

089-0061

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. /
S. I. 401	*	STEPHENSON	119	58	16 SHEETS
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT					
*177-4HB-4					

HORIZONTAL CURVE DATA

W.Bd. FA 401	FA 401 BASELINE	E.Bd. FA 401
PI Sta. 1028+43.06	PI Sta. 1028+80.648	PI Sta. 1026+98.59
$\Delta = 44^\circ 22' 10.19''$	$\Delta = 44^\circ 22' 10.19''$	$\Delta = 44^\circ 22' 10.19''$
$D = 1^\circ 45'$	$D = 1^\circ 45' 00''$	$D = 1^\circ 43' 36.46''$
$R = 3274.04'$	$R = 3274.04'$	$R = 3319.04'$
$T = 1335.10'$	$T = 1335.10'$	$T = 1353.04'$
$L = 2535.40'$	$L = 2535.40'$	$L = 2569.47'$
$E = 261.75'$	$E = 261.75'$	$E = 265.27'$

STATION 1026+30.32  
BUILT 19 BY  
STATE OF ILLINOIS  
FA 401 SECTION 177-4HB-4  
FA PROJ. F-401-2(21)  
LOADING HS 20  
STRUCTURE NO. 089-0061

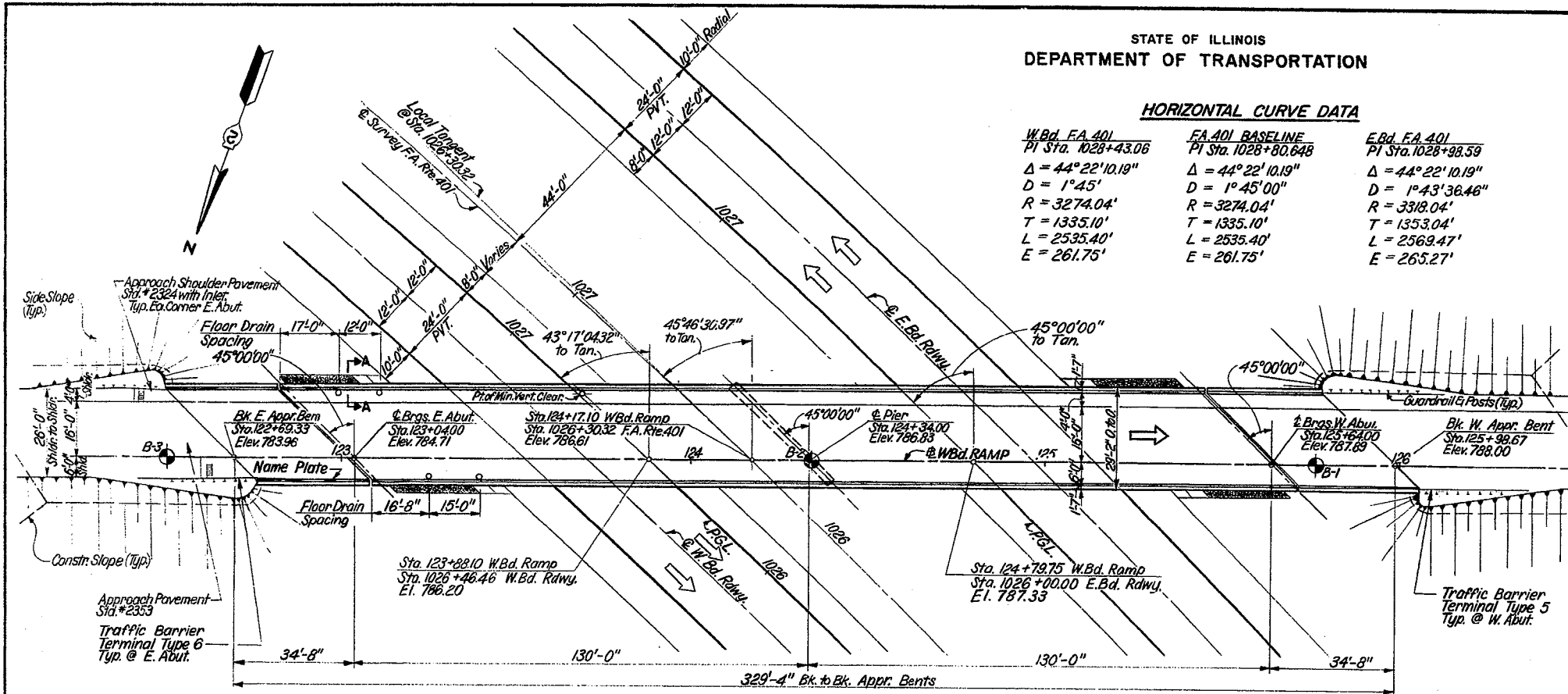
NAME PLATE  
See Std. 2173

DESIGN NOTES

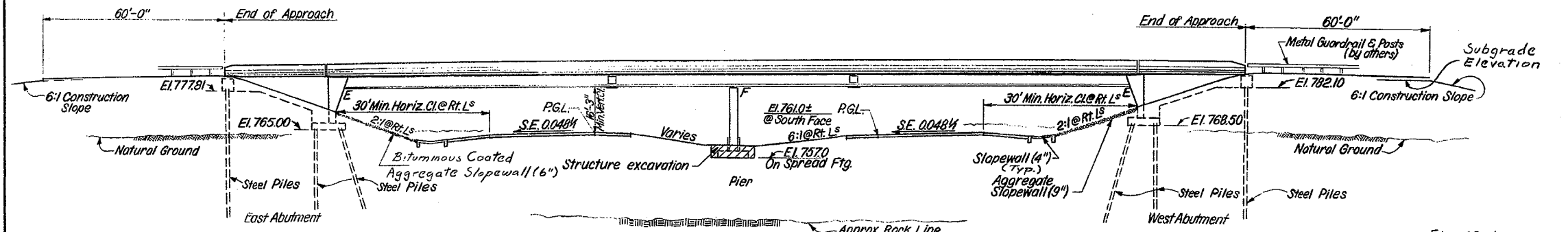
- Design Loading**  
H.S. 20-44 and allowance for 25 P.S.F. future wearing surface
- Design Stresses - Load Factor Design**  
 $f_c = 3,500$  P.S.I.  
 $f_y = 60,000$  P.S.I. (Reinf.)  
 $f_y = 50,000$  P.S.I. (M223) Gr. 50  
 $f_y = 36,000$  P.S.I. (M183)
- Design Specifications**  
AASHTO 1983  
& 1984 Interims

GENERAL NOTES

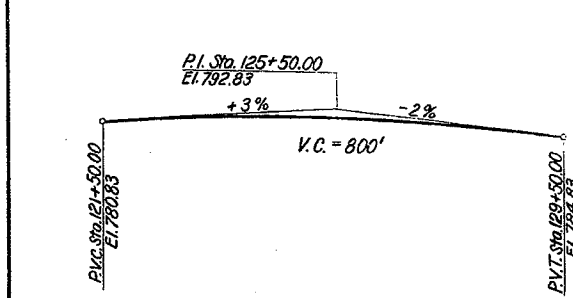
- See Special Provisions for Boring Data.  
Fasteners shall be high strength bolts. Bolts  $\frac{3}{8}$ "  $\phi$ , open holes  $\frac{1}{8}$ "  $\phi$  unless otherwise noted.  
Calculated Weight of Structural Steel M183 = 14,690 Lbs.  
M223 = 22,746 Lbs.  
The Zinc-silicate and vinyl paint system shall be used for shop and field painting of Structural Steel except where noted otherwise.  
All structural steel shall be AASHTO M223 Gr. 50, except as noted.  
Field welding of construction accessories will not be permitted to the bottom flange of girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in the other areas will be permitted only when approved by the Engineer.  
Anchor bolts shall be set before bolting cross frames 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 of the steel girders.  
Reinforcement bars shall conform to the requirements of AASHTO M-31 or M-53 Grade 60.  
Slope wall shall be reinforced with welded wire fabric, 6"x6"-W4.0xW4.0, weighing 58 lbs. per 100 sq. ft.  
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.  
The Contractor shall drive two steel test piles in a permanent location one each at East and West Abutment as directed by the Engineer before ordering the remainder of piles.  
Layout of slope walls may be varied in the field to suit ground conditions as directed by the Engineer.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of  $\frac{1}{8}$  inch. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two  $\frac{1}{2}$ " 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 1 Elastomeric Bearings, shims of the dimensions of top plate shall be provided and placed as detailed.



