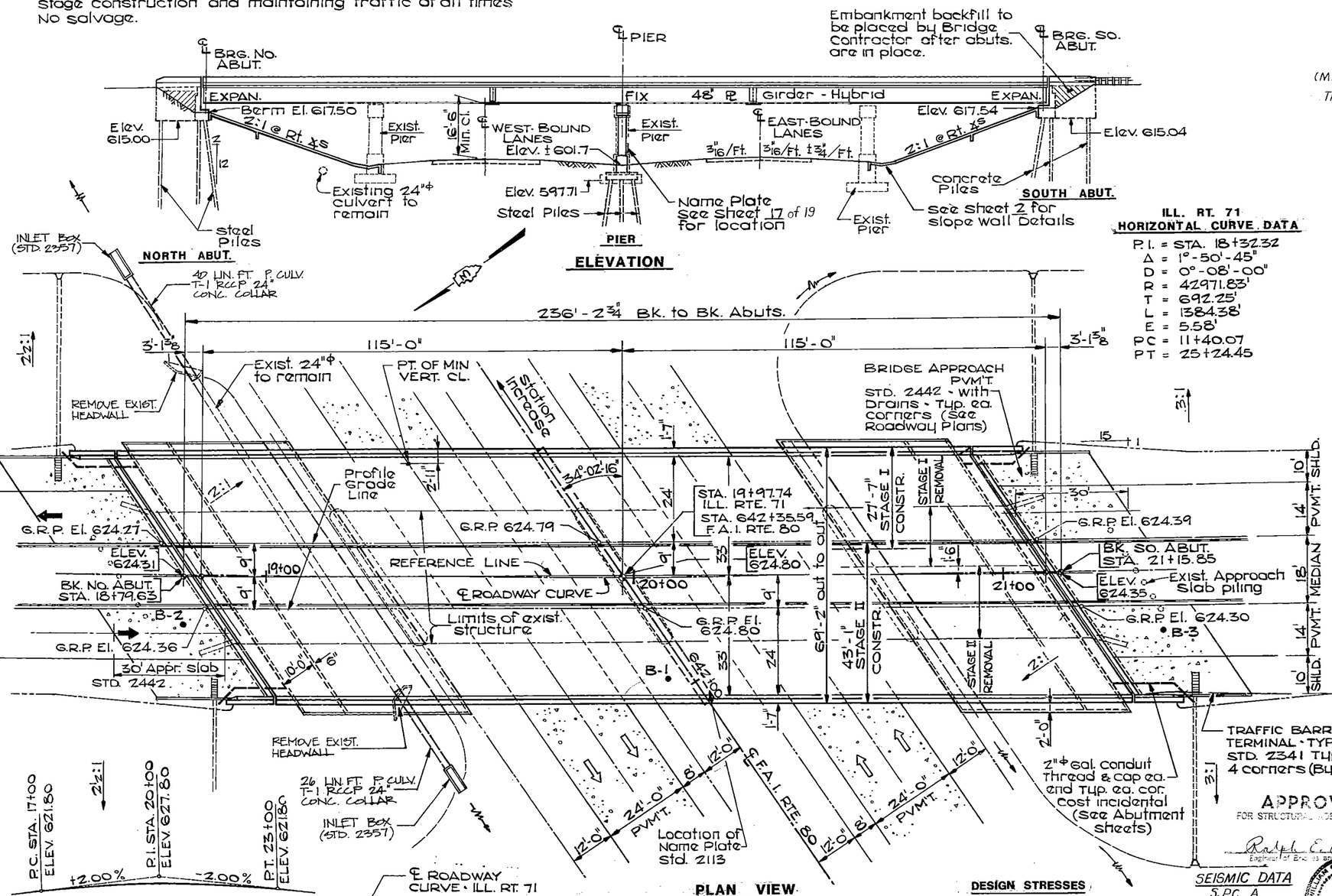
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-5 HBR	LASALLE	132	78
FED. ROAD DIST. NO. 7	ILL. PROJ.			

SHEET NO. 1 OF 19 SHEETS

STRUCTURE No. 050-0068 A four span conc. girder with reinf. concrete deck on pile bent abuts. and open conc. piers. 30' rdwy - 243'-9" Bk.-Bk. Abuts. Built 1960 as Sec. 50-5HB.
Contractor to remove existing structure utilizing stage construction and maintaining traffic at all times. No salvage.

BENCH MARK:
chisled square on East curb at North end of existing structure Elev. 623.66

NOTE
Bridge seat sealer shall be applied to the seat area of the abutments.



ILL. RT. 71
HORIZONTAL CURVE DATA

P.I. =	STA. 18+32.32
Δ =	1°-50'-45"
D =	0°-08'-00"
R =	42971.83'
T =	692.25'
L =	1384.38'
E =	5.58'
PC =	11+40.07
PT =	25+24.45

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
Engineer of Bridge Design

SEISMIC DATA
S.P.C. A
A=.04
S=1.0

DESIGN STRESSES
f'c = 3500 psi Conc.
fy = 60,000 psi Reinf.
fy = 50,000 psi Struct. Steel M-270 Grade 50
fy = 36,000 psi Struct Steel M-270 Grade 36

Designed in accordance with 1989 AASHTO Specifications & 1990 Interim Spec's. and 1983 Guide Specifications for Seismic Design of Highway Bridges w/1985 & 1988 Interim Spec's.

WILLIAM C. THOMPSON JR. 62-32965 REGISTERED STRUCTURAL ENGINEER OF ILLINOIS
12/23/91
William C. Thompson Jr.
EXP 11/30/94

GENERAL NOTES

See Sheet No. 19 for Soil Boring Logs.

Fasteners shall be High Strength Bolts. Bolts 7/8"φ, open holes 15/16"φ, unless otherwise noted.

Calculated weight of Structural Steel = 459,934 lbs.
(M270) Grade 36 = 215,104 lbs. (M270) Grade 50 = 244,830 lbs.

The inorganic zinc-silicate/acrylic/acrylic paint system shall be used for shop and field painting of Structural Steel except where otherwise noted.
The color of the acrylic finish coat shall be Munsell std. 7.5 G 4/8 (Interstate Green)

Field welding of construction accessories will not be permitted to the bottom flanges of girders nor to 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.

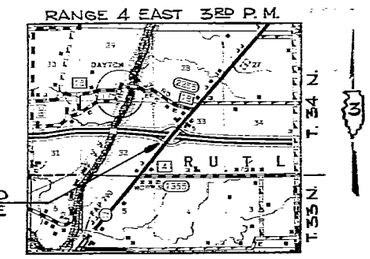
Anchor bolts shall be set before bolting diaph. over supports.

The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges, webs and all splice plate material except fill plates.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

The Contractor shall drive one steel HP 10×42 test pile in a permanent location at the North Abut. and Pier and one Concrete test pile at the South Abut. as directed by the Engineer before ordering the remainder of piles.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 1/8 inch 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.



LOCATION MAP

Revisions		
No.	Date	Remarks

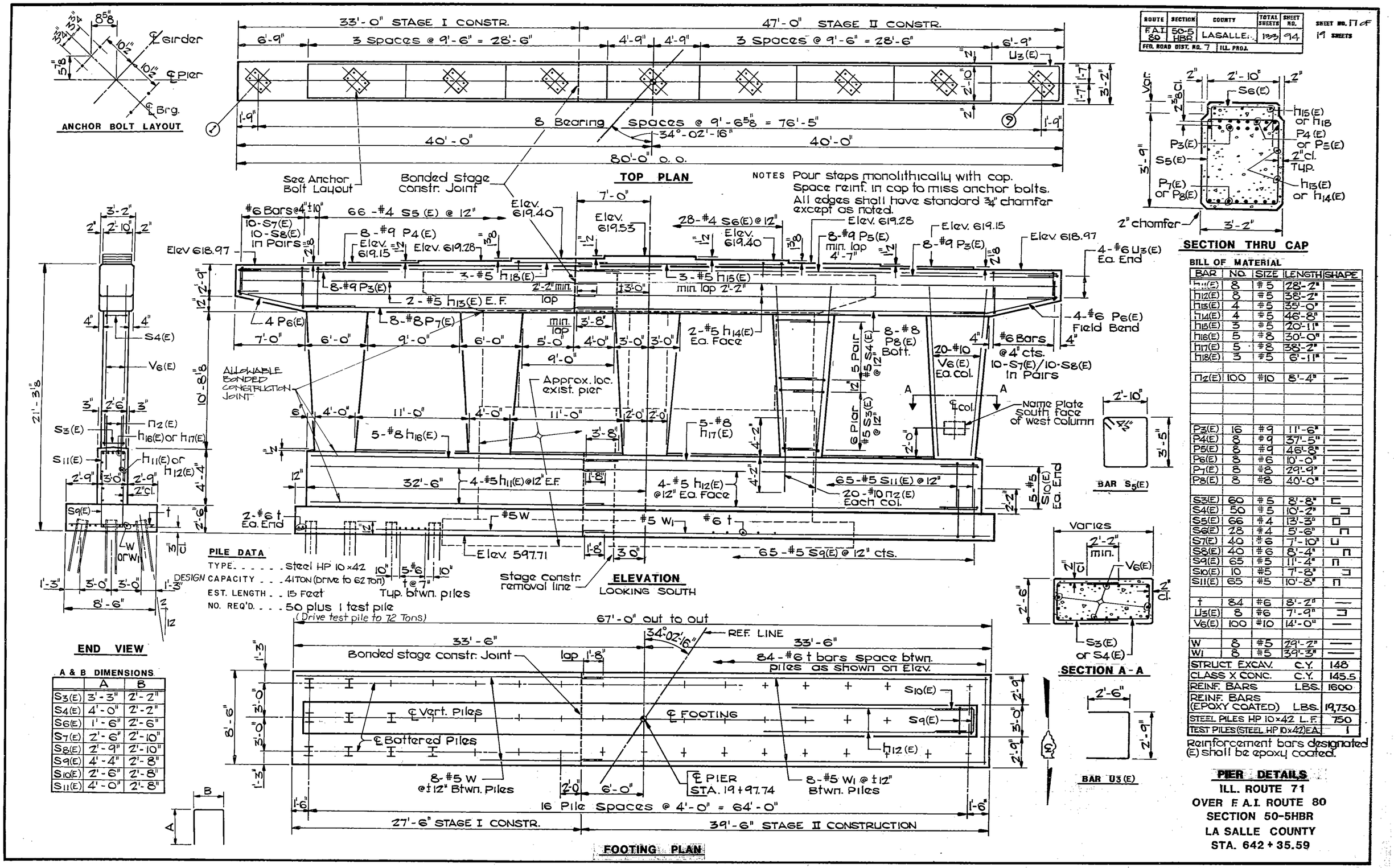
GENERAL PLAN & ELEVATION
SECTION 50-5HBR
F. A. ROUTE 790 ILL. ROUTE 71
OVER F. A. I. RT 80
LA SALLE COUNTY
STATION 642+35.59
STRUCTURE NO. 050-0217

Beling Consultants
Professional Engineers
MOLINE, IL. JOLIET, IL. CHICAGO, IL. ROCKFORD, IL. PEORIA, IL. DAVENPORT, IOWA COLUMBUS, OHIO

Scale 1" = 15'
Designed by A. GHARAMTI
Drawn by R. RHOADS
Checked by B. THOMPSON
Job No. 38310

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 80	50-5 HBR	LASALLE	133	94
FED. ROAD DIST. NO. 7	ILL. PROJ.			

SHEET NO. 17 OF 19 SHEETS



A & B DIMENSIONS	A	B
S3(E)	3'-3"	2'-2"
S4(E)	4'-0"	2'-2"
S6(E)	1'-6"	2'-6"
S7(E)	2'-6"	2'-10"
S8(E)	2'-9"	2'-10"
S9(E)	4'-4"	2'-8"
S10(E)	2'-6"	2'-8"
S11(E)	4'-0"	2'-8"

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h11(E)	8	#5	28'-2"	—
h12(E)	8	#5	38'-2"	—
h13(E)	4	#5	35'-0"	—
h14(E)	4	#5	46'-8"	—
h15(E)	3	#5	20'-11"	—
h16(E)	5	#8	30'-0"	—
h17(E)	5	#8	38'-2"	—
h18(E)	3	#5	6'-11"	—
n2(E)	100	#10	8'-4"	—
P3(E)	16	#9	11'-6"	—
P4(E)	8	#9	37'-5"	—
P5(E)	8	#9	46'-8"	—
P6(E)	8	#6	10'-0"	—
P7(E)	8	#8	29'-9"	—
P8(E)	8	#8	40'-0"	—
S3(E)	60	#5	8'-8"	⊏
S4(E)	50	#5	10'-2"	⊐
S5(E)	66	#4	13'-3"	□
S6(E)	28	#4	5'-6"	⊓
S7(E)	40	#6	7'-10"	⊔
S8(E)	40	#6	8'-4"	⊓
S9(E)	65	#5	11'-4"	⊓
S10(E)	10	#5	7'-8"	⊐
S11(E)	65	#5	10'-8"	⊓
t	84	#6	8'-2"	—
U3(E)	8	#6	7'-9"	⊐
V6(E)	100	#10	14'-0"	—
W	8	#5	29'-2"	—
W1	8	#5	39'-3"	—
STRUCT. EXCAV. C.Y.				148
CLASS X CONC. C.Y.				145.5
REINF. BARS LBS.				1600
REINF. BARS (EPOXY COATED) LBS.				19,730
STEEL PILES HP 10×42 L.F.				750
TEST PILES (STEEL HP 10×42) EA.				1

Reinforcement bars designated (E) shall be epoxy coated.

PIER DETAILS
ILL. ROUTE 71
OVER F.A.I. ROUTE 80
SECTION 50-5HBR
LA SALLE COUNTY
STA. 642 + 35.59

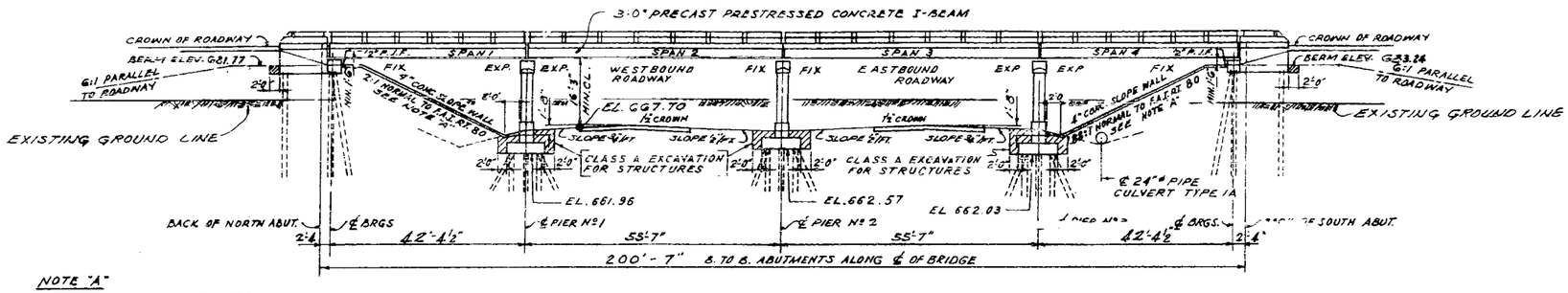
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-5	LA SALLE	229	179
STA.		TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	F.A. PROJECT I-80-3( ) 94		

SHEET 1 OF 12

B.M. # 20 - ELEV. 663.17
IRON ROD 200' RT. OF STA. 722+02.

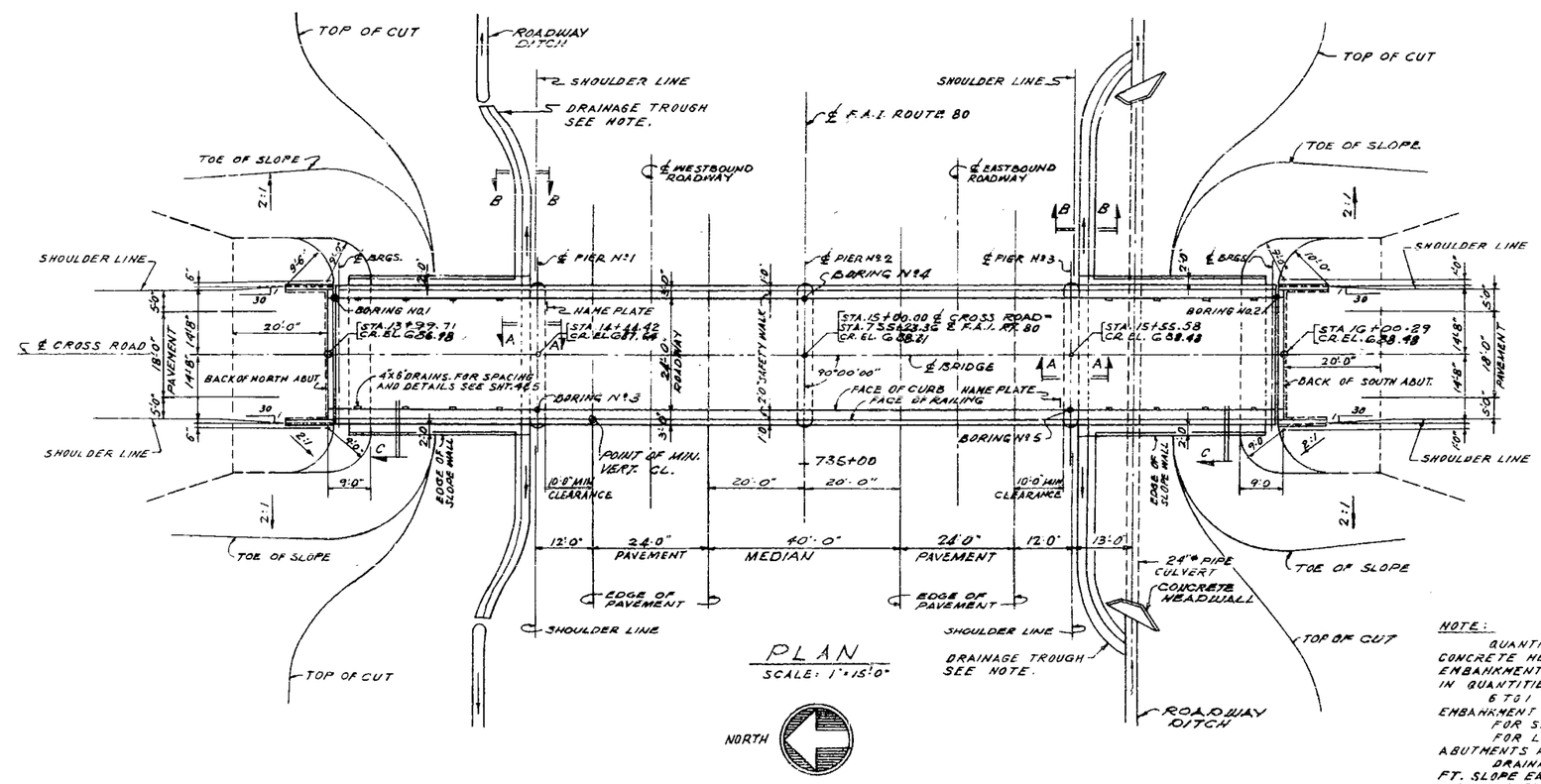
B.M. # 21 - ELEV. 679.01
IRON ROD 200' RT. OF STA. 735+45.

B.M. # 22 - ELEV. 657.02
IRON ROD 200' RT. OF STA. 761+85.



NOTE "A"
REINFORCED WITH WELDED WIRE FABRIC 6"x6" MESH, NO 4 WIRE, WEIGHING APPROX. 58# PER 100 SQ. FT.

ELEVATION
SCALE: 1" = 15'-0"



PLAN
SCALE: 1" = 15'-0"

NOTE:
QUANTITIES OF EARTH EXCAVATION, CONCRETE HEADWALL FOR F.A.I. RTE 80 AND EMBANKMENT FOR CROSS ROAD ARE INCLUDED IN QUANTITIES ON ROAD PLANS.
6 TO 1 BACKSLOPE MAY BE OMITTED IF EMBANKMENT IS CONSTRUCTED FULL LENGTH.
FOR SECTIONS A-A, B-B AND C-C SEE SHEET 2.
FOR LIMITS OF CLASS A EXCAVATION AT ABUTMENTS AND WINGWALLS SEE SHEET 2.
DRAINAGE TROUGH TO HAVE MIN. 8" PER FT. SLOPE EACH DIRECTION FROM EDGE OF SLOPEWALL AND TO TERMINATE IN ROADWAY DITCH.
FOR NAME PLATE LOCATION SEE SHEET 10

INDEX OF BRIDGE SHEETS - STATION 735+23.36

SHEET NO.	TITLE
1.	GENERAL PLAN AND ELEVATION
2	DRAINAGE DETAILS, EXCAVATION, QUANTITY AND GENERAL NOTES.
3.	BORINGS AND NAMEPLATES.
4	DECK REINFORCEMENT PLAN.
5.	DECK CROSS SECTION AND DIAPHRAGM DETAILS.
6.	DETAILS OF PRECAST PRESTRESSED CONCRETE I-BEAMS.
7.	FRAMING PLAN, BEARING DETAILS AND EXPANSION DEVICE.
8.	HANDRAIL DETAILS.
9.	NORTH AND SOUTH ABUTMENT AND WINGWALL DETAILS.
10	PIERS 1, 2 AND 3.
11.	REINFORCEMENT BAR LISTS.
12	ABUTMENT PILES.

HIGHWAY CLASSIFICATION
28-P-45

DESIGN LOAD
L.L. HS-S12-44
FUTURE D.L. 1½" BIT. WEARING SURFACE

DESIGN STRESSES
CONCRETE (CAST IN PLACE)
fc = 3500 LBS. PER SQ. IN.
fc = 1400 LBS PER SQ. IN.
fc = (WITH EARTH PRESSURE) 1000 LBS PER SQ. IN.
n = 10

PRESTRESSED CONCRETE
fc = 5,000 LBS. PER SQ. IN.
fci = 4,000 LBS. PER SQ. IN.
fc = 2,000 LBS. PER SQ. IN.

REINFORCING STEEL
fs = 20,000 LBS. PER SQ. IN.

PRETENSIONING STEEL
fsu = 248,000 LBS PER SQ. IN.
fsi = 173,600 LBS PER SQ. IN.

PILE LOADS
ABUTMENT = 35 TONS (CONCRETE PILES)
WINGWALLS = 10 TONS (TIMBER PILES)
PIERS = 20 TONS (TIMBER PILES)

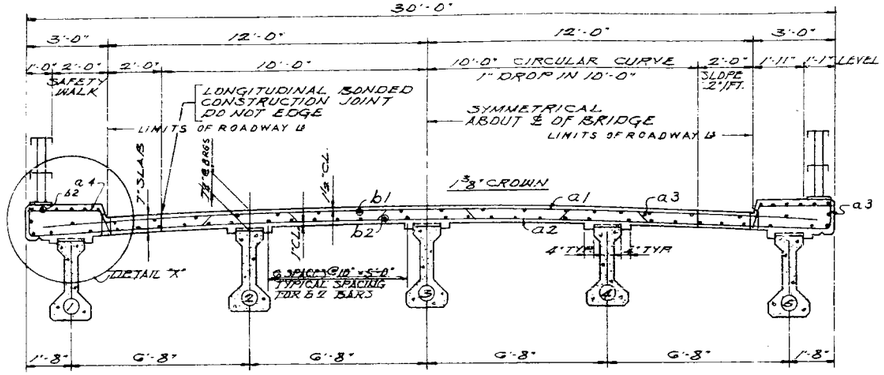
GENERAL PLAN & ELEVATION
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT I-80-3( )94
F.A.I. ROUTE 80 SECTION 50-5 HB
LA SALLE COUNTY
STATION 735+23.36

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE CHICAGO 3, ILLINOIS

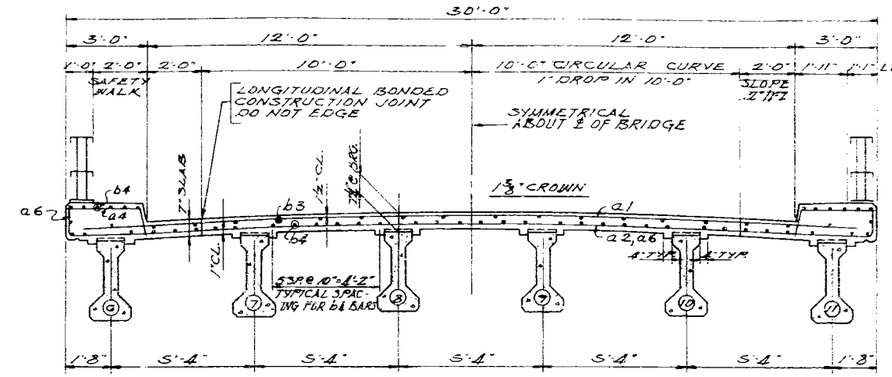
Vertical clearance changed to 14'-3" 2-8-60

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	30-5	LA SALLE	229	183
STA.		TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	F.A. PROJECT		

SHEET 5 OF 12



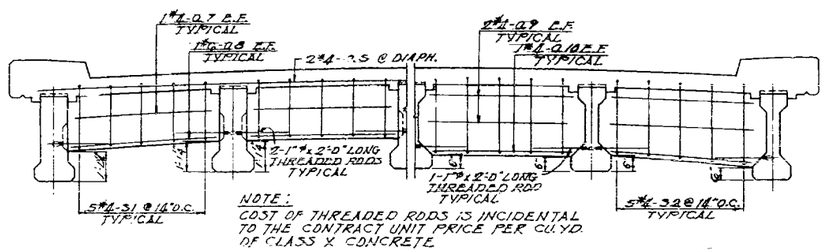
SPAN 1 & 4



SPAN 2 & 3

TYPICAL CROSS SECTIONS

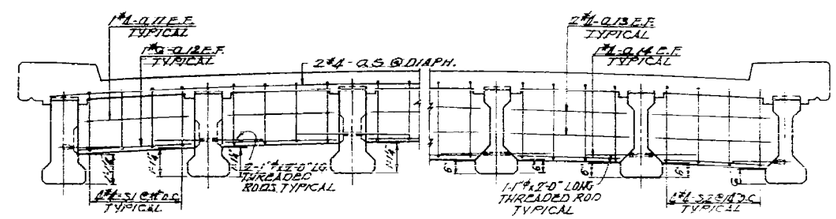
SCALE: ⅜" = 1'-0"



NOTE:
COST OF THREADED RODS IS INCIDENTAL TO THE CONTRACT UNIT PRICE PER CU. YD. OF CLASS X CONCRETE

AT BEARINGS AT INTERIOR

SPAN 1 & 4

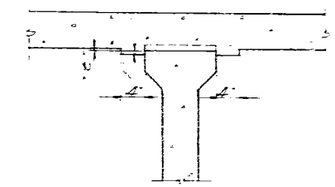


AT BEARINGS AT INTERIOR

SPAN 2 & 3

TYPICAL DIAPHRAGM DETAILS

SCALE: ⅜" = 1'-0"

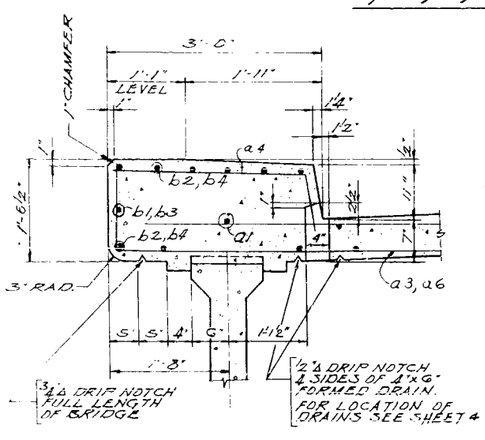


STANDARD FILLET DETAIL

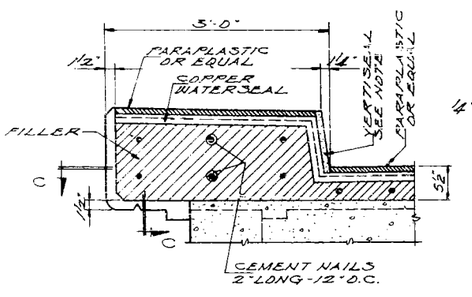
AFTER ALL PRECAST PRESTRESSED BEAMS HAVE BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE BEAMS SHALL BE TAKEN AT INTERVALS NOT TO EXCEED 10 FT. FROM THESE ELEVATIONS SUBTRACT THE INCREMENT OF DEFLECTIONS FOR THESE POINTS, DETERMINED FROM THE D.L. DEFLECTION DIAGRAM. THE ELEVATIONS SO ATTAINED SUBTRACTED ALGEBRAICALLY FROM THE THEORETICAL GRADE ELEVATIONS MINUS THE THICKNESS OF THE SLAB EQUAL THE DIMENSION "Y". A POSITIVE VALUE OF "Y" EQUALS THE FILLET HEIGHT ABOVE THE TOP OF THE BEAM. A NEGATIVE VALUE OF "Y" EQUALS THE EMBEDMENT OF THE BEAM ABOVE THE THEORETICAL BOTTOM OF SLAB ELEVATION.

TABLE OF "Y" DIMENSIONS

BEAMS \ "Y"	SPANS 1 & 4			SPANS 2 & 3		
	Y.25	Y.50	Y.75	Y.25	Y.50	Y.75
INTERIOR	3/16"	1/4"	3/16"	3/8"	1/2"	3/8"
EXTERIOR	1/4"	5/16"	1/4"	5/8"	13/16"	5/8"



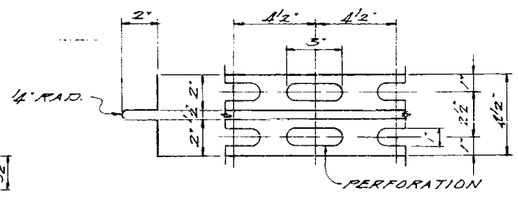
DETAIL "X" AND DRAIN DETAIL



CURB DETAIL AT FIXED PIER

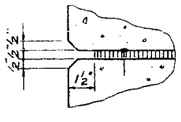
SCALE: 1" = 1'-0"

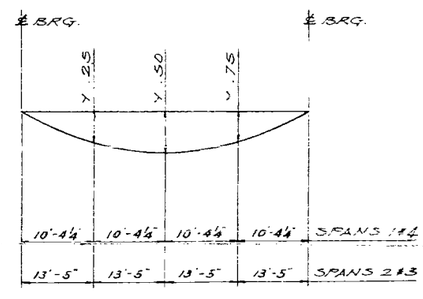
NOTE: SEAL VERTICAL CURB JOINT WITH BLACK COLD APPLIED JOINT SEALER "VERTISEAL", OR APPROVED EQUAL.



DETAIL OF COPPER WATERSEAL

SCALE: 3" = 1'-0"





D.L. DEFLECTION DIAGRAM

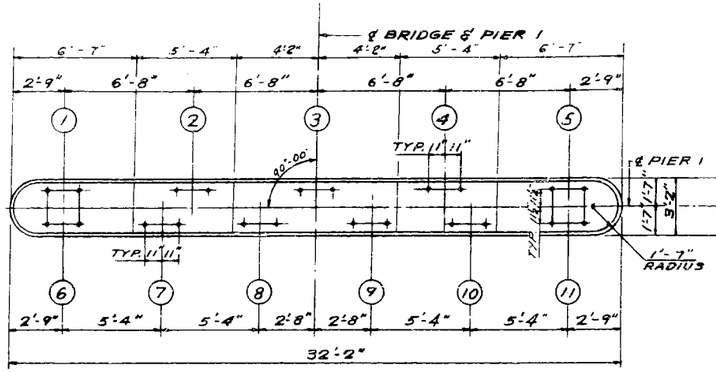
WEIGHT OF PRESTRESSED I-BEAMS NOT INCLUDED

DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT

LA SALLE COUNTY
STATION 735+23.56

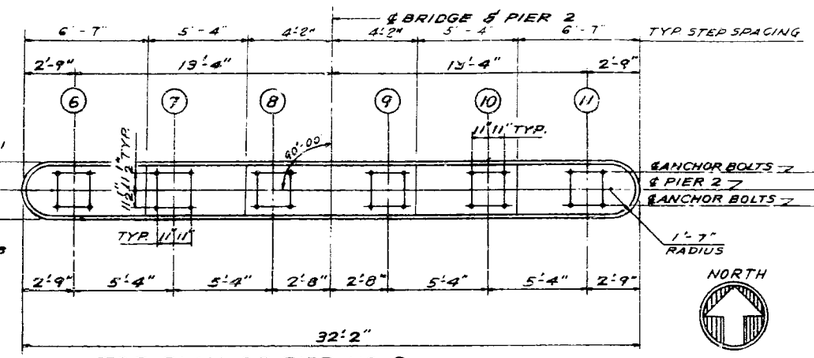
ALFRED BENESCH & ASSOCIATES
10 SOUTH WABASH AVENUE 586-
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

Revised: 1-27-60 - Curb revised - R.R.D.

