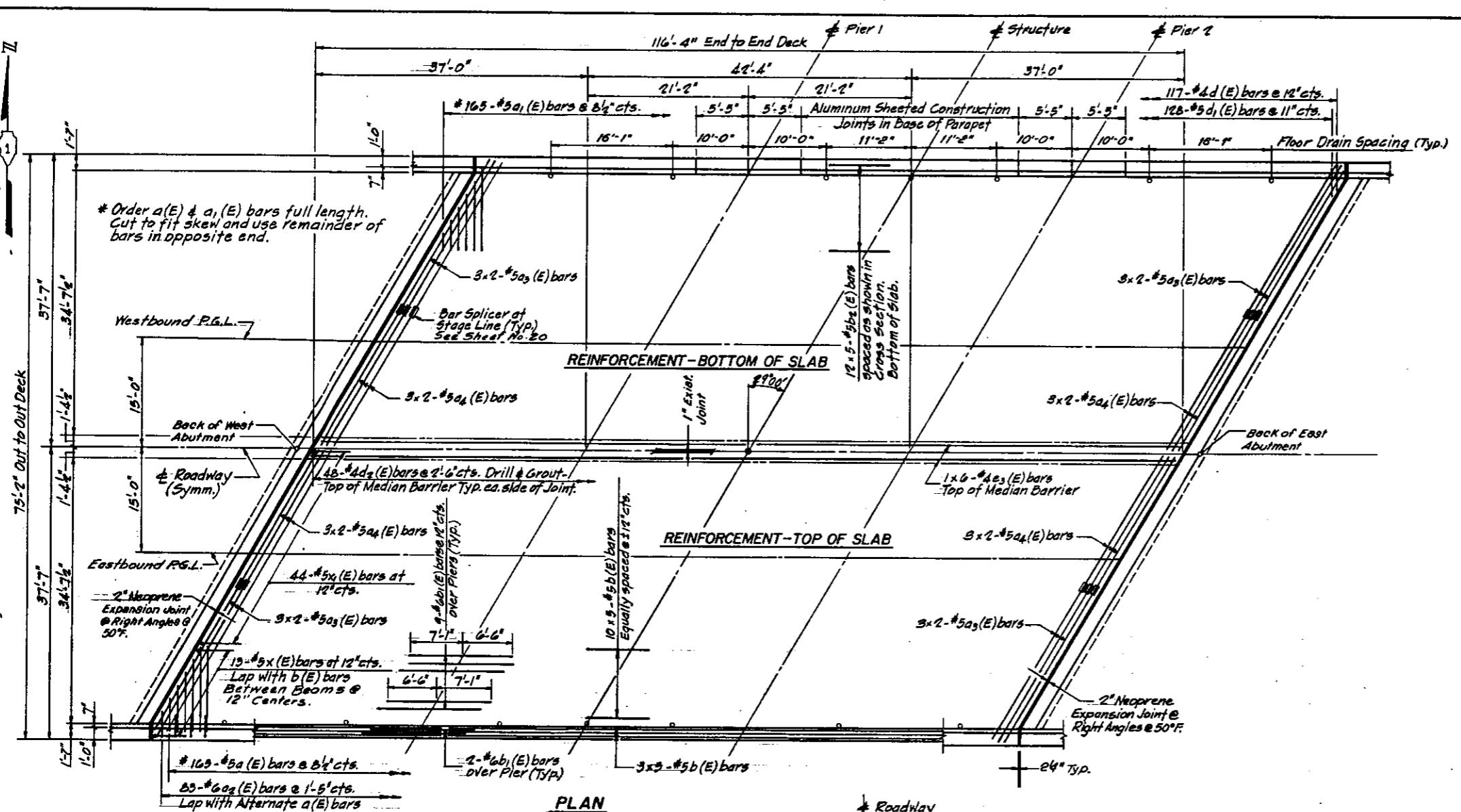


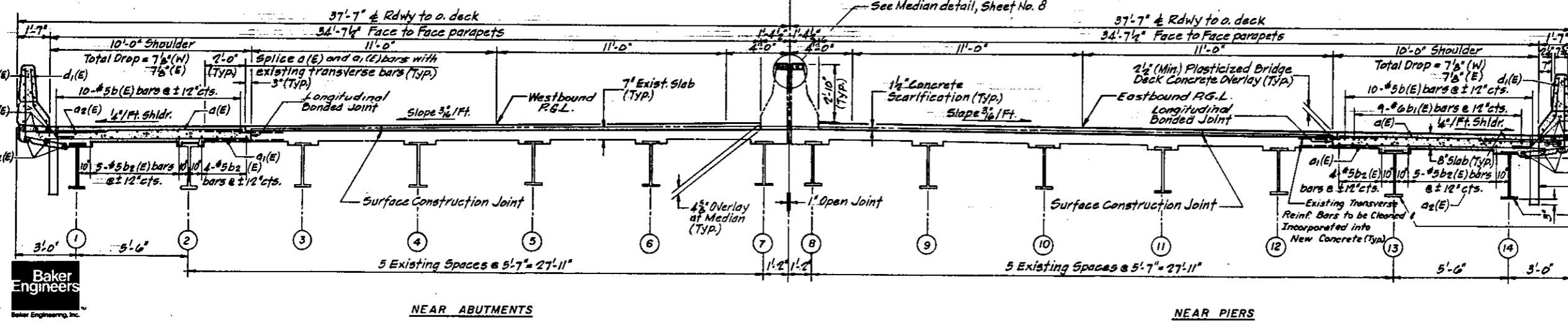
SHEET NO. 6	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF 22 SHEETS	426 BR-B-1 (86)	COOK	209	163
STA.		TO STA.		
FED. ROAD DIST. NO. 7		ILLINOIS		
		FED. AID PROJECT		



SUPERSTRUCTURE BILL OF MATERIAL

ITEM	UNIT	TOTAL
Plasticized Bridge Deck Conc. Overlay	Sq. Yd.	643
Bridge Deck Scarification, 1 1/2 in.	Sq. Yd.	634
Deck Slab Repair (Partial Depth)	Sq. Yd.	200
Deck Slab Repair (Full Depth)	Sq. Yd.	40
Class "X" Concrete	Cu. Yd.	106.0
Concrete Removal	Cu. Yd.	61
Neoprene Expansion Joints, 2 in.	Lin. Ft.	166
Preformed Joint Seal, 2 in.	Lin. Ft.	117

- NOTES:**
- SEE SHEETS 708 FOR SUPERSTRUCTURE DETAILS.
 - REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.
 - BARS INDICATED THUS 20 X 3 - 45 ETC. INDICATES 20 LINES OF BARS WITH 3 LENGTHS PER LINE.
 - FOR BAR SPlicer DETAILS, SEE STD. SHEET. COST INCIDENTAL TO REINFORCEMENT BARS (EPOXY COATED).
 - MINIMUM BAR LAPS**
#5 - 1'-8"
#6 - 2'-0"



Baker Engineers
Baker Engineering, Inc.

DESIGNED
R. ZEMAITAITIS

CHECKED
R. Wood

DRAWN
J. CHALIKIS

CHECKED
R. Zemaitaitis

CROSS SECTION
Looking East

NEAR PIERS

(W) Denotes West End of Deck.
(E) Denotes East End of Deck.

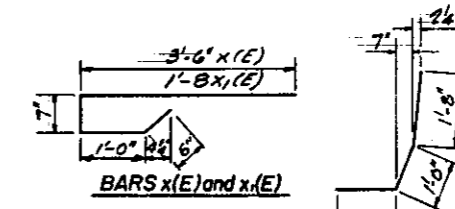
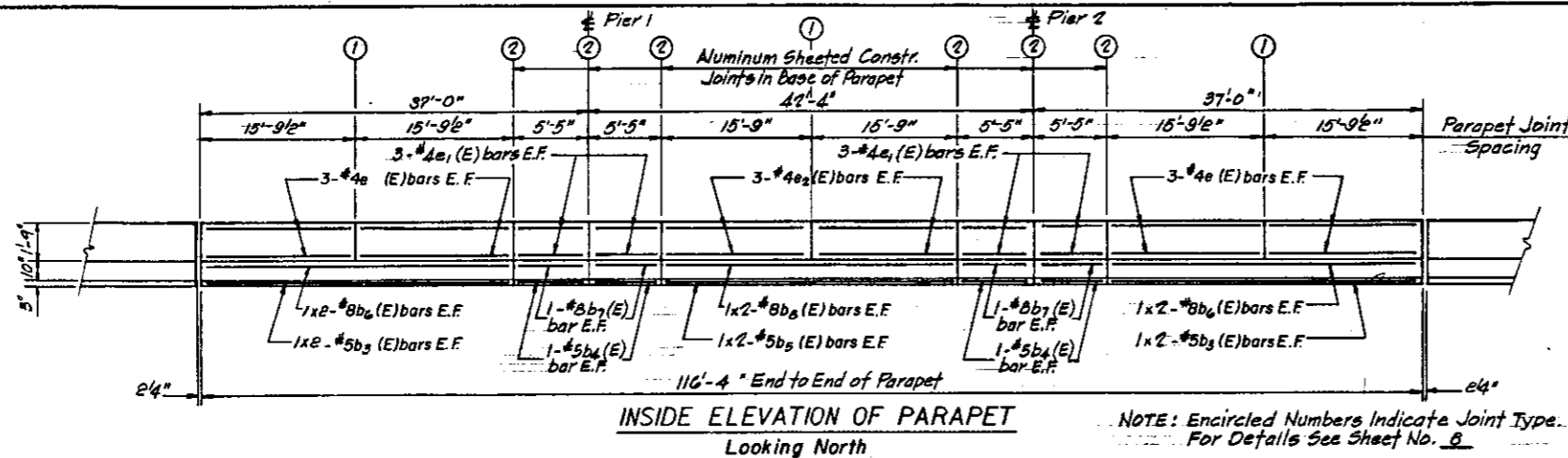
REVISIONS

NAME	DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

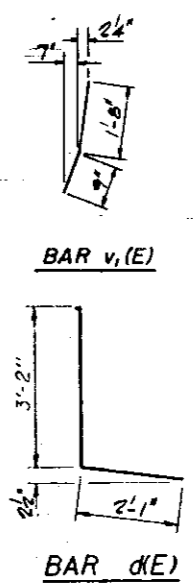
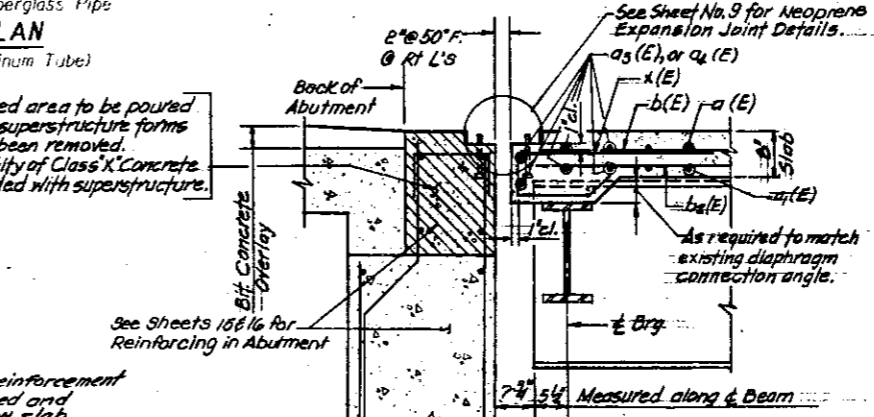
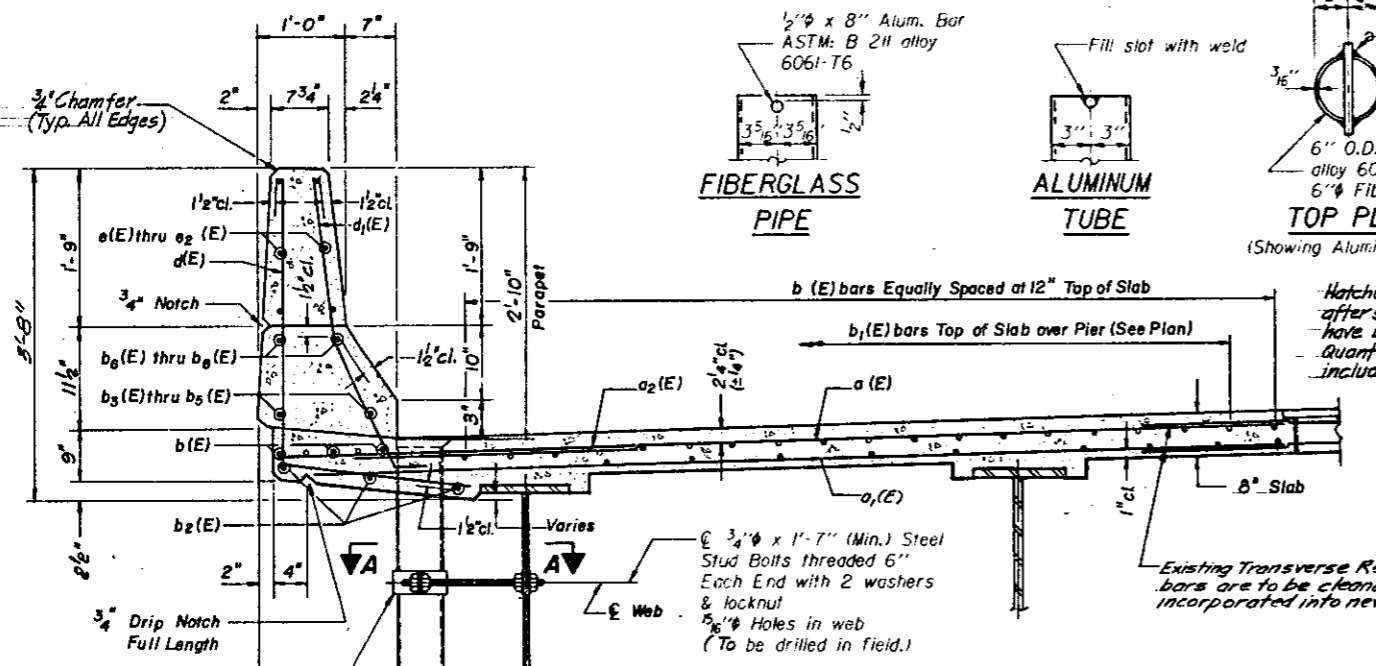
SUPERSTRUCTURE

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION BR-B-1 (86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016-0217



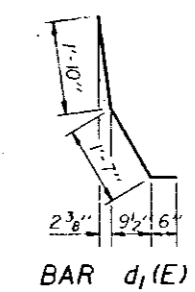
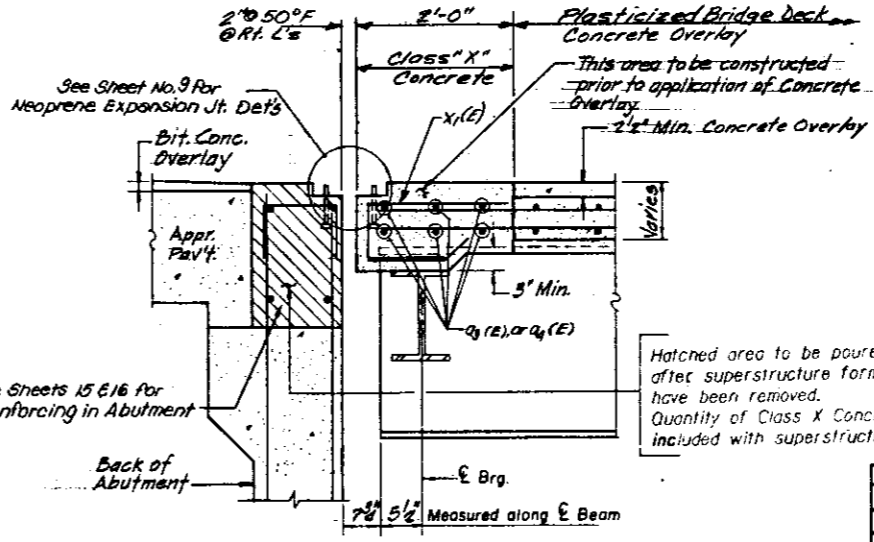
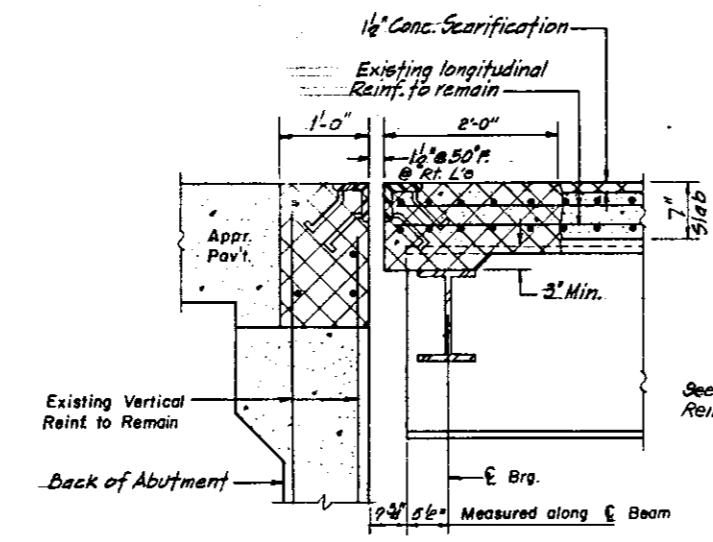
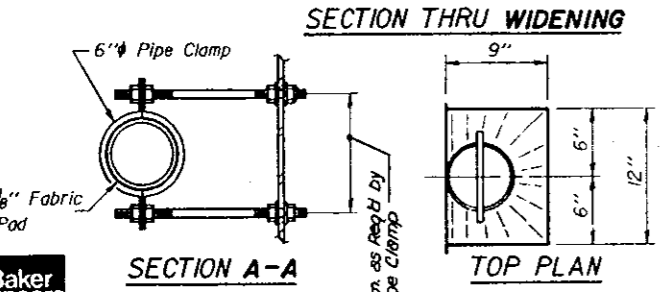
NOTES:

- E.F. - INDICATES EACH FACE.
- BAR'S INDICATED THUS 3 X 3 - #5 ETC. INDICATES 3 LINES OF BAR'S WITH 3 LENGTHS PER LINE.
- THE EXTERIOR SURFACES OF THE FLOOR DRAIN SHALL BE PAINTED WITH MARCON AND GREEN PAINT AS SPECIFIED FOR STRUCTURAL TUBE. THE EXTERIOR SURFACES OF THE ALUMINUM TUBE SHALL BE CLEANED AND GIVEN A WASHCOAT PRETREATMENT IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL'S SPECIFICATION SSPC - SP1 & SSPC - PAINT 37 PRIOR TO PAINTING.
- FIBERGLASS PIPE SHALL CONFORM TO ASTM D3596, WITH SHORT-TIME RUPTURE STRENGTH HOOP TENSILE STRESS OF 30,000 P.S.I. MINIMUM. THE SURFACE OF THE FIBERGLASS PIPE SHALL BE FREE OF BOND INHIBITING AGENTS.
- REINFORCEMENT BARS DESIGNATED (R) SHALL BE EPOXY COATED.



SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a ₁ (E)	330	#5	10'-6"	—
a ₂ (E)	166	#6	4'-0"	—
a ₃ (E)	24	#5	19'-3"	—
a ₄ (E)	24	#5	22'-3"	—
b ₁ (E)	130	#5	24'-6"	—
b ₂ (E)	44	#6	13'-7"	—
b ₃ (E)	120	#5	24'-6"	—
b ₃ (E)	16	#5	16'-0"	—
b ₄ (E)	16	#5	5'-1"	—
b ₅ (E)	8	#5	21'-10"	—
b ₆ (E)	16	#8	17'-6"	—
b ₇ (E)	16	#8	5'-1"	—
b ₈ (E)	8	#8	22'-11"	—
d(E)	234	#4	8'-3"	—
d ₁ (E)	256	#5	9'-11"	—
d ₂ (E)	96	#4	1'-0"	—
e(E)	48	#4	15'-5"	—
e ₁ (E)	48	#4	5'-1"	—
e ₂ (E)	24	#4	20'-10"	—
e ₃ (E)	12	#4	19'-0"	—
h(E)	12	#4	3'-8"	—
h ₁ (E)	8	#4	2'-8"	—
x ₁ (E)	176	#5	3'-9"	—
v(E)	16	#4	4'-0"	—
v ₁ (E)	12	#4	2'-5"	—
x ₂ (E)	12	#8	—	—
x(E)	52	#5	5'-7"	—
Reinforcement Bars (Epoxy Coated)		Lbs.		22,922
Expansion Bolts		Ea.		6
Floor Drains		Ea.		14



Baker Engineers
 DESIGNED R ZEMITAITIS
 CHECKED P WOOD
 DRAWN Z. DABROWSKI
 CHECKED P WOOD

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

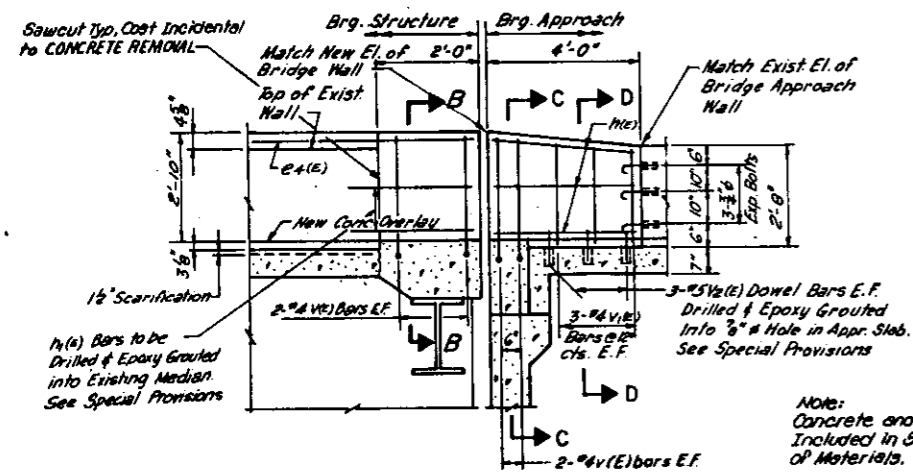
U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER POPLAR CREEK
 SECTION 8R-B-1 (86)
 COOK COUNTY
 STATION 240 + 83.50
 STRUCTURE No. 016-0217

REVISIONS

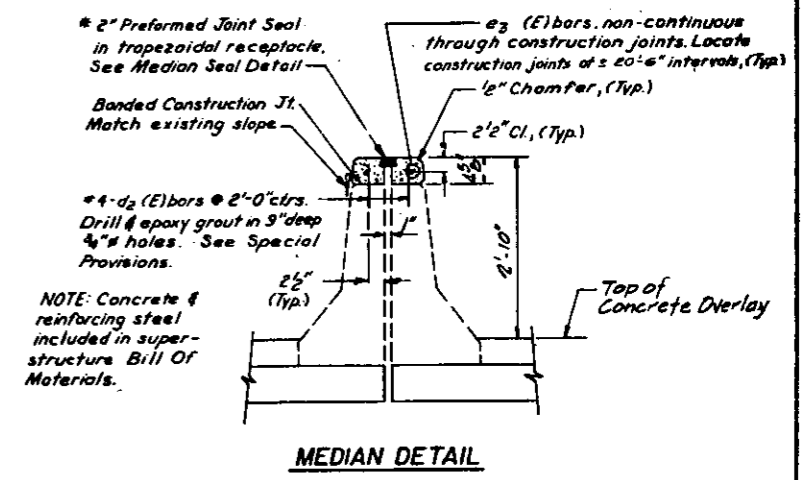
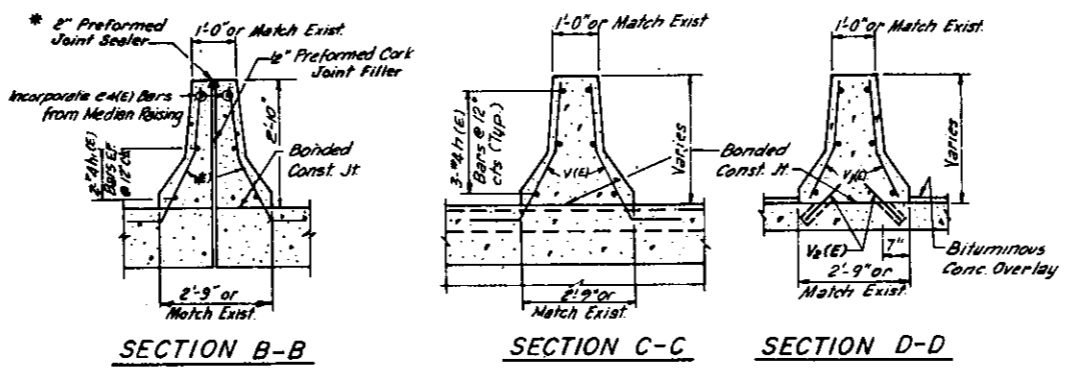
NAME	DATE

Denotes Concrete Removal and Scarification

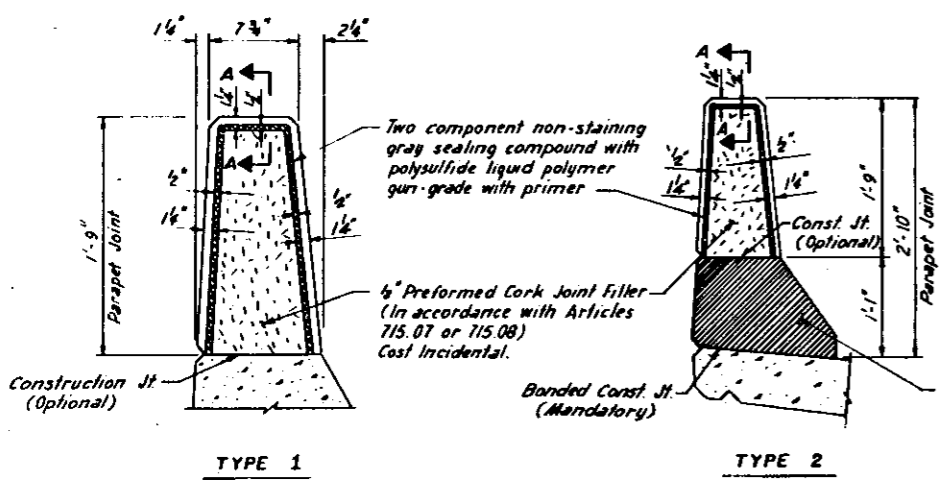
SHEET NO. 6	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF 22 SHEETS	BR-B-1 (86)	COOK	209	165
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



DETAIL OF MEDIAN BARRIER WALL

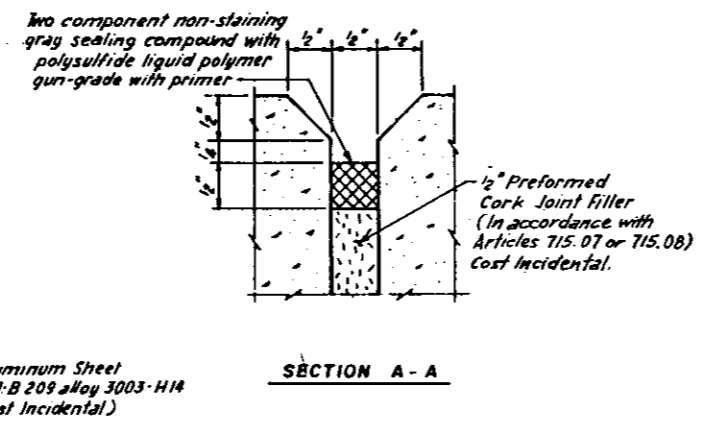


MEDIAN DETAIL

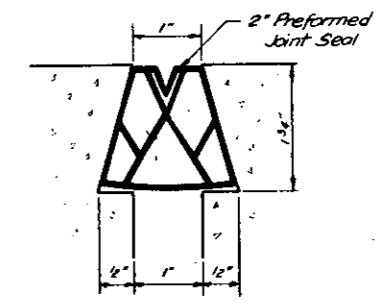


PARAPET JOINT DETAILS

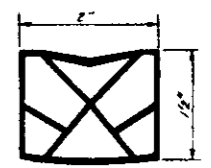
(For Location of Parapet Joints See Sheet No. 7)



SECTION A-A



MEDIAN SEAL DETAIL



PREFORMED JOINT SEAL (2")

DESIGNED	P. Wood
CHECKED	J. Owen
DRAWN	Z. Dabrowski
CHECKED	P. Wood

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS

REVISIONS	
NAME	DATE

U.S. ROUTE 20 BY-PASS (F.A.R. 426) OVER
POPLAR CREEK
SECTION BR-B-1 (86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016 - 0217

Joint Size	"C" at 50°F	"D" at 50°F
2"	2"	1 1/2" Min.
2 1/2"	2 1/2"	1 3/4" Min.
4"	3"	2 1/2" Min.

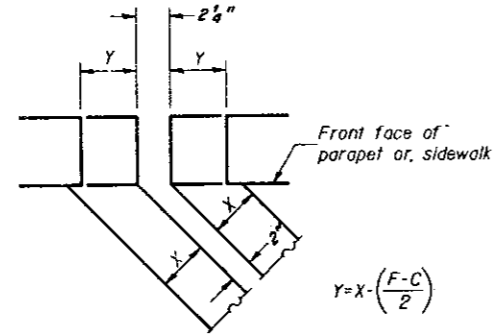
INSTALLATION NOTES

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

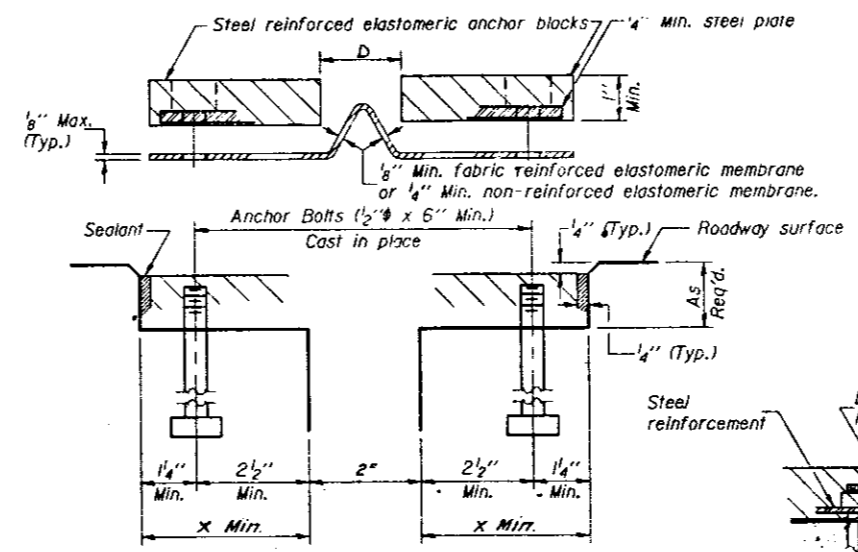
NOTE A: Maximum spacing of anchor bolts shall be 12" centers.

SKEW LIMITATIONS

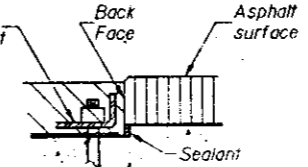
The details of the anchor blocks and the elastomeric membrane in the parapet, as shown, are for up to 50° skews. For skews greater than 50°, the anchor blocks and the elastomeric membrane, installed in accordance with dimension "D", might require modifications to insure a minimum clearance of 1/2" from 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.



FORMING BLOCKOUT SKETCH



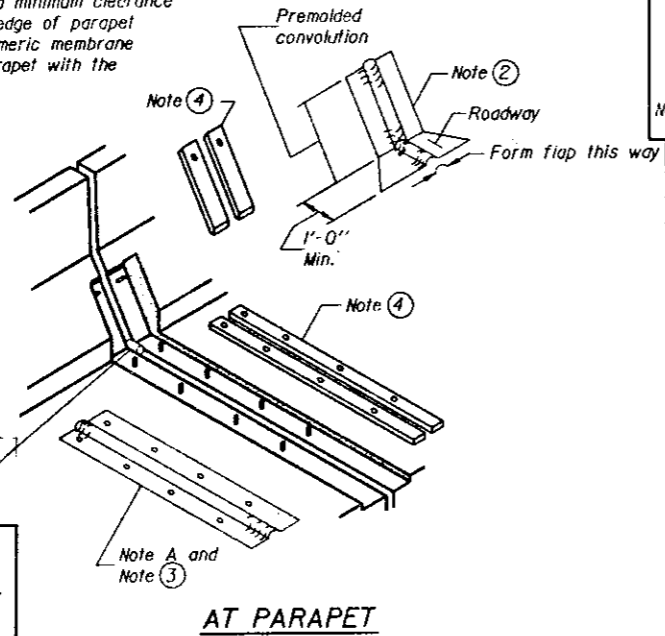
CROSS SECTION



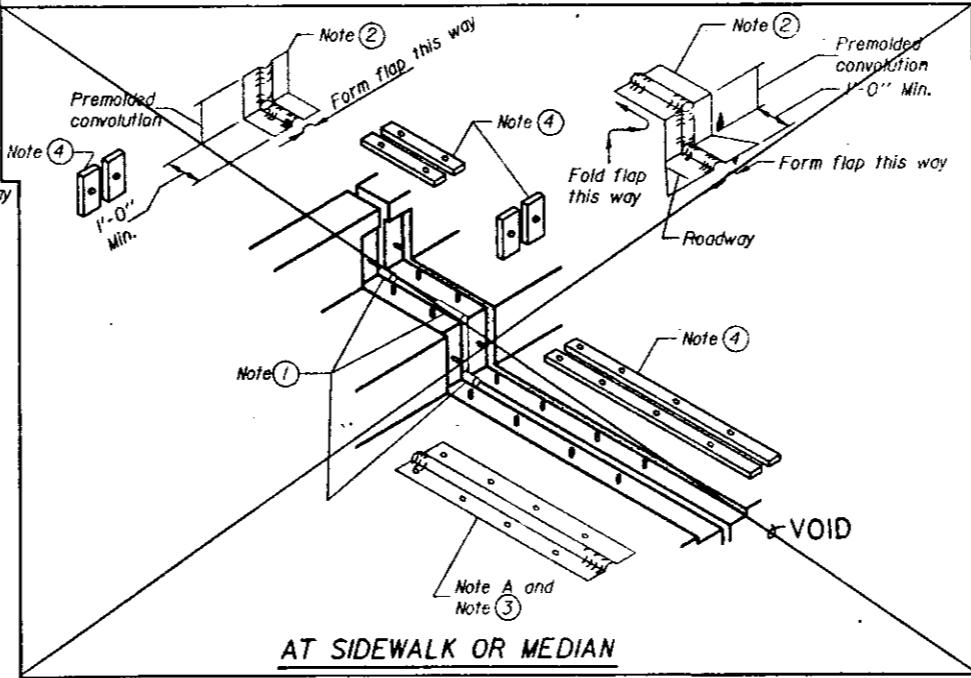
ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE

GENERAL NOTES

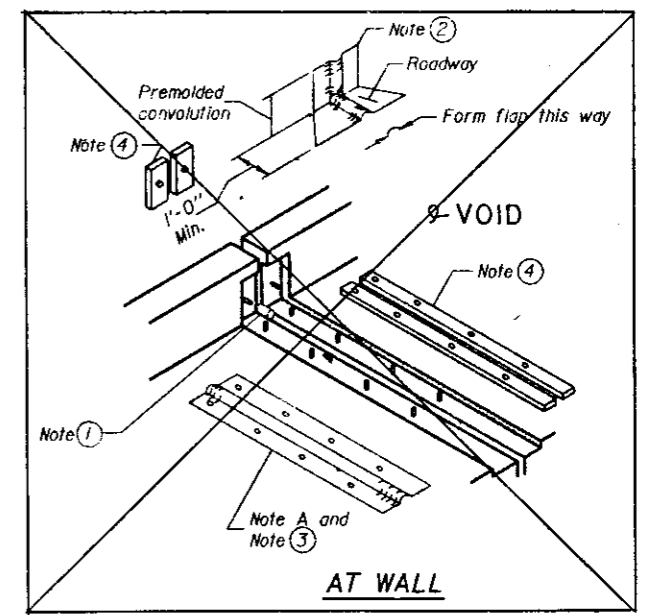
Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions.
 The elastomeric membrane shall be premolded with a single or a double upward convolution that will have a "memory" 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.
 Anchor Bolts, Washers and Nuts are to be Plated against Corrosion in Accordance with the Special Provisions, and shall be Zinc-coated by the Mechanical Plating Method Conforming to ASTM B695, Class 50. Zinc-coated Nuts shall be Tapped Oversize in Accordance with the Requirements of AASHTO M291 and shall Meet the Supplementary Requirements S1.1 thru S1.2.1 of the Same Specifications for Lubricant and Testing.



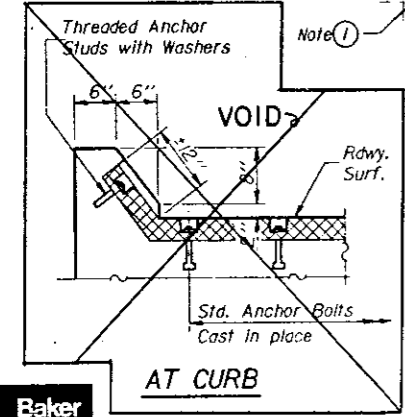
AT PARAPET



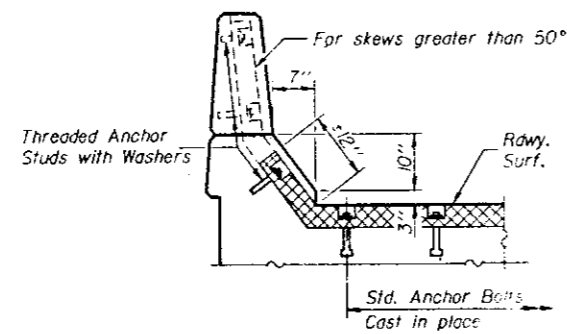
AT SIDEWALK OR MEDIAN



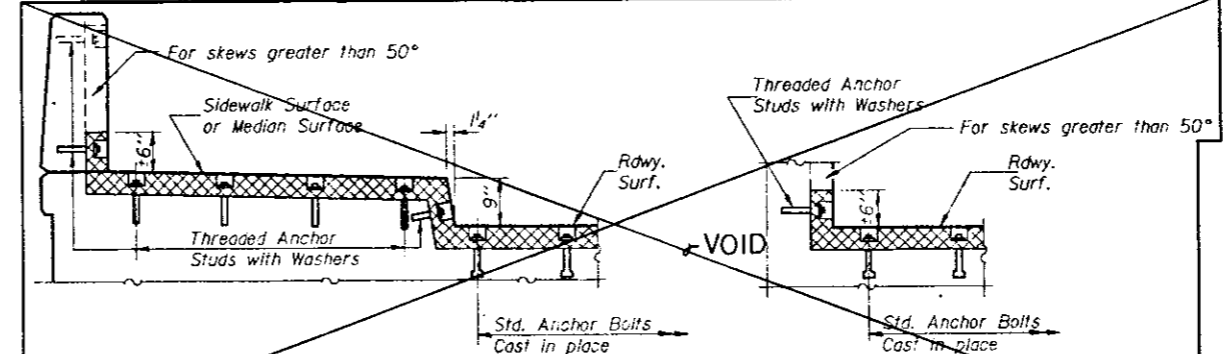
AT WALL



AT CURB



AT PARAPET



AT SIDEWALK OR MEDIAN

AT WALL

TYPICAL END TREATMENTS

Baker Engineers
 Baker Engineering Inc.

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

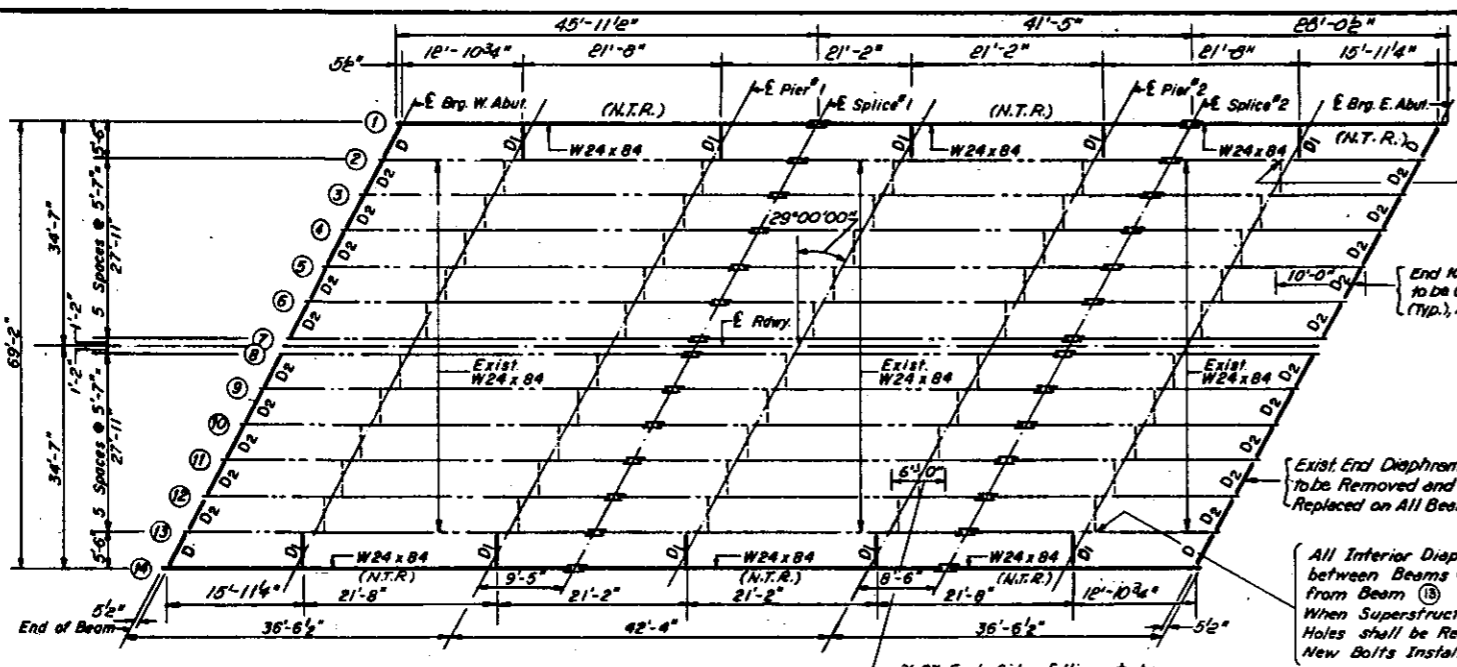
NOTE: Continuous Seal Type Neoprene Exp. Joints For 2", 2 1/4" & 4" Movement

REVISIONS	
NAME	DATE

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

CONTINUOUS SEAL TYPE NEOPRENE EXPANSION JOINTS

U.S. ROUTE 20 BY-PASS (F.A.R. 426) OVER
 POPLAR CREEK
 SECTION 8R-B-1 (86)
 COOK COUNTY
 STATION 240 + 83.50
 STRUCTURE No. 016 - 0217



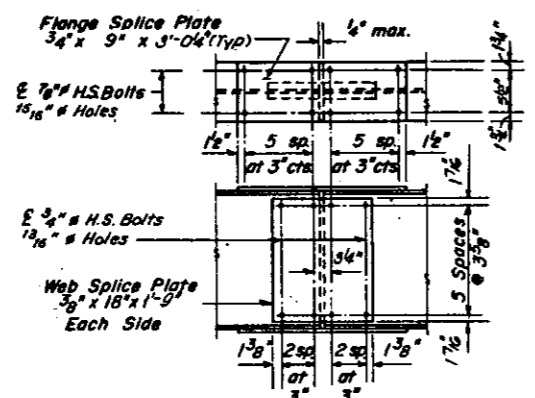
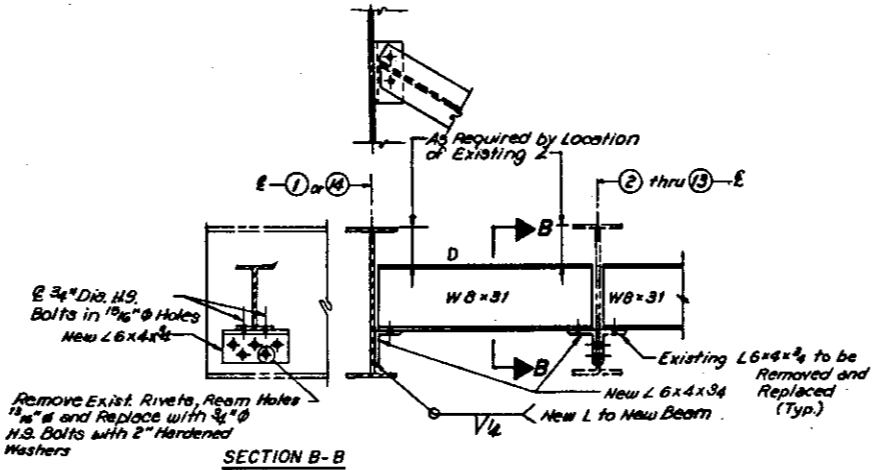
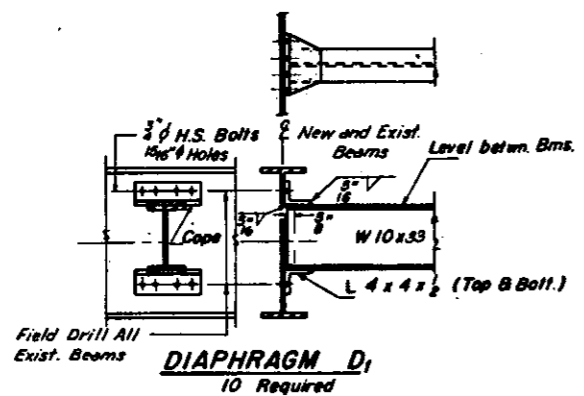
All Interior Diaphragms (except at Piers) between Beams (2) and (3) to be Disconnected from Beam (2) during Placement of Concrete. When Superstructure is Complete, 1/2" # Bolt Holes shall be Redrilled as Necessary and New Bolts Installed.

