

092-0032

DETAIL OF BRIDGE RAIL (SPECIAL)
STRUCTURE: 920032

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ILL. RTE. 1 F.A. 132	(48,48Z-2)RS-1	VERMILION	91	47

GENERAL NOTES

HOLLOW STRUCTURAL STEEL TUBES SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. DESIGNATION A-500 GRADE B STRUCTURAL STEEL TUBING.

ALL OTHER STEEL SHAPES AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. M-183

BOLTS, CAP SCREWS AND NUTS SHALL CONFORM TO THE REQUIREMENT OF A.S.T.M. DESIGNATION A-307 EXCEPT FOR HIGH STRENGTH BOLTS, NUTS AND WASHERS NOTED WHICH SHALL CONFORM TO A.A.S.H.T.O. M-164.

ALL BOLTS, NUTS, CAP SCREWS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH A.A.S.H.T.O. M-232.

ALL RAILING, RAIL SPLICES AND RAIL BLOCKING SHALL BE GALVANIZED AFTER SHOP FABRICATION IN ACCORDANCE WITH A.A.S.H.T.O. M-III AND A.S.T.M. A-385. GALVANIZED RAIL SHALL NOT BE PAINTED.

RAILING SHALL BE IN ACCORDANCE WITH SECTION 508 OF THE STANDARD SPECIFICATIONS, EXCEPT AS NOTED, AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAL FOOT FOR "BRIDGE RAIL (SPECIAL)".

ALL FIELD DRILLED HOLES SHALL BE COATED WITH AN APPROVED ZINC RICH PAINT BEFORE ERECTION.

THE CONTRACTOR WILL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS IN THE FIELD BEFORE ORDERING ANY MATERIAL.

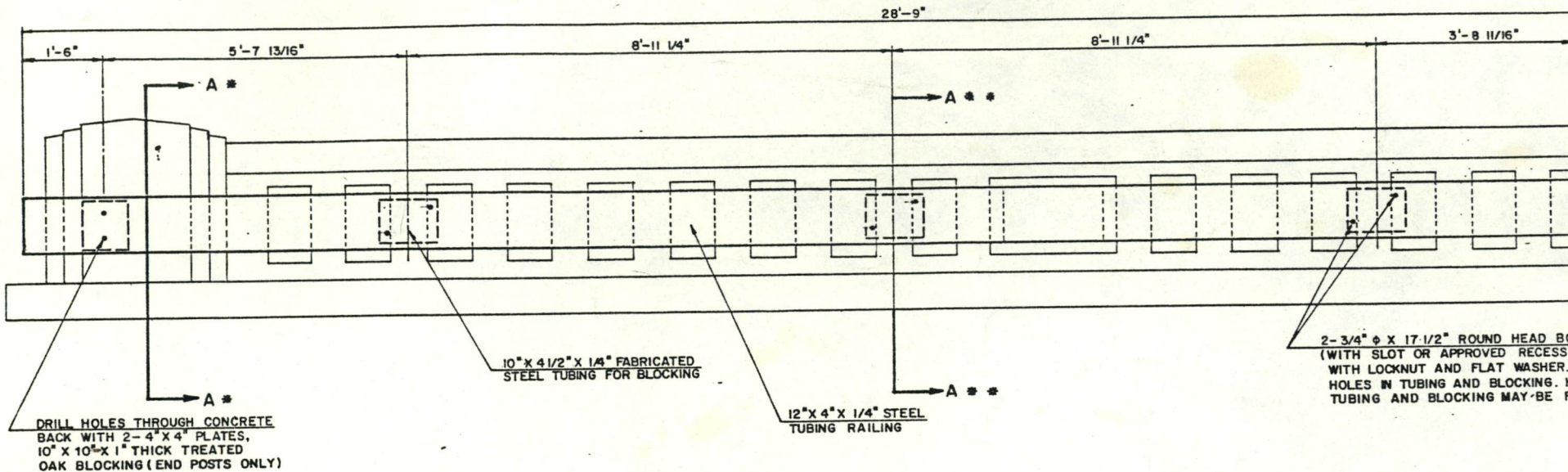
THE TREATED OAK BLOCKING SHALL COMPLY WITH THE APPLICABLE PORTIONS OF SECTION 711 OF THE STANDARD SPECIFICATIONS.

THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAL FOOT FOR BRIDGE RAIL SPECIAL WHICH PRICE SHALL INCLUDE ALL MATERIALS, EQUIPMENT AND LABOR FOR A COMPLETE INSTALLATION, INCLUDING CONNECTION TO EXISTING SPBGR, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

BILL OF MATERIALS

	QTY	UNIT
12" X 4" X 1/4" STEEL TUBING RAILING	115	LIN. FT.
10" X 4 1/2" X 1/4" STEEL TUBING BLOCKING	12	EACH
10" X 10" X 1" TREATED OAK BLOCKING	4	EACH
14" X 4" X 3/4" PLATES	12	EACH
4" X 4" X 1/2" PLATES	8	EACH
3/4" Φ BOLTS W/ WASHERS & LOCK NUTS	32	EACH

