN TOP OF PIER



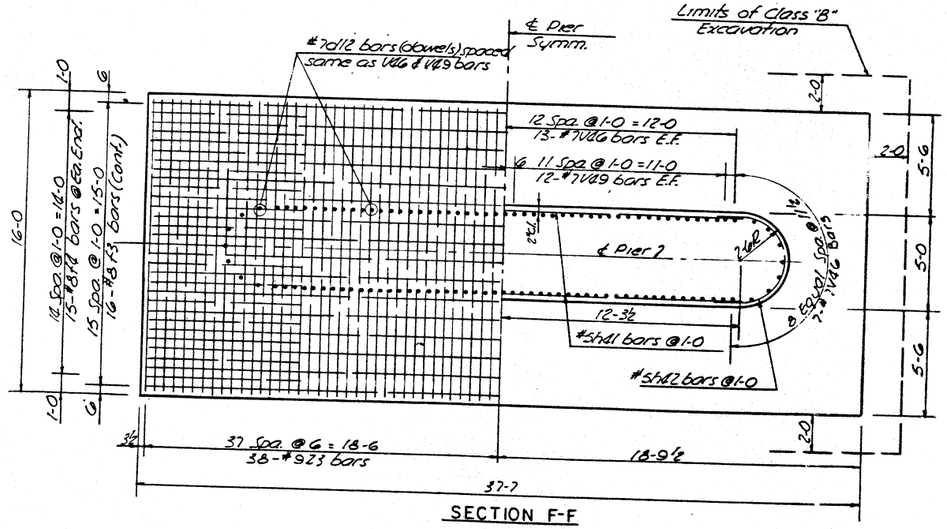
SECTION C-C



SECTION W-W



SECTION B-B



SECTION F-F

Maximum Footing Pressure 8000 psf
(A.A.S.H.O. Group II Loading)

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

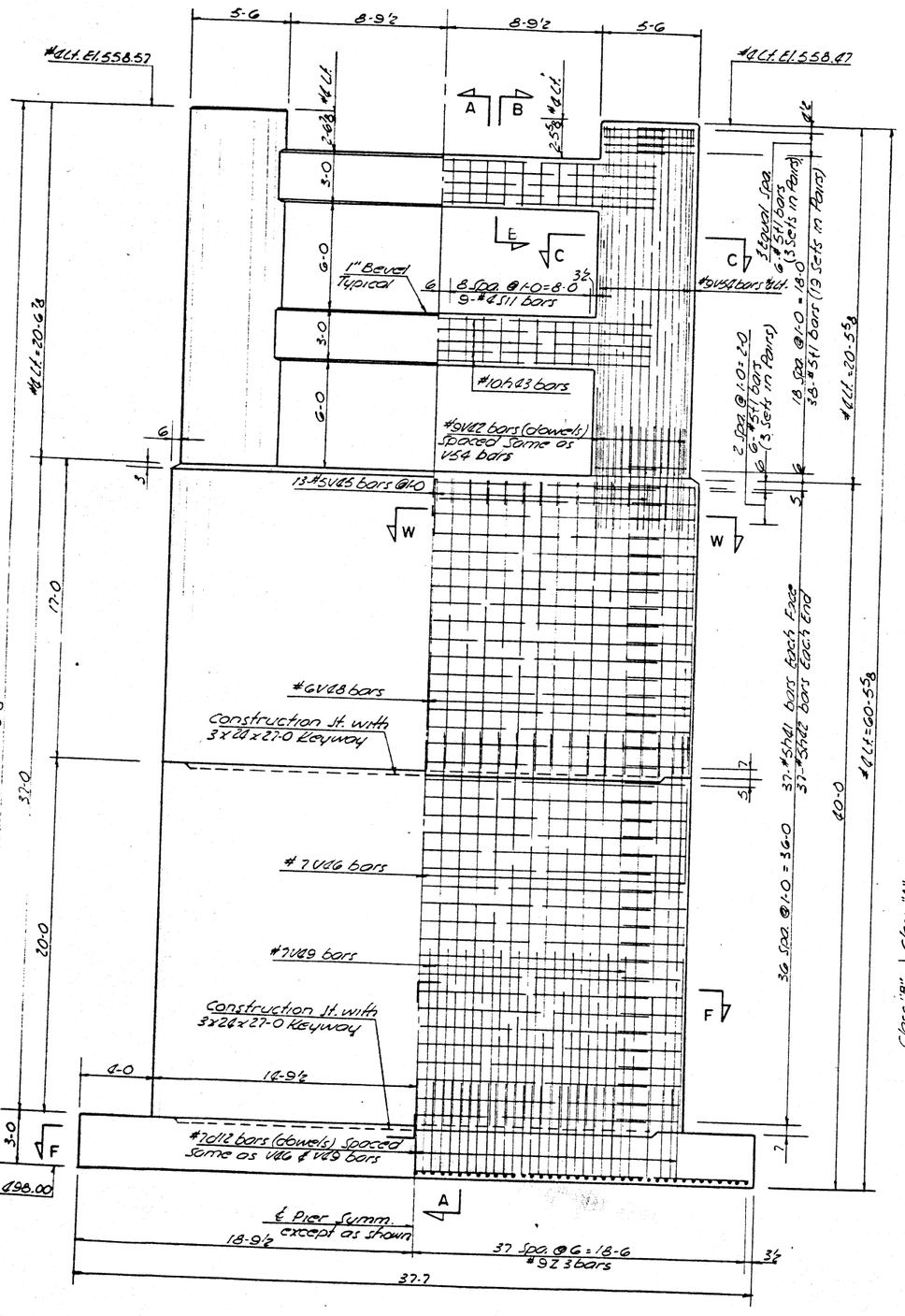
ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92 - 12B
VERMILION COUNTY STA. 1992+54