End 10'-0" of Exist. Beams to be Cleaned by Method I (Typ.) All Beams.

Exist. End Diaphragms to be Removed and Replaced on All Beams

All Interior Diaphragms (except at Piers) between Beams (12) and (13) to be Disconnected from Beam (13) during Placement of Concrete. When Superstructure is Complete, 1/2" # Bolt Holes shall be Redrilled as Necessary and New Bolts Installed.

- NOTES:
- TWO HARDENED WASHERS SHALL BE REQUIRED OVER ALL 1 1/8" HOLES IN DIAPHRAGMS.
 - ALL STRUCTURAL STEEL SHALL CONFORM TO AASHTO M163.
 - CLEAN AND PAINT ALL STRUCTURAL METALS. ALL EXISTING STRUCTURAL METALS SHALL BE CLEANED USING METHOD II, WITH THE EXCEPTION OF THE FOLLOWING WHICH SHALL BE CLEANED BY METHOD I: THE END 10 FT. OF EACH BEAM AT THE ABUTMENTS; THE END DIAPHRAGMS AND THE BEARINGS AT PIER 1. FOLLOWING REMOVAL OF THE CONCRETE DECK IN THE DESIGNATED AREAS, THE TOP FLANGES OF THE FACIA BEAMS, SPLICES AND END DIAPHRAGMS SHALL BE CLEANED USING METHOD II. THE METAL THUS EXPOSED SHALL BE FIELD PRIMED PRIOR TO FORMING THE NEW DECK. SEE SPECIAL PROVISIONS FOR CLEANING AND PAINTING STEEL STRUCTURES.
 - ALL CONTACT SURFACES OF JOINTS FOR THE DIAPHRAGMS SHALL BE FREE OF PAINT OR LACQUER.



BEAM REACTION TABLE

	ABUTMENT	PIER
R _D (K)	12.3	38.7
R _L (K)	29.7	36.8
Imp. (K)	29	11.1
R _T Total (K)	50.9	66.6

MOMENT TABLE

	0.4 Sp. 1 or 2 0.6 Sp. 3	PIER 1 or 2	0.5 Sp. 2
I (New) (in ⁴)	2370	2370	2370
DL (K)	0.892	0.892	0.892
ML (K)	84.7	136.6	61.7
ME (K)	154.3	123.5	151.7
Imp. (K)	46.3	37.0	45.5
M _T Total (K)	285.5	297.1	258.9
P _a (New) (ksi)	17.4	18.2	15.8

TOP OF FLANGE ELEVATIONS (BEFORE ANY DEFLECTION)*

BEAM	LOC.	E. Brg. W. Abut	E. Brg. Pier 1	E. Splice 1	E. Brg. Pier 2	E. Splice 2	E. Brg. E. Abut
1		723.43	722.26	722.74	722.46	722.39	722.34
1d		724.09	723.40	723.22	722.82	722.71	722.56

* For Fabrication Only

- I --- MOMENT OF INERTIA
- DL --- DEAD LOAD INCLUDING BEAM, SLAB, MEDIAN AND/OR PARAPET
- M_D --- MOMENT DUE TO DEAD LOAD
- M_L --- MOMENT DUE TO LIVE LOAD
- IMP --- IMPACT
- M_T --- BENDING STRESS DUE TO TOTAL MOMENT, M_T.

REVISIONS

NAME	DATE

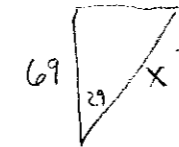
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION BR-B-1(86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016-0217

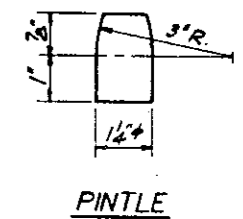
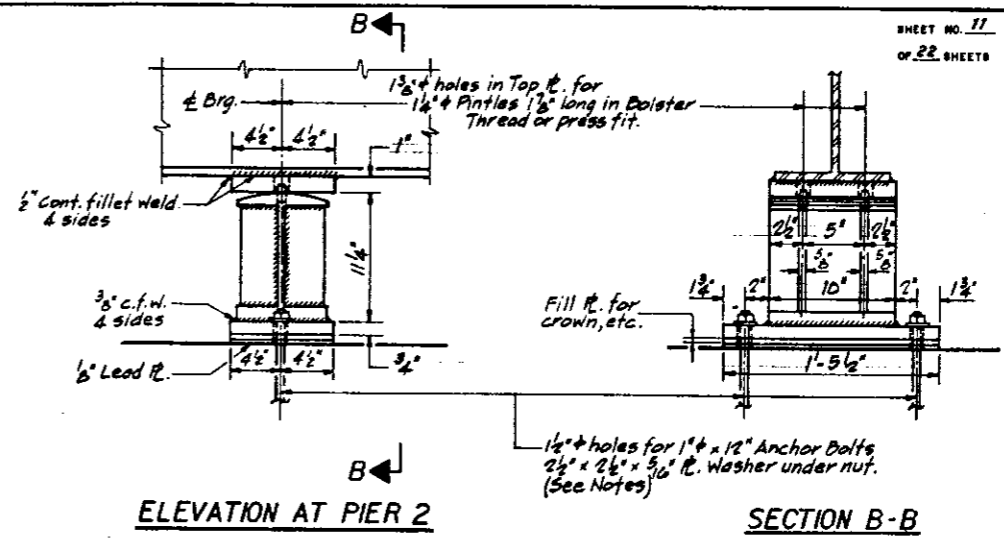
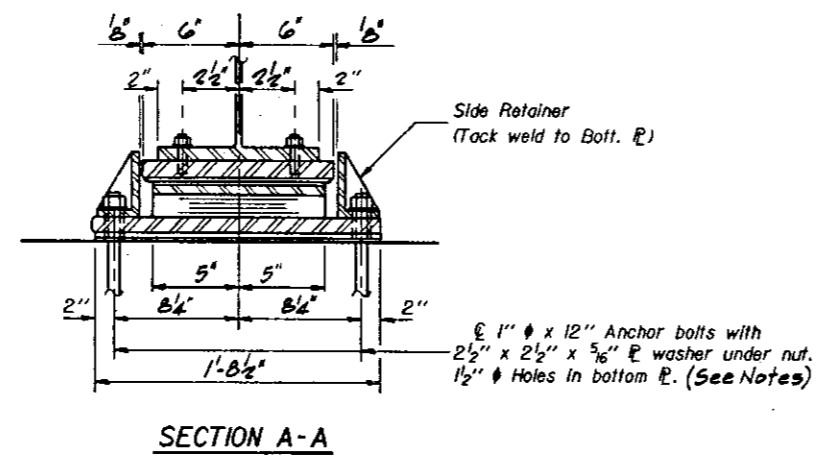
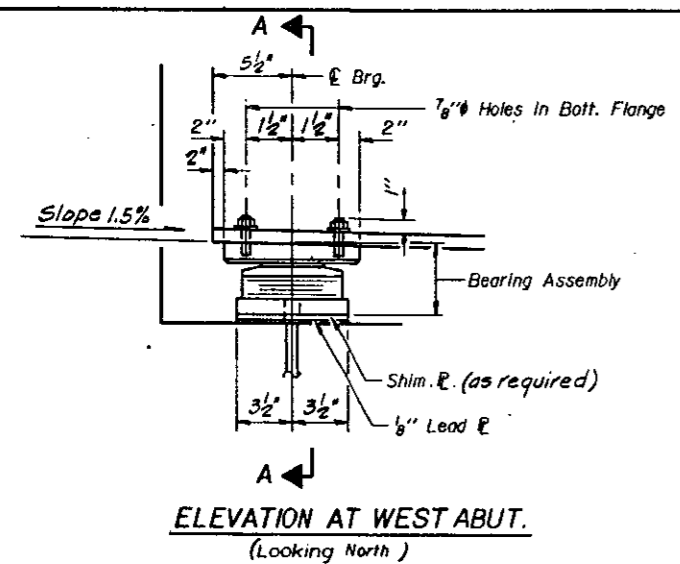
Baker Engineers
Baker Engineering, Inc.

DESIGNED: R. ZEMAITAITIS
CHECKED: P. WOOD
DRAWN: J. SHELBY
CHECKED: R. ZEMAITAITIS

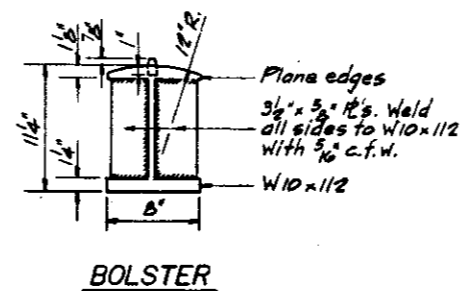
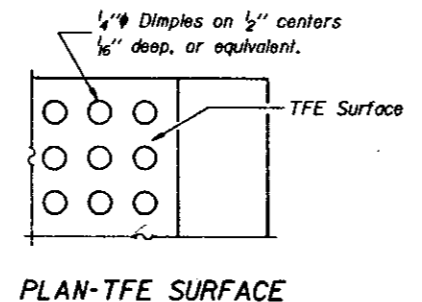
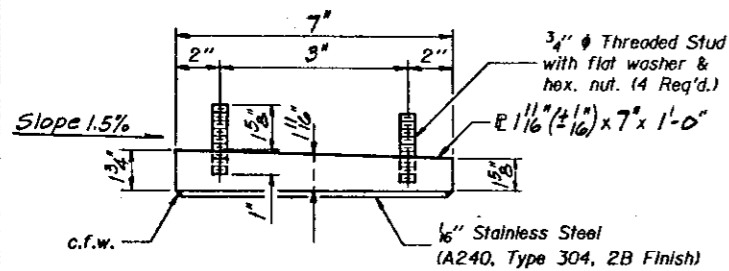


9.7 TONS

SHEET NO. 11	F. & S. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF 22 SHEETS	426	BR-B-1 (86)	COOK	209	168
STA.	TO STA.		FED. ROAD DIST. NO. 1		
ILLINOIS			FED. AID PROJECT		



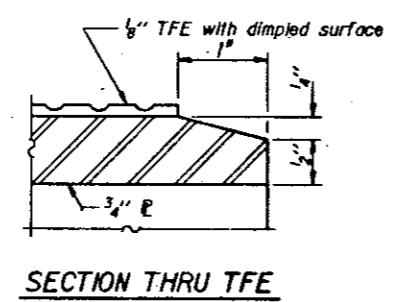
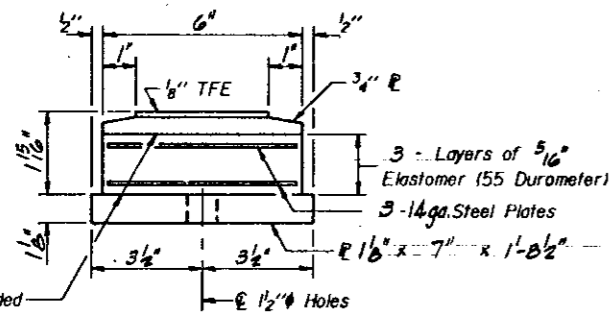
TYPE II TFE ELASTOMERIC EXP. BRG.



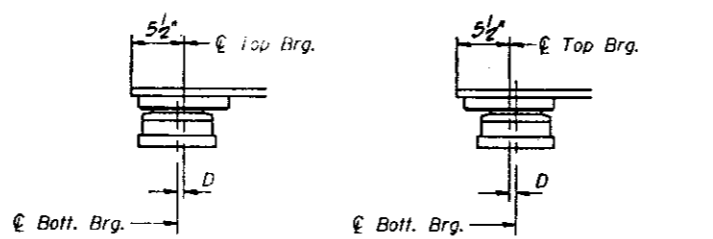
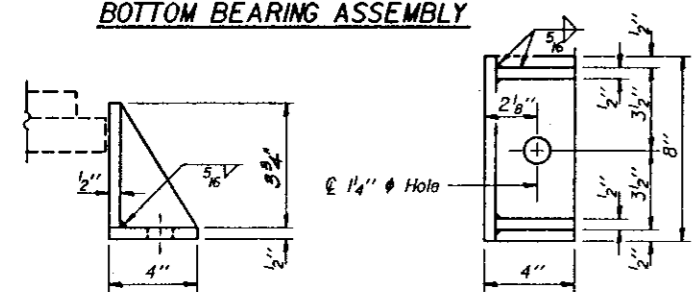
TOP BEARING ASSEMBLY

PLAN-TFE SURFACE

BOLSTER



- Notes:**
- Anchor bolts at fixed bearings may be built into the masonry. See Standard Sheet for Anchor Bolt Details.
 - All steel plates shown on this sheet shall be AASHTO M-183 unless otherwise noted.
 - The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	2

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

DESIGNED	R. Wood
CHECKED	R. ZEMAITAITIS
DRAWN	J. Chaliki's
CHECKED	P. Wood

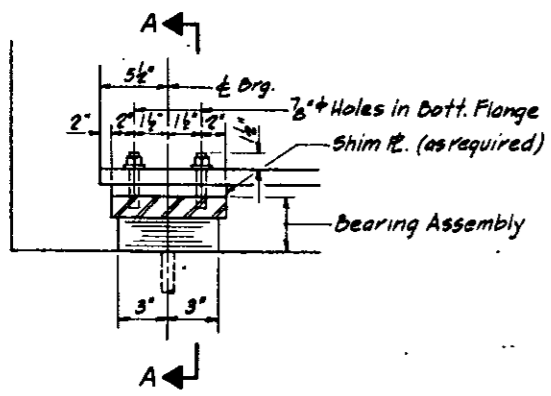
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**NEW BEARING DETAILS
WEST ABUTMENT & PIER 2**

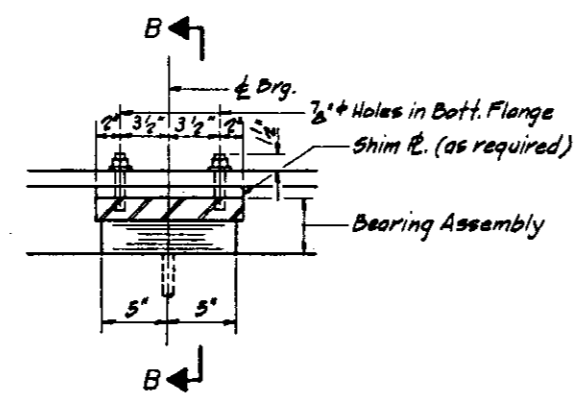
U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION BR-B-1 (86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016-0217

REVISIONS

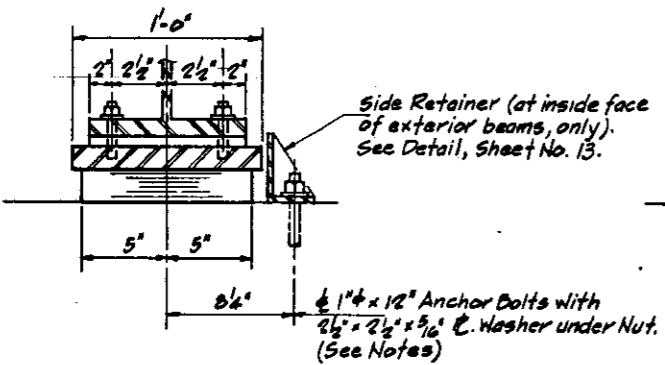
NAME	DATE



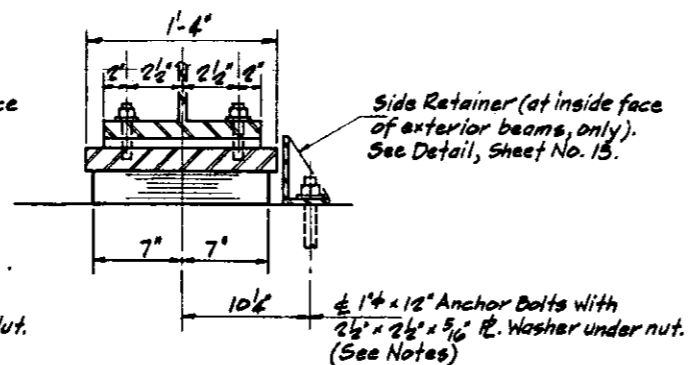
ELEVATION AT EAST ABUT.
(Looking North)



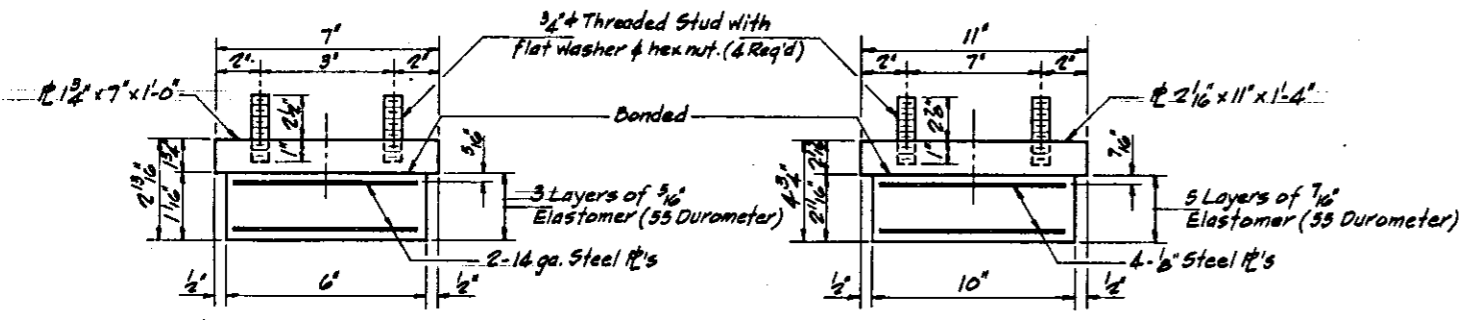
ELEVATION AT PIER 1



SECTION A-A



SECTION B-B



EAST ABUT. BEARING ASSEMBLY

PIER 1 BEARING ASSEMBLY

TYPE I ELASTOMERIC EXPANSION BRG.

- Notes:
1. See Sheet No. 21 for Anchor Bolt Details.
2. Shim Plates shall not be placed under Bearing Assembly.

Baker Engineers
Baker Engineering, Inc.

