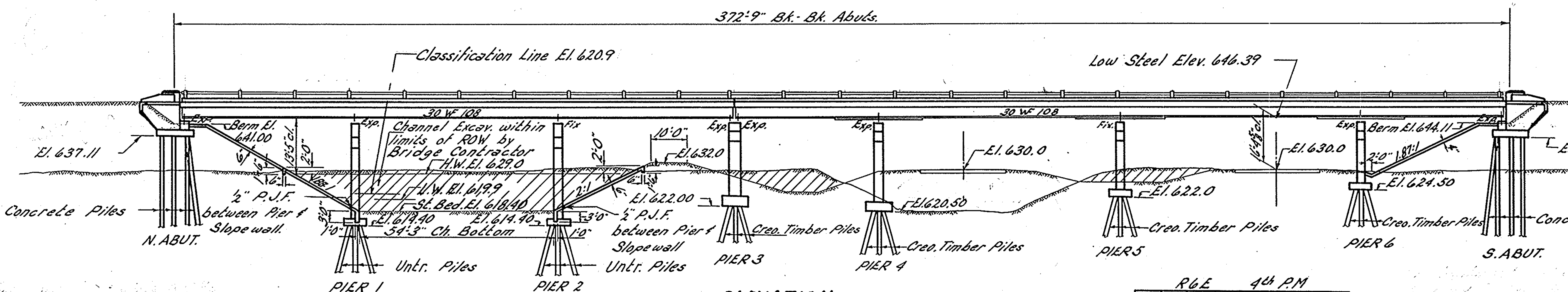
B.M. Sq. chiseled in conc. S.E. corner of Steel Bridge 10' Lt.
Sta. 19+98 Elev. 629.89
Existing Structure: Steel Girder 1 Span @ 85' Contractor to remove before new construction.

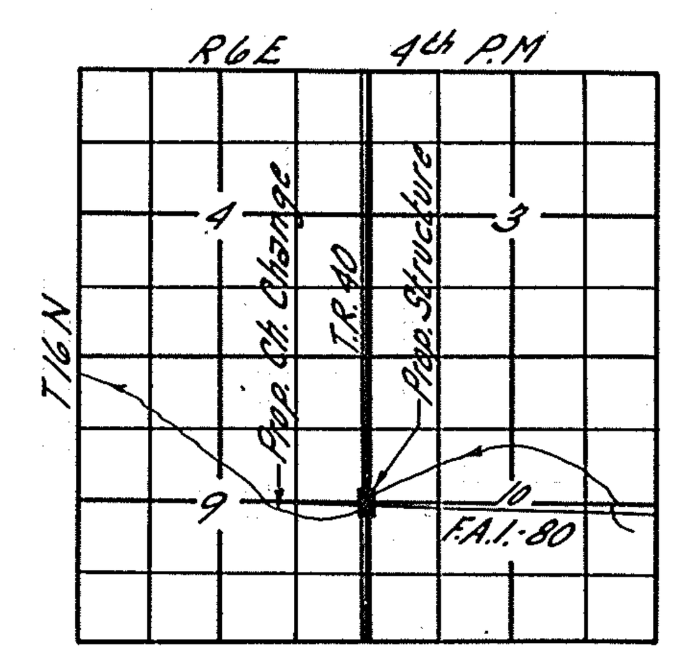
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. F.A.I. 80	06-1HB-1	BUREAU	105	21
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT- I-80-1(38)39	

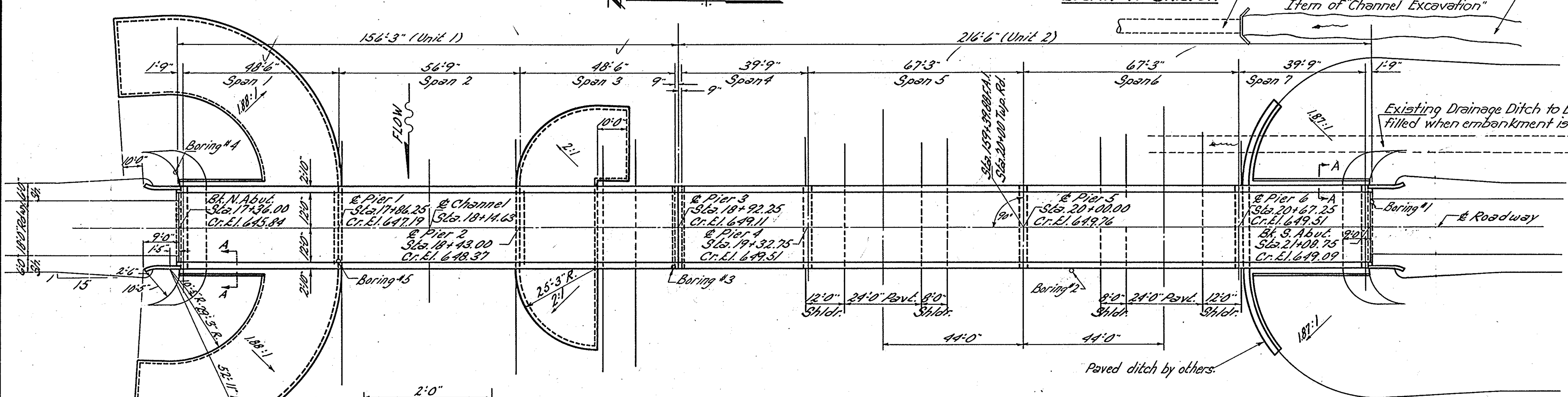
SHEET NO. 1
13 SHEETS



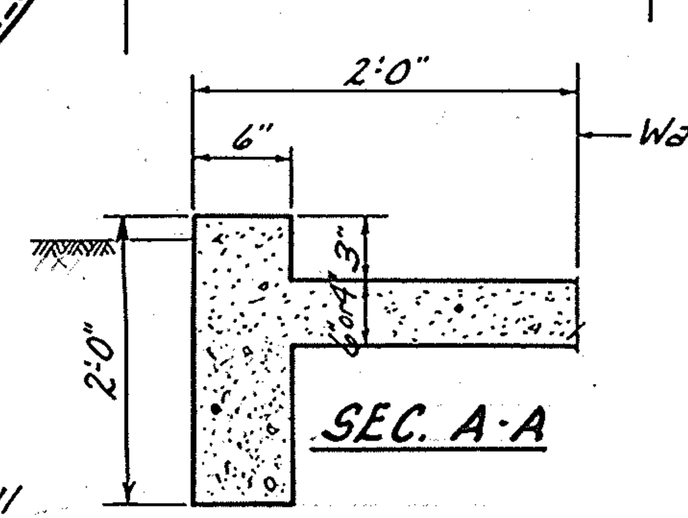
ELEVATION



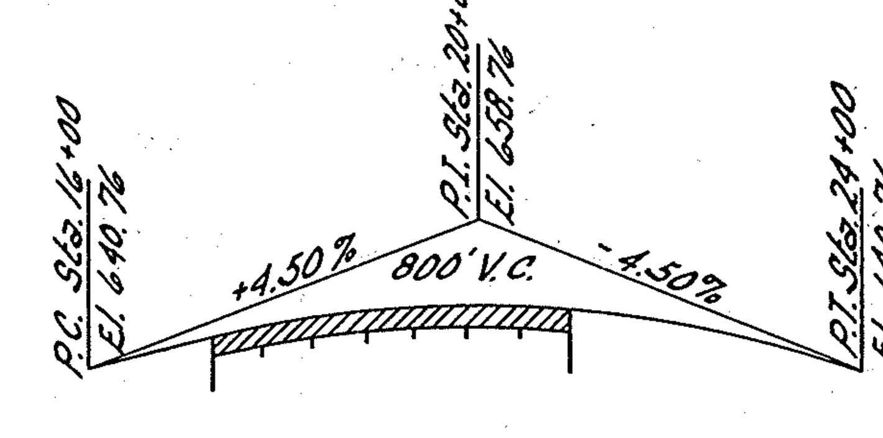
LOCATION SKETCH



PLAN



SEC. A-A



V.C. DATA TWP. RD.

GENERAL NOTES

Class X Concrete shall be used throughout

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

Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, #4 wires, 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.

Rivets ¾"φ, Open holes 13/16"φ, unless noted.

All bolsters, rockers, bearing plates, lead plates, shim plates, pintles and anchor bolts shall be fabricated and set in accordance with Article 51.15 of the Standard Specifications and are included in quantity of Structural Steel. Est. wt. 12,650#.

Anchor bolts shall be set before riveting diaphragms over supports.

Expansion guards shall be fabricated and erected in accordance with Article 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.

All paint shall be furnished and applied by the Contractor.

All Structural Steel shall conform to the ASTM Specifications A-36.

The Contractor shall drive one concrete test pile at each abutment in permanent location, one timber test pile at pier 2 in permanent location and one timber test pile in the vicinity of pier 5 as directed by the Engineer before casting or ordering remainder of piles.

Piles at Abutments shall be driven in holes precored to natural ground line in accordance with Article 60.9(c) of the Standard Specifications.

Coarse aggregate which is to be used in parapet handrails and end posts must be absolutely free of chert, flint, limonite, lignite and soft sandstone.

TOTAL BILL OF MATERIAL

Item		Super	Sub	Total
Class X Concrete	Cu. Yds.	320.0	350.4	670.4 ✓
Protective Coat	Sq. Yds	1412		1412
Reinforcement Bars	Lbs.	66,810	27,420	94,230
Structural Steel	Lbs.	257,250		257,250
Aluminum Handrail, Type D / Metal Handrail, Type E	Lin. Ft.	743		743
Name Plates	Each		2	2
Concrete Piles	Lin. Ft.		880 ✓	880
Test Piles (Concrete)	Each		2	2
Creosoted Piles	Lin. Ft.		1,620	1,620 ✓
Untreated Piles	Lin. Ft.		945	945
Test Piles (Timber)	Each		2	2
Channel Excavation	Cu. Yds.		4650	4,650
Slopewall (6")	Sq. Yds.		834	834
Slopewall (4")	Sq. Yds.		168	168
Class A Excav. for Structure	Cu. Yds.		952	952
Removal of Exist. Structures	Each			1
Class B Excav. for Structure	Cu. Yds.		264	264 ✓

Est. Excavation for N. Slope Wall
Class-A-Excavation = 572 Cu. Yds.
Class-B-Excavation = 114 Cu. Yds.
(Excluding Channel Excav.)

Est. Excavation for S. Slope Wall
Class-A-Excavation = 179 Cu. Yds.
Class-B-Excavation = 43 Cu. Yds.
(Excluding Channel Excav.)

DESIGNED	S. ENGEZ
CHECKED	[illegible]
DRAWN	S.E. P. Lawler
CHECKED	[illegible]

APRIL 13 1960
EXAMINED V. M. Romine — ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED [illegible] — ENGINEER OF DESIGN
APPROVED R.R. Bartelsmeyer — CHIEF HIGHWAY ENGINEER

STA. 159+39.88
BUILT 196 BY
STATE OF ILLINOIS
F.A.I. RT. 80 SEC. 06-1HB-1
F.A. PROJ. I-80-1(38)
LOADING H15-S12

NAME PLATE
See Std. 2113

DESIGN STRESSES
fc: 1,400 p.s.i. Super & Sub.
Vc: 75 p.s.i. Footings
fs: 20,000 p.s.i. Reinf.
fs: 18,000 p.s.i. Struct.
n: 10
LOADING H15-S12-44

WATERWAY INFORMATION
Drainage Area------------24,000 Acres
Character------------Level, Rolling & Cultivated
Required Opening (50 Yr. Fl.)--750 Sq. Ft.
Proposed Opening------------750 Sq. Ft.
Ordinary Water Elev. 620.9
Low Water Elev. 619.9

PROJECT I-80-1(38)39
TR 40 OVER
COAL CREEK & F.A.I.-80
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159+39.88

Revised: 3-13-60: Excavation for Slope Walls itemized. Added sketch of ditch to be relocated at So. Abut. (M.M.)

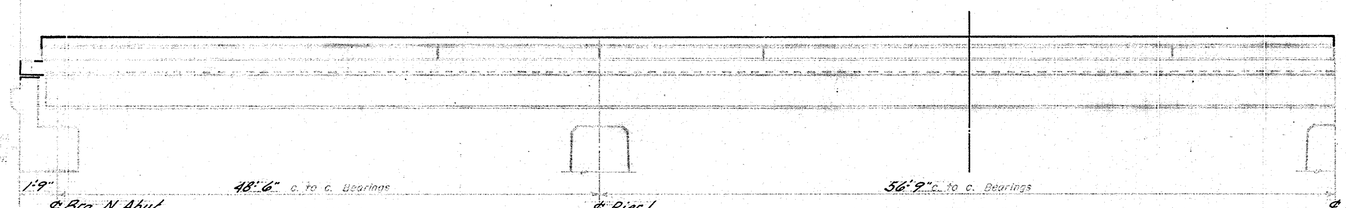
Rev. 1-14-61 Curb height reduced to 9". Two bent plate type handrail replaced by parapet type handrail. Slab reinforcement increased to meet AASHO tentative specs. "T-8". Reinforcement in pier caps increased. Sheet No. 12 replaced with new standard. Cutoff wall detail revised. Bill of Material revised accordingly. T.K.

Revised 12/17/62: In PLAN and ELEVATION removed construction slopes. In ELEVATION at N. Abut removed Embankment 3000 Cu Yd Borrow Excav 3,750 Cu Yd, at S. Abut Embankment 3600 Cu Yd Borrow Excav 4500 Cu Yd. In TOTAL BILL OF MATERIAL removed Borrow Excavation 8250 Cu Yd, added 1412 Sq Yd Protective Coat, and changed Metal Handrail to Aluminum Handrail, Type D] Metal Handrail, Type E. In GENERAL NOTES added note for A-36 Steel. W.S.
1/8/63: In BILL OF MATERIAL changed weight of Reinforcement Bars from 61,640# to 66,810# (Super) & 94,230# W.S.

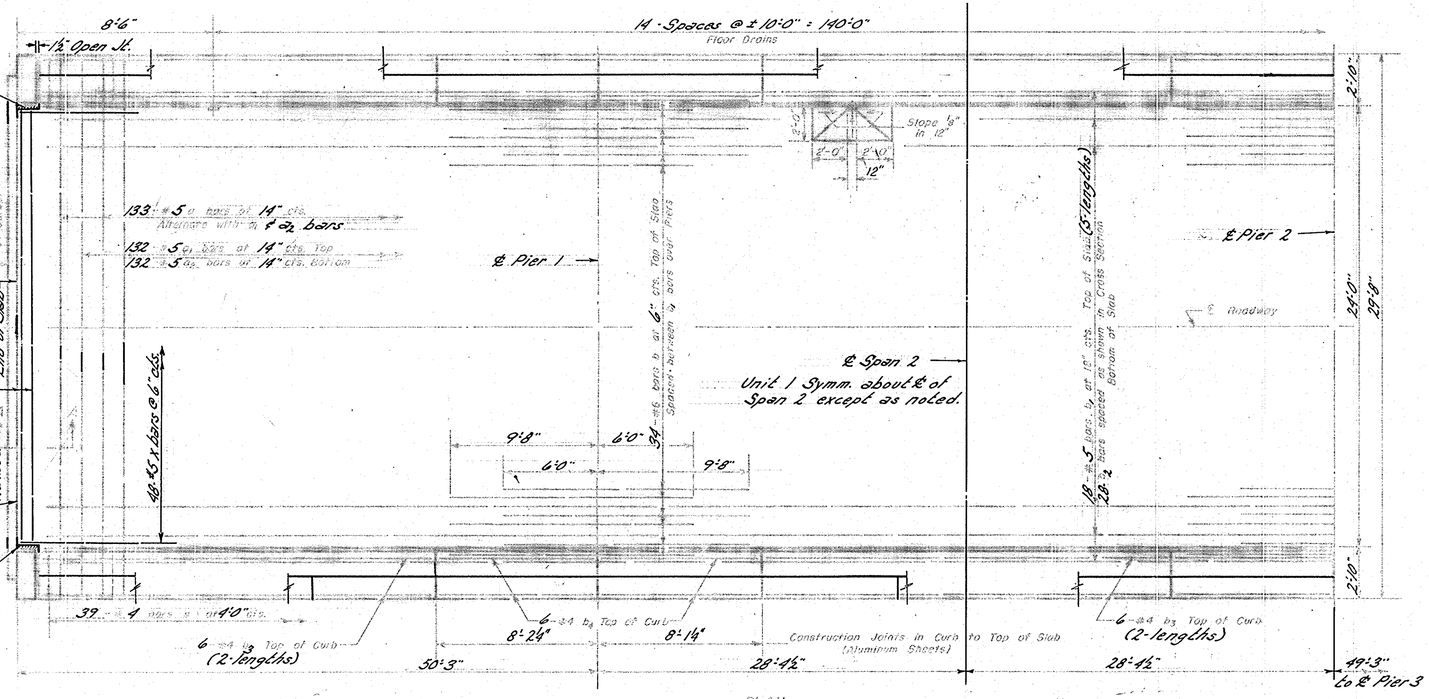
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

I. 80 (4-1HB-1)	BUREAU	105	622	13	SHEET 2

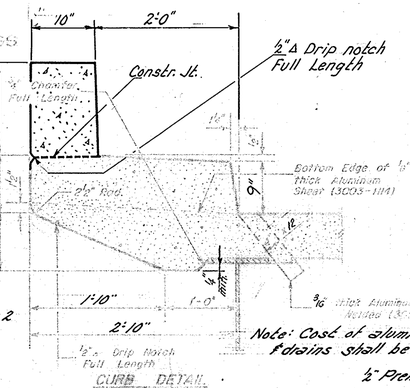
156'-3" Bk. of N.Abut. - ℄ Pier 3
(Unit. 1)



ELEVATION

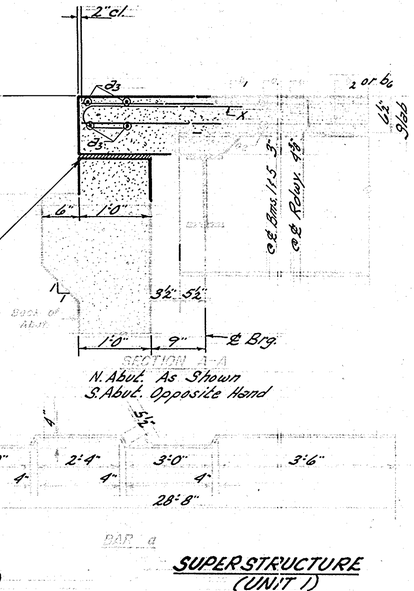


PLAN



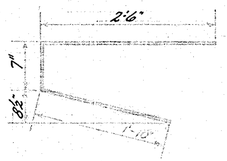
CURB DETAIL

Note: Cost of aluminum plates & drains shall be incidental.



For Section Over Pier 3 See Sheet No. 3.