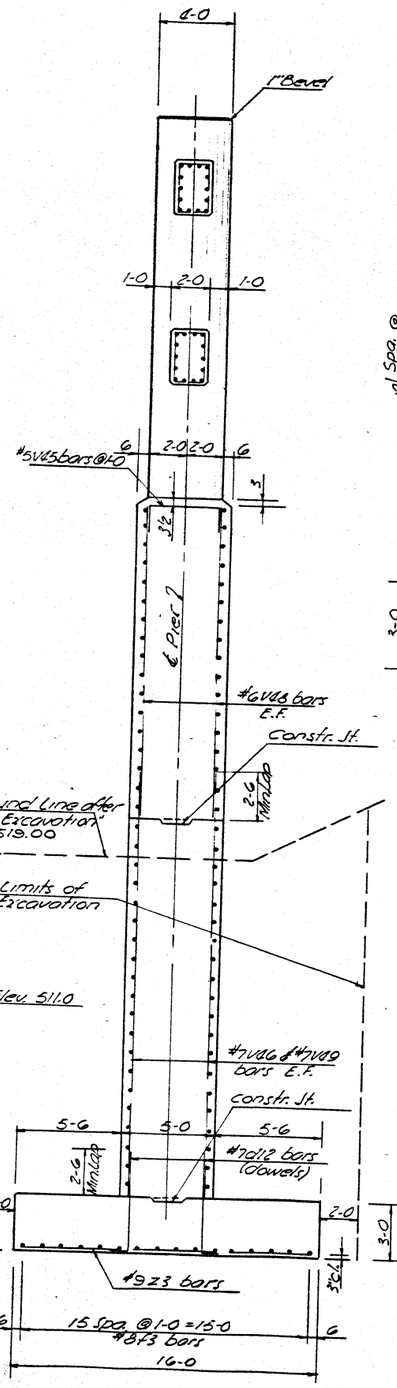
PIER NO. 3

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	SUPV.
SMH	RLF	MES	JWH	HSM	I.B.62
			LDB		

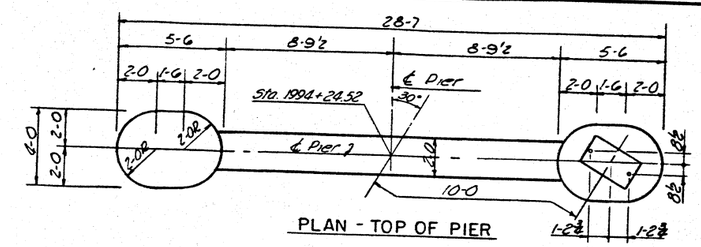
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12 B	VERMILION	142	57
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	FISCAL	