DESIGNED	P. Wood
CHECKED	R. ZEMAITAITIS
DRAWN	J. Chaliki's
CHECKED	P. Wood

BILL OF MATERIAL

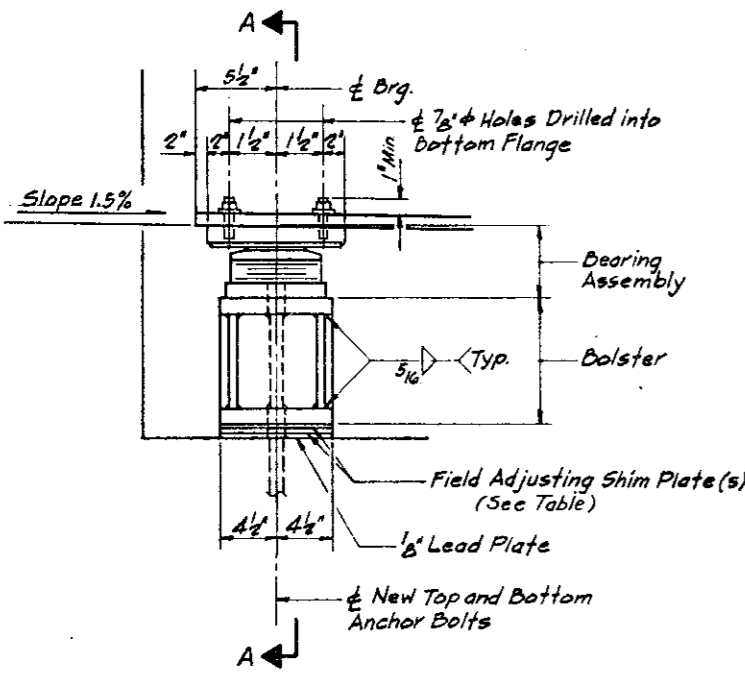
Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	4

REVISIONS	
NAME	DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

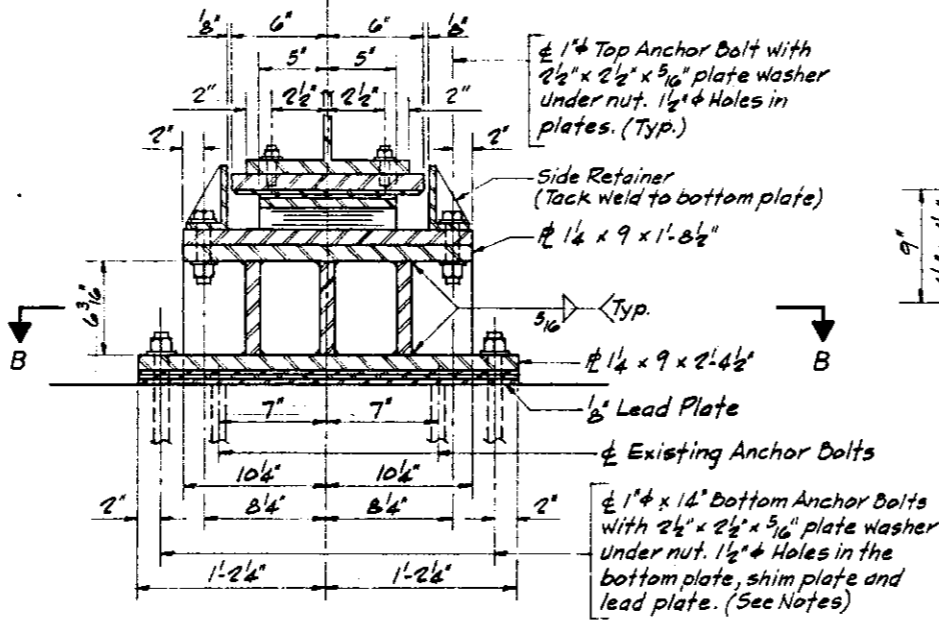
NEW BEARING DETAILS
EAST ABUTMENT & PIER 1

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION 8R-B-1(86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016-0217

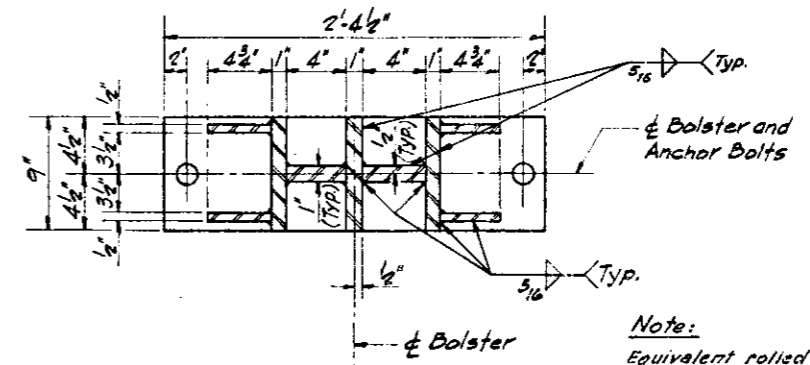


ELEVATION AT WEST ABUT.

TYPE II TFE ELASTOMERIC EXP. BRG. WITH BOLSTER

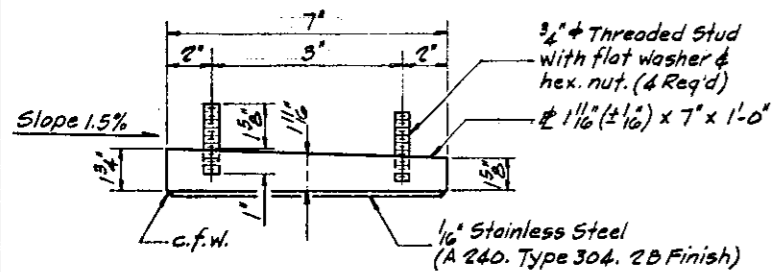


SECTION A-A

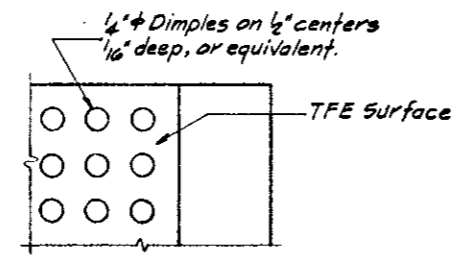


SECTION B-B

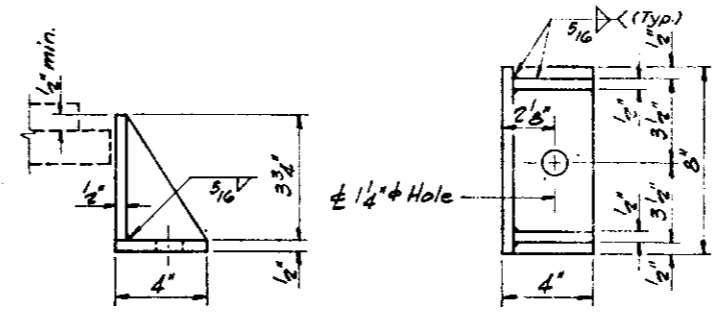
Note:
Equivalent rolled structural shapes with stiffeners will be allowed in lieu of welded plates.



TOP BEARING ASSEMBLY



PLAN - TFE SURFACE



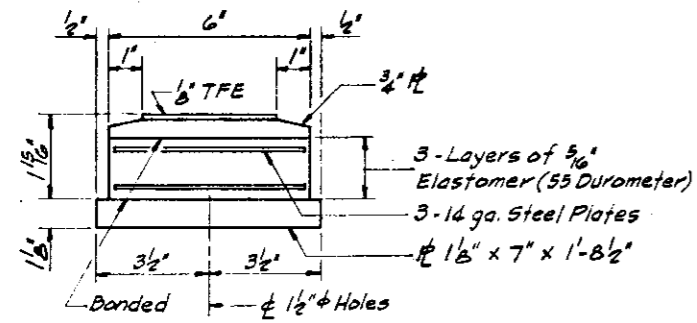
SIDE RETAINER

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

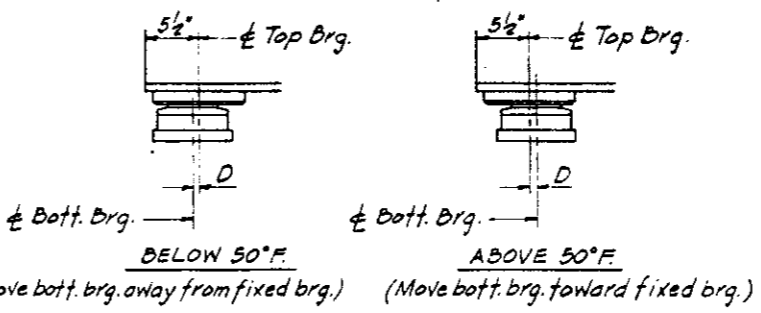
TABLE OF SHIM PLATES

Beam	2	3	4	5	6	7	8	9	10	11	12	13
Location												
West Abutment	0	0	0	0	0	0	4"	1/2"	1/2"	5 1/2"	3 1/4"	7 1/2"

- Notes:**
- See Sheet No. 21 for Anchor Bolt Details.
 - The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces. Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
 - Contractor shall verify dimensions of exist Bearings before removal and ordering of new Bearings, or fabrication of Bolsters.
 - Cost of Structural Steel for Bolsters is included for payment with "Furnishing and Erecting Structural Steel".



BOTTOM BEARING ASSEMBLY



SETTING ANCHOR BOLTS AT EXP. BRG.
D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type II	Each	12

REVISIONS	
NAME	DATE

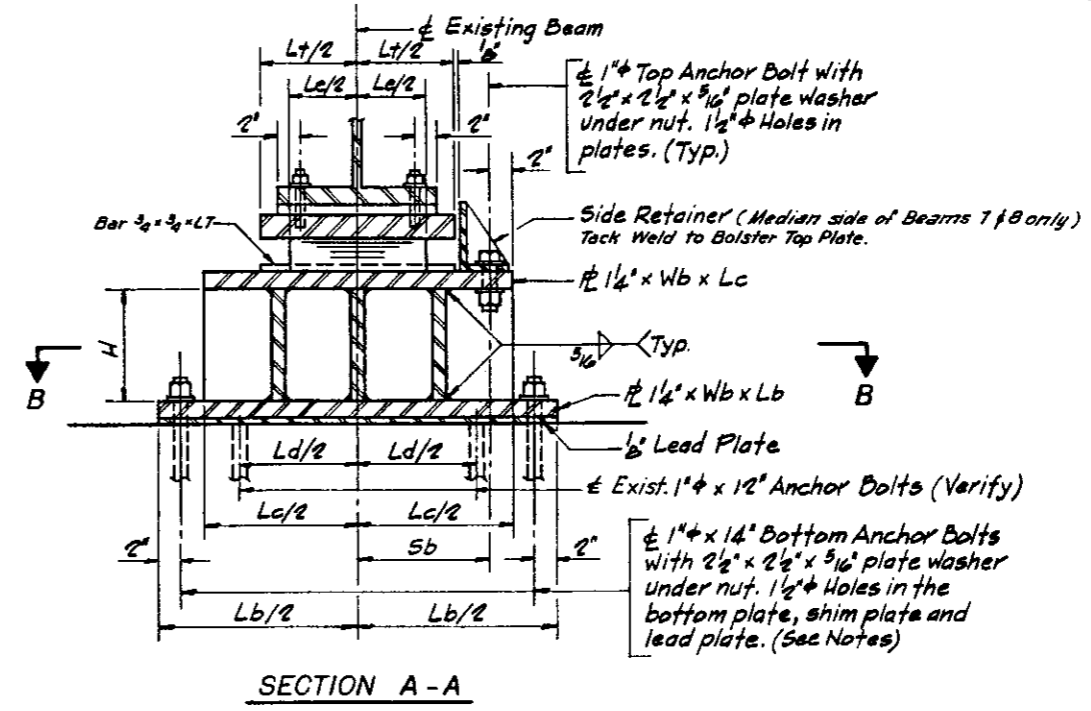
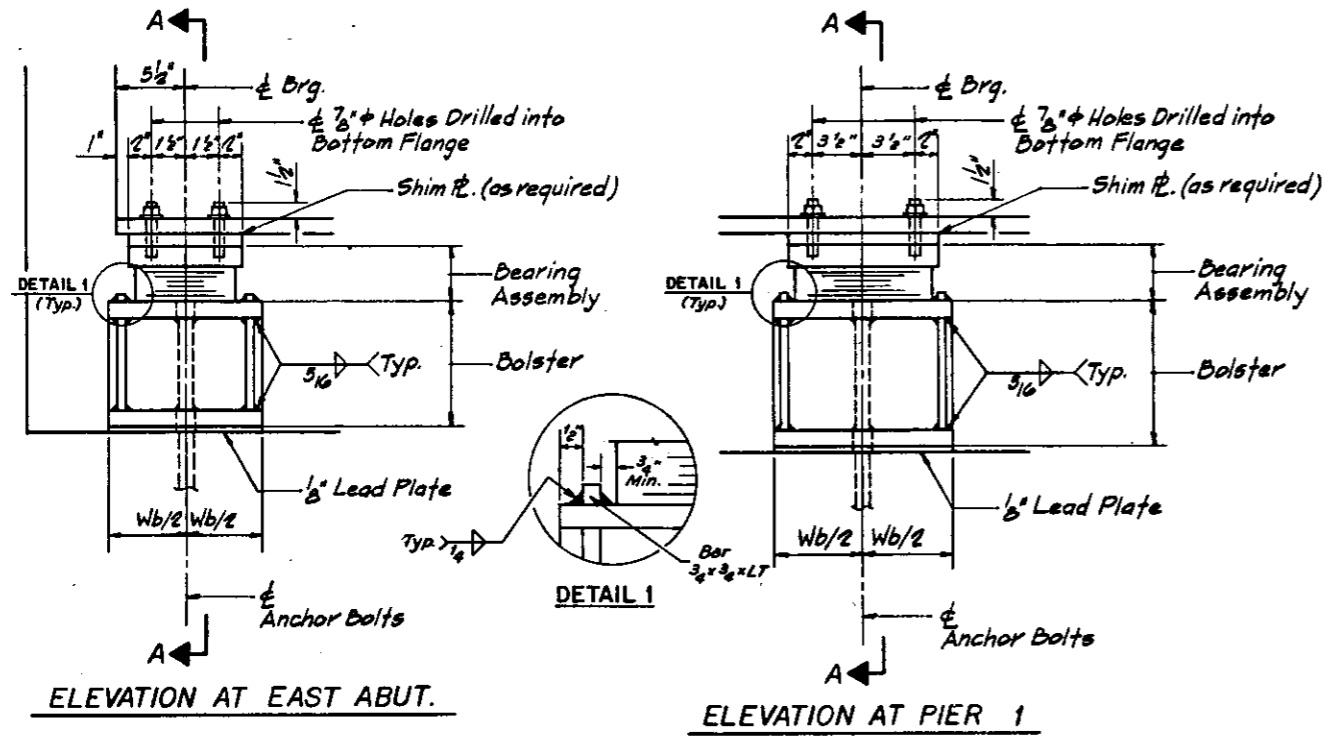
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

**REPLACEMENT BEARING DETAILS
WEST ABUTMENT**

U.S. ROUTE 20 BY-PASS (F.A.R. 426) OVER
POPLAR CREEK
SECTION 8R-B-1(86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016-0217

Baker Engineers
Baker Engineering, Inc.

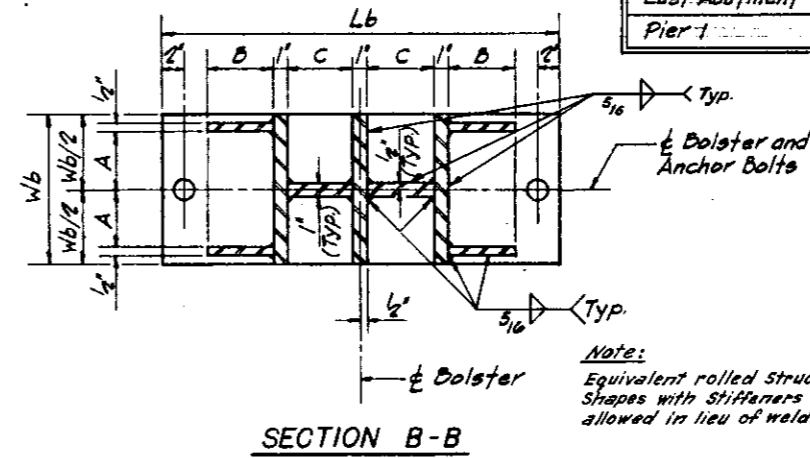
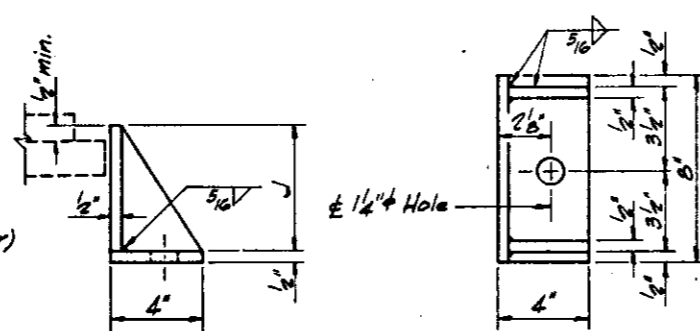
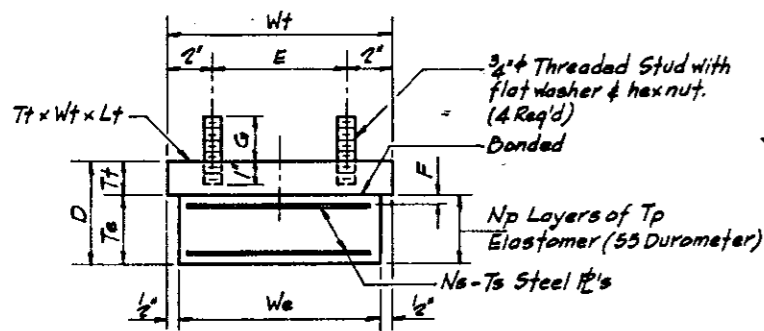
DESIGNED: P. Wood
CHECKED: R. ZEMAITAITIS
DRAWN: J. Chalikis
CHECKED: P. Wood



TYPE I ELASTOMERIC EXPANSION BRG. WITH BOLSTER

TABLE OF SHIM PLATES

Beam Location	2	3	4	5	6	7	8	9	10	11	12	13
East Abutment	0	3/4	0	3/4	0	0	1/8	3/4	3/8	0	1/2	0
Pier 1	0	0	0	0	0	0	1/4	1/4	1/8	1/8	1/8	0



EAST ABUT. BEARING ASSEMBLY
PIER 1 BEARING ASSEMBLY

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

Note:
 Equivalent rolled Structural Shapes with Stiffeners will be allowed in lieu of welded plates.

- Notes:**
- See Standard Sheet for Anchor Bolt Details.
 - Contractor shall verify dimensions of existing Bearings before removal and ordering of new Bearings, or fabrication of Bolsters.
 - Cost of Structural Steel for Bolsters and Structural Steel for Fixed Bearing at Pier 1 is included for payment with "Furnishing and Erecting Structural Steel".

TABLE OF VARIABLES FOR TYPE I EXPANSION BEARINGS WITH BOLSTERS

LOCATION	VARIABLE																							
	Te	We	Le	Np	Tp	Ns	Ts	Tt	Wt	Lt	Wb	Lb	Lc	Sb	Ld	A	B	C	D	E	F	G	H	J
East Abutment	1 1/8	6"	10"	3	5/16	2	1 1/4	1 1/2	7"	1'-0"	10"	2'-4 1/2"	1'-8 1/2"	8 1/2"	1'-2"	4"	4 3/4"	4"	2 1/16"	3"	5/16"	2 1/2"	8 3/16"	2 7/8"
Pier 1	2 1/16	10"	1'-2"	5	7/16	4	1 1/8	2 1/16	11"	1'-4"	1'-2"	2'-8 1/2"	2'-0 1/2"	10 1/2"	1'-2"	6"	5 3/4"	5"	4 3/4"	7"	7/16"	2 1/2"	6 5/8"	4 1/2"

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	24

REVISIONS

NAME	DATE

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

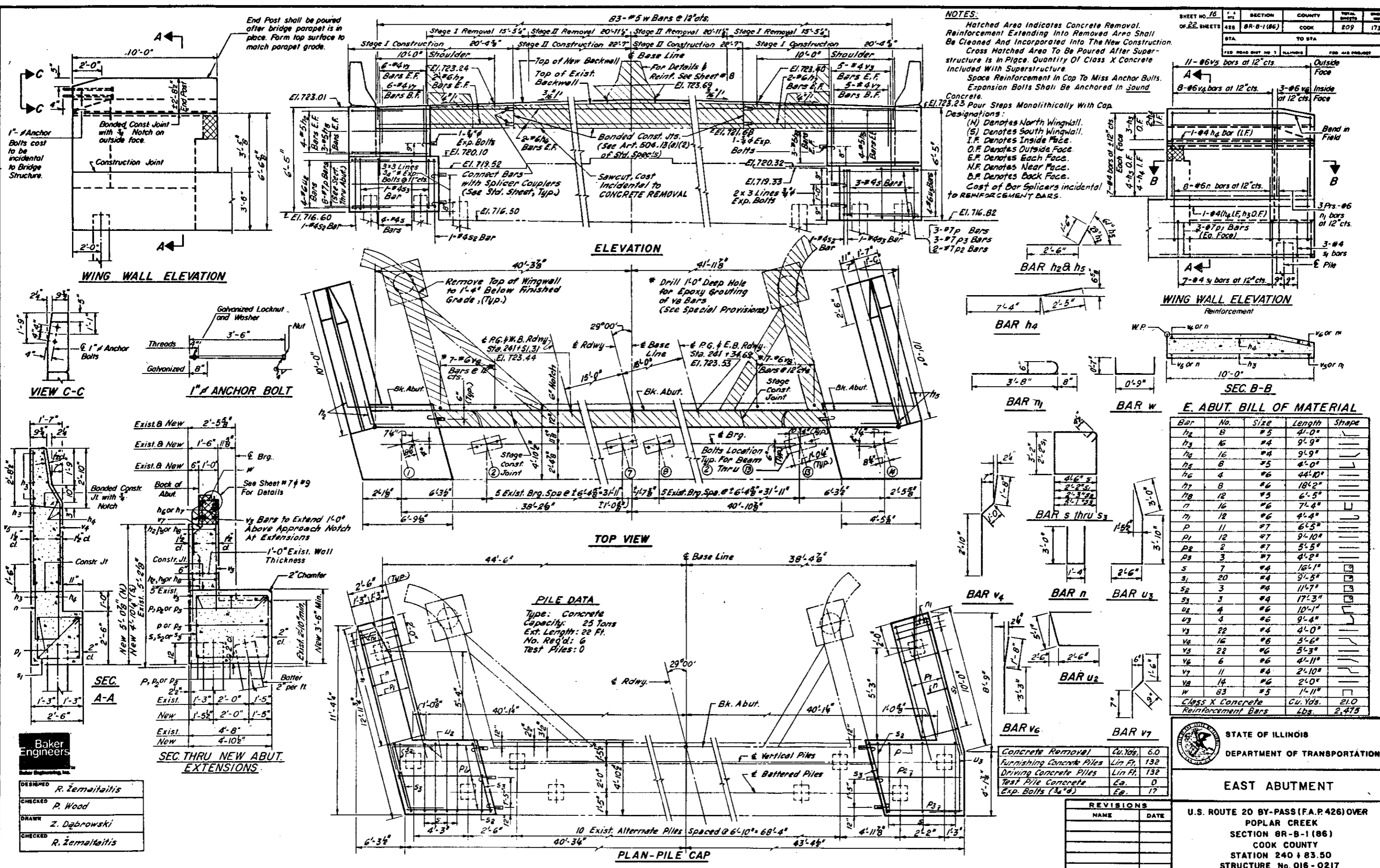
REPLACEMENT BEARING DETAILS
EAST ABUTMENT & PIER 1

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
 POPLAR CREEK
 SECTION BR-B-1 (86)
 COOK COUNTY
 STATION 240 + 83.50
 STRUCTURE No. 016 - 0217

Baker Engineers
 Baker Engineering, Inc.