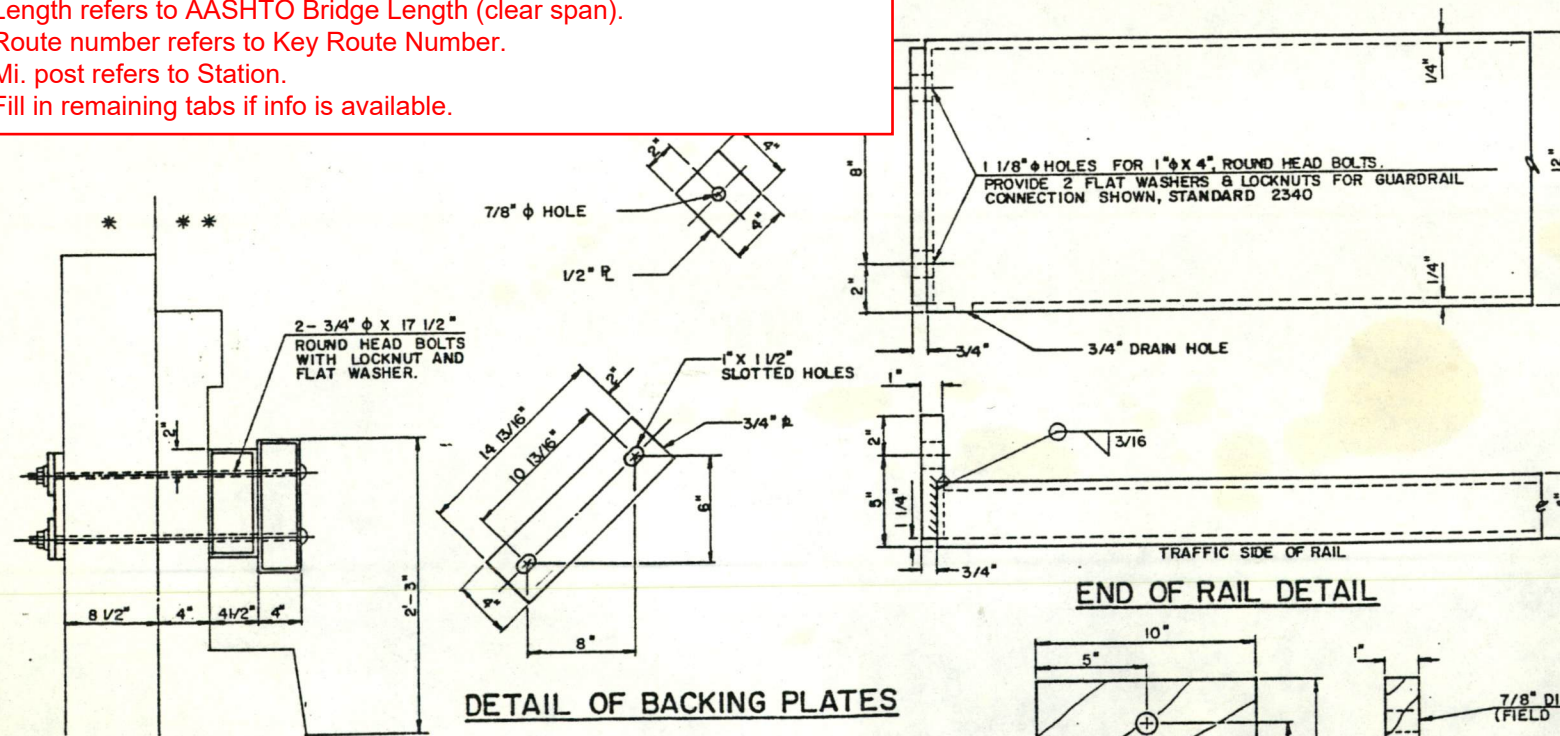
Structure photos and images from Google Street View indicate that along with the concrete ballustrade rail/ curb and steel tube railing, there is also a precast temporary F-shape barrier on one side of the structure.



ELEVATION

Main Window:

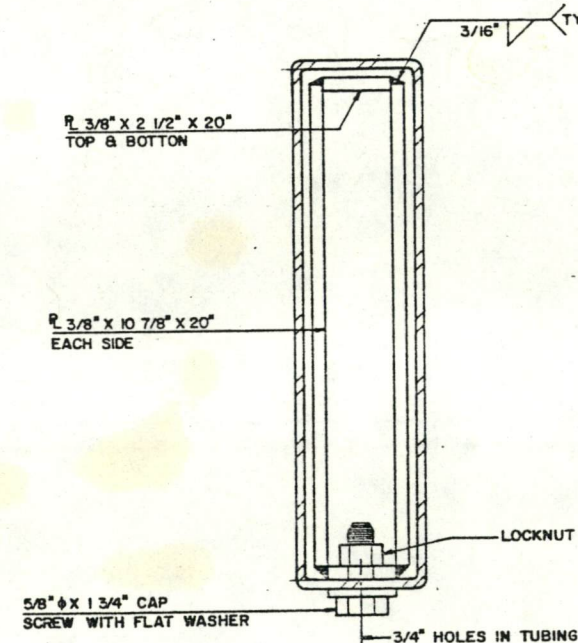
- "tut" suffix on Bridge & NBI ID indicates tutorial.
- "Template" should be unchecked in active models.
- Name includes initials of creator and latest modifier of model, facility carried over feature intersected, and acronym for structure type (see setup guide).
- Fields should match Structure Summary Report.
- Length refers to AASHTO Bridge Length (clear span).
- Route number refers to Key Route Number.
- Mi. post refers to Station.
- Fill in remaining tabs if info is available.



