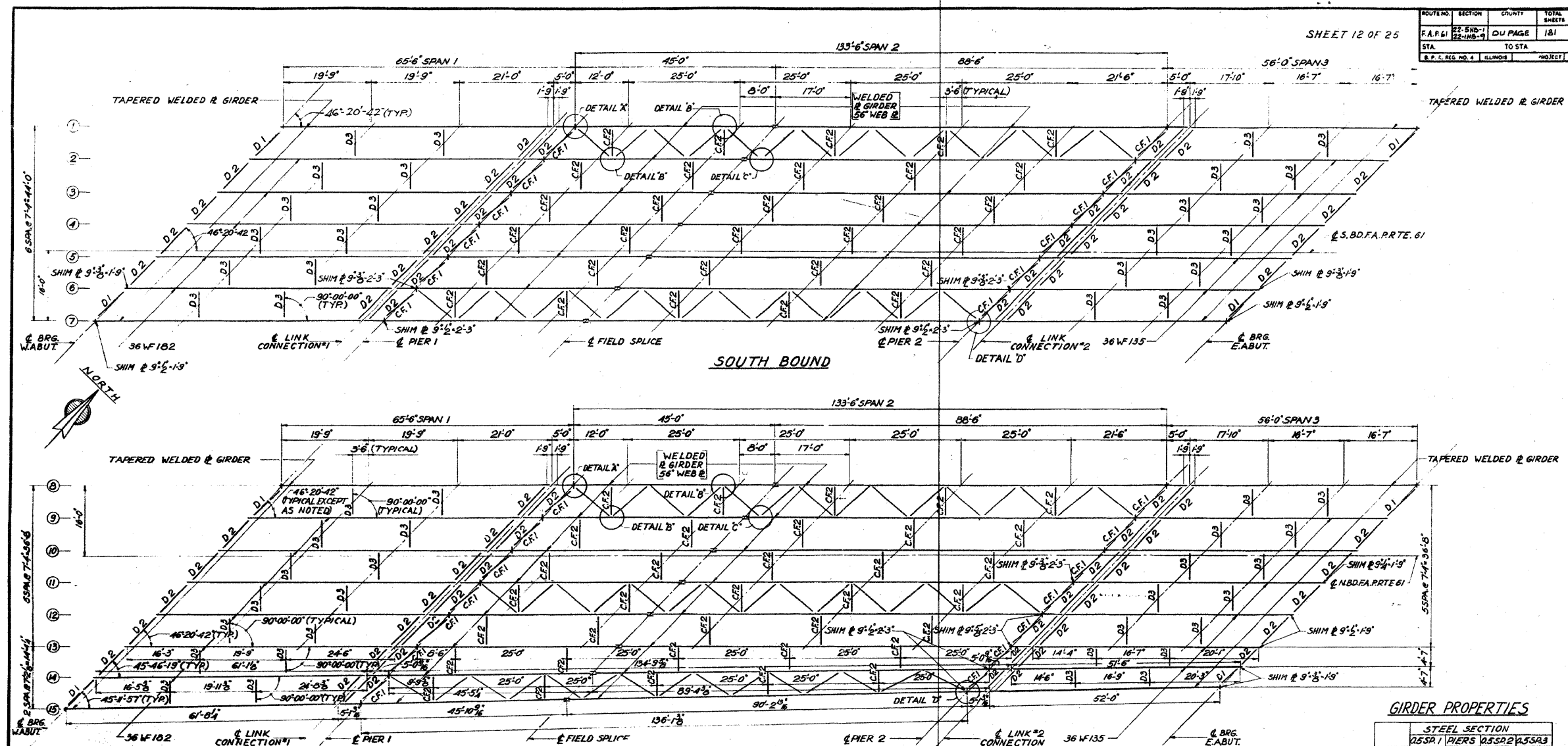


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 12 OF 25

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 61	22-5HB-1	DUPAGE	181	99
STA.	TO STA.			
1250+00	1250+83.16			
ILLINOIS PROJECT				



GIRDER ELEVATIONS
FOR FABRICATION ONLY

GIRDERS & BEAMS LOCATION	SOUTH-BOUND							NORTH-BOUND							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BRG. W. ABUT.	749.479	749.579	749.190	750.451	752.572	752.706	752.619	752.236	752.617	752.877	752.948	752.934	752.735	752.514	752.173
LINK CONN. 1	749.201	748.505	748.806	749.077	749.298	749.333	749.344	749.962	751.246	751.510	751.585	751.594	751.486	751.378	751.246
PIER NO. 1	749.117	748.419	748.725	748.990	749.211	749.285	749.258	749.876	751.160	751.423	751.498	751.509	751.406	751.301	751.181
FIELD SPLICE	747.220	747.571	747.672	748.162	748.384	748.411	748.430	750.048	752.332	752.595	752.670	752.691	752.665	752.593	752.529
PIER NO. 2	745.38	745.385	745.887	746.157	746.378	746.412	746.424	748.043	749.327	749.590	749.665	749.671	749.681	749.678	749.673
LINK CONN. 2	745.162	745.463	745.764	746.034	746.254	746.289	746.302	747.920	749.204	749.467	749.543	749.567	749.567	749.556	749.550
BRG. ABUT.	744.073	744.112	744.743	745.014	745.235	745.267	745.273	746.831	747.183	747.447	747.522	747.548	747.542	747.537	747.465

ELEVATIONS ARE GIVEN TO TOP OF WEB FOR PLATE GIRDERS AND TOP OF FLANGE FOR ROLLED BEAMS.

NORTH BOUND
FRAMING PLAN

STRESS TABLE

STEEL SECTION	MAXIMUM MOMENTS (FT-KIPS)				REACTIONS (KIPS)				SHEAR (KIPS)		
	025SR1	PIER 1	025SR2	025SR3	ABUT.	PIER 1	PIER 2	EABUT.	0.2 L _s	0.5 L _s	
D.L.	427	-153	2,296	-124	205	205	104.5	98.7	227		
COMPOSITE SECTION - MAXIMUM MOMENTS											
S.D.L.	104	-37	472	-32	74	69	232	223	58	9.1	0
L.L.	544	-203	1,415	-196	428	405	606	326	39.1	3.50	20.5
T.M.R.	146	-61	275	-59	124	10.0	140	13.5	17.2	6.8	4.0
TOTAL	794	-301	2,162	-287	626	657	202.1	193.1	78.8	50.9	24.5

S.D.L. - SUPERIMPOSED DEAD LOAD
I_s - MOMENT OF INERTIA STEEL SECT.
S_{ts} - SECTION MODULUS TOP STEEL SECT.
S_{bs} - SECTION MODULUS BOT. STEEL SECT.
I_c - MOMENT OF INERTIA COMP. SECT.
S_{tc} - SECTION MODULUS TOP COMP. SECT.
S_{bc} - SECTION MODULUS BOT. COMP. SECT.

GIRDER PROPERTIES

STEEL SECTION	
025SR1 PIERS	025SR2 025SR3
I _s	11,282 36,949 62,438 7796
S _{ts}	6.21 1.097 1.756 4.39
S _{bs}	6.21 1.572 2.571 4.39
COMPOSITE SECTION I=10	
I _c	25,482 123,706 15,296
S _{tc}	4.205 6.271 4.167
S _{bc}	8.42 3.091 6.18

FRAMING PLAN
F.A.P. ROUTE 61 OVER
ILLINOIS ROUTE 53 (ROHLWING ROAD)
PROJECT
SECTIONS 22-5HB-1 & 22-1HB-9
DUPAGE COUNTY
STATION 1250+83.16

ALFRED BENESCH & COMPANY
ENGINEERS - ARCHITECTS
102 W. MADISON AVE. CHICAGO, ILLINOIS

FOR INFORMATION ONLY

alfred benesch & company
Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 27 38 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 402
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

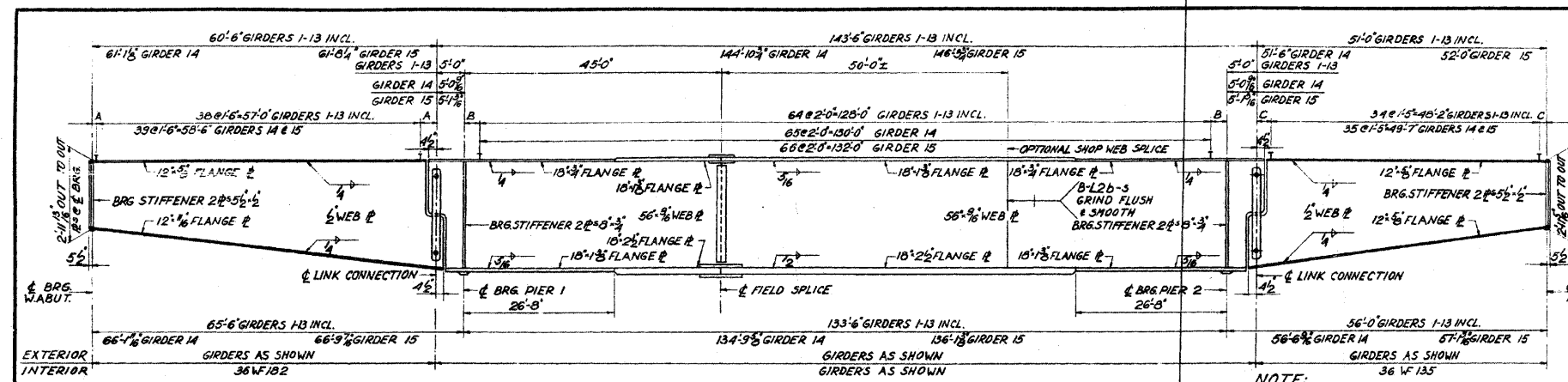
EXISTING PLAN INFORMATION 10 OF 21
STRUCTURE NO. 022-0138

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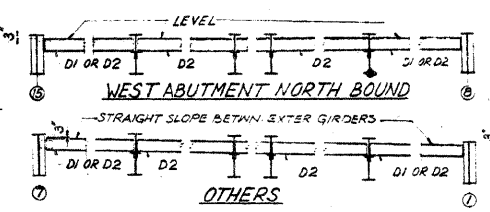
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.R. 61	22-5HB-1	DU PAGE	181	100
STA.	TO STA.			
B.P.R. REG. NO. 4	ILLINOIS	PROJECT		

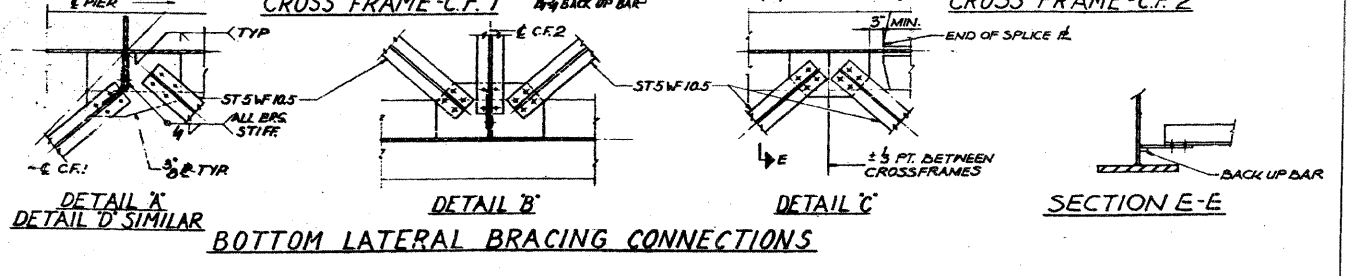
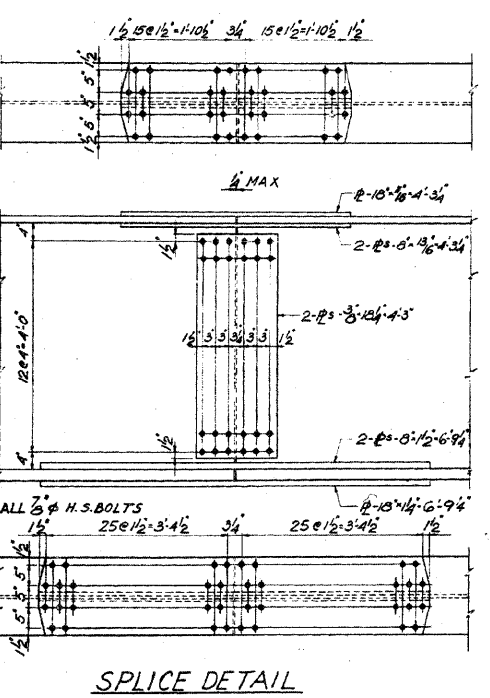
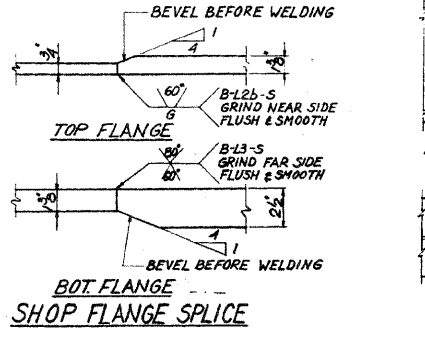
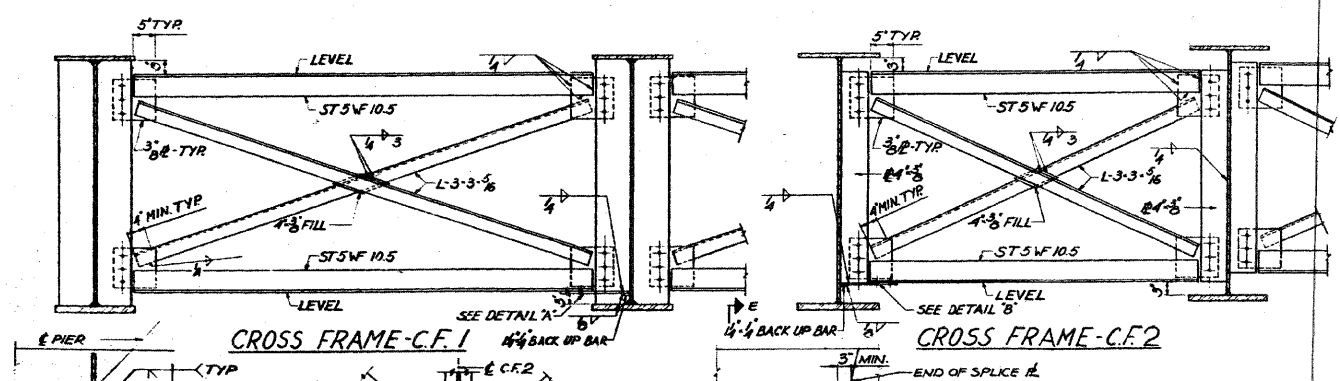
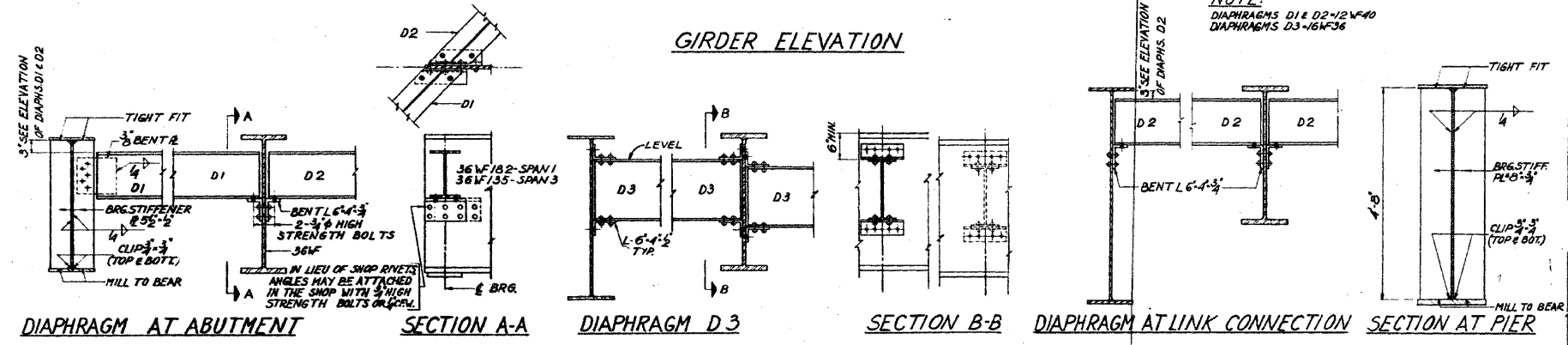
SHEET 13 OF 25



GIRDER	A	B	C
1-13	1'-9"	2'-9"	1'-5"
14	1'-3 1/2"	2'-4 1/2"	1'-1 1/2"
15	1'-7 1/2"	2'-0 1/2"	1'-2 1/2"



GIRDER ELEVATION



STEEL DETAILS
F.A. ROUTE 61 OVER
ILLINOIS ROUTE 53 (ROHLWING ROAD)
PROJECT
SECTIONS 22-5HB-1 & 22-1HB-9
DU PAGE COUNTY
STATION 1250+83.16

ALFRED BENESCH & COMPANY
ENGINEERS, SURVEYORS & PLANNERS
205 NORTH MICHIGAN AVENUE, SUITE 2400
CHICAGO, ILLINOIS 60601
312-565-0450 Job No. 10050

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SHEET NO. 28	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 403
38 SHEETS		CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

EXISTING PLAN INFORMATION 11 OF 21
STRUCTURE NO. 022-0138

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

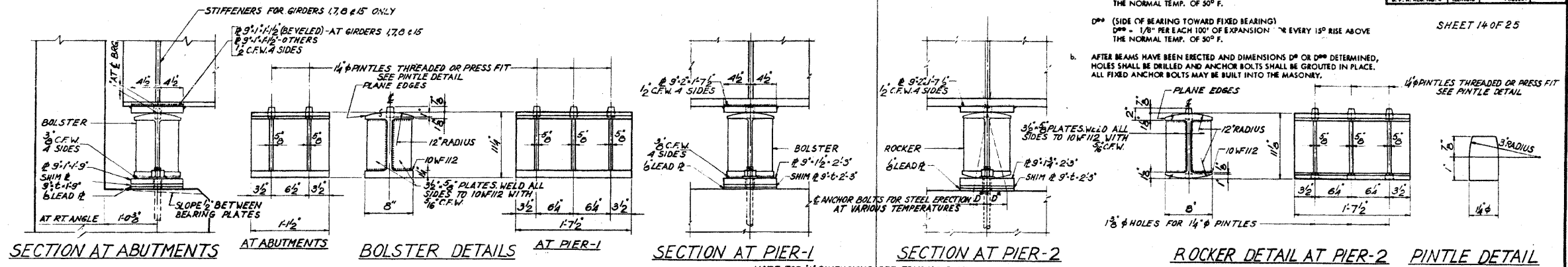
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F.A.P. 61	22-5HB-1	DUPAGE	181	101
STA.	TO STA.			
R.P.R. NO. 022-0138-0137	ILLINOIS	PROJECT		

SHEET 14 OF 25

NOTES ON SETTING OF ANCHOR BOLTS AT EXPANSION BEARINGS

- D^o (SIDE OF BEARING AWAY FROM FIXED BEARING)
D^o = 1/8" PER EACH 100' OF EXPANSION FOR EVERY 15° FALL BELOW THE NORMAL TEMP. OF 50° F.
- D^o (SIDE OF BEARING TOWARD FIXED BEARING)
D^o = 1/8" PER EACH 100' OF EXPANSION FOR EVERY 15° RISE ABOVE THE NORMAL TEMP. OF 50° F.

AFTER BEAMS HAVE BEEN ERECTED AND DIMENSIONS D^o OR D^o DETERMINED, HOLES SHALL BE DRILLED AND ANCHOR BOLTS SHALL BE GROUDED IN PLACE. ALL FIXED ANCHOR BOLTS MAY BE BUILT INTO THE MASONRY.



SECTION AT ABUTMENTS

AT ABUTMENTS

BOLSTER DETAILS

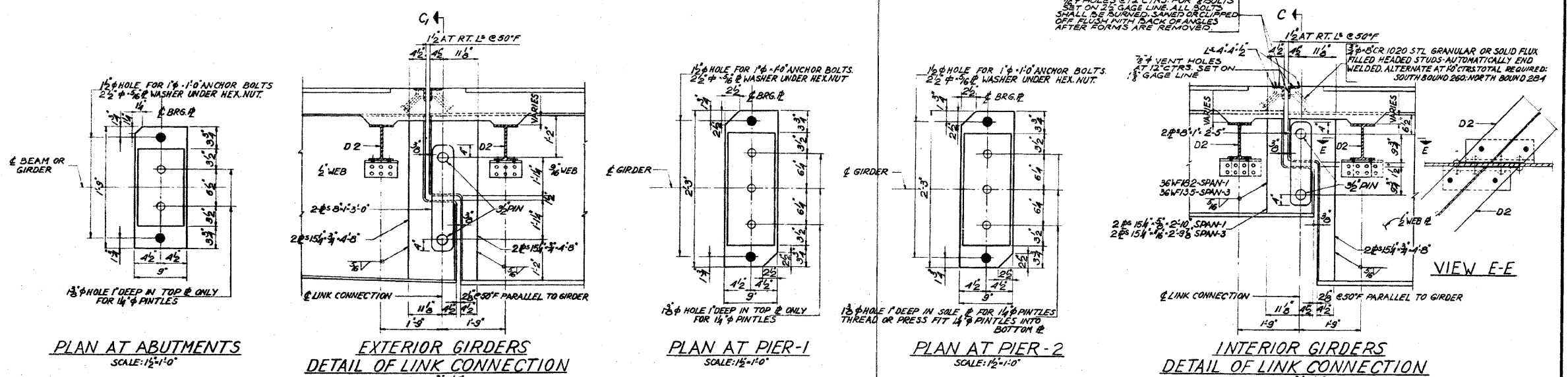
AT PIER-1

SECTION AT PIER-1

SECTION AT PIER-2

ROCKER DETAIL AT PIER-2 PINTE DETAIL

NOTE: FOR "C" DIMENSIONS SEE FRAMING PLAN



PLAN AT ABUTMENTS
SCALE: 1/2"=1'-0"

EXTERIOR GIRDERS
DETAIL OF LINK CONNECTION
SCALE: 3/4"=1'-0"

PLAN AT PIER-1
SCALE: 1/2"=1'-0"

PLAN AT PIER-2
SCALE: 1/2"=1'-0"

INTERIOR GIRDERS
DETAIL OF LINK CONNECTION
SCALE: 3/4"=1'-0"

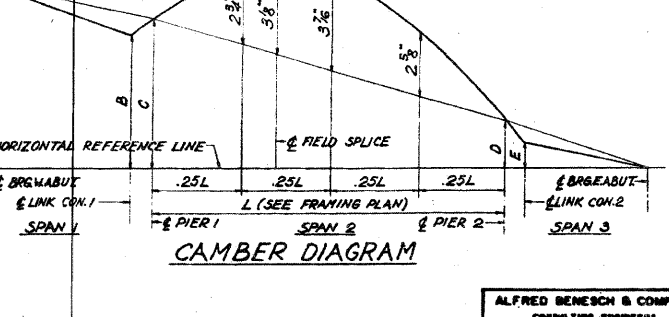
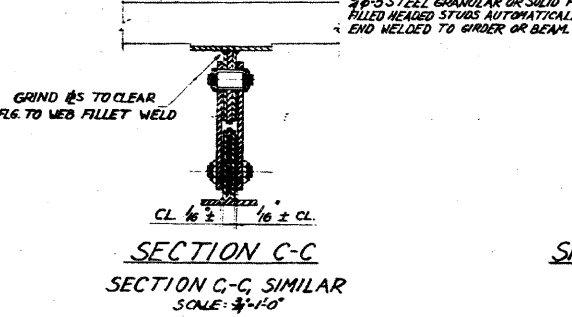
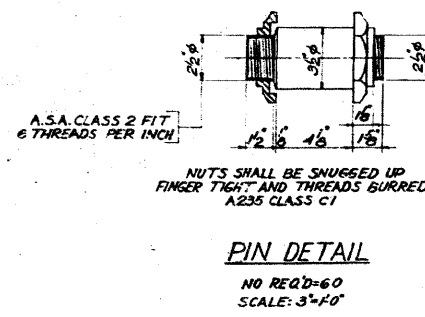


TABLE OF CAMBER DIMENSION

GIRDER	A	B	C	D	E
H212INCL	5'-4 1/2"	4'-1 1/2"	4'-0 1/2"	1'-2 1/2"	1'-0 1/2"
13	5'-7 1/2"	4'-0"	3'-11 1/2"	1'-2 1/2"	1'-0 1/2"
14	4'-11 1/2"	3'-10 1/2"	3'-10"	1'-2 1/2"	1'-0 1/2"
15	4'-8 1/2"	3'-9 1/2"	3'-8 1/2"	1'-2 1/2"	1'-0 1/2"

STEEL DETAILS
F.A. ROUTE 61 OVER
ILLINOIS ROUTE 53 (ROHLWING ROAD)
PROJECT
SECTIONS 22-5HB-1E 22-1HB-9
DU PAGE COUNTY
STATION 1250+83.16

ALFRED BENESCH & COMPANY
10 S. WABASH AVE. CHICAGO, ILLINOIS

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alfred benesch & company
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0460 Job No. 10060

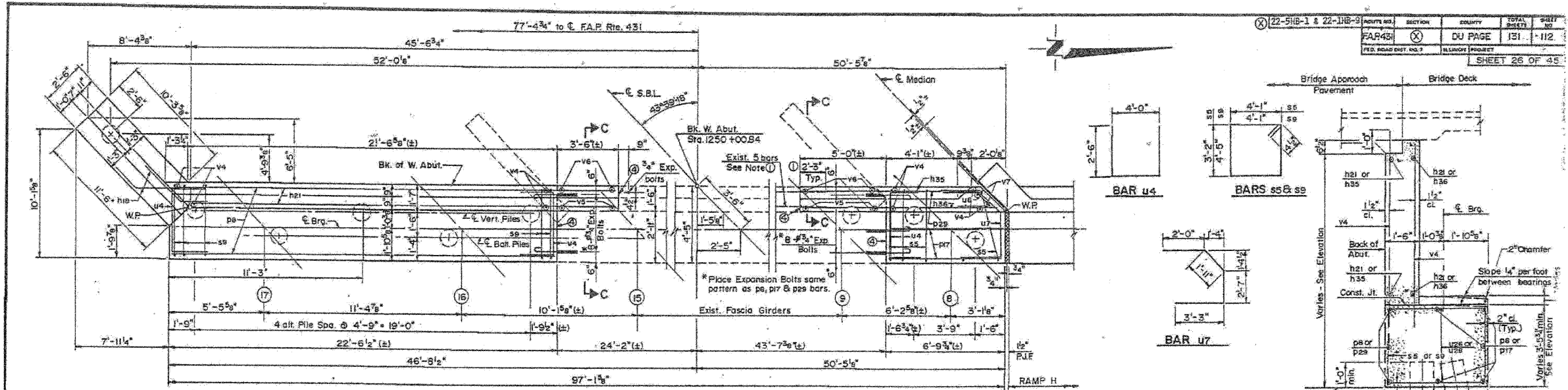
SHEET NO. 29	F.A.I. R.T.E. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 404
38 SHEETS		CONTRACT NO. 60G51			
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

EXISTING PLAN INFORMATION 12 OF 21
STRUCTURE NO. 022-0138

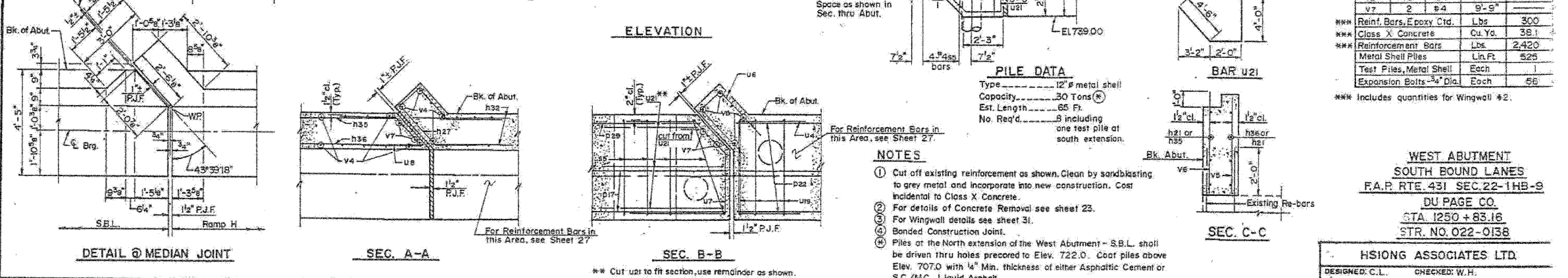
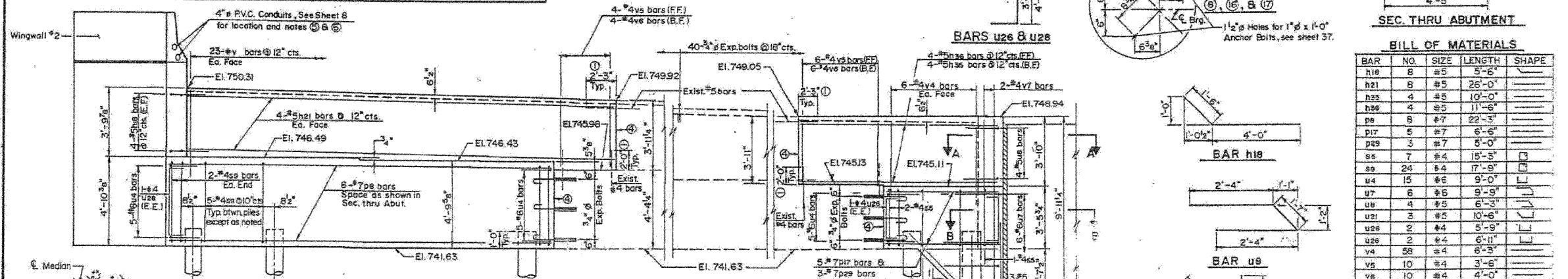
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

22-1HB-1 & 22-1HB-9	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. RTE. 431	DU PAGE	ILLINOIS	546	405
SHEET 26 OF 45				



FOR INFORMATION ONLY
(NOT INCLUDED IN THIS CONTRACT)



BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	SHAPE
h18	8	#5	5'-6"	
h21	8	#5	26'-0"	
h35	4	#5	10'-0"	
h36	4	#5	11'-6"	
pe	8	#7	22'-3"	
p17	5	#7	6'-6"	
p29	3	#7	5'-0"	
ss	7	#4	15'-3"	
se	24	#4	17'-9"	
u4	15	#6	9'-0"	
u7	6	#6	9'-9"	
u8	4	#5	6'-3"	
u21	3	#5	10'-6"	
u26	2	#4	5'-9"	
u28	2	#4	6'-11"	
v4	58	#4	6'-3"	
v5	10	#4	3'-6"	
v6	10	#4	4'-0"	
v7	2	#4	9'-9"	
Reinf. Bars, Epoxy Ctd.	Lbs.		300	
Class X Concrete	Cu. Yd.		38.1	
Reinforcement Bars	Lbs.		2,420	
Metal Shell Piles	Lin. Ft.		525	
Test Piles, Metal Shell	Each		1	
Expansion Bolts - 3/4" Dia.	Each		56	

*** Includes quantities for Wingwall #2.

WEST ABUTMENT
SOUTH BOUND LANES
F.A.P. RTE. 431 SEC. 22-1HB-9
DU PAGE CO.
STA. 1250 + 83.16
STR. NO. 022-0138

HSIONG ASSOCIATES LTD.
DESIGNED: C.L. CHECKED: W.H.
DRAWN: F.D.J. DATE: NO. H-042-2

EXISTING PLAN INFORMATION 13 OF 21
STRUCTURE NO. 022-0138

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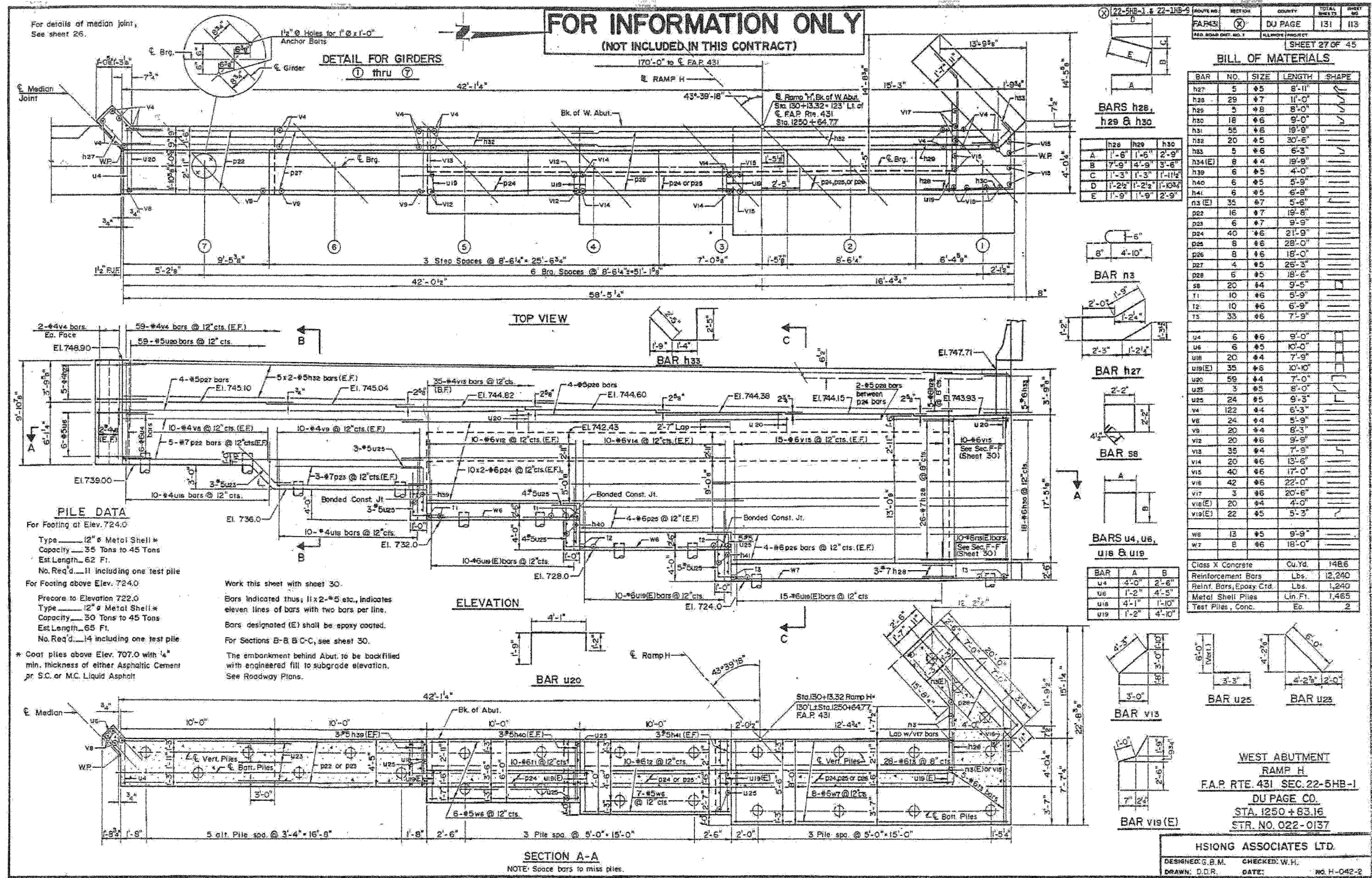
benesch
alfred benesch & company
Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 30	F.A.I. RTE. 290/355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 405
38 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOR INFORMATION ONLY
(NOT INCLUDED IN THIS CONTRACT)



For details of median joint, See sheet 26.

DETAIL FOR GIRDERS
① thru ⑦

TOP VIEW

PILE DATA
For Footing at Elev. 724.0

Type 12" Metal Shell*
Capacity 35 Tons to 45 Tons
Est. Length 62 Ft.
No. Req'd 11 including one test pile
For Footing above Elev. 724.0

Frecore to Elevation 722.0
Type 12" Metal Shell*
Capacity 30 Tons to 45 Tons
Est. Length 65 Ft.
No. Req'd 14 including one test pile

* Coat piles above Elev. 707.0 with 1/4" min. thickness of either Asphaltic Cement or S.C. or M.C. Liquid Asphalt

Work this sheet with sheet 30.
Bars indicated thus; 11x2-#5 etc., indicates eleven lines of bars with two bars per line.
Bars designated (E) shall be epoxy coated.
For Sections B-B & C-C, see sheet 30.
The embankment behind Abut. to be backfilled with engineered fill to subgrade elevation. See Roadway Plans.

ELEVATION

BAR u20

SECTION A-A
NOTE: Soace bars to miss piles.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 431	DU PAGE	ILLINOIS	131	113
SHEET 27 OF 45				

BILL OF MATERIALS

BAR NO.	SIZE	LENGTH	SHAPE
h27	5 #5	8'-11"	
h28	29 #7	11'-0"	
h29	5 #8	8'-0"	
h30	18 #6	9'-0"	
h31	55 #6	19'-9"	
h32	20 #5	20'-6"	
h33	5 #6	6'-3"	
h34(E)	8 #4	19'-9"	
h39	6 #5	4'-0"	
h40	6 #5	5'-9"	
h41	6 #5	6'-9"	
h42(E)	35 #7	5'-6"	
p22	16 #7	19'-8"	
p23	6 #7	9'-9"	
p24	40 #6	21'-9"	
p25	8 #6	28'-0"	
p26	8 #6	18'-0"	
p27	4 #5	26'-3"	
p28	6 #5	18'-6"	
ss	20 #4	9'-5"	
t1	10 #6	5'-9"	
t2	10 #6	6'-9"	
t3	33 #6	7'-9"	
u4	6 #6	9'-0"	
u6	6 #5	10'-0"	
u18	20 #4	7'-9"	
u19(E)	35 #6	10'-10"	
u20	59 #4	7'-0"	
u23	3 #5	8'-0"	
u25	24 #5	9'-3"	
v4	122 #4	6'-3"	
v8	24 #4	5'-9"	
v9	20 #4	6'-3"	
v12	20 #6	9'-9"	
v13	35 #4	7'-9"	
v14	20 #6	13'-6"	
v15	40 #6	17'-0"	
v16	42 #6	22'-0"	
v17	3 #6	20'-6"	
v18(E)	20 #4	4'-0"	
v19(E)	22 #5	5'-3"	
w8	13 #5	9'-9"	
w7	8 #6	18'-0"	
Class X Concrete Cu.Yd. 1486			
Reinforcement Bars Lbs. 12,240			
Reinf. Bars, Epoxy Ctd. Lbs. 1,240			
Metal Shell Piles Lin Ft. 1,465			
Test Piles, Conc. Ea. 2			

BARS h28, h29 & h30

h28	h29	h30
A	1'-6"	1'-6"
B	7'-9"	4'-9"
C	1'-3"	1'-3"
D	1'-2 1/2"	1'-2 1/2"
E	1'-9"	1'-9"

BAR h3

BAR h27

BAR ss

BARS u4, u6, u18 & u19

BAR	A	B
u4	4'-0"	2'-6"
u6	1'-2"	4'-5"
u18	4'-1"	1'-10"
u19	1'-2"	4'-10"

BAR v13

BAR v18(E)

WEST ABUTMENT
RAMP H
F.A.P. RTE. 431 SEC. 22-5HB-1
DU PAGE CO.
STA. 1250+83.16
STR. NO. 022-0137

HSIONG ASSOCIATES LTD.
DESIGNED: G.B.M. CHECKED: W.H.
DRAWN: D.D.R. DATE: NO. H-042-2

FOR INFORMATION ONLY

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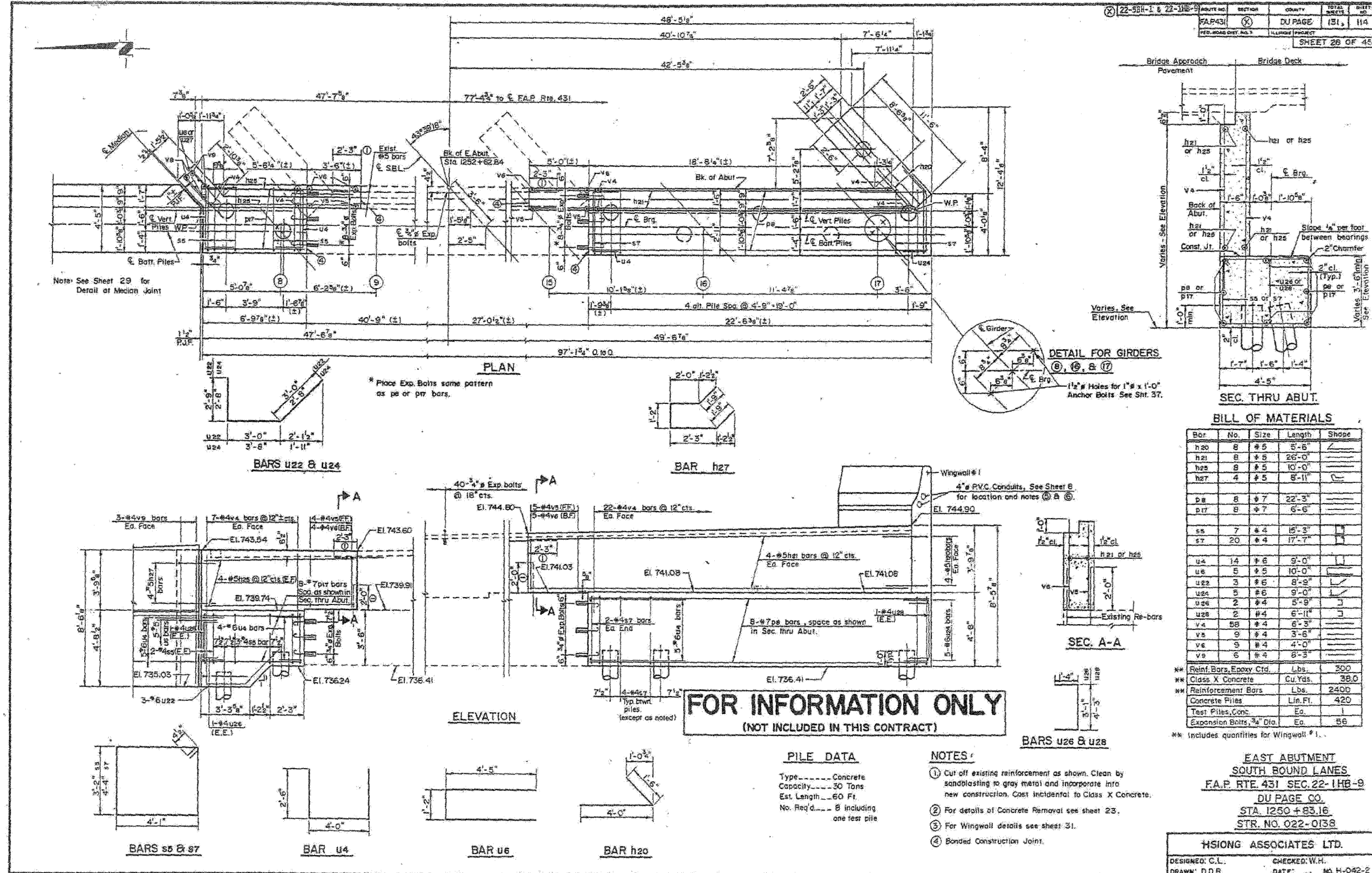
alfred benesch & company
Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 31	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	406
38 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

EXISTING PLAN INFORMATION 14 OF 21
STRUCTURE NO. 022-0138

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

22-504-1 & 22-118-9	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP431	(X)	DUPAGE	151	114
SHEET 26 OF 45				



BILL OF MATERIALS

Bar	No.	Size	Length	Shape
h20	8	#5	5'-6"	
h21	8	#5	26'-0"	
h22	8	#5	10'-0"	
h27	4	#5	8'-11"	
D8	8	#7	22'-3"	
D17	8	#7	6'-6"	
S5	7	#4	15'-3"	
S7	20	#4	17'-7"	
U4	14	#6	9'-0"	
U6	5	#5	10'-0"	
U22	3	#6	8'-9"	
U24	5	#6	9'-0"	
U26	2	#4	5'-9"	
U28	2	#4	6'-11"	
V4	58	#4	6'-3"	
V5	9	#4	3'-6"	
V6	9	#4	4'-0"	
V9	6	#4	8'-3"	
** Includes quantities for Wingwall #1.				

FOR INFORMATION ONLY
(NOT INCLUDED IN THIS CONTRACT)

PILE DATA

Type-----Concrete
Capacity-----30 Tons
Est. Length-----60 Ft.
No. Req'd-----8 including one test pile

NOTES

- Cut off existing reinforcement as shown. Clean by sandblasting to gray metal and incorporate into new construction. Cost incidental to Class X Concrete.
- For details of Concrete Removal see sheet 23.
- For Wingwall details see sheet 31.
- Bonded Construction Joint.

FOR INFORMATION ONLY

benesch

alfred benesch & company
Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0460 Job No. 10050

SHEET NO. 32	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 407
38 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

EAST ABUTMENT
SOUTH BOUND LANES
F.A.P. RTE. 431 SEC. 22-118-9
DU PAGE CO.
STA. 1250 + 83.16
STR. NO. 022-0138

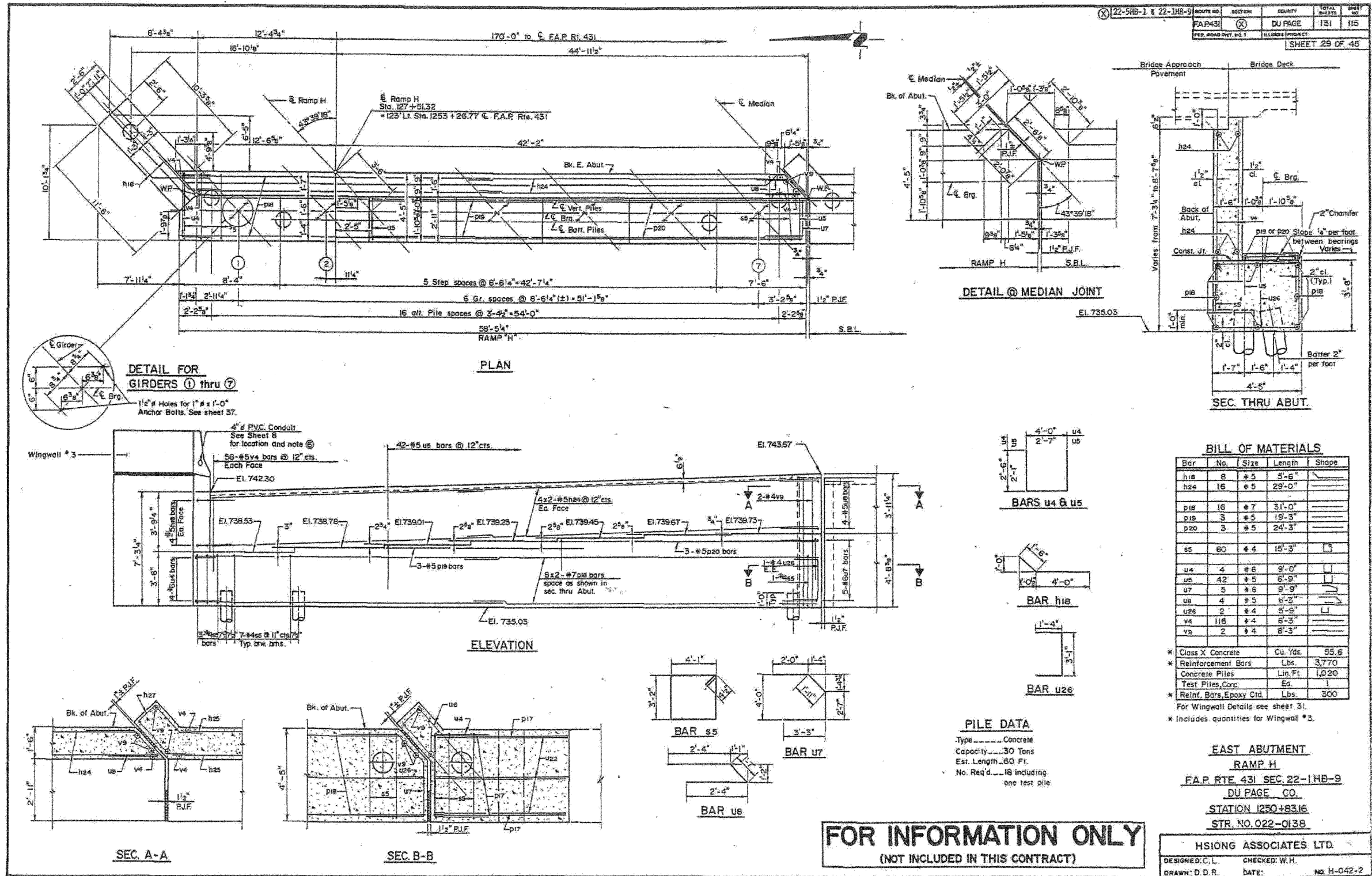
HSIONG ASSOCIATES LTD.
DESIGNED: C.L. CHECKED: W.H.
DRAWN: D.D.R. DATE: NO. H-042-2

EXISTING PLAN INFORMATION 15 OF 21
STRUCTURE NO. 022-0138

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22-1HB-1 & 22-1HB-9	FAP431	DUPAGE	131	115
SHEET 29 OF 45				



BILL OF MATERIALS

Bar	No.	Size	Length	Shape
h18	8	#5	5'-6"	
h24	16	#5	29'-0"	
p18	16	#7	31'-0"	
p19	3	#5	19'-3"	
p20	3	#5	24'-3"	
s5	80	#4	15'-3"	
u4	4	#6	9'-0"	
u5	42	#5	6'-9"	
u7	5	#6	9'-9"	
u8	4	#5	6'-2"	
u26	2	#4	5'-9"	
v4	115	#4	6'-3"	
v9	2	#4	6'-3"	

* Class X Concrete Cu. Yds. 55.6
* Reinforcement Bars Lbs. 3,770
* Concrete Piles Lin. Ft. 1,020
* Test Piles, Conc. Ea. 1
* Reinf. Bars Epoxy Ctd. Lbs. 300

For Wingwall Details see sheet 31.
* Includes quantities for Wingwall #3.

EAST ABUTMENT
RAMP H
F.A.P. RTE. 431 SEC. 22-1HB-9
DU PAGE CO.
STATION 1250+83.16
STR. NO. 022-0138

HSIONG ASSOCIATES LTD.
DESIGNED: C.L. CHECKED: W.H.
DRAWN: D.D.R. DATE: NO. H-042-2

FOR INFORMATION ONLY
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alfred benesch & company
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Chicago, Illinois 60601
312-555-0450 Job No. 10050

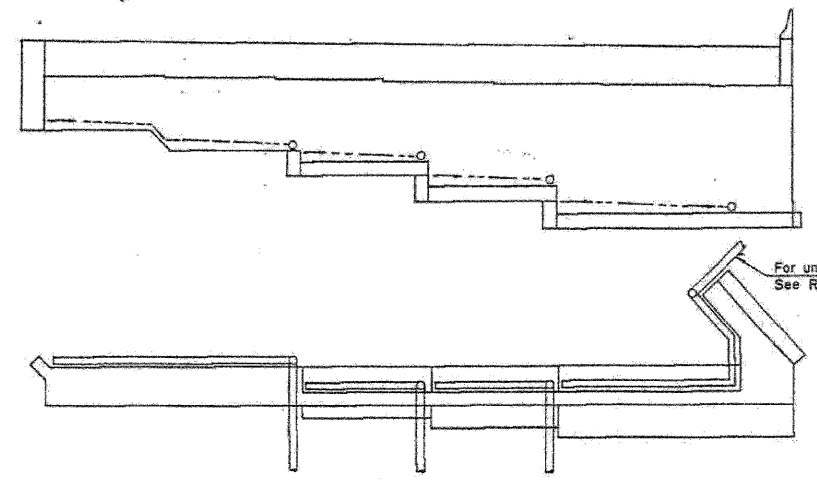
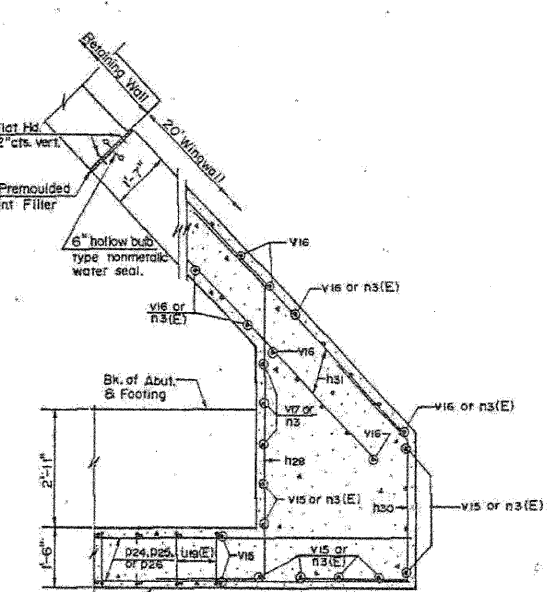
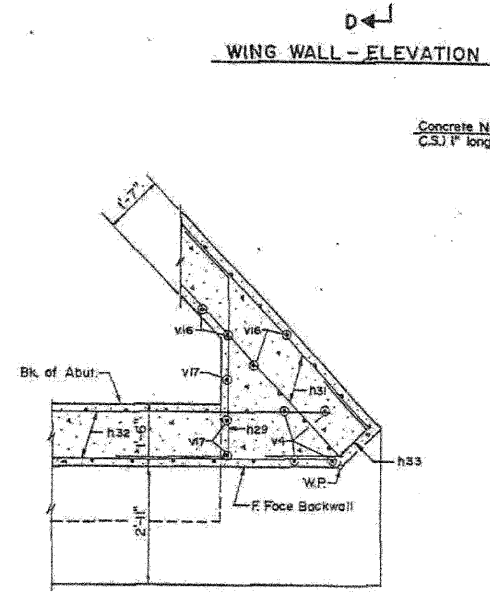
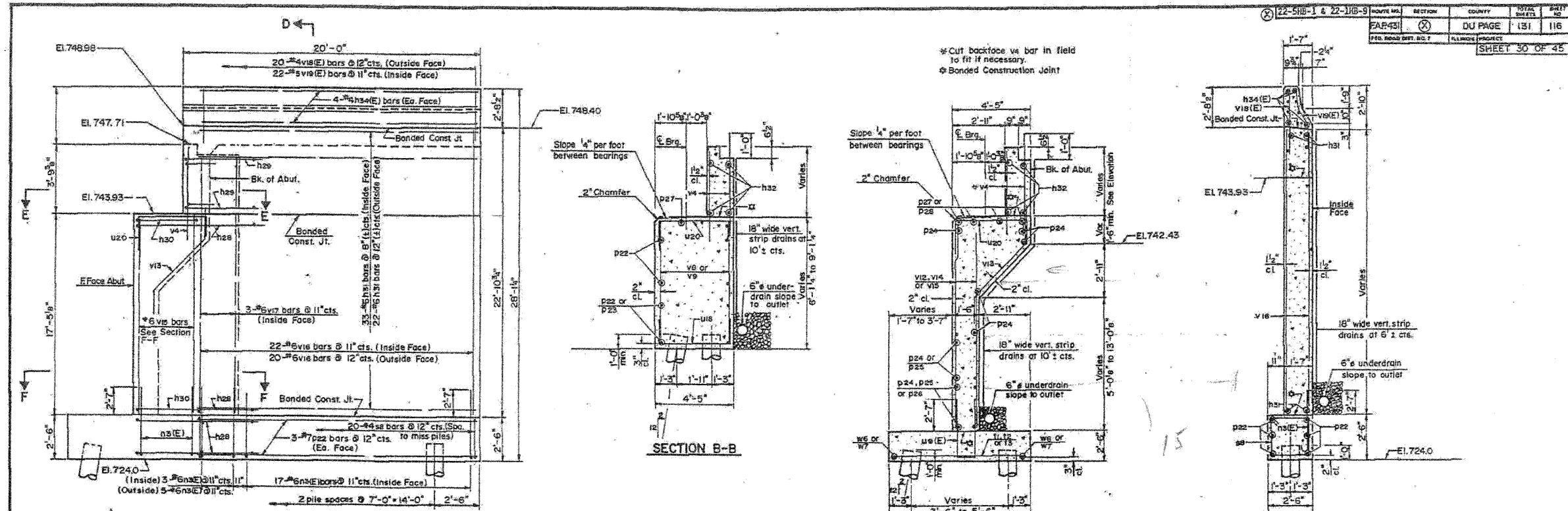
SHEET NO. 33	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 408
38 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 16 OF 21
STRUCTURE NO. 022-0138

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 11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22-518-1 & 22-118-9	FAR 431	DUPAGE	131	116
SHEET 30 OF 45				



NOTE:
Cost of vertical strip drains
is incidental to Class X
Concrete

WINGWALL DETAILS
RAMP H
F.A.P. RTE. 431 SEC. 22-118-9
DU PAGE CO.
STATION 1250+83.16
STR. NO. 022-0138

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(NOT INCLUDED IN THIS CONTRACT)

Work this sheet with sheet 27

HSIONG ASSOCIATES LTD.
DESIGNED: G.B.M. CHECKED: W.H.
DRAWN: F.J. DATE: NO.H-042-2

EXISTING PLAN INFORMATION 17 OF 21
STRUCTURE NO. 022-0138

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312-565-0450 Job No. 10050

SHEET NO. 34	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	409
38 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

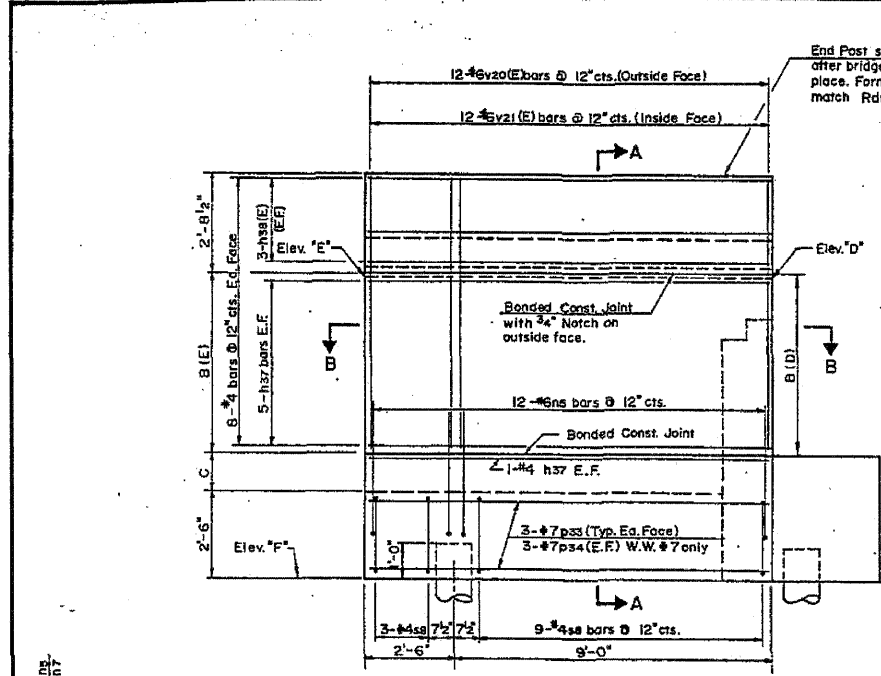
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

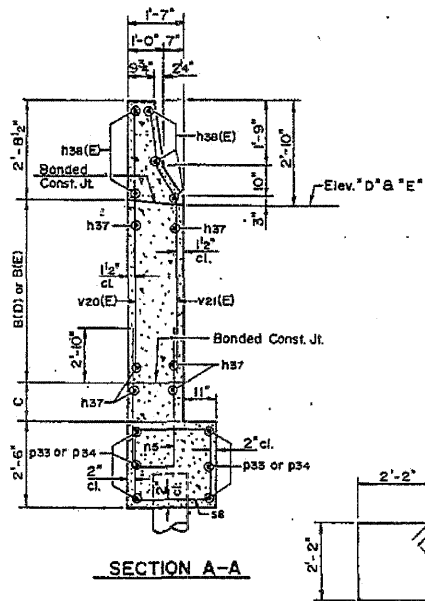
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22-5HB-1 & 22-1HB-9	DU PAGE	DUPAGE	131	117
SHEET 31 OF 45				

TABLE OF DIMENSIONS

Location	B(D)	9(E)	C	W.W. Nos.
S.B.L. Southeast	5'-1"	4'-10"	2'-2"	1
S.B.L. Southwest	5'-10"	5'-4 1/2"	2'-4 1/2"	2
N.B.L. Northeast	4'-10"	4'-7"	1'-0"	3
N.B.L. Southeast	5'-0 1/4"	4'-9 3/4"	1'-8 1/4"	4
N.B.L. Southwest	5'-1 1/2"	5'-4 3/8"	1'-0"	5
N.B.L. Northeast	4'-11 1/8"	4'-9"	1'-0"	6
N.B.L. Northwest	5'-0 3/8"	5'-3 3/8"	1'-0"	7



ELEVATION - FOR WINGWALLS #3, #5, #6 & #7



SECTION A-A

ELEVATION "D"

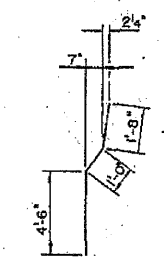
S.B.L.	West Abut. East Abut.	
	North WW	South WW
N.B.L.	751.50	746.03
N.B.L.	752.27	747.05
N.B.L.	752.62	746.22

ELEVATION "E"

S.B.L.	West Abut. East Abut.	
	North WW	South WW
N.B.L.	743.00	735.03
N.B.L.	751.74	745.79
N.B.L.	752.50	746.81
N.B.L.	752.85	748.01

ELEVATION "F"

S.B.L.	West Abut. East Abut.	
	North WW	South WW
N.B.L.	743.63	736.41
N.B.L.	743.86	738.69
N.B.L.	744.12	739.13



BAR v21(E)

BAR LIST - ONE WINGWALL FOR WINGWALLS #3, #5, #6 & #7

BAR	NO.	SIZE	LENGTH	SHAPE
n37	12	#4	11'-3"	
h38(E)	6	#4	11'-3"	
n5	12	#6	11'-4"	
p33	6	#7	13'-0"	
p34	6	#7	11'-0"	
s8	12	#4	9'-5"	
v20(E)	12	#6	7'-0"	
v21(E)	12	#6	7'-2"	

** Typical except for Wingwall #7
** For Wingwall #7 only

BAR LIST - ONE WINGWALL FOR WINGWALLS #1, #2 & #4

BAR	NO.	SIZE	LENGTH	SHAPE
h37	14	#4	11'-3"	
h38(E)	6	#4	11'-3"	
n7	12	#6	14'-0"	
p33	6	#7	13'-0"	
p34	6	#7	11'-0"	
s8	12	#4	9'-5"	
v20(E)	12	#6	7'-0"	
v21(E)	12	#6	7'-2"	

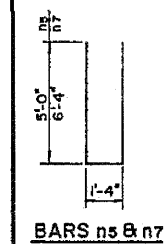
*** For Wingwalls #1 & #4
*** For Wingwall #2 Reinforcement Bars designated (E) shall be epoxy coated.

WINGWALL DETAILS
F.A.P. ROUTE 431

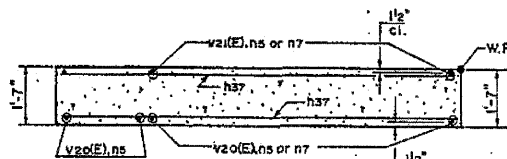
SECTIONS 22-5HB-1 & 22-1HB-9
DU PAGE CO.
STATION 1250+83.16
STRUCTURE NOS. 022-0137 & 022-0138

HSIONG ASSOCIATES LTD.
DESIGNED: C.L. CHECKED: W.H.
DRAWN: F.D.J. & R.H.H. DATE: 04-11-04

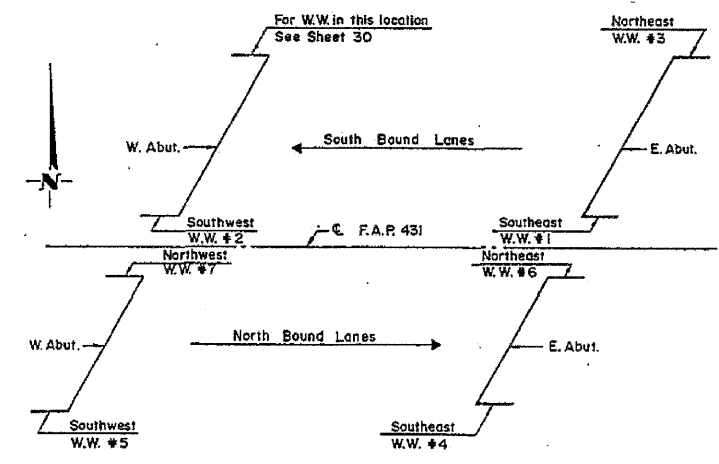
FOR INFORMATION ONLY
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BARS n5 & n7

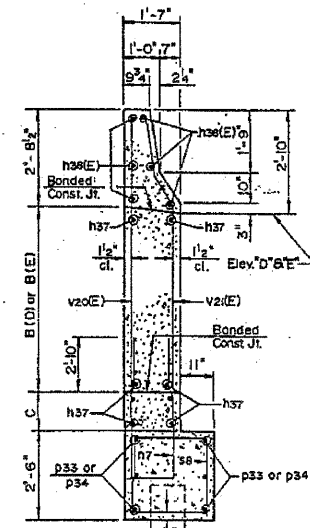


SECTION B-B

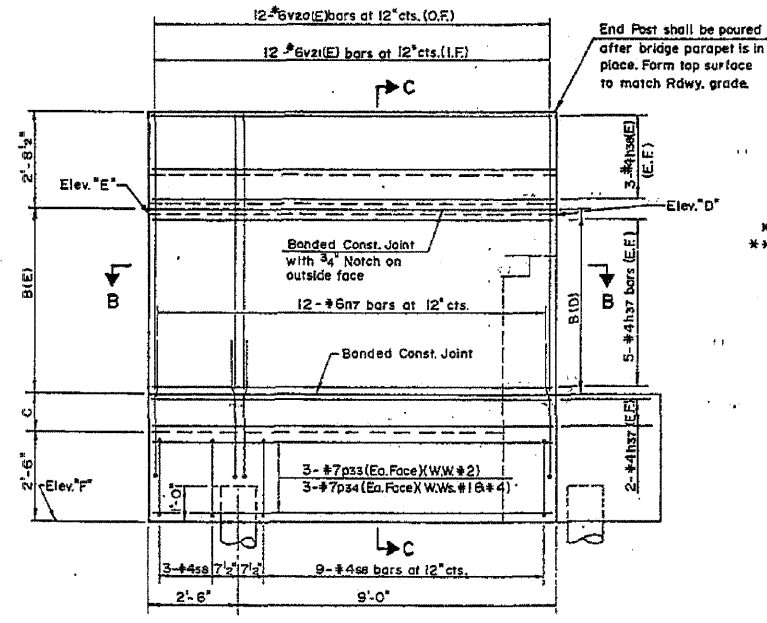


KEY SKETCH

Work this Sheet with Sheets 24, 25, 26, 28 & 29



SECTION C-C



ELEVATION - FOR WINGWALLS #1, #2 & #4

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312-565-0460 Job No. 10050

SHEET NO. 35	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 410
38 SHEETS	CONTRACT NO. 60G51		ILLINOIS FED. AID PROJECT		

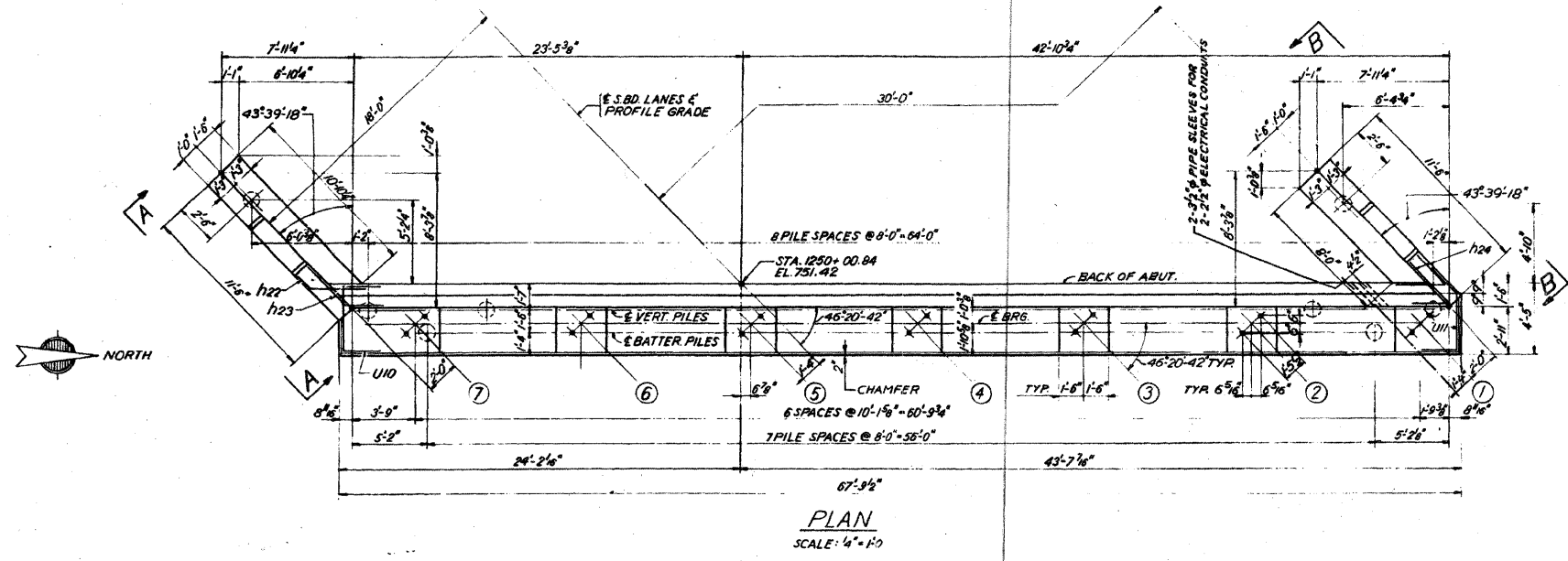
EXISTING PLAN INFORMATION 18 OF 21
STRUCTURE NO. 022-0138

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 290	22(1, 1-1, 2&3)RS-7	DUPAGE	181	102
STA.	TO STA.	PROJECT		
1250+83.16				

SHEET 15 OF 25

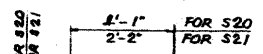
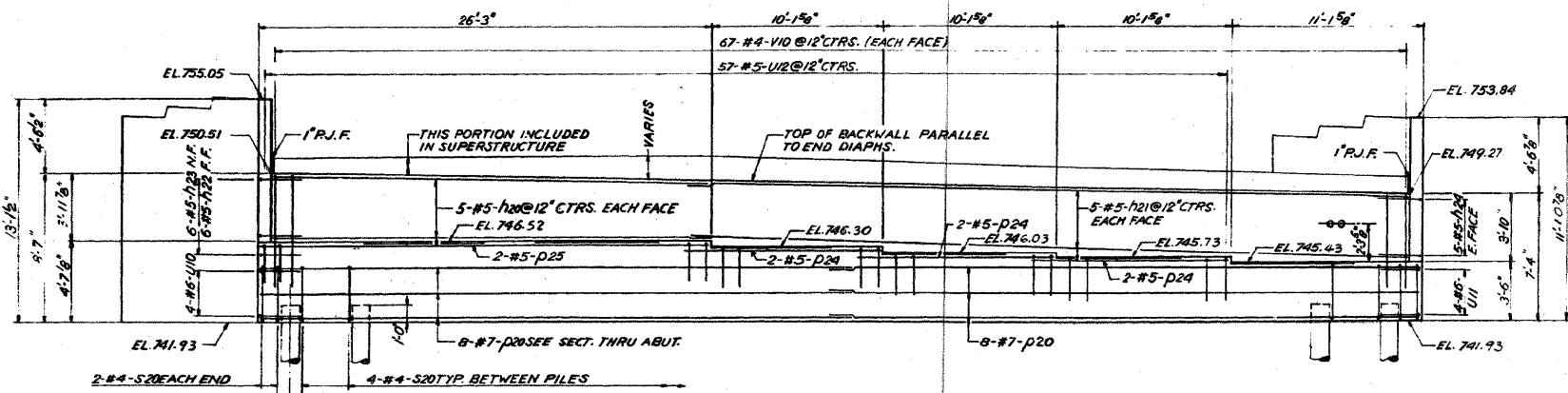


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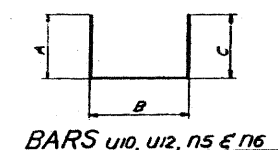
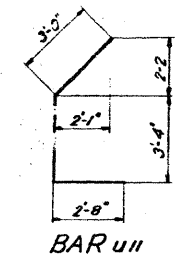
BAR	NO.	SIZE	LENGTH	SHAPE
h20	10	#5	26'-9"	U
h21	10	#5	42'-0"	U
h22	6	#5	4'-3"	U
h23	6	#5	5'-3"	U
h24	10	#5	6'-0"	U
h25	38	#4	11'-3"	U
h26	4	#4	7'-6"	U
h27	4	#4	3'-2"	U
n15	12	#5	10'-9"	U
n16	12	#5	8'-3"	U
D20	16	#7	34'-6"	U
D21	6	#7	13'-0"	U
D22	3	#7	13'-3"	U
D23	3	#7	12'-0"	U
D24	6	#5	11'-3"	U
D25	2	#5	28'-0"	U
S20	68	#4	16'-3"	U
S21	24	#4	9'-5"	U
U10	4	#6	9'-0"	U
U11	4	#6	9'-0"	U
U12	57	#5	6'-9"	U
V10	134	#4	6'-0"	U
V11	16	#4	7'-3"	U
V12	16	#4	7'-9"	U
V13	8	#4	8'-5"	U
V14	8	#4	8'-3"	U
CLASS X CONCRETE	CU. YDS.	71.2		
REINF. BARS	LBS.	5100		
CONCRETE PILES	LIN. FT.	1350		

PILE DATA

TYPE CONCRETE
CAPACITY 30 TONS
EST. LENGTH 75'
*NO. REQUIRED 19
*INCLUDES 1 TEST PILE

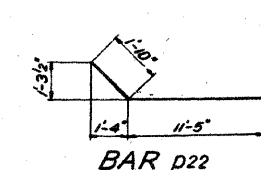
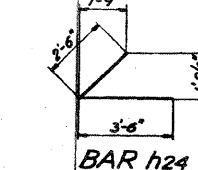
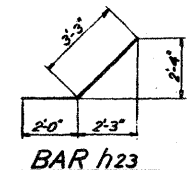
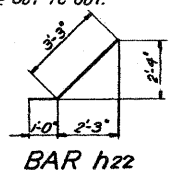


BARS S20 & S21



NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT.