N. Abut. As Shown
S. Abut. Opposite Hand



BAR s

BAR a

TOP OF SLAB ELEVATIONS (UNIT 1)

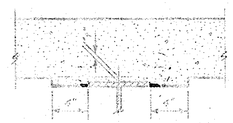
Sta.	At ℄ Beams 1 & 5	At ℄ Beams 2 & 4	At ℄ Beams 3
17+36.00	645.73	645.81	645.89
17+37.75	645.78	645.86	645.89
17+47.75	646.07	646.15	646.18
17+57.75	646.35	646.43	646.46
17+67.75	646.61	646.70	646.73
17+77.75	646.87	646.95	646.98
17+86.25	647.08	647.16	647.19
17+96.25	647.31	647.39	647.42
18+06.25	647.54	647.62	647.65
18+16.25	647.75	647.83	647.86

Sta.	At ℄ Beams 1 & 5	At ℄ Beams 2 & 4	At ℄ Beams 3
18+26.25	647.95	648.03	648.06
18+36.25	648.14	648.22	648.25
18+43.00	648.26	648.34	648.37
18+53.00	648.43	648.51	648.54
18+63.00	648.59	648.67	648.70
18+73.00	648.74	648.82	648.85
18+83.00	648.88	648.96	648.99
18+91.50	648.98	649.06	649.10
18+92.25	649.00	649.08	649.11

SUPERSTRUCTURE (UNIT 1)

BILL OF MATERIAL

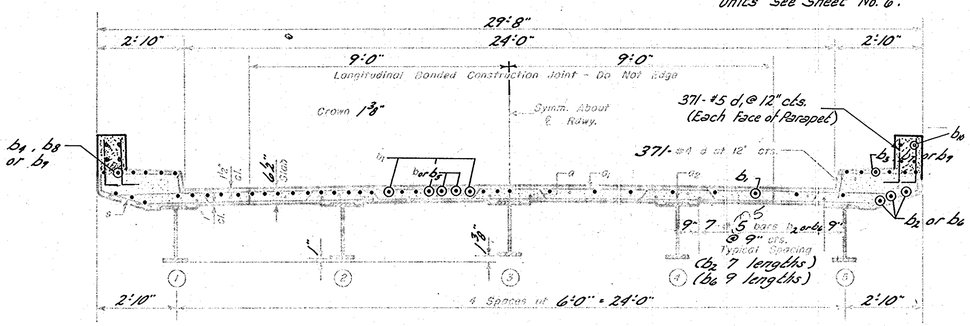
Bar	No.	Size	Length	Type
a	133	#5	29'-8"	—
a1	132	#5	28'-0"	—
a2	132	#5	27'-6"	—
a3	4	#5	23'-8"	—
b	68	#6	15'-6"	—
b1	90	#5	32'-0"	—
b2	238	#5	23'-6"	—
b3	72	#4	21'-6"	—
b4	24	#4	7'-8"	—
b10	152	#5	7'-9"	L
X	48	#5	5'-3"	L
s	78	#4	4'-11"	L
d	310	#4	1'-1"	L
d1	620	#5	3'-2"	L
Class X Concrete			Cu. Yd.	134.4
Reinforcement Bars			Lbs.	27,460
Structural Steel			Lbs.	106,320



METHOD OF DETERMINING FILLET HEIGHT "Y"

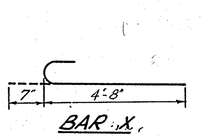
After all Structural Steel has been erected elevations of the top flanges of the beams shall be taken at intervals not to exceed 10 Ft. From these elevations subtract the increment of deflections for these points, determined from the D.L. Deflection Diagram. The elevations so attained subtracted from the theoretical grade elevations, minus slab thickness, equals the fillet heights above top of beam.

DESIGNED	S. Engr.	APPROVED	APRIL 13 1960
CHECKED	Consultant	APPROVED	V.M. Romine
DRAWN	S.E. Plawler W.A. Sorensen	APPROVED	E.B. Schmidt
CHECKED	Consultant	APPROVED	R.K. Bartelmeyer



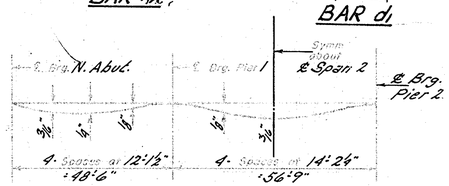
OVER PIERS — CROSS SECTION — TYPICAL
Unit 1 of 2

Note: For parapet details See Sheet No. 3.
For length & spacing of parapet units See Sheet No. 6.



BAR x

BAR d1



DEAD LOAD DEFLECTION DIAGRAM
Unit - 1

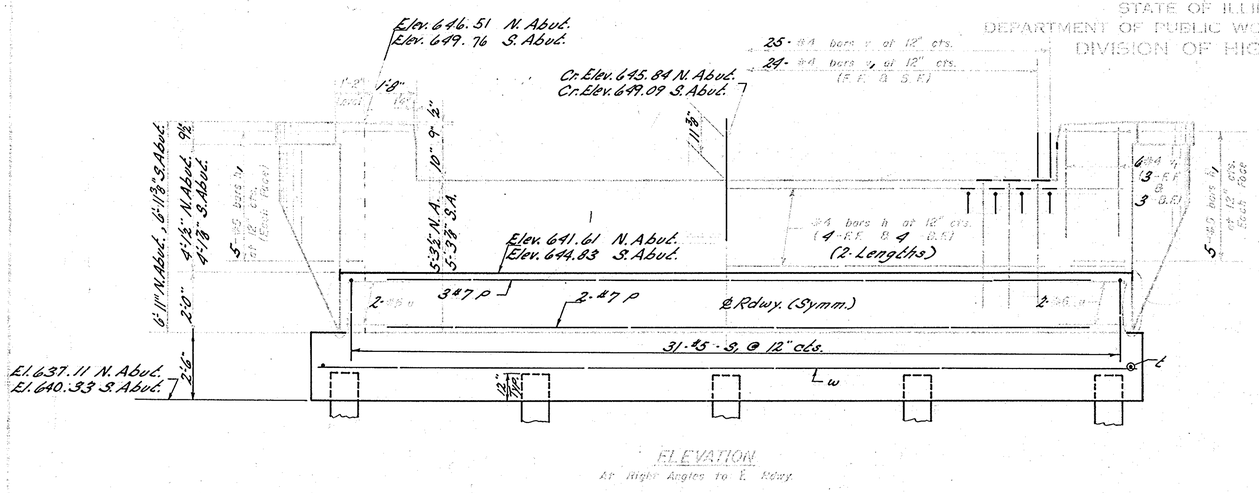
DESIGN STRESSES
fs 18000 psi Structural Steel
fs 20000 psi Reinforcement
fc 1400 psi Concrete in Flexure
fc 1400 psi Substructure
n = 10

SUPERSTRUCTURE
UNIT 1 - SPANS 1, 2 & 3
TR 40 OVER
COAL CREEK ℄ F.A.I. 80
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159 + 39.88

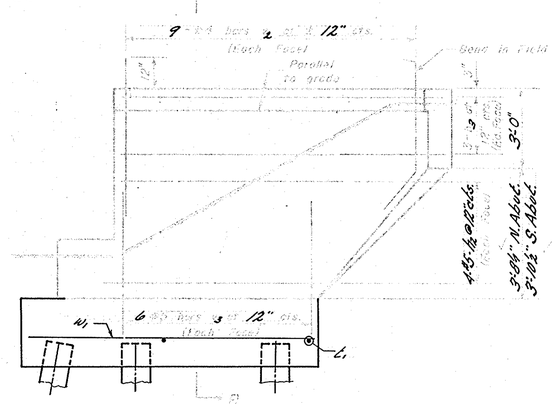
Revised 12/1/62 - In PLAN and CURB DETAIL changed drains from 4"x8" (½"ø) to 4"x12" (⅝"ø). In BAR X detail changed length of 2'-11" to 4'-8" and in BILL OF MATERIAL changed length X bar from 3'-6" to 5'-3". In METHOD OF DETERMINING FILLET HEIGHT "Y" removed the ℄ Chamfer along edges of Flange. In B.O.M. changed distributing steel from #4 to #5 in BILL OF MATERIAL changed b2 bars from 56 x 23'-6" to 238 - #5 23'-6" and Weight of Reinforcement Bars from 25,320# to 27,460 # lbs.

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

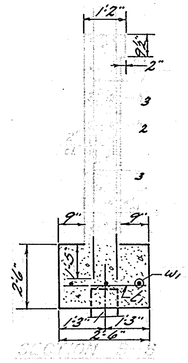
F.A.I. 80 06-1HB-1 BUREAU 105 228 13



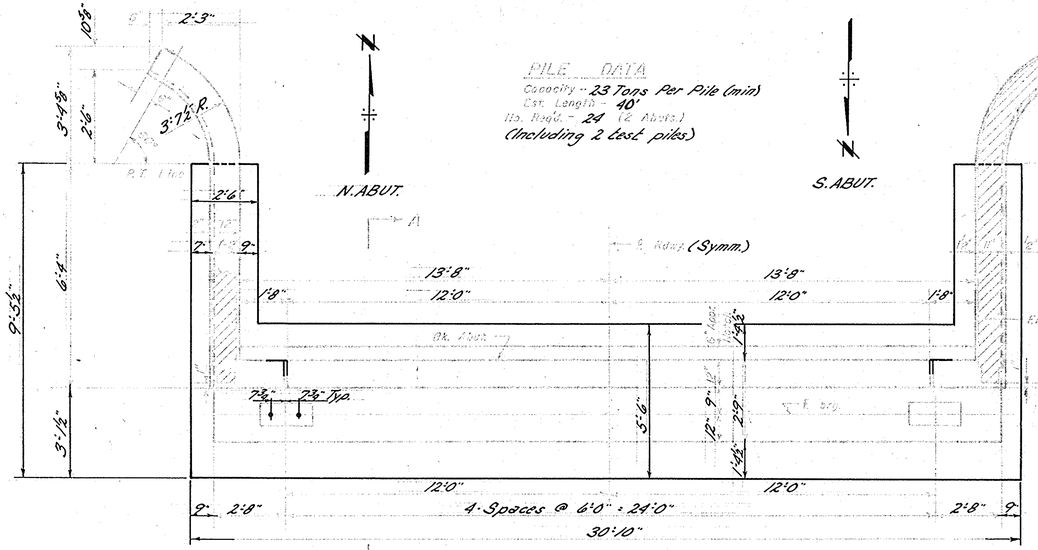
ELEVATION
At Right Angles to ℄ Rdwy.



SIDE ELEVATION

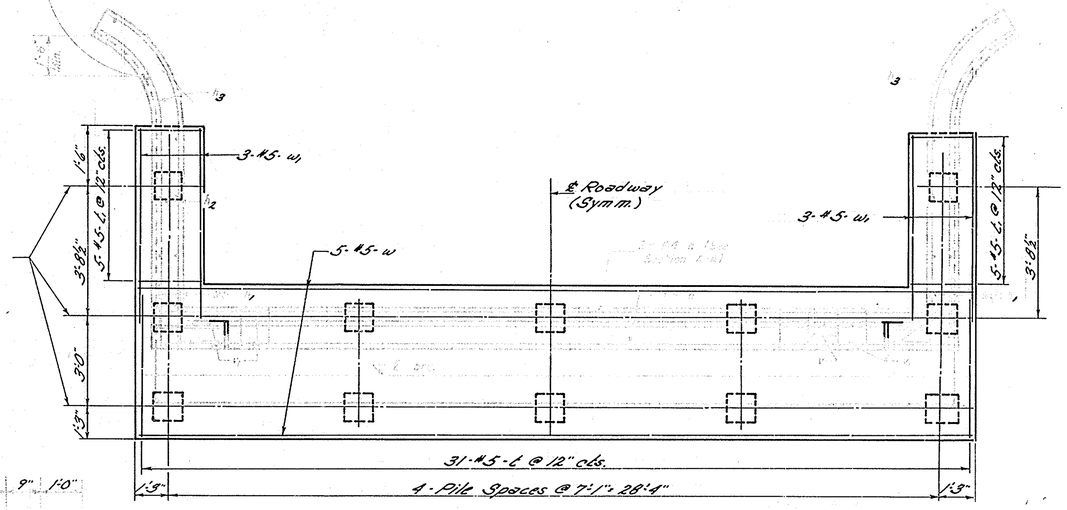


SECTION B-B

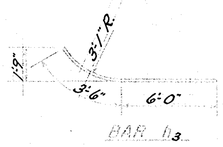


PLAN OF ABUTMENT
Dimensions

PILE DATA
Capacity - 23 Tons Per Pile (min)
Est. Length - 40'
Rls. Reqd. - 24 (12 Abuts.)
(Including 2 test piles)



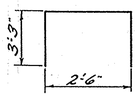
PLAN OF ABUTMENT
Reinforcement & Pile Spacing



BAR b3

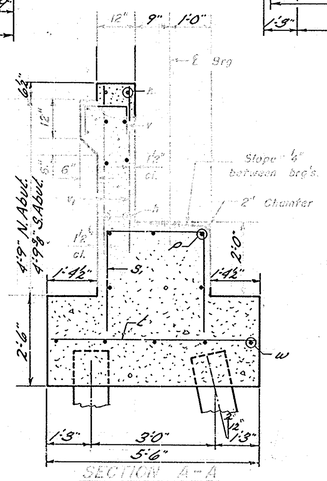
BAR b1

BAR b



BAR S1

BAR u



SECTION A-A

BILL OF REINFORCEMENT

Bar	No.	Size	Length	Shape	Bar	No.	Size	Length	Shape
b	40	#4	15'-0"		U	8	#6	8'-5"	
b1	40	#4	2'-3"						
b2	32	#5	6'-3"						
b3	24	#5	12'-3"						
						50			
P	10	#7	29'-0"		V1	120		4'-0"	
					V2	72	#4	5'-0"	
S1	62	#5	9'-0"		V3	48	#5	5'-5"	
					w	10	#5	30'-6"	
L	62	#5	5'-2"		w1	12	#5	5'-0"	
L1	20	#5	2'-3"						

NO. 4 SO. ABUTMENTS
BILL OF MATERIAL

Item		
Class X Concrete	Cu. Yds.	66.8
Reinforcement Steel	Lbs.	4,230
Concrete Piles	Lin. Ft.	880
Test Piles (Concrete)	Each	2

Note: Bill of Material includes reinforcement & Class X Concrete for end posts.

S. Enger
Architect-Engr.
S.E. P. Lawler
Supervising Architect
Chief Clerk

APRIL 13 60
V. M. Romine
Engineer of Bridges & Grade Separation
Chief Engineer
Asst. Director

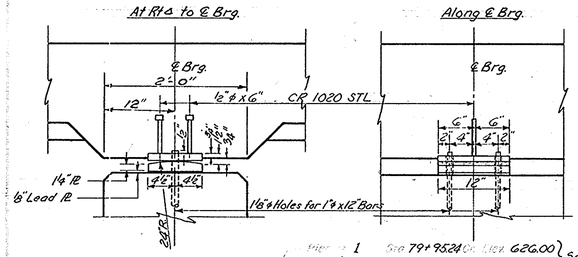
NO. 4 SO. ABUTMENTS
TR 40 OVER
COAL CREEK & F.A.I. 80
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159 + 39.88

A-5 Dwng. 1-21-58 Rev. 9-23-59

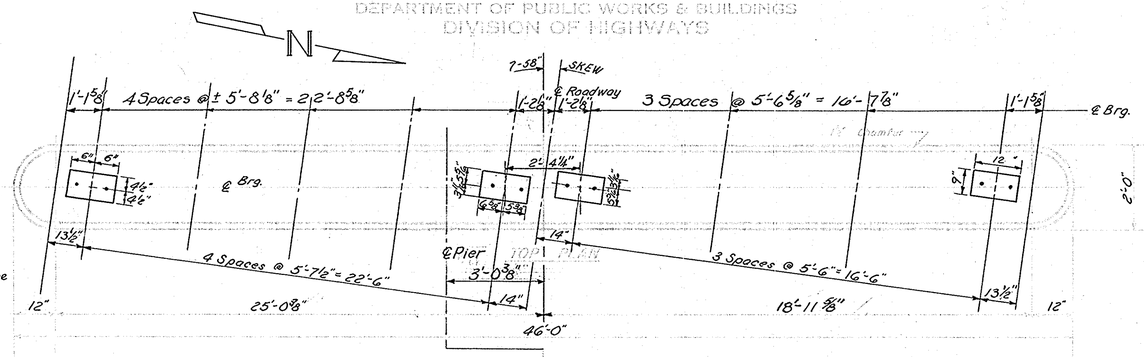
I. 80 06-18-1	Bureau	17	9	7

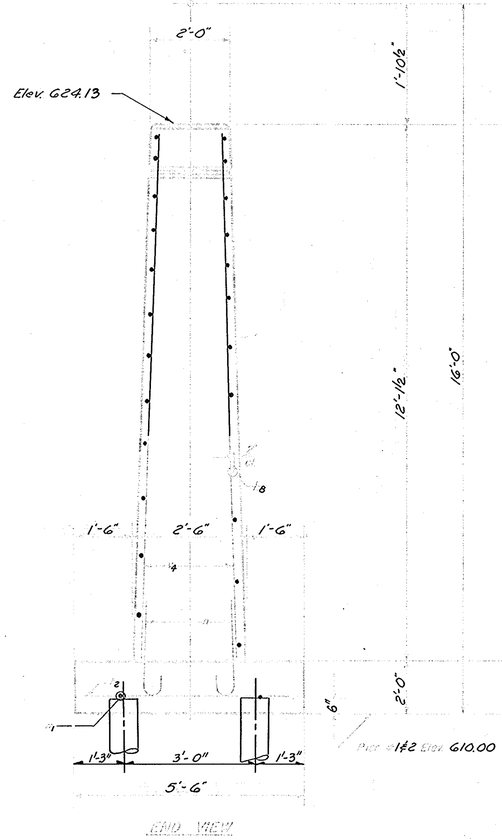
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

DETAILS OF BEARINGS AT PIERS

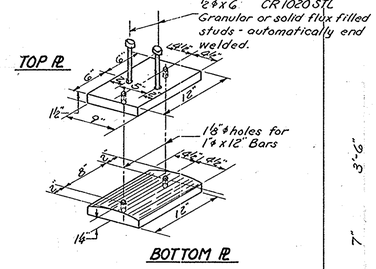


Pier # 1 Sta 79+95.24 Cr. Elev. 626.00
Pier # 2 Sta 80+22.07 Cr. Elev. 626.00
} So. Bridge





END VIEW



h_6	10"	1'-11"
h_7	1'-1"	2'-3"

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

S 1 & 2

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

Mark	No.	Size	Length	
h_6	48	#5	2'-9"	
h_7	48	#5	3'-4"	⌒
h_8	96	#5	22'-6"	—
	192	#5	4'-1"	
2	98	#5	5'-3"	
4	192	#5	11'-9"	
1	8	#5	24'-9"	
Class A Concrete			Cu. Yd.	134.3
Reinforcement Bars			Lb.	6,470
* Structural Steel			Lb.	1,760

Untreated Piles (North Bridge)	Lin. Ft.	1,175
Test Pile (Timber)	each	1

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

DESIGNED	L.D.Winn
CHECKED	Emery J. Sticken / L.D.W. / H. Armstrong
DRAWN	F.S.

JAN. 15 1960
W. M. Rominie
E. E. Ernst
R. K. Bartelsmeyer

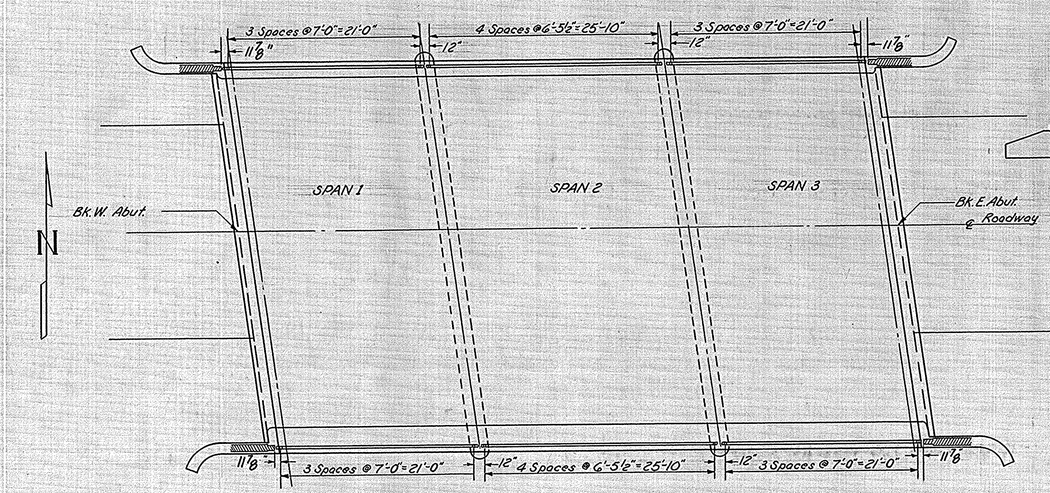
Rev. 6/12/62 Studs Modernized R.A.B.