DESIGNED **P. Wood**
 CHECKED **R. ZEMAITAITIS**
 DRAWN **J. Chaliki**
 CHECKED **P. Wood**

NOTES:
 Hatched Area Indicates Concrete Removal. Reinforcement Extending Into Removed Area Shall Be Cleaned And Incorporated Into The New Construction. Cross Hatched Area To Be Poured After Superstructure Is In Place. Quantity Of Class X Concrete Included With Superstructure. Space Reinforcement In Cap To Miss Anchor Bolts. Expansion Bolts Shall Be Anchored In Sound Concrete.
 Elevation Designations:
 (N) Denotes North Wingwall.
 (S) Denotes South Wingwall.
 I.F. Denotes Inside Face.
 O.F. Denotes Outside Face.
 E.F. Denotes Each Face.
 N.F. Denotes Near Face.
 B.F. Denotes Back Face.
 Cost of Bar Splicers incidental to REINFORCEMENT BARS.



E. ABUT. BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h ₂	8	#5	41'-0"	
h ₃	16	#4	9'-9"	
h ₄	16	#4	9'-9"	
h ₅	8	#5	41'-0"	
h ₆	4	#6	44'-10"	
h ₇	8	#6	18'-2"	
h ₈	12	#5	6'-5"	
h ₉	16	#6	7'-4"	
h ₁₀	12	#6	4'-4"	
P	11	#7	6'-5"	
P ₁	12	#7	9'-10"	
P ₂	2	#7	5'-5"	
P ₃	3	#7	4'-2"	
s	7	#4	16'-1"	
s ₁	20	#4	9'-5"	
s ₂	3	#4	11'-7"	
s ₃	3	#4	17'-3"	
u ₂	4	#6	10'-1"	
u ₃	4	#6	9'-4"	
v ₃	22	#4	4'-0"	
v ₄	16	#6	5'-6"	
v ₅	22	#6	5'-3"	
v ₆	6	#6	4'-11"	
v ₇	11	#4	2'-10"	
v ₈	14	#6	2'-0"	
w	83	#5	1'-11"	
Class X Concrete				Cu. Yds. 21.0
Reinforcement Bars				Lbs. 2,475

PILE DATA
 Type: Concrete
 Capacity: 25 Tons
 Ext. Length: 22 Ft.
 No. Req'd: 6
 Test Piles: 0

Concrete Removal

Cu. Yds.	6.0
Furnishing Concrete Piles	Lin Ft. 132
Driving Concrete Piles	Lin Ft. 132
Test Pile Concrete	Ea. 0
Exp. Bolts (3/4" x 8")	Ea. 17

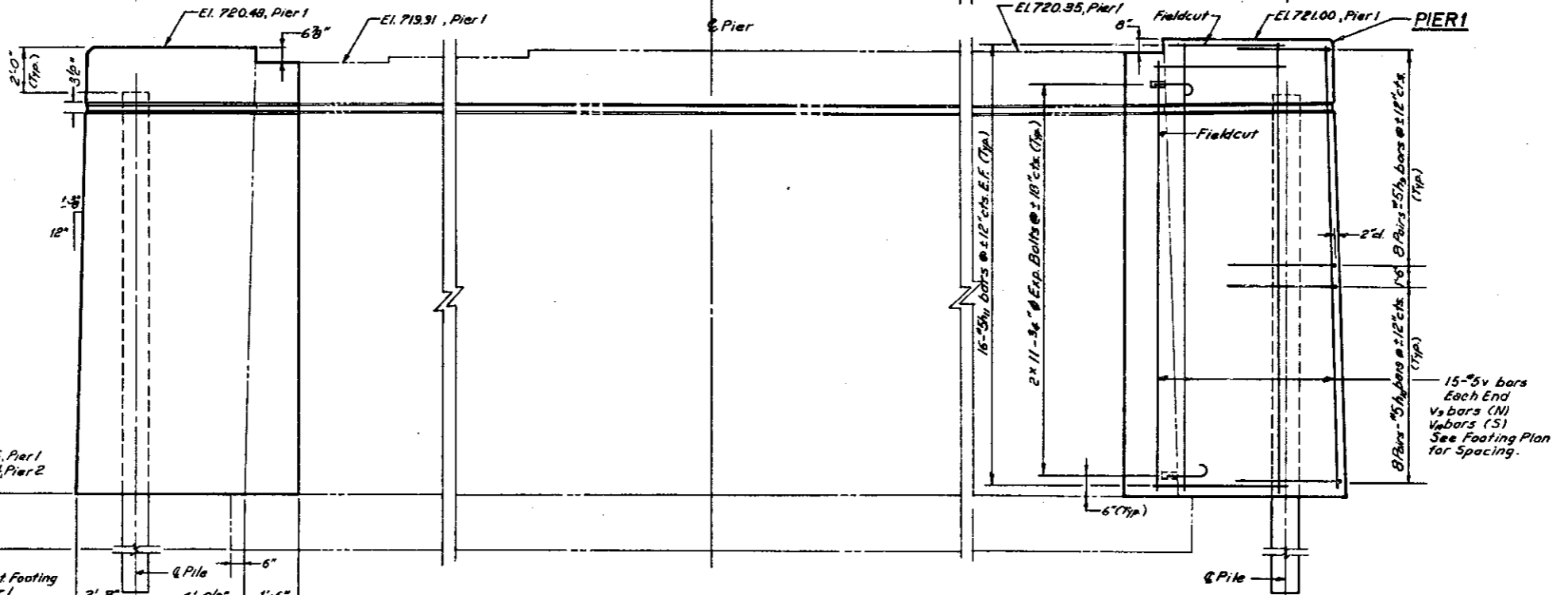
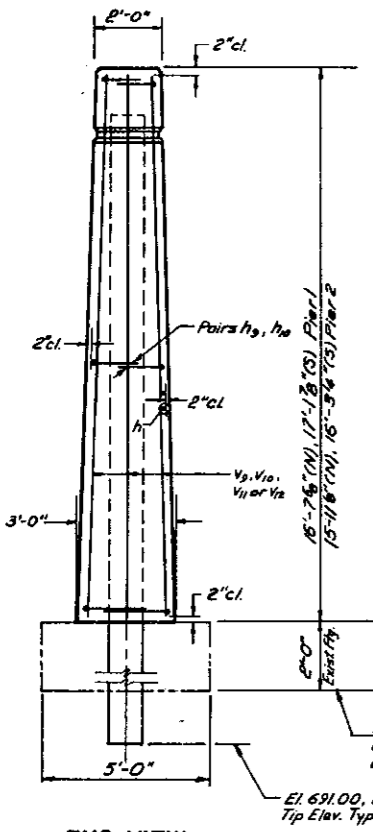
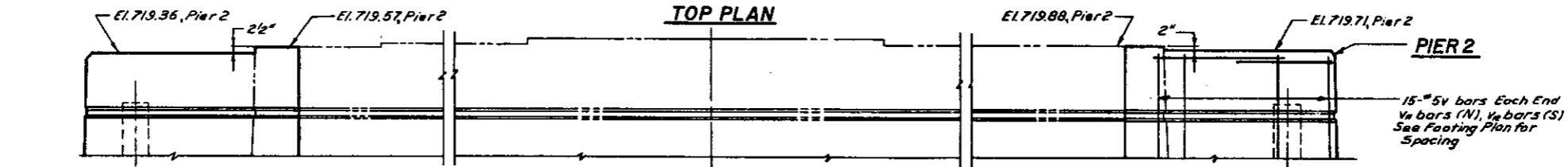
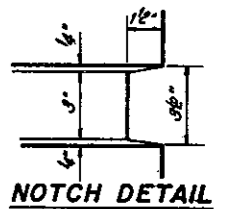
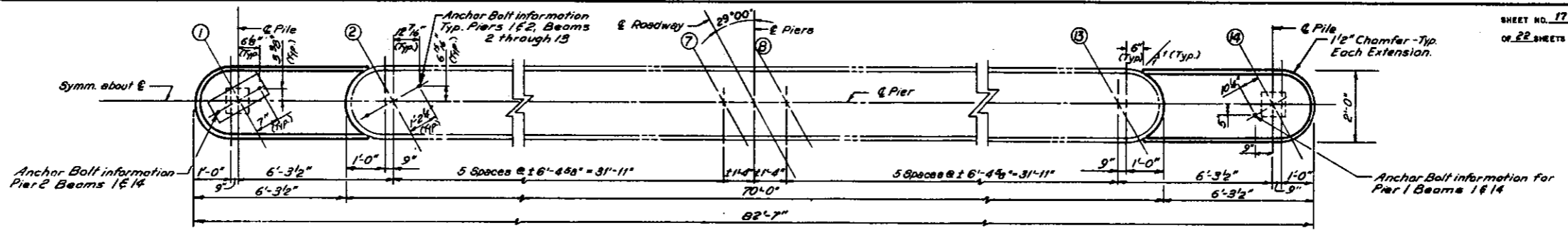
REVISIONS

NAME	DATE

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
EAST ABUTMENT
 U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
 POPLAR CREEK
 SECTION 8R-B-1(86)
 COOK COUNTY
 STATION 240 + 83.50
 STRUCTURE No. 016 - 0217

Baker Engineers
 DESIGNED R. Zemaitaitis
 CHECKED P. Wood
 DRAWN Z. Dabrowski
 CHECKED R. Zemaitaitis

SHEET NO. 17	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF 22 SHEETS	426 BR-B-1 (86)	COOK	209	174
STA		TO STA		
FED. ROAD DIST. NO. 1		ILLINOIS		FED. AID PROJECT



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h ₉	64	#5	5'-3"	
h ₁₀	64	#5	5'-11"	
h ₁₁	128	#5	4'-5"	
v ₆	15	#5	16'-3"	
v ₁₀	15	#5	16'-9"	
v ₁₁	15	#5	15'-7"	
v ₁₂	15	#5	15'-11"	

ITEM	UNIT	QUANTITY
Class "X" Concrete	Cu. Yd.	41.5
Reinforcement Bars	Pound	2,347
Expansion Bolts 3/4" Ø	Each	88
Concrete Piles	Lin. Ft.	72
Test Pile	Each	1

NOTES:
Contractor to encase piles with concrete pier extensions as shown. Remove streambed soil material to top of exist. footings prior to placing reinforcement and concrete.

Baker Engineers
Baker Engineering, Inc.

DESIGNED: J. Owen
CHECKED: R. Wood
DRAWN: K. Dytkowski
CHECKED: J. Owen

PILE DATA
TYPE: CONCRETE
CAPACITY: 45 TONS
EST. LENGTH: 24 FT.
NO. REQ'D: 3
TEST PILES: 1

R & A DIMENSIONS

BAR	R	A
h ₉	2'-9"	2'-6"
h ₁₀	3'-0"	2'-11"

REVISIONS

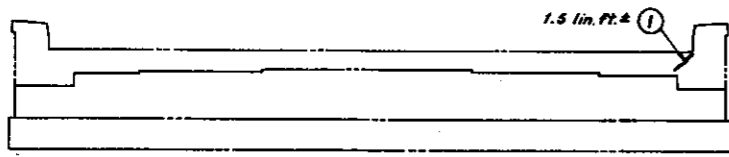
NAME	DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

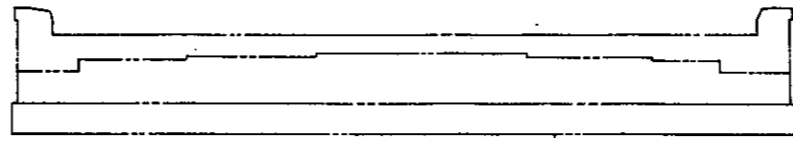
PIERS

U.S. ROUTE 20 BY-PASS (F.A.R. 426) OVER
POPLAR CREEK
SECTION BR-B-1 (86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016 - 0217

SHEET NO. 18	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF 22 SHEETS	BR-B-1 (86)	COOK	209	175
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

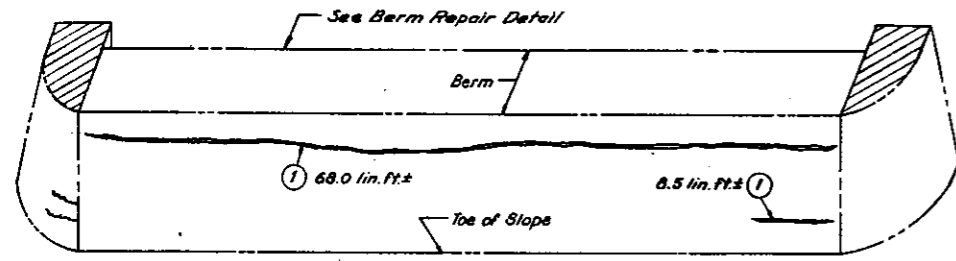


EAST ABUTMENT ELEVATION

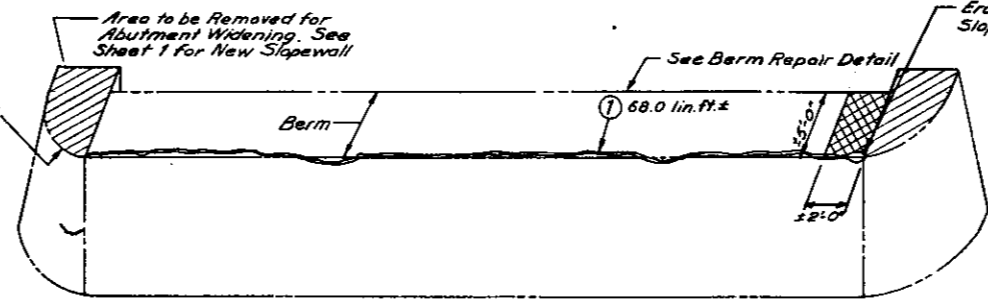


WEST ABUTMENT ELEVATION

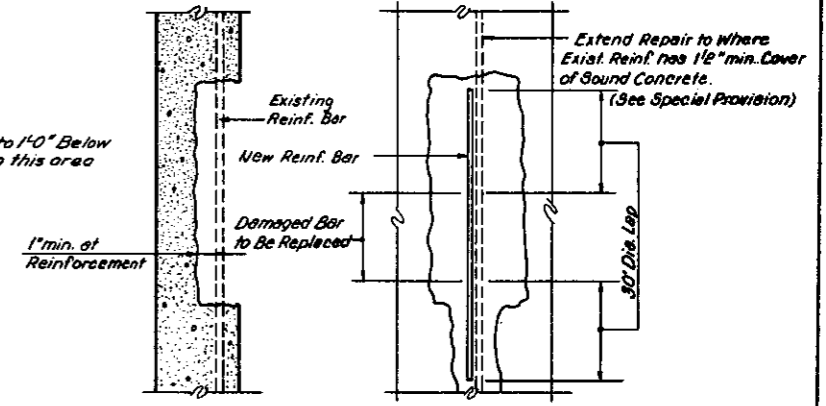
NOTE: Except As Noted East and West Abutment Are In Good Condition.



EAST ABUTMENT SLOPEWALL



WEST ABUTMENT SLOPEWALL

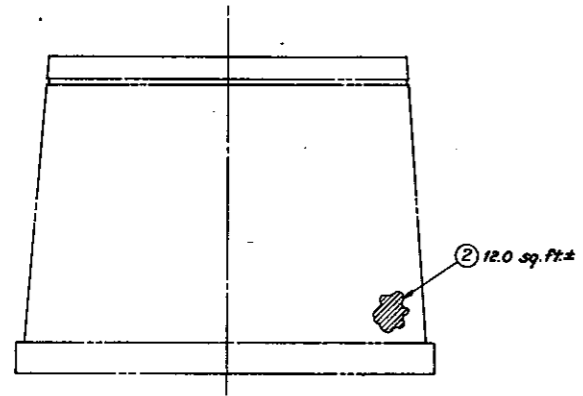


EPOXY MORTAR REPAIR DETAILS

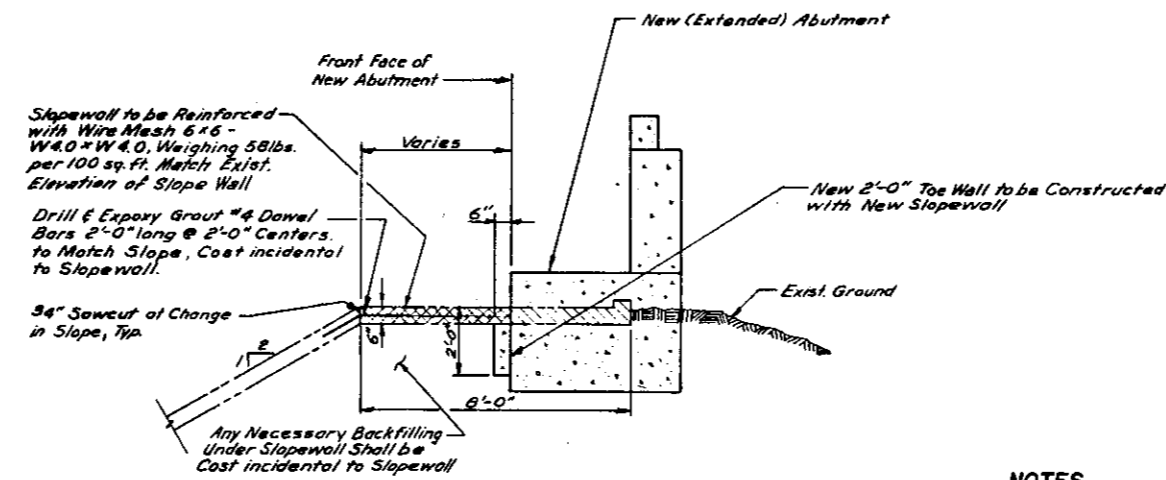
Detail Applies Where Existing Reinforcement Is Exposed As a Result of Removing Unsound Concrete. Existing Reinforcement having 25% or more of Cross Sectional Area Lost Due to Corrosion or Damage During Concrete Removal Shall be Replaced By New Reinforcement Lapped As Shown. Payment for Added Reinforcement Steel Shall be at the Unit Price for Reinf. Bars.

BILL OF MATERIAL

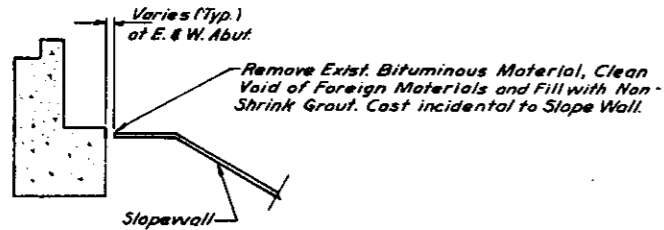
ITEM	UNIT	QUANTITY
Epoxy Crack Sealing	Lin. Ft.	146
Epoxy Mortar Repair	Cu. Ft.	3



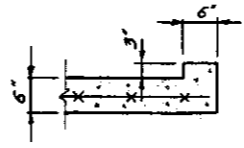
PIER 1 WEST FACE



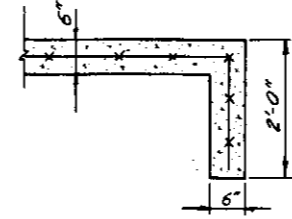
SECTION A-A (TYPICAL)



BERM REPAIR DETAIL



SECTION B-B (EXISTING)



SECTION B-B (NEW)

NOTES

1. Except as noted, Piers are in good condition
2. See Sheet 1 for location of sections A-A and B-B
3. Areas of Settlement in the Slope Wall are to be Removed (Slope Wall Removal) and to be Replaced (Slope Wall, 6 inch)

LEGEND

- ① Denotes Epoxy Crack Sealing
- ② Denotes Epoxy Mortar Repair
- ▨ Denotes Slope Wall Removal
- ▩ Denotes Slope Wall Area to be Removed and New Slope Wall Constructed.
- Denotes tight Crack that does not Require Sealing

Baker Engineers
Baker Engineering, Inc.

