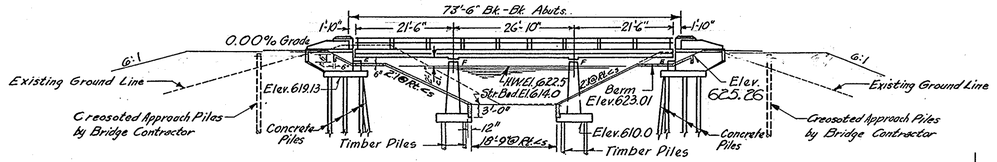
B.M. Spike & Washer in 10" Box Elder Tree
East Side of Drainage Ditch, Rt.
Sta. 80+50 Elev 623.74 (U.S.G.S. Datum)
No Existing Structure.

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I 80	06-18-1	Bureau	17	6
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
7 SHEETS



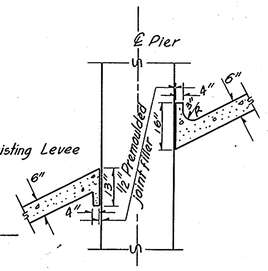
ELEVATION
Scale 1/8" = 1'-0"

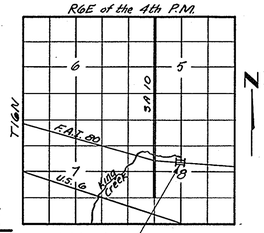
PILE DATA

Capacity - 15 ton
Est. Length - 20 ft.
No Req'd. - 24
Creosoted Piles

NOTE: 1/2" Premoulded joint filler between all faces of piers and Slope Wall

After Slope Wall has been constructed excavate face of levees as directed by the engineer to provide smooth transition from normal channel to proposed widened channel. This work shall be paid for as Channel Excavation.





LOCATION MAP

PLAN
Scale 1/8" = 1'-0"

DETAIL OF SLOPE WALL AT PIERS

GENERAL NOTES

Class X Concrete shall be used throughout except in end posts & piers Handrail concrete shall be used in all end posts.

Class A Concrete shall be used in piers.

The concrete floor slab shall be finished in accordance with Art. 51.19 of the Standard Specifications.

Slope wall shall be reinforced with welded wire fabric 6"x 6" mesh, #4 wire, weighing 58# per 100 sq. ft.

Layout of slope walls may be varied to suit ground conditions in the field, as directed by the Engineer.

Railings shall be adjusted to true alignment after curbs have been poured.

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

Expansion guards shall be fabricated and erected in accordance with Art. 51.13 (d) of the Standard Specifications and are included in quantity of Structural Steel.

Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. See articles 56.1 to 56.5 inclusive of the Standard Specifications.

The contractor shall drive 4 Test Piles in the permanent locations given below as directed by the Engineer before ordering remainder of piles:

(1) Concrete test pile of the West Abutment of the North bridge.
(2) Concrete test pile at the East Abutment of the South bridge
(3) Timber test pile at the East pier of the North bridge
(4) Timber test pile at the West pier of the South bridge

TWO BRIDGES
TOTAL BILL OF MATERIAL

ITEM		SUPER	SUB.	TOTAL
Class X Concrete	Cu. Yds.	283.0	163.2	446.2
Class A Concrete	Cu. Yds.		268.6	268.6
Handrail Concrete	Cu. Yds.	4.6		4.6
Reinforcement Bars	Lb.	69,380	21,580	90,960
Structural Steel	Lb.	2,220	14,780	17,000
Metal Handrail	Lin. Ft.	286		286
Name Plates	Each	2		2
Slope Wall	Sq. Yds.		1,500	1,500
Class A. Excavation	Cu. Yds.		1,510	1,510
Class B. Excavation	Cu. Yds.		450	450
Protective Coat	Sq. Yds.	754		754
Concrete Piles	Lin. Ft.		1,500	1,500
Concrete Test Piles	Each		2	2
Creosoted Piles	Lin. Ft.		480	480
Unfreated Piles	Lin. Ft.		1,880	1,880
Test Pile, Timber	Each		2	2

STATION 80+02.50
BUILT 19 BY
STATE OF ILLINOIS
F.A.I. Rt. 80 SEC. 06-18-1
F.A. PROJ. I-80-1 (37)
LOADING H20-S16 & ALT.

NAME PLATE DATA
(See Std. 2113)
Locate N.E. & S.W. Corner

WATERWAY INFORMATION

Drainage Area ---------- 3630 Acres
Character ---------- Rolling, Hilly & Cultivated
Required Opening (50 Yr. Flood) --- 270 Sq. Ft.
Present Opening ---------- — Sq. Ft.
Proposed Opening ---------- 270 Sq. Ft.
Ordinary Water Elev. --- 615.5
Low Water Elev. --- 615.0

DESIGN STRESSES

fc = 1400 psi Super. & Sub.
Vc = 75 psi. Footings
fs = 20,000 psi. Reinf.
fs = 18,000 psi. Struct.
n = 10

LOADING H20-S16-44 & ALTERNATE

GEN. NOTES CONT. All paint shall be furnished and applied by the Contractor.

SOUTH DITCH MINERAL MARSH
F.A.I. Rt. 80 Sec. 06-1 B-1
BUREAU COUNTY
STA. 80+02.50
PROJECT I-80-1 (37) 37

DESIGNED	L.D. Winn
CHECKED	Emery J. Stickan
DRAWN	L.D.W. F. Bahr, Gabor Papp
CHECKED	E.S.

JAN. 15 1960

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

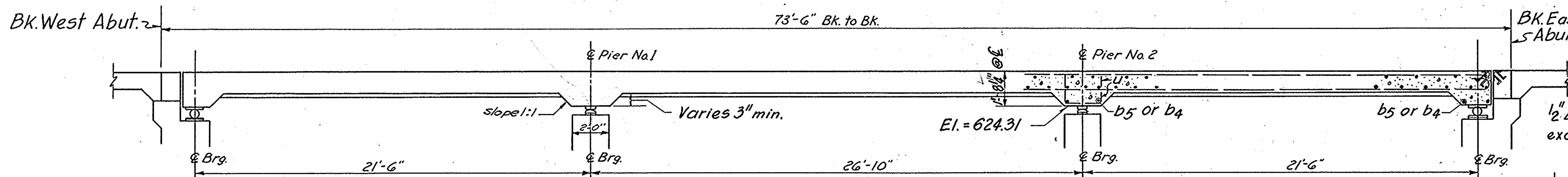
Revised - 1-8-62 - W.J.M. - In TOTAL BILL OF MATERIAL - TWO BRIDGES, removed the following items: Borrow Excavation - 300 Cu. Yds.; Channel Excavation - 115 Cu. Yds. Changed Constr. Berm from 20' to 60'
1-10-62 - W.S.

Revised 6/11/62 R.H.J. Removed "Abutments" from note for 1/2" P.J.F.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 80	06-1B-1	Bureau	17	7
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT.	

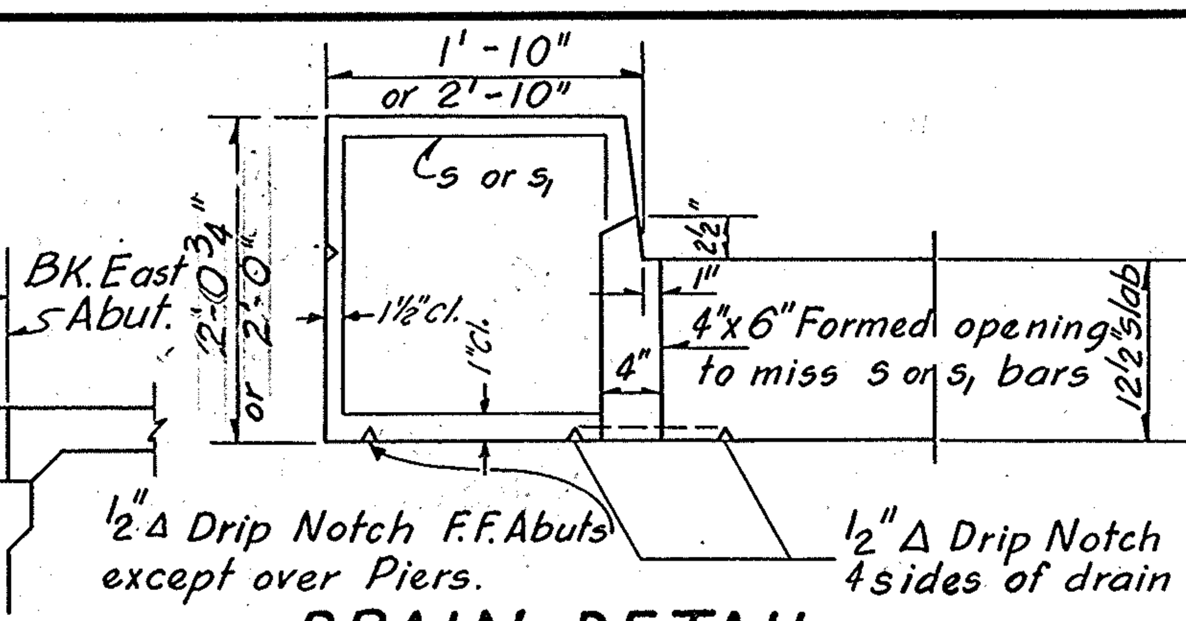
SHEET NO. 2
7 SHEETS

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

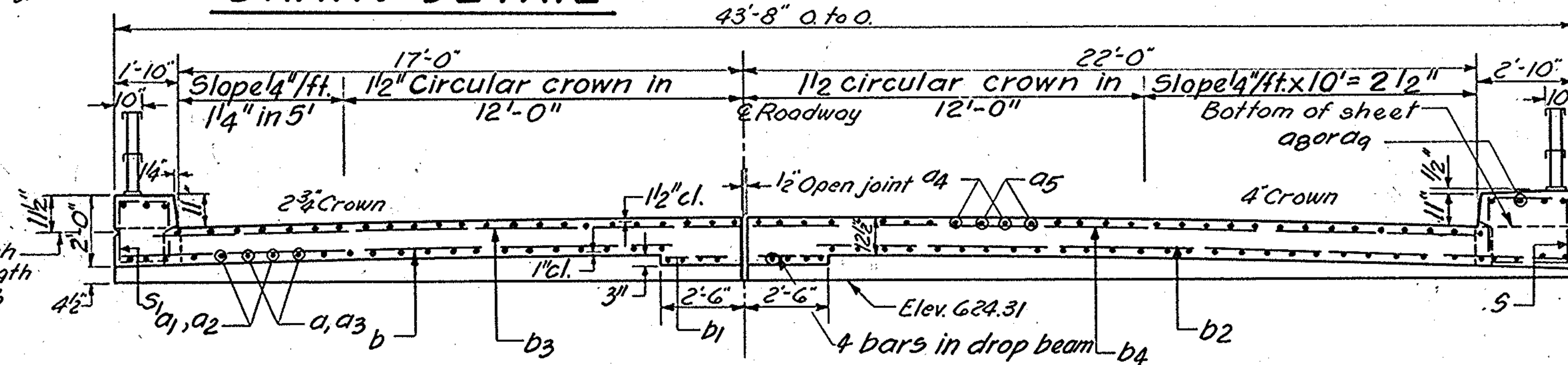


ELEVATION
(Dimensions along ℄ of Roadway)