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

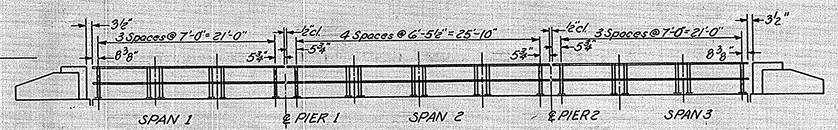
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	06-1B-1	Bureau	17	10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 5
7 SHEETS

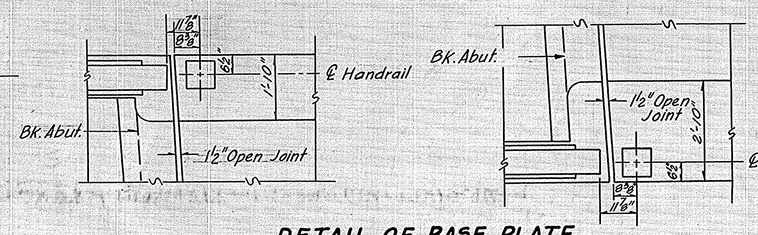


PLAN
(SOUTH BRIDGE)

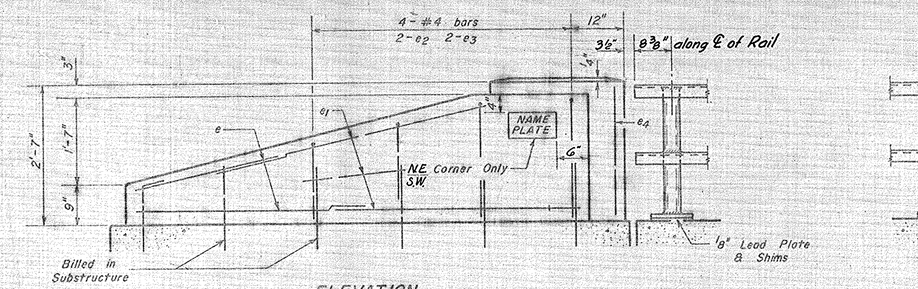


ELEVATION

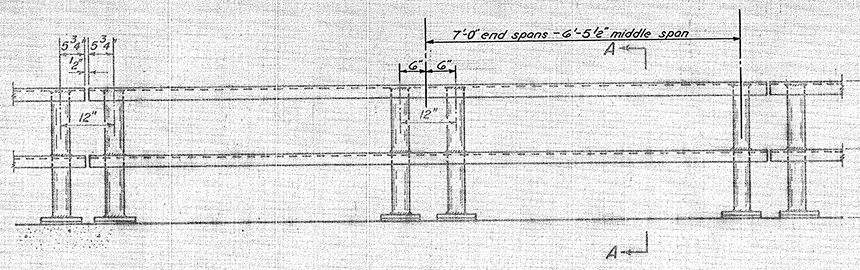
NOTE:
For details of Connection for Bent Plate Rail Panels See Sheet No 5-A



DETAIL OF BASE PLATE
FOR END POST OF HANDRAIL



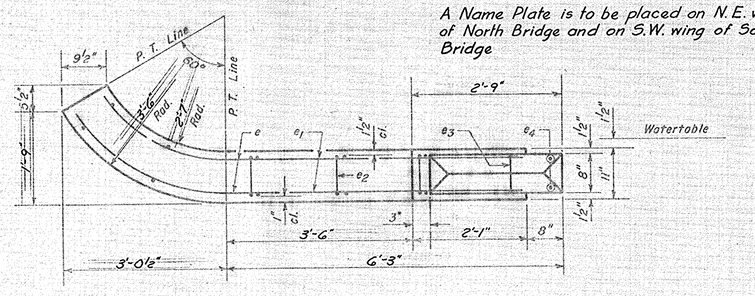
ELEVATION



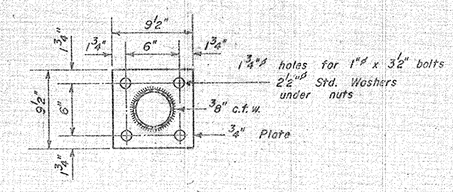
ELEVATION TYPICAL PANEL

SECTION A-A

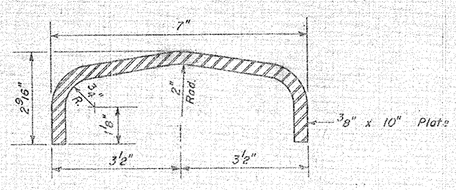
A Name Plate is to be placed on N.E. wing of North Bridge and on S.W. wing of South Bridge



PLAN - END POST



BASE PLATE
ALL POSTS - SUPERSTRUCTURE



DETAIL OF RAIL

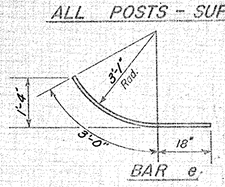
(One Bridge)
BILL OF MATERIAL

Handrail Concrete	Cu. Yd.	2.3
Reinforcement Bars	Lbs.	190
Metal Handrail	Lin. Ft.	143

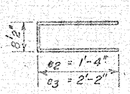
GENERAL NOTES

All End Posts shall be Handrail Concrete.

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



BAR e



BAR e2 or e3

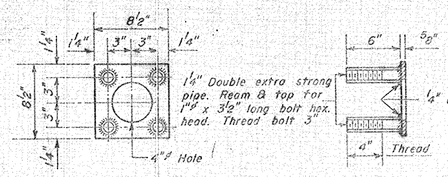
(One Bridge)
BILL OF REINFORCEMENT

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	2'-3"	

DESIGNED	L.D. Winn
CHECKED	Emery J. Sticker
DRAWN	Gabor Papp L.D.W. W.A. Sousaman
CHECKED	E.S.

EXAMINED JAN. 15 1960
PASSED
APPROVED

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



1½" Double extra strong pipe. Ream & tap for 1"ø x 3½" long bolt hex. head. Thread bolt 3"

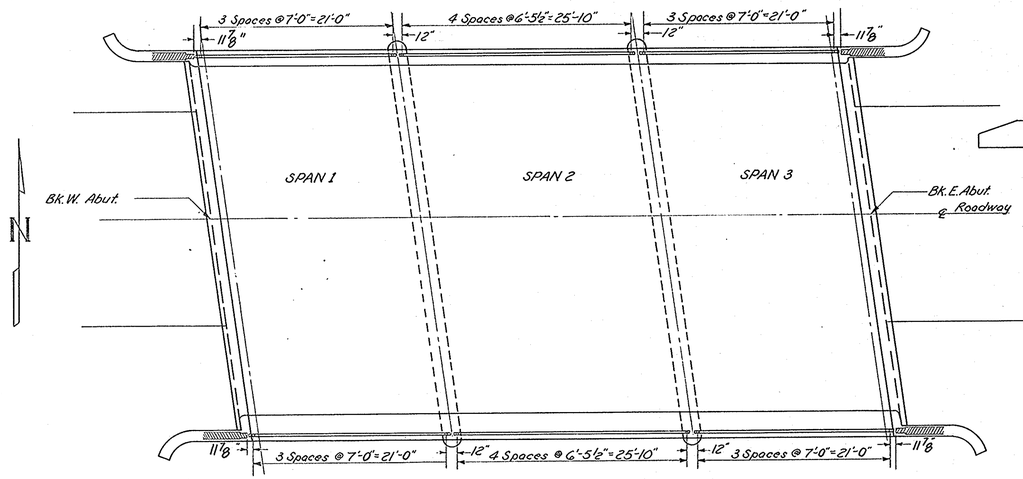
ANCHOR DEVICE
At Single Post

ANCHOR DEVICE
At Double Post

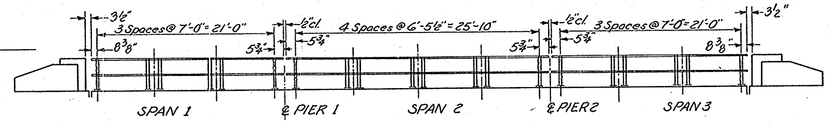
METAL HANDRAIL
FAI. RT. 80 SEC. 06-1 B-1
BUREAU COUNTY
STA. 80+02.50

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

Z. 80 05-18-1	Bureau	17	10	7	5

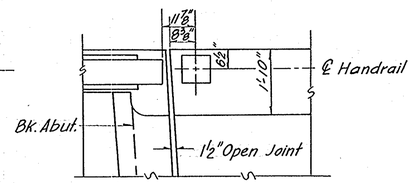


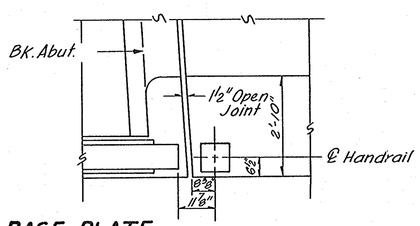
PLAN
(SOUTH BRIDGE)



ELEVATION

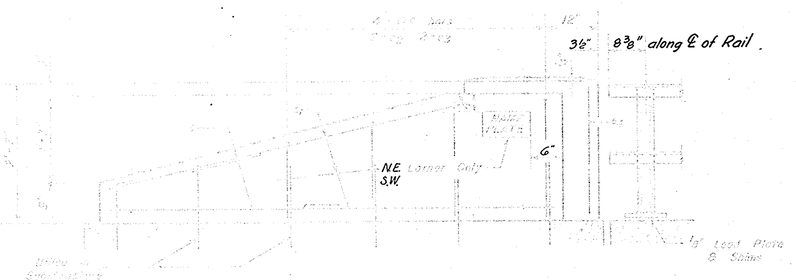
NOTE:
For details of Connection for Bent Plate Rail Panels See Sheet Nº 5-A



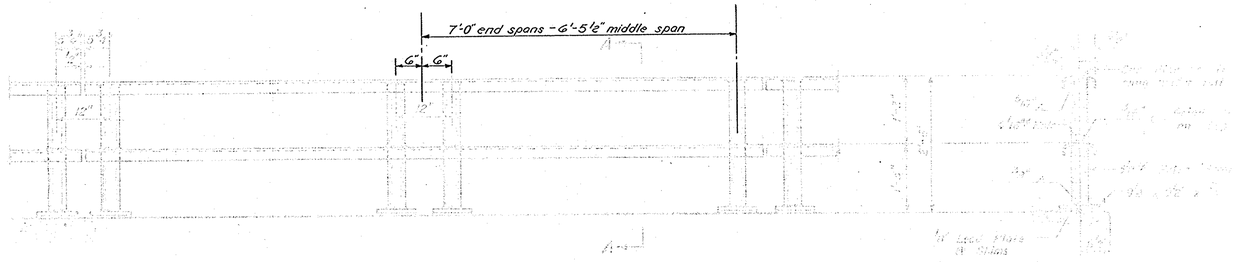


DETAIL OF BASE PLATE
FOR END POST OF HANDRAIL

3½" 8⅜" along ℄ of Rail.



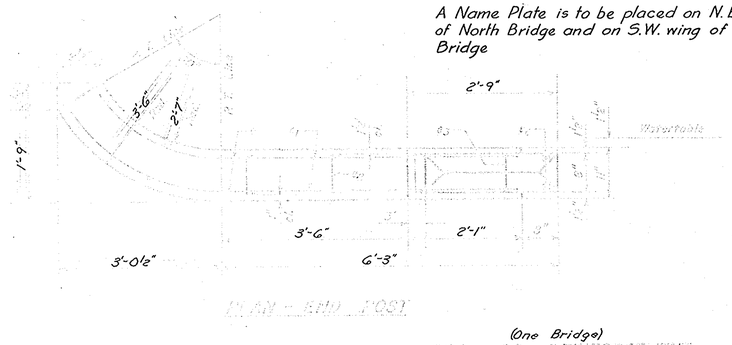
ELEVATION



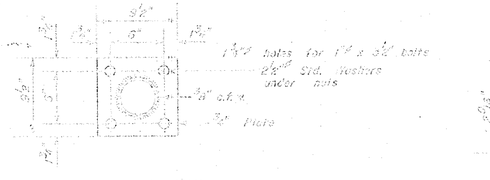
ELEVATION TYPICAL PANEL

SECTION

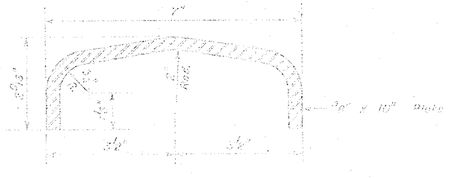
A Name Plate is to be placed on N.E. wing of North Bridge and on S.W. wing of South Bridge



PLAN - END POST



BASE PLATE
ALL POSTS - SUPERSTRUCTURE

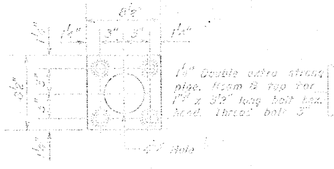


DETAIL OF RAIL

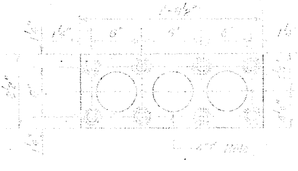
(One Bridge)

Bar	No.	Size	Length	Shape
1	15	⅝	4'-6"	
2	24	⅝	5'-6"	
3	6	#4	3'-5"	
4	8	#4	3'-0"	
5	2	#4	2'-3"	

HAND RAIL REINFORCEMENT



ANCHOR DEVICE
At Single Post



ANCHOR DEVICE
At Double Post

(One Bridge)

Standard Panels	23
Panels with Bent Plate Rail	190
Metal Handrail	143

SUMMARY OF QUANTITIES
For This Sheet Only

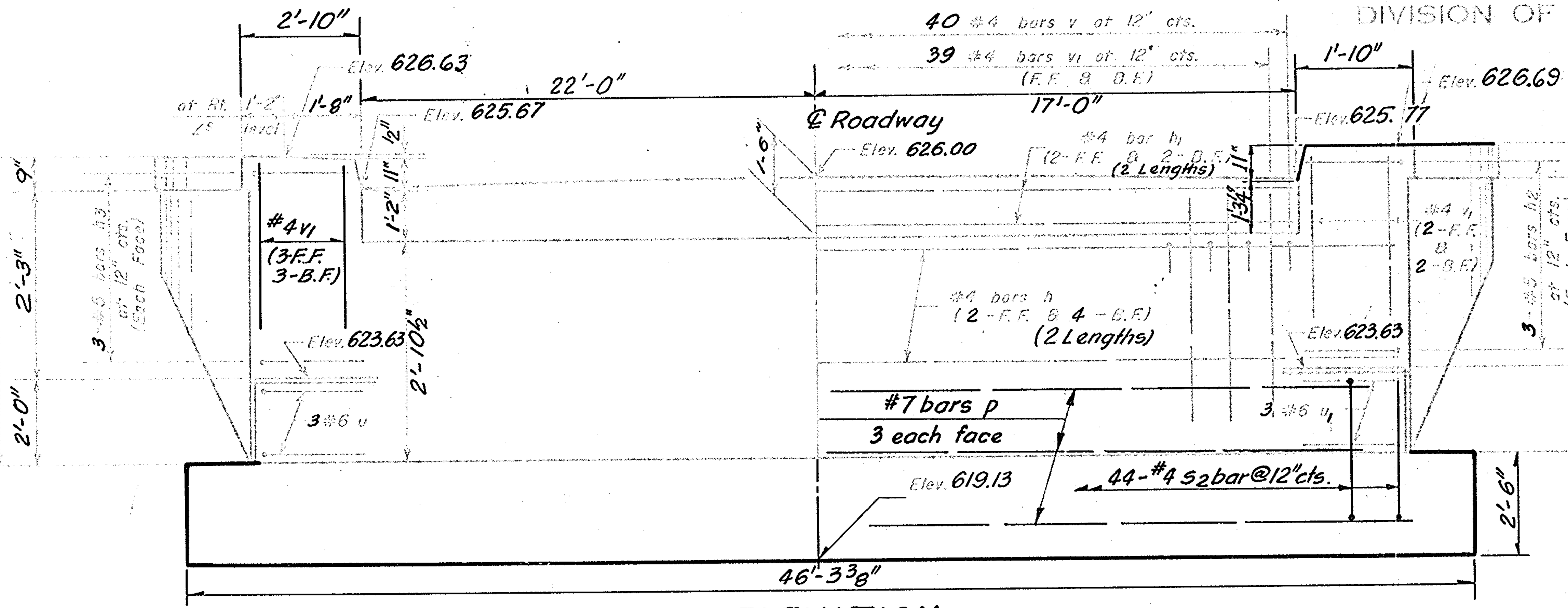
L. D. Winn
Emery J. Sticker
Gabor Papp L.D.W.
E S.

JAN. 15 60

METAL HANDRAIL
FAI. 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. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
80	06-1B-1	Bureau	17	8	SHEET NO. 3 — 7 SHEETS

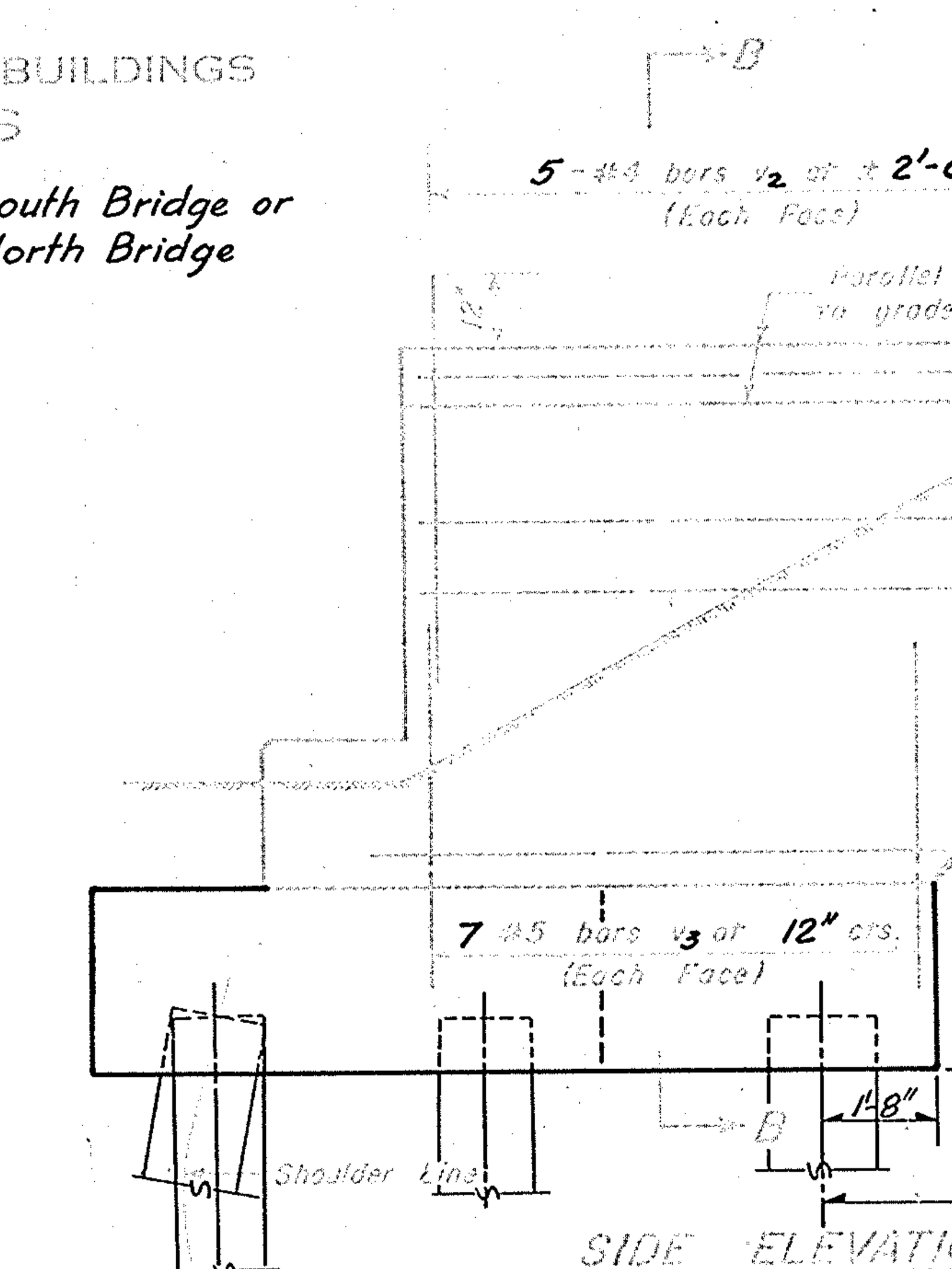


ELEVATION

At Right Angles to ℄ Rdwy.