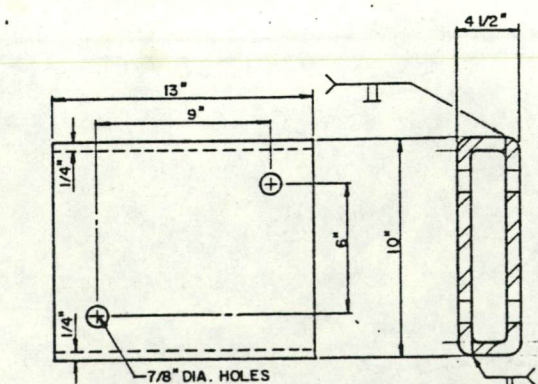
SECTION A-A

* SECTION THRU END POSTS
** SECTION THRU RAIL

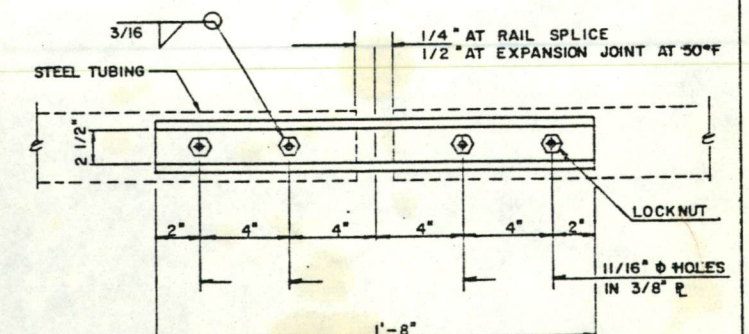
TREATED OAK BLOCKING DETAIL



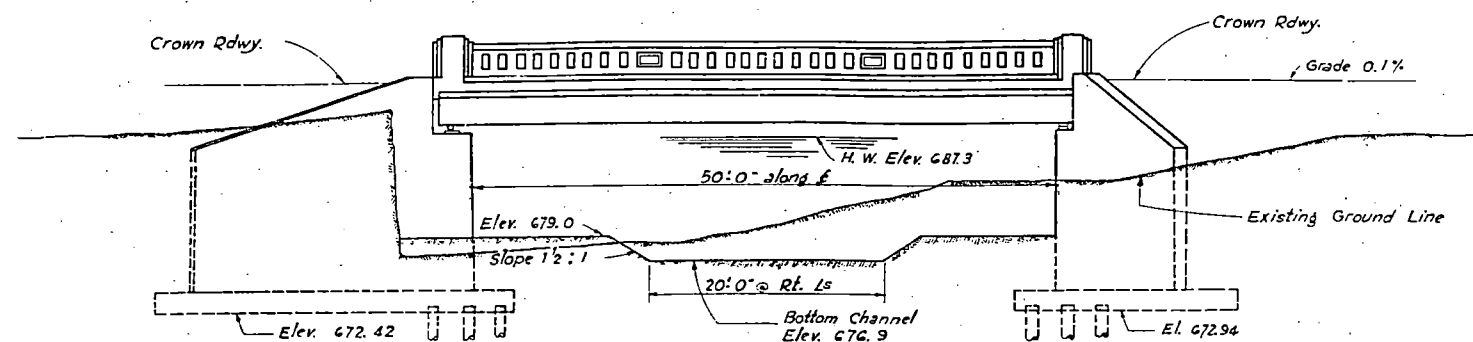
SECTION AT RAIL SPICE



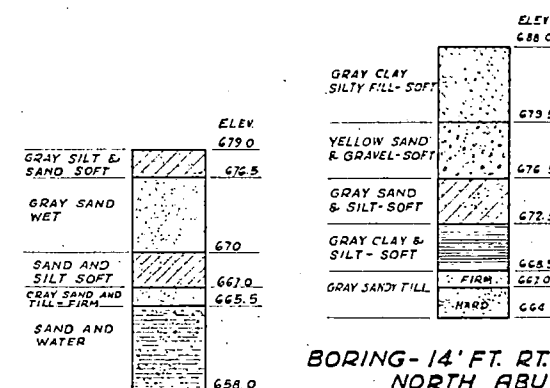
FABRICATED STEEL BLOCKING DETAIL



PLAN-BOTTOM SPICE PLATE-TYPICAL
(SPLICING ITEMS NOT INCLUDED IN BILL MATERIALS)



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



BORING- 14' FT. RT. STA. 980+68
NORTH ABUTMENT

BORING - 33 FT. LT. STA. 980+30
SOUTH ABUTMENT

PAVEMENT TO BE REMOVED

Lt. Stg. 979 + 97 to 980 + 17
Lt. Stg. 980 + 61 to 981 + 07

Pavement Removal = 120 Sq. Yds.