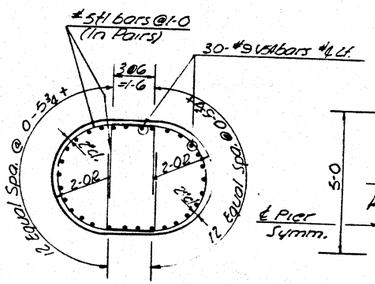
ELEVATION



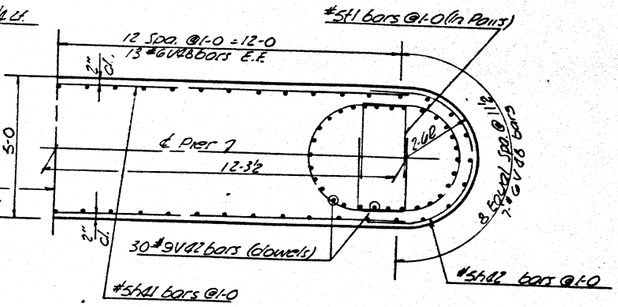
SECTION A-A



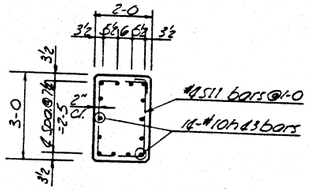
PLAN - TOP OF PIER



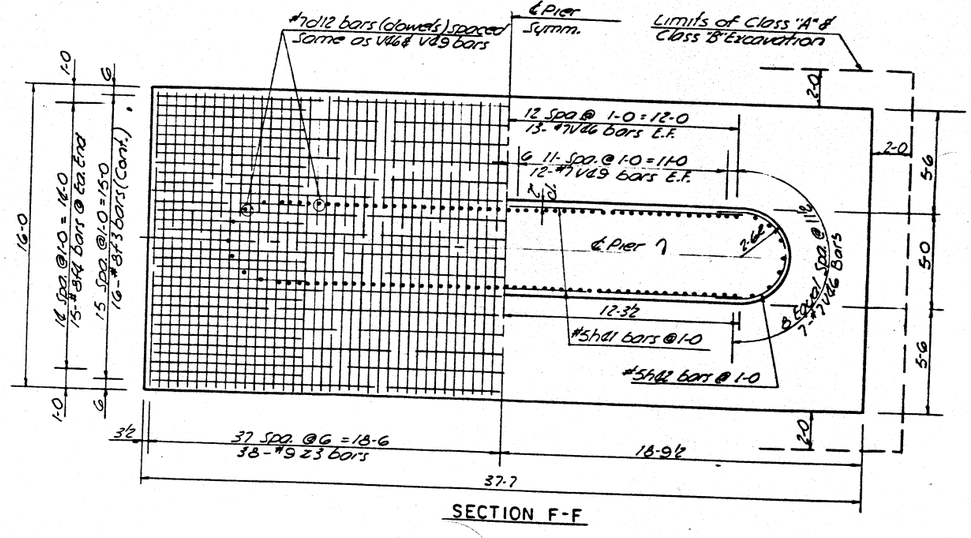
SECTION C-C



SECTION W-W



SECTION B-B



SECTION F-F

Maximum Footing Pressure 8600 psf (A.A.S.H.O. Group II Loading)

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS — CHICAGO, ILLINOIS

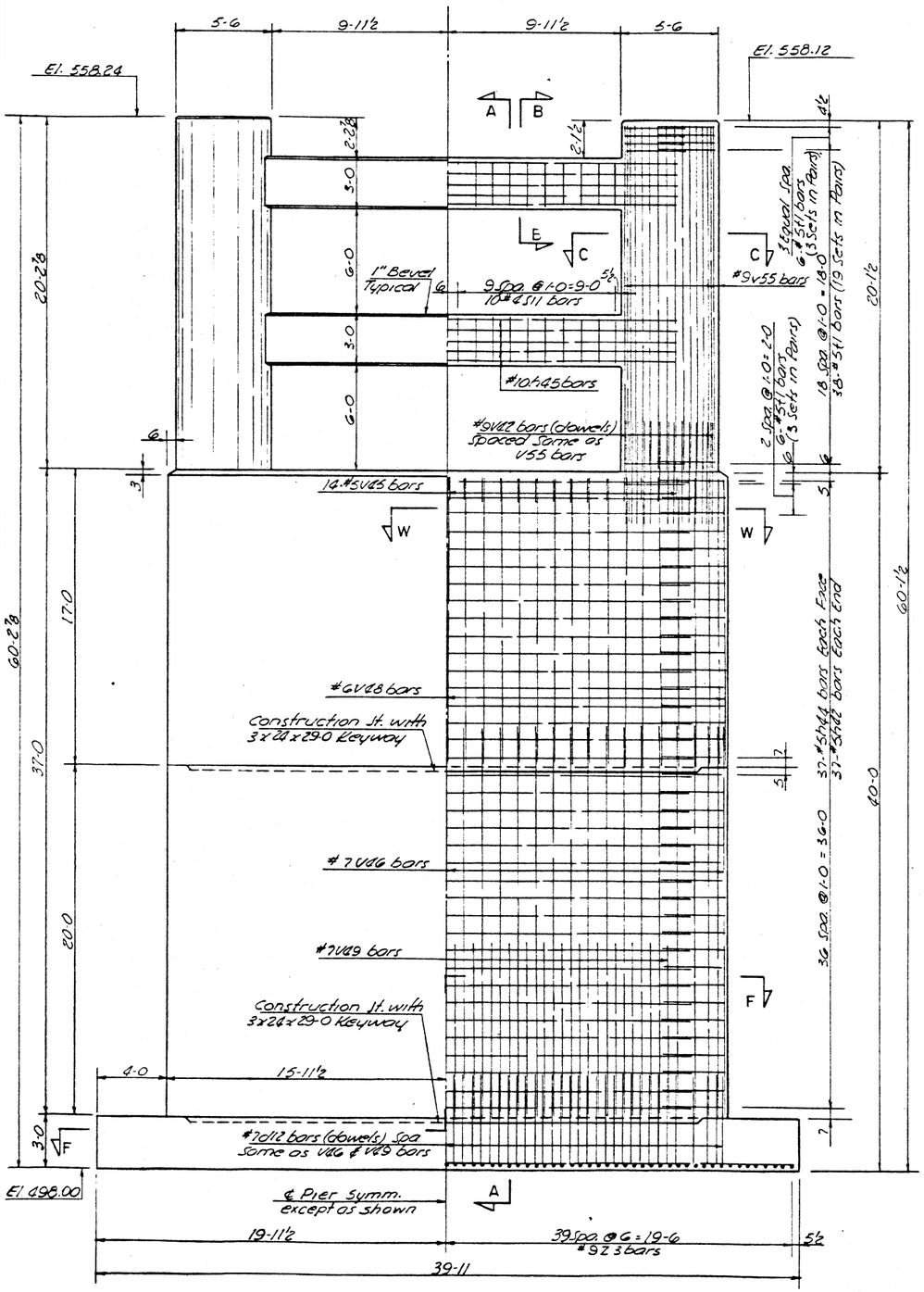
ILLINOIS DIVISION OF HIGHWAYS

FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12B
VERMILION COUNTY — STA. 1992+54