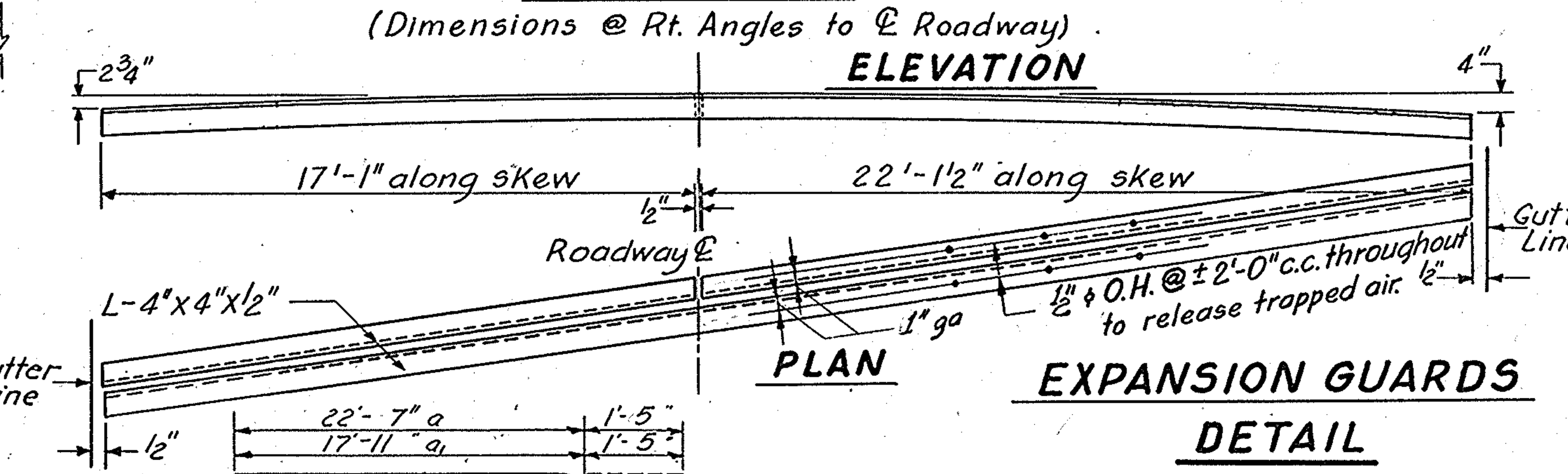
NOTE: (14)→ denotes the number of Required Bars in adjacent similar Section of Bridge.



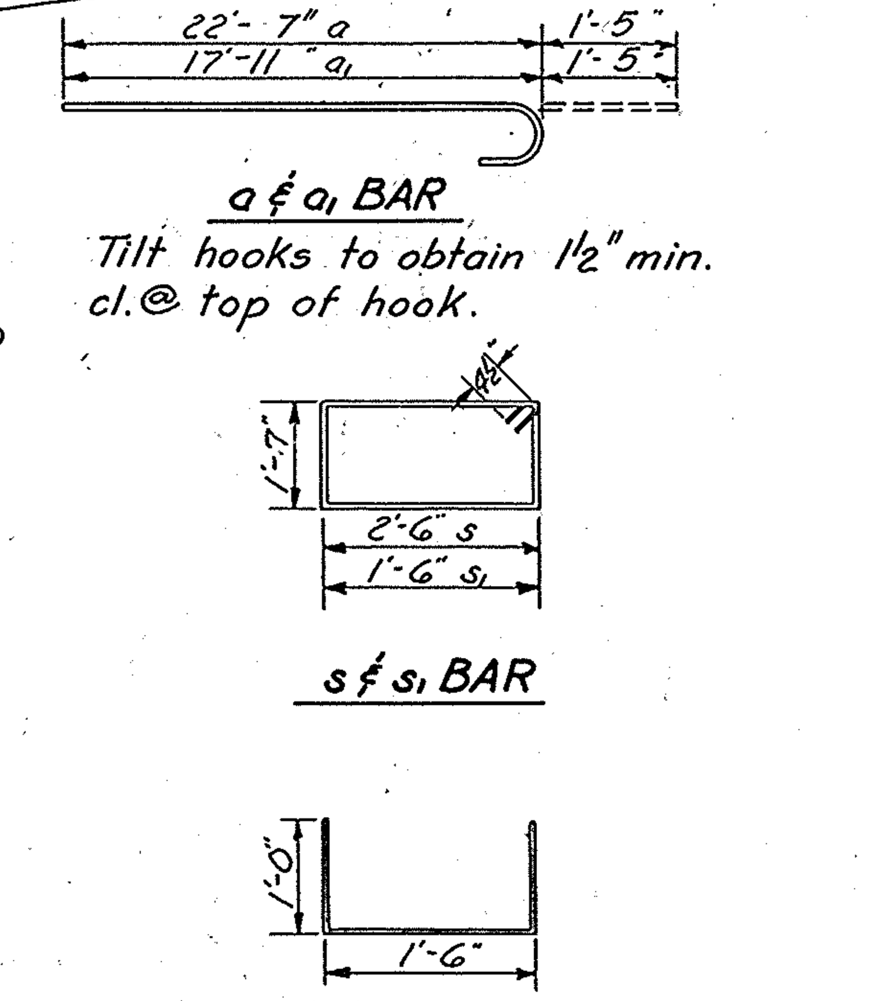
DRAIN DETAIL



SECTION NEAR PIER
(Dimensions @ Rt. Angles to ℄ Roadway)



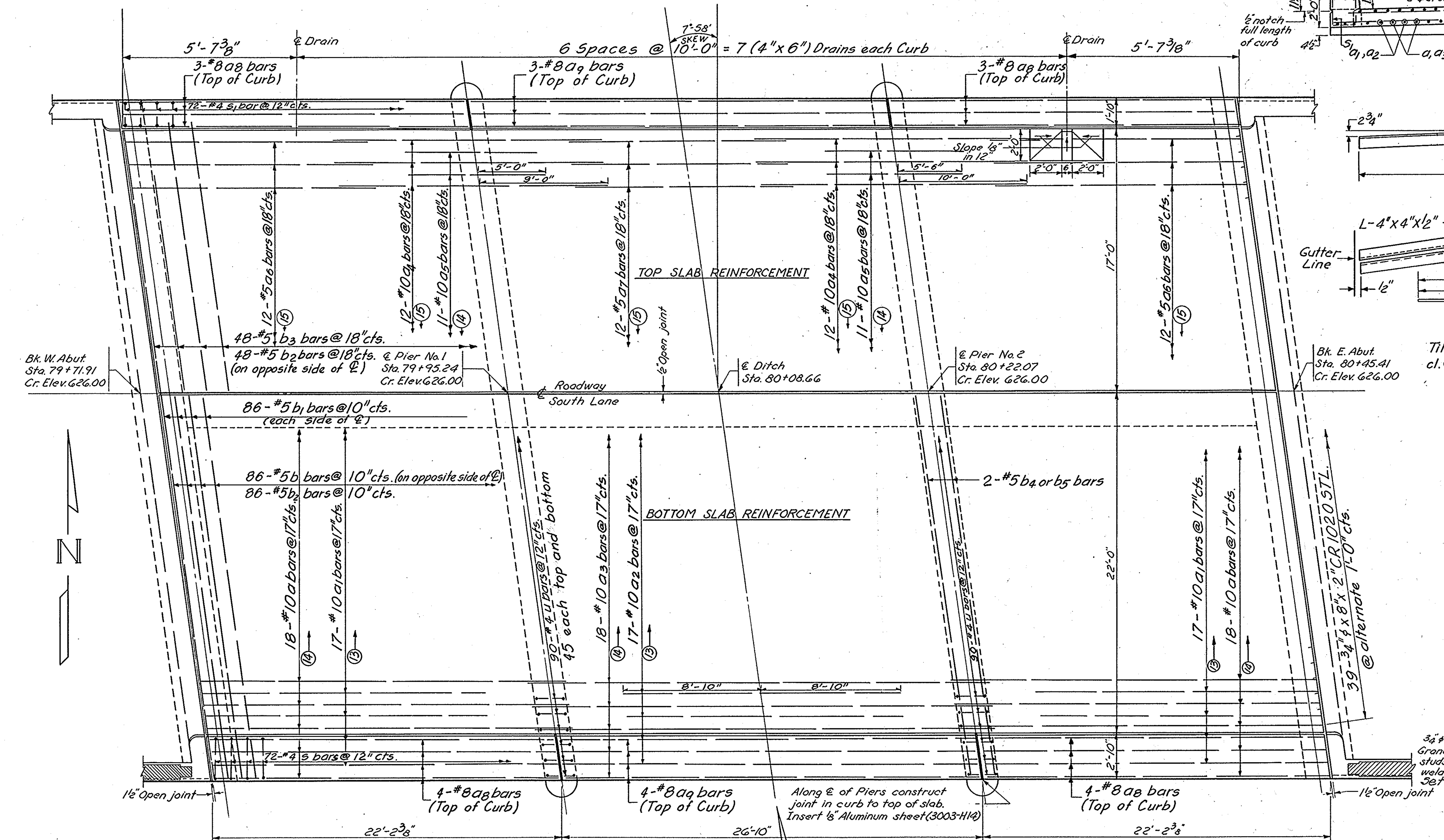
EXPANSION GUARDS DETAIL



BILL OF MATERIAL
(One Bridge)

