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STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS AND BUILDINGS
DIVISION OF HIGHWAYS
**PLANS FOR PROPOSED
FEDERAL-AID SECONDARY PROJECT**

PLAN 1 INCH = 100 FEET
PROFILE HOR. 1 INCH = 100 FEET
PROFILE VERT. 1 INCH = 10 FEET
CROSS SECTIONS 1 INCH = 5 FEET

F.A.S. ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
3	X-6B	LAKE	16	1

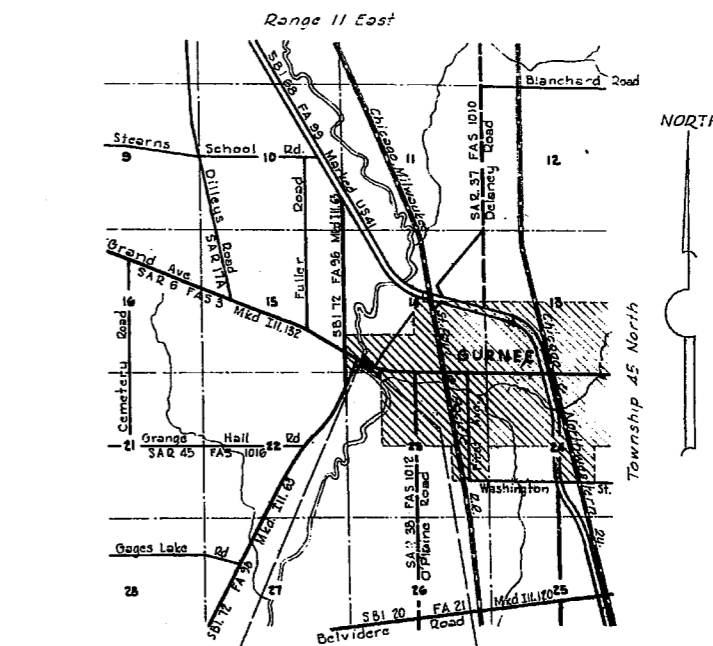
FED. ROAD DIST. NO. 7 ILLINOIS PROJECT S-416 (3)

049-0062
IL 132 e Des Plaines

**F.A.S. ROUTE 3 SECTION X-6B LAKE COUNTY
PROJECT S-416 (3)**

SUMMARY OF QUANTITIES

313	Cu. Yds.	Earth Excavation
350	"	Channel Excavation
3222	"	Borrow Excavation
2	"	Trench Backfill
408	Tons	Sub-base-Granular Material, Type A
120	"	Gravel or Crushed Stone Base Course, Type A
490	Sq. Yds.	Portland Cement Concrete Base Course (10")
275	Gals.	Bituminous Materials (Prima Coat)
210	Tons	Bituminous Concrete Binder Course
156	"	" " Surface Course, Fine Dense-Graded Aggregate Type, Subclass F-11
723.8	Sq. Yds.	Portland Cement Concrete Pavement (10")
352.6	"	" " " (16 1/2" - 10 1/2" - 16 1/2")
1214	"	Pavement Fabric
1	Each	Removal of Existing Superstructure
489.5	Cu. Yds.	Class X Concrete
1.1	"	Handrail Concrete
48228	Lbs	Reinforcement Bars
7860	Sq. Ft.	Precast Prestressed Concrete Bridge Deck
2738	Lbs.	Furnishing and Erecting Structural Steel
300	Lin. Ft.	Furnishing and Erecting Metal Handrail
348	"	Furnishing Concrete Piles
348	"	Driving " "
880	"	Furnishing Untreated Piles, up to 30'
640	"	" " " " " " 20'
1520	"	Driving Timber Piles
2	Each	Test Piles (Concrete)
6	"	" " (Timber)
1	"	Name Plates
68	"	Expansion Bolts
560	Sq. Yds.	Broken Concrete Riprap
27	Lin. Ft.	Storm Sewers, Type 1, 10"
80	"	" " " " " " 12"
20	"	" " " " " " 1, 18"
1	Each	Inlets, Type A, with Type 2 Frame and Grate
2	"	" " " " " " 12
1	"	Manholes, Type A, 4' Diameter, with Type 1 Frame, Closed Lid
54	Lin. Ft.	Combination Concrete Curb and Gutter, Type 1
682	"	" " " " " " " " 3
402	"	Concrete Median, Type 3
915	Sq. Yds.	Pavement Removal
15	Cu. Yds.	Masonry Removal
5	Each	Furnishing and Erecting Right of Way Markers
0.3	Acres	Complete Seeding
0.6	Tons	Mulch
90	Cu. Yds.	Class A Excavation for Structures
164	Cu. Yds.	Class B Excavation for Structures



CONSTRUCTION STARTS
STA. 5+95.15

CONSTRUCTION ENDS
STA. 10+36.25

9+61.25 Auth #1

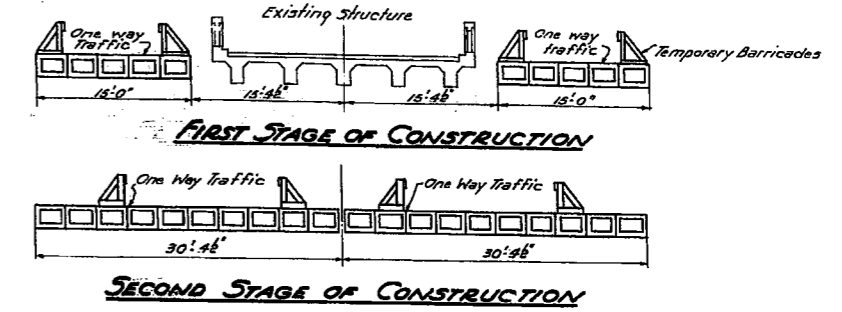
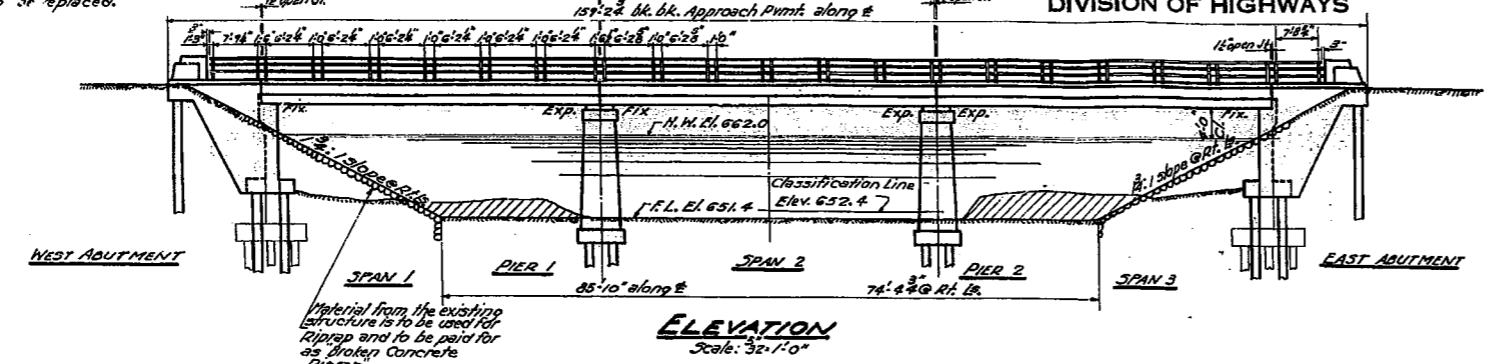
STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS AND BUILDINGS DIVISION OF HIGHWAYS	
SUBMITTED	Dec. 20, 1956
D. J. Maggion	
PASSED	2-13-57 DISTRICT ENGINEER
Wm. S. Suttell	
ENGINEER OF LOCAL ROADS AND STREETS	
APPROVED	2-17-57
R. R. Bartolomeo	
CHIEF HIGHWAY ENGINEER	
APPROVED	2-17-57
E. A. Kraus	
DIRECTOR	

TOTAL NET LENGTH OF LAYOUT TO BE IMPROVED = 441.1 LINEAL FEET = 0.084 MILES

8. Ft. Chisled Square in top of South end of East Abutment. Elev. 660.27
 Existing Structure: R.C. Deck Girder 3 spans, 24' Rdwy. on R.C. Abutts. & Piers. Also 4'x6' Sidewalks with timber flooring on steel frames & pipe handrails. Superstructure to be replaced.