BAR	A	B	C
U10	2'-6"	4'-0"	2'-6"
U12	2'-1"	2'-7"	2'-1"
n15	5'-0"	9"	5'-0"
n16	3'-9"	9"	3'-9"



WEST ABUTMENT-SOUTH BOUND
F.A.P.ROUTE 61 OVER
ILLINOIS ROUTE 53(ROHLWING ROAD);
PROJECT
SECTIONS 22-5HB-1E 22-1HB-9
DUPAGE COUNTY
STATION 1250+83.16

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
10 S. WABASH AVE. CHICAGO, ILLINOIS

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Chicago, Illinois 60601
312-565-0460 Job No. 10050

SHEET NO. 36	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 411
38 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

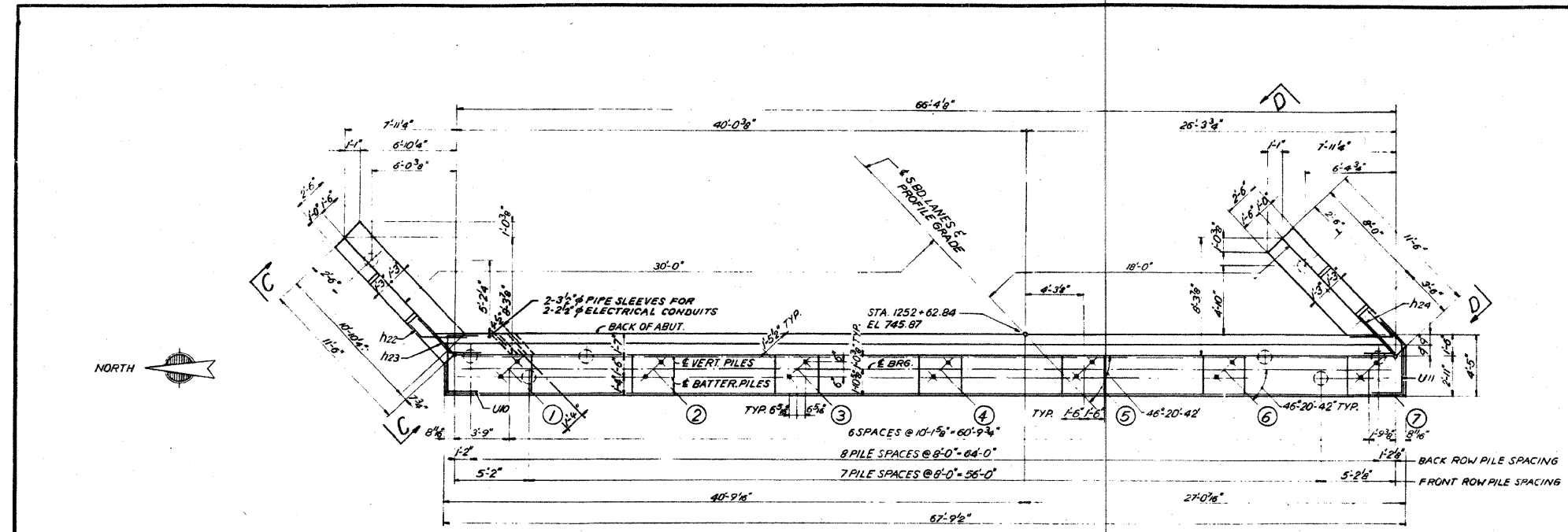
EXISTING PLAN INFORMATION 19 OF 21
STRUCTURE NO. 022-0138

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. PG 1	22-5HB-1	DUPAGE	181	103
STA.	TO STA.			
S.P. & REG. NO. 4		ILLINOIS	PROJECT	

SHEET 16 OF 25



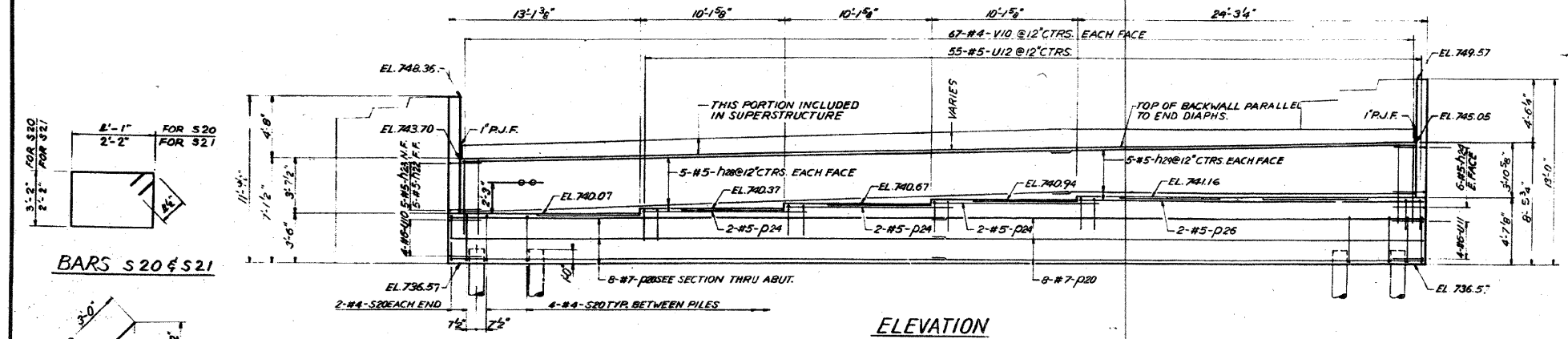
PLAN
SCALE: 1/4"=1'-0"

BILL OF MATERIAL

BAR NO	SIZE	LENGTH	SHAPE
h22	#5	4'-3"	U
h23	#5	5'-3"	U
h24	#5	6'-0"	U
h25	#4	11'-3"	U
h26	#4	7'-6"	U
h27	#4	3'-6"	U
h28	#5	43'-6"	U
h29	#5	24'-9"	U
u10	#5	10'-9"	U
u11	#5	8'-3"	U
u12	#5	8'-3"	U
u10	#7	34'-0"	U
u11	#7	13'-0"	U
u12	#7	13'-3"	U
u23	#7	12'-0"	U
u24	#5	11'-3"	U
u25	#5	24'-0"	U
s20	#4	15'-3"	U
s21	#4	9'-5"	U
u10	#6	9'-0"	U
u11	#6	9'-0"	U
u12	#5	6'-9"	U
v10	#4	6'-0"	U
v11	#4	7'-3"	U
v14	#4	8'-3"	U
v15	#4	6'-6"	U
v16	#4	8'-0"	U
v17	#4	7'-6"	U
v18	#4	6'-9"	U
CLASS 'X' CONCRETE CU. YDS.			70.2
REINF. BARS LBS			5060
CONCRETE PILES LIN. FT.			1080

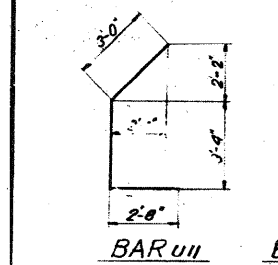
PILE DATA

TYPE CONCRETE
CAPACITY 30 TONS
EST. LENGTH 60
*NO. REQUIRED 19
*INCLUDES 1 TEST PILE



ELEVATION

BARS S20 & S21



NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT

BAR	A	B	C
U10	2'-6"	4'-0"	2'-6"
U12	2'-1"	2'-7"	2'-1"
h22	5'-0"	9"	5'-0"
h23	3'-9"	9"	3'-9"

EAST ABUTMENT-SOUTH BOUND
F.A. ROUTE 61 OVER
ILLINOIS ROUTE 53 (ROHLWING ROAD)
PROJECT
SECTIONS 22-5HB-1 & 22-1HB-9
DUPAGE COUNTY
STATION 1250+83.16

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
18 S. WABASH AVE. CHICAGO, ILLINOIS

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Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-665-0450 Job No. 10050

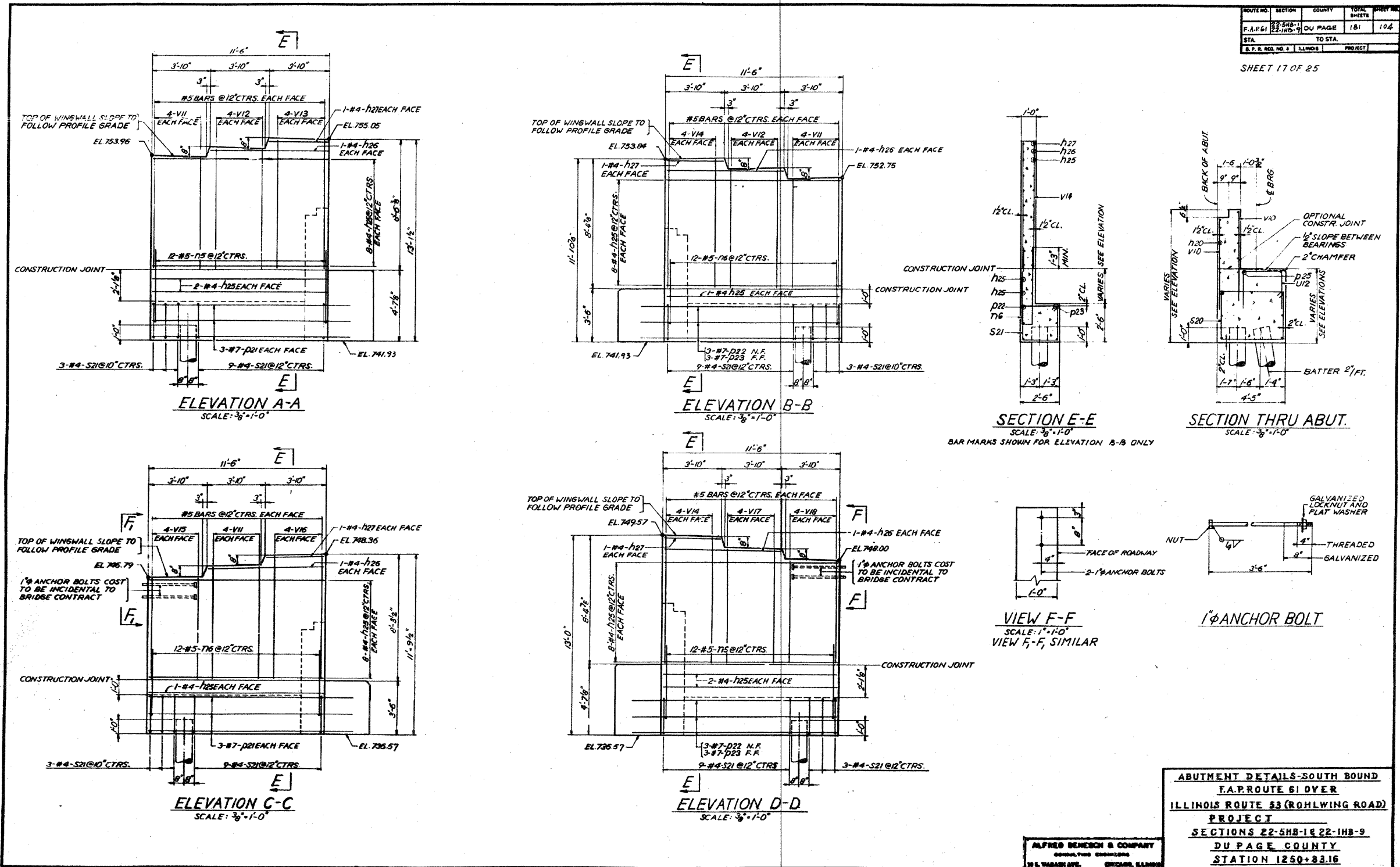
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38 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 20 OF 21
STRUCTURE NO. 022-0138

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 61	22-SHB-1	DUPAGE	181	104
STA.	TO STA.			
E.P. & R. NO. 1	ILLINOIS	PROJECT		

SHEET 17 OF 25



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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 38	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 413
38 SHEETS	355			CONTRACT NO. 60G51	
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	

EXISTING PLAN INFORMATION 21 OF 21
STRUCTURE NO. 022-0138

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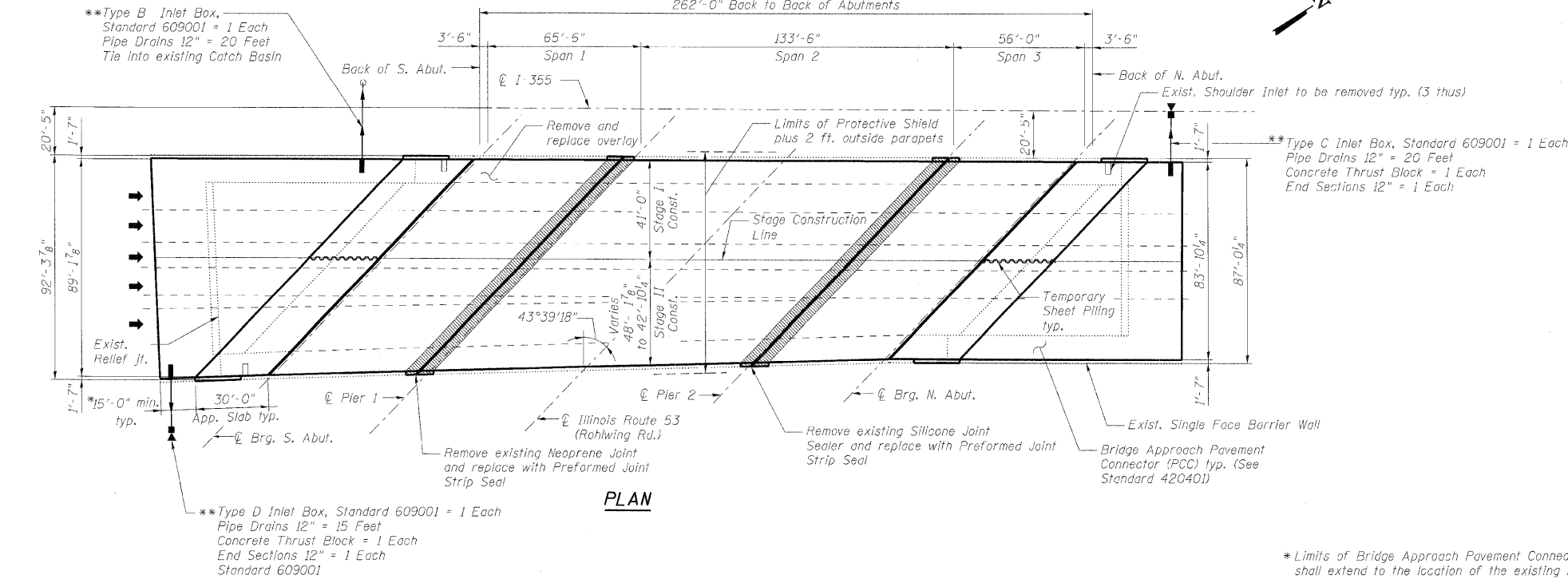
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure:
The structure is a three-span composite plate girder bridge with pin and link hinged connections in Spans 1 and 3.
The original structure was built in 1970 as F.A.P. Route 61 Section 22-5HB-1 & 22-1HB-9. In 1984, the bridge was widened and overlaid and the expansion joints were reconstructed. In 1988, the expansion joint at the north pier was replaced. In 1995, the pin and link connections were replaced. In 1997, a portion of the overlay was replaced.

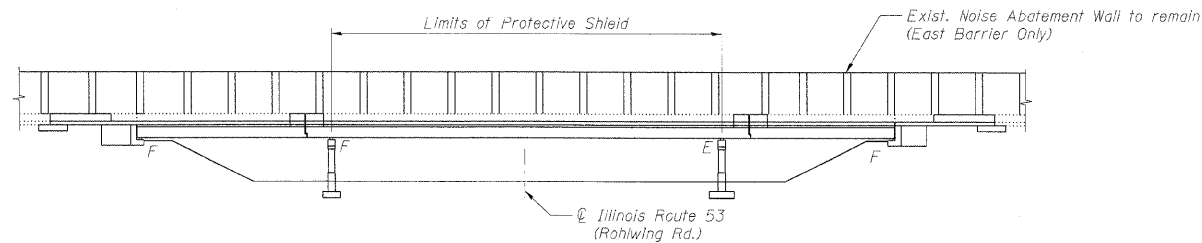
Bench Mark: Chiseled "□" on the South Wingwall of the West Abutment for the Northbound structure. E.L. 755.09

Stage construction shall be utilized to maintain traffic during construction.

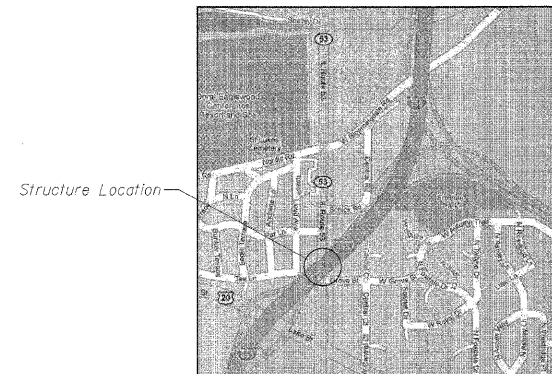
No salvage



PLAN



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

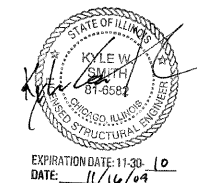
$f'_c = 3,500$ psi
 $f_y = 60,000$ psi

SCOPE OF WORK

1. Remove bridge approach slabs.
2. Bridge Deck Hydro-scarification.
3. Repair bridge deck.
4. Reconstruct deck joints at each pier with preformed joint strip seal.
5. Place New Overlay.
6. Stabilize abutments.
7. Replace bridge approach slabs and approach pavement connectors.
8. Install inlets at approach shoulders.
9. Trim beam ends at pin and link connection.
10. Apply Protective Coat.

* Limits of Bridge Approach Pavement Connector (PCC) shall extend to the location of the existing relief joint, 6'-0" beyond the limits of the Proposed Bridge Approach Slab per Hwy. Std. 420401, or 15'-0" beyond the limits of the proposed Bridge Approach Slab per Hwy. Std. 609001 wherever shoulder inlets are proposed.

** Match existing shoulder elevations. Position the inlet box and pipe drain between existing barrier wall shafts at locations where the noise abatement wall is mounted on the barrier wall.



GENERAL PLAN AND ELEVATION
I-355 NB OVER ILLINOIS ROUTE 53
DUPAGE COUNTY
STATION 106+46
STRUCTURE NO. 022-0137

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

benesch

alfred benesch & company
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 1 32 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 414
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOTAL BILL OF MATERIAL

GENERAL NOTES

- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.
- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- If the contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
- The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing pile. This connection shall be reviewed and accepted by the Engineer and included in the cost of Temporary Sheet Piling.
- Stage construction shall be utilized to maintain traffic during construction.
- The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
- Protective Coat shall be applied to the new Bridge Deck Latex Concrete Overlay and Approach Slabs as well as the top and inside faces of Parapets.
- Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

- General Plan and Elevation
- General Notes, Bill of Material and Index of Sheets
- Stage Construction Details
- Temporary Concrete Barrier for Stage Construction
- Bridge Deck and Approach Slab Repairs
- South Bridge Approach Slab Details 1 of 2
- South Bridge Approach Slab Details 2 of 2
- North Bridge Approach Slab Details 1 of 2
- North Bridge Approach Slab Details 2 of 2
- Expansion Joint Repairs
- Expansion Joint Details
- Preformed Joint Strip Seal
- Steel Repair Details
- Abutment Stabilization Details
- Bar Splicer Assembly Details
- Existing Plan Information

ITEM	UNIT	SUPER	SUB	TOTAL
Bridge Approach Pavement Connector (PCC)	Sq. Yd.	1,076		1,076
Pavement Reinforcement 9"	Sq. Yd.	1,076		1,076
Approach Slab Removal	Sq. Yd.	1,650		1,650
Concrete Barrier Removal	Foot	79.0		79.0
Concrete Removal	Cu. Yd.	55.7		55.7
Protective Shield	Sq. Yd.	1,389		1,389
* Structure Excavation	Cu. Yd.		488	488
Concrete Structures	Cu. Yd.		76.5	76.5
Concrete Superstructure	Cu. Yd.	320.9		320.9
Bridge Deck Grooving	Sq. Yd.	2,934		2,934
Protective Coat	Sq. Yd.	3,354		3,354
Reinforcement Bars, Epoxy Coated	Pound	71,150	14,060	85,210
Bar Splicers	Each	178	80	258
Temporary Sheet Piling	Sq. Ft.		296	296
Preformed Joint Strip Seal	Foot	243.0		243.0
End Sections 12"	Each	2		2
Geocomposite Wall Drain	Sq. Yd.		189	189
Pipe Drains 12"	Foot	55		55
Pipe Underdrains for Structures 4"	Foot		252	252
Removing Inlets	Each	3		3
Type B Inlet Box, Standard 609001	Each	1		1
Type C Inlet Box, Standard 609001	Each	1		1
Type D Inlet Box, Standard 609001	Each	1		1
Concrete Thrust Blocks	Each	2		2
Bridge Deck Latex Concrete Overlay, 2 1/2"	Sq. Yd.	2,412		2,412
Expanded Polystyrene Fill	Cu. Yd.		303	303
Bridge Deck Hydro-Scarification, 2 1/2"	Sq. Yd.	2,412		2,412
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	23.8		23.8
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	17.1		17.1
Modify Existing Pin & Link Connection	L. Sum	0.25		0.25

* All excavated materials shall be disposed of within IDOT right-of-way and within the project limits. See the General Notes sheet from the roadway plans for more information.

GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 022-0137

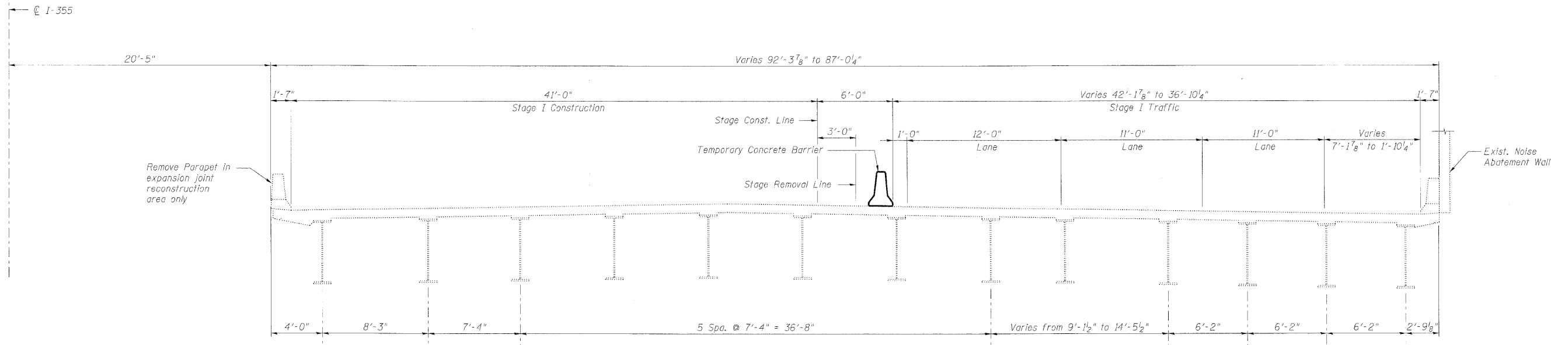
DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

benesch

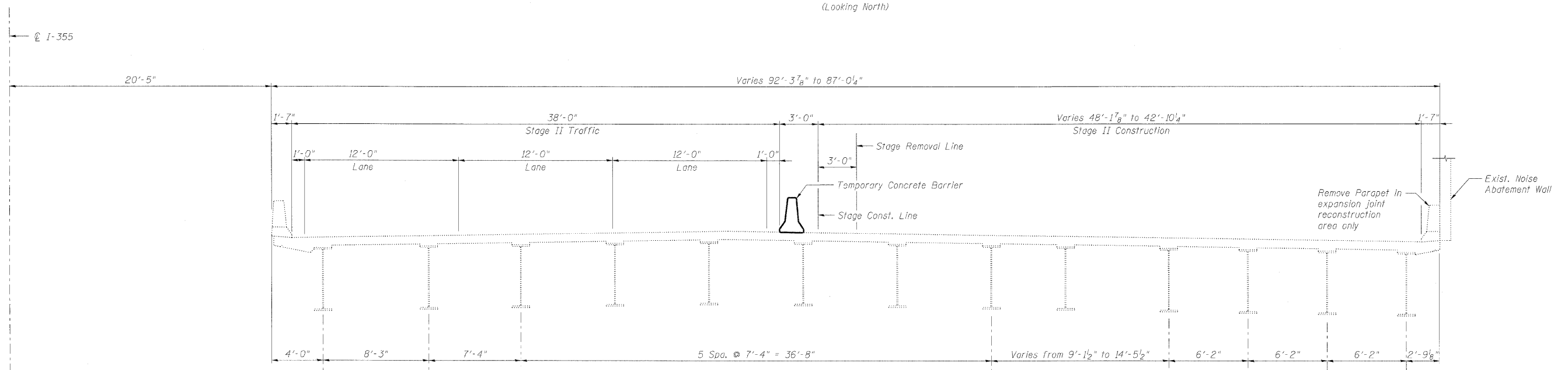
alfred benesch & company
Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-666-0460 Job No. 10050

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290				
31 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking North)



STAGE II CROSS SECTION
(Looking North)

Notes:

1. For quantity of Temporary Concrete Barrier, see roadway plans.
2. Temporary Concrete Barrier to be anchored to the approach slabs adjacent to locations of Structure Excavation. For Temporary Concrete Barrier Details, see Temporary Concrete Barrier for Stage Construction sheet.

DESIGNED -	MFB
CHECKED -	MAC
DRAWN -	VH
CHECKED -	KWS

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 022-0137

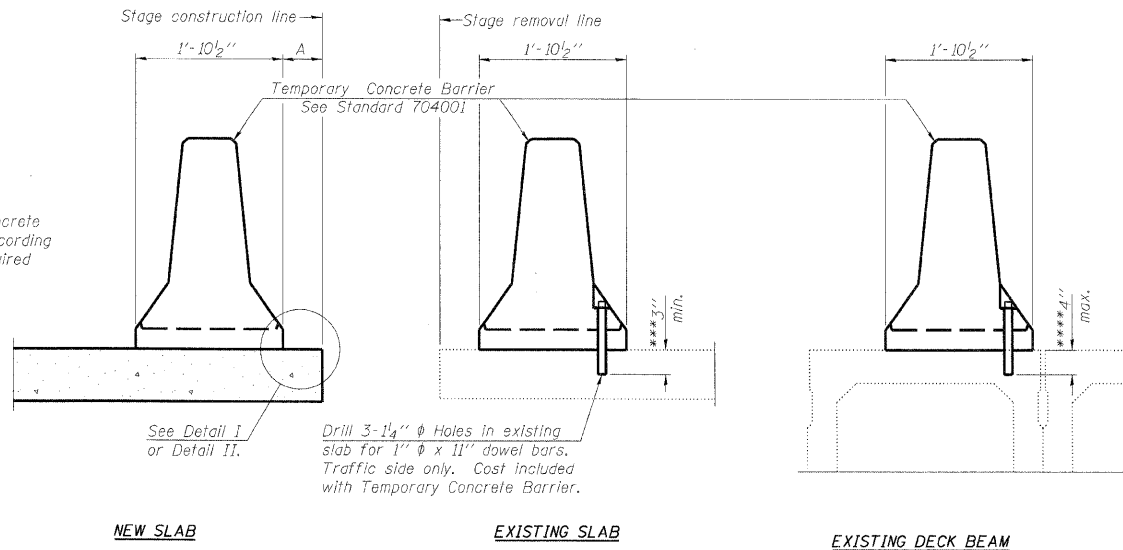
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 3 32 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 416
	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

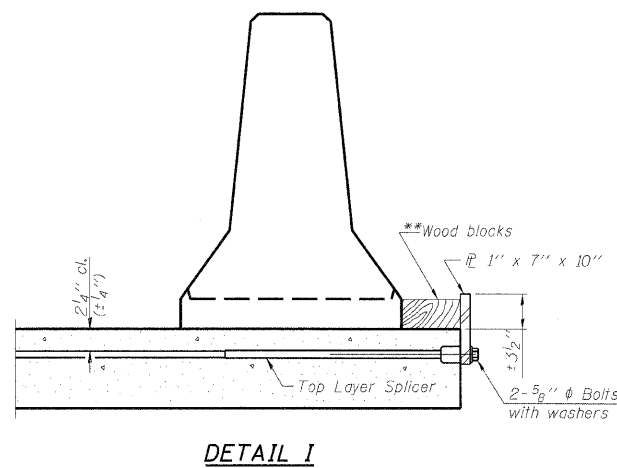
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{r} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{c} of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{r} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place Inserts spaced between the top layer of reinforcement at approximate \bar{c} of each barrier panel.

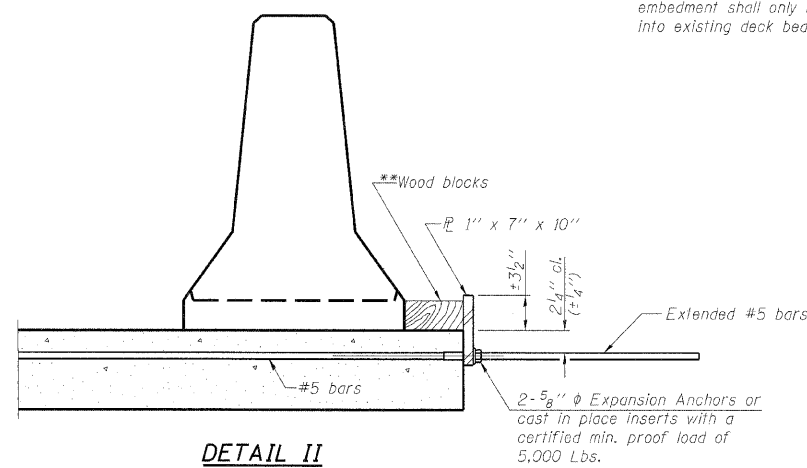
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after construction, embedment shall only be into wearing surface and not into existing deck beam concrete.

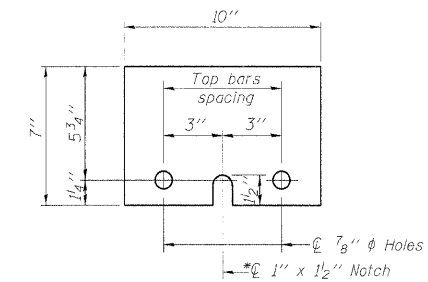


DETAIL I



DETAIL II

**Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.



STEEL RETAINER \bar{r} 1" x 7" x 10"

* Required only with Detail II

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

R-27

10-1-08

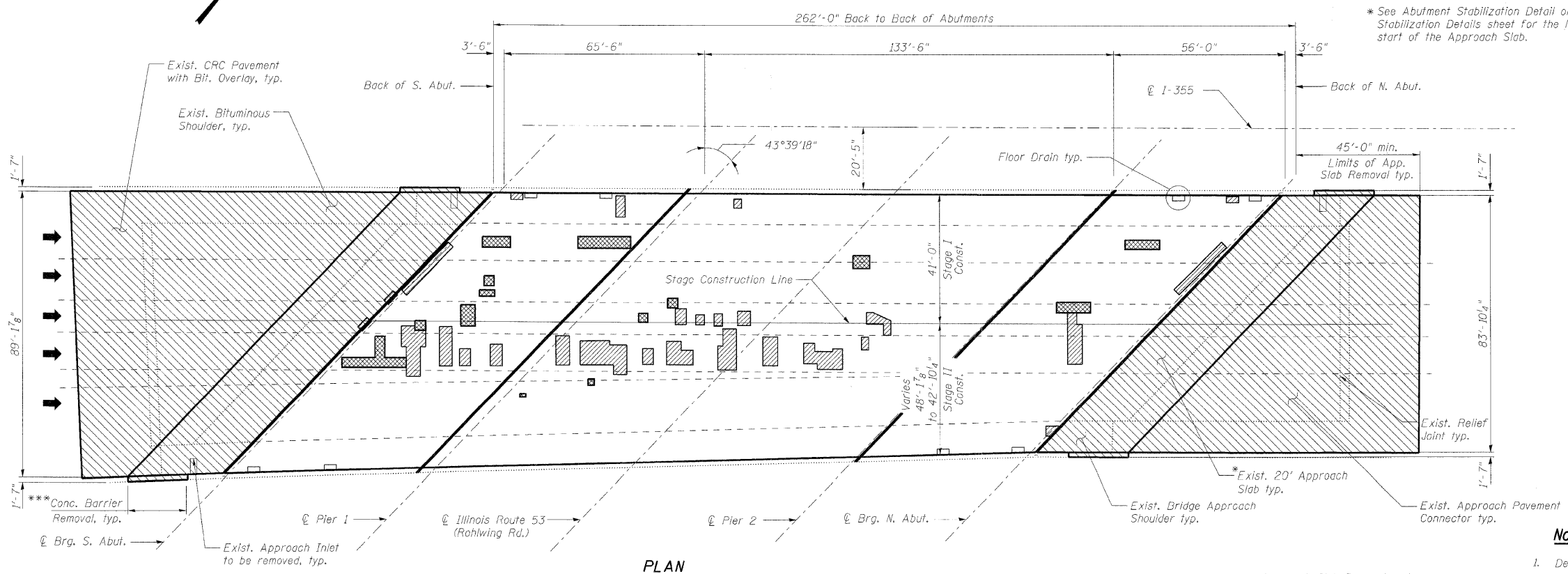
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Chicago, Illinois 60601
312-665-0460 Job No. 10050

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 022-0137

SHEET NO. 4 32 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 417
	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			CONTRACT NO. 60G51	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	105.2 [▲]
	Deck Slab Repair (Full Depth - Type I)	Sq. Yd.	23.8
	Deck Slab Repair (Full Depth - Type II)	Sq. Yd.	17.1
	Protective Shield	Sq. Yd.	1,389
	Protective Coat	Sq. Yd.	2,744
	Bridge Deck Grooving	Sq. Yd.	2,370
	Bridge Deck Latex Concrete Overlay, 2 1/2"	Sq. Yd.	2,412
	Bridge Deck Hydro-Scarification, 2 1/2"	Sq. Yd.	2,412

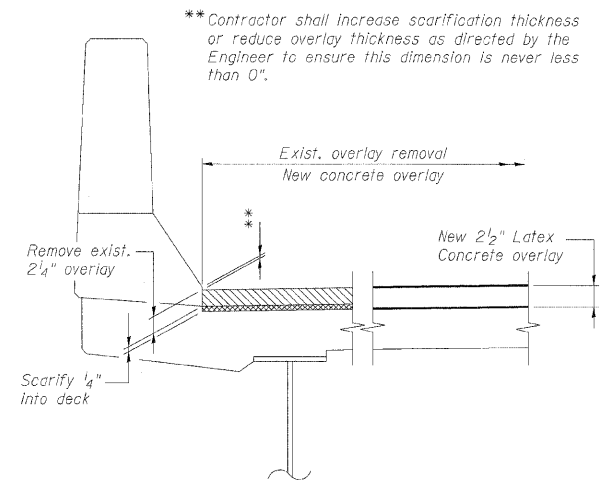
▲ For information only to assist the Contractor in bidding. See Special Provision for "Bridge Deck Latex Concrete Overlay".

Notes:

- Deck and approach slab repair areas are estimated based on infrared thermographic deck survey and visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield see General Plan and Elevation sheet.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 2 1/2".
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2 1/2".
- See Approach Slab Details sheets for Approach Slab removal and replacement details and quantities. See the Special Provisions for "Approach Slab Removal" and "Concrete Barrier Removal".
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and shall protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.

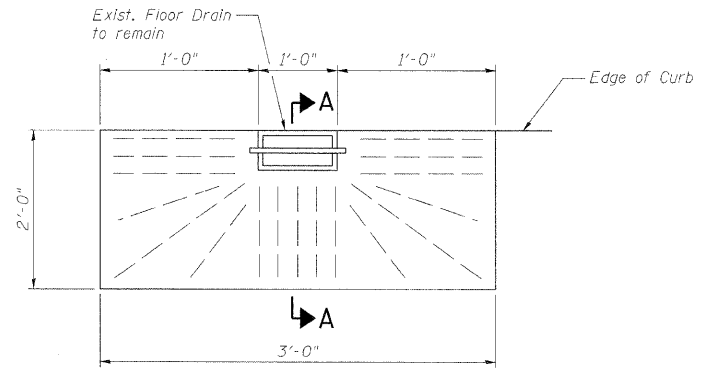
**BRIDGE DECK
AND APPROACH SLAB REPAIRS
STRUCTURE NO. 022-0137**

***Limits of Concrete Barrier Removal shall match the limits of proposed parapet on the approaches. See sheets 6 thru 9 for details.

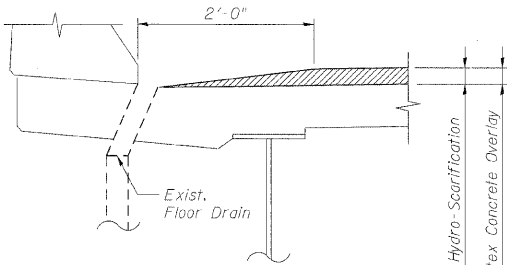


**SCARIFICATION & OVERLAY
DETAIL AT PARAPET**

PLAN



PLAN



SECTION A-A

CONCRETE OVERLAY AT FLOOR DRAIN

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

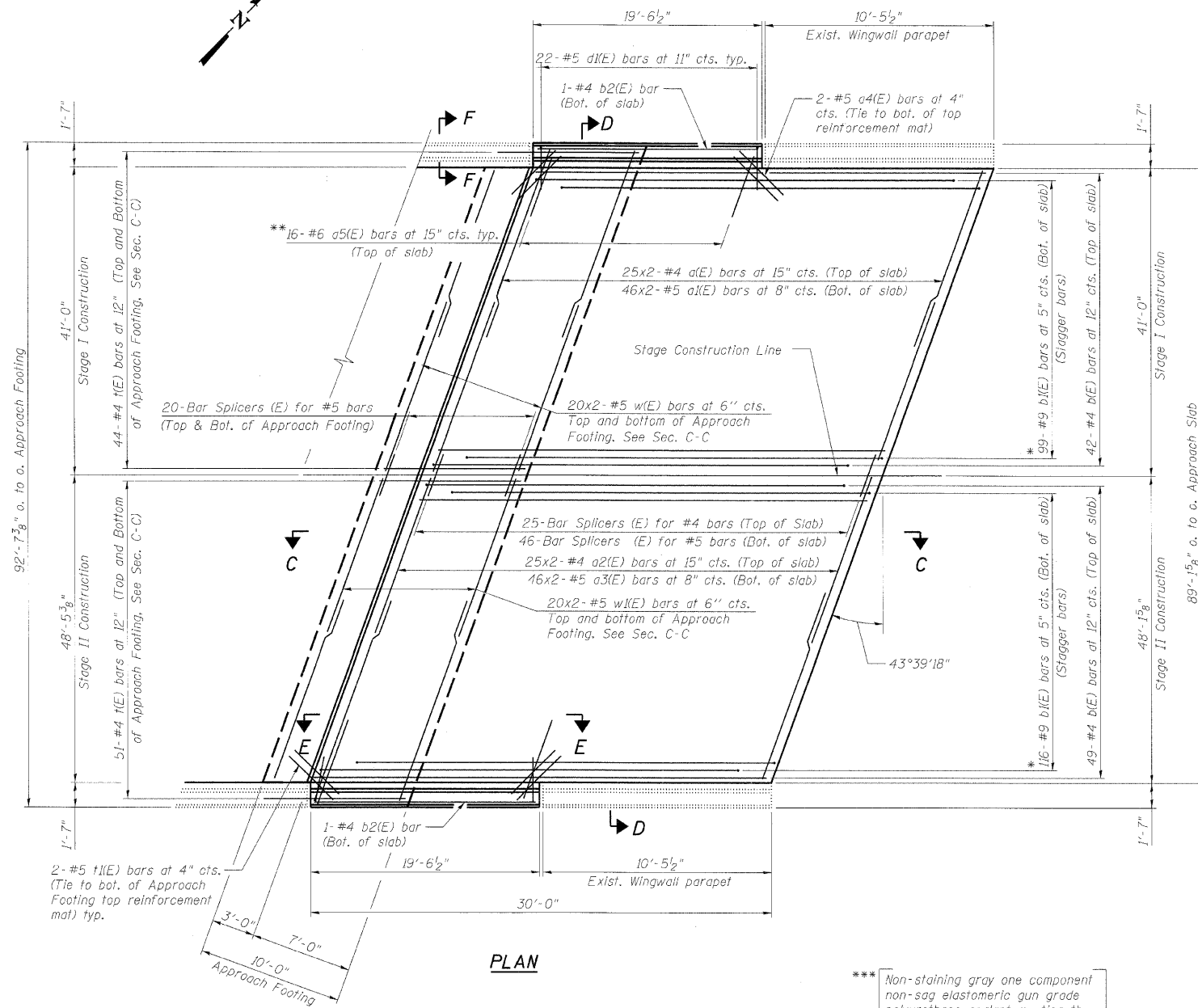
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312-665-0460 Job No. 10060

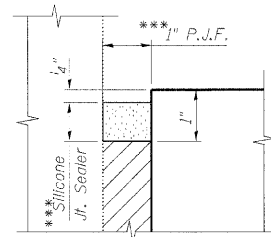
SHEET NO. 5 32 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 418
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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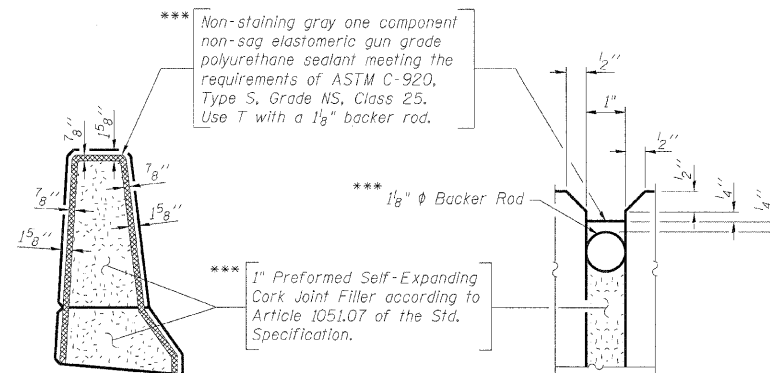
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



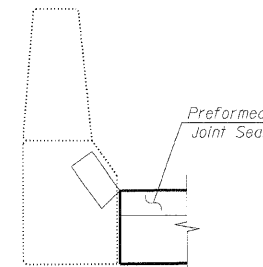
PLAN



DETAIL 1

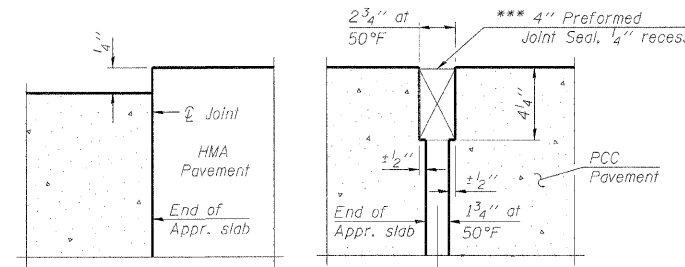


DETAIL 2



SECTION F-F

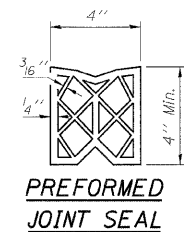
Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.



FLEXIBLE PAVEMENT

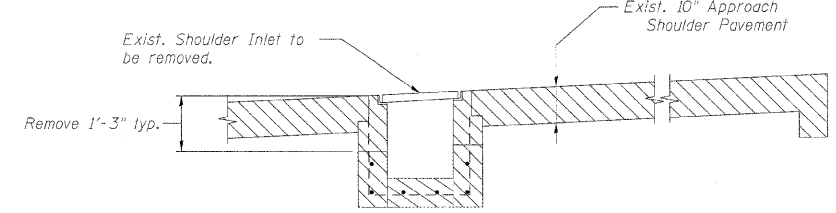
RIGID PAVEMENT

DETAIL 3



PREFORMED JOINT SEAL

- * Tilt bars as required to maintain clearance.
- ** Alternate with a(E) or a2(E) bars.
- *** Cost included with Concrete Superstructure.



APPROACH SLAB REMOVAL DETAIL AT INLET

Note:
Work this sheet with South Bridge Approach Slab Details (2 of 2) sheet.

SOUTH BRIDGE APPROACH SLAB DETAILS
(1 of 2)
STRUCTURE NO. 022-0137

DESIGNED	JLS/MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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Chicago, Illinois 60601
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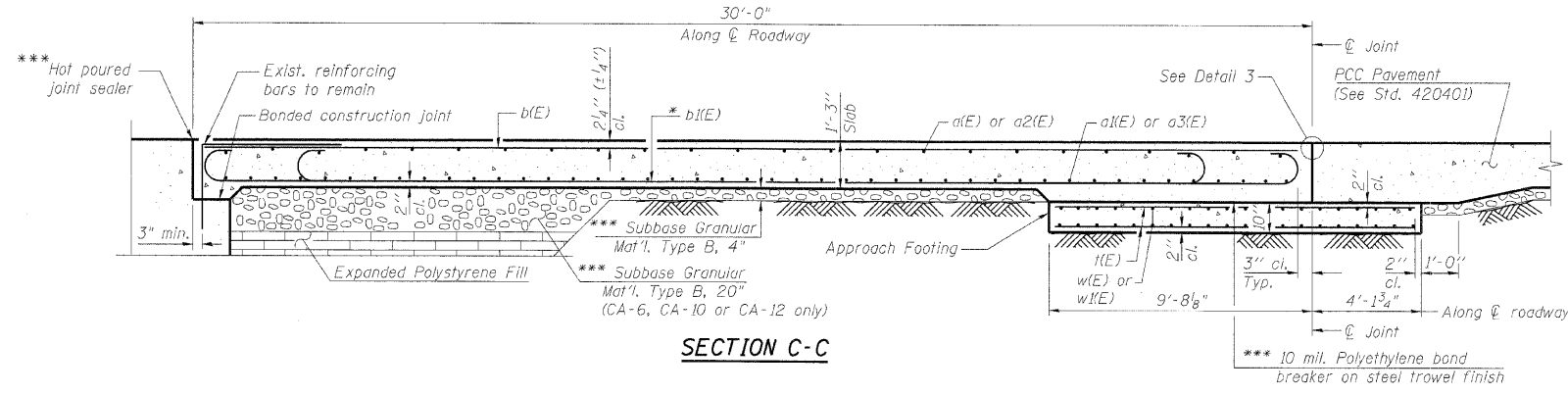
SHEET NO. 6 32 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 419
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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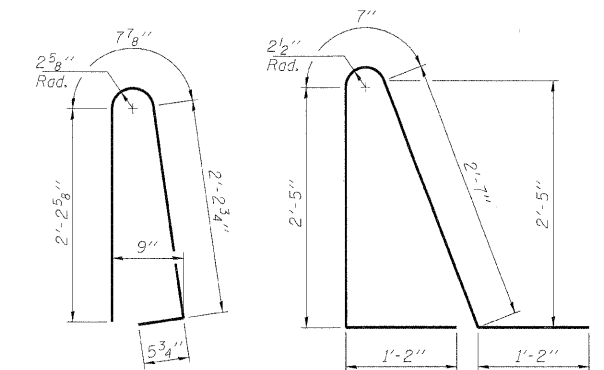
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	50	#4	30'-3"	—
a1(E)	92	#5	30'-6"	—
a2(E)	50	#4	35'-3"	—
a3(E)	92	#5	35'-6"	—
a4(E)	4	#5	4'-0"	—
a5(E)	32	#6	6'-0"	—
b(E)	91	#4	29'-8"	—
b1(E)	215	#9	29'-9"	—
b2(E)	2	#4	19'-2"	—
d(E)	44	#5	5'-7"	—
d1(E)	44	#5	7'-11"	—
e(E)	16	#4	19'-2"	—
e1(E)	2	#8	15'-2"	—
h(E)	190	#4	13'-6"	—
h1(E)	4	#5	4'-0"	—
w(E)	80	#5	30'-6"	—
w1(E)	80	#5	35'-6"	—
ITEM	UNIT	TOTAL		
Approach Slab Removal	Sq. Yd.	875		
Concrete Barrier Removal	Foot	39.5		
Concrete Superstructure	Cu. Yd.	136.4		
Concrete Structures	Cu. Yd.	39.6		
Bridge Deck Grooving	Sq. Yd.	291		
Protective Coat	Sq. Yd.	314		
Reinforcement Bars, Epoxy Coated	Pound	40,570		

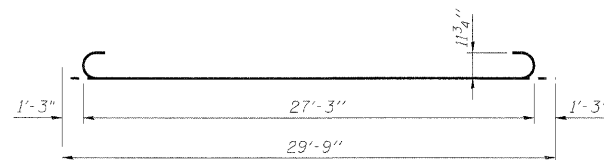


SECTION C-C

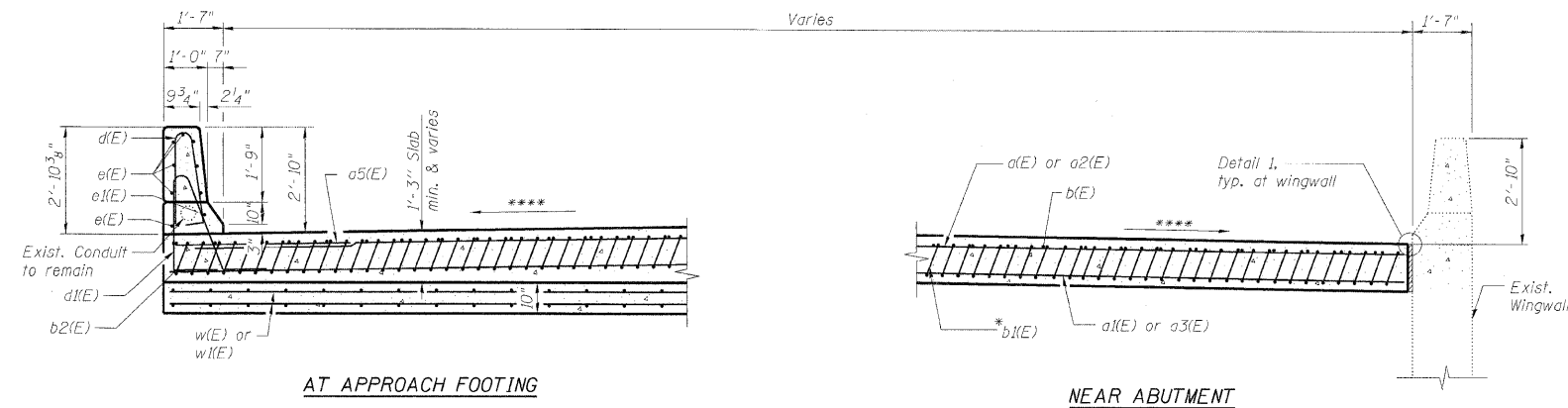


BAR d(E)

BAR d1(E)



BAR b1(E)



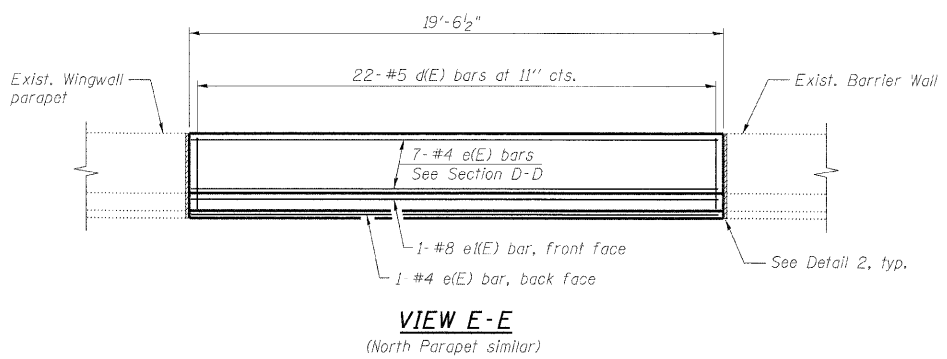
AT APPROACH FOOTING

NEAR ABUTMENT

SECTION D-D

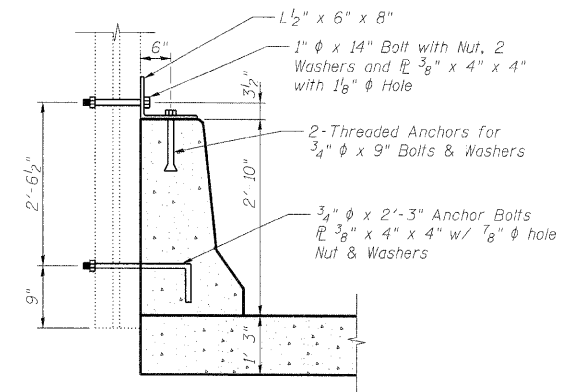
(See Plan for dimensions not shown)

- * Tilt bars as required to maintain clearance.
- *** Cost included with Concrete Superstructure.
- **** Match existing grades and cross slopes.



VIEW E-E

(North Parapet similar)



NOISE ABATEMENT WALL ATTACHMENT DETAIL

(East Parapet Only, 3 Connections Assumed)
Locations to match existing and to be verified in the field.
Work to be performed per Art. 505 of the Std. Specs.
Cost included with Concrete Superstructure

Notes:

- a(E), a1(E), a2(E) and a3(E) bar spacings measured parallel to ϕ Roadway. b(E) and b1(E) bars spacings measured perpendicular to ϕ Roadway. w(E), w1(E) and w2(E) bars measured parallel to Exp. Jt.
- For existing approach slab and shoulder pavement details, see existing plans.
- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
- Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
- Approach footing concrete shall be paid for as Concrete Structures.
- Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
- The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
- For bar splicer details, see Bar Splicers Assembly Details sheet.
- Cost of excavation for approach footing included with Concrete Structures.
- For Expanded Polystyrene Fill and drainage treatment details, see sheet 14.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and shall protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Minimum bar lap: #4 bar = 1'-8" #5 bar = 2'-2"
- Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
- Cut w(E), w1(E) and h(E) bars in field to fit in the vicinity of the approach footing boxout around the existing concrete barrier wall.
- Work this sheet with South Bridge Approach Slab Details (1 of 2) sheet.

SOUTH BRIDGE APPROACH SLAB DETAILS
(2 OF 2)
STRUCTURE NO. 022-0137

DESIGNED	JLS/MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

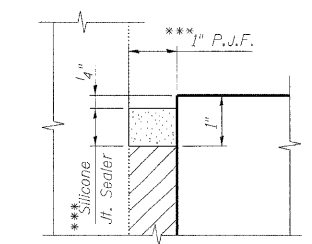
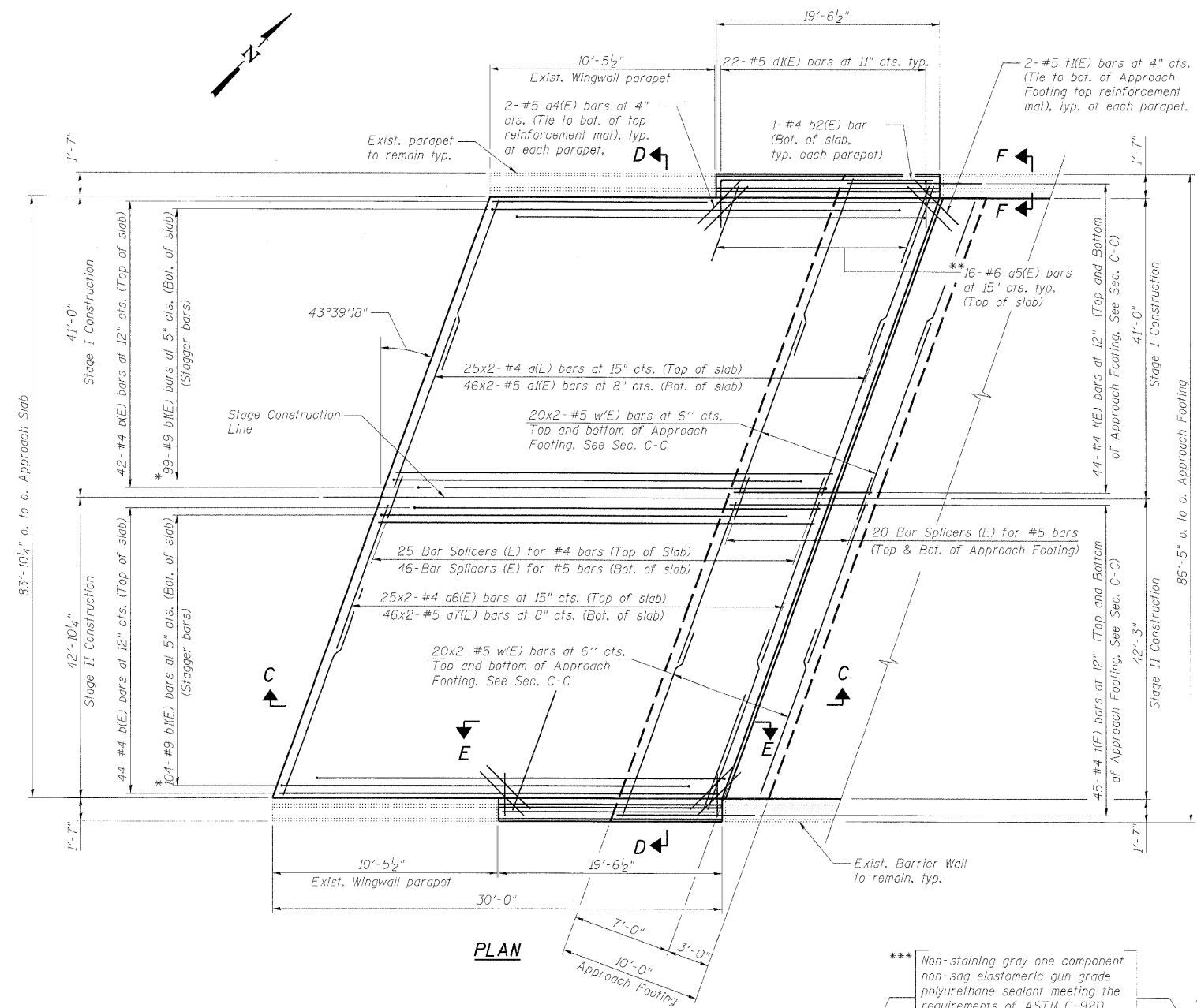
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Chicago, Illinois 60601
312-565-0460 Job No. 10060

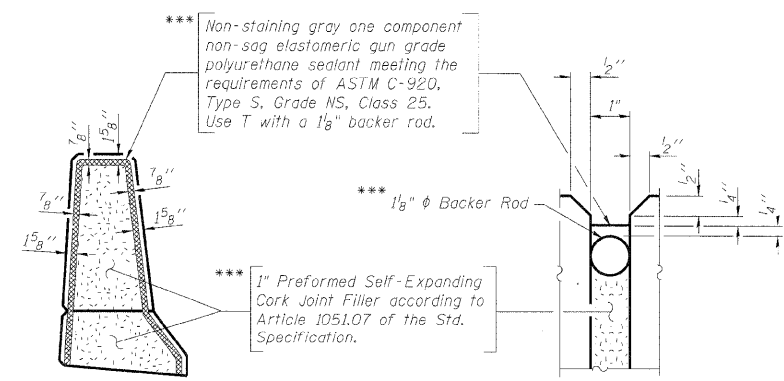
SHEET NO. 7 32 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 420
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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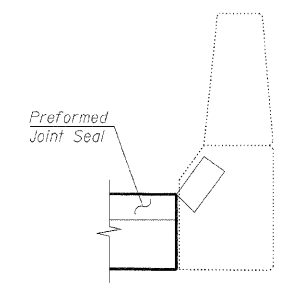
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DETAIL 1



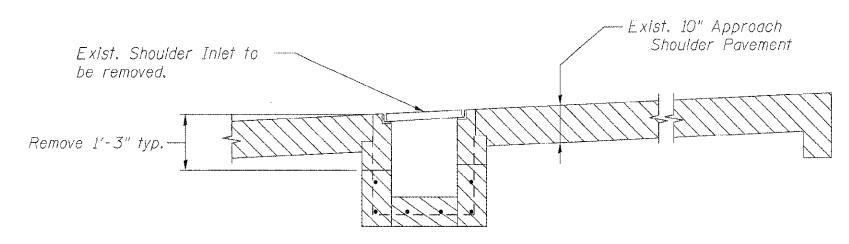
DETAIL 2



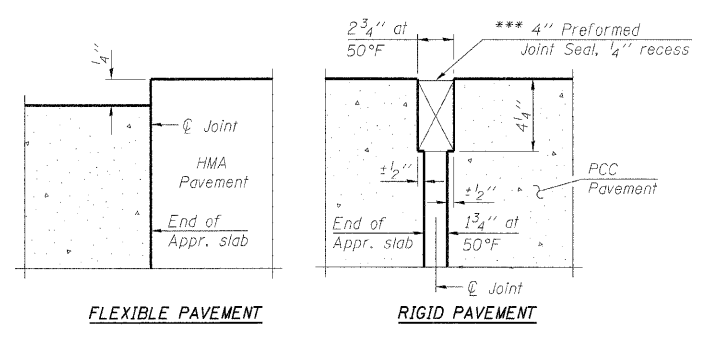
SECTION F-F

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.

- * Tilt bars as required to maintain clearance.
- ** Alternate with a(E) or a6(E) bars.
- *** Cost included with Concrete Superstructure.

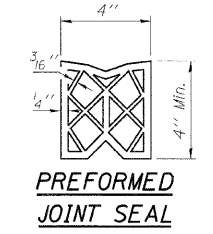


APPROACH SLAB REMOVAL DETAIL AT INLET



FLEXIBLE PAVEMENT RIGID PAVEMENT

DETAIL 3



PREFORMED JOINT SEAL

Note:
Work this sheet with North Bridge Approach Slab Details (2 of 2) sheet.

