72C90

SANGAMON

#47

F.A.I. RTE.	SECTION	COUNTY	TOT. SHEETS	SHEET NO.
I-72	*	SANGAMON	194	1
	ILLINOIS	CONTRACT NO. 72C90		

* (84-10-1RS-3, 84-10-2RS-4)BR, I

PART "A"

1. PART "A"
   BEGIN IMPROVEMENT
   SECTION (84-10-1RS-3, 84-10-2RS-4)BR, I
   I-72 STATION 13+32.00 (EB) &
   STA. 15+40.00 (WB)
2. SN 084-0150
   STA. 48+76.46 (FAI 72) =
   STA. 100+01.88 (MECHANICSBURG RD)
3. SN 084-2011
   EXIST. BOX CULVERT
   STA. 68+55.02
4. SN 084-0151
   STA. 161+04.98 (FAI 172) =
   STA. 200+00.00 (TR 171)
5. BRIDGE OMISSION:
   SN 084-0152 OVER SANGAMON RIVER
   STA. 193+08.04 TO STA. 201+56.86 (FAI 72, WB)
   SN 084-0153 OVER SANGAMON RIVER
   STA. 193+22.30 TO STA. 201+41.12 (FAI 72, EB)
6. SN 084-0154
   STA. 269+23.08 (FAI 72) =
   STA. 299+80.31 (TR 420)
7. PART "A"
   END IMPROVEMENT
   SECTION (84-10-1RS-3, 84-10-2RS-4)BR, I
   STATION EQUATION:
   STA. 295+70.43 (BK) = STA. 0+00.00 (AH)
8. PART "A"
   SHOULDER RUMBLE STRIPS IMPROVEMENT
   I-72/CLEARLAKE AVE.
   STA. 34+00.00 TO STA. 70+81.00 (EB)
   STA. 34+00.00 TO STA. 70+81.00 (WB)

PART "B"

8. PART "B"
   BEGIN IMPROVEMENT
   SECTION (84-10-1RS-3, 84-10-2RS-4)BR, I
   STA. 276+08.75 (TR 420)
9. PART "B"
   END IMPROVEMENT
   SECTION (84-10-1RS-3, 84-10-2RS-4)BR, I
   STA. 313+50.00 (TR 420)
10. PART "B"
    BEGIN IMPROVEMENT
    STA. 85+48.50 (CH 12)
11. PART "B"
    END IMPROVEMENT
    STA. 112+26.46 (CH 12)

100%
11-15-2014

FOR INDEX OF SHEETS, SEE SHEET NO. 2 OF 194

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

PROJECT ENGINEER: VINCE MADONIA (217) 785-9046
PROJECT MANAGER: VICTOR YOUNG (217) 557-7897

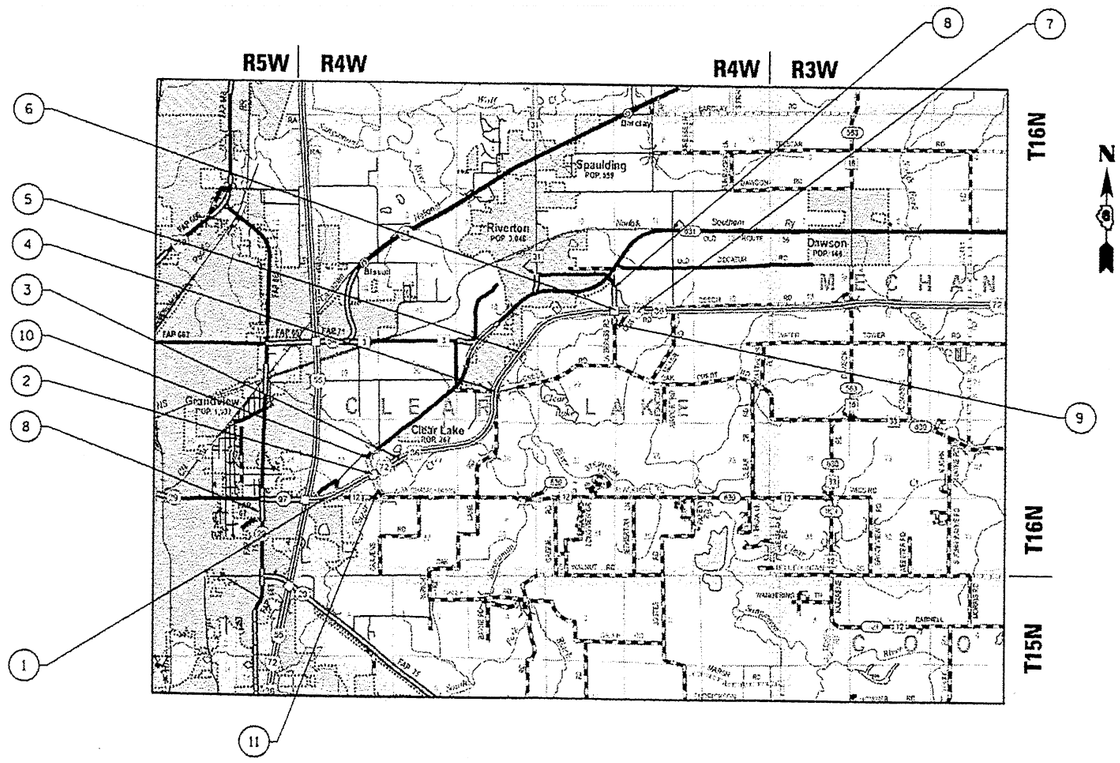
CONTRACT NO. 72C90 084-0151

STATE OF ILLINOIS I-17-14 LETTING ITEM 047

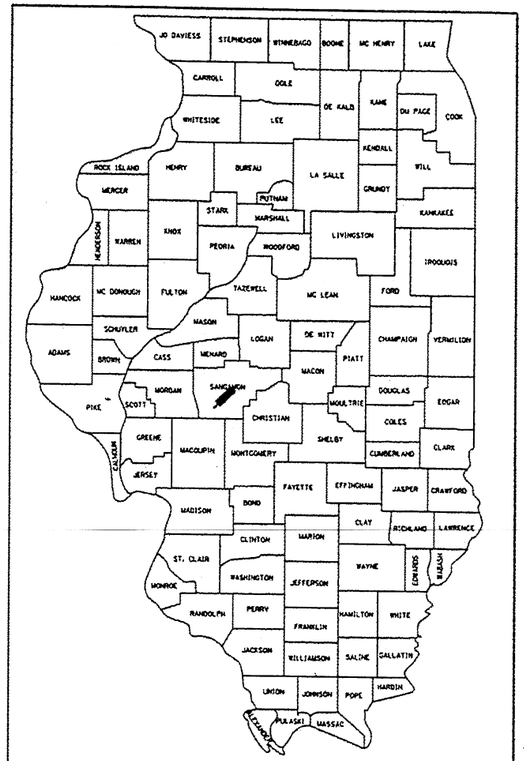
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PROPOSED
HIGHWAY PLANS

FAI 72 (I-72)
SECTION (84-10-1RS-3, 84-10-2RS-4)BR, I
PROJECT ACNHPP-0072(401)
HMA RESURFACING, BRIDGE REHABILITATION
SANGAMON COUNTY

C-96-085-09



D-96-085-09



LOCATION OF SECTION INDICATED THUS: –

FAI 72

FUNCTION CLASS = INTERSTATE
ADT (2012) 13,500
SU (2012) 610
MU (2012) 1,430
PV (2012) 11,460

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED September 6 20 13
Ryan Bikes
DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER
October 4 20 13
John D. Baranzelli P.E. for
ENGINEER OF DESIGN AND ENVIRONMENT
October 4 20 13
Omer Osman, P.E. for
DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PART "A"

GROSS LENGTH = 27,389.61 FT = 5.187 MILES
NET LENGTH = 27,389.61 FT = 5.187 MILES

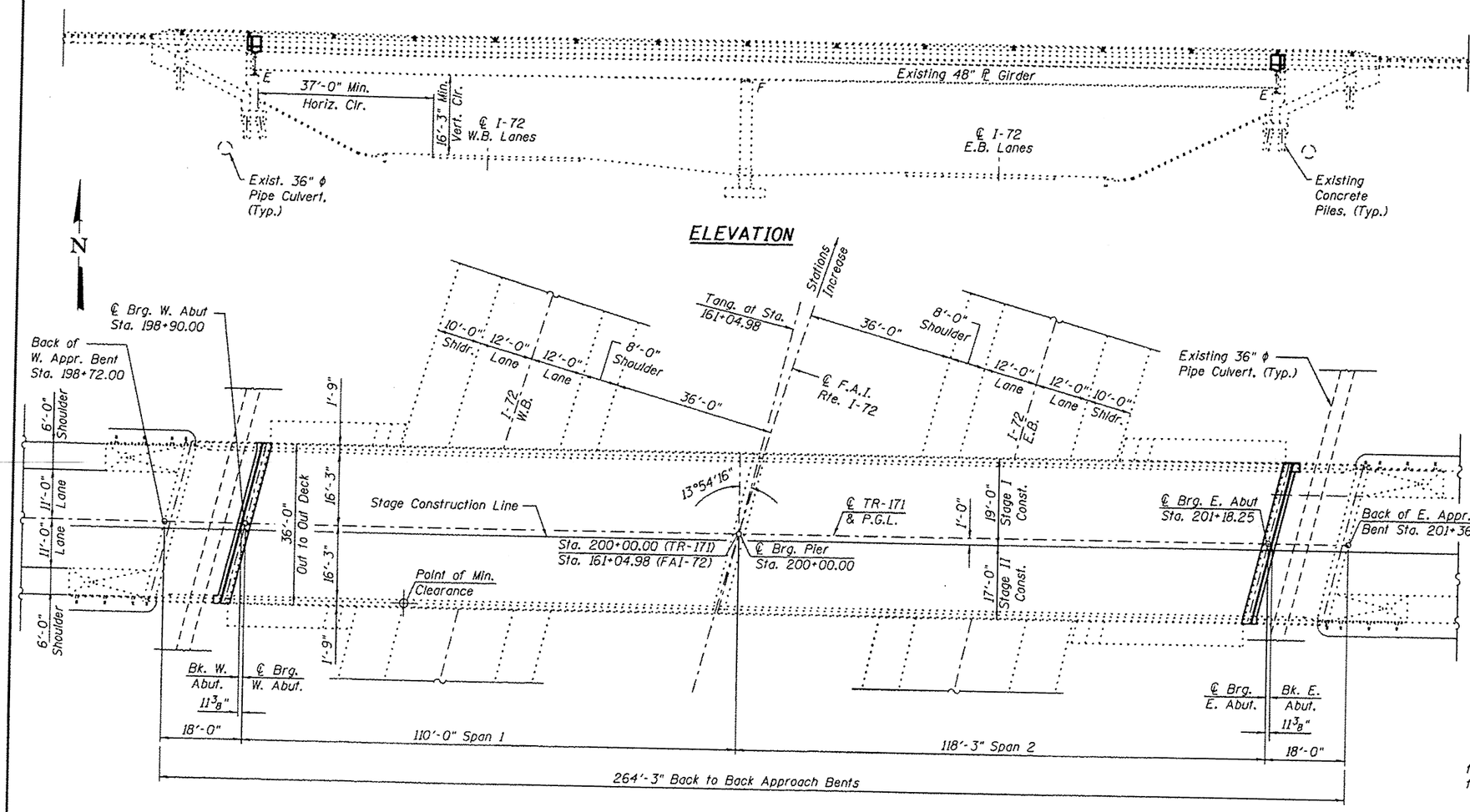
PART "B"

GROSS LENGTH = 17,889.02 FT = 3.388 MILES
NET LENGTH CH 12 (MECHANICSBURG RD.) = 16,300.00 FT = 0.309 MILES
NET LENGTH TR 420 (OVERPASS RD.) = 1,589.02 FT = 0.0301 MILES

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

Existing Structure: S.N. 084-0151 was originally built under FAI 72, Section (84-10-1HB-1) in 1974. It is a two-span, steel continuous structure with vaulted approaches. The structure length is 264'-3" back-to-back approach bents and the width is 36'-0" out-to-out. The two steel span lengths are 110'-0" and 118'-3", respectively moving up-station. The approach spans are each 18'-0". In 1998, the expansion joints and overlay were removed and replaced.

Structure to be repaired using staged construction. Silicone joints will be replaced. One lane to remain open during construction.



GENERAL NOTES

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

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.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer.

Any cracks that cannot be removed by grinding $\frac{1}{4}$ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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.

Cleaning and field painting of structural steel shall be done under a separate painting contract.

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	Cu. Yd.	5.4	-	5.4
Protective Shield	Sq. Yd.	313	-	313
Concrete Superstructure	Cu. Yd.	5.4	-	5.4
Protective Coat	Sq. Yd.	26.0	-	26.0
Reinforcement Bars, Epoxy Coated	Pound	1,330	-	1,330
Bar Splicers	Each	20	-	20
Preformed Joint Strip Seal	Foot	72	-	72
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	20	-	20
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	10	-	10
Deck Slab Repair (Partial)	Sq. Yd.	50	-	50

* Apply on top and inside surfaces of new Concrete only.

DESIGN STRESSES

FIELD UNITS (NEW)

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

FIELD UNITS (EXISTING)

fc = 1,400 psi (Substructure)
fc = 1,200 psi (Deck slab)
fs = 20,000 psi (Reinforcement)
fs = 27,000 psi (Steel)

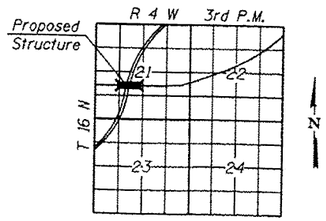
INDEX OF SHEETS

DESIGN SPECIFICATIONS

(New Construction)
2002 AASHTO "Standard Specifications for Highway Bridges"

EXISTING LOADING HS 20-44

Allow 25#/sq. ft. for future wearing surface.



LOCATION SKETCH

Michael T. Haley 9-5-13
Date

Michael T. Haley
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2014

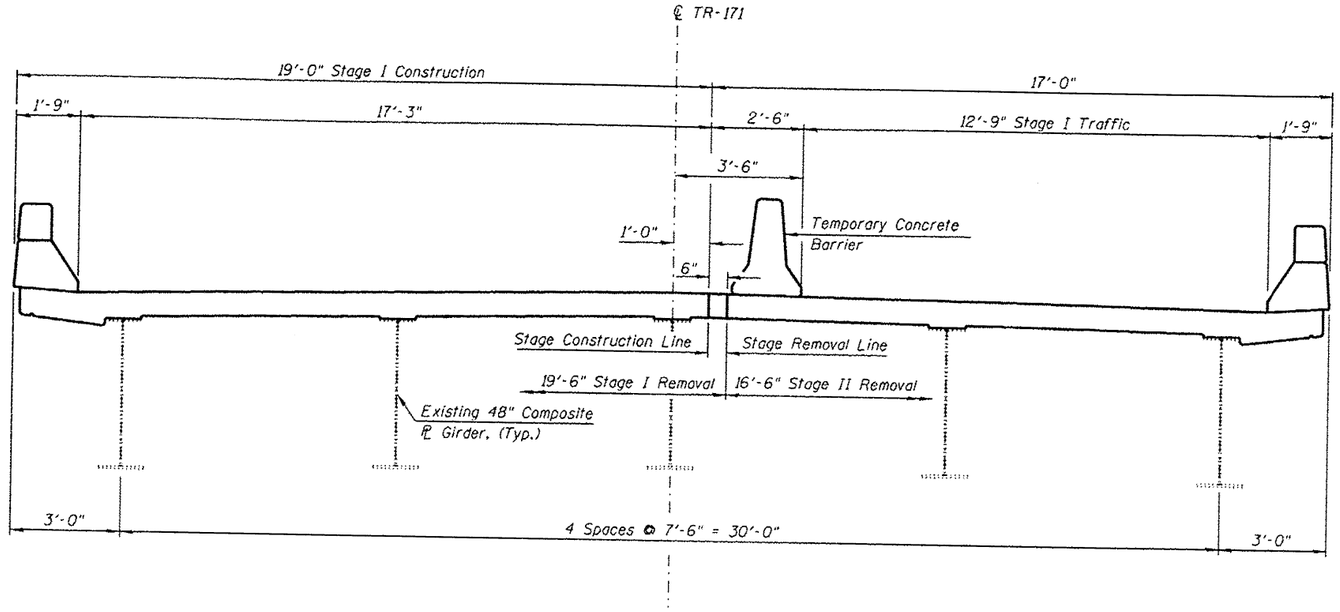
GENERAL PLAN & ELEVATION
TR-171 OVER F.A.I. RTE. 72
SECTION (84-10-1.2) RS-3
SANGAMON COUNTY
STATION 200+00.00
STRUCTURE NO. 084-0151

FILE NAME = Oak Crest Rd. over I-72.dgn	USER NAME =	DESIGNED - SAL	REVISED -
		CHECKED - MTH	REVISED -
	PLOT SCALE =	DRAWN - TJW	REVISED -
	PLOT DATE =	CHECKED - MTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

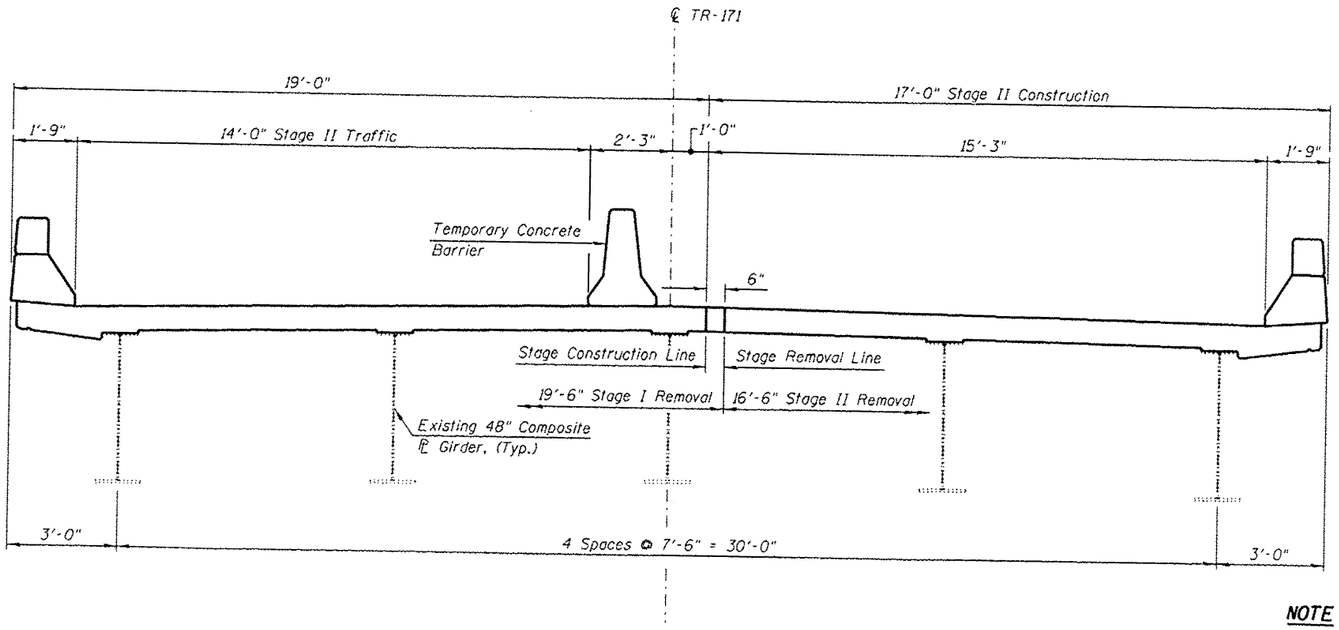
GENERAL PLAN AND ELEVATION
OAK CREST RD. (TR-171) OVER F.A.I.-72 – S.N. 084-0151
SHEET NO. 1 OF 8 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	(84-10-1.2)RS-3	SANGAMON	194	140
		CONTRACT NO. 72C90		
FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		



STAGE I TYPICAL BRIDGE SECTION

(LOOKING EAST)



STAGE II TYPICAL BRIDGE SECTION

(LOOKING EAST)

NOTE

Staging similar for Approaches.

FILE NAME = Oak Crest Rd. over I-72.dgn	USER NAME =	DESIGNED - SAL	REVISED -
		CHECKED - MTH	REVISED -
	PLOT SCALE =	DRAWN - TJW	REVISED -
	PLOT DATE =	CHECKED - MTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING TYPICAL
OAK CREST RD. (TR-171) OVER F.A.I.-72 - S.N. 084-0151
SHEET NO. 2 OF 8 SHEETS

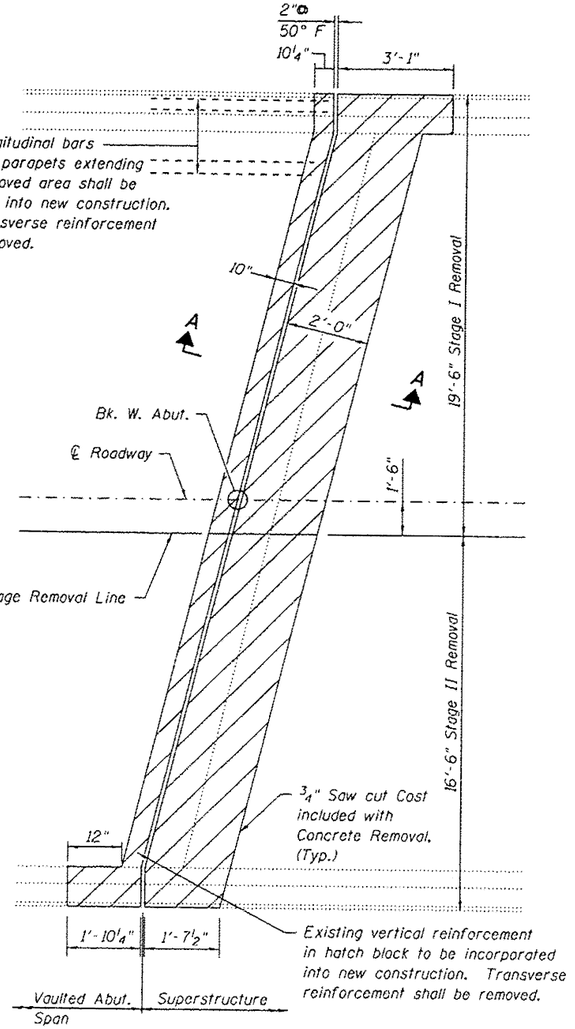
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	SANGAMON	194	141
	* (84-10-1RS-3, 84-10-2RS-1)BR.1	CONTRACT NO. 72C90		
FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

NOTES:

Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

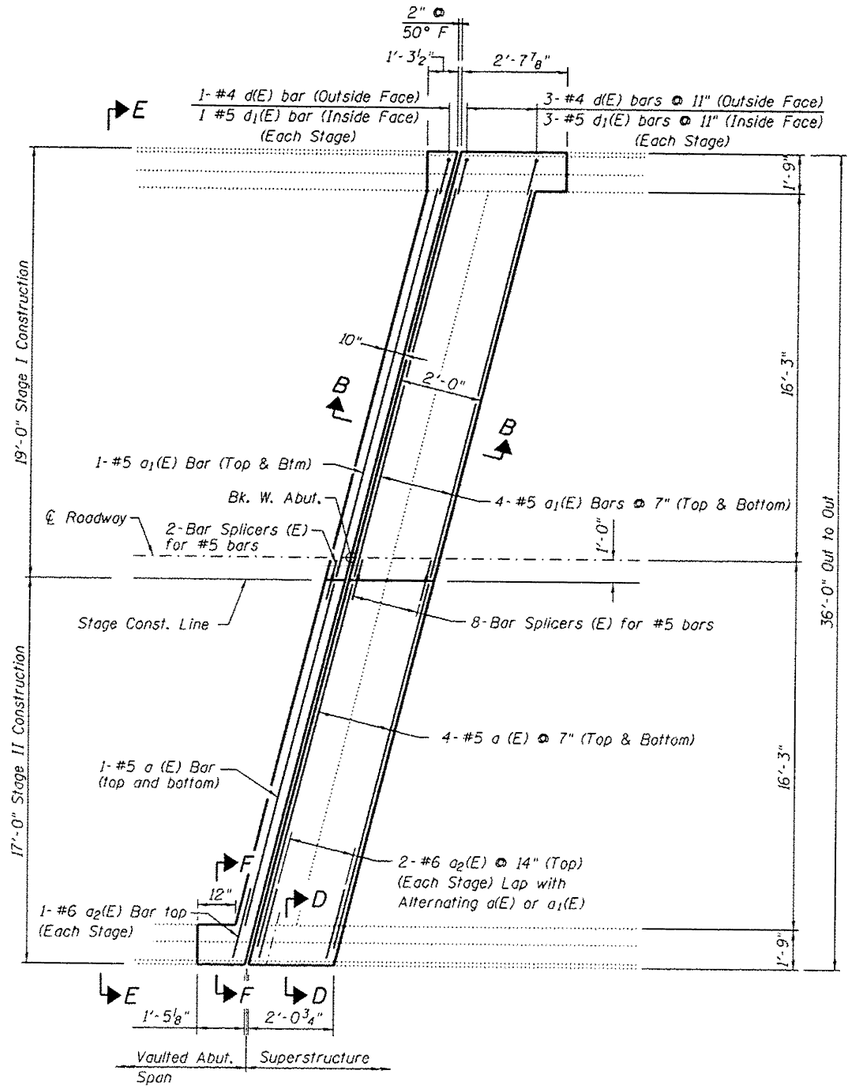
Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Concrete Removal.