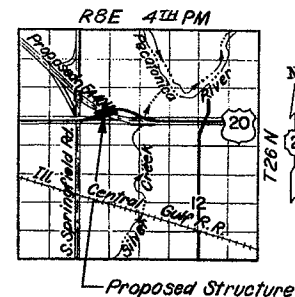
PLAN



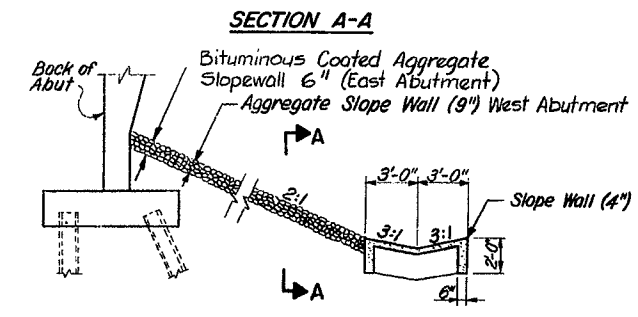
ELEVATION



PROFILE F.A. RTE. 401 (Along Median Edge of Pavement)



LOCATION SKETCH



SECTION THRU SLOPE WALL

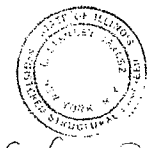
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER STRUCT.	SUB STRUCT.	TOTAL
Structure Excavation	Cu. Yds.	—	491	491
Protective Coat	Sq. Yds.	1,213	—	1,213
Class "X" Concrete	Cu. Yds.	334.7	283.4	618.1
Furnishing and Erecting Structural Steel	L. Sum	1	—	1
Reinforcement Bars	Lbs.	21,640	38,930	60,570
Reinforcement Bars (Epoxy Coated)	Lbs.	71,390	—	71,390
Stud Shear Connectors	Each	2,016	—	2,016
Steel Piles HP 10 x 42	Lin. Ft.	—	1,507	1,507
Test Piles Steel HP 10 x 42	Each	—	2	2
Name Plates	Each	1	—	1
Slope Wall (4")	Sq. Yds.	—	74	74
Aggregate Slope Wall (9")	Sq. Yds.	—	133	133
Neoprene Expansion Joint (2")	Lin. Ft.	78	—	78
Floor Drains	Each	4	—	4
Bituminous Coated Aggregate Slope Wall 6"	Sq. Yd.	—	112	112
Elastomeric Bearing Assembly Type 1	Each	—	8	8
Sand Backfill	Cu. Yds.	—	305	305

For Footing Layout see Sheet #16

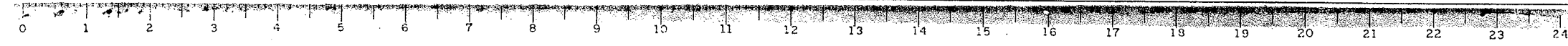
GENERAL PLAN

FA 401 SECTION 177-4 HB-4  
FA 401 UNDER W.B. RAMP  
STEPHENSON COUNTY  
STATION 1026+30.32



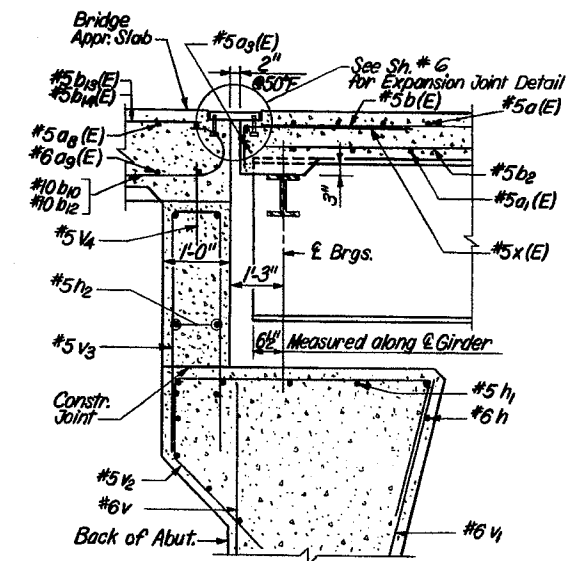
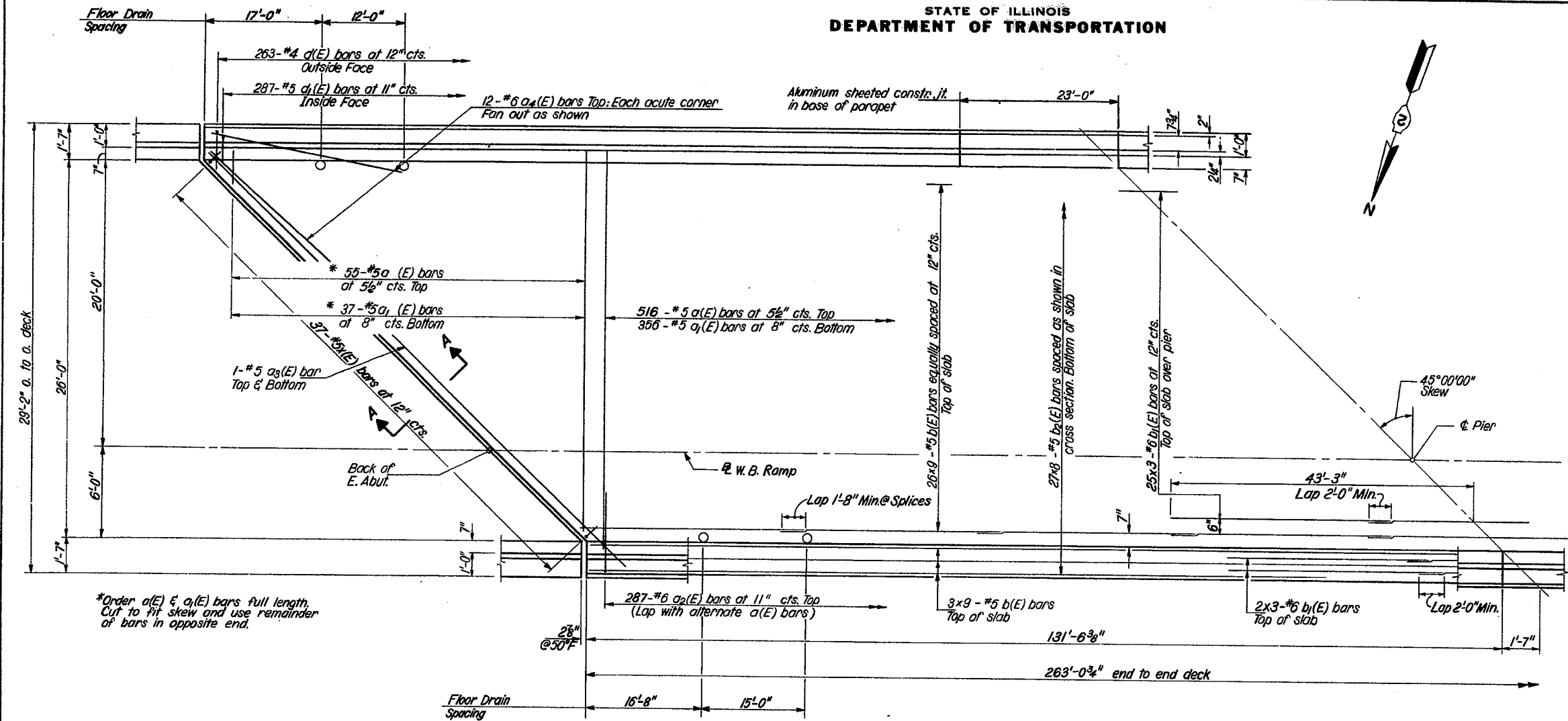
James J. Rayburn  
Engineer of Bridges and Structures

DESIGNED	S.J.
CHECKED	Y.V.
DRAWN	H.P.
CHECKED	Y.V.



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

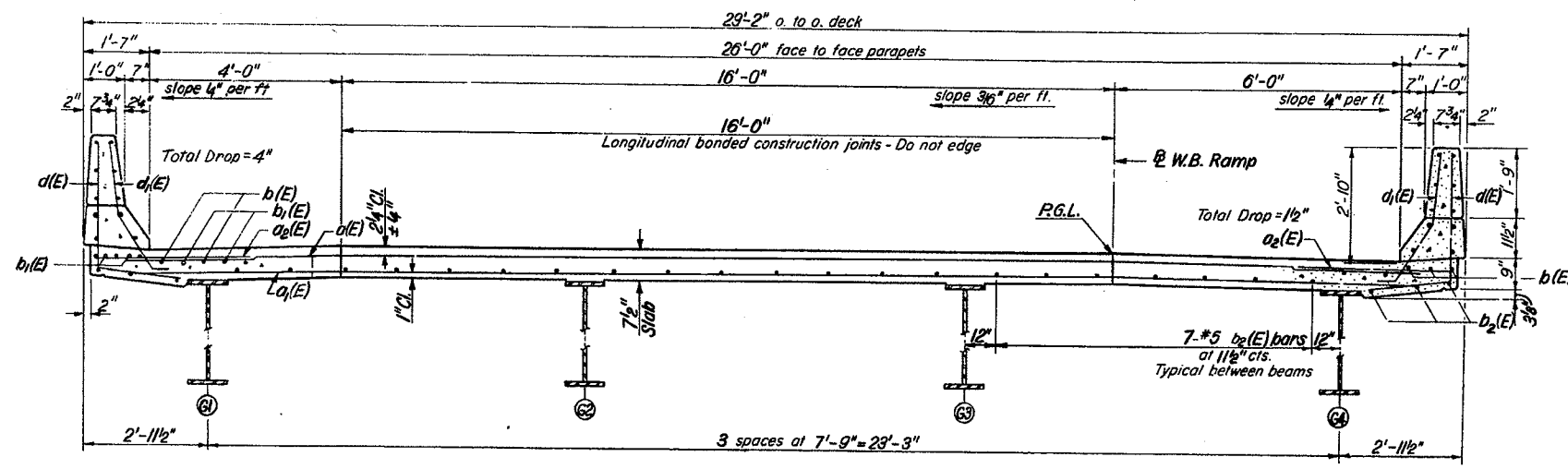
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
401	*	STEPHENSON	119	61	16 SHEETS
* 177-4HB-4					



SECTION A-A  
At Rt. Ls to Abut.  
unless noted

\*Order a(E) & a1(E) bars full length.  
Cut to fit skew and use remainder  
of bars in opposite end.

HALF PLAN



CROSS SECTION  
LOOKING WEST

NOTES:  
See sheet #5 for superstructure details and Bill of Material.  
Reinforcement bars designated (E) shall be epoxy coated.  
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

DESIGNED	S.J.
CHECKED	Y.K.
DRAWN	O.G.
CHECKED	Y.V.