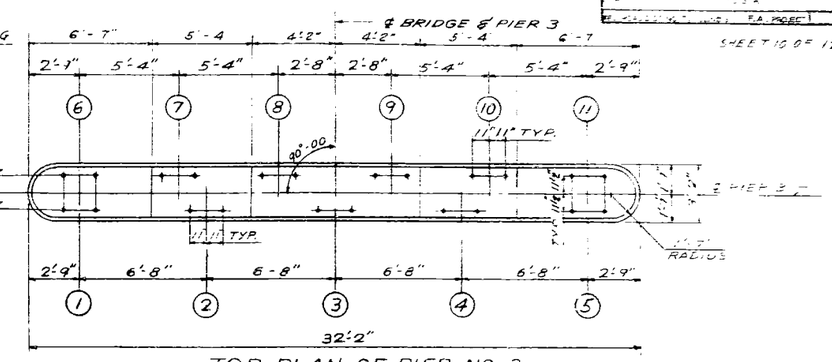


TOP PLAN OF PIER NO. 1

NOTE: PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH TOP BEAM

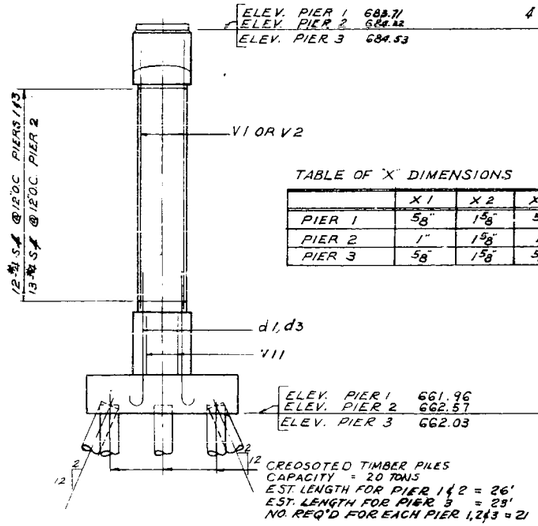


TOP PLAN OF PIER NO. 2



TOP PLAN OF PIER NO. 3

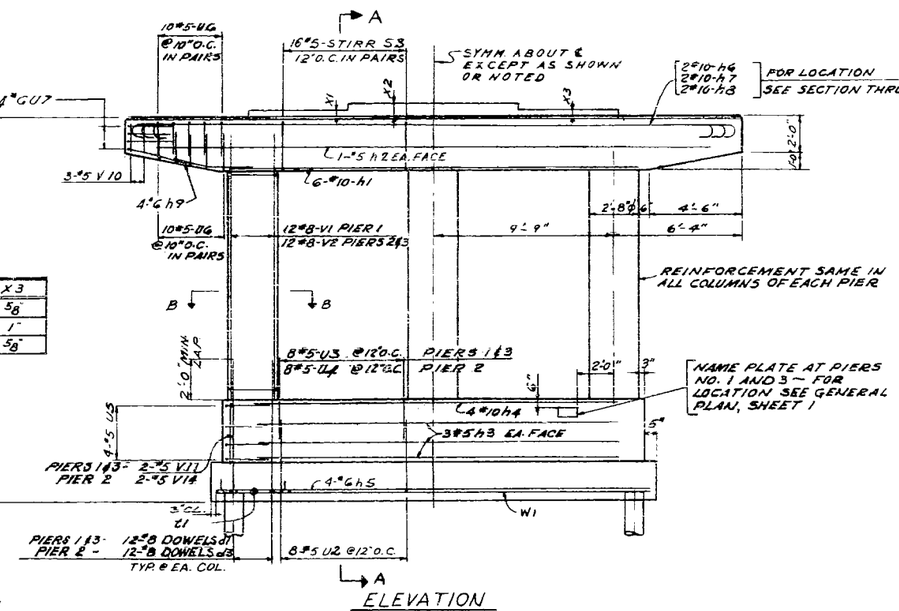
NORTH



END VIEW

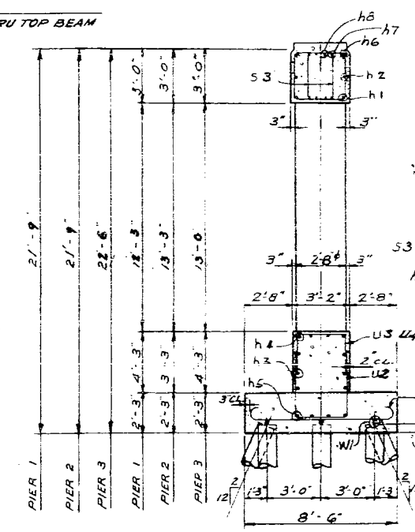
TABLE OF "X" DIMENSIONS

	X1	X2	X3
PIER 1	5⅛"	1⅝"	5⅛"
PIER 2	1"	1⅝"	1"
PIER 3	5⅛"	1⅝"	5⅛"

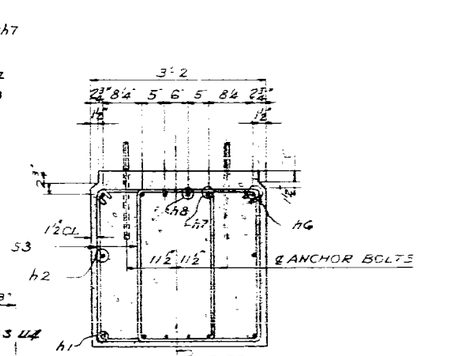


ELEVATION

SCALE 1/4" = 1'-0"



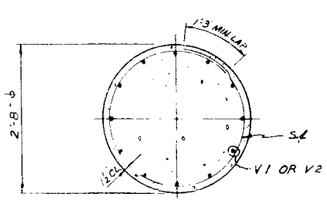
SECTION A-A



SECTION THRU TOP BEAM

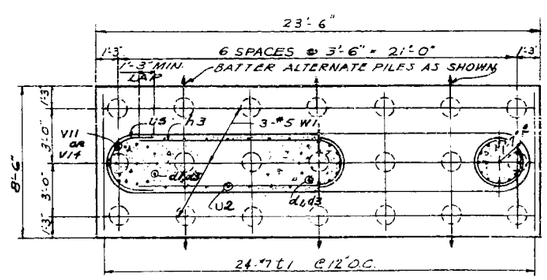
NOTE

SPACE TOP BARS AS SHOWN ABOVE TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.



SECTION B-B

SCALE 3/4" = 1'-0"



HALF SECTION HALF PLAN

FOOTING PLAN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY PIER 1	PIER 2	PIER 3
CLASS X CONCRETE	CU. YDS.	45.7	43.8	46.2
REINFORCEMENT BARS	LBS.	6,320	6,280	6,390
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	62	52	51
CREOSOTED TIMBER PILES (20 TO 28')	LIN. FT.	546	546	483
TEST PILES (TIMBER)	EACH	-	1	-

PIERS 1, 2 AND 3
GRADE SEPARATION
CROSS ROADS
OVER F.A.I. ROUTE 80
F.A. PROJECT
ROUTE 80 SECTION 50 B
LA SALLE COUNTY
STATION 735+23.36

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE CHICAGO, ILLINOIS

586-

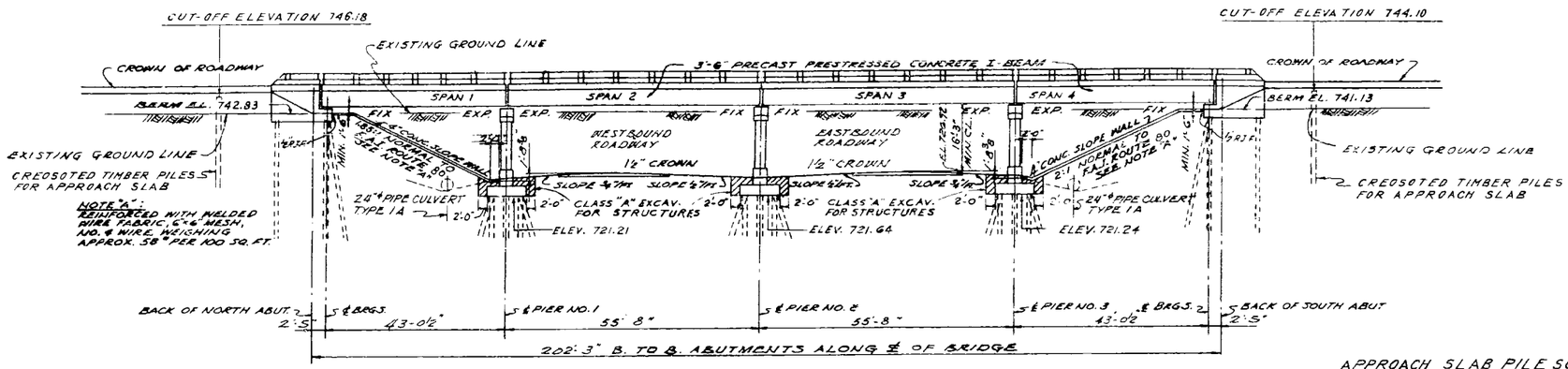
B.M. #27 - ELEV. 717.36
IRON ROD 200 FT. RT. OF STA. 828 +18.

B.M. #28 - ELEV. 739.33
SPIKE IN TELE. POLE 200' RT. OF STA. 841 +20.

B.M. #29 - ELEV. 715.87
SPIKE IN TELE. POLE 160' LT. OF STA. 858 +35.

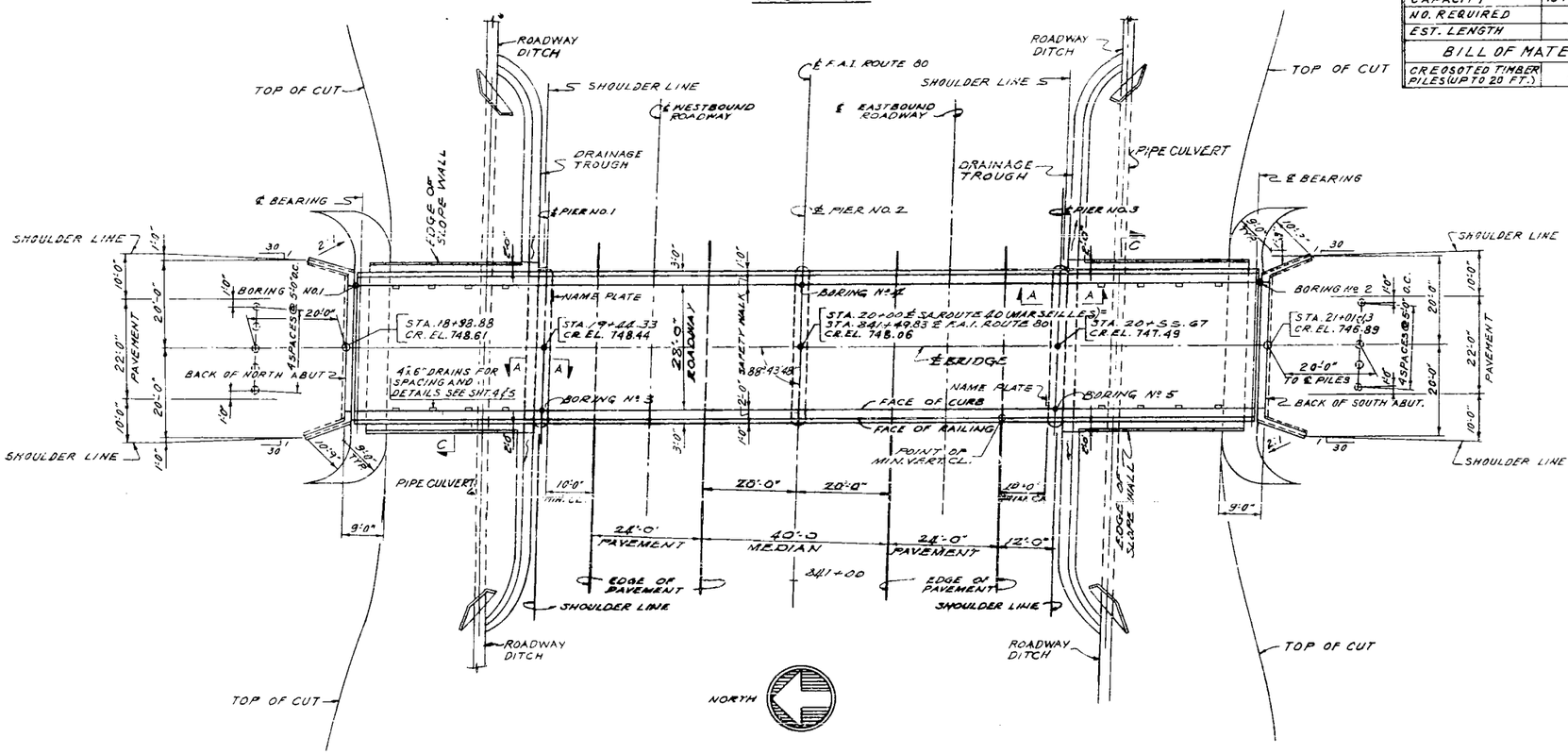
SECTION NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-5	LA SALLE	229	19
STA.	TO STA.			

SHEET 1 OF 12



ELEVATION

SCALE 1" = 15'-0"



PLAN

SCALE 1" = 15'-0"

APPROACH SLAB PILE SCHEDULE

	NORTH APPROACH	SOUTH APPROACH
CAPACITY	15 TONS	15 TONS
NO. REQUIRED	5	5
EST. LENGTH	16'	16'
BILL OF MATERIAL		
CREOSOTED TIMBER PILES (UP TO 20 FT.)	80'	80'

INDEX OF BRIDGE SHEETS - STATION 841+49.83

SHEET NO.	TITLE
1.	GENERAL PLAN AND ELEVATION
2.	DRAINAGE DETAILS, EXCAVATION, QUANTITY AND GENERAL NOTES.
3.	BORINGS AND NAMEPLATES
4.	DECK REINFORCEMENT PLAN.
5.	DECK CROSS SECTION AND DIAPHRAGM DETAILS.
6.	DETAILS OF PRECAST PRESTRESSED CONCRETE I-BEAMS
7.	FRAMING PLAN, BEARING DETAILS AND EXPANSION DEVICE
8.	HANDRAIL DETAILS
9.	NORTH AND SOUTH ABUTMENT AND WINGWALL DETAILS.
10.	PIERS 1, 2 AND 3.
11.	REINFORCEMENT BAR LISTS
12.	ABUTMENT PILES.

NOTE:

DRAINAGE TROUGH TO HAVE MIN. 8" PER FT. SLOPE EACH DIRECTION FROM EDGE OF SLOPEWALL AND TO TO TERMINATE IN ROADWAY DITCH.

FOR SECTIONS A-A, B-B, AND C-C SEE SHEET 2

FOR LIMITS OF CLASS A EXCAVATION AT ABUTMENTS AND WINGWALLS SEE SHEET 2.

QUANTITIES OF EARTH EXCAVATION FOR F.A.I. ROUTE 80 ARE INCLUDED IN QUANTITIES ON ROAD PLANS.

FOR LOCATION OF NAME PLATES ON PIERS SEE SHEET 10.

HIGHWAY CLASSIFICATION

205-M-60

DESIGN LOAD

L.L. H20-S16-44
FUTURE D.L. 1½" BIT. WEARING SURFACE

DESIGN STRESSES

CONCRETE (CAST IN PLACE)
f_c = 3500 LBS. PER SQ. IN.
f_c = 1400 LBS. PER SQ. IN.
f_c = (WITH EARTH PRESSURE) 1000 LBS. PER SQ. IN.
n = 10

PRESTRESSED CONCRETE
f_c = 5000 LBS. PER SQ. IN.
f_{ci} = 4,000 LBS. PER SQ. IN.
f_t = 2,000 LBS. PER SQ. IN.

REINFORCING STEEL
f_s = 20,000 LBS. PER SQ. IN.

PRETENSIONING STEEL
f_{su} = 240,000 LBS. PER SQ. IN.
f_{si} = 173,600 LBS. PER SQ. IN.

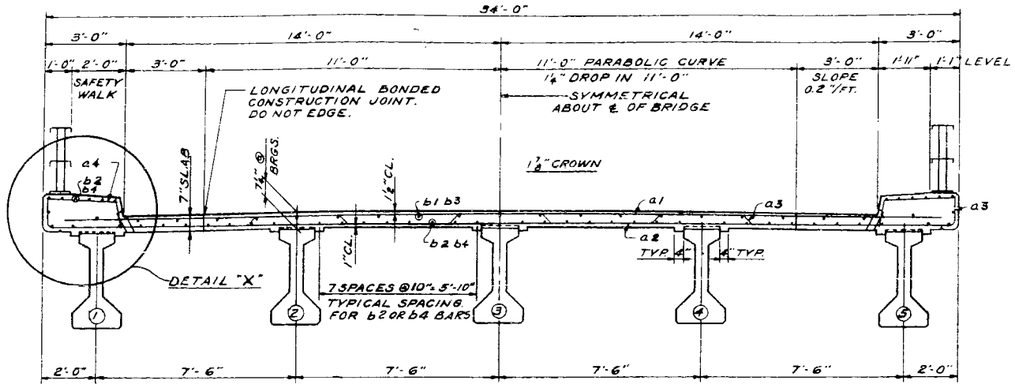
PILE LOADS
ABUTMENT = 35 TONS (CONCRETE PILES)
WINGWALLS = 10 TONS (TIMBER PILES)
PIERS = 20 TONS (TIMBER PILES)
APPROACH SLAB = 15 TONS (TIMBER PILES)

GENERAL PLAN & ELEVATION
GRADE SEPARATION
S.A. ROUTE 40 (MARSEILLES R.D.)
OVER F.A.I. ROUTE 80
F.A. PROJECT I-80-3( )94
F.A.I. ROUTE 80 SECTION 50-5 HB-2
LA SALLE COUNTY
STATION 841+49.83

ALFRED BENESCH & COMPANY CONSULTING ENGINEERS
10 SOUTH RIVERSIDE PLAZA CHICAGO, ILLINOIS

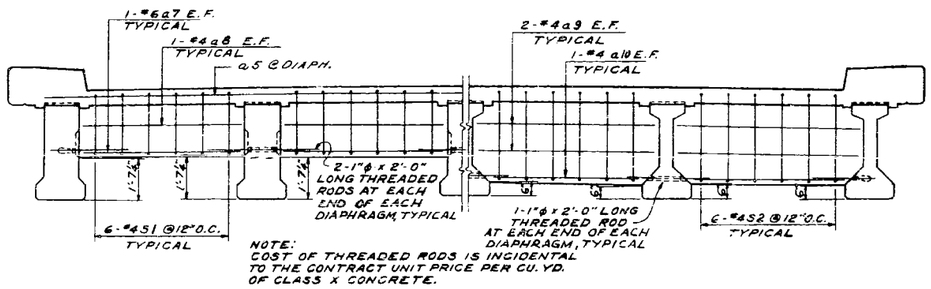
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.80	50-5	LA SALLE	229	95
STA.	TO STA			

SHEET 5 OF 12



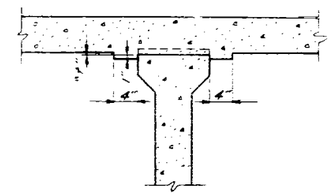
TYPICAL CROSS SECTION

SCALE: ⅜" = 1'-0"



AT BEARINGS AT INTERIOR

TYPICAL DIAPHRAGM DETAILS

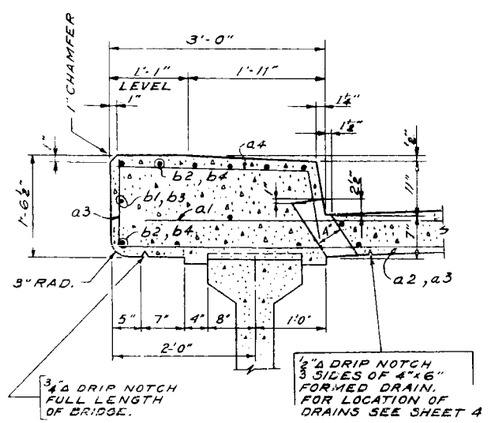


STANDARD FILLET DETAIL

AFTER ALL PRECAST PRESTRESSED BEAMS HAVE 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 ALSEBRAICALLY FROM THE THEORETICAL GRADE ELEVATIONS MINUS THE THICKNESS OF THE SLAB EQUAL THE DIMENSION "Y". A POSITIVE VALUE OF "Y" EQUALS THE FILLET HEIGHT ABOVE THE TOP OF THE BEAM. A NEGATIVE VALUE OF "Y" EQUALS THE EMBEDMENT OF THE BEAM ABOVE THE THEORETICAL BOTTOM OF SLAB ELEVATION

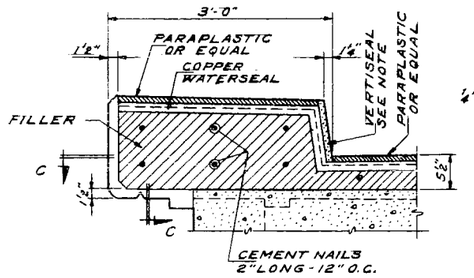
TABLE OF "Y" DIMENSIONS

"Y" / BEAMS	SPANS 1 & 4			SPANS 2 & 3		
	Y.25	Y.50	Y.75	Y.25	Y.50	Y.75
INTERIOR	⅛"	⅛"	⅛"	¼"	⅜"	¼"
EXTERIOR	⅛"	3/16"	⅛"	⅜"	½"	⅜"



DETAIL "X" AND DRAIN DETAIL

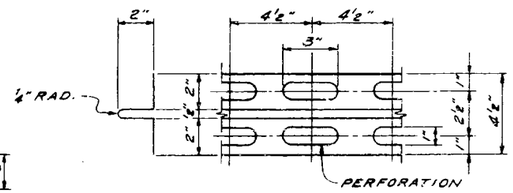
SCALE: 1" = 1'-0"



CURB DETAIL AT FIXED PIER

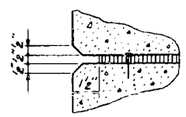
SCALE: 1" = 1'-0"

NOTE : SEAL VERTICAL CURB JOINT WITH BLACK COLD APPLIED JOINT SEALER "VERTISEAL" OR APPROVED EQUAL.

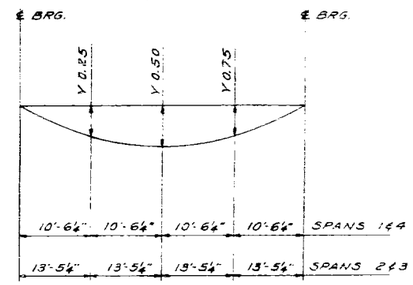


DETAIL OF COPPER WATERSEAL

SCALE: 3" = 1'-0"



SECTION "C"



D.L. DEFLECTION DIAGRAM

WEIGHT OF PRESTRESSED I-BEAMS NOT INCLUDED.

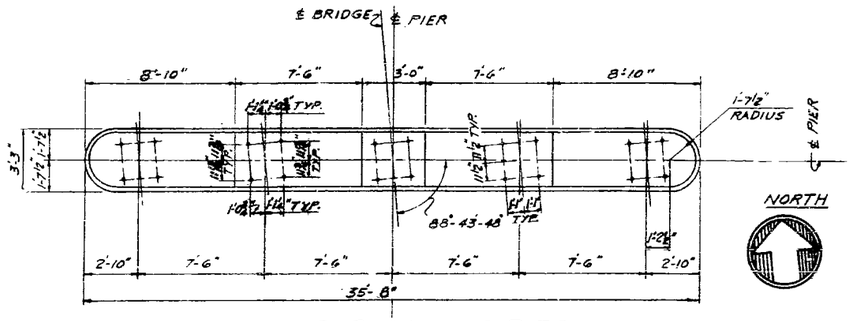
DECK CROSS SECTIONS AND DIAPHRAGM DETAIL
GRADE SEPARATION
S.A. ROUTE 4D (MARSEILLES RD.)
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 50-5 HR-2
LA SALLE COUNTY
STATION 841+42.83

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 506 CHICAGO, ILLINOIS

Revised: 1-27-60. Curb Raised. R.R.D

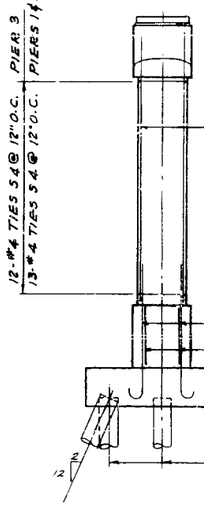
FEDERAL AID ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-5	LA SALLE	229	200
STA.		TO STA.		
FED. ROAD DIV. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET 16 OF 12



TOP PLAN OF PIER

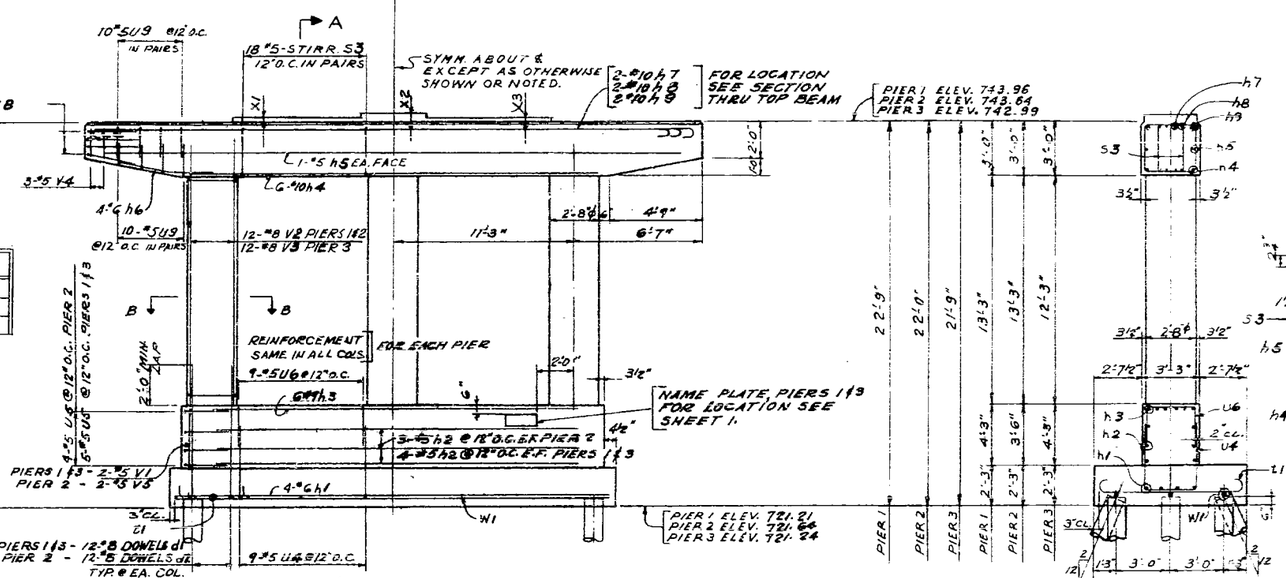
NOTE:
PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH TOP BEAM.



END VIEW

TABLE OF "X" DIMENSIONS

	X1	X2	X3
PIER 1	1'-2"	2'-8"	1'-2"
PIER 2	1'-2"	2'-8"	1'-2"
PIER 3	1'-8"	2'-2"	1'-8"

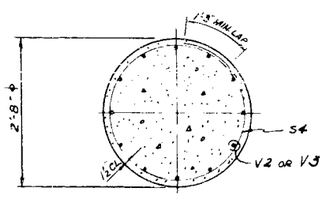


ELEVATION

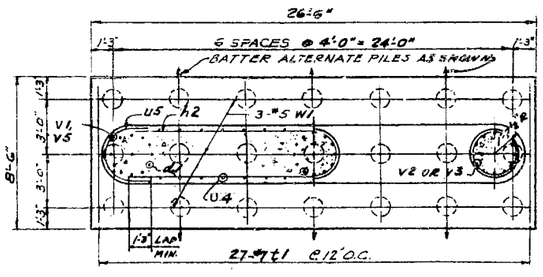
SECTION A-A

SECTION THRU TOP BEAM

NOTE:
SPACE REINFORCEMENT IN TOP BEAM TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.



SECTION B-B
SCALE ¾" = 1'-0"



HALF SECTION HALF PLAN
FOOTING PLAN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY PIER 1	PIER 2	PIER 3
CLASS X CONCRETE	CU. YDS.	51.9	49.7	51.4
REINFORCEMENT BARS	LBS.	6,870	6,760	6,760
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	68	60	68
CREOSOTED TIMBER PILES (20' TO 38')	LIN. FT.	441	441	588
TEST PILES (TIMBER)	EACH	—	1	—

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE CHICAGO, ILLINOIS

PIERS 1, 2 AND 3
GRADE SEPARATION
S.A. ROUTE 4D (MARSEILLES RD.)
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 50-5 RB-2
LA SALLE COUNTY
STATION 99+49.63

B.M. #30 – ELEV. 725.72
ROCK 170' LEFT OF STA. 869+85

B.M. #31 – ELEV. 710.05
R.R. SPIKE IN POWER POLE 350' LEFT OF STA. 884+85

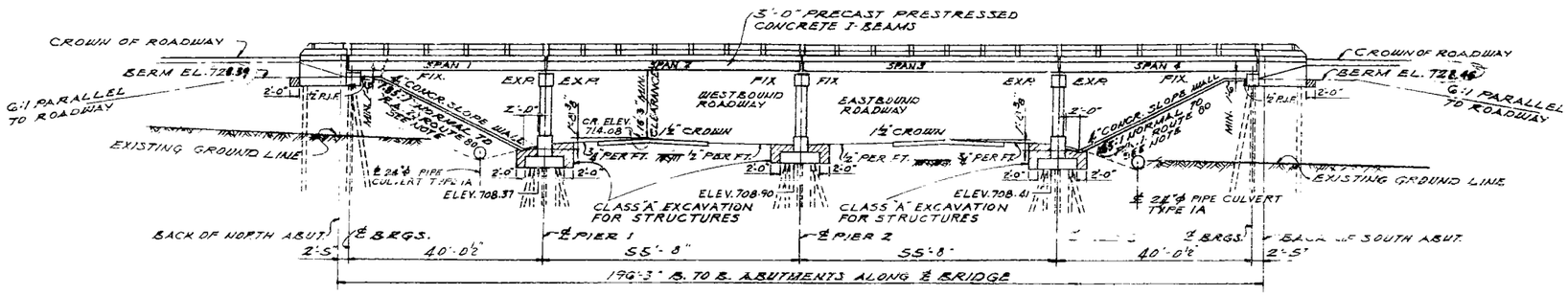
B.M. #32 – ELEV. 735.47
R.R. SPIKE IN WILD CHERRY 200' RIGHT OF STA. 898+14

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA I 80	50 B	LASALLE	229	203
STA.		TO STA.		

SHEET 1 OF 12

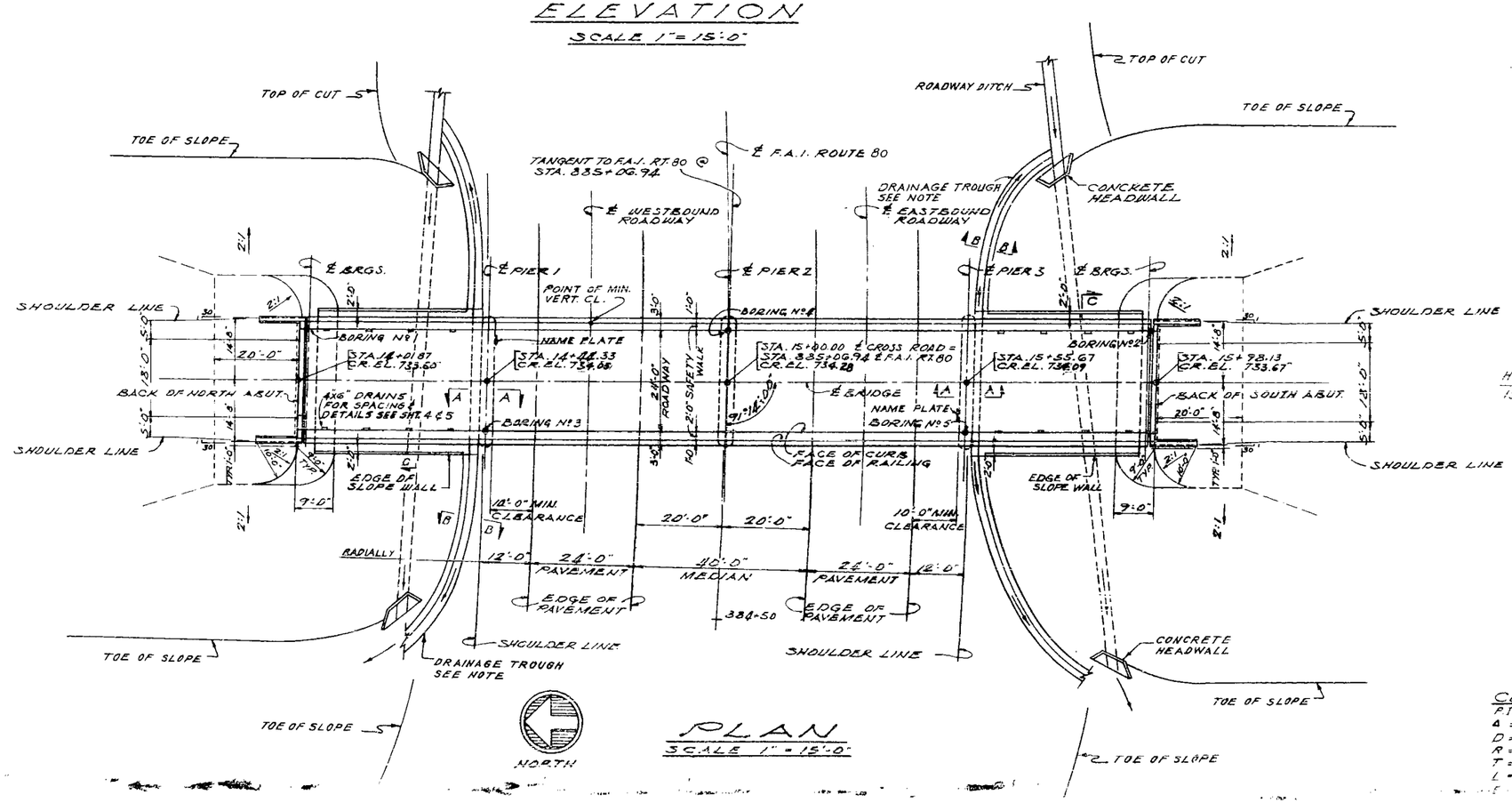
INDEX OF BRIDGE SHEETS – STATION 885-06.94

SHEET NO.	TITLE
1.	GENERAL PLAN AND ELEVATION.
2.	DRAINAGE DETAILS, EXCAVATION, QUANTITY AND GENERAL NOTES.
3.	BORINGS AND NAMEPLATES.
4.	DECK REINFORCEMENT PLAN.
5.	DECK CROSS SECTION AND DIAPHRAGM DETAILS.
6.	DETAILS OF PRECAST PRESTRESSED CONCRETE I-BEAMS.
7.	FRAMING PLAN, BEARING DETAILS AND EXPANSION DEVICE.
8.	HANDRAIL DETAILS.
9.	NORTH AND SOUTH ABUTMENT AND WINGWALL DETAILS.
10.	PIERS 1, 2 AND 3.
11.	REINFORCEMENT BAR LISTS.
12.	ABUTMENT PILES.



ELEVATION

SCALE 1" = 15'-0"



PLAN

SCALE 1" = 15'-0"

NOTE:

FOR LOCATION OF NAME PLATES ON PIERS SEE SHEET 10.