Pavement to be removed by Bridge Contractor.

GUARD RAIL TO BE REMOVED

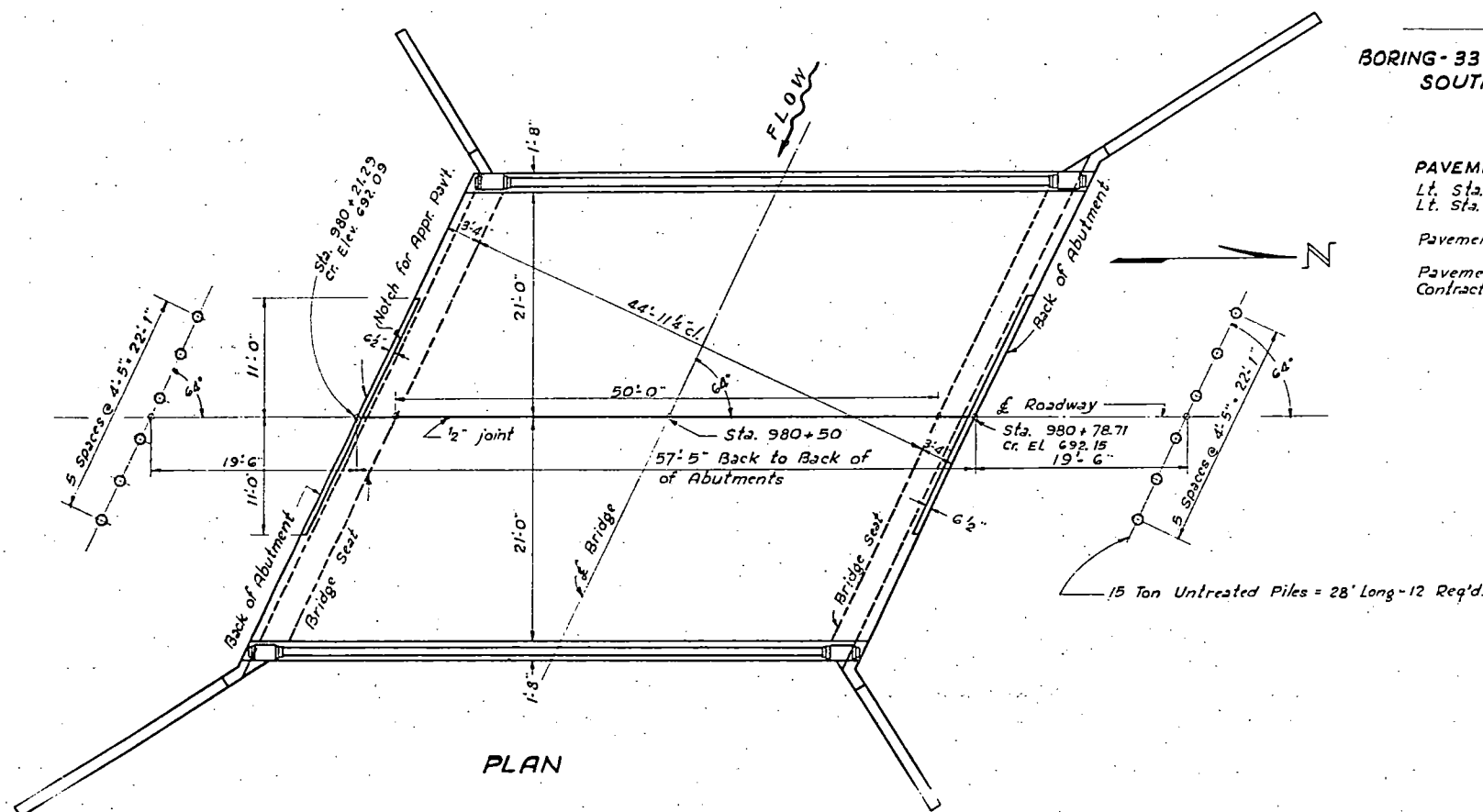
LT. Sts. 979 + 96 to 980 + 16
LT. Sts. 979 + 96 to 980 + 16
LT. Sts. 980 + 70 to 980 + 90
LT. Sts. 980 + 70 to 980 + 90

Guard Rail Removal: 80 Lin. Ft.

Guard rail to be removed by
Bridge Contractor.

CHANNEL CHANGE

Channel change to be made by Bridge Contractor Length = 400 Ft. Channel Excavation to be placed in Rdwy. Fill betw. Sta. 977 and Sta. 984 as directed by the Engr Est. Channel Excavation = 1250 Cu. Yds.



Due to the lack of material strength specifications, concrete and reinforcement materials were defined based on the year of construction (see IDOT Structural Services Manual Appendix A-11).