Work this sheet with Sheet 4 of 8. Hatched areas indicate concrete removal.



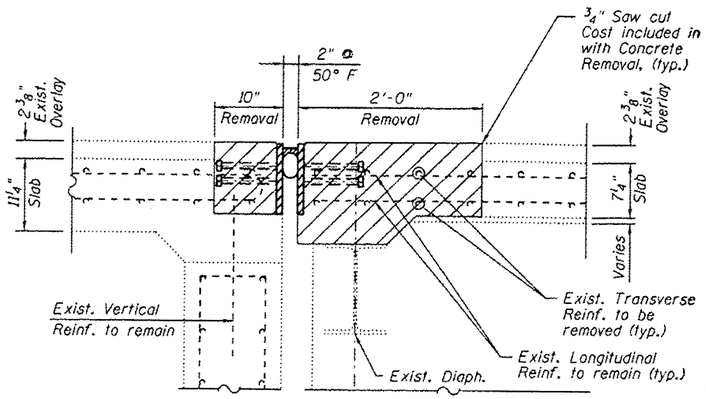
CONCRETE REMOVAL PLAN

(W. Abut. Shown, E. Abut. Similar)



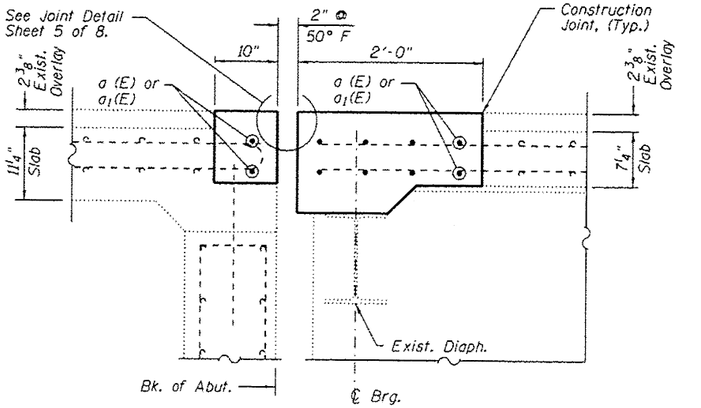
CONCRETE REPLACEMENT PLAN

(W. Abut. Shown, E. Abut. Similar)



SECTION A-A

(Showing removal at deck. Dimensions at Rt. L's)



SECTION B-B

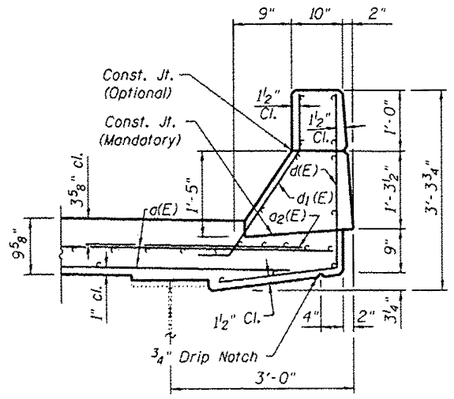
(Showing Proposed Section at Roadway. Dimensions at Rt. L's)

FILE NAME : Oak Crest Rd. over I-72.dgn	USER NAME :	DESIGNED - SAL	REVISED -
		CHECKED - MTH	REVISED -
	PLOT SCALE :	DRAWN - TJW	REVISED -
	PLOT DATE :	CHECKED - MTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

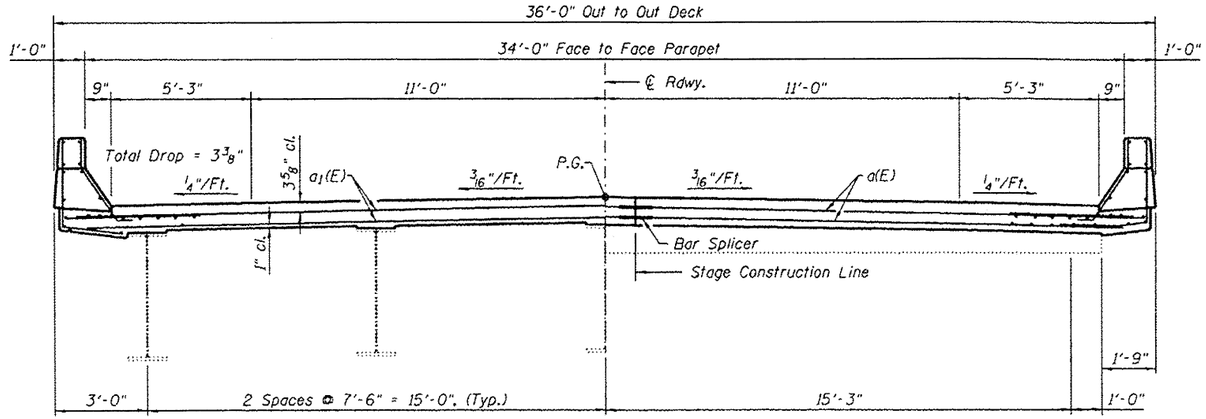
DECK JOINT REPAIRS (1 OF 2)
OAK CREST RD. (TR-171) OVER F.A.I.-72 – S.N. 084-0151
SHEET NO. 3 OF 8 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	SANGAMON	194	142
* (84-10-1RS-3, 84-10-2RS-R)BR,I		CONTRACT NO. 72C90		
FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		



SECTION D-D

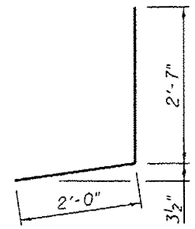
(Showing Parapet at Superstructure. Horizontal dimensions at Rt. L's)



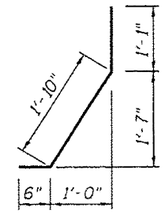
ON DECK SIDE

ON APPROACH SIDE

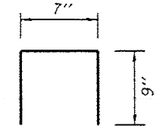
SECTION E-E



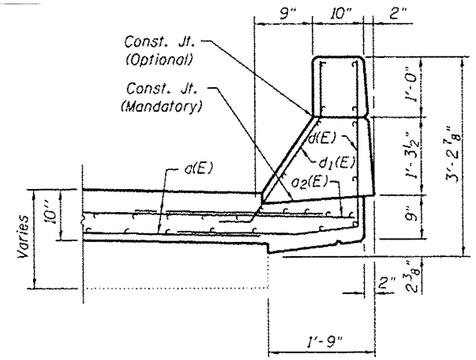
BAR d(E)



BAR d1(E)

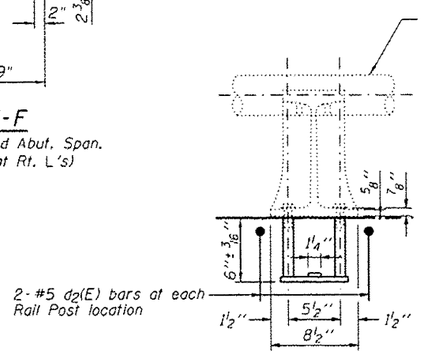


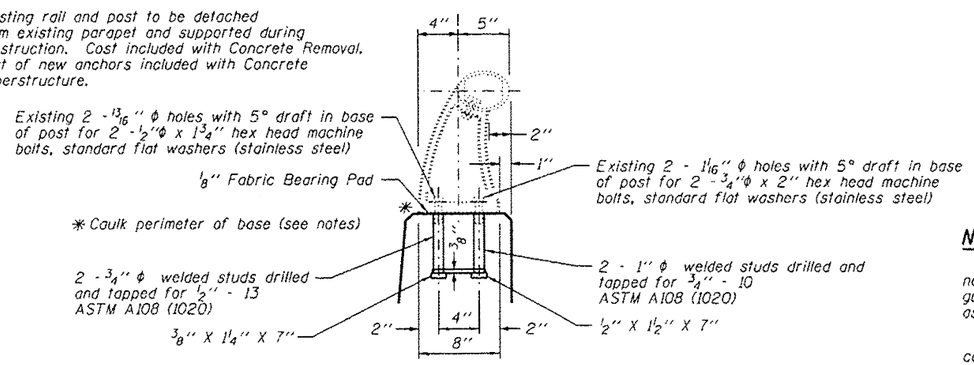
BAR d2(E)



SECTION F-F

(Showing Parapet at Vaulted Abut. Span. Horizontal dimensions at Rt. L's)





RAIL POST DETAIL

(Rail posts to be removed and re-erected at W. Abutment only. Two (2) new anchors required.)

BILL OF MATERIAL

(Two abutments)

Bar	No.	Size	Length	Shape
a(E)	20	#5	16'-11"	
a1(E)	20	#5	19'-0"	
a2(E)	12	#6	4'-0"	
d(E)	16	#4	4'-7"	
d1(E)	16	#5	3'-5"	
d2(E)	4	#5	2'-1"	
Concrete Removal			Cu. Yd.	5.4
Concrete Superstructure			Cu. Yd.	5.4
Reinforcement Bars, Epoxy Coated			Pound	1,330
Bar Splicers			Each	20
Protective Coat			Sq. Yd.	26.0

NOTES:

Seat perimeter of base of post to parapet with two-component non-staining gray sealing compund with polysulfide liquid polymers, gun grade, with primer. Fabric bearing pad shall have same dimensions as base of post.

Existing reinforcement shall be cleaned and incorporated into the new construction, as noted. Cost included with Concrete Removal.

Any Reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included with Concrete Removal.

Removal of all existing expansion joints shall be included in the cost of Concrete Removal.

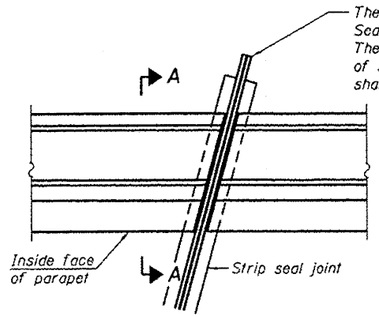
Work this sheet with sheet 3 of 8.

FILE NAME = Oak Crest Rd. over I-72.dgn	USER NAME =	DESIGNED - SAL	REVISED -
		CHECKED - MTH	REVISED -
	PLOT SCALE =	DRAWN - TJW	REVISED -
	PLOT DATE =	CHECKED - MTH	REVISED -

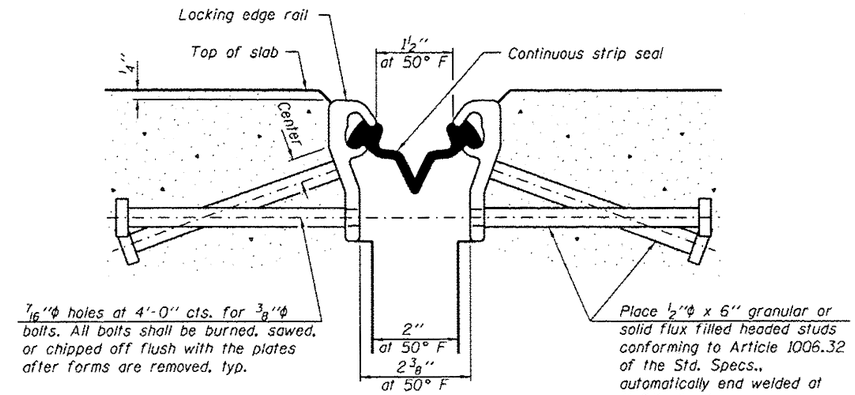
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK JOINT REPAIRS (2 OF 2)
OAK CREST RD. (TR-171) OVER F.A.I.-72 – S.N. 084-0151
SHEET NO. 4 OF 8 SHEETS

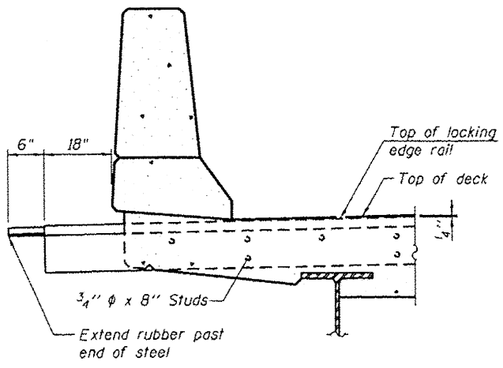
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	SANGAMON	194	143
	* (84-10-1RS-3, 84-10-2RS-R1BR,[	CONTRACT NO. 72C90		
FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		



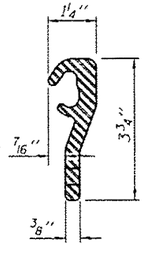
PLAN



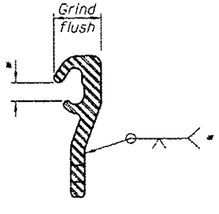
SECTION THRU STRIP SEAL JOINT
(Dimensions at Rt. L's)



SECTION A-A



LOCKING EDGE RAIL



LOCKING EDGE RAIL SPLICE

* Omit weld at seal opening.

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 and stage construction joint.

The manufacturer's recommended installation methods shall be followed.

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

Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.

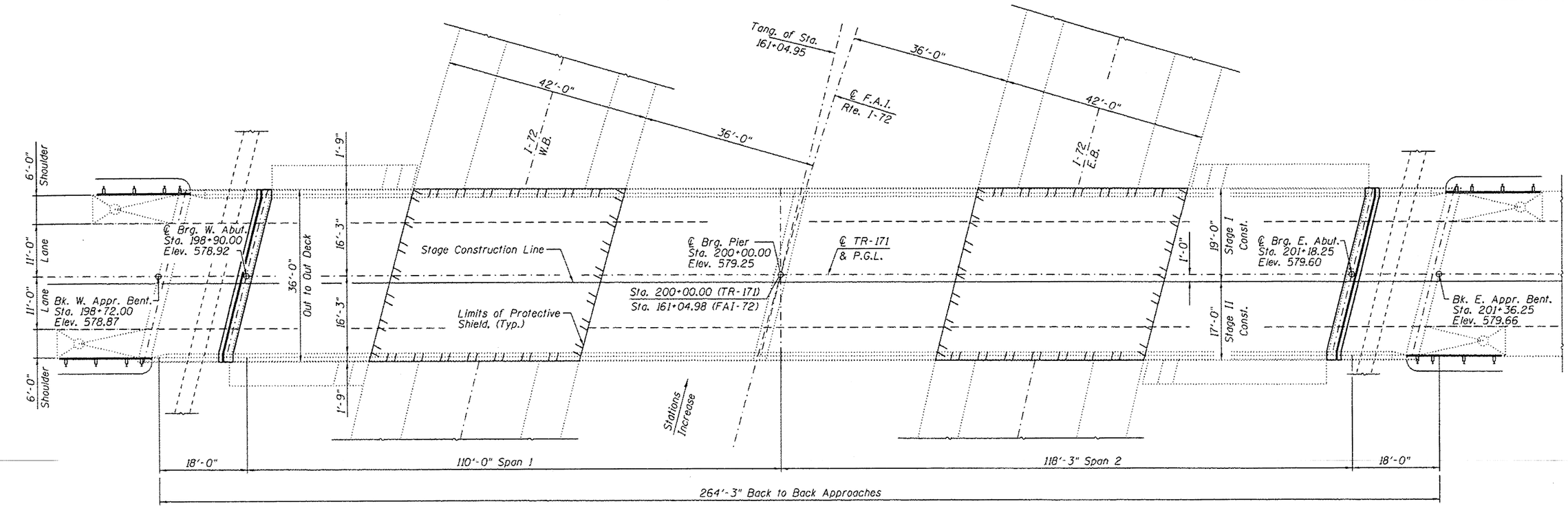
Parapet plates and anchorage studs included in the cost of Preformed Joint Strip Seal.

The inside of the Locking Edge Railing groove shall be free of weld residue.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	72

FILE NAME = Oak Crest Rd. over I-72.dgn	USER NAME =	DESIGNED - SAL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PREFORMED JOINT STRIP SEAL OAK CREST RD. (TR-171) OVER F.A.I.-72 - S.N. 084-0151	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - MTH	REVISED -			72	-	SANGAMON	194	144
	PLOT SCALE =	DRAWN - TJW	REVISED -				* (84-10-1RS-3, 84-10-2RS-R)BR,I	CONTRACT NO. 72C90		
	PLOT DATE =	CHECKED - MTH	REVISED -		SHEET NO. 5 OF 8 SHEETS	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		



Patch No.	Size	Deck Slab Repair (Part Depth)
PD1	EST	50
PD2		
PD3		
PD4		
PD5		
PD6		
PD7		
PD8		
PD9		
PD10		
PD11		
PD12		
PD13		
PD14		

Patch No.	Size	Deck Slab Repair (FD TY I)	Deck Slab Repair (FD TY II)
FD1	EST	20	10
FD2			
FD3			
FD4			
FD5			
FD6			
FD7			
FD8			
FD9			
FD10			
FD11			
FD12			
FD13			
FD14			

NOTES:

Following removal of HMA Surface, Contractor shall notify resident engineer to inspect & sound existing deck.

Quantities are estimated, actual quantities to be determined by the Resident Engineer.

Protective Shield shall be installed as directed by resident engineer to protect traffic below.

PATCHING LEGEND

Partial Depth

Full Depth

BILL OF MATERIAL

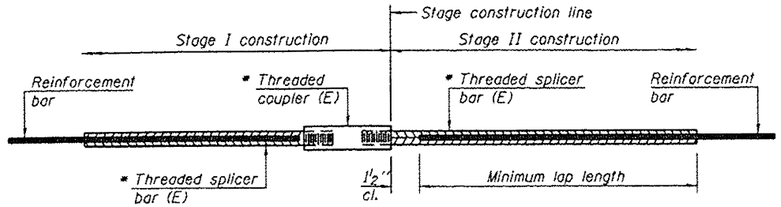
Item	Unit	Total
Deck Slab Repair (Partial)	Sq. Yd.	50
Deck Slab Repair (Full Depth Type I)	Sq. Yd.	20
Deck Slab Repair (Full Depth Type II)	Sq. Yd.	10
Protective Shield	Sq. Yd.	313.0

FILE NAME = Oak Crest Rd. over I-72.dgn	USER NAME =	DESIGNED - SAL	REVISED -
		CHECKED - MTH	REVISED -
	PLOT SCALE =	DRAWN - TJW	REVISED -
	PLOT DATE =	CHECKED - MTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PATCHING PLAN
OAK CREST RD. (TR-171) OVER F.A.I.-72 – S.N.084-0151
SHEET NO. 6 OF 8 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	SANGAMON	194	145
	* (84-10-1RS-3, 84-10-2RS-RIBR.)	CONTRACT NO. 72C90		
FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		



STANDARD BAR SPLICER ASSEMBLY

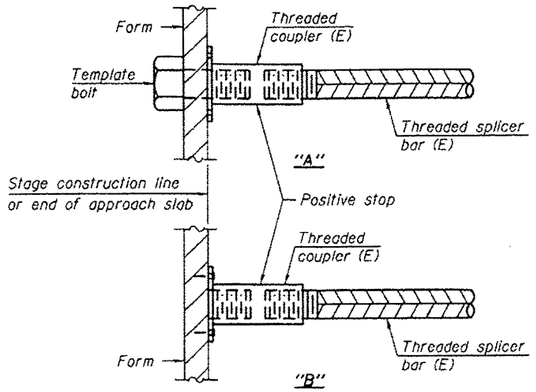
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

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

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

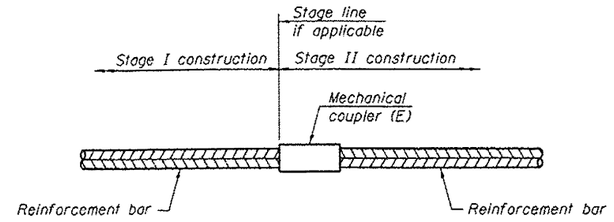
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
N. Abut.	#5	10	3
S. Abut.	#5	10	3



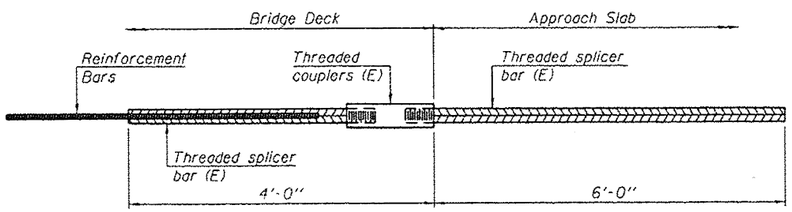
INSTALLATION AND SETTING METHODS

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



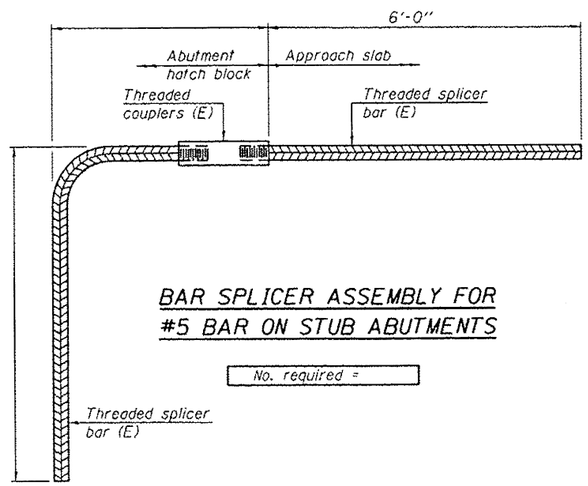
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



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

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

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

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

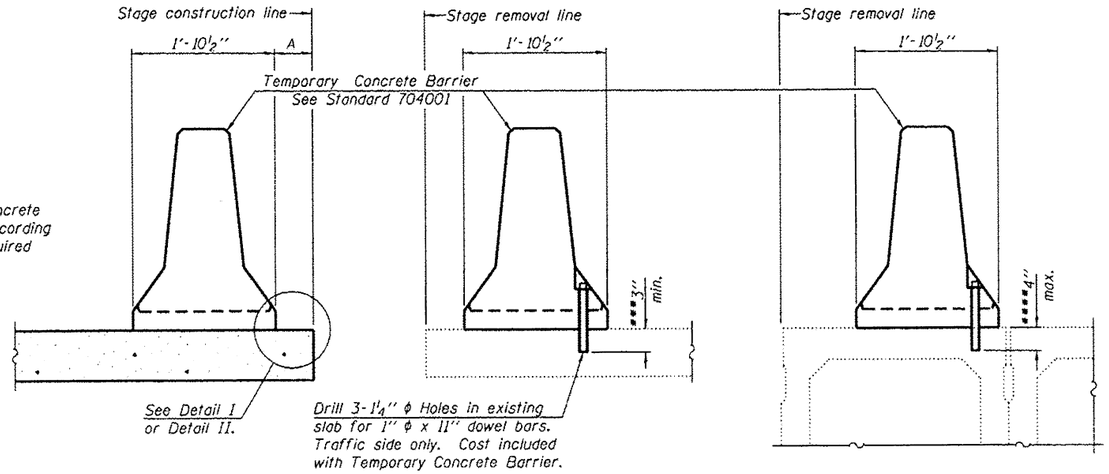
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

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

BSD-1 1-27-12

FILE NAME = Oak Crest Rd. over I-72.dgn	USER NAME =	DESIGNED - SAL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS OAK CREST RD. (TR-171) OVER F.AI.-72 - S.N. 084-0151	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - MTH	REVISED -			72	*	SANGAMON	194	146
	PLOT SCALE =	DRAWN - TJW	REVISED -			* (84-10-1RS-3, 84-10-2RS-R)BR,I		CONTRACT NO. 72C90		
	PLOT DATE =	CHECKED - MTH	REVISED -		SHEET NO. 7 OF 8 SHEETS	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

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



NOTES

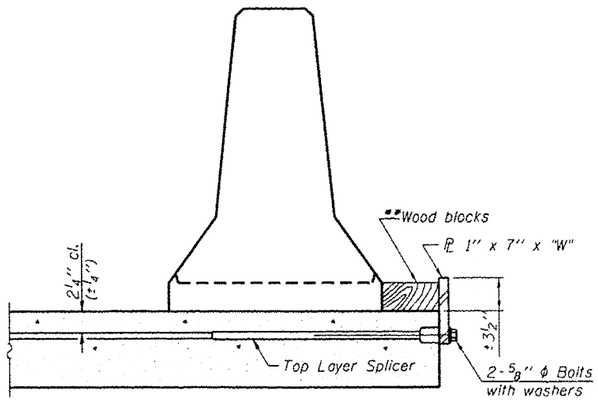
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x "W" steel ℙ to the top layer of couplers with 2-⅝" ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

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

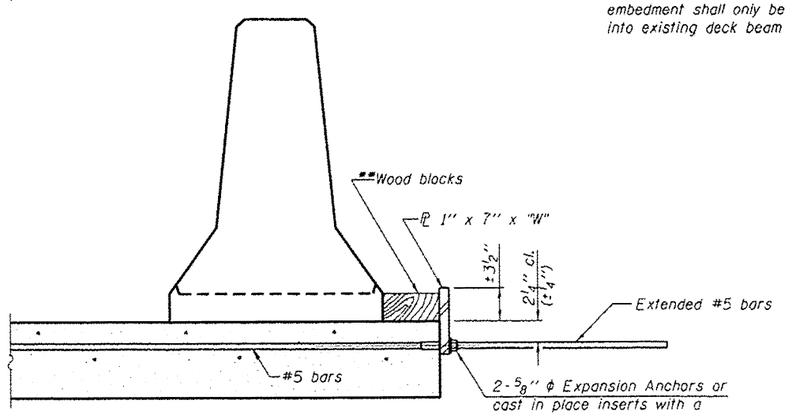
Cost of anchorage is included with Temporary Concrete Barrier.