QUANTITIES OF EARTH EXCAVATION AND CONCRETE HEADWALLS FOR F.A.I. RTE. 80 AND EMBANKMENT FOR CROSS ROAD ARE INCLUDED IN QUANTITIES ON ROAD PLANS.

6 TO 1 BACKSLOPE MAY BE OMITTED IF EMBANKMENT IS CONSTRUCTED FULL LENGTH.

FOR SECTIONS A-A, B-B AND C-C SEE SHEET 2.

FOR LIMITS OF CLASS A EXCAVATION AT ABUTMENTS AND WINGWALLS SEE SHEET 2.

DRAINAGE TROUGH TO HAVE MIN. 1/8" PER FT. SLOPE EACH DIRECTION FROM EDGE OF SLOPE WALL AND TO TERMINATE IN ROADWAY DITCH.

SLOPE WALL REINFORCED WITH WELDED WIRE FABRIC, 6"x6" MESH, NO. 4 WIRE, WEIGHING APPROX. 58# PER 100 SQ. FT.

HIGHWAY CLASSIFICATION
15-P-45

DESIGN LOAD

LL. H15-S12-44
FUTURE D.L. 1 1/2" BIT. WEARING SURFACE

DESIGN STRESSES

CONCRETE (CAST IN PLACE)
f'c = 3,500 LBS. PER SQ. INCH
fc = 1,400 LBS. PER SQ. INCH
fc = (WITH EARTH PRESSURE) 1000 LBS. PER SQ. IN.
V = (PIER FOOTING) 75 LBS. PER SQ. IN.
n = 10

PRESTRESSED CONCRETE
f'c = 5,000 LBS. PER SQ. INCH
f'ci = 4,000 LBS. PER SQ. INCH
fc = 2,000 LBS. PER SQ. INCH

REINFORCING STEEL
fs = 20,000 LBS. PER SQ. INCH

PRETENSIONING STEEL
fsu = 248,000 LBS. PER SQ. INCH
fsi = 173,000 LBS. PER SQ. INCH

PILE LOADS

ABUTMENT #3 35 TONS (CONCRETE PILES)
WINGWALLS = 10 TONS (TIMBER PILES)
PIERS 20 TONS (TIMBER PILES)

CURVE DATA F.A.I. 80

P.I. STA. 889+65.93
Δ = 0°-48'-20"
D = 0°-03'-00"
R = 114,591.56'
T = 805.56'
L = 1,611.11

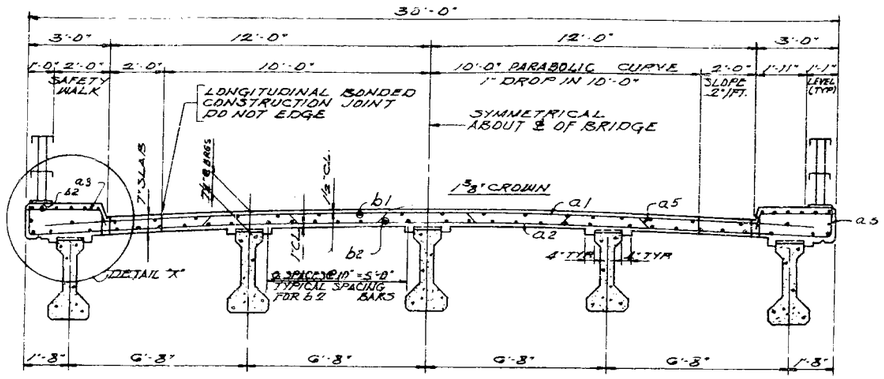
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 606 CHICAGO, ILLINOIS

GENERAL PLAN & ELEVATION
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT I-80-3( )194
F.A.I. ROUTE 80 SECTION 50 B
LA SALLE COUNTY
STATION 885+06.94

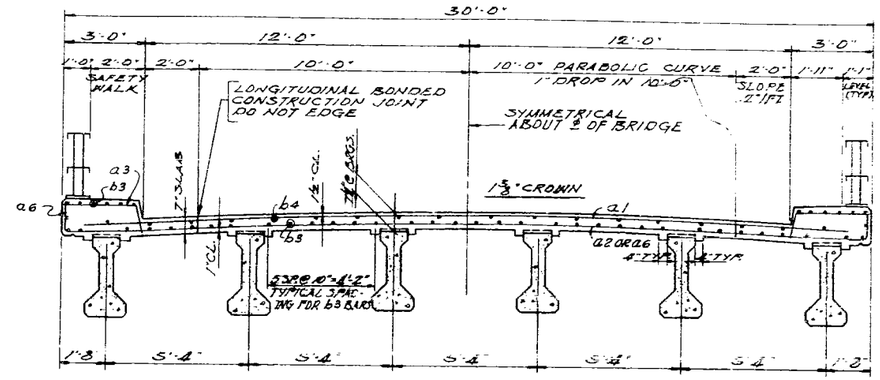
Vertical clearance changed to 16'-3" 8-8-60

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I 80	50-3	LA SALLE	229	207
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	F.A. PROJECT		

SHEET 5 OF 12



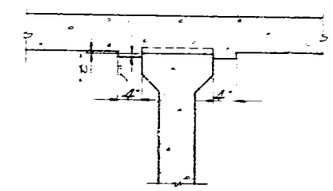
SPAN 1 & 4



SPAN 2 & 3

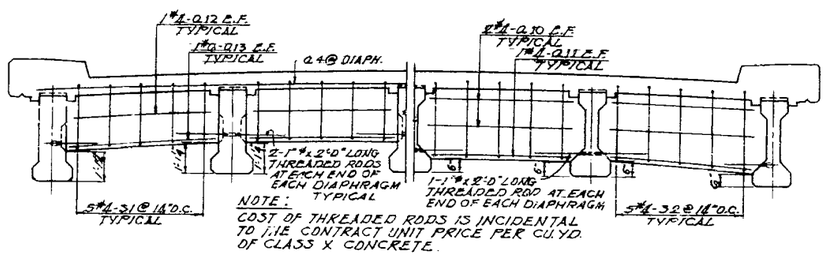
TYPICAL CROSS SECTIONS

SCALE: ⅜" = 1'-0"



STANDARD FILLET DETAIL

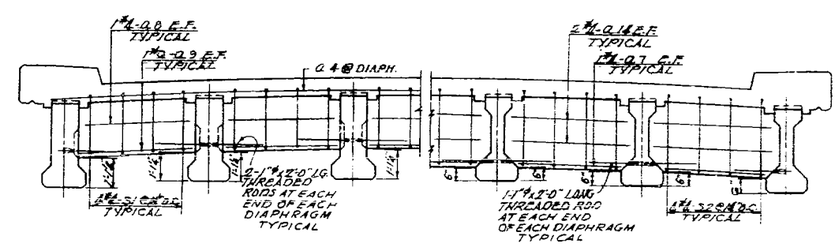
AFTER ALL PRECAST PRESTRESSED BEAMS HAVE BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE BEAMS SHALL BE TAKEN AT INTERVALS NOT TO EXCEED 10 FT. FROM THESE ELEVATIONS SUBTRACT THE INCREMENT OF DEFLECTIONS FOR THESE POINTS, DETERMINED FROM THE D.L. DEFLECTION DIAGRAM. THE ELEVATIONS SO ATTAINED SUBTRACTED ALGEBRAICALLY FROM THE THEORETICAL GRADE ELEVATIONS MINUS THE THICKNESS OF THE SLAB EQUAL THE DIMENSION "Y". A POSITIVE VALUE OF "Y" EQUALS THE FILLET HEIGHT ABOVE THE TOP OF THE BEAM. A NEGATIVE VALUE OF "Y" EQUALS THE EMBEDMENT OF THE BEAM ABOVE THE THEORETICAL BOTTOM OF SLAB ELEVATION.



NOTE: COST OF THREADED RODS IS INCIDENTAL TO THE CONTRACT UNIT PRICE PER CU. YD. OF CLASS X CONCRETE.

AT BEARINGS AT INTERIOR

SPAN 1 & 4



AT BEARINGS AT INTERIOR

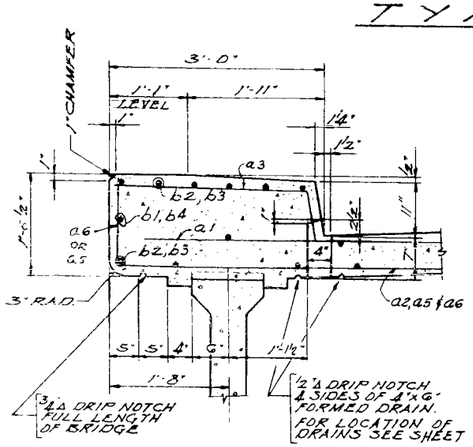
SPAN 2 & 3

TYPICAL DIAPHRAGM DETAILS

SCALE: ⅜" = 1'-0"

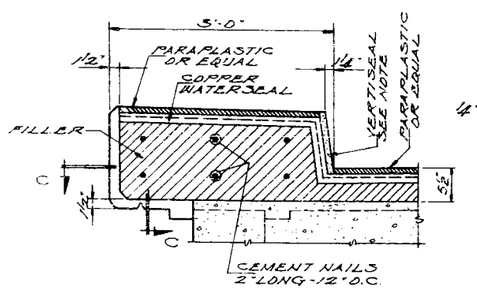
TABLE OF "Y" DIMENSIONS

"Y" / BEAMS	SPAN 1 & 4			SPANS 2 & 3		
	Y .25	Y .50	Y .75	Y .25	Y .50	Y .75
INTERIOR	1/8"	3/16"	1/8"	3/8"	2"	3/8"
EXTERIOR	3/16"	1/4"	3/16"	5/8"	1 3/16"	5/8"



DETAIL "X" AND DRAIN DETAIL

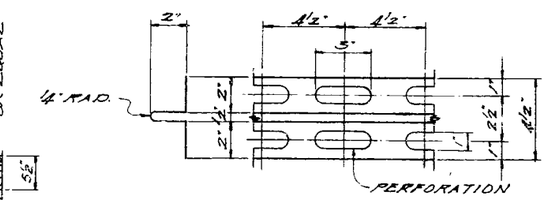
SCALE: 1" = 1'-0"



CURB DETAIL AT FIXED PIER

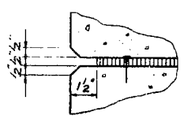
SCALE: 1" = 1'-0"

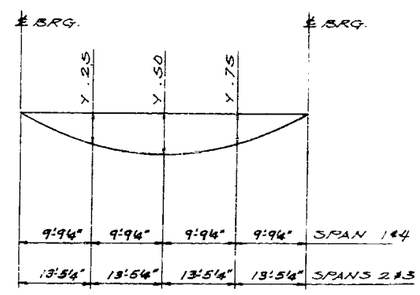
NOTE: SEAL VERTICAL CURB JOINT WITH BLACK COLD APPLIED JOINT SEALER "VERTISEAL", OR APPROVED EQUAL.



DETAIL OF COPPER WATER SEAL

SCALE: 5" = 1'-0"





D.L. DEFLECTION DIAGRAM

WEIGHT OF PRESTRESSED I-BEAMS NOT INCLUDED

DECK CROSS SECTIONS AND DIAPHRAGM DETAILS

GRADE SEPARATION

CROSS ROAD

OVER F.A.I. ROUTE 80

F.A. PROJECT

F.A.I. ROUTE 80 SECTION 50-3

LA SALLE COUNTY

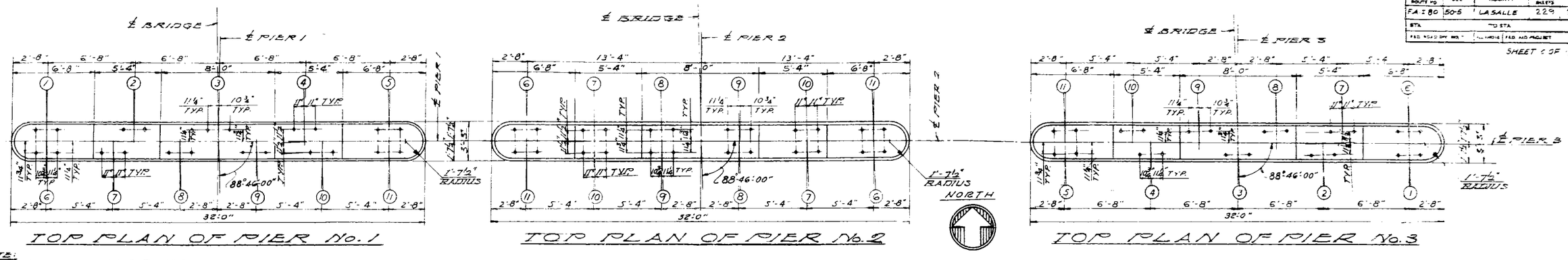
STATION 885+06.94

10 SOUTH WABASH AVENUE 586 CHICAGO, ILLINOIS

Revised 1-27-60 Curb Raised R.R.D.

FEDERAL AID ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-5	LA SALLE	229	212
STA		TO STA		
FED. ROAD DIV. NO. 1	ILLINOIS	FED. AID PROJECT		

SHEET 1 OF 12

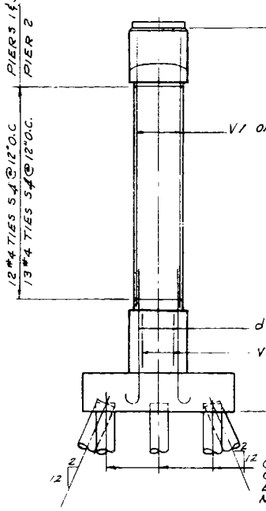


TOP PLAN OF PIER No. 1

TOP PLAN OF PIER No. 2

TOP PLAN OF PIER No. 3

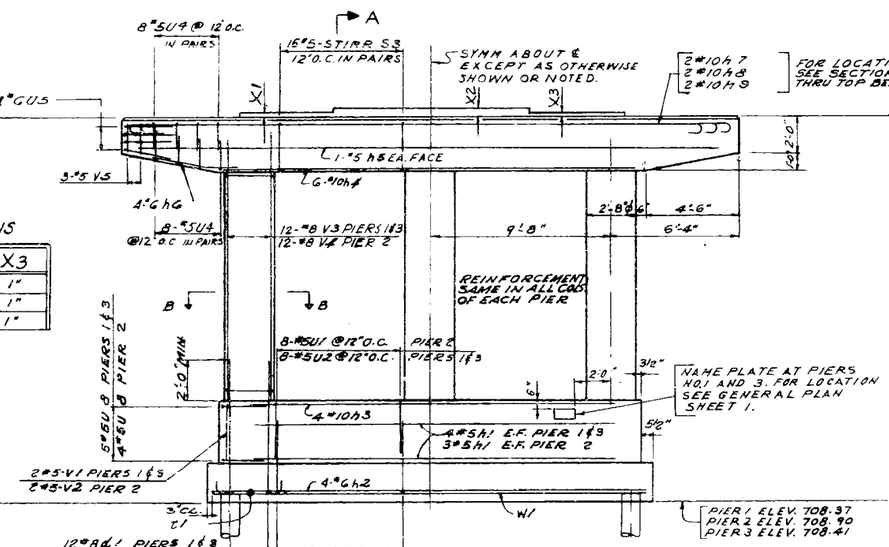
NOTE:
PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH TOP BEAM.



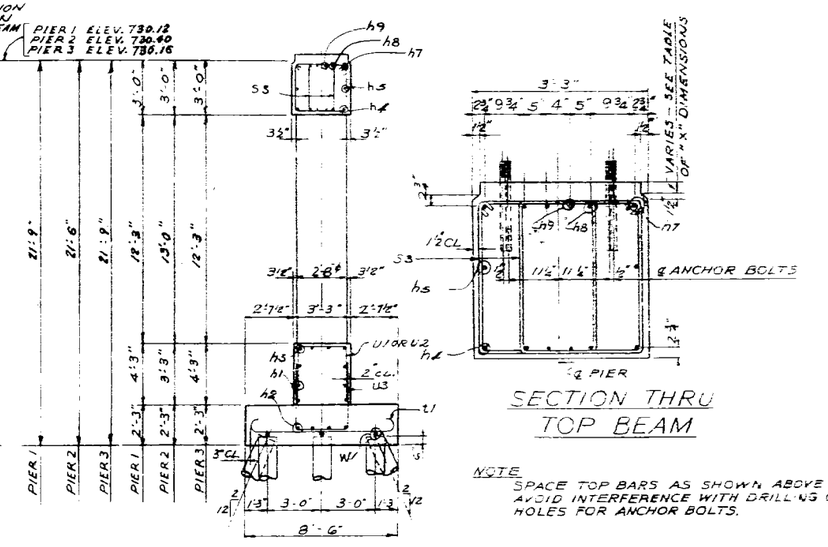
END VIEW

TABLE OF "X" DIMENSIONS

	X1	X2	X3
PIER 1	1"	1⅝"	1"
PIER 2	1"	1⅝"	1"
PIER 3	1"	1⅝"	1"



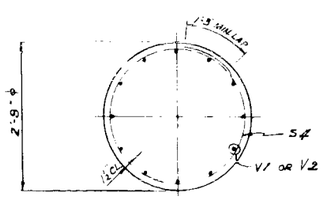
ELEVATION
SCALE ¼"=1'-0"



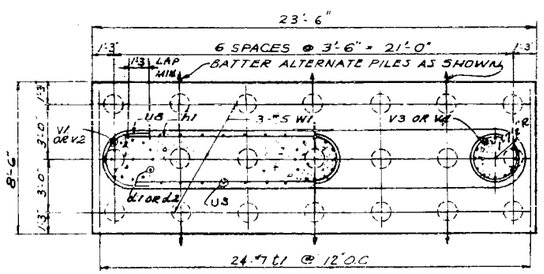
SECTION A-A

SECTION THRU TOP BEAM

NOTE
SPACE TOP BARS AS SHOWN ABOVE TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.



SECTION B-B
SCALE ¾"=1'-0"



HALF SECTION HALF PLAN

FOOTING PLAN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY PIER 1	PIER 2	PIER 3
CLASS X CONCRETE	CU. YDS.	46.2	44.0	46.2
REINFORCEMENT BARS	LBS.	6,330	6,230	6,330
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	61	53	60
CREOSOTED TIMBER PILES (20' TO 38')	LIN. FT.	525	525	525
TEST PILES (TIMBER)	EACH	—	1	—

PIERS 1, 2 AND 3
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 50-5 PART
LA SALLE COUNTY
STATION 885+06.94

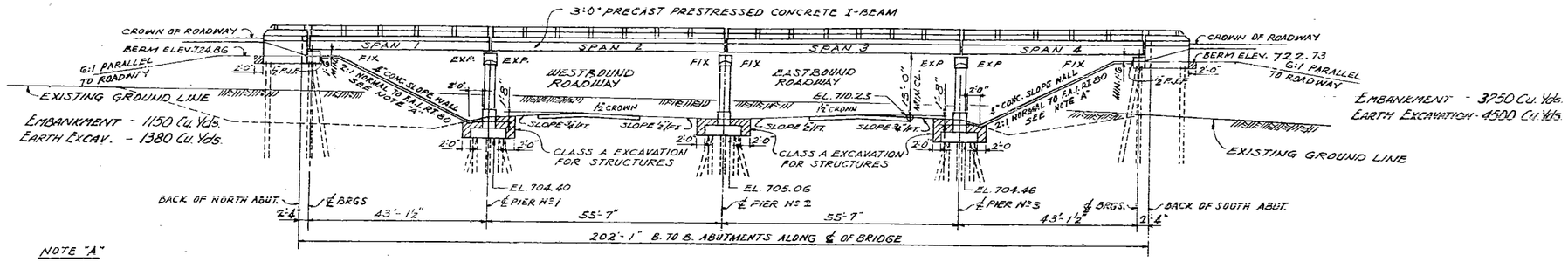
10 SOUTH WABASH AVENUE 586 CHICAGO, ILLINOIS

B.M. 34 - EL. 722.99
R.R. SPIKE IN TEL POLE 175' LT. OF STA. 924+85
B.M. 35 - EL. 720.23
R.R. SPIKE IN P. POLE 145' LT. OF STA. 937+65
B.M. 36A - EL. 697.41
R.R. SPIKE IN FENCE POST 160' LT. OF STA 751+20

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-6HB	LA SALLE	56	19
STA.		TO STA.		

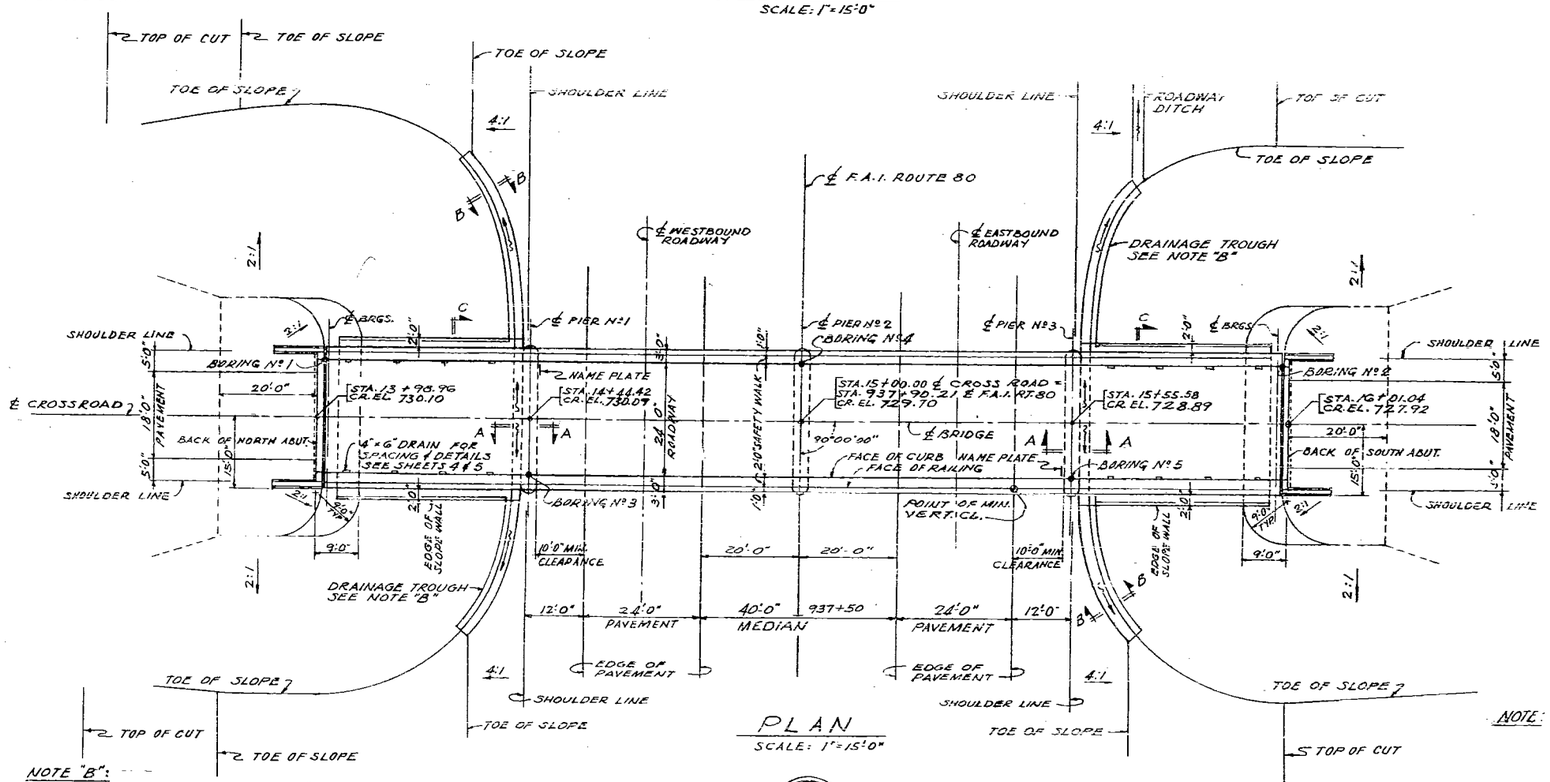
F.A.I. ROAD DIST. NO. 7 ILLINOIS F.A. PROJECT I-80-3(22)

SHEET 1 OF 12



NOTE "A"
REINFORCED WITH WELDED WIRE FABRIC 6" x 6" MESH, NO. 4 WIRE, WEIGHING APPROX. 58# PER 100 SQ. FT.

ELEVATION
SCALE: 1" = 15'-0"



PLAN
SCALE: 1" = 15'-0"

NOTE "B":
DRAINAGE TROUGH TO HAVE MIN. 3" PER FOOT SLOPE EACH DIRECTION FROM EDGE OF SLOPE WALL AND TO TERMINATE AS SHOWN.

NORTH

NOTE:
FOR SECTIONS A-A, B-B, & C-C SEE SHEET 2.
FOR LIMITS OF CLASS A EXCAVATION AT ABUTMENTS AND WINGWALLS SEE SHEET 2.
FOR LOCATION OF NAME PLATES SEE SHEET 10.

INDEX OF SHEETS — SECTION 50-6HB

SHEET NO.	TITLE
1	GENERAL PLAN AND ELEVATION
2	DRAINAGE DETAILS, EXCAVATION, QUANTITIES AND GENERAL NOTES
3	BORINGS AND NAME PLATES
4	DECK REINFORCEMENT PLAN
5	DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
6	DETAILS OF PRECAST PRESTRESSED CONCRETE I-BEAMS
7	FRAMING PLAN, BEARING DETAILS AND EXPANSION DEVICE
8	HANDRAIL DETAILS
9	NORTH AND SOUTH ABUTMENTS AND WINGWALL DETAILS
10	PIERS 1, 2 AND 3
11	REINFORCEMENT BAR LISTS
12	ABUTMENT PILES

ABUTMENT PILE NOTES:

1. DRIVE A CONCRETE TEST PILE AT EACH ABUTMENT.
2. CONSTRUCT EMBANKMENT AS SHOWN.
3. DRILL OVERSIZE HOLES THROUGH THE EMBANKMENT TO THE EXISTING GROUND FOR THE ABUTMENT AND WING PILES.
4. DRIVE THE REMAINDER OF THE CONCRETE PILES FOR THE ABUTMENTS THROUGH THE DRILLED OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A PENETRATION BELOW EXISTING GROUND NOT LESS THAN DETERMINED FROM THE TEST PILES.
5. DRIVE THE TIMBER PILES FOR THE ABUTMENT WINGS THROUGH THE OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A MINIMUM PENETRATION OF 10 FEET INTO THE EXISTING GROUND.
6. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

ROAD CLASSIFICATION = E-1
DESIGN SPEED = 45 M.P.H.

DESIGN LOAD
L.L. H15-S12-44
FUTURE D.L. 1½" BIT. WEARING SURFACE

DESIGN STRESSES
CONCRETE (CAST IN PLACE)
f'c = 3500 LBS. PER SQ. IN.
fc = 1400 LBS. PER SQ. IN.
fc (WITH EARTH PRESSURE) 1050 LBS. PER SQ. IN.
γ = (PIER FOOTINGS) 75 LBS. PER CU. FT.
n = 10
PRESTRESSED CONCRETE
f'c = 5,000 LBS. PER SQ. IN.
f'ci = 4,000 LBS. PER SQ. IN.
fc = 2,000 LBS. PER SQ. IN.
REINFORCING STEEL
fs = 20,000 LBS. PER SQ. IN.
PRETENSIONING STEEL
fsu = 243,000 LBS. PER SQ. IN.
fsi = 172,500 LBS. PER SQ. IN.

PILE LOADS
ABUTMENT = 35 TONS (CONCRETE PILES)
WINGWALLS = 10 TONS (TIMBER PILES)
PIERS = 20 TONS (TIMBER PILES)

GENERAL PLAN & ELEVATION
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT I-80-3(22)
F.A.I. ROUTE 80 SECTION 50-6HB
LASALLE COUNTY
STATION 937+90.21

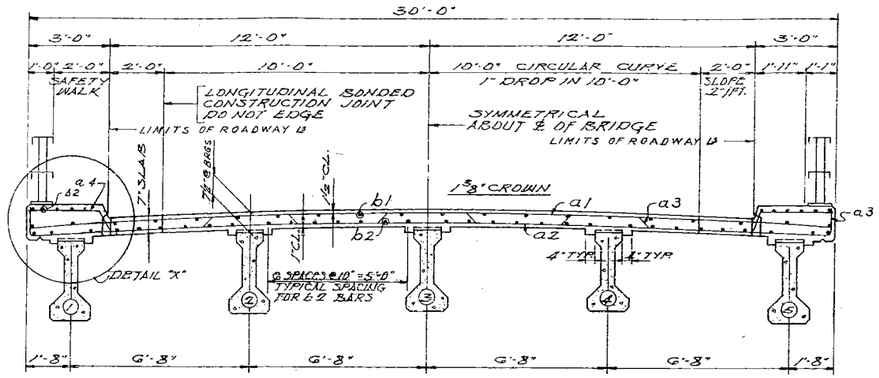
ITEMS FOR STRUCTURES EXAMINED June 2, 1959
DIRECTOR OF HIGHWAY TRAFFIC STRUCTURES

REV. 12/29/59 RAK. 1) QUANTITIES FOR EMBANKMENT ADDED
2) ITEMS DELETED UNDER "NOTE"

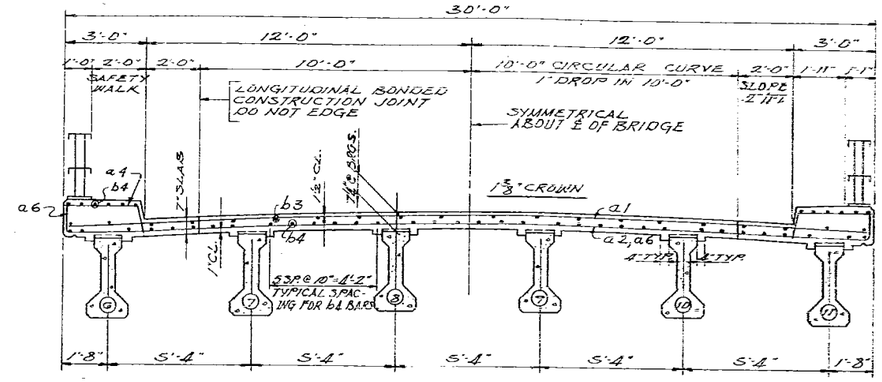
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-6HB	LA SALLE	56	23
STA.	TO STA.			
FED. ROAD DIST. NO. 11 ILLINOIS	F.A. PROJECT			

SHEET 5 OF 12



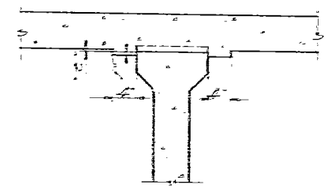
SPAN 1 & 4



SPAN 2 & 3

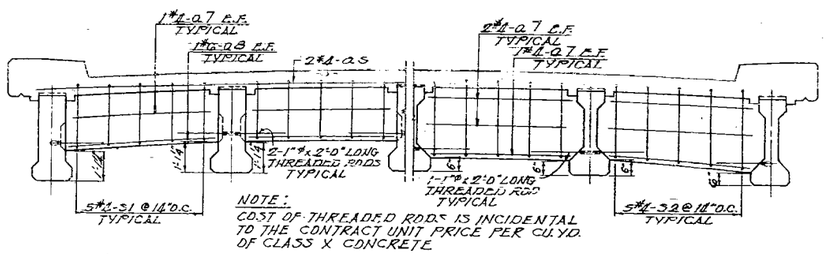
TYPICAL CROSS SECTIONS

SCALE: ⅜" = 1'-0"



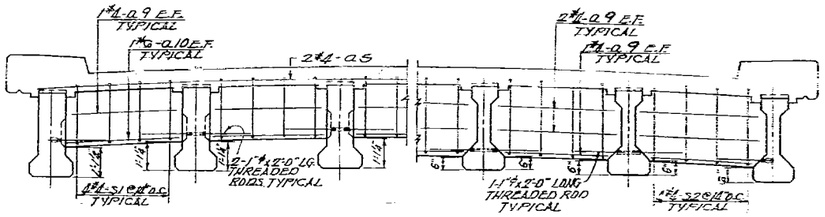
STANDARD FILLET DETAIL

AFTER ALL PRECAST PRESTRESSED BEAMS HAVE 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 ALGEBRAICALLY FROM THE THEORETICAL GRADE ELEVATIONS MINUS THE THICKNESS OF THE SLAB EQUAL THE DIMENSION "Y". A POSITIVE VALUE OF "Y" EQUALS THE FILLET HEIGHT ABOVE THE TOP OF THE BEAM. A NEGATIVE VALUE OF "Y" EQUALS THE EMBEDMENT OF THE BEAM ABOVE THE THEORETICAL BOTTOM OF SLAB ELEVATION.



AT BEARINGS AT INTERIOR

SPAN 1 & 4



AT BEARINGS AT INTERIOR

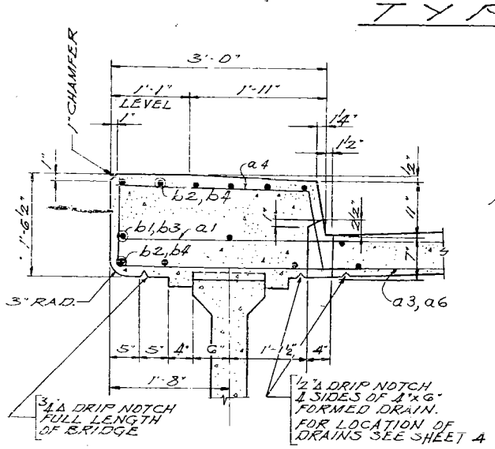
SPAN 2 & 3

TYPICAL DIAPHRAGM DETAILS

SCALE: ⅜" = 1'-0"

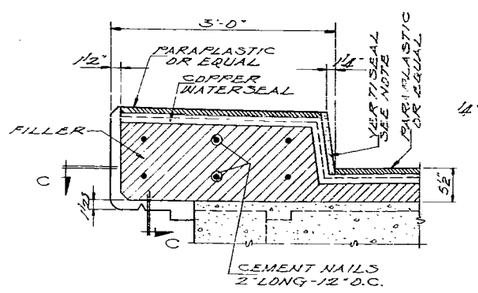
TABLE OF "Y" DIMENSIONS

"Y" / BEAMS	SPANS 1 & 4			SPANS 2 & 3		
	Y.25	Y.50	Y.75	Y.25	Y.50	Y.75
INTERIOR	3/16"	1/4"	3/16"	3/8"	1/2"	3/8"
EXTERIOR	1/4"	5/16"	1/4"	5/8"	7/8"	5/8"



DETAIL "X" AND DRAIN DETAIL

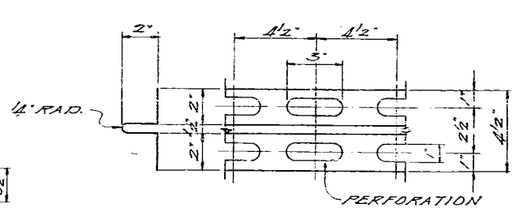
SCALE: 1" = 1'-0"



CURB DETAIL AT FIXED PIER

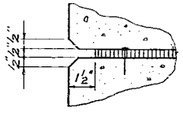
SCALE: 1" = 1'-0"

NOTE: SEAL VERTICAL CURB JOINT WITH BLACK COLD APPLIED JOINT SEALER "VERTISEAL", OR APPROVED EQUAL.