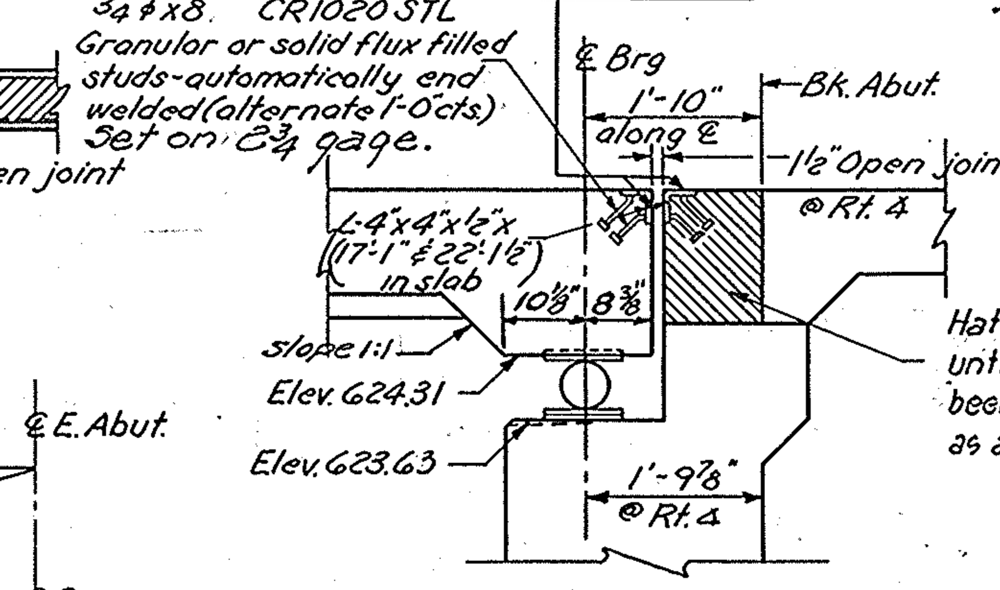
BAR	№	SIZE	LENGTH	SHAPE
a	64	#10	24'-0"	hooked
a_1	60	#10	19'-4"	hooked
a_2	30	#10	17'-8"	straight
a_3	32	#10	29'-0"	straight
a_4	54	#10	19'-0"	straight
a_5	50	#10	10'-6"	straight
a_6	54	#5	13'-0"	straight
a_7	27	#5	11'-0"	straight
a_8	14	#8	22'-0"	straight
a_9	7	#8	26'-6"	straight
b	86	#5	17'-0"	straight
b_1	172	#5	2'-3"	straight
b_2	134	#5	23'-0"	straight
b_3	48	#5	18'-0"	straight
b_4	8	#5	18'-9"	straight
b_5	8	#5	24'-9"	straight
s	72	#4	8'-11"	closed
s_1	72	#4	6'-11"	closed
u	180	#4	3'-6"	U
Class X Concrete			Cu. Yds.	141.5
Reinforcement Bars			Lb.	34,500
* Structural Steel			Lb.	1,110

* Includes Expansion Guard on Deck only.



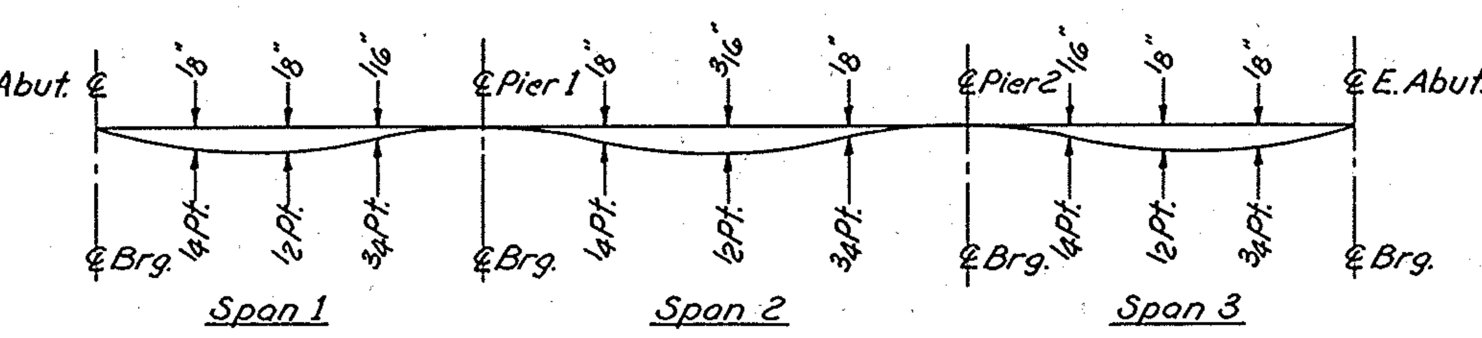
PLAN OF SOUTH BRIDGE
(North Bridge Similar when rotated through 180°)
about ℄ Median Sta. 80+02.50

7/16" φ holes @ 12" cts. for ⅜" bolts. All bolts shall be burned, sawed or chipped off flush with back of angles after forms are removed. Set on 2½" gage



Hatched area shall not be poured until superstructure falsework has been removed. Quantity included as a part of Substructure Quantities.

SECTION AT ABUTMENT



DEAD LOAD DEFLECTIONS

DESIGNED	L. D. Winn
CHECKED	Emery J. Stickan
DRAWN	L.D.W. Gabor Papp J.L. Armstrong
CHECKED	E.S.

JAN. 15 1960
EXAMINED — ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED — ENGINEER OF DESIGN
APPROVED — CHIEF HIGHWAY ENGINEER

SUPERSTRUCTURE
F.A.I. RT. 80 SEC. 06-1B-1
BUREAU COUNTY
STA. 80+02.50

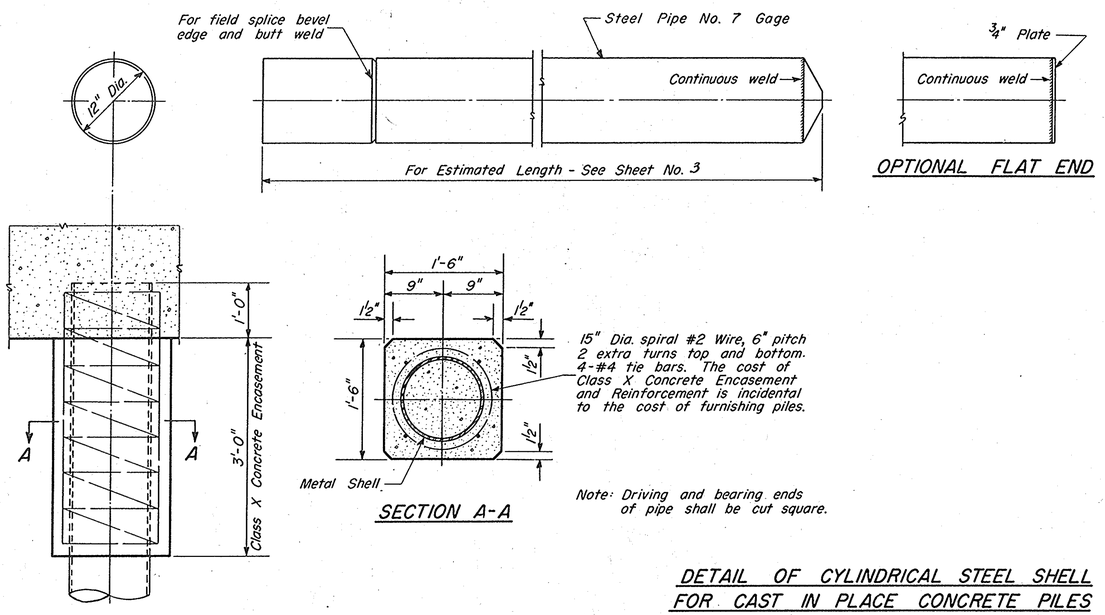
Revised 3-14-62 - W.J.W. - In SECTION AT ABUTMENT added notation that "Hatched area shall not be poured until superstructure falsework has been removed." Revised 6/11/62 In Expansion Guards Detail 13/16 φ O.H. changed to ½" φ, set on 1" gage instead of 1½" ga. In Sect. AT ABUT. studs modernized.

CHARLES BRUNING CO., INC.