The 1" x 7" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

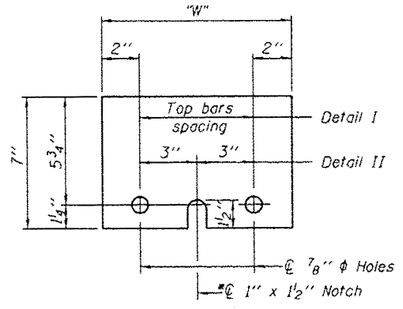
SECTIONS THRU SLAB OR DECK BEAM



DETAIL I



DETAIL II



STEEL RETAINER ℙ 1" x 7" x "W"

* Required only with Detail II

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

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

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

"W" = Top bars spacing + 4"

R-27 7-1-10

FILE NAME = Oak Crest Rd. over I-72.dgn	USER NAME =	DESIGNED - SAL	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION OAK CREST RD. (TR 171) OVER F.A.I. 72 – S.N. 084-0151	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - MTH	REVISED -			72	*	SANGAMON	194	147
	PLOT SCALE =	DRAWN - TJW	REVISED -			* (84-10-1RS-3, 84-10-2RS-RIBR.I		CONTRACT NO. 72C90		
	PLOT DATE =	CHECKED - MTH	REVISED -		SHEET NO. 8 OF 8 SHEETS	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

*72002 #11 1-15-98 F.A.L RTE. 72 SANGAMON Co. SEC. (84-10-1, 2, 3) RS-2 I&R COPY #11

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	SANGAMON	94	1
FED. ROAD DIST. NO. 5		ILLINOIS	FED. AID PROJECT **	

* (84-10-1,2,3)RS-2 ** IM-72-1(63)0

D-96-553-96

95%
11-13-1999

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED FEDERAL AID HIGHWAY

SCALES: PLAN 1:1000; PROFILE HORIZ. 1:1000; PROFILE VERT.; CROSS SECTIONS

F.A.I. ROUTE 72 (I–72)
SECTION (84–10–1,2,3) RS–2
PROJECT IM-72-1(63)0
SANGAMON COUNTY
C–96–508–99

INDEX OF SHEETS

LIST OF STANDARDS

442001-01	631021-01	701321-02
442101-01	631031-01	701326-01
442201-01	635001	701401
482006-01	665001	701406-01
482101	701006-01	701411-01
601001	701101	701426
601101	701106	702001
602301	701201	780001-01
604001	701301	781001-02
606001-01	701306	000001-02
606301-01	701311-01	001001
630001-01	701316-01	BLR-23

METRIC RATIOS

1 m 0 2 m — 1 : 50
0 5 m 10 m — 1 : 100
0 20 m — 1 : 250
5 m 0 20 m — 1 : 500
0 50 m 100 m — 1 : 1000

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

CONTRACT NO. 72002

084-0151

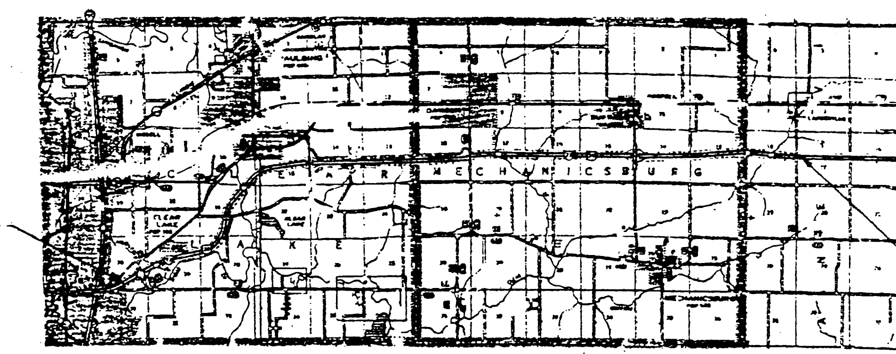
SECTION (84-10-1,2,3) RS-2 INCLUDES:

RESURFACING W.B. LANES FROM STA 167+100 TO STA 175+436
RESURFACING E.B. LANES FROM STA 181+525 TO STA 184+710
RESURFACING E.B. LANES FROM STA 186+790 TO STA 189+410

RECONSTRUCTION OF INTERCHANGE INTERSECTIONS:
CAMP BUTLER, RIVERTON, AND BUFFALO

MINOR STRUCTURE REPAIR FOR:

084-0150	084-0156
084-0151	084-0158
084-0152	084-0159
084-0154	084-2010
084-0155	084-2011



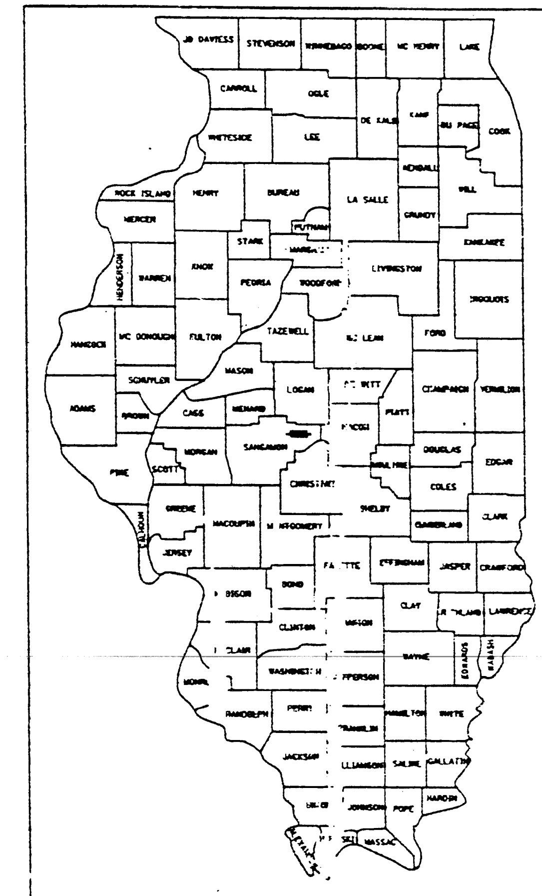
RESURFACING OMISSIONS:
S.N. 084-0152
STA.172+286.826 TO STA 172+566.887

S.N. 084-0158
STA.187+801.153 TO STA 187+857.847

AVERAGE DAILY TRAFFIC
11,800

0 1 2 3 4 5km

TOTAL LENGTH OF SECTION = 14.141 km
NET LENGTH OF SECTION = 13.804 km



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 27 MAR 19 98
DISTRICT ENGINEER

ENGINEER OF PROJECT DEVELOPMENT AND IMPLEMENTATION
December 4 19 98
ENGINEER OF DESIGN AND ENVIRONMENT
December 4 19 98
DIRECTOR, DIVISION OF HIGHWAYS

SEAL

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

6-239

084-0151

Rev.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	SANGAMON	94	63
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

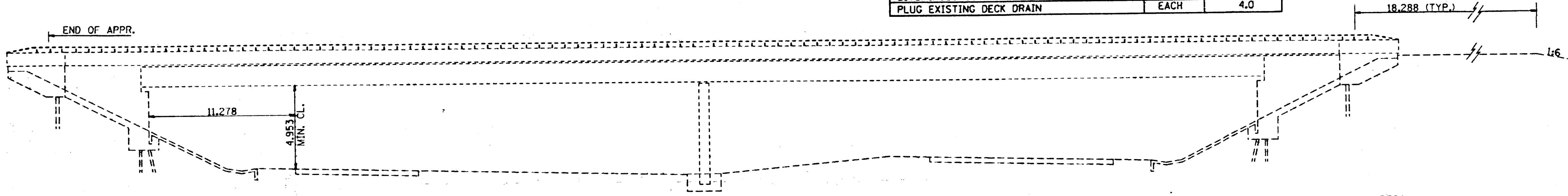
* (84-10-1,2,3)RS-2
S.N. 084-0151

SHEET 1 OF 4

EXISTING STRUCTURE: S.N. 084-0151 IS 10.973 m WIDE BY 80.54 m LONG. 4 SPANS. THIS STRUCTURE CARRIES TR 171 OVER I-72 BUILT IN 1974.

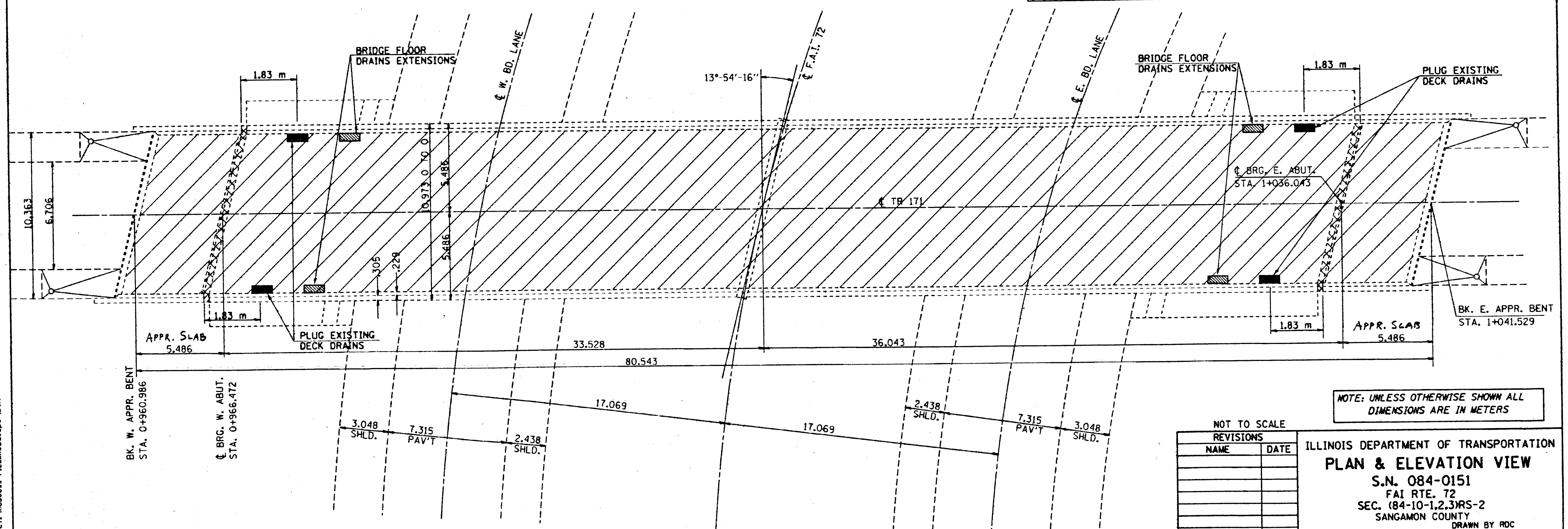
THIS IMPROVEMENT INCLUDES THE REMOVAL OF THE EXISTING BITUMINOUS WEARING SURFACE AND WATERPROOFING MEMBRANE SYSTEM; REPLACED WITH PROPOSED MICROSILICA CONCRETE OVERLAY; DECK REPAIRS, REMOVAL AND REPLACEMENT OF A PORTION OF THE DECK AND THE TOP OF THE ABUTMENT AT THE EXISTING EXPANSION JOINTS; INSTALLING NEW STEEL EXPANSION DAMS AND SEALS AT EACH ABUTMENT; REMOVE AND REPLACE BITUMINOUS CONCRETE SURFACE ON APPROACHES; PLUG EXISTING DECK DRAINS;
INSTALLING BRIDGE FLOOR DRAIN EXTENSIONS; ALL IMPROVEMENT WILL BE COMPLETED VIA STAGE CONSTRUCTION.

TOTAL BILL OF MATERIALS		
ITEM	UNIT	TOTAL
SILICONE JOINT SEALER	M	22.608
BRIDGE DECK MICROSILICA CONCRETE OVERLAY	SQ. M	778.661
CONCRETE BRIDGE DECK SCARIFICATION	SQ. M	778.661
CONCRETE REMOVAL	CU. M	4.51
CONCRETE SUPERSTRUCTURE	CU. M	5.49
BRIDGE DECK GROOVING	SQ. M	795.283
FURNISHING AND ERECTING STRUCTURAL STEEL	KG	1182.760
REINFORCEMENT BARS (EPOXY COATED)	KG	504.384
FLOOR DRAIN EXTENTIONS	EACH	4.0
BITUMINOUS CONCRETE REMOVAL (DECK)	SQ. M	795.283
PLUG EXISTING DECK DRAIN	EACH	4.0



BITUMINOUS CONCRETE REMOVAL - DECK
BRIDGE DECK SCARIFICATION
BRIDGE DECK MICROSILICA CONCRETE OVERLAY

CONCRETE REMOVAL
CONCRETE SUPERSTRUCTURE
FURNISHING AND ERECTING STEEL
SILICONE JOINT SEALER



NOTE: UNLESS OTHERWISE SHOWN ALL DIMENSIONS ARE IN METERS

NOT TO SCALE

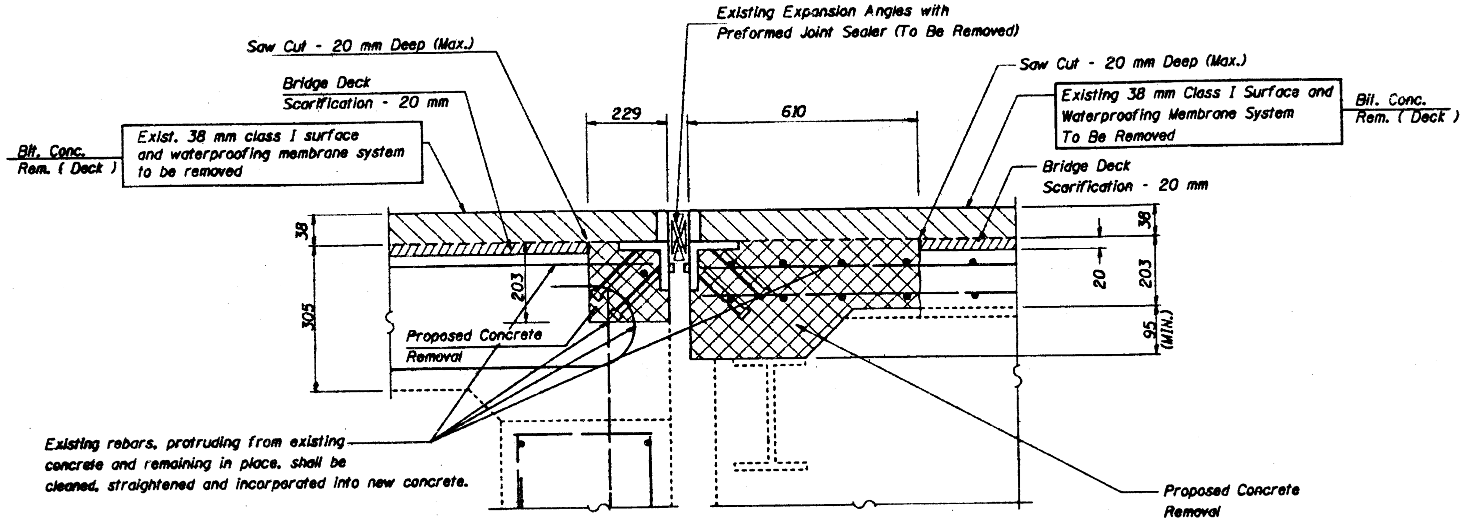
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
PLAN & ELEVATION VIEW
S.N. 084-0151
FAI RTE. 72
SEC. (84-10-1,2,3)RS-2
SANGAMON COUNTY
DRAWN BY RDC
DATE
CHECKED BY

PROJECT: mc50899 FILE:mcod03p3 .DGN

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	SANGAMON	94	69
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

* (84-10-1,2,3)RS-2
S.N. 084-0151



CONCRETE REMOVAL DETAIL
SECTION AT EAST & WEST ABUTMENT
S.N. 084-0151

Note: Removal of the existing expansion joint will not be paid for separately but shall be considered included in the "Concrete Removal".

Note: Any reinforcement bars that are damaged during concrete removal operations shall be replaced using an approved bar splicer or anchorage system. Cost included in "Concrete Removal".

Note: Saw cutting, not to exceed max. depth shall be considered as Cost included in " Concrete Removal ".

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270M Gr.250, unless otherwise noted.

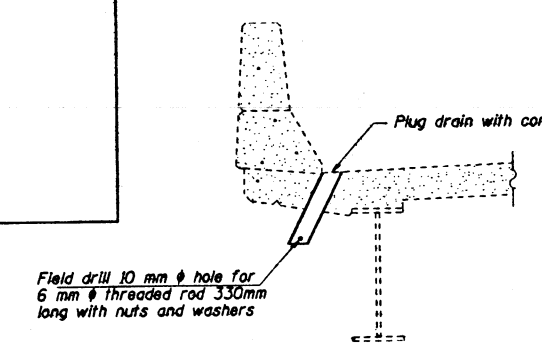
Reinforcement bars shall conform to the requirements of AASHTO M-31M, M-42M or M-53M grade, 400.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale and all other loose, detrimental foreign material shall be removed from the portions of flanges of stringers (girders) in contact with concrete. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-3 for power tool cleaning or SP-2 for hand tool cleaning. Cost shall be included in the cost of " Concrete Superstructure".

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

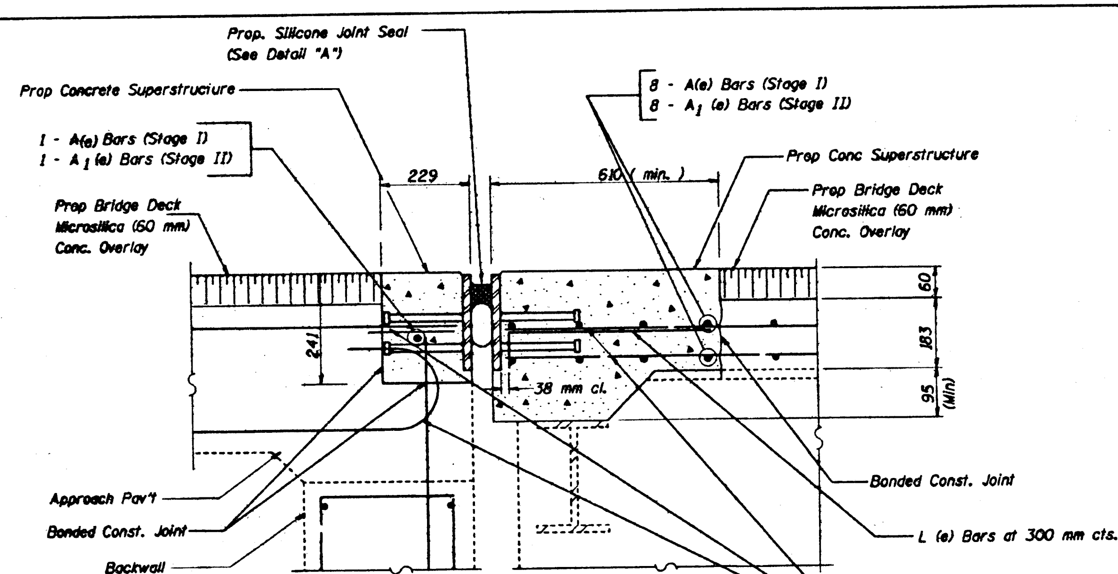
Existing longitudinal reinforcement extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Existing transverse reinforcement may be cut as shown and removed.
Joint opening shall be adjusted according to article 503.10 (c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.



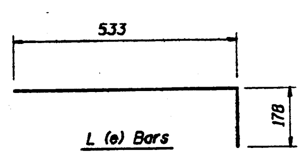
SECTION AT DRAIN

BILL OF MATERIALS

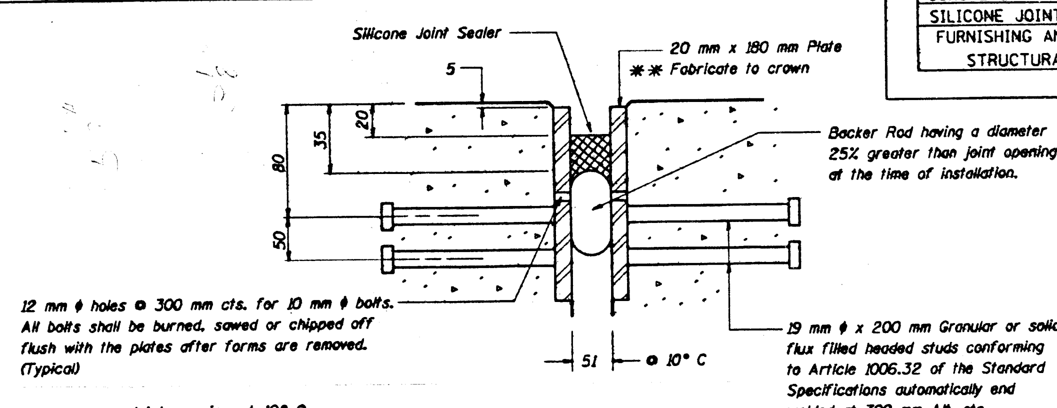
BAR	NO.	SIZE	LENGTH (m)	SHAPE
A (e)	16	20	5.715	———
A_1 (e)	18	20	5.028	———
L (e)	68	15	0.711	——┐
REINFORCEMENT BARS (EPOXY COATED)			KG	504.384
CONCRETE REMOVAL			CU. M	4.510
CONCRETE SUPERSTRUCTURE			CU. M	5.490
SILICONE JOINT SEALER			M	22.608
FURNISHING AND ERECTING STRUCTURAL STEEL			KG	1182.760



SECTION AT ABUTMENT
S.N. 084-0151
East & West Abutment



L (e) Bars



** Furnish in segments of 6 m maximum length. Maximum space between installed segments shall be 5 mm. Seal space with silicone sealant suitable for structural steel. No field painting is required.

Note: After fabrication all surfaces of the steel plates shall be given one shop coat of the inorganic zinc-silicate primer. This cost shall be included in the cost of "F & E Str. Steel."

Joint opening at 10° C
S.N. 084-0151
51 mm
East and West Abutments

DETAIL "A"
Proposed Silicone Joint Seal (Steel Details)

Note:
All dimensions are in millimeters unless otherwise noted.

NOT TO SCALE

REVISIONS	
NAME	DATE

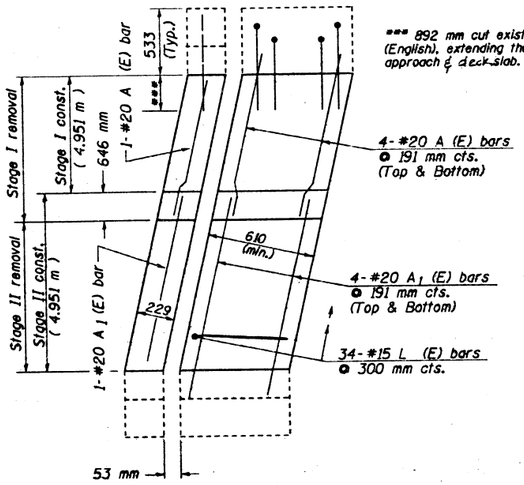
ILLINOIS DEPARTMENT OF TRANSPORTATION
DETAILS
S.N. 084-0151
FAI RTE. 72
SEC. (84-10-1,2,3)RS-2
SANGAMON COUNTY
DRAWN BY RDC
DATE
CHECKED BY

c:\projects\mc50899\mcad03p3.dgn
Tue Aug 11 07:38:15 1998
mcad03p6.dgn,6 LV:1-63
PROJECT: mc50899 FILE:mcad03p3 .DGN

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	SANGAMON	94	65
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

* (84-10-1,2,3)RS-2
S.N. 084-0151

SHEET 3 OF 4



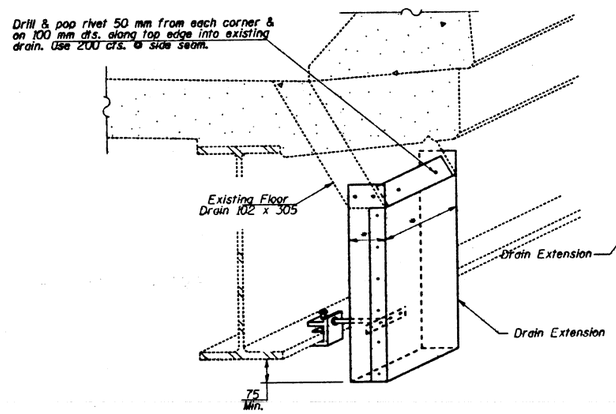
*** 892 mm cut existing #5 & #6 bars. (English), extending the width of the approach & deck slab. (lap with A (E) & A1 (E) bars)

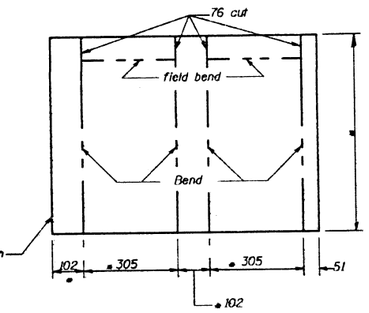
Minimum Bar Laps

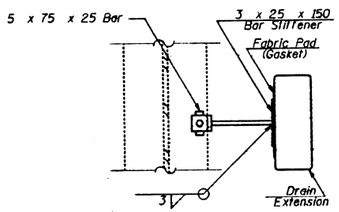
#20 bars - 790 mm @ Stage Line

Existing #5 (English) - 660 mm tranverse bars in approach slab.
Existing #6 (English) - 790 mm tranverse bars in deck slab.