NORTH BRIDGE APPROACH SLAB DETAILS
(1 of 2)
STRUCTURE NO. 022-0137

DESIGNED	JLS/MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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Chicago, Illinois 60601
312-665-0450 Job No. 10050

SHEET NO. 8 32 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 421
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

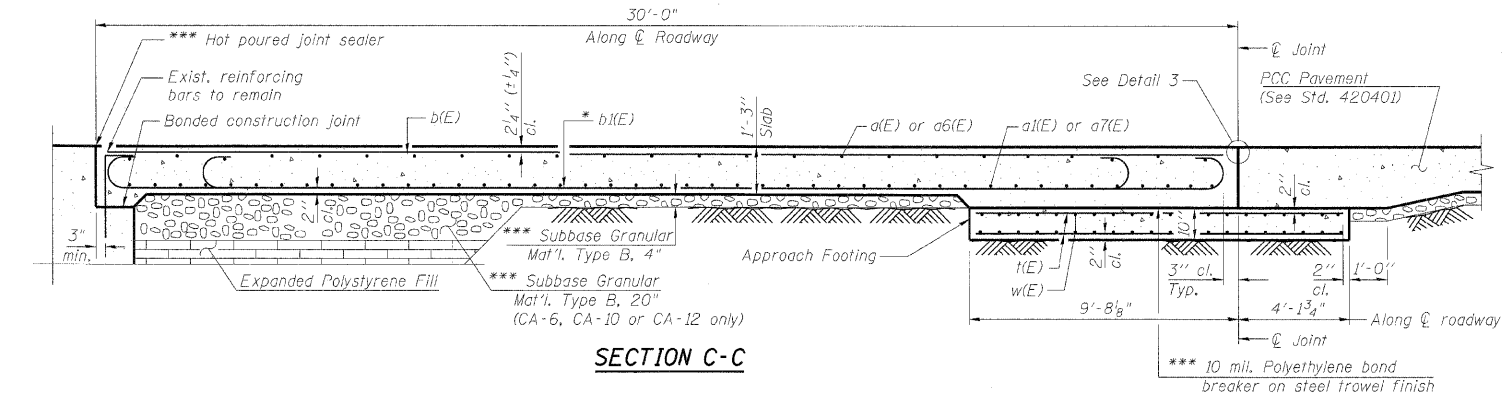
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

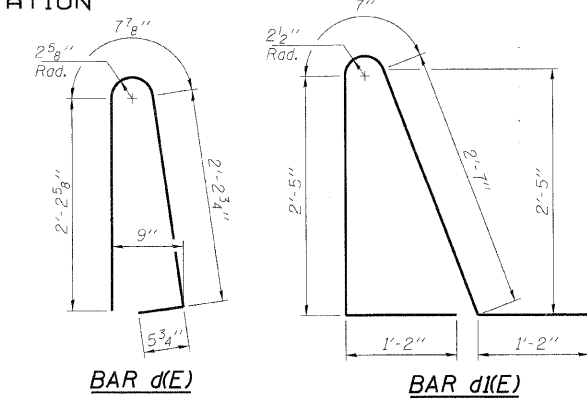
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	50	#4	30'-3"	—
a1(E)	92	#5	30'-6"	—
a4(E)	4	#5	4'-0"	—
a5(E)	32	#6	6'-0"	—
a6(E)	50	#4	31'-6"	—
a7(E)	92	#5	31'-9"	—
b(E)	86	#4	29'-8"	—
b1(E)	203	#9	29'-9"	—
b2(E)	2	#4	19'-2"	—
d(E)	44	#5	5'-7"	—
d1(E)	44	#5	7'-11"	—
e(E)	16	#4	19'-2"	—
e1(E)	2	#8	19'-2"	—
h(E)	178	#4	13'-6"	—
h1(E)	4	#5	4'-0"	—
w(E)	80	#5	30'-5"	—
w2(E)	80	#5	31'-9"	—

ITEM	UNIT	TOTAL
Approach Slab Removal	Sq. Yd.	775
Concrete Barrier Removal	Foot	39.5
Concrete Superstructure	Cu. Yd.	128.8
Concrete Structures	Cu. Yd.	36.9
Bridge Deck Grooving	Sq. Yd.	273
Protective Coat	Sq. Yd.	296
Reinforcement Bars, Epoxy Coated	Pound	38,360

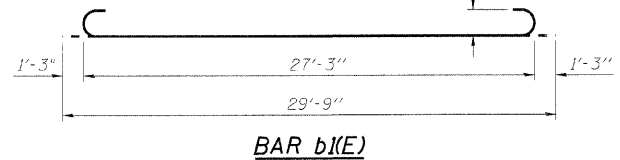


SECTION C-C

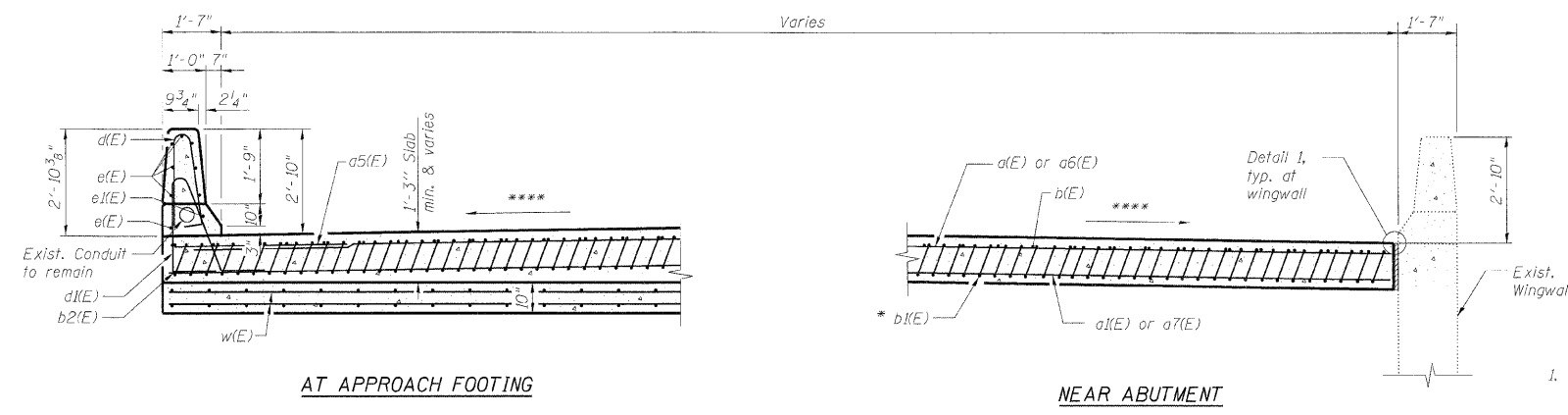


BAR d(E)

BAR d1(E)



BAR b1(E)



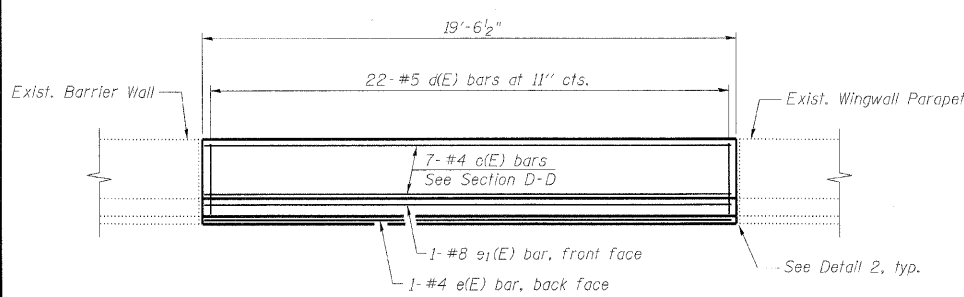
AT APPROACH FOOTING

NEAR ABUTMENT

SECTION D-D

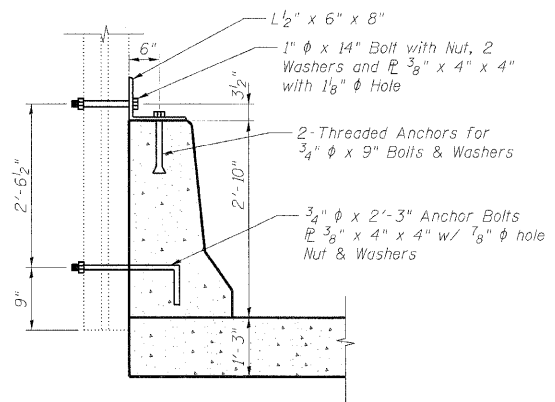
(See Plan for dimensions not shown)

- * Tilt bars as required to maintain clearance.
- *** Cost included with Concrete Superstructure.
- **** Match existing grades and cross slopes.



VIEW E-E

(North Parapet similar)



NOISE ABATEMENT WALL
ATTACHMENT DETAIL

(East Parapet Only, 3 Connections Assumed)
Locations to match existing and to be verified in the field.
Work to be performed per Art. 505 of the Std. Specs.
Cost included with Concrete Superstructure

Notes:

- a(E), a1(E), and a5(E) bar spacings measured parallel to $\text{\textcircled{C}}$ Roadway. b(E) and b1(E) bars spacings measured perpendicular to $\text{\textcircled{C}}$ Roadway. w(E), w1(E) and w2(E) bars measured parallel to Exp. Jt.
- For existing approach slab and shoulder pavement details, see existing plans.
- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
- Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
- Approach footing concrete shall be paid for as Concrete Structures.
- Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
- The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
- For bar splicer details, see Bar Splicers Assembly Details sheet.
- Cost of excavation for approach footing included with Concrete Structures.
- For Expanded Polystyrene Fill and drainage treatment details, see sheet 14.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and shall protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work. Instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Minimum bar lap: #4 bar = 1'-8"
#5 bar = 2'-2"
- Cut w(E), w2(E) and h(E) bars in field to fit in the vicinity of the approach footing boxout around the existing concrete barrier wall.

14. Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
15. Work this sheet with North Bridge Approach Slab Details (1 of 2) sheet.

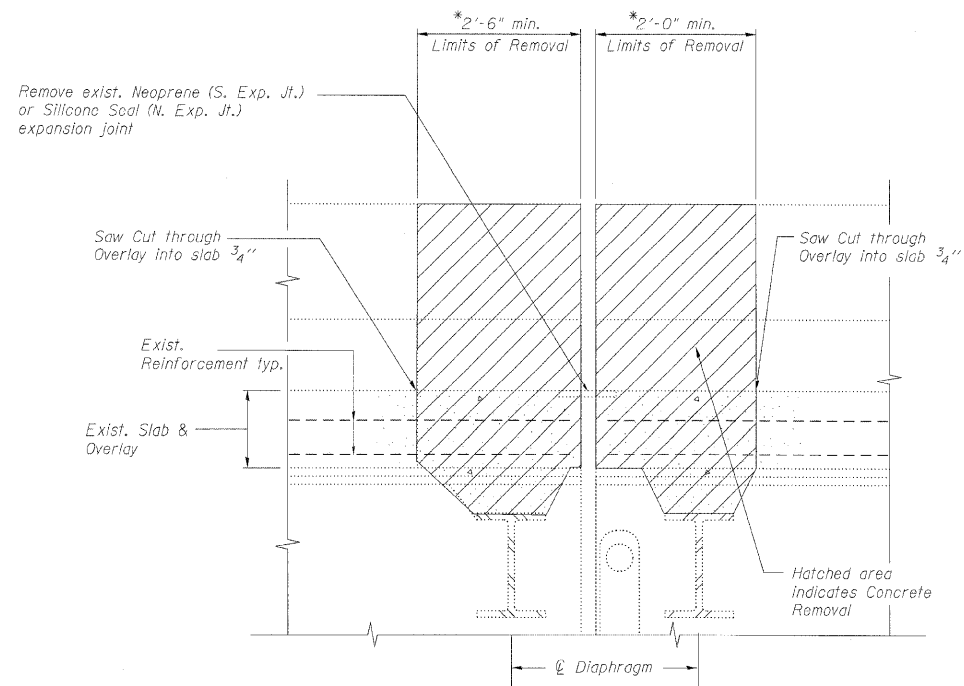
NORTH BRIDGE APPROACH SLAB DETAILS
(2 OF 2)
STRUCTURE NO. 022-0137

DESIGNED	JLS/MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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Chicago, Illinois 60601
312-565-0460 Job No. 10050

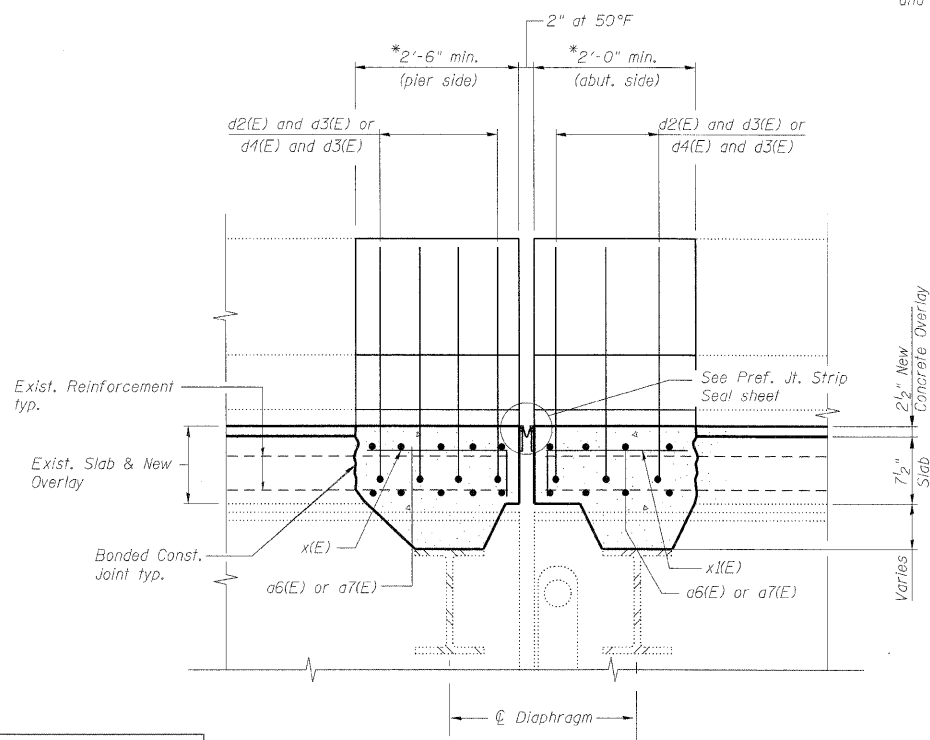
SHEET NO. 9 32 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 422
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

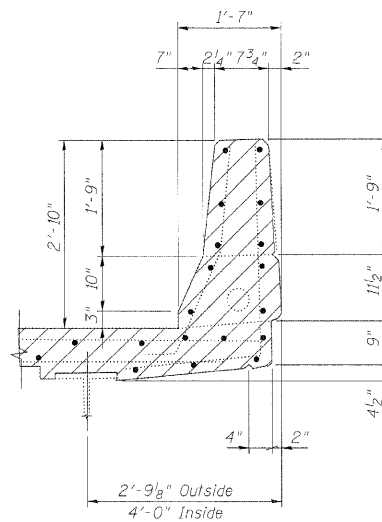


SECTION A-A

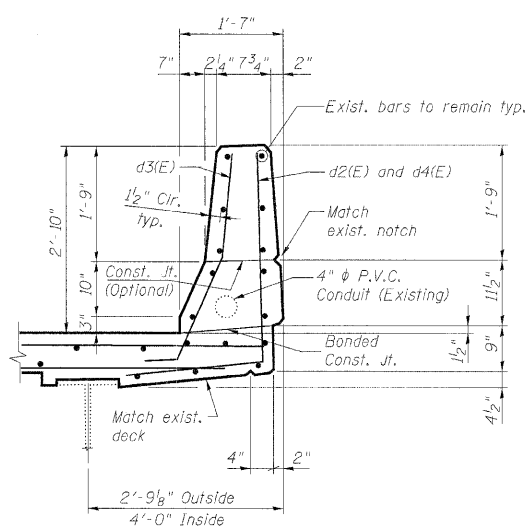
* Removal and reconstruction limits shall extend beyond the haunch between the diaphragm and the deck.



SECTION B-B



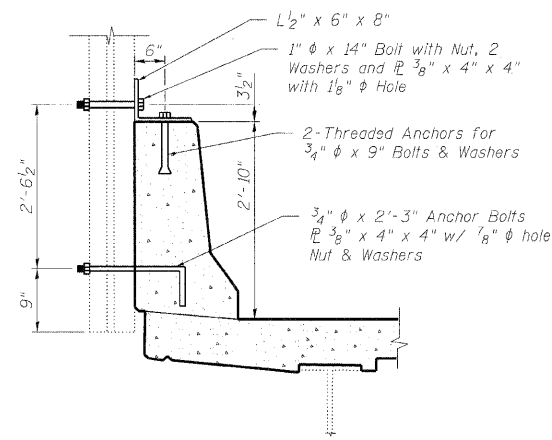
EXISTING PARAPET SECTION



PROPOSED PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Existing noise wall to remain. Care shall be taken not to damage the noise wall during parapet removal and reconstruction. Any damage to the noise walls shall be repaired at no additional cost to the Department. If a noise wall connection falls within the limits of concrete removal, then the connection shall be removed and reinstalled and noise wall temporarily supported to the satisfaction of the Engineer. Cost included in Concrete Removal.
- Work this sheet with Expansion Joint Repairs sheet.



NOISE ABATEMENT WALL ATTACHMENT DETAIL

(East Parapet Only)
Locations to match existing and to be verified in the field.
Work to be performed per Art. 505 of the Std. Specs.
Cost included with Concrete Superstructure

EXPANSION JOINT DETAILS
STRUCTURE NO. 022-0137

DESIGNED	MFB
CHECKED	KWS
DRAWN	VH
CHECKED	KWS

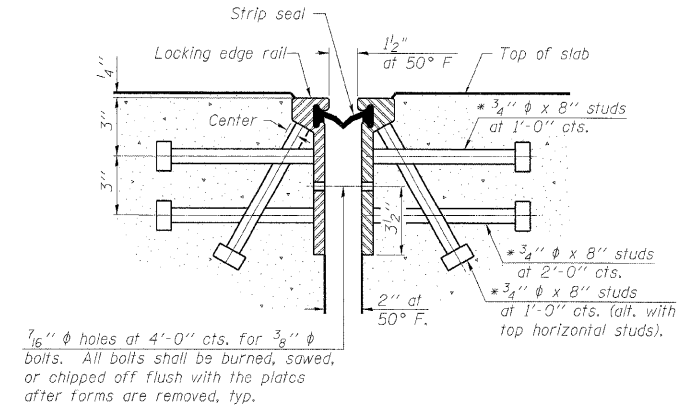
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Chicago, Illinois 60601
312-665-0450 Job No. 10050

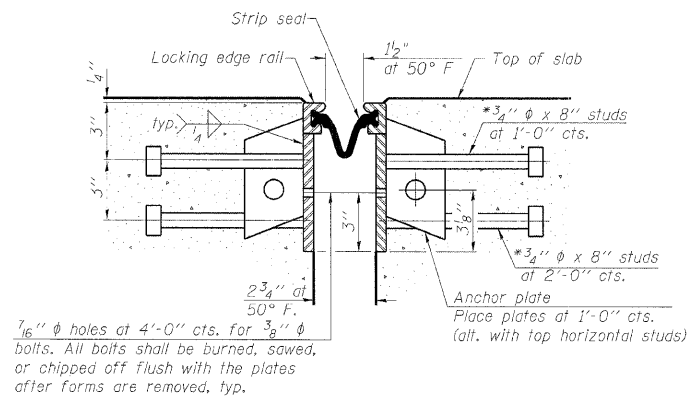
SHEET NO. 11	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	424
32 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



SECTION THRU
ROLLED RAIL JOINT



SECTION THRU
WELDED RAIL JOINT

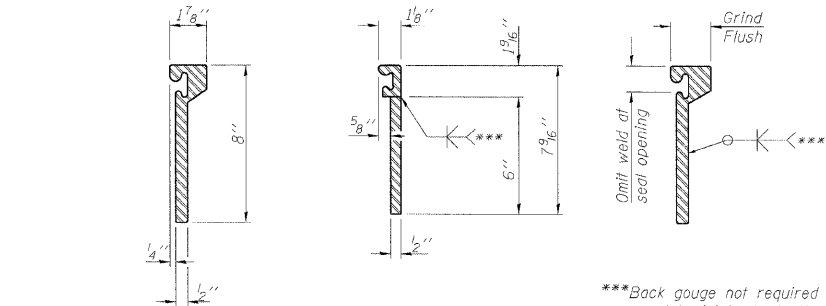
Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

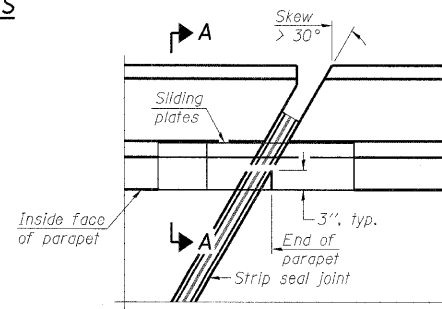


ROLLED
EXTRUDED RAIL WELDED RAIL

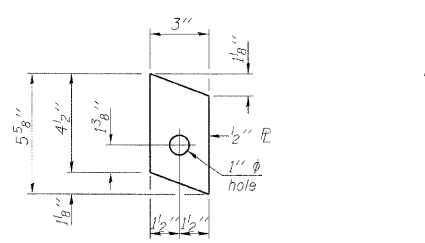
LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.

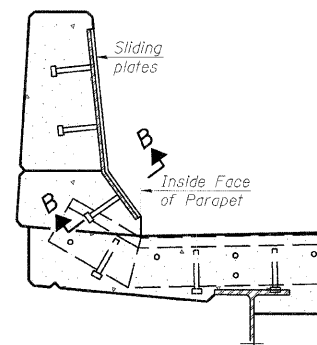
LOCKING EDGE RAILS



PLAN

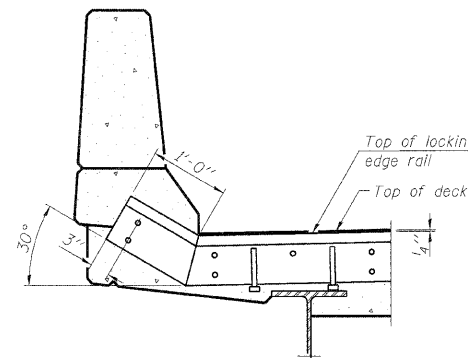


ANCHOR PLATE
(for welded rail)

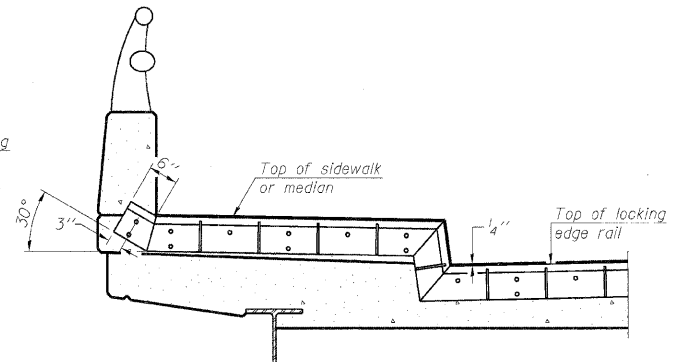


SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)



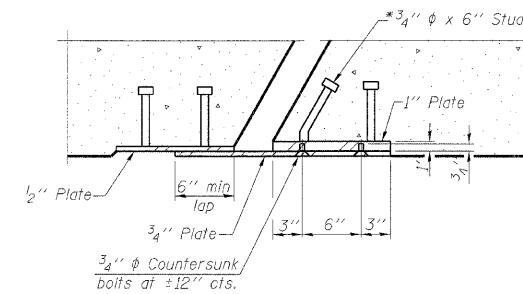
AT PARAPET



AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	243.0

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

EJ-SSJ

10-1-08

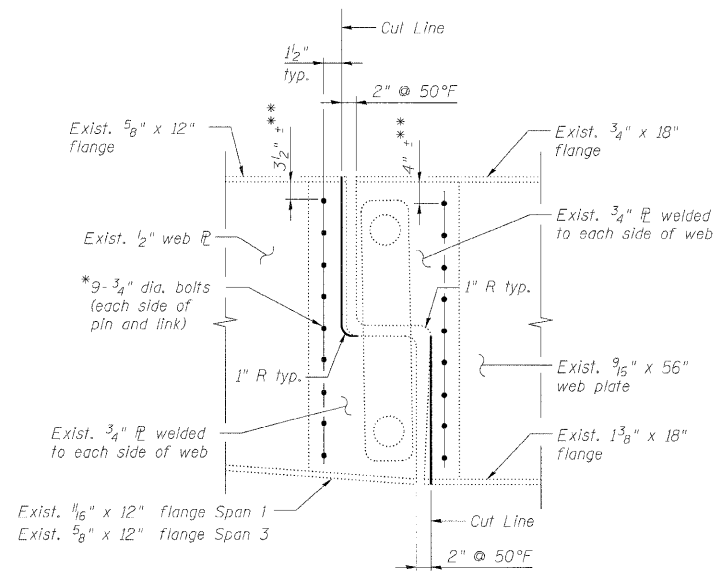
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Chicago, Illinois 60601
312-666-0460 Job No. 10050

SHEET NO. 12	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
32 SHEETS	290 355	221, 1-1, 2&3RS-7	DUPAGE	546	425
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 60G51					

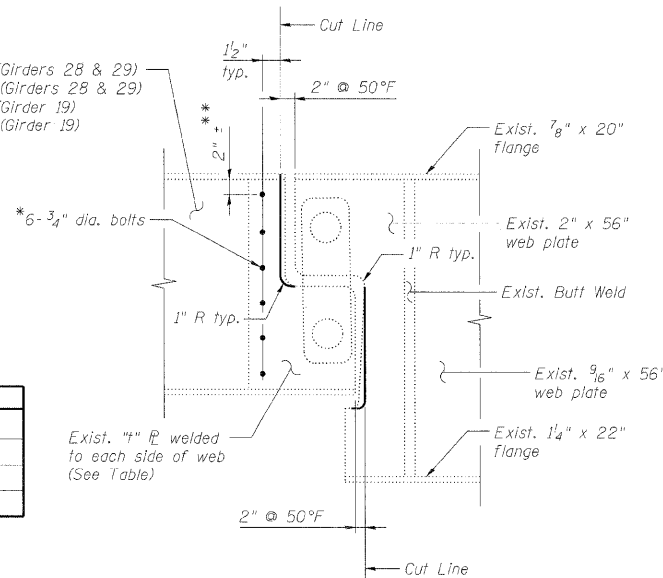
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 022-0137

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



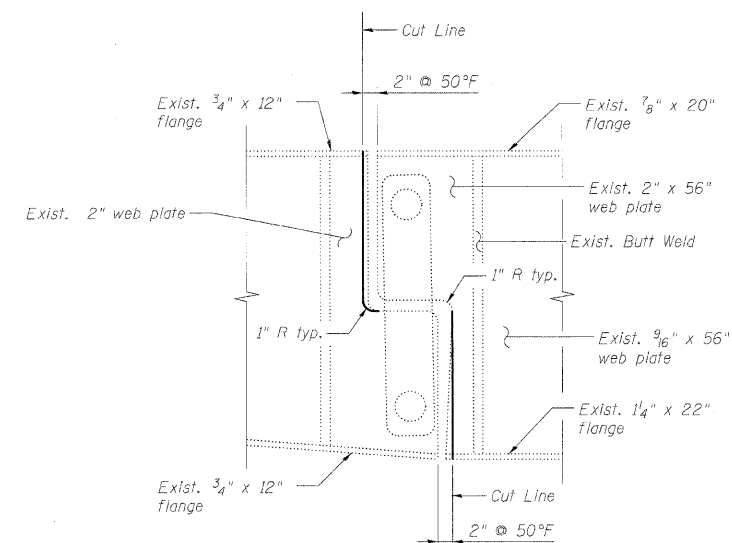
GIRDER MODIFICATION DETAILS - GIRDERS 20 & 27
(18 bolts per connection - 72 thus)

Exist. W36x160 Span 1 (Girders 28 & 29)
Exist. W36x135 Span 3 (Girders 28 & 29)
Exist. W36x194 Span 1 (Girder 19)
Exist. W36x150 Span 3 (Girder 19)

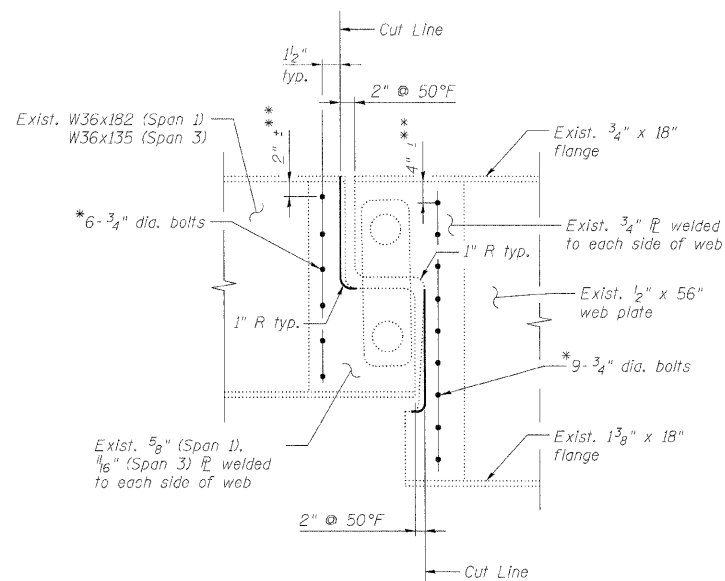


Girder	"I"
W36x194	5/8"
W36x160	5/16"
W36x150	5/16"
W36x135	5/16"

GIRDER MODIFICATION DETAILS - GIRDERS 19, 28 & 29
(6 bolts per connection - 36 thus)



GIRDER MODIFICATION DETAILS - GIRDERS 18 & 30



GIRDER MODIFICATION DETAILS - GIRDERS 21-26
(15 bolts per connection - 180 thus)

* Install 3/4" diameter high strength bolts with two hardened washers that conform with ASTM (A-325) and AASHTO-164 with 13/16" diameter holes at 6" (+) centers to hold plates together. Gaps between the plates and web shall be sealed such that no moisture can develop between the plates. Cost included with Modify Existing Pin and Link Connection.

** Verify in field. Distance from flange to first bolt shall be equal at top and bottom of girder.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Modify Existing Pin and Link Connection	L. Sum	0.25

Notes:

- Cut surfaces shall be grinded smooth, spot cleaned, and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Paint shall be applied per the requirements of Paint System 2, according to the Special Provision "Cleaning and Painting Existing Steel Structures". Cost included with Modify Existing Pin and Link Connection.
- See existing plans for girder layout and numbering.
- The Contractor must exercise extreme care so as not to damage the pins or link plate while trimming the girders.
- Some connections may have already been cut therefore the current existing geometries may not match the geometries as shown on the existing plans.
- Pin and Link connections are located near each pier. Thus, there are 2 connections per girder line.

DESIGNED -	KWS
CHECKED -	MFB/EFS
DRAWN -	RMG
CHECKED -	KWS

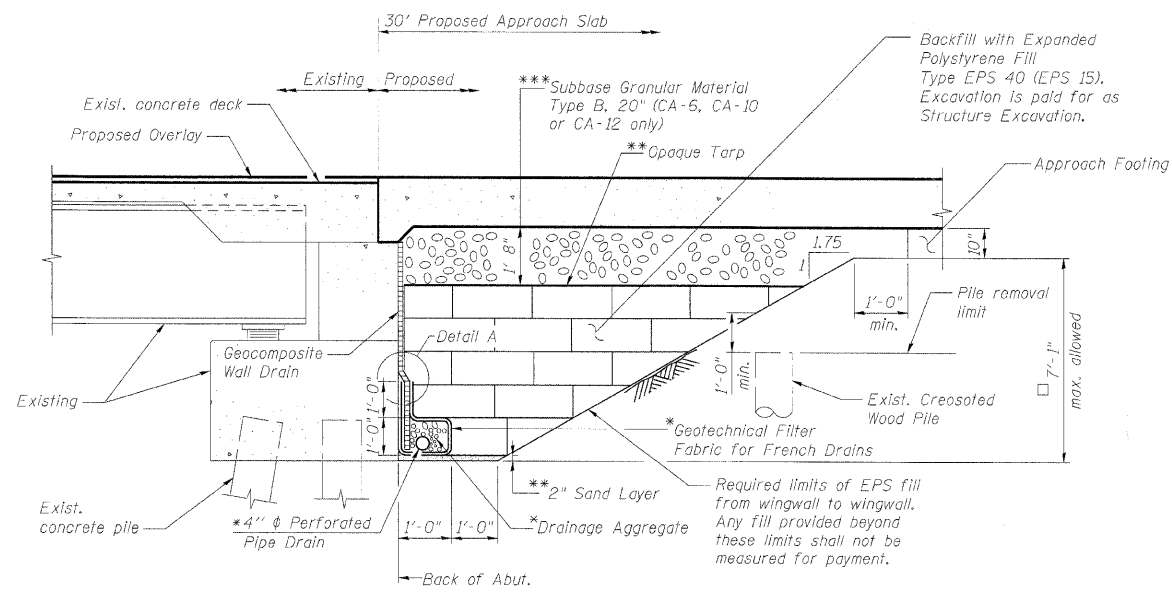
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Chicago, Illinois 60601
312-565-0460 Job No. 10050

SHEET NO. 13	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290				
32 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	

STEEL REPAIR DETAILS
STRUCTURE NO. 022-0137

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ABUTMENT STABILIZATION DETAIL

(Horiz. dim. @ Rt. L's)

* Included in the cost of Pipe Underdrains for Structures.

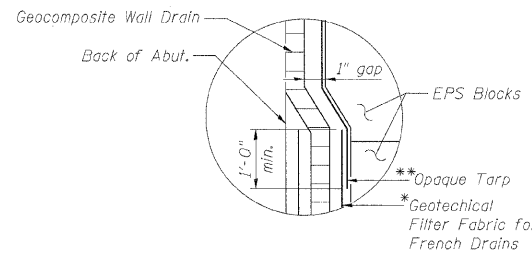
** Included in the cost of Expanded Polystyrene Fill.

*** Included in the cost of Concrete Superstructure. See Approach Slab Details.

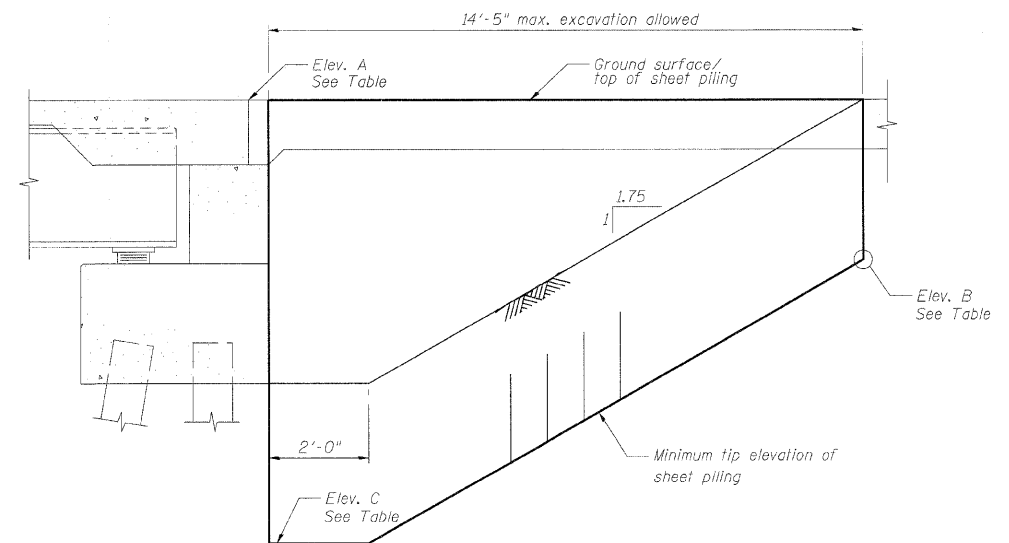
All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 60110).

Existing approach slabs are supported on creosoted wood piles. The piles shall be removed down a minimum of 1'-0" below the limits of structure excavation. Cost included in Structure Excavation.

Max. allowed EPS fill depth to maintain 1'-0" min. berm from Proposed Approach Footing to EPS fill cut. If abutment exceeds this height, only install fill down to the max. allowed depth.



DETAIL A



TEMPORARY SHEET PILING

(Horiz. dim. @ Rt. L's)

SHEET PILING ELEVATION TABLE					
Abutment	Elev. A	Elev. B	Elev. C	Min. Section Modulus Req'd. (in ² /ft.)	Min. Embedment (ft.)
North	748.28	742.08	734.99	3.3	6.3
South	753.57	747.37	740.28	3.3	6.3

BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu. Yd.	488
Temporary Sheet Piling	Sq. Ft.	296
Geocomposite Wall Drain	Sq. Yd.	189
Pipe Underdrains for Structures 4"	Foot	252
Expanded Polystyrene Fill	Cu. Yd.	303

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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Chicago, Illinois 60601
312-565-0460 Job No. 10050

**ABUTMENT STABILIZATION DETAILS
STRUCTURE NO. 022-0137**

SHEET NO. 14	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	427
32 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

The diameter of this part is equal or larger than the diameter of bar spliced.

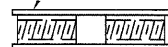
The diameter of this part is the same as the diameter of the bar spliced.

ROLLED THREAD DOWEL BAR



** ONE PIECE

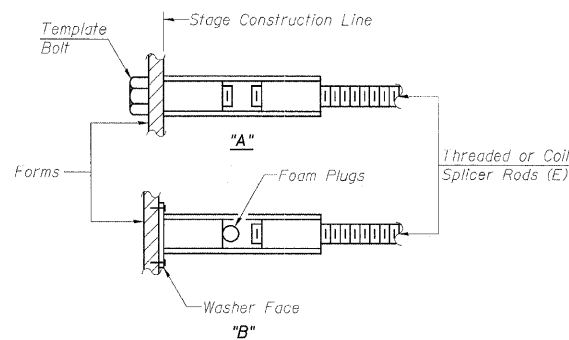
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

NOTES

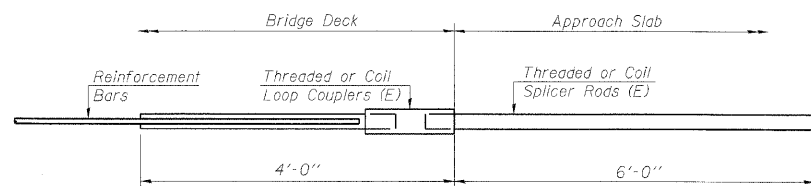
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_s$
(Tension in kips)
- ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_s$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_s = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

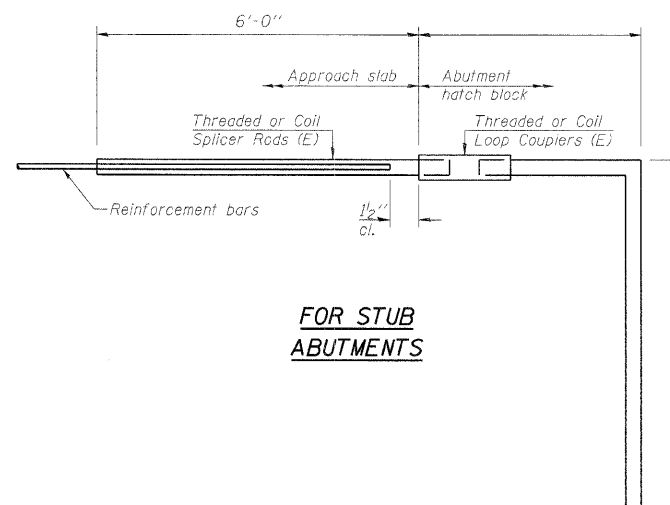
BAR SPLICER ASSEMBLIES

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-2"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



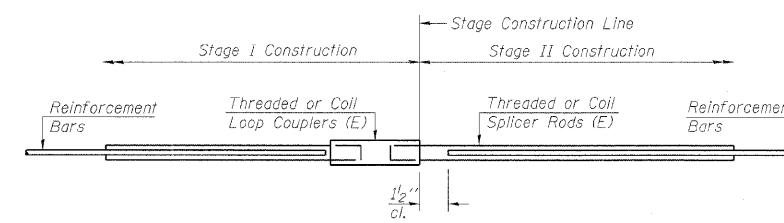
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar	
Min. Capacity =	23.0 kips - tension
Min. Pull-out Strength =	12.3 kips - tension
No. Required =	



FOR STUB ABUTMENTS

Bar Splicer for #5 bar	
Min. Capacity =	23.0 kips - tension
Min. Pull-out Strength =	12.3 kips - tension
No. Required =	



STANDARD

Bar Size	No. Assemblies Required	Location
#5	36	Deck
#4	50	App. Slab
#5	92	App. Slab
#5	80	App. Footing

**BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 022-0137**

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

BSD-1

10-1-08

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Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0460 Job No. 10050

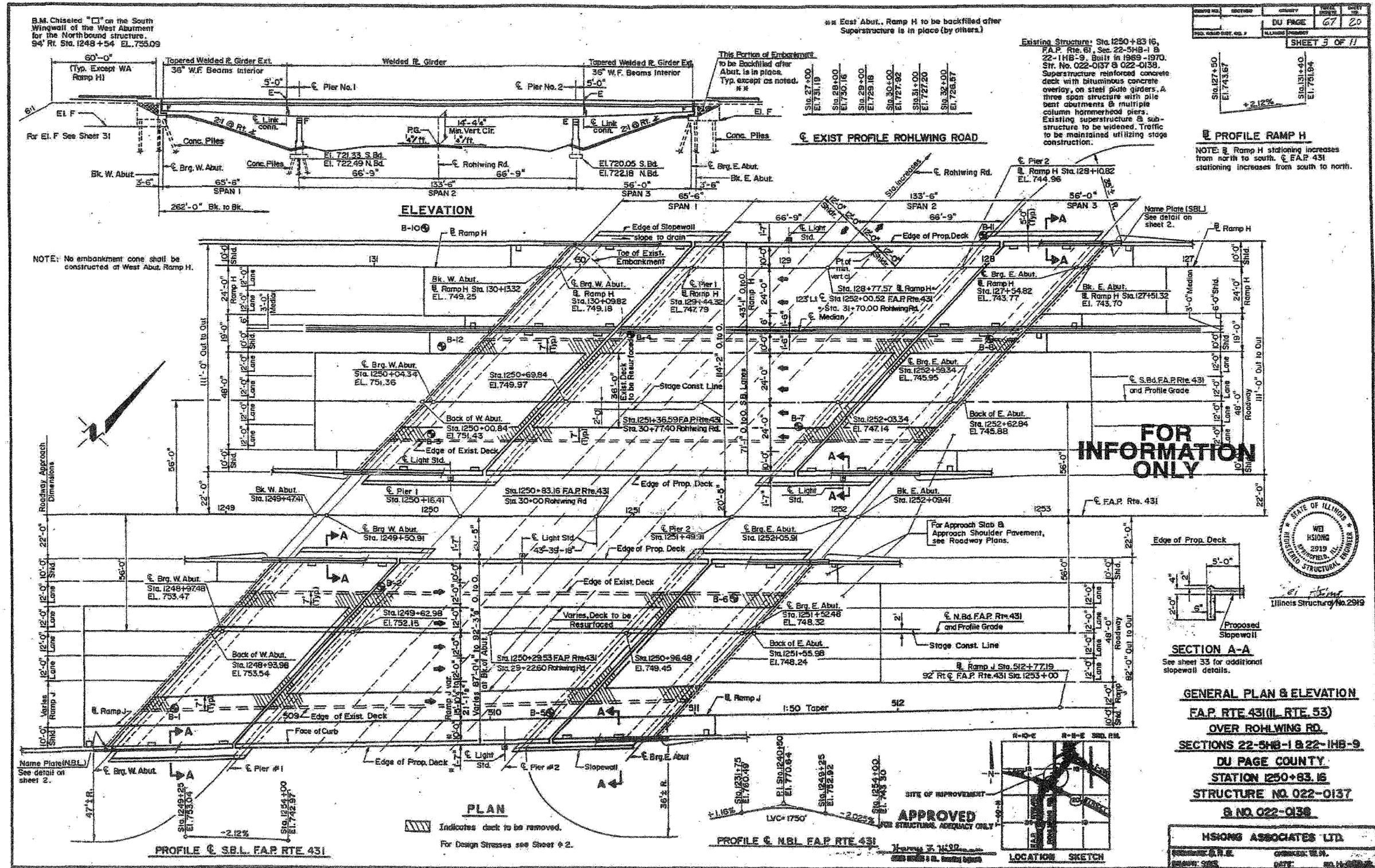
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	CONTRACT NO. 60C51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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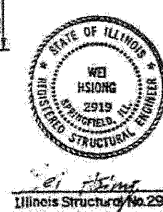
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DU PAGE	67	20
SHEET 3 OF 11		



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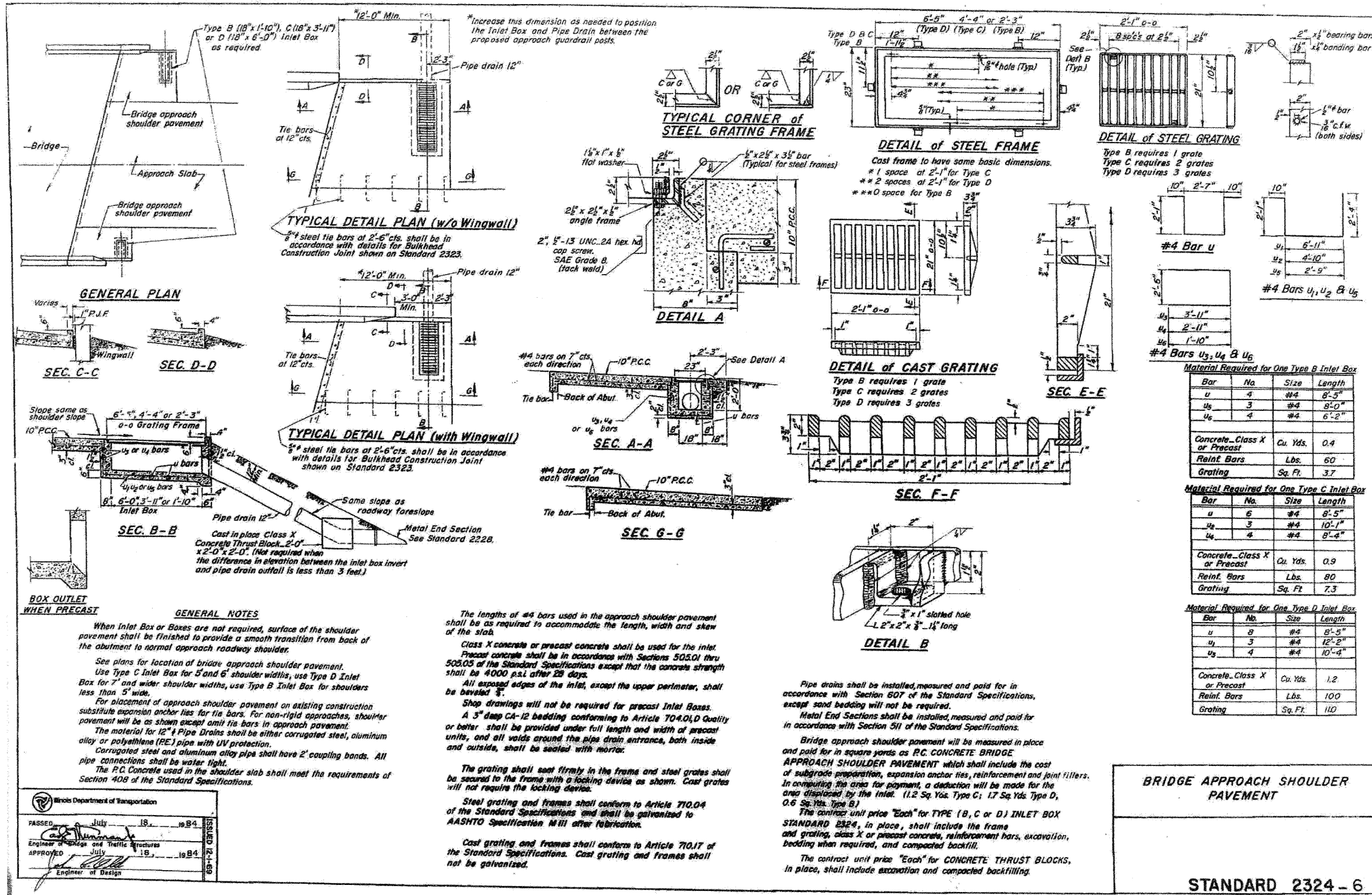
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 16	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 429
32 SHEETS			CONTRACT NO. 60G51		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

EXISTING PLAN INFORMATION 1 OF 17
STRUCTURE NO. 022-0137

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Illinois Department of Transportation
PASSED July 18, 1984
Engineer of Bridge and Traffic Structures
APPROVED July 18, 1984
Engineer of Design

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Chicago, Illinois 60601
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SHEET NO. 18 32 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 431
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

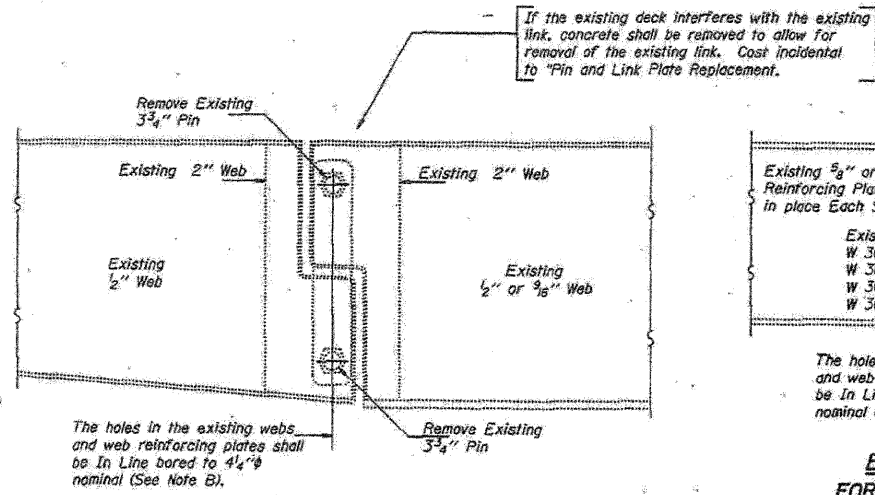
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STRUCTURE NO. 022-0137

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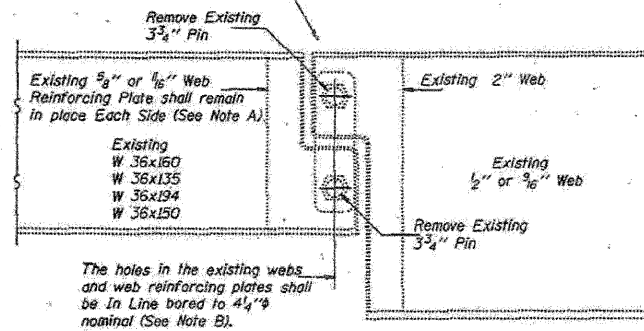
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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DEPARTMENT OF TRANSPORTATION

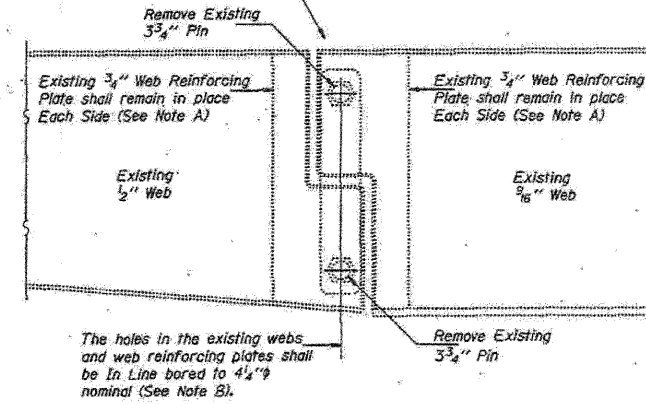
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F.A.P. RT. 431	SEC. 22-5HB-1 & 22-1HB-9	DUPAGE	67	118
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	



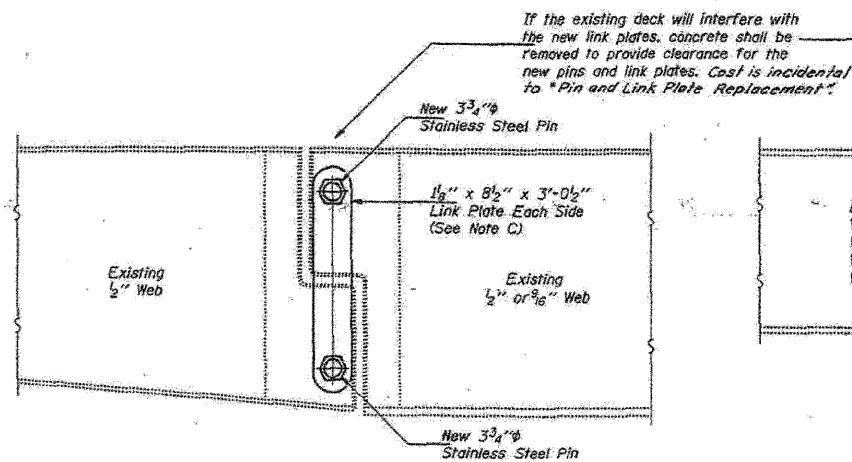
ELEVATION AT EXISTING PIN ASSEMBLY
FOR BMS. 1, 17, 18, & 30



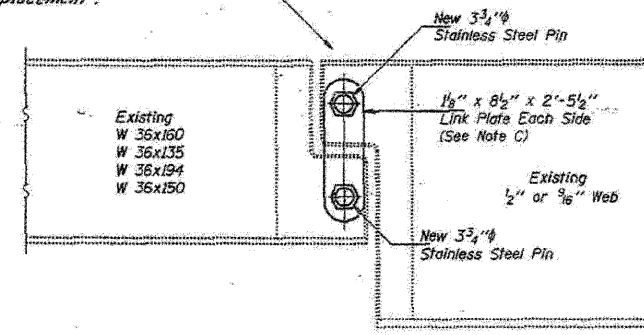
ELEVATION AT EXISTING PIN ASSEMBLY
FOR BMS. 2, 3, 4, 5, 6, 7, 8, 16, 19, 28 & 29



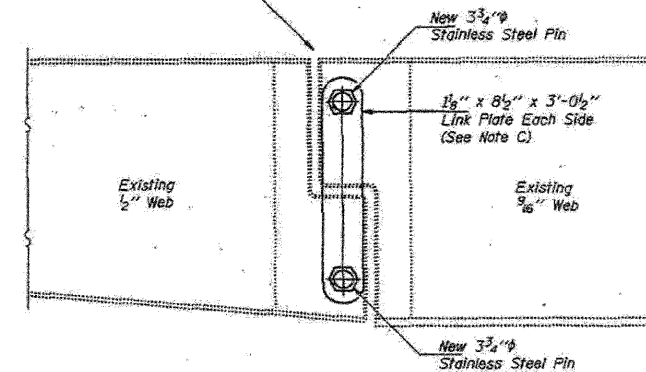
ELEVATION AT EXISTING PIN ASSEMBLY
FOR BMS. 9, 15, 20, & 27



ELEVATION AT NEW PIN ASSEMBLY
FOR BMS. 1, 17, 18, & 30



ELEVATION AT NEW PIN ASSEMBLY
FOR BMS. 2, 3, 4, 5, 6, 7, 8, 16, 19, 28 & 29



ELEVATION AT NEW PIN ASSEMBLY
FOR BMS. 9, 15, 20, & 27

DESIGNED <i>Anthony J. P...</i>	DECEMBER 13, 19 95
CHECKED <i>Robert J. M...</i>	EXAMINED
DRAWN <i>r.d. carbonell</i>	PASSED
CHECKED <i>AKU, CHM</i>	

For Notes A, B and C see sheet #2 of 9.
PIN AND LINK PLATE REPLACEMENT
F.A.P. RT. 431 SEC. 22-5HB-1 & 22-1HB-9
DUPAGE COUNTY
STA. 1250+83.16
STR. No. 022-0137 & 022-0138

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SHEET NO. 19	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	221, 1-1, 2&3)RS-7	DUPAGE	546	432
32 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	

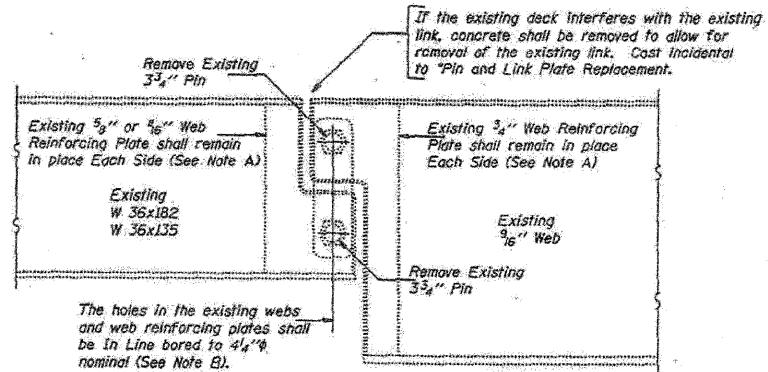
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STRUCTURE NO. 022-0137

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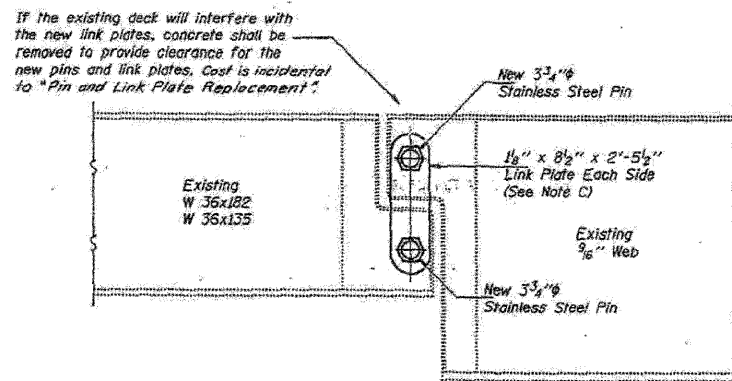
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DEPARTMENT OF TRANSPORTATION

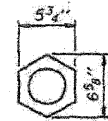
PROJECT NO.	SECTION	COUNTY	SHEET	SHEET NO. 2
F.A.P. RT. 431	SEC. 22-5HB-1	DUPAGE	67	19
11 SHEETS				



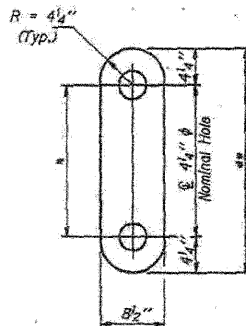
ELEVATION AT EXISTING PIN ASSEMBLY
FOR BMS. 10, 11, 12, 13, 14, 21, 22, 23, 24, 25 & 26



ELEVATION AT NEW PIN ASSEMBLY
FOR BMS. 10, 11, 12, 13, 14, 21, 22, 23, 24, 25 & 26



NUT DETAIL
(480 Required)



LINK PLATE DETAIL

Girders	#	#	No. Required
1, 9, 15, 17, 18, 20, 27 & 30	2'-4"	3'-0 1/2"	32
2 thru 8, 10 thru 14, 16, 19, 21 thru 26, 28 and 29	1'-9"	2'-5 1/2"	88

NOTES

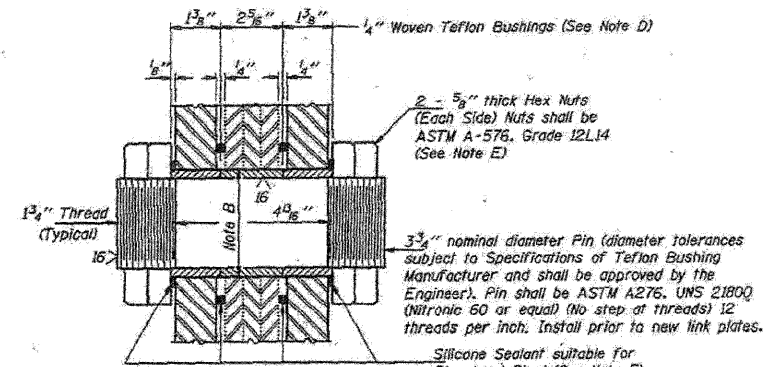
All new structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
The Contractor shall provide support and/or shoring systems for the beam in the area of existing pin and link plate replacement. The support and/or shoring systems shall be approved by the Engineer. Such approval will not relieve the Contractor of responsibility for the safety of the structure. See Special Provisions for "Temporary Support System."
The inorganic zinc rich primer/acrylic/acrylic paint system shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the acrylic finish coat shall be Light Grey, Munsell No. 10Y 7/L. See Special Provisions "Cleaning and Painting Metal Structures".
Existing Structural steel shall be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures". Cost incidental to "Pin and Link Plate Replacement."
All existing steel surfaces behind link plates shall be cleaned and primed before installation of new link plates. Cost incidental to "Pin and Link Plate Replacement."
Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
The Pins and Link Plates shall conform to the minimum Charpy V-Notch Toughness of 25 ft.-lbs. at 40° F.
The pins, link plates, bushings, nuts and silicone sealant are the items included in "Pin and Link Plate Replacement".

MAXIMUM REACTIONS AT PIN

RR	(K)	39.9
R4	(K)	43.1
Imo.	(K)	11.7
R (Total)	(K)	94.7

DESIGNED	AYY
CHECKED	CHM
DRAWN	r.b. carbonell
CHECKED	AYY CHM

DECEMBER 13, 1995
EXAMINED *Jed E. H...*
PASSED



SECTION THRU PIN
(120 Required)

Note A:
Existing welds shall be inspected for cracks using liquid dye penetrant or magnetic particle testing. Any cracks that are found shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Clean and point before installing new link plates.

Note B:
Bore diameter for bushing in link plate, existing webs and web reinforcement plates shall correspond to bushing manufacturer's allowable tolerances for proper functioning. Hole diameter may be adjusted to allow use of stock bushings.

Note C:
Inside face of new link plates shall receive first field coat in shop. The primer shall pass the M.E.K. Rub Test before the first field coat is applied.

Note D:
Actual bushing thickness per manufacturer's specifications, 1/4" is approximate. Bushings shall be a self-lubricating filament wound epoxy matrix backed Duralon Bearing, metal backed Fiber Glide Bearing or equivalent. No primer or grease shall be allowed on bushings. Bushings shall be suitable for dynamic loads of 20,000 psi.

Note E:
Tighten inside nuts to bring all bushings into firm contact, then back off 1/4 turn and tighten outer nuts.

Note F:
Apply 3/8" bead to face of the web reinforcing plates approximately 1/2" from bushing immediately before installing new link plates. Place sealant around nuts after installation. Sealant shall be suitable for prolonged exterior exposure without losing flexibility or adhesion to painted steel surfaces. Proposed products shall be subject to Department's acceptance based on documented testing or other evidence.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Temporary Support System	Each	60
Pin and Link Plate Replacement	Each	60

PIN AND LINK PLATE REPLACEMENT
F.A.P. RT. 431 SEC. 22-5HB-1 & 22-1HB-9
DUPAGE COUNTY
STA. 1250+83.16
STR. No. 022-0137 & 022-0138

EXISTING PLAN INFORMATION 5 OF 17
STRUCTURE NO. 022-0137

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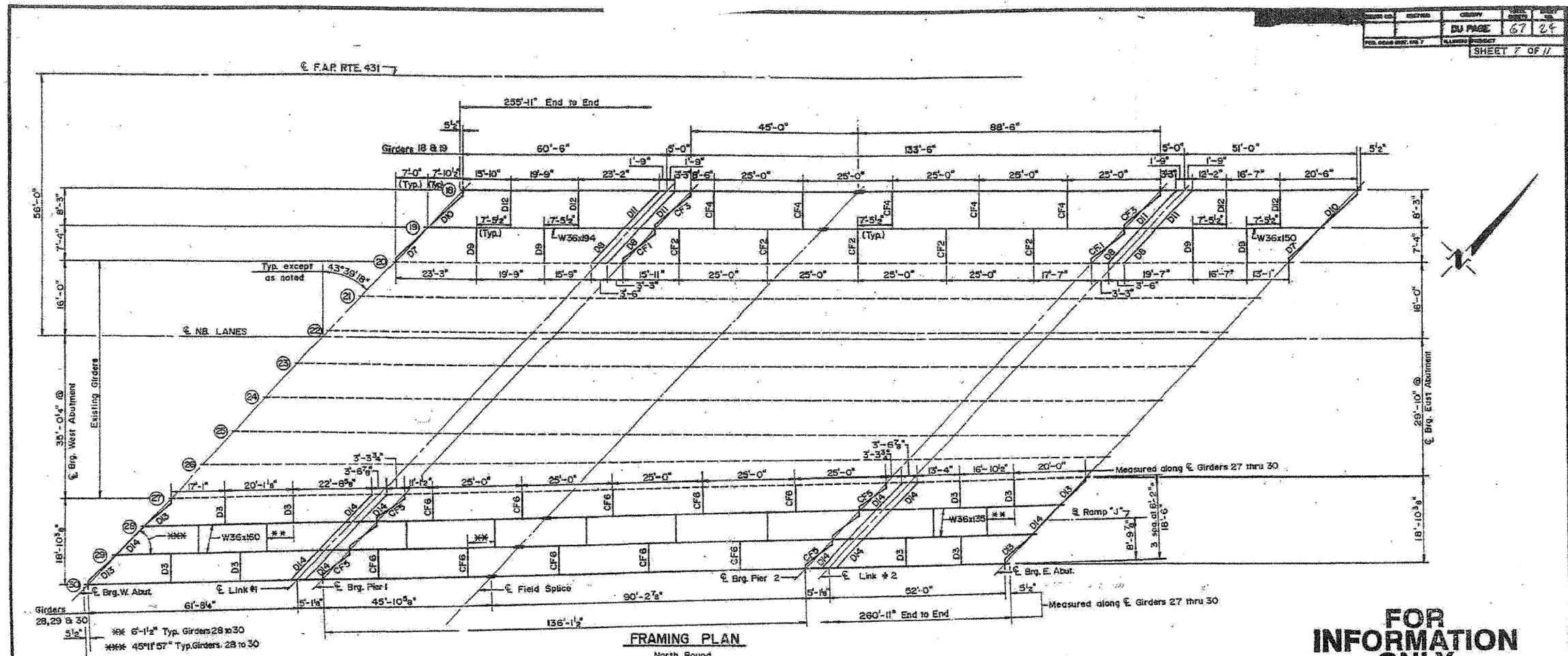
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312-565-0450 Job No. 10050

SHEET NO. 20	F.A.I. RTE. 290-355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 433
32 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DU PAGE 67 24
SHEET 7 OF 11



FOR INFORMATION ONLY

TABLE OF ELEVATIONS
(For Fabrication only)

GIRDERS	NORTH BOUND				
	18	19	28	29	30
E. Brq. W. Abut.	751.43	751.81	752.03	751.89	751.69
E. Link #1 (W. Sect.)	750.52	750.93	750.80	750.80	750.80
E. Link #1 (Grd. Sect.)	750.13	750.46	750.86	750.73	750.60
E. Brq. Pier 1	750.05	750.38	750.82	750.70	750.57
E. Field Splices	749.28	749.59	750.22	750.13	750.04
E. Brq. Pier 2	747.35	747.68	748.48	748.47	748.43
E. Link #2 (W. Sect.)	747.22	747.55	748.35	748.35	748.31
E. Link #2 (W. Sect.)	747.62	748.42	748.42	748.42	748.31
E. Brq. E. Abut.	746.26	746.64	747.47	747.46	747.39

Elevations are given to top of Web for E. Girder Section & Top of Flange of W. Sections.
Elevations at Links & Field Splices have been adjusted for camber.

GIRDER MOMENT TABLE FOR GIRDERS 18 & 19

	0.5 Sp. 1	Piers for 2	0.5 Sp. 2	0.5 Sp. 3
I _s (in ⁴)	12,100	43,816	81,527	9,040
I _c (in ⁴)	23,581	83,956	15,856	17,373
S _s (in ³)	664	1,342	2,382	504
S _c (in ³)	993	648	2843	1074
R (k/ft)	1.07	1.07	1.28	1.02
M _e (K)	490	167	2,964	329
f _{s-n.c.} (ksi)	8.85	1.49	14.62	7.84
S _R (k/A)	0.25	0.25	0.25	0.25
M _{sR} (K)	113	41	555	81
M _k (K)	578	228	1,592	457
M _{imp} (K)	56	44	307	130
TOTAL (K)	847	313	2,454	668
f _{s-c} (ksi)	1.60	2.90	19.17	1.48
f _s TOTAL (ksi)	19.77	4.29	19.17	18.87
VR (k)	54.8		61.5	53.5

GIRDER REACTION TABLE FOR GIRDERS 18 & 19

	W. Abut.	Piers	E. Abut.
R _e (k)	39.9	147.6	32.1
R _k (k)	43.1	99.1	41.7
Imp (k)	11.7	15.3	11.8
R _{TOTAL} (k)	94.7	230.0	85.6

GIRDER MOMENT TABLE FOR GIRDERS 28 THRU 30

	0.5 Sp. 1	Piers for 2	0.5 Sp. 2	0.5 Sp. 3
I _s (in ⁴)	9,750	43,816	63,779	7,800
I _c (in ⁴)	22,507	83,956	15,856	17,373
S _s (in ³)	542	1,342	2,468	439
S _c (in ³)	741	670	2,833	1,000
R (k/ft)	0.771	0.771	1.12	0.741
M _e (K)	366	136	2,481	250
f _{s-n.c.} (ksi)	8.12	1.22	12.06	6.83
S _R (k/A)	0.234	0.234	0.234	0.234
M _{sR} (K)	111	40	508	79
M _k (K)	468	182	1,219	372
M _{imp} (K)	128	35	233	101
TOTAL (K)	705	257	1,980	552
f _{s-c} (ksi)	1.99	2.30	12.48	1.89
f _s TOTAL (ksi)	19.73	3.52	20.24	17.99
VR (k)	43.5		46.5	42.5

GIRDER REACTION TABLE FOR GIRDERS 28 THRU 30

	W. Abut.	Piers	E. Abut.
R _e (k)	31.0	123.4	32.4
R _k (k)	34.3	93.6	33.2
Imp (k)	9.2	10.3	9.3
R _{TOTAL} (k)	74.5	187.3	67.9

For Girder Elevations, See Sheet 16.
For Details of Diaphragms & Cross Frames, See Sheets 15, 16 & 18.
For Camber Diagram, See Sheet 19.
For details of Links #1 & #2 for proposed girders see sheet 16.
For reconstruction details of Links #1 & #2 for existing girders see sheet 34.

f_{s-n.c.} is the stress in the steel of the non-composite section.
f_{s-c} is the stress in the steel of the composite section.
Values affected by the modular ratio n are shown as $\frac{f_s}{n}$.

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s TOTAL.
I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_s TOTAL.
VR is the maximum $\frac{1}{2}$ impact shear range in span.