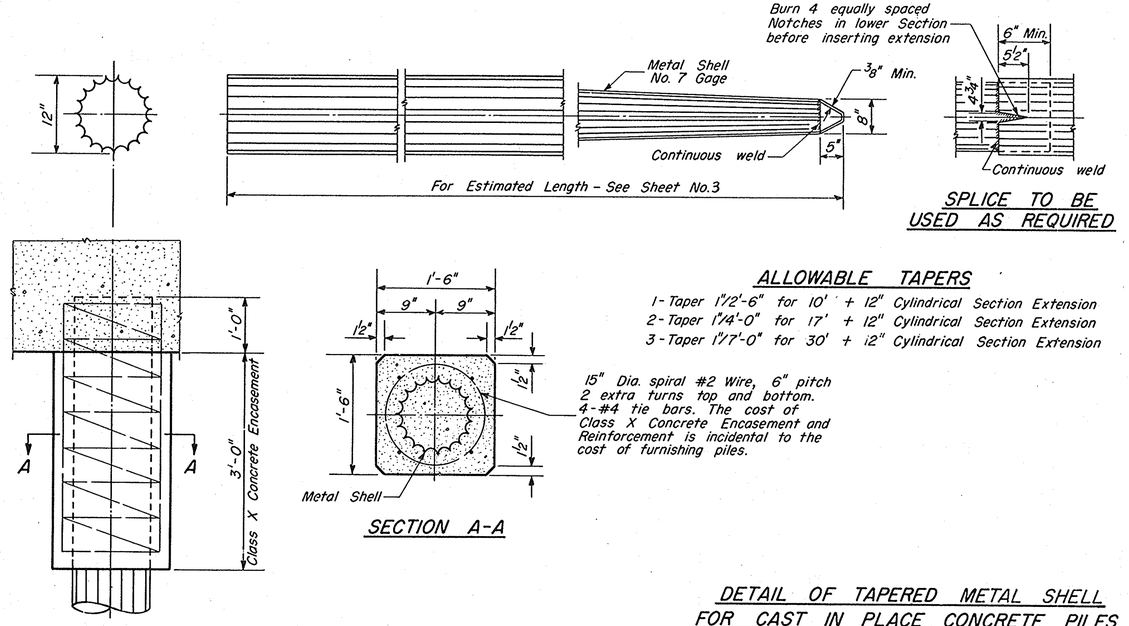
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. F. A. I. 80	06-18-1	Bureau	17	12
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

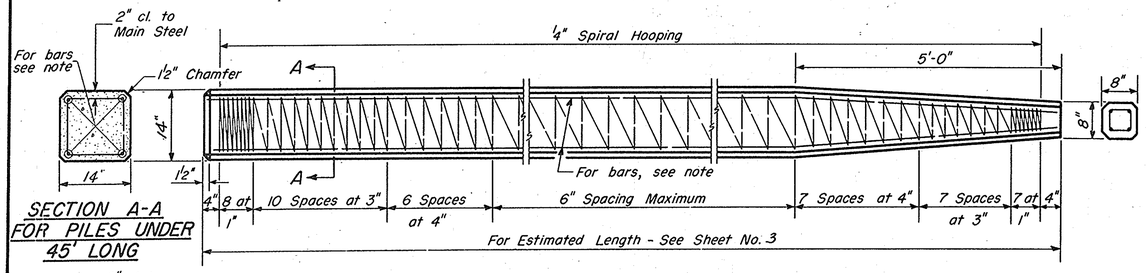
SHEET NO. 6
7 SHEETS



DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



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 the 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.

*L = Over all length of pile to be handled.

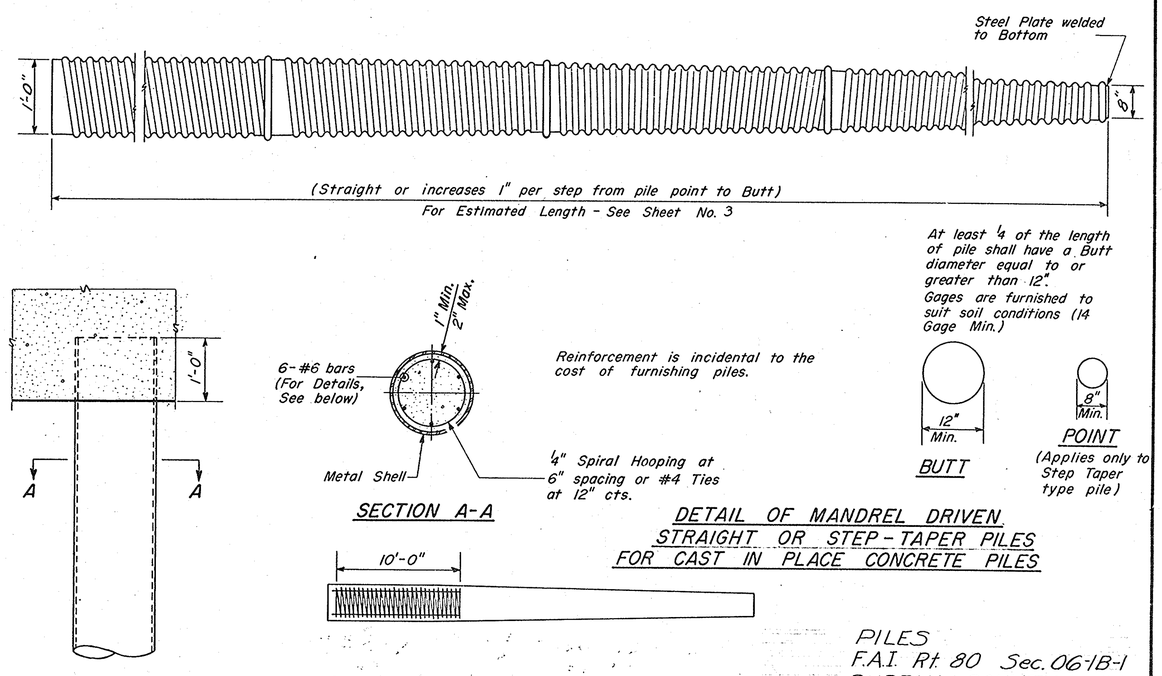
DESIGNED	
CHECKED	
DRAWN	W. A. Sausaman
CHECKED	

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

X-1 Rev. 5-12-61

DETAIL OF PRECAST CONCRETE PILES

New Sheet added 1-18-62 W.S.



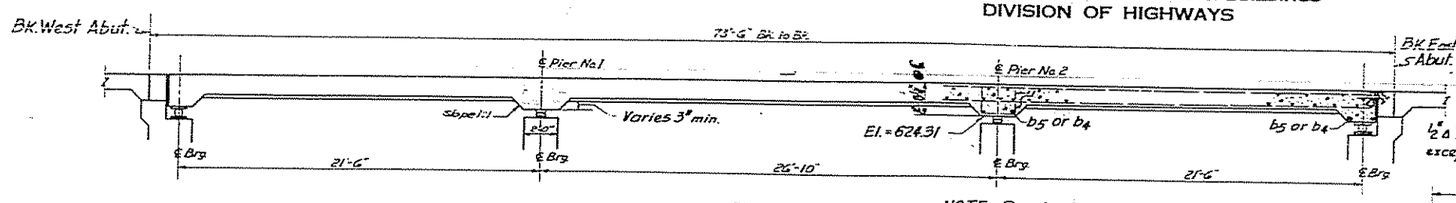
DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES

PILES
F.A.I. Rt. 80 Sec. 06-1B-1
BUREAU COUNTY
Sta. 80+02.5

SN 006-0003 & 006-0004

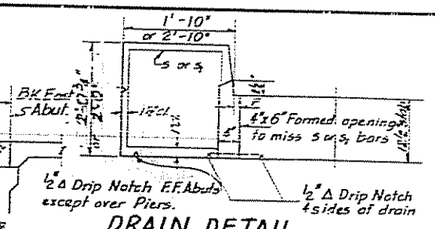
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

STATE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. RT. 80 SEC. 06-1 S-1	Bureau	17	7	SHEET NO. 2
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		7 SHEETS

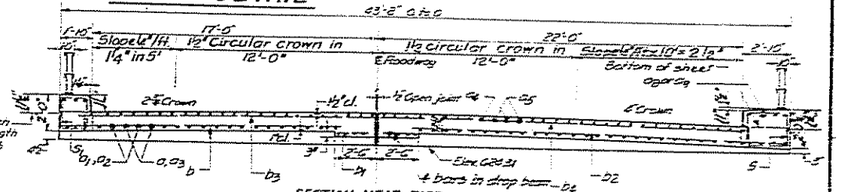


ELEVATION
(Dimensions along ℄ of Roadway)

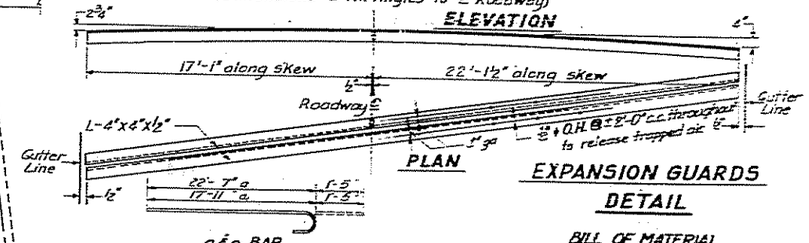
NOTE: ⑮ denotes the number of Required Bars in adjacent similar Section of Bridge.