JOINT RECONSTRUCTION



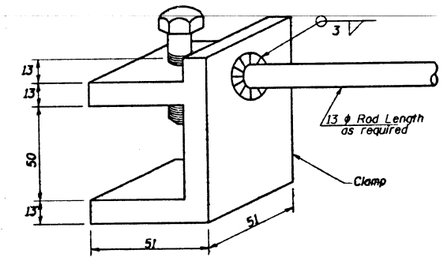




Notes: Pop rivet the 3 x 25 bar to Drain Extension. Use 5 mm stainless steel pop rivets of sufficient length.

* Field measure cut to fit existing drain. Drill & pop rivet 200 mm centers along length of drain extension.

DECK DRAIN EXTENSION DETAIL



STEEL CLAMP

All dimensions are in millimeters unless otherwise noted.

REVISIONS	
NAME	DATE

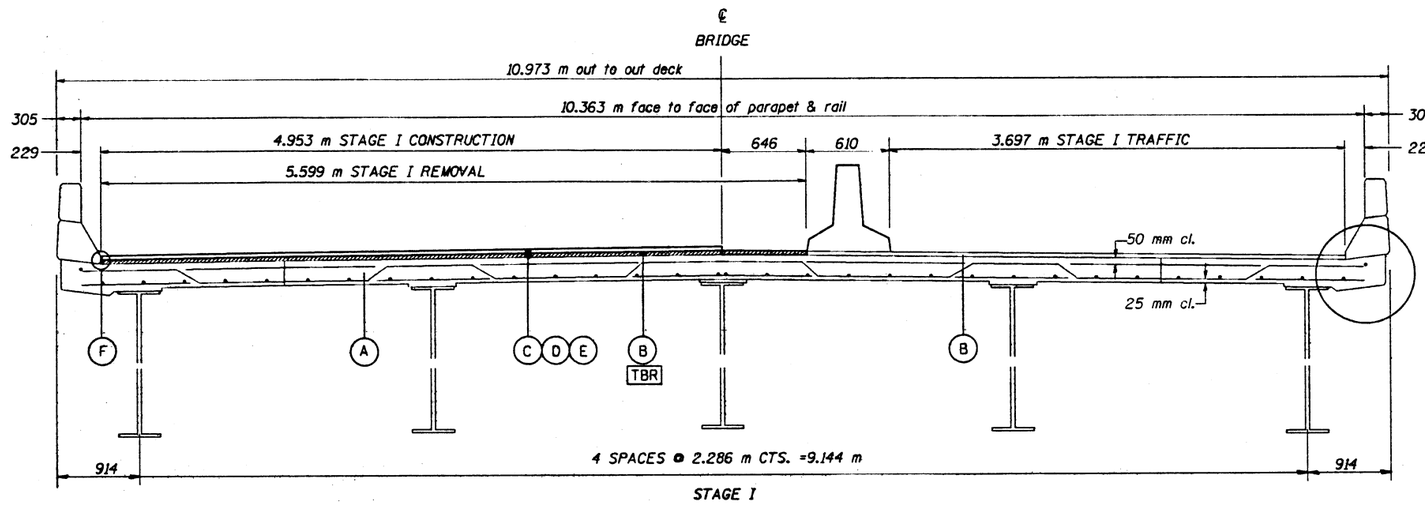
ILLINOIS DEPARTMENT OF TRANSPORTATION
DETAILS
S.N. 084-0151
FAI RTE. 72
SEC. (84-10-1,2,3)RS-2
SANGAMON COUNTY
DRAWN BY CAD
DATE: MARCH 17, 1997 CHECKED BY EJC

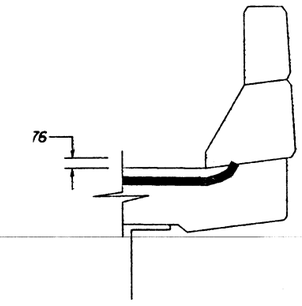
c:\projects\mc50899\mcad03p3.dgn LV=1-63
Wed Aug 12 08:01:10 1998
mcad03p6.dgn.6 LV=1-63
PROJECT: mc50899 FILE:mcad03p3.DGN
D6MSTDS:BRDRAIN.DGN

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
72	*	SANGMON	94	66
STA.		TO STA.		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	

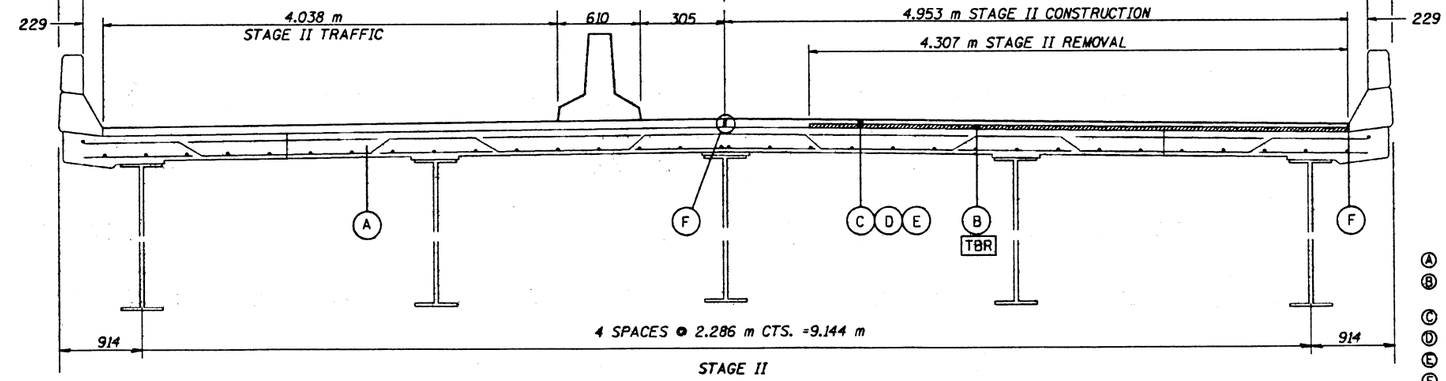
SHEET 4 OF 4

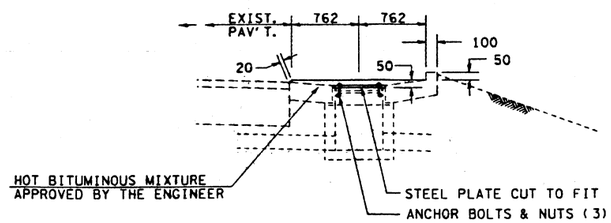
* (84-10-1,2,3)RS-2
S.N. 084-0151





TYP. END OF SEAL TREATMENT





INLET CAP DETAIL

NOTE: THE WORK SHOWN IN THIS DETAIL (INCLUDING ITS REMOVAL) WILL NOT BE PAID FOR SEPERATELY BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF EACH FOR TRAFFIC CONTROL AND PROTECTION STD. 701321.

LEGEND

- Ⓐ EXISTING DECK
- Ⓑ EXISTING BITUMINOUS WEARING SURFACE - 38 mm W/ WATERPROOFING MEMBRANE SYSTEM
- Ⓒ PROPOSED CONCRETE BRIDGE DECK SCARIFICATION - 20 mm
- Ⓓ PROPOSED BRIDGE MICROSILICA CONCRETE OVERLAY - 60 mm
- Ⓔ PROPOSED BRIDGE DECK GROOVING
- Ⓕ PROPOSED BONDED CONSTRUCTION JOINT

NOT TO SCALE

NOTE: UNLESS OTHERWISE SHOWN ALL DIMENSIONS ARE IN MILLIMETERS

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
STAGING TYPICALS
S.N. 084-0151
FAI RTE. 72
SEC. (84-10-1,1,2,3)RS-2
SANGAMON COUNTY
DRAWN BY RDC
DATE CHECKED BY

c:\projects\mc50899\mcad03p3.dgn LV=1:63
Tue Aug 11 07:38:19 1998
mcad03p6.dgn,6 LV=1:63

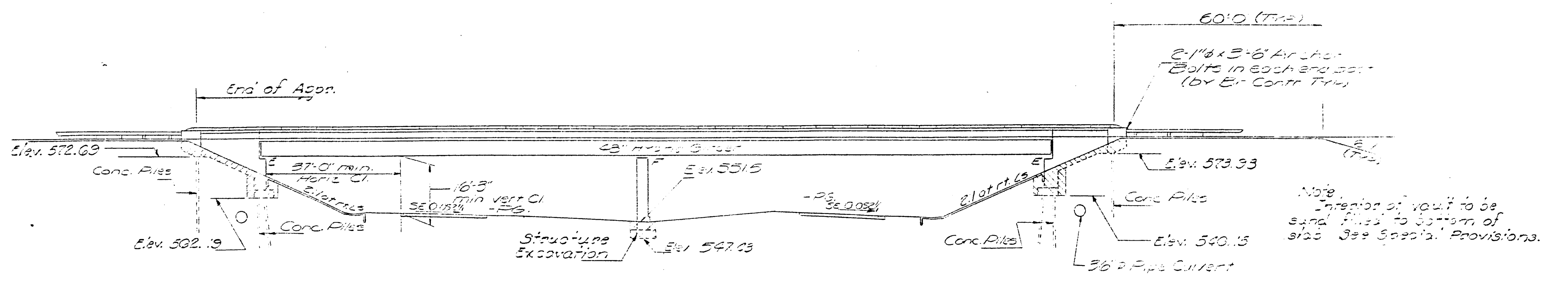
PROJECT: mc50899 FILE:mcad03p3.DGN

B.M. 25' Top of R.O.W. marker 50' Right of 161+02 Elev. 579.40

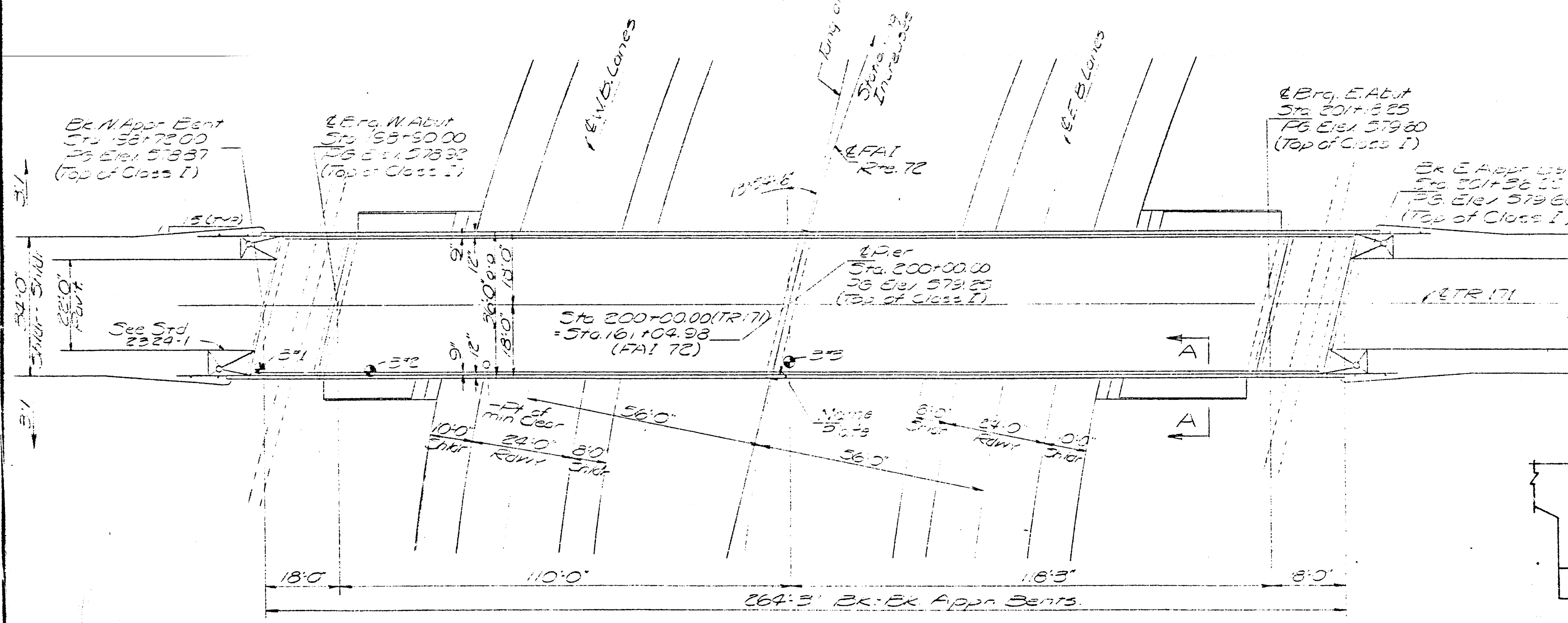
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 72	64-10 (-1-B-1)	SANGAMON	5	—
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

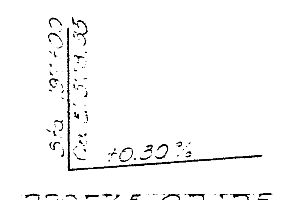
SHEET NO.
13 SHEETS



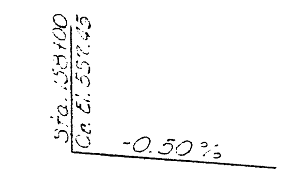
ELEVATION



PLAN



PROFILE GRADE TR. 171



PROFILE GRADE FAI RTE 72 (At median edge)

GENERAL NOTES

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

Fasteners shall be high strength bolts. Bolts ¾"⌀; open holes 13/16"⌀, unless otherwise noted.

Calculated weight of Structural Steel. = 261,620 #

The Basic Lead Silico Chromate paint system shall be used for shop and field painting of structural steel.

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

Anchor bolts shall be set before bolting diaphragms over supports.

Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weight 58# per 100 sq. ft.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

Protective Coat shall not be applied to surfaces to which Coal Tar Interlayer Protective Coat is applied.

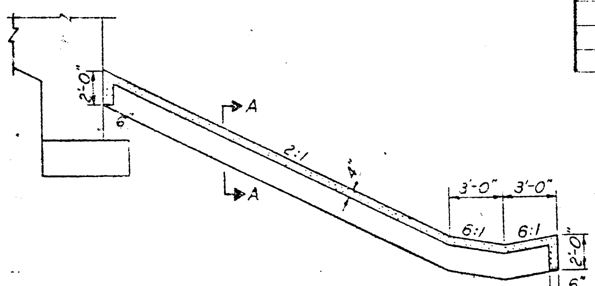
The contractor shall drive two concrete test piles one each at East Approach Bent and one each at West Abutment in permanent locations as directed by the Engineer before ordering the remainder of piles.

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.

TOTAL BILL OF MATERIAL

Item	Unit	Super.	Sub.	Total
Bituminous Concrete Surf. Cse. Cl. I	Tons	[illegible]		[illegible]
Structure Excavation	Cu. Yds.		240	240
Protective Coat	Sq. Yds.	204		204
Class X Concrete	Cu. Yds.	314.5	198.4	512.9
Structural Steel	L.S.	L.S.		L.S.
Stud Shear Connectors	Each	2175		2175
Aluminum Railing	Lin. Ft.	545		545
Reinforcement Bars	Lbs.	76,690	23,240	99,930
Concrete Piles	Lin. Ft.		609	609
Test Piles (Concrete)	Each		2	2
Name Plates	Each		1	1
Slope Wall (4")	Sq. Yds.		448	448
Coal Tar Interlayer Protective Coat	Sq. Yds.	951		951
Preformed Joint Sealer 4"	Lin. Ft.	75		75
Sand Backfill	Cu. Yds.		154	154

* A 36 = 161,551 Lbs
A 572 = 74,939 Lbs
A 588 = 25,130 Lbs
261,620 Lbs



SLOPEWALL DETAIL

STATION 161+04.98
BUILT 19   BY
STATE OF ILLINOIS
F.A.I. RT. 72   SEC. 64-10-1-B-1
F.A. PROJ. I-72-1(15)
LOADING HS 20-44

NAME PLATE
See Std. 2131-1

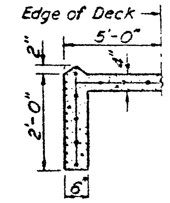
CURVE DATA
FAI RTE. 72

PI Sta. 163+56.99
Δ: 59°-10'-56"
D: 2°00'
T: 1010.60'
R: 2864.79'
L: 1959.1'
E: 162.05'
SE: 0.053'/'

DESIGN STRESSES

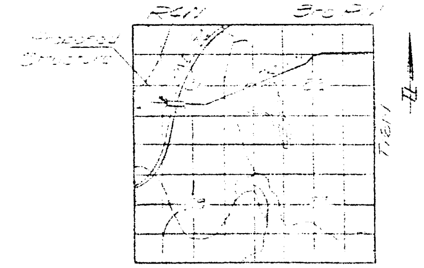
f'c=1200 psi. Deck
f'c=1400 psi. Curb Parapet Sub & Appr Slab
fs=20000 psi. Reinf.
fs=20000 psi. Struct. (A36)
fs=27000 psi. Struct. (A588 or A572)
v=75 psi. (Piles)
n=10
Design Specifications 1969 AASHO (as applicable)
Allow 25#/Sq. Ft. for Fut. W.S.

LOADING HS20-44



Edge of Deck

SECTION A-A



LOCATION SKETCH

PROJECT I-72-1(15)
BRIDGE [illegible]
[illegible]
FAI RTE 72 [illegible]
SANGAMON COUNTY
STATION 161+04.98

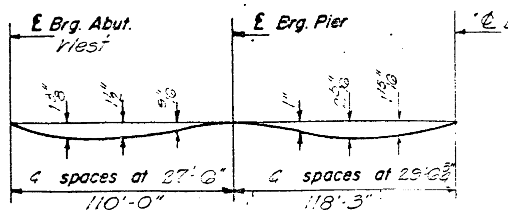
DESIGNED	[signature]
CHECKED	[signature]
J. SCHNEIDER	
DRAWN	[signature]
CHECKED	JNP

June 14 1972
EXAMINED [signature] — ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED [signature] — ENGINEER OF DESIGN
APPROVED [signature] — CHIEF HIGHWAY ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 72	84-10 (HB-1)	SANGAMON	56	8
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

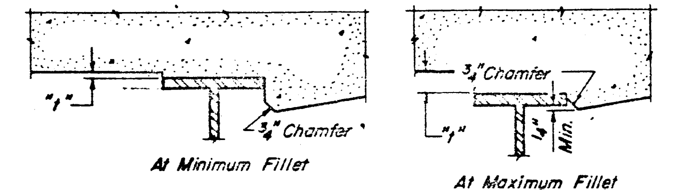
SHEET NO. 2
3 SHEETS



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.



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 Deflection" shown below, minus slab thickness, & Class I equals the fillet heights "t" above top flange of beams

FILLET HEIGHTS

W. Abut. N. Curb

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF APPR. SLAB		19876.538	-16.250	578.599	578.599
A		19886.538	-16.250	578.629	578.629
BK. W. ABUT.		19893.075	-16.250	578.648	578.648

E. Abut. N Curb

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
BK. E. ABUT.		20123.221	-16.250	579.339	579.339
W		20133.221	-16.250	579.369	579.369
END OF APPR SLAB		20139.758	-16.250	579.388	579.388

Girder 1

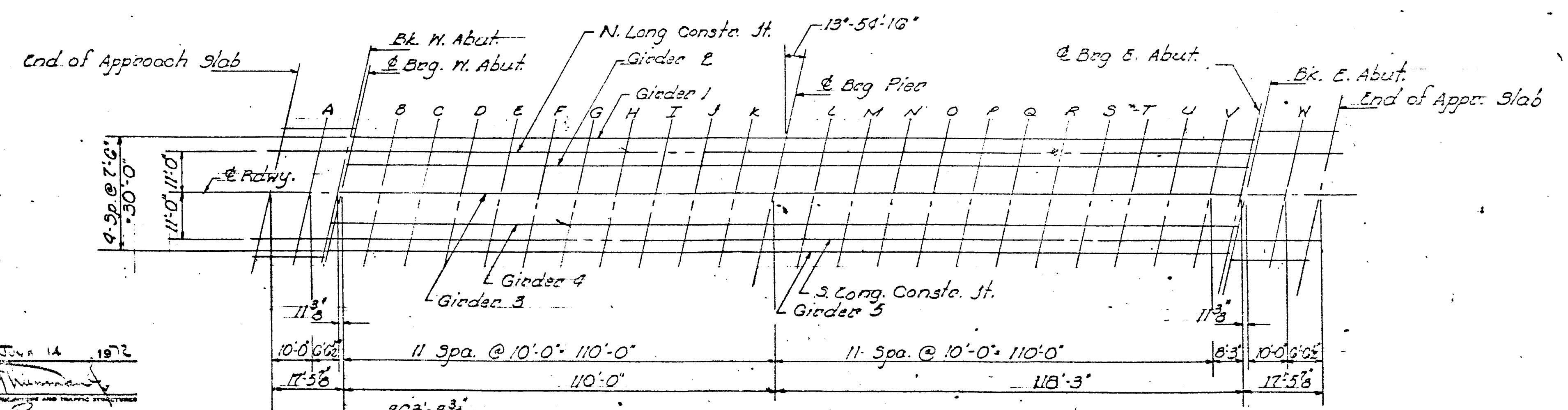
Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF APPR. SLAB		19876.228	-15.000	578.624	578.624
A		19886.228	-15.000	578.654	578.654
BK. W. ABUT.		19892.765	-15.000	578.673	578.673
℄ BRG. W. ABUT		19893.713	-15.000	578.676	578.676
B		19903.713	-15.000	578.706	578.748
C		19913.713	-15.000	578.736	578.819
D		19923.713	-15.000	578.766	578.881
E		19933.713	-15.000	578.796	578.915
F		19943.713	-15.000	578.826	578.950
G		19953.713	-15.000	578.856	578.957
H		19963.713	-15.000	578.886	578.967
I		19973.713	-15.000	578.916	578.958
J		19983.713	-15.000	578.946	578.978
K		19993.713	-15.000	578.976	578.992
℄ BRG. PIER		20003.713	-15.000	579.006	579.006
L		20013.713	-15.000	579.036	579.066
M		20023.713	-15.000	579.066	579.125
N		20033.713	-15.000	579.096	579.185
O		20043.713	-15.000	579.126	579.250
P		20053.713	-15.000	579.156	579.315
Q		20063.713	-15.000	579.186	579.377
R		20073.713	-15.000	579.216	579.396
S		20083.713	-15.000	579.246	579.416
T		20093.713	-15.000	579.276	579.430
U		20103.713	-15.000	579.306	579.406
V		20113.713	-15.000	579.336	579.381
℄ BRG E. ABUT.		20121.963	-15.000	579.361	579.361
BK E. ABUT.		20122.911	-15.000	579.364	579.364
W		20132.911	-15.000	579.394	579.394
END OF APPR. SLAB		20139.448	-15.000	579.413	579.413

N. Long. Bonded Constr. Joint

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF APPR. SLAB		19875.238	-11.000	578.704	578.704
A		19885.238	-11.000	578.734	578.734
BK. W. ABUT.		19891.775	-11.000	578.753	578.753
℄ BRG. W. ABUT		19892.723	-11.000	578.756	578.756
B		19902.723	-11.000	578.786	578.828
C		19912.723	-11.000	578.816	578.899
D		19922.723	-11.000	578.846	578.961
E		19932.723	-11.000	578.876	578.996
F		19942.723	-11.000	578.906	579.030
G		19952.723	-11.000	578.936	579.047
H		19962.723	-11.000	578.966	579.048
I		19972.723	-11.000	578.996	579.048
J		19982.723	-11.000	579.026	579.058
K		19992.723	-11.000	579.056	579.072
℄ BRG. PIER		20002.723	-11.000	579.086	579.086
L		20012.723	-11.000	579.116	579.146
M		20022.723	-11.000	579.146	579.205
N		20032.723	-11.000	579.176	579.265
O		20042.723	-11.000	579.206	579.330
P		20052.723	-11.000	579.236	579.396
Q		20062.723	-11.000	579.266	579.457
R		20072.723	-11.000	579.296	579.477
S		20082.723	-11.000	579.326	579.496
T		20092.723	-11.000	579.356	579.510
U		20102.723	-11.000	579.386	579.486
V		20112.723	-11.000	579.416	579.461
℄ BRG E. ABUT.		20120.973	-11.000	579.441	579.441
BK E. ABUT.		20121.921	-11.000	579.444	579.444
W		20131.921	-11.000	579.474	579.474
END OF APPR SLAB		20138.458	-11.000	579.493	579.493