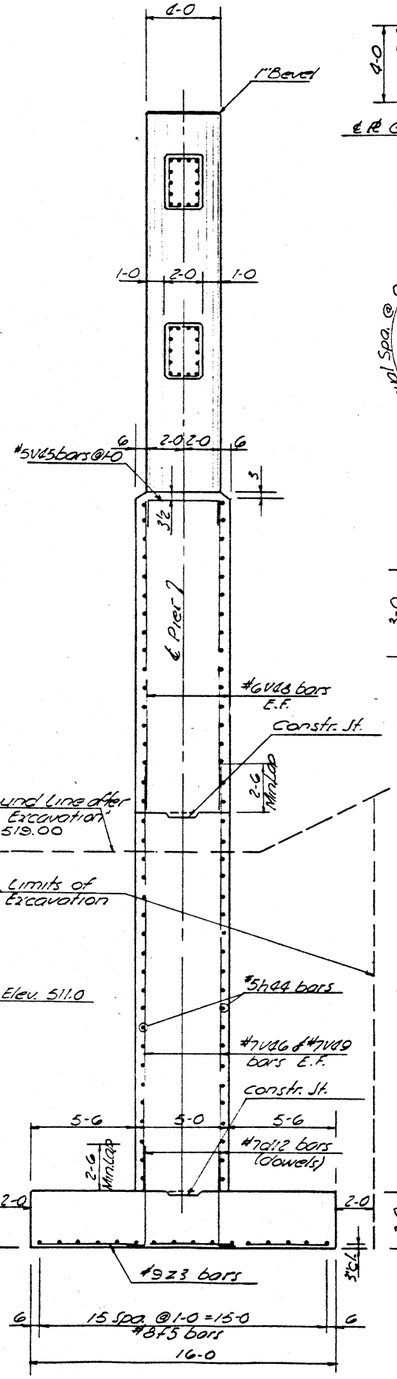
PIER NO. 4 LT. BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVISED - DATE	REVISED
SMH	RLF	WES	JWH		
			LDB	HSM 1.8.62	

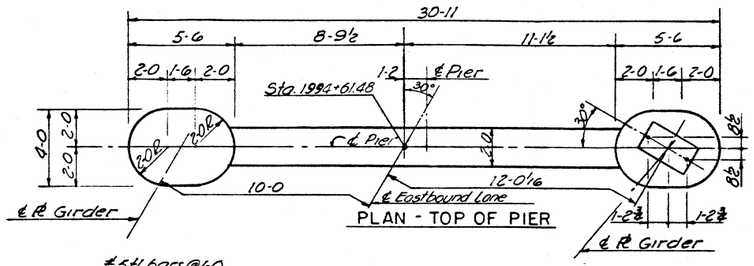
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12 B	VERMILION	142	58
FEDERAL ROAD DISTRICT NO. 7	ILLINOIS	PROJ.		