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.A.S. 6	X-68	LAKE	16	5
F.A.S. 3				
FED. ROAD DIST. NO. 1	SUBDIV.	FED. AID PROJECT	S-416 (3)	



WATERWAY INFORMATION

Drainage Area	15400 Acres
Character of Drainage Area	Level, Wooded, Cultivated
Required Opening (35 Yr. Flood)	700 Sq. Ft.
Present Opening	1065 Sq. Ft.
Proposed Opening	700 Sq. Ft.

STATION 7+80.6
 BUILT 195 BY
 STATE OF ILLINOIS
 F.A.S. EX. 3 SEC. X-68
 PROJ. S-416(3)
 LONGW. HD-516

GENERAL NOTES

Class X Concrete shall be used throughout except in Handrail and Posts. Handrail Concrete shall be used in Handrail and Posts. The concrete floor slabs shall be finished in accordance with the applicable provisions of Art. 51.10 (a) of the Standard Specifications for Highway Bridges, see Special Provisions.

All bearing plates, lead plates and anchor bolts shall be fabricated and set in accordance with Art. 51.14 of the Standard Specifications and are included for payment as Structural Steel. Estimated Weight: 2738 lbs.

The following surfaces of expansion guards shall be given two shop coats of red lead paint, the backs of vertical legs of 4" x 1/2" angles and 4 x 3/4" angles.

Expansion guards will not be paid for directly but will be included in the cost of the Precast Prestressed Bridge Deck, see Special Provisions.

Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint, see Art. 51.10 to 51.5 inclusive of the Standard Specifications.

All paint shall be furnished and applied by the Contractor. The Contractor shall drive 6" cast piles in permanent locations as directed by the Engineer before ordering rebar for piles, for location see Sheets 8 and 9.

Curbs shall be Class X Concrete and shall not be poured until longitudinal joints have been packed & cured for them. Precast Prestressed Concrete Bridge Deck, see Special Provisions.

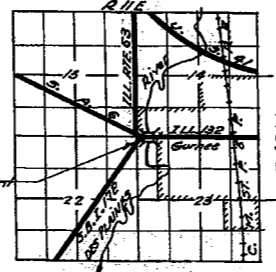
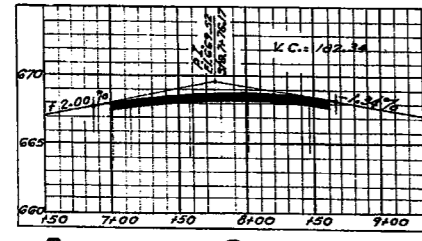
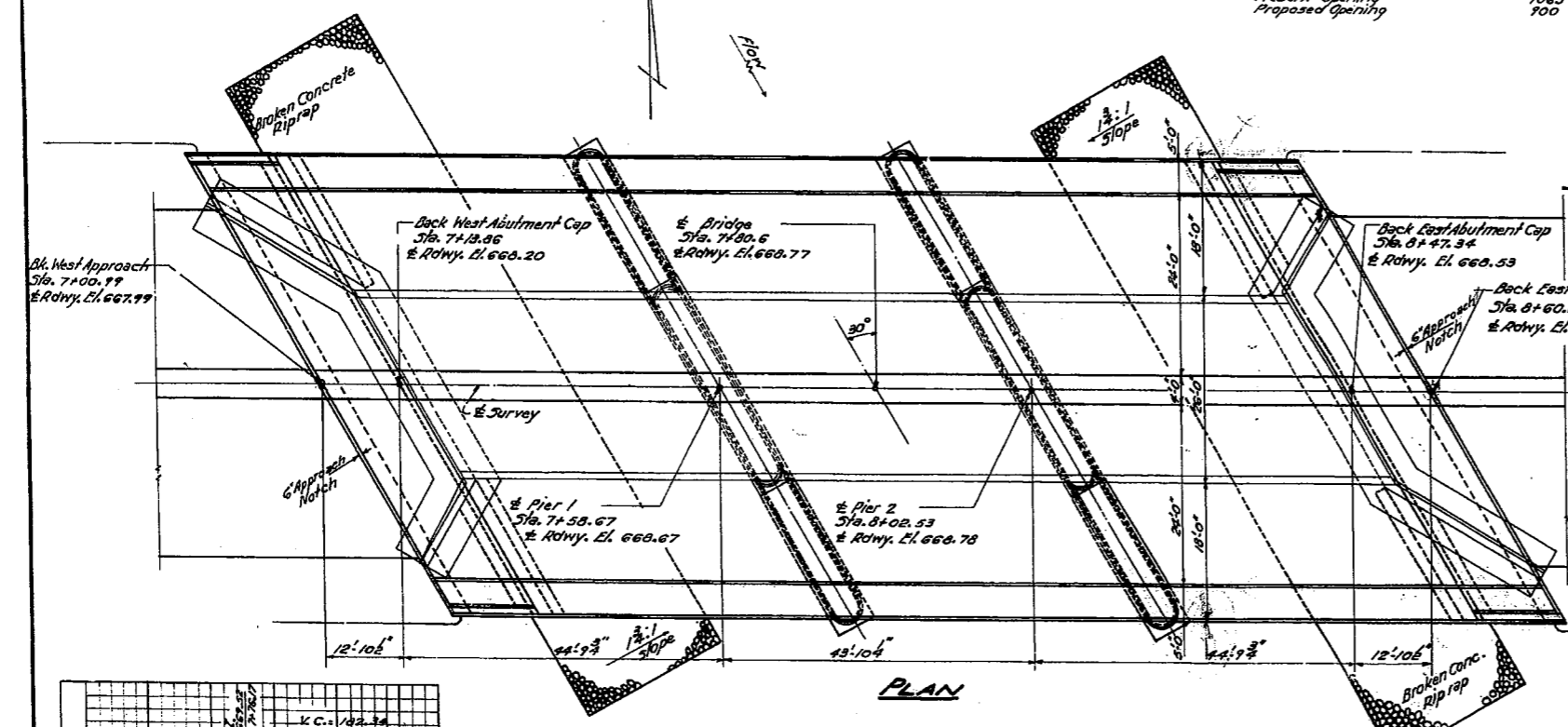
Strand used as prestressing element shall be American Steel and Wire Company Type R. 3. Special High Strength Strand for Prestressed Concrete - Stress Relieved, Bright 11.0 seven wire or equal.

Pockets that receive transverse tie bar on outside beams shall be filled with grout after transverse tie assembly is in place.

The 7" rods in the transverse tie assembly shall be spaced at the top of the threads at the root of the threads is approximately 20000/psi.