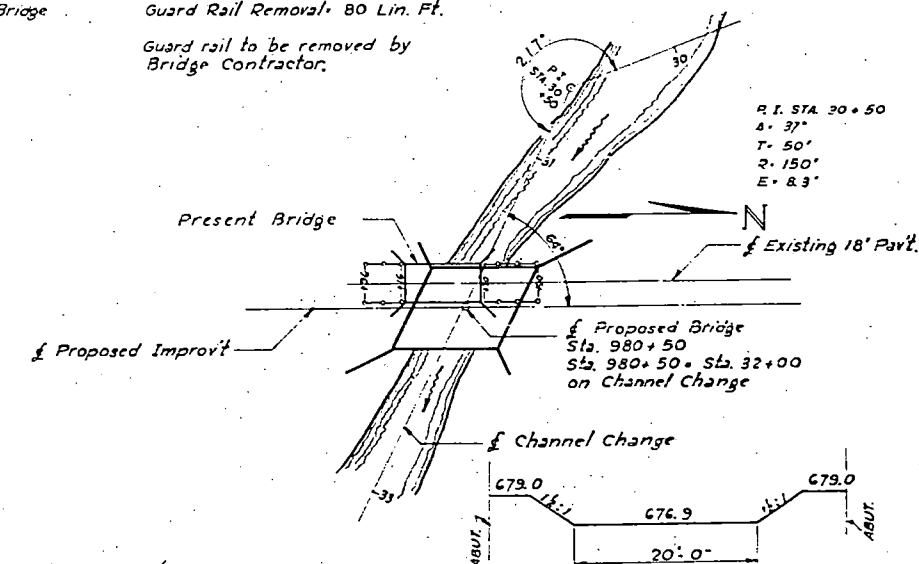
WATERWAY DATA

DRAINAGE AREA	9000 ACRES
CHARACTER	ROLLING, CULTIVATED
ASSUMED "C" TALBOTS FORMULA	0.40
OPENING BELOW HIGH WATER	421 SQ. FT.

STANDARD	COMPUTED <i>Edward J. Dahlin</i>
	CHECKED <i>M.P. SUPERAK</i>
	DRAWN <i>E.J. Dahlin</i> HENRY D. TIER
	CHECKED <i>M.P. S.</i>
SPECIAL	ASSEMBLED _____
	CHECKED _____

EXAMINED 4-18-1940
H. T. [Signature] BRIDGE ENGINEER
PASSED [Signature] ENGINEER OF DESIGN
APPROVED [Signature] CHIEF HIGHWAY ENGINEER

TOTAL BILL OF MATERIAL				
ITEM	SUPER	SUB.	SEC.B	SEC.F
HANDRAIL - CONCRETE	CU. YDS.	7.1		7.1
CLASS X CONCRETE	CU. YDS.	135.7	256.9	392.6
REINFORCEMENT BARS	LBS.	42480	30870	73350
STRUCTURAL STEEL	LBS.	3100		3100
PAVEMENT REMOVAL	SQ. YDS.			120
TEST PILES	EA.		2	2
FLOOR DRAINS	EA.	10		10
CHANNEL EXCAV.	CU. YDS			1250
GUARD RAIL REMOVAL LIN. FT.				80
REMOVAL EXIST. STRUCT. EA.				1
UNTREATED PILES-12 @ 28' LG. 1/2"			336	336
" " -57'-20" - "			1140	1140
" " -25'-18" - "			430	460
" " -87'-12" - "			984	984



CROSS SECTION OF CHANNEL CHANGE
AT RT. 45 TO 6

LOCATION SKETCH
SCALE: 1" = 50 FT.

Rollers and bearing plates shall be painted one shop coat of blue lead paint and two field coats of white lead paint. All paint shall be furnished by the Contractor.
Length of Test Piles - See Special Provisions.