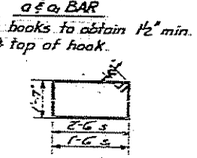
DRAIN DETAIL



SECTION NEAR PIER
(Dimensions ⊥ to ℄ Roadway)



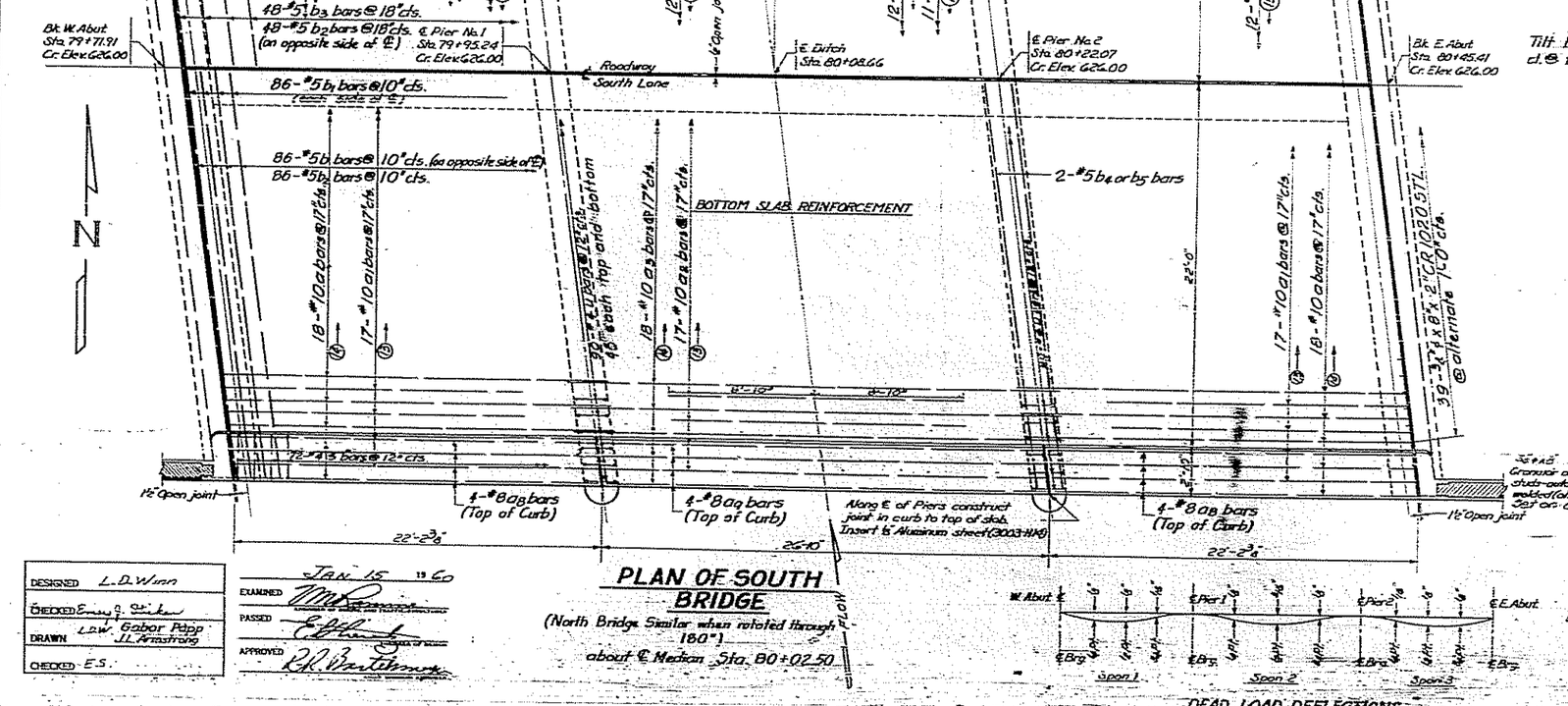
EXPANSION GUARDS DETAIL



BILL OF MATERIAL
(One Bridge)

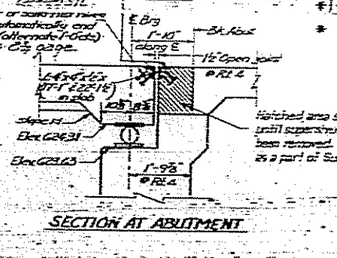
BAR	№	SIZE	LENGTH	SHAPE
a	64	#10	24'-0"	
a1	60	#10	19'-4"	
a2	30	#10	17'-6"	
a3	32	#10	20'-0"	
a4	54	#10	15'-9"	
a5	50	#10	10'-5"	
a6	54	#5	13'-0"	
a7	27	#5	11'-0"	
a8	14	#8	22'-0"	
a9	7	#8	26'-5"	
b	88	#5	17'-0"	
b1	172	#5	2'-3"	
b2	134	#5	23'-0"	
b3	48	#5	15'-0"	
b4	8	#5	18'-9"	
b5	8	#5	28'-5"	
S	72	#4	8'-0"	
S1	72	#4	5'-0"	
U	180	#4	3'-6"	
Class X Concrete			Cu.Yds.	181.5
Reinforcement Bars			Lbs.	24,540
Structural Steel			Lbs.	2,116

* Includes Expansion Guard on Deck only.



PLAN OF SOUTH BRIDGE
(North Bridge Similar when rotated through 180°)
about ℄ Median Sta. 80+02.50

DEAD LOAD DEFLECTIONS



SECTION AT ABUTMENT

⅝" ϕ holes @ 12" c/s. for ⅜" ϕ bolts. All bolts shall be burned, sawed or chipped off flush with back of angles after forms are removed. Set on 2½" gage.

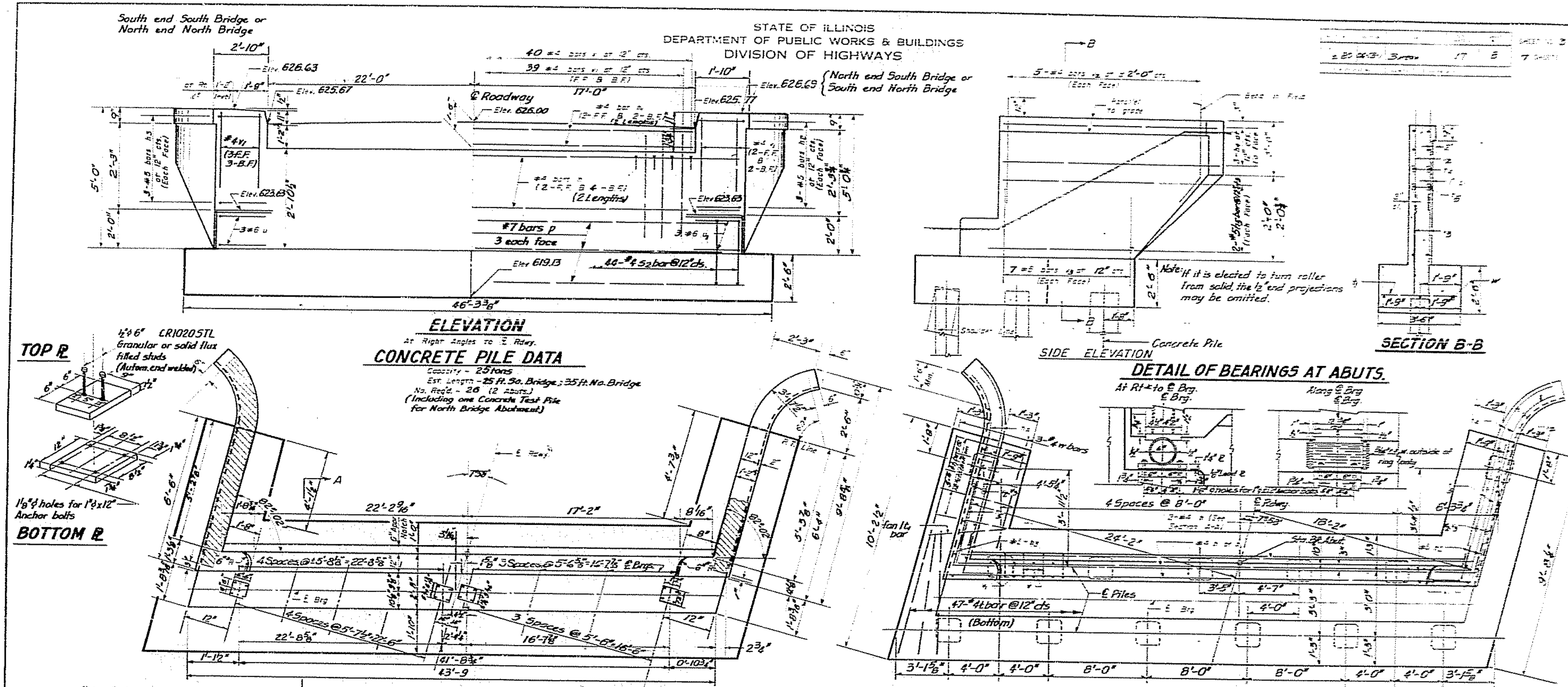
DESIGNED	L.D. Winn
CHECKED	E.S.
DRAWN	L.D.W. Gabor Papp J.L. Armstrong
CHECKED	E.S.

JAN. 15 1960

EXAMINED
PASSED
APPROVED

SUPERSTRUCTURE
FAS RT 80 SEC 06-1 S-1
BUREAU COUNTY
STA 80+02.50

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

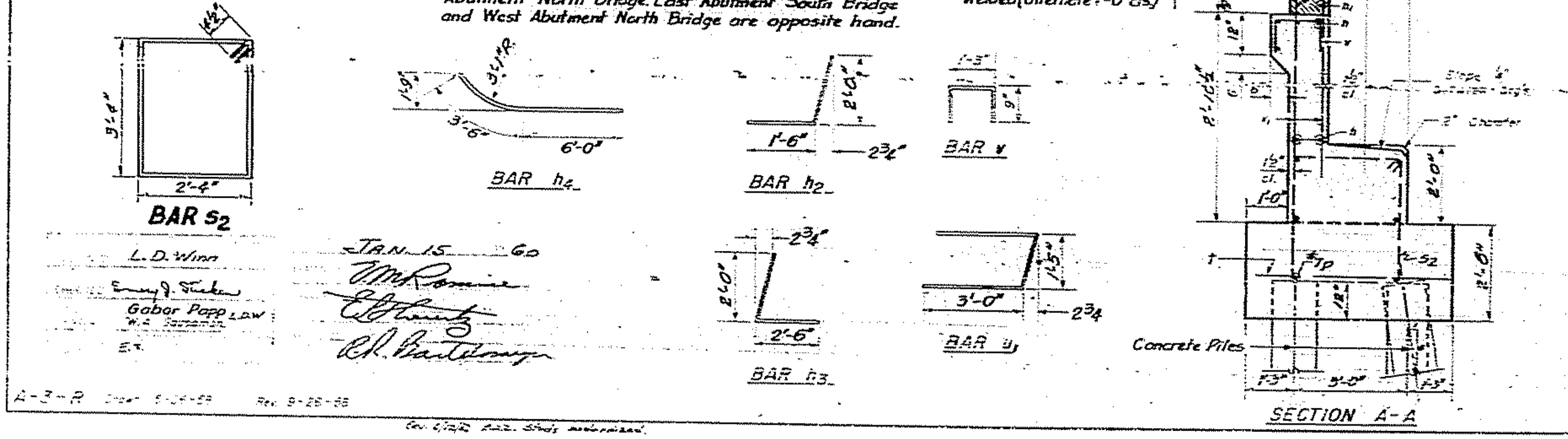


* Note: Contractor shall construct curb without radius when a curb & gutter are to be used on bridge approaches (See Road Plans)

PLAN OF ABUTMENT

Dimensions

This plan shows West Abutment South Bridge or East Abutment North Bridge. East Abutment South Bridge and West Abutment North Bridge are opposite hand.