Girder 2

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF APPR. SLAB		19874.372	-7.500	578.756	578.756
A		19884.372	-7.500	578.786	578.786
BK. W. ABUT.		19890.909	-7.500	578.806	578.806
℄ BRG. W. ABUT		19891.857	-7.500	578.808	578.808
B		19901.857	-7.500	578.838	578.880
C		19911.857	-7.500	578.868	578.951
D		19921.857	-7.500	578.898	579.014
E		19931.857	-7.500	578.928	579.048
F		19941.857	-7.500	578.958	579.082
G		19951.857	-7.500	578.988	579.099
H		19961.857	-7.500	579.018	579.100
I		19971.857	-7.500	579.048	579.100
J		19981.857	-7.500	579.078	579.111
K		19991.857	-7.500	579.108	579.124
℄ BRG. PIER		20001.857	-7.500	579.138	579.138
L		20011.857	-7.500	579.168	579.198
M		20021.857	-7.500	579.198	[illegible]
N		20031.857	-7.500	579.228	579.317
O		20041.857	-7.500	579.258	[illegible]
P		20051.857	-7.500	579.288	[illegible]
Q		20061.857	-7.500	579.318	579.509
R		20071.857	-7.500	579.348	579.529
S		20081.857	-7.500	579.378	579.549
T		20091.857	-7.500	579.408	579.563
U		20101.857	-7.500	579.438	579.538
V		20111.857	-7.500	579.468	579.513
℄ BRG E. ABUT.		20120.107	-7.500	579.493	579.493
BK E. ABUT.		20121.055	-7.500	579.496	579.496
W		20131.055	-7.500	579.526	579.526
END OF APPR. SLAB		20137.5[illegible]	-7.500	579.546	579.546



PLAN

DESIGNED	W. Z. Miller
CHECKED	J. Schneller
DRAWN	P.G. Barnett
CHECKED	JNP

E-S 8-1-65

June 14, 1972

EXAMINED — Engineer of Bridges and Traffic Structures
PASSED W. E. Baumann — Engineer of Design
APPROVED Richard H. Golterman — Chief Highway Engineer

TOP OF CLASS I ELEVATION
F.A.I. RT. 72 SEC. 84-10-1HB-1
SANGAMON COUNTY
STA. 1614 04.93

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 72	84-10-1HB-1	SANGAMON	56	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

SHEET NO. 3
13 SHEETS

℄ Rdwy. & Girder 3

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF APPR. SLAB		19872.515	0.0	578.868	578.868
A		19882.515	0.0	578.898	578.898
Bk. W. ABUT.		19889.052	0.0	578.917	578.917
℄ BRG. W. ABUT		19890.000	0.0	578.920	578.920
B		19900.000	0.0	578.950	578.992
C		19910.000	0.0	578.980	579.063
D		19920.000	0.0	579.010	579.125
E		19930.000	0.0	579.040	579.159
F		19940.000	0.0	579.070	579.194
G		19950.000	0.0	579.100	579.211
H		19960.000	0.0	579.130	579.211
I		19970.000	0.0	579.160	579.212
J		19980.000	0.0	579.190	579.222
K		19990.000	0.0	579.220	579.236
℄ BRG. PIER		20000.000	0.0	579.250	579.250
L		20010.000	0.0	579.280	579.310
M		20020.000	0.0	579.310	579.369
N		20030.000	0.0	579.340	579.429
O		20040.000	0.0	579.370	579.494
P		20050.000	0.0	579.400	579.559
Q		20060.000	0.0	579.430	579.621
R		20070.000	0.0	579.460	579.640
S		20080.000	0.0	579.490	579.660
T		20090.000	0.0	579.520	579.674
U		20100.000	0.0	579.550	579.650
V		20110.000	0.0	579.580	579.625
℄ BRG E. ABUT.		20118.250	0.0	579.605	579.605
BK E. ABUT.		20119.198	0.0	579.608	579.608
W		20129.198	0.0	579.638	579.638
END OF APPR SLAB		20135.735	0.0	579.657	579.657

Girder 4

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF APPR. SLAB		19870.658	7.500	578.745	578.745
A		19880.658	7.500	578.775	578.775
Bk. W. ABUT.		19887.195	7.500	578.794	578.794
℄ BRG. W. ABUT		19888.143	7.500	578.797	578.797
B		19898.143	7.500	578.827	578.869
C		19908.143	7.500	578.857	578.940
D		19918.143	7.500	578.887	579.032
E		19928.143	7.500	578.917	579.037
F		19938.143	7.500	578.947	579.071
G		19948.143	7.500	578.977	579.088
H		19958.143	7.500	579.007	579.088
I		19968.143	7.500	579.037	579.089
J		19978.143	7.500	579.067	579.099
K		19988.143	7.500	579.097	579.113
℄ BRG. PIER		19993.143	7.500	579.127	579.127
L		20008.143	7.500	579.157	579.137
M		20018.143	7.500	579.187	579.246
N		20028.143	7.500	579.217	579.306
O		20038.143	7.500	579.247	579.371
P		20048.143	7.500	579.277	579.437
Q		20053.143	7.500	579.307	579.498
R		20068.143	7.500	579.337	579.518
S		20078.143	7.500	579.367	579.537
T		20088.143	7.500	579.397	579.551
U		20098.143	7.500	579.427	579.527
V		20108.143	7.500	579.457	579.502
℄ BRG E. ABUT.		20116.393	7.500	579.482	579.482
BK E. ABUT.		20117.341	7.500	579.485	579.485
W		20127.341	7.500	579.515	579.515
END OF APPR SLAB		20133.873	7.500	579.534	579.534

S. Long. Bonded Constr. Joint

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF APPR. SLAB		19869.792	11.000	578.687	578.687
A		19879.792	11.000	578.717	578.717
Bk. W. ABUT.		19886.329	11.000	578.737	578.737
℄ BRG. W. ABUT		19887.277	11.000	578.740	578.740
B		19897.277	11.000	578.770	578.811
C		19907.277	11.000	578.800	578.883
D		19917.277	11.000	578.830	578.945
E		19927.277	11.000	578.860	578.979
F		19937.277	11.000	578.890	579.014
G		19947.277	11.000	578.920	579.031
H		19957.277	11.000	578.950	579.031
I		19967.277	11.000	578.980	579.032
J		19977.277	11.000	579.010	579.042
K		19987.277	11.000	579.040	579.056
℄ BRG. PIER		19997.277	11.000	579.070	579.070
L		20007.277	11.000	579.100	579.130
M		20017.277	11.000	579.130	579.139
N		20027.277	11.000	579.160	579.249
O		20037.277	11.000	579.190	579.314
P		20047.277	11.000	579.220	579.379
Q		20057.277	11.000	579.250	579.441
R		20067.277	11.000	579.280	579.450
S		20077.277	11.000	579.310	579.430
T		20087.277	11.000	579.340	579.404
U		20097.277	11.000	579.370	579.470
V		20107.277	11.000	579.400	579.445
℄ BRG E. ABUT.		20115.527	11.000	579.425	579.425
BK E. ABUT.		20116.475	11.000	579.428	579.428
W		20126.475	11.000	579.458	579.458
END OF APPR. SLAB		20133.012	11.000	579.477	579.477

Girder 5

Location	Beam	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
END OF APPR. SLAB		19868.802	15.000	578.601	578.601
A		19878.802	15.000	578.631	578.631
Bk. W. ABUT.		19885.339	15.000	578.651	578.651
℄ BRG. W. ABUT		19886.287	15.000	578.654	578.654
B		19896.287	15.000	578.684	578.725
C		19906.287	15.000	578.714	578.797
D		19916.287	15.000	578.744	578.889
E		19926.287	15.000	578.774	578.893
F		19936.287	15.000	578.804	578.927
G		19946.287	15.000	578.834	578.945
H		19956.287	15.000	578.864	578.945
I		19966.287	15.000	578.894	578.945
J		19976.287	15.000	578.924	578.936
K		19986.287	15.000	578.954	578.970
℄ BRG. PIER		19996.287	15.000	578.984	578.984
L		20006.287	15.000	579.014	579.043
M		20016.237	15.000	579.044	579.103
N		20026.287	15.000	579.074	579.163
O		20036.287	15.000	579.104	579.223
P		20046.287	15.000	579.134	579.233
Q		20056.287	15.000	579.164	579.354
R		20066.287	15.000	579.194	579.374
S		20076.237	15.000	579.224	579.394
T		20086.287	15.000	579.254	579.408
U		20096.287	15.000	579.284	579.333
V		20106.287	15.000	579.314	579.359
℄ BRG E. ABUT.		20114.537	15.000	579.339	579.339
BK E. ABUT.		20115.485	15.000	579.341	579.341
W		20125.485	15.000	579.371	579.371
END OF APPR SLAB		20132.022	15.000	579.391	579.391

N. Abut. S. Curb

END OF APPR. SLAB	19868.492	16.250	578.574	578.574
A	19878.492	16.250	578.604	578.604
Bk. W. ABUT.	19885.029	16.250	578.624	578.624

E. Abut. S. Curb

BK E. ABUT.	20115.175	16.250	579.314	579.314
W	20125.175	16.250	579.344	579.344
END OF APPR SLAB	20131.712	16.250	579.364	579.364

DESIGNED Remittance
CHECKED James Pence
J. SCHNELLER
DRAWN P.G. Bamett
CHECKED JNP

E-S 8-1-65

JUNE 14 1972
EXAMINED
PASSED W.E. Baumann ENGINEER OF DESIGN
APPROVED Richard H. Gotterman DEPUTY HIGHWAY ENGINEER

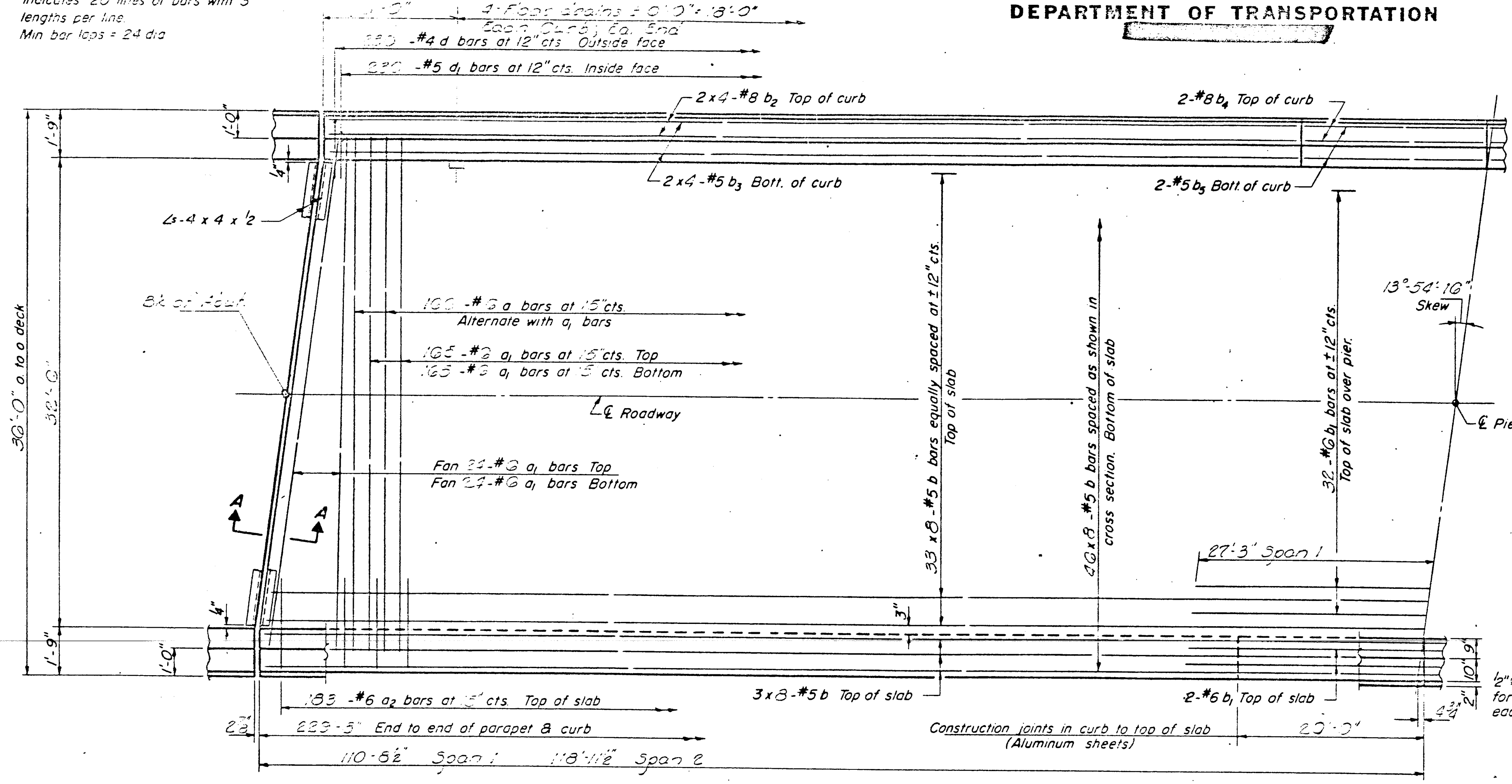
TOP OF CLASS I ELEVATION
F.A.I. RT. 72 SEC. 84-10-1HB-1
SANGAMON COUNTY
STA. 1614+04.93

NOTE:
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
Min bar laps = 24 dia

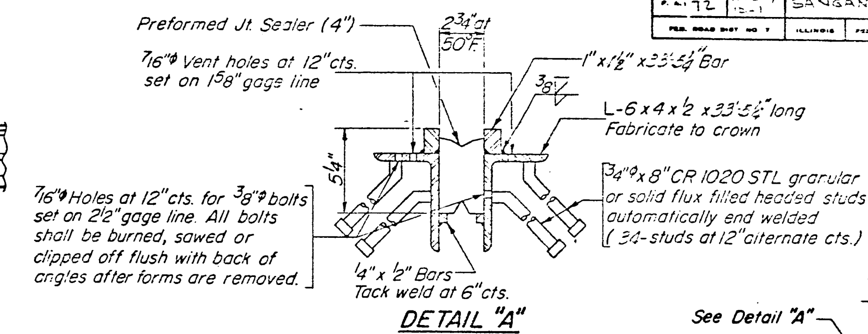
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 72	84-10 (HB-1, 15-1)	SANGAMON	56	20
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

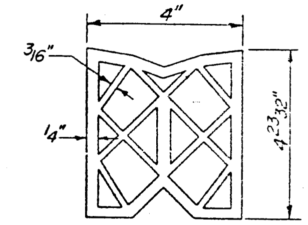
SHEET NO. 6
13 SHEETS



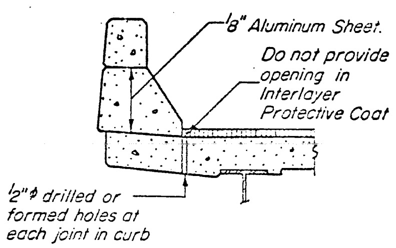
HALF PLAN



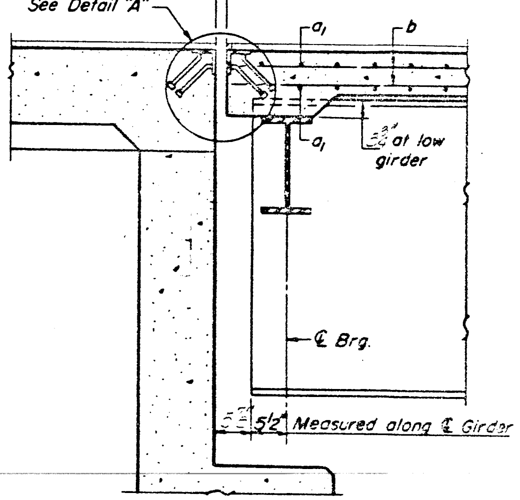
DETAIL "A"



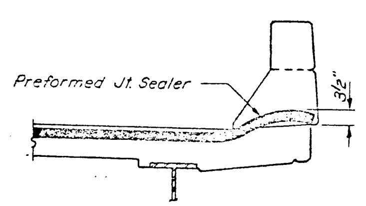
PREFORMED JOINT SEALER (4")



SECTION AT CURB JOINTS



SECTION A-A

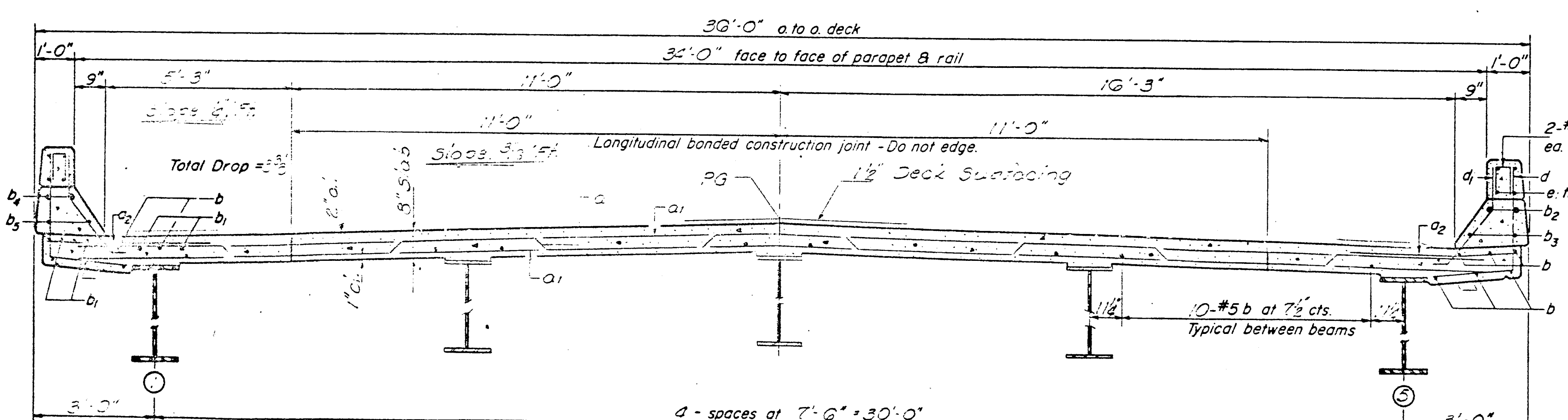


TYPICAL END OF SEALER TREATMENT

NOTE: For placement of bars d_3 and e_1 thru e_3 see sheet #6.

BILL OF MATERIAL

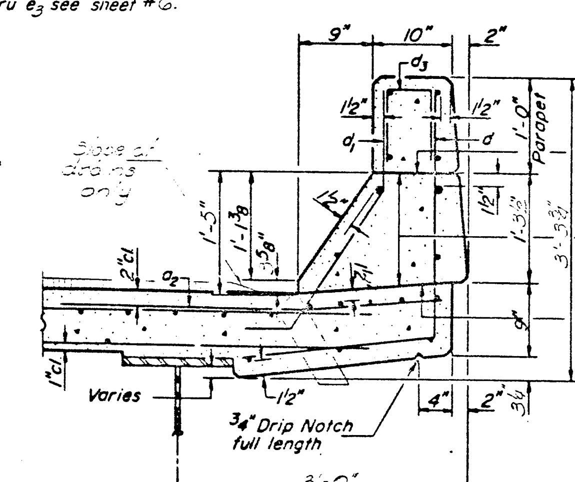
Bar	No.	Size	Length	Shape
a	100	#6	30'-5"	
a1	426	#6	30'-0"	
a2	366	#6	4'-0"	
b	680	#5	[illegible]	
b1	36	#6	[illegible]	
b2	32	#8	[illegible]	
b3	32	#5	[illegible]	
b4	8	#8	[illegible]	
b5	8	#5	[illegible]	
d	300	#4	[illegible]	
d1	400	#5	3'-[illegible]	
Reinforcement Bars			Lbs.	[illegible]
Class X Concrete			Cu. Yds.	[illegible]



NEAR PIER

NEAR MIDSPAN

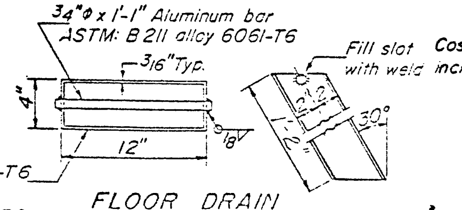
CROSS SECTION
(Looking East)



CURB SECTION

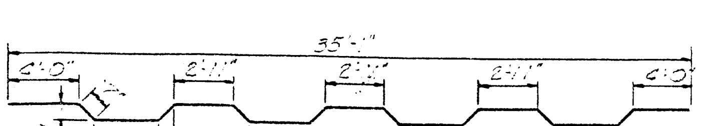
Cost of Aluminum Sheets shall be incidental to Class X Concrete.

Parapet Reinforcement and Class X Concrete are billed on sheet #6.