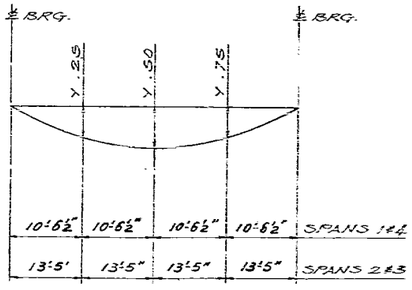


DETAIL OF COPPER WATERSEAL

SCALE: 3" = 1'-0"



SECTION "C"



D.L. DEFLECTION DIAGRAM

WEIGHT OF PRESTRESSED I-BEAMS NOT INCLUDED

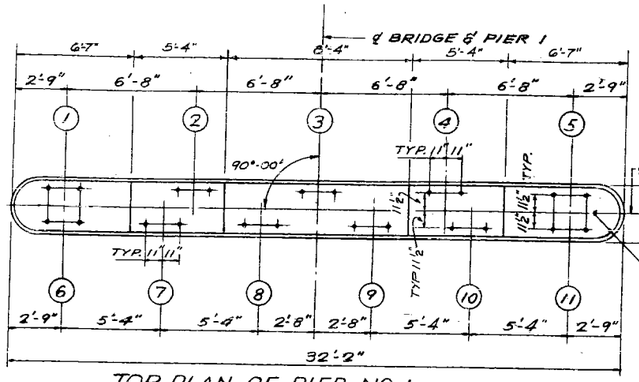
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 566- CHICAGO, ILLINOIS

DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECT. 50-6HB
LA SALLE COUNTY
STATION 937+90.2

Revised - 1-12-60 - W.J.M. - Changed height of curb from 9" to 12" in DETAIL "X" & DRAIN DETAIL

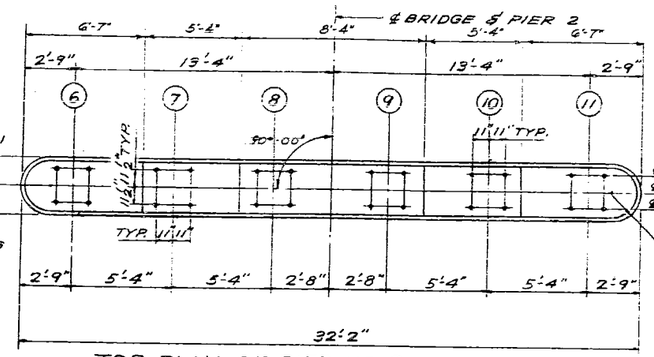
F.A.I. 80	50-6HB	LA SALLE	54	28
STA.		TO STA.		

SHEET 16 OF 12

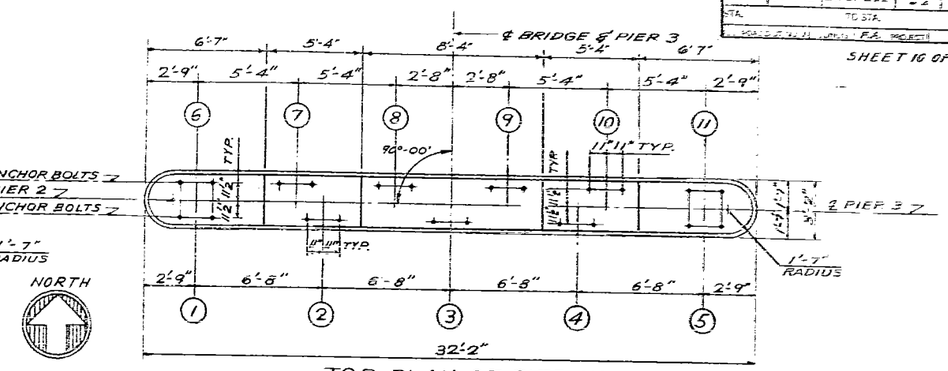


TOP PLAN OF PIER NO. 1

NOTE: PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH TOP BEAM

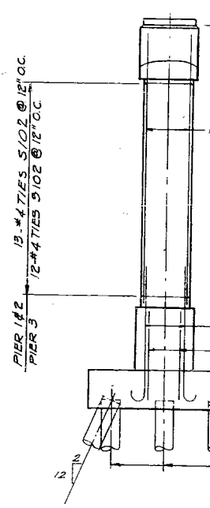


TOP PLAN OF PIER NO. 2



TOP PLAN OF PIER NO. 3

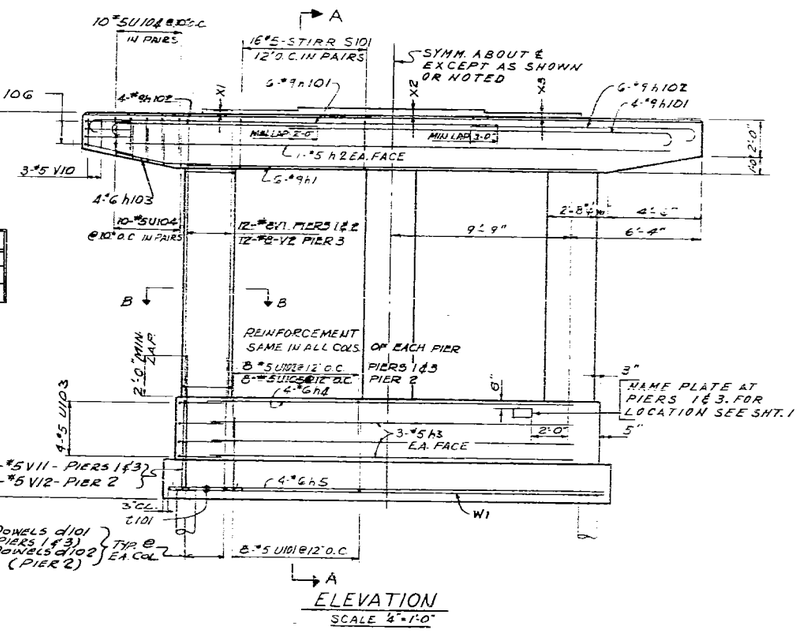
NORTH



END VIEW

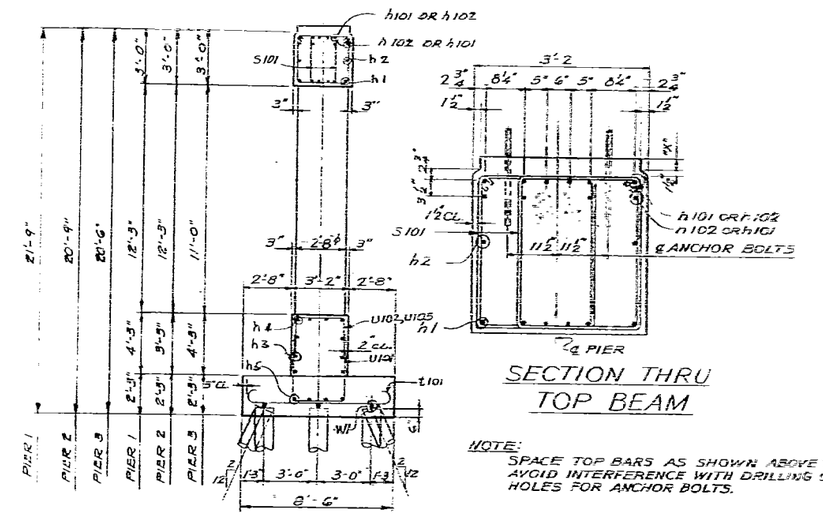
TABLE OF "X" DIMENSIONS

	X1	X2	X3
PIER 1	5/8"	1 5/8"	3/8"
PIER 2	1"	1 3/8"	1"
PIER 3	3/8"	1 3/8"	5/8"



ELEVATION

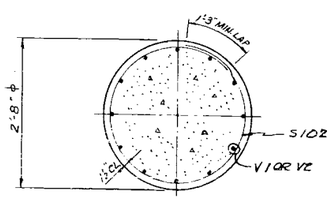
SCALE 4" = 1'-0"



SECTION A-A

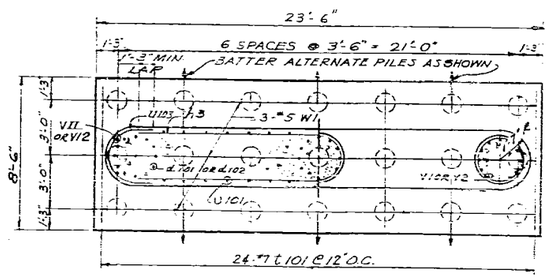
SECTION THRU TOP BEAM

NOTE: SPACE TOP BARS AS SHOWN ABOVE TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.



SECTION B-B

SCALE 3/4" = 1'-0"



HALF SECTION HALF PLAN

FOOTING PLAN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY PIER 1	PIER 2	PIER 3
CLASS X CONCRETE	CU. YDS.	45.6	43.1	44.9
REINFORCEMENT BARS	LBS.	6,360	6,260	6,230
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	60	52	59
CREOSOTED TIMBER PILES	LIN. FT.	525	525	525
TEST PILES (TIMBER)	EACH	1	1	1

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

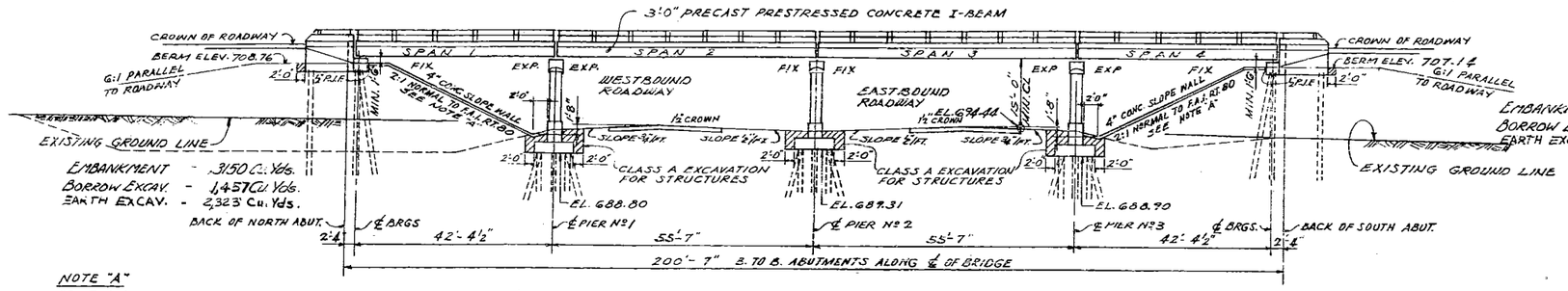
PIERS 1, 2 AND 3
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 50-6HB
LASALLE COUNTY
STATION 937+90.21

B.M. 38A - ELEV. 698.09
R.R. SPIKE IN GATE POST 150' LT. OF STA. 977+30
B.M. 39 - ELEV. 679.03
R.R. SPIKE IN TEL. POLE 300' LT. OF STA. 990+64
B.M. 40 - ELEV. 688.53
R.R. SPIKE IN TEL. POLE 180' LT. OF STA. 1004+12

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-6HB-1	LA SALLE	56	31
STA.		TO STA.		

STATE ROAD DIST. NO. 2 | ILLINOIS | F.A. PROJECT I-80-3(22)101

SHEET 1 OF 12



EMBANKMENT - 3500 Cu. Yds.
BORROW EXCAV. - 1,458 Cu. Yds.
EARTH EXCAV. 2,742 Cu. Yds.

NOTE "A"
REINFORCED WITH WELDED WIRE FABRIC 6" x 6" MESH, No 4 WIRE; WEIGHING APPROX. 58# PER 100 SQ. FT.

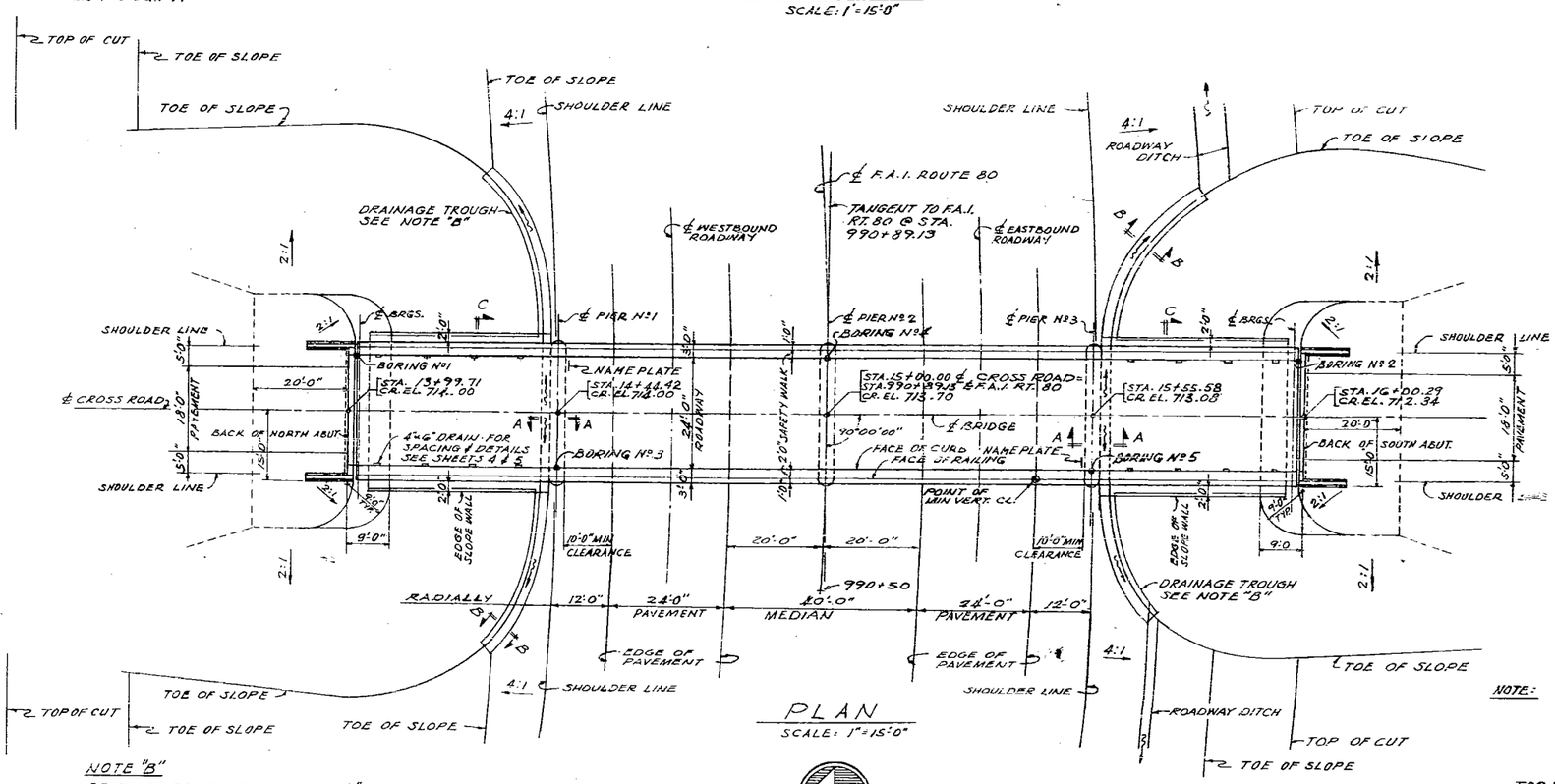
ELEVATION
SCALE: 1" = 15'-0"

INDEX OF SHEETS — SECTION 50-6HB

SHEET NO.	TITLE
1	GENERAL PLAN AND ELEVATION
2	DRAINAGE DETAILS, EXCAVATION, QUANTITIES AND GENERAL NOTES
3	BORINGS AND NAME PLATES
4	DECK REINFORCEMENT PLAN
5	DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
6	DETAILS OF PRECAST PRESTRESSED CONCRETE I-BEAMS
7	FRAMING PLAN, BEARING DETAILS AND EXPANSION DEVICE
8	HANDRAIL DETAILS
9	NORTH AND SOUTH ABUTMENTS AND WINGWALL DETAILS
10	PIERS 1, 2 AND 3
11	REINFORCEMENT BAR LISTS
12	ABUTMENT PILES

ABUTMENT PILE NOTES:

1. DRIVE A CONCRETE TEST PILE AT EACH ABUTMENT.
2. CONSTRUCT EMBANKMENT AS SHOWN.
3. DRILL OVERSIZE HOLES THROUGH THE EMBANKMENT TO THE EXISTING GROUND FOR THE ABUTMENT AND WING PILES.
4. DRIVE THE REMAINDER OF THE CONCRETE PILES FOR THE ABUTMENTS THROUGH THE DRILLED OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A PENETRATION BELOW EXISTING GROUND NOT LESS THAN DETERMINED FROM THE TEST PILES.
5. DRIVE THE TIMBER PILES FOR THE ABUTMENT WINGS THROUGH THE OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A MINIMUM PENETRATION OF 10 FEET INTO THE EXISTING GROUND.
6. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.



PLAN
SCALE: 1" = 15'-0"

NOTE "B"
DRAINAGE TROUGH TO HAVE MIN. ⅛" PER FT. SLOPE EACH DIRECTION FROM EDGE OF SLOPE WALL AND TO TERMINATE AS SHOWN.

NORTH

CURVE DATA
F.A.I. ROUTE 80

P.I. STA. 990 + 92.17
Δ 0° - 09' - 40" (LT.)
D 0° - 00' - 30"
R 687,549.35'
L 1,933.32'
T 966.69'
E 0.68'

NOTE:
FOR SECTIONS A-A, B-B, & C-C SEE SHEET 2.
FOR LIMITS OF CLASS A EXCAVATION AT ABUTMENTS AND WINGWALLS SEE SHEET 2.
FOR LOCATION OF NAME PLATES SEE SHEET 10.

ROAD CLASSIFICATION = E-1
DESIGN SPEED = 45 M.P.H.

DESIGN LOAD
L.L. H15-S12-44
FUTURE D.L. 1½" BIT. WEARING SURFACE

DESIGN STRESSES
CONCRETE (CAST IN PLACE)
fc = 3500 LBS. PER SQ. IN.
fc = 1400 LBS. PER SQ. IN.
fc = (WITH EARTH PRESSURE) 1000 LBS. PER SQ. IN.
fc = (PIER FOOTINGS) 75 LBS. PER SQ. IN.
n = 10

PRESTRESSED CONCRETE
fc = 5,000 LBS. PER SQ. IN.
fci = 4,000 LBS. PER SQ. IN.
fc = 2,000 LBS. PER SQ. IN.

REINFORCING STEEL
fs = 20,000 LBS. PER SQ. IN.

PRETENSIONING STEEL
fsu = 225,000 LBS. PER SQ. IN.
fsi = 170,000 LBS. PER SQ. IN.

PILE LOADS
ABUTMENT = 35 TONS (CONCRETE PILES)
WINGWALLS = 10 TONS (TIMBER PILES)
PIERS = 20 TONS (TIMBER PILES)

PLANS FOR STRUCTURES EXAMINED June 15 19 59
M. A. Romine
ENGINEER OF BRIDGE & TRAFFIC STRUCTURES

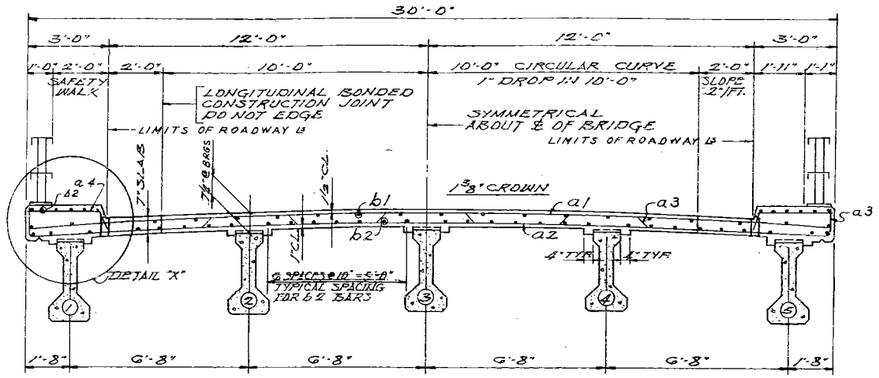
REV. 12/29/59 RAK: 1) QUANTITES FOR EMBANKMENT ADDED
2) ITEMS DELETED UNDER "NOTE"

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

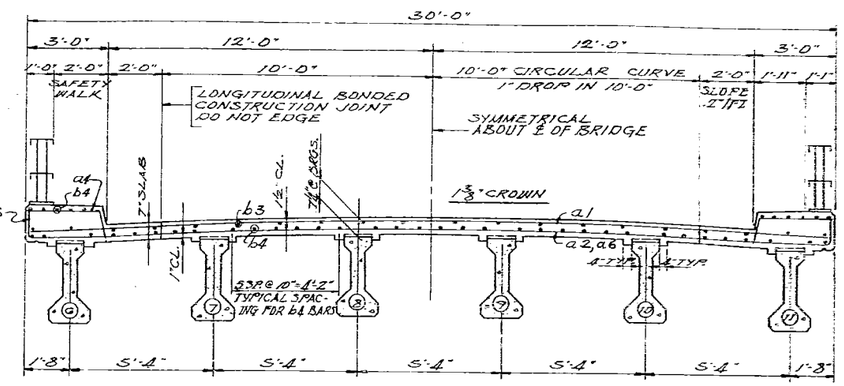
GENERAL PLAN & ELEVATION
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT I-80-3(22)101
F.A.I. ROUTE 80 SECTION 50-6HB-1
LASALLE COUNTY
STATION 990+89.13

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-6HB-1	LA SALLE	53	35
STA.		TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	F.A. PROJECT		

SHEET 5 OF 12



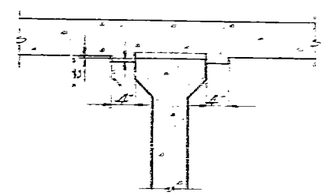
SPAN 1 & 4



SPAN 2 & 3

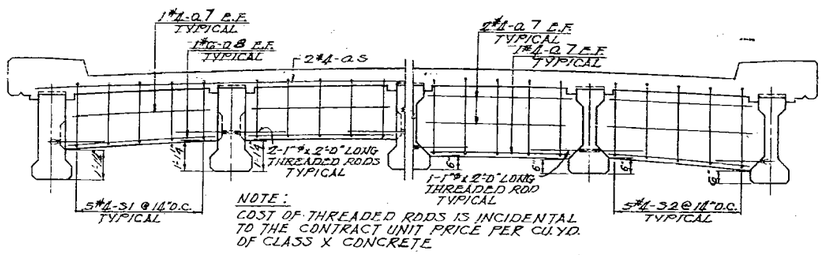
TYPICAL CROSS SECTIONS

SCALE: 3/8" = 1'-0"



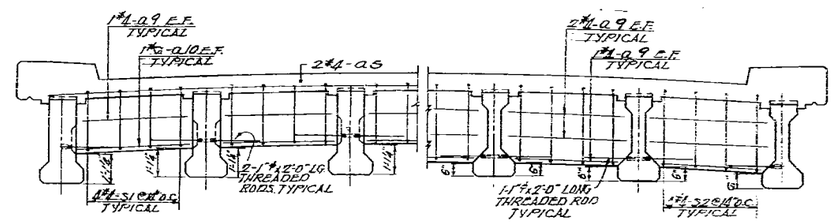
STANDARD FILLET DETAIL

AFTER ALL PRECAST PRESTRESSED BEAMS HAVE 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 ALGEBRAICALLY FROM THE THEORETICAL GRADE ELEVATIONS MINUS THE THICKNESS OF THE SLAB EQUAL THE DIMENSION "Y". A POSITIVE VALUE OF "Y" EQUALS THE FILLET HEIGHT ABOVE THE TOP OF THE BEAM. A NEGATIVE VALUE OF "Y" EQUALS THE EMBEDMENT OF THE BEAM ABOVE THE THEORETICAL BOTTOM OF SLAB ELEVATION.



AT BEARINGS AT INTERIOR

SPAN 1 & 4



AT BEARINGS AT INTERIOR

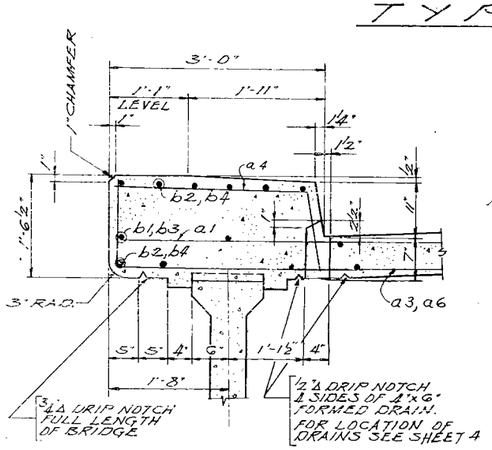
SPAN 2 & 3

TYPICAL DIAPHRAGM DETAILS

SCALE: 3/8" = 1'-0"

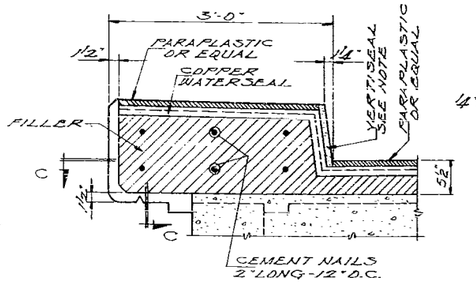
TABLE OF "Y" DIMENSIONS

"Y" / BEAMS	SPANS 1 & 4			SPANS 2 & 3		
	Y.25	Y.50	Y.75	Y.25	Y.50	Y.75
INTERIOR	3/16"	1/4"	3/16"	3/8"	1/2"	3/8"
EXTERIOR	1/4"	5/16"	1/4"	5/8"	7/8"	5/8"



DETAIL "X" AND DRAIN DETAIL

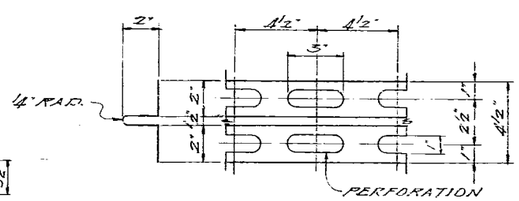
SCALE: 1" = 1'-0"



CURB DETAIL AT FIXED PIER

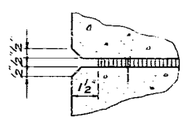
SCALE: 1" = 1'-0"

NOTE: SEAL VERTICAL CURB JOINT WITH BLACK COLD APPLIED JOINT SEALER "VERTISEAL", OR APPROVED EQUAL.

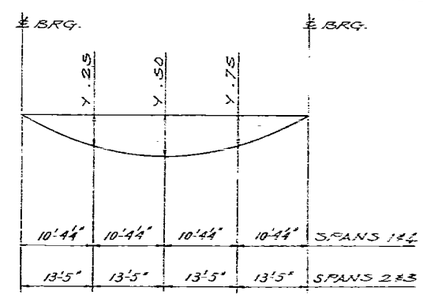


DETAIL OF COPPER WATERSEAL

SCALE: 3" = 1'-0"



SECTION "C"



D.L. DEFLECTION DIAGRAM

WEIGHT OF PRESTRESSED I-BEAMS NOT INCLUDED

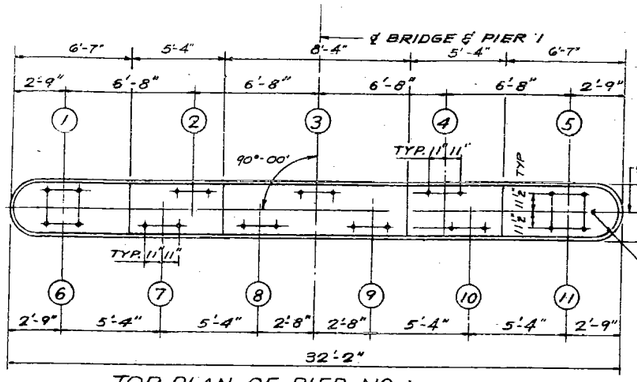
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 50-6HB-1
LA SALLE COUNTY
STATION 990+89.13

Revised - 1-12-60 - Changed height of curb from 9" to 12" in DETAIL "X" & DRAIN DETAIL

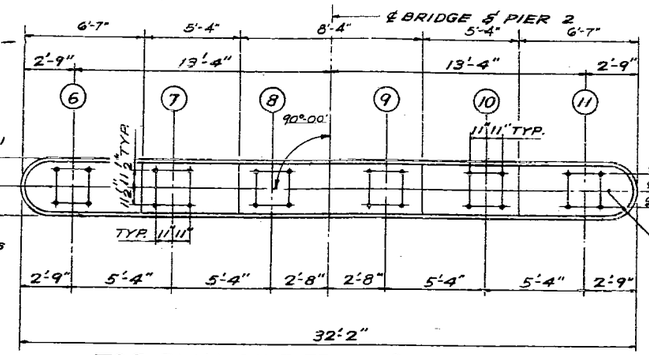
F.A.I. 80	SECTION 59-6H&D	LA SALLE	50	49

SHEET 10 OF 12

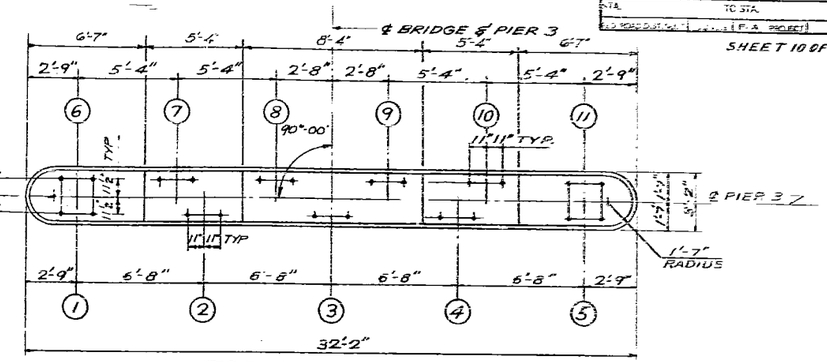


TOP PLAN OF PIER NO. 1

NOTE: PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH TOP BEAM

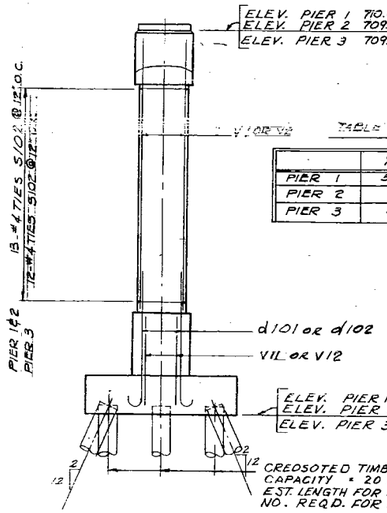


TOP PLAN OF PIER NO. 2



TOP PLAN OF PIER NO. 3

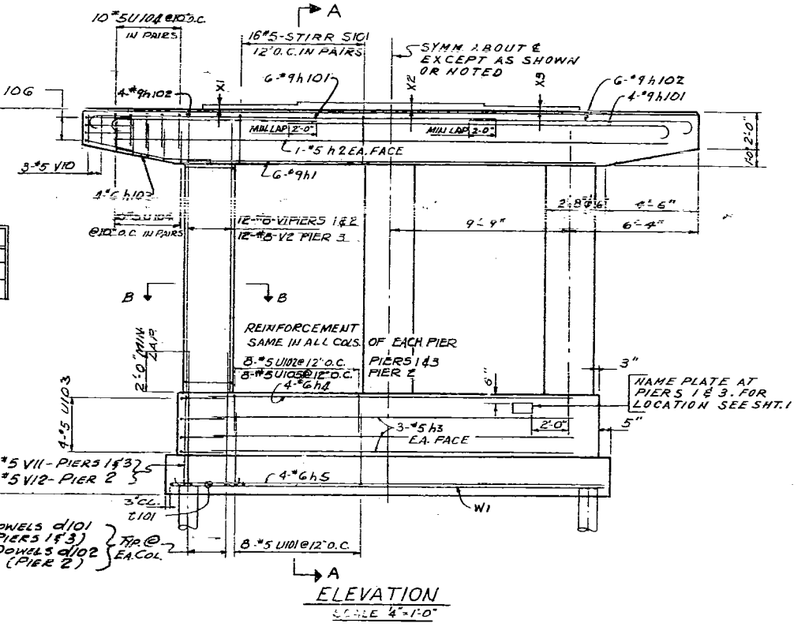
NORTH



END VIEW

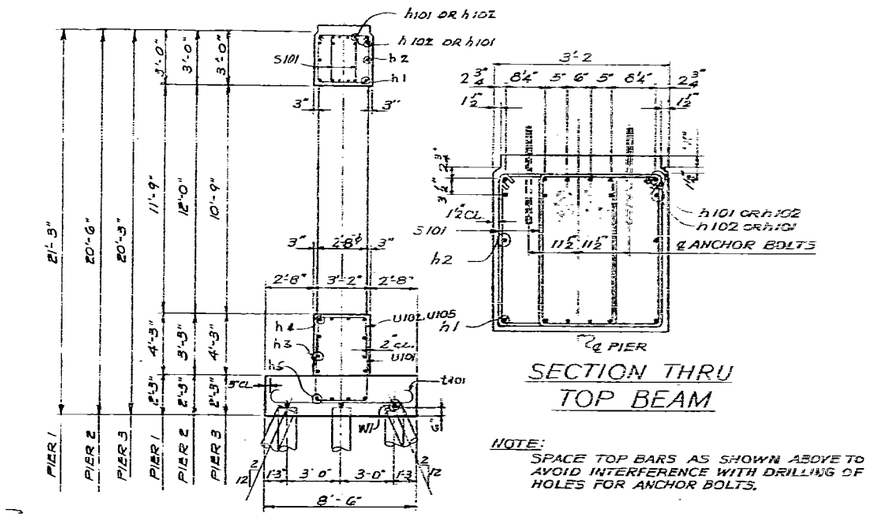
TABLE OF "X" DIMENSIONS

	X1	X2	X3
PIER 1	5/8"	1 5/8"	5/8"
PIER 2	1"	1 5/8"	1"
PIER 3	5/8"	1 5/8"	5/8"



ELEVATION

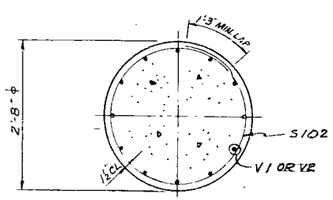
SCALE 1/4" = 1'-0"



SECTION THRU TOP BEAM

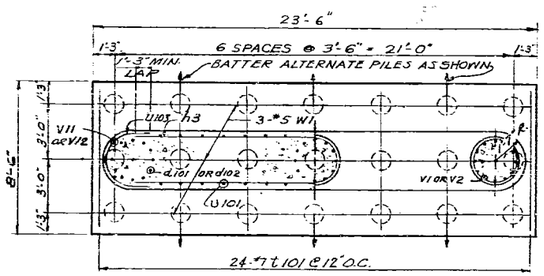
SECTION A-A

NOTE:
SPACE TOP BARS AS SHOWN ABOVE TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.