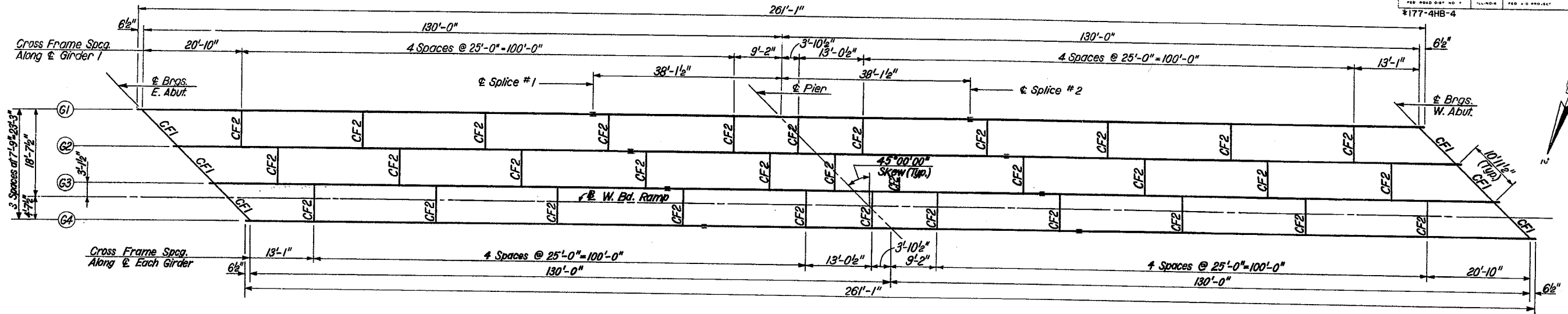
DECK DETAILS  
FA 401 SECTION 177-4 HB-4  
FA 401 UNDER W. B. RAMP  
STEPHENSON COUNTY  
STATION 1026+30.32

S-2-L

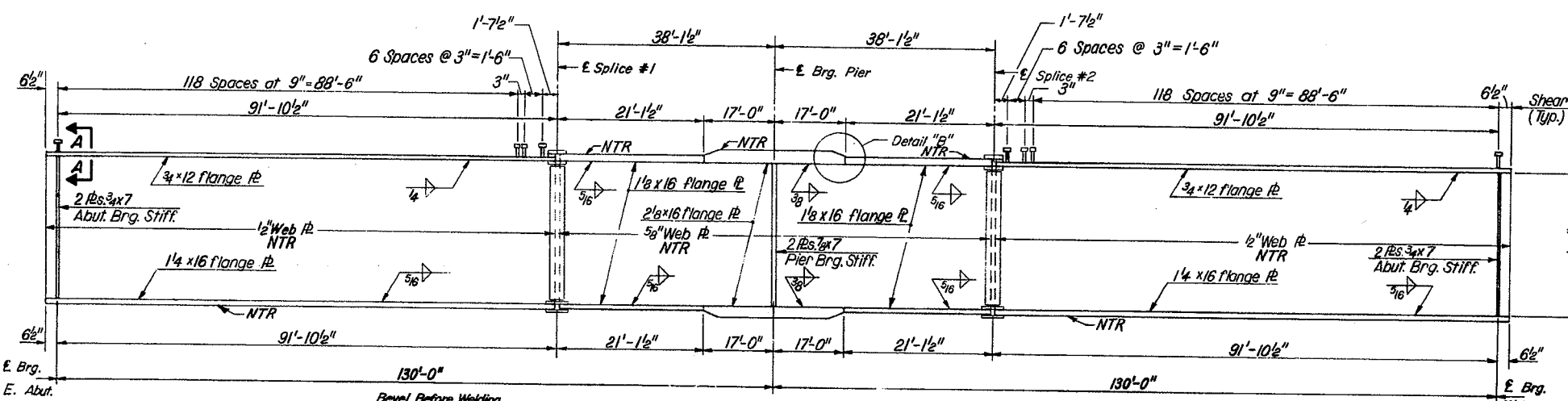


STATE OF ILLINOIS  
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PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
401	*	STEPHENSON	119	66
SHEET NO. 9 16 SHEETS				

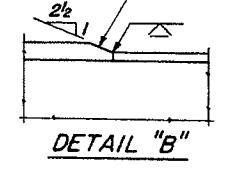
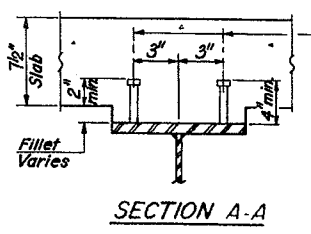
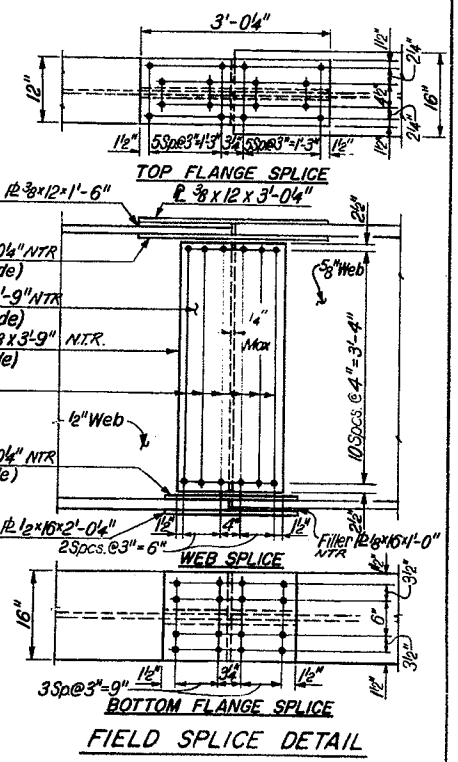
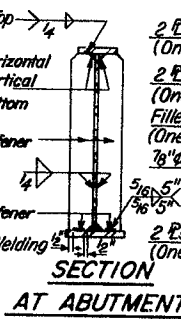
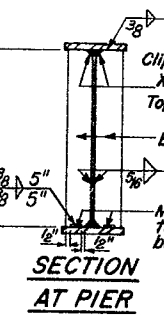


FRAMING PLAN



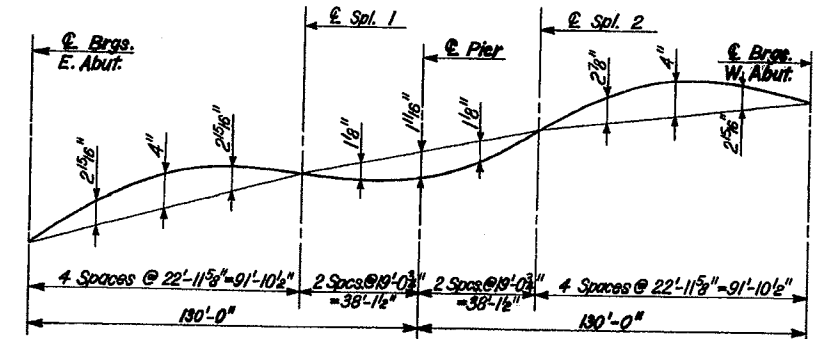
GIRDER ELEVATION

"NTR" denotes plates to which notch toughness requirements are applicable.



LOCATION	TOP WEB ELEVATIONS *				
	E. ABUT.	SPLICE 1	PIER	SPLICE 2	W. ABUT.
GIR. 1	783.14	785.04	785.41	786.06	786.63
GIR. 2	783.44	785.29	785.65	786.28	786.80
GIR. 3	783.72	785.53	785.87	786.48	786.96
GIR. 4	783.83	785.60	785.91	786.51	786.94

\* For Fabrication only



CAMBER FOR GIRDERS 1 THRU 4

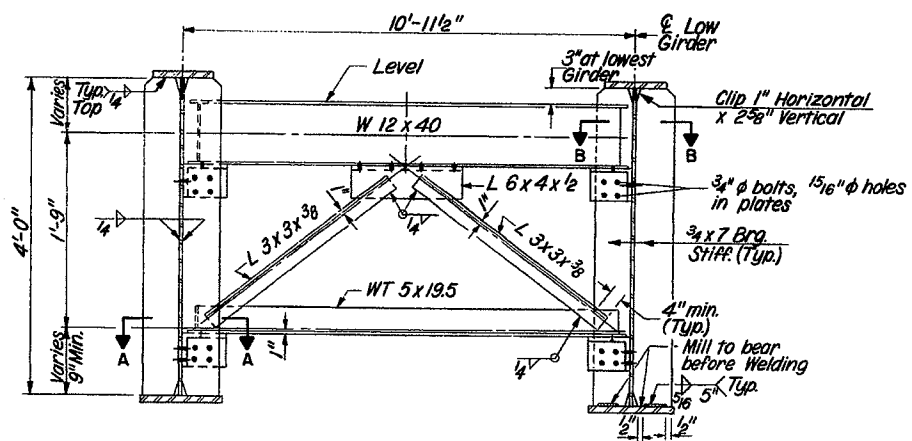
DESIGNED	S.J.
CHECKED	Y.V.
DRAWN	P.M. & O.G.
CHECKED	Y.V.