FRAMING PLAN
NORTH BOUND LANES
F.A.P. RTE. 431 SEC. 22-5HB-1
DU PAGE CO.
STATION 1250+83.16
STR. NO. 022-0137

HSIONG ASSOCIATES LTD.
ENGINEERS & ARCHITECTS
205 NORTH MICHIGAN AVENUE, SUITE 2400
CHICAGO, ILLINOIS 60601
PHONE: 312.665.0450 FAX: 312.665.0450

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312-665-0450 Job No. 10050

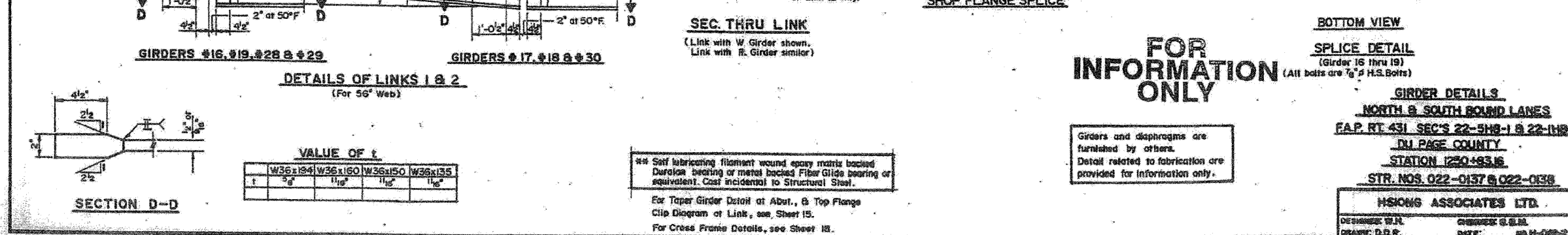
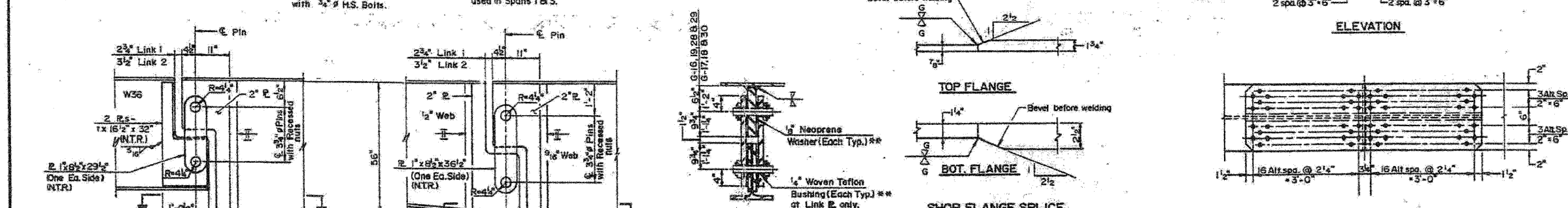
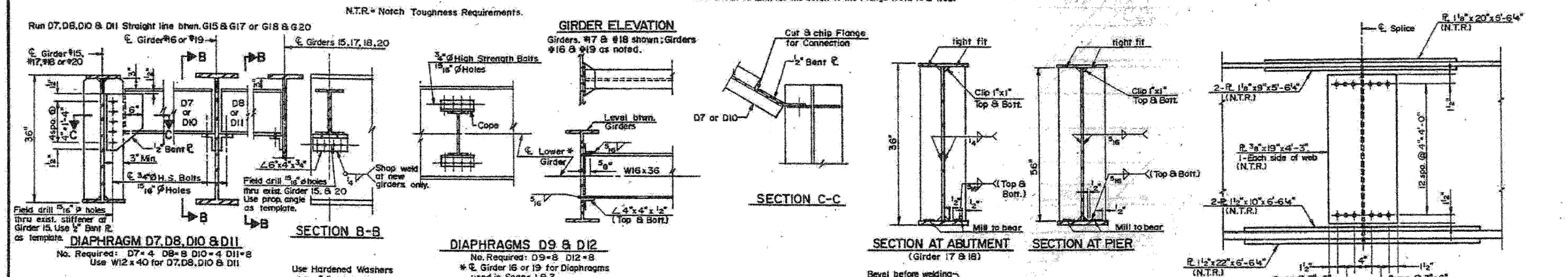
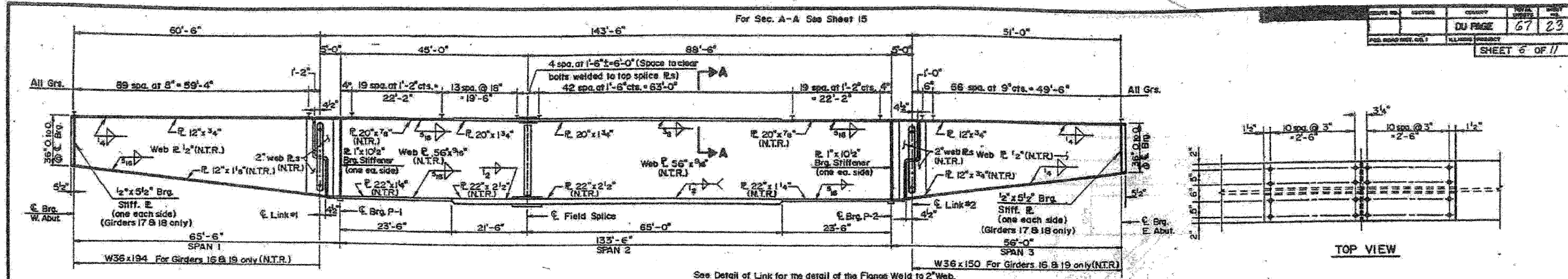
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32 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

EXISTING PLAN INFORMATION 6 OF 17
STRUCTURE NO. 022-0137

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DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			546	435
DU PAGE				
STR. NOS. 022-0137 & 022-0138				



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Girders and diaphragms are furnished by others. Detail related to fabrication are provided for information only.

GIRDER DETAILS
NORTH & SOUTH BOUND LANES
F.A.P. RT. 431, SEC'S 22-5H8-1 & 22-1H8-9
DU PAGE COUNTY
STATION 1250+83.16
STR. NOS. 022-0137 & 022-0138
HSIONG ASSOCIATES LTD.

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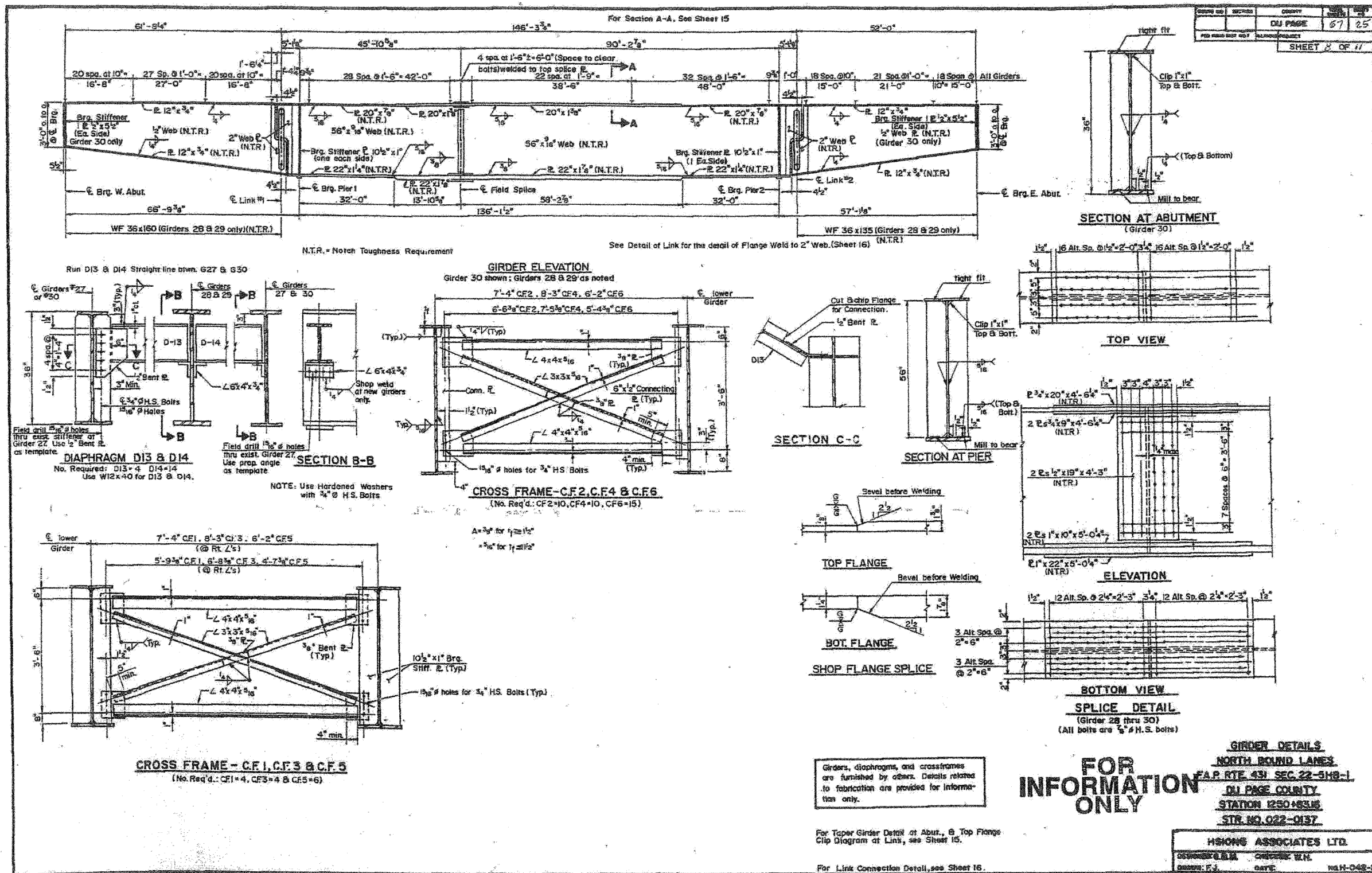
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SHEET NO. 22	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 435
32 SHEETS					
CONTRACT NO. 60G51					
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

EXISTING PLAN INFORMATION 7 OF 17
STRUCTURE NO. 022-0137

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312-565-0460 Job No. 10050

SHEET NO. 23	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 436
	32 SHEETS	CONTRACT NO. 60G51			
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

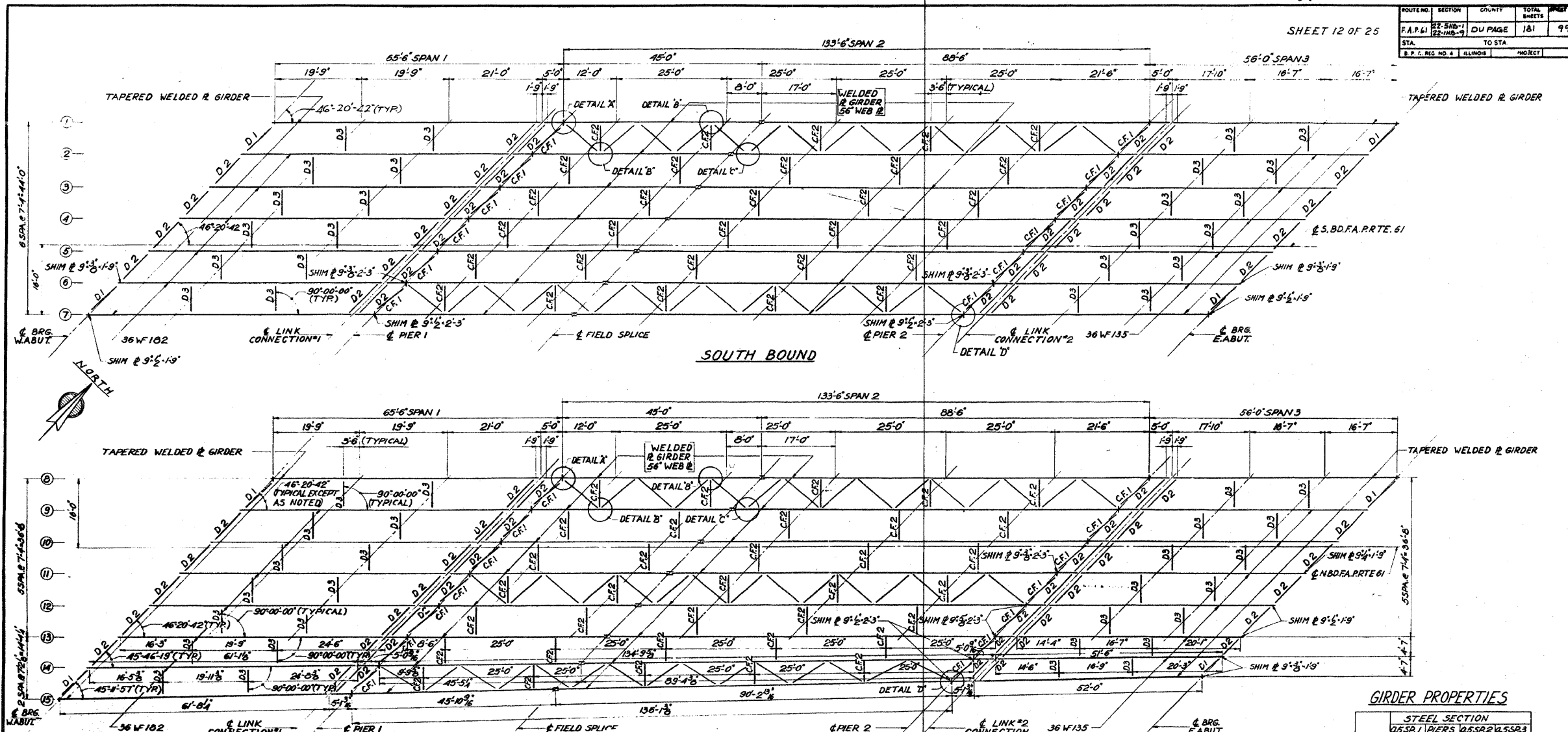
EXISTING PLAN INFORMATION 8 OF 17
STRUCTURE NO. 022-0137

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 12 OF 25

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 61	22-SHB-1 22-IHB-9	DUPAGE	181	99
STA.	TO STA.			
B.P.C. REG. NO. 4	ILLINOIS	PROJECT		



GIRDER ELEVATIONS FOR FABRICATION ONLY

GIRDERS & BEAMS	SOUTH-BOUND							NORTH-BOUND							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
BRG. W. ABUT.	749.779	749.879	749.890	750.451	750.572	750.706	750.619	752.236	752.617	752.877	752.948	752.938	752.735	752.514	752.173
LINK CONN. 1	748.204	748.505	748.806	749.017	749.228	749.352	749.334	750.852	751.246	751.510	751.585	751.594	751.486	751.375	751.246
PIER NO. 1	748.117	748.419	748.723	748.930	749.141	749.265	749.258	750.876	751.260	751.423	751.498	751.509	751.406	751.301	751.181
FIELD SPICE	747.290	747.571	747.652	748.671	748.354	748.417	748.410	750.048	750.332	750.595	750.670	750.691	750.645	750.593	750.529
PIER NO. 2	745.38	745.385	745.387	746.157	746.318	746.442	746.424	748.045	748.527	748.519	748.605	748.671	748.634	748.618	748.615
LINK CONN. 2	745.162	745.463	745.764	746.084	746.256	746.289	746.302	747.920	748.204	748.467	748.543	748.569	748.561	748.556	748.550
BRG. E. ABUT.	747.073	747.142	747.143	745.04	745.235	745.267	745.213	746.831	747.183	747.447	747.522	747.548	747.542	747.537	747.465

ELEVATIONS ARE GIVEN TO TOP OF WEB FOR PLATE GIRDERS AND TO TOP OF FLANGE FOR ROLLED BEAMS.

STRESS TABLE

TABLE OF MOMENTS AND REACTIONS-INTERIOR BEAMS

D.L.	STEEL SECTION-MAX. MOMENTS (FT.KIPS)			REACTIONS (KIPS)			SHEAR (KIPS)		
	DESR1 PIER 1	DESR2 PIER 2	DESR3	W. ABUT.	PIER 1	PIER 2	E. ABUT.	0.2 L _s	0.5 L _s
	427	-153	2,296	-124	269	263	104.3	98.7	22.7
S.D.L.	104	-37	412	-32	74	6.9	232	223	58
L.L.	544	-203	1,415	-196	428	10.5	606	58.6	39.1
IMR	146	-61	275	-59	124	10.0	740	73.5	11.2
TOTAL	794	-301	2,162	-287	626	25.7	202.1	193.7	78.8

S.D.L. = SUPERIMPOSED DEAD LOAD
 I_s = MOMENT OF INERTIA STEEL SECT.
 S_{ts} = SECT. MODULUS TOP STEEL SECT.
 S_{bs} = SECT. MODULUS BOT. STEEL SECT.
 I_c = MOMENT OF INERTIA COMP. SECT.
 S_{tc} = SECT. MODULUS TOP COMP. SECT.
 S_{bc} = SECT. MODULUS BOT. COMP. SECT.

GIRDER PROPERTIES

STEEL SECTION	PIERS	DESR2	DESR3
I _s	11,282	36,949	62,498
S _{ts}	621	1,097	1,756
S _{bs}	621	1,572	2,571
COMPOSITE SECTION 11-10			
I _c	25,482	123,706	15,296
S _{tc}	4,205	6,271	4,167
S _{bc}	872	3,081	618

FRAMING PLAN
F.A.P. ROUTE 61 OVER
ILLINOIS ROUTE 53 (ROHLWING ROAD)
PROJECT
SECTIONS 22-SHB-1 & 22-IHB-9
DUPAGE COUNTY
STATION 1250+83.16

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
19 S. WABASH AVE. CHICAGO, ILLINOIS

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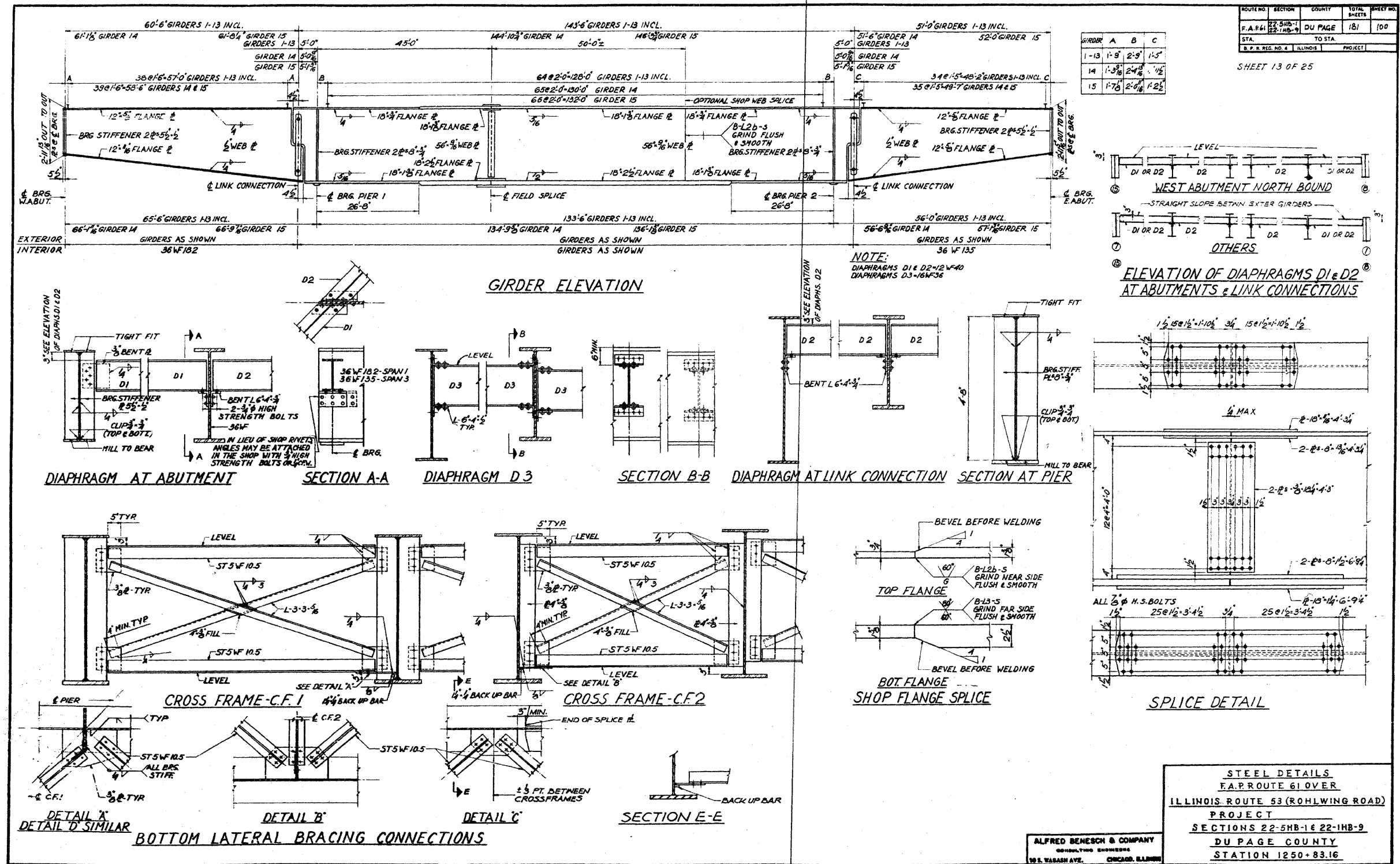
benesch
alfred benesch & company
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 24	F.A.I. RTE. 290	SECTION 221, 1-1, 2&3RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 437
32 SHEETS			CONTRACT NO. 60G51		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

EXISTING PLAN INFORMATION 9 OF 17
STRUCTURE NO. 022-0137

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 61	22-5HB-1	DU PAGE	181	100
STA.	TO STA.			
S.P. REG. NO. 4	ILLINOIS	PROJECT		

SHEET 13 OF 25

GIRDER	A	B	C
1-13	1'-9"	2'-9"	1'-5"
14	1'-3 1/2"	2'-4 1/2"	1'-1/2"
15	1'-7 1/2"	2'-0 1/2"	1'-2 1/2"

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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-665-0450 Job No. 10050

SHEET NO.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
25	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	438
32 SHEETS				CONTRACT NO. 60G51	
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

EXISTING PLAN INFORMATION IO OF 17
STRUCTURE NO. 022-0137

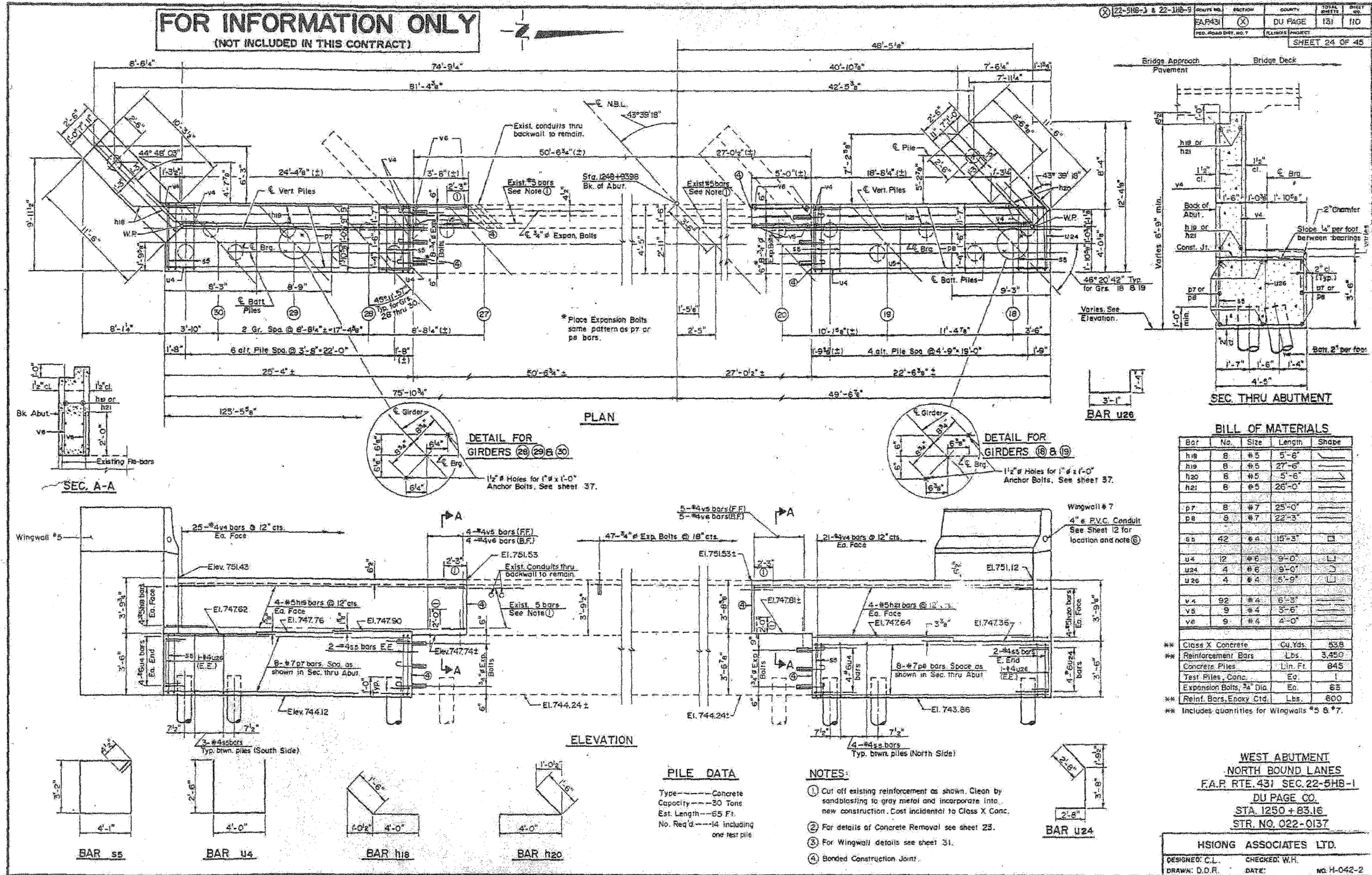
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FOR INFORMATION ONLY
(NOT INCLUDED IN THIS CONTRACT)

22-5HB-3 & 22-1HB-9	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P.431	221	1-1, 2&3RS-7	DUPAGE	546	440
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

SHEET 24 OF 45



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Chicago, Illinois 60601
312-665-0450 Job No. 10050

SHEET NO. 27	F.A.I. RTE. 290	SECTION 221, 1-1, 2&3RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 440
32 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 12 OF 17
STRUCTURE NO. 022-0137

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22-5HB-1 & 22-1HB-9	DU PAGE	DUPAGE	131	117
SHEET 31 OF 45				

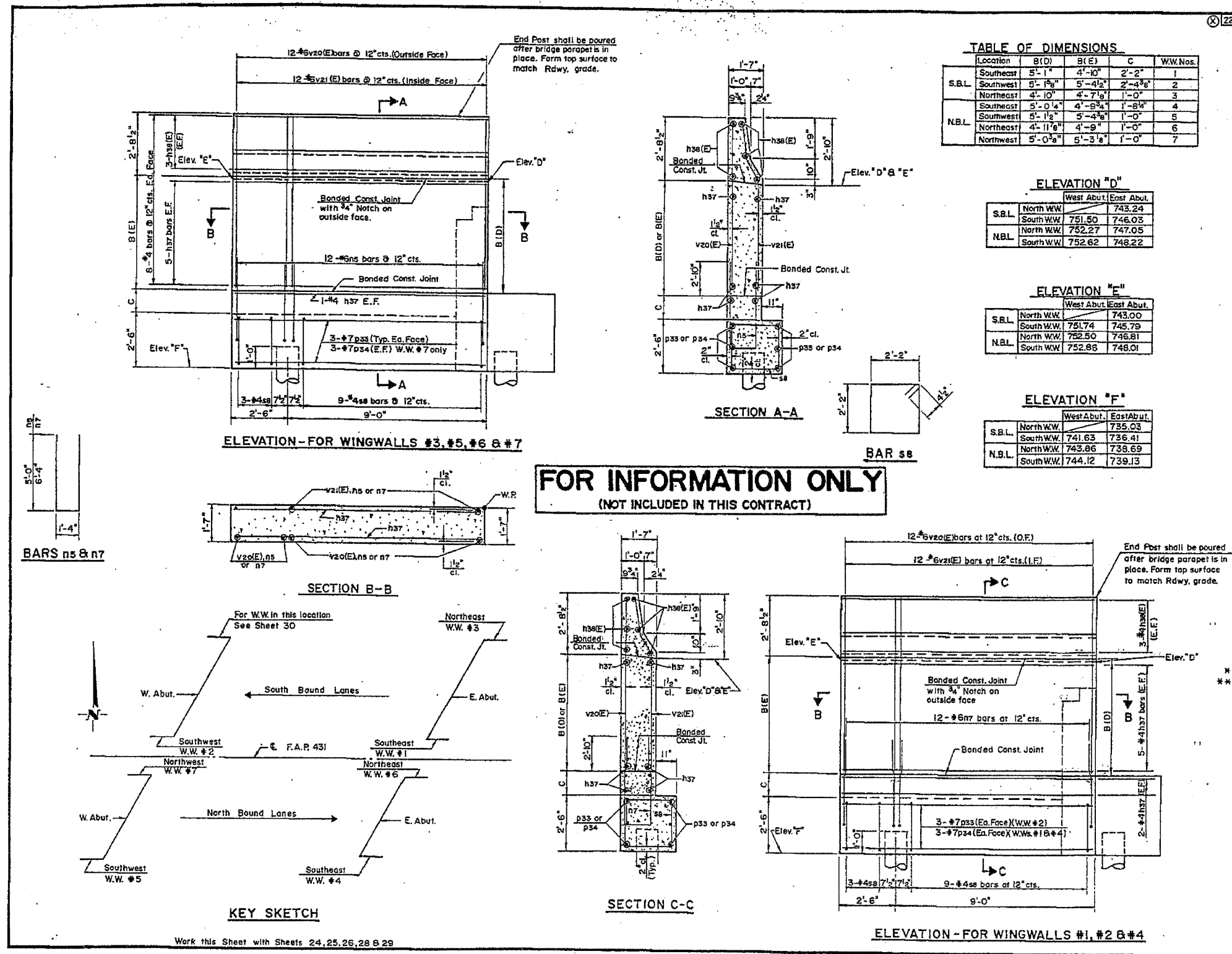


TABLE OF DIMENSIONS

Location	B(D)	B(E)	C	W.W.Nos.
S.B.L. Southeast	5'-1"	4'-10"	2'-2"	1
S.B.L. Southwest	5'-1 1/2"	5'-4 1/2"	2'-4 1/2"	2
S.B.L. Northeast	4'-10"	4'-7 1/2"	1'-0"	3
N.B.L. Southeast	5'-0 1/4"	4'-9 1/4"	1'-8 1/4"	4
N.B.L. Southwest	5'-1 1/2"	5'-4 1/2"	1'-0"	5
N.B.L. Northeast	4'-11 1/8"	4'-9"	1'-0"	6
N.B.L. Northwest	5'-0 3/8"	5'-3 1/8"	1'-0"	7

ELEVATION "D"

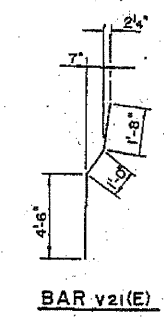
S.B.L.	West Abut.		East Abut.
	North W.W.	South W.W.	
			743.24
			751.50
N.B.L.	North W.W.	South W.W.	747.05
			752.62
			748.22

ELEVATION "E"

S.B.L.	West Abut.		East Abut.
	North W.W.	South W.W.	
			743.00
			751.74
N.B.L.	North W.W.	South W.W.	746.81
			752.50
			748.01

ELEVATION "F"

S.B.L.	West Abut.		East Abut.
	North W.W.	South W.W.	
			735.03
			741.63
N.B.L.	North W.W.	South W.W.	738.69
			743.86
			739.13



BAR LIST - ONE WINGWALL FOR WINGWALLS #3, #5, #6 & #7

BAR	NO.	SIZE	LENGTH	SHAPE
n37	12	#4	11'-3"	
n38(E)	6	#4	11'-3"	
n5	12	#6	11'-4"	
p33	6	#7	13'-0"	
p34	6	#7	11'-0"	
s8	12	#4	9'-5"	
v20(E)	12	#6	7'-0"	
v21(E)	12	#6	7'-2"	

BAR LIST - ONE WINGWALL FOR WINGWALLS #1, #2 & #4

BAR	NO.	SIZE	LENGTH	SHAPE
h37	14	#4	11'-3"	
h38(E)	6	#4	11'-5"	
n7	12	#6	14'-0"	
p33	6	#7	13'-0"	
p34	6	#7	11'-0"	
s8	12	#4	9'-5"	
v20(E)	12	#6	7'-0"	
v21(E)	12	#6	7'-2"	

WINGWALL DETAILS
F.A.P. ROUTE 431
SECTIONS 22-5HB-1 & 22-1HB-9
DU PAGE CO.
STATION 1250+83.16
STRUCTURE NOS 022-0137 & 022-0138

HSIONG ASSOCIATES LTD.
DESIGNED: C.L. CHECKED: W.H.
DRAWN: F.D.J. & R.H.K. DATE: NOV-04-82

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(NOT INCLUDED IN THIS CONTRACT)

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alfred benesch & company
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-665-0460 Job No. 10050

SHEET NO. 29	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 442
32 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 14 OF 17
STRUCTURE NO. 022-0137

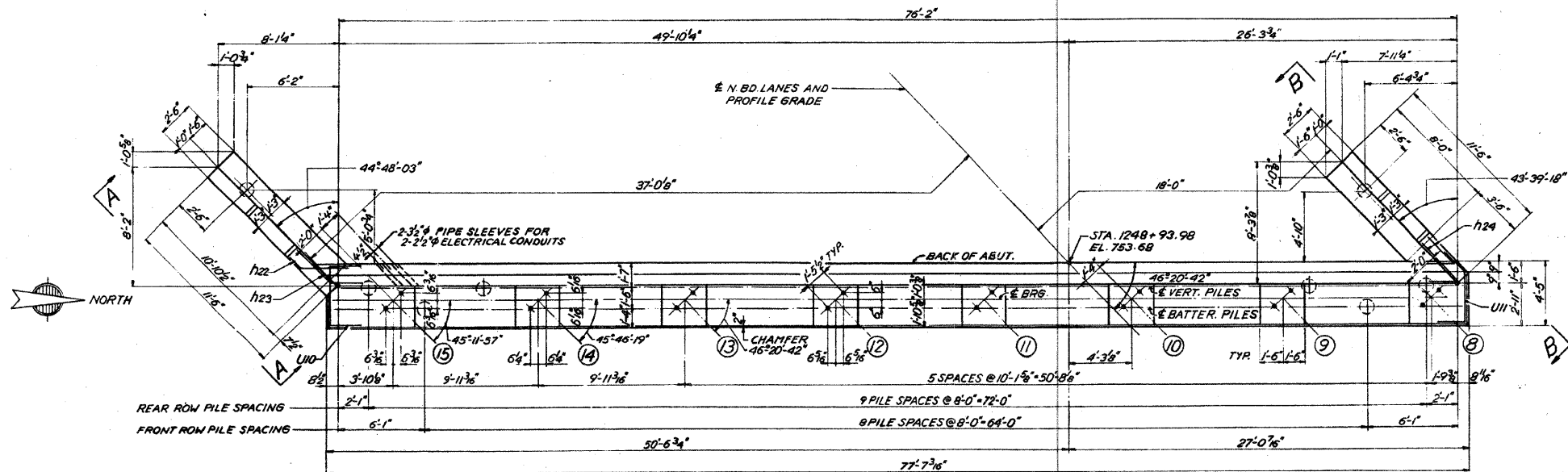
Work this Sheet with Sheets 24, 25, 26, 28 & 29

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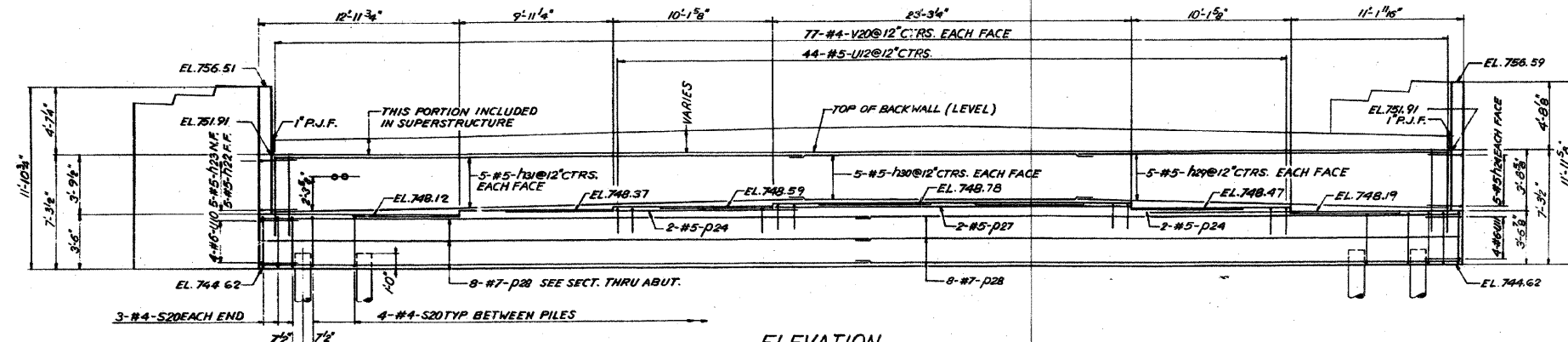
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 61	22(1, 1-1, 2&3)RS-7	DUPAGE	181	105
STA.	TO STA.			
8 P. S. REG. NO. 4	ILLINOIS	PROJECT		

SHEET 18 OF 25



PLAN
SCALE: 1/4" = 1'-0"



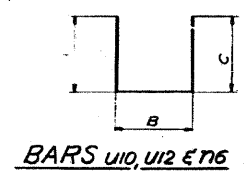
ELEVATION

BILL OF MATERIAL

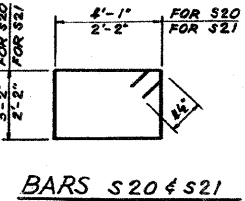
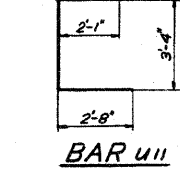
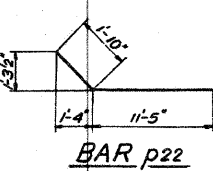
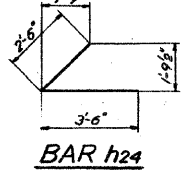
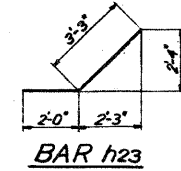
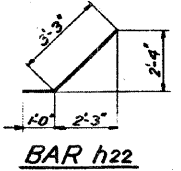
BAR NO.	NO.	SIZE	LENGTH	SHAPE
h22	5	#5	4-3	✓
h23	5	#5	5-3	✓
h24	10	#5	6-0	✓
h25	36	#4	11-3	✓
h26	4	#4	7-6	✓
h27	4	#4	3-6	✓
h29	10	#5	24-9	✓
h30	10	#5	20-0	✓
h31	10	#5	35-0	✓
h76	24	#5	8-9	✓
D21	6	#7	13-0	✓
D22	3	#7	13-3	✓
D23	3	#7	12-0	✓
D24	4	#5	11-3	✓
D27	2	#5	23-0	✓
D28	16	#7	39-6	✓
S20	78	#4	15-3	✓
S21	24	#4	9-5	✓
U10	4	#6	9-0	✓
U11	4	#6	9-0	✓
U12	44	#4	6-9	✓
V14	16	#4	8-3	✓
V17	16	#4	7-6	✓
V19	16	#4	7-0	✓
V20	154	#4	5-6	✓
CLASS X CONCRETE	CU. YDS.	73.5		
REINF. BARS	LBS.	5210		
CONCRETE PILES	LIN. FT.	1300		

PILE DATA

TYPE	CONCRETE
CAPACITY	30 TONS
EST. LENGTH	65'
*NO. REQUIRED	21
*INCLUDE 1 TEST PILE	



BAR	A	B	C
U10	2'-6"	4'-0"	2'-6"
U12	2'-1"	2'-7"	2'-1"
h76	3'-9"	9'	3'-9"



WEST ABUTMENT-NORTH BOUND
F.A.P. ROUTE 61 OVER
ILLINOIS ROUTE 53 (ROHLWING ROAD)
PROJECT
SECTIONS 22-5HB-1 & 22-1HB-9
DU PAGE COUNTY
STATION 1250+83.16

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
10 S. WABASH AVE. CHICAGO, ILLINOIS

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Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

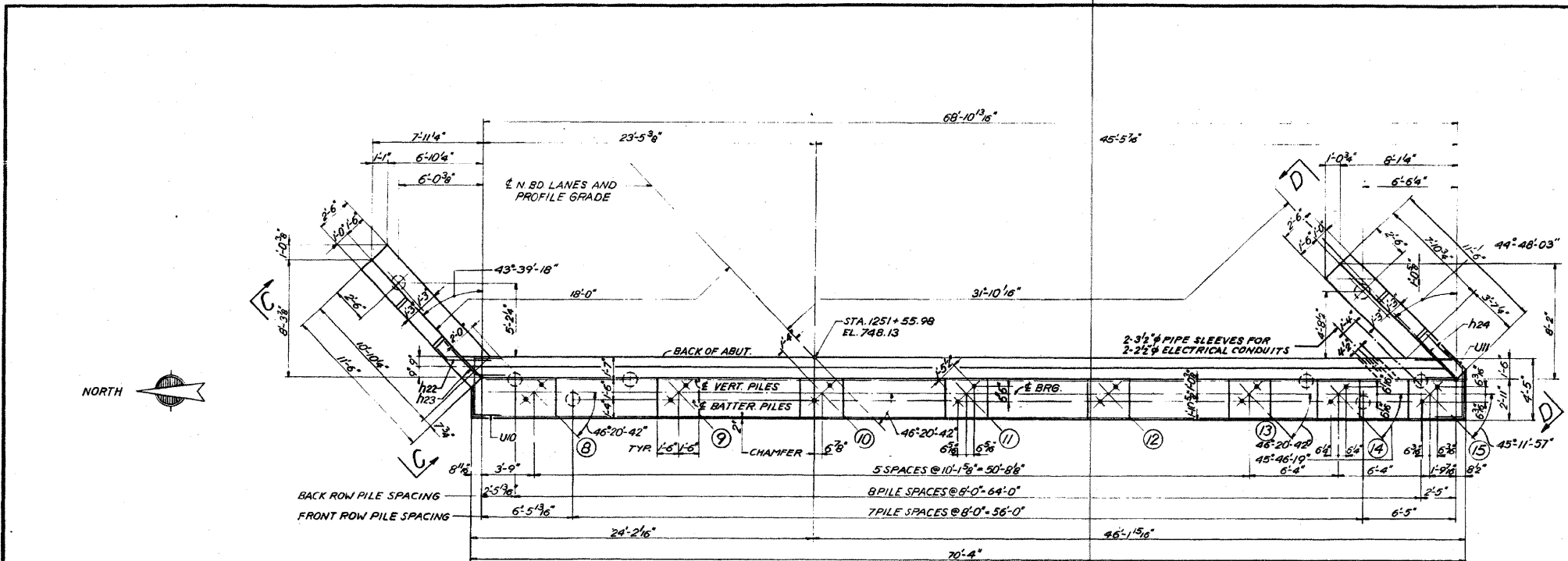
SHEET NO. 30	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 443
32 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 15 OF 17
STRUCTURE NO. 022-0137

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 290	22-5HB-16	DUPAGE	181	106
STA.	TO STA.			
1250+83.16	1250+83.16			
SHEET 19 OF 25				



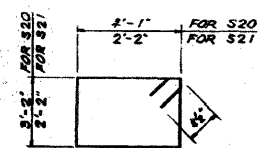
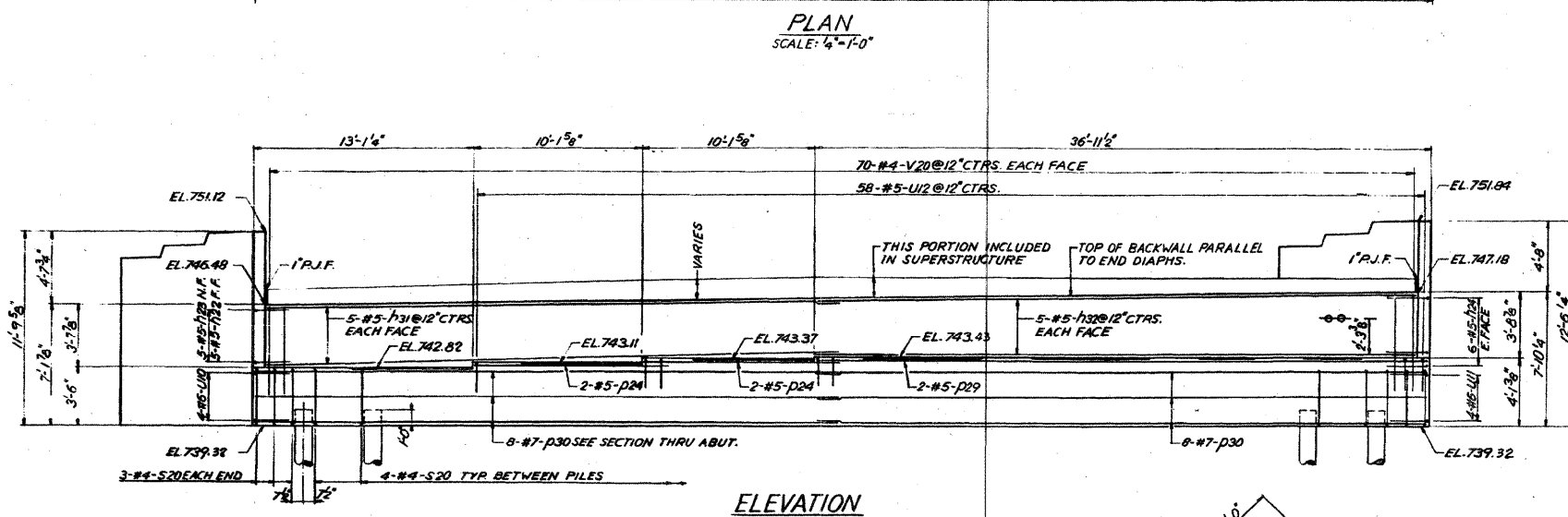
BILL OF MATERIAL

BAR NO.	NO.	SIZE	LENGTH	SHAPE
h22	5	#5	4'-3"	✓
h23	5	#5	5'-3"	✓
h24	12	#5	6'-0"	✓
h25	36	#4	11'-3"	✓
h26	4	#4	7'-6"	✓
h27	4	#4	3'-6"	✓
h31	10	#5	35'-0"	✓
h32	10	#5	36'-3"	✓
U10	4	#6	9'-0"	✓
U11	4	#6	9'-1"	✓
U12	58	#5	6'-9"	✓
D21	6	#7	13'-0"	✓
D22	3	#7	13'-3"	✓
D23	3	#7	12'-0"	✓
D24	4	#5	11'-3"	✓
D29	2	#5	36'-6"	✓
D30	16	#7	36'-0"	✓
S20	70	#4	15'-3"	✓
S21	24	#4	9'-5"	✓
VII	8	#4	7'-3"	✓
V14	8	#4	6'-3"	✓
V15	8	#4	6'-0"	✓
V16	8	#4	8'-0"	✓
V17	8	#4	7'-6"	✓
V18	8	#4	6'-9"	✓
V20	140	#4	5'-6"	✓

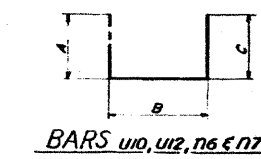
CLASS 'X' CONCRETE	CU. YDS.	69.2
REINF. BARS	LBS.	5130
CONCRETE PILES	LIN. FT.	900

PILE DATA

TYPE: CONCRETE
CAPACITY: 30 TONS
EST. LENGTH: 60'
*NO. REQUIRED: 19
*INCLUDES 1 TEST PILE



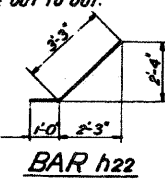
BARS S20 & S21



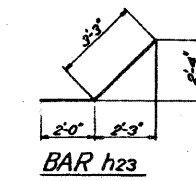
BARS U10, U12, U16 & U17

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT.

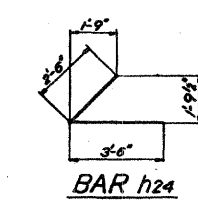
BAR	A	B	C
U10	2'-6"	4'-0"	2'-6"
U12	2'-1"	2'-7"	2'-1"
U16	3'-9"	9'	3'-9"
U17	4'-3"	9'	4'-3"



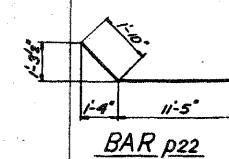
BAR h22



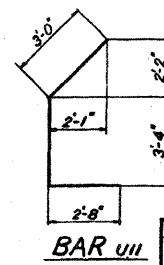
BAR h23



BAR h24



BAR p22



BAR u11

EAST ABUTMENT-NORTH BOUND
F.A.P. ROUTE 61 OVER
ILLINOIS ROUTE 53 (ROHLING ROAD)
PROJECT
SECTIONS 22-5HB-16 22-1HB-9
DUPAGE COUNTY
STATION 1250+83.16

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
121 N. WASHINGTON ST. CHICAGO, ILLINOIS

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Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 31	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 444
32 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

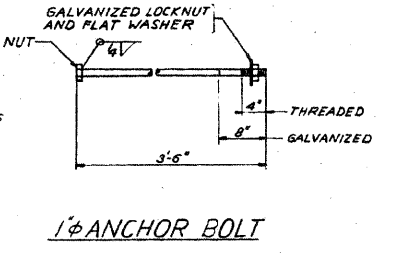
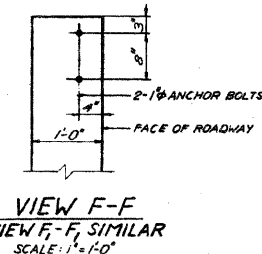
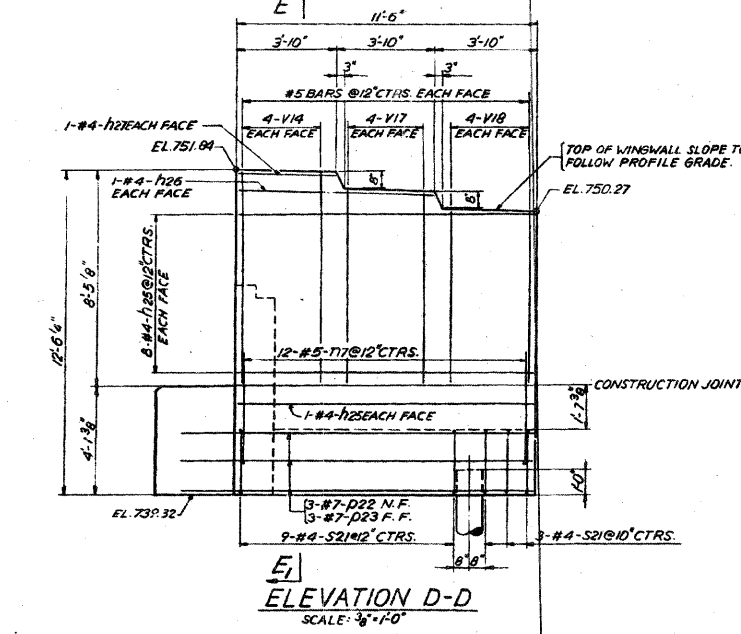
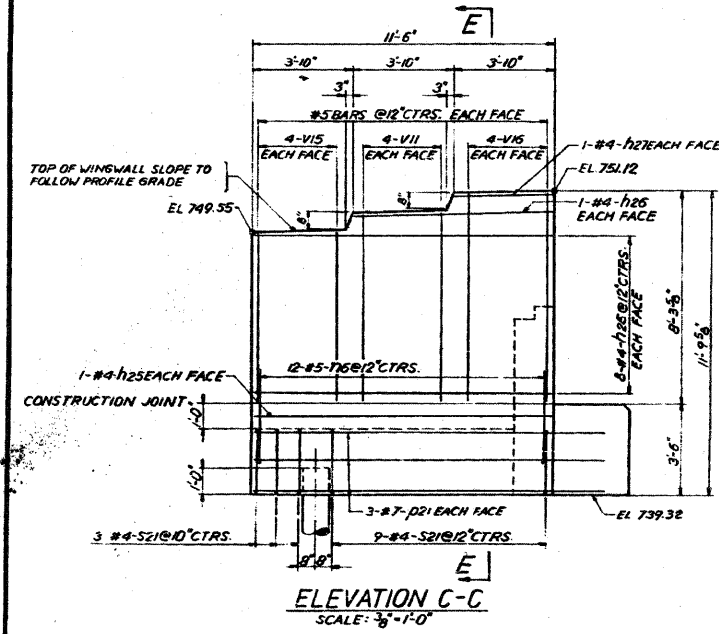
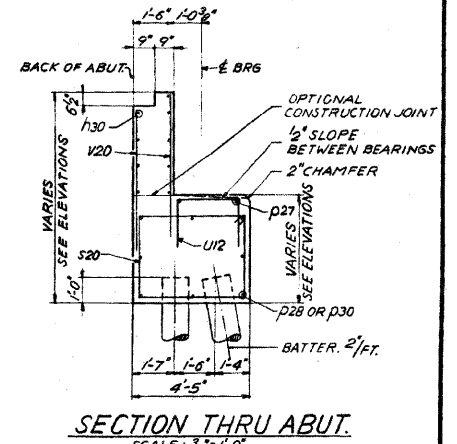
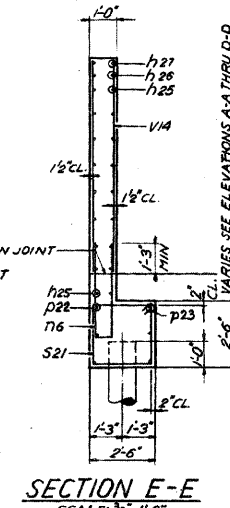
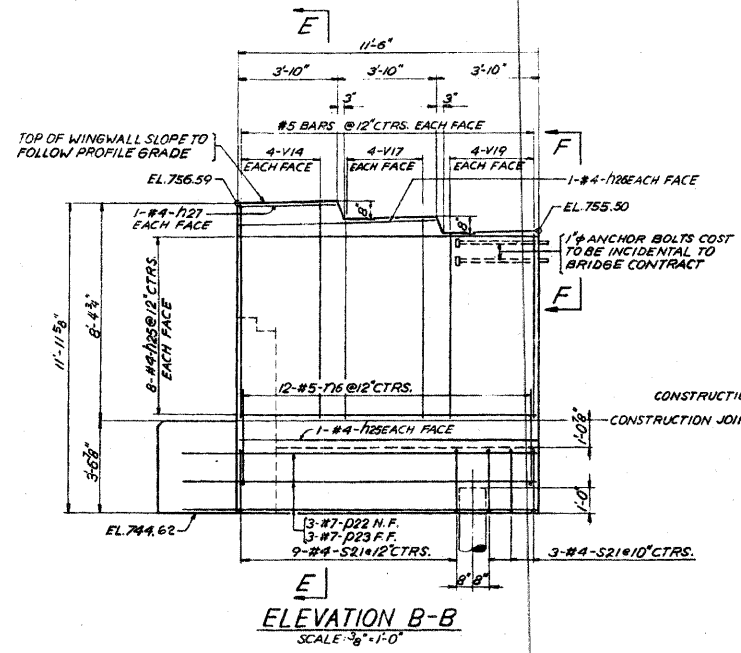
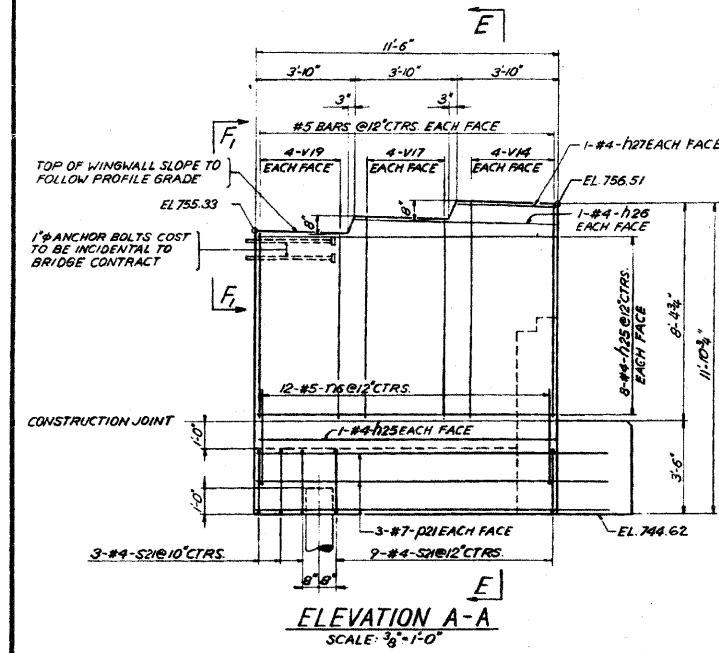
EXISTING PLAN INFORMATION 16 OF 17
STRUCTURE NO. 022-0137

I:\112\2009\10050\engineering\documents\contract\1\SN.022.0138.0137_Rohling-Rd\0137-60G51-031-Existplan.16.dgn 18:45:29 11/12/2009

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE/SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.R. 61	DUPAGE	181	107
STA.	TO STA.		
S.P. & REG. NO. 4	ILLINOIS	PROJECT	

SHEET 20 OF 25



ABUTMENT DETAILS-NORTH BOUND
F.A.P. ROUTE 61 OVER
ILLINOIS ROUTE 53 (ROHLWING ROAD)
PROJECT
SECTIONS 22-5HB-1 & 22-1HB-9
DUPAGE COUNTY
STATION 1250+83.16

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
38 S. WABASH AVE. CHICAGO, ILLINOIS

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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 32	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	221, 1-1, 2&3RS-7	DUPAGE	546	445
32 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

EXISTING PLAN INFORMATION 17 OF 17
STRUCTURE NO. 022-0137

18:15:40
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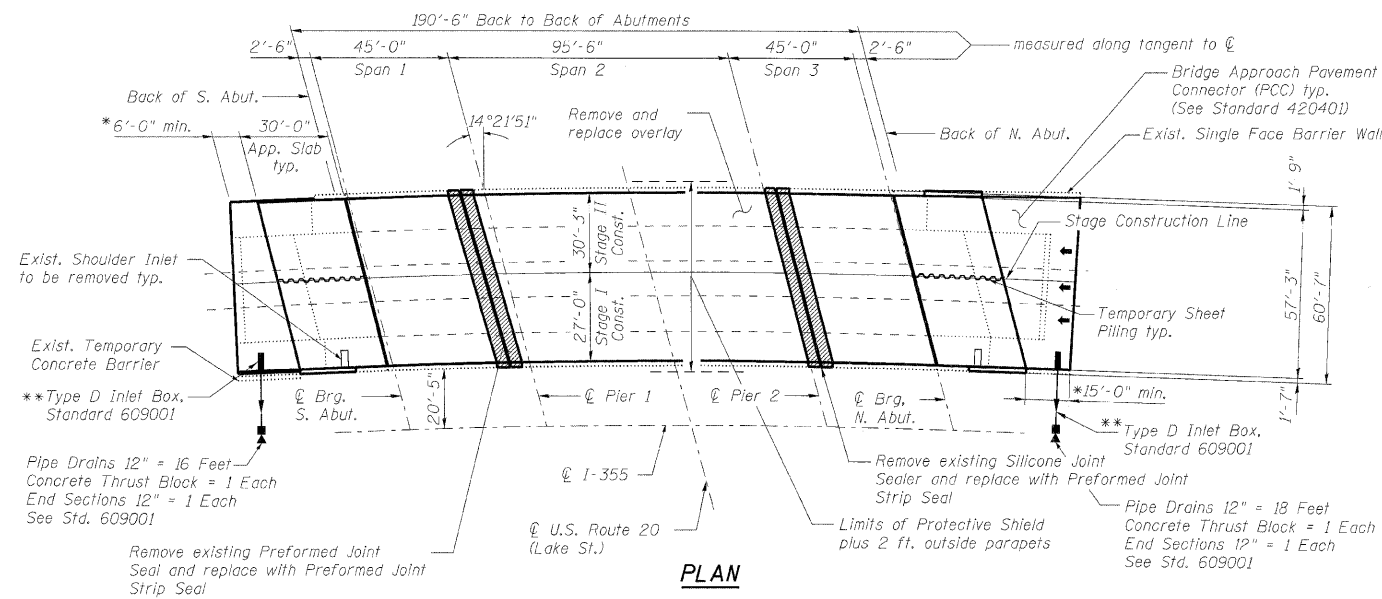
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure:
The structure is a three-span continuous composite steel structure with a 7/2-inch reinforced concrete deck and a 2-inch concrete overlay. The original structure was built in 1970 as F.A.P. Route 61, Section 22-5HB. In 1988, the deck was widened and overlaid. In 1997, the expansion joints at both piers were reconstructed. In 2002, a beam segment was replaced.

Bench Mark:
Chiseled "□" on S.E. corner of East Wingwall of the N. Abut. of the Southbound Structure. Elev. 765.72

Stage construction shall be utilized to maintain traffic during construction.

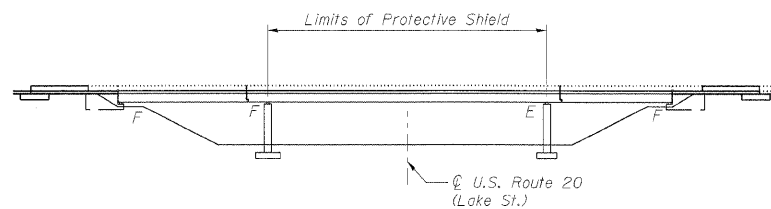
No salvage



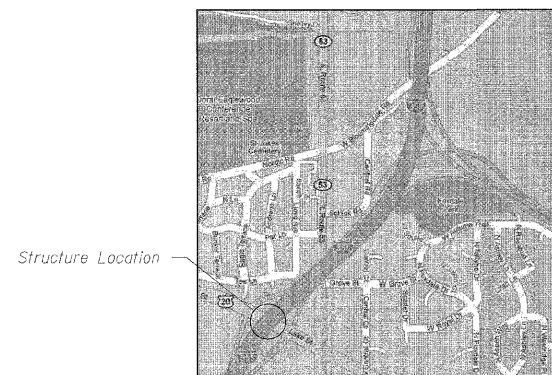
PLAN

*Limits of Bridge Approach Pavement Connector (PCC) shall extend to the location of the existing relief joint, 6'-0" beyond the limits of the Proposed Bridge Approach Slab per Hwy. Std. 420401, or 15'-0" beyond the limits of the proposed Bridge Approach Slab per Hwy. Std. 609001 wherever shoulder inlets are proposed.

**Match existing shoulder elevations.



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

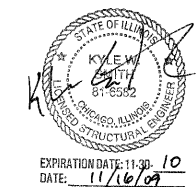
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi

SCOPE OF WORK

1. Remove bridge approach slabs.
2. Bridge Deck Hydro-scarification.
3. Repair bridge deck.
4. Reconstruct deck joints near each pier with preformed joint strip seal.
5. Place New Overlay.
6. Stabilize abutments.
7. Replace bridge approach slabs and approach pavement connectors.
8. Install inlets at approach shoulders.
9. Trim beam ends at pin and link connection.
10. Apply Protective Coat.



GENERAL PLAN AND ELEVATION
I-355 SB OVER U.S. ROUTE 20
DUPAGE COUNTY
STATION 95+19
STRUCTURE NO. 022-0111

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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Chicago, Illinois 60601
312-565-0460 Job No. 10050

SHEET NO. 1 28 SHEETS	F.A.I. RTE. 290-355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 446
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOTAL BILL OF MATERIAL

GENERAL NOTES

- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- If the contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
- The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing pile. This connection shall be reviewed and accepted by the Engineer and included in the cost of Temporary Sheet Piling.
- Stage construction shall be utilized to maintain traffic during construction.
- The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
- Protective Coat shall be applied to the new Bridge Deck Latex Concrete Overlay and Approach Slabs as well as to the top and inside faces of Parapets.
- Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

- General Plan and Elevation
- General Notes, Bill of Material and Index of Sheets
- Stage Construction Details
- Temporary Concrete Barrier for Stage Construction
- Bridge Deck and Approach Slab Repairs
- South Bridge Approach Slab Details (1 of 2)
- South Bridge Approach Slab Details (2 of 2)
- North Bridge Approach Slab Details (1 of 2)
- North Bridge Approach Slab Details (2 of 2)
- Expansion Joint Repairs
- Expansion Joint Details
- Preformed Joint Strip Seal
- Steel Repair Details
- Abutment Stabilization Details
- Bar Splicer Assembly Details
- 16-28. Existing Plan Information

ITEM	UNIT	SUPER	SUB	TOTAL
Bridge Approach Pavement Connector (PCC)	Sq. Yd.	230		230
Pavement Reinforcement 9"	Sq. Yd.	230		230
Approach Slab Removal	Sq. Yd.	605		605
Concrete Barrier Removal	Foot	58.5		58.5
Concrete Removal	Cu. Yd.	28.0		28.0
Protective Shield	Sq. Yd.	685		685
* Structure Excavation	Cu. Yd.		273	273
Concrete Structures	Cu. Yd.		38.5	38.5
Concrete Superstructure	Cu. Yd.	205.7		205.7
Bridge Deck Grooving	Sq. Yd.	1,475		1,475
Protective Coat	Sq. Yd.	1,785		1,785
Reinforcement Bars, Epoxy Coated	Pound	43,710	6,940	50,650
Bar Splicers	Each	178	80	258
Temporary Sheet Piling	Sq. Ft.		401	401
Preformed Joint Strip Seal	Foot	123.0		123.0
End Sections 12"	Each	2		2
Geocomposite Wall Drain	Sq. Yd.		97	97
Pipe Drains 12"	Foot	34		34
Pipe Underdrains for Structures 4"	Foot		130	130
Removing Inlets	Each	2		2
Type D Inlet Box, Standard 609001	Each	2		2
Concrete Thrust Blocks	Each	2		2
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,142		1,142
Expanded Polystyrene Fill	Cu. Yd.		175	175
Bridge Deck Hydro-Scarification, 2 1/4"	Sq. Yd.	1,142		1,142
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	5.1		5.1
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	7.8		7.8
Modify Existing Pin & Link Connection	L. Sum	0.19		0.19

* All excavated materials shall be disposed of within IDOT right-of-way and within the project limits. See the General Notes sheet from the roadway plans for more information.

GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 022-0111

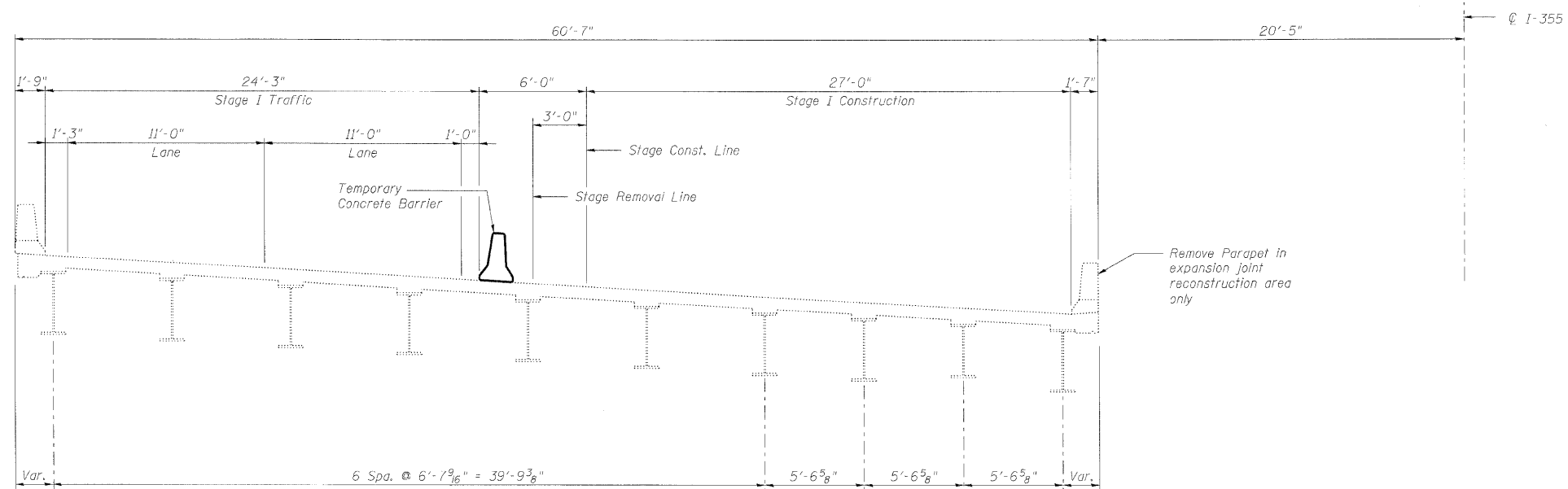
DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

benesch

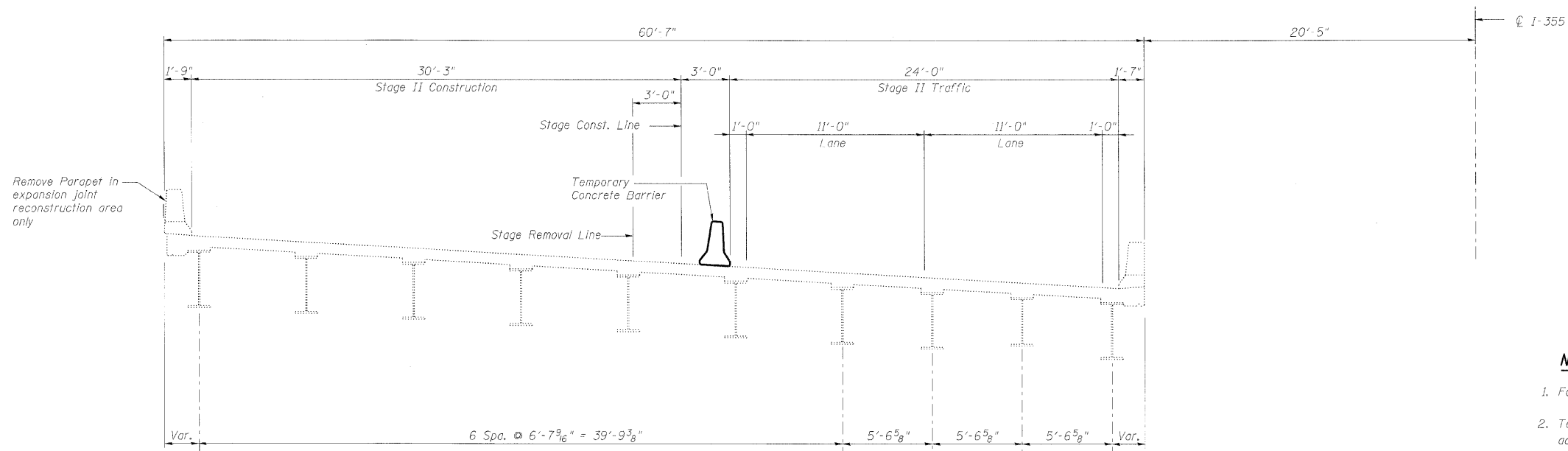
alfred benesch & company
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-666-0450 Job No. 10050

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290				
28 SHEETS	355	CONTRACT NO. 60G51			
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking North)



STAGE II CROSS SECTION
(Looking North)

Notes:

1. For quantity of Temporary Concrete Barrier, see roadway plans.
2. Temporary Concrete Barrier to be anchored to the approach slabs adjacent to locations of Structure Excavation. For Temporary Concrete Barrier Details, see Temporary Concrete Barrier for Stage Construction sheet.