SECTION B-B

SCALE 3/4" = 1'-0"



HALF SECTION HALF PLAN

FOOTING PLAN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY PIER 1	PIER 2	PIER 3
CLASS X CONCRETE	CU. YDS.	45.3	43.0	44.7
REINFORCEMENT BARS	LBS.	6,320	6,210	6,200
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	59	53	57
CREOSOTED TIMBER PILES	LIN. FT.	630	630	630
TEST PILES (TIMBER)	EACH	1	1	1

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

PIERS 1, 2 AND 3
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 59-6H&D
LASALLE COUNTY
STATION 990+85.13

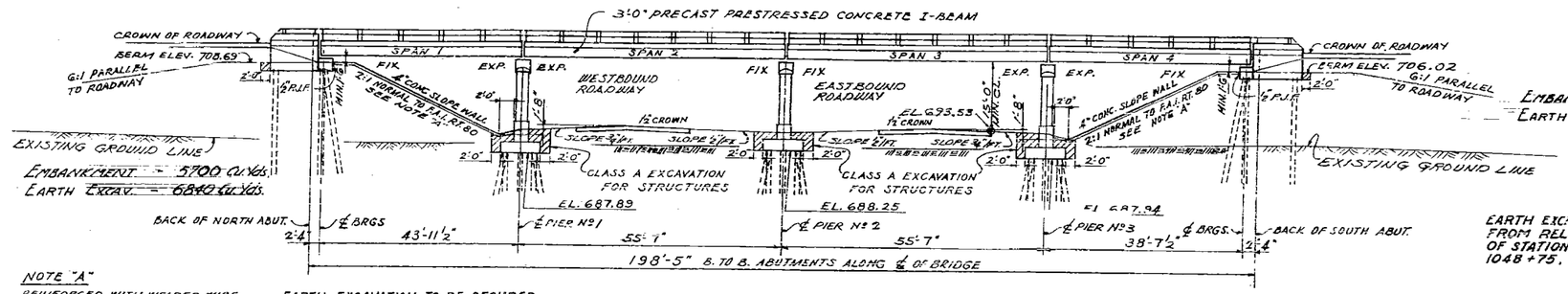
B.M. 42 — EL. 698.60
R.R. SPIKE IN 36" MAPLE 180' LT. OF STA. 1029+00
B.M. 43 — EL. 687.89
R.R. SPIKE IN TEL. POLE 200' RT. OF STA. 1044+20
B.M. 44 — EL. 681.37
R.R. SPIKE IN TEL. POLE 180' LT. OF STA. 1060+50

F.A.I. 80	50-6HB	LA SALLE	56
C.S.		TO STA.	

SHEET 1 OF 12

INDEX OF SHEETS - SECTION 50-6HB

SHEET NO.	TITLE
1.	GENERAL PLAN AND ELEVATION.
2.	DRAINAGE DETAILS, EXCAVATION, QUANTITIES AND GENERAL NOTES.
3.	BORINGS AND NAME PLATES.
4.	DECK REINFORCEMENT PLAN.
5.	DECK CROSS SECTIONS DIAPHRAGM DETAILS.
6.	DETAILS OF PRECAST PRESTRESSED CONCRETE I-BEAMS.
7.	FRAMING PLAN, BEARING DETAILS AND EXPANSION DEVICE.
8.	HANDRAIL DETAILS.
9.	NORTH AND SOUTH ABUTMENTS AND WINGWALLS DETAILS.
10.	PIERS 1, 2 AND 3.
11.	REINFORCEMENT BAR LIST.
12.	ABUTMENT PILES

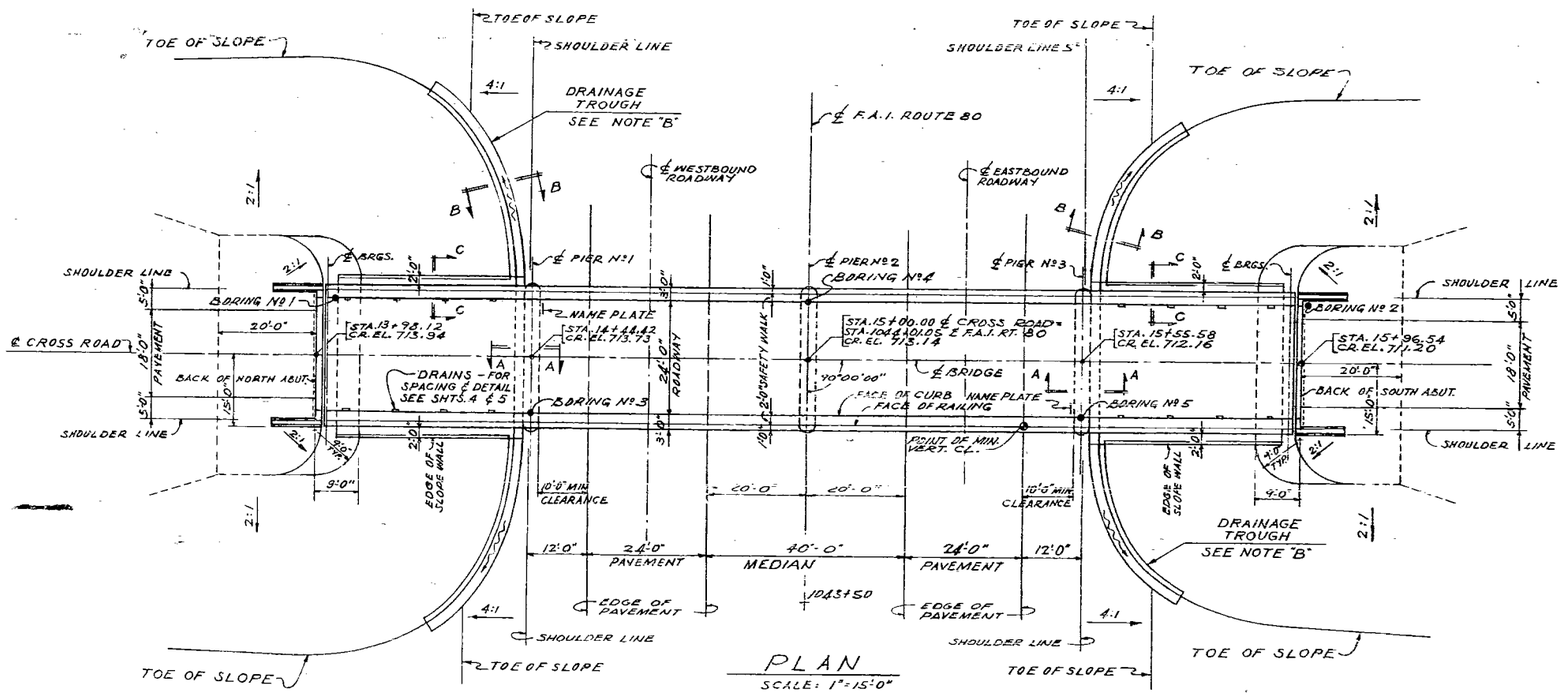


NOTE "A"
REINFORCED WITH WELDED WIRE FABRIC 6"x6" MESH, NO. 8 WIRE, WEIGHING APPROX. 58# PER 100 SQ. FT.

EARTH EXCAVATION TO BE SECURED FROM RELOCATED ROADS LEFT OF STATION 1039+75 TO STATION 1048+75.

EARTH EXCAVATION TO BE SECURED FROM RELOCATED ROADS LEFT OF STATION 1039+75 TO STATION 1048+75.

ELEVATION
SCALE: 1" = 15'-0"



PLAN
SCALE: 1" = 15'-0"

NOTE "B"
DRAINAGE TROUGH TO HAVE MINIMUM ⅛" PER FOOT SLOPE EACH DIRECTION FROM EDGE OF SLOPE WALL AND TO TERMINATE AS SHOWN.

REV. 12/29/59 RAK. 1) QUANTITIES FOR EMBANKMENT ADDED
2) ITEMS DELETED UNDER "NOTE"

PLANS FOR STRUCTURES EXAMINED June 15 19 59
ENGINEER OF BRIDGE & TRAFFIC STRUCTURES

NOTE:

FOR SECTIONS A-A, B-B, & C-C SEE SHEET 2.
FOR LIMITS OF CLASS A EXCAVATION AT ABUTMENTS AND WING WALLS SEE SHEET 2.
FOR LOCATION OF NAME PLATES SEE SHTS. 3 & 10.

ROAD CLASSIFICATION = E-1
DESIGN SPEED = 45 M.P.H.
DESIGN LOAD
L.L. HS-S12-44
FUTURE D.L. 1½" BIT. WEARING SURFACE

DESIGN STRESSES

CONCRETE (CAST IN PLACE)
fc = 3500 LBS. PER SQ. IN.
fc = 1400 LBS. PER SQ. IN.
fc = (WITH EARTH PRESSURE) 1000 LBS. PER SQ. IN.
fp = (PIER FOOTING) 75 LBS. PER SQ. IN.
n = 18

PRESTRESSED CONCRETE
fc = 5,000 LBS. PER SQ. IN.
fci = 4,000 LBS. PER SQ. IN.
fc = 2,000 LBS. PER SQ. IN.

REINFORCING STEEL
fs = 20,000 LBS. PER SQ. IN.

PRETENSIONING STEEL
fsu = 248,000 LBS. PER SQ. IN.
fsi = 173,600 LBS. PER SQ. IN.

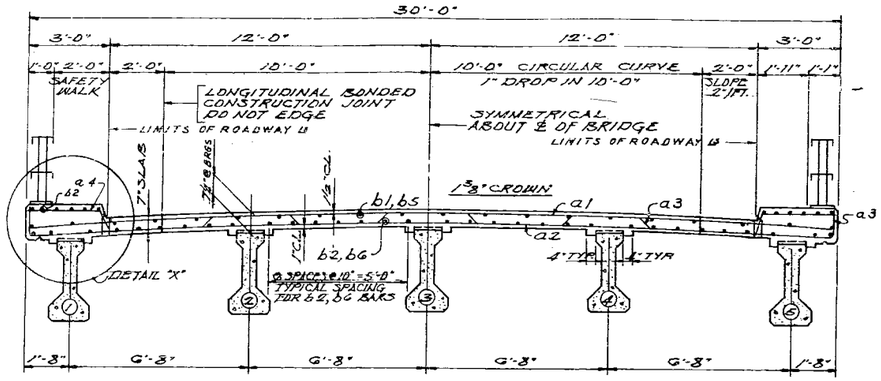
PILE LOADS
ABUTMENTS = 35 TONS (CONCRETE PILES)
WINGWALLS = 10 TONS (TIMBER PILES)
PIERS = 20 TONS (TIMBER PILES)

GENERAL PLAN & ELEVATION
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT I-80-3(22)101
F.A.I. ROUTE 80 SECTION 50-6HB-2
LASALLE COUNTY
STATION 1044+01.05

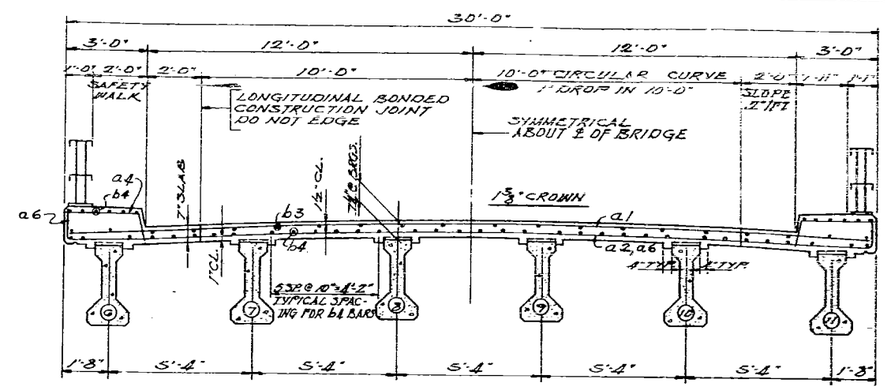
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.80	50-6HB-2	LA SALLE	56	47
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	F.A. PROJECT		

SHEET 5 OF 12.



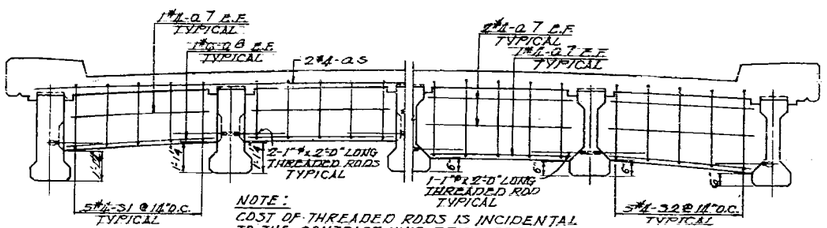
SPAN 1 & 4



SPAN 2 & 3

TYPICAL CROSS SECTIONS

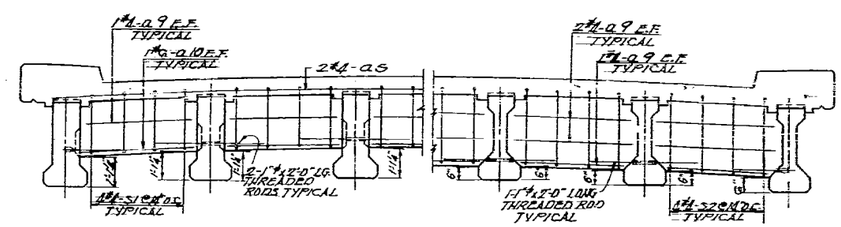
SCALE: 3/8" = 1'-0"



NOTE:
COST OF THREADED RODS IS INCIDENTAL TO THE CONTRACT UNIT PRICE PER CU.YD. OF CLASS X CONCRETE.

AT BEARINGS AT INTERIOR

SPAN 1 & 4

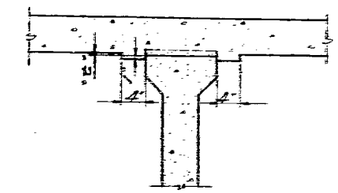


AT BEARINGS AT INTERIOR

SPAN 2 & 3

TYPICAL DIAPHRAGM DETAILS

SCALE: 3/8" = 1'-0"

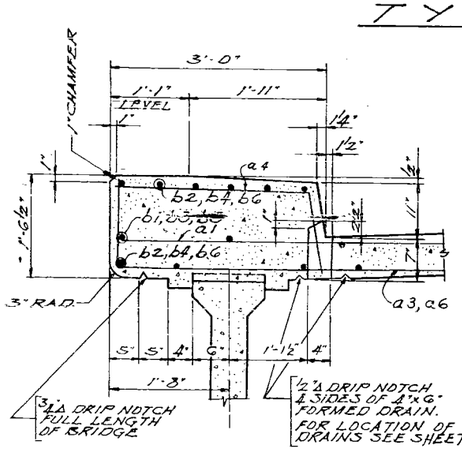


STANDARD FILLET DETAIL

AFTER ALL PRECAST PRESTRESSED BEAMS HAVE 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 ALGEBRAICALLY FROM THE THEORETICAL GRADE ELEVATIONS MINUS THE THICKNESS OF THE SLAB EQUAL THE DIMENSION "Y". A POSITIVE VALUE OF "Y" EQUALS THE FILLET HEIGHT ABOVE THE TOP OF THE BEAM. A NEGATIVE VALUE OF "Y" EQUALS THE EMBEDMENT OF THE BEAM ABOVE THE THEORETICAL BOTTOM OF SLAB ELEVATION.

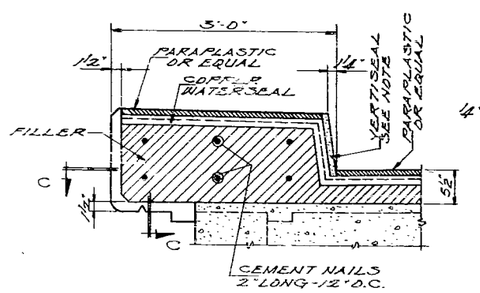
TABLE OF "Y" DIMENSIONS

"Y" / BEAMS	SPAN 1			SPANS 2 & 3		
	Y.25	Y.50	Y.75	Y.25	Y.50	Y.75
INTERIOR	3/16"	1/4"	3/16"	3/8"	1/2"	3/8"
EXTERIOR	1/4"	3/8"	1/4"	5/8"	7/8"	5/8"
	SPAN 4					
INTERIOR	1/8"	1/8"	1/8"			
EXTERIOR	1/8"	3/16"	1/8"			



DETAIL "X" AND DRAIN DETAIL

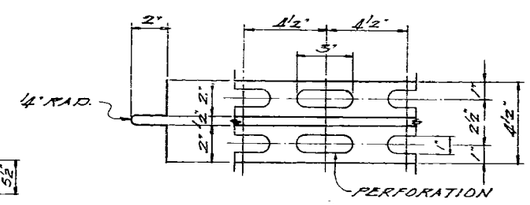
SCALE: 1" = 1'-0"



CURB DETAIL AT FIXED PIER

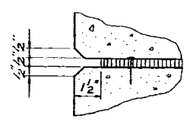
SCALE: 1" = 1'-0"

NOTE: SEAL VERTICAL CURB JOINT WITH BLACK COLD APPLIED JOINT SEALER "VERTISEAL" OR APPROVED EQUAL.

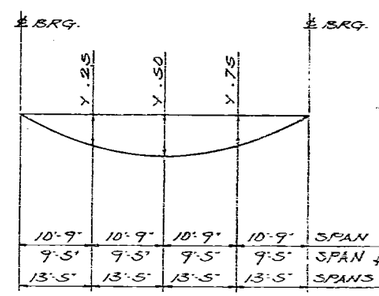


DETAIL OF COPPER WATERSEAL

SCALE: 3" = 1'-0"



SECTION "C"



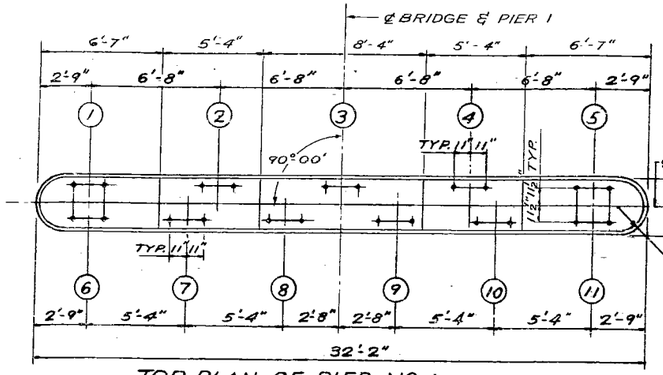
D.L. DEFLECTION DIAGRAM

WEIGHT OF PRESTRESSED I-BEAMS NOT INCLUDED

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 5864 CHICAGO, ILLINOIS

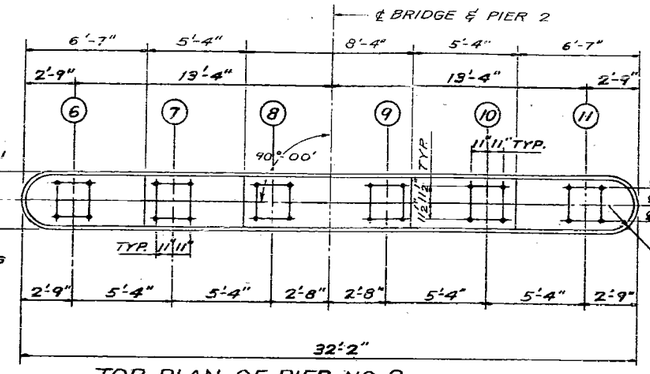
DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 50-6HB-2
LA SALLE COUNTY
STATION 1044 + 01.05

Revised - 1-12-60 - N.J.M. - Changed height of curb from 9" to 12" in DETAIL "X" & DRAIN DETAIL

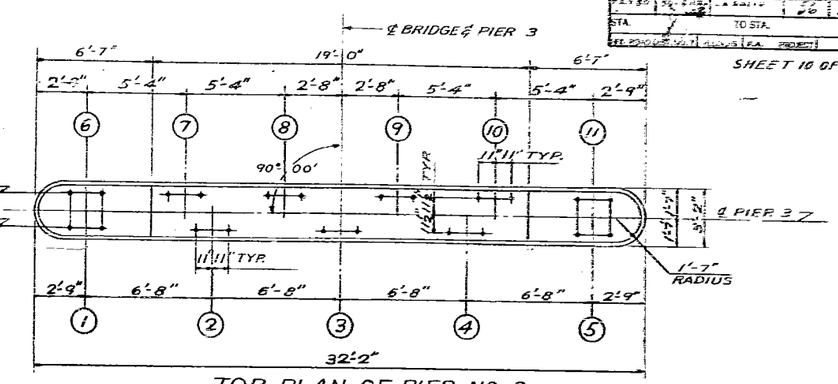


TOP PLAN OF PIER NO. 1

NOTE: PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH TOP BEAM

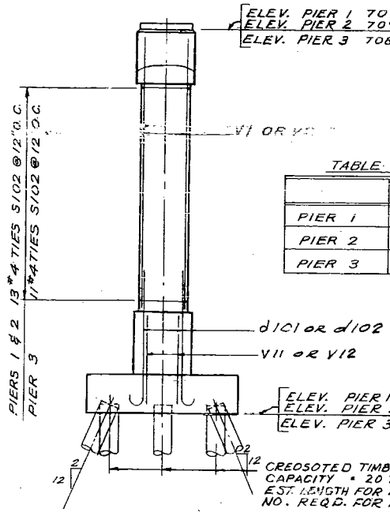


TOP PLAN OF PIER NO. 2



TOP PLAN OF PIER NO. 3

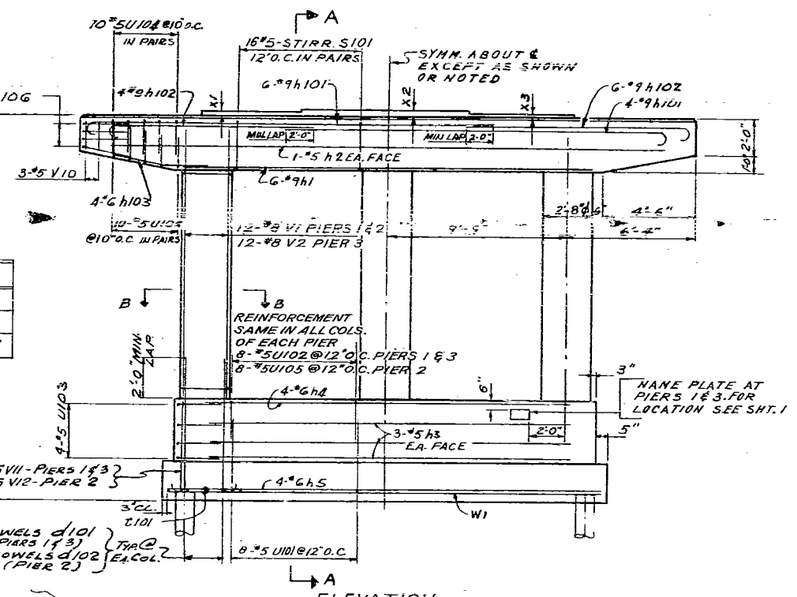
NORTH



END VIEW

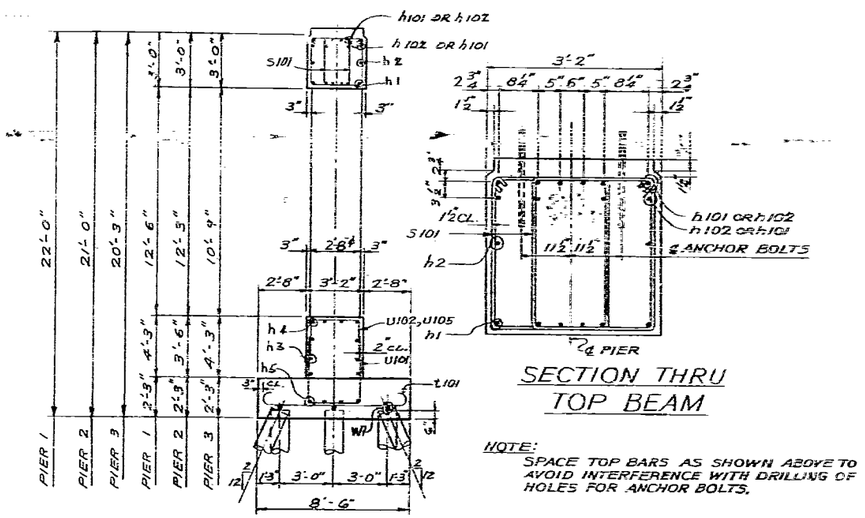
TABLE OF "X" DIMENSIONS

	X_1	X_2	X_3
PIER 1	1"	1 5/8"	1"
PIER 2	1"	1 5/8"	1"
PIER 3	1 5/8"	1 5/8"	1 5/8"



ELEVATION

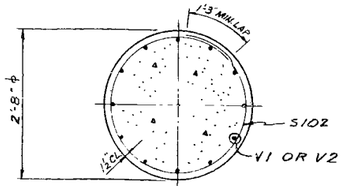
SCALE 1/4" = 1'-0"



SECTION THRU TOP BEAM

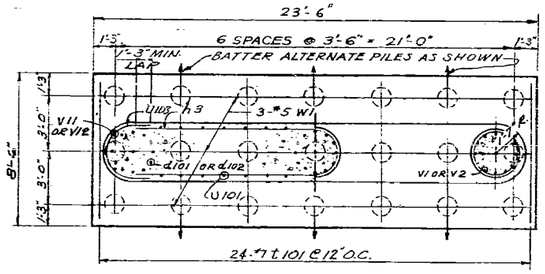
NOTE:
SPACE TOP BARS AS SHOWN ABOVE TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.

SECTION A-A



SECTION B-B

SCALE 3/4" = 1'-0"



HALF SECTION HALF PLAN

FOOTING PLAN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY PIER 1	PIER 2	PIER 3
CLASS X CONCRETE	CU. YDS.	45.7	43.8	44.8
REINFORCEMENT BARS	LBS.	6,370	6,260	6,180
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	59	54	57
CREOSOTED TIMBER PILES	LIN. FT.	630	630	630
TEST PILES (TIMBER)	EACH	1	1	1

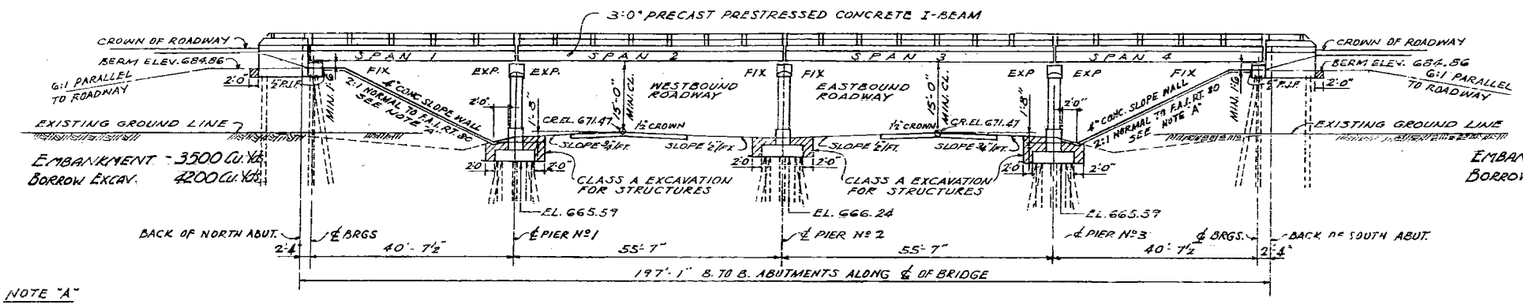
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 585- CHICAGO, ILLINOIS

PIERS 1, 2 AND 3
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 89
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 30-6H
LASALLE COUNTY
STATION 1044 + 01.35

B.M. 46 - ELEV. 675.02
BOLT IN ROOT OF 24" OSAGE 190' LT. OF STA '083+76
B.M. 47 - ELEV. 671.17
ON R.O.W. MARKER 200' LT. OF STA. 1096+70
B.M. 48A - ELEV. 663.94
TOP OF BOTTOM GATE HOOK ON POST 200' LT. OF STA. 1110+07

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-6HB-3	LA SALLE	55	18
STA.	TO STA.			
FED. ROAD DIST. NO. 11	FILINGS	S.A. PROJECT		

SHEET 1 OF 12



NOTE "A"
REINFORCED WITH WELDED WIRE FABRIC, 6"x6" MESH, NO 4 WIRE, WEIGHING APPROX. 58# PER 100 SQ.FT.

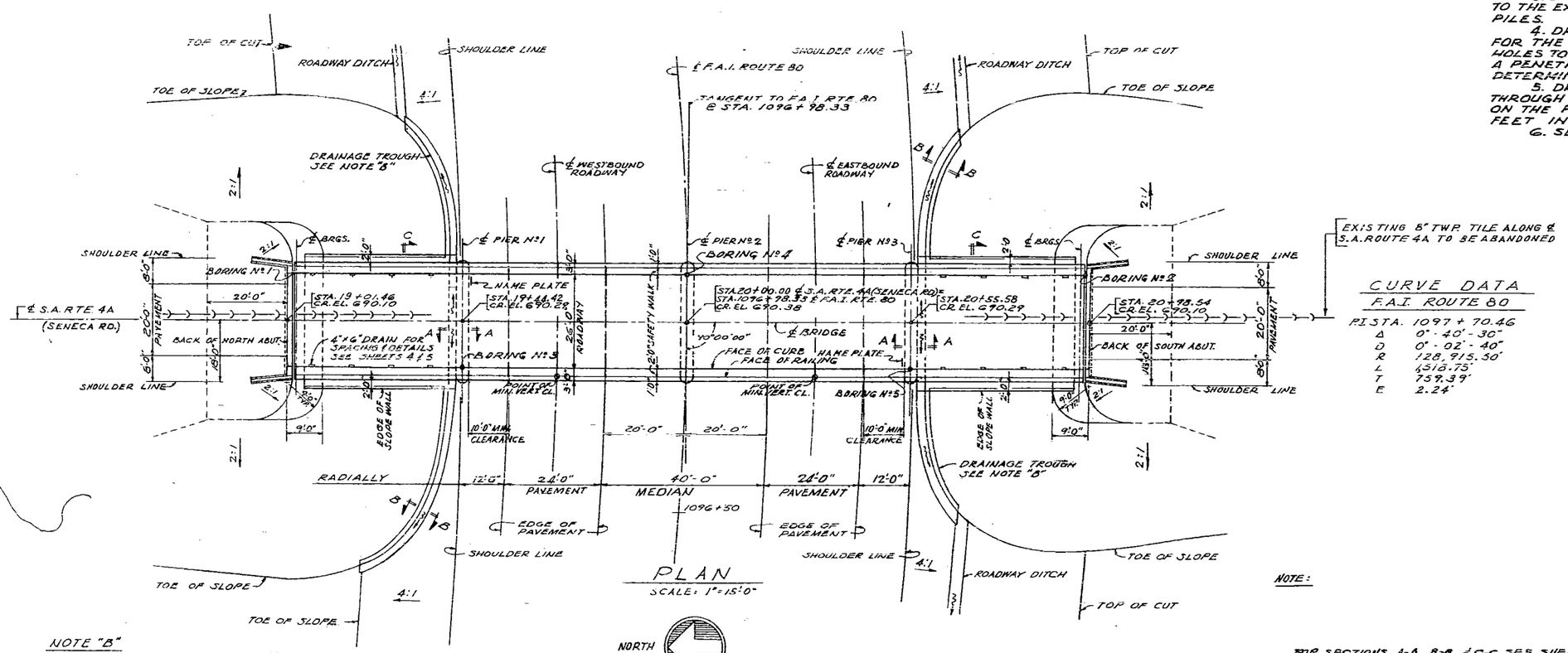
ELEVATION
SCALE: 1" = 15'-0"

INDEX OF SHEETS — SECTION 50-6HB-3

SHEET NO.	TITLE
1	GENERAL PLAN AND ELEVATION
2	DRAINAGE DETAILS, EXCAVATION, QUANTITIES AND GENERAL NOTES
3	BORINGS AND NAME PLATES
4	DECK REINFORCEMENT PLAN
5	DECK CROSS SECTIONS AND DILPHRAGM DETAILS
6	DETAILS OF PRECAST PRESTRESSED CONCRETE I-BEAMS
7	FRAMING PLAN, BEARING DETAILS AND EXPANSION DEVICE
8	HANDRAIL DETAILS
9	NORTH AND SOUTH ABUTMENTS AND WINGWALL DETAILS
10	PIERS 1, 2 AND 3
11	REINFORCEMENT BAR LISTS
12	ABUTMENT PILES

ABUTMENT PILE NOTES:

1. DRIVE A CONCRETE TEST PILE AT EACH ABUTMENT.
2. CONSTRUCT EMBANKMENT AS SHOWN.
3. DRILL OVERSIZE HOLES THROUGH THE EMBANKMENT TO THE EXISTING GROUND FOR THE ABUTMENT AND WING PILES.
4. DRIVE THE REMAINDER OF THE CONCRETE PILES FOR THE ABUTMENTS THROUGH THE DRILLED OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A PENETRATION BELOW EXISTING GROUND NOT LESS THAN DETERMINED FROM THE TEST PILES.
5. DRIVE THE TIMBER PILES FOR THE ABUTMENT WINGS THROUGH THE OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A MINIMUM PENETRATION OF 10 FEET INTO THE EXISTING GROUND.
6. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.