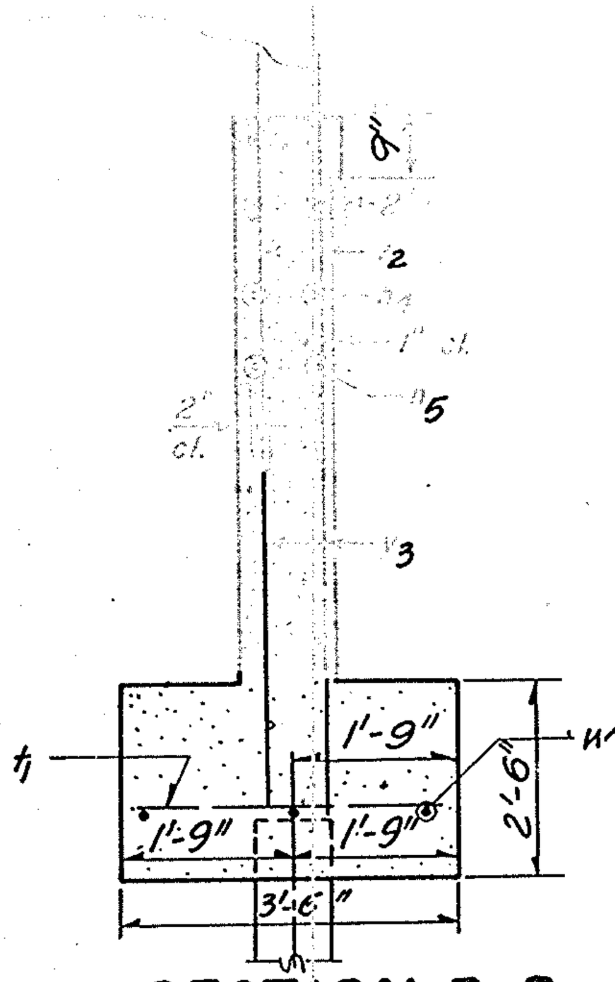
CONCRETE PILE DATA

Capacity - 25 tons
Est. Length - 25 ft. So. Bridge; 35 ft. No. Bridge
No. Req'd. - 26 (2 Abuts.)
(Including one Concrete Test Pile for North Bridge Abutment.)



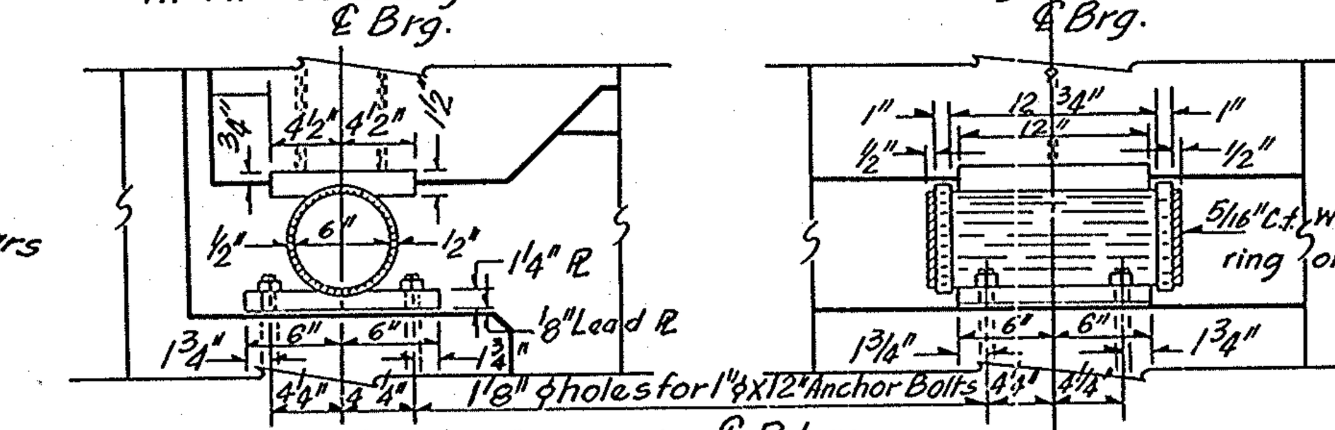
SIDE ELEVATION

Note: If it is elected to turn roller from solid, the ½" end projections may be omitted.

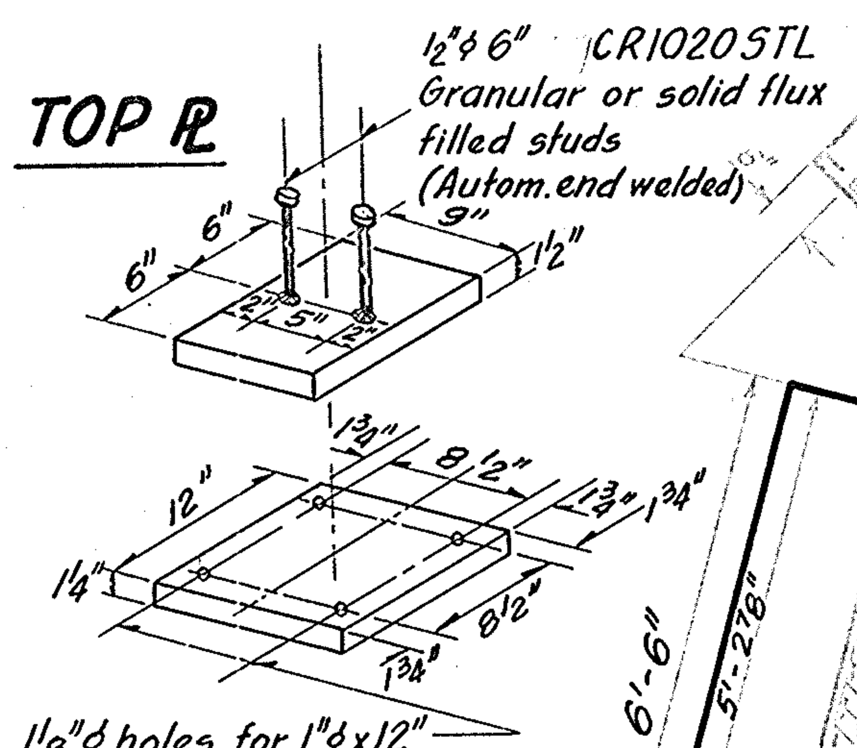


SECTION B-B

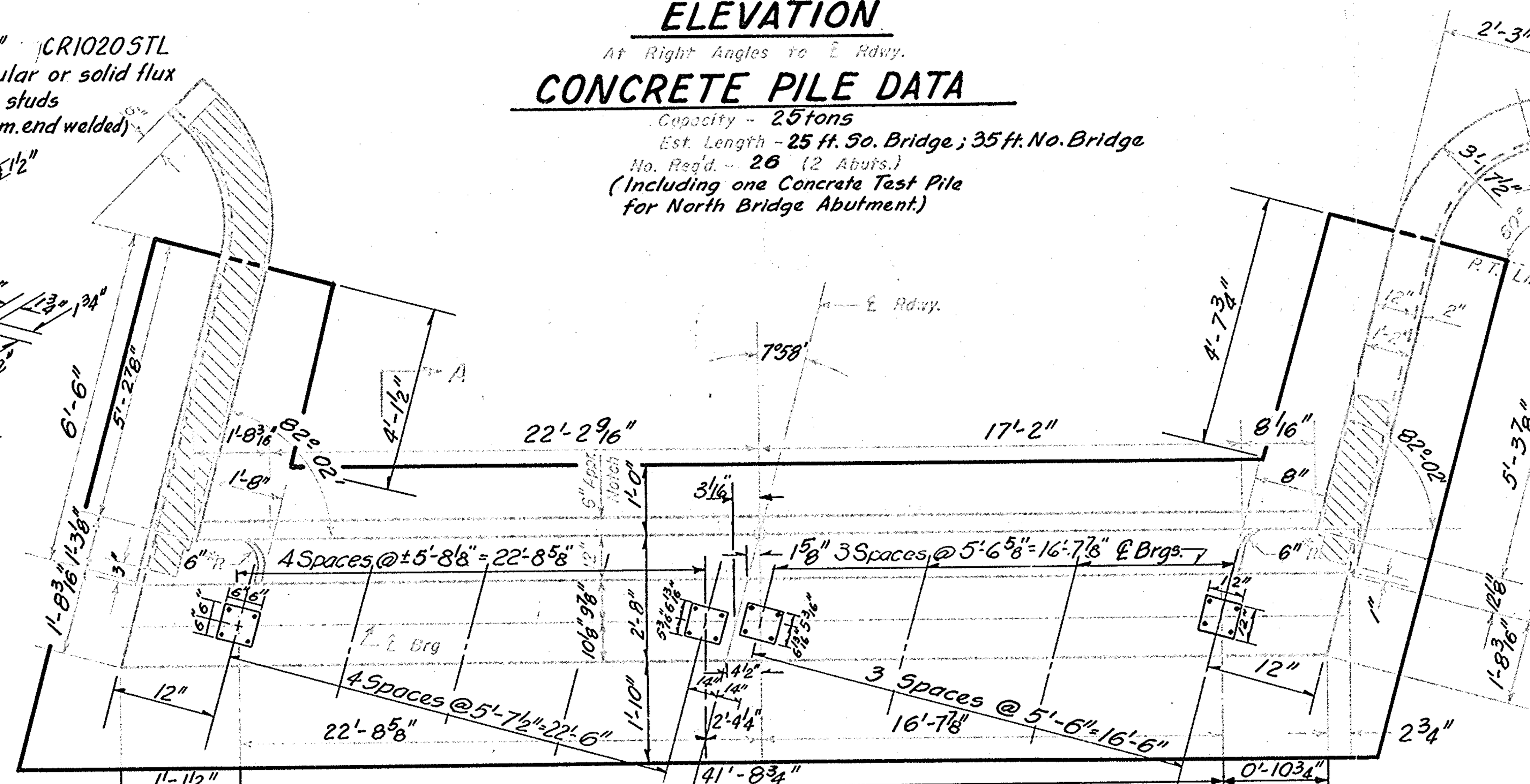
DETAIL OF BEARINGS AT ABUTS.



TOP PL



BOTTOM PL



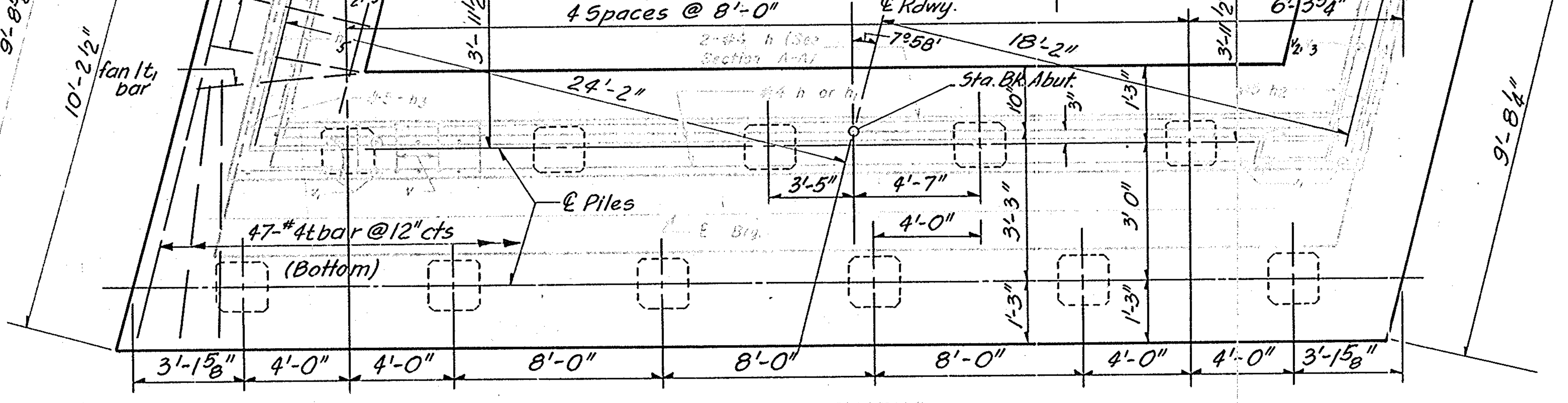
* Note: Contractor shall construct curb without radius when a curb & gutter are to be used on bridge approaches (See Road Plans).

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.

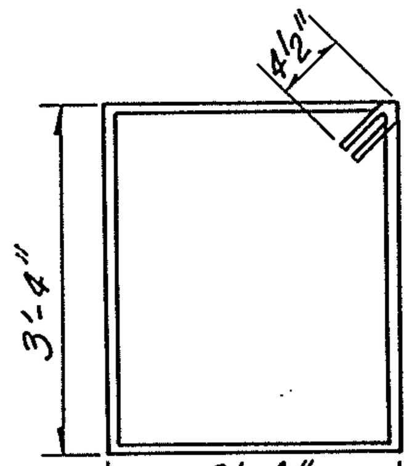
∠-4"x4"x½"x39'-3" long with ¾"ϕ x 8" CR1020STL Granular or solid flux filled Studs - automatically end welded (alternate 1'-0" cts.)



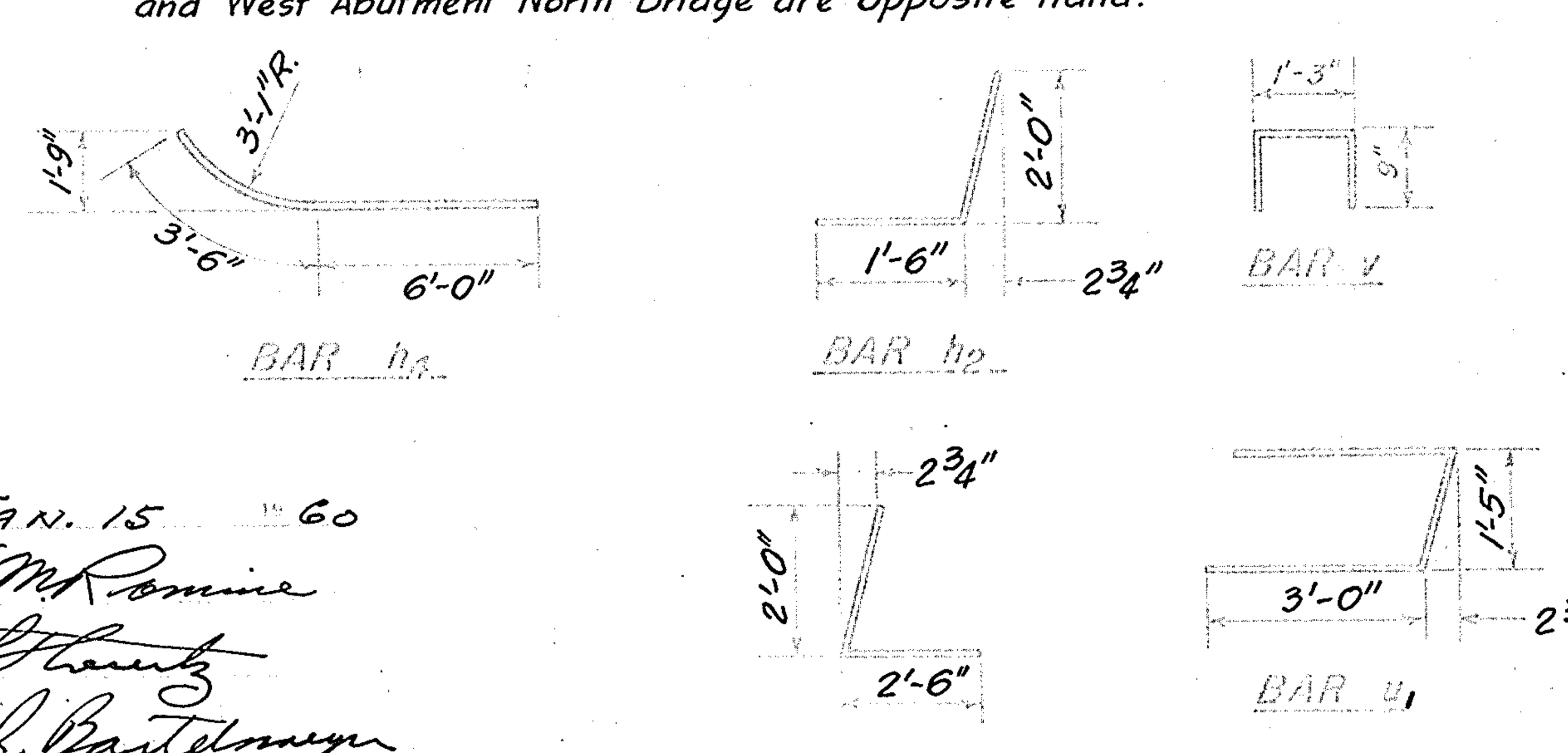
PLAN OF ABUTMENT

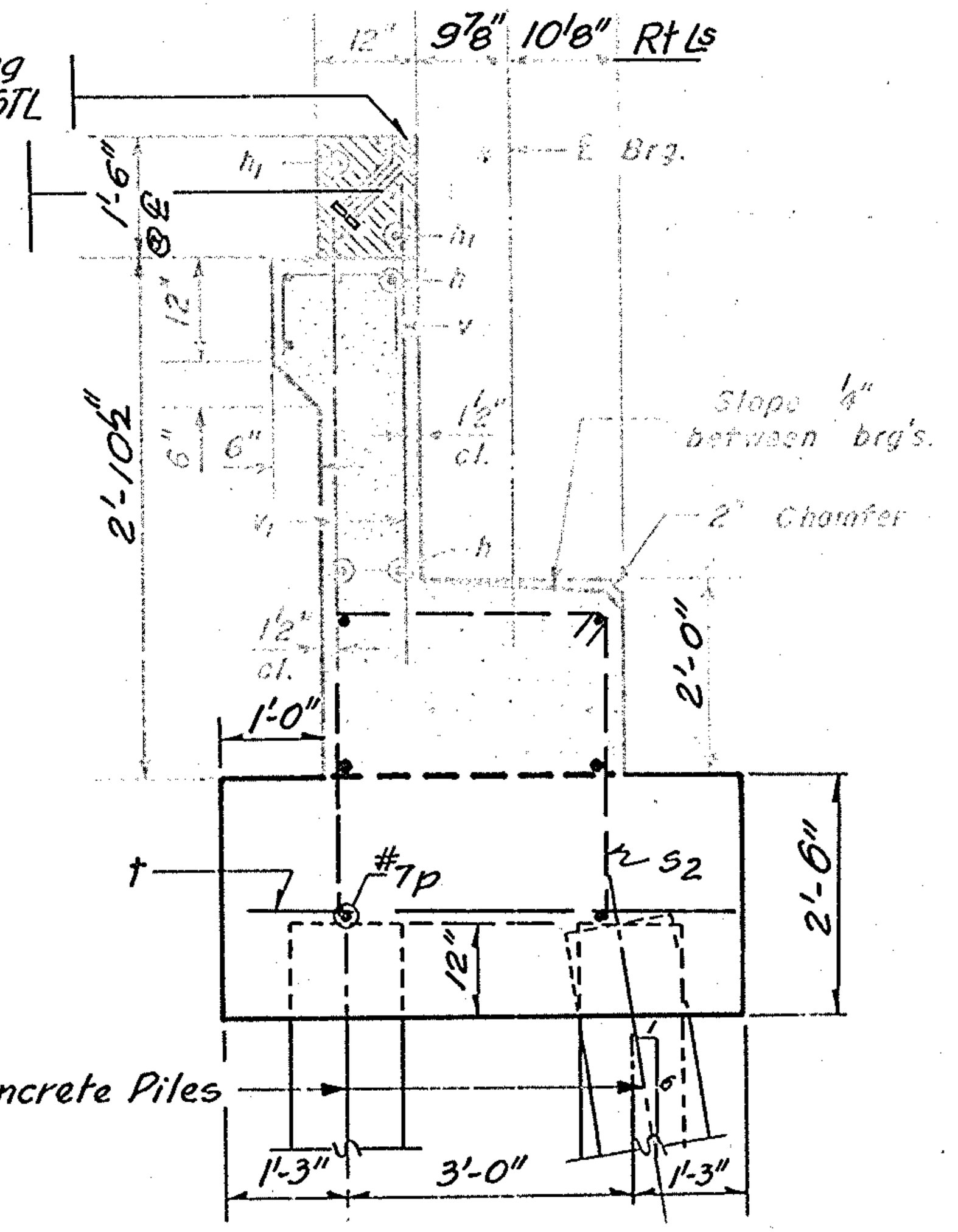
Reinforcement & Pile Spacing

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



BAR s2





SECTION A-A

(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"	—
h1	8	#4	20'-0"	—	t1	12	#4	3'-3"	—
h2	6	#5	3'-6"	⅃					
h3	6	#5	4'-6"	L	u1	6	#6	7'-5"	⊔
h4	12	#5	9'-6"						
h5	8	#5	6'-3"	—	v	40	#4	2'-9"	⊓
					v1	88	#4	4'-0"	—
p	12	#7	22'-8"	—	v2	20	#4	4'-6"	—
					v3	28	#5	3'-0"	—
s2	44	#4	12'-1"	□					
					w	6	#4	6'-0"	—

** 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.

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

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

Designed L. D. Winn
Checked Emery J. Stuckan
Gabor Papp L.D.W.
Drawn W. A. Sauseman
Checked E. S.