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 022-0111

DESIGNED -	MFB
CHECKED -	MAC
DRAWN -	VH
CHECKED -	KWS

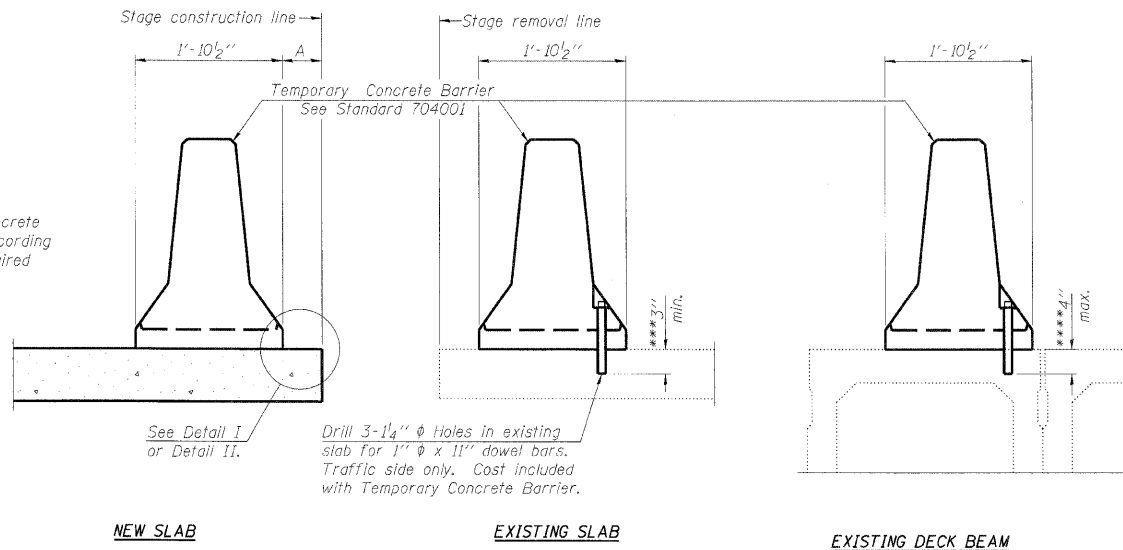
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312-665-0450 Job No. 10050

SHEET NO. 3 28 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 448
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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DEPARTMENT OF TRANSPORTATION

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

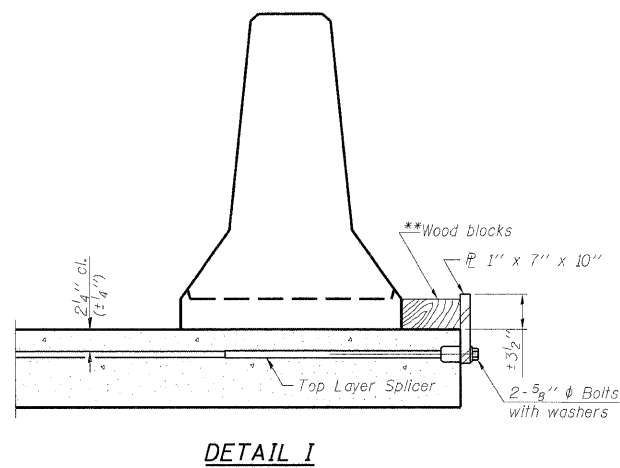
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{r} to the top layer of couplers with 2-5/8" ϕ bolts screwed to coupler at approximate \bar{c} of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{r} to the concrete slab or concrete wearing surface with 2-5/8" ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{c} of each barrier panel.

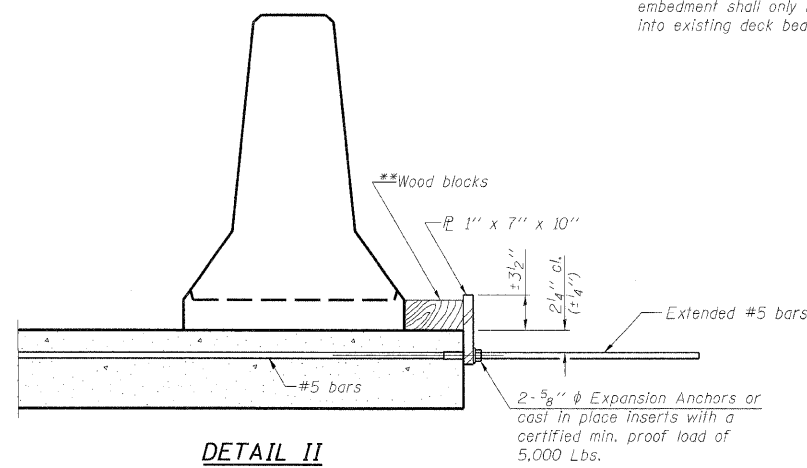
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.

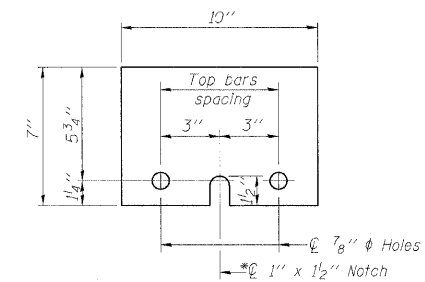


DETAIL I



DETAIL II

**Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.



STEEL RETAINER \bar{r} 1" x 7" x 10"

* Required only with Detail II

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

R-27

10-1-08

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312-565-0450 Job No. 10050

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 022-0111

SHEET NO. 4 28 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 449
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

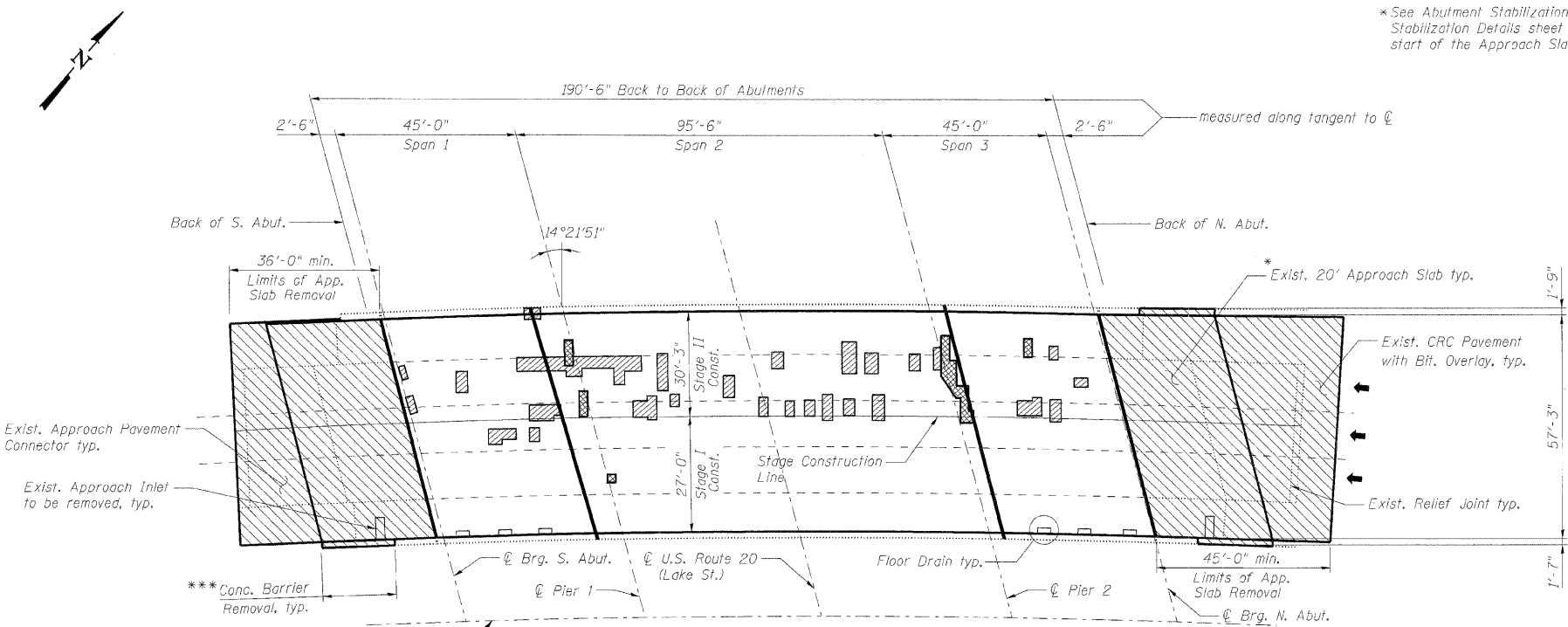
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	61.1 ▲
	Deck Slab Repair (Full Depth - Type I)	Sq. Yd.	5.1
	Deck Slab Repair (Full Depth - Type II)	Sq. Yd.	7.8
	Protective Shield	Sq. Yd.	685
	Protective Coat	Sq. Yd.	1,371
	Bridge Deck Grooving	Sq. Yd.	1,101
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,142
	Bridge Deck Hydro-Scarification, 2 1/4"	Sq. Yd.	1,142

▲ For information only to assist the Contractor in bidding. See Special Provision for "Bridge Deck Latex Concrete Overlay."

Notes:

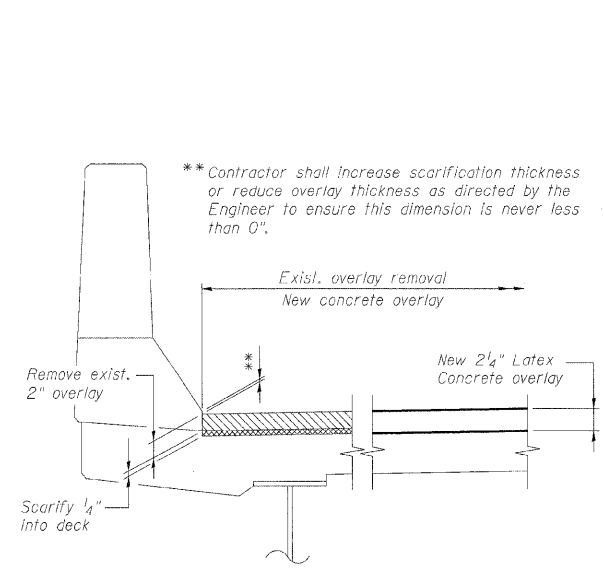
- Deck and approach slab repair areas are estimated based on an infrared thermographic deck survey and visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield see General Plan and Elevation sheet.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 2 1/4".
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2 1/4".
- See Approach Slab Details sheets for Approach Slab removal and replacement details and quantities. See the Special Provisions for "Approach Slab Removal" and "Concrete Barrier Removal".
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and shall protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.



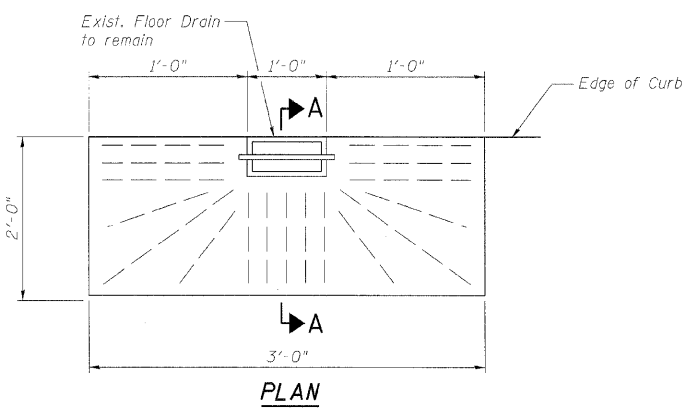
PLAN

Approach Slab Removal and Concrete Barrier Removal.

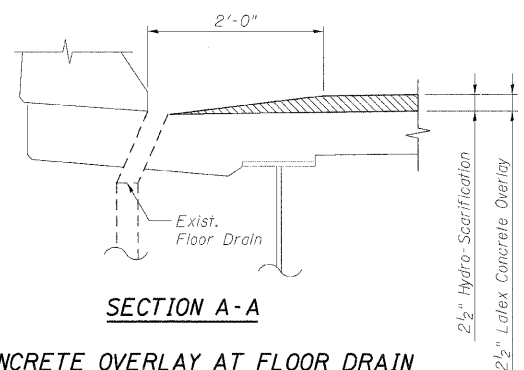
*** Limits of Concrete Barrier Removal shall match the limits of proposed parapet on the approaches. See sheets 6 thru 9 for details. See Note 6.



**SCARIFICATION & OVERLAY
DETAIL AT PARAPET**



PLAN



**SECTION A-A
CONCRETE OVERLAY AT FLOOR DRAIN**

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

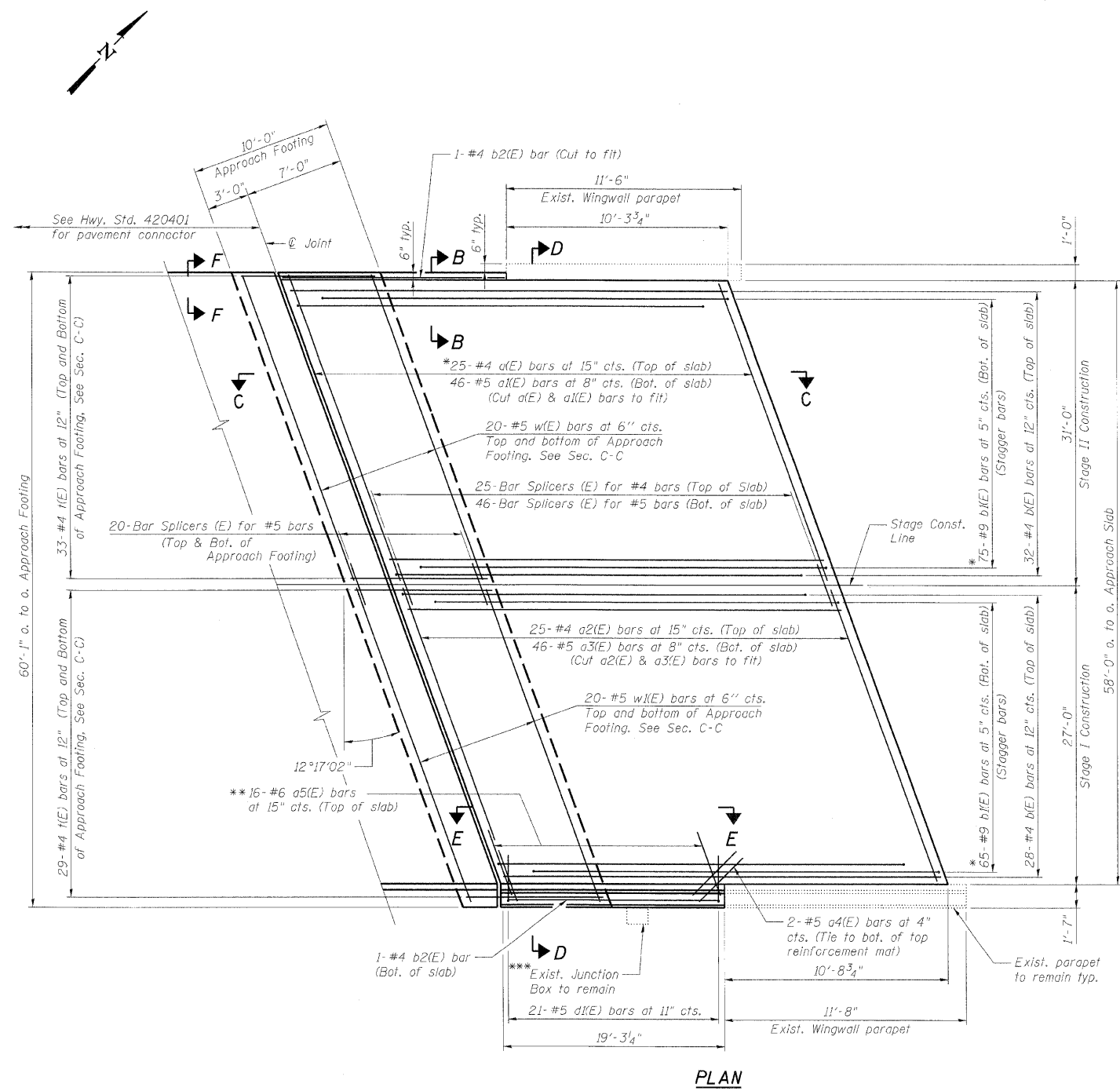
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Chicago, Illinois 60601
312-665-0460 Job No. 10050

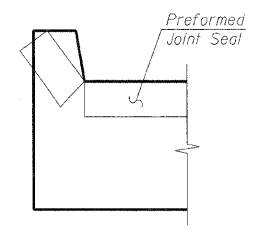
**BRIDGE DECK
AND APPROACH SLAB REPAIRS
STRUCTURE NO. 022-0111**

SHEET NO. 5 28 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 450
	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

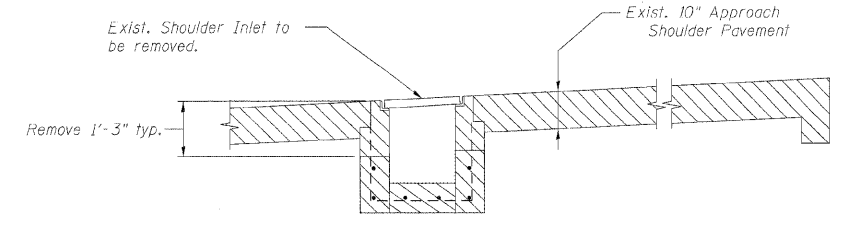
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



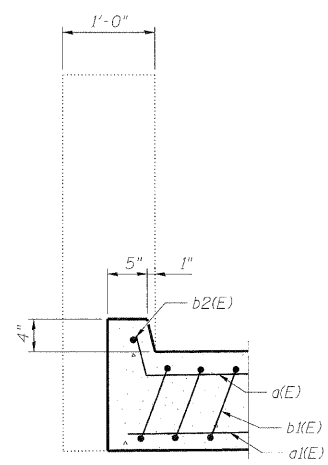
PLAN



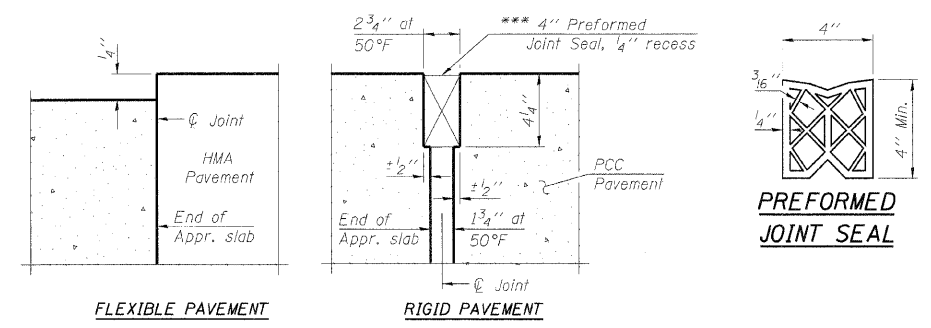
VIEW F-F
Angle Preformed Joint Seal at 45°
at curbs when req'd for drainage.



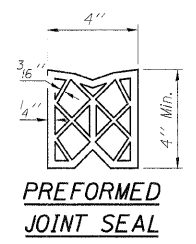
APPROACH SLAB REMOVAL DETAIL AT INLET



SECTION B-B



DETAIL 3



PREFORMED JOINT SEAL

- * Tilt bars as required to maintain clearance.
- ** Alternate with a2(E) bars.
- *** Cost Included with Concrete Superstructure.

Note:
Work this sheet with South Bridge Approach
Slab Details (2 of 2).

**SOUTH BRIDGE APPROACH SLAB DETAILS
(1 OF 2)
STRUCTURE NO. 022-0111**

DESIGNED -	JLS/MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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Chicago, Illinois 60601
312-565-0450 Job No. 10050

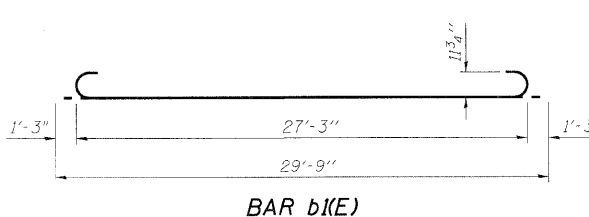
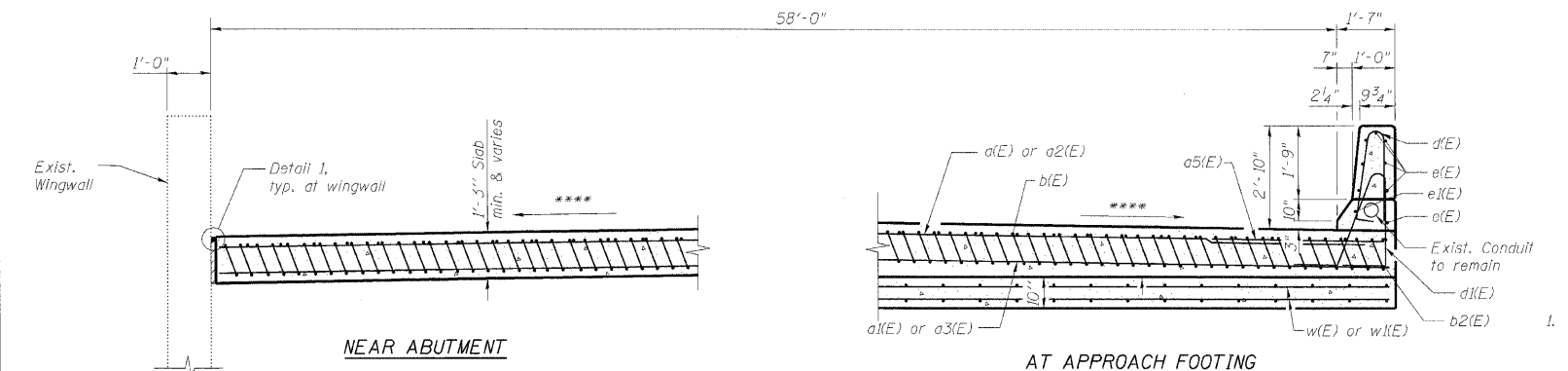
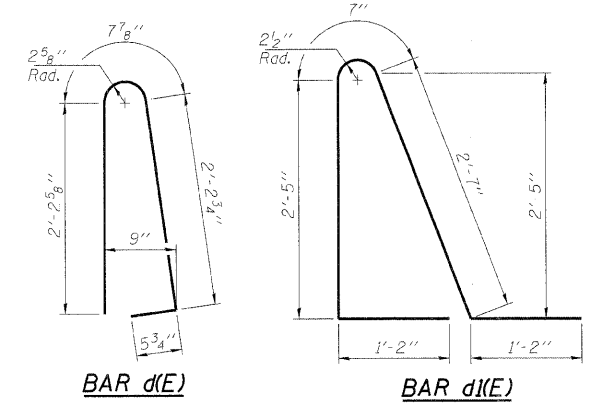
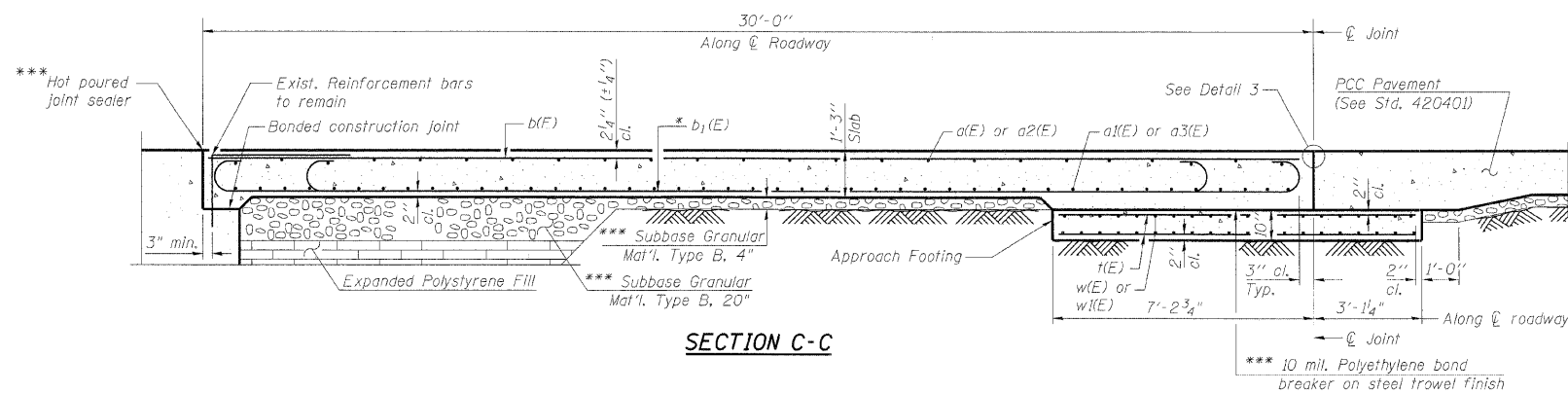
SHEET NO. 6 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 451
	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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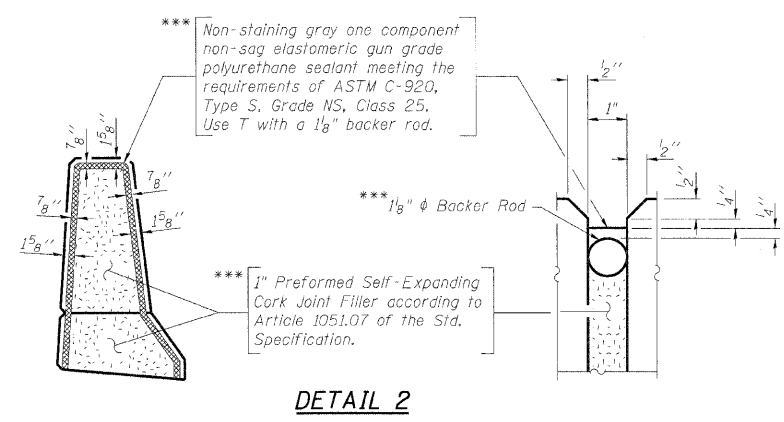
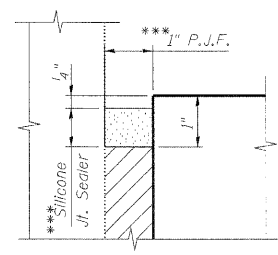
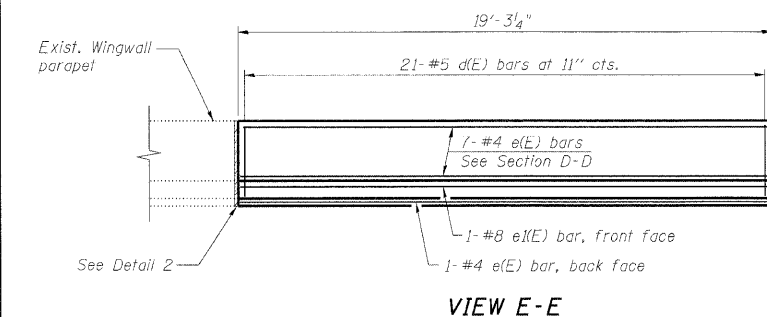
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	25	#4	32'-10"	—
a1(E)	46	#5	32'-5"	—
a2(E)	25	#4	29'-5"	—
a3(E)	46	#5	29'-5"	—
a4(E)	2	#5	4'-0"	—
a5(E)	16	#6	6'-0"	—
b(E)	60	#4	29'-8"	—
b1(E)	140	#9	29'-9"	—
b2(E)	2	#4	19'-0"	—
d(E)	21	#5	5'-7"	—
d1(E)	21	#5	7'-11"	—
e(E)	8	#4	19'-0"	—
e1(E)	1	#8	19'-0"	—
f(E)	124	#4	10'-0"	—
w(E)	40	#5	32'-5"	—
w1(E)	40	#5	29'-5"	—
ITEM				TOTAL
Approach Slab Removal		Sq. Yd.	276	
Concrete Barrier Removal		Foot	19.5	
Concrete Superstructure		Cu. Yd.	87.3	
Concrete Structures		Cu. Yd.	19.2	
Bridge Deck Grooving		Sq. Yd.	187	
Protective Coat		Sq. Yd.	204	
Reinforcement Bars, Epoxy Coated		Pound	23,400	



- Notes:**
- a(E), a1(E), a2(E) and a3(E) bar spacings measured parallel to \perp Roadway. b(E) and b1(E) bars spacings measured perpendicular to \perp Roadway. w(E) and w1(E) bars measured parallel to Exp. Jt.
 - For existing approach slab and shoulder pavement details, see existing plans.
 - Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
 - Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
 - Approach footing concrete shall be paid for as Concrete Structures.
 - Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 - The approach footing maximum applied service bearing pressure (G_{max}) = 2.0 ksf.
 - For bar splicer details, see Bar Splicers Assembly Details sheet.
 - Cost of excavation for approach footing included with Concrete Structures.
 - For Expanded Polystyrene Fill and drainage treatment details, see sheet 14.
 - The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and shall protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
 - The existing junction box located in the concrete barrier wall is to remain and to be incorporated into the proposed parapet. Cost Included with Concrete Superstructure.
 - Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
 - Minimum bar lap: #4 bar - 1'-3"
#5 bar - 2'-2"
 - Work this sheet with South Bridge Approach Slab Details (1 of 2) sheet.



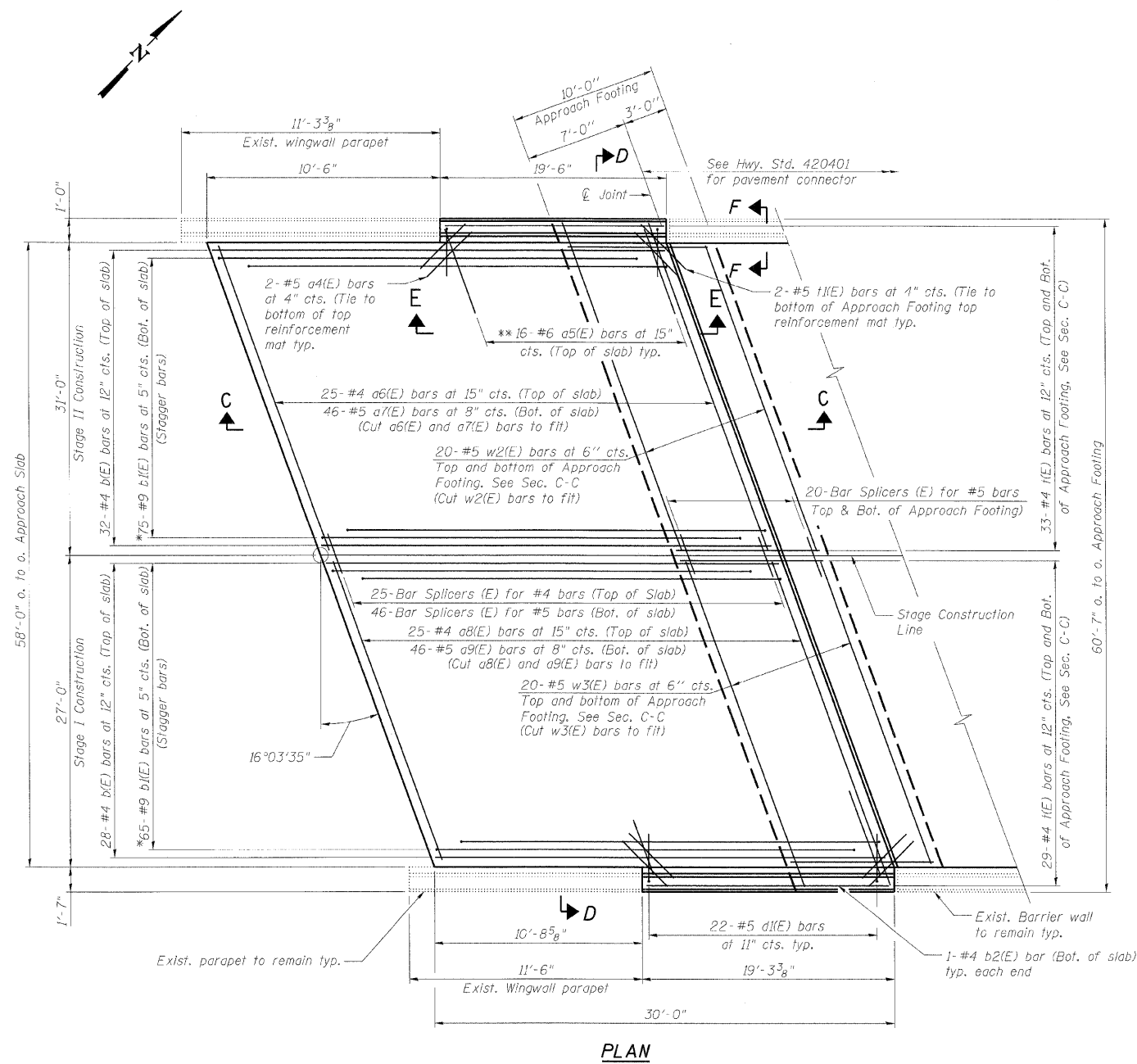
DESIGNED	JLS/MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

SOUTH BRIDGE APPROACH SLAB DETAILS
(2 OF 2)
STRUCTURE NO. 022-0111

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312-668-0480 Job No. 10050

SHEET NO. 7	F.A.I. RTE. 290/355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 452
28 SHEETS			CONTRACT NO. 60G51		
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

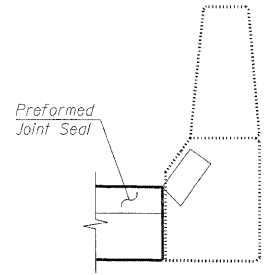
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



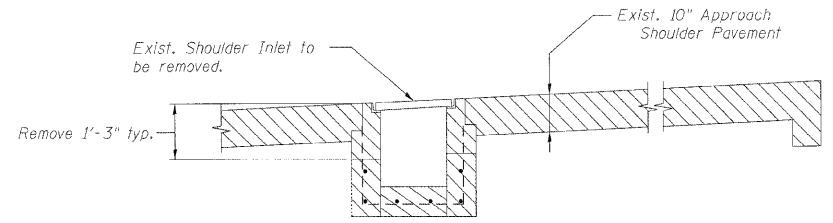
PLAN

- * Tilt bars as required to maintain clearance.
- ** Alternate with a6(E) or a8(E) bars.
- *** Cost included with Concrete Superstructure.

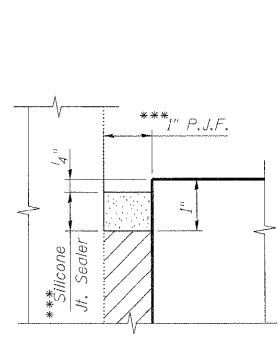
DESIGNED	JLS/MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS



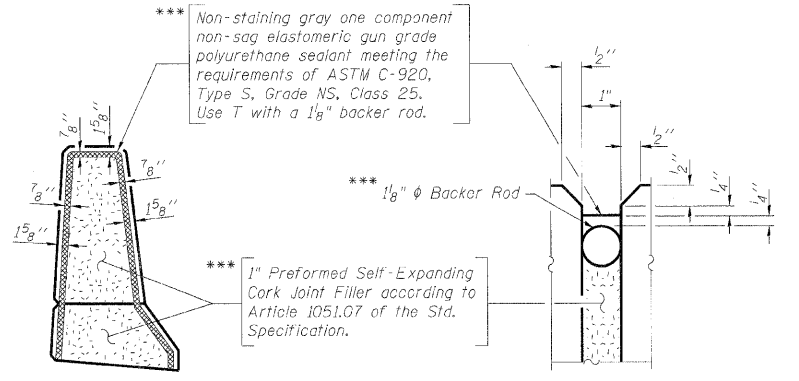
SECTION F-F
Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.



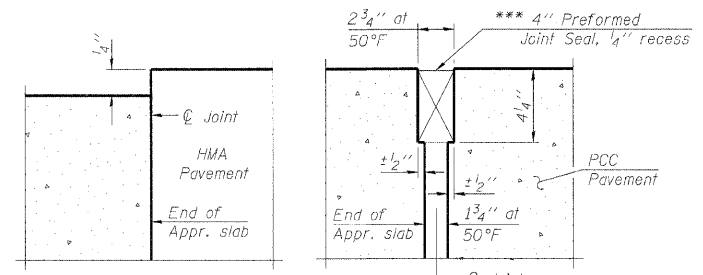
APPROACH SLAB REMOVAL DETAIL AT INLET



DETAIL 1



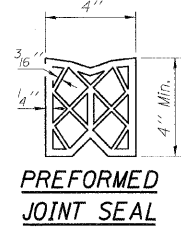
DETAIL 2



FLEXIBLE PAVEMENT

RIGID PAVEMENT

DETAIL 3



PREFORMED JOINT SEAL

Note:
Work this sheet with North Bridge Approach Slab Details (2 of 2) sheet.

NORTH BRIDGE APPROACH SLAB DETAILS
(1 OF 2)
STRUCTURE NO. 022-0111

SHEET NO. 8 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 453
	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

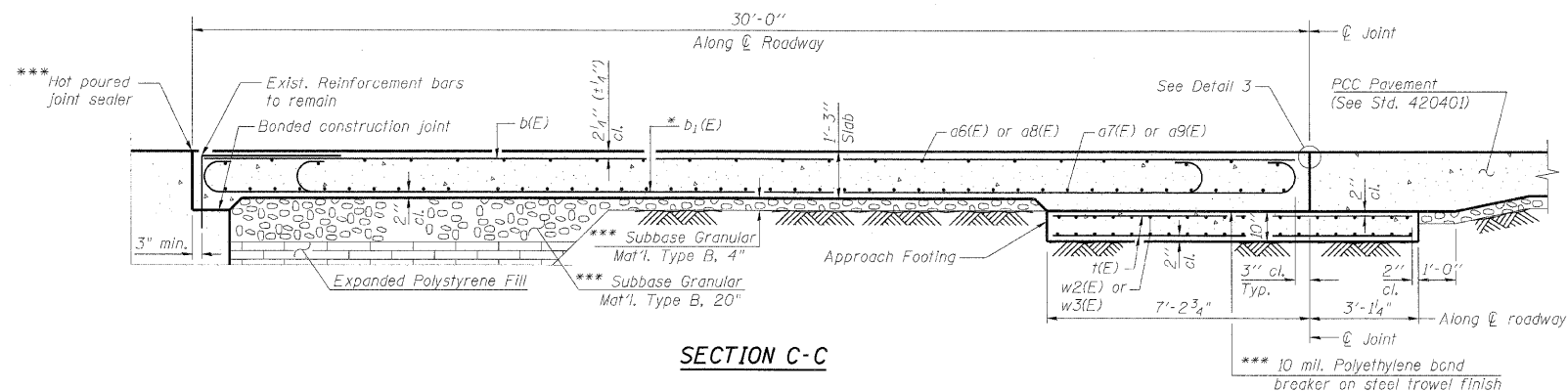
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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-665-0460 Job No. 10050

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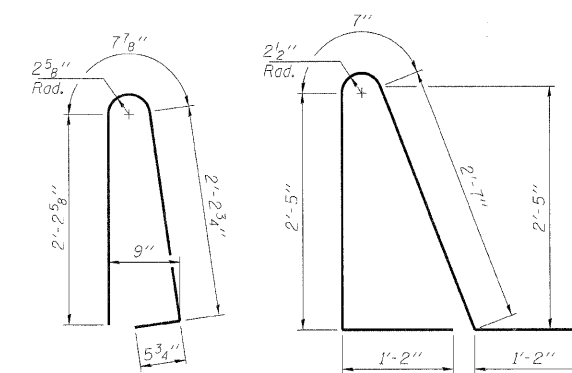
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a6(E)	25	#4	34'-3"	—
a7(E)	46	#5	30'-0"	—
a8(E)	25	#4	29'-5"	—
a9(E)	46	#5	29'-5"	—
a4(E)	4	#5	4'-0"	—
a5(E)	32	#6	6'-0"	—
b(E)	60	#4	29'-8"	—
b1(E)	140	#9	29'-9"	—
b2(E)	2	#4	19'-0"	—
d(E)	44	#5	5'-7"	—
d1(E)	44	#5	7'-11"	—
e(E)	16	#4	19'-0"	—
e1(E)	2	#8	19'-0"	—
t(E)	124	#4	10'-0"	—
t1(E)	4	#5	4'-0"	—
w2(E)	40	#5	34'-3"	—
w3(E)	40	#5	30'-0"	—
ITEM	UNIT	TOTAL		
Approach Slab Removal	Sq. Yd.	329		
Concrete Barrier Removal	Foot	39.0		
Concrete Superstructure	Cu. Yd.	90.4		
Concrete Structures	Cu. Yd.	19.3		
Bridge Deck Grooving	Sq. Yd.	187		
Protective Coat	Sq. Yd.	240		
Reinforcement Bars, Epoxy Coated	Pound	24,050		

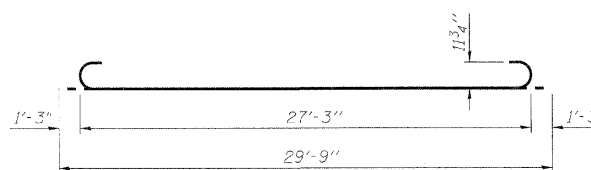


SECTION C-C

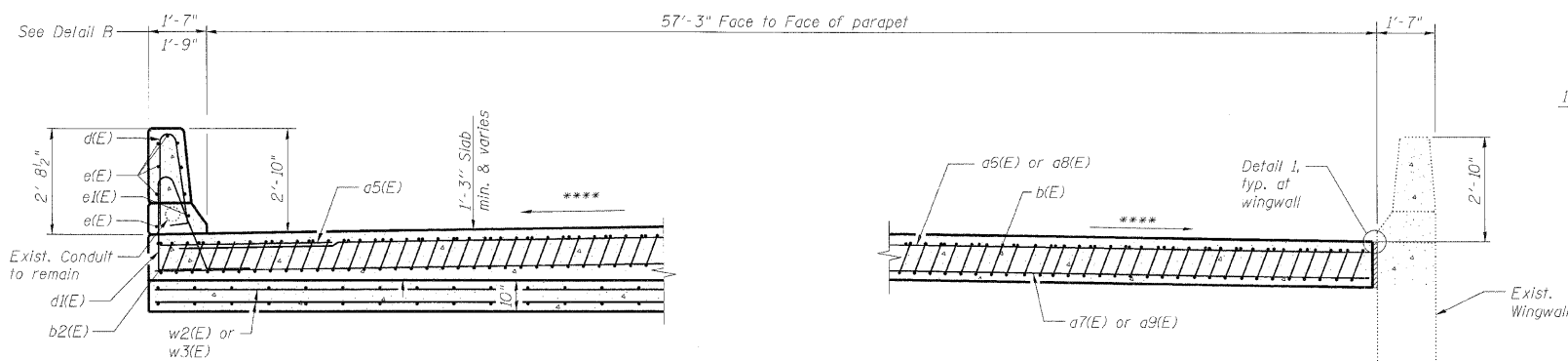


BAR d(E)

BAR d1(E)



BAR b1(E)



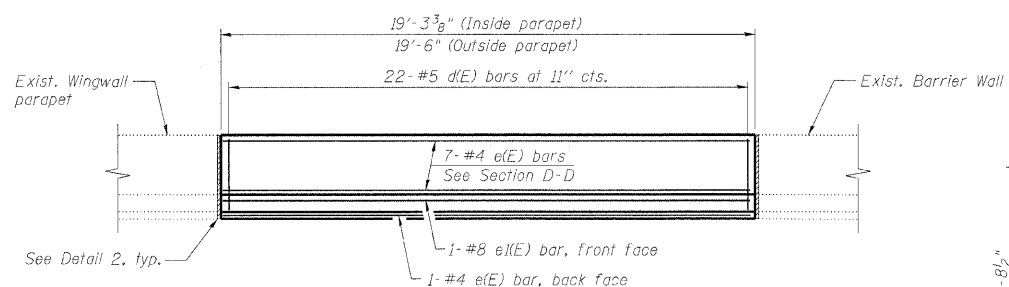
AT APPROACH FOOTING

NEAR ABUTMENT

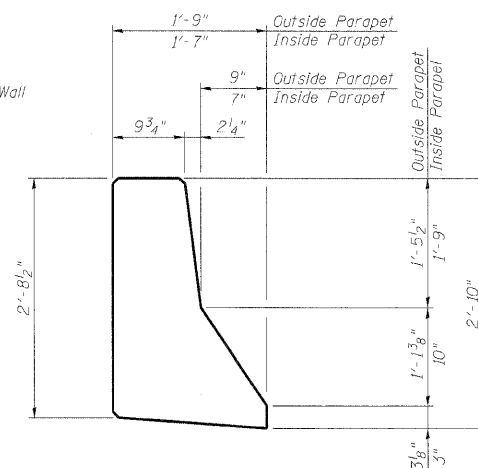
SECTION D-D

(See Plan for dimensions not shown)

- * Tilt bars as required to maintain clearance.
- *** Cost included with Concrete Superstructure.
- **** Match existing grades and cross slopes.



VIEW E-E



DETAIL B

Notes:

- a6(E), a7(E), a2(E) and a3(E) bar spacings measured parallel to ϕ Roadway. b(E) and b1(E) bars spacings measured perpendicular to ϕ Roadway. w1(E) and w2(E) bars measured parallel to Exp. Jt.
- For existing approach slab and shoulder pavement details, see existing plans.
- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
- Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
- Approach footing concrete shall be paid for as Concrete Structures.
- Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
- The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
- For bar splicer details, see Bar Splicers Assembly Details sheet.
- Cost of excavation for approach footing included with Concrete Structures.
- For Expanded Polystyrene Fill and drainage treatment details, see sheet 14.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and shall protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Cut w1(E), w2(E) and t(E) bars in field to fit in the vicinity of the approach footing boxout around the existing concrete barrier wall.

- Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
- Minimum bar lap: #4 bar = 1'-8" #5 bar = 2'-2"
- Work this sheet with North Bridge Approach Slab Details (1 of 2) sheet.

NORTH BRIDGE APPROACH SLAB DETAILS
(2 OF 2)
STRUCTURE NO. 022-0111

DESIGNED	JLS/MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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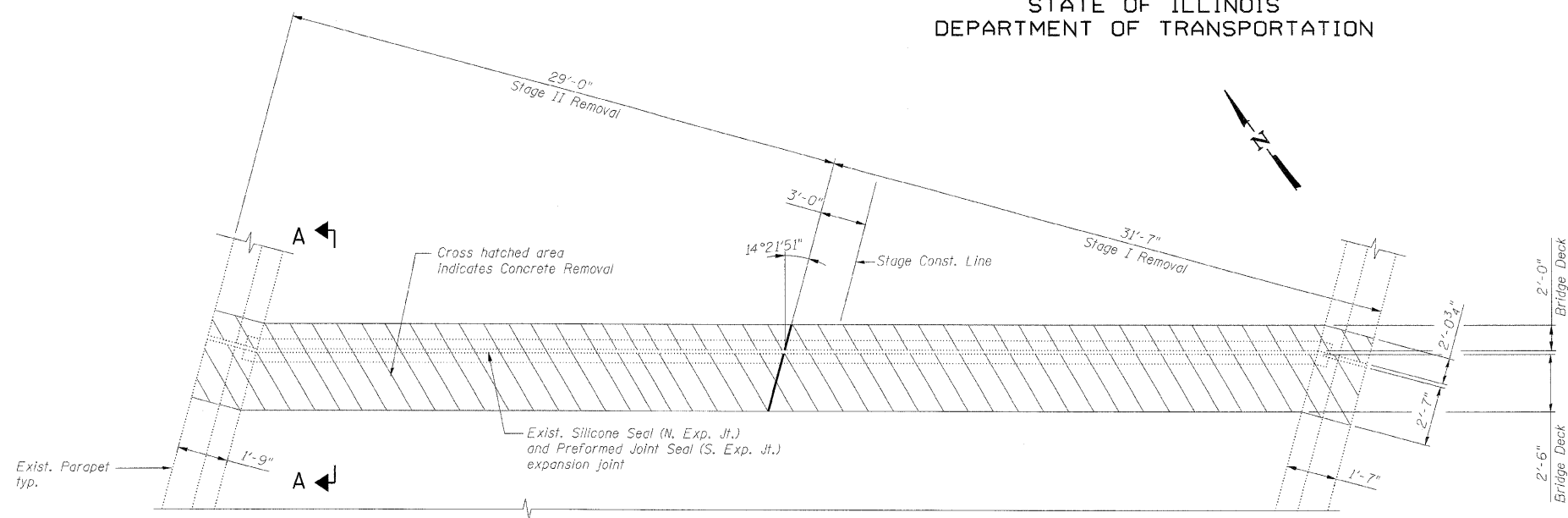
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 9 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 454
	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

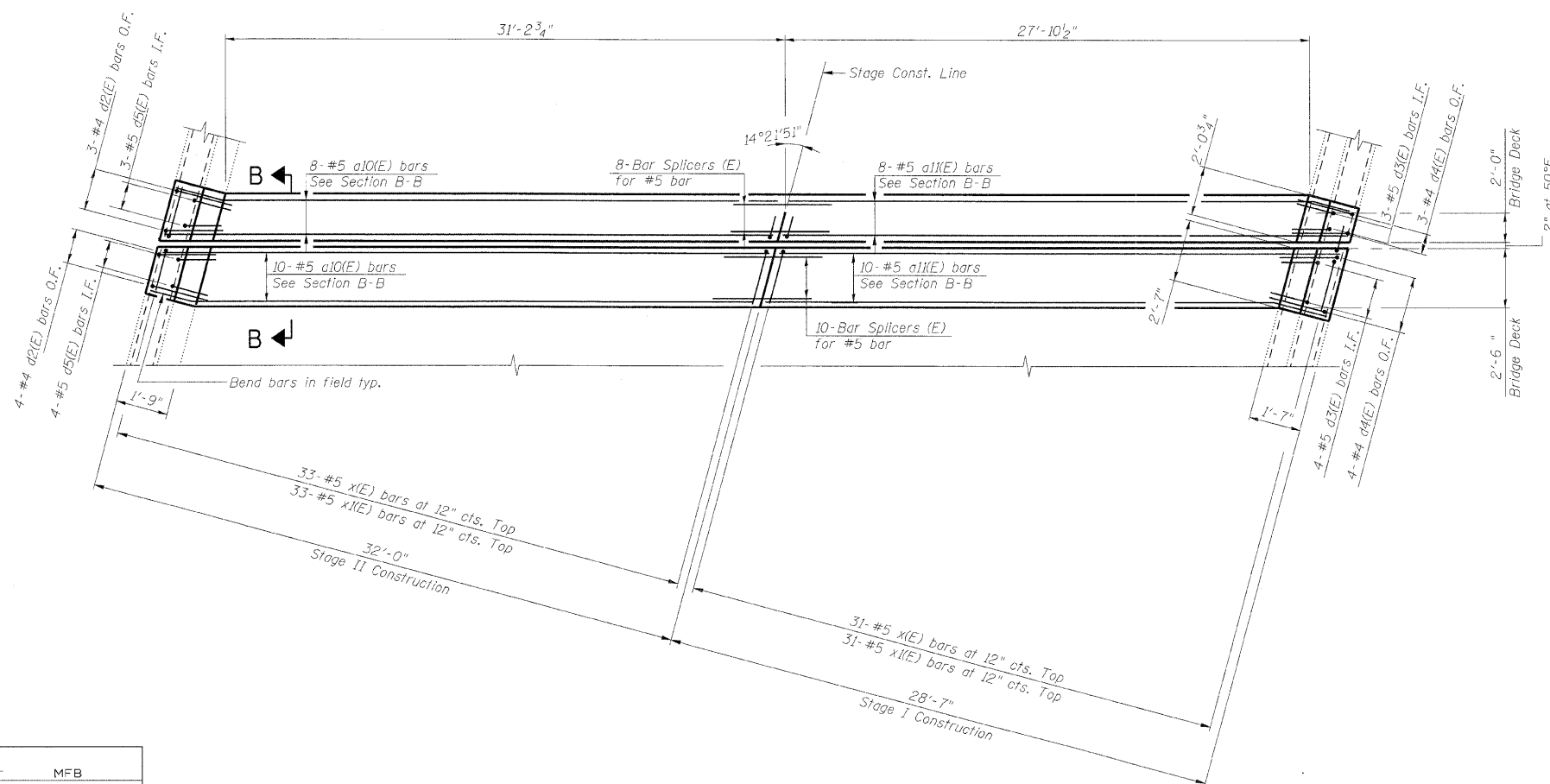
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

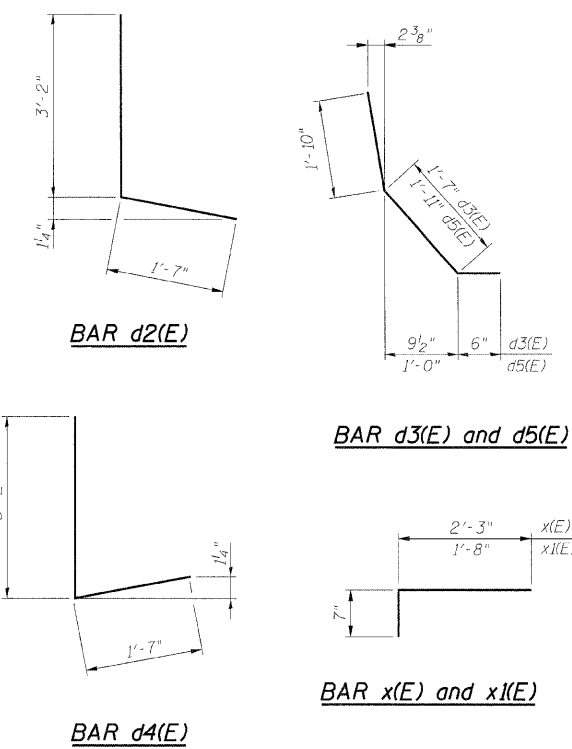
Bar	No.	Size	Length	Shape
a10(E)	36	#5	32'-6"	
a11(E)	36	#5	29'-0"	
d2(E)	14	#4	4'-9"	L
d3(E)	14	#5	3'-11"	L
d4(E)	14	#4	4'-9"	L
d5(E)	14	#5	4'-3"	L
x(E)	128	#5	2'-10"	┌┐
x1(E)	128	#5	2'-3"	┌┐
Item	Unit	Total		
Concrete Removal	Cu. Yd.	28.0		
Concrete Superstructure	Cu. Yd.	28.0		
Reinforcement Bars, Epoxy Coated	Pound	3,200		



EXISTING PARTIAL PLAN AT NORTH EXPANSION JOINT
(Opposite Hand for South Expansion Joint)



PROPOSED PARTIAL PLAN AT NORTH EXPANSION JOINT
(Opposite Hand for South Expansion Joint)



- Notes:**
1. Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
 2. I.F. denotes Inside Face.
O.F. denotes Outside Face.
 3. Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
 4. x(E) and x1(E) bar spacing measured along skew.

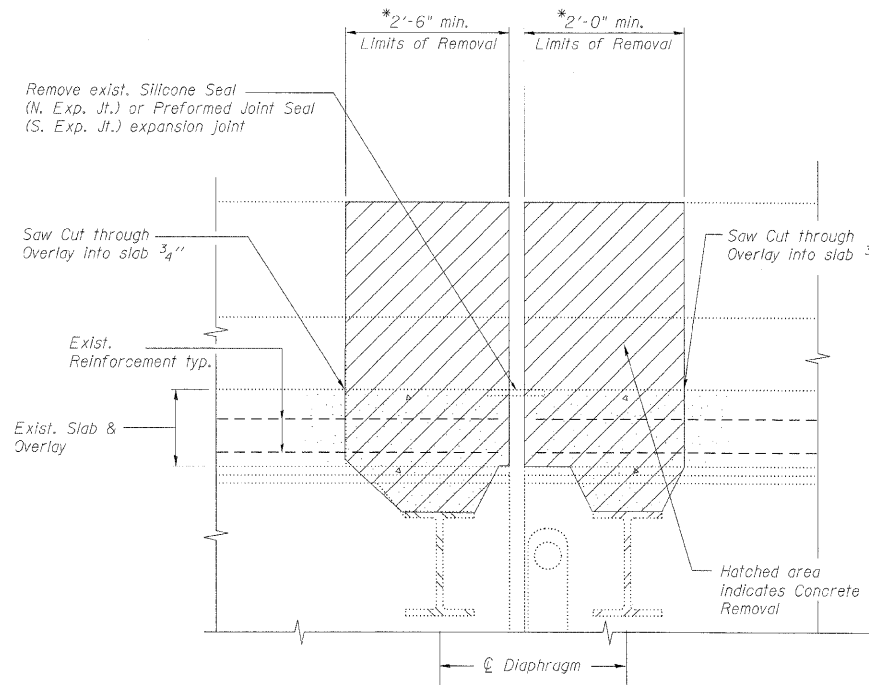
DESIGNED	MFB
CHECKED	KWS
DRAWN	VH
CHECKED	KWS

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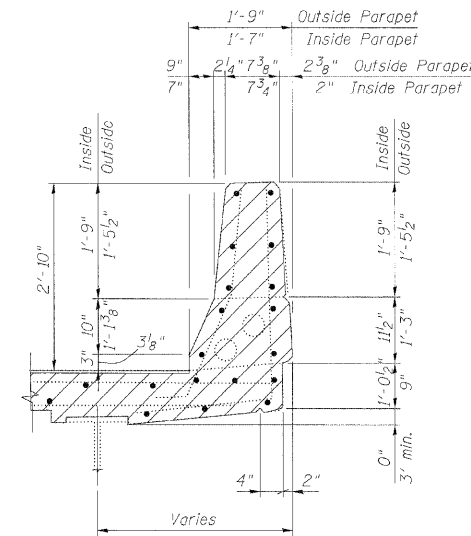
SHEET NO. 10 28 SHEETS	F.A.I. RTE. 290-355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 455
	CONTRACT NO. 60G51			ILLINOIS FED. AID PROJECT	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



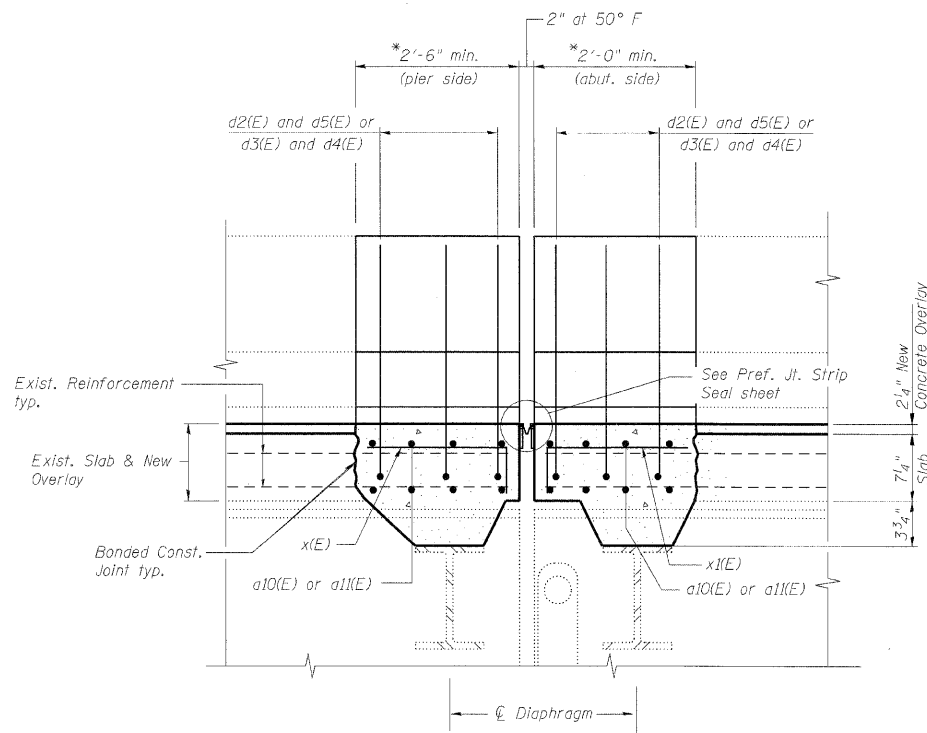
SECTION A-A



EXISTING PARAPET SECTION

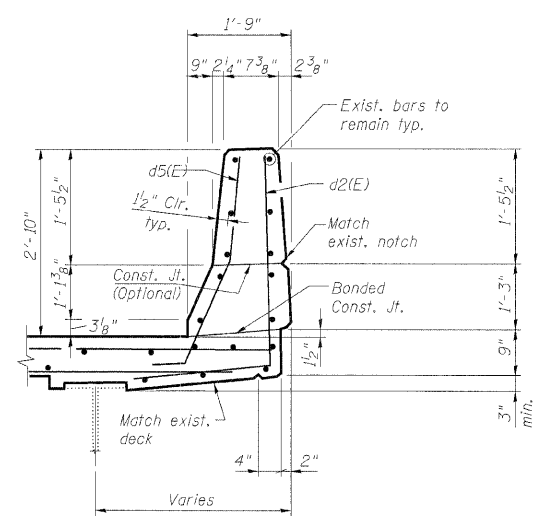
Notes:

- Existing reinforcement bars extending into the concrete removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Work this sheet with Expansion Joint Repairs sheet.

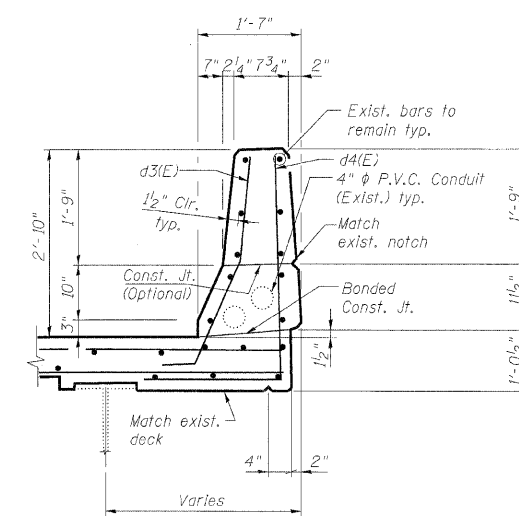


SECTION B-B

*Removal and reconstruction limits shall extend beyond the haunch between the diaphragm and the deck.



PROPOSED OUTSIDE PARAPET SECTION



PROPOSED INSIDE PARAPET SECTION

EXPANSION JOINT DETAILS
STRUCTURE NO. 022-0111

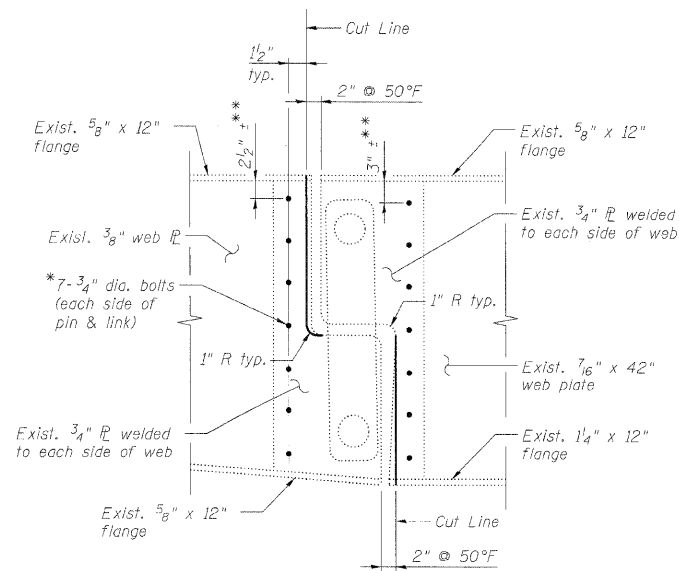
DESIGNED	MFB
CHECKED	KWS
DRAWN	VH
CHECKED	KWS

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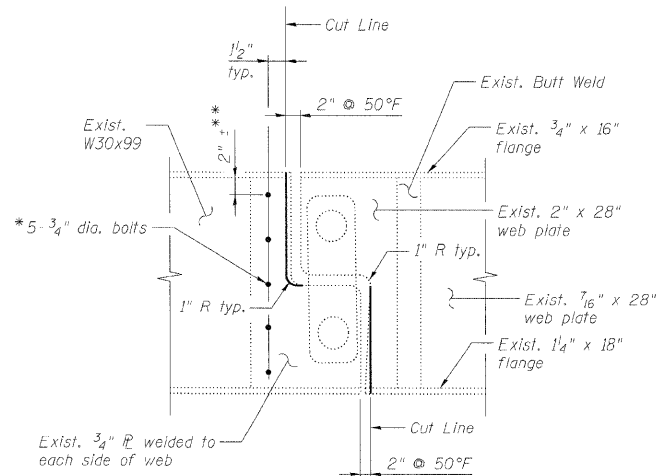
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Chicago, Illinois 60601
312-566-0450 Job No. 10050

SHEET NO. 11	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	456
28 SHEETS	355	CONTRACT NO. 60G51			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

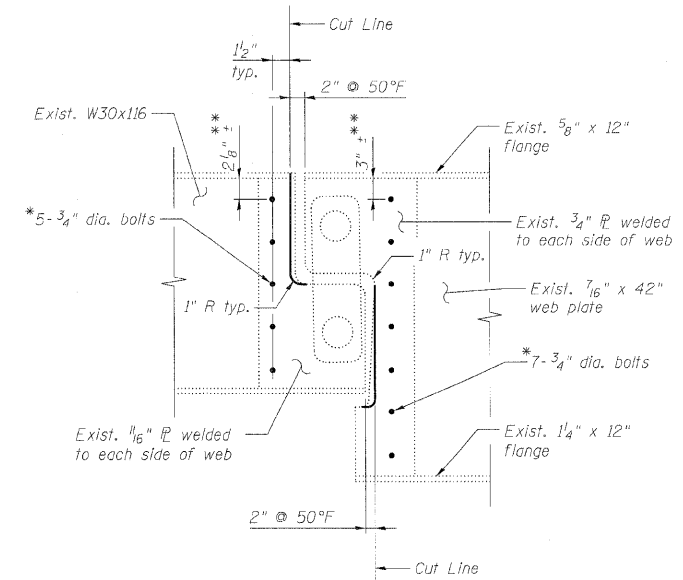
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



GIRDER MODIFICATION DETAILS - GIRDERS 1 & 7
(14 bolts per connection - 56 thus)



GIRDER MODIFICATION DETAILS - GIRDERS 8-10
(5 bolts per connection - 30 thus)



GIRDER MODIFICATION DETAILS - GIRDERS 2-6
(12 bolts per connection - 120 thus)

* Install 3/4" diameter high strength bolts with two hardened washers that conform with ASIM (A-325) and AASHTO-164 with 13/16" diameter holes at 6" (±) centers to hold plates together. Gaps between the plates and web shall be sealed such that no moisture can develop between the plates. Cost included with Modify Existing Pin and Link Connection.