LETTERING FOR NAME PLATE
 See Std. 2113

Note: Piles used under existing Piers and Abutts.



DESIGN STRESSES

Prestressed Precast Units
 fc --- 5000 psi
 fc --- 3500 psi
 fs --- 250000 psi (Cables)
 fs --- 180000 psi
 fs --- 180000 psi (Struct.)

Field Units
 fc --- 1400 psi Super.
 fc --- 800 psi Sub.
 fs --- 20000 psi Reinf.
 fs --- 180000 psi Struct.
 n --- 10

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPERSTRUCTURE	SUBSTR.	TOTAL
Class X Concrete	Cu. Yds.	100.0	388.5	488.5
Handrail Concrete	Cu. Yds.	1.1		1.1
Precast Prestressed Concrete Bridge Deck	Sq. Ft.	2860		2860
Concrete Median (Type 3)	Lin. Ft.	159		159
Reinforcement Bars	Lbs.	15,200	13,450	34,650
Structural Steel	Lbs.	2,738		2,738
Metal Handrail	Lin. Ft.	300		300
Bit Material (Prime Coat)	Gals.	85		85
Bit Conc. Under Course	Tons	37		37
Bit Conc. Surface Course - I-II	Tons	67		67
Conc. Piles (20'lg)	Lin. Ft.		348	348
Untreated Piles (20'lg)	Lin. Ft.		880	880
Test Piles (Concrete)	Each		2	2
Test Piles (Timber)	Each		6	6
Expansion Bolts	Each		68	68
Removal of Exist. Superstr.	Each	1		1
Pavement Removal	Sq. Yds.	56		56
Masonry Removal	Cu. Yds.		15	15
Broken Conc. Rip-rap	Sq. Yds.		560	560
Name Plates	Each	1		1
Channel Excavation	Cu. Yds.		350	350
Cresoted Piles (20'lg)	Lin. Ft.		640	640
Class X Deck Top Structures	Cu. Yds.		90	90
Class B Deck Top Structures	Cu. Yds.		184	184

DESIGNED Hal Adams Rejzigs
 CHECKED Robert B. Asher
 DRAWN W. Miller
 CHECKED R.B. K.

NOV. 16 1956
 EXAMINED V.M. Romine
 PASSED [Signature]
 APPROVED R.L. Bartelmann

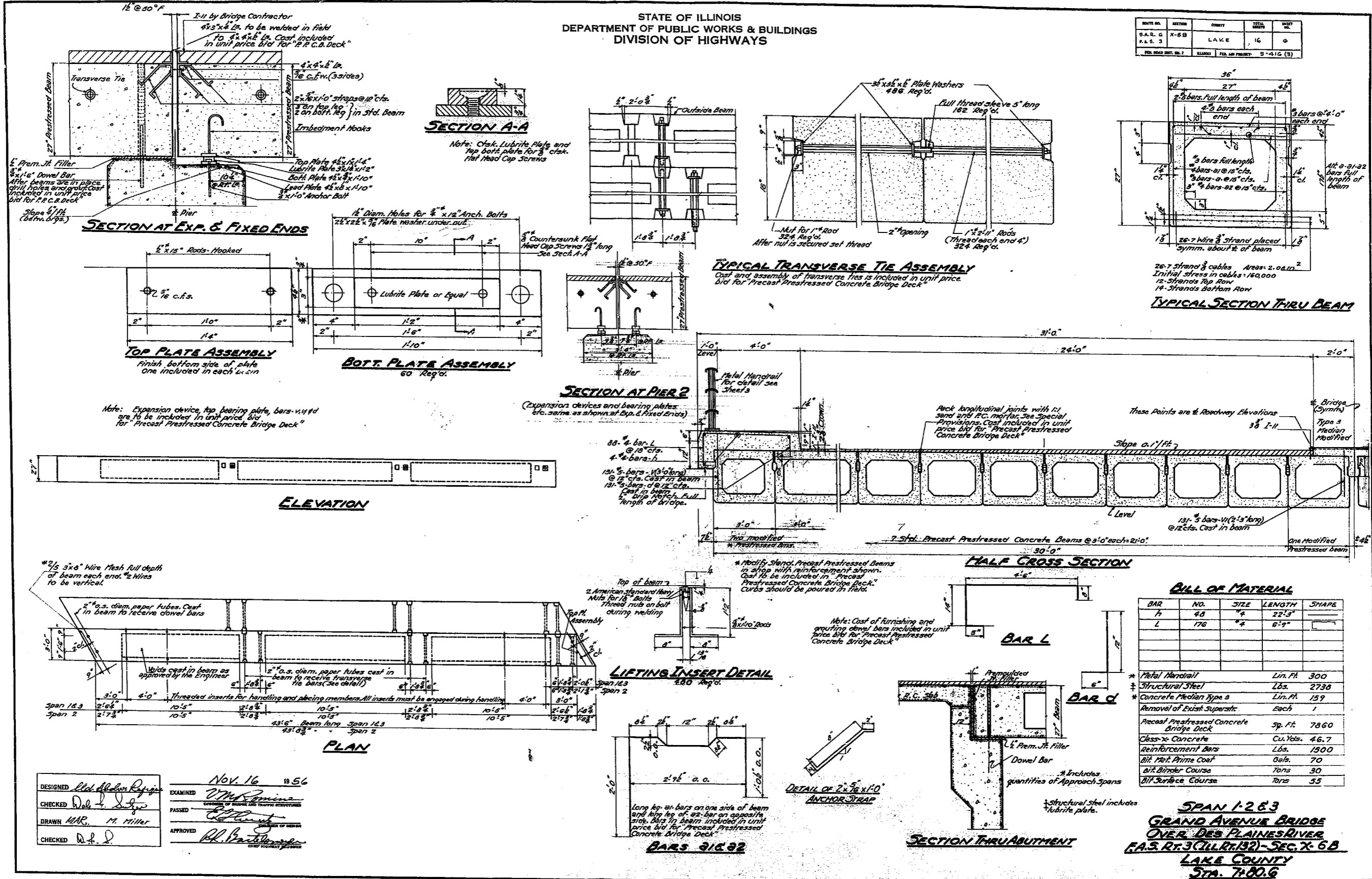
**GENERAL PLAN & ELEVATION
 GRAND AVENUE BRIDGE
 OVER DES PLAINES RIVER
 F.A.S. RT. 3 (ILL. RT. 132) - SEC. X-68
 LAKE COUNTY
 STA. 7+80.6**

Rev. 1-29-57. C.I.A & C.I.B. Excav. Added.