JAN. 15 1960

V. M. Romine
E. J. Lantz
R. R. Bartelsmeyer

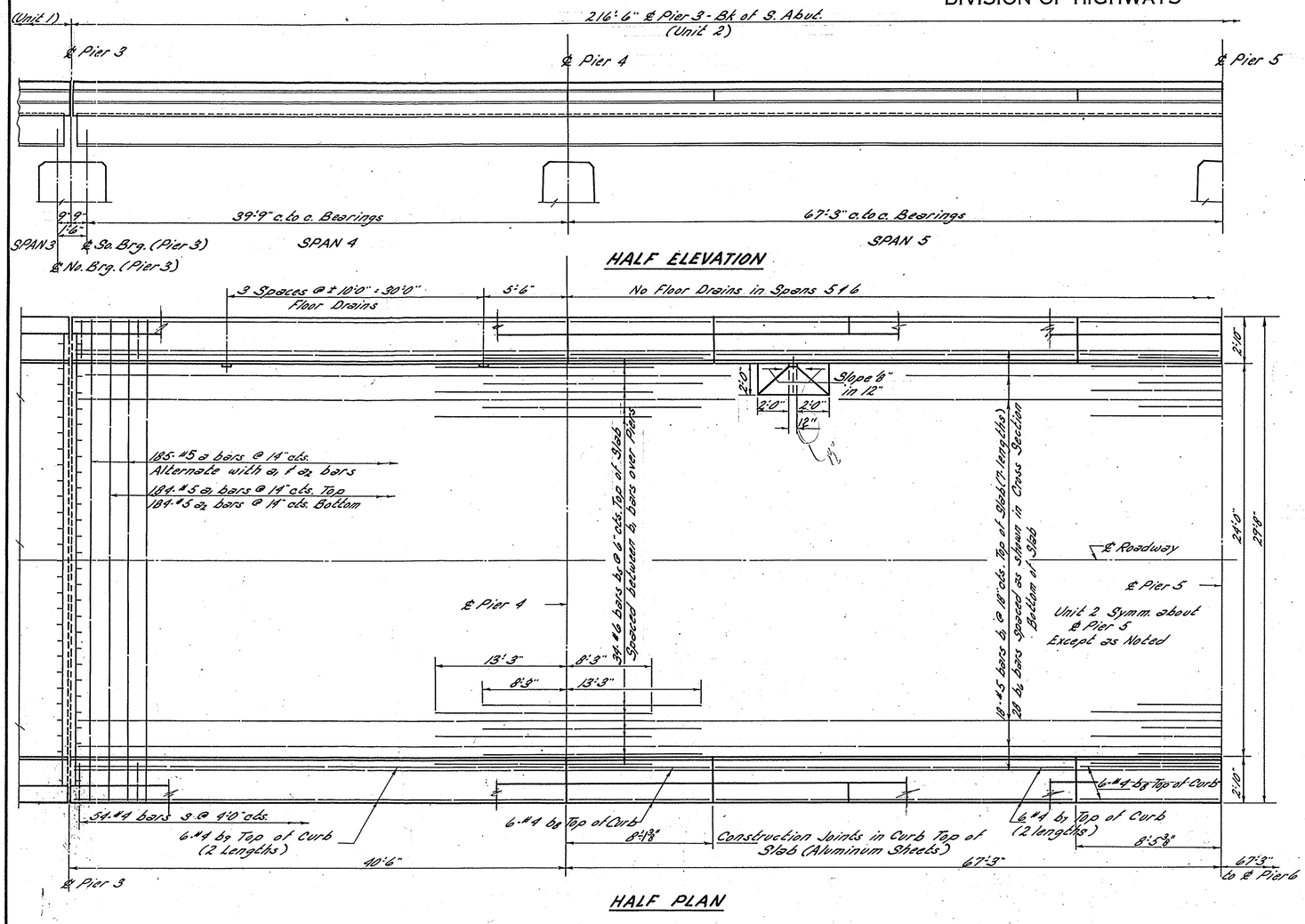
A-3-R Drawn 5-26-58 Rev. 9-26-58

Rev. 6/12/62 R.A.Z. Studs modernized.

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	06-1HB-1	BUREAU	105	23
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

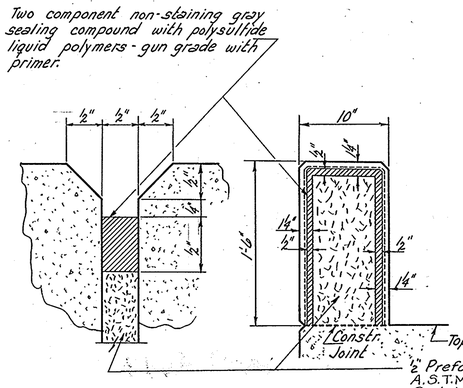
SHEET NO. 3
13 SHEETS



HALF ELEVATION

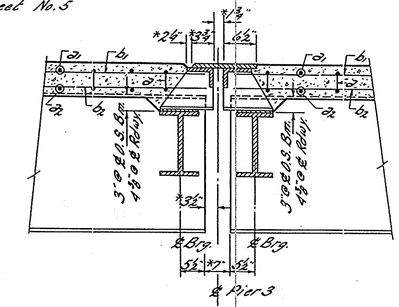
HALF PLAN

Note: For Length & Spacing of parapet unit see Sheet No. 6



DETAIL OF JOINT IN PARAPET

*At 50°F Temp
For Exp. Guard See Sheet No. 5



SECTION A-A

Note: See Sheet No. 2 for Cross Section of slab, Section thru So. Abut, fillet heights, curb & bar details.

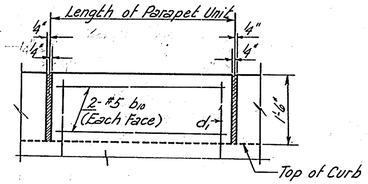
TOP OF SLAB ELEVATIONS (UNIT 2)

Sta	@ ℄ Beams. 1 & 5	2 & 4	3
18+92.25	649.00	649.08	649.11
18+93.00	649.00	649.08	649.12
19+03.00	649.12	649.20	649.23
19+13.00	649.22	649.30	649.33
19+23.00	649.31	649.40	649.43
19+32.75	649.40	649.48	649.51
19+42.75	649.46	649.55	649.58
19+52.75	649.52	649.60	649.63
19+62.75	649.57	649.65	649.68
19+72.75	649.60	649.69	649.72
19+82.75	649.63	649.71	649.74
19+92.75	649.64	649.73	649.76
20+00.00	649.65	649.73	649.76
20+10.00	649.64	649.72	649.75

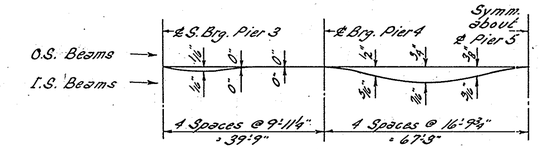
Sta	@ ℄ Beam 1 & 5	2 & 4	3
20+20.00	649.62	649.71	649.74
20+30.00	649.60	649.68	649.71
20+40.00	649.56	649.64	649.67
20+50.00	649.51	649.59	649.62
20+60.00	649.44	649.53	649.56
20+67.25	649.39	649.48	649.51
20+77.25	649.31	649.39	649.42
20+87.25	649.22	649.30	649.33
20+97.25	649.11	649.20	649.23
21+07.00	649.00	649.08	649.12
21+08.25	648.98	649.06	649.09

SUPERSTRUCTURE UNIT 2 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	185	#5	29'-8"	
a1	184	#5	28'-8"	
a2	184	#5	27'-6"	
a3	4	#5	23'-8"	
b1	126	#5	32'-0"	
b3	102	#6	21'-6"	
b4	306	#5	25'-6"	
b5	48	#4	25'-9"	
b6	48	#4	7'-9"	
b7	48	#4	20'-9"	
b10	208	#5	7'-9"	
s	108	#4	4'-11"	
d	432	#4	1'-1"	
d1	864	#5	3'-2"	
x	48	#5	3'-6"	
Class X Concrete			Cu. Yds.	185.6
Reinforcement Bars			Lbs.	39,160
Structural Steel			Lbs.	150,930



℄ ELEVATION
Typical Parapet Unit



DEAD LOAD DEFLECTION DIAGRAM
Unit 2

DESIGNED	S. Engor	APRIL 13 1960	
CHECKED	Carl Eckhardt	EXAMINED	V. M. Romine, ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
DRAWN	S. E. P. Lawler	PASSED	E. Hummel, ENGINEER OF DESIGN
CHECKED	Carl Eckhardt	APPROVED	R. R. Bartelsmeyer, CHIEF HIGHWAY ENGINEER

DESIGN STRESSES

f_s = 18,000 p.s.i. Structural Steel
f_s = 20,000 p.s.i. Reinforcement
f_c = 1,400 p.s.i. Superstructure
f_c = 1,400 p.s.i. Substructure
n = 10

SUPERSTRUCTURE UNIT 2 - SPANS 4, 5, & 6 OF TR. 40 OVER COAL CREEK & F.A.I. 80

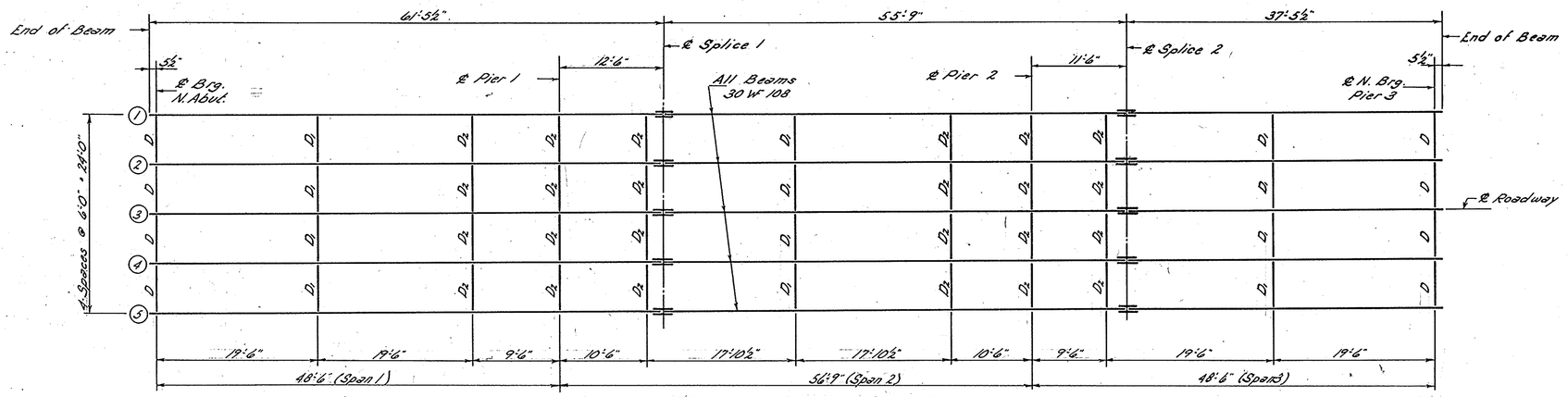
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159 + 39.88

Revised 12/17/62: In HALF PLAN changed dmins. from 4"x8" to 4"x18", In DETAIL OF JOINT IN PARAPET changed filler material from ½" Sponge Rubber Pad to ½" Preformed Cork Asphalt Joint Filler. In ℄ ELEVATION changed dmins. from 4"x8" to 4"x18", In DETAIL OF JOINT IN PARAPET changed filler material from ½" Sponge Rubber Pad to ½" Preformed Cork Asphalt Joint Filler.
11/9/62: Changed distribution steel from #6 to #5, In BILL OF MATERIAL changed b6 Bars from "4 x 25'-6" to "5 x 15'-6" and Reinforcement Bars from 36,820 to 39,350# n.s.

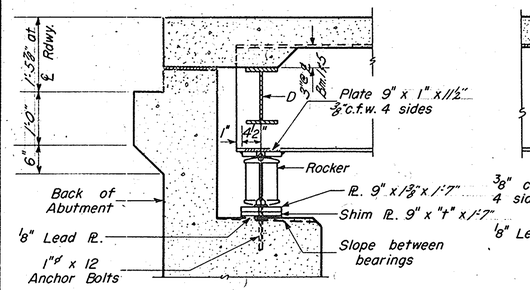
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. F. A. R. 80	06-1148-1	BUREAU	105	84
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

SHEET NO. 4
13 SHEETS

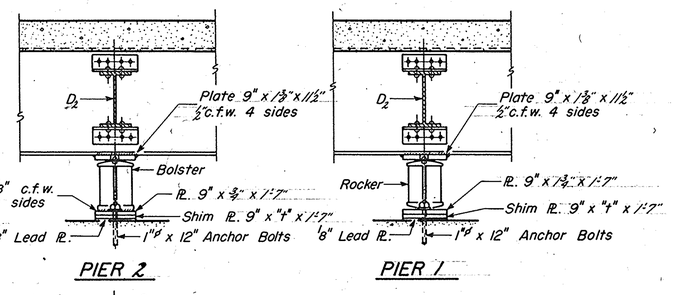
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



STRUCTURAL STEEL LAYOUT
(Unit 1)

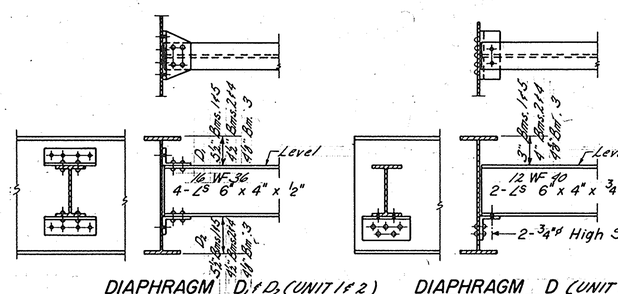


SECTION AT N. ABUTMENT
So. Abut. similar except opposite hand.



PIER 2

PIER 1



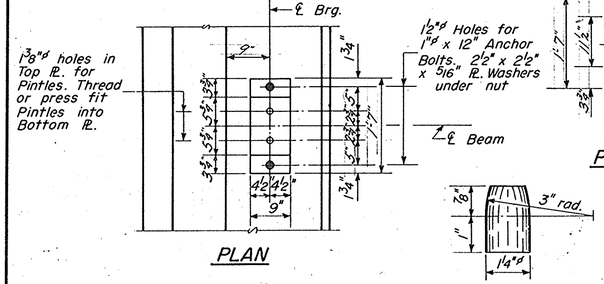
DIAPHRAGM D, & D2 (UNIT 1 & 2)
80 Required
Unit 1 { 12 D, 24 D2 } Unit 2 { 16 D, 28 D2 }

DIAPHRAGM D (UNIT 1 & 2)
16 Required
8 (Unit 1) 8 (Unit 2)

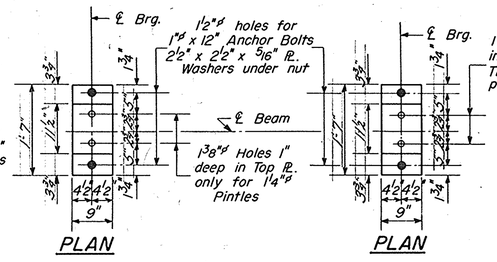
ELEVATION TOP OF BEAMS

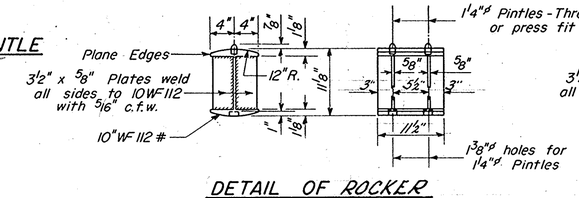
Location	Beams 1 & 5	Beams 2 & 4	Beams 3
℄ Brg. N. Abut.	645.24	645.32	645.35
℄ Pier 1	646.45	646.54	646.57
℄ Splice 1	646.77	646.85	646.88
℄ Pier 2	647.63	647.71	647.75
℄ Splice 2	647.86	647.94	647.97
℄ N. Brg. Pier 3	648.44	648.52	648.56

Note: For sliding plate Expansion Guard & section at Pier 3 see Sheet No. 5.

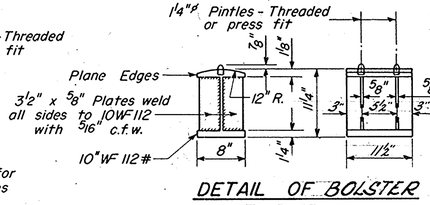


DETAIL OF PINTLE

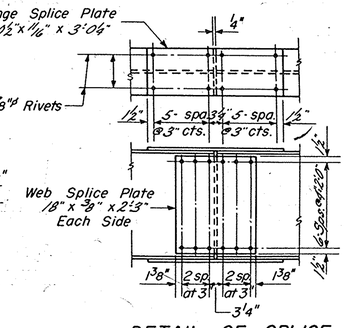




DETAIL OF ROCKER AT PIER 1, 3 & ABUTS.