PROJECT 11-A-(1)
BRIDGE OVER RED TOP CREEK
S. B. I. RTE. 1 - SECT. 48-X-3-B-F
VERMILION COUNTY
STA. 980 + 50

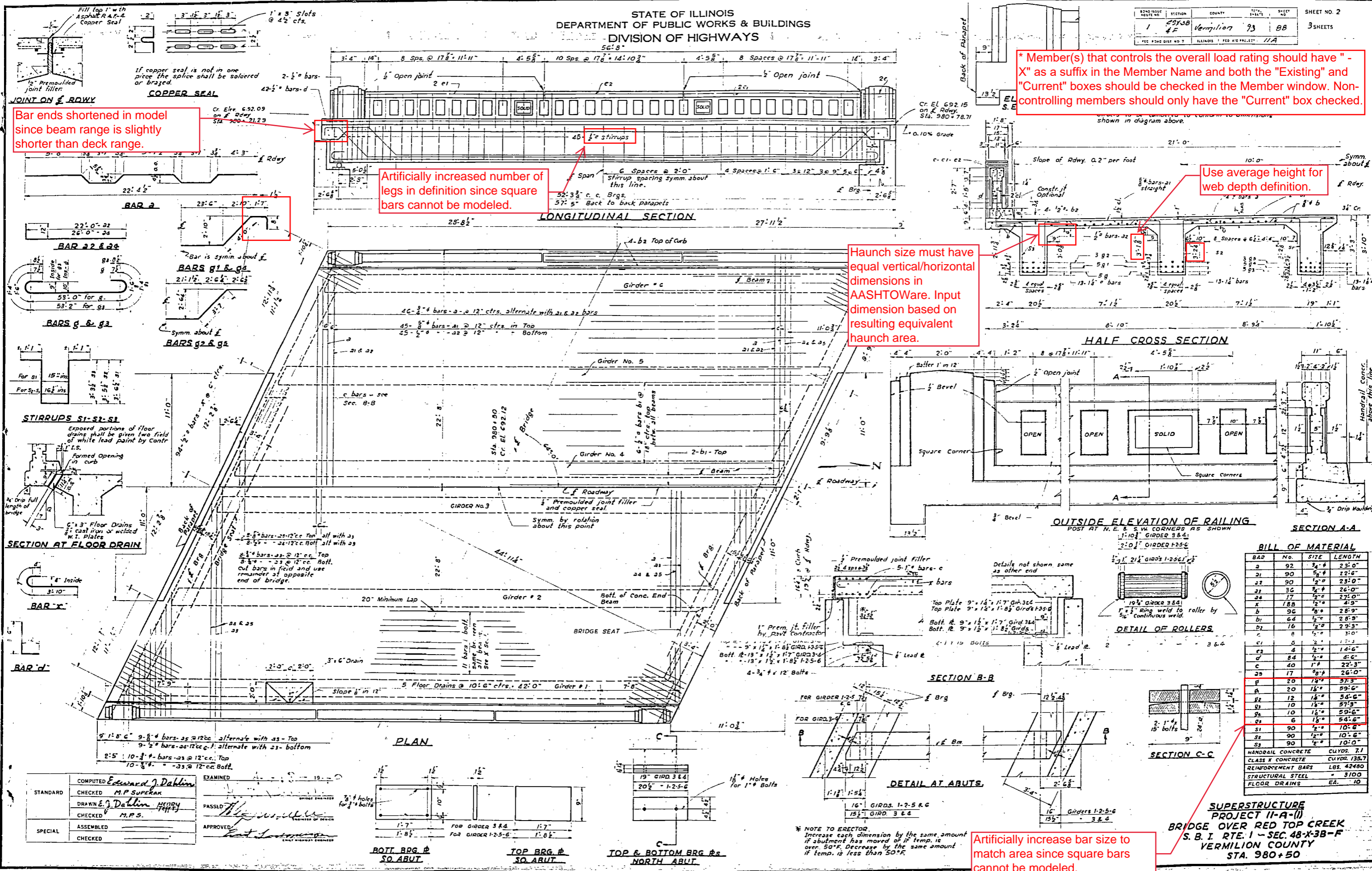
Many older bridges were not designed for HS-20 loading and therefore sometimes rate low. In this case, 3D FEM analysis can be run within AASHTOWare to show that all posting, routine permit, and emergency vehicles have sufficient rating factors (LFR).

H-20 LOADING

REEL 5-4

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

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
29338 4F	Vermilion	93	88	3 SHEETS



* Member(s) that controls the overall load rating should have " - X" as a suffix in the Member Name and both the "Existing" and "Current" boxes should be checked in the Member window. Non-controlling members should only have the "Current" box checked.

Use average height for web depth definition.

Haunch size must have equal vertical/horizontal dimensions in AASHTOWare. Input dimension based on resulting equivalent haunch area.

Artificially increased number of legs in definition since square bars cannot be modeled.

Bar ends shortened in model since beam range is slightly shorter than deck range.

Artificially increase bar size to match area since square bars cannot be modeled.

BAR	No.	SIZE	LENGTH
1	92	3/4"	23'-0"
2	90	3/4"	12'-6"
3	90	1/2"	23'-0"
4	36	3/4"	26'-0"
5	17	1/2"	27'-0"
6	18	1/2"	4'-9"
7	96	5/8"	28'-9"
8	64	1/2"	28'-9"
9	16	1/2"	29'-3"
10	8	1/2"	3'-0"
11	8	1/2"	1'-3"
12	4	1/2"	14'-6"
13	84	1/2"	4'-6"
14	40	1/2"	22'-3"
15	17	3/4"	26'-0"
16	20	1/2"	57'-9"
17	20	1/2"	59'-6"
18	12	1/2"	34'-6"
19	10	1/2"	57'-9"
20	10	1/2"	59'-6"
21	6	1/2"	54'-6"
22	90	1/2"	10'-6"
23	90	1/2"	10'-6"
24	90	1/2"	10'-0"