DESIGNED	P. Wood
CHECKED	J. Owen
DRAWN	K. Dypkowski
CHECKED	P. Wood

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

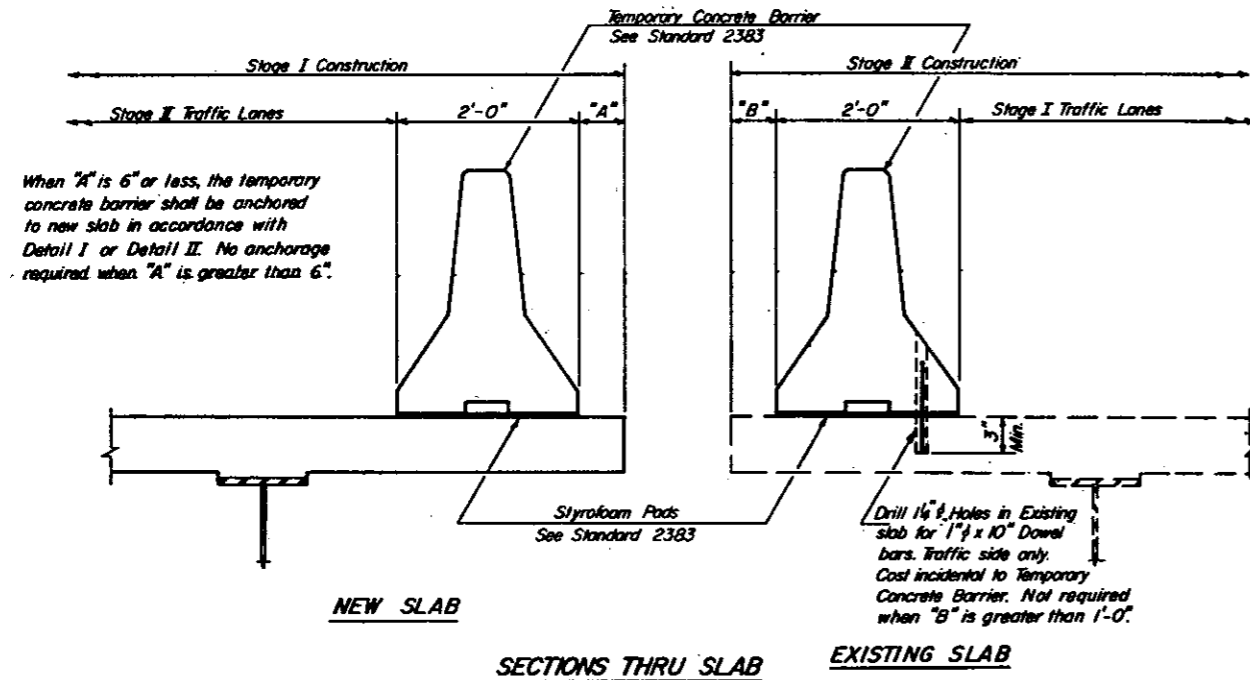
EXISTING SUBSTRUCTURE REPAIRS

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION BR-B-1 (86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016 - 0217

REVISIONS	
NAME	DATE

DATE	BY	CHECKED	DATE	BY
11/1/86	BR-B-1	COOK	209	ITC
A.A. 428 (86)				

SHEET NO. 19
OF 28 SHEETS

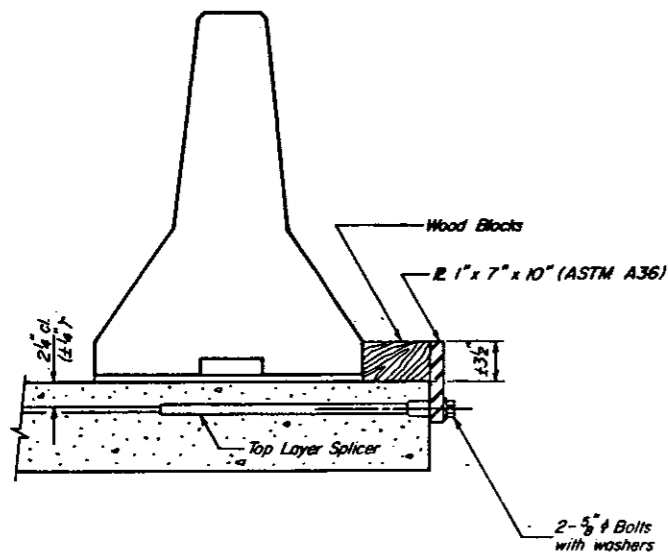


NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7" x 10" steel PL to the top layer of couplers with 2-5/8" bolts screwed to coupler at approximate 1/2 of each 10'-0" barrier panel.

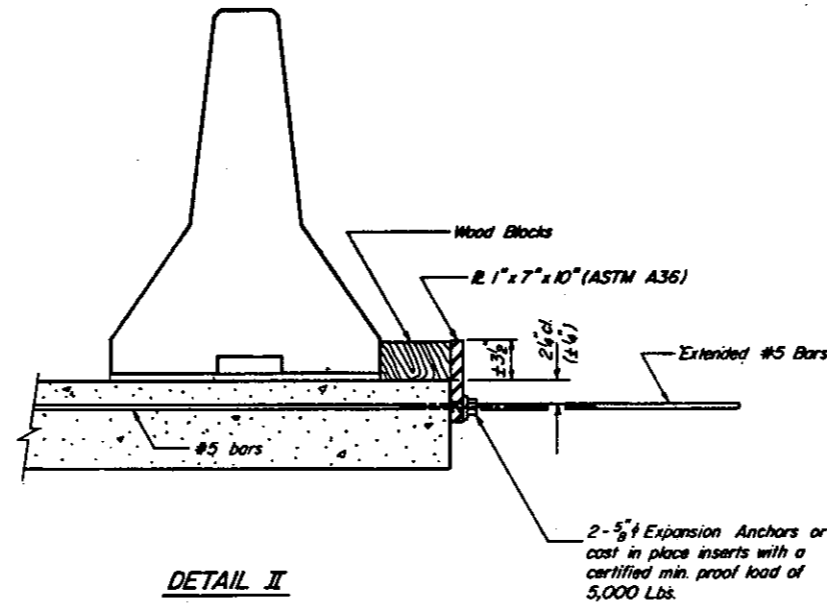
Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7" x 10" steel PL to the concrete slab with 2-5/8" Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate 1/2 of each 10'-0" barrier panel.

Cost of anchorage is incidental to Temporary Concrete Barrier.



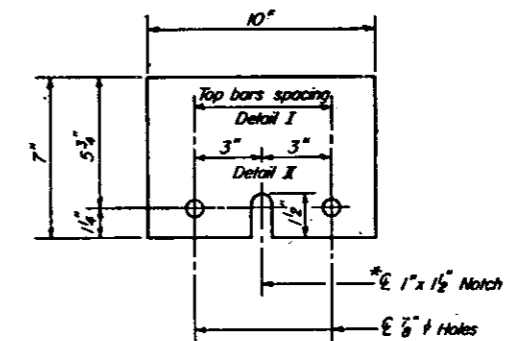
DETAIL I

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



DETAIL II

The 1" x 7" x 10" Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



1" x 7" x 10"

* Required only with Detail II

Baker Engineers
Baker Engineering, Inc.

DESIGNED
CHECKED
DRAWN
CHECKED

REVISIONS	
NAME	DATE

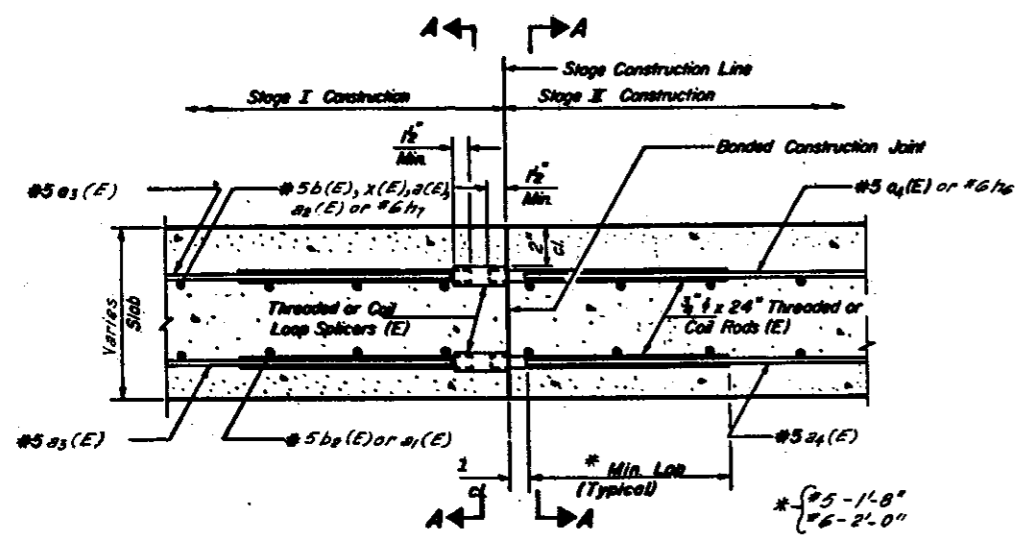
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION

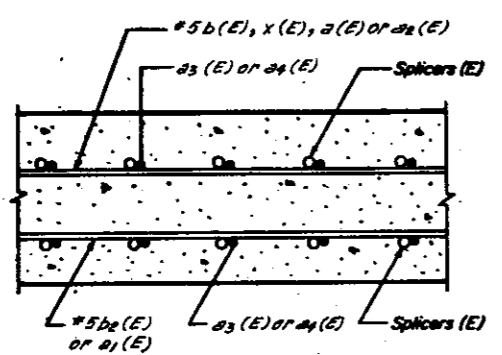
U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION BR-B-1 (86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016-0217

PROJECT NO.	SECTION	SHEET NO.	TOTAL SHEETS
BR-B-1 (86)	COOK	209	177
DATE: 11/1/88		DRAWN BY: []	

SHEET NO. 20
OF 22 SHEETS



SECTION THRU SLAB



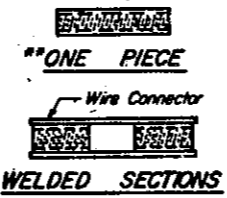
SECTION A-A

SPLICER DETAILS
(No. Reqd. 40)

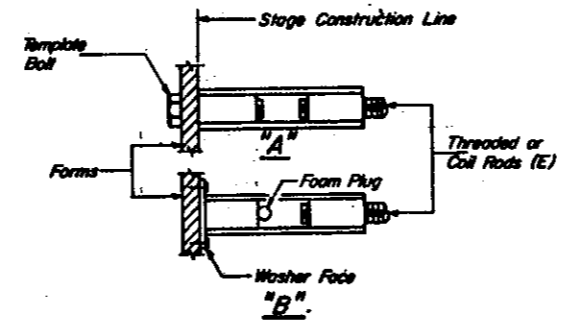
Cost incidental to reinforcement bars (Epoxy Coated).



Rolled Thread Dowel Bar



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



INSTALLATION AND SETTING METHODS

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

NOTES

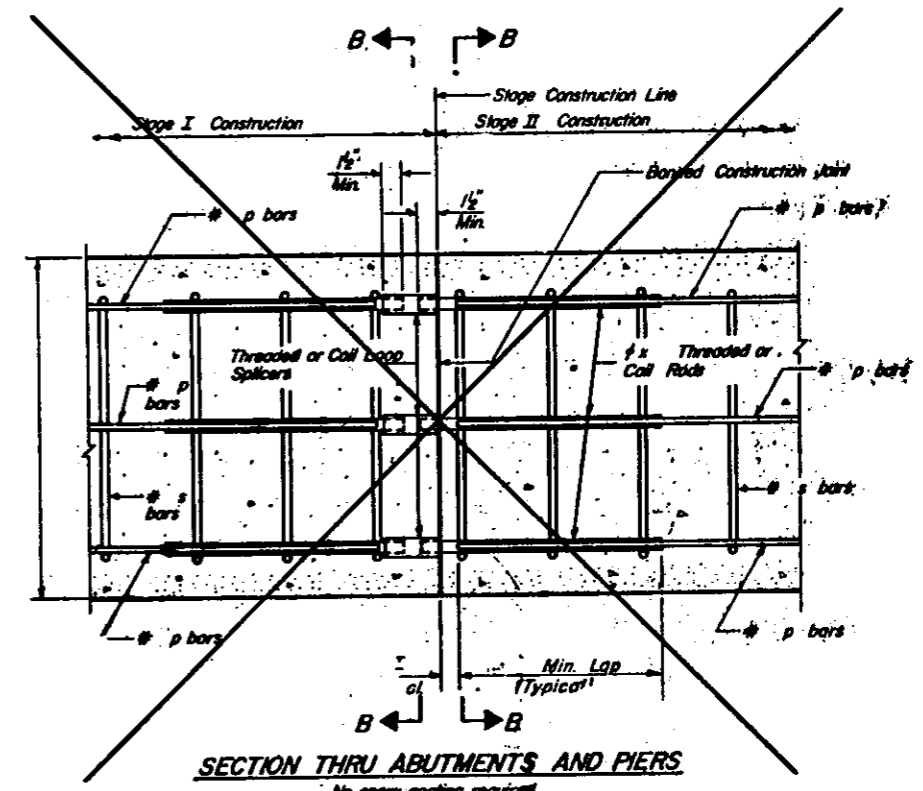
Steel Splicer (Coupler) assembly shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Steel Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length and have effective tensile stress area equal or greater than that of the lapped reinforcement bars.
Splicer rods shall extend minimum 1/2 inches into the couplers.
All reinforcement bars shall be lapped and tied to the splicer rods.
Splicer (coupler) assembly in the slab shall be epoxy coated in accordance with the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed splicer (coupler) assembly satisfies the following requirements:

- Minimum Capacity = $1.25 \times f_y \times A_s$
(Tension in kips)
- Minimum Pull-out Strength = $1.25 \times f_{allow} \times A_s$
(Tension in kips)

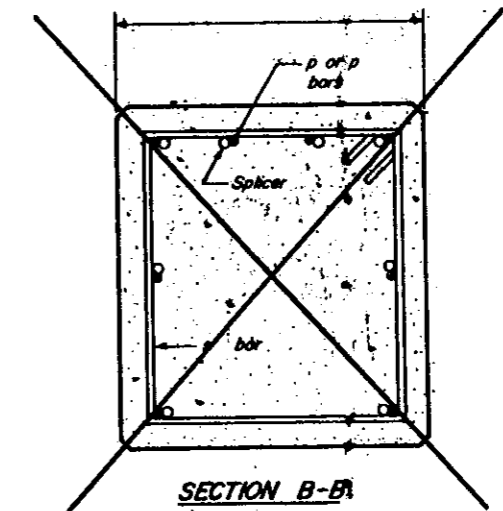
Where f_y = Yield strength of lapped reinforcement bars in k.s.i.
 f_{allow} = Allowable tensile stress in lapped reinforcement bars in k.s.i. (Service Load)
 A_s = Tensile stress area of lapped reinforcement bars.
* 28 day concrete

Typical Splicer (Coupler) Assembly Sizes:

In Slabs	#5 bar lap with 3/4" Splicer (Coupler) x 2'-0" Splicer Rods	Minimum Capacity = 230 kips-tension Minimum Pull-out Strength = 2 kips-tension
In Sub-structures	#7 bar lap with 1" Splicer (Coupler) x 3'-5" Splicer Rods	Minimum Capacity = 45.1 kips-tension Minimum Pull-out Strength = 18.0 kips-tension
	#8 bar lap with 1 1/4" Splicer (Coupler) x 4'-6" Splicer Rods	Minimum Capacity = 58.9 kips-tension Minimum Pull-out Strength = 23.6 kips-tension



SECTION THRU ABUTMENTS AND PIERS
No epoxy coating required.



SECTION B-B

SPLICER DETAILS
(No. Reqd.)

Cost incidental to reinforcement bars.

Baker Engineers
Baker Engineering, Inc.

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

REVISIONS	
NAME	DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

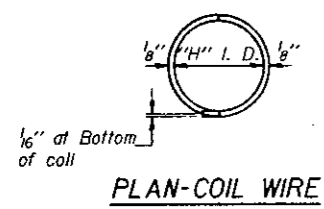
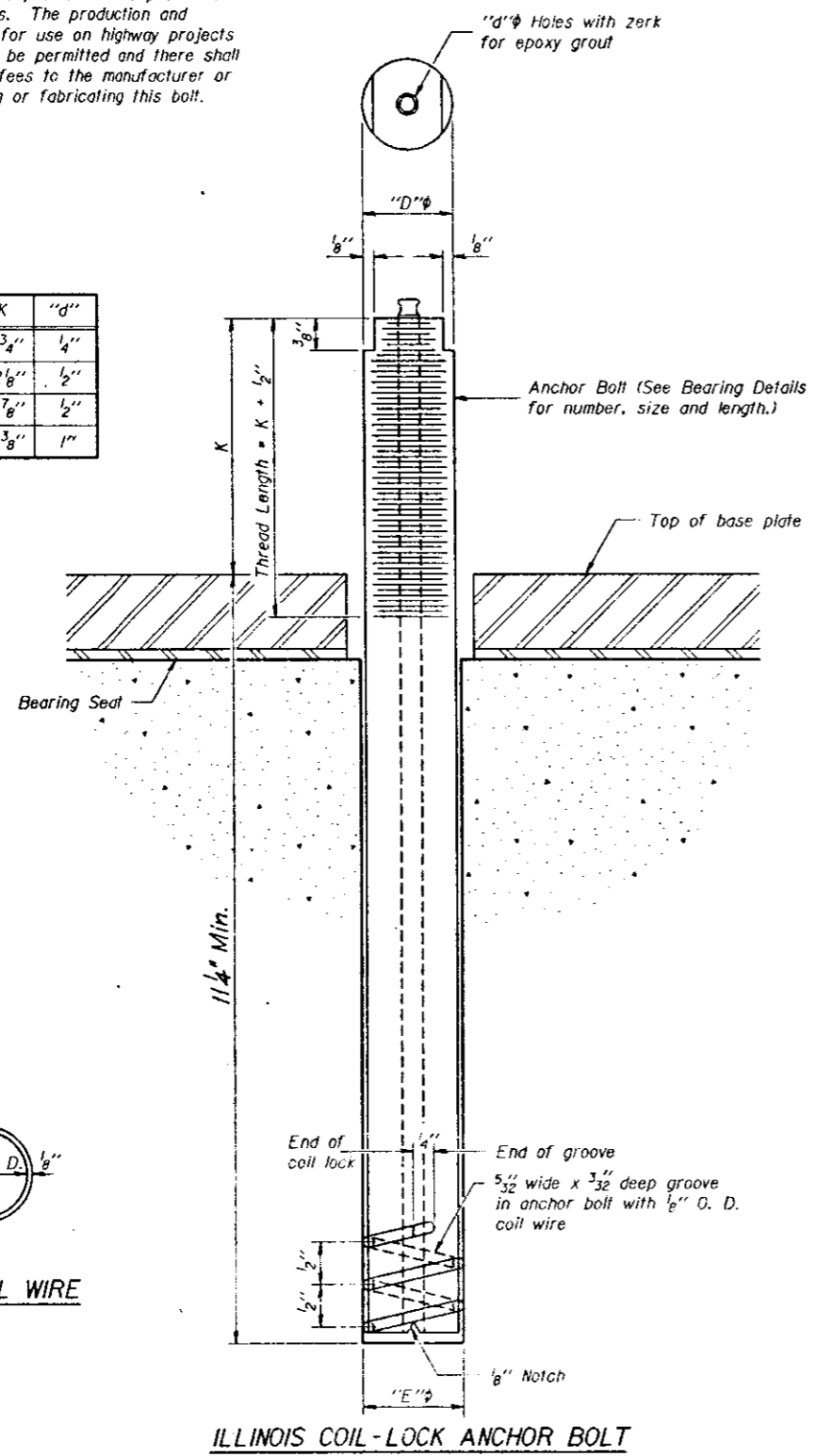
BAR SPLICER (COUPLER) DETAILS AT STAGE CONSTRUCTION

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION BR-B-1 (86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016-0217

SHEET NO. 21	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OP. 22 SHEETS	428 BR-B-1(86)	COOK	809	178
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. A.U.T.D. 1.1		

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.

D	E	H	K	"d"
1"	1 1/8"	3 1/8"	1 3/4"	1/4"
1 1/2"	1 5/8"	1 5/8"	2 1/8"	1/2"
2"	2 1/8"	1 3/8"	2 1/8"	1/2"
2 1/2"	2 5/8"	2 5/8"	3 3/8"	1"



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 A519, Grad 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 I and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the 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 tensioned until the steel base plates are 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.

NOTES

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.
 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.
 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".

Baker Engineers
 Baker Engineering, Inc.