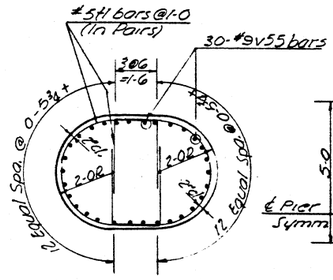
ELEVATION



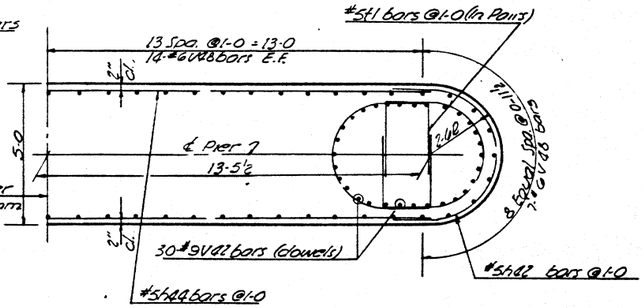
SECTION A-A



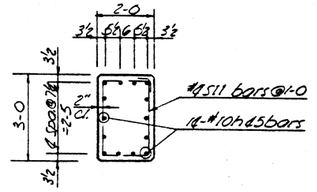
PLAN - TOP OF PIER



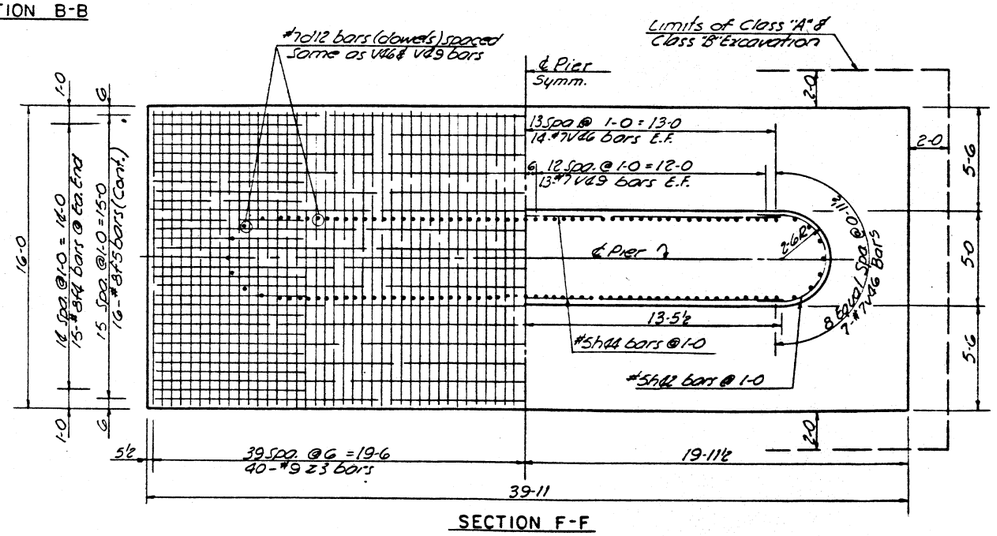
SECTION C-C



SECTION W-W



SECTION B-B



SECTION F-F

Maximum Footing Pressure 8300 psf
(A.A.S.H.O. Group II Loading)

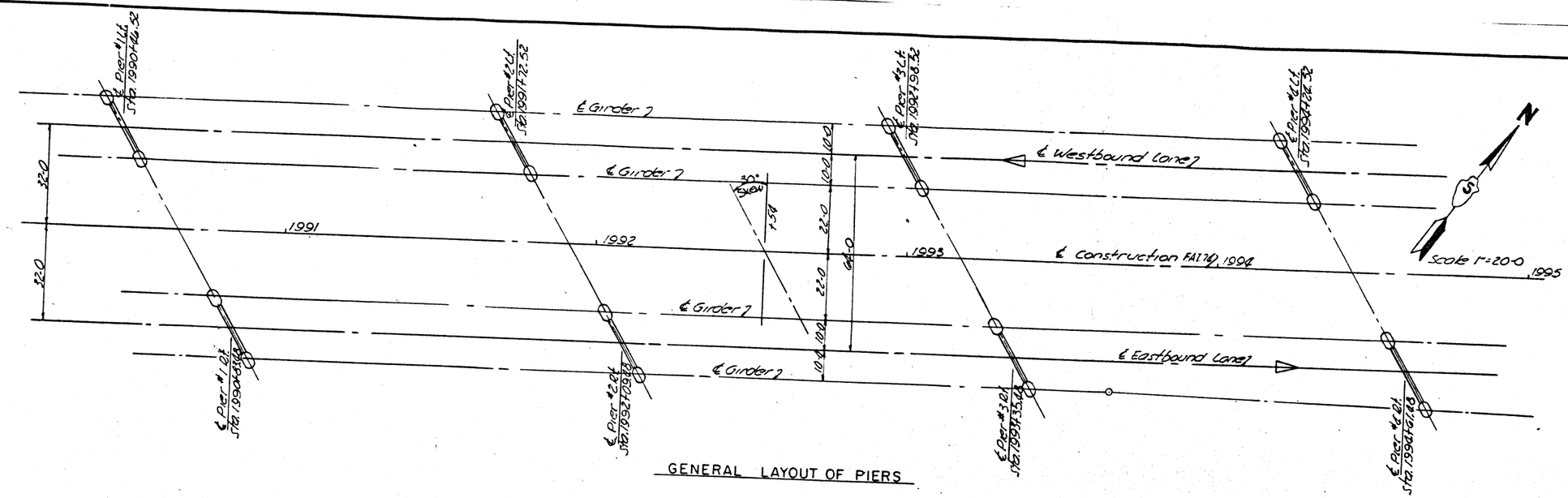
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS

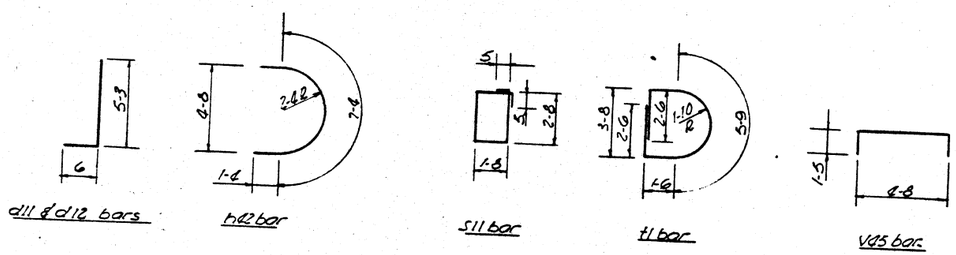
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