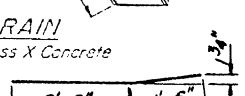


Aluminum Sheets Welded ASTM: B 209 alloy 6061-T6 or Aluminum Extrusions ASTM: B 221 alloy 6061-T6

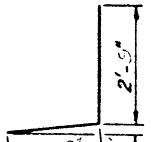
FLOOR DRAIN
Cost incidental to Class X Concrete



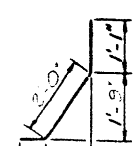
BAR a



BAR a_2



BAR d



BAR d_1

DESIGNED	[illegible]
CHECKED	[illegible]
DRAWN	[illegible]
CHECKED	[illegible]

June 14 1972
EXAMINED
PASSED
APPROVED

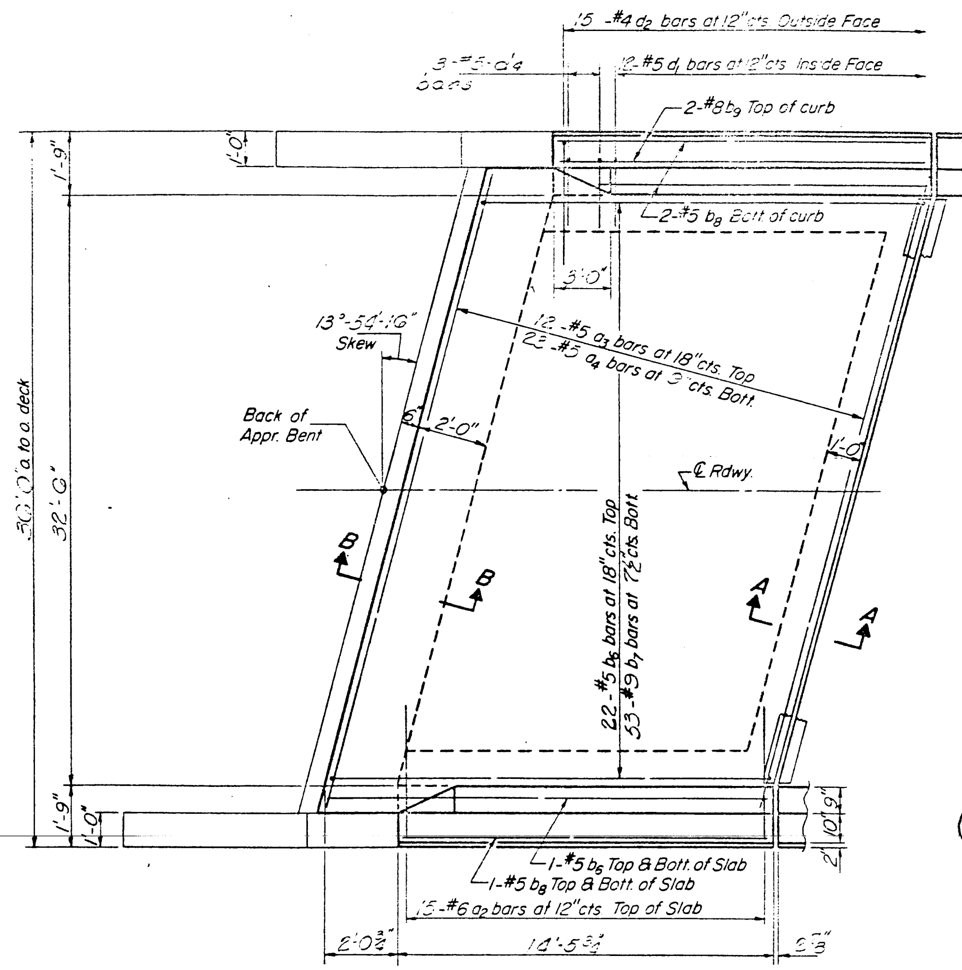
SUPERSTRUCTURE
F.A.I. RT. 72 SEC. 84-10 (HB-1)
SANGAMON COUNTY
STA. 101+04.93

S-586-L (≦15°) 4-22-68, 12-3-69

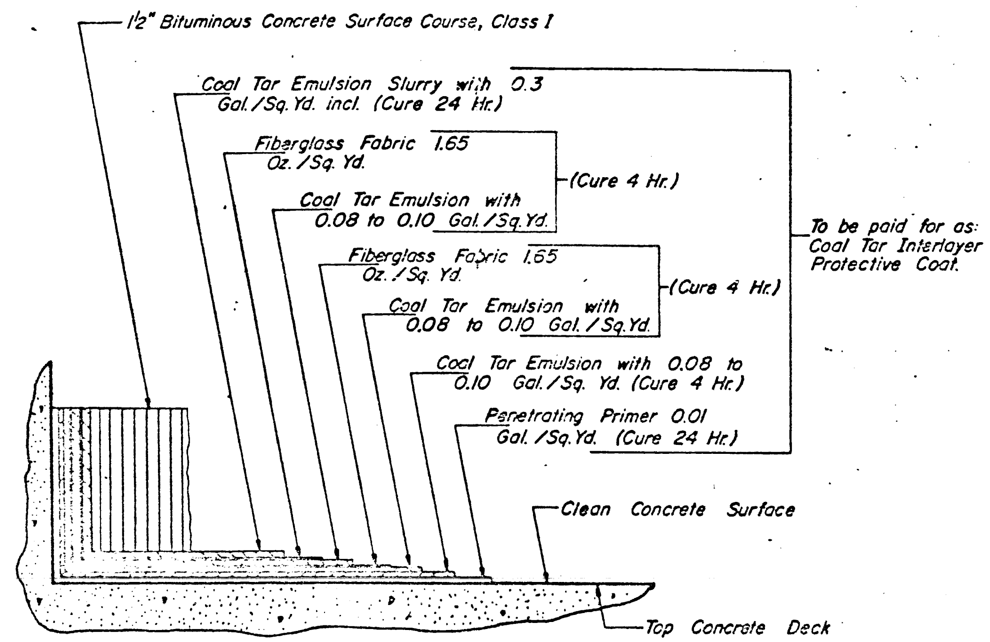
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 72	84-10 (-B-1, 12-1)	SANGAMON	56	21
FED. ROAD DIST. NO 7	ILLINOIS	FED AID PROJECT-		

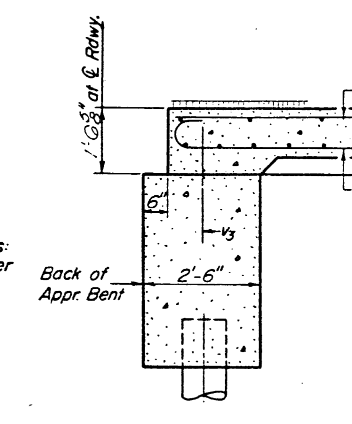
SHEET NO. 5
15 SHEETS



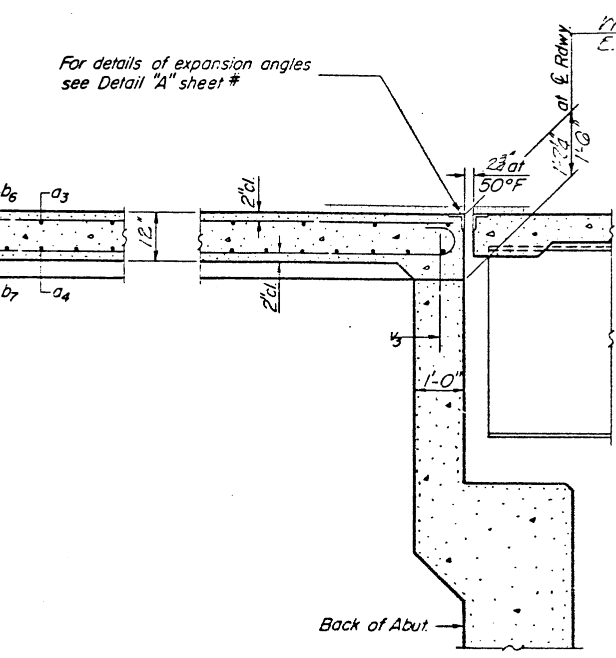
PLAN



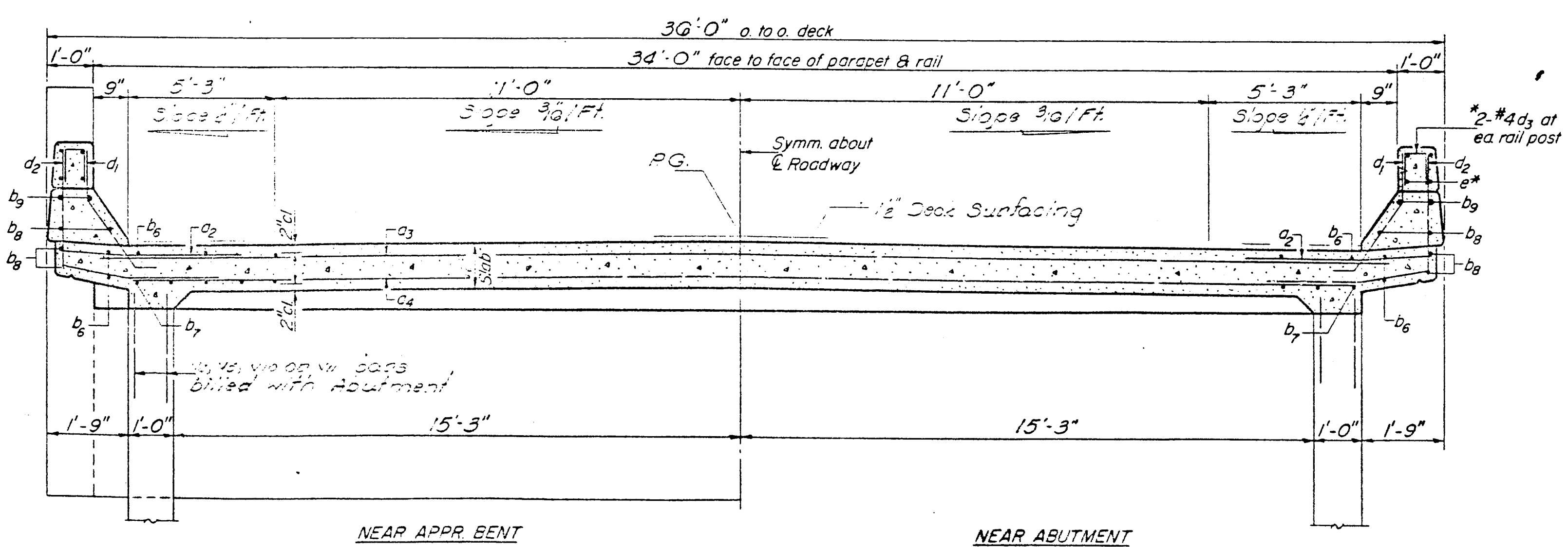
DETAIL OF DECK SURFACING



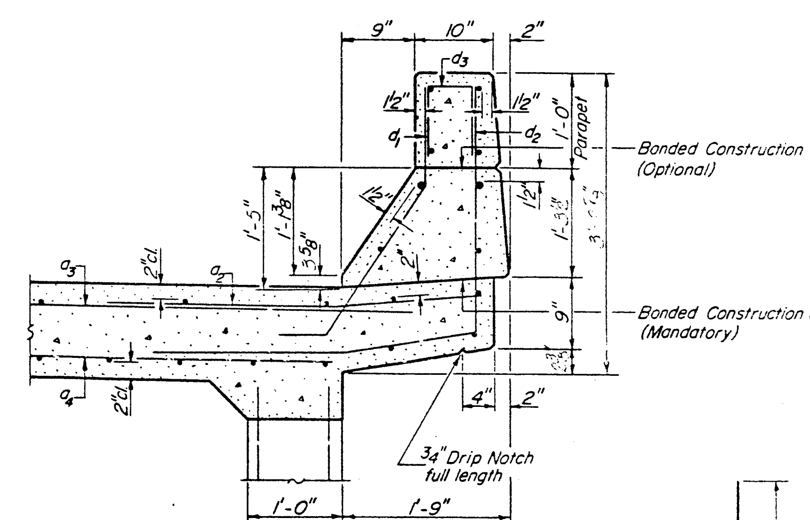
SECTION B-B



SECTION A-A



CROSS SECTION

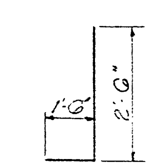


CURB SECTION

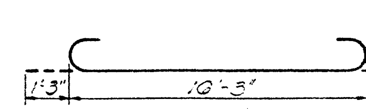
TWO APPR. SLABS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_2	60	#5	4'-0"	——
a_3	24	#5	34'-9"	——
a_4	46	#5	32'-0"	——
b_6	52	#5	13'-5"	——
b_7	106	#9	15'-9"	⊂⊃
b_8	10	#5	14'-2"	——
b_9	8	#8	14'-2"	——
d_1	48	#5	3'-7"	⌋
d_2	60	#4	3'-1"	⌋
d_c	12	#5	4'-0"	⊥
Reinforcement Bars			Lbs.	11,440
Class X Concrete			Cu. Yds.	50.7

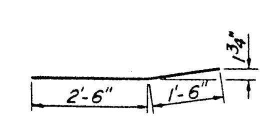
*Parapet Reinforcement and Class X Concrete are billed on sheet # 3



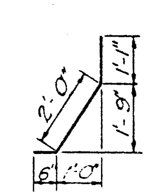
BAR d_c



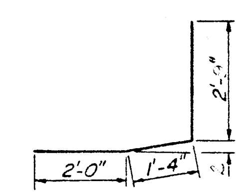
BAR b_7



BAR a_2



BAR d_1



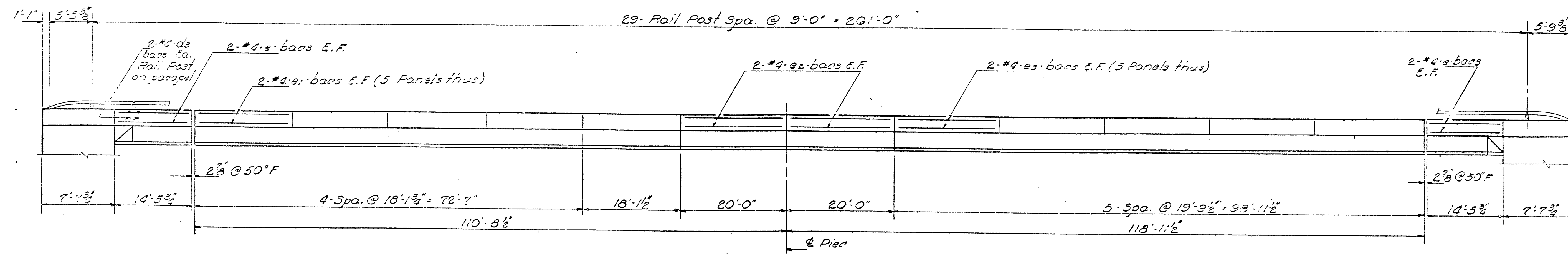
BAR d_2

DESIGNED	R. x mathur
CHECKED	Louis Penel
DRAWN	J. Schneller
CHECKED	JNP

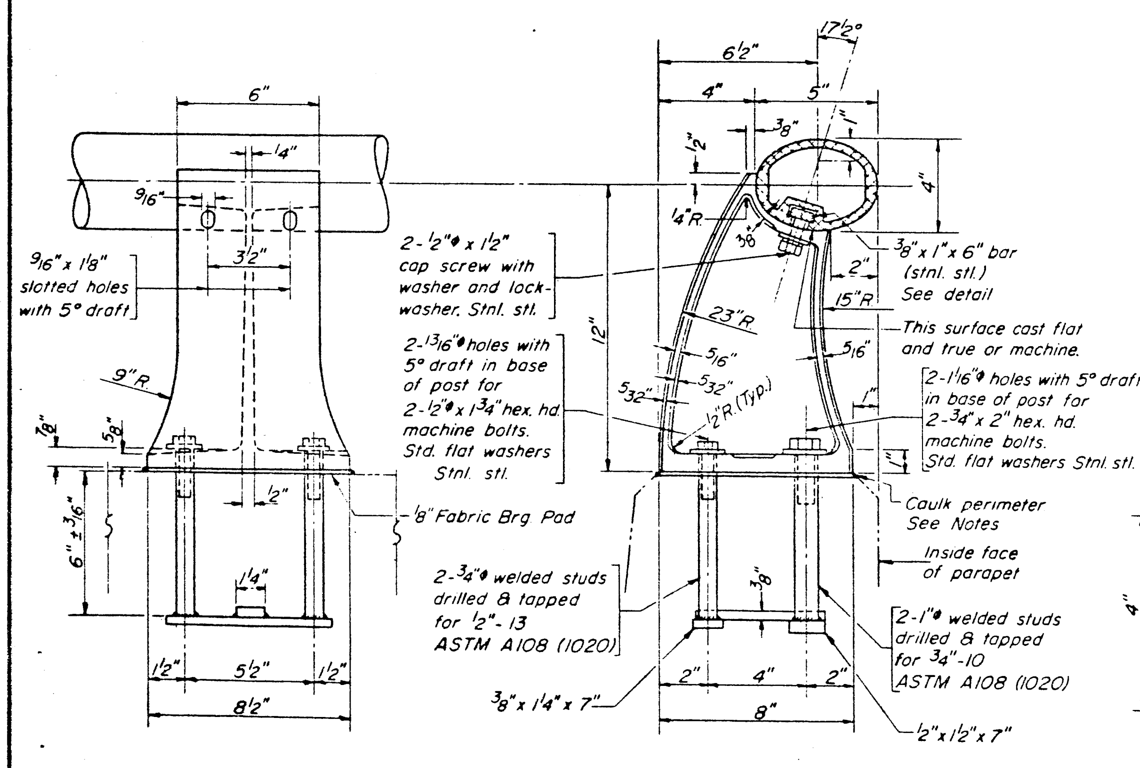
June 14 1972
EXAMINED — ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED — ENGINEER OF DESIGN
APPROVED — CHIEF HIGHWAY ENGINEER

APPROACH DETAILS
F.A.I. RT. 72 SEC. 84-10-HB-1
SANGAMON COUNTY
STA 161+04.98

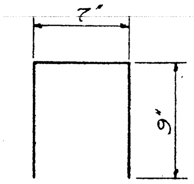
SAS-L (≦30°) 3-1-69



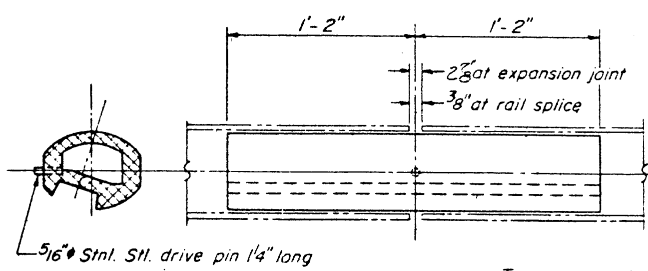
ELEVATION



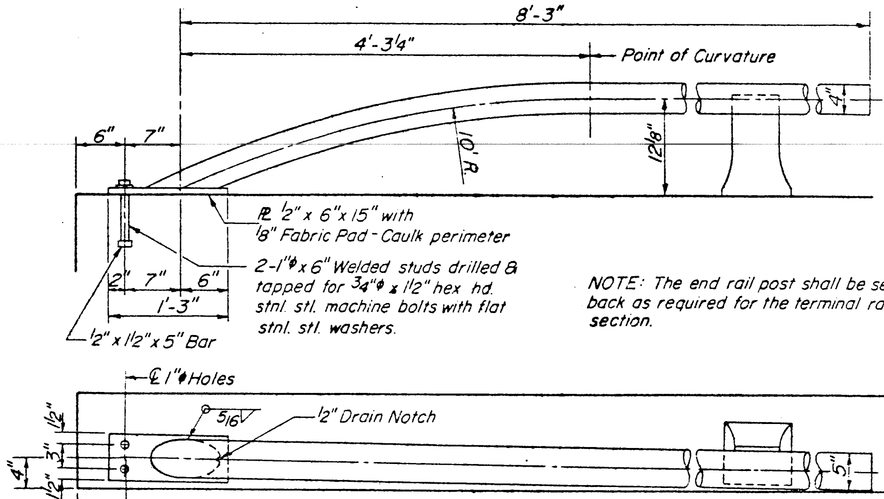
RAIL POST DETAILS



BAR d3

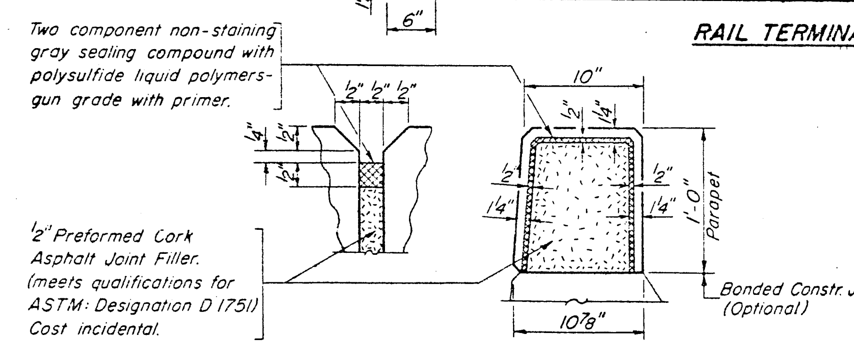


RAIL SPLICE

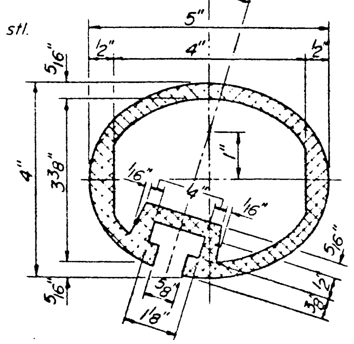


NOTE: The end rail post shall be set back as required for the terminal rail section.

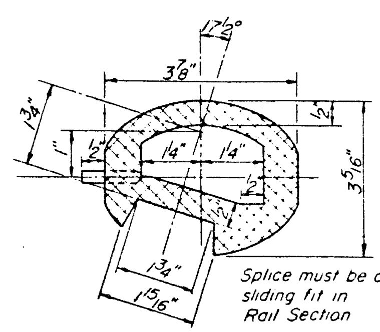
RAIL TERMINAL SECTION



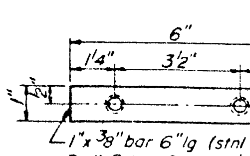
PARAPET JOINT DETAIL



SEC. THRU ELLIPTICAL RAIL SECTION



SEC. THRU SPLICE



CLAMP BAR

NOTES:

All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced but shall be attached to a minimum of 2 posts.

All joints in rail shall be spliced per detail.

Provide 1 - 1/8" and 2 - 1/16" Aluminum Shims for 25% of the Posts. Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.

Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min tensile 38 ksi, and elongation of 10% in 2 inches.

PARAPETS & RAILS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
e	16	#4	14'-2"	———
e1	40	#4	17'-10"	———
e2	16	#4	19'-9"	———
e3	40	#4	19'-6"	———
d3	112	#3	2'-1"	⊓
Reinforcement Bars			Lbs.	1530
Class X Concrete			Cu Yds.	13.7
Aluminum Railing			Lin Ft.	[illegible]

ALUMINUM RAILING
F.A.I. RT. 72 SEC. 84-10-HB-1
SANGAMON COUNTY
STA. 161+04. 98

DESIGNED	R. u. mattum
CHECKED	James Pence
DRAWN	J. SCHNELLER
CHECKED	JNP

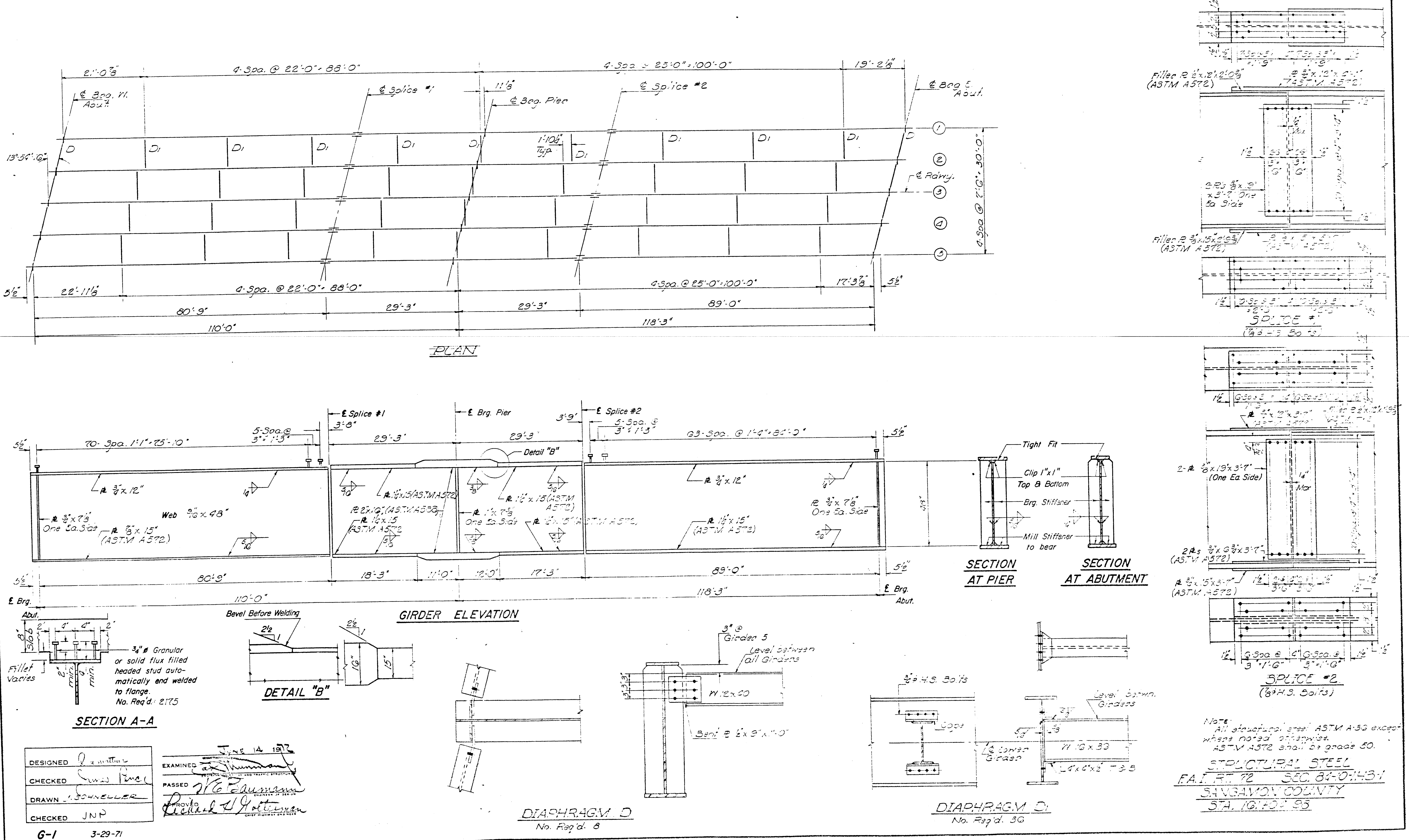
JUNE 14 1972
EXAMINED [signature] ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED W. G. Baumann ENGINEER OF DESIGN
APPROVED Richard H. Golterman CHIEF HIGHWAY ENGINEER

R-17 4-22-68 9-18-69 3-3-71

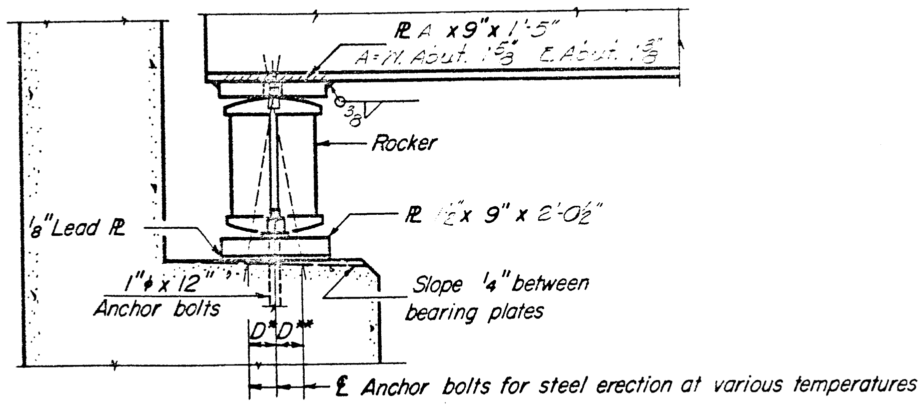
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 72	84-1 3	SANGAMON	56	23