DESIGNED
CHECKED
DRAWN
CHECKED

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

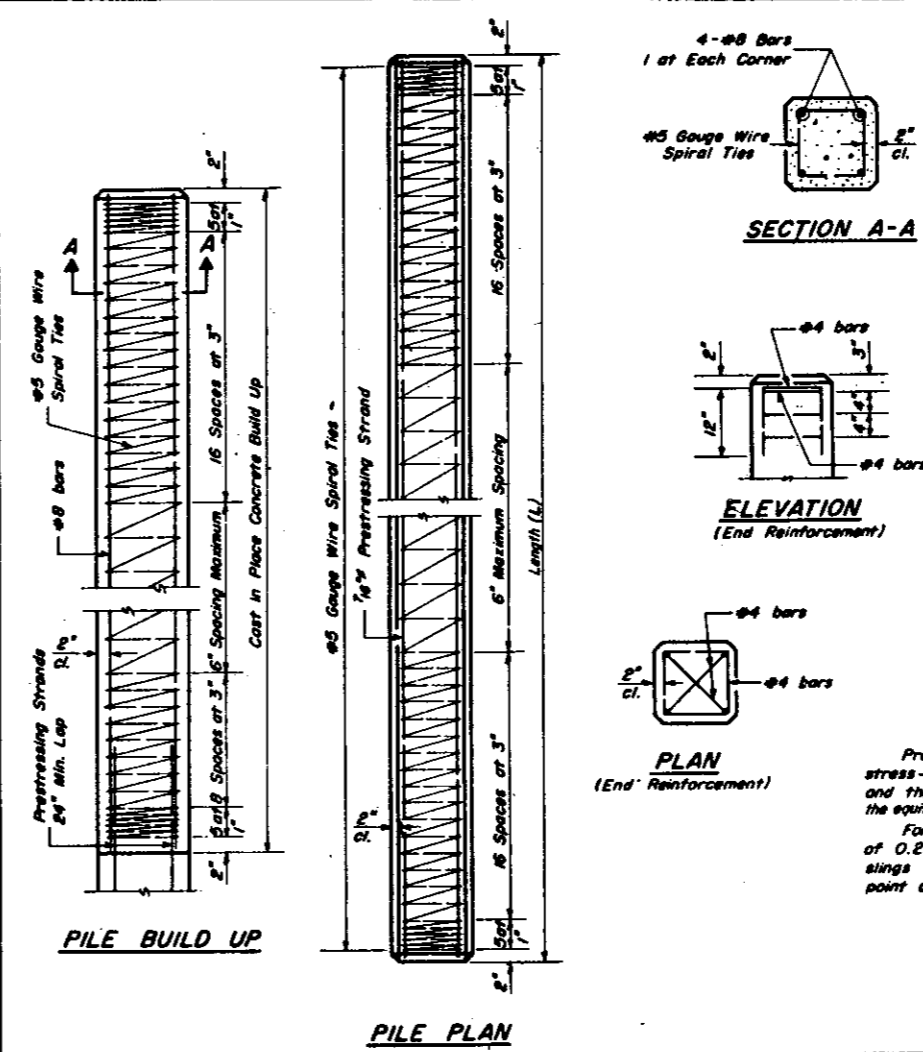
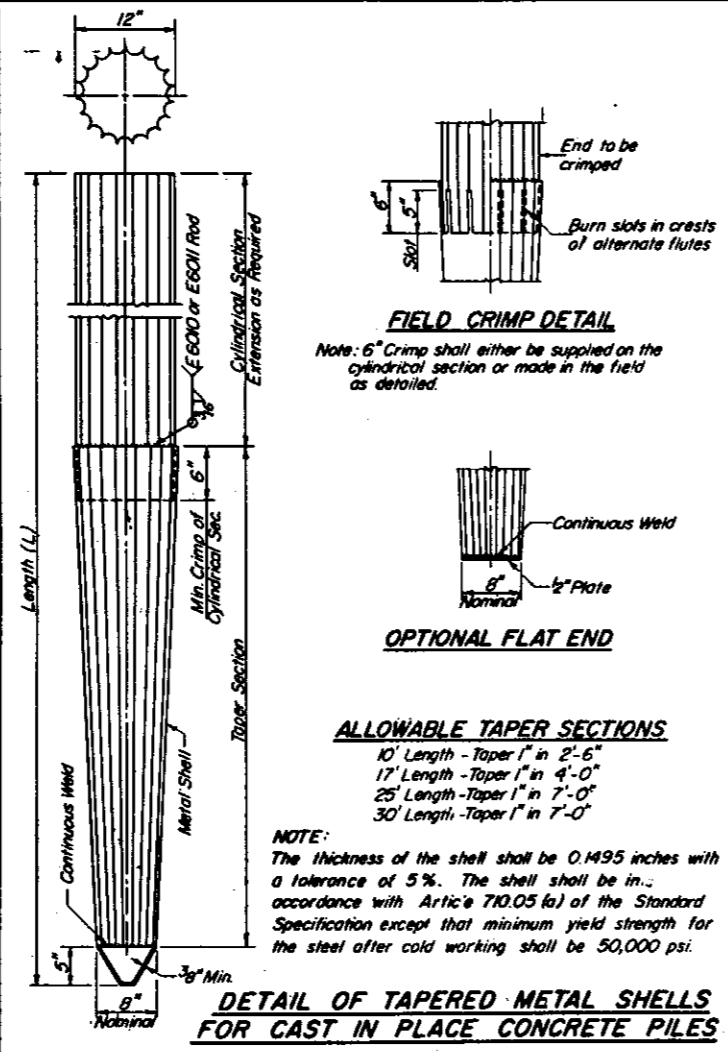
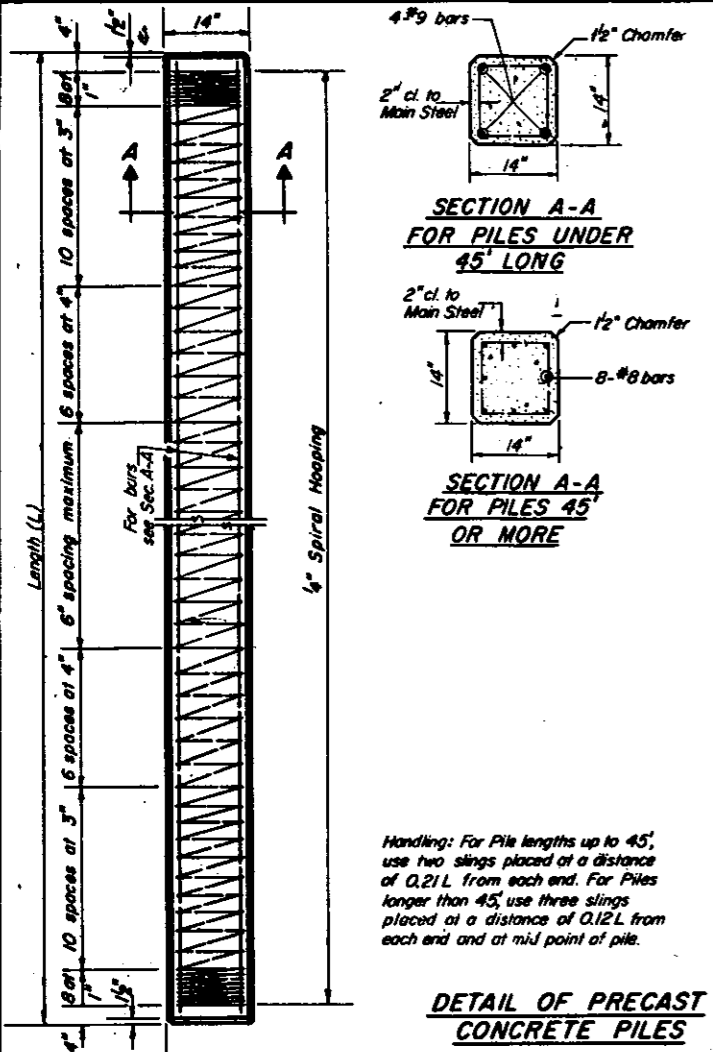
ANCHOR BOLT DETAILS FOR BEARINGS

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
 POPLAR CREEK
 SECTION 08-B-1(86)
 COOK COUNTY
 STATION 240 + 83.50
 STRUCTURE No. 016 - 0217

REVISIONS	
NAME	DATE

DESIGNED	DATE	BY	TOTAL SHEETS	SHEET NO.
CHECKED			209	22
DRAWN			179	
CHECKED				

SHEET NO. 22
OF 22 SHEETS



DESIGN STRESSES

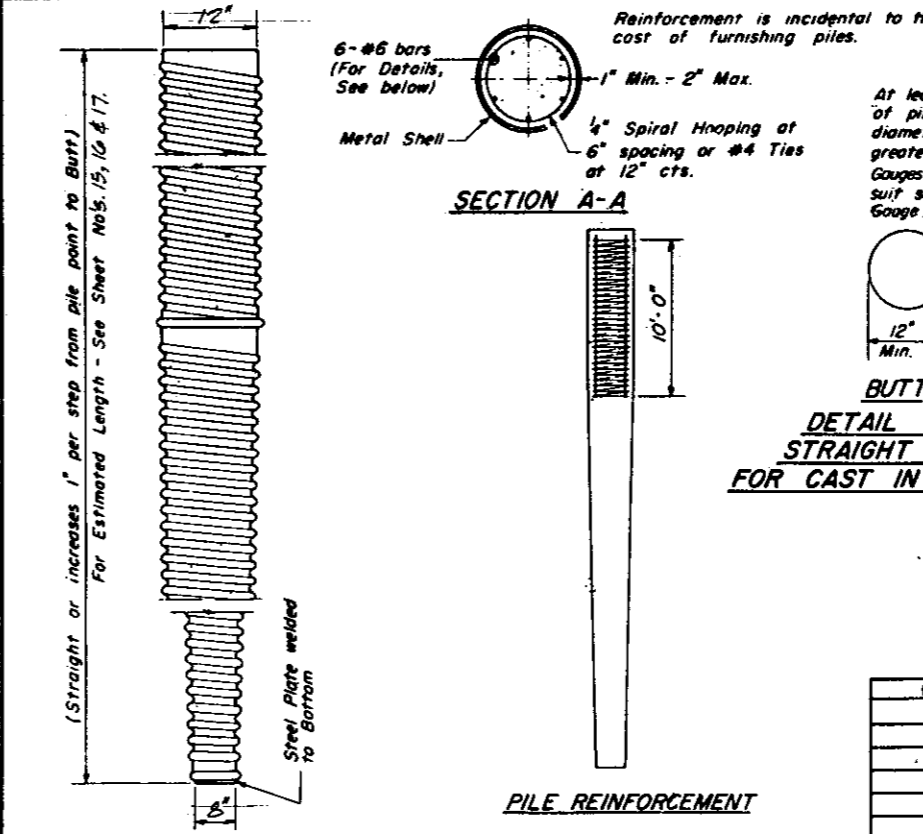
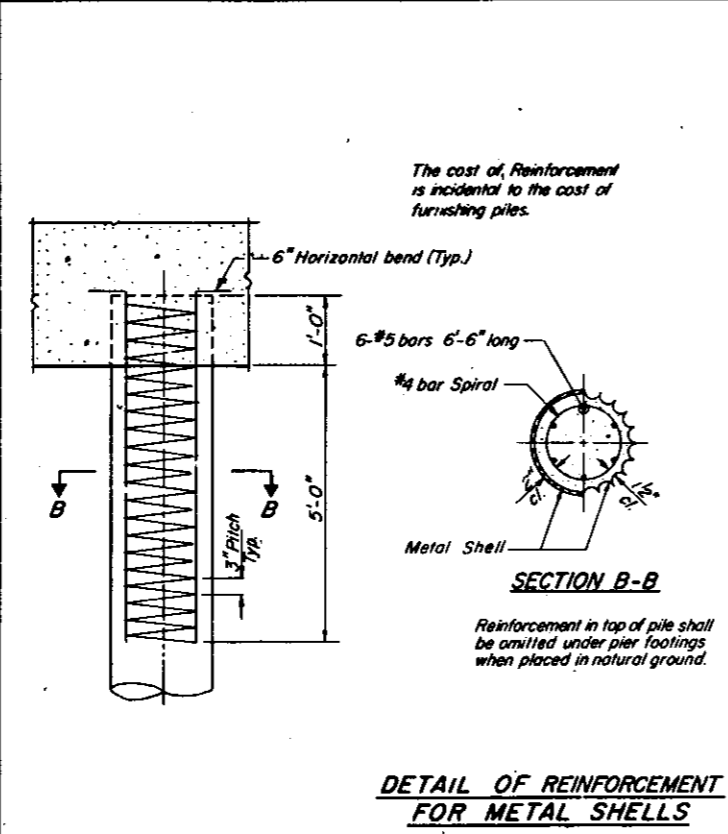
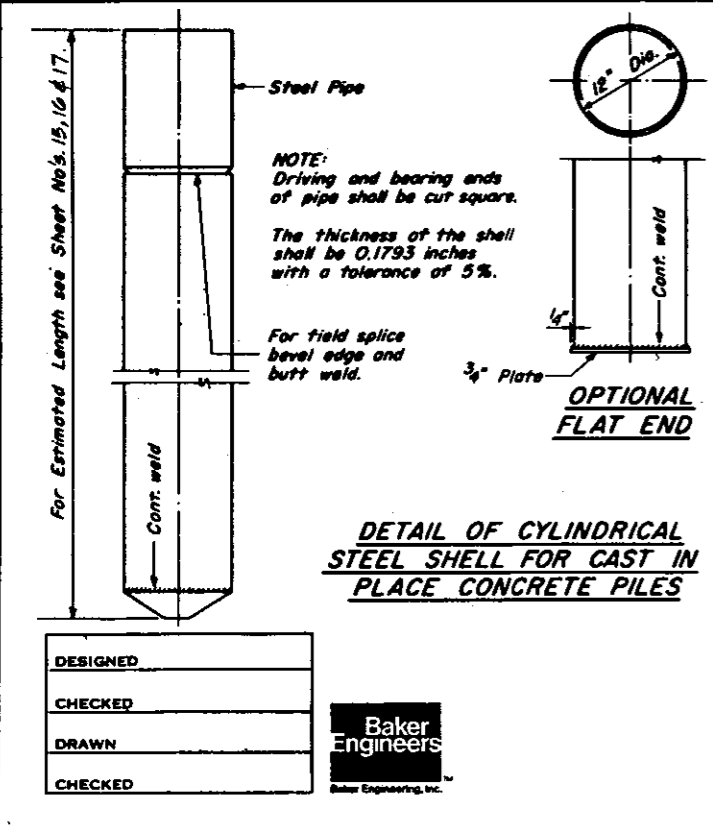
$f_c' = 5,000$ psi.
 $f_c' = 4,000$ psi.
 $f_s' = 270,000$ psi. (31,000 lbs. - 7/8" or 4,300 lbs. - 1/2")
 $f_s' = 189,000$ psi. (21,700 lbs. - 7/8" or 29,900 lbs. - 1/2")

NOTES

Prestress steel shall be non-galvanized extra high strength stress-relieved 7-wire strand. The nominal diameter shall be 7/8" and the minimum nominal cross-sectional area shall be 0.115 sq. in. or the equivalent 6-12 strands with a cross-sectional area of 0.153 sq. in. may be used.

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 and at mid-point of pile. * L = Over all length of pile to be handled.

PRECAST PRESTRESSED CONCRETE PILE



DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

Baker Engineers
Baker Engineering, Inc.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PILE DETAILS

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION 8R-B-1 (86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016 - 0217

REVISIONS	
NAME	DATE

SHEET NO. /	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF 22 SHEETS	426 BR-B-1(86)	COOK	209	158
STA	TO STA	P-81-356-84		

EXISTING STRUCTURE DATA: THE EXISTING THREE SPAN CONTINUOUS NON-COMPOSITE ROLLED BEAM STRUCTURE WAS CONSTRUCTED IN 1959, CARRYING TWO LANES IN EACH DIRECTION OF U.S. ROUTE 20 BYPASS TRAFFIC OVER POPLAR CREEK. THE STRUCTURE IS 119'-8" LONG WITH A TOTAL ROADWAY WIDTH OF 75'-2". THE EAST AND THE WESTBOUND TRAFFIC IS SEPARATED BY A NEW JERSEY TYPE CONCRETE BARRIER WALL MEDIAN WHICH WAS CONSTRUCTED IN 1979. THE DECKS AND SUBSTRUCTURE ARE REINFORCED CONCRETE. THE PIERS ARE SUPPORTED ON SPREAD FOOTINGS AND THE ABUTMENTS ARE SUPPORTED ON PILES.

CONTRACTOR SHALL WIDEN EXISTING STRUCTURE, SCARIFY EXISTING DECK AND APPLY CONCRETE OVERLAY USING STAGE CONSTRUCTION.

Original Construction Boring Locations.
1985 Reconstruction Boring Locations.

DESIGN DATA

DESIGN SPECIFICATIONS: AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1983 EDITION, 1984 & 1985 INTERIMS.

NEW CONCRETE: FC=3500 PSI
NEW REINFORCING STEEL: FY=60000 PSI
NEW STRUCTURAL STEEL: FS=50000 PSI
EXISTING STRUCTURAL STEEL: FS=10000 PSI

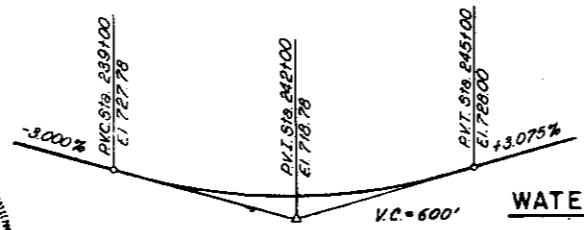
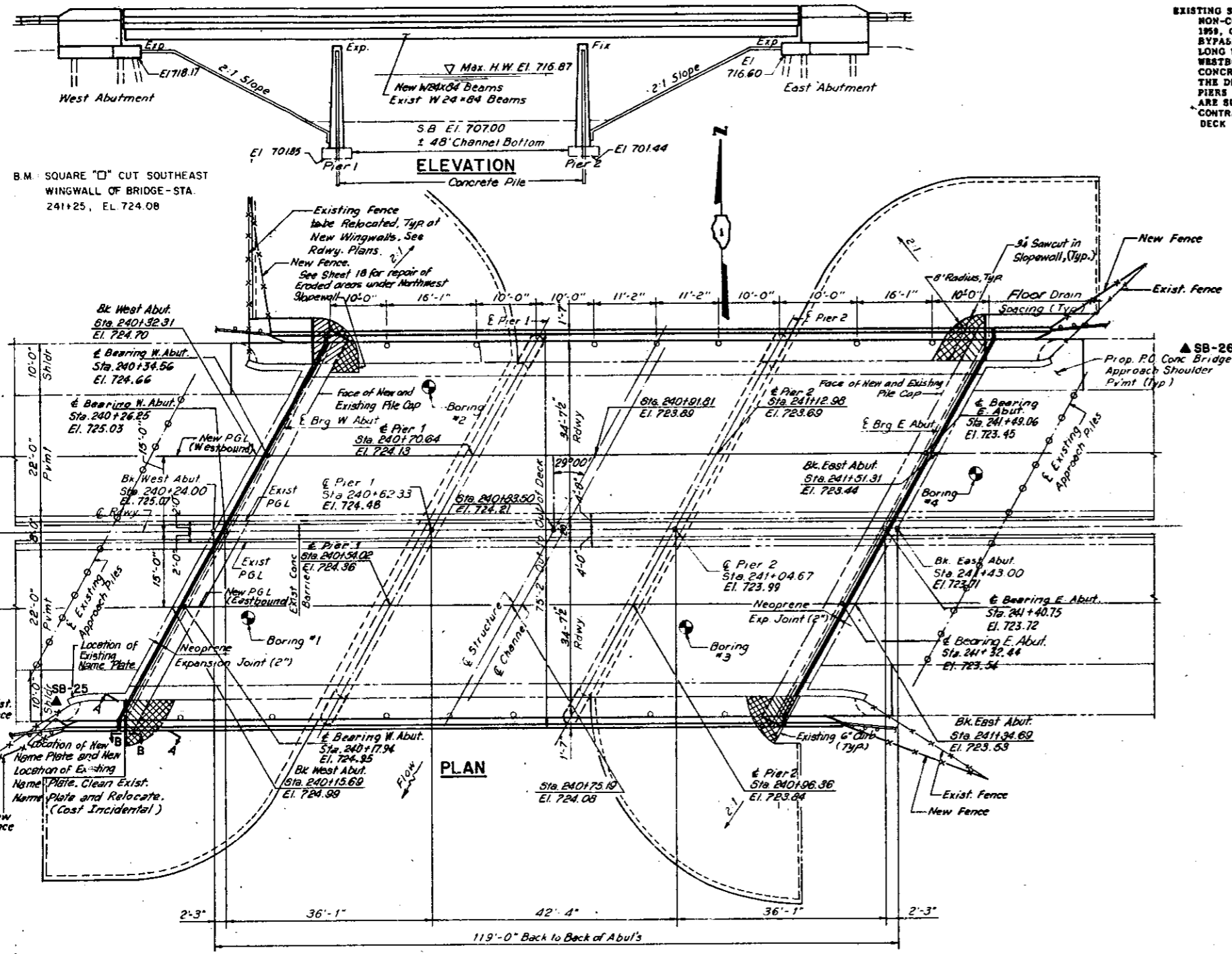
DESIGN LOADING: HS20-44
STRUCTURAL STEEL, CONCRETE DECK AND SUBSTRUCTURE CONCRETE ARE DESIGNED BY THE SERVICE LOAD METHOD.

STA. 240+83.50
WIDENED 198 BY
STATE OF ILLINOIS
F.A.R.T. 6(S.B.I.) SEC. BR-B-1(86)
F.A. PROJ. I.K. 426-1(79)
LOADING HS20
STR. NO. 016-0217
See Standard 2113
See Plan for locations of new and existing Name Plates.

NOTES:

- Denotes Slopewall Removal
- Denotes Slopewall area to be Removed and new Slopewall Constructed.

For Sections A-A and B-B,
See Sheet No. 18

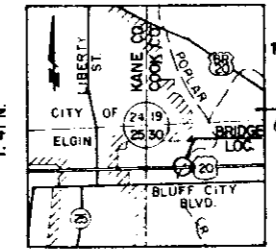


WATERWAY INFORMATION

Drainage Area — 26,777 Acres
Present Opening — 425 Sq Ft
Proposed Opening — 425 Sq Ft
From Exist. Plans

PROFILE U.S. RT. 20 BY PASS

R.8E. - 3RD PM. - R.9E.



LOCATION SKETCH

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
James J. Rayburn
Engineer of Bridge and Structures

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION BR-B-1(86)
COOK COUNTY
STATION 240+83.50
STRUCTURE No. 016-0217

REVISIONS	
NAME	DATE
Profile Revised	2/18/86



DESIGNED	P. Wood
CHECKED	J. Owen
DRAWN	J. Shelby
CHECKED	P. Wood

Signed *John H. Owen* Date 4-21-86
John H. Owen, SE, Ill. Reg. No. 81-3361



016-0217

SHEET NO. 2	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
OF 22 SHEETS	BR-B-1(86)	COOK	209	159
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

TOTAL BILL OF MATERIALS				
ITEM	UNIT	SUPER-STRUCTURE	SUB-STRUCTURE	TOTAL
CONCRETE REMOVAL	CU YD	64	4	68
EXPANSION BOLTS, 3/4 INCH	EACH	---	126	126
REMOVAL OF EXISTING BEARINGS	EACH	---	36	36
STRUCTURE EXCAVATION	CU YD	---	74	74
FLOOR DRAINS	EACH	14	---	14
PROTECTIVE COAT	SQ YD	1663	---	1663
PREFORMED JOINT SEAL, 3"	LIN FT	117	---	117
ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	---	28	28
ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	---	14	14
CLASS X CONCRETE	CU YD	186.0	83.5	189.5
STRUCTURAL STEEL	L. SUM	.12	---	.12
CLEANING AND PAINTING ST. BR. M.L.G.	L. SUM	1	---	1
REINFORCEMENT BARS	POUND	---	7,440	7,440
REINFORCEMENT BARS, (EPOXY COATED)	POUND	22,922	---	22,922
FURNISHING CONCRETE PILES	LIN FT	---	279	279
DRIVING CONCRETE PILES	LIN FT	---	279	279
TEST PILE CONCRETE	EACH	---	2	2
NAME PLATE	EACH	1	---	1
FURNISH & INSTALL	---	---	---	---
TEMPORARY CONCRETE BARRIER	LIMIT	55	---	55
TEMPORARY CONCRETE BARRIER, TERMINAL SECTION	EACH	1	---	1
RELOCATE TEMPORARY CONCRETE BARRIER	LIMIT	55	---	55
SLOPE WALL REMOVAL	SQ YD	---	186	186
SLOPE WALL, 6 INCH	SQ YD	---	121	121
BRIDGE DECK SCARIFICATION (1 1/2")	SQ YD	634	---	634
PLASTICIZED BRIDGE DECK CONCRETE OVERLAY	SQ YD	643	---	643
DECK SLAB REPAIR (FULL DEPTH)	SQ YD	40	---	40
DECK SLAB REPAIR (PARTIAL DEPTH)	SQ YD	200	---	200
NEOPRENE EXPANSION JOINT 2"	LIN FT	166	---	166
EPOXY MORTAR REPAIR	CU FT	---	2	2
EPOXY CRACK SEALING	LIN FT	---	146	146

Calculated weight of Structural Steel = 42,200 Lbs.