G-1 4-1-79

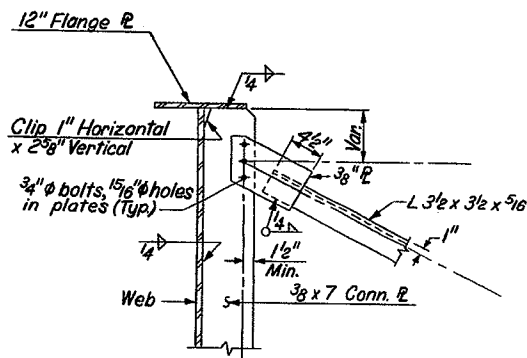
STRUCTURAL STEEL  
FA 401 SECTION 177-4 HB-4  
FA 401 UNDER W.B. RAMP  
STEPHENSON COUNTY  
STATION 1026+30.32

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

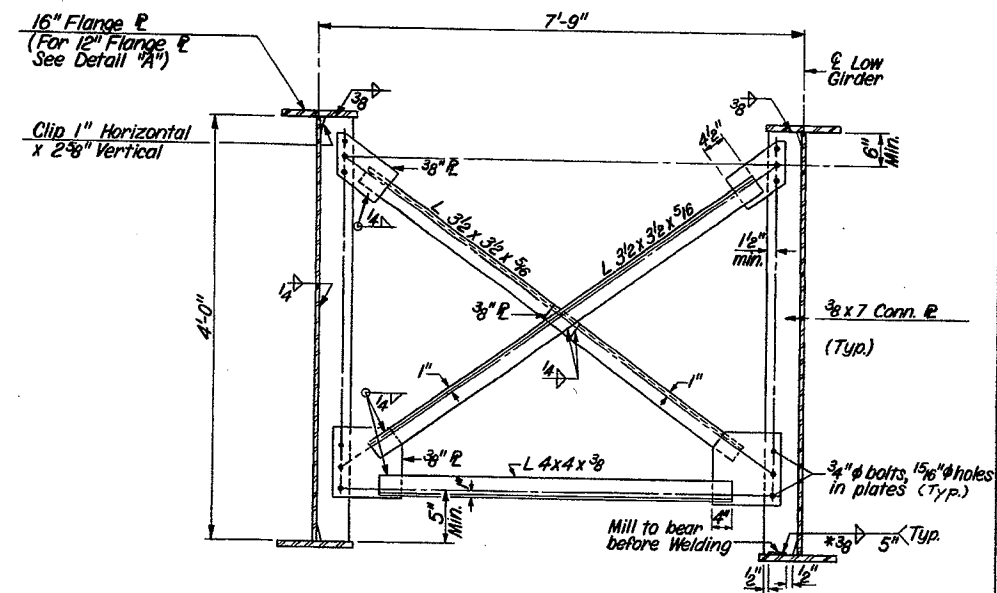
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S. R. I. T. A. 401	*	STEPHENSON	119	67	16 SHEETS
FED. ROAD DIST. NO 7	ILLINOIS	FED. AID PROJECT			
*177-4HB-4					



TYPICAL END CROSS FRAME CF-1

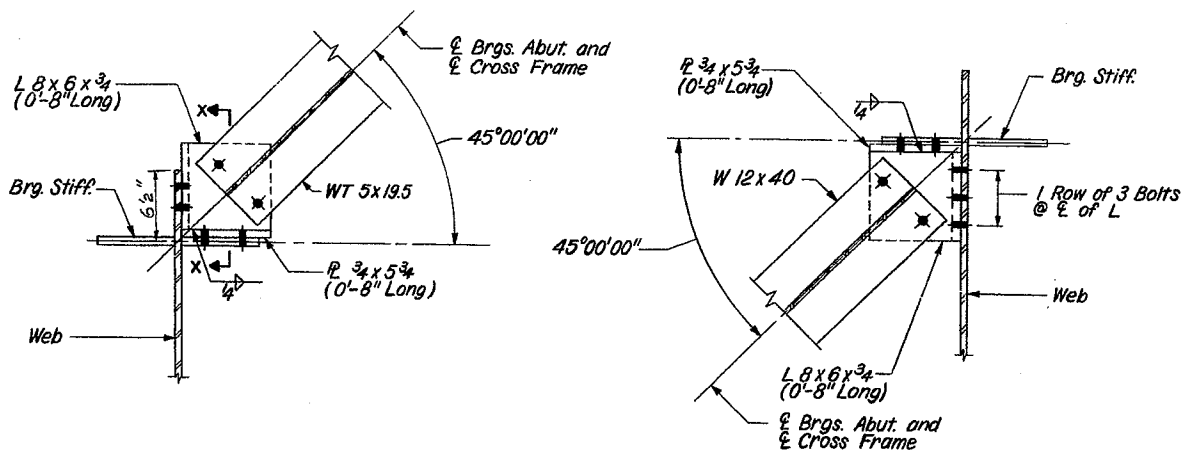


DETAIL "A"



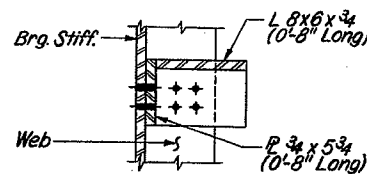
TYPICAL INTERIOR CROSS FRAME CF-2

\* @ 2 1/2" Flange  
5/16 for other Flanges



SECTION A-A

SECTION B-B



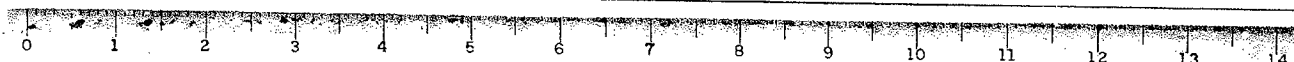
SECTION X-X

NOTES

All Cross Frames (WT, W12, angles, plates and connection plates) shall be AASHTO M183.  
Hardened washers shall be required over holes in plates or angles for Cross Frames.  
Work this sheet with sheet #9.

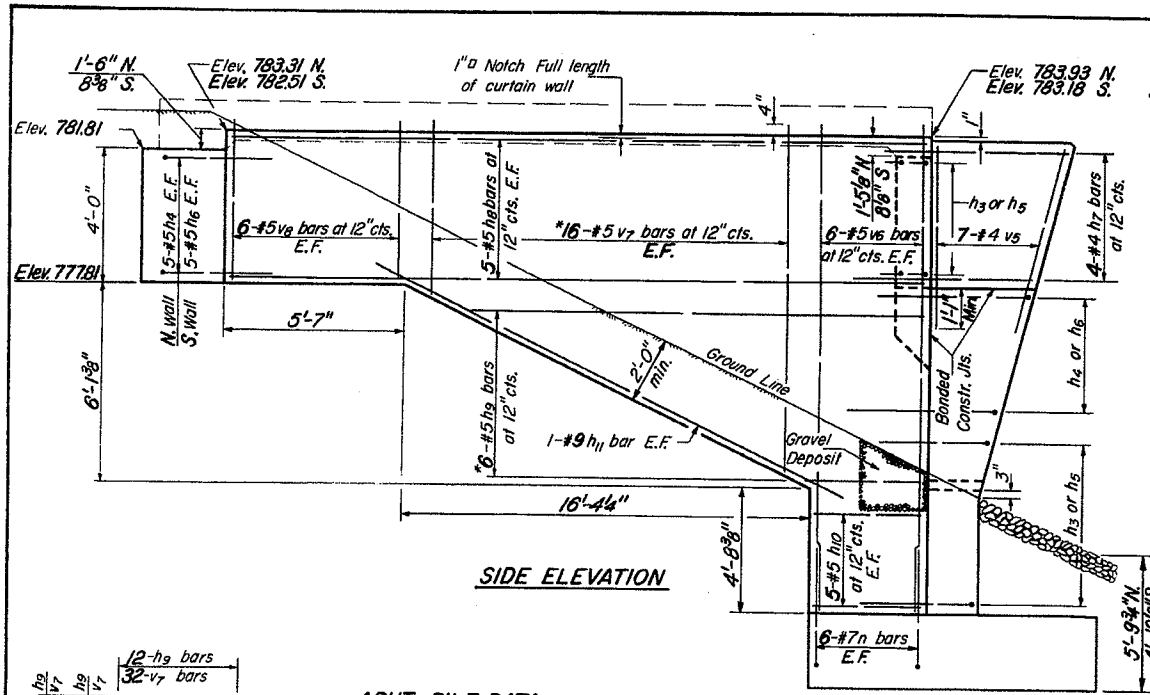
DESIGNED	Y.V.
CHECKED	J.D.S.
DRAWN	H.P.
CHECKED	Y.V.

STRUCTURAL STEEL  
FA 401 SECTION 177-4 HB-4  
FA 401 UNDER W.B. RAMP  
STEPHENSON COUNTY  
STATION 1026 + 30.32



STATE OF ILLINOIS  
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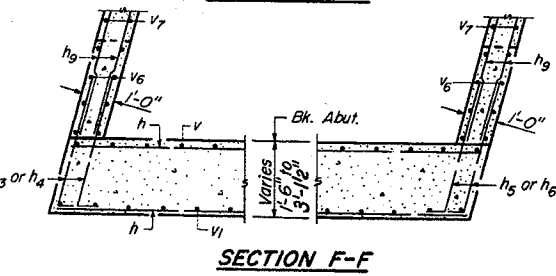
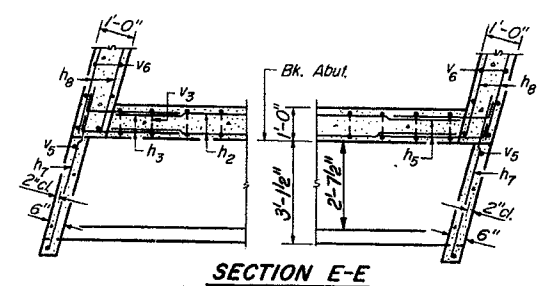
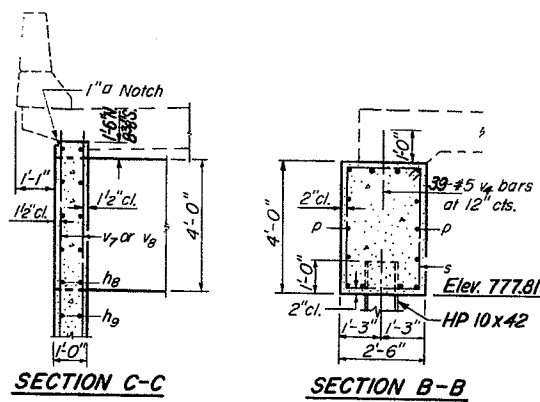
SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
401	STEPHENSON	119	70
PROJECT		NO.	DATE
* 177-4HB-4			