PIER NO. 4 RT. BRIDGE

DESIGNED	DRAWN	TRACED	CHECKED	REVISED	DATE	REVISED
SMH	RLF	WES	JWH			
			LDB	HSM	KB.62	



GENERAL LAYOUT OF PIERS



BENDING DIAGRAMS
(All bar dimensions are out to out)

F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	142	59
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	

BAR SCHEDULE

Piers	Bar	No.	Size	Length	Spacing	Shape
1Lt.&Rt.	d11	128	6	5-9	As Shown	
2,3&4Lt.&Rt.	d12	680	7	5-9	As Shown	
1Lt.&Rt.	f1	28	7	35-1	1-0	
1Lt.&Rt.	f2	52	7	8-0	1-0	
2&3Lt.&Rt.	f3	84	8	32-1	1-0	
2,3&4Lt.&Rt.	f4	188	8	8-0	1-0	
4Rt.	f5	16	8	39-5	1-0	
2&3Lt.&Rt.	h41	470	5	26-7	1-0	
All	h42	502	5	10-0	1-0	
2&3Lt.&Rt.	h43	196	10	26-0	As Shown	
4Rt.	h44	74	5	26-11	1-0	
4Rt.	h45	28	10	26-9	As Shown	
All	s11	292	4	9-6	1-0	
All	t1	864	5	13-9	As Shown	D
1Lt.&Rt.	v41	128	6	26-8	As Shown	
All	v42	680	9	6-0	As Shown	
1Lt.	v43	60	9	23-8	As Shown	
1Rt.	v44	60	9	23-6	As Shown	
All	v45	202	5	7-6	1-0	
2,3&4Lt.&Rt.	v46	388	7	22-6	As Shown	
2Lt.&Rt.	v47	96	7	15-0	1-0	
2,3&4Lt.&Rt.	v48	388	6	16-8	As Shown	
3&4Lt.&Rt.	v49	196	7	10-0	1-0	
2Lt.	v50	60	9	23-3	As Shown	
2Rt.	v51	60	9	22-11	As Shown	
3Lt.	v52	60	9	21-5	As Shown	
3Rt.	v53	60	9	21-1	As Shown	
4Lt.	v54	60	9	20-3	As Shown	
4Rt.	v55	60	9	19-11	As Shown	
1Lt.&Rt.	z1	182	7	13-6	0-6	
2Lt.&Rt.	z2	150	10	17-6	0-6	
3&4Lt.&Rt.	z3	304	9	15-6	0-6	

PIER QUANTITIES

Class X Concrete	2,293.3 Cu. Yds.
Reinforcement Bars	201,160 Lbs.
Class A Excavation	1,570 Cu. Yds.
Class B Excavation	2,400 Cu. Yds.

Note: Quantities shown are for 8 Piers Left & Right.

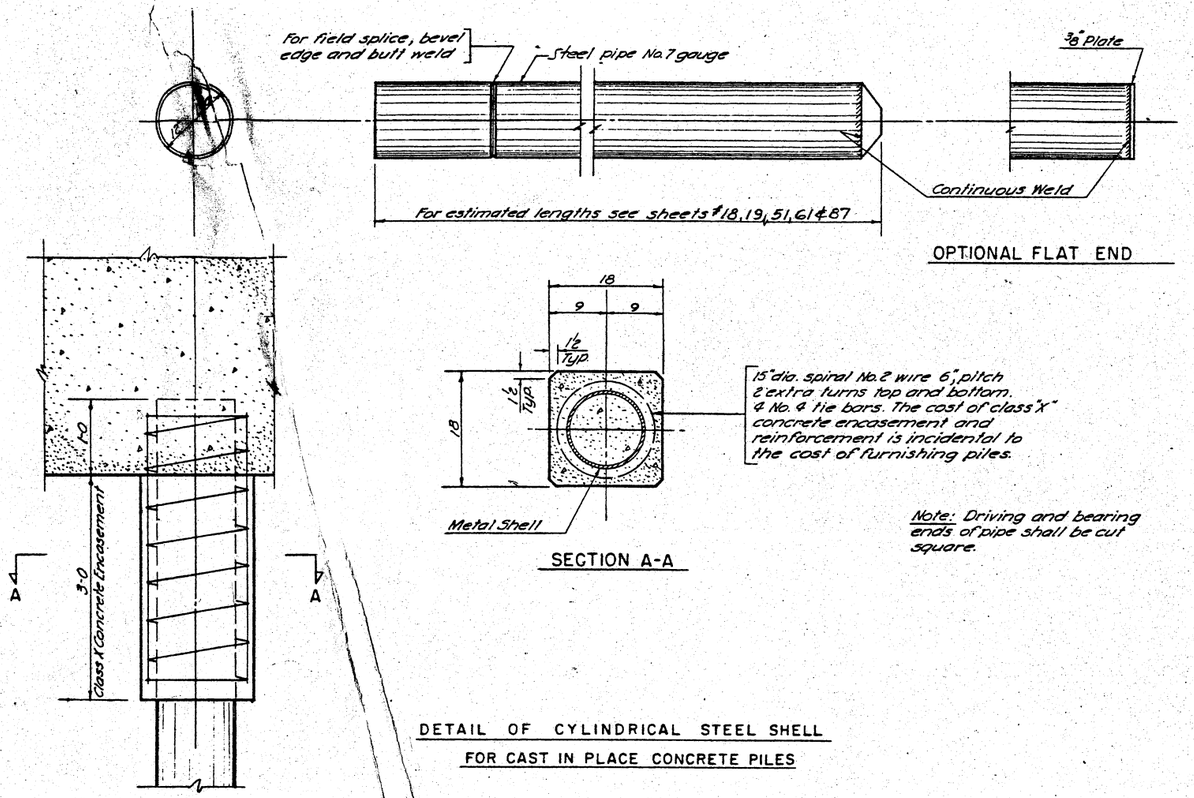
CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI - 74 SECTION 92-12B
VERMILION COUNTY STA. 1992+54