LONGW. HD-516-44

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.A.S. 3	X-6B	LAKE	16	6
FOR ROAD DIST. NO. 1				
ILLINOIS FED. AID PROJECT 9-416 (9)				



DESIGNED *Ed. J. Miller*
CHECKED *W. J. Miller*
DRAWN *MAR. M. Miller*
CHECKED *A. J. P.*

NOV. 16 1956
EXAMINED *W. M. Spina*
PASSED *[Signature]*
APPROVED *[Signature]*

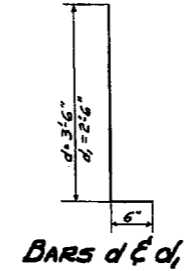
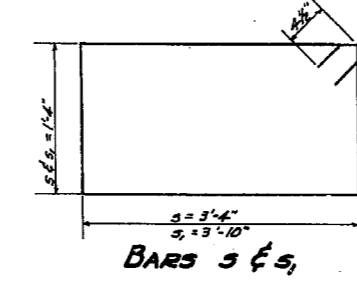
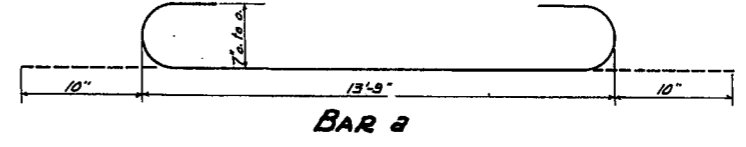
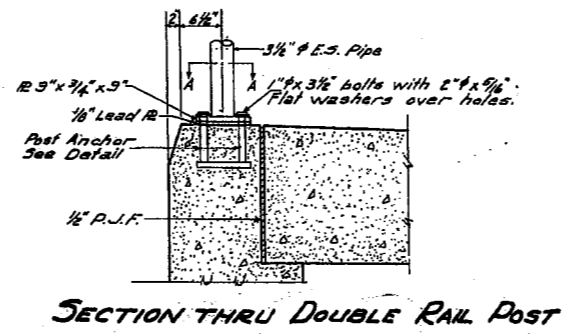
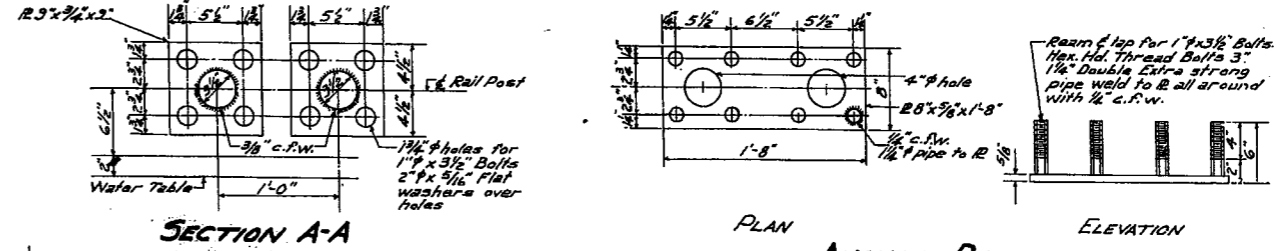
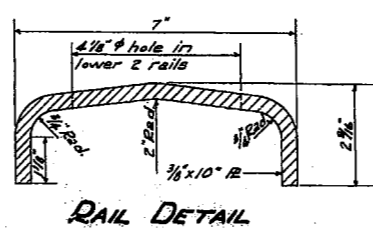
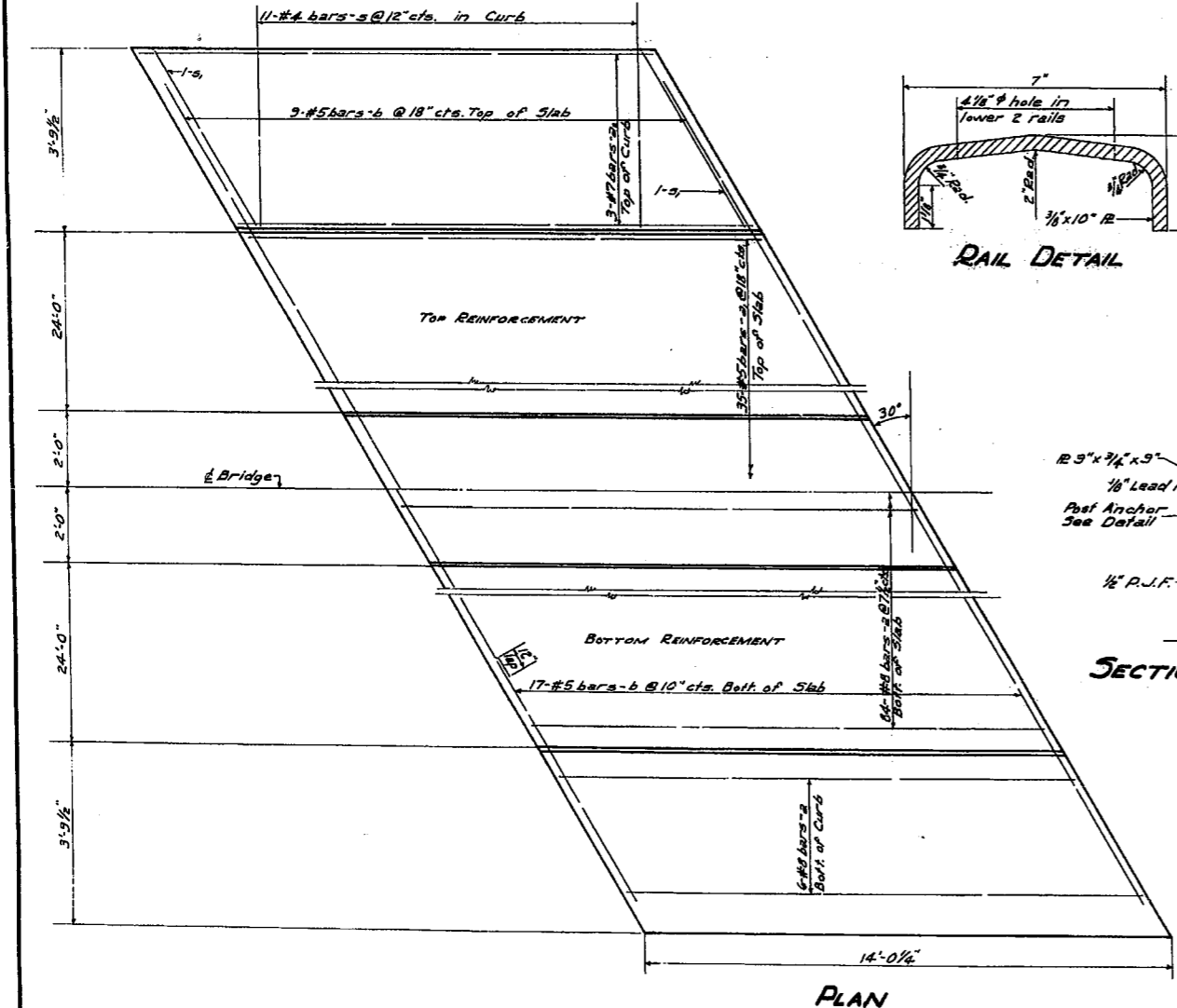
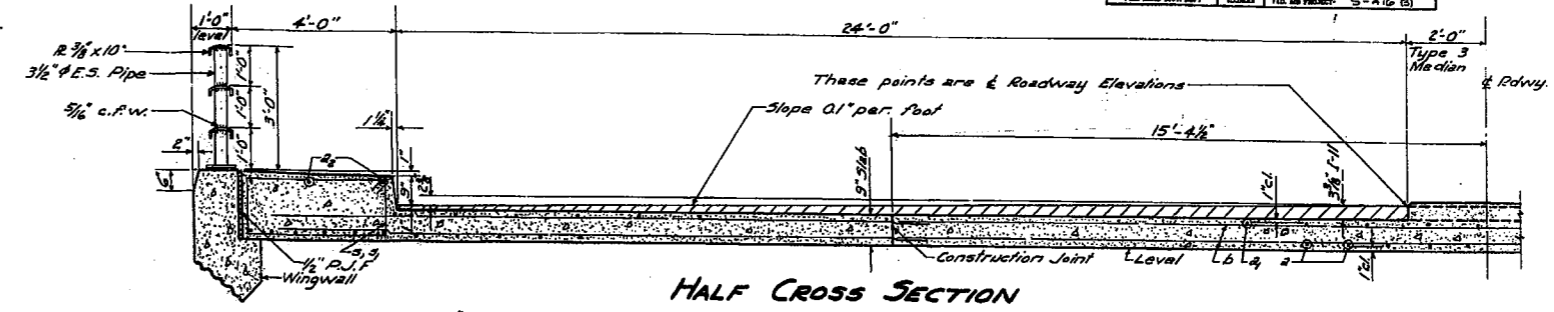
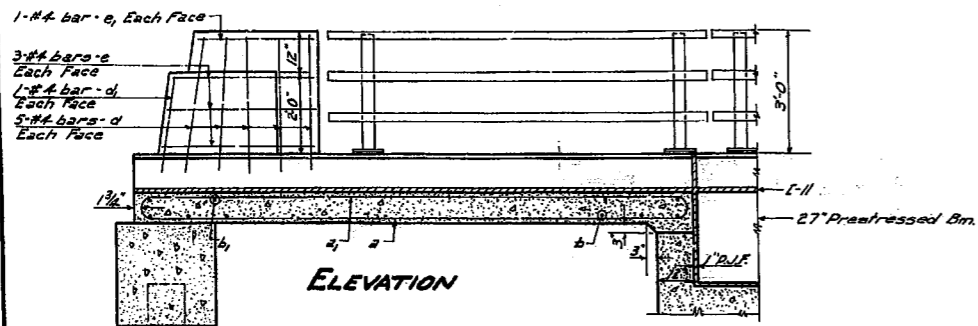
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h	48	"#4	22'3"	
L	176	"#4	6'-9"	
Metal Handrail Lin. Ft. 300				
Structural Steel Lbs. 2738				
Concrete Median Type 3 Lin. Ft. 159				
Removal of Existing Superstr. Each 1				
Precast Prestressed Concrete Bridge Deck Sp. Ft. 7860				
Class-X Concrete Cu. Yds. 46.7				
Reinforcement Bars Lbs. 1500				
Bit. Mat. Prime Coat Bkts. 70				
Bit. Binder Course Tons 30				
Bit. Surface Course Tons 55				