(One Abut)

BILL OF REINFORCEMENT

Bar	No.	Size	Length	Shape	Bar	No.	Size	Length	Shape
h	12	#4	22'-3"	—	t	47	#4	5'-3"	—
h_1	9	#4	20'-0"	—	h	12	#4	3'-3"	—
h_2	6	#5	3'-6"	⌐					
h_3	6	#5	4'-6"	L	u_1	6	#6	7'-5"	⊔
h_4	12	#5	9'-6"	—					
h5	8	#5	6'-3"	—	v	46	#4	[illegible]	⊓
					v_1	88	#4	4'-0"	—
p	12	#7	22'-8"	—	v_2	20	#6	4'-5"	—
					v_3	28	#5	5'-0"	—
s_2	44	#4	12'-1"	▢					
					w	6	#6	6'-0"	—

** Bill of Material (South Bridge) same as N. Bridge except Concrete Piles-625 Lin. Ft.*

NOTE:
Batter every other pile in front row beginning with outside pile of each Bridge. North end of North bridge & South end of South bridge

** BILL OF MATERIAL (N.BRIDGE)

Item	Unit	Quantity
Class X Concrete	Cu. Yd.	81.6
Reinforcement Bars	Lb.	4320
*Structural Steel	Lb.	5630
Concrete Piles	Lin. Ft.	875
Concrete Test Pile	each	1

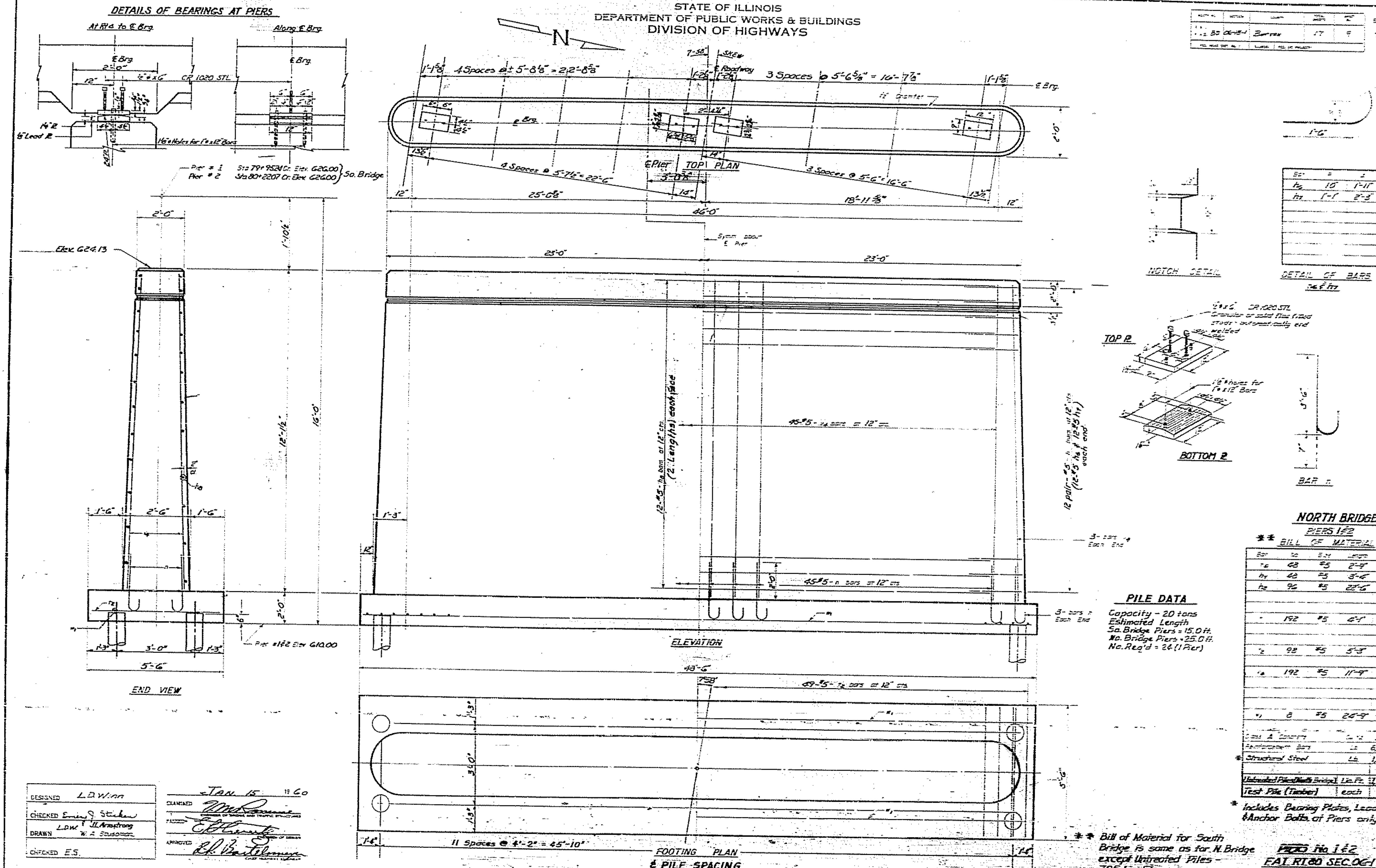
*Includes Rollers, Bearing Plates, Lead Plates, Anchor Bolts & Expansion Guard Angle on Abutments only.

ABUTMENTS
F.A.I. RT. 80 SEC. 06-1B-1
BUREAU COUNTY
STA. 80+02.50

L. D. Winn
Gabor Papp
JAN. 15 60

A-3-R Drawn 8-26-59 Rev. 9-26-58

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



PILE DATA
Capacity – 20 tons
Estimated Length
So. Bridge Piers = 15.0 ft.
No. Bridge Piers = 25.0 ft.
No. Req'd = 24 (1 Pier)

NORTH BRIDGE
PIERS 1 & 2
** BILL OF MATERIAL

Bar	No.	Size	Length	Shape
	48	#5	2'-9"	
	48	#5	3'-6"	
	96	#5	22'-6"	
	192	#5	6'-1"	
	98	#5	5'-3"	
	192	#5	11'-9"	
	8	#5	26'-9"	
Class A Concrete			Cu. Yd.	134.3
Reinforcement Bars			Lb.	6,470
* Structural Steel			Lb.	1,750
Untreated Piles (North Bridge)			Lin. Ft.	1,175
Test Pile (Timber)			each	1

* Includes Bearing Plates, Lead Plates & Anchor Bolts at Piers only.

** Bill of Material for South Bridge is same as for N. Bridge except Untreated Piles – 705 Lin. Ft.

PIERS No. 1 & 2
F.A.I. RT. 80 SEC. 06-1 B-1
BUREAU COUNTY
STA. 80+02.50

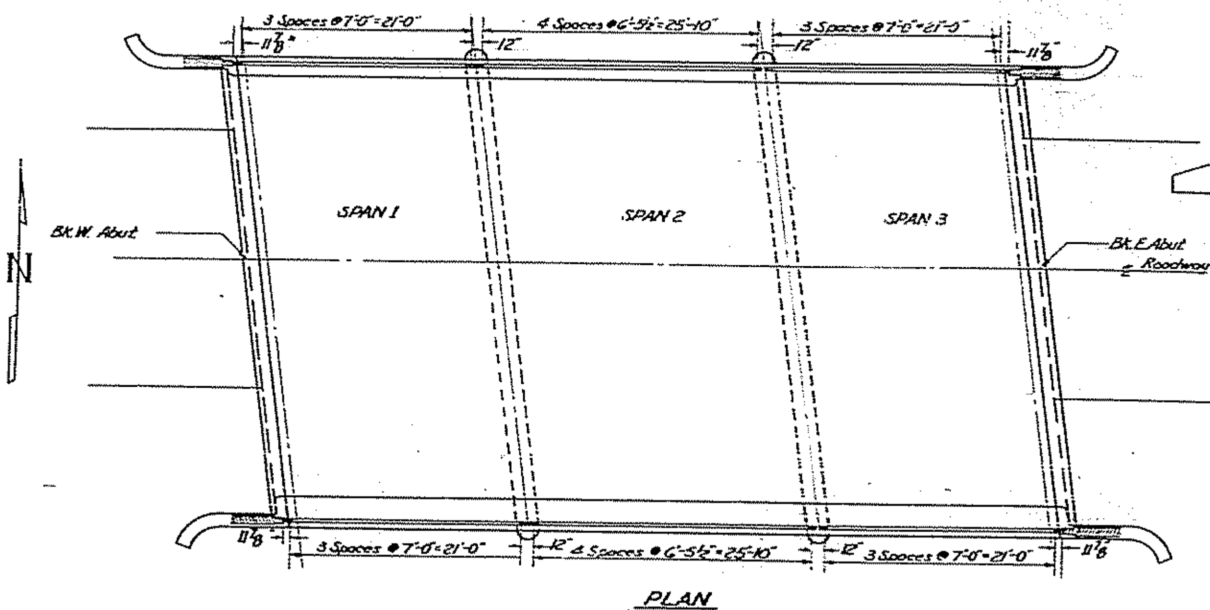
DESIGNED	L.D. Winn
CHECKED	Ervin J. Sticken
DRAWN	L.D.W. & J.L. Armstrong, W. A. Stusoman
CHECKED	E.S.