PLAN
SCALE: 1" = 15'-0"

NORTH

NOTE "B"
DRAINAGE TROUGH TO HAVE MIN. ⅛" PER FT. SLOPE EACH DIRECTION FROM EDGE OF SLOPE WALL AND TO TERMINATE AS SHOWN.

CURVE DATA
F.A.I. ROUTE 80

P.I. STA.	1097 + 70.46
Δ	0° - 40' - 30"
D	0° - 02' - 40"
R	128,915.50'
L	1,516.75'
T	757.39'
E	2.24'

ROAD CLASSIFICATION = D
DESIGN SPEED = 60 M.P.H.

DESIGN LOAD
L.L. HS-S12-44
FUTURE D.L. 1½" BIT. WEARING SURFACE

DESIGN STRESSES

CONCRETE (CAST IN PLACE)
fc = 3500 LBS. PER SQ. IN.
fc = 1400 LBS. PER SQ. IN.
fc = (WITH EARTH PRESSURE) 1000 LBS. PER SQ. IN.
fc = (PIER FOOTING) 75 LBS. PER SQ. IN.
n = 10

PRESTRESSED CONCRETE
fc = 5,000 LBS. PER SQ. IN.
fci = 4,000 LBS. PER SQ. IN.
fc = 2,000 LBS. PER SQ. IN.

REINFORCING STEEL
fs = 20,000 LBS. PER SQ. IN.

PRETENSIONING STEEL
fsy = 243,000 LBS. PER SQ. IN.
fsi = 173,650 LBS. PER SQ. IN.

PILE LOADS
ABUTMENT = 35 TONS (CONCRETE PILES)
WINGWALLS = 10 TONS (TIMBER PILES)
PIERS = 20 TONS (TIMBER PILES)

NOTE:

FOR SECTIONS A-A, B-B, & C-C SEE SHEET 2.
FOR LIMITS OF CLASS A EXCAVATION AT ABUTMENTS AND WINGWALLS SEE SHEET 2.
FOR LOCATION OF NAME PLATES SEE SHT. 10.

PLANS FOR PROPOSED ... JAN 6 1.5 59
ENGINEER

REV. 12/29/59 RAK. 1) QUANTITIES FOR EMBANKMENT ADDED
2) ITEMS DELETED UNDER "NOTE"

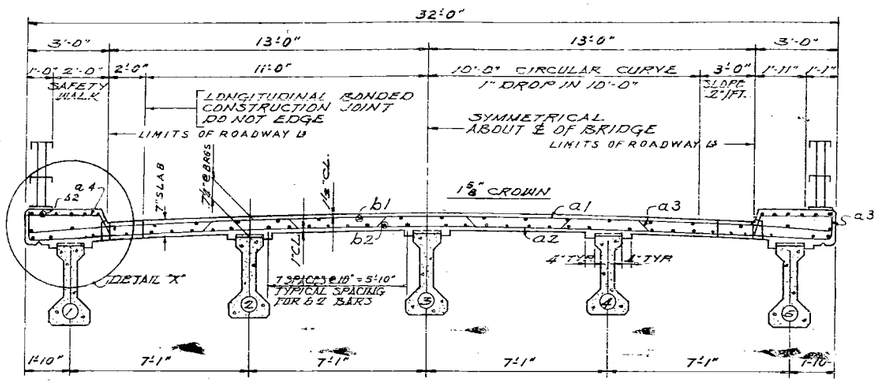
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586 CHICAGO, ILLINOIS

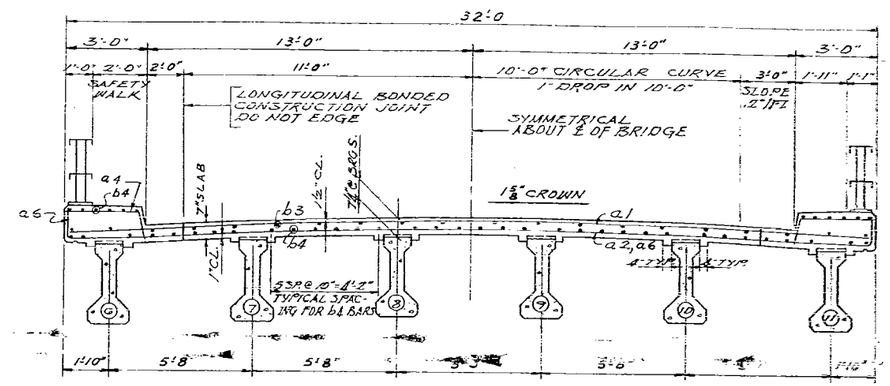
GENERAL PLAN & ELEVATION
GRADE SEPARATION
S.A. ROUTE 4A (SENECA RD.)
OVER F.A.I. ROUTE 80
F.A. PROJECT I-80-3(22)101
F.A.I. ROUTE 80 SECTION 50-6HB-3
LA SALLE COUNTY
STATION 1096 + 98.33

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	50-6-B3	LA SALLE	55	22
STA.	TO STA.			

FED. ROAD DIST. NO. 7 ILLINOIS F.A. PROJECT

SHEET 3 OF 2

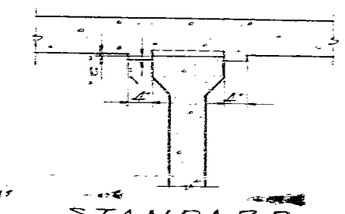




SPAN 1 & 4 — SPAN 2 & 3

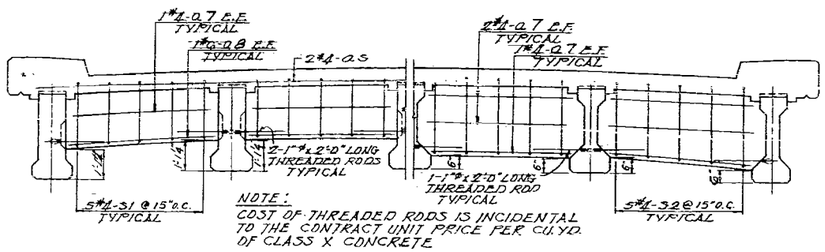
TYPICAL CROSS SECTIONS

SCALE: 3/8" = 1'-0"



STANDARD FILLET DETAIL

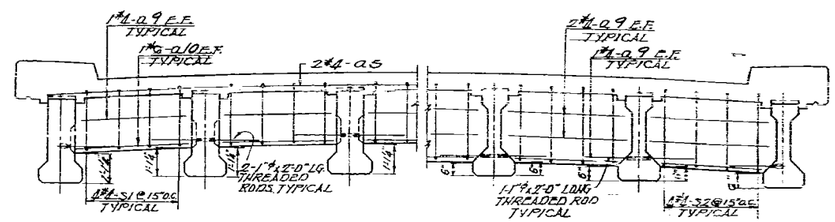
AFTER ALL PRECAST PRESTRESSED BEAMS HAVE BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE BEAMS SHALL BE TAKEN AT INTERVALS NOT TO EXCEED 10 FT. FROM THESE ELEVATIONS SUBTRACT THE INCREMENT OF DEFLECTIONS FOR THESE POINTS, DETERMINED FROM THE D.L. DEFLECTION DIAGRAM. THE ELEVATIONS SO ATTAINED SUBTRACTED ALGEBRAICALLY FROM THE THEORETICAL GRADE ELEVATIONS MINUS THE THICKNESS OF THE SLAB EQUAL THE DIMENSION "Y". A POSITIVE VALUE OF "Y" EQUALS THE FILLET HEIGHT ABOVE THE TOP OF THE BEAM. A NEGATIVE VALUE OF "Y" EQUALS THE EMBEDMENT OF THE BEAM ABOVE THE THEORETICAL BOTTOM OF SLAB ELEVATION.



NOTE:
COST OF THREADED RODS IS INCIDENTAL TO THE CONTRACT UNIT PRICE PER CU. YD. OF CLASS X CONCRETE

AT BEARINGS — AT INTERIOR

SPAN 1 & 4



AT BEARINGS — AT INTERIOR

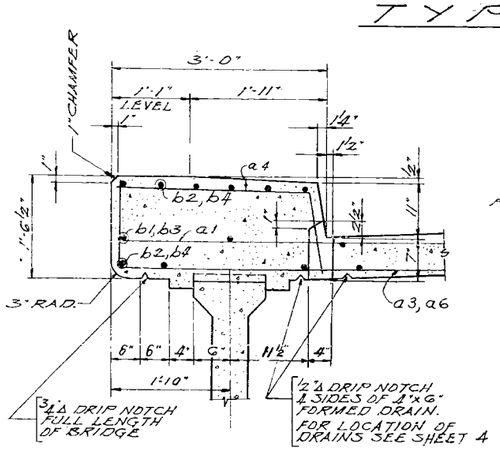
SPAN 2 & 3

TYPICAL DIAPHRAGM DETAILS

SCALE: 3/8" = 1'-0"

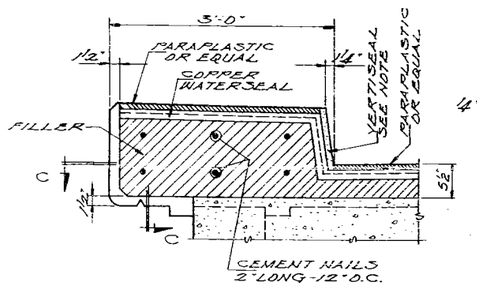
TABLE OF "Y" DIMENSIONS

"Y" / BEAMS	SPANS 1 & 4			SPANS 2 & 3		
	Y.25	Y.50	Y.75	Y.25	Y.50	Y.75
INTERIOR	1/8"	3/16"	1/8"	3/8"	1/2"	3/8"
EXTERIOR	3/16"	1/4"	3/16"	5/8"	7/8"	5/8"



DETAIL "X" AND DRAIN DETAIL

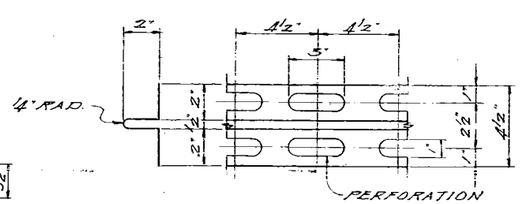
SCALE: 1" = 1'-0"



CURB DETAIL AT FIXED PIER

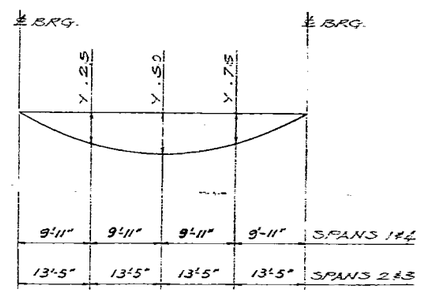
SCALE: 1" = 1'-0"

NOTE: SEAL VERTICAL CURB JOINT WITH BLACK COLD APPLIED JOINT SEALER "VERTISEAL", OR APPROVED EQUAL



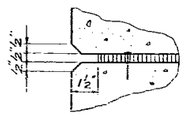
DETAIL OF COPPER WATERSEAL

SCALE: 3" = 1'-0"



D.L. DEFLECTION DIAGRAM

WEIGHT OF PRESTRESSED I-BEAMS NOT INCLUDED

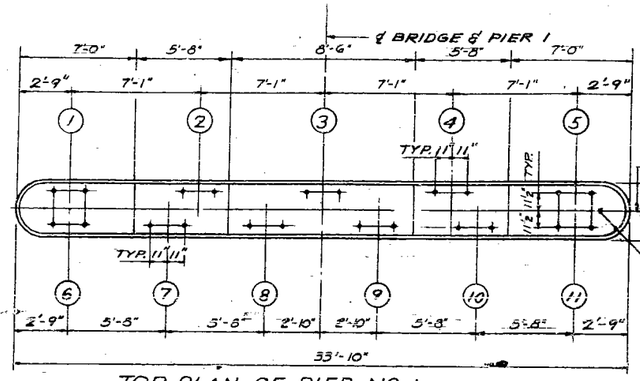


SECTION "C"

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 5861- CHICAGO, ILLINOIS

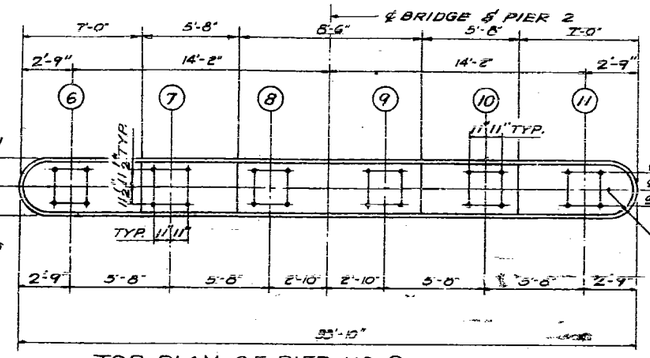
DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
GRADE SEPARATION
S.A. ROUTE 4A (SENECA RD.)
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 50-6-B3
LA SALLE COUNTY
STATION 1096+98.33

Revised - 1-12-60 - W.J.M. - Changed height of curb from 9" to 12" in DETAIL "X" & DRAIN DETAIL.

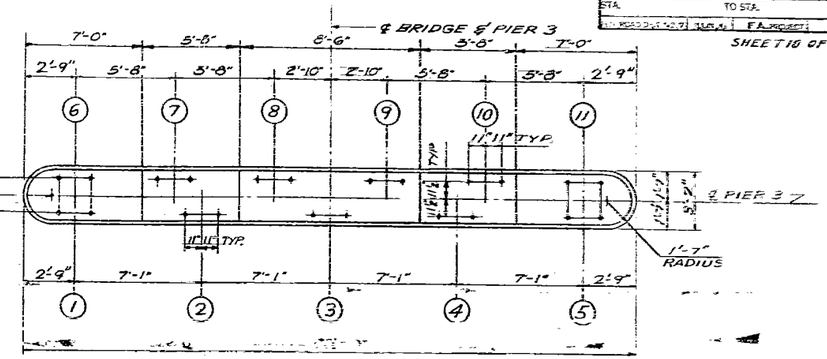


TOP PLAN OF PIER NO. 1

NOTE: PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH TOP BEAM

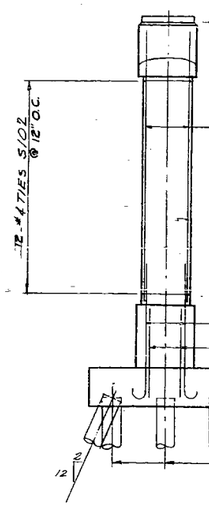


TOP PLAN OF PIER NO. 2



TOP PLAN OF PIER NO. 3

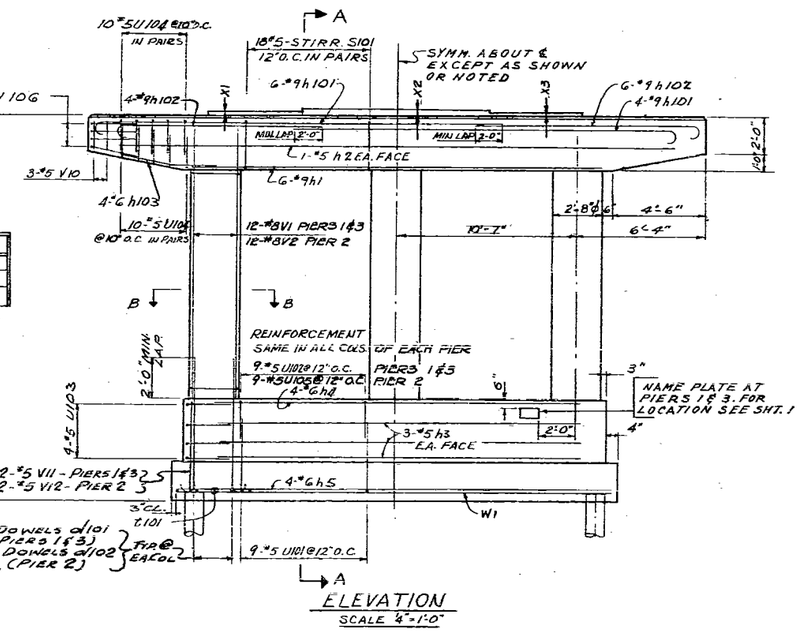
NORTH



END VIEW

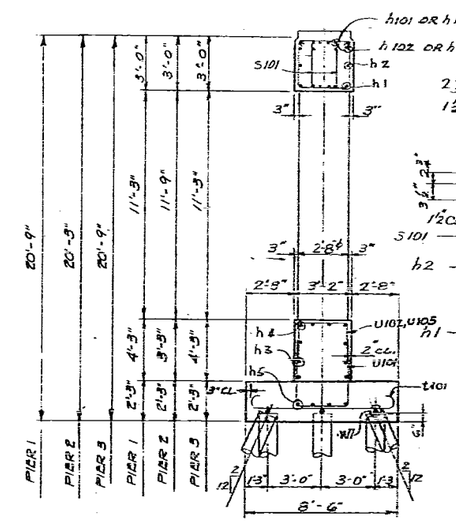
TABLE OF 'X' DIMENSIONS

	X1	X2	X3
PIER 1	3/4"	1 3/4"	3/4"
PIER 2	1 1/8"	1 3/4"	1 1/8"
PIER 3	3/4"	1 3/4"	3/4"

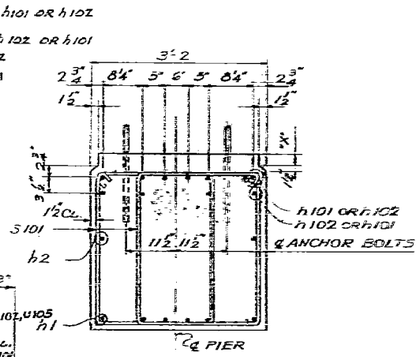


ELEVATION

SCALE 1/4" = 1'-0"

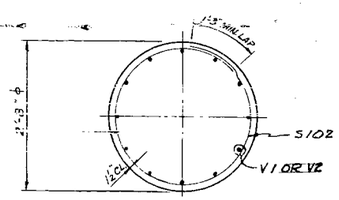


SECTION A-A



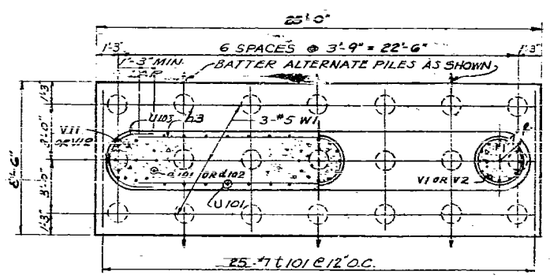
SECTION THRU TOP BEAM

NOTE:
SPACE TOP BARS AS SHOWN ABOVE TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.



SECTION B-B

SCALE 3/4" = 1'-0"



HALF SECTION HALF PLAN

FOOTING PLAN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY PIER 1	PIER 2	PIER 3
CLASS X CONCRETE	CU. YDS.	47.6	45.1	47.6
REINFORCEMENT BARS	LBS.	6,510	6,450	6,510
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	63	56	63
CREOSOTED TIMBER PILES	LIN. FT.	735	735	735
TEST PILES (TIMBER)	EACH	1	1	1

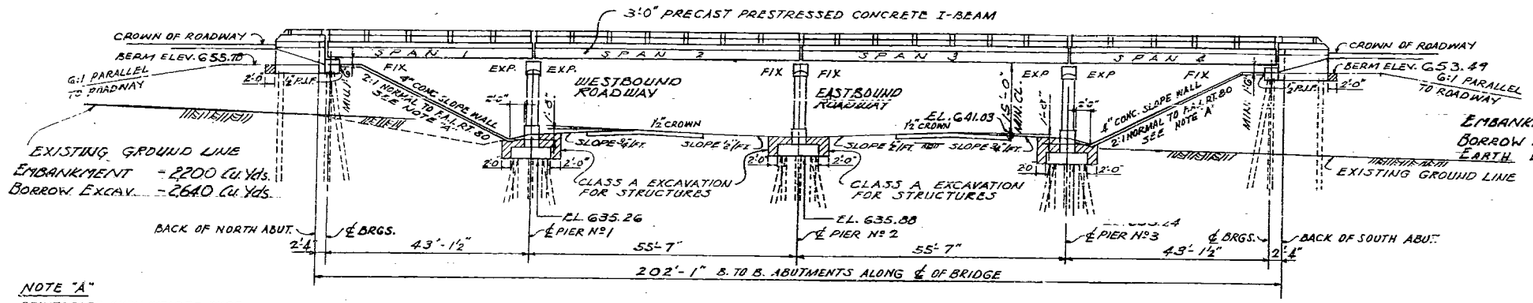
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

PIERS 1, 2 AND 3
GRADE SEPARATION
S.A. ROUTE 4A (SENECA RD.)
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 50-6H33
LA SALLE COUNTY
STATION 1096+98.33

B.M. 50A - ELEV. 646.69
SPIKE IN POST 195' LT. OF STA. 1134+80
B.M. 51 - ELEV. 644.04
SPIKE IN P. POLE 200' LT. OF STA. 1147+10
B.M. 52 - ELEV. 629.21
SPIKE IN ROOT OF HEDGE APPLE 228' LT. OF STA. 740+17

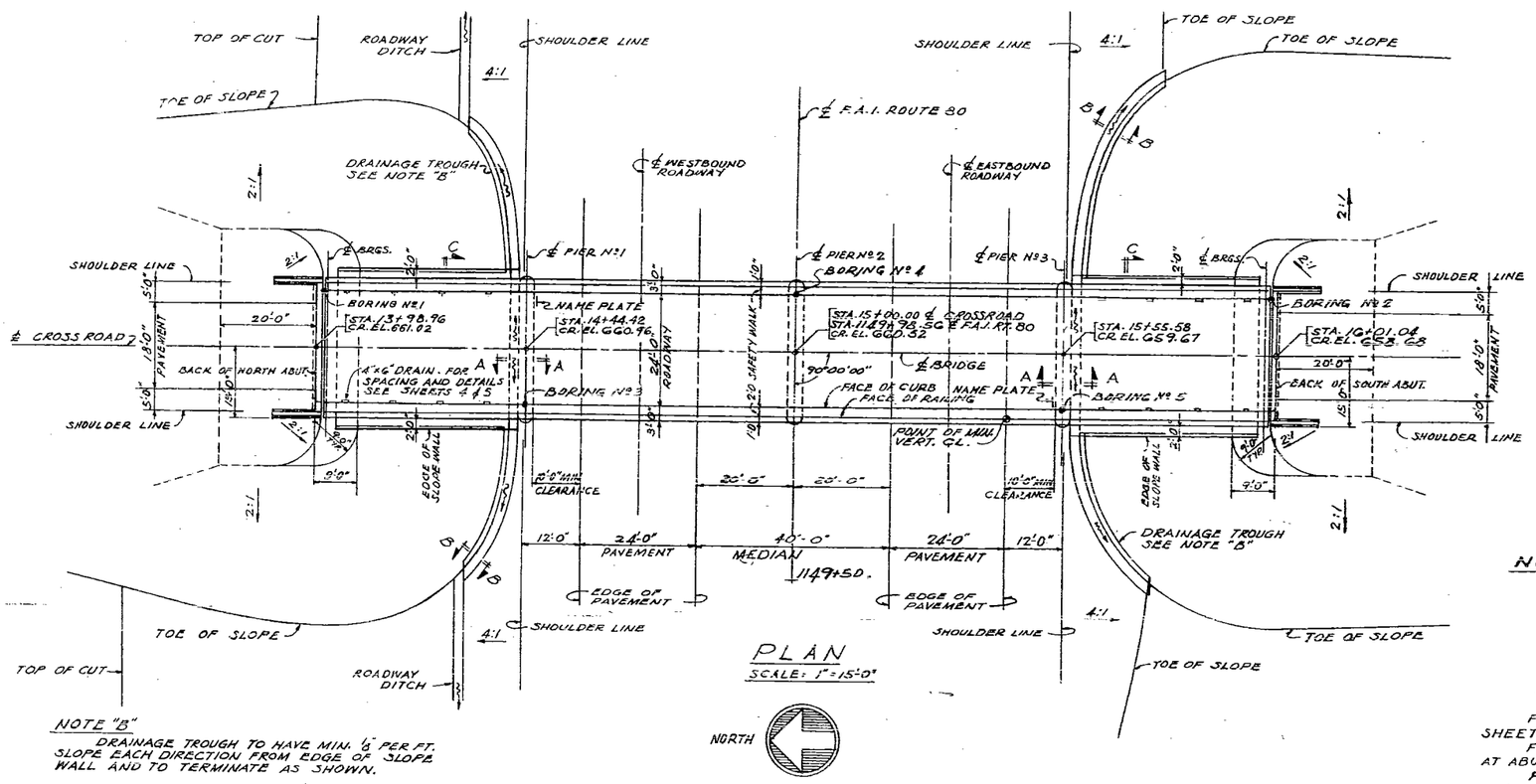
STATE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	32-1HB	GRUNDY	55	30
STA.		TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	F.A. PROJECT I-80-3(22)101		

SHEET 1 OF 12



NOTE "A"
REINFORCED WITH WELDED WIRE FABRIC 6"x6" MESH, NO. 5 WIRE, WEIGHING APPROX. 58# PER 100 SQ. FT.

ELEVATION
SCALE: 1" = 15'-0"



PLAN
SCALE: 1" = 15'-0"

NOTE "B"
DRAINAGE TROUGH TO HAVE MIN. 1/8" PER FT. SLOPE EACH DIRECTION FROM EDGE OF SLOPE WALL AND TO TERMINATE AS SHOWN.

PLANS FOR STRUCTURES APPROVED June 15 1959
ENGINEER

REV. 12/29/59 RAK. 1) QUANTITIES FOR EMBANKMENT ADDED
2) ITEMS DELETED UNDER "NOTE"

INDEX OF SHEETS — SECTION 32-1HB

SHEET NO.	TITLE
1	GENERAL PLAN AND ELEVATION
2	DRAINAGE DETAILS, EXCAVATION, QUANTITIES AND GENERAL NOTES
3	BORINGS AND NAME PLATES
4	DECK REINFORCEMENT PLAN
5	DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
6	DETAILS OF PRECAST PRESTRESSED CONCRETE I BEAMS
7	FRAMING PLAN, BEARING DETAILS AND EXPANSION DEVICE
8	HANDRAIL DETAILS
9	NORTH AND SOUTH ABUTMENTS AND WINGWALL DETAILS
10	PIERS 1, 2 AND 3
11	REINFORCEMENT BAR LISTS
12	ABUTMENT PILES

ABUTMENT PILE NOTES:

1. DRIVE A CONCRETE TEST PILE AT EACH ABUTMENT.
2. CONSTRUCT EMBANKMENT AS SHOWN.
3. DRILL OVERSIZE HOLES THROUGH THE EMBANKMENT TO THE EXISTING GROUND FOR THE ABUTMENT AND WING PILES.
4. DRIVE THE REMAINDER OF THE CONCRETE PILES FOR THE ABUTMENTS THROUGH THE DRILLED OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A PENETRATION BELOW EXISTING GROUND NOT LESS THAN DETERMINED FROM THE TEST PILES.
5. DRIVE THE TIMBER PILES FOR THE ABUTMENT WINGS THROUGH THE OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A MINIMUM PENETRATION OF 10 FEET INTO THE EXISTING GROUND.
6. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

ROAD CLASSIFICATION = E-1
DESIGN SPEED = 45 M.P.H.
DESIGN LOAD
L.L. HIS-S12-44
FUTURE D.L. 1½" BIT. WEARING SURFACE

DESIGN STRESSES
CONCRETE (CAST IN PLACE)
fc = 3500 LBS. PER SQ. IN.
fc = 1400 LBS. PER SQ. IN.
fc = (WITH EARTH PRESSURE) 1600 LBS. PER SQ. IN.
fr = (PIER FOOTING) 75 LBS. PER SQ. IN.
n = 10
PRESTRESSED CONCRETE
fc = 5,000 LBS. PER SQ. IN.
fci = 4,000 LBS. PER SQ. IN.
fc = 2,000 LBS. PER SQ. IN.
REINFORCING STEEL
fs = 20,000 LBS. PER SQ. IN.
PRETENSIONING STEEL
fsu = 243,000 LBS. PER SQ. IN.
fsi = 173,600 LBS. PER SQ. IN.

PILE LOADS
ABUTMENT = 35 TONS (CONCRETE PILES)
WINGWALLS = 10 TONS (TIMBER PILES)
PIERS = 20 TONS (TIMBER PILES)

NOTE:

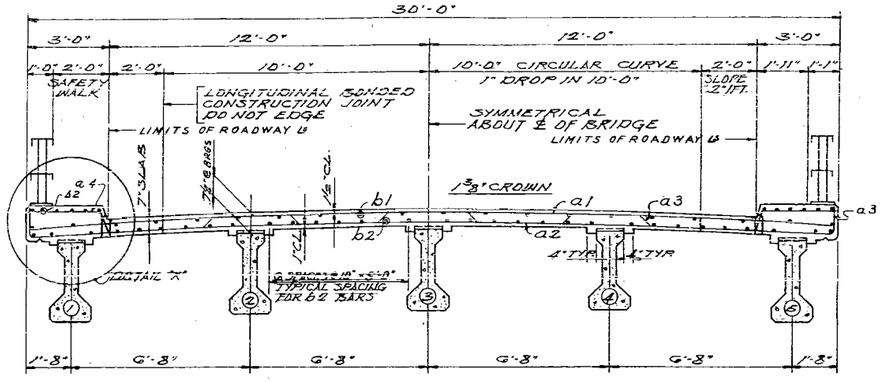
FOR SECTIONS A-A, B-B, & C-C SEE SHEET 2
FOR LIMITS OF CLASS A EXCAVATION AT ABUTMENTS AND WING WALLS SEE SHEET 2
FOR LOCATION OF NAME PLATES SEE SHEET 10.

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

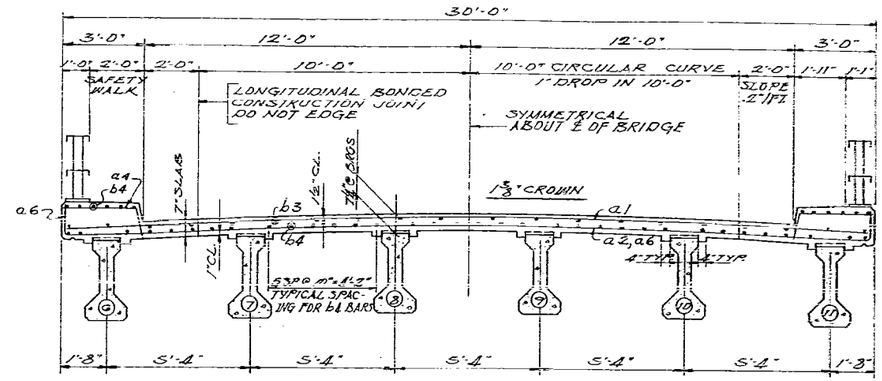
GENERAL PLAN & ELEVATION
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT I-80-3(22)101
F.A.I. ROUTE 80 SECTION 32-1HB
GRUNDY COUNTY
STATION 1149+78.56

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	32-1HB	GRUNDY	55	34
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	F.A. PROJECT		

SHEET 5 OF 12



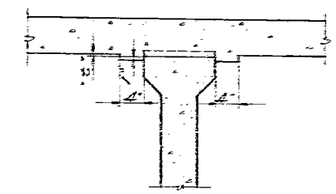
SPAN 1 & 4



SPAN 2 & 3

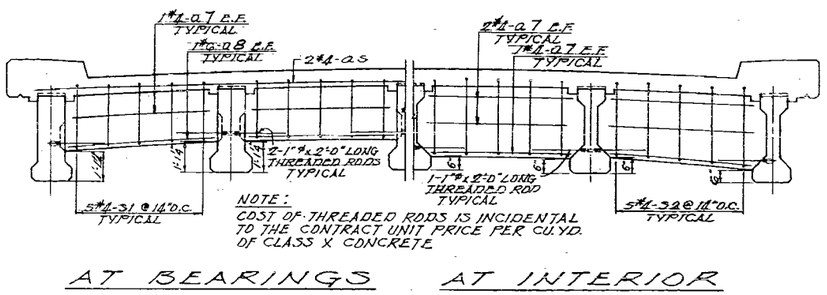
TYPICAL CROSS SECTIONS

SCALE: 3/8" = 1'-0"



STANDARD FILLET DETAIL

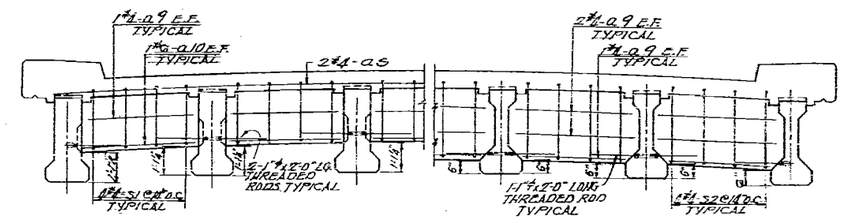
AFTER ALL PRECAST PRESTRESSED BEAMS HAVE BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE BEAMS SHALL BE TAKEN AT INTERVALS NOT TO EXCEED 10 FT. FROM THESE ELEVATIONS SUBTRACT THE INCREMENT OF DEFLECTIONS FOR THESE POINTS, DETERMINED FROM THE D.L. DEFLECTION DIAGRAM. THE ELEVATIONS SO ATTAINED SUBTRACTED ALGEBRAICALLY FROM THE THEORETICAL GRADE ELEVATIONS MINUS THE THICKNESS OF THE SLAB EQUAL THE DIMENSION "Y". A POSITIVE VALUE OF "Y" EQUALS THE FILLET HEIGHT ABOVE THE TOP OF THE BEAM. A NEGATIVE VALUE OF "Y" EQUALS THE EMBEDMENT OF THE BEAM ABOVE THE THEORETICAL BOTTOM OF SLAB ELEVATION.