** Verify in field. Distance from flange to first bolt shall be equal at top and bottom of girder.

Notes:

1. Cut surfaces shall be grinded smooth, spot cleaned, and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Paint shall be applied per the requirements of Paint System 2, according to the Special Provision "Cleaning and Painting Existing Steel Structures". Cost included with Modify Existing Pin and Link Connection.
2. See existing plans for girder layout and numbering.
3. The Contractor must exercise extreme care so as not to damage the pins or link plate while trimming the girders.
4. Some connections may have already been cut and, therefore, the current existing geometries may not match the geometries as shown on the existing plans.
5. Pin and Link connections are located near each pier. Thus, there are 2 connections per girder line.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Modify Existing Pin and Link Connection	L. Sum	0.19

DESIGNED -	KWS
CHECKED -	MFB/EFS
DRAWN -	RMG
CHECKED -	KWS

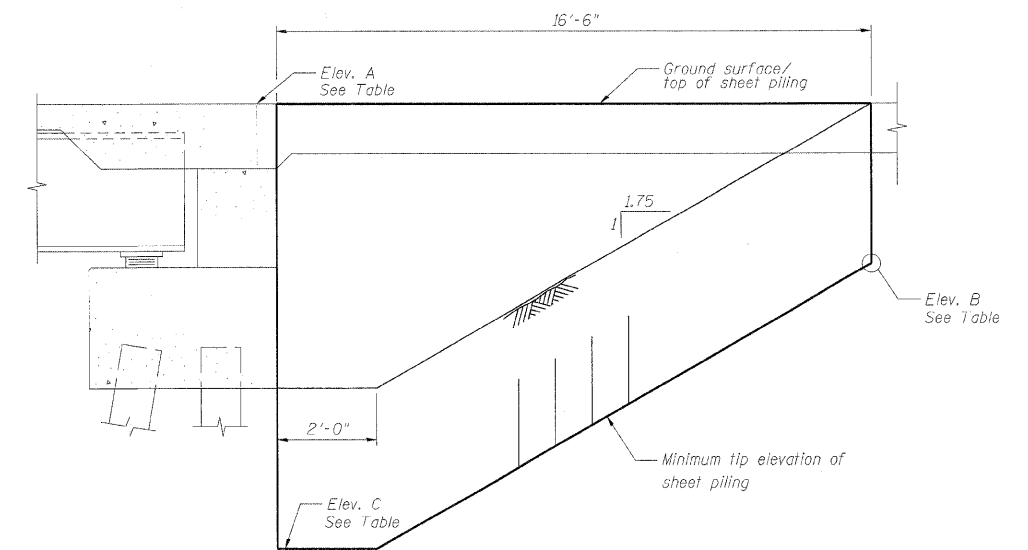
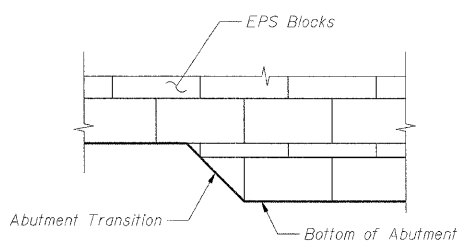
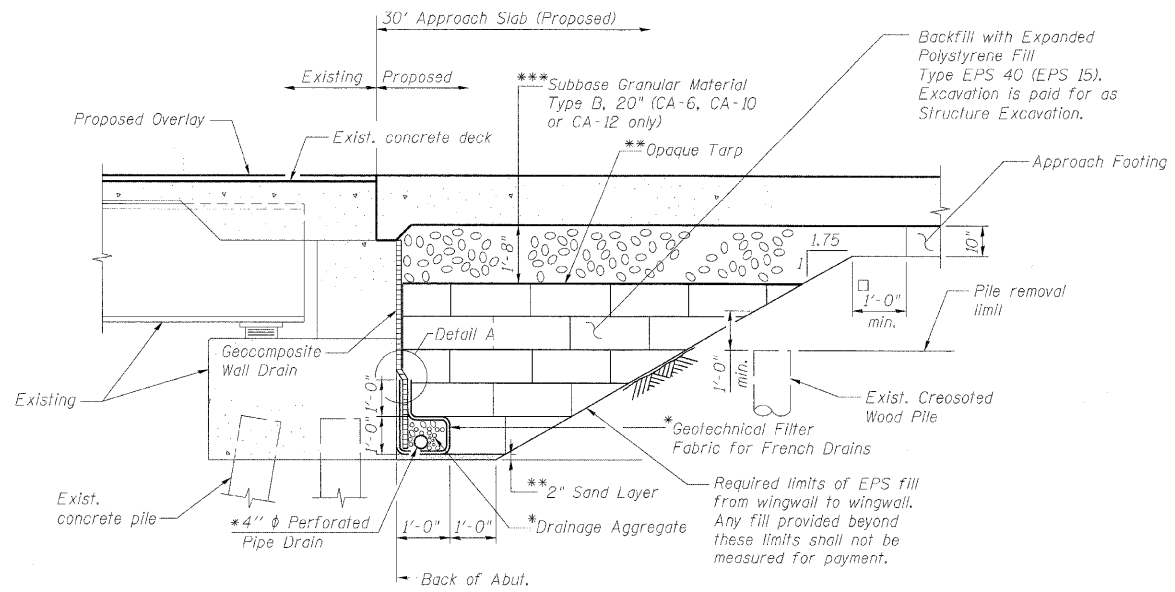
**STEEL REPAIR DETAILS
STRUCTURE NO. 022-0111**

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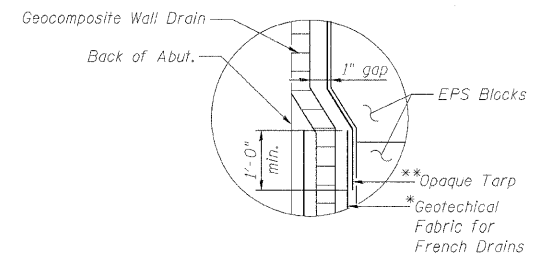
SHEET NO. 13	F.A.I. RTE.	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 458
	290/355				
28 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT					

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ABUTMENT STABILIZATION DETAIL
(Horiz. dim. @ Rt. L's)

- * Included in the cost of Pipe Underdrains for Structures.
 - ** Included in the cost of Expanded Polystyrene Fill.
 - *** Included in the cost of Concrete Superstructure. See Approach Slab Details.
- All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 60110).
- Existing approach slabs are supported on creosoted wood piles. The piles shall be removed down a minimum of 1'-0" below the limits of structure excavation. Cost included in Structure Excavation.
- Limit the depth of the EPS fill to maintain 1'-0" min. berm from the Proposed Approach Footing to EPS fill cut at the prescribed slope of 1.75:1. This may result in the bottom of the EPS fill being at a higher elevation than the bottom of the abutment. However, it is more important that the sleeper slab not be founded on top of the compressible EPS blocks and that the EPS blocks be placed at a minimum slope of 1.75:1 than it is that the blocks are placed all the way down to the bottom of the abutment.



DETAIL A

SHEET PILING ELEVATION TABLE					
Abutment	Elev. A	Elev. B	Elev. C	Min. Section Modulus Req'd. (in. ³ /ft.)	Min. Embedment (ft.)
North	764.04	756.44	748.25	4.7	7.6
South	764.56	756.96	748.71	4.7	7.6

BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu. Yd.	273
Temporary Sheet Piling	Sq. Ft.	401
Geocomposite Wall Drain	Sq. Yd.	97
Pipe Underdrains for Structures 4"	Foot	130
Expanded Polystyrene Fill	Cu. Yd.	175

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

ABUTMENT STABILIZATION DETAILS
STRUCTURE NO. 022-0111

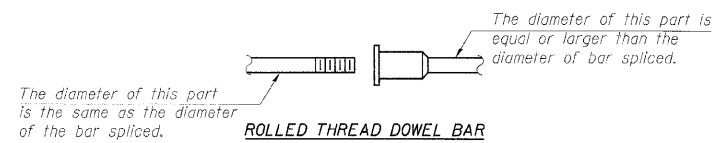
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Chicago, Illinois 60601
312-555-0490 Job No. 10050

SHEET NO. 14	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	459
28 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

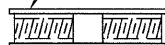
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



** ONE PIECE

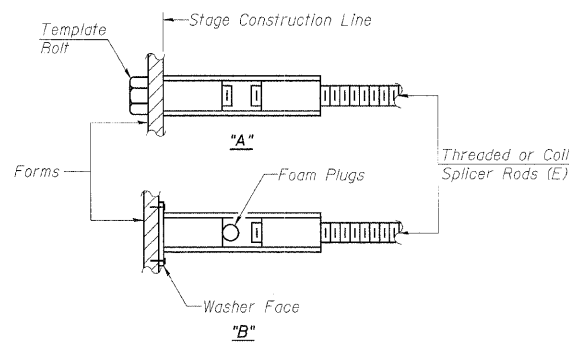
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



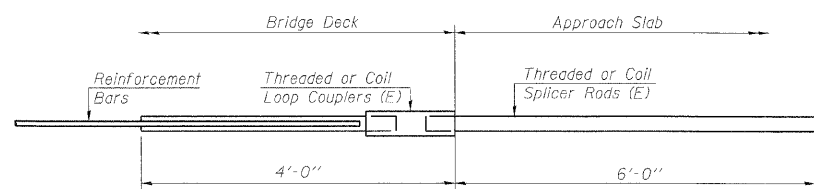
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.

NOTES
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

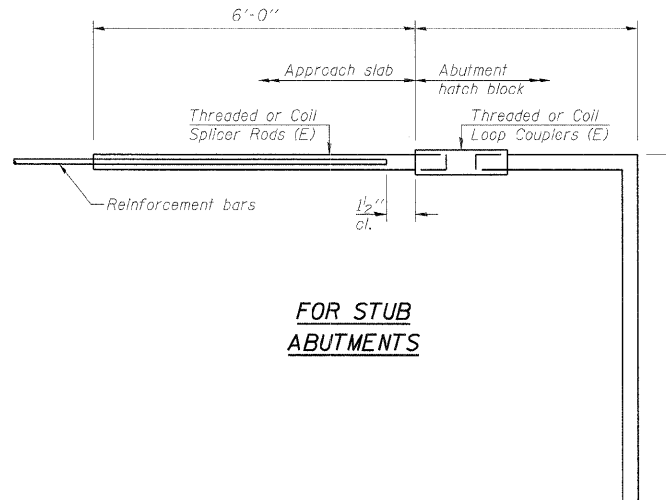
- ① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_s$
 - ② Minimum *Pull-out Strength (Tension in kips) = $0.66 \times f_y \times A_s$
- Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_s = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-2"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



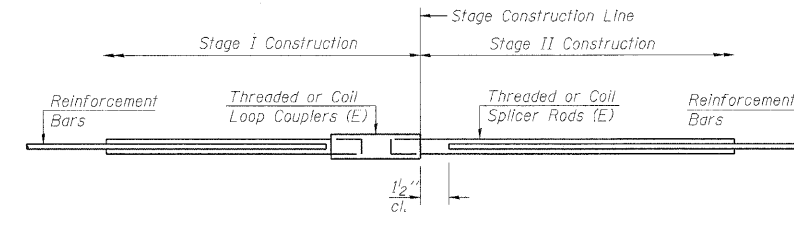
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar	
Min. Capacity =	23.0 kips - tension
Min. Pull-out Strength =	12.3 kips - tension
No. Required =	



FOR STUB ABUTMENTS

Bar Splicer for #5 bar	
Min. Capacity =	23.0 kips - tension
Min. Pull-out Strength =	12.3 kips - tension
No. Required =	



STANDARD

Bar Size	No. Assemblies Required	Location
#5	36	Deck
#4	50	Approach Slab
#5	92	Approach Slab
#5	80	Approach Footing

**BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 022-0111**

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

BSD-1

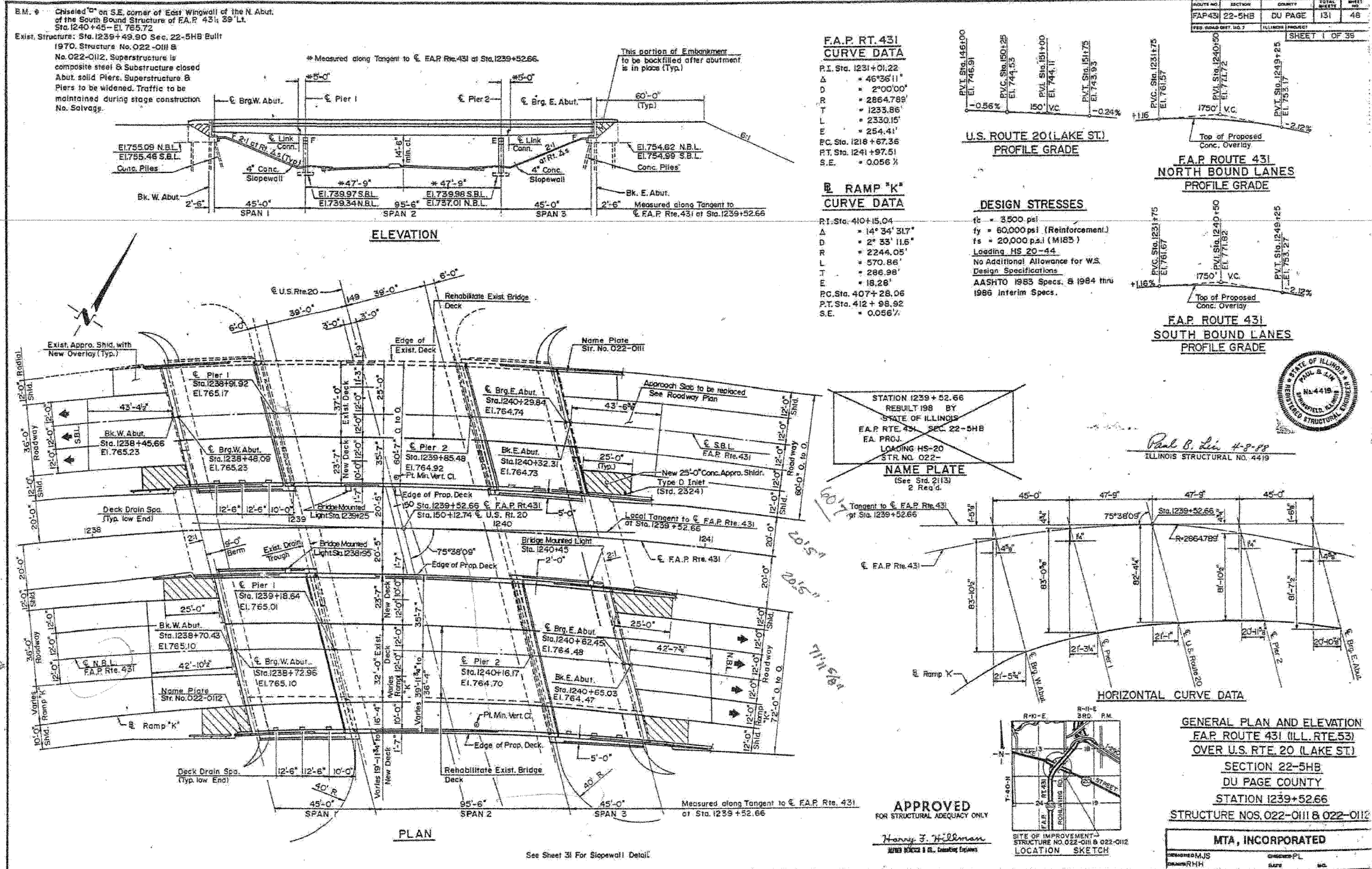
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Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-955-0450 Job No. 10050

SHEET NO. 15 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 460
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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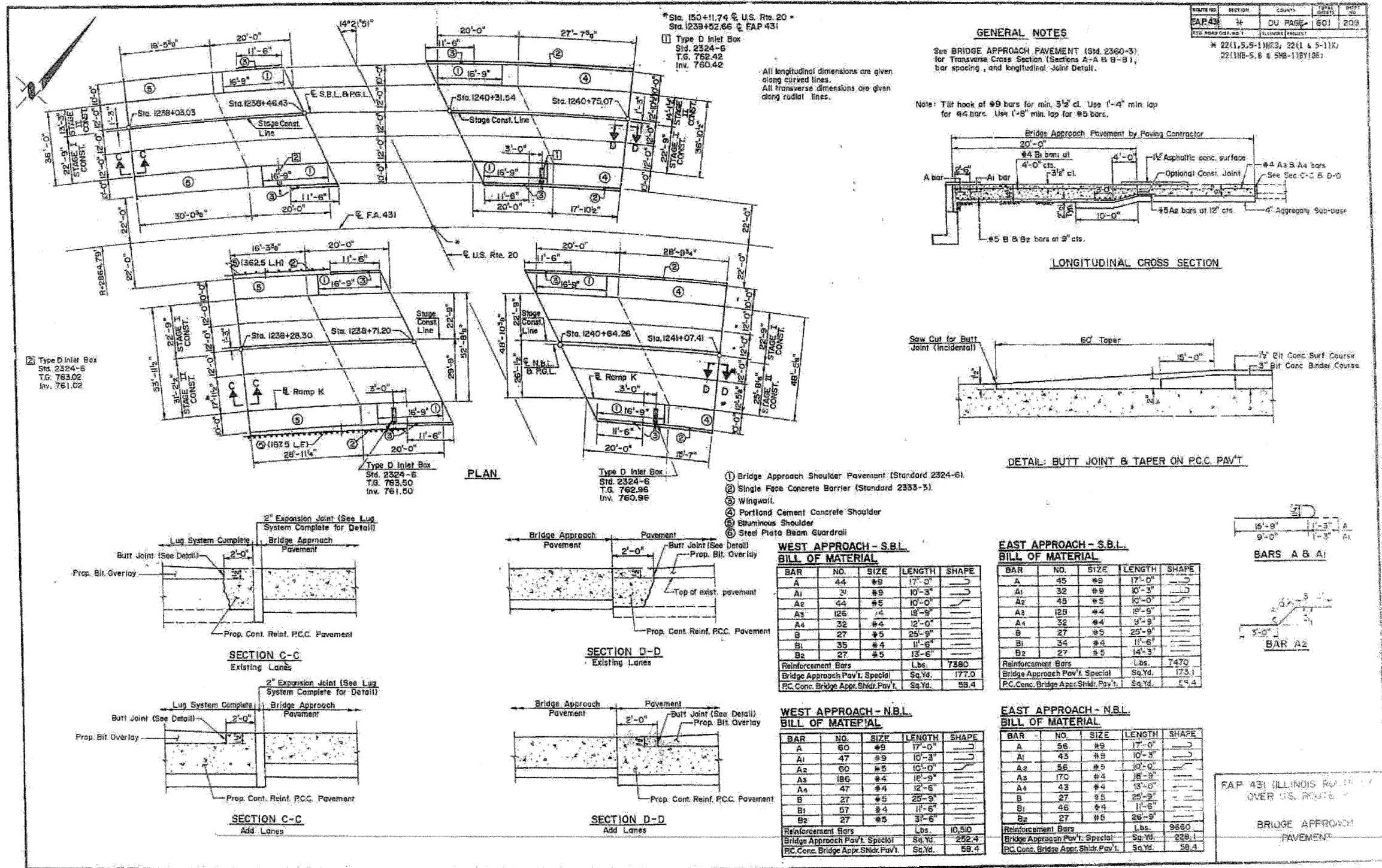
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Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 16	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	461
28 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

EXISTING PLAN INFORMATION 1 OF 13
STRUCTURE NO. 022-0111

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PLAN INFORMATION 2 OF 13
STRUCTURE NO. 022-0111

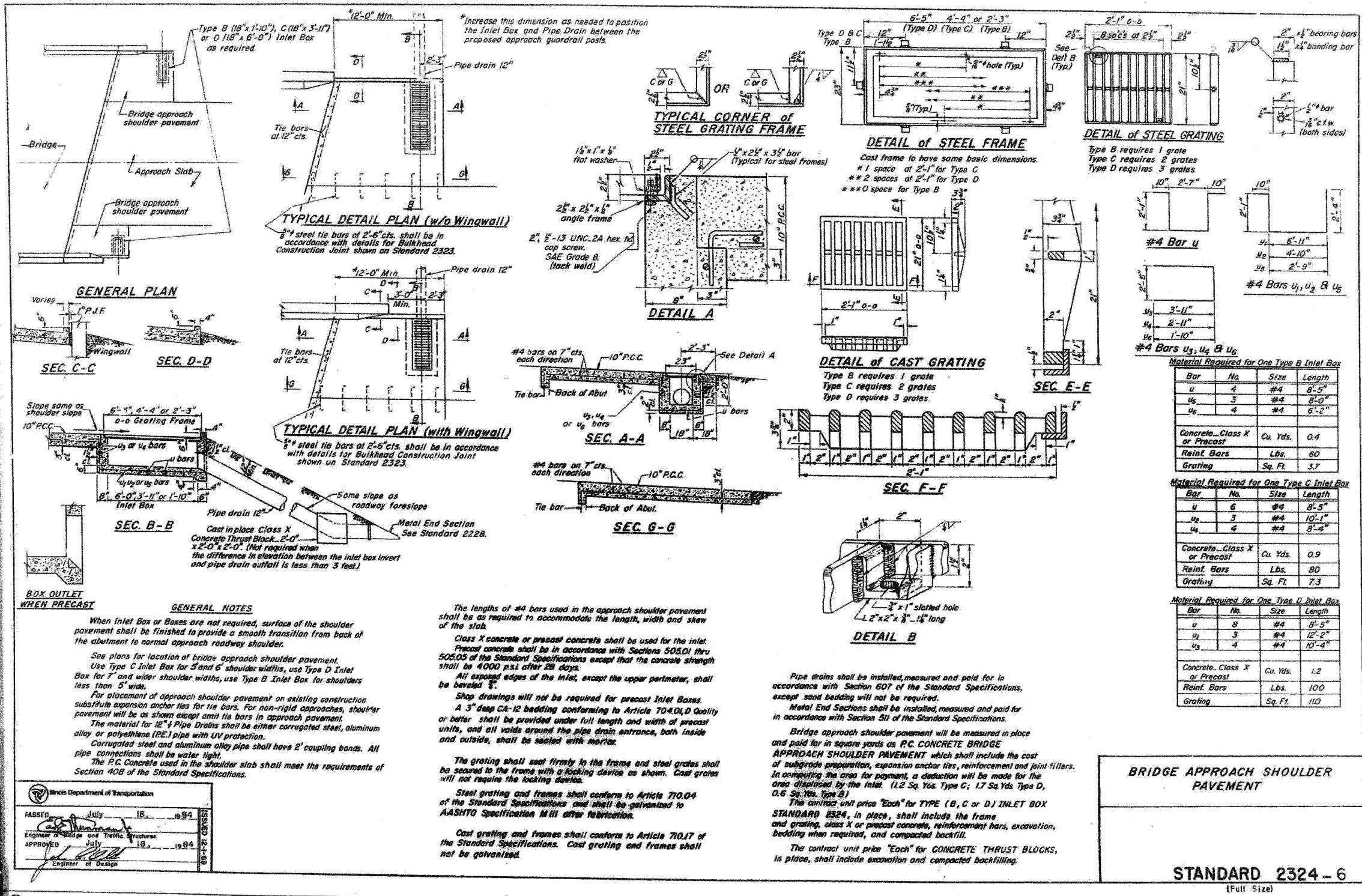
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Chicago, Illinois 60601
312-665-0450 Job No. 10050

SHEET NO. 17	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	462
28 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



Illinois Department of Transportation
 PASSED July 18, 1989
 Engineer of Bridge and Traffic Structures
 APPROVED July 18, 1989
 Engineer of Design

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 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-865-0400 Job No. 10050

SHEET NO. 18 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 463
	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

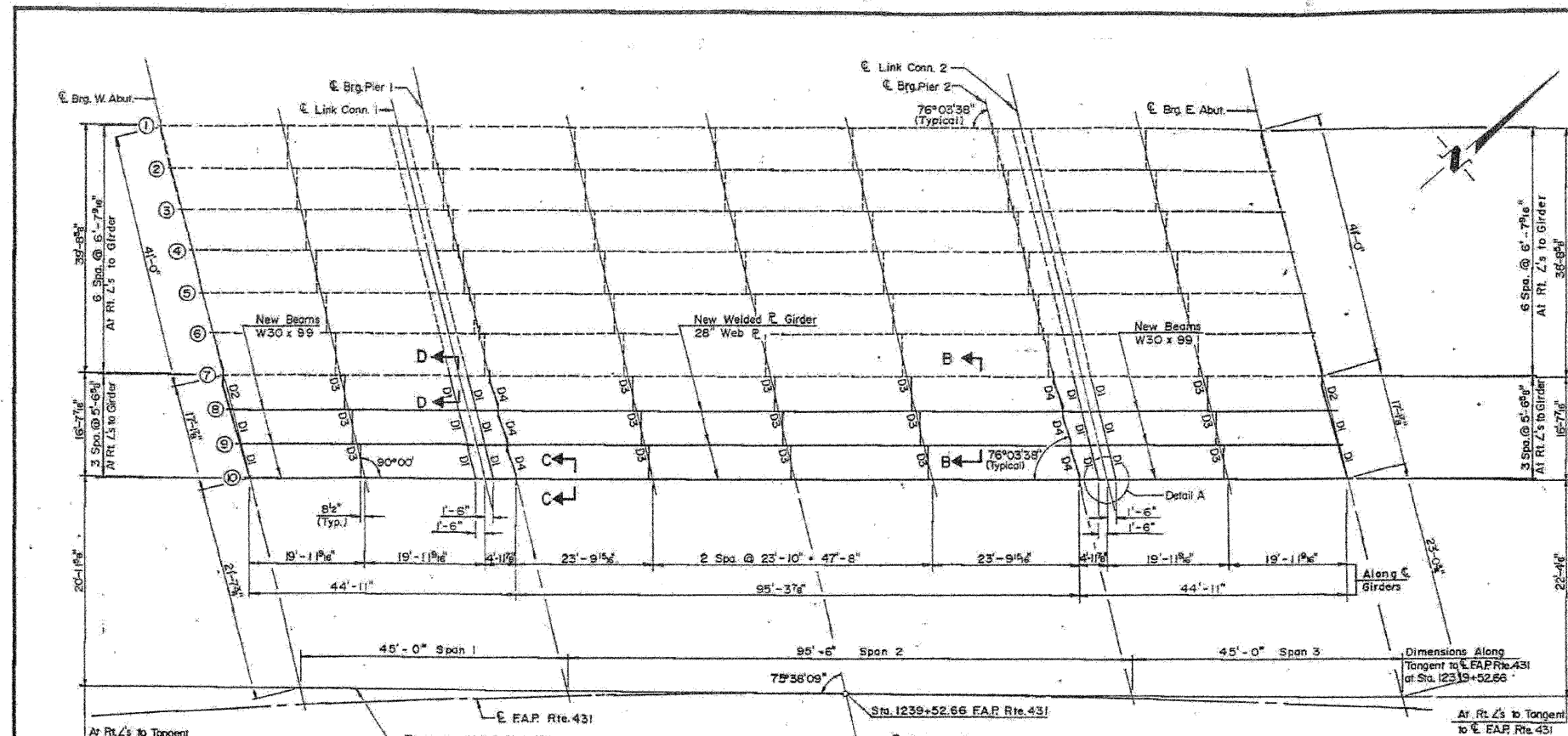
EXISTING PLAN INFORMATION 3 OF 13
STRUCTURE NO. 022-0111

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 431	22-5HS	DU PAGE	131	57
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT			

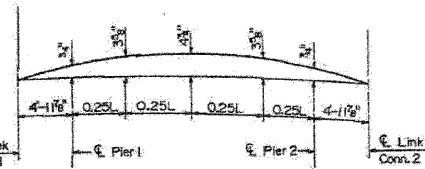
SHEET 10 OF 39



GIRDER ELEVATIONS

LOCATION	GIRDER		
	B	9	10
€ Brg. W. Abut.	763.15	762.94	762.52
€ Link Conn. 1	762.86	762.55	762.24
€ Pier 1	762.93	762.62	762.31
€ Pier 2	762.69	762.38	762.06
€ Link Conn. 2	761.89	762.58	761.26
€ Brg. E. Abut.	762.88	762.56	762.05

Elevations are given to Top of Flange of Beams and to Top of Web of Girders.
Elevations at € Link Connection have been adjusted for Camber.
Elevations for Fabrication only.
For Top of Flange Elevation at € Link Connection add 0.06 to Top of Web Elevation given in table.



MOMENT TABLE

Composite in Positive Moment Areas of Span 2 only

	0.5 Span 1 or 3	0.5 Span 2
I _s (in ⁴)	3,990	12,955
S _{ts} (in ³)	269	659
S _{bs} (in ³)	269	1,093
I _c (in ⁴)	—	29,829
S _{tc} (in ³)	—	3,037
S _{bc} (in ³)	—	1,376
R _i (k/ft)	0.63	0.78
M _E (k)	12.6	81.7
f _s NON-COMP (ksi)	5.62	14.88
S _R (k/ft)	0.23	0.23
M _{SE} (k)	4.6	23.6
M _{IMP} (k)	225	721
M _{TOTAL} (k)	67	164
TOTAL (k)	336	1,121
f _s COMP (ksi)	15.08	4.43
f _s TOTAL (ksi)	20.70	19.31
VR (k)	—	41.6

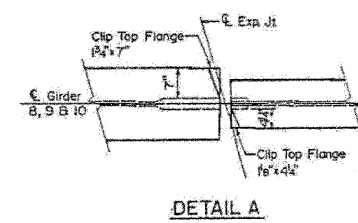
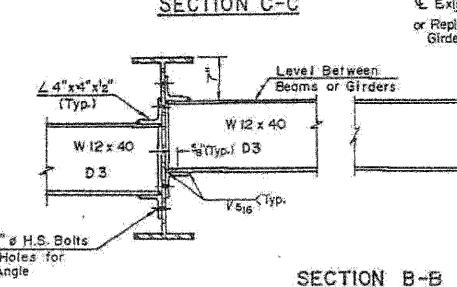
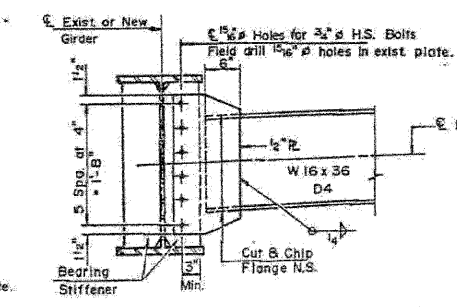
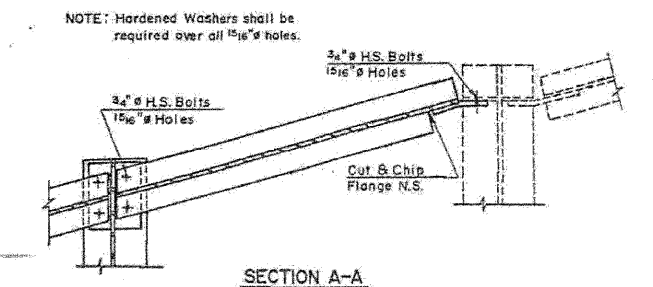
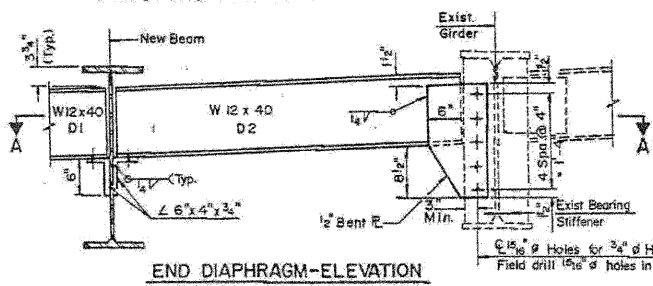
SECTION D-D

I_s = Moment of Inertia Steel Section
S_{ts} = Sec. Mod. Top Steel Section
S_{bs} = Sec. Mod. Bottom Steel Section
I_c = Moment of Inertia Comp. Section
S_{tc} = Sec. Mod. Top Comp. Sect.
S_{bc} = Sec. Mod. Bottom Comp. Sect.
VR is the Maximum Truck $\frac{L}{4}$ + Impact Shear Range in Span

REACTION TABLE

	ABUT	PIER
R _E (k)	20.2	70.5
R _L (k)	27.6	34.4
IMP (k)	8.3	7.8
RTOTAL (k)	56.1	112.7

FRAMING PLAN



FRAMING PLAN-S&L

F.A.P. ROUTE 431
SECTION 22-5HS
DU PAGE COUNTY
STATION 1239+52.66
STRUCTURE NO. 022-0111

MTA, INCORPORATED	
DESIGNED BY: M.T.S.	CHECKED BY: B.L.
DRAWN BY: K.T.B.	DATE: _____

FOR INFORMATION ONLY

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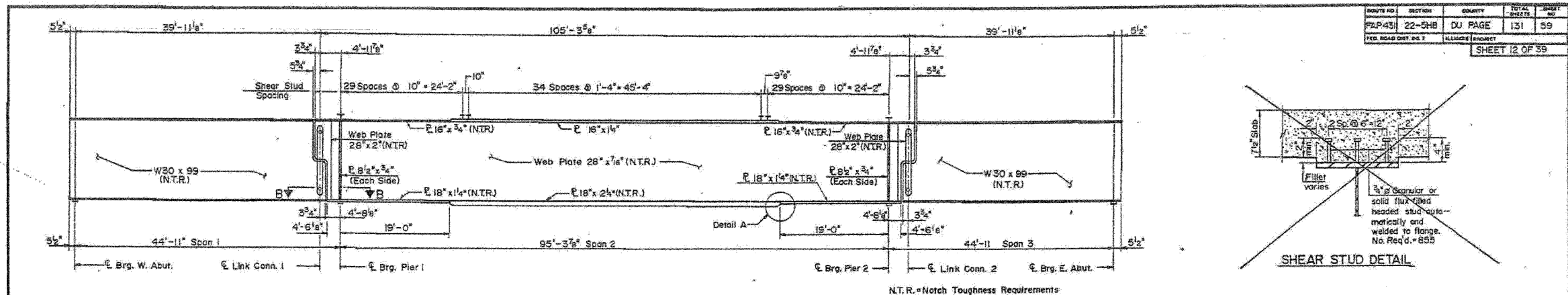
alfred benesch & company
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0460 Job No. 10050

SHEET NO. 19 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 464
	CONTRACT NO. 60G51			ILLINOIS FED. AID PROJECT	

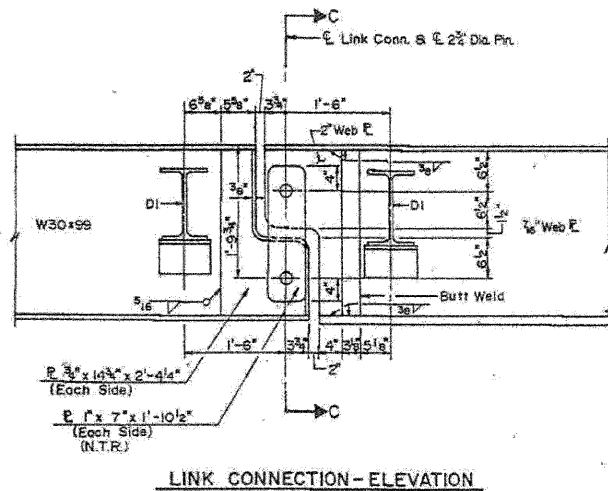
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

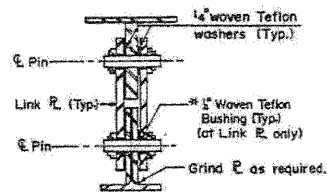
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 431	22-5HB	DU PAGE	131	59
FED. ROAD DIST. NO. 7	ILLINOIS PROJECT	SHEET 12 OF 59		



GIRDERS 8, 9 & 10 - ELEVATION
For Web to Flange Weld, See Weld Table

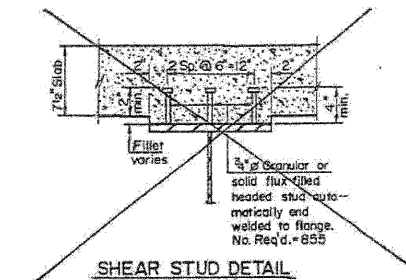


LINK CONNECTION - ELEVATION

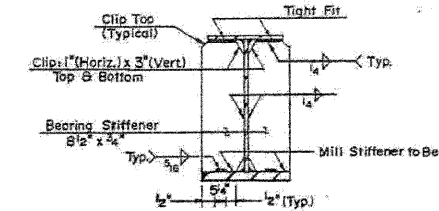


SECTION C-C

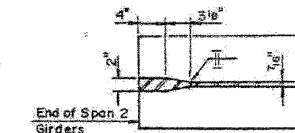
* Self Lubricating filament wound epoxy matrix backed Durlon bearing on metal backed Fibre Glass Bearing or equivalent. Cost incidental to Structural Steel.
(Link with W Girder shown, link with R Girder similar.)



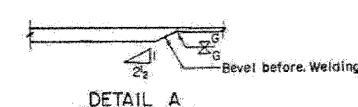
SHEAR STUD DETAIL



SECTION AT PIERS



SECTION B-B



DETAIL A

WELD TABLE

Flange Thickness	Weld Size
Over 3/4" to 1 1/2"	5/16"
Over 1 1/2" to 2 1/4"	3/8"

Weld Size shall be as tabulated U.G.N.

REPLACEMENT GIRDER 20 NOTES

THE WELDED PLATE GIRDER (CENTER SPAN) PORTION OF EXISTING GIRDER 20 SHALL BE REPLACED WITH A NEW WELDED PLATE GIRDER AS SHOWN. WORK UNDER THIS CONTRACT SHALL INCLUDE FABRICATING AND DELIVERING THE CENTER PORTION OF GIRDER 20 LOCATED BETWEEN LINK JOINTS. ALSO INCLUDED SHALL BE FURNISHING AND DELIVERING ALL LINK PLATES, LINK PINS, AND ASSOCIATED LINK HARDWARE TO BE ATTACHED TO GIRDER 20. ALSO INCLUDED SHALL BE TOP BEARING PLATES FOR BEARINGS AT PIER 1 AND PIER 2 ONLY.

- GIRDER 20 ERECTION NOTES:**
- HOLES FOR ATTACHING PROPOSED DIAPHRAGMS TO GIRDER 20 REPLACEMENT SHALL BE SHOP DRILLED.
 - HOLES FOR ATTACHING EXISTING DIAPHRAGMS TO GIRDER 20 REPLACEMENT SHALL BE FIELD DRILLED USING EXISTING CONNECTING ANGLES AS TEMPLATE.
 - ATTACH GIRDER 20 REPLACEMENT AT EXISTING BEARING DIAPHRAGMS ONLY. POUR CONCRETE DECK THEN FIELD DRILL AND ATTACH REMAINING EXISTING DIAPHRAGMS.

GIRDER DETAILS-S.B.L.
F.A.P. ROUTE 431
SECTION 22-5HB
DU PAGE COUNTY
STATION 1239 + 52.66
STRUCTURE NO. 022-0111

MTA, INCORPORATED	
DESIGNED MJS	CHECKED PL
DRAWN AE	DATE

EXISTING PLAN INFORMATION 5 OF 13
STRUCTURE NO. 022-0111

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alfred benesch & company
Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-555-0460 Job No. 10050

SHEET NO. 20	F.A.I. RTE. 290/355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 465
28 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

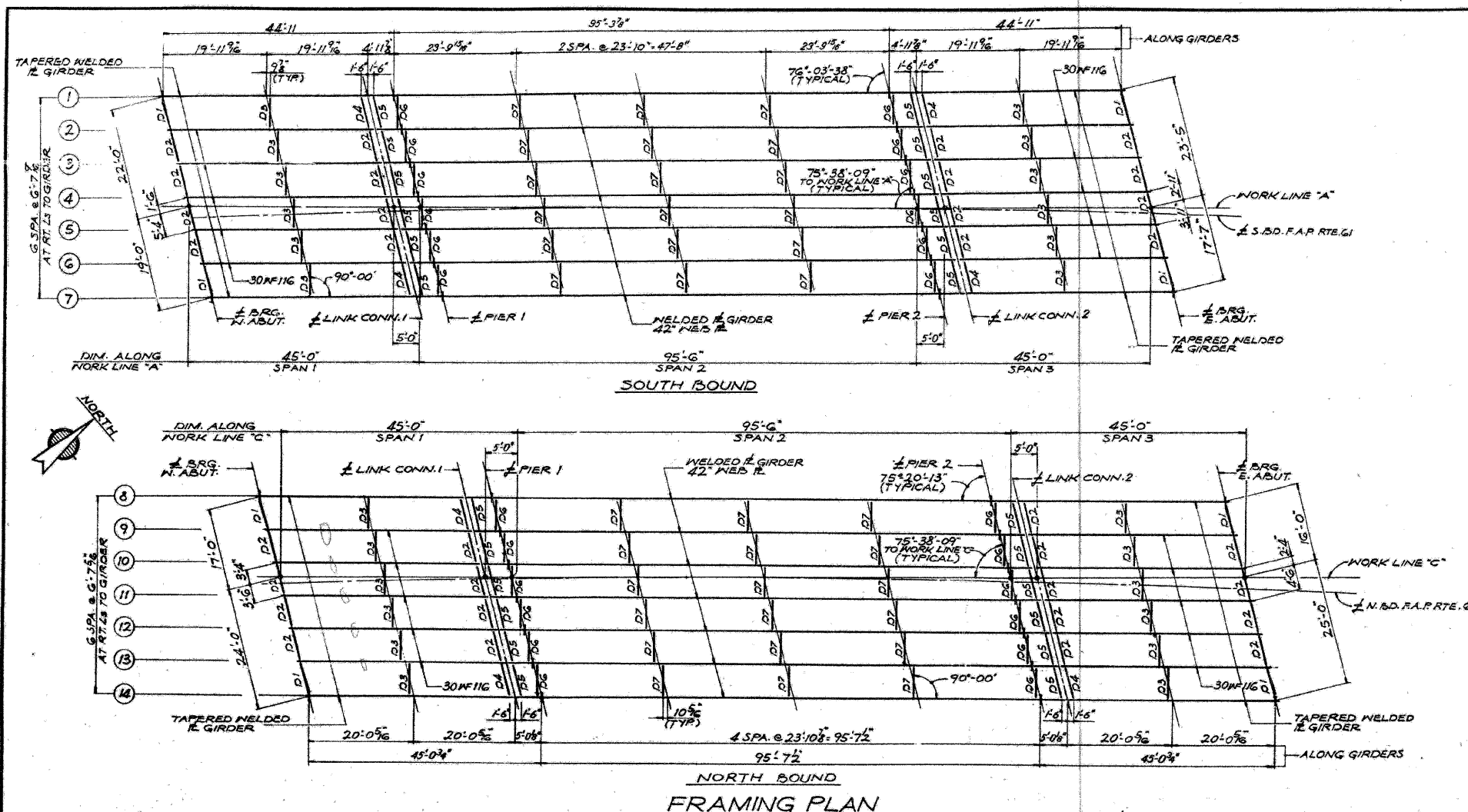
PREFABRICATION CONTRACT

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.R. 61	22-5HB	DUPAGE	181	74
STA.	TO STA.			
S.P. & REG. NO. 4	ILLINOIS PROJECT			

SHEET 10 OF 23



STRESS TABLE "A"

TABLE OF MOMENTS AND REACTIONS - INTERIOR BEAMS

	MOMENTS (FT.-KIPS)		REACTIONS (KIPS)	
	0.5 SPAN 1	PIER 1	0.5 SPAN 2	PIERS
D.L.	150	-85	15.0	57.9
S.D.L.	90	-29	5.0	18.3
L.L.	206	-163	30.9	37.0
IMP.	80	-49	8.3	8.3
TOTAL	546	-326	60.2	121.5
SEC. MOD. PROVIDED	328	486		

STRESS TABLE "B"

INTERIOR BEAM

	0.5 SPAN 2		
	STEEL SECTION	COMPOSITE SECTION	
D.L.	MAX. MOMENT	19,472	
		870	
S.D.L.	MAX. MOMENT (FT.KIP)	1,123	
L.L.		CL. COMPOSITE SECTION	
IMP.		n=10	
TOTAL		47,309	
		3,753	
		1,449	
	SHEAR (KIP)		
	SUPPT. 0.25PT. 0.5PT.		
S.D.L.	12.0 8.0 0		
L.L.	36.8 27.8 17.0		
IMP.	8.2 6.2 3.8		
TOTAL	57.0 40.0 20.8		

GIRDER PROPERTIES

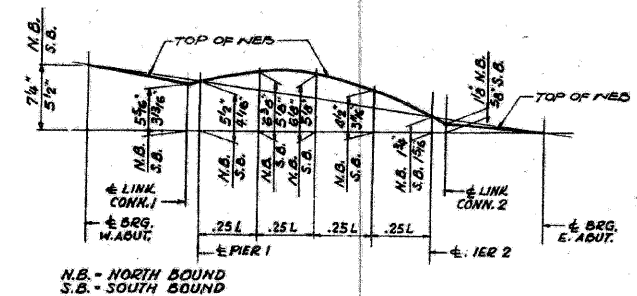
STEEL SECTION	
I _s	19,472
S _{ts}	870
S _{bs}	1,123
CL. COMPOSITE SECTION	
I _c	47,309
S _{tc}	3,753
S _{bc}	1,449

S.D.L. - SUPERIMPOSED DEAD LOAD
 I_s - MOMENT OF INERTIA STEEL SECT.
 S_{ts} - SECT. MODULUS TOP STEEL SECT.
 S_{bs} - SECT. MODULUS BOT. STEEL SECT.
 I_c - MOMENT OF INERTIA COMP. SECT.
 S_{tc} - SECT. MODULUS TOP COMP. SECT.
 S_{bc} - SECT. MODULUS BOT. COMP. SECT.

GIRDER ELEVATIONS FOR FABRICATION ONLY

GIRDERS & BEAMS LOCATION	SOUTH-BOUND							NORTH-BOUND						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
± BRG. W. ABUT.	765.580	765.278	764.903	764.527	764.152	763.777	763.402	763.228	764.525	764.550	764.174	763.799	763.424	762.949
± LINK CONN. 1	765.452	765.077	764.701	764.326	763.951	763.576	763.201	763.070	764.694	764.319	763.943	763.567	763.192	762.816
± PIER NO. 1	765.466	765.091	764.716	764.340	763.965	763.590	763.214	763.080	764.704	764.329	763.953	763.578	763.202	762.826
± PIER NO. 2	765.233	764.857	764.481	764.106	763.730	763.354	762.979	764.789	764.393	764.017	763.641	763.265	762.889	762.512
± LINK CONN. 2	765.195	764.820	764.444	764.068	763.693	763.317	762.941	764.727	764.331	763.975	763.599	763.222	762.846	762.469
± BRG. E. ABUT.	765.127	764.824	764.449	764.072	763.696	763.320	762.944	764.625	764.322	763.945	763.568	763.192	762.815	762.438

ELEVATIONS ARE GIVEN TO TOP OF FIBS OF PLATE GIRDERS AND TO TOP OF FLANGE OF ROLLED BEAMS AND TO TOP OF DIMENSION OF 3/4" TO TOP OF FIBS OF PLATE GIRDERS AND TO TOP OF FLANGE OF ROLLED BEAMS ABSTRACTED FROM TOP OF SLAB ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION.



CAMBER DIAGRAM
 NOTE: CAMBER DIAGRAM BASED ON CONCRETE & STEEL D.L. DEFLECTION + VERTICAL CURVE CORRECTION.

NOTE: FOR ELECTRICAL SUPPORT DETAILS SEE SH. 12

FRAMING PLAN
 F.A. ROUTE 61 OVER
 F.A. ROUTE 6 (LAKE STREET)
 PROJECT
 SECTION 22-5HB
 DUPAGE COUNTY
 STATION 1239+49.90

ALFRED BENESCH & COMPANY
 ENGINEERS - SURVEYORS - PLANNERS
 100 N. WABASH AVE. CHICAGO, ILLINOIS

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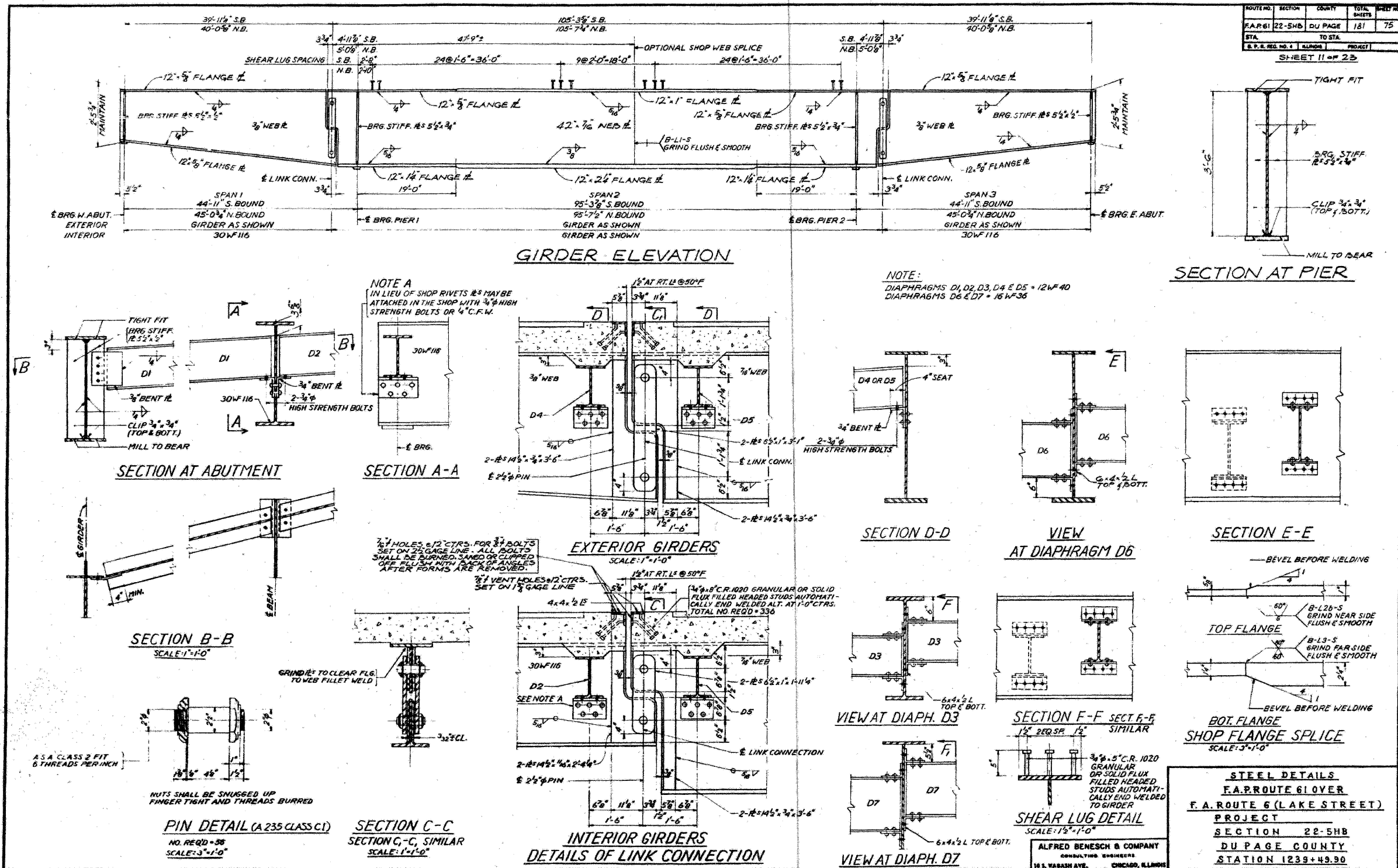
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	FED. ROAD DIST. NO. ILLINOIS			CONTRACT NO. 60G51	

EXISTING PLAN INFORMATION 6 OF 13
STRUCTURE NO. 022-0111

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.R. 61	22-5HB	DUPAGE	181	75
STA.	TO STA.			
F. & P. REG. NO. 4	ALPHABETIC	PROJECT		
SHEET 11 OF 23				



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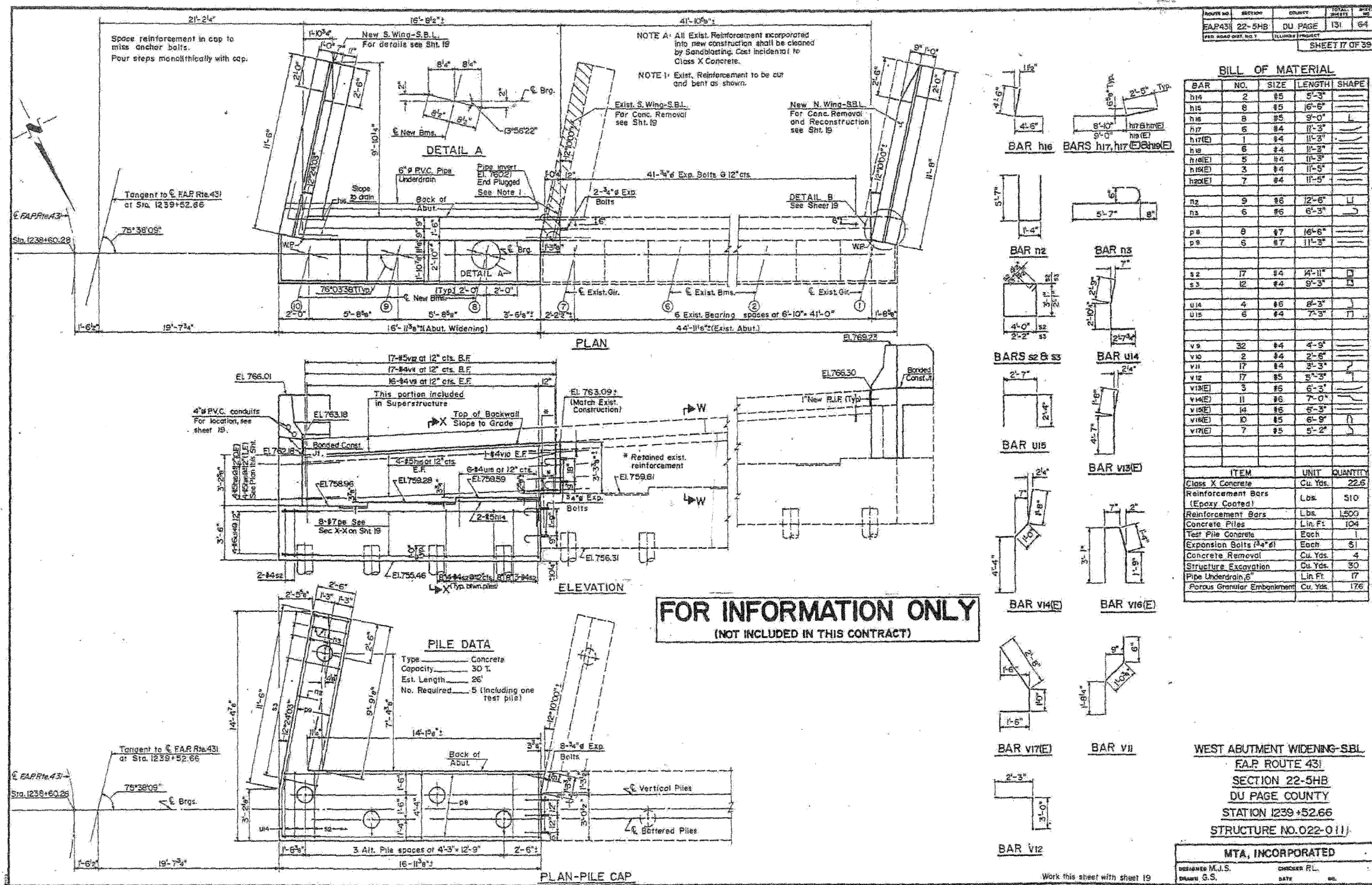
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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 22	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 467
28 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 7 OF 13
STRUCTURE NO. 022-0111

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PLAN INFORMATION 8 OF 13
STRUCTURE NO. 022-0111

FOR INFORMATION ONLY

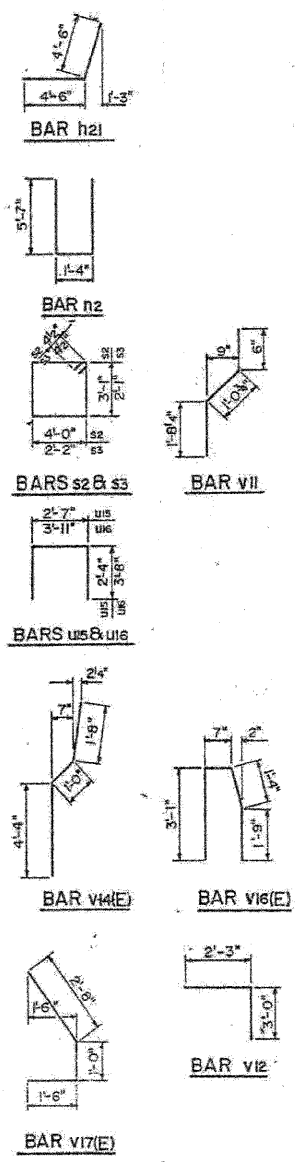
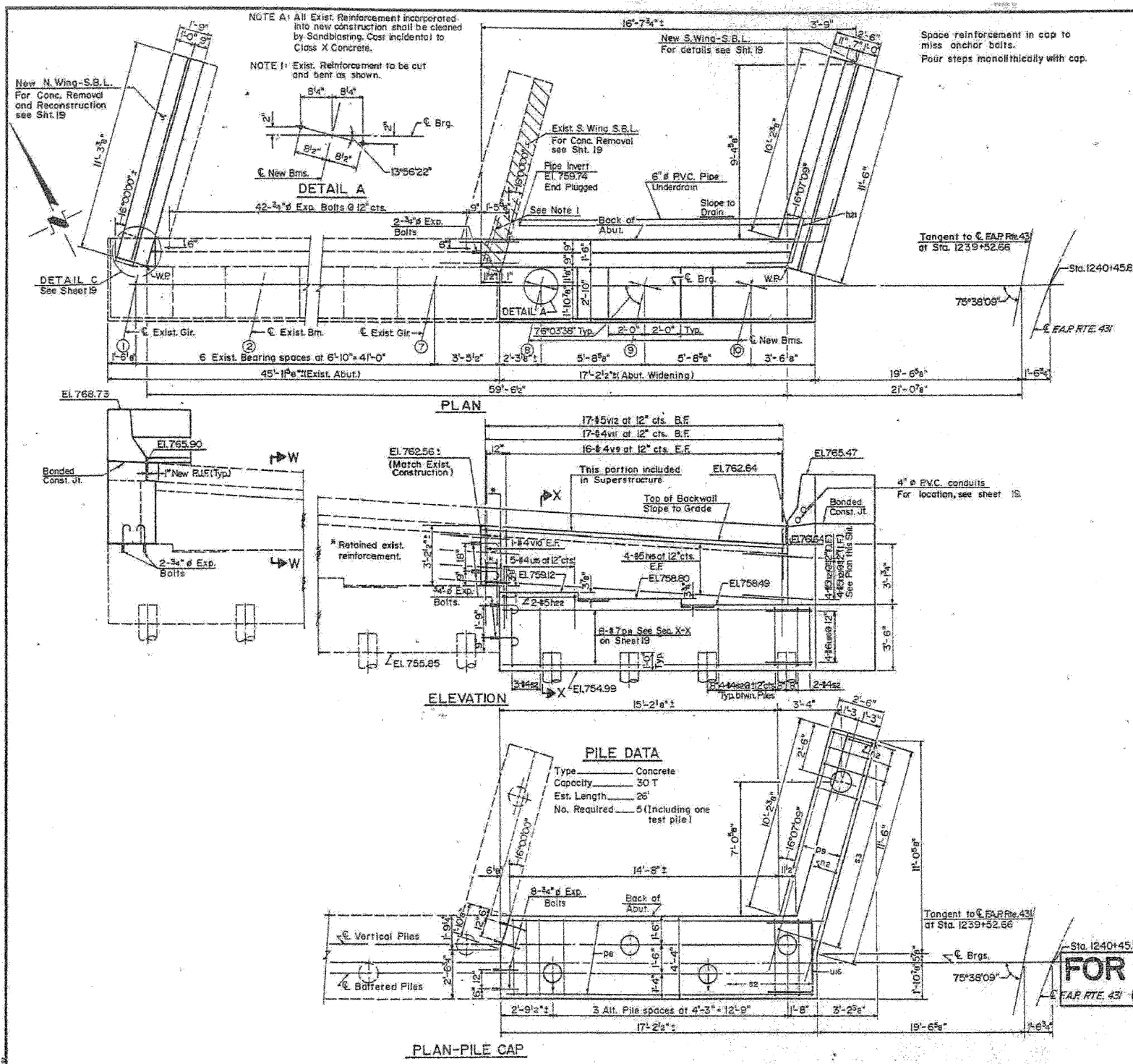
benesch
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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 23 28 SHEETS	F.A.I. R.T.E. 290/355	SECTION 22(1, 1-1, 2&3RS-7)	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 468
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
22-5HB	DU PAGE	ILLINOIS	131	65
SHEET 18 OF 59				



BILL OF MATERIAL

BAR NO.	SIZE	LENGTH	SHAPE
h15	#8	15'	15'-6"
h16	#12	#4	11'-3"
h16(E)	#6	#4	11'-3"
h21	#8	#5	9'-0"
h22	#2	#5	4'-0"
h24(E)	#10	#4	11'-0"
n2	#12	#6	12'-6"
p e	#8	#7	16'-6"
p g	#6	#7	11'-3"
s2	#17	#4	14'-11"
s3	#12	#4	9'-3"
u15	#6	#4	7'-3"
u16	#4	#6	11'-3"
v9	#32	#4	4'-9"
v10	#2	#4	2'-6"
v11	#17	#4	3'-3"
v12	#17	#5	5'-3"
v14(E)	#14	#6	7'-0"
v15(E)	#14	#5	6'-3"
v16(E)	#10	#5	6'-9"
v17(E)	#10	#5	5'-2"

ITEM	UNIT	QUANTITY
Class X Concrete	Cu. Yds.	22.6
Reinforcement Bars (Epoxy Coated)	Lbs.	520
Reinforcement Bars	Lbs.	1,520
Concrete Piles	Lin. Ft.	104
Test Pile Concrete	Each	1
Expansion Bolts (#4's)	Each	54
Concrete Removal	Cu. Yds.	4
Structure Excavation	Cu. Yds.	30
Pipe Underdrain 6"	Lin. Ft.	18
Porous Granular Embankment	Cu. Yds.	16

FOR INFORMATION ONLY
(NOT INCLUDED IN THIS CONTRACT)

EAST ABUTMENT WIDENING-S.B.I.
F.A.P. ROUTE 431
SECTION 22-5HB
DU PAGE COUNTY
STATION 1239+52.66
STRUCTURE NO. 022-0111

MTA, INCORPORATED
DESIGNED M.J.S. CHECKED P.L.
DATE G.S. DATE NO.