DETAIL OF BOLSTER AT PIER 2



DETAIL OF SPLICE

TABLE OF "t" DIMENSIONS

Beam	N. Abut.	Piers 1	Piers 2	Piers 3 (N. Brg.)
1 & 5	0"	0"	0"	0"
2 & 4	1"	1"	1"	1"
3	1⅜"	1⅜"	1⅜"	1⅜"

STRUCTURAL STEEL
UNIT 1 - SPANS 1, 2 & 3
TR 40 OVER
COAL CREEK & F.A.I. 80
F.A.I. RT. 80 SEC. 06-1148-1
BUREAU COUNTY
STA. 159 + 39.88

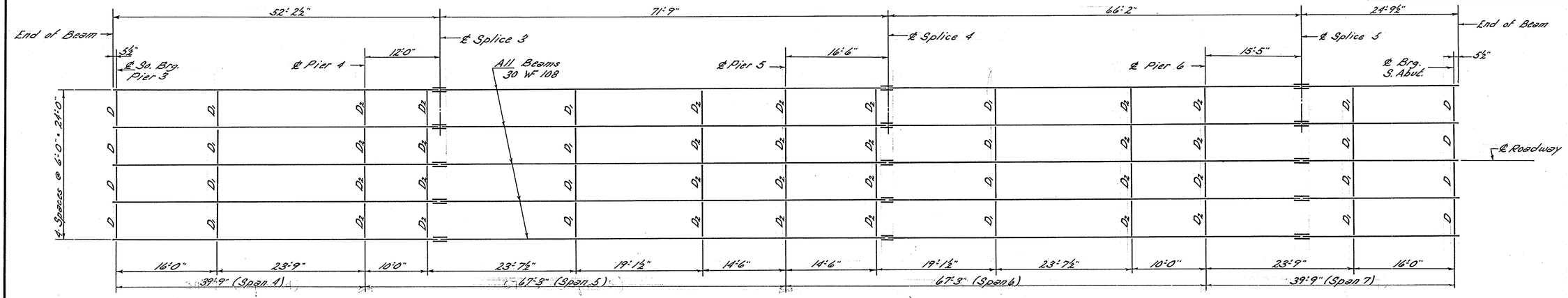
DESIGNED	S. Enger	APRIL 13 1960
CHECKED	Carl Jeffkordal	EXAMINED V. M. Romine
DRAWN	S. E. P. Lowler W. A. Sausoman	PASSED
CHECKED	Carl Jeffkordal	APPROVED R. K. Bartelmeyer

I-2 Re-drawn 8-18-59

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

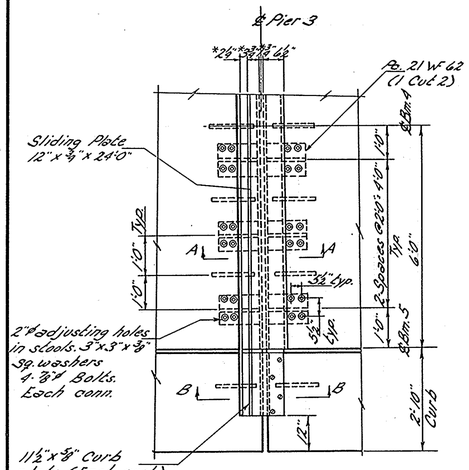
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. R. I. F. A. I. 80	06-1HB-1	BUREAU	105	77
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 5
13 SHEETS

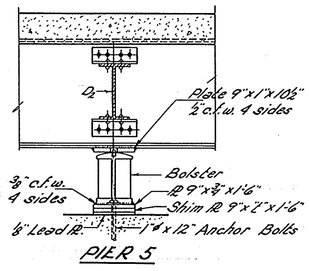


*At 50°F Normal Temp.

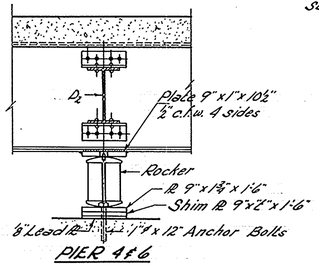
STRUCTURAL STEEL
(Unit 2)



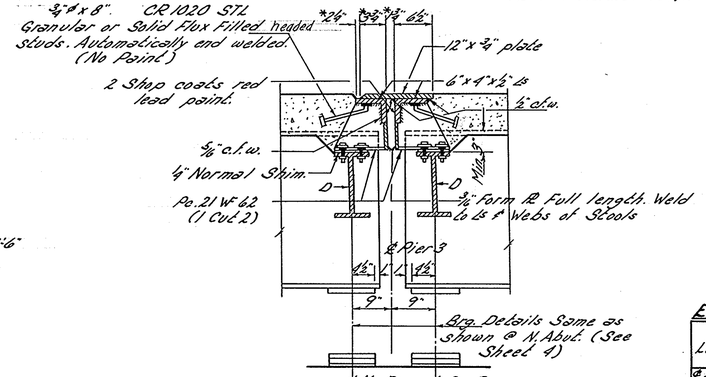
PARTIAL PLAN
EXPANSION GUARD



PIER 5



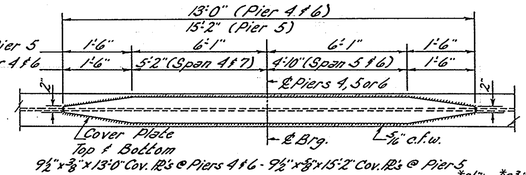
PIER 4 & 6



PIER 3 & SECTION A-A

PLAN

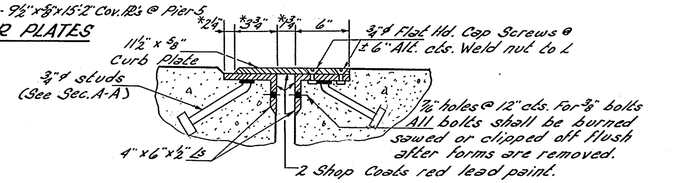
PLAN



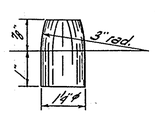
DETAIL OF COVER PLATES

Location	Beams 1 & 5	Beams 2 & 4	Beams 3
℄ S. Brg. Pier 3	648.46	648.54	648.57
℄ Pier 4	648.78	648.86	648.89
℄ Splice 3	648.87	648.96	648.99
℄ Pier 5	649.00	649.08	649.11
℄ Splice 4	649.03	649.11	649.15
℄ Pier 6	648.75	648.83	648.86
℄ Splice 5	648.66	648.75	648.78
℄ Brg. S. Abut.	648.46	648.54	648.57

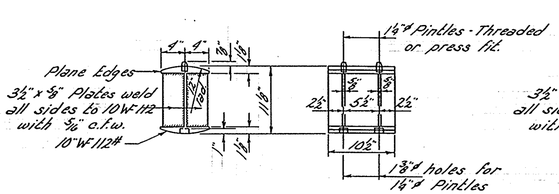
ELEVATION TOP OF BEAMS



SECTION B-B

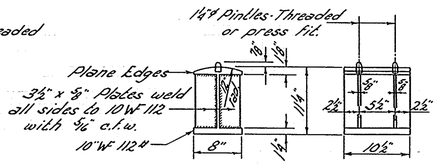


DETAIL OF PINTLE



DETAIL OF ROLLER
AT PIER 4 & 6

Note: For Details of splices & diaphragms See Sheet No. 4



DETAIL OF BOLSTER
AT PIER 5

TABLE OF "L" DIMENSIONS

Beam	Piers 1 (S.B.Brg.)	4	5	6	S. Abut.
1 & 5	4"	0"	0"	0"	0"
2 & 4	1⅛"	1"	1"	1"	1"
3	1⅞"	1⅞"	1⅞"	1⅞"	1⅞"

DESIGNED	S. Enger	
CHECKED	Vaudfee Kastal	
DRAWN	S.E. Alawler	
CHECKED	Vaudfee Kastal	

APRIL 13 1960

EXAMINED V. M. Romine
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES

PASSED E. E. Evans
ENGINEER OF DESIGN

APPROVED R. K. Bartelsmeyer
CHIEF HIGHWAY ENGINEER

STRUCTURAL STEEL
UNIT 2 - SPANS 4, 5, 6 & 7
TR 40 OVER
COAL CREEK & F.A.I. - 80
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159 + 39.88

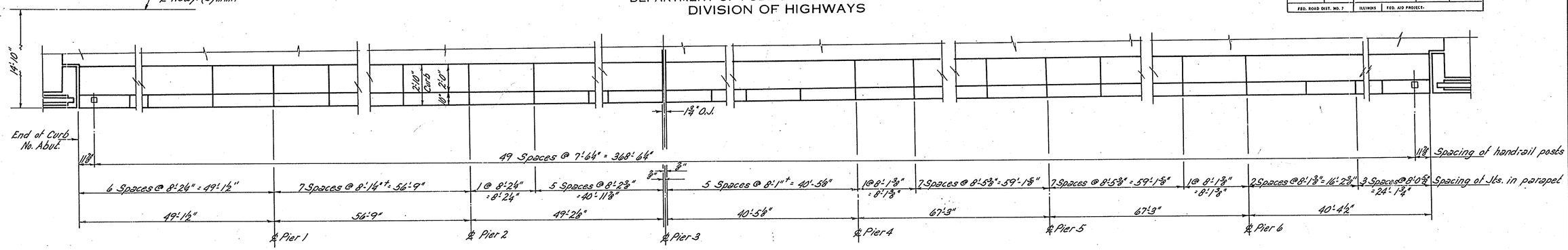
Revised 12/14/62: In PIER 3, & SECTION A-A and SECTION BB changed studs from ¾"ø x 8" x 2" to ¾"ø x 8" headed w.s.

K+E 186 IMPERIAL ® TRACING CLOTH T.M.

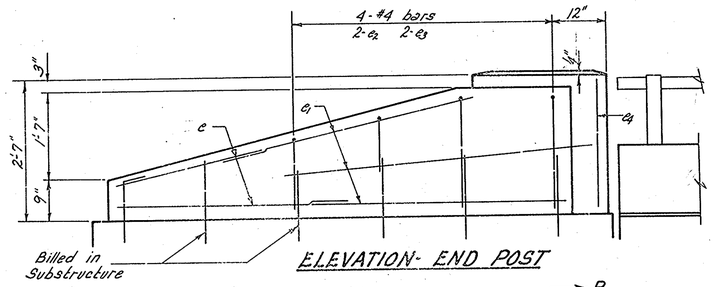
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. F. A. I. 80	06-1HB-1	BUREAU	105	26
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

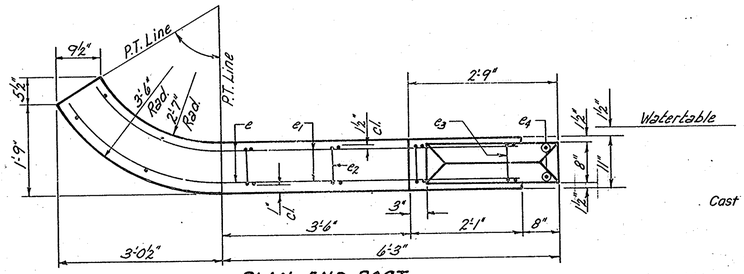
SHEET NO. 6
13 SHEETS



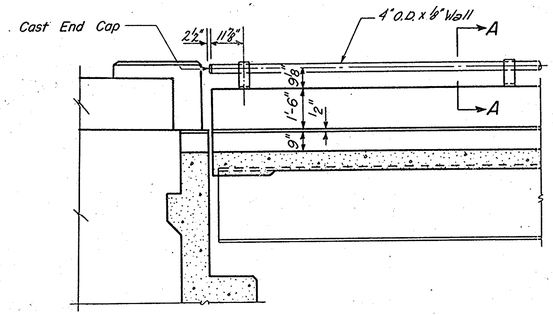
PLAN



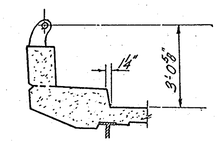
ELEVATION - END POST



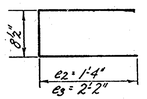
PLAN - END POST



PARTIAL ELEVATION

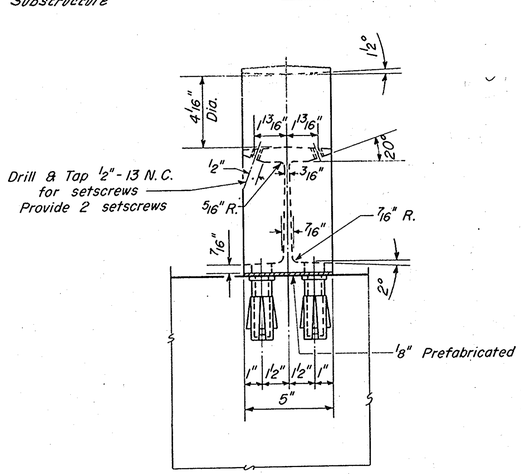


BAR e

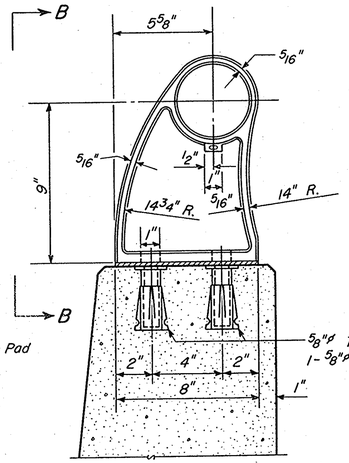


BAR e2 or e3

SEC. THRU CURB

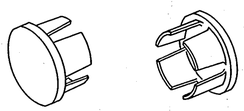


VIEW B-B



SECTION A-A

RAIL POST DETAILS



CAST END CAP
DRIVE FIT TYPE
4 - Required
Incidental to item "Aluminum Handrail"

BILL OF MATERIAL

Item	Unit	Quantity
Aluminum Handrail	Lin. Ft.	743

BILL OF MATERIAL (4 END POSTS)

Item	Unit	Quantity
Class X Concrete	Cu. Yds.	2.3
Reinforcement Bars	Lbs.	190

BILL OF REINFORCEMENT

Bar	No.	Size	Length	Shape
e	16	#4	4'-6"	
e1	24	#4	5'-4"	
e2	8	#4	3'-4"	
e3	8	#4	5'-0"	
e4	8	#4	2'-3"	

NOTES
All Posts shall be placed normal to parapet
All Posts shall be of Aluminum conforming to ASTM Specification B-108 alloy SG-70B-T6.
All Rail Tubing shall be of Aluminum conforming to ASTM Specification B-235 alloy GS-11A-T6.
Alclad Washers shall be made from sheet conforming to ASTM Specification B-209 alloy clad CG-42A-T4.
Rail Tubing may be cut to random lengths.
For material composition of Prefabricated Pad, See Art. 54.9 (f), (Bearings and Anchorage), of the Std. Specs.
Set Screws shall be of Aluminum conforming to ASTM Specification B-211 alloy CG-42A-T4.

DESIGNED	Van Quattebaum
CHECKED	P. Lawler
DRAWN	T.R. W. A. Sausaman.
CHECKED	P.L.

MAY 10 1961
EXAMINED — ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED — ENGINEER OF DESIGN
APPROVED — CHIEF HIGHWAY ENGINEER

R-10 Drawn 2-16-60

TYPE D
ALUMINUM HANDRAIL

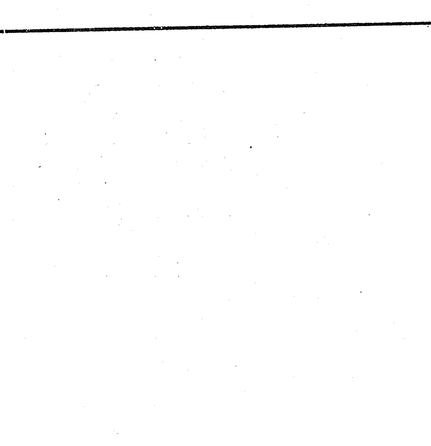
HANDRAIL & END POSTS
UNIT 1 & 2
TR 40 OVER
COAL CREEK & F.A.I. 80
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159 + 39.88

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

ROUTE NO	SECTION	COUNTY	TOTAL SHEETS	SHEET NO
S.B.I. F.A.P. 80	06-1HB-1	BUREAU	105	27
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 6A
13 SHEETS

Note: For Plan see Sheet 6



VIEW B-B

SECTION A-A

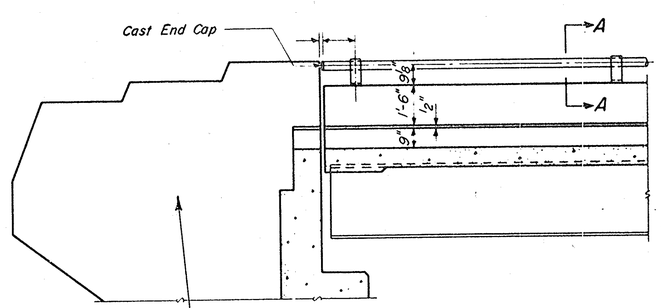
RAIL POST DETAILS

CAST END CAP
DRIVE FIT TYPE
4 Required
Galvanize to A.S.T.M. A-153.
Incidental to item "Metal Handrail".

5/8"ø Threaded Inserts. Provide 1- Stainless Steel Washer and 1- 5/8"ø x 2" Stainless Steel Bolt with each Insert
4 - Required each post
Inserts shall be cast in place.

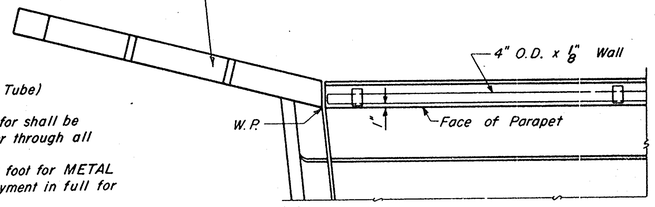
NOTES

All Posts shall be placed normal to parapet.
All Posts shall be malleable cast iron conforming to A.S.T.M. A-47, Grade 35018, galvanized to A.S.T.M. A-153.
All Rail Tubing shall conform to A.S.T.M. A-53, Grade B, (Pipe or Tube) galvanized to A.S.T.M. A-120.
Metal handrail shall be measured in lineal feet. The length paid for shall be the overall length along the top longitudinal railing member through all posts and gaps.
Metal handrail will be paid for at the contract unit price per lineal foot for METAL HANDRAIL, measured as specified, which price shall be payment in full for all materials, fabrication, transportation, and erection.
If any of the galvanizing coat is damaged or removed during erection, the affected area shall be painted with one coat of zinc paint in accordance with Military Specification MIL-P-26915 Type I, air-dry cure.
Rail Tubing may be cut to random lengths.
For material composition of Prefabricated Pad, see Art. 549 (f), (Bearing and Anchorage), of the Standard Specifications.
Galvanized railing shall not be painted.

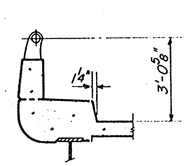


ELEVATION - END POST

Note: For End Post Detail see Sheet 6.