SPAN 1-2 & 3
GRAND AVENUE BRIDGE
OVER DES PLAINES RIVER
P.A.S. RT. 3 (ILL. RT. 132) - SEC. X-6 B
LAKE COUNTY
STA. 7100.6

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

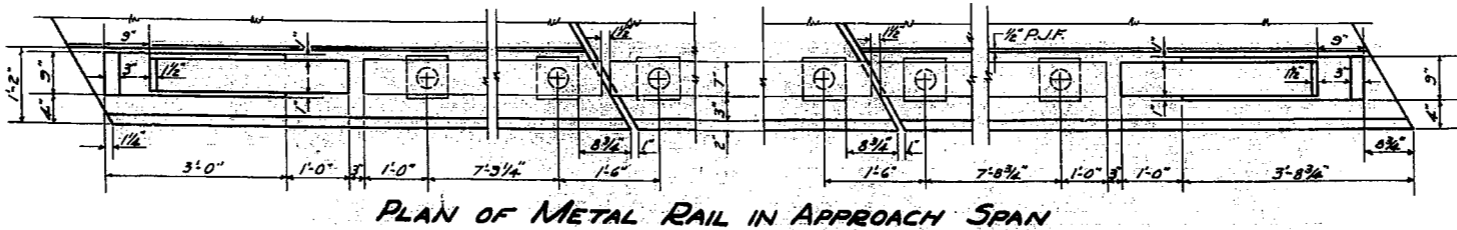
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.A.S. 2	X-6B	LAKE	16	7
F.A.S. 3				
FED. ROAD DIST. NO. 7	BLK. NO.	FED. AID PROJECT	S-416 (B)	



BILL OF MATERIAL
APPROACH SPANS

BAR	No.	SIZE	LENGTH	SHAPE
a	132	#8	15'-5"	C
a	70	#5	13'-8"	—
a1	12	#7	13'-8"	—
b	208	#5	18'-0"	—
d	40	#4	4'-0"	—
d1	8	#4	3'-0"	—
e	24	#4	3'-6"	—
e1	8	#4	2'-3"	—
s	44	#4	10'-1"	C
s1	8	#4	11'-1"	C
Class X Concrete				Cu. Yds. 53.3
Handrail Concrete				Cu. Yds. 1.1
Reinforcement Bars				Lbs. 13700
Bit. Mat. applied (Prime)				Gals. 15
Bit. Conc. Binder Course				Tons 7
Bit. Conc. Surface Course				Tons 12
Pavement Removal				Sq. Yds. 56

Note: The Contract Unit Price for Metal Handrail shall include furnishing, fabricating, installing and painting all pipes, plates, lead plates & anchor assemblies. The Metal Handrail shall be given one shop coat of red lead paint and two field coats of aluminum paint. The Rail Post Anchor shall not be painted.



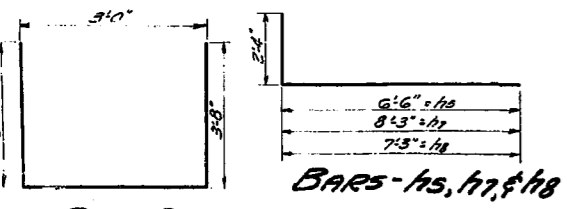
DESIGNED *Ed. Alden Reynolds*
CHECKED *Robert B. Irlbe*
DRAWN *M.A.R. J. Ganci*
CHECKED *R.B.N.*

NOV. 16 1956
EXAMINED *W.M. Romine*
PASSED *Ed. Alden Reynolds*
APPROVED *R.B. Irlbe*

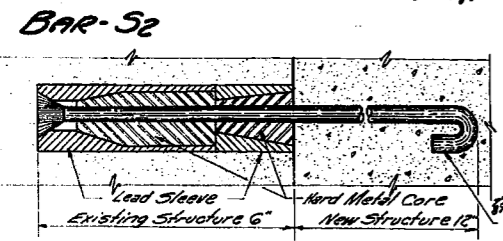
APPROACH SPANS
GRAND AVENUE BRIDGE
OVER DES PLAINES RIVER
F.A.S. RT. 3 (ILL. RT. 132) SEC. X-6B
LAKE COUNTY
STATION 7+80.6

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

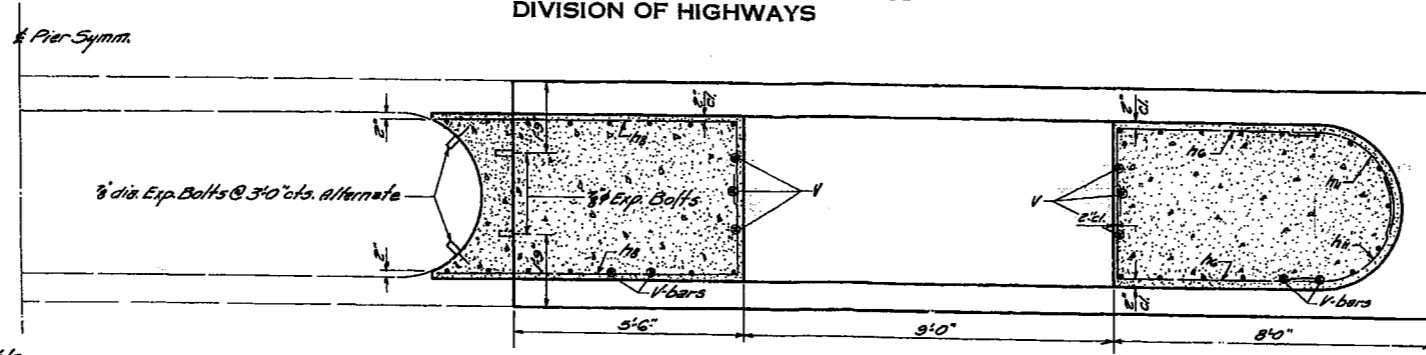
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.A.R. 6	X-6B	LAKE	16	8
F.A.S. 3				
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT: 51-416 (3)	