PREFABRICATION CONTRACT

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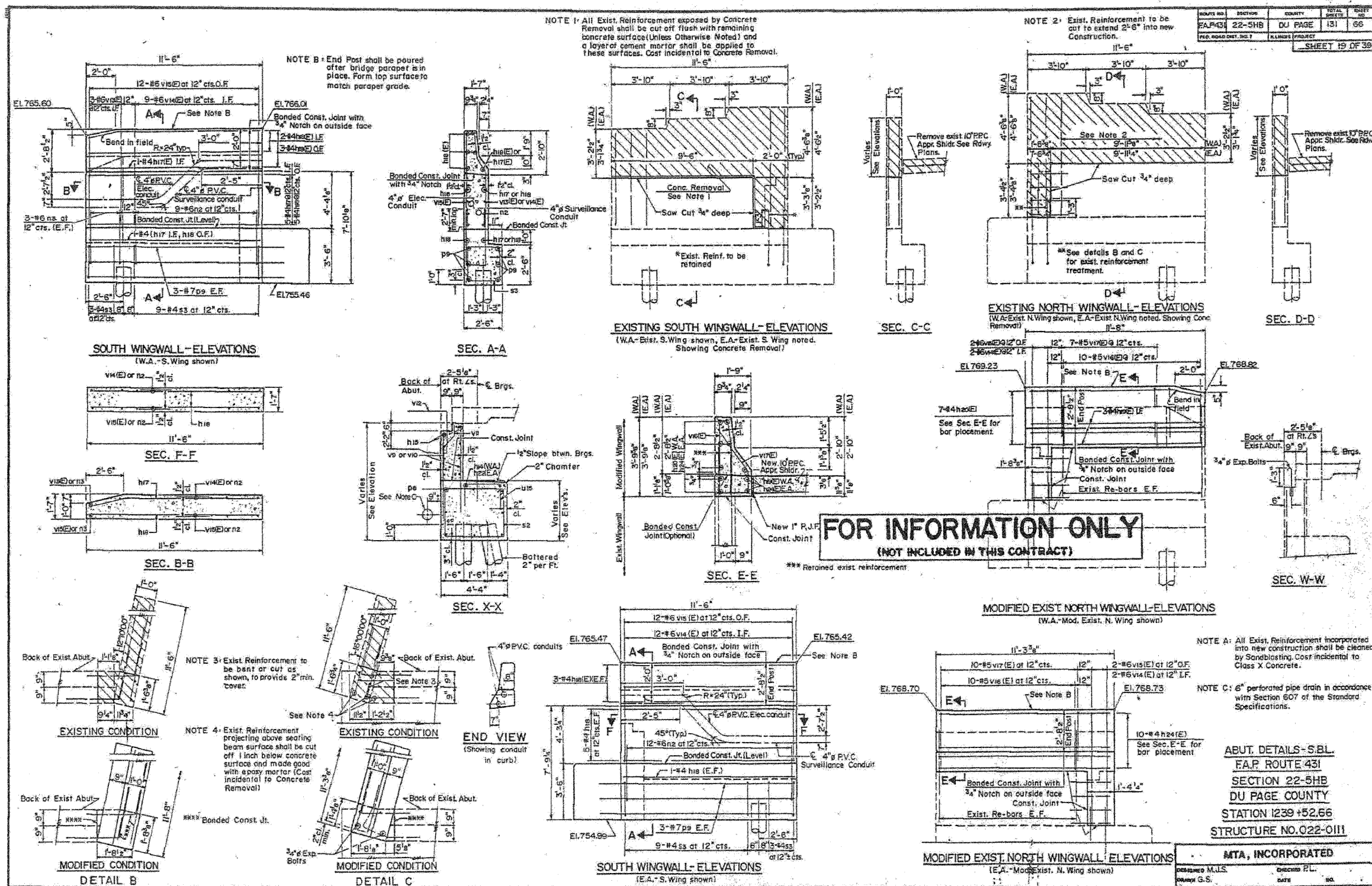
alfred benesch & company
Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 24	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 469
28 SHEETS		CONTRACT NO. 60G51			
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	

EXISTING PLAN INFORMATION 9 OF 13
STRUCTURE NO. 022-0111

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



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SHEET NO. 25	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	221, 1-1, 2&3RS-7	DUPAGE	546	470
28 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

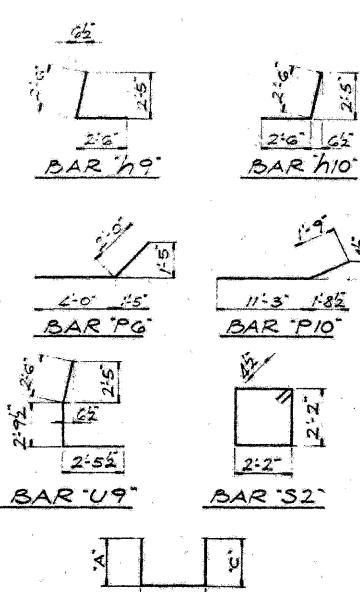
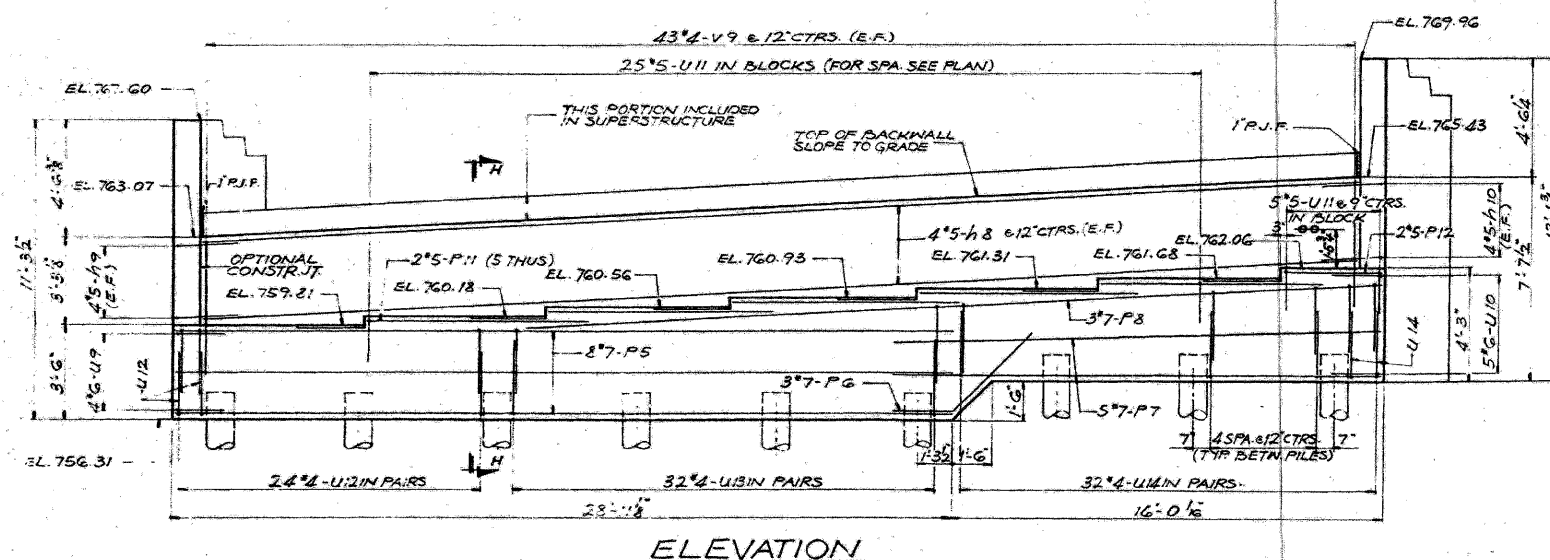
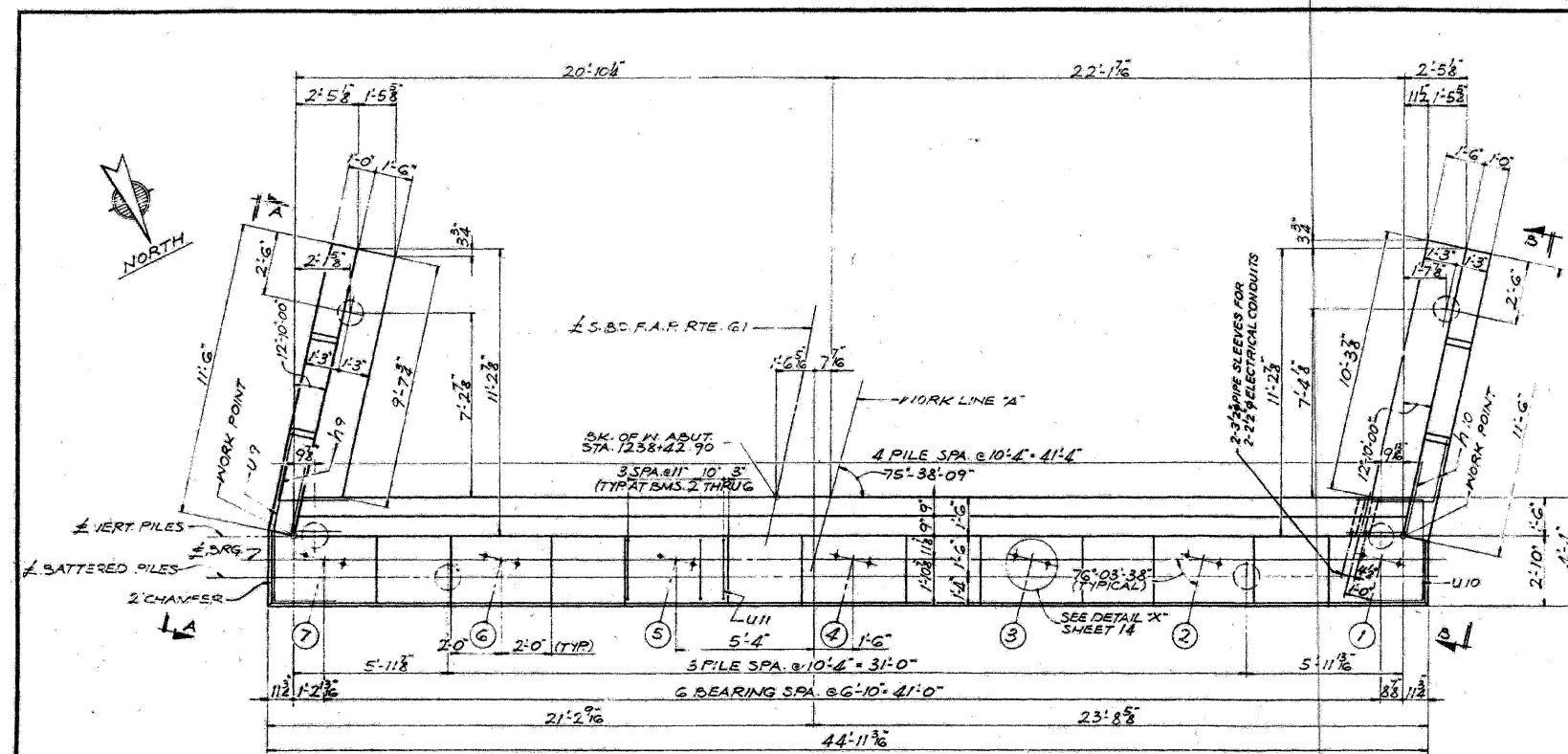
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STRUCTURE NO. 022-0111

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.R. 22-5HB	DUPAGE	181	77	
STA.	TO STA.			
S.P. & REC. NO. 4 ILLINOIS PROJECT				

SHEET 13 OF 23



MARK	A'	B'	C'
P2	3'-6"	9'	3'-6"
P3	4'-3"	9'	4'-3"
U10	2'-6 1/2"	3'-11"	2'-6 1/2"
U11	1'-6"	2'-6"	1'-6"
U12	2'-3"	4'-0"	2'-3"
U13	2'-0 1/2"	4'-0"	2'-0 1/2"
U14	2'-5"	4'-0"	2'-5"

BILL OF MATERIAL

BAR	No	SIZE	LENGTH	SHAPE
h8	8	#5	42'-6"	---
h9	3	#5	5'-0"	L
h10	3	#5	5'-0"	L
h11	34	#4	11'-3"	---
h12	4	#4	7'-5"	---
h13	4	#4	3'-6"	---
P2	13	#5	7'-9"	---
P3	13	#5	9'-3"	---
P5	8	#7	28'-6"	---
P6	3	#7	6'-0"	---
P7	5	#7	18'-0"	---
P8	3	#7	31'-6"	---
P9	9	#7	13'-0"	---
P10	3	#7	13'-0"	---
P11	10	#5	8'-0"	---
P12	2	#5	3'-3"	---
S2	24	#4	9'-5"	---
U9	4	#6	7'-9"	L
U10	5	#6	9'-0"	L
U11	30	#5	5'-6"	L
U12	24	#4	8'-6"	L
U13	32	#4	9'-9"	L
U14	32	#4	9'-0"	L
V9	36	#4	4'-6"	---
V10	16	#4	6'-3"	---
V11	16	#4	7'-0"	---
V12	10	#4	7'-6"	---
V13	10	#4	7'-9"	---

REINFORCEMENT BARS	LBS.	3720
CONCRETE PILES	LIN. FT.	500
CLASS 'X' CONCRETE	CU. YDS.	48.0
TEST PILE (CONCRETE)	EACH	1

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT

FILE DATA
TYPE: CONCRETE
CAPACITY: 30 TONS
EST. LENGTH: 50 FT.
* NO. REQUIRED: 11
* INCLUDES 1 TEST PILE

WEST ABUTMENT-SOUTH BOUND
F.A. ROUTE 61 OVER
F.A. ROUTE 6 (LAKE STREET)
PROJECT
SECTION 22-5HB
DUPAGE COUNTY
STATION 1239+49.90

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
10 S. WABASH AVE. CHICAGO, ILLINOIS

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Chicago, Illinois 60601
312-665-0460 Job No. 10050

SHEET NO. 26	F.A.I. RTE. 290	SECTION 221, 1-1, 2&3RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 471
28 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

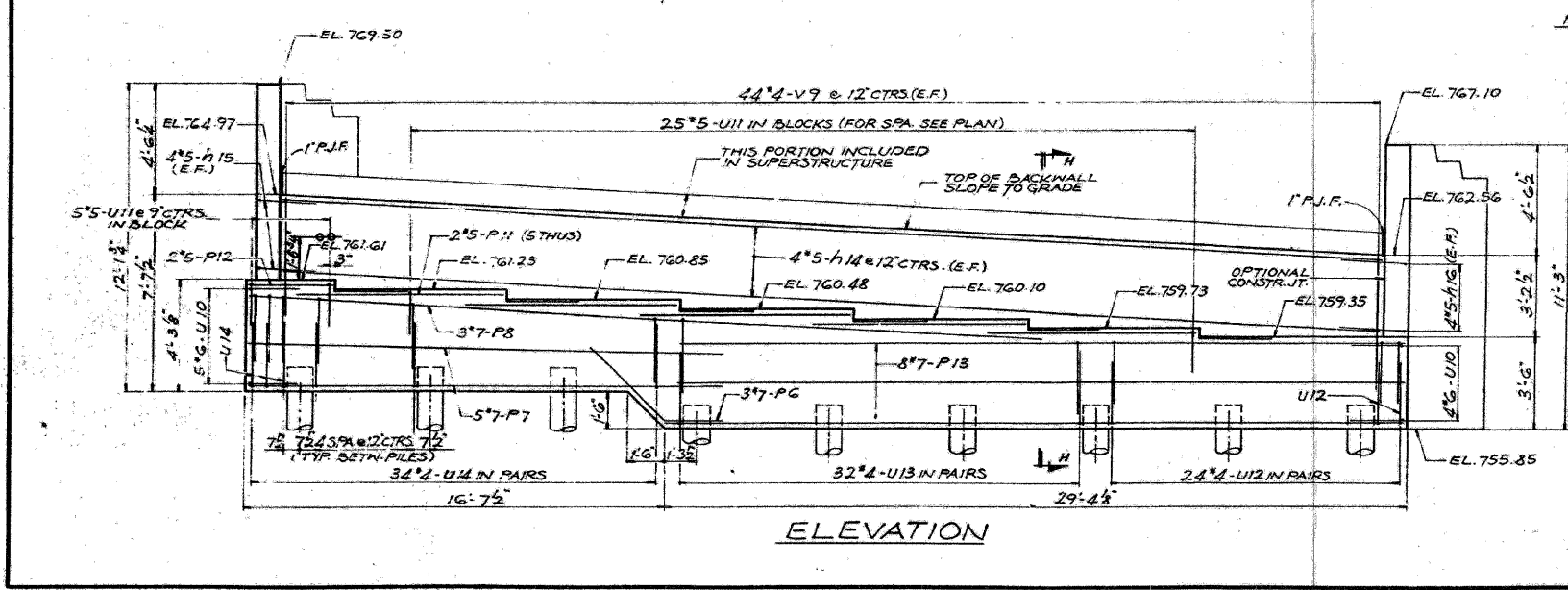
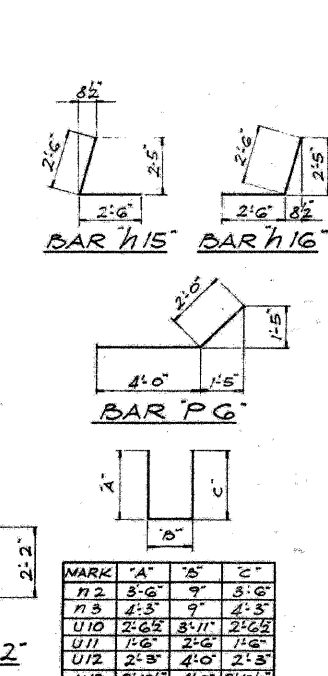
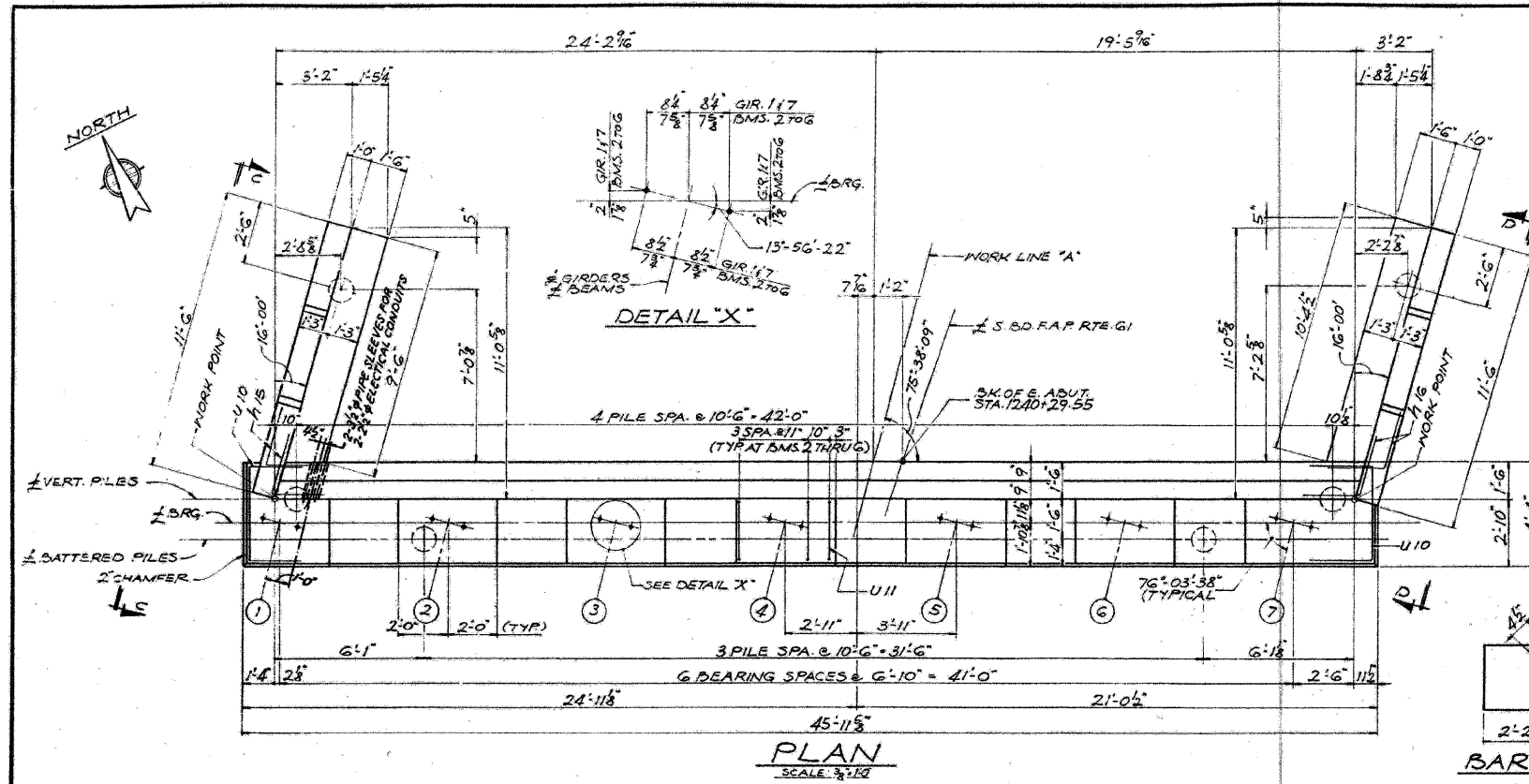
EXISTING PLAN INFORMATION 11 OF 13
STRUCTURE NO. 022-0111

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.R. 22-5HB	DU PAGE	181	78	
STA.	TO STA.			
1239+49.90	1239+49.90			

SHEET 14 OF 23



NOTE
ALL BAR DIMENSIONS ARE OUT TO OUT.

FILE DATA

TYPE: CONCRETE
CAPACITY: 30 TONS
EST. LENGTH: 45 FT.
* No. REQUIRED: 11
* INCLUDES 1 TEST PILE

EAST ABUTMENT-SOUTH BOUND
F.A. ROUTE 61 OVER
F.A. ROUTE 6 (LAKE STREET)
PROJECT
SECTION 22-5HB
DU PAGE COUNTY
STATION 1239+49.90

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
10 S. WABASH AVE. CHICAGO, ILLINOIS

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312-565-0450 Job No. 10050

SHEET NO. 27	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 472
28 SHEETS	355			CONTRACT NO. 60G51	
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

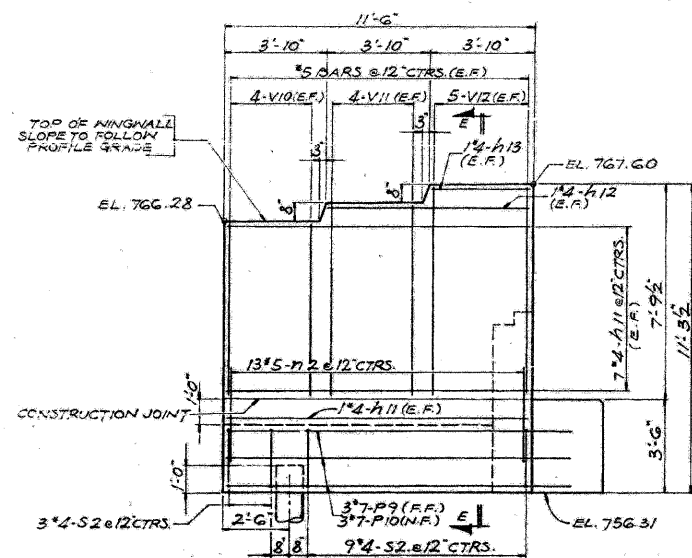
EXISTING PLAN INFORMATION 12 OF 13
STRUCTURE NO. 022-0111

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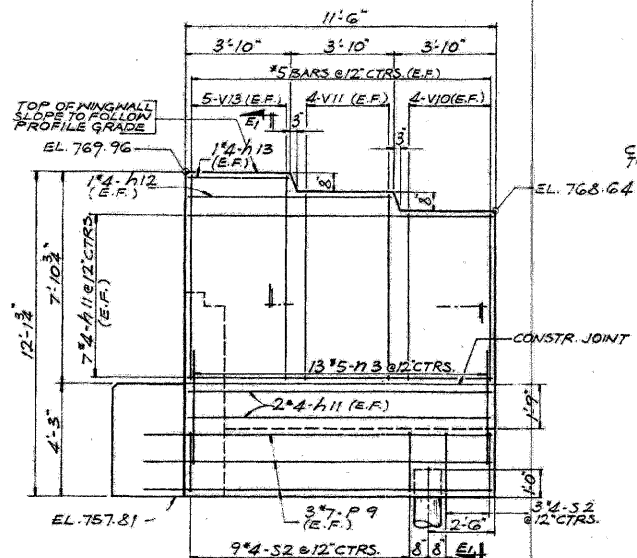
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 61	22-5HB	DU PAGE	181	79
STA.	TO STA.			
ILLINOIS		PROJECT		

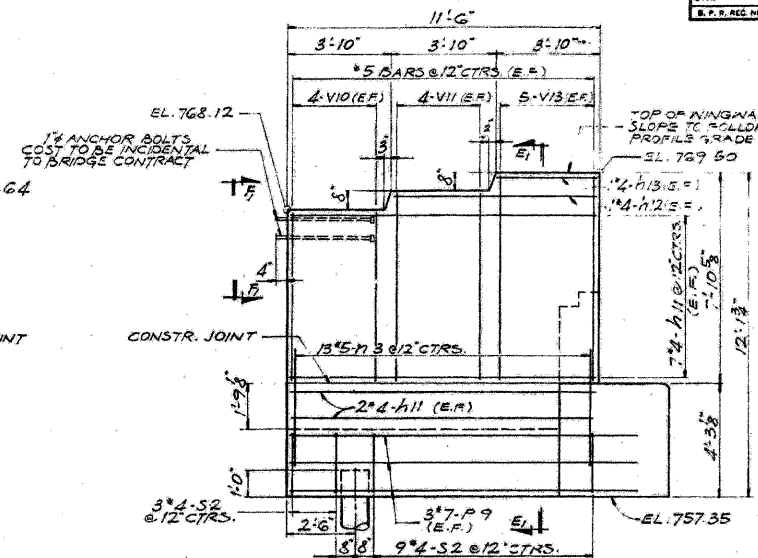
SHEET 15 OF 23



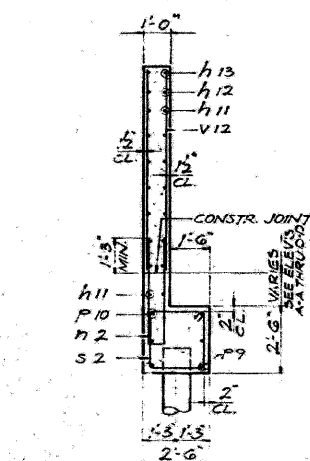
ELEVATION A-A
SCALE: 3/8" = 1'-0"



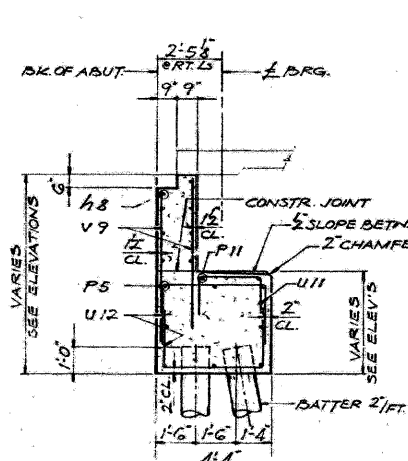
ELEVATION B-B



ELEVATION C-C

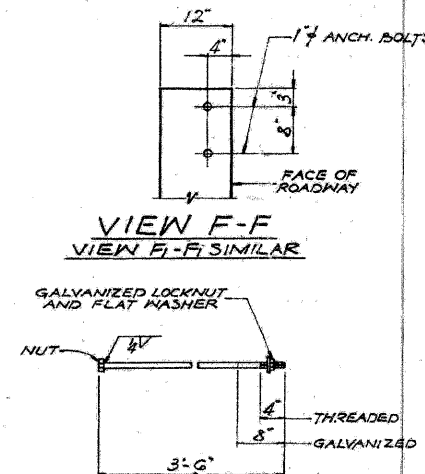


SECTION E-E
SECTION E-E, SIMILAR
SCALE: 3/8" = 1'-0"

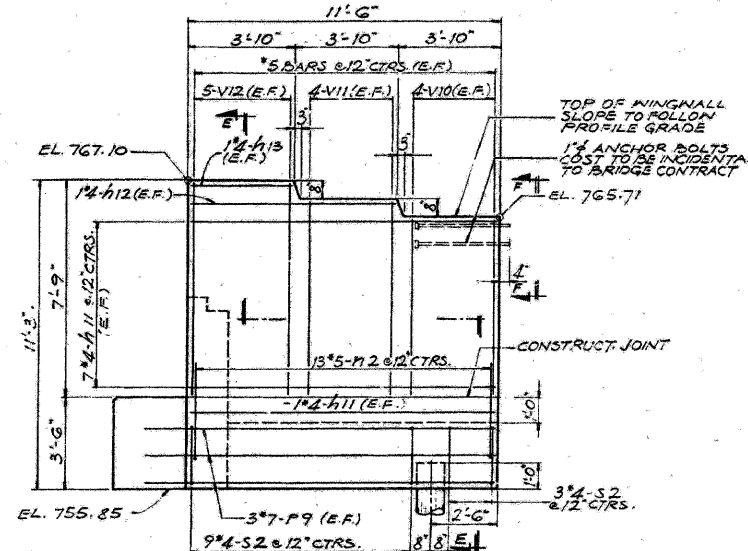


SECTION H-H
SCALE: 3/8" = 1'-0"

NOTE: BAR MARKS SHOWN FOR WEST ABUTMENT



1 1/4 ANCHOR BOLTS



ELEVATION D-D

ABUTMENT DETAILS-SOUTH BOUND
F.A. ROUTE 61 OVER
F.A. ROUTE 6 (LAKE STREET)
PROJECT
SECTION 22-5HB
DU PAGE COUNTY
STATION 1239+49.90

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SHEET NO. 28	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 473
28 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 13 OF 13
STRUCTURE NO. 022-0111

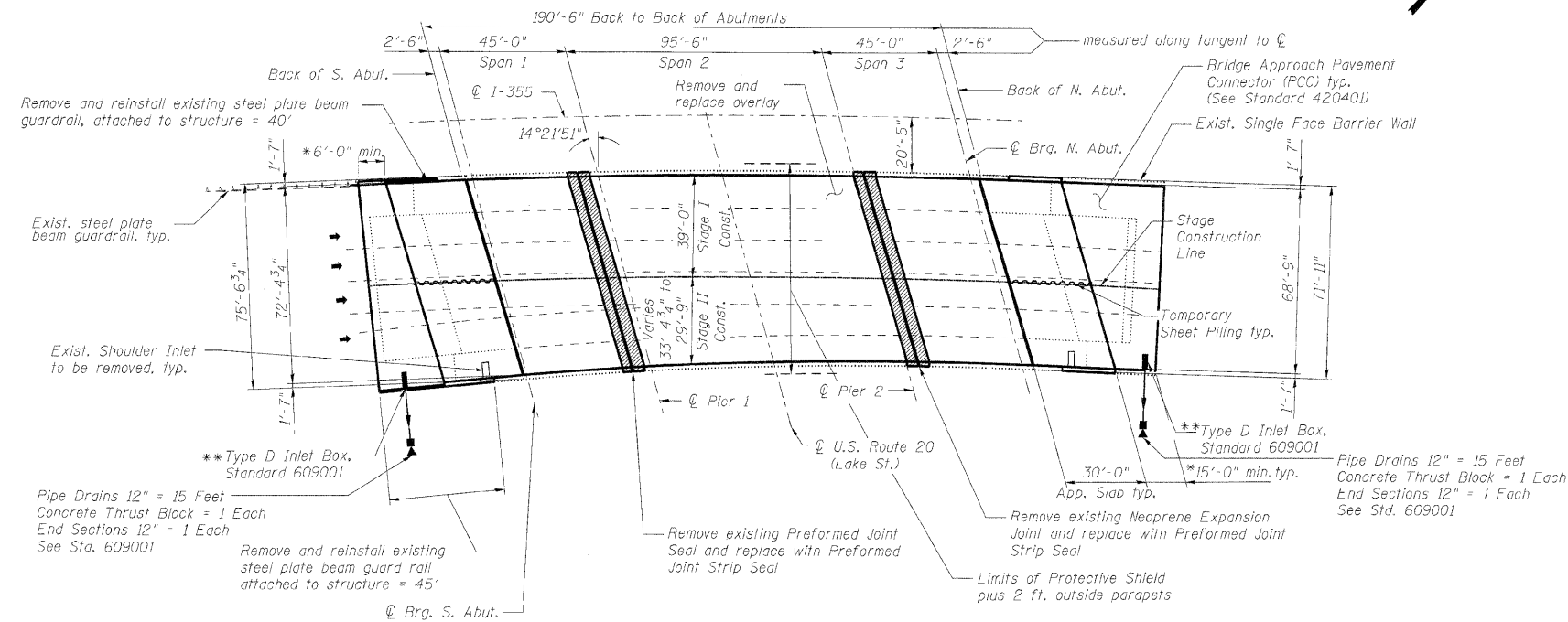
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

Existing Structure:
The structure is a three-span continuous, composite steel structure with a 7/2-inch reinforced concrete deck and a 2-inch concrete overlay.
The original structure was built in 1970 as F.A.P. Route 61, Section 22-5HB. In 1988, the deck was widened and overlaid. In 1997, the expansion joints at both piers were reconstructed and a partial width overlay was placed. In 2002, a beam segment was replaced.

Bench Mark:
Chiseled "□" on S.E. corner of East Wingwall of the N. Abut. of the Southbound Structure.
Elev. 765.72

Stage construction shall be utilized to maintain traffic during construction.

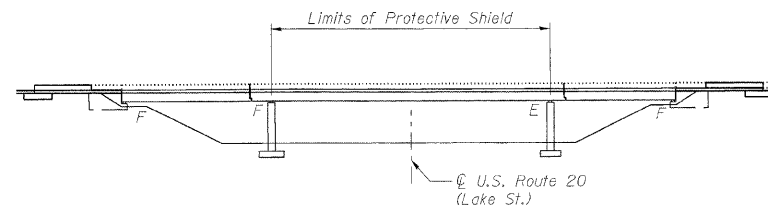
No salvage



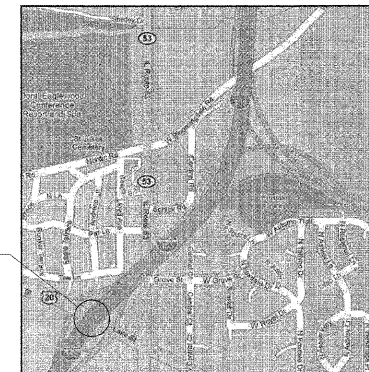
PLAN

* Limits of Bridge Approach Pavement Connector (PCC) shall extend to the location of the existing relief joint, 6'-0" beyond the limits of the Proposed Bridge Approach Slab per Hwy. Std. 420401, or 15'-0" beyond the limits of the proposed B.A.S. per Hwy. Std. 609001 wherever shoulder inlets are proposed.

** Match existing shoulder elevations.



ELEVATION



LOCATION SKETCH

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

DESIGN STRESSES

$f'c = 3,500$ psi
 $f_y = 60,000$ psi

SCOPE OF WORK

1. Remove bridge approach slabs.
2. Bridge Deck Hydro-scarification.
3. Repair bridge deck.
4. Reconstruct deck joints near each pier with preformed joint strip seal.
5. Place New Overlay.
6. Stabilize abutments.
7. Replace bridge approach slabs and approach pavement connectors.
8. Install inlets at approach shoulders.
9. Trim beam ends at pin and link connection.
10. Apply Protective Coat.



EXPIRATION DATE: 11/30/10
DATE: 11/16/09

GENERAL PLAN AND ELEVATION
I-355 NB OVER U.S. ROUTE 20
DUPAGE COUNTY
STATION 95+19
STRUCTURE NO. 022-0112

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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312-665-0460 Job No. 10050

SHEET NO. 1 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 474
	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOTAL BILL OF MATERIAL

GENERAL NOTES

- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete. As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.
- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- If the contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.
- The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing pile. This connection shall be reviewed and accepted by the Engineer and included in the cost of Temporary Sheet Piling.
- Stage construction shall be utilized to maintain traffic during construction.
- The Contractor shall exercise care during removal of existing joints to ensure that the slab, beams and diaphragms' integrity will not be detrimentally impacted. The Contractor shall repair any damage(s) to the slab, beams and diaphragms caused by his operation as directed by the Engineer at no additional cost to the Department.
- Protective Coat shall be applied to the new Bridge Deck Latex Concrete Overlay and Approach Slabs as well as the top and inside faces of Parapets.
- Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50°F.

INDEX OF SHEETS

- General Plan and Elevation
- General Notes, Bill of Material and Index of Sheets
- Stage Construction Details
- Temporary Concrete Barrier for Stage Construction
- Bridge Deck and Approach Slab Repairs
- South Bridge Approach Slab Details (1 of 2)
- South Bridge Approach Slab Details (2 of 2)
- North Bridge Approach Slab Details (1 of 2)
- North Bridge Approach Slab Details (2 of 2)
- Expansion Joint Repairs
- Expansion Joint Details
- Preformed Joint Strip Seal
- Steel Repair Details
- Abutment Stabilization Details
- Bar Splicer Assembly Details
- Existing Plan Information

ITEM	UNIT	SUPER	SUB	TOTAL
Bridge Approach Pavement Connector (PCC)	Sq. Yd.	307		307
Pavement Reinforcement 9"	Sq. Yd.	307		307
Approach Slab Removal	Sq. Yd.	780		780
Concrete Barrier Removal	Foot	58.5		58.5
Concrete Removal	Cu. Yd.	33.7		33.7
Protective Shield	Sq. Yd.	811		811
* Structure Excavation	Cu. Yd.		367	367
Concrete Structures	Cu. Yd.		47.3	47.3
Concrete Superstructure	Cu. Yd.	249.3		249.3
Bridge Deck Grooving	Sq. Yd.	1,825		1,825
Protective Coat	Sq. Yd.	2,149		2,149
Reinforcement Bars, Epoxy Coated	Pound	54,300	8,840	63,140
Bar Splicers	Each	178	80	258
Temporary Sheet Piling	Sq. Ft.		497	497
Preformed Joint Strip Seal	Foot	150.0		150.0
End Sections 12"	Each	2		2
Geocomposite Wall Drain	Sq. Yd.		124	124
Pipe Drains 12"	Foot	30		30
Pipe Underdrains for Structures 4"	Foot		157	157
Removing Inlets	Each	2		2
Type D Inlet Box, Standard 609001	Each	2		2
Concrete Thrust Blocks	Each	2		2
Rem. & Reinst. of Exist. Steel Plate Beam Guard Rail, Attached to Structures	Foot	85		85
Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,407		1,407
Expanded Polystyrene Fill	Cu. Yd.		240	240
Bridge Deck Hydro-Scarification, 2 1/4"	Sq. Yd.	1,407		1,407
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	5.0		5.0
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	5.0		5.0
Cleaning and Painting Exposed Rebar (Special)	Sq. Ft.	5		5
Modify Existing Pin & Link Connection	L. Sum	0.23		0.23

* All excavated materials shall be disposed of within IDOT right-of-way and within the project limits. See the General Notes sheet from the roadway plans for more information.

GENERAL NOTES, BILL OF MATERIAL
AND INDEX OF SHEETS
STRUCTURE NO. 022-0112

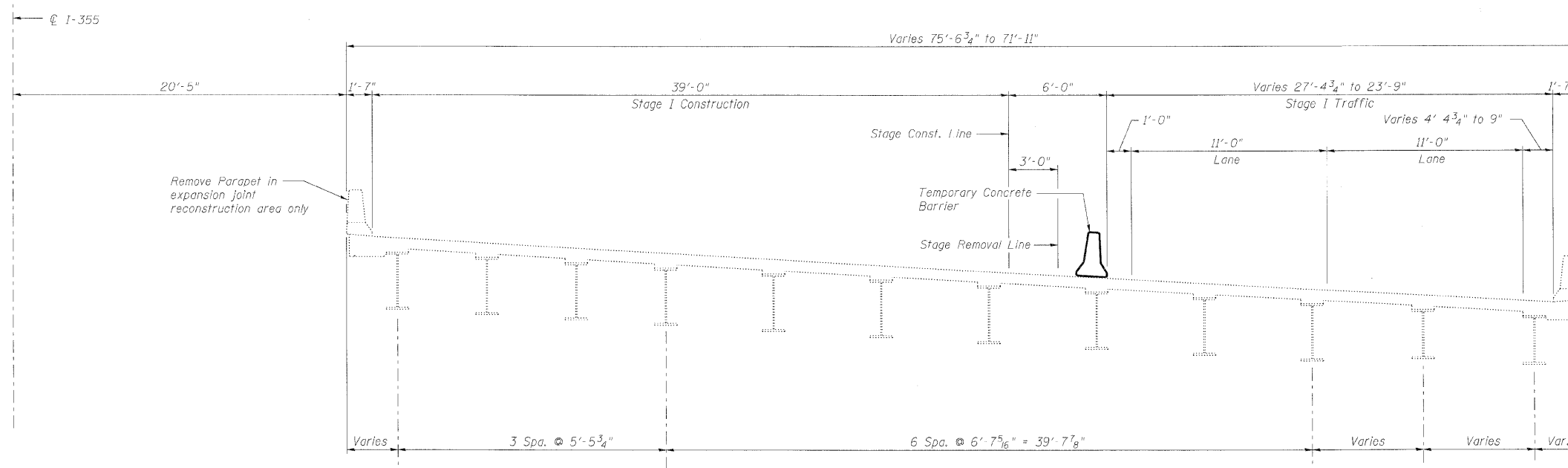
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CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

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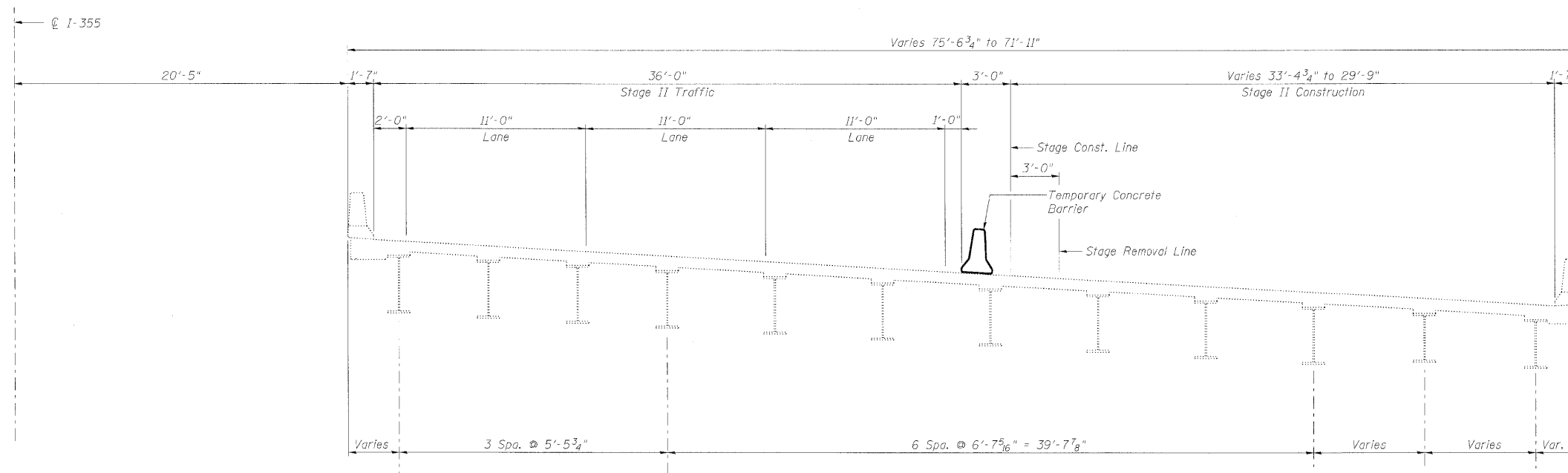
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205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-565-0480 Job No. 10050

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290				
28 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I CROSS SECTION
(Looking North)



STAGE II CROSS SECTION
(Looking North)

Notes:

1. For quantity of Temporary Concrete Barrier, see roadway plans.
2. Temporary Concrete Barrier to be anchored to the approach slabs adjacent to locations of Structure Excavation. For Temporary Concrete Barrier Details, see Temporary Concrete Barrier for Stage Construction sheet.

Remove Parapet in expansion joint reconstruction area only

DESIGNED	MFB
CHECKED	MAC
DRAWN	VH
CHECKED	KWS

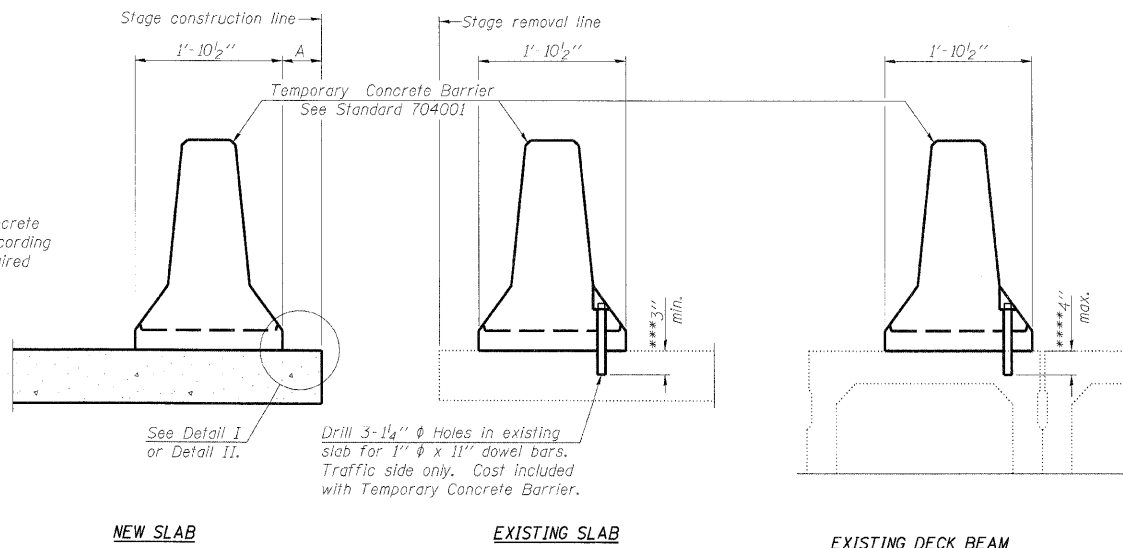
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 alfred benesch & company
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 205 North Michigan Avenue, Suite 2400
 Chicago, Illinois 60601
 312-565-0490 Job No. 10050

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 022-0112

SHEET NO. 3 28 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 476
	CONTRACT NO. 60G51			ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



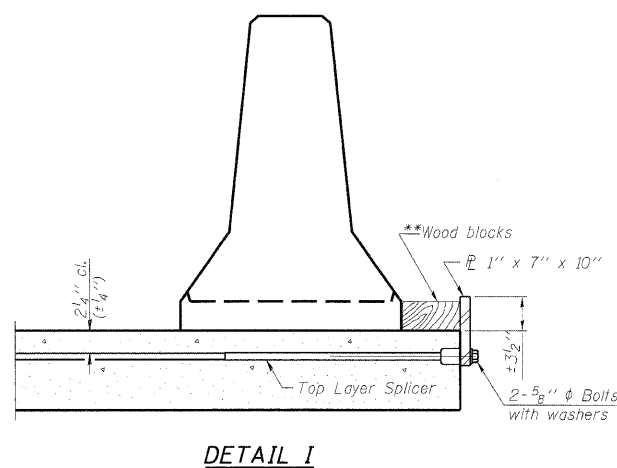
SECTIONS THRU SLAB OR DECK BEAM

NOTES

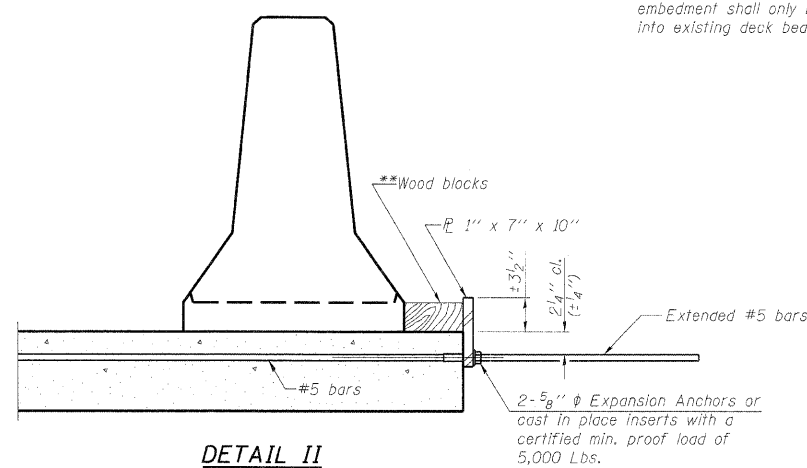
- Detail I - With Bar Splicer or Couplers:
Connect one (1) 1"x7"x10" steel \bar{R} to the top layer of couplers with 2- $\frac{5}{8}$ " ϕ bolts screwed to coupler at approximate \bar{C} of each barrier panel.
- Detail II - With Extended Reinforcement Bars:
Connect one (1) 1"x7"x10" steel \bar{R} to the concrete slab or concrete wearing surface with 2- $\frac{5}{8}$ " ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate \bar{C} of each barrier panel.
- Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7" x 10" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

**** If existing deck beam is to remain in place after construction, embedment shall only be into wearing surface and not into existing deck beam concrete.

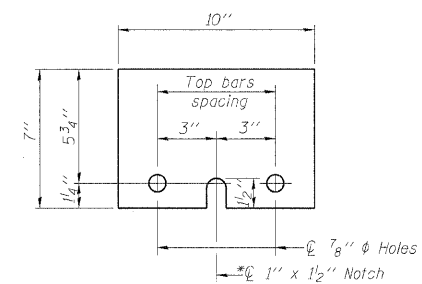


DETAIL I



DETAIL II

**Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.



STEEL RETAINER \bar{R} 1" x 7" x 10"

* Required only with Detail II

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

R-27

10-1-08

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Chicago, Illinois 60601
312-565-0450 Job No. 10050

TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION
STRUCTURE NO. 022-0112

SHEET NO. 4 28 SHEETS	F.A.I. RTE. 290 355	SECTION 221, 1-1, 2&3RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 477
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

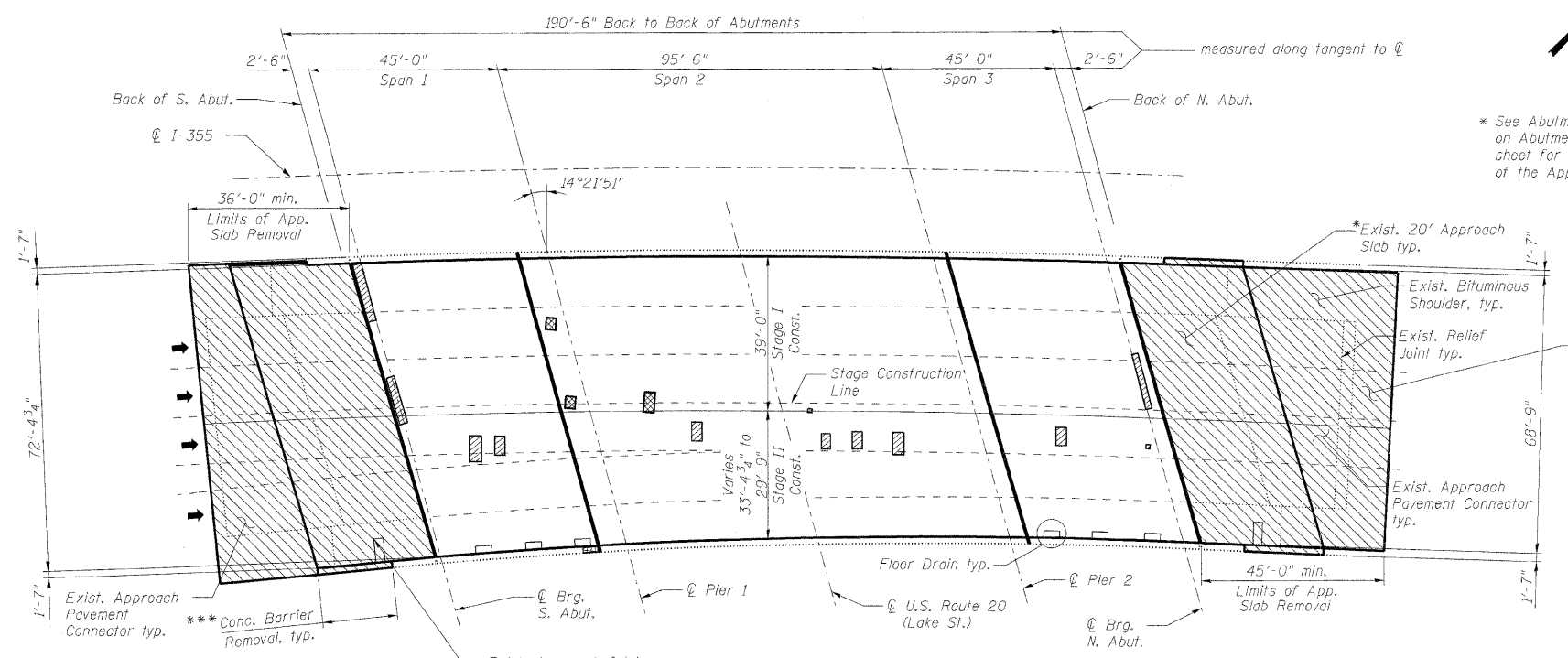
BILL OF MATERIAL

SYMBOL	ITEM	UNIT	QUANTITY
	Deck Slab Repair (Partial)	Sq. Yd.	19.0 ▲
	Deck Slab Repair (Full Depth - Type I)	Sq. Yd.	5.0
	Deck Slab Repair (Full Depth - Type II)	Sq. Yd.	5.0
	Cleaning & Painting Exposed Rebar (Special)	Sq. Ft.	5
	Protective Shield	Sq. Yd.	811
	Protective Coat	Sq. Yd.	1,651
	Bridge Deck Grooving	Sq. Yd.	1,367
	Bridge Deck Latex Concrete Overlay, 2 1/4"	Sq. Yd.	1,407
	Bridge Deck Hydro-Scarification, 2 1/4"	Sq. Yd.	1,407

▲ For information only to assist the Contractor in bidding. See Special Provision for "Bridge Deck Latex Concrete Overlay".

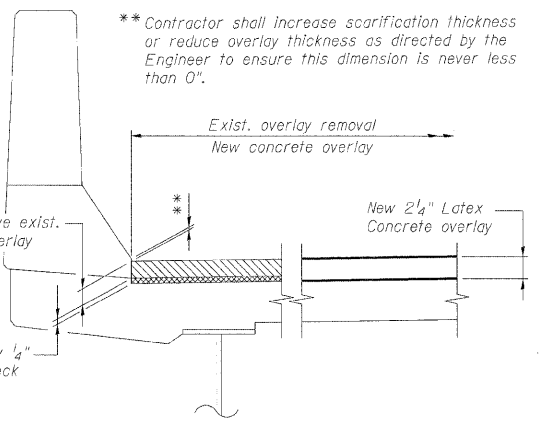
Notes:

- Deck and approach slab repair areas are estimated based on infrared thermographic deck survey and visual inspection completed in June 2009. Actual repair areas and locations shall be determined by the Engineer and shown on As-Built plans.
- Protective Shield, required for deck slab and/or parapet repairs, shall be installed according to Article 501.03 of the Standard Specifications. For limits of Protective Shield see General Plan and Elevation sheet.
- Deck drains (downspouts, floor drains, and scuppers) shall be cleaned prior to placement of the Latex Concrete Overlay. Cost of cleaning the deck drains is included in Bridge Deck Hydro-Scarification, 2 1/4".
- Gaps caused by distress around floor drains shall be filled with epoxy as specified in the Special Provision "Epoxy Injection". Cost included with Bridge Deck Latex Concrete Overlay, 2 1/4".
- See Approach Slab Details sheets for Approach Slab removal and replacement details and quantities. See the Special Provisions for "Approach Slab Removal" and "Concrete Barrier Removal".
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and shall protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work. Instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.

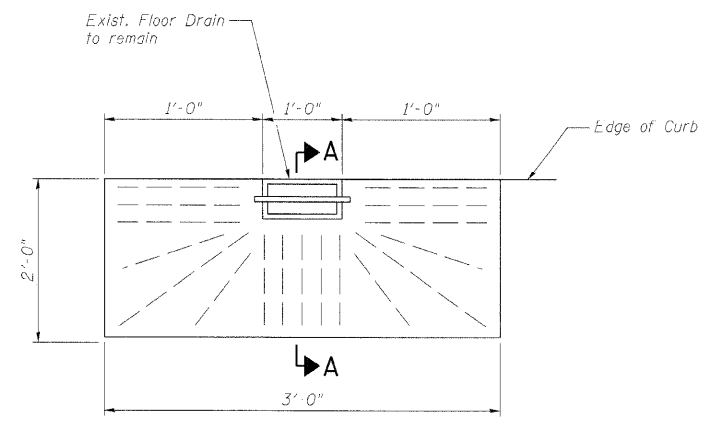


PLAN

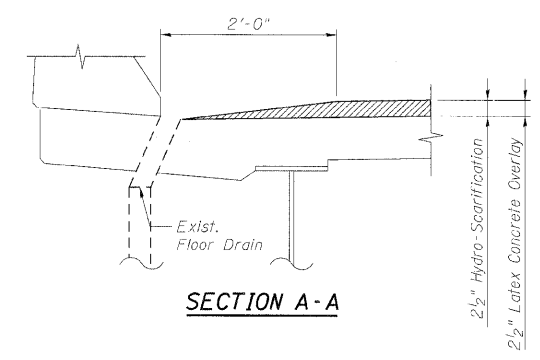
*** Limits of Concrete Barrier Removal shall match the limits of proposed parapet on the approaches. See sheets 6 thru 9 for details. See Note 6.



SCARIFICATION & OVERLAY
DETAIL AT PARAPET



PLAN



SECTION A-A

CONCRETE OVERLAY AT FLOOR DRAIN

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

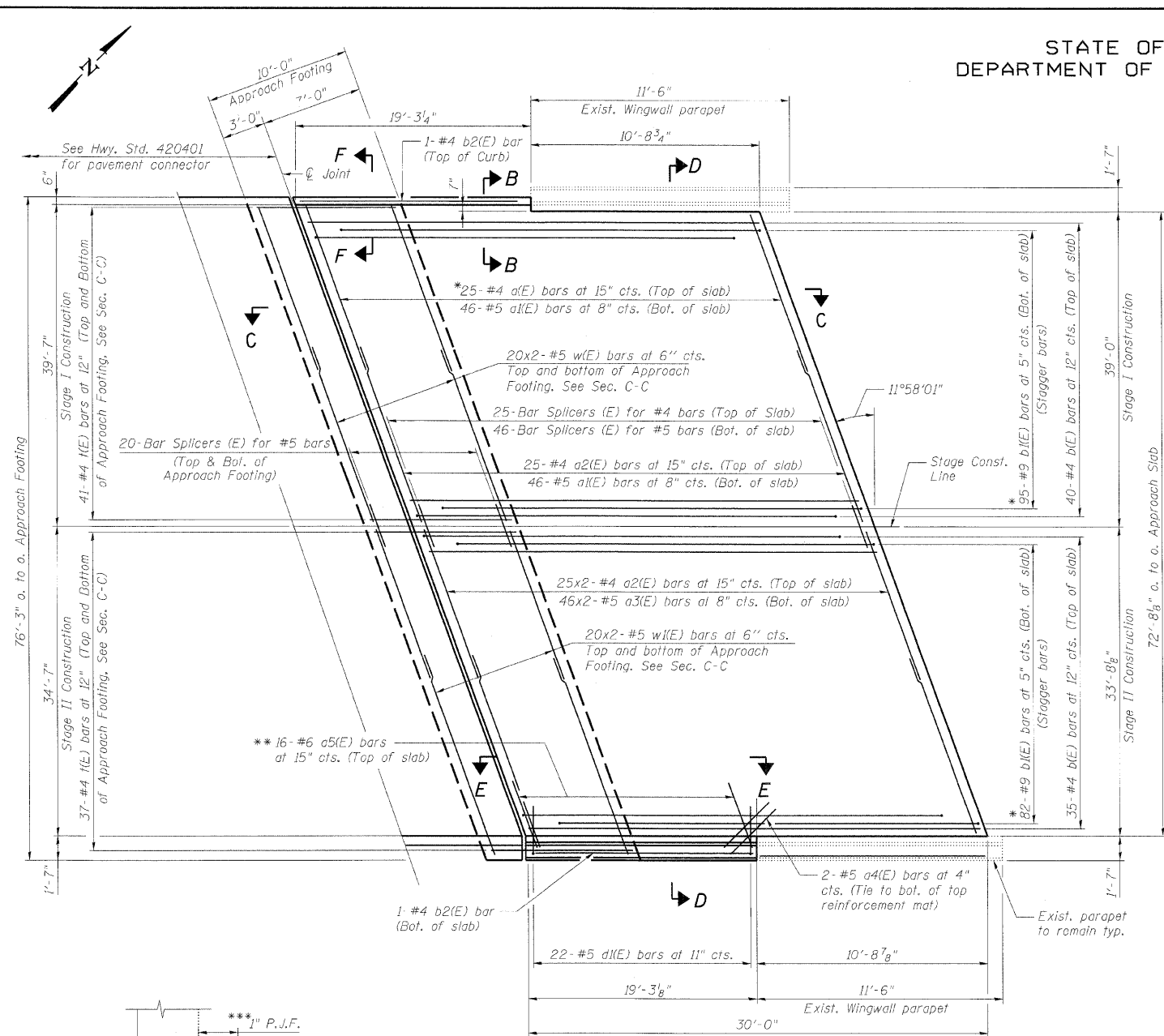
benesch

alfred benesch & company
Engineers - Surveyors - Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-665-0460 Job No. 10060

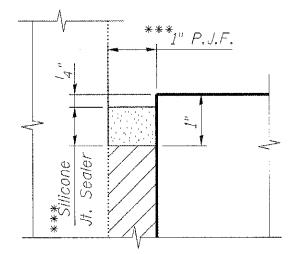
SHEET NO. 5 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 478
	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

x:\10000s\10050\engineer-ing-documents-contract\1\SN.022.0111.0112.Lake.St.012-60G51-005-deck-repair.dgn 18:18:53 11/12/2009

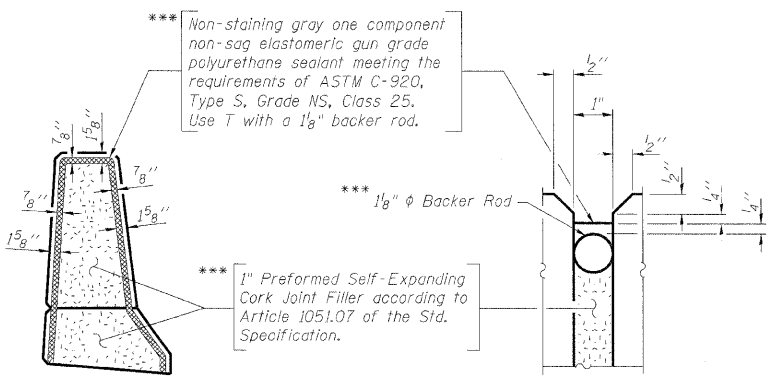
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PLAN

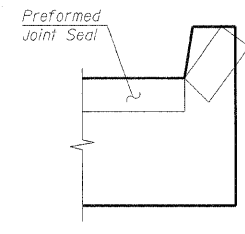


DETAIL 1



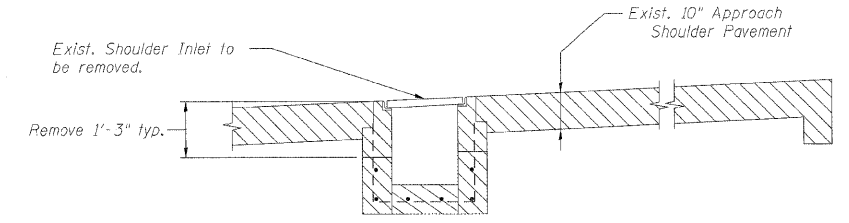
DETAIL 2

- * Tilt bars as required to maintain clearance.
- ** Alternate with a2(E) bars.
- *** Cost included with Concrete Superstructure.

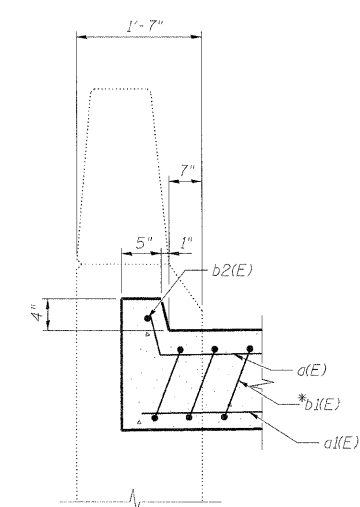


VIEW F-F

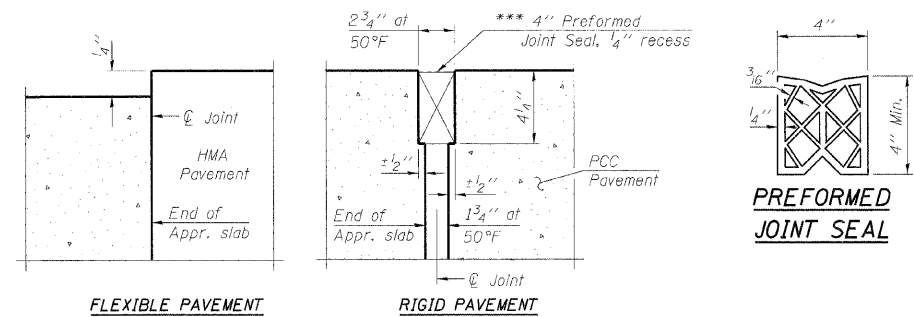
Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.



APPROACH SLAB REMOVAL DETAIL AT INLET



SECTION B-B



DETAIL 3

Note:
Work this sheet with South Bridge Approach Slab Details (2 of 2).

SOUTH BRIDGE APPROACH SLAB DETAILS
(1 OF 2)
STRUCTURE NO. 022-0112

DESIGNED	JLS/MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

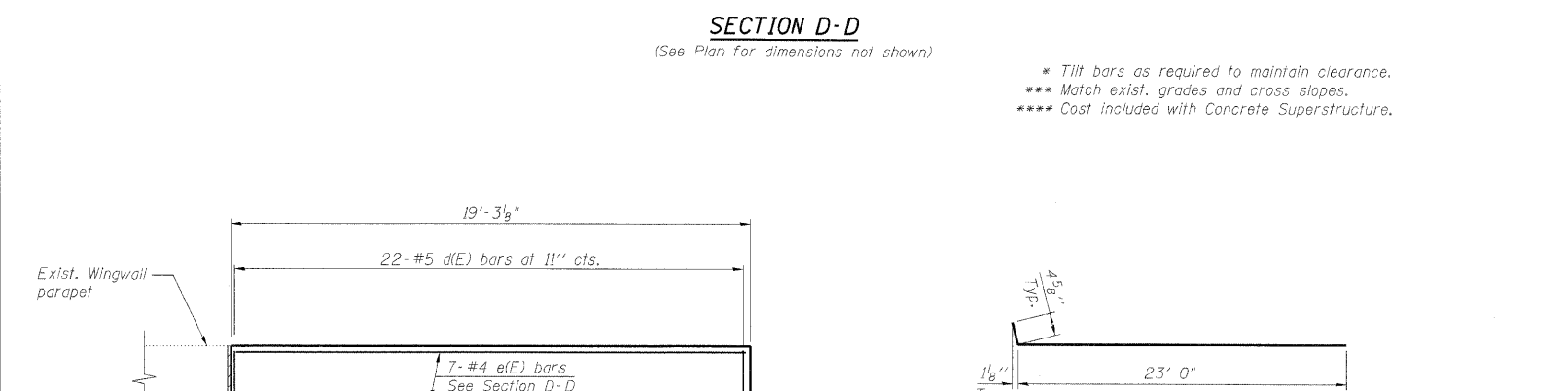
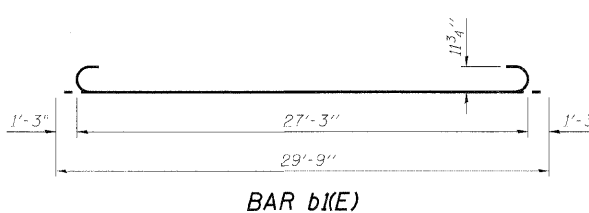
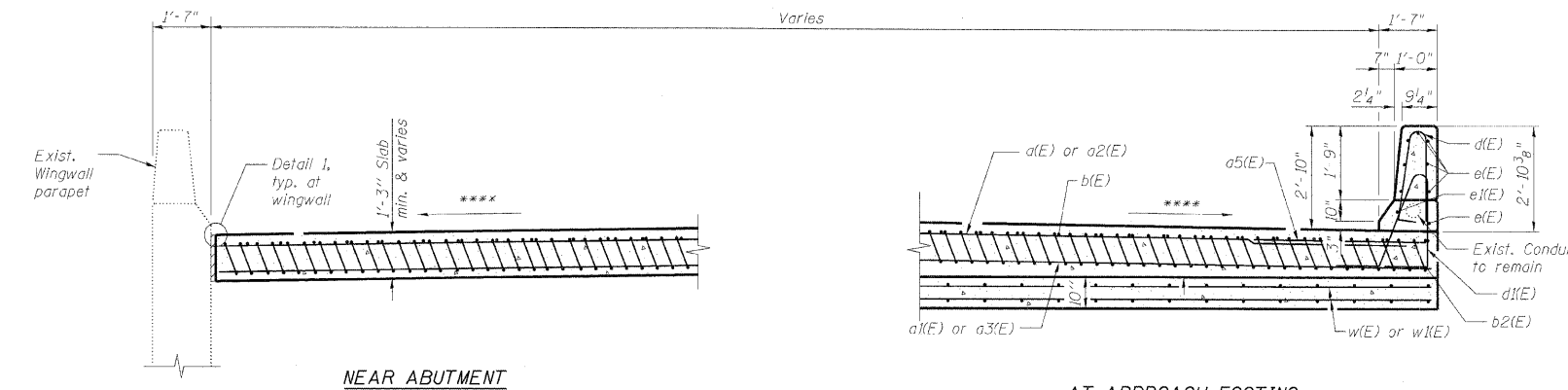
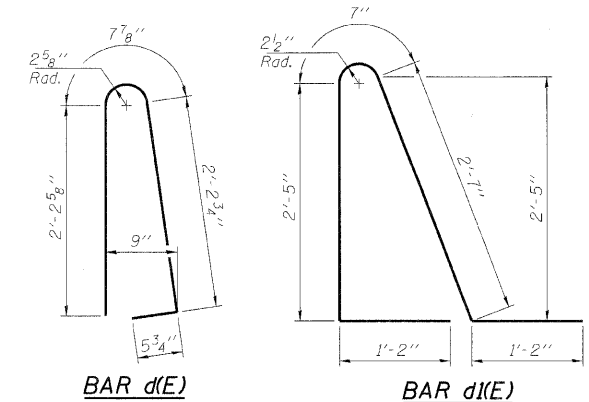
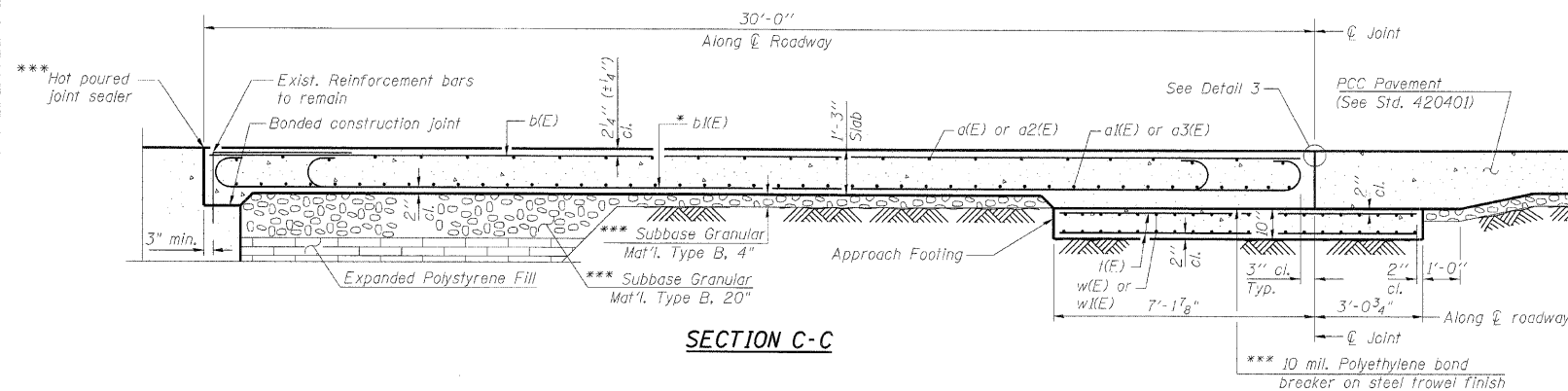
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Chicago, Illinois 60601
312-665-0490 Job No. 10050

SHEET NO. 6 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 479
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	25	#4	23'-5"	—
a1(E)	92	#5	21'-9"	—
a2(E)	75	#4	19'-9"	—
a3(E)	92	#5	19'-9"	—
a4(E)	2	#5	4'-0"	—
a5(E)	16	#6	6'-0"	—
b(E)	75	#4	29'-8"	—
b1(E)	177	#9	29'-9"	—
b2(E)	2	#4	19'-0"	—
d(E)	22	#5	5'-1"	—
d1(E)	22	#5	7'-11"	—
e(E)	8	#4	19'-0"	—
e1(E)	1	#8	19'-0"	—
f(E)	156	#4	10'-0"	—
w(E)	80	#5	21'-9"	—
w1(E)	80	#5	19'-9"	—
ITEM	UNIT	TOTAL		
Approach Slab Removal	Sq. Yd.	366		
Concrete Barrier Removal	Foot	19.5		
Concrete Superstructure	Cu. Yd.	108.3		
Concrete Structures	Cu. Yd.	24.4		
Bridge Deck Grooving	Sq. Yd.	236		
Protective Coat	Sq. Yd.	253		
Reinforcement Bars, Epoxy Coated	Pound	29,910		



- Notes:**
- a(E), a1(E), a2(E) and a3(E) bar spacings measured parallel to \perp Roadway. b(E) and b1(E) bars spacings measured perpendicular to \perp Roadway. w(E), w1(E) and w2(E) bars measured parallel to Exp. Jt.
 - For existing approach slab and shoulder pavement details, see existing plans.
 - Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
 - Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
 - Approach footing concrete shall be paid for as Concrete Structures.
 - Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 - The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
 - For bar splicer details, see Bar Splicers Assembly Details sheet.
 - Cost of excavation for approach footing included with Concrete Structures.
 - For Expanded Polystyrene Fill and drainage treatment details, see sheet 14.
 - The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and shall protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
 - Existing guardrail attached to the existing concrete barrier wall is to be removed prior to concrete barrier removal and reattached to the proposed approach slab parapet. See Special Provision for "Remove and Reinstall Existing Steel Plate Beam Guard Rail, Attached to Structure".
 - Bars indicated thus 8x2-#4 etc. indicates 8 lines of bars with 2 lengths per line.
 - Minimum bar length: #4 = 1'-8" #5 = 2'-2"
 - Work this sheet with South Bridge Approach Slab Details (1 fo 2) sheet.

DESIGNED -	JLS/MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	MFB

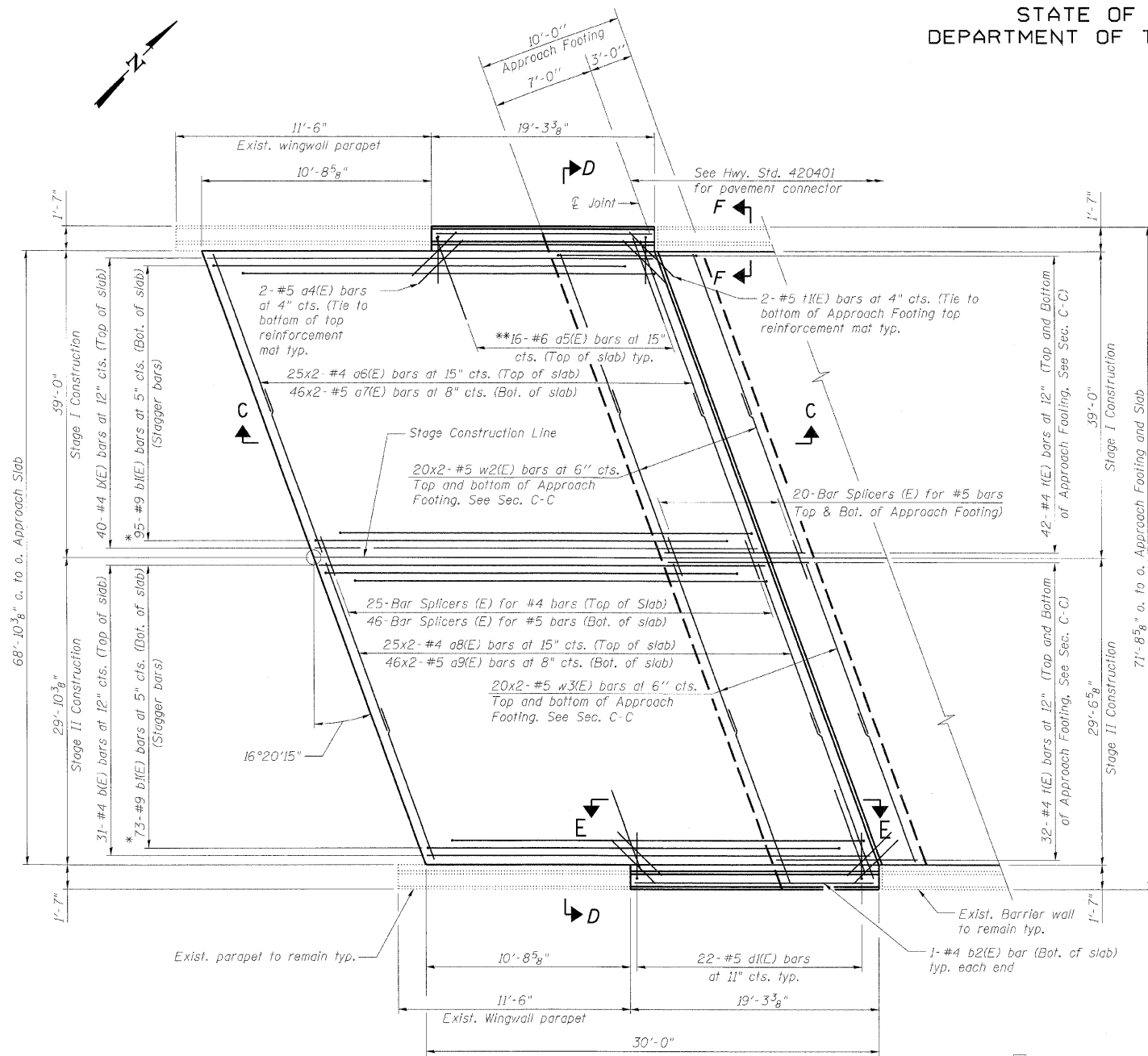
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312-565-0460 Job No. 10090

SHEET NO. 7	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 480
28 SHEETS		CONTRACT NO. 60G51			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

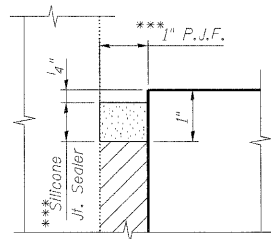
SOUTH BRIDGE APPROACH SLAB DETAILS
(2 OF 2)
STRUCTURE NO. 022-0112

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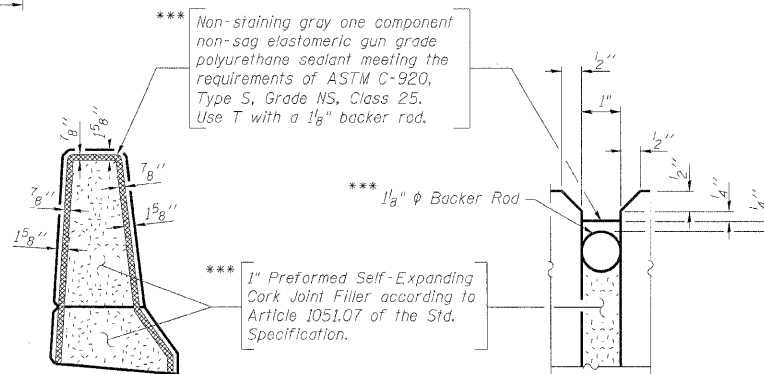
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



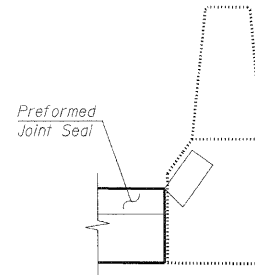
PLAN



DETAIL 1

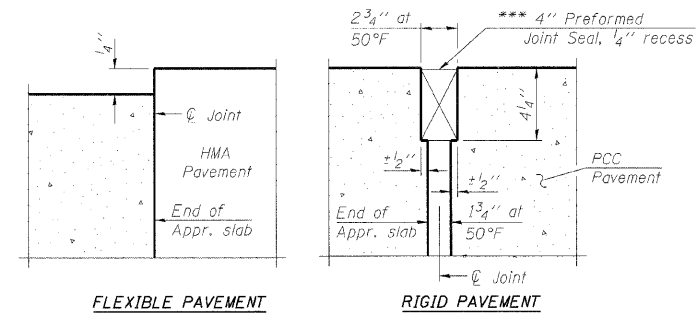


DETAIL 2



SECTION F-F

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.