GENERAL NOTES

SEE PROPOSAL FOR BORING DATA.

FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 3/4" DIA., OPEN HOLES 1 1/8" DIA., UNLESS OTHERWISE NOTED.

ALL STRUCTURAL STEEL SHALL RECEIVE ONE COAT OF DULL ORANGE PRIMER; NEW STRUCTURAL STEEL SHALL BE SHOP PRIMED. ALL STRUCTURAL STEEL, NEW AND EXISTING, SHALL RECEIVE TWO FIELD COATS OF ALUMINUM PAINT WITH THE FOLLOWING EXCEPTIONS, AS APPLICABLE, WHICH SHALL RECEIVE ONE COAT OF MAROON FIRST FIELD COAT AND FINAL COAT OF INTERSTATE GREEN.

- THE EXTERIOR WEB SURFACE, THE BOTTOM AND EDGES OF THE BOTTOM FLANGE, THE BOTTOM SURFACE OF THE EXTERIOR TOP FLANGE, AND THE TOP SURFACE OF THE EXTERIOR BOTTOM FLANGE, OF NEW FACIA BEAMS.
- ALL STRUCTURAL STEEL ELEMENTS OF NEW ELASTOMERIC BEARING ASSEMBLIES AND NEW STRUCTURAL STEEL FIXED BEARINGS FOR NEW FACIA BEAMS.

FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS 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 NEW DIAPHRAGMS OVER SUPPORTS.

THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 1. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS, ALL SPLICE PLATE MATERIAL AND HINGE PLATES.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 OR M-53, GRADE 60.

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

EXPANSION BOLTS SHALL CONSIST OF APPROVED EXPANSION ANCHORS, PROVIDING MINIMUM CERTIFIED PROOF LOAD = 4,000 LBS., AND 3/4" DIA. X 1 1/2" HOOKED BOLTS.

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. FOR TYPE I ELASTOMERIC BEARINGS, SHIMS OF THE DIMENSIONS OF TOP PLATE SHALL BE PROVIDED AND PLACED AS DETAILED.

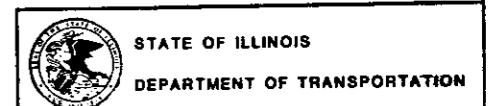
CONCRETE PILES AT ABUTMENTS SHALL BE DRIVEN THROUGH THE EMBANKMENT WITHOUT PREBORING.

THE CONTRACTOR SHALL DRIVE TWO CONCRETE TEST PILES IN PERMANENT LOCATIONS SHOWN IN THE PLANS AND AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

THE EMBANKMENT CONFIGURATION SHOWN SHALL BE THE MINIMUM EMBANKMENT THAT MUST BE CONSTRUCTED PRIOR TO WIDENING OF THE ABUTMENTS.



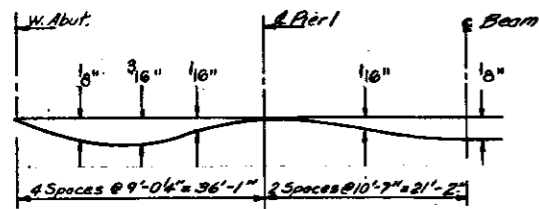
DESIGNED	P. Wood
CHECKED	J. Owen
DRAWN	K. Dypkowski
CHECKED	J. Owen



GENERAL NOTES AND BILL OF MATERIALS

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION BR-B-1(86)
COOK COUNTY
STATION 240 + 83.50
STRUCTURE No. 016 - 0217

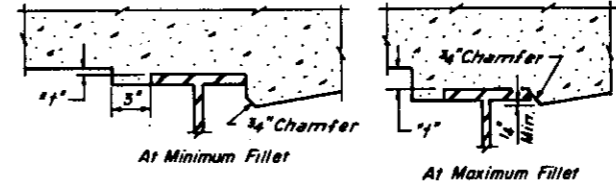
REVISIONS	
NAME	DATE



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 deflection as shown below.



FILLET HEIGHTS

To determine "f": 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, equals the fillet heights "f" above top flange of beams.

BEAM 1

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ADJUSTED FOR DEAD LOAD DEFLECTION
CORCA	240+45.01	-19.574	724.158	724.158
A	240+52.01	-19.574	724.216	724.222
B	240+60.01	-19.574	723.873	723.885
C	240+75.01	-19.574	723.745	723.746
CORCP1	240+81.00	-19.574	723.673	723.673
D	240+91.00	-19.574	723.542	723.547
E	241+01.00	-19.574	723.461	723.471
F	241+11.00	-19.574	723.370	723.377
G	241+21.00	-19.574	723.289	723.290
CORCP2	241+23.03	-19.574	723.271	723.271
H	241+33.03	-19.574	723.205	723.211
I	241+43.03	-19.574	723.145	723.139
J	241+53.03	-19.574	723.087	723.105
CORCA	241+58.01	-19.574	723.073	723.073

BEAM 2

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ADJUSTED FOR DEAD LOAD DEFLECTION
CORCA	240+42.36	-16.073	724.321	724.321
A	240+52.36	-16.073	724.170	724.182
B	240+62.36	-16.073	724.029	724.041
C	240+72.36	-16.073	723.889	723.900
CORCP1	240+76.44	-16.073	723.824	723.824
D	240+86.44	-16.073	723.710	723.715
E	240+96.44	-16.073	723.606	723.616
F	241+06.44	-16.073	723.512	723.519
G	241+16.44	-16.073	723.428	723.429
CORCP2	241+20.78	-16.073	723.410	723.410
H	241+30.78	-16.073	723.338	723.346
I	241+40.78	-16.073	723.277	723.291
J	241+50.78	-16.073	723.226	723.234
CORCA	241+56.06	-16.073	723.200	723.200

NORTH LONG. CONST. JOINT

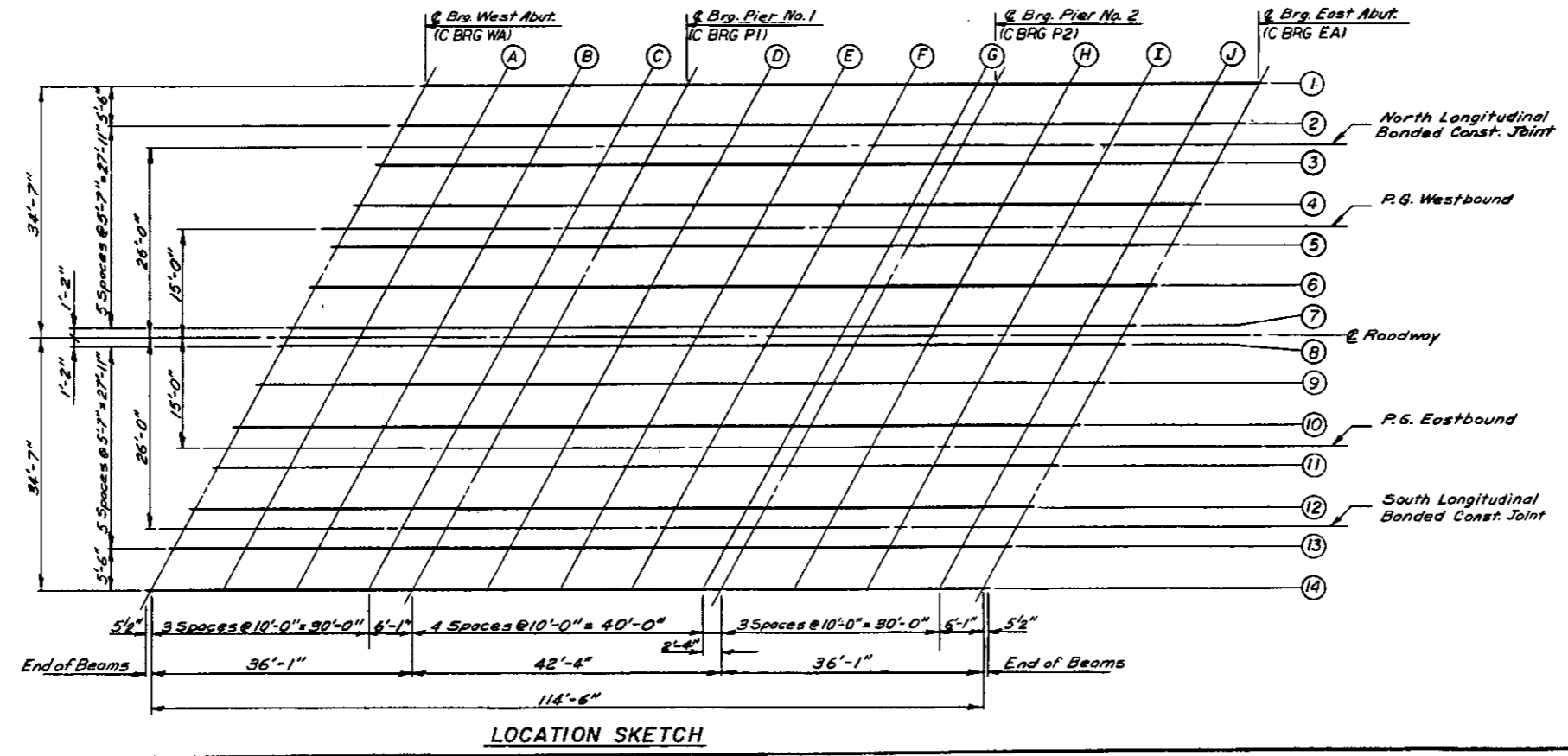
LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ADJUSTED FOR DEAD LOAD DEFLECTION
CORCA	240+40.83	-11.000	724.412	724.412
A	240+50.83	-11.000	724.230	724.271
B	240+60.83	-11.000	724.117	724.129
C	240+70.83	-11.000	723.985	723.980
CORCP1	240+76.73	-11.000	723.909	723.909
D	240+86.73	-11.000	723.795	723.798
E	240+96.73	-11.000	723.687	723.697
F	241+06.73	-11.000	723.592	723.599
G	241+16.73	-11.000	723.506	723.507
CORCP2	241+19.07	-11.000	723.488	723.488
H	241+29.07	-11.000	723.414	723.422
I	241+39.07	-11.000	723.351	723.365
J	241+49.07	-11.000	723.290	723.307
CORCA	241+56.15	-11.000	723.271	723.271

BEAM 3

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ADJUSTED FOR DEAD LOAD DEFLECTION
CORCA	240+39.27	-8.493	724.473	724.473
A	240+49.27	-8.493	724.319	724.331
B	240+59.27	-8.493	724.175	724.187
C	240+69.27	-8.493	724.041	724.045
CORCP1	240+73.35	-8.493	723.965	723.965
D	240+83.35	-8.493	723.847	723.852
E	240+93.35	-8.493	723.740	723.750
F	241+03.35	-8.493	723.643	723.650
G	241+13.35	-8.493	723.556	723.557
CORCP2	241+17.00	-8.493	723.537	723.537
H	241+27.00	-8.493	723.463	723.471
I	241+37.00	-8.493	723.398	723.412
J	241+47.00	-8.493	723.344	723.352
CORCA	241+53.77	-8.493	723.316	723.316

BEAM 4

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ADJUSTED FOR DEAD LOAD DEFLECTION
CORCA	240+36.17	-2.912	724.609	724.609
A	240+46.17	-2.912	724.451	724.463
B	240+56.17	-2.912	724.305	724.317
C	240+66.17	-2.912	724.168	724.172
CORCP1	240+72.25	-2.912	724.080	724.080
D	240+82.25	-2.912	723.948	723.974
E	240+92.25	-2.912	723.830	723.860
F	241+02.25	-2.912	723.730	723.765
G	241+12.25	-2.912	723.648	723.689
CORCP2	241+14.59	-2.912	723.648	723.648
H	241+24.59	-2.912	723.571	723.579
I	241+34.59	-2.912	723.503	723.517
J	241+44.59	-2.912	723.446	723.464
CORCA	241+50.67	-2.912	723.416	723.416



Baker Engineers
Baker Engineering, Inc.

DESIGNED: P. Wood
CHECKED: J. Owen
DRAWN: K. Dytkowski
CHECKED: P. Wood

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS

U.S. ROUTE 20 BY-PASS (F.A.P. 426) OVER
POPLAR CREEK
SECTION BR-B-1(86)
COOK COUNTY
STATION 240+83.50
STRUCTURE No. 016-0217

REVISIONS	
NAME	DATE

WESTBOUND PROFILE GRADE LINE

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+34.56	0.000	724.600	724.600
A	240+44.56	0.000	724.521	724.533
B	240+54.56	0.000	724.373	724.385
C	240+64.56	0.000	724.234	724.238
CBRCP1	240+70.64	0.000	724.155	724.155
D	240+80.64	0.000	724.033	724.038
E	240+90.64	0.000	723.921	723.951
F	241+00.64	0.000	723.819	723.826
G	241+10.64	0.000	723.727	723.729
CBRCP2	241+12.90	0.000	723.707	723.707
H	241+22.90	0.000	723.629	723.636
I	241+32.90	0.000	723.559	723.573
J	241+42.90	0.000	723.499	723.507
CBRCEA	241+49.06	0.000	723.489	723.489

☉ BEAM 5

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+33.00	2.668	724.745	724.745
A	240+43.00	2.668	724.585	724.597
B	240+53.00	2.668	724.433	724.447
C	240+63.00	2.668	724.290	724.299
CBRCP1	240+69.16	2.668	724.215	724.215
D	240+79.16	2.668	724.091	724.096
E	240+89.16	2.668	723.978	723.988
F	240+99.16	2.668	723.874	723.881
G	241+09.16	2.668	723.781	723.782
CBRCP2	241+11.50	2.668	723.761	723.761
H	241+21.50	2.668	723.680	723.686
I	241+31.50	2.668	723.608	723.623
J	241+41.50	2.668	723.549	723.557
CBRCEA	241+47.58	2.668	723.517	723.517

☉ BEAM 6

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+29.99	0.248	724.883	724.883
A	240+39.99	0.248	724.720	724.732
B	240+49.99	0.248	724.566	724.578
C	240+59.99	0.248	724.423	724.427
CBRCP1	240+64.07	0.248	724.341	724.341
D	240+74.07	0.248	724.214	724.219
E	240+84.07	0.248	724.098	724.108
F	240+94.07	0.248	723.991	723.996
G	241+04.07	0.248	723.895	723.896
CBRCP2	241+08.41	0.248	723.874	723.874
H	241+18.41	0.248	723.790	723.790
I	241+28.41	0.248	723.716	723.730
J	241+38.41	0.248	723.652	723.660
CBRCEA	241+44.49	0.248	723.619	723.619

☉ BEAM 7

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+26.90	13.828	725.018	725.018
A	240+36.90	13.828	724.852	724.864
B	240+46.90	13.828	724.696	724.708
C	240+56.90	13.828	724.549	724.553
CBRCP1	240+62.90	13.828	724.465	724.465
D	240+72.90	13.828	724.335	724.340
E	240+82.90	13.828	724.216	724.226
F	240+92.90	13.828	724.106	724.113
G	241+02.90	13.828	724.004	724.007
CBRCP2	241+05.32	13.828	723.985	723.985
H	241+15.32	13.828	723.890	723.906
I	241+25.32	13.828	723.821	723.835
J	241+35.32	13.828	723.753	723.762
CBRCEA	241+41.40	13.828	723.718	723.718

☉ BEAM 8

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+23.60	-13.828	725.061	725.061
A	240+33.60	-13.828	724.873	724.885
B	240+43.60	-13.828	724.715	724.727
C	240+53.60	-13.828	724.568	724.572
CBRCP1	240+61.60	-13.828	724.483	724.483
D	240+71.60	-13.828	724.352	724.357
E	240+81.60	-13.828	724.231	724.231
F	240+91.60	-13.828	724.120	724.127
G	241+01.60	-13.828	724.019	724.020
CBRCP2	241+04.02	-13.828	723.997	723.997
H	241+14.02	-13.828	723.908	723.916
I	241+24.02	-13.828	723.830	723.844
J	241+34.02	-13.828	723.764	723.778
CBRCEA	241+40.10	-13.828	723.725	723.725

☉ BEAM 9

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+22.51	-8.248	725.012	725.012
A	240+32.51	-8.248	724.841	724.853
B	240+42.51	-8.248	724.690	724.692
C	240+52.51	-8.248	724.529	724.533
CBRCP1	240+58.59	-8.248	724.443	724.443
D	240+68.59	-8.248	724.308	724.313
E	240+78.59	-8.248	724.194	724.194
F	240+88.59	-8.248	724.070	724.077
G	240+98.59	-8.248	723.964	723.967
CBRCP2	241+00.93	-8.248	723.943	723.943
H	241+10.93	-8.248	723.851	723.860
I	241+20.93	-8.248	723.770	723.784
J	241+30.93	-8.248	723.699	723.707
CBRCEA	241+37.01	-8.248	723.641	723.641

☉ BEAM 10

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+19.42	-2.668	724.980	724.980
A	240+29.42	-2.668	724.806	724.818
B	240+39.42	-2.668	724.643	724.655
C	240+49.42	-2.668	724.489	724.495
CBRCP1	240+55.50	-2.668	724.400	724.400
D	240+65.50	-2.668	724.263	724.268
E	240+75.50	-2.668	724.135	724.145
F	240+85.50	-2.668	724.011	724.025
G	240+95.50	-2.668	723.911	723.912
CBRCP2	240+97.84	-2.668	723.887	723.887
H	241+07.84	-2.668	723.793	723.801
I	241+17.84	-2.668	723.708	723.722
J	241+27.84	-2.668	723.634	723.642
CBRCEA	241+33.92	-2.668	723.594	723.594

EASTBOUND PROFILE GRADE LINE

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+17.94	0.000	724.966	724.966
A	240+27.94	0.000	724.790	724.802
B	240+37.94	0.000	724.625	724.637
C	240+47.94	0.000	724.470	724.474
CBRCP1	240+54.02	0.000	724.380	724.380
D	240+64.02	0.000	724.241	724.246
E	240+74.02	0.000	724.112	724.122
F	240+84.02	0.000	723.994	724.001
G	240+94.02	0.000	723.885	723.886
CBRCP2	240+96.36	0.000	723.863	723.863
H	241+06.36	0.000	723.765	723.773
I	241+16.36	0.000	723.679	723.693
J	241+26.36	0.000	723.600	723.611
CBRCEA	241+32.44	0.000	723.542	723.542

☉ BEAM 11

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+16.33	2.912	724.950	724.950
A	240+26.33	2.912	724.775	724.785
B	240+36.33	2.912	724.606	724.618
C	240+46.33	2.912	724.449	724.453
CBRCP1	240+52.41	2.912	724.359	724.359
D	240+62.41	2.912	724.218	724.223
E	240+72.41	2.912	724.080	724.088
F	240+82.41	2.912	723.967	723.974
G	240+92.41	2.912	723.867	723.869
CBRCP2	240+94.75	2.912	723.833	723.833
H	241+04.75	2.912	723.735	723.743
I	241+14.75	2.912	723.647	723.661
J	241+24.75	2.912	723.570	723.578
CBRCEA	241+30.83	2.912	723.528	723.528

☉ BEAM 12

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+12.23	0.493	724.921	724.921
A	240+22.23	0.493	724.741	724.753
B	240+32.23	0.493	724.570	724.582
C	240+42.23	0.493	724.410	724.414
CBRCP1	240+49.31	0.493	724.318	724.318
D	240+59.31	0.493	724.176	724.179
E	240+69.31	0.493	724.041	724.051
F	240+79.31	0.493	723.917	723.924
G	240+89.31	0.493	723.804	723.805
CBRCP2	240+91.65	0.493	723.779	723.779
H	241+01.65	0.493	723.671	723.686
I	241+11.65	0.493	723.587	723.601
J	241+21.65	0.493	723.506	723.514
CBRCEA	241+27.73	0.493	723.462	723.462

SOUTH LONG. CONST. JOINT

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+11.85	11.000	724.568	724.808
A	240+21.85	11.000	724.726	724.738
B	240+31.85	11.000	724.555	724.567
C	240+41.85	11.000	724.393	724.397
CBRCP1	240+47.93	11.000	724.300	724.300
D	240+57.93	11.000	724.155	724.160
E	240+67.93	11.000	724.020	724.030
F	240+77.93	11.000	723.895	723.902
G	240+87.93	11.000	723.780	723.781
CBRCP2	240+90.27	11.000	723.755	723.755
H	241+00.27	11.000	723.653	723.661
I	241+10.27	11.000	723.580	723.574
J	241+20.27	11.000	723.478	723.486
CBRCEA	241+26.35	11.000	723.433	723.433

☉ BEAM 13

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+10.14	14.073	724.875	724.875
A	240+20.14	14.073	724.692	724.704
B	240+30.14	14.073	724.519	724.531
C	240+40.14	14.073	724.356	724.360
CBRCP1	240+46.22	14.073	724.261	724.261
D	240+56.22	14.073	724.114	724.119
E	240+66.22	14.073	723.978	723.988
F	240+76.22	14.073	723.851	723.856
G	240+86.22	14.073	723.734	723.735
CBRCP2	240+88.56	14.073	723.709	723.709
H	240+98.56	14.073	723.605	723.613
I	241+08.56	14.073	723.511	723.525
J	241+18.56	14.073	723.427	723.435
CBRCEA	241+24.64	14.073	723.381	723.381

☉ BEAM 14

LINE	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
CBRCHA	240+07.09	19.574	724.818	724.818
A	240+17.09	19.574	724.631	724.643
B	240+			