NOTE:
COST OF THREADED RODS IS INCIDENTAL TO THE CONTRACT UNIT PRICE PER CU. YD. OF CLASS X CONCRETE

AT BEARINGS AT INTERIOR

SPAN 1 & 4



AT BEARINGS AT INTERIOR

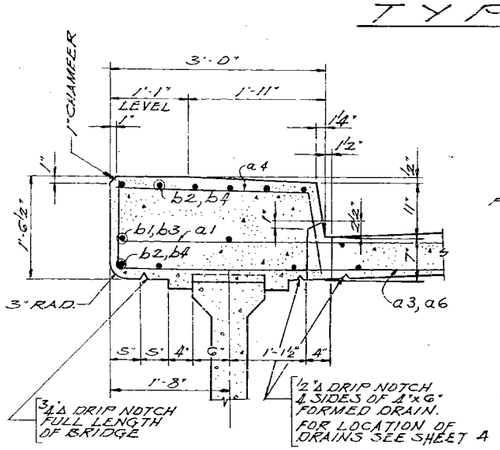
SPAN 2 & 3

TYPICAL DIAPHRAGM DETAILS

SCALE: 3/8" = 1'-0"

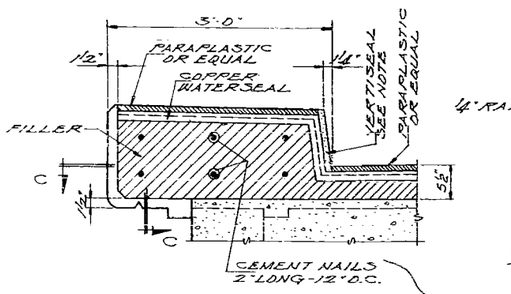
TABLE OF "Y" DIMENSIONS

BEAMS \ "Y"	SPANS 1 & 4			SPANS 2 & 3		
	Y.25	Y.50	Y.75	Y.25	Y.50	Y.75
INTERIOR	3/16"	1/4"	3/16"	3/8"	1/2"	3/8"
EXTERIOR	1/4"	5/16"	1/4"	5/8"	7/8"	5/8"



DETAIL "X" AND DRAIN DETAIL

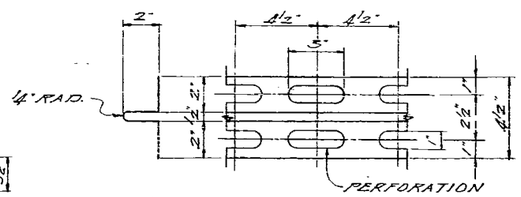
SCALE: 1" = 1'-0"



CURB DETAIL AT FIXED PIER

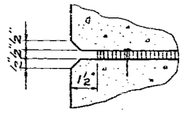
SCALE: 1" = 1'-0"

NOTE: SEAL VERTICAL CURB JOINT WITH BLACK COLD APPLIED JOINT SEALER "VERTISEAL", OR APPROVED EQUAL.

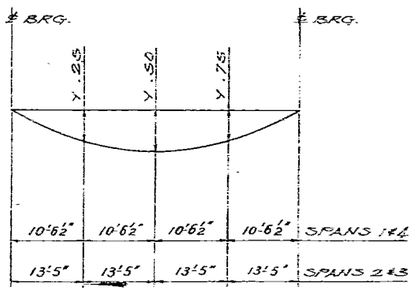


DETAIL OF COPPER WATERSEAL

SCALE: 3" = 1'-0"



SECTION "C"



D.L. DEFLECTION DIAGRAM

WEIGHT OF PRESTRESSED T-BEAMS NOT INCLUDED

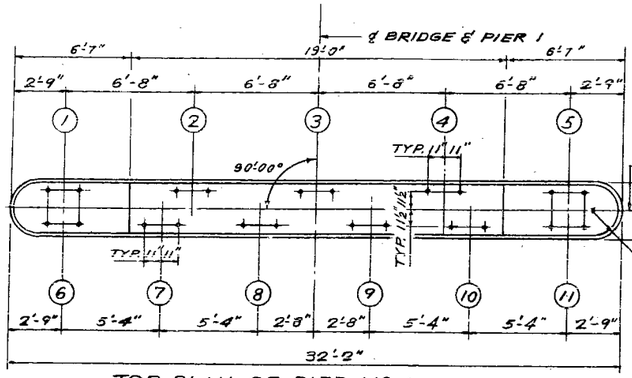
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 32-1HB
GRUNDY COUNTY
STATION 1149+98.56

Revised - 1-12-60 - W.J.M. - Changed height of curb from 9" to 12" in DETAIL "X" & DRAIN DETAIL

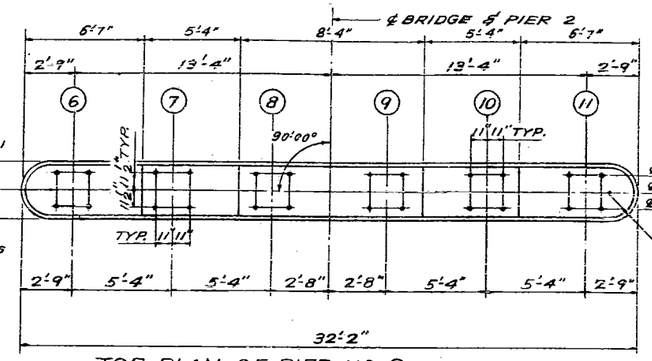
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	32-1H8	GRUNDY	55	33
STA.		TO STA.		
F.A. PROJECT				

SHEET 10 OF 12

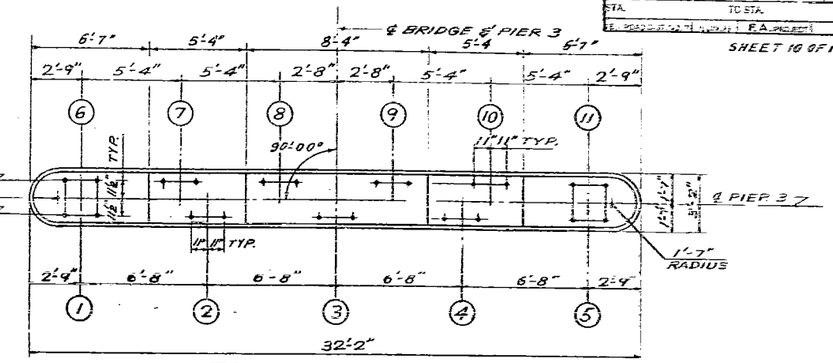


TOP PLAN OF PIER NO. 1

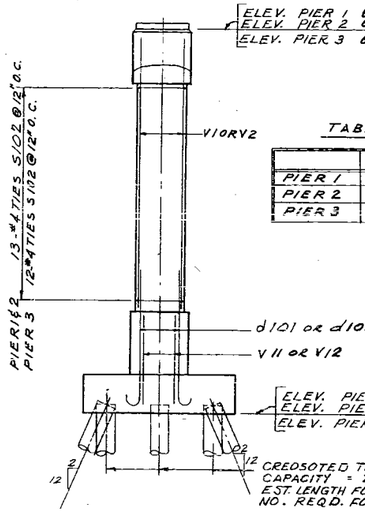
NOTE: PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH TOP BEAM



TOP PLAN OF PIER NO. 2



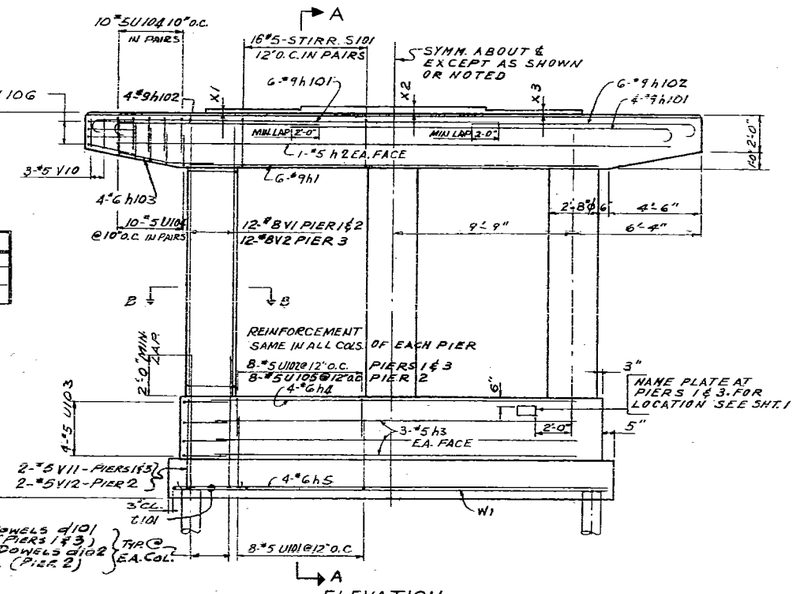
TOP PLAN OF PIER NO. 3



END VIEW

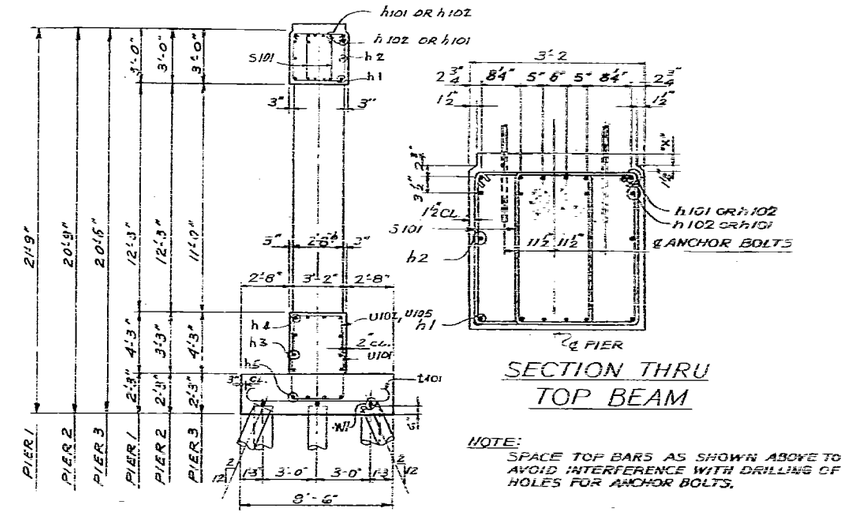
TABLE OF "X" DIMENSIONS

	X1	X2	X3
PIER 1	1⅛"	1⅛"	1⅛"
PIER 2	1"	1⅝"	1"
PIER 3	⅝"	1⅝"	⅝"



ELEVATION

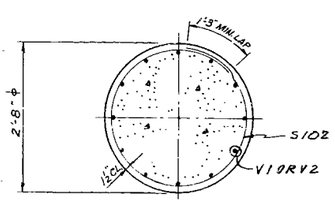
SCALE ¼"=1'-0"



SECTION A-A

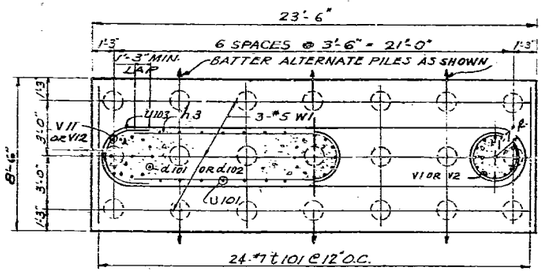
SECTION THRU TOP BEAM

NOTE:
SPACE TOP BARS AS SHOWN ABOVE TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.



SECTION B-B

SCALE ¾"=1'-0"



HALF SECTION HALF PLAN

FOOTING PLAN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY PIER 1	PIER 2	PIER 3
CLASS X CONCRETE	CU. YDS.	45.7	43.1	44.9
REINFORCEMENT BARS	LBS.	6,360	6,260	6,230
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	60	53	60
CREOSOTED TIMBER PILES	LIN. FT.	525	525	525
TEST PILES (TIMBER)	EACH	1	1	1

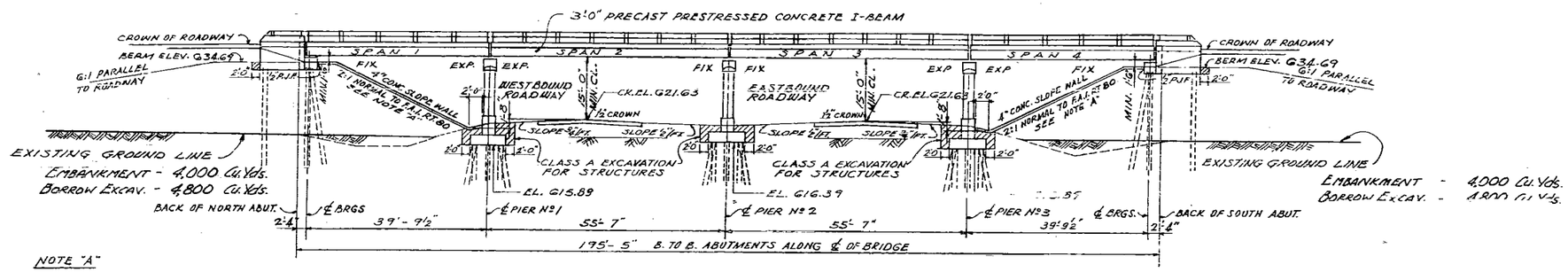
ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

PIERS 1, 2 AND 3
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 32-1H8
GRUNDY COUNTY
STATION 1149+98.56

B.M. 53 - ELEV. 621.78
R.R. SPIKE IN HEDGE APPLE 450' RT. OF STA. 753+55
B.M. 54 - ELEV. 619.78
SPIKE IN P. POLE 200' RT. OF STA. 766+30
B.M. 55 - ELEV. 621.29
IRON ROD 200' RT. OF STA. 779+89

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	32-1HB-1	GRUNDY	55	42
STA.	TO STA.			
FED. ROAD DIST. NO. 7	ILLINOIS	F.A. PROJ. I-80-3(22)101		

SHEET 1 OF 12

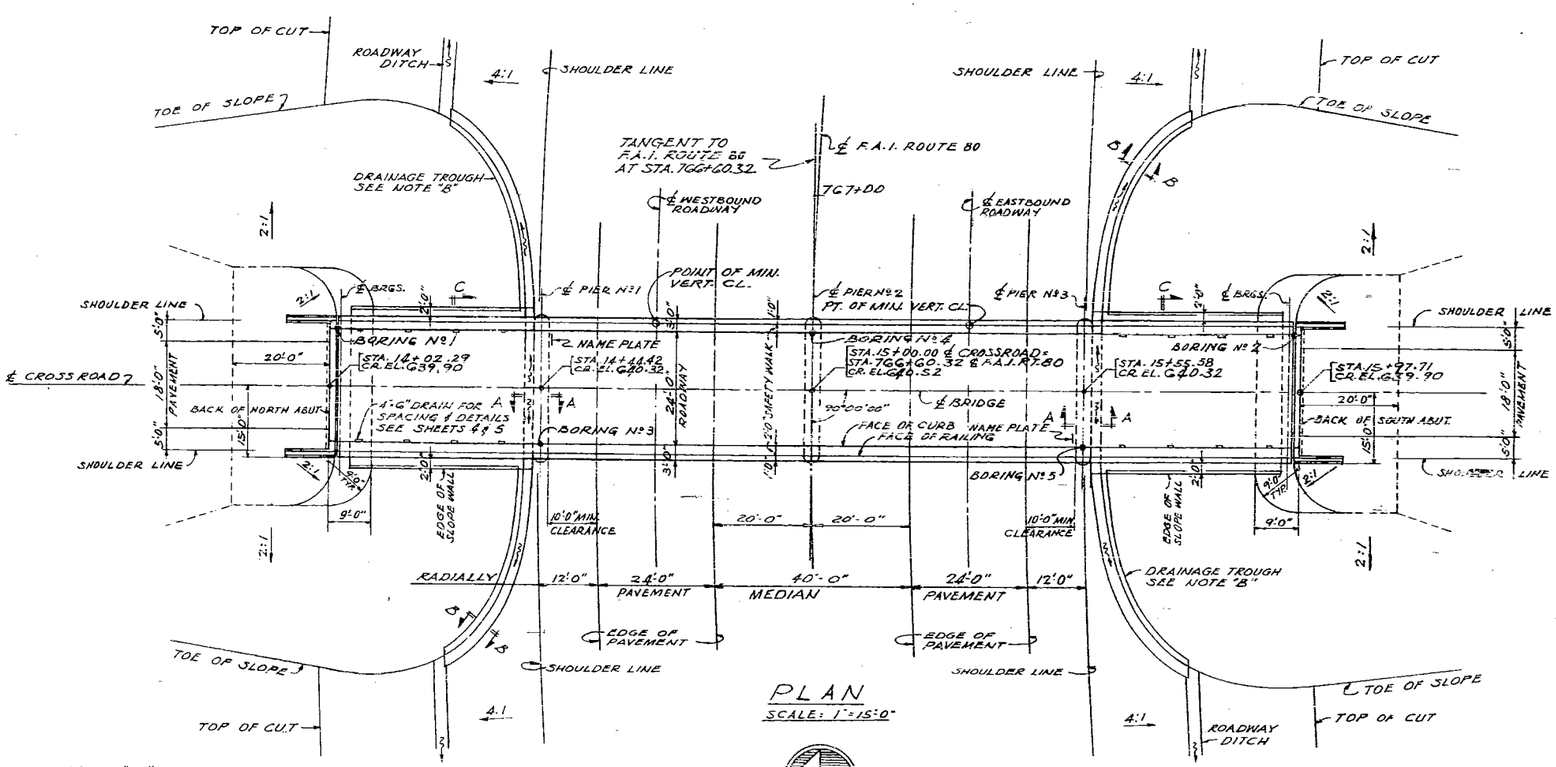


NOTE "A"

REINFORCED WITH WELDED WIRE FABRIC 6" x 6" MESH, No. 4 WIRE, WEIGHING APPROX. 58# PER 100 SQ. FT.

ELEVATION

SCALE: 1" = 15'-0"



PLAN

SCALE: 1" = 15'-0"

NOTE "B"

DRAINAGE TROUGH TO HAVE MIN. ⅛" PER FT. SLOPE EACH DIRECTION FROM EDGE OF SLOPE WALL AND TO TERMINATE AS SHOWN.

REV. 12/29/59 R.A.K. 1) QUANTITES FOR EMBANKMENT ADDED
2) ITEMS DELETED UNDER "NOTE"

INDEX OF SHEETS — SECTION 32-1HB

SHEET NO.	TITLE
1	GENERAL PLAN AND ELEVATION
2	DRAINAGE DETAILS, EXCAVATION, QUANTITIES AND GENERAL NOTES
3	BORINGS AND NAME PLATES
4	DECK REINFORCEMENT PLAN
5	DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
6	DETAILS OF PRECAST PRESTRESSED CONCRETE I-BEAMS
7	FRAMING PLAN, BEARING DETAILS AND EXPANSION DEVICE
8	HANDRAIL DETAILS
9	NORTH AND SOUTH ABUTMENTS AND WINGWALL DETAILS
10	PIERS 1, 2 AND 3
11	REINFORCEMENT BAR LISTS
12	ABUTMENT PILES

EMBANKMENT - 4,000 Cu. Yds.
BORROW EXCAV. - 4,800 Cu. Yds.

ABUTMENT PILE NOTES:

1. DRIVE A CONCRETE TEST PILE AT EACH ABUTMENT.
2. CONSTRUCT EMBANKMENT AS SHOWN.
3. DRILL OVERSIZE HOLES THROUGH THE EMBANKMENT TO THE EXISTING GROUND FOR THE ABUTMENT AND WING PILES.
4. DRIVE THE REMAINDER OF THE CONCRETE PILES FOR THE ABUTMENTS THROUGH THE DRILLED OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A PENETRATION BELOW EXISTING GROUND NOT LESS THAN DETERMINED FROM THE TEST PILES.
5. DRIVE THE TIMBER PILES FOR THE ABUTMENT WINGS THROUGH THE OVERSIZE HOLES TO THE CAPACITY SHOWN ON THE PLANS AND TO A MINIMUM PENETRATION OF 10 FEET INTO THE EXISTING GROUND.
6. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.

CURVE DATA
F.A.I. ROUTE 80

P.I. STA.	766+60.32
Δ	0°-28'-40"
D	0°-02'-00"
R	171,887.34'
L	1433.33'
T	716.67'
E	1.50'

ROAD CLASSIFICATION = E-1
DESIGN SPEED = 45 M.P.H.
DESIGN LOAD
L.L. H15-S12-44
FUTURE D.L. 1½" BIT. WEARING SURFACE

DESIGN STRESSES

CONCRETE (CAST IN PLACE)
f'_c = 3500 LBS. PER SQ. IN.
f_c = 1400 LBS. PER SQ. IN.
f_c = 1400 (WITH EARTH PRESSURE) 1800 LBS. PER SQ. IN.
v = 120 (PIER FOOTING) 75 LBS. PER SQ. IN.
n = 10

PRESTRESSED CONCRETE
f'_c = 5,000 LBS. PER SQ. IN.
f'_{ci} = 4,000 LBS. PER SQ. IN.
f_c = 2,000 LBS. PER SQ. IN.

REINFORCING STEEL
f_s = 20,000 LBS. PER SQ. IN.

PRETENSIONING STEEL
f_{su} = 248,000 LBS. PER SQ. IN.
f_{si} = 173,600 LBS. PER SQ. IN.

PILE LOADS
ABUTMENT = 55 TONS (CONCRETE PILES)
WINGWALLS = 10 TONS (TIMBER PILES)
PIERS = 20 TONS (TIMBER PILES)

NOTE:

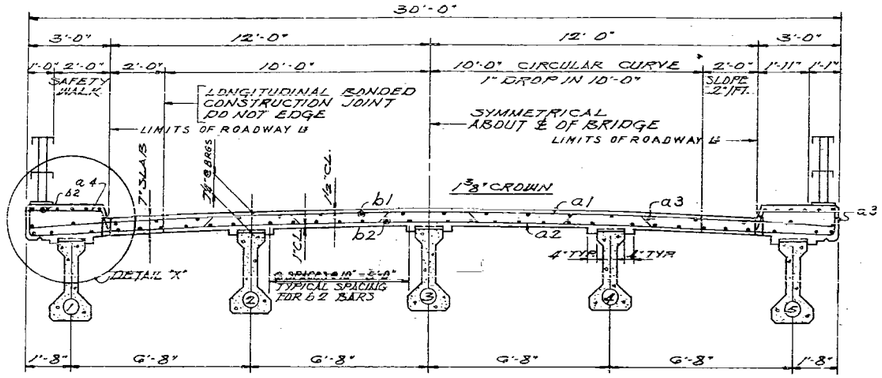
FOR SECTIONS A-A, B-B, & C-C SEE SHEET 2
FOR LIMITS OF CLASS A EXCAVATION AT ABUTMENTS AND WING WALLS SEE SHEET 2.
FOR LOCATION OF NAME PLATES SEE SHEET 10.

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 566- CHICAGO, ILLINOIS

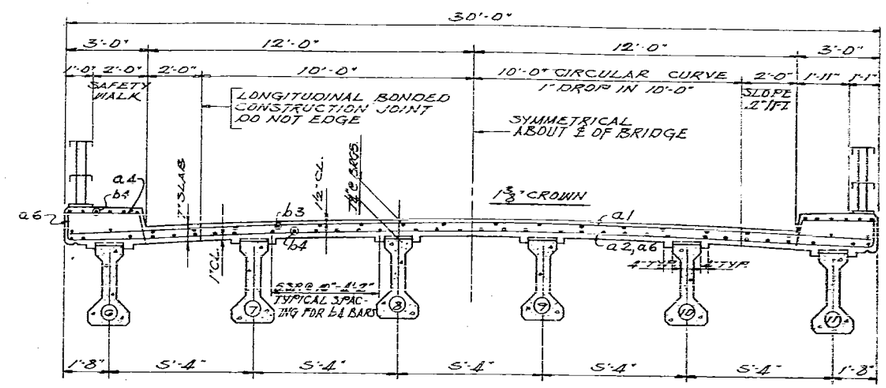
GENERAL PLAN & ELEVATION
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT I-80-3(22)101
F.A.I. ROUTE 80 SECTION 32-1HB
GRUNDY COUNTY
STATION 766+60.32

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	32-1 HB	GRUNDY	55	45
STA.		TO STA.		
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET 5 OF 2



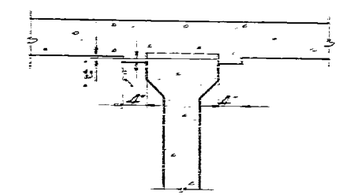
SPAN 1 & 4



SPAN 2 & 3

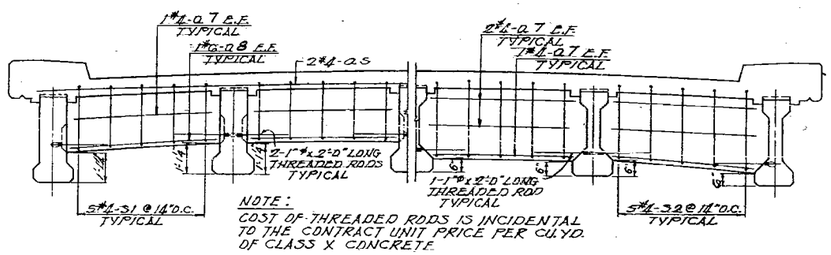
TYPICAL CROSS SECTIONS

SCALE: 3/8" = 1'-0"



STANDARD FILLET DETAIL

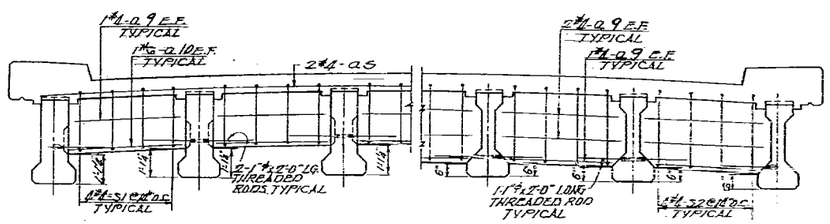
AFTER ALL PRELIMINARY PRESTRESSED BEAMS HAVE BEEN ERECTED, ELEVATIONS OF THE TOP FLANGES OF THE BEAMS SHALL BE TAKEN AT INTERVALS NOT TO EXCEED 10 FT. FROM THESE ELEVATIONS SUBTRACT THE INCREMENT OF DEFLECTIONS FOR THESE POINTS, DETERMINED FROM THE D.L. DEFLECTION DIAGRAM. THE ELEVATIONS SO ATTAINED SUBTRACTED ALGEBRAICALLY FROM THE THEORETICAL GRADE ELEVATIONS MINUS THE THICKNESS OF THE SLAB EQUAL THE DIMENSION "Y". A POSITIVE VALUE OF "Y" EQUALS THE FILLET HEIGHT ABOVE THE TOP OF THE BEAM. A NEGATIVE VALUE OF "Y" EQUALS THE EMBEDMENT OF THE BEAM ABOVE THE THEORETICAL BOTTOM OF SLAB ELEVATION.



NOTE:
COST OF THREADED RODS IS INCIDENTAL TO THE CONTRACT UNIT PRICE PER CU. YD. OF CLASS X CONCRETE.

AT BEARINGS AT INTERIOR

SPAN 1 & 4



AT BEARINGS AT INTERIOR

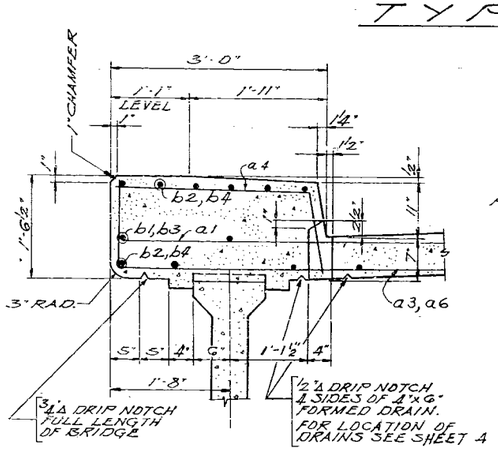
SPAN 2 & 3

TYPICAL DIAPHRAGM DETAILS

SCALE: 3/8" = 1'-0"

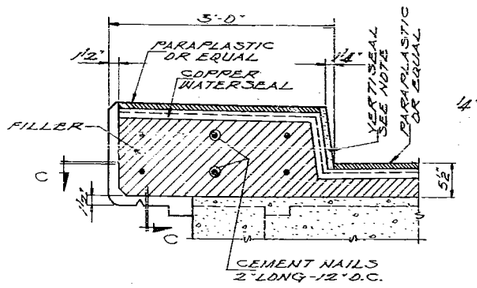
TABLE OF "Y" DIMENSIONS

"Y" / BEAMS	SPANS 1 & 4			SPANS 2 & 3		
	Y .25	Y .50	Y .75	Y .25	Y .50	Y .75
INTERIOR	1/8"	3/16"	1/8"	3/8"	1/2"	3/8"
EXTERIOR	3/16"	1/4"	3/16"	5/8"	7/8"	5/8"



DETAIL "X" AND DRAIN DETAIL

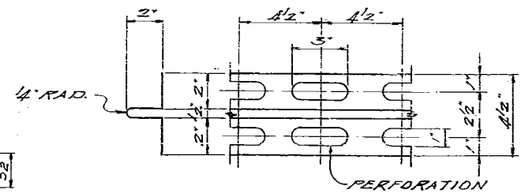
SCALE: 1" = 1'-0"



CURB DETAIL AT FIXED PIER

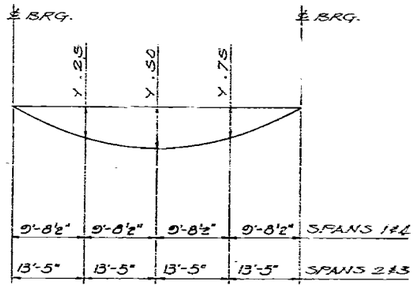
SCALE: 1" = 1'-0"

NOTE: SEAL VERTICAL CURB JOINT WITH BLACK COLD APPLIED JOINT SEALER "VERTISEAL", OR APPROVED EQUAL.



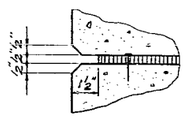
DETAIL OF COPPER WATERSEAL

SCALE: 3" = 1'-0"



D.L. DEFLECTION DIAGRAM

WEIGHT OF PRESTRESSED I-BEAMS NOT INCLUDED



SECTION "C"

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE CHICAGO, ILLINOIS

DECK CROSS SECTIONS AND DIAPHRAGM DETAILS
GRADE SEPARATION
CROSS ROAD
OVER F.A.I. ROUTE 80
F.A. PROJECT
F.A.I. ROUTE 80 SECTION 32-1HB-1
GRUNDY COUNTY
STATION 766+50.32

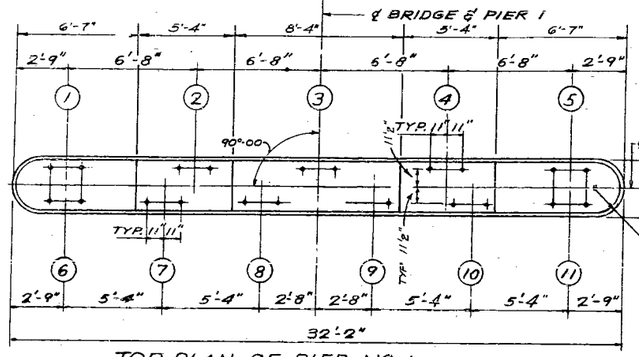
Revised - 1-12-60 WJM - Changed height of curb from 9" to 12" in DETAIL "X" & DRAIN DETAIL

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 80	32-1HB-1	GRUNDY	55	51

STA. TO STA.