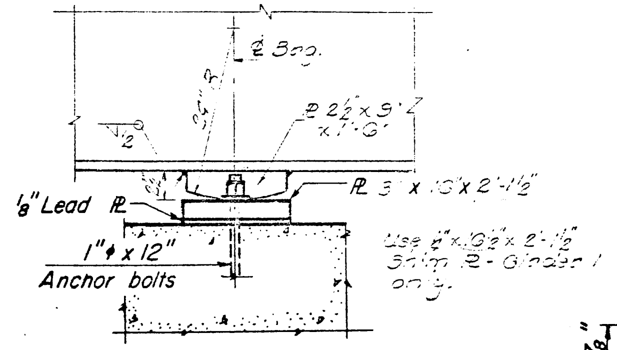
SHEET NO. 7 OF 8 SHEETS



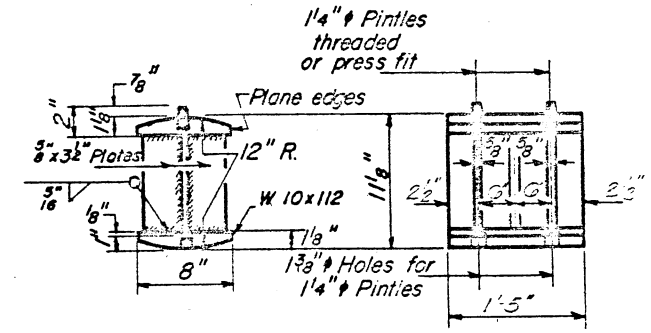
PLAN
4-Spa. @ 22'-0" = 88'-0"
4-Spa. @ 25'-0" = 100'-0"
℄ Splice #1
℄ Splice #2
℄ Brg. Pier
℄ Brg. W. Abut.
℄ Brg. E. Abut.
℄ Rdwy.
4-Spa. @ 7'-6" = 30'-0"
80'-9"
29'-3"
89'-0"
110'-0"
118'-3"
GIRDER ELEVATION
70-Spa. 1'-1" = 75'-10"
63-Spa. @ 1'-4" = 84'-0"
Web 9/16" x 48"
Detail "B"
SECTION AT PIER
SECTION AT ABUTMENT
Tight Fit
Clip 1" x 1" Top & Bottom
Brg. Stiffener
Mill Stiffener to bear
SECTION A-A
3/4" ø Granular or solid flux filled headed stud automatically end welded to flange.
No. Req'd.: 2175
DETAIL "B"
Bevel Before Welding
DIAPHRAGM D
No. Req'd. 8
DIAPHRAGM D1
No. Req'd. 36
W 12 x 40
W 16 x 36
SPLICE #1
(7/8" H.S. Bolts)
SPLICE #2
(7/8" H.S. Bolts)
Note:
All structural steel ASTM A-36 except where noted otherwise.
ASTM A572 shall be grade 50.
STRUCTURAL STEEL
F.A.I. RT. 72 SEC. 84-1 HB-1
SANGAMON COUNTY
STA. 16+02.95
DESIGNED
CHECKED
DRAWN SCHNELLER
CHECKED JNP
EXAMINED
PASSED
APPROVED
June 14 1972
G-1 3-29-71



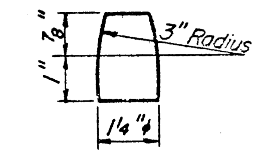
SECTION



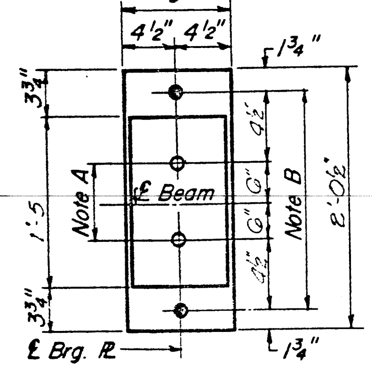
ELEVATION



ROCKER



PINTLE



PLAN

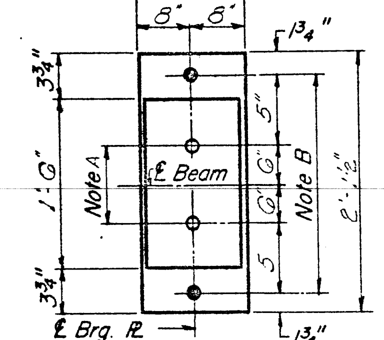
AT ABUTMENT

NOTE A

1 3/8" ϕ Holes - 1" deep in top PL for pintles. Thread or press fit pintles into bottom PL.

NOTE B

1 1/2" ϕ Holes for 1" ϕ anchor bolts. 5/16 x 2 1/2" x 2 1/2" PL. Washers under nut.



PLAN

AT PIER

BEARING ASSEMBLY DETAILS

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

a) D* (Side of brg. away from fixed brg.)
D* = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50°F.
D** (Side of brg. toward fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50°F.

b) After beams have been erected and dimensions D* or D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.

MOMENT TABLE - Composite 2 Span (Composite in Positive Moment Areas Only)

INTERIOR GIRDER MOMENT TABLE	0.4 Sp. 1	Pier	0.6 Sp. 2
I_s (in⁴)	[illegible]	45200	20923
I_c (in⁴)	[illegible]		55437
S_s (in³)	793	1733	1000
S_c (in³)	[illegible]		1597
$\mathcal{D}$ (k/l)	[illegible]	1.432	.996
$M_{\mathcal{D}}$ (ik)	[illegible]	2035	893
$fs_{\mathcal{D}}$ (ksi)	[illegible]	3.5	10.5
$S\mathcal{D}$ (k/l)	[illegible]		0.495
$Ms_{\mathcal{D}}$ (ik)	[illegible]		531
M_{L} (ik)	950	911	1057
M_{Imp} (ik)	202	190	213
TOTAL (ik)	[illegible]	1101	1806
fs_{L} (ksi)	16.8	7.6	15.5
fs_{TOTAL} (ksi)	23.5	26.1	26.5
VR (k)	53.0		58.3

REACTION TABLE -

INTERIOR GIRDER REACTION TABLE	W. Abut.	Pier	E. Abut.
$R_{\mathcal{D}}$ (k)	56.6	216.3	65.4
R_{L} (k)	44.0	79.1	44.5
Imp. (k)	9.4	16.5	9.2
R_{TOTAL} (k)	110.0	311.9	119.1

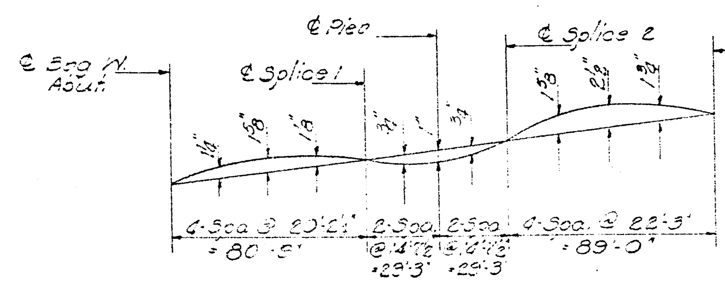
I_s and S_s are the moment of inertia and section modulus of the steel section.

I_c and S_c are the moment of inertia and section modulus of the composite section used in computing fs.

VR is the maximum L + Impact shear range in span used to determine shear connector spacing.

TOP OF WEB ELEVATIONS

Loc. \ Gm	1	2	3	4	5
℄ Brg. W. Abut.	[illegible]	[illegible]	[illegible]	577.797	577.654
℄ Splice 1	[illegible]	[illegible]	[illegible]	578.095	577.952
℄ Pier	[illegible]	[illegible]	[illegible]	578.125	577.934
℄ Splice 2	578.204	[illegible]	578.445	578.325	578.182
℄ Brg. E. Abut.	578.561	578.495	578.605	578.482	578.559



CAMBER DIAGRAM

DESIGNED	R.K. Mathur
CHECKED	James Pence
J. SCHNELLER	
DRAWN	P.G. Barnett
CHECKED	JNP

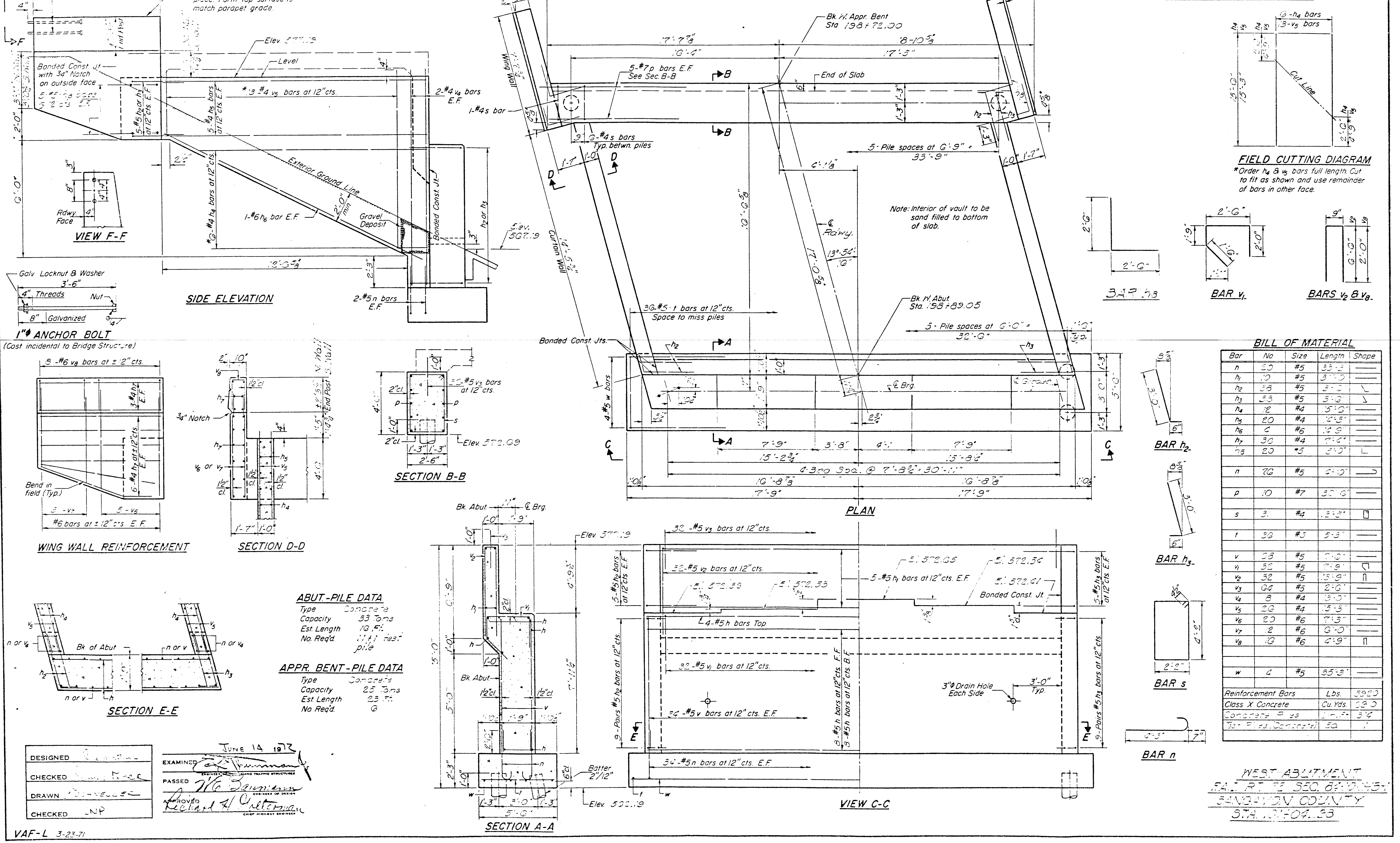
June 14 1972
EXAMINED — ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED W.E. Baumann — ENGINEER OF DESIGN
APPROVED Richard H. Golterman — CHIEF HIGHWAY ENGINEER

BEARING DETAILS
F.A. RT. 72 SEC. [illegible]
SANGAMON COUNTY
STA. 101+03.98

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 72	84-10-3-1, 1R-1	SANGAMON	56	25
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 9
13 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ABUT-PILE DATA

Type: Concrete
Capacity: 33 Tons
Est. Length: 16 Ft.
No. Req'd: 11 + 1 Test pile

APPR. BENT-PILE DATA

Type: Concrete
Capacity: 25 Tons
Est. Length: 23 Ft.
No. Req'd: 6

BILL OF MATERIAL

Bar	No	Size	Length	Shape
h	20	#5	33'-3"	—
h_1	10	#5	31'-0"	—
h_2	38	#5	5'-0"	∟
h_3	38	#5	5'-6"	∟
h_4	12	#4	15'-6"	—
h_5	20	#4	14'-3"	—
h_6	4	#6	14'-9"	—
h_7	36	#4	7'-6"	—
h_8	20	#5	5'-0"	∟
n	76	#5	4'-10"	⊃
p	10	#7	30'-6"	—
s	31	#4	13'-5"	▯
t	36	#5	5'-3"	—
v	68	#5	7'-6"	—
v_1	32	#5	7'-9"	⊐
v_2	32	#5	13'-9"	⊓
v_3	64	#5	2'-6"	—
v_4	8	#4	13'-0"	—
v_5	26	#4	15'-3"	—
v_6	20	#6	7'-3"	—
v_7	12	#6	6'-0"	—
v_8	16	#6	4'-9"	⊓
w	4	#5	35'-3"	—
Reinforcement Bars			Lbs.	5920
Class X Concrete			Cu. Yds.	69.0
Concrete Piles			Lin. Ft.	314
Test Piles (Concrete)			Ea.	1

DESIGNED	[illegible]	EXAMINED [signature] ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES — June 14 1972
CHECKED	[illegible]	PASSED [signature] ENGINEER OF DESIGN
DRAWN	[illegible]	APPROVED Richard H. Golterman CHIEF HIGHWAY ENGINEER
CHECKED	N.P.	

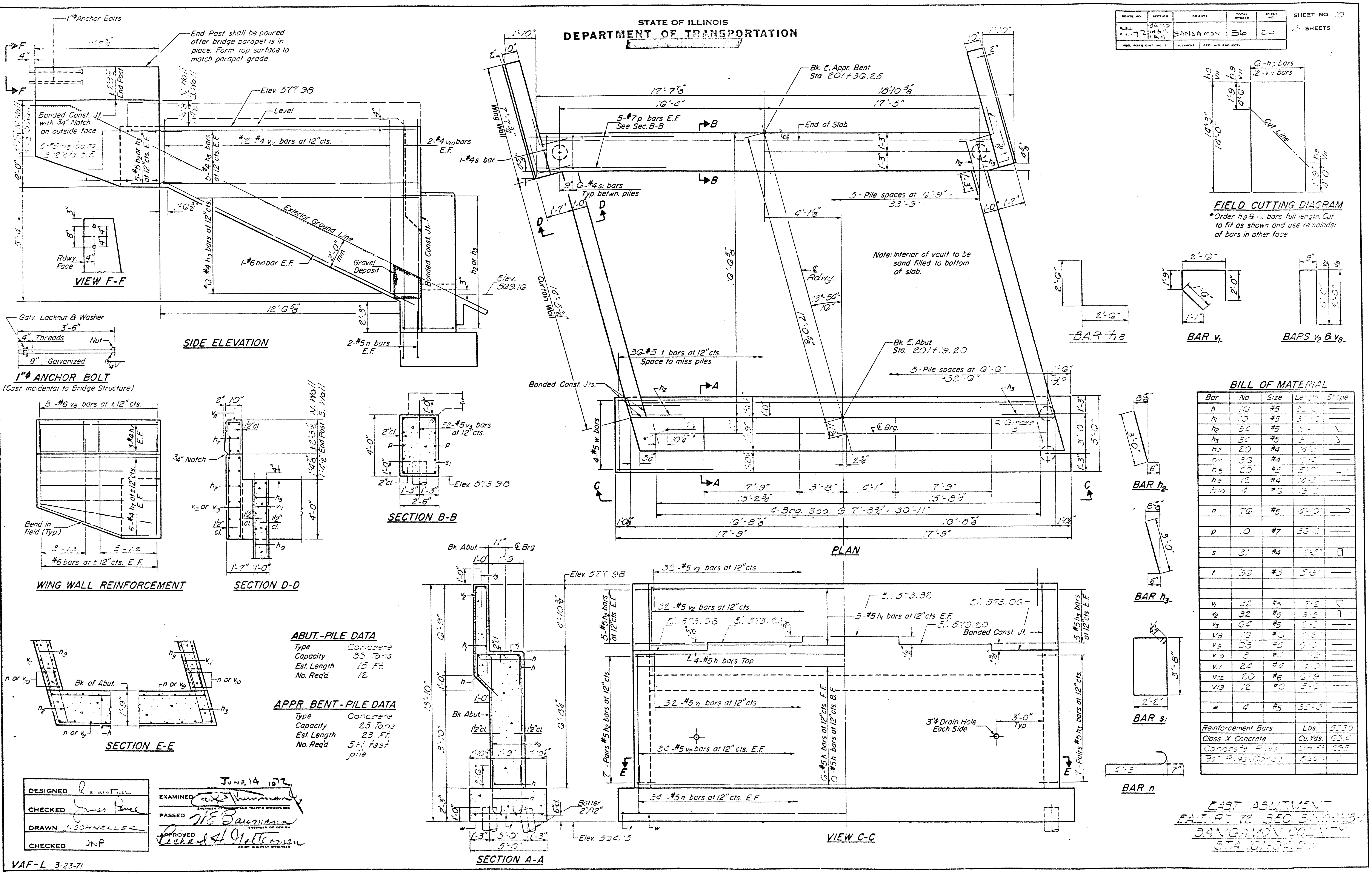
WEST ABUTMENT
F.A.I. RT. 72 SEC. 84-10-3-1
SANGAMON COUNTY
STA. 199+04.36

VAF-L 3-23-71

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 72	84-10 1HB-1, 1A-1	SANGAMON	56	26
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 10
13 SHEETS



1"φ Anchor Bolts
End Post shall be poured after bridge parapet is in place. Form top surface to match parapet grade.
Elev. 577.98
Level
Bonded Const. Jt. with 3/4" Notch on outside face
#2 #4 v11 bars at 12" cts.
2-#4 v10 bars E.F.
Exterior Ground Line
2'-0" min.
Gravel Deposit
1-#6 h10 bar E.F.
6-#4 h9 bars at 12" cts.
Bonded Const. Jt.
Elev. 569.16
12'-6 5/8"
2-#5 n bars E.F.
SIDE ELEVATION
VIEW F-F
Rdwy Face
Galv. Locknut & Washer
3'-6"
4" Threads
Nut
8" Galvanized
1"φ ANCHOR BOLT
(Cast incidental to Bridge Structure)
8 -#6 v8 bars at ±12" cts.
#6 bars at ±12" cts. E.F.
Bend in field (Typ.)
WING WALL REINFORCEMENT
3/4" Notch
SECTION D-D
2-#5 v3 bars at 12" cts.
Elev. 573.98
SECTION B-B
n or v10
Bk. of Abut.
n or v9
SECTION E-E
Bk. C. Appr. Bent Sta. 201+36.25
17'-7 3/8"
18'-10 5/8"
16'-4"
17'-5"
5-#7 p bars E.F. See Sec. B-B
End of Slab
1-#4 s bar
6-#4 s bars Typ. betwn. piles
5-Pile spaces at 6'-9" = 33'-9"
Wing Wall
Curtain Wall
Note: Interior of vault to be sand filled to bottom of slab.
℄ Rdwy.
13°-54'-16"
Bk. ℄ Abut. Sta. 201+19.20
36-#5 t bars at 12" cts. Space to miss piles
5-Pile spaces at 6'-6" = 32'-6"
Bonded Const. Jts.
4-#5 w bars
℄ Brg.
7'-9"
3'-8"
6'-1"
15'-2 3/4"
15'-8 3/4"
6-Brg. Spa. @ 7'-8 3/4" = 30'-11"
16'-8 3/8"
17'-9"
PLAN
Bk. Abut.
℄ Brg.
Batter 2"/12"
Elev. 554.15
SECTION A-A
Elev. 577.98
32-#5 v3 bars at 12" cts.
32-#5 v2 bars at 12" cts.
El. 573.32
El. 573.06
5-#5 h1 bars at 12" cts. E.F.
El. 573.20
Bonded Const. Jt.
4-#5 h bars Top
32-#5 v1 bars at 12" cts.
34-#5 v9 bars at 12" cts. E.F.
6-#5 h bars at 12" cts. E.F.
3"φ Drain Hole Each Side
3'-0" Typ.
34-#5 n bars at 12" cts. E.F.
7-Pairs #5 h2 bars at 12" cts.
7-Pairs #5 h3 bars at 12" cts.
VIEW C-C
6-h9 bars
12-v11 bars
Cut Line
FIELD CUTTING DIAGRAM
*Order h9 & v11 bars full length. Cut to fit as shown and use remainder of bars in other face.
BAR h8
BAR v1
BARS v2 & v8
BAR h2
BAR h3
BAR s1
BAR n

ABUT.-PILE DATA

Type	Concrete
Capacity	33 Tons
Est. Length	15 Ft.
No. Req'd.	12

APPR. BENT-PILE DATA

Type	Concrete
Capacity	25 Tons
Est. Length	23 Ft.
No. Req'd.	5+1 test pile

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	16	#5	[illegible]	——
h1	10	#5	[illegible]	——
h2	34	#5	[illegible]	_
h3	34	#5	[illegible]	)
h5	20	#4	[illegible]	——
h7	36	#4	[illegible]	——
h8	20	#5	5'-0"	[illegible]
h9	12	#4	[illegible]	——
h10	4	#6	[illegible]	
n	76	#5	4'-0"	——⊃
p	10	#7	[illegible]	——
s	31	#4	[illegible]	▯
t	36	#5	[illegible]	——
v1	32	#5	[illegible]	⊓
v2	32	#5	[illegible]	⊓
v3	64	#5	[illegible]	——
v8	16	#6	[illegible]	[illegible]
v9	65	#5	[illegible]	——
v10	8	[illegible]	[illegible]	——
v11	24	#4	[illegible]	——
v12	20	#6	[illegible]	——
v13	12	#6	[illegible]	——
w	4	#5	[illegible]	——
Reinforcement Bars			Lbs.	[illegible]
Class X Concrete			Cu. Yds.	[illegible]
Concrete Piles			Lin. Ft.	295
Test Piles (Conc.)			Each	[illegible]

EAST ABUTMENT
F.A.I. RT. 72 SEC. 84-10-1HB-1
SANGAMON COUNTY
STA. 201+[illegible]

DESIGNED	R. [illegible]
CHECKED	James [illegible]
DRAWN	J. SCHNELLER
CHECKED	JNP

June 14 1972
EXAMINED [signature] ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED W.E. Baumann ENGINEER OF DESIGN
APPROVED Richard H. Golterman CHIEF HIGHWAY ENGINEER

VAF-L 3-23-71

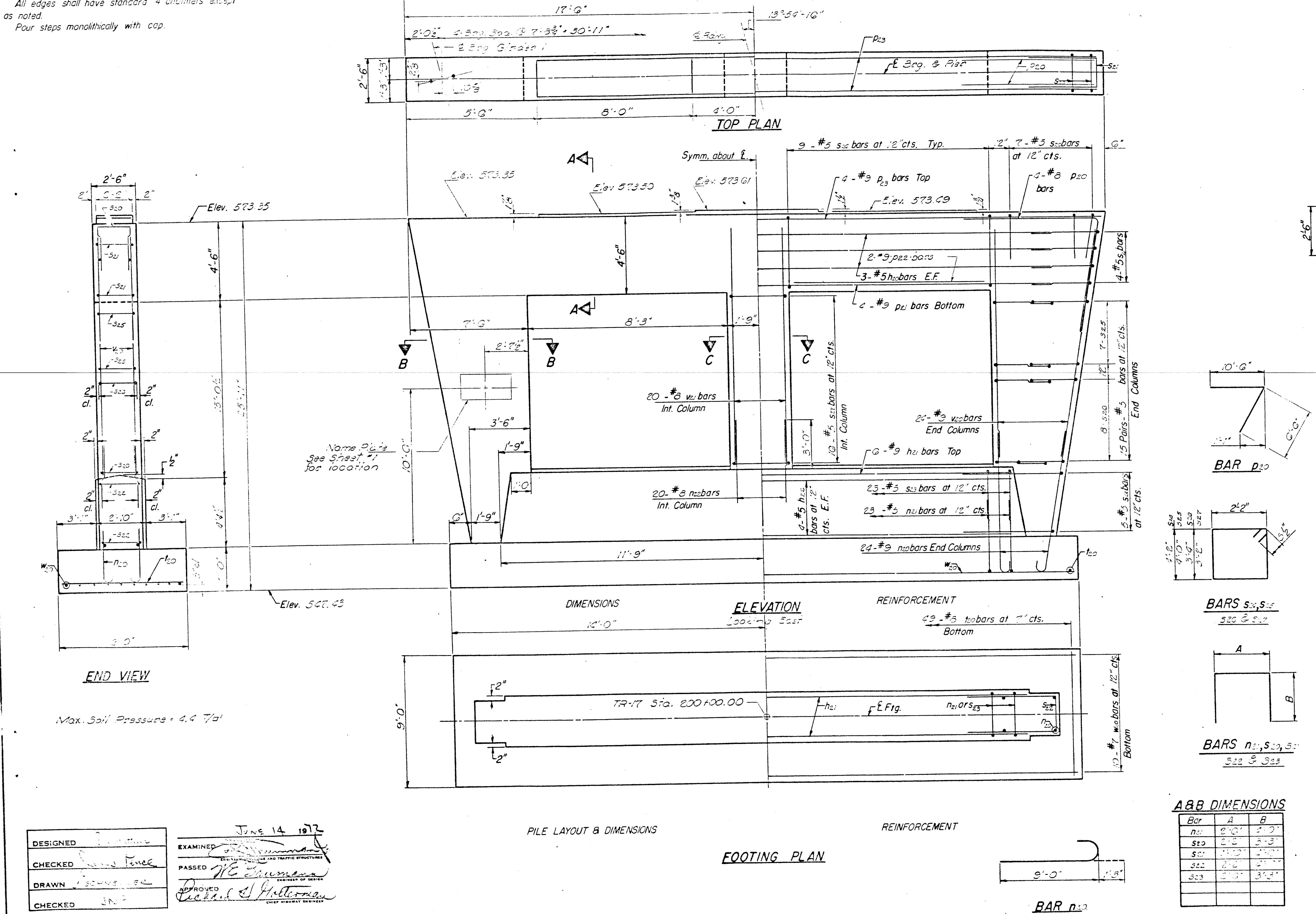
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

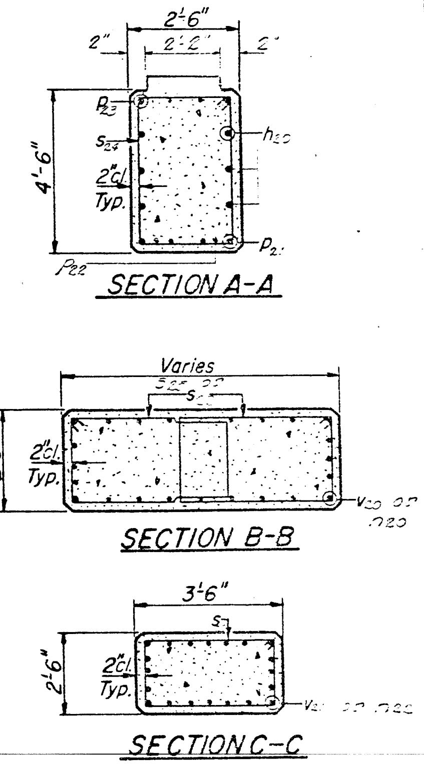
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 72	84-10-1-B-1	SANGAMON	56	27
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 11
13 SHEETS

NOTES

Space reinforcement in cap to miss anchor bolts.
All edges shall have standard 3/4" chamfers except as noted.
Pour steps monolithically with cap.





BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h20	6	#5	29'-0"	———
h21	6	#9	21'-8"	———
h22	8	#5	21'-8"	———
n20	48	#9	10'-3"	hook
n21	23	#5	[illegible]	U
n22	20	#8	6'-0"	———
p20	8	#5	[illegible]	7
p21	4	#9	23'-0"	———
p22	4	#9	5'-0"	———
p23	4	#9	34'-9"	———
s20	14	#5	9'-5"	⊓
s21	8	#5	[illegible]	⊓
s22	10	#5	[illegible]	⊓
s23	23	#5	9'-0"	⊓
s24	18	#5	13'-7"	□
s25	28	#5	13'-5"	□
s26	32	#5	11'-1"	□
s27	10	#5	11'-7"	□
t20	49	#8	8'-8"	———
v20	48	#9	13'-0"	———
v21	20	#8	13'-0"	———
w20	10	#7	[illegible]	———
Class X Concrete			Cu.Yds.	66.0
Reinforcement Bars			Lbs.	11770

A&B DIMENSIONS

Bar	A	B
n21	2'-6"	[illegible]
s20	2'-2"	3'-3"
s21	[illegible]	[illegible]
s22	2'-2"	[illegible]
s23	[illegible]	3'-3"

PIER
F.A. RT. 72 SEC. 84-10-1-B-1
SANGAMON COUNTY
STA. 10+04.95

DESIGNED	[illegible]
CHECKED	[illegible]
DRAWN	[illegible]
CHECKED	[illegible]

June 14 1972
EXAMINED [signature]
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED W.E. [signature]
ENGINEER OF DESIGN
APPROVED Richard [signature]
CHIEF HIGHWAY ENGINEER

P-12 11-18-69

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATIONS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 72	84-2-1 143-1 B-1	SANGAMON	56	28
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 28
56 SHEETS

COUNTY SANGAMON
Boring No. 1
Station 198+71.2
Offset 16' RT CL

Surface Water El. ——
Groundwater El. at Completion ——
After —— Hours ——

	Elevation	N	Qu t/s.f.	w (%)
Ground Surface	571.0			
BLACK SILTY CLAY				
GRAY, BROWN & YELLOW	571.5	5	0.2 B	28
SILT				
SOFT	-5	6	0.3 B	29
	566.0	9	0.5 B	26
TAN SILTY CLAY SOFT STIFF	-10	10	1.7 B	24
	560.0	10	1.5 B	24
YELLOW & GRAY SILTY CLAY W/SAND PARTINGS MEDIUM	-15	4	0.6 B	20
	557.0	11	1.0 B	16
BROWN, YELLOW, & GRAY CLAY LOAM (TILL) MEDIUM				
HARD	-20	62	8.9 S	11
	550.0	100 11"	5.0 S	11
GRAY CLAY (TILL) HARD	-25	55	6.2 S	9
	545.0	55	5.8 S	10
GRAY SILT VERY STIFF 6" LAYER OF SAND & GRAVEL	-30	53	2.2 S	21
	540.0	100 10"	-	16
BLACK SHALE W/THIN SANDY LAYERS	-35	100 4"	-	17
HARD	535.5	100 3"	-	12
BORING COMPLETED	-40			
	-45			

COUNTY SANGAMON
Boring No. 2
Station 198+97
Offset 16' RT CL

Surface Water El. ——
Groundwater El. at Completion ——
After —— Hours ——

	Elevation	N	Qu t/s.f.	w (%)
Ground Surface	571.0			
BLACK SILTY CLAY				
GRAY, BROWN, & YELLOW	571.5	7	0.5 B	30
SILT				
SOFT	-5	7	0.5 B	28
	566.0	8	0.5 B	25
TAN SILTY CLAY STIFF	-10	9	1.7 B	23
	561.5	10	1.9 B	22
YELLOW & GRAY SILTY CLAY STIFF	-15	8	1.5 B	22
	557.0	7	2.4 B	15
BROWN, YELLOW & GRAY CLAY LOAM (TILL) VERY STIFF	-20	61	5.7 S	10
	550.0	100 6"	-	10
BROWN & YELLOW & GRAY CLAY LOAM (TILL) (VERY STIFF)				
GRAY CLAY (TILL) HARD	-25	100	5.8 S	7
	545.0	55	6.5 S	9
GRAY SILT VERY STIFF	-30	57	3.1 S	13
STIFF		40	1.1 S	23
	539.0	100 6"	-	-
BLACK SHALE W/THIN SANDY LAYERS	-35	100 4"	-	-
VERY STIFF	535.5	100 1"	-	-
BORING COMPLETED	-40			
	-45			

COUNTY SANGAMON
Boring No. 3
Station 200+00
Offset 11' RT CL

Surface Water El. ——
Groundwater El. at Completion ——
After —— Hours ——

	Elevation	N	Qu t/s.f.	w (%)
Ground Surface	571.5			
BLACK SILTY CLAY				
GRAY, BROWN & YELLOW	572.0	5	0.3 B	27
SILT				
SOFT	-5	7	0.5 B	25
	566.5	8	0.5 B	24
TAN SILTY CLAY STIFF	-10	8	1.4 B	25
	560.5	8	0.9 B	27
YELLOW & GRAY SILTY CLAY STIFF	-15	10	1.7 B	22
	557.5	8	0.3 B	16
BROWN, YELLOW & GRAY CLAY LOAM (TILL) SOFT	-20	100 11"	7.9 S	10
	553.5	100 5"	5.1 S	10
GRAY CLAY(TILL) HARD	-25			
	548.5	75	7.9 S	9
GRAY SILT W/COAL FRAGMENTS HARD		100 12"	-	-
	-30			
	543.5	58	3.1 S	19
GRAY CLAY LOAM (TILL) W/6" LAYER SAND & GRAVEL HARD		58	9.1 S	10
	539.5 -35			
BLACK SHALE W/THIN SANDY LAYERS VERY STIFF		100 5"	2.1 S	14
	536.0	100 2"	-	14
BORING COMPLETED	-40			
	-45			

← F to 9

N – Standard Penetration Test – Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".

Qu – Unconfined Compressive Strength – t/sf

w – Water Content – percentage of oven dry weight – %.

Type failure:
B – Bulge Failure
S – Shear Failure
E – Estimated Value
P – Penetrometer

DESIGNED	R L Mattair
CHECKED	JNP
DRAWN	J. SCHNELLER
CHECKED	JNP

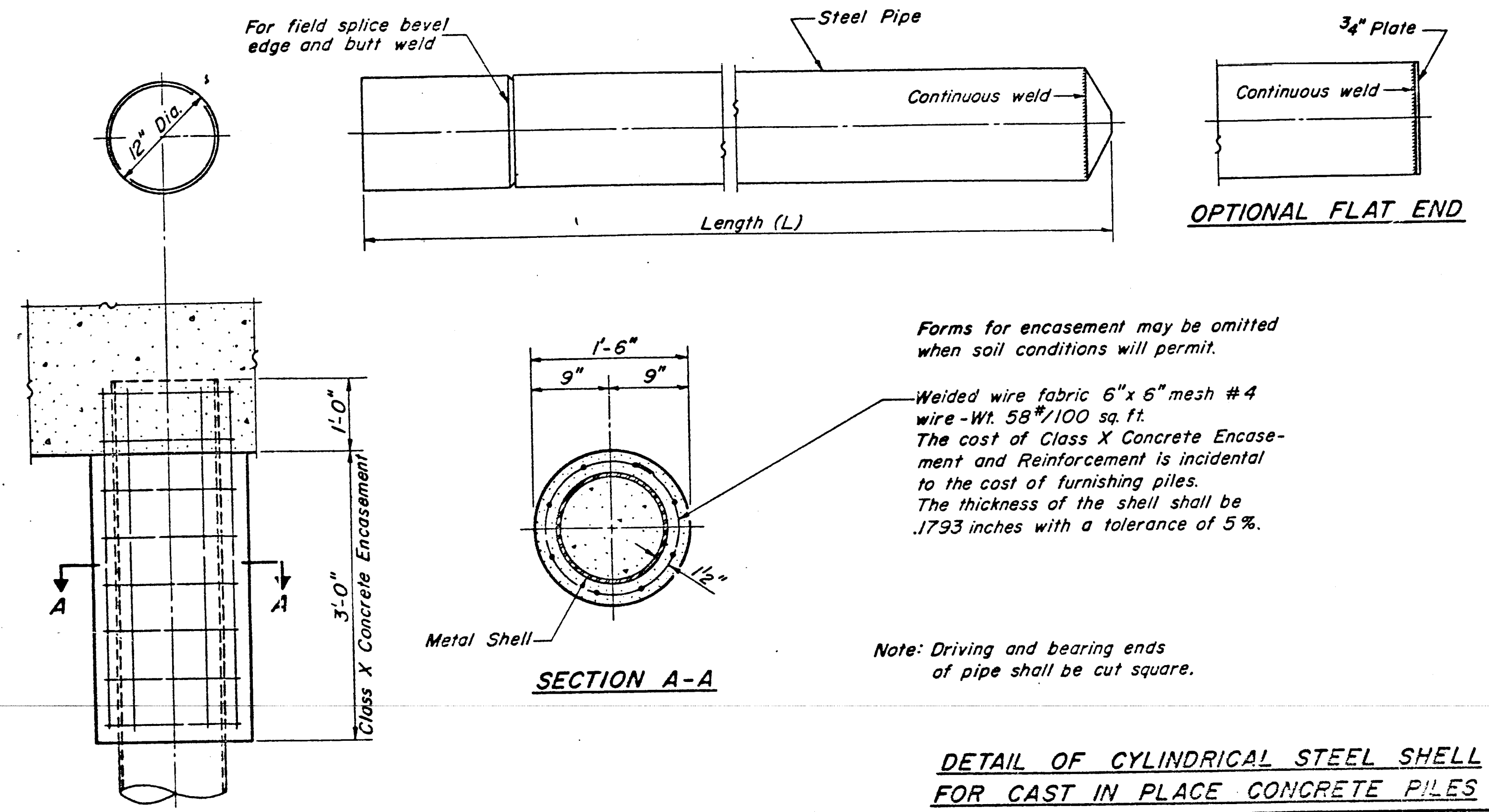
JUNE 14 1972

EXAMINED [signature] ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

PASSED W G Bauman ENGINEER OF DESIGN

APPROVED Richard H Gottschalk CHIEF HIGHWAY ENGINEER

BORING DATA
F.A.I. RT 72 SEC. 84-2-1 B-1
SANGAMON COUNTY
STA. 196+71.2

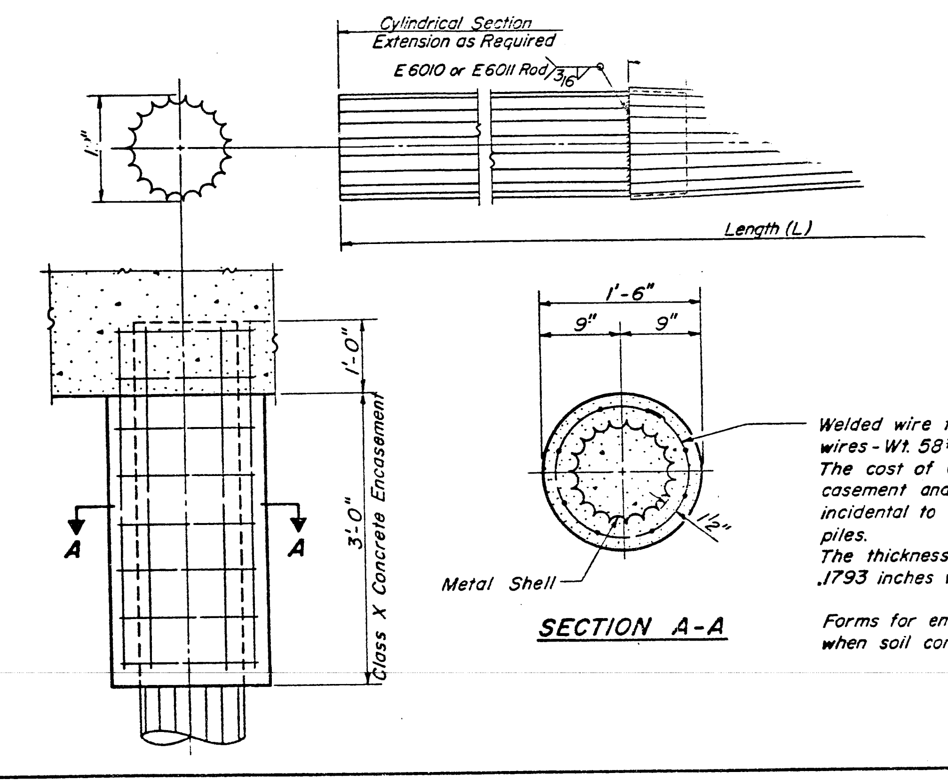


Forms for encasement may be omitted when soil conditions will permit.

Welded wire fabric 6"x 6" mesh #4 wire - Wt. 58#/100 sq. ft.
The cost of Class X Concrete Encasement and Reinforcement is incidental to the cost of furnishing piles.
The thickness of the shell shall be .1793 inches with a tolerance of 5%.

Note: Driving and bearing ends of pipe shall be cut square.

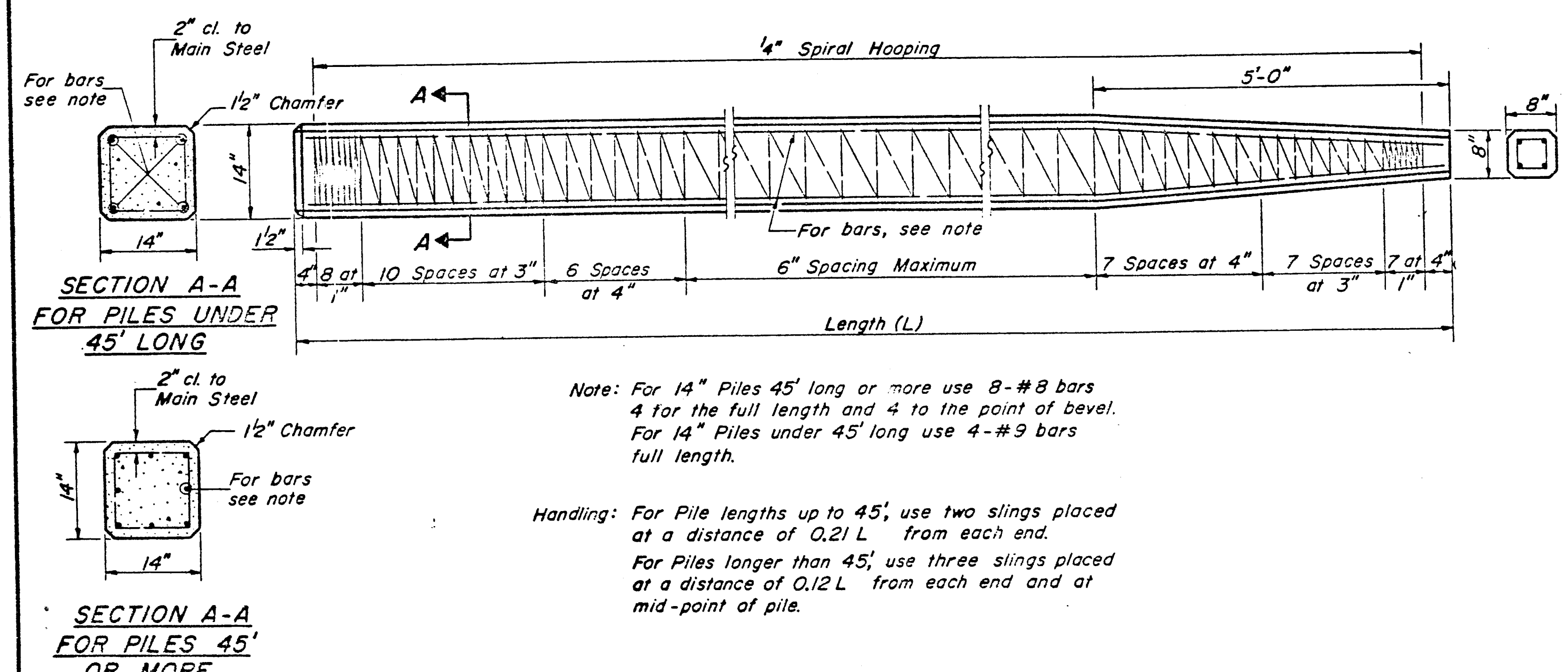
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



Welded wire fabric 6"x 6" mesh #4 wires - Wt. 58#/100 sq. ft.
The cost of Class X Concrete Encasement and Reinforcement is incidental to the cost of furnishing piles.
The thickness of the shell shall be .1793 inches with a tolerance of 5%.

Forms for encasement may be omitted when soil conditions will permit

DETAIL OF TAPERED METAL SHELL FOR CAST IN PLACE CONCRETE PILES



Note: For 14" Piles 45' long or more use 8-#8 bars 4 for the full length and 4 to the point of bevel. For 14" Piles under 45' long use 4-#9 bars full length.

Handling: For Pile lengths up to 45', use two slings placed at a distance of 0.21 L from each end. For Piles longer than 45', use three slings placed at a distance of 0.12 L from each end and at mid-point of pile.

DESIGNED	
CHECKED	
DRAWN	J. SCHNELLER
CHECKED	

June 14 1972

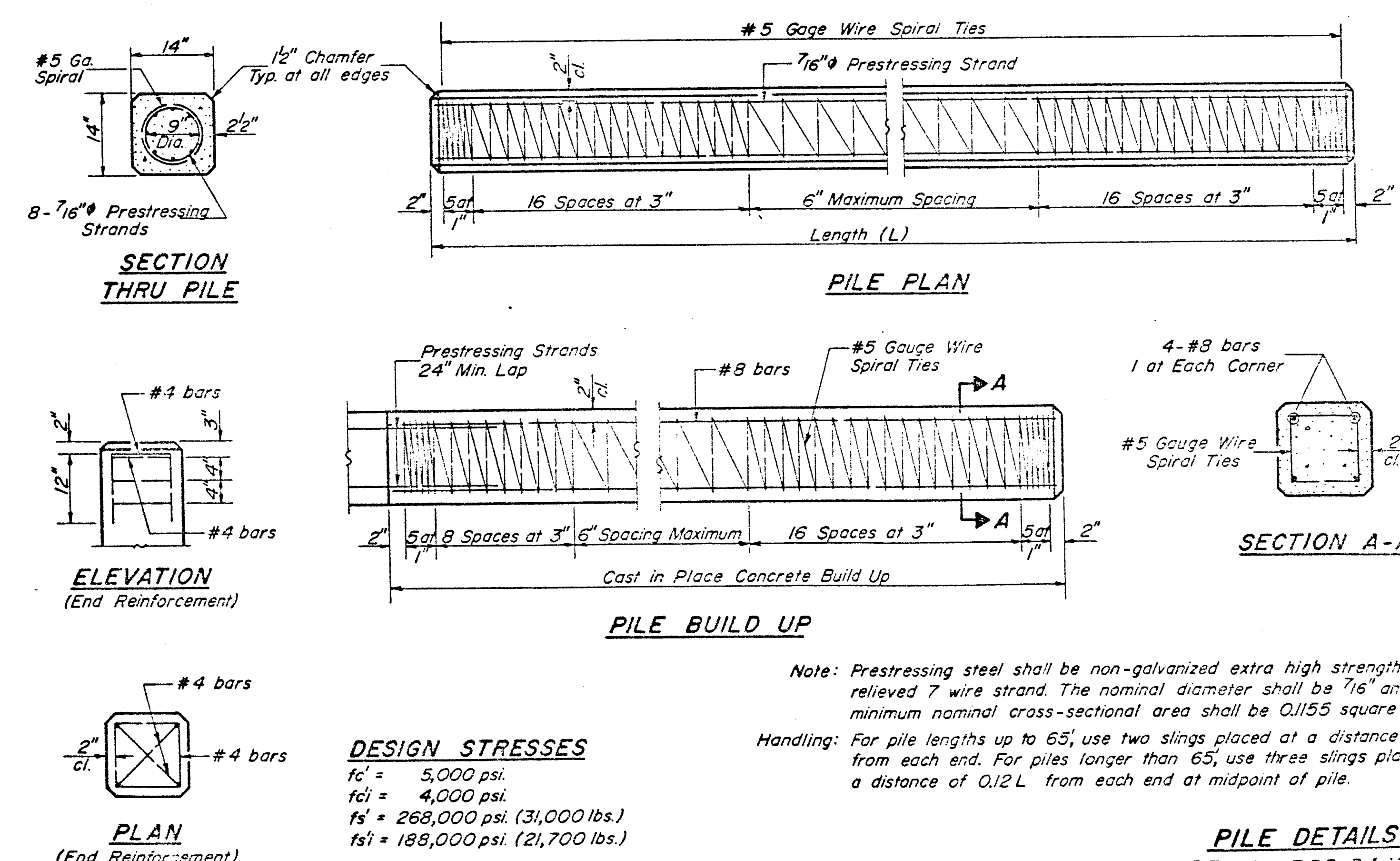
EXAMINED — ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

PASSED — ENGINEER OF DESIGN

APPROVED — CHIEF HIGHWAY ENGINEER

X-2 2-14-69

DETAIL OF PRECAST CONCRETE PILES



DESIGN STRESSES
$f'c$ = 5,000 psi.
$f'ci$ = 4,000 psi.
$f's$ = 268,000 psi. (31,000 lbs.)
fsi = 188,000 psi. (21,700 lbs.)

Note: Prestressing steel shall be non-galvanized extra high strength stress-relieved 7 wire strand. The nominal diameter shall be 7/16" and the minimum nominal cross-sectional area shall be 0.1155 square inch.

Handling: For pile lengths up to 65', use two slings placed at a distance of 0.21 L from each end. For piles longer than 65', use three slings placed at a distance of 0.12 L from each end at midpoint of pile.

PILE DETAILS
F.A.I. RT. 72 SEC. 84-IV-HB-1
SANGAMON COUNTY
STA. 161+04.93

DETAIL OF PRECAST PRESTRESSED CONCRETE PILES