Jan 15 1960
EXAMINED [signature]
PASSED [signature]
APPROVED [signature]

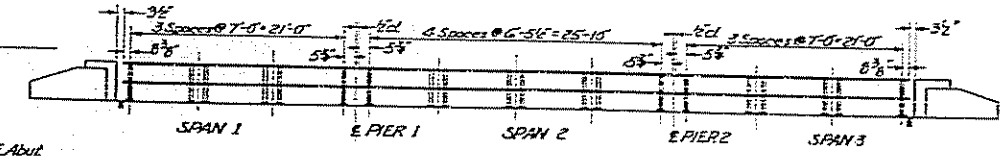
P-1 DRAWN 8-1-52

SHEET NO. 4 — 7 SHEETS

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

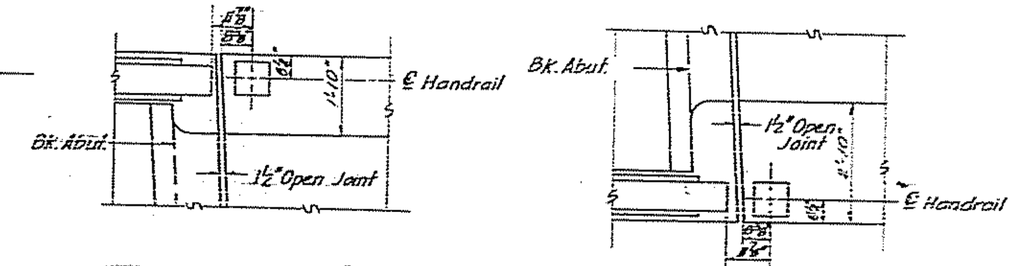


PLAN
(SOUTH BRIDGE)

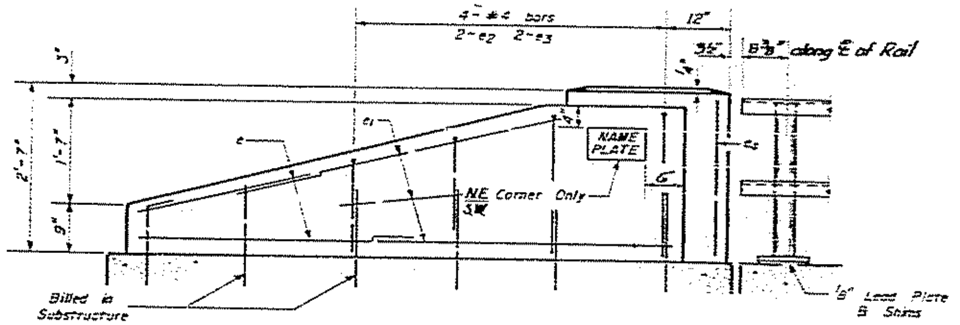


ELEVATION

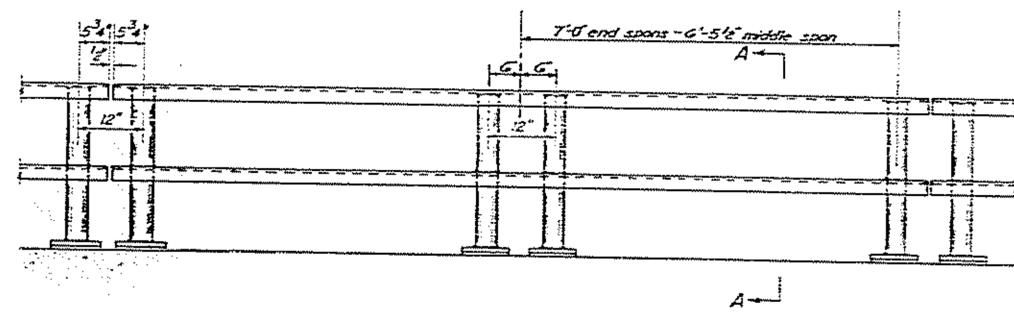
NOTE:
For details of Connection for Bent Plate Rail Panels See Sheet No 5-A



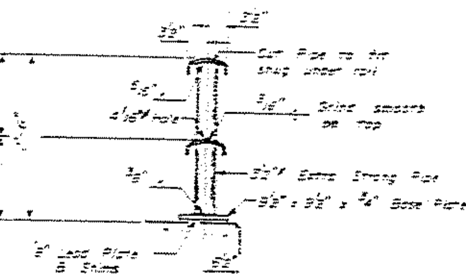
DETAIL OF BASE PLATE
FOR END POST OF HANDRAIL



ELEVATION

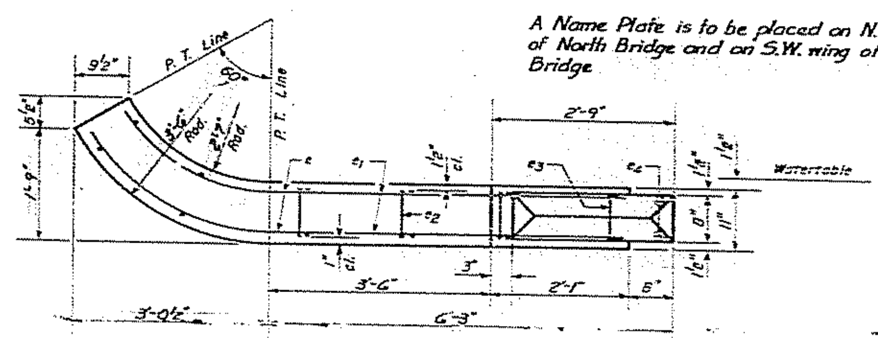


ELEVATION TYPICAL PANEL

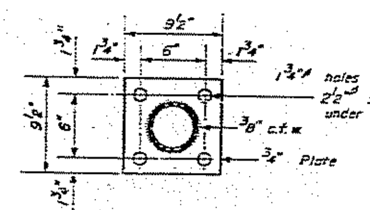


SECTION A-A

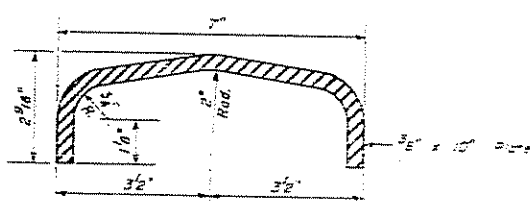
A Name Plate is to be placed on N.E. wing of North Bridge and on S.W. wing of South Bridge



PLAN - END POST



BASE PLATE
ALL POSTS - SUPERSTRUCTURE



DETAIL OF RAIL

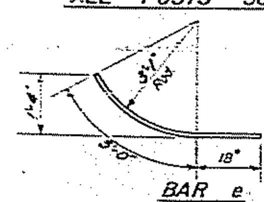
(One Bridge)
BILL OF MATERIAL

Handrail Concrete	Cu.Yd.	23
Reinforcement Bars	Lbs.	190
Metal Handrail	Lin.Ft.	143

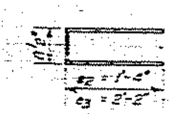
GENERAL NOTES

All End Posts shall be Handrail Concrete.

Provide ... 50% of the Posts.



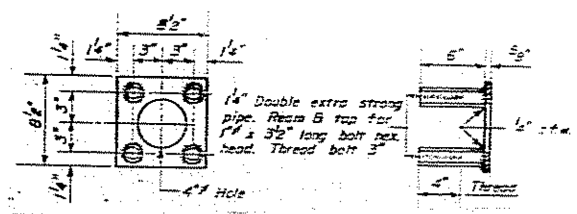
BAR e



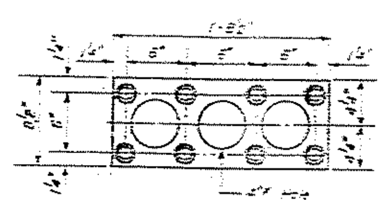
BAR e2 or e3

(One Bridge)
BILL OF REINFORCEMENT

Bar	No.	Size	Length	Shape
e	16	#4	4'-6"	
e1	24	#4	5'-6"	
e2	8	#4	3'-4"	
e3	8	#4	5'-0"	
e4	8	#4	3'-3"	



ANCHOR DEVICE
At Single Post



ANCHOR DEVICE
At Double Post

DESIGNED	L. D. Winn
CHECKED	E. G. Stike
DRAWN	Gabor Papp L.D.W. W.A. Sousamon
CHECKED	E.S.

JAN 15 1960

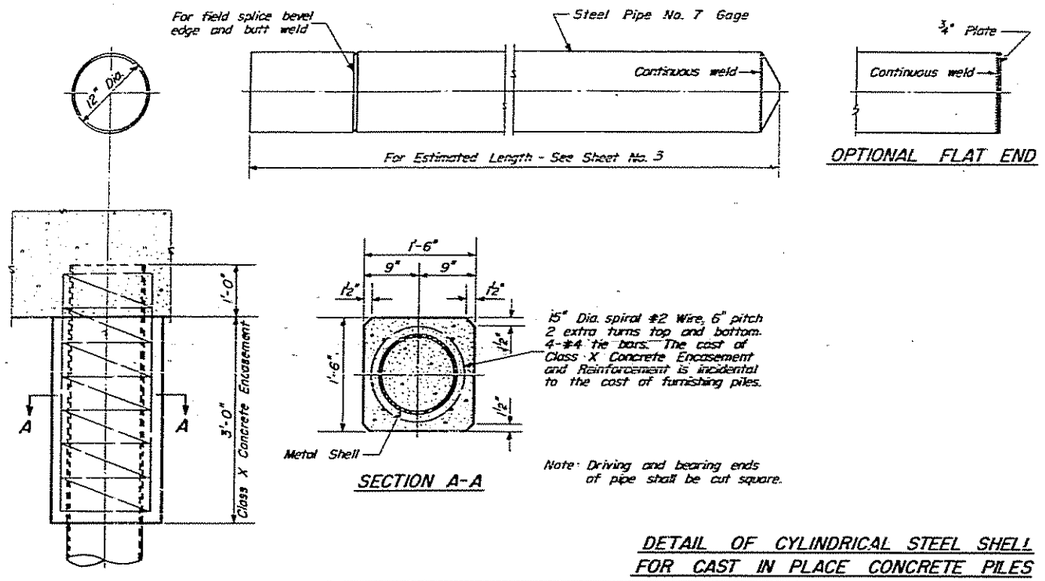
R-6. Drawn 5-15-58 Rev. 8-14-58 9-25-58 10-2-58