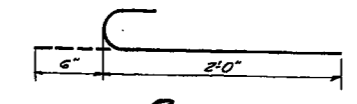
BARS-15, 17, & 18



EXPANSION BOLT



SECTION A-A

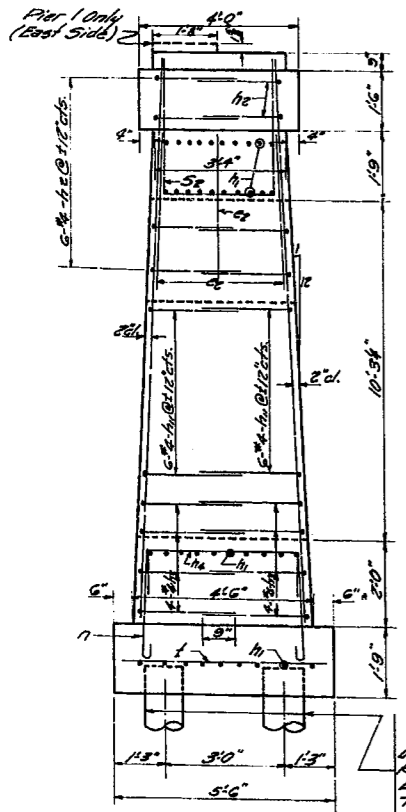


BAR-17

3'-3"	1'-0"	h2
4'-0"	1'-0"	h2
3'-9"	1'-0"	h2

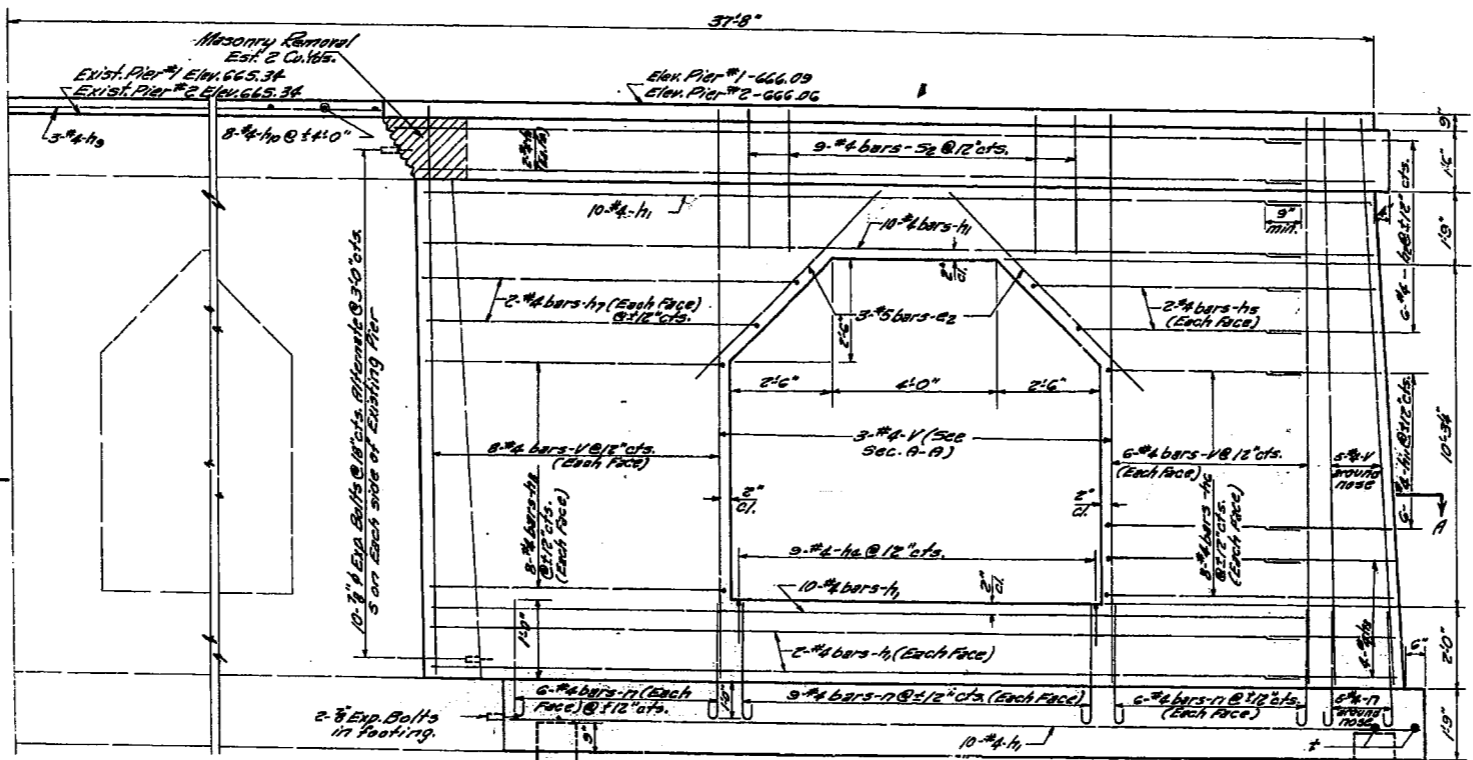
Bar	Radius
h2	1'-6"
h3	2'-0"
h1	1'-9"

BARS-h2 & h3

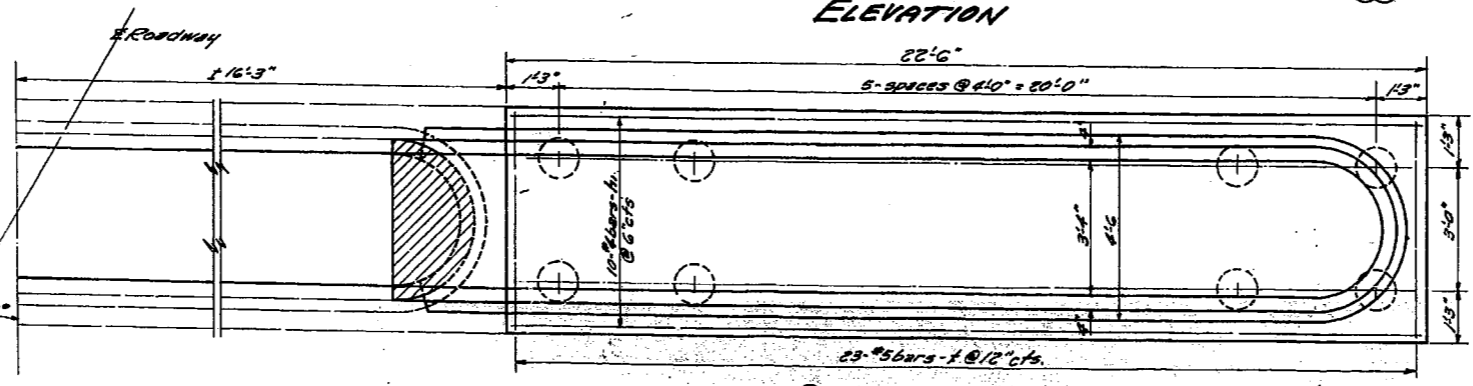


END ELEVATION

PILE DATA
Untreated Piles
Required 44
Est. Length - 20'
Test Piles - 4
Min. Capacity - 20 Tons