PLAN - END POST



SEC. THRU CURB

BILL OF MATERIAL

Item	Unit	Quantity
METAL HANDRAIL	Lin. Ft.	743

TYPE E
METAL HANDRAIL

TR 40 OVER
COAL CREEK & F.A.I. 80
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159 + 39.88

DESIGNED	
CHECKED	
DRAWN Wm. M. Best	
CHECKED	

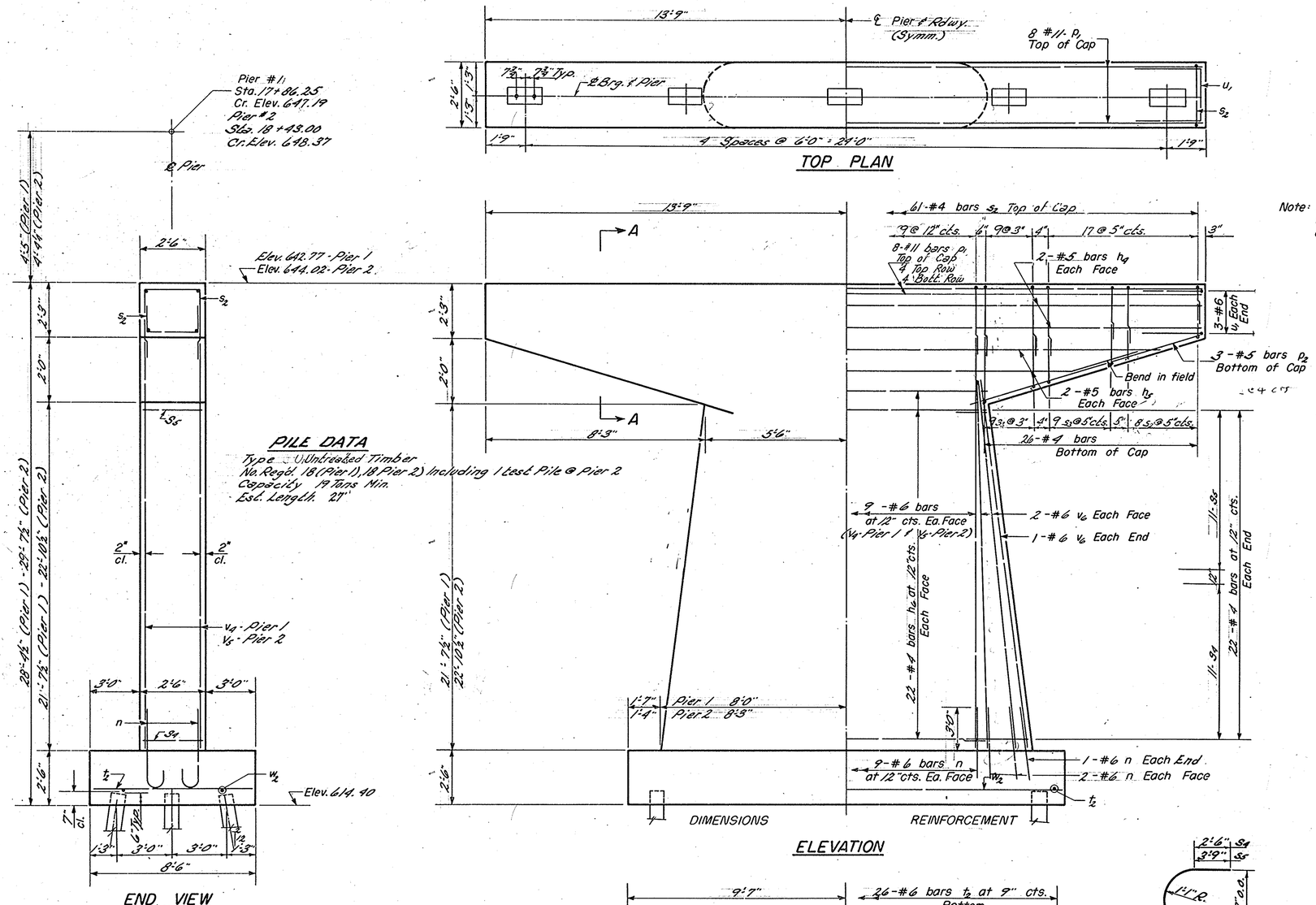
19
EXAMINED
ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED
ENGINEER OF DESIGN
APPROVED
CHIEF HIGHWAY ENGINEER

R-14 Drawn 11-2-62

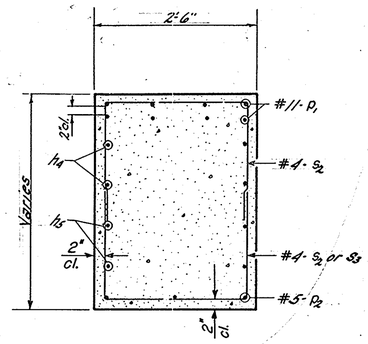
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

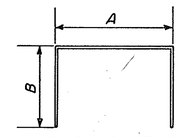
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S B I F A I. 80	06-1H8-1	BUREAU	105	29
FED. ROAD DIST NO. 7	ILLINOIS	FED. AID PROJECT.		

SHEET NO. 8
13 SHEETS



Note: All edges shall have standard ¾" chamfers except footings.

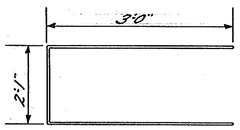




A & B DIMENSIONS

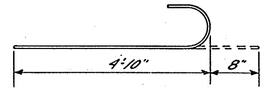
Bar	A	B
S_2	2'-2"	2'-0"
S_3	2'-2"	2'-11"

s BARS



u, BAR

S_4 & S_5 BARS

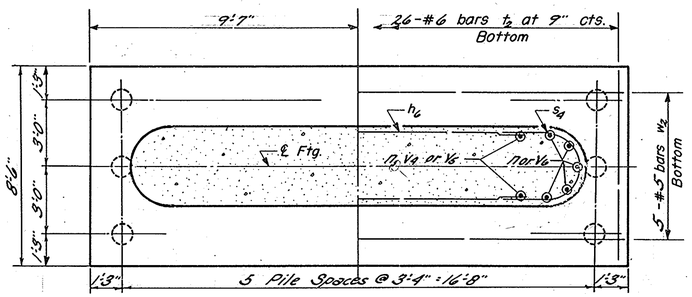


n BAR

PILES 1 & 2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_4	8	#5	23'-2"	——
h_5	8	#5	23'-6"	——
h_6	88	#4	8'-6"	——
n	56	#6	5'-6"	U
P_1	16	#11	27'-2"	——
P_2	12	#5	9'-6"	——
S_2	154	#4	6'-2"	⊓
S_3	72	#4	8'-0"	⊓
S_4	44	#4	8'-6"	⊔
S_5	44	#4	11'-0"	⊔
t_2	52	#6	8'-2"	——
U_1	12	#6	8'-1"	U
V_4	18	#6	24'-8"	——
V_5	18	#6	25'-10"	——
V_6	20	#6	24'-0"	——
W_2	10	#5	18'-10"	——
Class X Concrete			Cu. Yds.	105.9
Reinforcement Bars			Lbs.	8,470
Untreated Piles			Lin. Ft.	945
Test Piles (Timb.)			Each	1
Class B Excavation Struct.			Cu. Yds.	102

PILE DATA
Type: Untreated Timber
No. Reqd. 18 (Pier 1), 18 (Pier 2) Including 1 test Pile @ Pier 2
Capacity 19 Tons Min.
Est. Length 27'



FOOTING PLAN

DESIGNED	J. Enger
CHECKED	Unofficial Staff
DRAWN	P. Lawler, W. A. Sausaman
CHECKED	Unofficial Staff

APRIL 13 1960

EXAMINED V. M. Romine, ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED E. Blank, ENGINEER OF DESIGN
APPROVED R. K. Bartelsmeyer, CHIEF HIGHWAY ENGINEER

P-2 Re-drawn 7-17-59

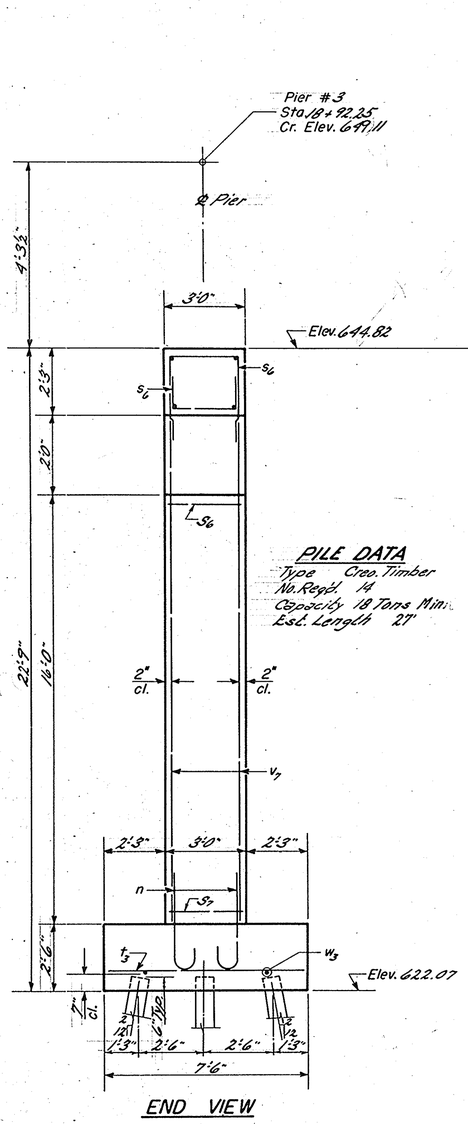
PIERS 1 & 2

I.R. 40 OVER
COAL CREEK & F.A.I.-80
F.A.I. RT. 80 SEC. 06-1H8-1
BUREAU COUNTY
STA. 159 + 39.88

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	06-1HB-1	BUREAU	195	30
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT:		

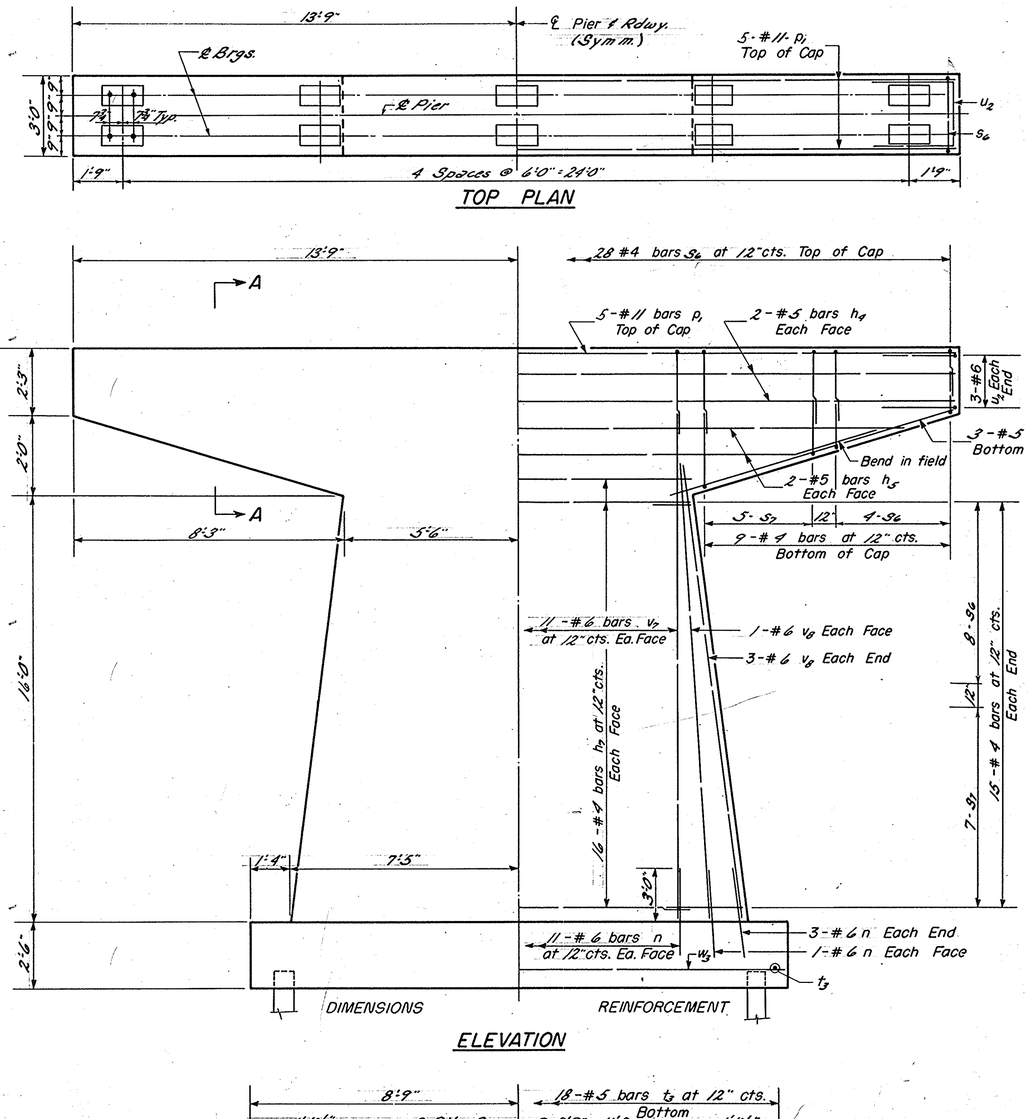
SHEET NO. 9
13 SHEETS



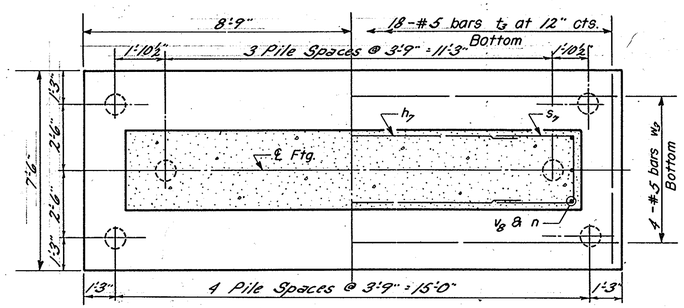
END VIEW

PILE DATA

Type Creo. Timber
No. Req'd. 14
Capacity 18 Tons Min.
Est. Length 27'

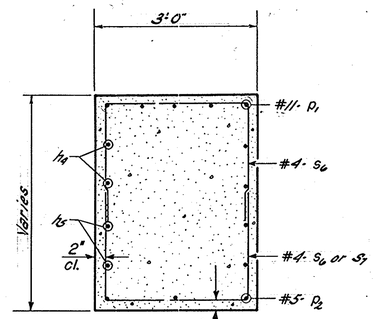


ELEVATION

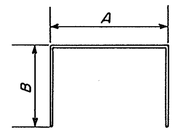


FOOTING PLAN

Note: All edges shall have standard ¾" chamfers except footings.



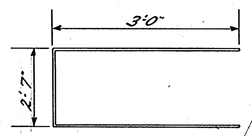
SECTION A-A



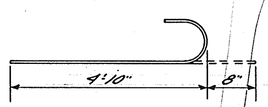
A & B DIMENSIONS

Bar	A	B
s_6	2'8"	2'0"
s_7	2'8"	2'11"

s BARS



u_2 BAR



n BAR

PIER 3
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_4	4	#5	27'2"	——
h_5	4	#5	23'6"	——
h_7	32	#4	10'6"	——
n	32	#6	5'6"	⊃
p_1	5	#11	27'2"	——
p_2	10	#5	9'6"	——
s_6	52	#4	6'8"	⊓
s_7	24	#4	8'6"	⊓
t_3	18	#5	7'2"	——
u_2	6	#6	8'7"	⊏
v_7	22	#6	19'0"	——
v_8	10	#6	17'9"	——
w_3	5	#5	17'2"	——
Class X Concrete			Cu. Yds.	46.4
Reinforcement Bars			Lbs.	3,090
Creosoted Piles			Lin. Ft.	378
Class A Excavation Struct.			Cu. Yds.	73

DESIGNED	S. Engel
CHECKED	Raufelstad
DRAWN	P. Fowler, W. A. Sausaman
CHECKED	Raufelstad

APRIL 13 1960

EXAMINED V. M. Romine, ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED [illegible], ENGINEER OF DESIGN
APPROVED R. K. Bates, CHIEF HIGHWAY ENGINEER

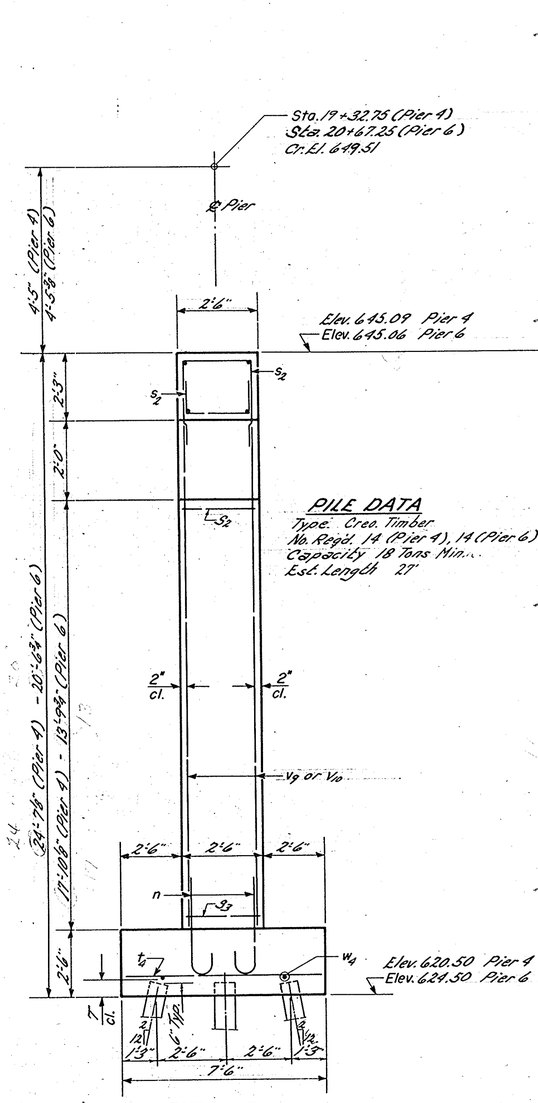
P-2 Re-drawn 7-17-59

PIER 3
TR 10 OVER
COAL CREEK & F.A.I.-80
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159 + 39.88

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

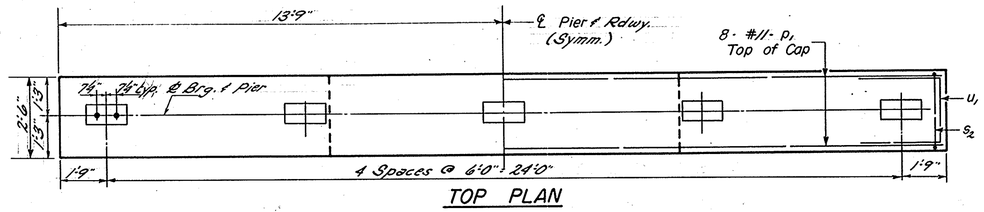
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 80	06-1H83-1	BUREAU	195	31
FED. ROAD DIST NO. 7	ILLINOIS	FED. AID PROJECT:		

SHEET NO. 10
13 SHEETS

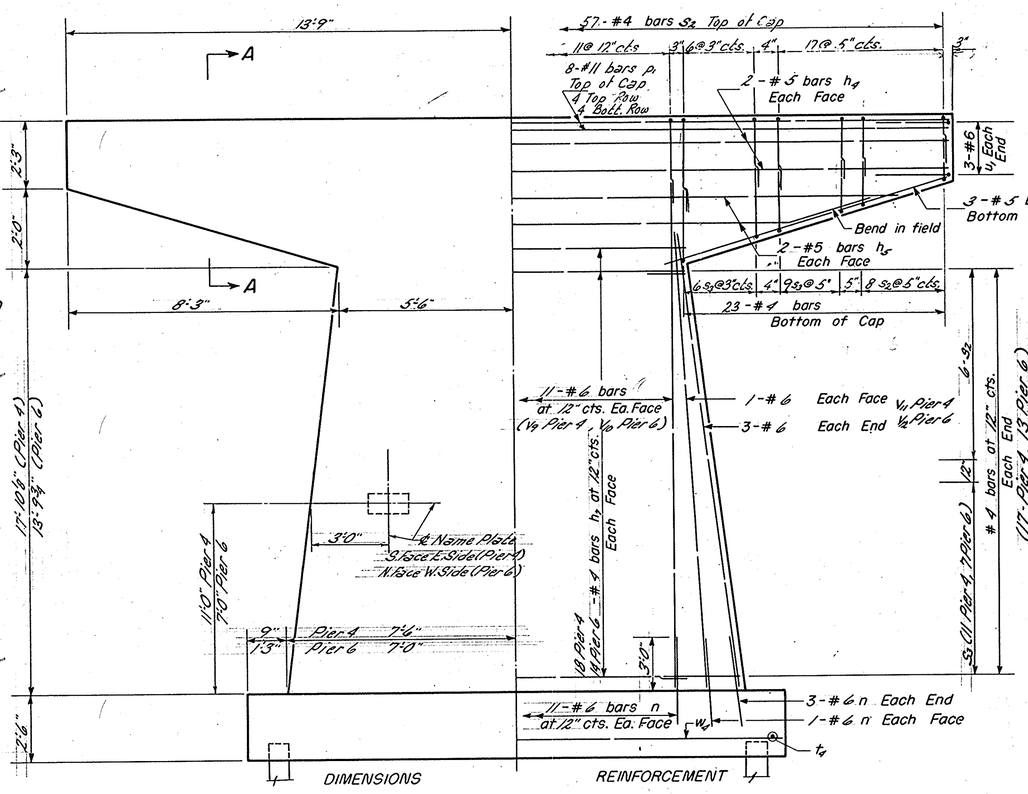


END VIEW

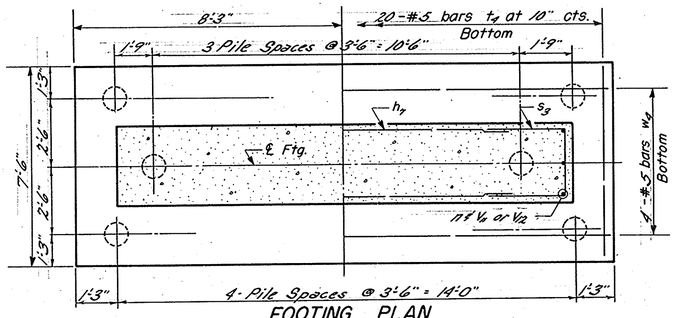
PILE DATA
Type. Creo. Timber
No. Regd. 14 (Pier 4), 14 (Pier 6)
Capacity 18 Tons Min.
Est. Length 27'



TOP PLAN

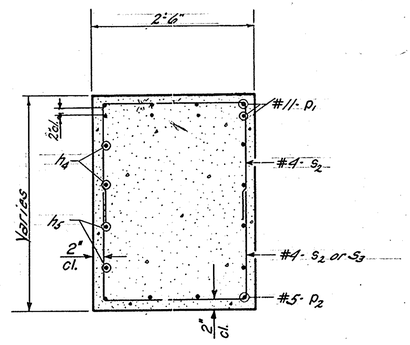


ELEVATION

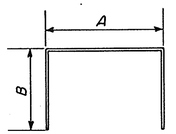


FOOTING PLAN

Note: All edges shall have standard ¾" chamfers except footings.