**ABUT-PILE DATA**  
Type Steel Piles HP 10x42  
Design Capacity - 37 Ton \*  
Est. Length 27'  
No Req'd. 24 (Incl. Test Pile)  
\* Driven to 55 Ton

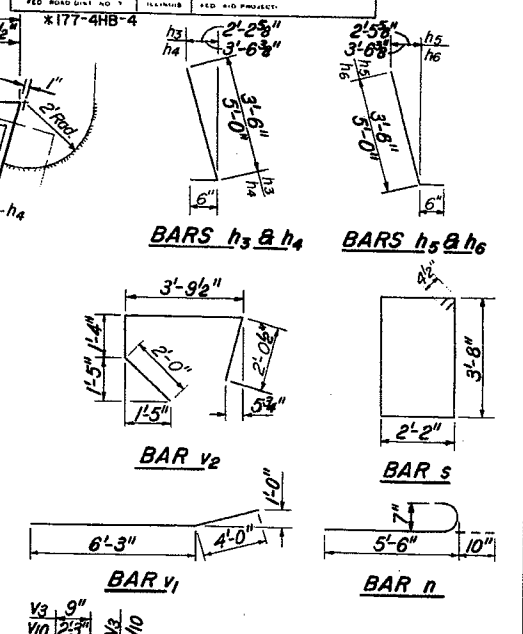
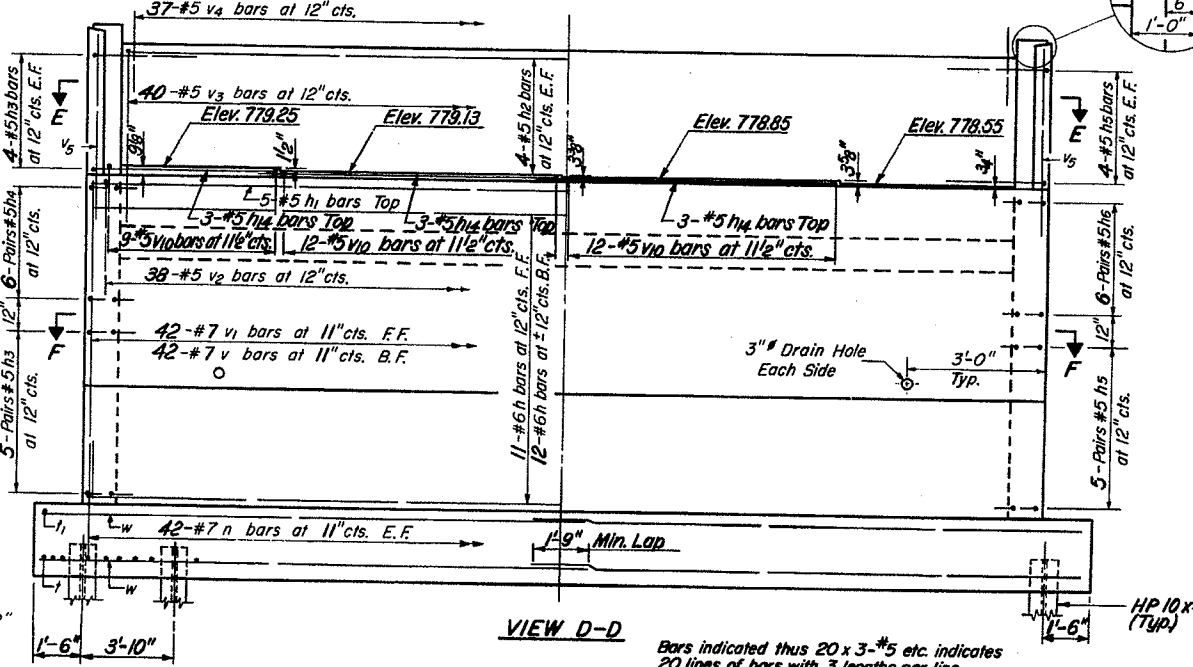
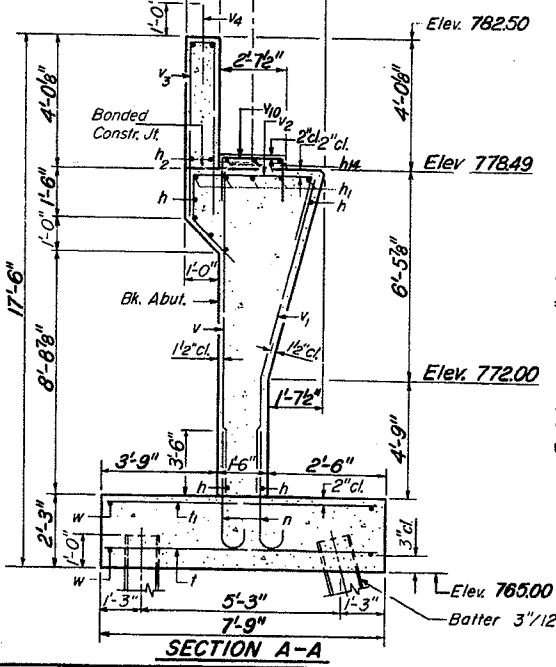
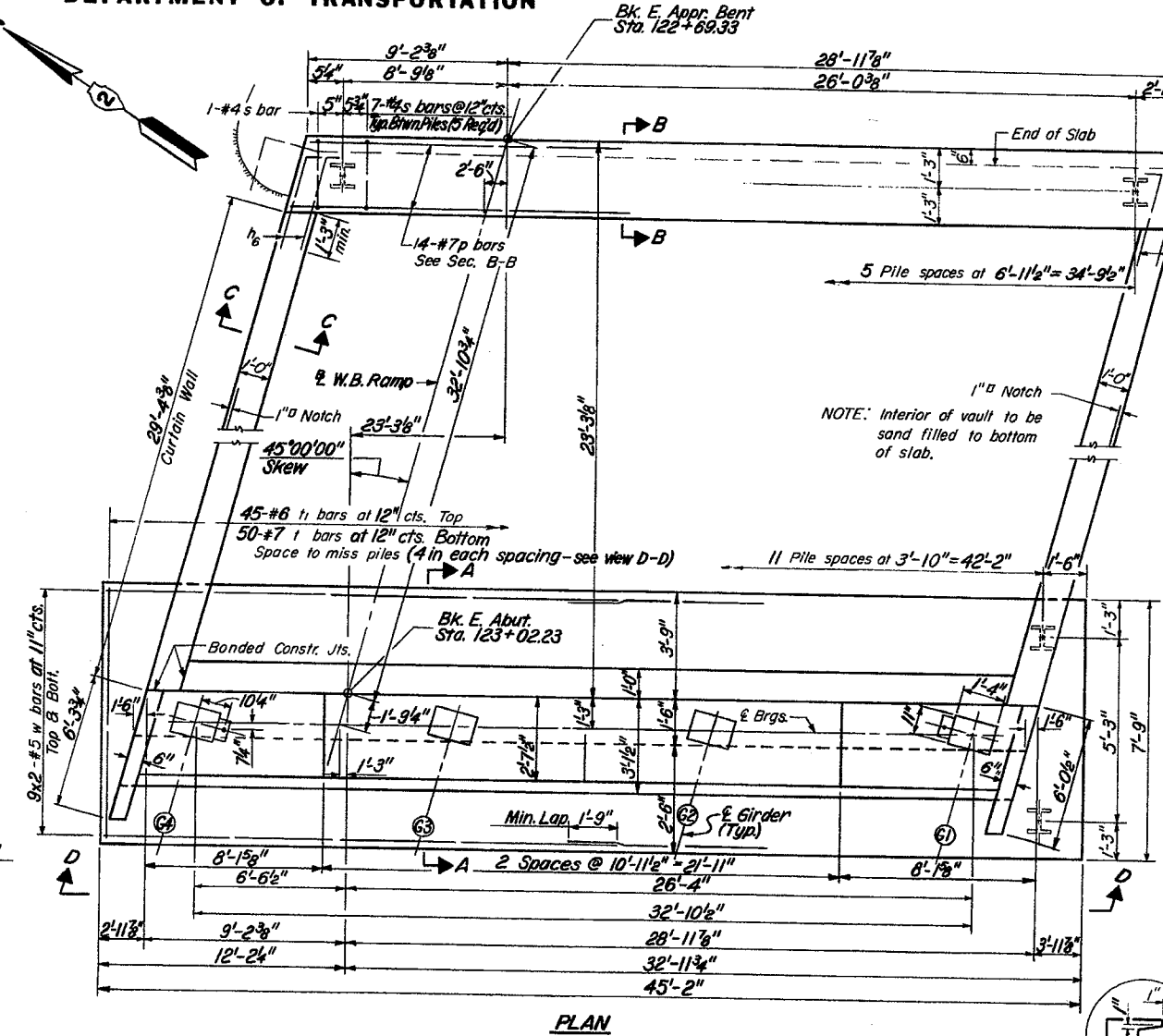
**APPR. BENT-PILE DATA**  
Type Steel Piles HP 10x42  
Design Capacity - 30 Ton \*\*  
Est. Length 38'  
No Req'd. 6  
\*\* Driven to 45 Ton

**FIELD CUTTING DIAGRAM**  
\*Order h<sub>3</sub> & v<sub>7</sub> bars full length. Cut to fit as shown and use remainder of bars in other face.



DESIGNED	S.J.
CHECKED	Y.K.
DRAWN	H.P.
CHECKED	Y.K.