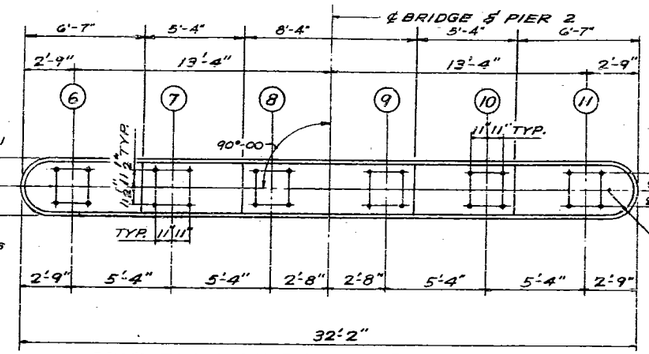
F.A. PROJECT NO. | F.A. PROJECT

SHEET 10 OF 12

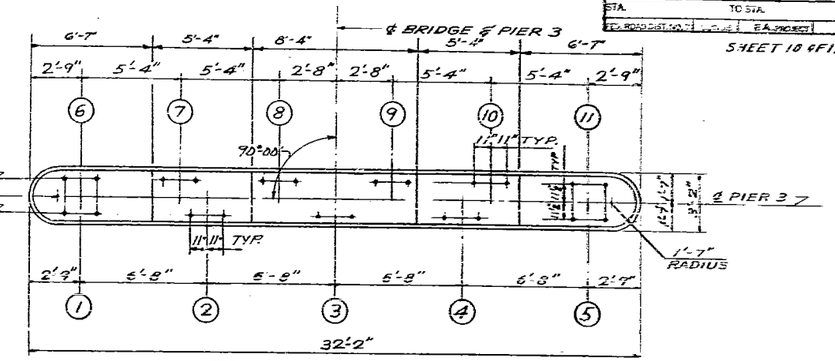


TOP PLAN OF PIER NO. 1

NOTE: PEDESTAL STEPS TO BE POURED MONOLITHICALLY WITH TOP BEAM

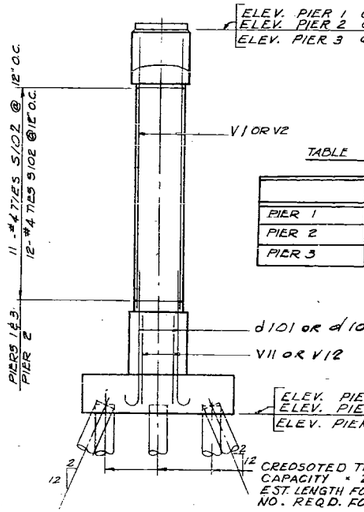


TOP PLAN OF PIER NO. 2



TOP PLAN OF PIER NO. 3

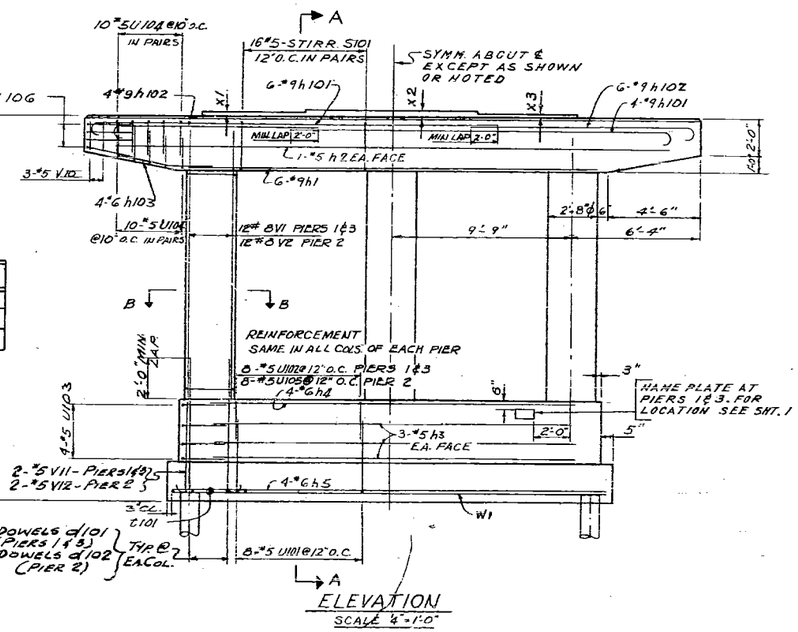
NORTH



END VIEW

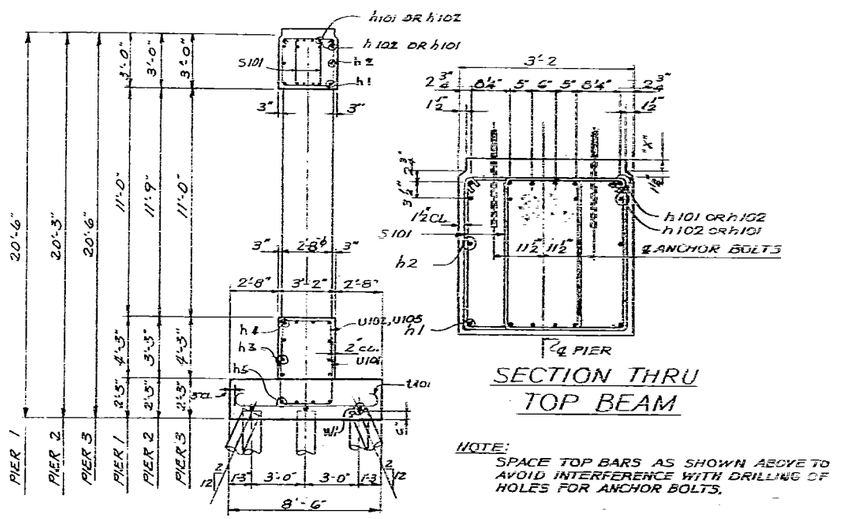
TABLE OF "X" DIMENSIONS

	X1	X2	X3
PIER 1	5/8"	1 5/8"	5/8"
PIER 2	1"	1 5/8"	1"
PIER 3	5/8"	1 5/8"	5/8"



ELEVATION

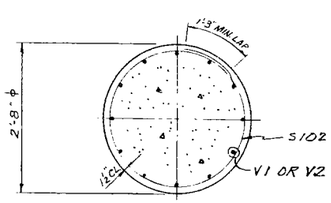
SCALE 1/4" = 1'-0"



SECTION THRU TOP BEAM

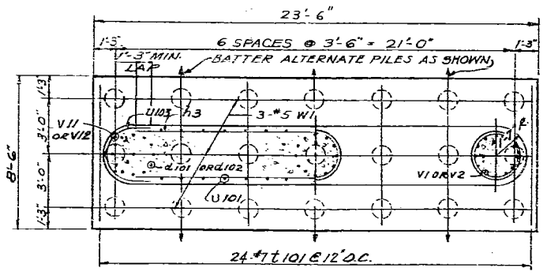
SECTION A-A

NOTE: SPACE TOP BARS AS SHOWN ABOVE TO AVOID INTERFERENCE WITH DRILLING OF HOLES FOR ANCHOR BOLTS.



SECTION B-B

SCALE 3/4" = 1'-0"



HALF SECTION HALF PLAN

FOOTING PLAN

BILL OF MATERIALS

ITEM	UNIT	QUANTITY PIER 1	PIER 2	PIER 3
CLASS X CONCRETE	CU. YDS.	44.9	42.8	44.9
REINFORCEMENT BARS	LBS.	6,210	6,190	6,210
CLASS A EXCAVATION FOR STRUCTURES	CU. YDS.	58	53	58
CREOSOTED TIMBER PILES	LIN. FT.	525	525	525
TEST PILES (TIMBER)	EACH	1	1	1

PIERS 1, 2 AND 3

GRADE SEPARATION

CROSS ROAD

OVER F.A.I. ROUTE 80

F.A. PROJECT

F.A.I. ROUTE 80 SECTION 32-1HB-1

GRUNDY COUNTY

STATION 765+60.32

ALFRED BENESCH & ASSOCIATES CONSULTING ENGINEERS
10 SOUTH WABASH AVENUE 586- CHICAGO, ILLINOIS

B.M.: #70 - S. & W. in F.P.
Rt. Sta. 17+80 - T. Rd. #26
Elev. 610.10

Existing Structure: None

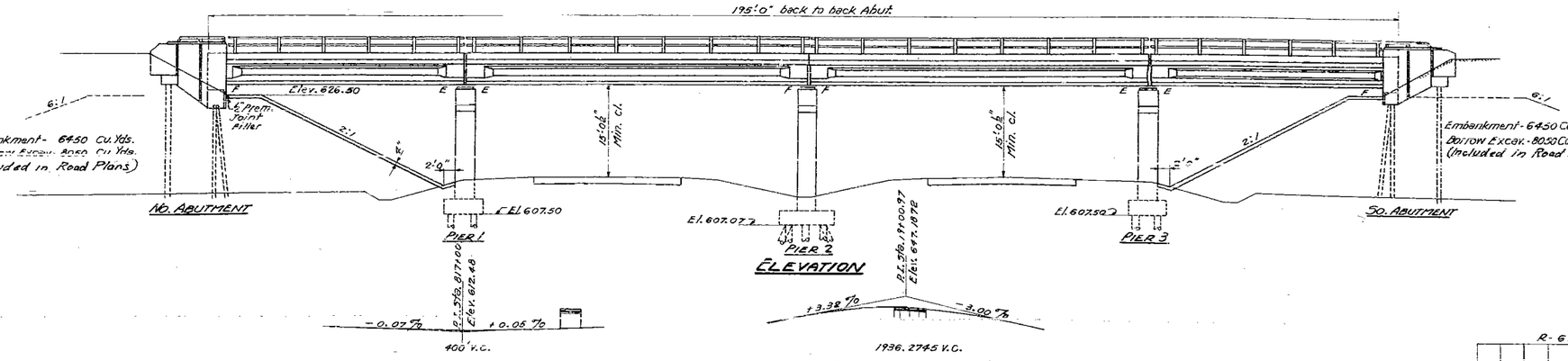
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

FAI-80

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 6	32-2-HB-K	Grundy	65	24

FED. ROAD DIST. NO. 7 | ILLINOIS | FED. AID PROJECT-

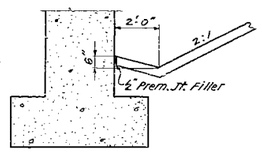
SHEET NO. 1
9 SHEETS



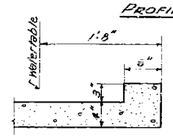
ELEVATION

PROFILE GRADE - F.A.I.-06

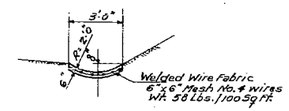
PROFILE GRADE - I. Ro #26



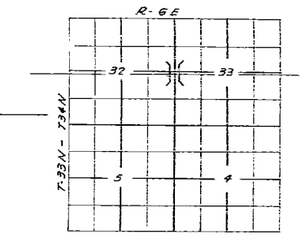
SECTION A-A



SECTION B-B



SECTION C-C



LOCATION SKETCH

STATION 8+79+51.05
BUILT 195 BY
STATE OF ILLINOIS
F.A.I. RT. 6 - SEC. 32-2HB-K
F.A. PROJECT I-063(31)
LOADING H20-S16

LETTERING FOR NAME PLATE
See Standard 2113

GENERAL NOTES

Class-X-Concrete shall be used thruout except as noted.

The concrete in the floor slab shall be poured in one continuous operation between construction joints shown.

The concrete floor slab shall be finished in accordance with Art. 51.19(3) of the Standard Specifications.

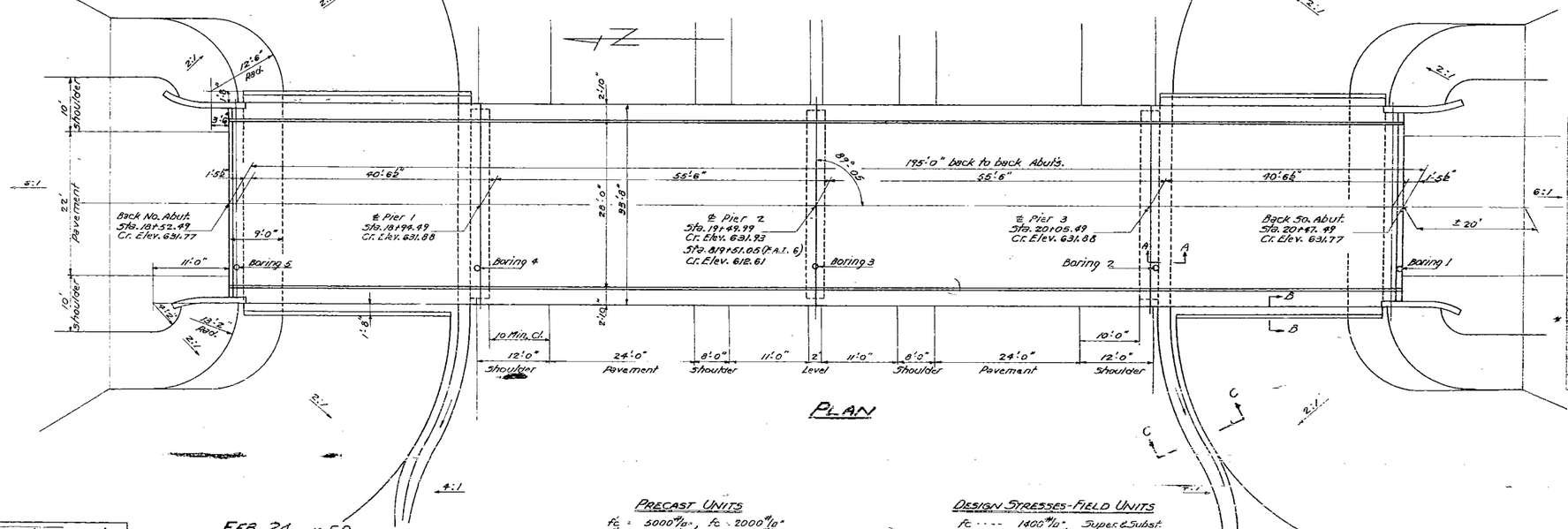
All bearing plates, keep plates, anchor bolts and pintles shall be fabricated and set in accordance with Art. 51.14 of the Standard Specifications.

Unless otherwise noted structural steel shall be given one shop coat of red lead paint and two field coats of aluminum paint. Paint shall be furnished and applied by the Contractor.

For Item Precast Prestressed Concrete I-beams see Special Provisions.

Slopewall shall be reinforced with welded wire fabric 6"x6" Mesh #4 wires weighing 58#/100 ft.

The Contractor shall drive one concrete test pile at each abutment in a permanent location and one timber test pile at each Pier as directed by the Engineer.



PLAN

TOTAL BILL OF MATERIAL

ITEM		SUPER.	SUBSTR.	TOTAL
Class-X-Concrete	Cu. Yds.	192.5	169.7	362.2
Precast Prestressed Conc. I. Beams	Lin. Ft.	964		964
Reinforcement Bars	Lbs.	29490	15580	45070
Structural Steel	Lbs.	8440		8440
Metal Handrail	Lin. Ft.	410		410
Name Plates	Each	1		1
Concrete Piles (45'/p.)	Lin. Ft.		540	540
Creosoted Piles (25'/p.)	Lin. Ft.		780	780
Creosoted Piles (30'/p.)	Lin. Ft.		120	120
Concrete Test Piles	Each			2
Timber Test Piles	Each			3
* Slope Wall	Sq. Yds.			375
Class-A-Excav. for Structure	Cu. Yds.			120

* Includes Paved Ditch.

PRECAST UNITS

f'_c = 5000#/□", f_c = 2000#/□"
f'_{ci} = 4000#/□", f_{ci} = 2400#/□"
f_s = 248000#/□" Strand
f_{su} = 173600#/□" Strand
f_s = 20000#/□" Struct.
f_s = 20000#/□" Reinf.

DESIGN STRESSES - FIELD UNITS

f_c - - - - 1800#/□" Super. & Subst.
f_s - - - 20000#/□" Reinf.
f_s - - - 18000#/□" Struct.
n - - - - 10
V - - - 75#/□" Pier Footings.

DESIGNED	A. E. Thurman
CHECKED	
DRAWN	M. Miller
CHECKED	

FEB. 24 1958

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

Loading H20-S16-44

GENERAL PLAN & ELEVATION
PROJECT I-063(31)
F.A.I. ROUTE 6 - SECTION 32-2HB-K
GRUNDY COUNTY
STATION 8+79+51.05

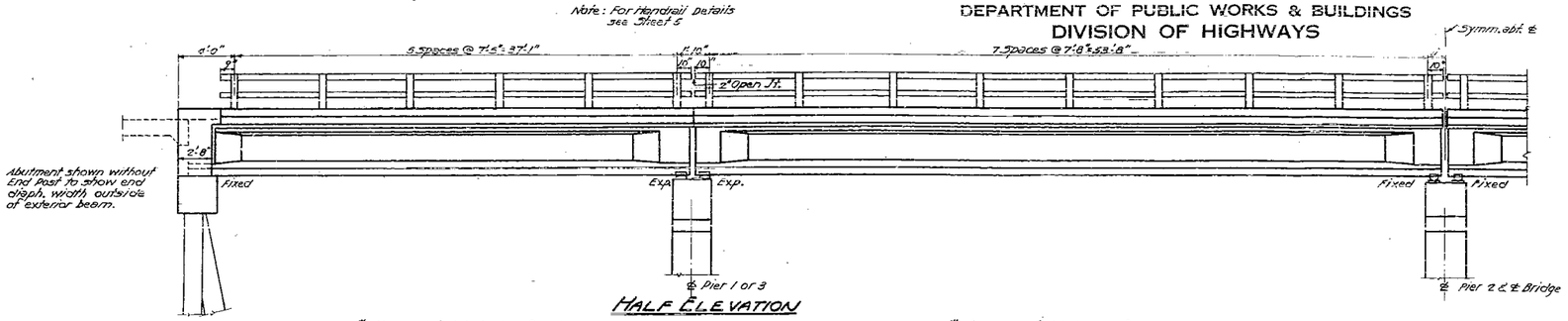
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

FAI-80

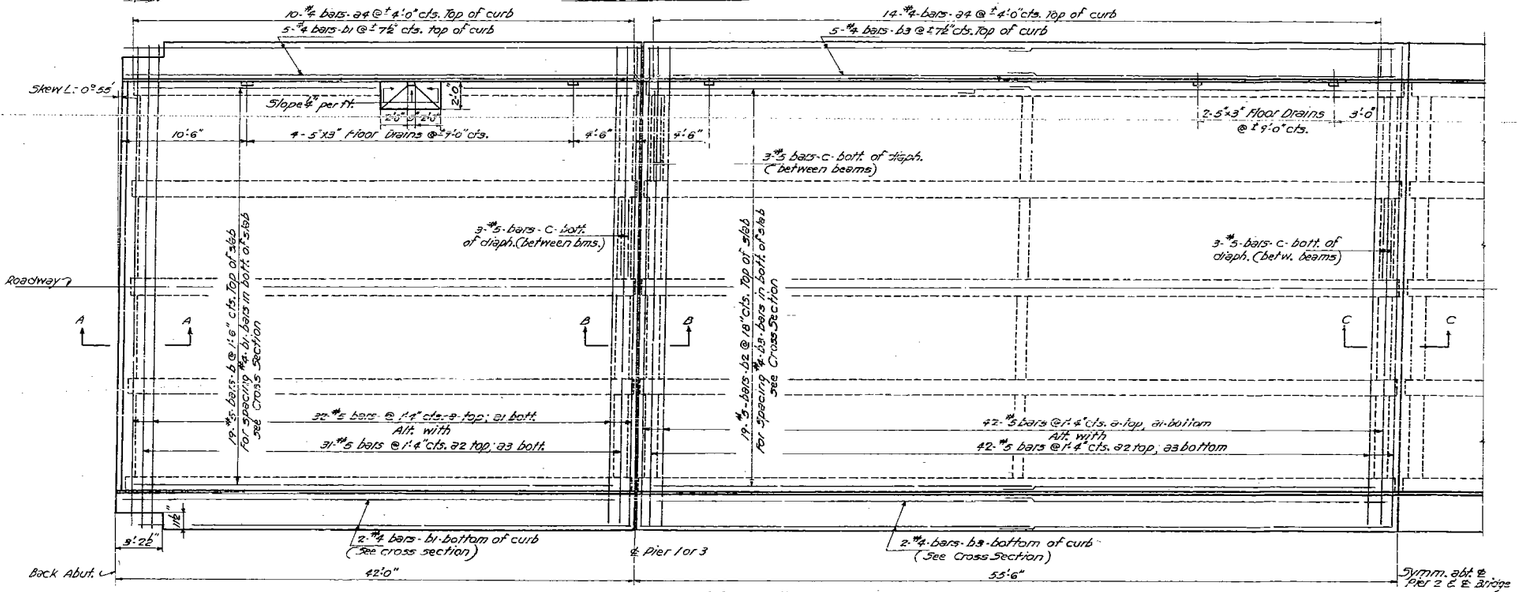
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 6	32-2-HBK	Grundy	65	26
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 3
9 SHEETS

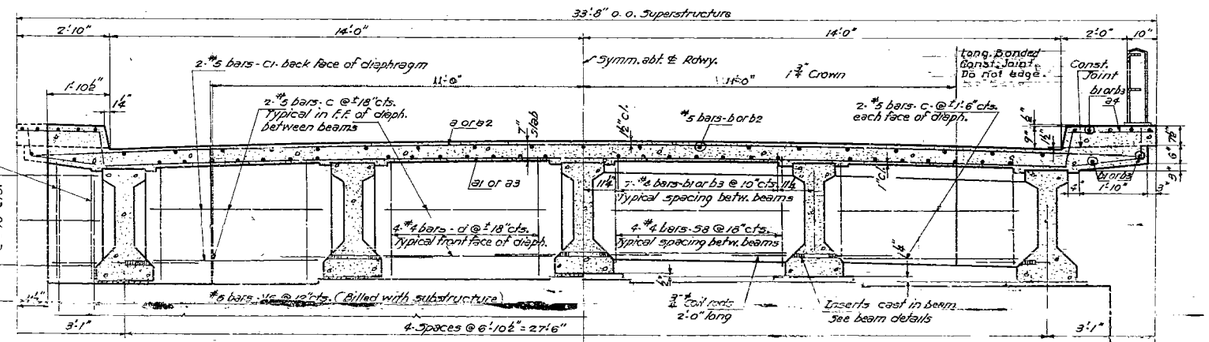
Note: For Handrail Details see Sheet 5



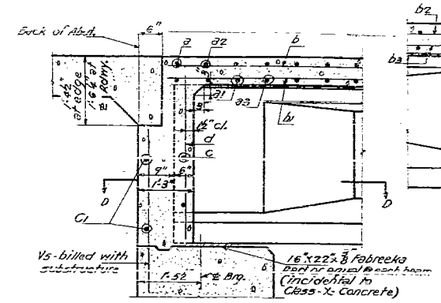
HALF ELEVATION



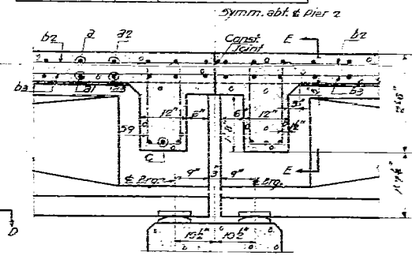
HALF PLAN



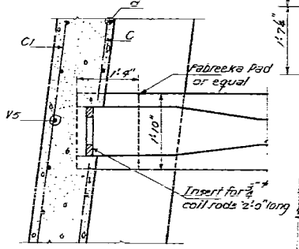
HALF SECTION NEAR ABUTMENT



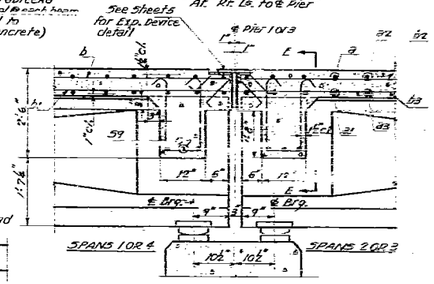
SECTION A-A
At Rt. Ls. to back Abut.



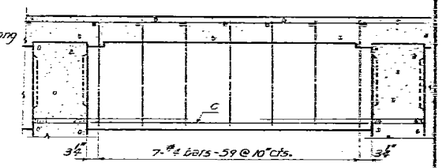
SECTION C-C
At Rt. Ls. to ℄ Pier



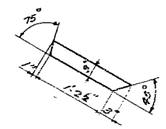
SECTION D-D

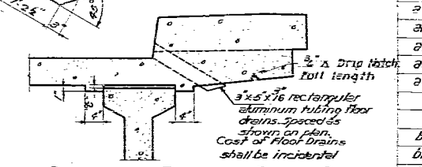


SECTION B-B
At Rt. Ls. to ℄ Pier



SECTION E-E



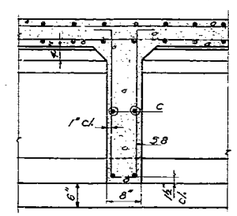


DETAIL OF FILLET & FLOOR DRAIN

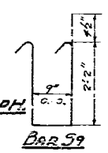
To determine fillet height "C" take elevations of the top flange of the precast prestressed concrete beam at the quarter points of each beam after beams have been erected. From these elevations subtract the increment of deflections for these points, determined from the Dead Load Deflection Diagram. The elevations so obtained subtracted from the theoretical grade elevation minus the slab thickness equals the fillet dimension "C". A positive value of "C" equals the fillet height above the top of the beam a negative value of "C" equals the imbedment of the beam above the theoretical bottom of slab elevation.

BILL OF MATERIAL

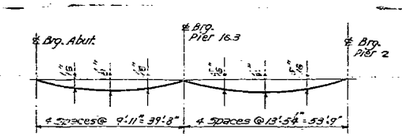
Bar	No.	Size	Length	Shape
a	148	#5	32'-8"	
a1	148	#5	32'-10"	
a2	146	#5	32'-9"	
a3	146	#5	30'-6"	
a4	96	#4	2'-6"	
b	38	#5	28'-3"	
b1	168	#4	27'-5"	
b2	38	#5	28'-3"	
b3	105	#4	28'-3"	
c3	16	#4	2'-6"	
c	120	#5	5'-4"	
c1	8	#5	16'-6"	
c2	12	#5	7'-0"	
d	40	#4	3'-8"	
58	32	#4	7'-10"	
59	168	#4	5'-10"	
Class-X Concrete			Cu. Yds.	192.5
Reinforcing Bars			Lbs.	24,600
Structural Steel			Lbs.	8400
Precast Prestressed Conc. I-Bms.			Lin. Ft.	954
Fabr. Handrail			Lin. Ft.	610
Name Plates			Each	1



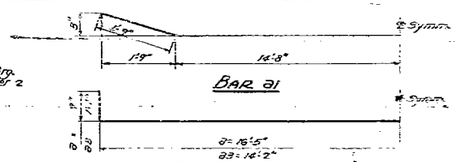
SECTION THRU INTERIOR DIAPH.



BAR 59

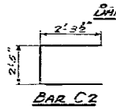


DEFLECTION DIAGRAM
Due to dead load of cast in place slab

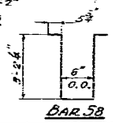


BAR a1

BARS a1, a3



BAR C2



BAR 58

HALF SECTION NEAR ℄ SPAN 1 OR 2 - SHOWING INTERMEDIATE DIAPH. IN SPAN 2

CROSS SECTION
At Rt. Ls. to ℄ Roadway

DESIGNER	A.E. Hummel	F.E.B. 24 1958	
CHECKED	Donald A. Fuller	EXAMINED	W. M. Rennie, Engineer of Bridge and Traffic Structures
DRAWN	C.E.T. M. Miller	PASSED	E. L. Hunt
CHECKED	D.A.F.	APPROVED	R. R. Bartelsmeyer, Chief Highway Engineer

SUPERSTRUCTURE
F.A.I. RT. 6 - SECTION 32-2HB-K
GRUNDY COUNTY
STATION 819+51.05

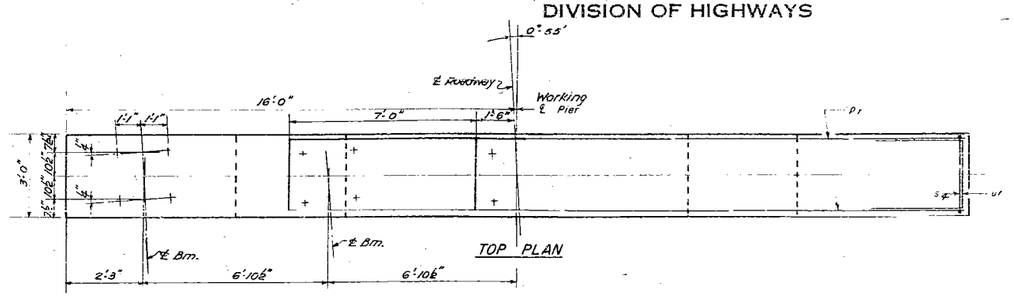
Rev. 5-15-58 - Added Long. Const. Joint & Drip Notch.

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

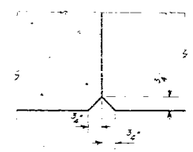
FAI-80

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 6	32-2-11BK	Grundy	65	30
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT-		

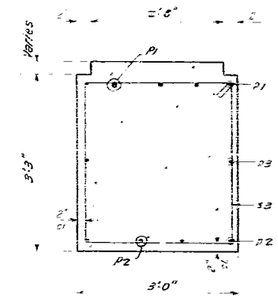
SHEET NO 7
9 SHEETS



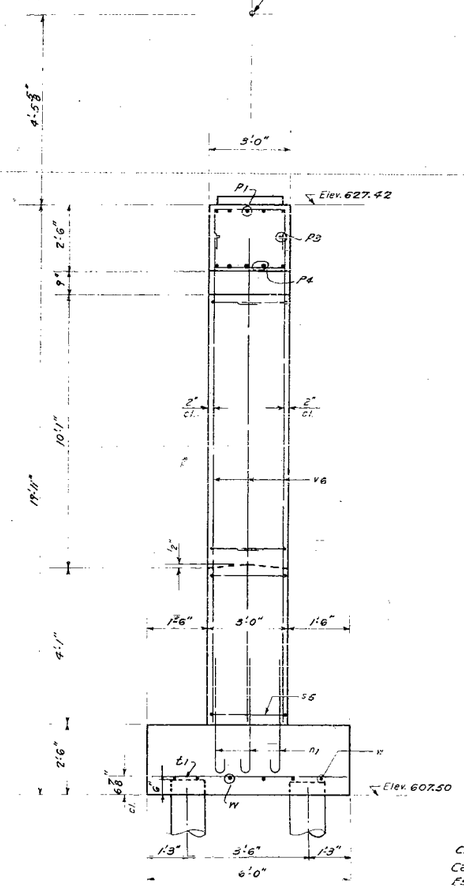
TOP PLAN



SECTION B-B



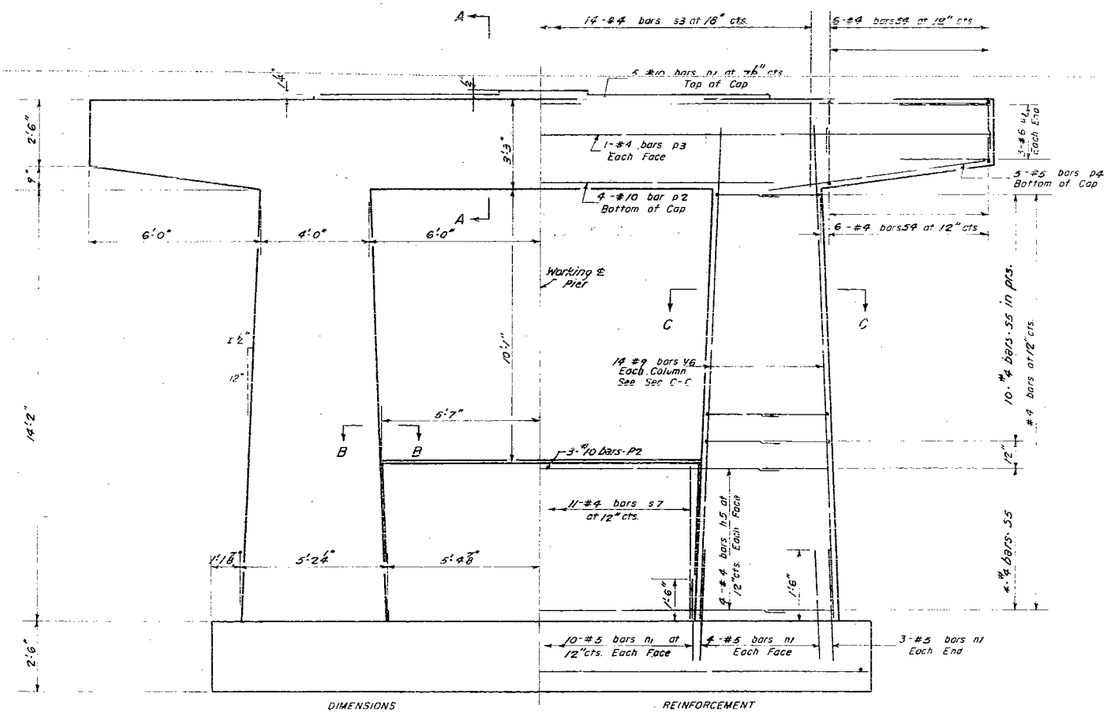
SECTION A-A



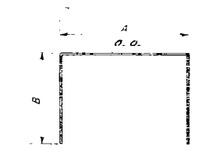
END VIEW

Note All edges shall have standard ¾" chamfer, except footing

PILE DATA
Creosoted Piles
Capacity 20 Tons
Est. Length 15'



ELEVATION

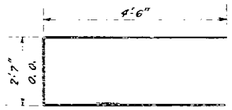


S4-S5-S7 BARS

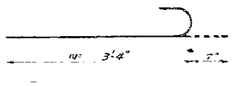
S3 BARS

A & B DIMENSIONS

BAR	A	B
S4	2'8"	2'0"
S5	2'9"	2'9"
S7	2'9"	3'11"



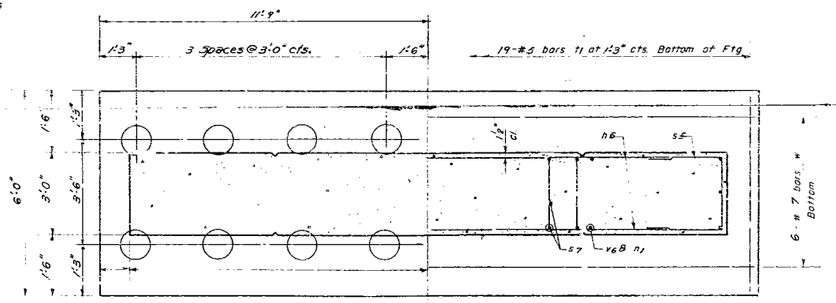
u1 BAR



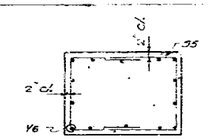
n1 BARS

PIERS 1&3
BILL OF MATERIAL

Bar	No	Size	Length	Shape
n1	88	#5	3'-11"	
p1	20	#10	17'-0"	
p2	14	#10	16'-6"	
p3	8	#4	16'-6"	
p4	20	#5	8'-0"	
s3	28	#4	11'-11"	
s4	48	#4	6'-8"	
s5	96	#4	8'-3"	
s7	22	#4	10'-7"	
h5	16	#4	17'-6"	
t1	38	#5	5'-5"	
u1	12	#6	11'-7"	
v6	56	#9	16'-9"	
w	12	#7	23'-3"	
Cross X Concrete			Cu. Yd.	87.1
Reinforcement Bars			Lbs.	8530
Creosoted Piles		(15'-0")	Lin. Ft.	480
Test Piles			Each	2



FOOTING PLAN



SECTION C-C

DESIGNED	C.D. Thummel	
CHECKED	Donald A. Fowler	
DRAWN	W. A. Sousomon	M. Miller
CHECKED	D.D.F.	

FEB. 24 1958

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

DETAILS OF PIERS 1&3
F.A.I. RT. 6 - SECTION 32-2 HB-K
GRUNDY COUNTY
STATION 819+51.05

P-3 DRAWN 4-25-57