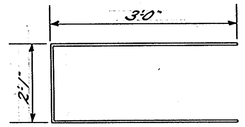
SECTION A-A



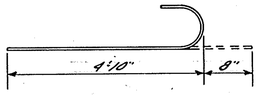
A & B DIMENSIONS

Bar	A	B
S_2	2'-2"	2'-0"
S_3	2'-2"	2'-11"

S BARS



u, BAR



n BAR

PIERS 4 & 6
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_4	8	#5	27'-2"	—
h_5	8	#5	23'-6"	—
h_7	56	#4	10'-6"	—
n	64	#6	5'-6"	⊃
P_1	16	#11	27'-2"	—
P_2	12	#5	9'-6"	—
S_2	170	#4	6'-2"	⊓
S_3	76	#4	8'-0"	⊓
t_9	40	#6	6'-8"	—
U_1	12	#6	8'-1"	⊏
V_9	22	#6	20'-10"	—
V_{10}	22	#6	16'-10"	—
V_{11}	10	#6	19'-6"	—
V_{12}	10	#6	14'-9"	—
W_4	8	#5	16'-2"	—
Class X Concrete			Cu. Yds.	88.1
Reinforcement Bars			Lbs.	7440
Creosoted Piles			Lin. Ft.	756
Class A Excav. for Struct.			Cu. Yds.	48
Class B Excav. for Struct.			Cu. Yds.	5

PIERS 4 & 6

TR 40 OVER
COAL CREEK & F.A.I.-80
F.A.I. RT. 80 SEC. 06-1H83-1
BUREAU COUNTY
STA. 159 +39.88

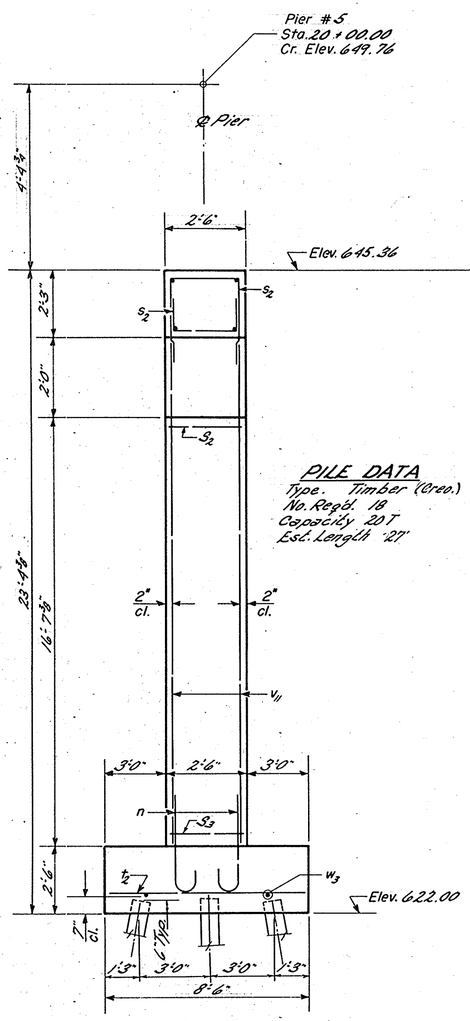
DESIGNED	S. Enger	APRIL 13 1960
CHECKED	Chief Architectural	EXAMINED W. M. Romine, ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
DRAWN	S. E. Plawter, W. A. Sausaman	PASSED E. E. Blumhorst, ENGINEER OF DESIGN
CHECKED	Chief Architectural	APPROVED R. R. Bartelsmeyer, CHIEF HIGHWAY ENGINEER

P-2 Re-drawn 7-17-59

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

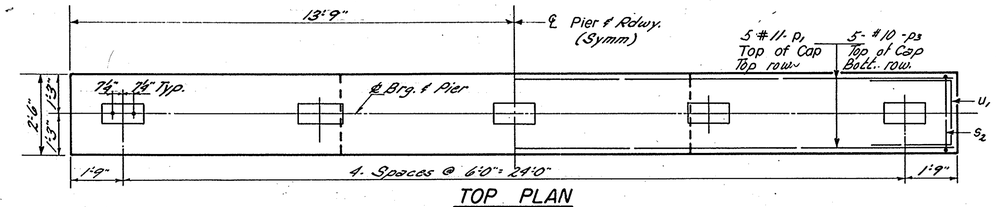
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 80	06-1HB-1	BUREAU	105	32
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 11
13 SHEETS

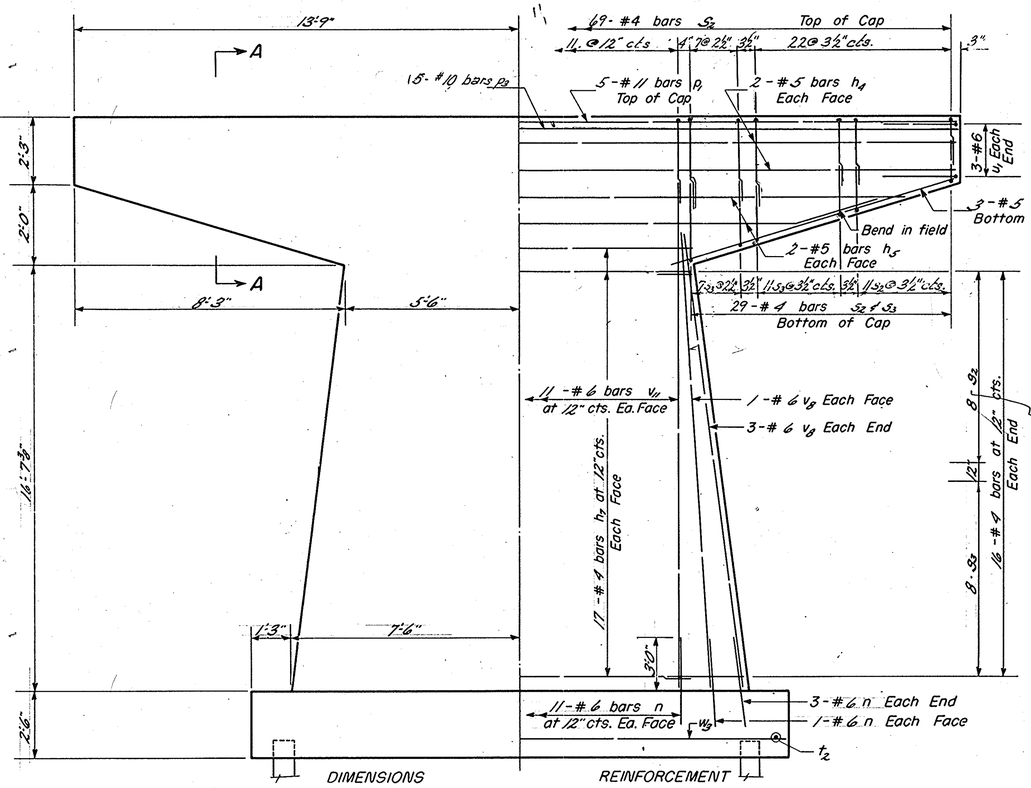


PILE DATA
Type. Timber (Creo.)
No. Reqd. 18
Capacity 20T
Est. Length 27'

END VIEW



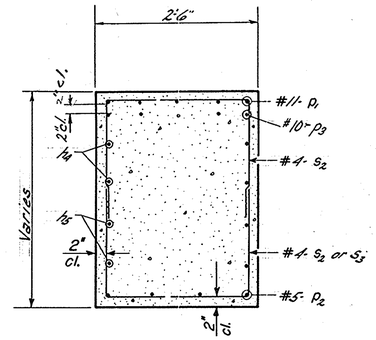
TOP PLAN



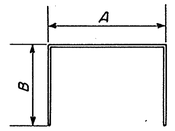
ELEVATION

FOOTING PLAN

Note: All edges shall have standard ¾" chamfers except footings.



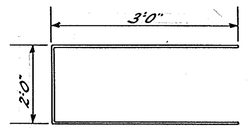
SECTION A-A



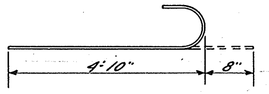
A & B DIMENSIONS

Bar	A	B
s_2	2'-2"	2'-0"
s_3	2'-2"	2'-11"

s BARS



u_1 BAR



n BAR

PIER 5
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_4	4	#5	27'-2"	—
h_5	4	#5	23'-6"	—
h_7	34	#4	10'-6"	—
n	32	#6	5'-6"	⊃
p_1	5	#11	27'-2"	—
p_2	6	#5	9'-6"	—
p_3	5	#10	27'-2"	—
s_2	107	#4	6'-2"	⊓
s_3	152	#4	8'-0"	⊓
t_z	26	#6	8'-2"	—
u_1	6	#6	8'-1"	⊏
v_8	10	#6	17'-9"	—
v_{11}	22	#6	19'-6"	—
w_3	5	#5	17'-2"	—
Class X Concrete			Cu. Yds.	43.2
Reinforcement Bars			Lbs.	4,190
Creosoted Piles			Lin. Ft.	486
Test. Piles (Timber)			Each	1
Class A Excav. for Struct.			Cu. Yds.	80.0

PIER 5

T.R. 40 OVER
COAL CREEK & F.A.I.-80
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159+39.88

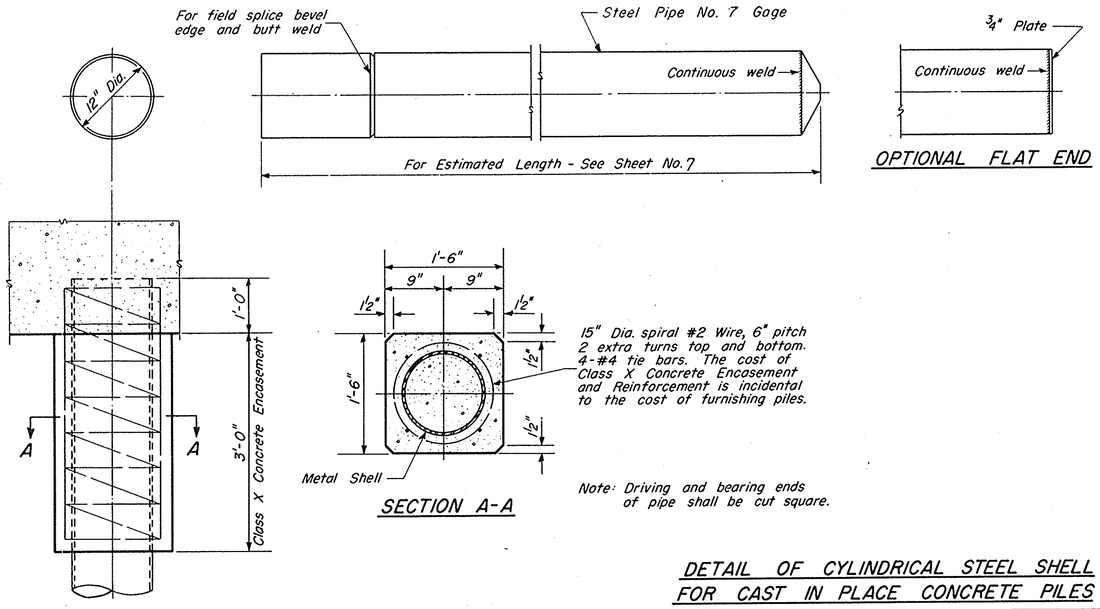
DESIGNED	S. Enger	EXAMINED	APRIL 13 1960
CHECKED	Vanfurbastal		V. M. Romine, ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
DRAWN	E. P. Lawler, W. A. Sausaman	PASSED	
CHECKED	Vanfurbastal	APPROVED	CHIEF HIGHWAY ENGINEER, DIVISION OF HIGHWAYS

P-2 Re-drawn 7-17-59

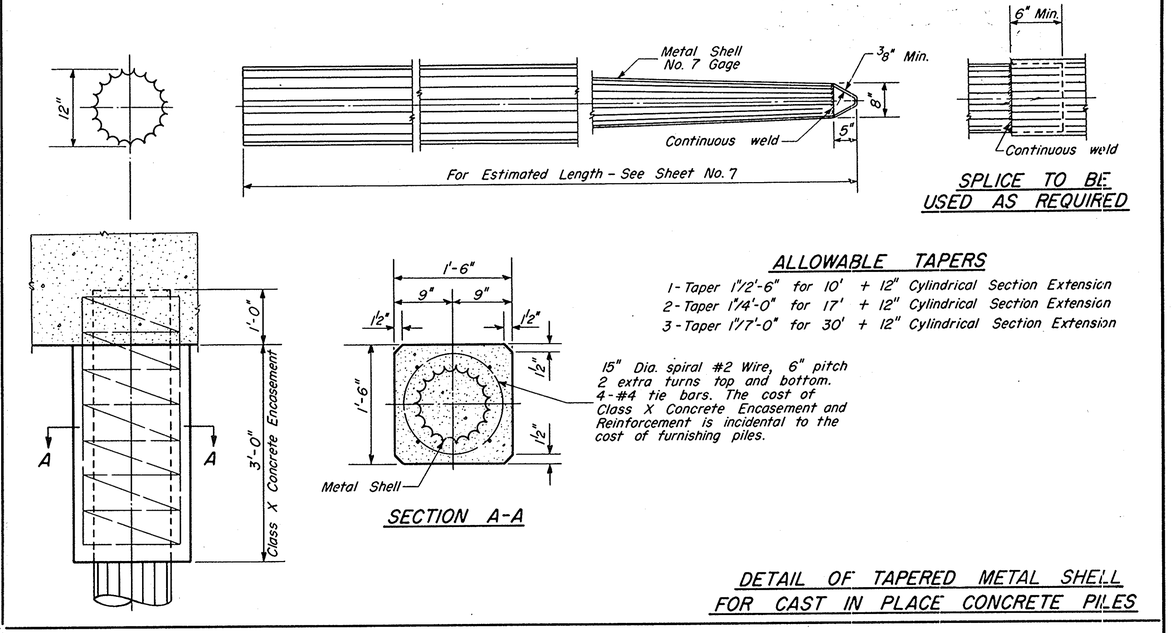
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S. B. I. F. A. I. 80	06-1HB-1	BUREAU	105	33
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

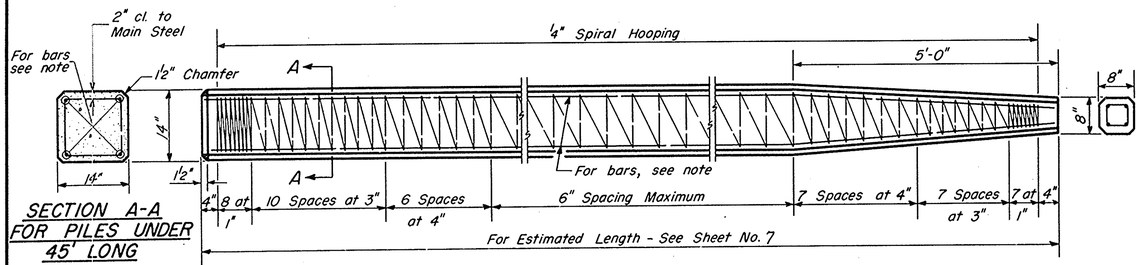
SHEET NO. 12
13 SHEETS



DETAIL OF CYLINDRICAL STEEL SHELL
FOR CAST IN PLACE CONCRETE PILES



DETAIL OF TAPERED METAL SHELL
FOR CAST IN PLACE CONCRETE PILES

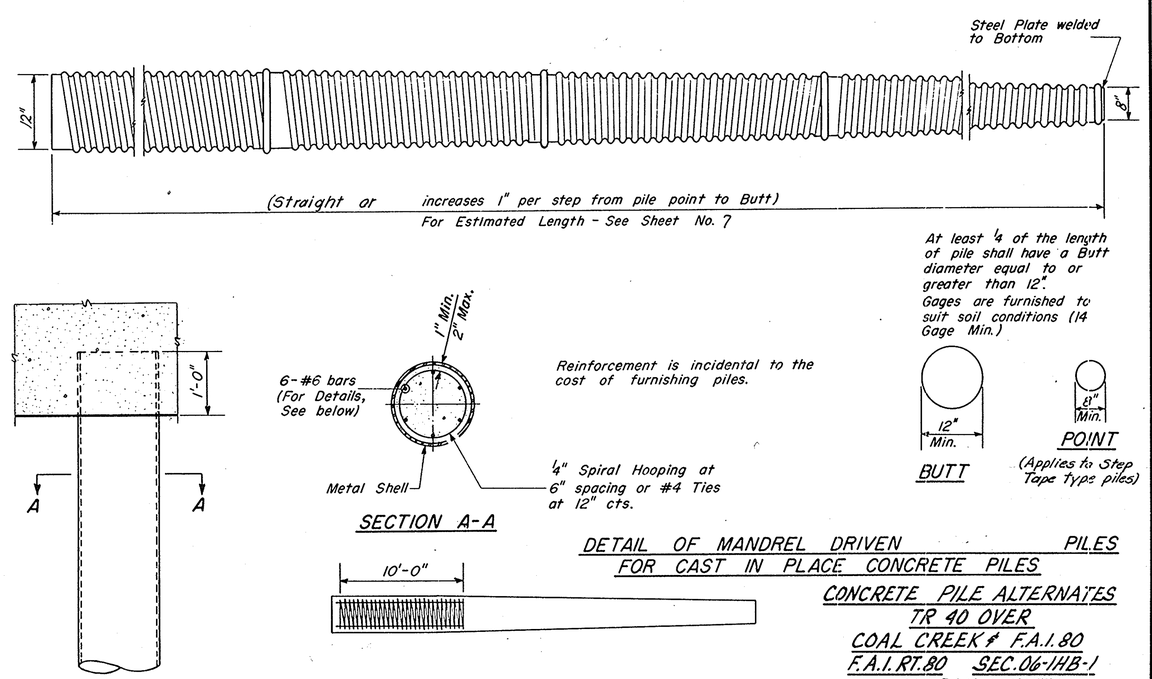


DESIGNED	Vanpelt Kartal
CHECKED	P. Lawler
DRAWN	T.K. P. Lawler W. A. Sausaman
CHECKED	P.L.

MAY 10 1961
EXAMINED N. E. Baumann ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED ENGINEER OF DESIGN
APPROVED CHIEF HIGHWAY ENGINEER

X-1 Re-drawn 9-24-59 Rev. 9-23-60 Rev. 11-23-60

DETAIL OF PRECAST CONCRETE PILES



DETAIL OF MANDREL DRIVEN PILES
FOR CAST IN PLACE CONCRETE PILES

CONCRETE PILE ALTERNATES
TR 40 OVER
COAL CREEK & F.A.I. 80
F.A.I. RT. 80 SEC. 06-1HB-1
BUREAU COUNTY
STA. 159 + 39.88

K-E 158 IMPERIAL