AV-R 8-30-80



**BILL OF MATERIAL**

Bar	No	Size	Length	Shape
h	23	#6	37'-10"	
h1	5	#5	37'-10"	
h2	8	#5	37'-10"	
h3	18	#5	4'-0"	L
h4	22	#5	5'-6"	L
h5	18	#5	4'-0"	L
h6	22	#5	5'-6"	
h7	8	#4	7'-6"	
h8	20	#5	29'-0"	
h9	12	#5	18'-6"	
h10	20	#5	5'-0"	
h11	4	#9	21'-0"	
h12	9	#5	12'-0"	
n	108	#7	6'-4"	
p	14	#7	37'-10"	
s	36	#4	12'-5"	
i	45	#7	7'-3"	
i1	50	#8	7'-3"	
v	42	#7	10'-10"	
v1	42	#7	11'-1"	
v2	38	#5	9'-2"	
v3	40	#5	11'-3"	
v4	78	#5	2'-6"	
v5	14	#4	5'-6"	
v6	24	#5	16'-2"	
v7	32	#5	11'-7"	
v8	24	#5	5'-9"	
v10	33	#5	5'-11"	
w	36	#5	23'-3"	

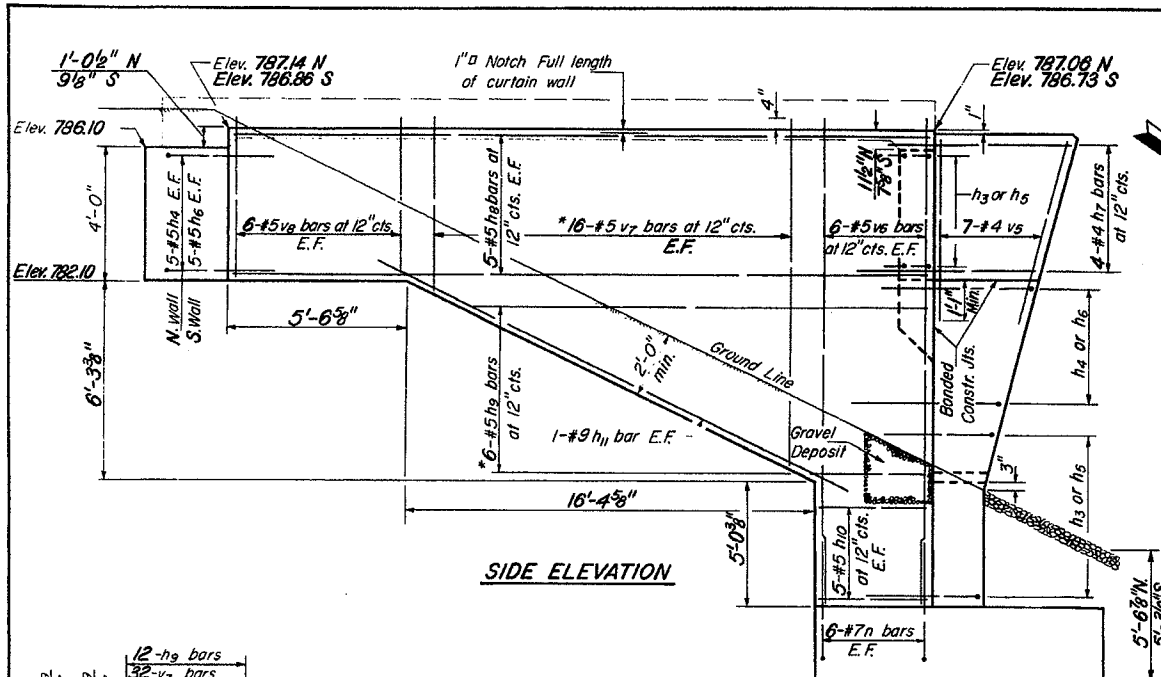
**Structure Excavation Cu. Yds. 212**  
**Reinforcement Bars Lbs. 12,570**  
**Class X Concrete Cu. Yds. 1034**  
**Steel Piles HP 10x42 Lin. Ft. 849**  
**Test Piles Steel HP 10x42 Each 1**  
**Sand Backfill Cu. Yds. 153**

**EAST ABUTMENT**  
FA 401 SECTION 177-4 HB-4  
FA 401 UNDER W.B. RAMP  
STEPHENSON COUNTY  
STATION 1026+30.32

Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

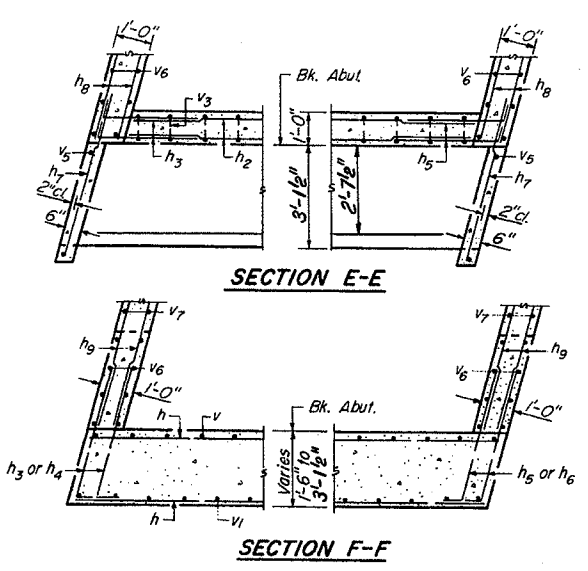
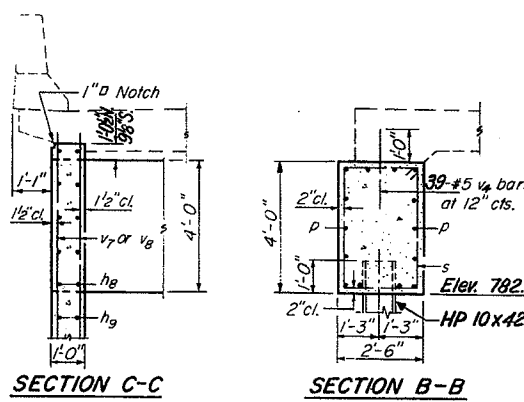
PROJECT NO.	401	COUNTY	STEPHENSON	TOTAL SHEETS	119	SHEET NO.	71	SHEETS	16
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**ABUT-PILE DATA**  
Type Steel Piles HP 10x42  
Design Capacity - 37 Ton\*  
Est. Length 20'  
No. Req'd. 24 (Incl. Test Pile)  
\* Driven to 55 Ton

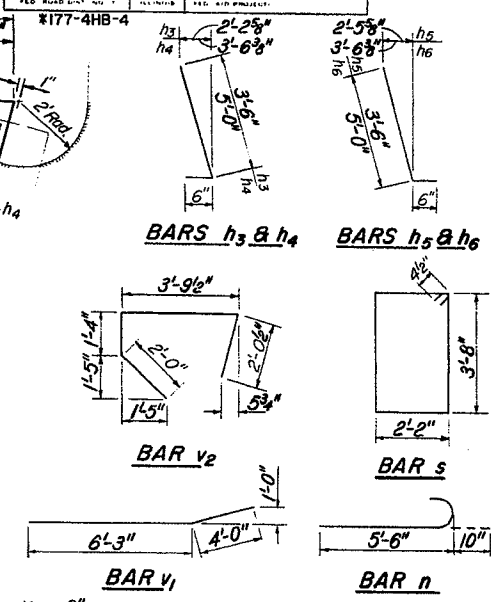
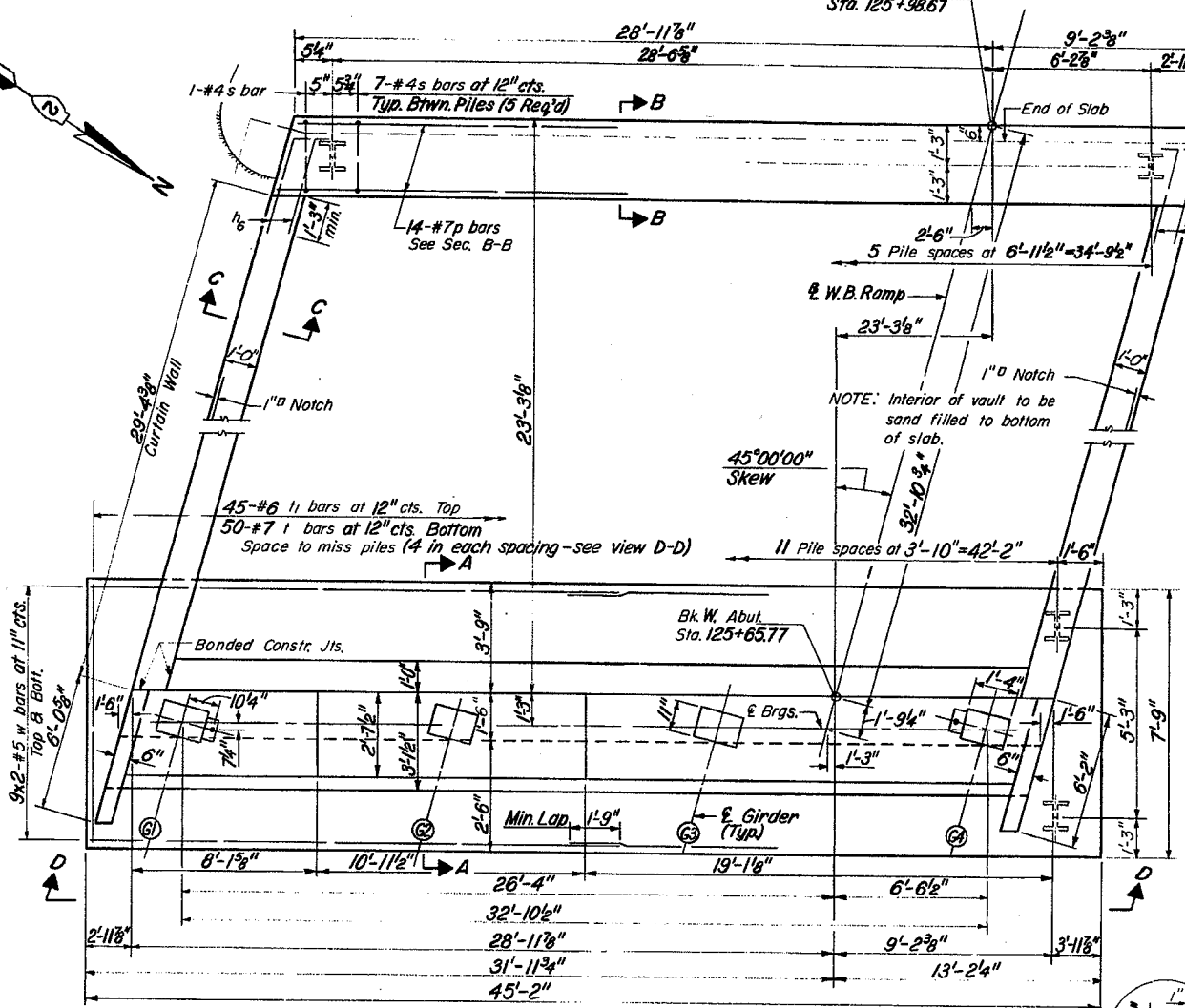
**APPR. BENT-PILE DATA**  
Type Steel Piles HP 10x42  
Design Capacity - 30 Ton\*\*  
Est. Length 33'  
No. Req'd. 6  
\*\* Driven to 45 Ton