ELEVATION



PLAN

BILL OF MATERIAL

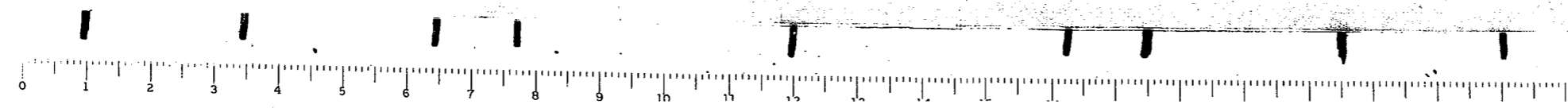
Bar	No.	Size	Length	Shape
c2	24	#5	6'-0"	
h1	132	#4	22'-0"	
h2	48	#4	4'-9"	
h3	16	#4	5'-0"	
h4	36	#4	7'-6"	
h5	16	#4	8'-10"	
h6	64	#4	7'-4"	
h7	16	#4	10'-7"	
h9	64	#4	9'-7"	
h8	12	#4	15'-0"	
h10	16	#4	5'-0"	
52	36	#4	10'-4"	
1	92	#5	3'-0"	
V	132	#4	16'-0"	
17	188	#4	2'-6"	
h11	48	#4	4'-9"	
Class X Concrete		Cu Yds. 200.0		
Reinforcement Bars		Lbs. 7040		
Expansion Bolts		Each 48		
Untreated Piles		Linn. Ft. 880		
Test Piles		Each 4		
Masonry Removal		Cu Yds. 2		

Note: One test pile to be driven at each extension of each pier in a permanent location.

PIERS #1 & #2
GRAND AVENUE BRIDGE
OVER DES PLAINES RIVER
F.A.S. RT. 3 (ILL. RT. 132) SEC. X-6B
LAKE COUNTY
STA. 7+80.6

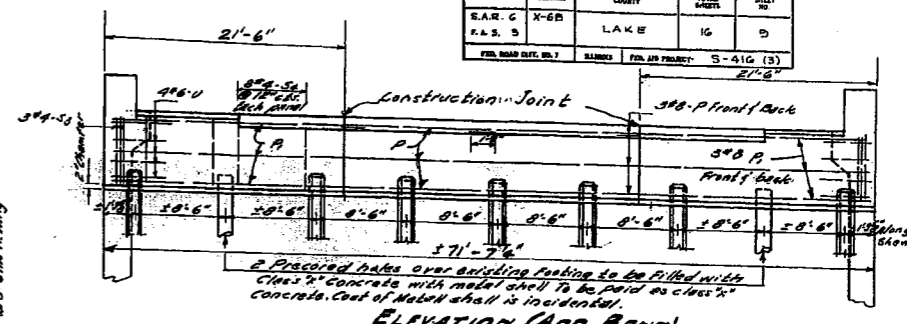
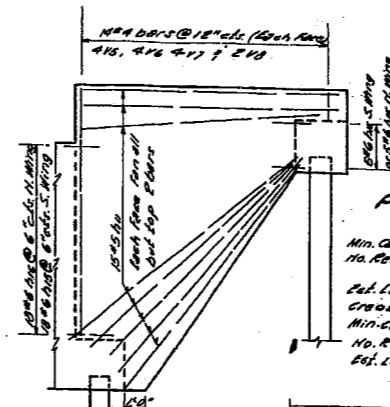
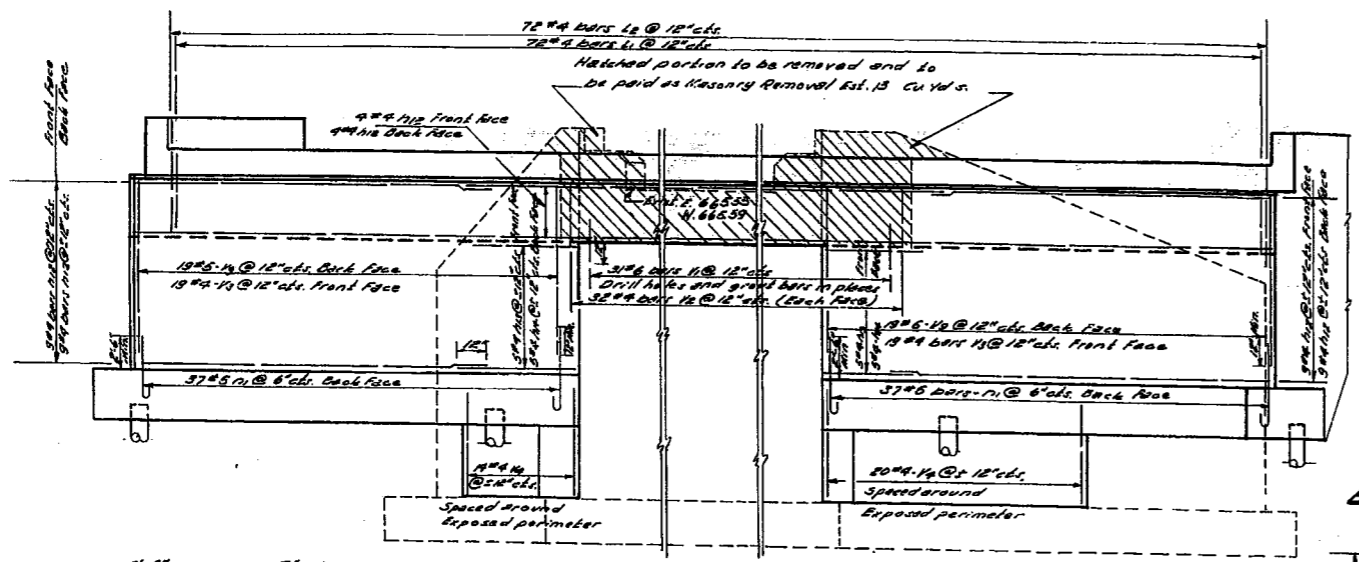
DESIGNER H. H. Alder
CHECKED Robert B. Kline
DRAWN M.A.R. E. Rish
CHECKED A. B. K.