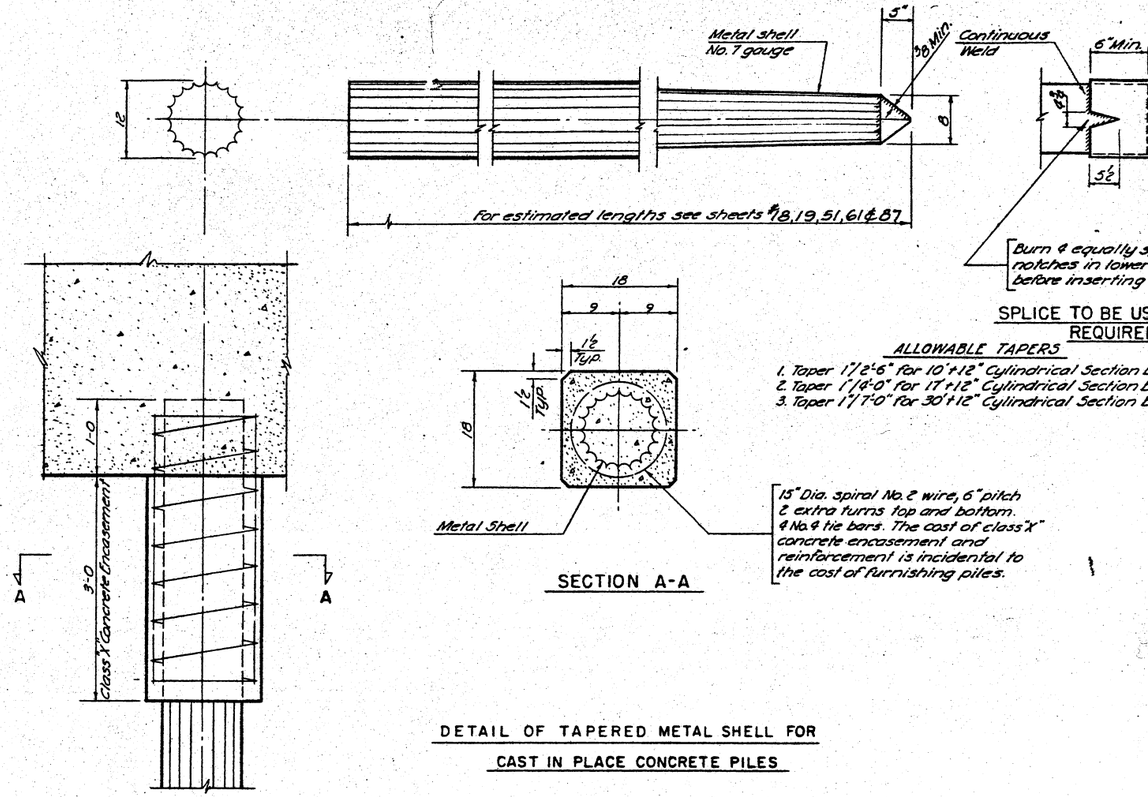
PIER DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	DEPARTMENT	DATE	REVISED
SMH	RLF	WES	JWH			
			LDB	HSM	1-2-68	

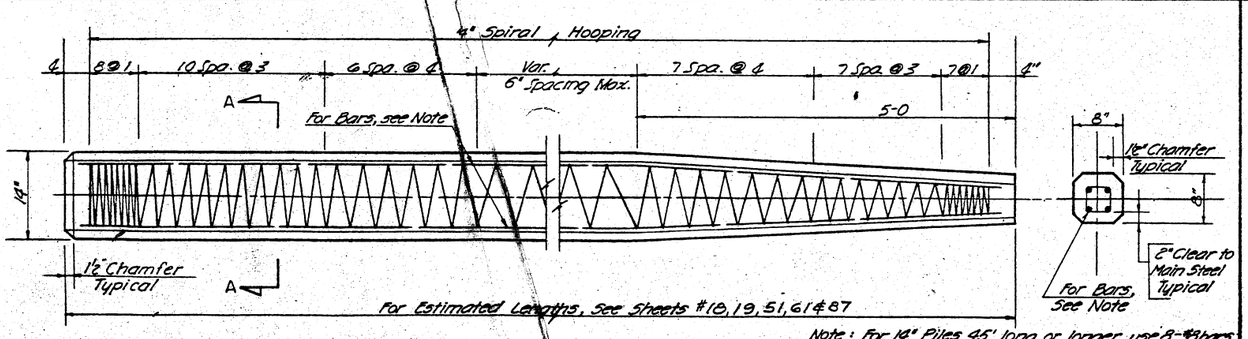
F.A.I. RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	92-12B	VERMILION	122	60
FEDERAL ROAD DISTRICT NO. 7		ILLINOIS	PROJ.	