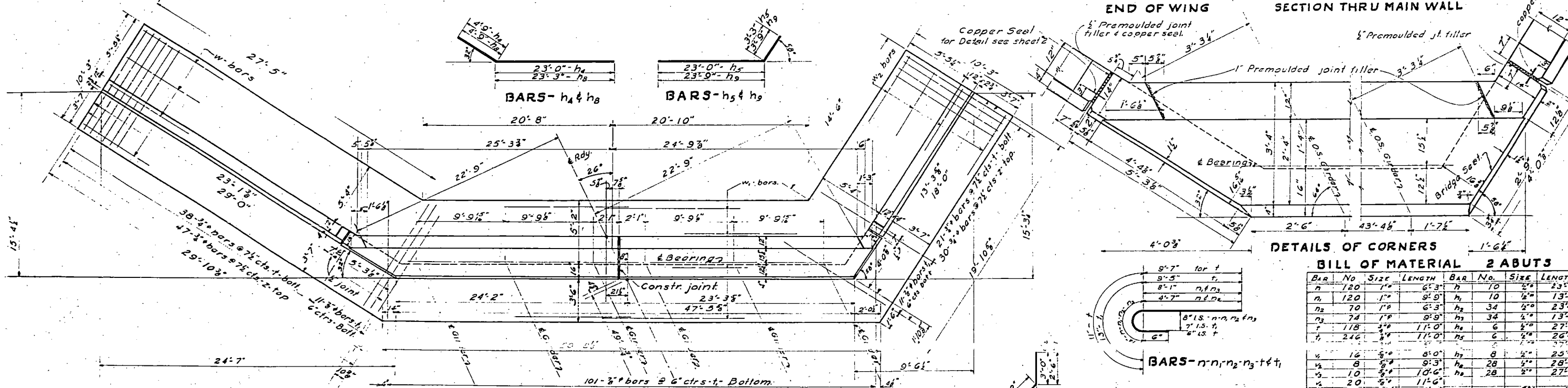
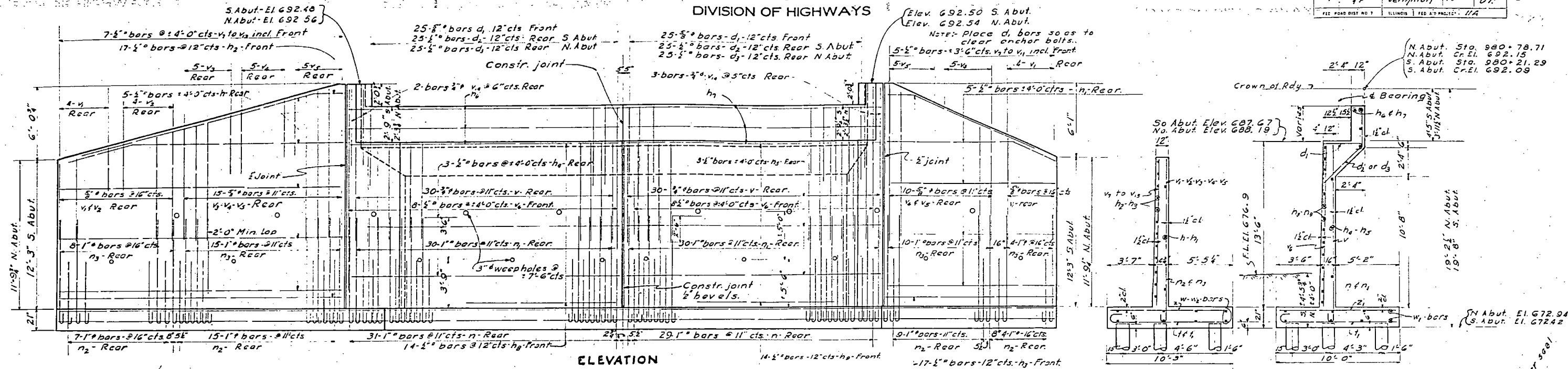
SUPERSTRUCTURE PROJECT II-A-(1)
BRIDGE OVER RED TOP CREEK
S. B. I. RTE. 1 - SEC. 48-X-38-F
VERMILION COUNTY
STA. 980+50

COMPUTED	Edward J. Dahlin
CHECKED	M.P. SUPERAK
DRAWN	E.J. Dahlin
CHECKED	M.P.S.
ASSEMBLED	
CHECKED	

BOIT BRG. #
SO. ABUT.
TOP BRG. #
SO. ABUT.
TOP & BOTTOM BRG. #s
NORTH ABUT.