**FIELD CUTTING DIAGRAM**  
\* Order h<sub>9</sub> & v<sub>7</sub> bars full length. Cut to fit as shown and use remainder of bars in other face.



DESIGNED	S.J.
CHECKED	Y.K.
DRAWN	H.P.
CHECKED	Y.K.

AV-R 8-30-80

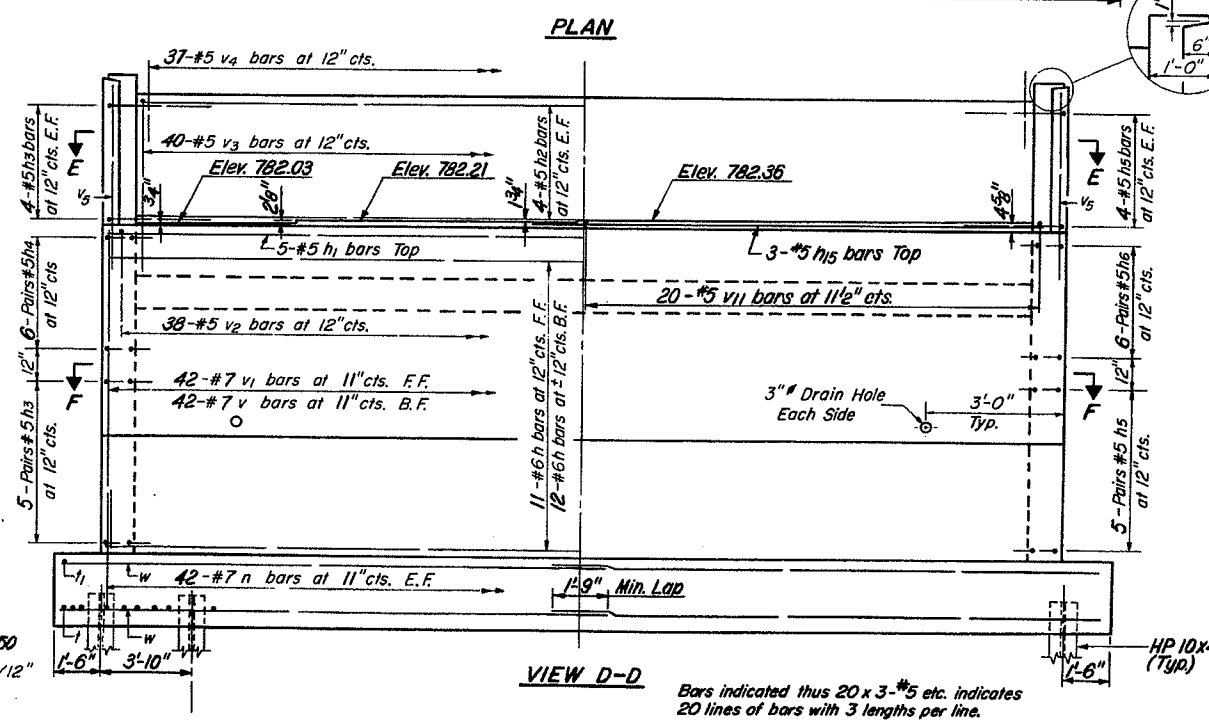


**BILL OF MATERIAL**

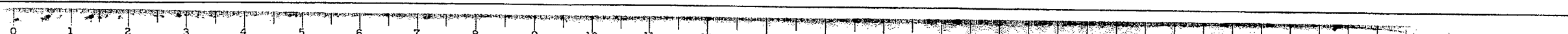
Bar No	Size	Length	Shape
h	23	#6	37'-10"
h <sub>1</sub>	5	#5	37'-10"
h <sub>2</sub>	8	#5	37'-10"
h <sub>3</sub>	18	#5	4'-0"
h <sub>4</sub>	22	#5	5'-6"
h <sub>5</sub>	18	#5	4'-0"
h <sub>6</sub>	22	#5	5'-6"
h <sub>7</sub>	8	#4	7'-6"
h <sub>8</sub>	20	#5	29'-0"
h <sub>9</sub>	12	#5	18'-6"
h <sub>10</sub>	20	#5	5'-0"
h <sub>11</sub>	4	#9	21'-0"
h <sub>15</sub>	3	#5	22'-9"
n	108	#7	6'-4"
p	14	#7	37'-10"
s	36	#4	12'-5"
t	45	#7	7'-3"
l	50	#6	7'-3"
v	42	#7	10'-10"
v <sub>1</sub>	42	#7	11'-1"
v <sub>2</sub>	38	#5	9'-2"
v <sub>3</sub>	40	#5	11'-3"
v <sub>4</sub>	76	#5	2'-6"
v <sub>5</sub>	14	#4	5'-6"
v <sub>6</sub>	24	#5	16'-2"
v <sub>7</sub>	32	#5	11'-7"
v <sub>8</sub>	24	#5	5'-9"
v <sub>11</sub>	20	#5	5'-3"
w	36	#5	23'-3"

**Structure Excavation Cu. Yds.** 212  
**Reinforcement Bars** Lbs. 12,430  
**Class X Concrete** Cu. Yds. 103.2  
**Steel Piles HP 10x42** Lin. Ft. 658  
**Test Piles Steel HP 10x42** Each 1  
**Sand Backfill** Cu. Yds. 152