METAL HANDRAIL
F.A.I. RT. 80 SEC. 06-1 B-1
BUREAU COUNTY
STA. 80+02.50

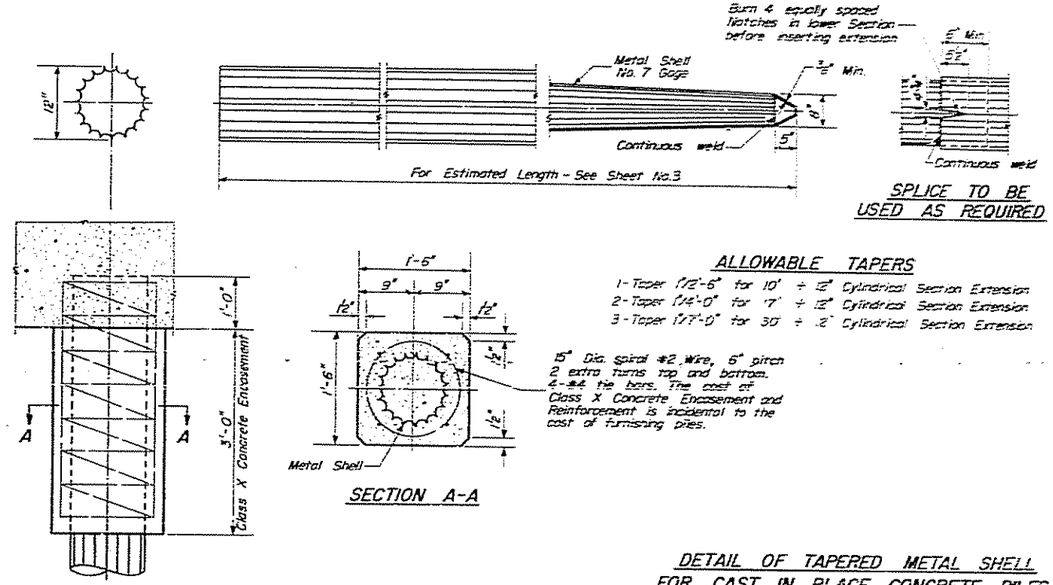
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

F.A.I. 80	06-18-1	Bureau	17	12

SHEET NO. 6
7 SHEETS



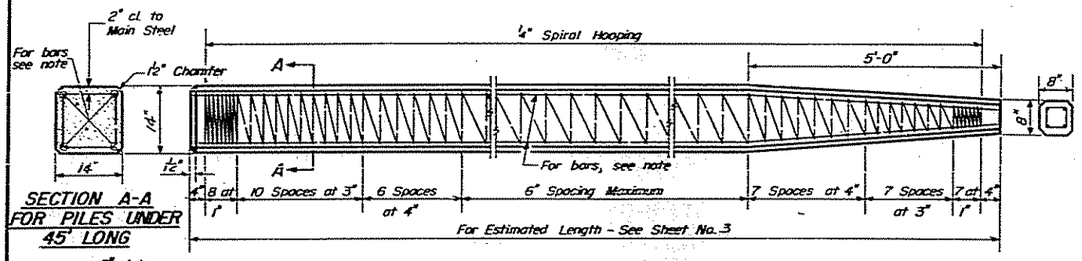
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES



ALLOWABLE TAPERS

1-Taper 1'2"-6" for 10' ± 12" Cylindrical Section Extension
2-Taper 1'4"-0" for 17' ± 12" Cylindrical Section Extension
3-Taper 1'7"-0" for 30' ± 12" Cylindrical Section Extension

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 the 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.

*L = Over all length of pile to be handled.

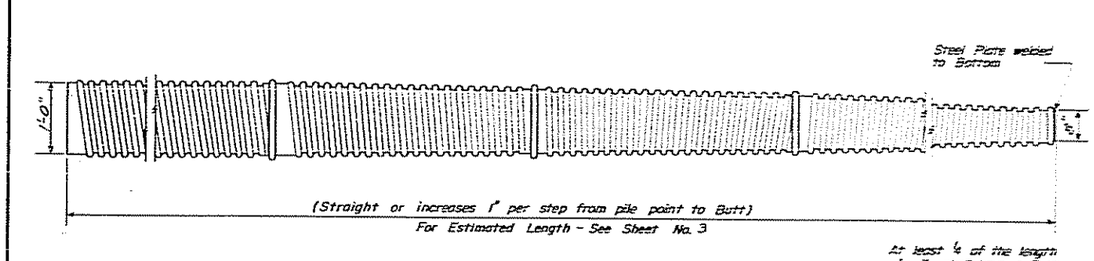
DESIGNED	
CHECKED	
DRAWN	W. A. Sausaman
CHECKED	

EXAMINED
PASSED
APPROVED

X-1 Rev. 5-12-61

DETAIL OF PRECAST CONCRETE PILES

New Sheet added 1-18-62 H.S.

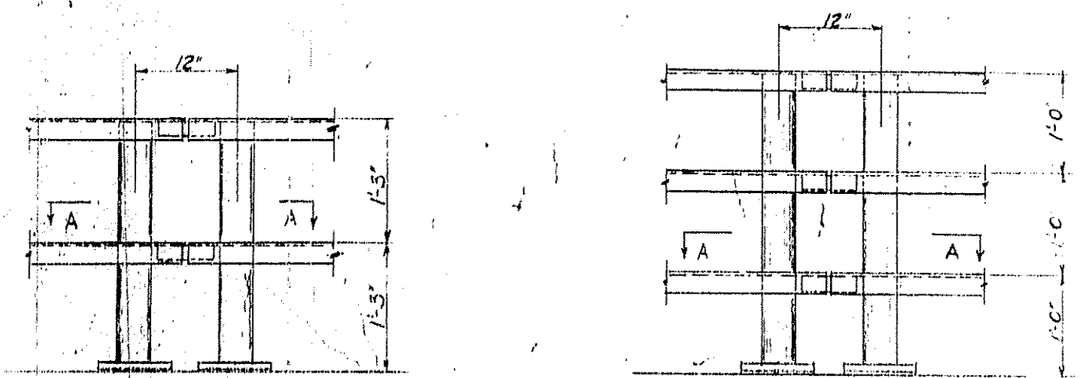


DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES

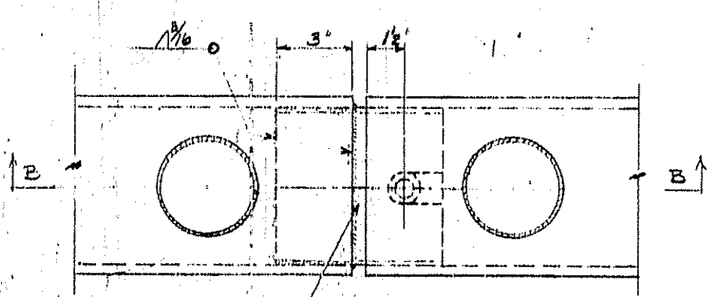
PILES
FAI Rt 80 Sec. 06-1B-
BUREAU COUNTY
Sta. 80+025

ROUTE NO.	DESIGN	COUNTY	SHEET NO.	TOTAL SHEETS
FAI 80 '06-1B-1		Bureau	17	11

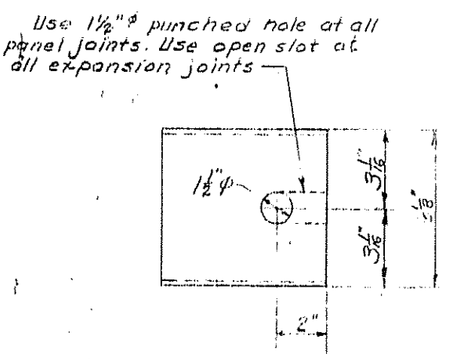
SHEET NO. 5A
7 SHEETS.



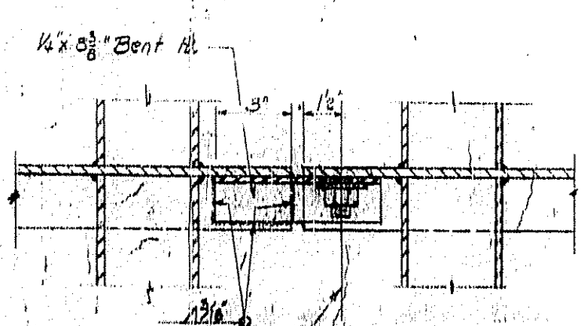
TYPICAL ELEVATION
@ PANEL JOINTS



SECTION 'A-A'

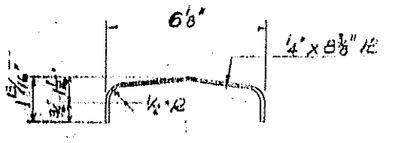


PLAN



¾"ø x 1¾ GRANULAR OR SOLID FLUX FILLED STUD. THREADED FULL LENGTH - AUTOMATICALLY END WELDED TO ¾" ø x 1¾" FULLY THREADED STUD WELDED WITH ⅜" ø F.W. PROVIDE WASHER AND LOCKNUT

SECTION 'B-B'



END VIEW

DETAIL ¼" BENT 12

EXAMINED Nov. 10, 1959
RECOMMENDED
APPROVED

Rev. 11-10-59 12-7-59

Revised - 3-11-62 - Changed dimensions of washability plate.

CONNECTION DETAILS
FOR BENT PLATE
RAIL PANELS