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

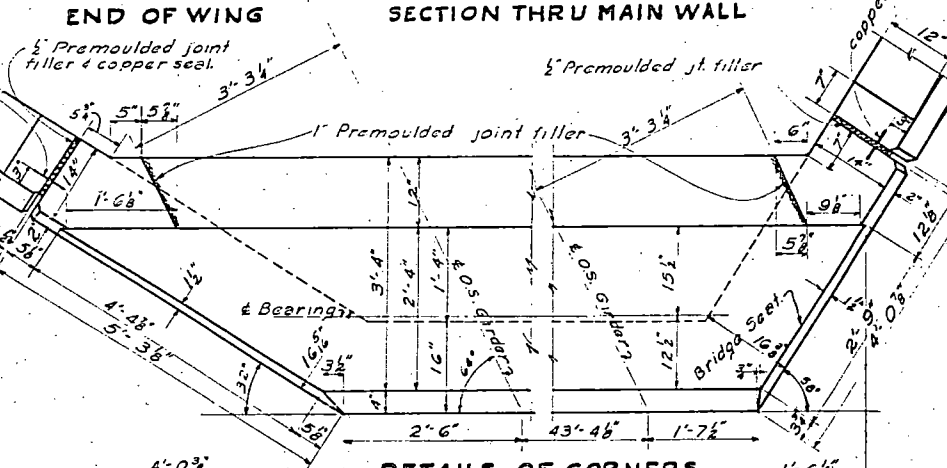
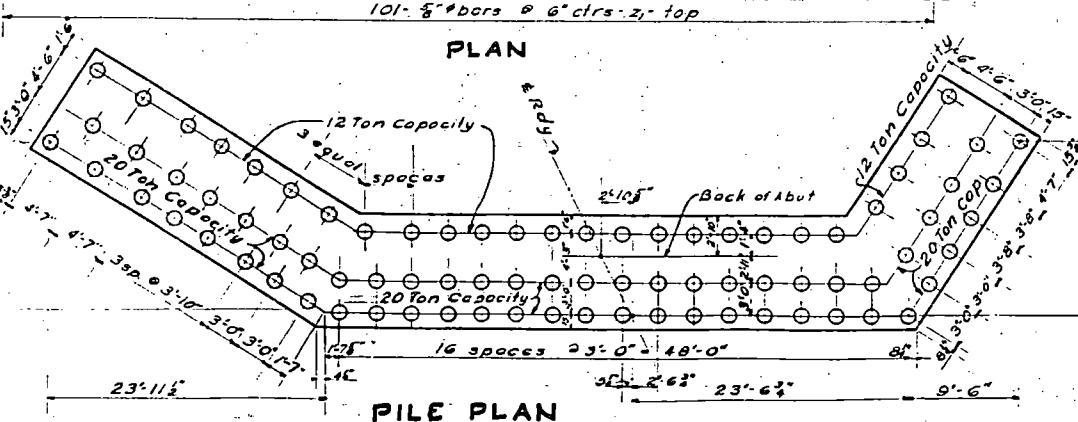
SCALE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
1" = 10'-0"	4F	Vermilion	93	89	3 SHEETS
ILLINOIS FED. AID PROJECT: 11A					



NORTH ABUT.
20 Ton Untr. Piles
57 Req'd
Est. Length 12'-0"

12 Ton Untr. Piles
25 Req'd
Est. Length 12'-0"

COMPUTED	Edward J. Dahlin
CHECKED	M.P. SUPERAK
DRAWN	E.J. Dahlin
CHECKED	M.P.S.
ASSEMBLED	
CHECKED	



TAILS OF CORNERS

1-62

BILL OF MATERIAL				2 ABUTS			
BAR	No	SIZE	LENGTH	BAR	No	SIZE	LENGTH
n1	120	1"	6'-3"	h1	10	1/2"	23'-3"
n2	120	1"	9'-9"	h2	10	1/2"	13'-6"
n3	70	1"	6'-3"	h3	34	3/4"	23'-3"
n4	74	1"	9'-9"	h4	34	1/2"	13'-6"
n5	118	3/4"	11'-0"	h5	6	1/2"	27'-9"
n6	246	3/4"	17'-0"	h6	6	1/2"	26'-3"
n7	16	3/4"	8'-0"	h7	8	1/2"	25'-3"
n8	8	3/4"	9'-3"	h8	28	1/2"	28'-0"
n9	10	3/4"	10'-6"	h9	28	1/2"	27'-6"
n10	20	3/4"	11'-6"				
n11	20	3/4"	12'-0"	d1	100	5/8"	0'-0"
n12	32	3/4"	13'-3"	d2	50	5/8"	7'-0"
n13	4	3/4"	12'-0"	d3	50	5/8"	6'-0"
n14	4	3/4"	13'-9"	z	154	3/4"	10'-0"
n15	4	3/4"	14'-6"	z1	202	3/4"	0'-0"
n16	4	3/4"	16'-6"	w	16	1/2"	29'-0"
n17	4	3/4"	17'-6"	w1	32	5/8"	26'-0"
n18	2	3/4"	18'-0"	w2	16	5/8"	19'-0"
n19	2	3/4"	18'-0"				
n20	10	3/4"	7'-0"				
Class X Concrete				Cu Yds.			
Reinforcement Bars				Lbs.			
Untr. Piles (20'-0" lg)				Lin. Ft.			
Untr. Piles (18'-0" lg)				Lin. Ft.			
Untr. Piles (12'-0" lg)				Lin. Ft.			
TEST PILES				Foch			

PROJECT 11-A-C1)
SUBSTRUCTURE
BRIDGE OVER RED CREEK
S.B.I. RTE 1 SEC. 48-X-3B-F
VERMILION COUNTY
STA 980+50