**WEST ABUTMENT**  
FA 401 SECTION 177-4 HB-4  
FA 401 UNDER W.B. RAMP  
STEPHENSON COUNTY  
STATION 1026+30.32



Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

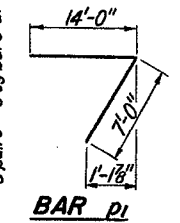
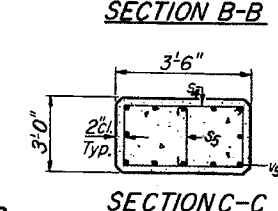
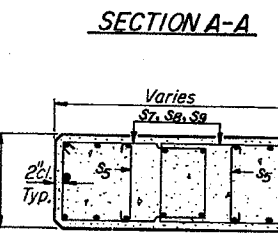
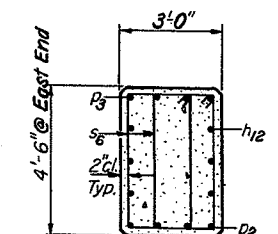
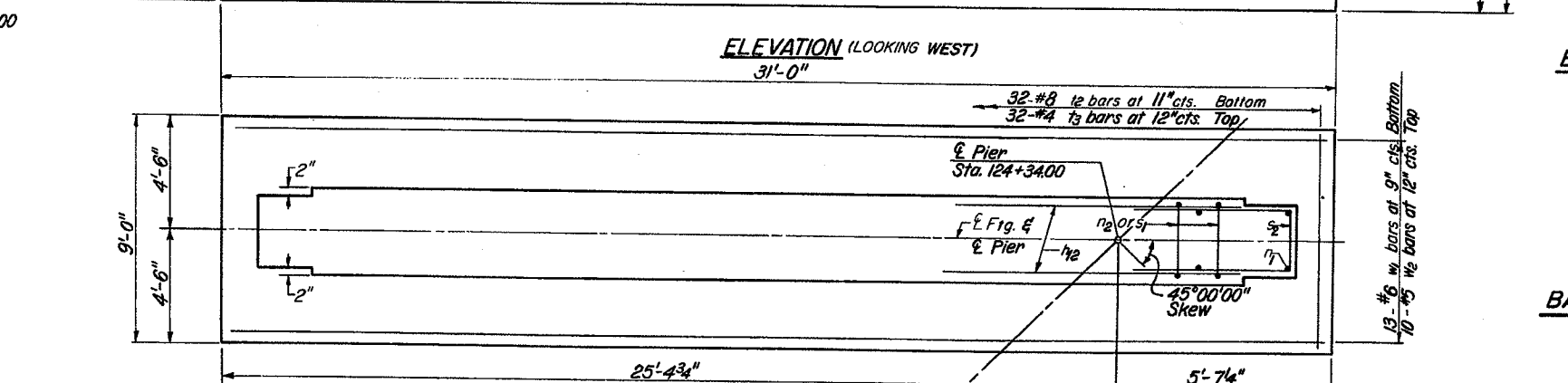
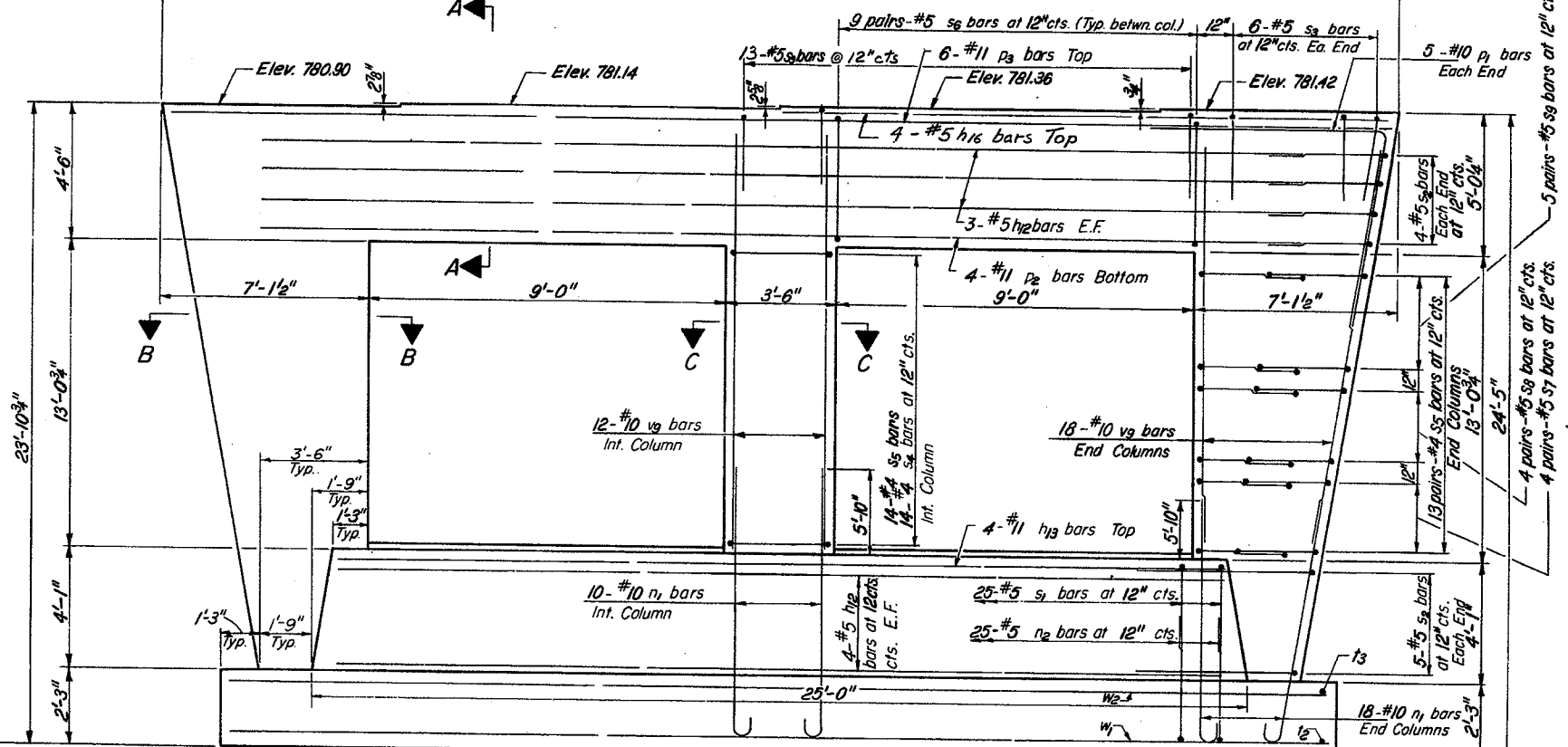
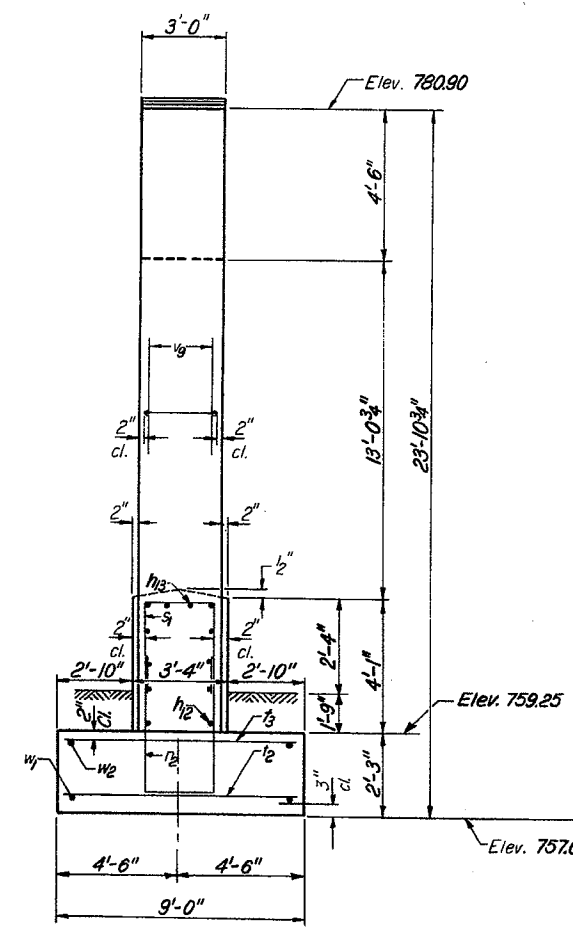
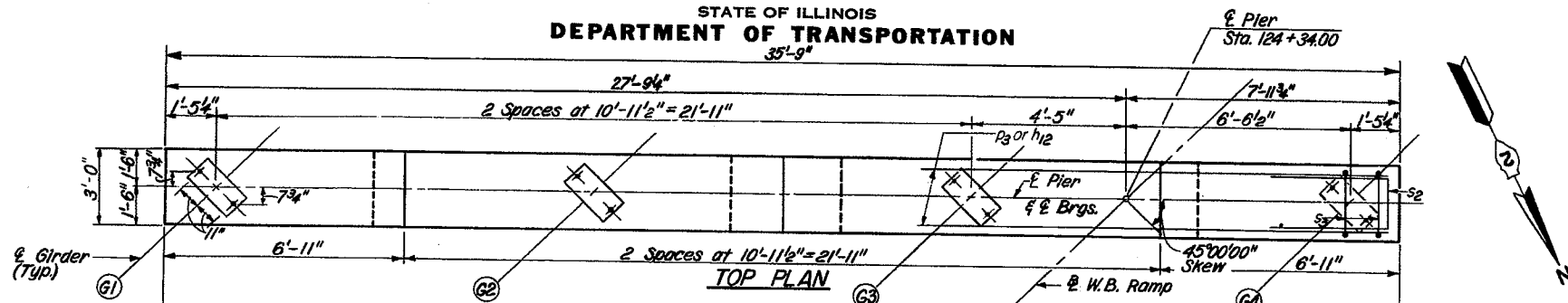


**NOTES**

Space reinforcement in cap to miss anchor bolts.  
All edges shall have standard  $\frac{3}{4}$ " chamfers except as noted.  
Pour steps monolithically with cap.

STATE OF ILLINOIS  
**DEPARTMENT OF TRANSPORTATION**

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 15
401	*	STEPHENSON	119	72	16 SHEETS
FED. ROAD DIST. NO. 3 ILLINOIS FED. AID PROJECT					
* 177-4HB-4					



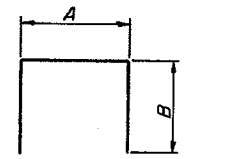
**C&D DIMENSIONS**

Bar	C	D
s4	3'-2"	2'-8"
s6	1'-11"	4'-2"
s7	2'-8"	2'-8"
s8	3'-1"	2'-8"
s9	3'-6"	2'-8"

**BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h12	14	#5	23'-6"	□
h13	4	#11	23'-6"	□
h16	4	#5	17'-6"	□
n1	46	#10	13'-4"	□
n2	25	#5	11'-0"	□
p1	10	#10	21'-0"	7
p2	4	#11	30'-0"	□
p3	6	#11	32'-0"	□
s1	25	#5	10'-0"	□
s2	18	#5	16'-10"	□
s3	25	#5	8'-8"	□
s4	14	#5	12'-7"	□
s5	70	#4	3'-8"	□
s6	36	#5	13'-1"	□
s7	16	#5	11'-7"	□
s8	16	#5	12'-5"	□
s9	20	#5	13'-3"	□
t2	32	#8	8'-8"	□
t3	32	#4	8'-6"	□
v9	48	#10	17'-1"	□
w1	13	#6	30'-6"	□
w2	10	#5	30'-6"	□
Class X Concrete		Cu. Yds.	76.8	
Reinforcement Bars		Lbs.	13,930	
Structure Excavation		Cu. Yds.	67	

**BARS s4, s6, s7, s8 & s9**



**BARS n2, s1, s2 & s3**

**A&B DIMENSIONS**

Bar	A	B
n2	3'-0"	4'-0"
s1	3'-0"	3'-8"
s2	2'-10"	7'-0"
s3	2'-8"	3'-0"

**PIER**  
FA 401 SECTION 177-4 HB-4  
FA 401 UNDER W.B. RAMP  
STEPHENSON COUNTY  
STATION 1026+30.32

DESIGNED	S.J.
CHECKED	Y.K.
DRAWN	H.P.
CHECKED	Y.K.

P-12 8-30-80