EXAMINED Nov. 16 1956
PASSED
APPROVED



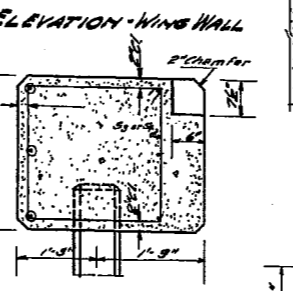
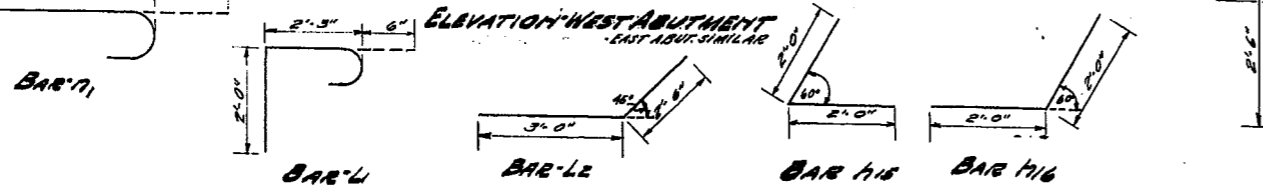
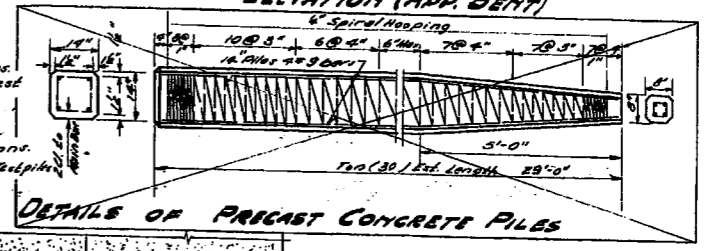
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	SHEET NO.
S.A.S. 3	X-6B	LAKE	16
P.L.S. 5			



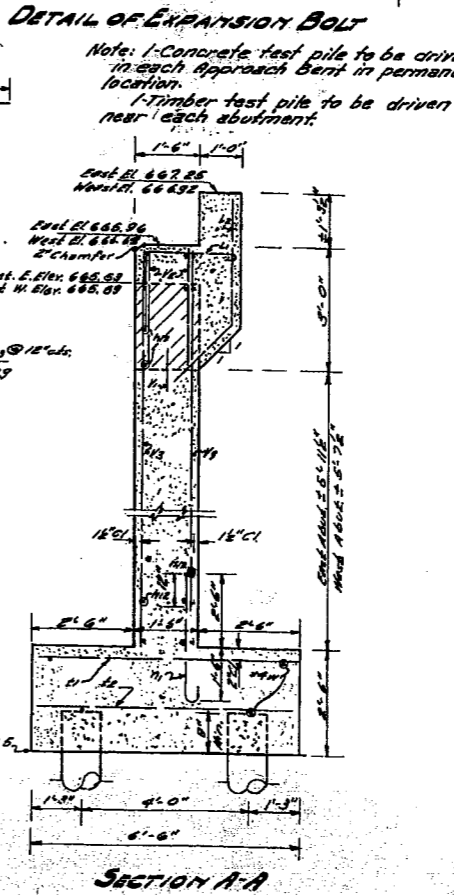
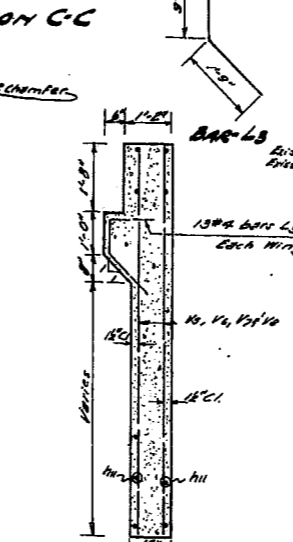
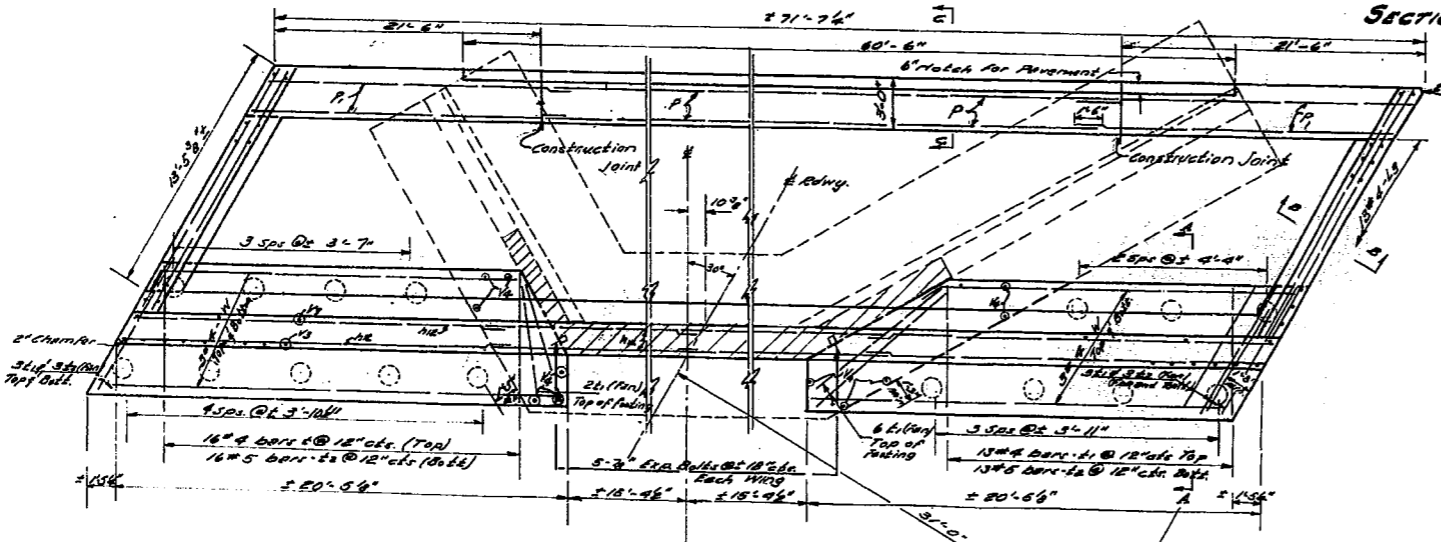
PILE DATA

Conc. Piles
Min. Capacity 50 Tons
No. Required - 12 Piles
Piles
Cut Length - 25'
Crossed Piles
Min. Capacity 20 Tons
No. Required 32 #2 Rebar
Cut Length - 20'



BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
10	120	#5	13'-0"	—
11	108	#6	18'-6"	—
12	20	#4	2'-9"	—
13	20	#4	1'-3"	—
14	48	#6	4'-0"	—
15	48	#6	4'-0"	—
16	144	#4	4'-9"	—
17	144	#4	5'-6"	—
18	62	#4	3'-10"	—
19	120	#5	4'-7"	—
20	12	#4	10'-7"	—
21	120	#4	9'-5"	—
22	24	#4	6'-0"	—
23	70	#5	8'-0"	—
24	16	#6	10'-5"	—
25	62	#6	2'-0"	—
26	120	#4	2'-9"	—
27	76	#4	8'-6"	—
28	68	#4	7'-0"	—
29	32	#4	11'-6"	—
30	32	#4	8'-6"	—
31	32	#4	6'-6"	—
32	16	#4	2'-0"	—
33	76	#5	8'-6"	—
34	24	#4	18'-0"	—
35	24	#4	15'-3"	—
36	24	#8	25'-0"	—
Class 2 Concrete		Cu. Yds.	188.5	
Reinforcement Bars		Lbs.	10410	
Masonry Removal		Cu. Yds.	13	
Concrete Piles		Lin. Ft.	348	
Crossed Piles		Lin. Ft.	640	
Expansion Bolts		Each	20	
Test Piles (Conc.)		Each	2	
Test Piles (Timber)		Each	2	



DESIGNED: *W. H. R. R.*
CHECKED: *R. B. K.*
DRAWN: *M. A. R.*
CHECKED: *R. B. K.*

EXAMINED: *W. H. R. R.*
PASSED: *R. B. K.*
APPROVED: *R. B. K.*

Nov. 16 1956

ABUTMENTS & APPROACH BENTS
GRAND AVENUE BRIDGE
OVER DES PLAINES RIVER
P.A.S. RTE. 3 (I.H. RTE. 132)
SEC. 16B LAKE COUNTY
STA. 7+80.6

LAKE X-6B