DETAIL OF CYLINDRICAL STEEL SHELL
FOR CAST IN PLACE CONCRETE PILES



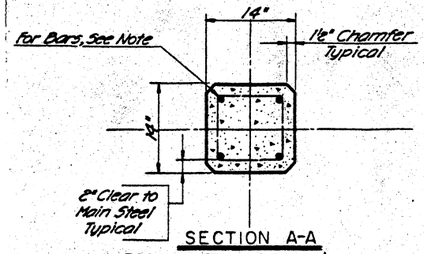
DETAIL OF TAPERED METAL SHELL FOR
CAST IN PLACE CONCRETE PILES

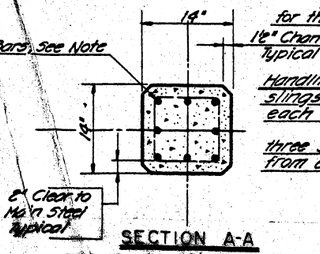


DETAIL OF PRECAST CONCRETE PILES

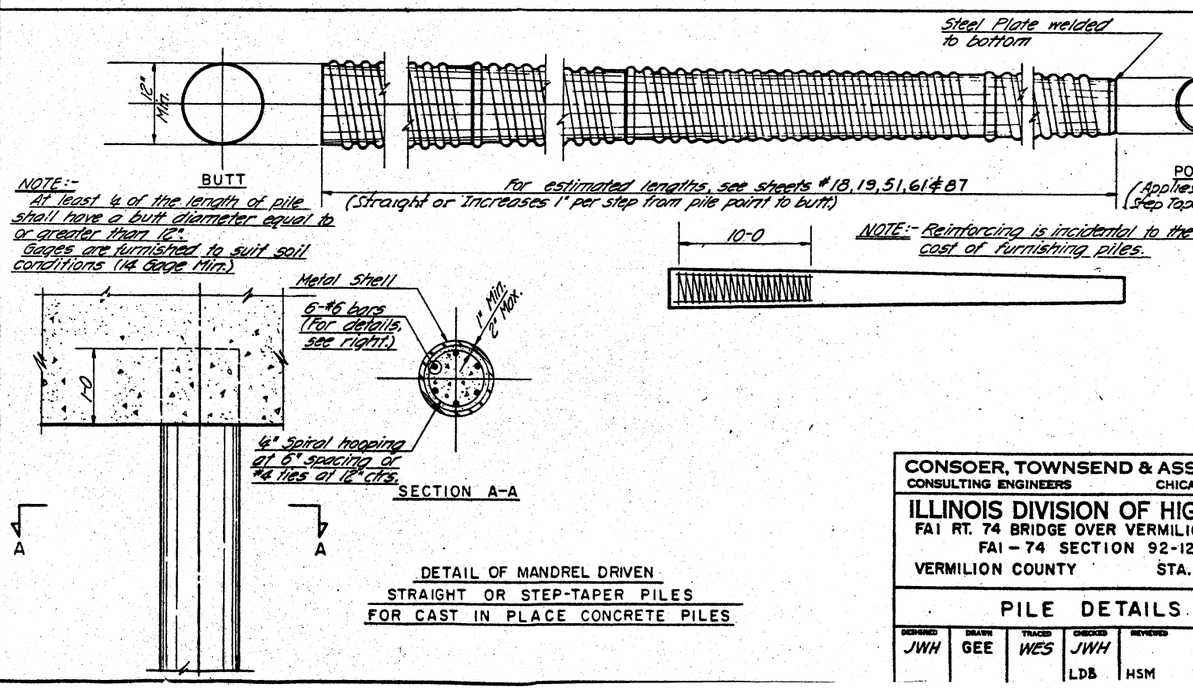
Note: For 14" Piles 45' long or longer, use 8-#8 bars (4 for the full length & 4 to the point of bevel).
For 14" Piles under 45' long, use 4-#9 bars for the full length.

Handling: For pile lengths up to 45 ft. use two slings placed at a distance of 0.21L* from each end.
For pile lengths longer than 45 ft. use three slings placed at a distance of 0.12L* from each end and at midpoint of pile.





* L = Overall length of pile to be handled.



DETAIL OF MANDREL DRIVEN
STRAIGHT OR STEP-TAPER PILES
FOR CAST IN PLACE CONCRETE PILES

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS — CHICAGO, ILLINOIS

ILLINOIS DIVISION OF HIGHWAYS
FAI RT. 74 BRIDGE OVER VERMILION RIVER
FAI – 74 SECTION 92-12B
VERMILION COUNTY — STA. 1992+54

PILE DETAILS

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
JWH	GEE	WES	JWH		
			LDB	HSM	