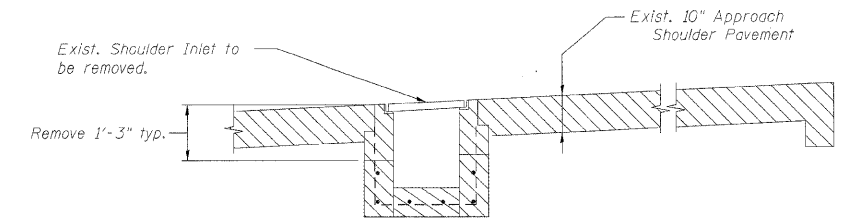


FLEXIBLE PAVEMENT

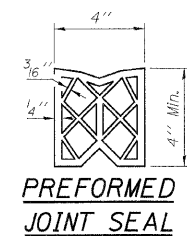
RIGID PAVEMENT

DETAIL 3

- * Tilt bars as required to maintain clearance.
- ** Lap with alternate a6(E) or a8(E) bars.
- *** Cost included with Concrete Superstructure.



APPROACH SLAB REMOVAL DETAIL AT INLET



PREFORMED JOINT SEAL

Note:

Work this sheet with North Bridge Approach Slab Details (2 of 2) sheet.

NORTH BRIDGE APPROACH SLAB DETAILS
(1 OF 2)
STRUCTURE NO. 022-0112

DESIGNED -	JLS/MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

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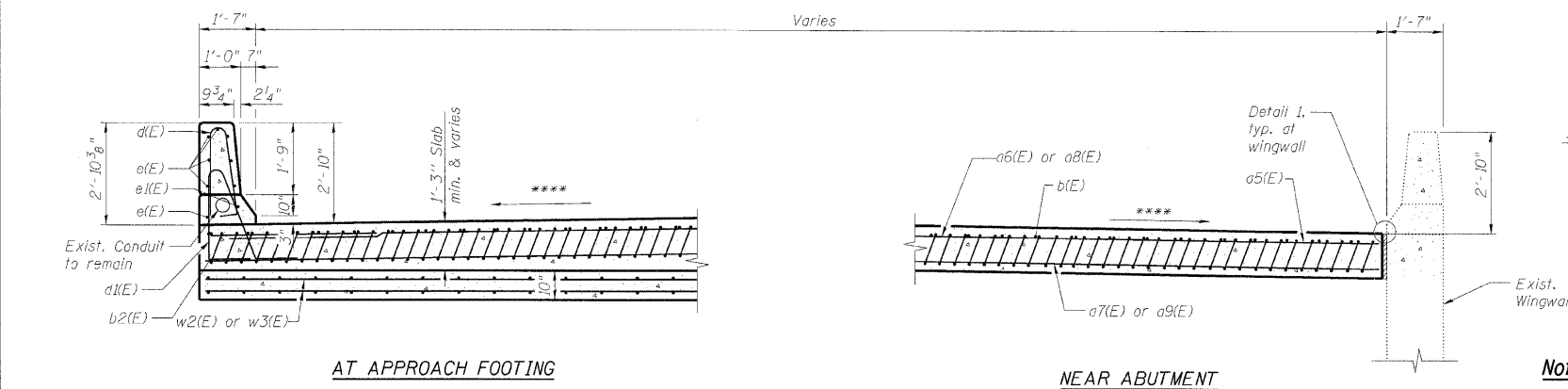
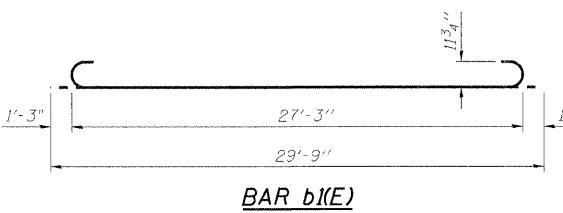
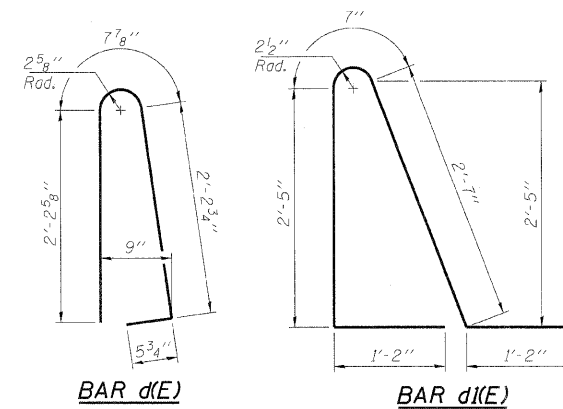
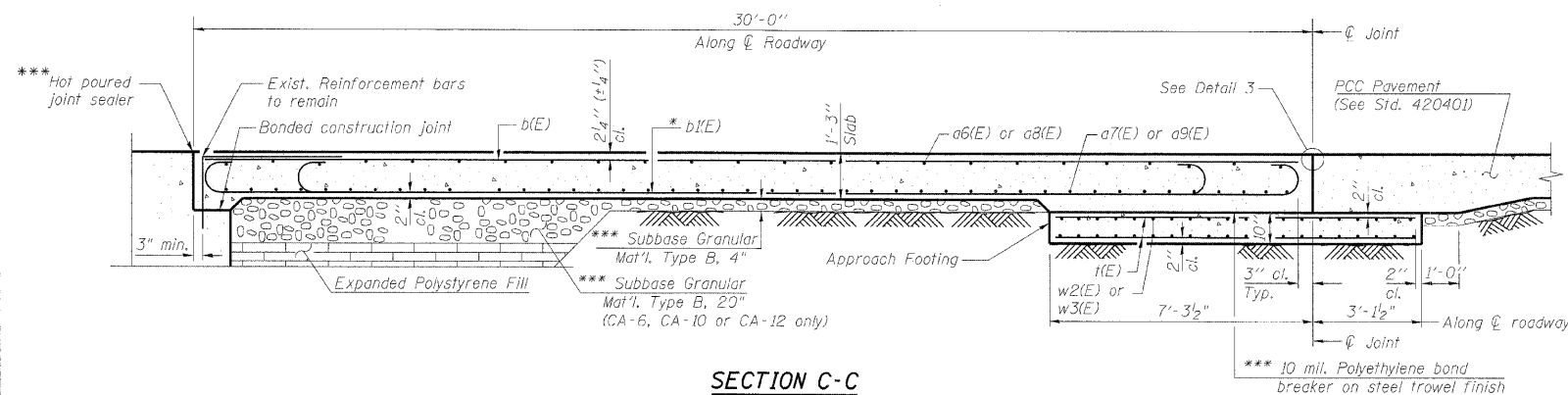
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 8 28 SHEETS	F.A.I. RTE. 290	SECTION 221, 1-1, 2&3RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 481
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a6(E)	50	#4	22'-0"	—
a7(E)	92	#5	22'-3"	—
a8(E)	50	#4	17'-3"	—
a9(E)	92	#5	17'-6"	—
a4(E)	4	#5	4'-0"	—
a5(E)	32	#6	6'-0"	—
b(E)	71	#4	29'-8"	—
b1(E)	168	#9	29'-9"	—
b2(E)	2	#4	19'-0"	—
d(E)	44	#5	5'-7"	—
d1(E)	44	#5	7'-11"	—
e(E)	16	#4	19'-0"	—
e1(E)	2	#8	19'-0"	—
t(E)	148	#4	10'-0"	—
t1(E)	4	#5	4'-0"	—
w2(E)	80	#5	22'-3"	—
w3(E)	80	#5	17'-6"	—
ITEM	UNIT	TOTAL		
Approach Slab Removal	Sq. Yd.	414		
Concrete Barrier Removal	Foot	39.0		
Concrete Superstructure	Cu. Yd.	107.3		
Concrete Structures	Cu. Yd.	22.9		
Bridge Deck Grooving	Sq. Yd.	2.22		
Protective Coat	Sq. Yd.	245		
Reinforcement Bars, Epoxy Coated	Pound	29,110		



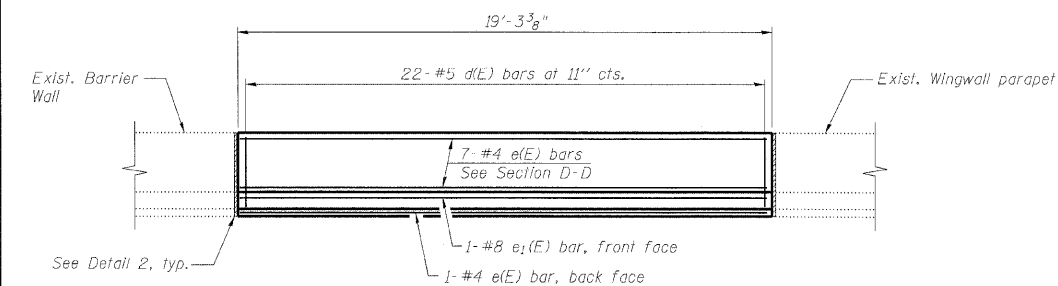
AT APPROACH FOOTING

NEAR ABUTMENT

SECTION D-D

(See Plan for dimensions not shown)

- * Tilt bars as required to maintain clearance.
- *** Match existing grades and cross slopes.
- **** Cost included with Concrete Superstructure.



VIEW E-E

Notes:

- a(E), a1(E), a2(E) and a3(E) bar spacings measured parallel to ϕ Roadway. b(E) and b1(E) bars spacings measured perpendicular to ϕ Roadway. w2(E) and w3(E) bars measured parallel to Exp. Jt.
- For existing approach slab and shoulder pavement details, see existing plans.
- Existing reinforcement bars extending into the concrete removal area shall be blast-cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during approach slab removal shall be repaired or replaced with an approved bar splicer or anchorage system. Cost included with Approach Slab Removal.
- Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
- Approach footing concrete shall be paid for as Concrete Structures.
- Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
- The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
- For bar splicer details, see Bar Splicers Assembly Details sheet.
- Cost of excavation for approach footing included with Concrete Structures.
- For Expanded Polystyrene Fill and drainage treatment details, see sheet 14.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and shall protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Cut w2(E), w3(E) and t(E) bars in field to fit in the vicinity of the approach footing boxout around the existing concrete barrier wall.
- Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
- Minimum bar length: #4 = 1'-8"
#5 = 2'-2"
- Work this sheet with North Bridge Approach Slab Details (1 of 2) sheet.

NORTH BRIDGE APPROACH SLAB DETAILS
(2 OF 2)

STRUCTURE NO. 022-0112

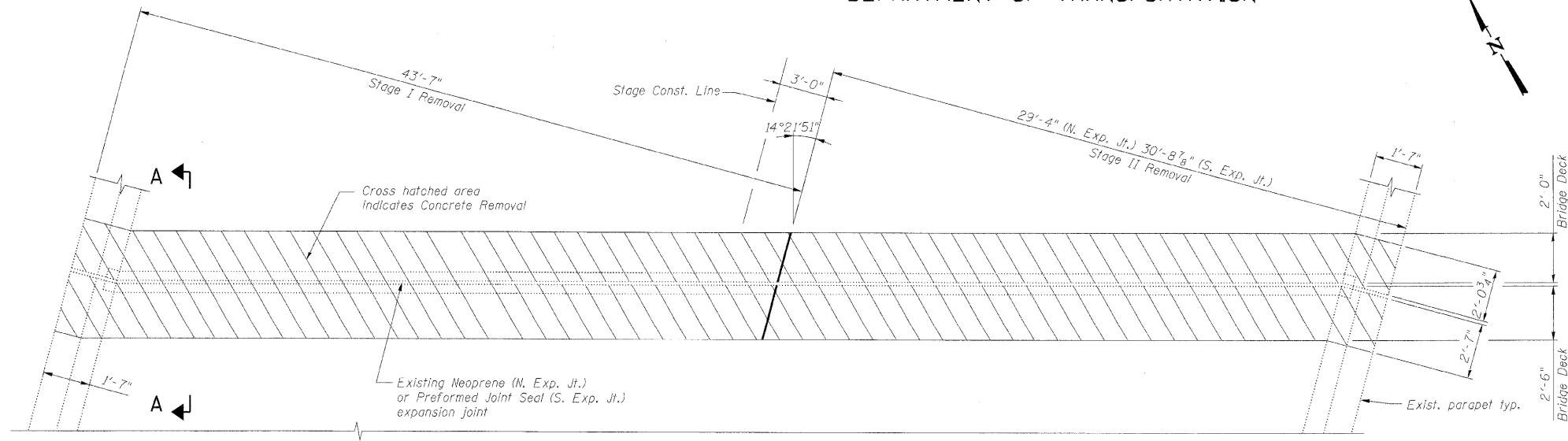
DESIGNED -	JLS/MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

benesch

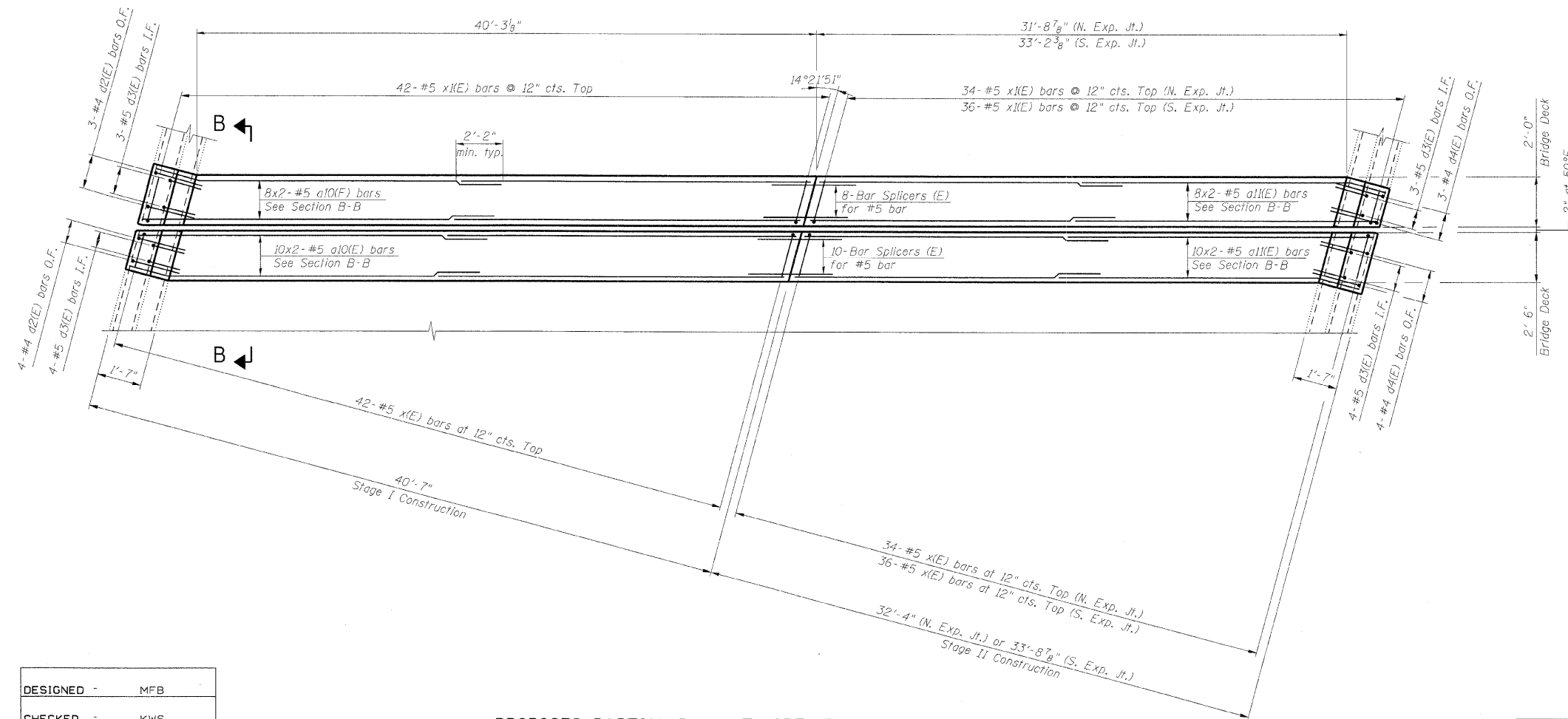
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312-555-0450 Job No. 10050

SHEET NO. 9 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 482
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EXISTING PARTIAL PLAN AT NORTH EXPANSION JOINT
(Opposite Hand for South Expansion Joint)



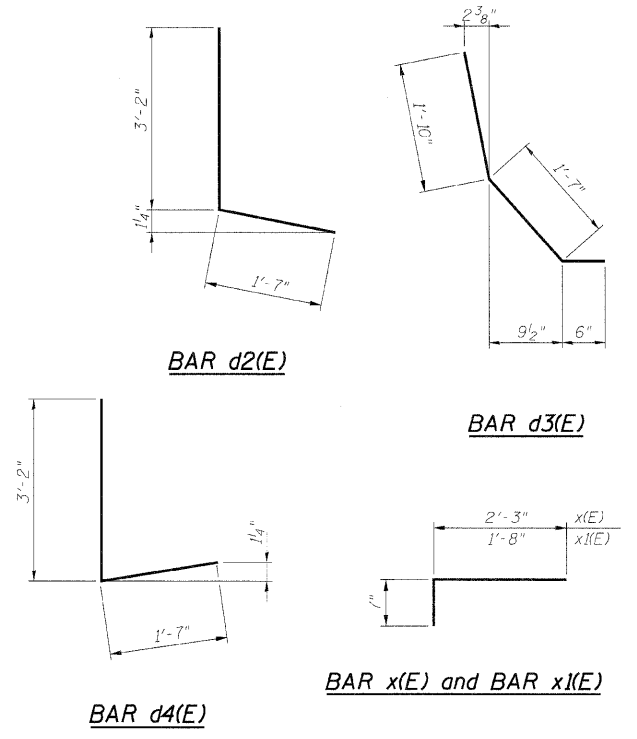
PROPOSED PARTIAL PLAN AT NORTH EXPANSION JOINT
(Opposite Hand for South Expansion Joint)

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	VH
CHECKED -	KWS

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Chicago, Illinois 60601
312-666-0460 Job No. 10050

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	72	#5	22'-9"	—
a11(E)	72	#5	18'-6"	—
d2(E)	14	#4	4'-9"	┌
d3(E)	28	#5	3'-11"	┌
d4(E)	14	#4	4'-9"	┌
x(E)	154	#5	2'-10"	┌
x1(E)	154	#5	2'-3"	┌
item		Unit	Total	
Concrete Removal		Cu. Yd.	33.7	
Concrete Superstructure		Cu. Yd.	33.7	
Reinforcement Bars, Epoxy Coated		Pound	4,120	



Notes:

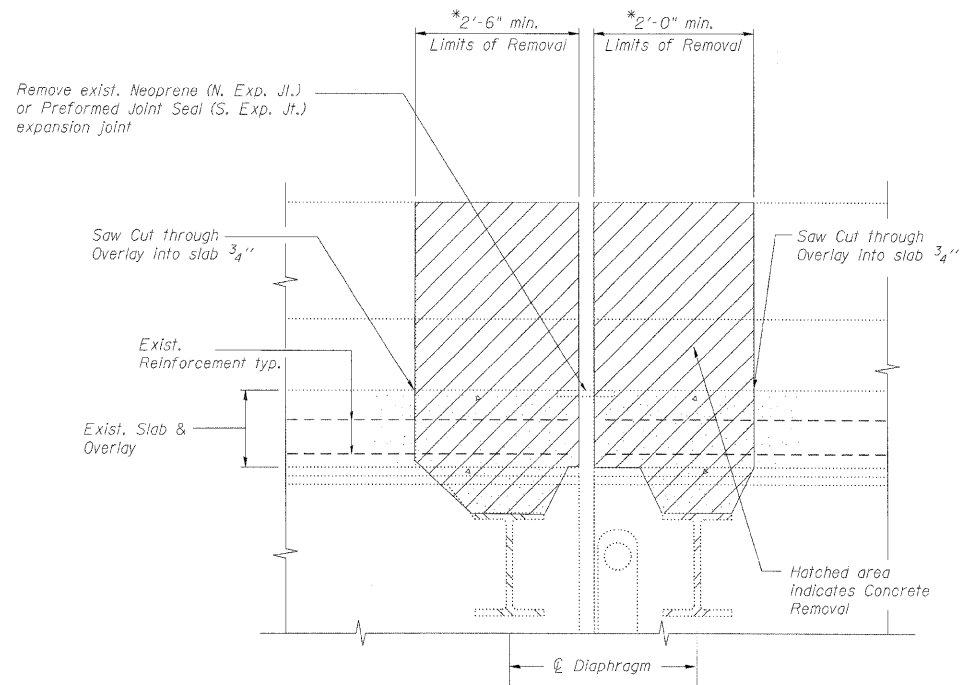
1. Bars indicated thus 8x2-#5 etc. indicates 8 lines of bars with 2 lengths per line.
2. I.F. denotes Inside Face.
O.F. denotes Outside Face.
3. Work this sheet with Expansion Joint Details sheet and Bar Splicer Assembly Details sheet.
4. x(E) and x1(E) bar spacing measured along skew.

**EXPANSION JOINT REPAIRS
STRUCTURE NO. 022-0112**

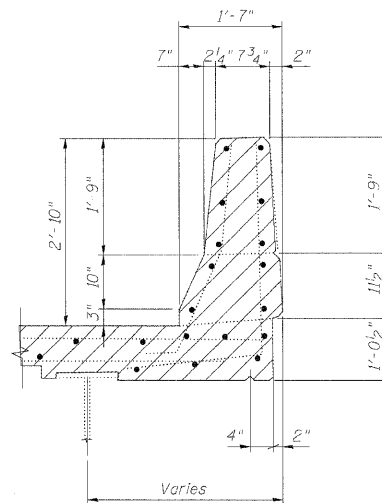
SHEET NO. 10 28 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 483
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

x:\10000s\10050\engineering\documents\contract\1\SN.022.011.012.Lake.St.0112-60G51-010-ExpJt-repair.dgn 18:19:20 11/12/2009

STATE OF ILLINOIS
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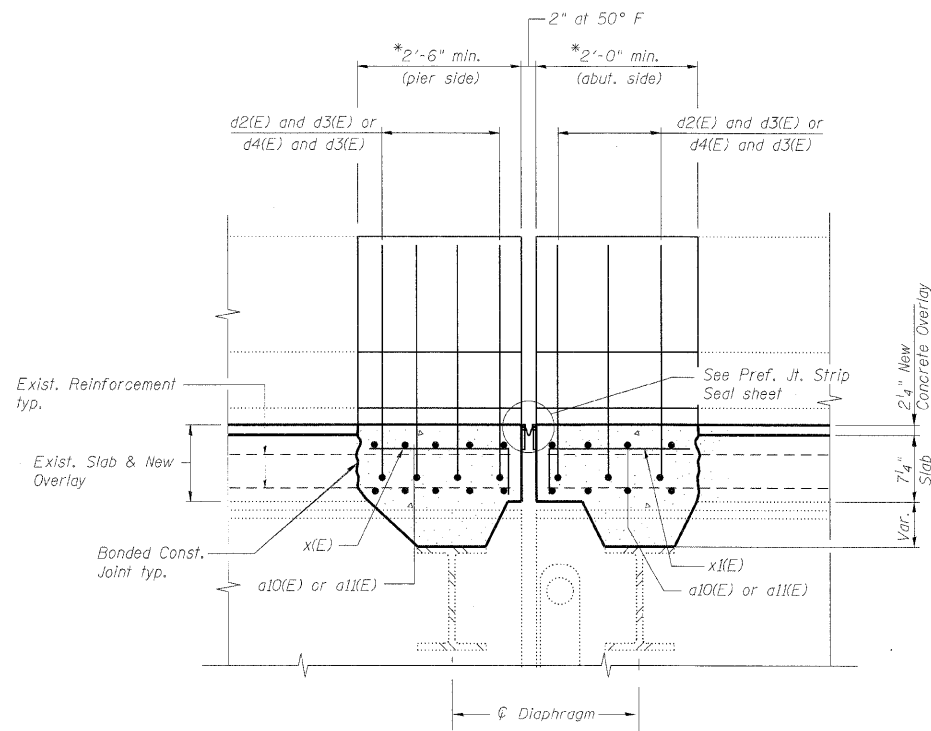


SECTION A-A

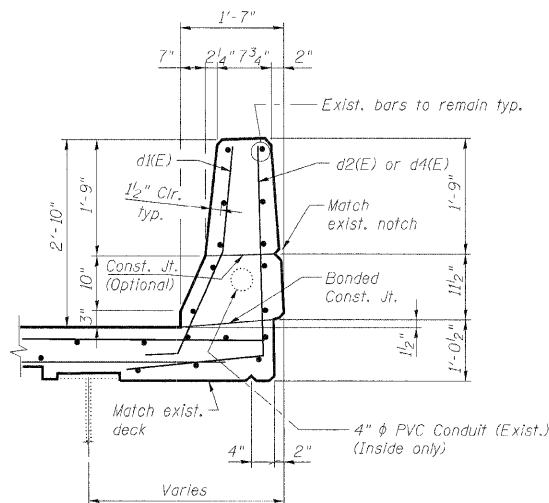


EXISTING PARAPET SECTION

* Removal and reconstruction limits shall extend beyond the haunch between the diaphragm and the deck.



SECTION B-B



PROPOSED PARAPET SECTION

Notes:

- Existing reinforcement bars extending into the concrete removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.
- Existing reinforcement bars in the concrete removal area parallel to the expansion joints shall be removed.
- Removal and disposal of the existing expansion joints will not be paid for separately, but shall be included with the cost of Concrete Removal.
- The Contractor shall exercise extreme care with the existing conduits in sections of the parapet to be removed and to protect and support the conduit. The Contractor will be required to repair any damage done to the conduit to the satisfaction of the Engineer. No splicing will be allowed to any cable damage resulting from this work, instead the Contractor will be required to repair the entire span of any damaged cable at no additional cost to the Department.
- Work this sheet with Expansion Joint Repairs sheet.

DESIGNED	MFB
CHECKED	KWS
DRAWN	VH
CHECKED	KWS

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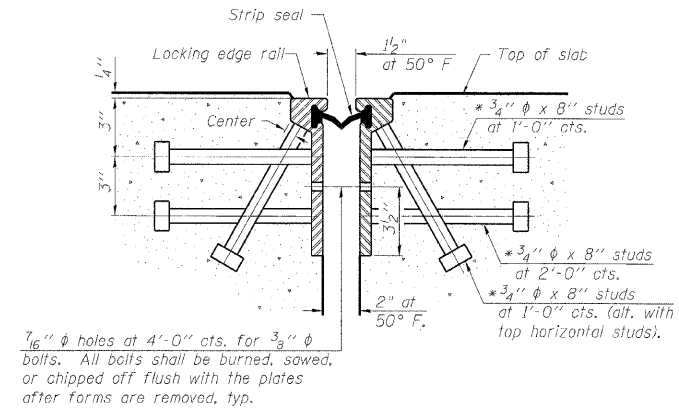
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

EXPANSION JOINT DETAILS
STRUCTURE NO. 022-0112

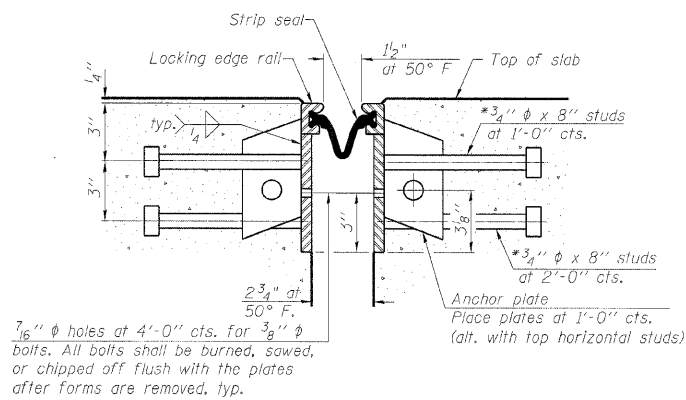
SHEET NO. 11 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 484
	355	CONTRACT NO. 60G51			
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



SECTION THRU
ROLLED RAIL JOINT



SECTION THRU
WELDED RAIL JOINT

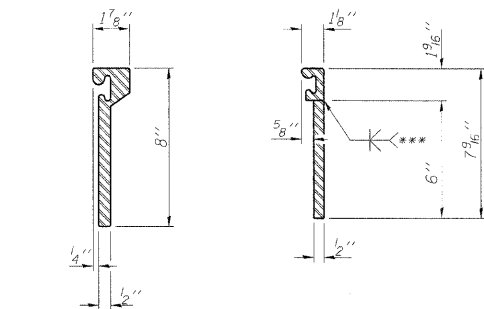
Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

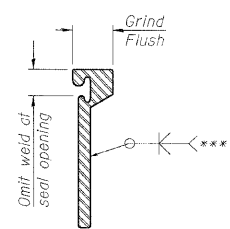
The height and thickness of the Locking Edge Rails shown are minimum dimensions. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities and stage construction joints.

The manufacturer's recommended installation methods shall be followed. The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

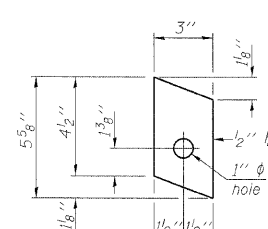
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.



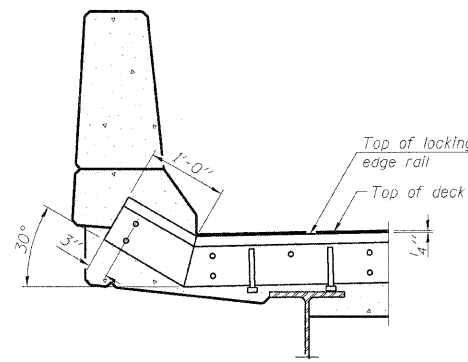
ROLLED
EXTRUDED RAIL WELDED RAIL



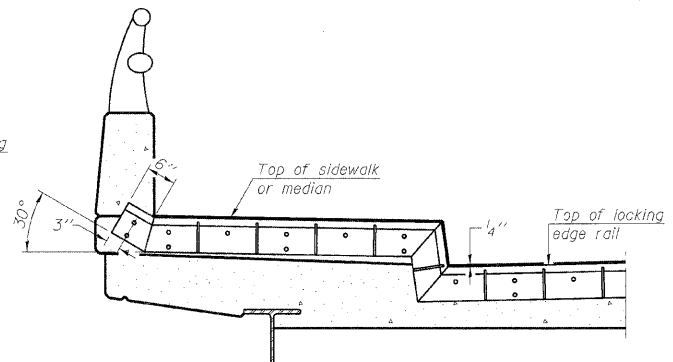
***Back gauge not required if complete joint penetration is verified by mock-up.



ANCHOR PLATE
(for welded rail)



AT PARAPET



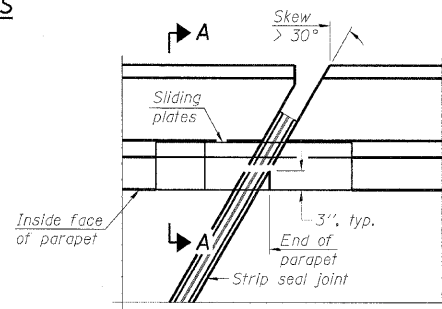
AT SIDEWALK OR MEDIAN

Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.

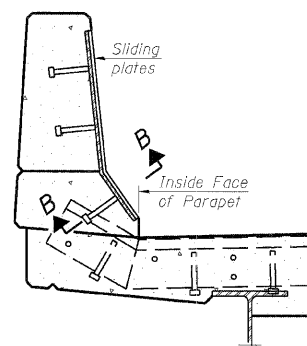
LOCKING EDGE RAILS

LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.



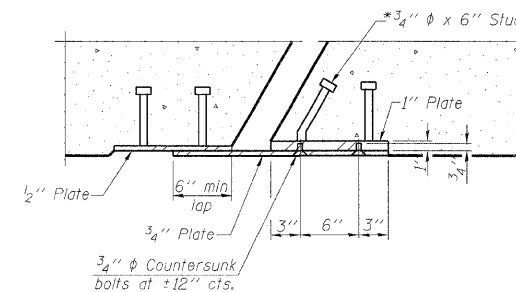
PLAN



SECTION A-A

POINT BLOCK DETAILS
(for skews > 30°)

TYPICAL END TREATMENTS



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	150.0

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	VH
CHECKED -	KWS

EJ-SSJ

10-1-08

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312-565-0450 Job No. 10050

SHEET NO. 12 28 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 485
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

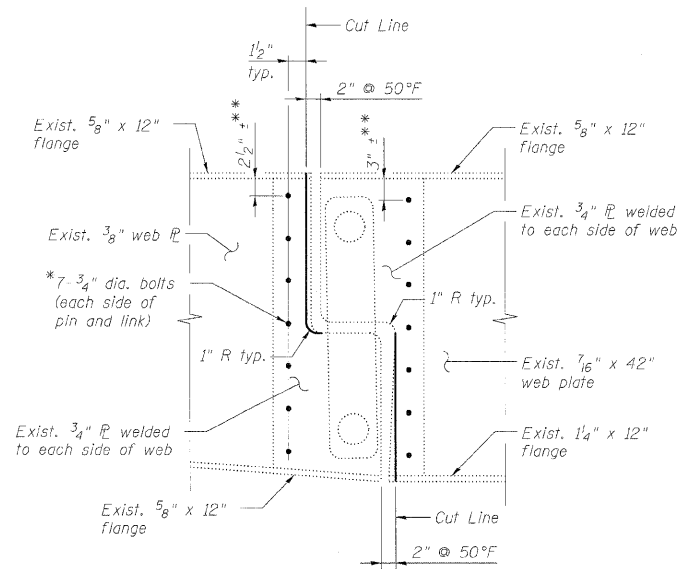
PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 022-0112

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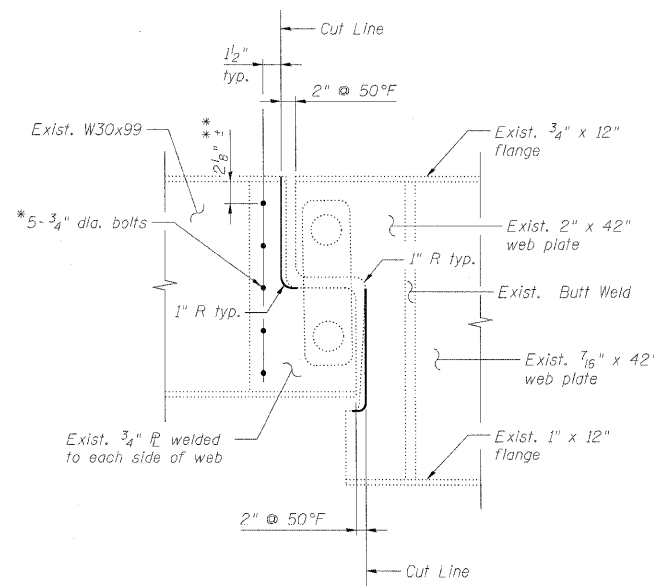
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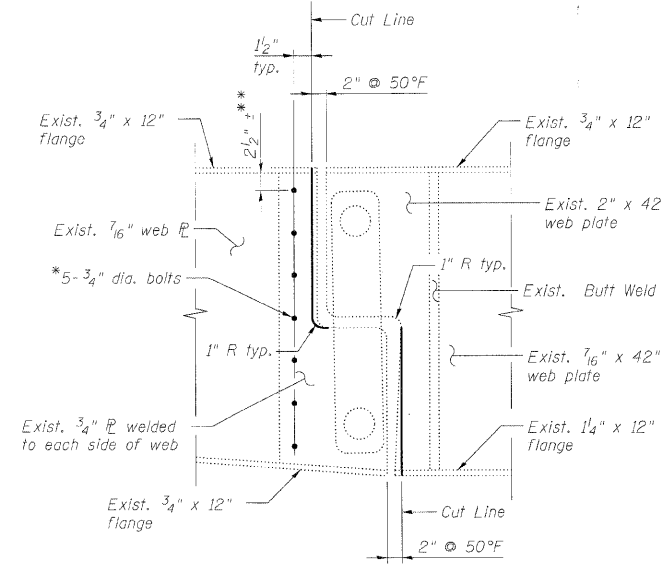
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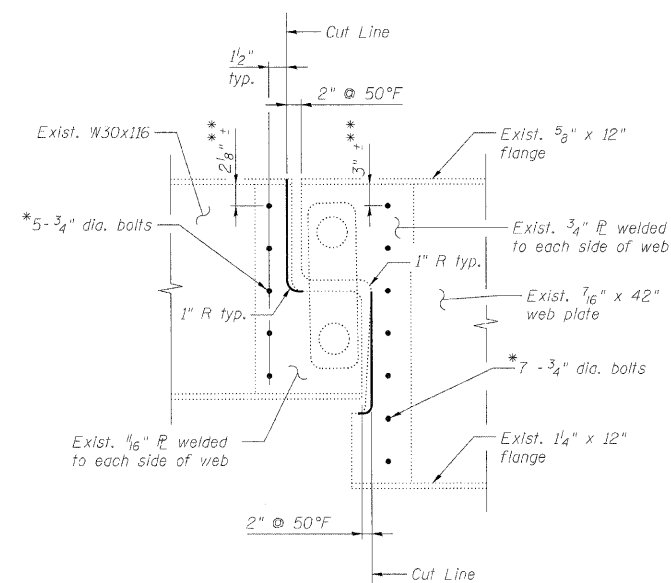
GIRDER MODIFICATION DETAILS - GIRDER 14
(14 bolts per connection - 28 thus)



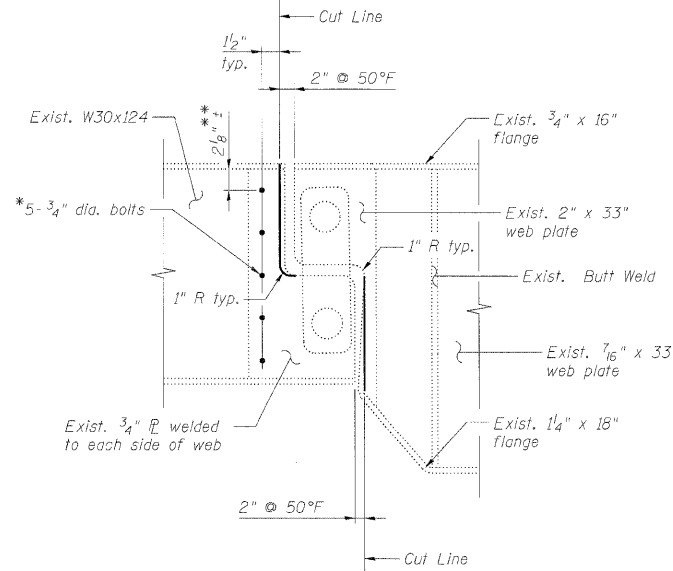
GIRDER MODIFICATION DETAILS - GIRDERS 12-13
(5 bolts per connection - 20 thus)



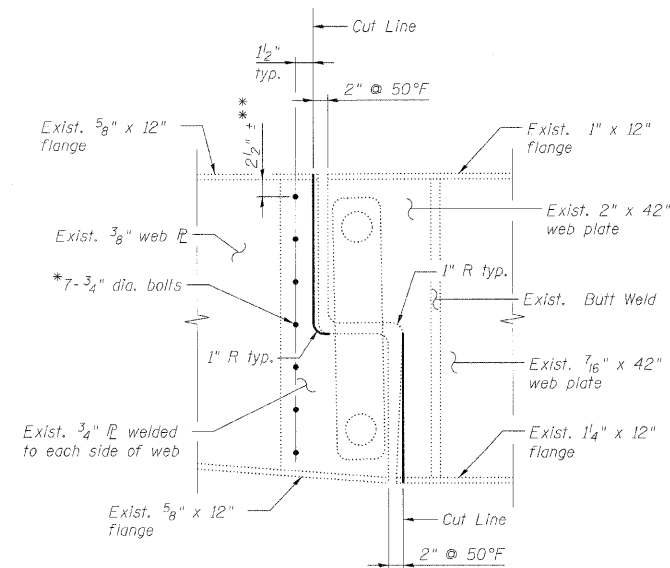
GIRDER MODIFICATION DETAILS - GIRDER 11
(7 bolts per connection - 14 thus)



GIRDER MODIFICATION DETAILS - GIRDERS 15-19
(12 bolts per connection - 120 thus)



GIRDER MODIFICATION DETAILS - GIRDERS 21 & 22
(5 bolts per connection - 20 thus)



GIRDER MODIFICATION DETAILS - GIRDER 20
(7 bolts per connection - 14 thus)

Notes:

1. Cut surfaces shall be grinded smooth, spot cleaned, and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Paint shall be applied per the requirements of Paint System 2, according to the Special Provision "Cleaning and Painting Existing Steel Structures". Cost included with Modify Existing Pin and Link Connection.
2. See existing plans for girder layout and numbering.
3. The Contractor must exercise extreme care so as not to damage the pins or link plate while trimming the girders.
4. Some connections may have already been cut and, therefore, the current existing geometries may not match the geometries as shown on the existing plans.
5. Pin and Link connections are located near each pier. Thus, there are 2 connections per girder line.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Modify Existing Pin and Link Connection	L. Sum	0.23

* Install 3/4" diameter high strength bolts with two hardened washers that conform with ASTM (A-325) and AASHTO-164 with 13/16" diameter holes at 6" (+) centers to hold plates together. Gaps between the plates and web shall be sealed such that no moisture can develop between the plates. Cost included with Modify Existing Pin and Link Connection.

** Verify in field. Distance from flange to first bolt shall be equal at top and bottom of girder.

DESIGNED -	KWS
CHECKED -	MFB/EFS
DRAWN -	RMG
CHECKED -	KWS

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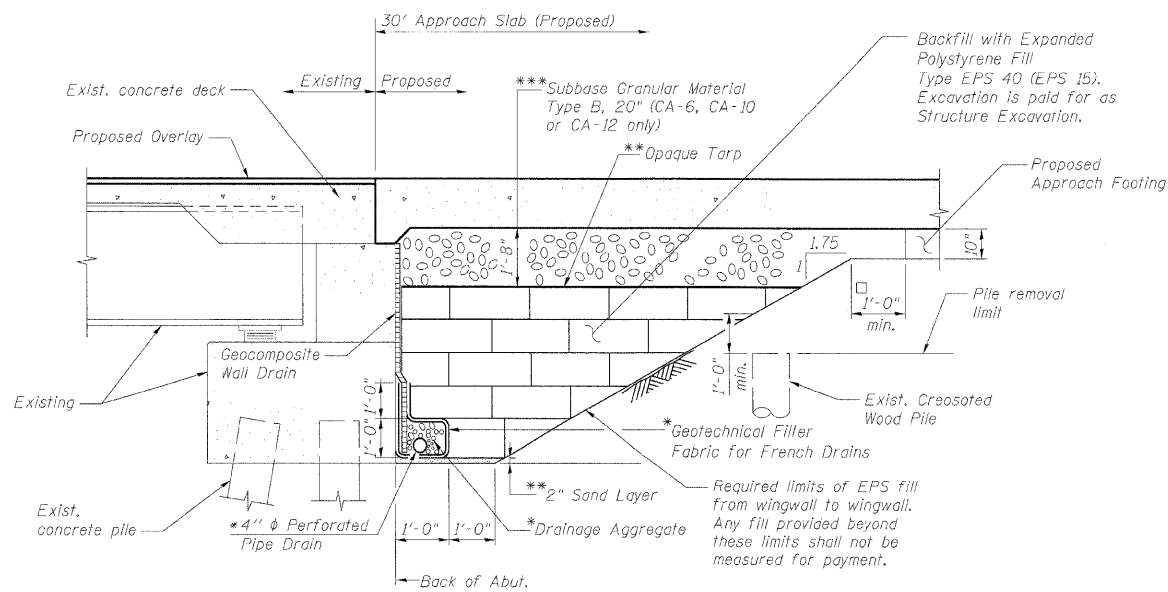
SHEET NO. 13	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	486
28 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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DEPARTMENT OF TRANSPORTATION



ABUTMENT STABILIZATION DETAIL

(Horiz. dim. @ Rt. L's)

* Included in the cost of Pipe Underdrains for Structures.

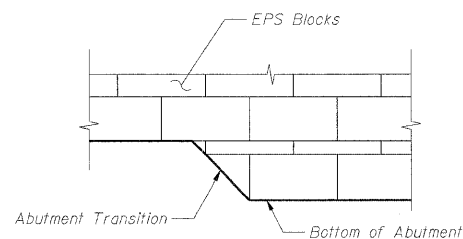
** Included in the cost of Expanded Polystyrene Fill.

*** Included in the cost of Concrete Superstructure. See Approach Slab Details.

All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 60110).

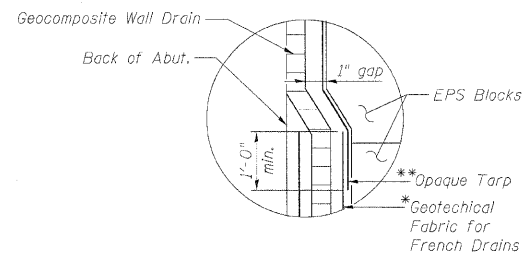
Existing approach slabs are supported on creosoted wood piles. The piles shall be removed down a minimum of 1'-0" below the limits of structure excavation. Cost included in Structure Excavation.

- Limit the depth of the EPS fill to maintain 1'-0" min. berm from the Proposed Approach Footing to EPS fill cut at the prescribed slope of 1.75:1. This may result in the bottom of the EPS fill being at a higher elevation than the bottom of the abutment. However, it is more important that the sleeper slab not be founded on top of the compressible EPS blocks and that the EPS blocks be placed at a minimum slope of 1.75:1 than it is that the blocks are placed all the way down to the bottom of the abutment.



**EPS BLOCK ORIENTATION
AT ABUTMENT TRANSITION DETAIL**

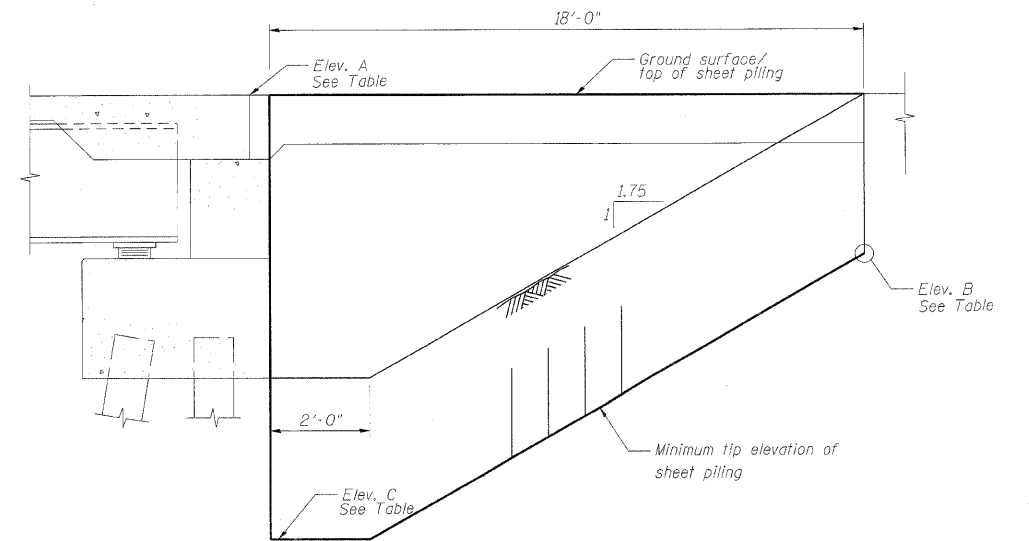
(Located at Steps in Abutment footing)



DETAIL A

BILL OF MATERIAL

Item	Unit	Total
Structure Excavation	Cu. Yd.	367
Temporary Sheet Piling	Sq. Ft.	497
Geocomposite Wall Drain	Sq. Yd.	124
Pipe Underdrains for Structures 4"	Foot	157
Expanded Polystyrene Fill	Cu. Yd.	240



TEMPORARY SHEET PILING

(Horiz. dim. @ Rt. L's)

SHEET PILING ELEVATION TABLE

Abutment	Elev. A	Elev. B	Elev. C	Min. Section Modulus Req'd. (in ² /ft.)	Min. Embedment (ft.)
North	764.47	755.77	746.64	6.8	8.7
South	765.11	756.42	747.26	6.8	8.7

DESIGNED	MFB
CHECKED	KWS
DRAWN	RMG
CHECKED	KWS

**ABUTMENT STABILIZATION DETAILS
STRUCTURE NO. 022-0112**

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312-665-0450 Job No. 10050

SHEET NO. 14	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	487
28 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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The diameter of this part is equal or larger than the diameter of bar spliced.

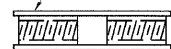
The diameter of this part is the same as the diameter of the bar spliced.

ROLLED THREAD DOWEL BAR



** ONE PIECE

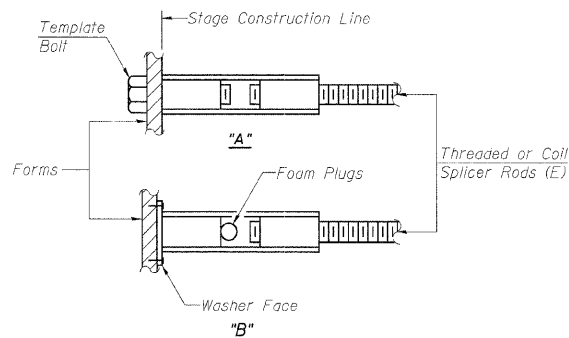
Wire Connector



WELDED SECTIONS

BAR SPLICER ASSEMBLY ALTERNATIVES

**Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A": Set bar splicer assembly by means of a template bolt.
"B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E): Indicates epoxy coating.

NOTES

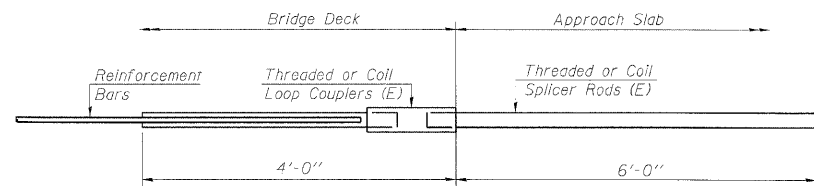
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or coiled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_t$
(Tension in kips)
- ② Minimum *Pull-out Strength = $0.66 \times f_y \times A_t$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 A_t = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

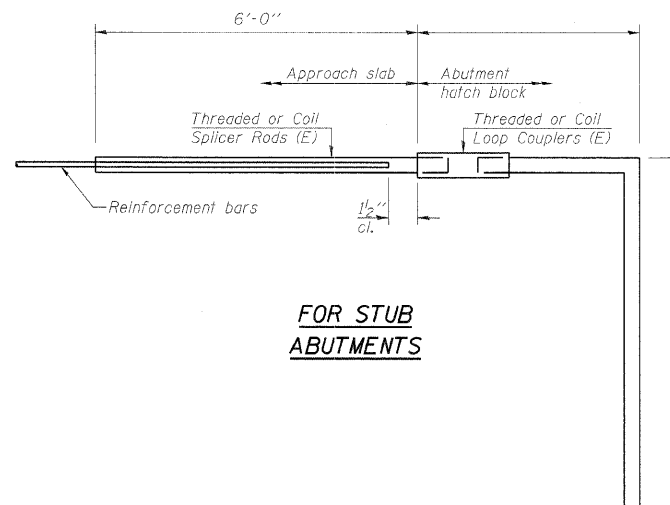
BAR SPLICER ASSEMBLIES

Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-Out Strength kips - tension
#4	1'-8"	14.7	7.9
#5	2'-2"	23.0	12.3
#6	2'-7"	33.1	17.4
#7	3'-5"	45.1	23.8
#8	4'-6"	58.9	31.3
#9	5'-9"	75.0	39.6
#10	7'-3"	95.0	50.3
#11	9'-0"	117.4	61.8



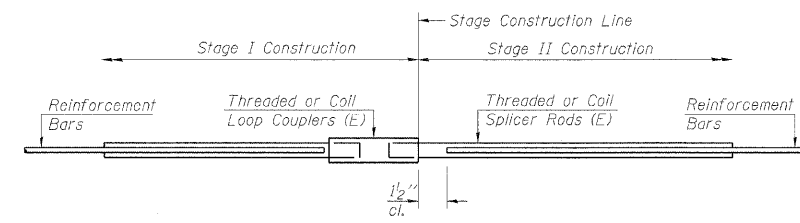
FOR INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

Bar Splicer for #5 bar	
Min. Capacity =	23.0 kips - tension
Min. Pull-out Strength =	12.3 kips - tension
No. Required =	



FOR STUB ABUTMENTS

Bar Splicer for #5 bar	
Min. Capacity =	23.0 kips - tension
Min. Pull-out Strength =	12.3 kips - tension
No. Required =	



STANDARD

Bar Size	No. Assemblies Required	Location
#5	36	Deck
#4	50	Approach Slab
#5	92	Approach Slab
#5	80	Approach Footing

**BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 022-0112**

DESIGNED -	MFB
CHECKED -	KWS
DRAWN -	RMG
CHECKED -	KWS

BSD-1

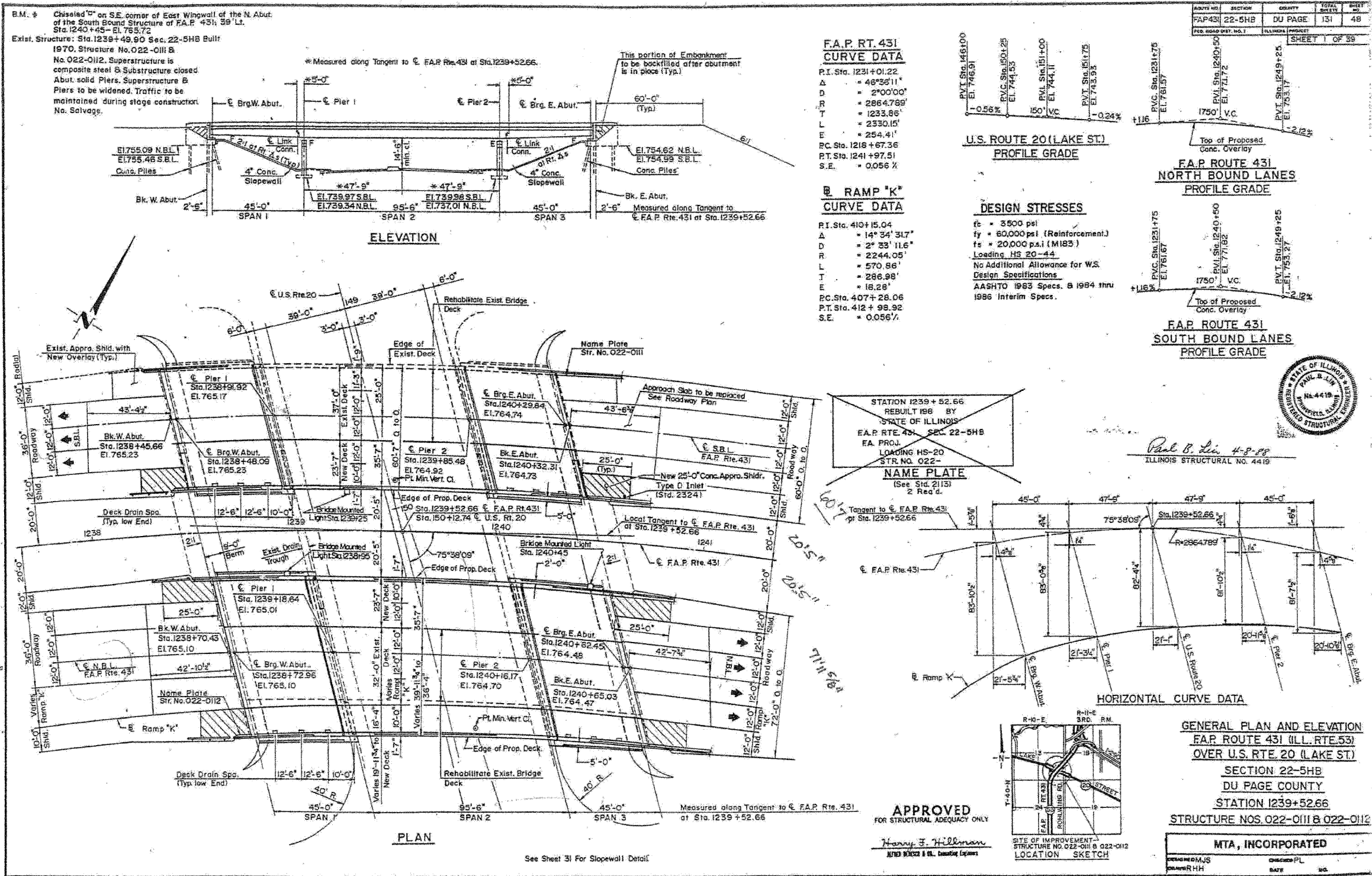
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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 15 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 488
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
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FOR INFORMATION ONLY

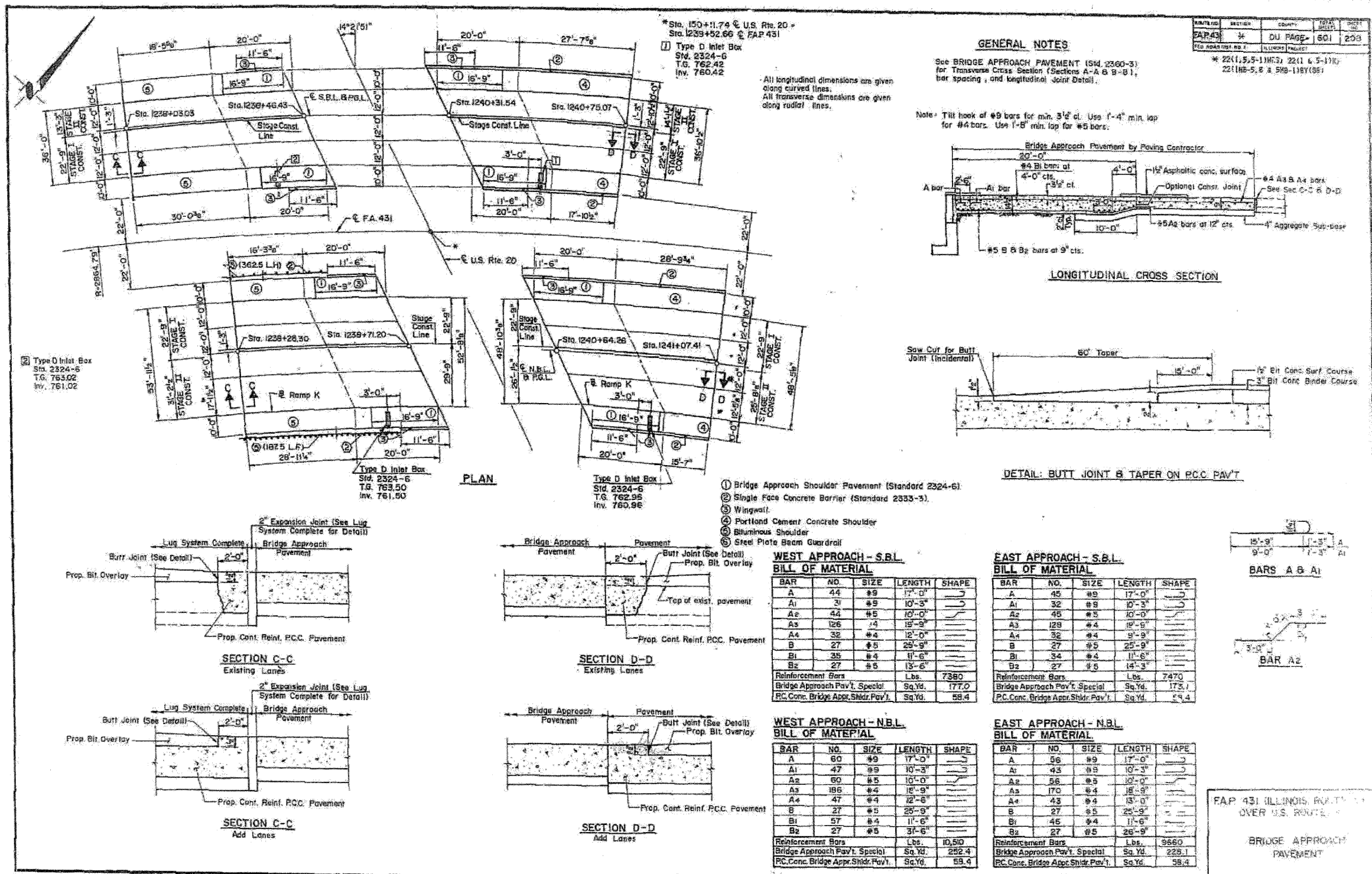
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SHEET NO. 16 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 489
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

EXISTING PLAN INFORMATION 1 OF 13
STRUCTURE NO. 022-0112

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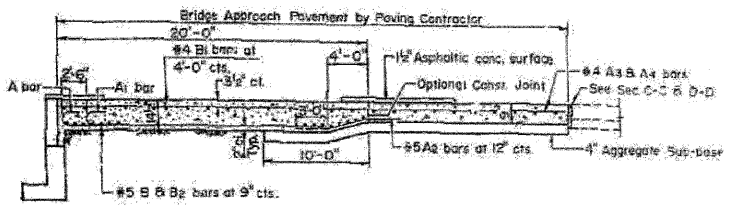
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



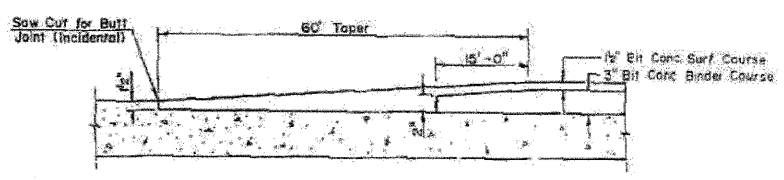
GENERAL NOTES

See BRIDGE APPROACH PAVEMENT (Std. 2360-3) for Transverse Cross Section (Sections A-A & B-B), bar spacing, and longitudinal joint detail.

Note: Tilt hook of #9 bars for min. 3/4" cl. Use 1'-4" min. lap for #4 bars. Use 1'-8" min. lap for #5 bars.



LONGITUDINAL CROSS SECTION



DETAIL: BUTT JOINT & TAPER ON R.C.C. PAVT

1 Type D Inlet Box
Std. 2324-6
T.G. 763.02
Inv. 761.02

2 Type D Inlet Box
Std. 2324-6
T.G. 763.50
Inv. 761.50

3 Type D Inlet Box
Std. 2324-6
T.G. 762.98
Inv. 760.98

- 1 Bridge Approach Shoulder Pavement (Standard 2324-6)
- 2 Single Face Concrete Barrier (Standard 2333-3)
- 3 Wingwall
- 4 Portland Cement Concrete Shoulder
- 5 Bituminous Shoulder
- 6 Steel Plate Beam Guardrail

WEST APPROACH - S.B.L.
BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
A	44	#9	17'-0"	J
A1	31	#9	10'-3"	J
A2	44	#5	10'-0"	J
A3	126	#4	18'-9"	J
A4	32	#4	12'-0"	J
B	27	#5	25'-9"	J
B1	35	#4	11'-6"	J
B2	27	#5	13'-6"	J
Reinforcement Bars			Lbs.	7380
Bridge Approach Pav't. Special			Sq. Yd.	177.0
P.C. Conc. Bridge Appr. Shldr. Pav't.			Sq. Yd.	58.4

EAST APPROACH - S.B.L.
BILL OF MATERIAL

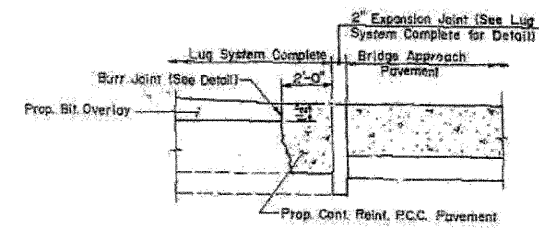
BAR	NO.	SIZE	LENGTH	SHAPE
A	45	#9	17'-0"	J
A1	32	#9	10'-3"	J
A2	45	#5	10'-0"	J
A3	128	#4	18'-9"	J
A4	32	#4	9'-9"	J
B	27	#5	25'-9"	J
B1	34	#4	11'-6"	J
B2	27	#5	14'-3"	J
Reinforcement Bars			Lbs.	7470
Bridge Approach Pav't. Special			Sq. Yd.	178.1
P.C. Conc. Bridge Appr. Shldr. Pav't.			Sq. Yd.	59.4

WEST APPROACH - N.B.L.
BILL OF MATERIAL

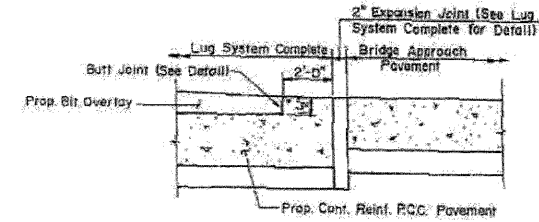
BAR	NO.	SIZE	LENGTH	SHAPE
A	60	#9	17'-0"	J
A1	47	#9	10'-3"	J
A2	60	#5	10'-0"	J
A3	186	#4	18'-9"	J
A4	47	#4	12'-6"	J
B	27	#5	25'-9"	J
B1	57	#4	11'-6"	J
B2	27	#5	31'-6"	J
Reinforcement Bars			Lbs.	10,510
Bridge Approach Pav't. Special			Sq. Yd.	252.4
P.C. Conc. Bridge Appr. Shldr. Pav't.			Sq. Yd.	58.4

EAST APPROACH - N.B.L.
BILL OF MATERIAL

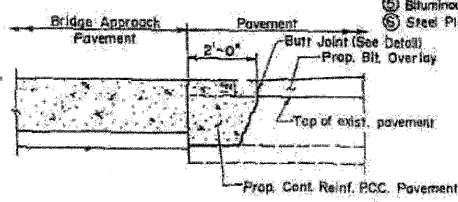
BAR	NO.	SIZE	LENGTH	SHAPE
A	56	#9	17'-0"	J
A1	43	#9	10'-3"	J
A2	56	#5	10'-0"	J
A3	170	#4	18'-9"	J
A4	43	#4	13'-0"	J
B	27	#5	25'-9"	J
B1	45	#4	11'-6"	J
B2	27	#5	25'-9"	J
Reinforcement Bars			Lbs.	9660
Bridge Approach Pav't. Special			Sq. Yd.	228.1
P.C. Conc. Bridge Appr. Shldr. Pav't.			Sq. Yd.	58.4



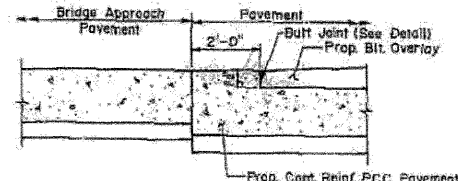
SECTION C-C
Existing Lanes



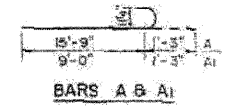
SECTION C-C
Add Lanes



SECTION D-D
Existing Lanes



SECTION D-D
Add Lanes



F.A.P. 431 ILLINOIS ROUTE 290 OVER U.S. ROUTE 290
BRIDGE APPROACH PAVEMENT

EXISTING PLAN INFORMATION 2 OF 13
STRUCTURE NO. 022-0112

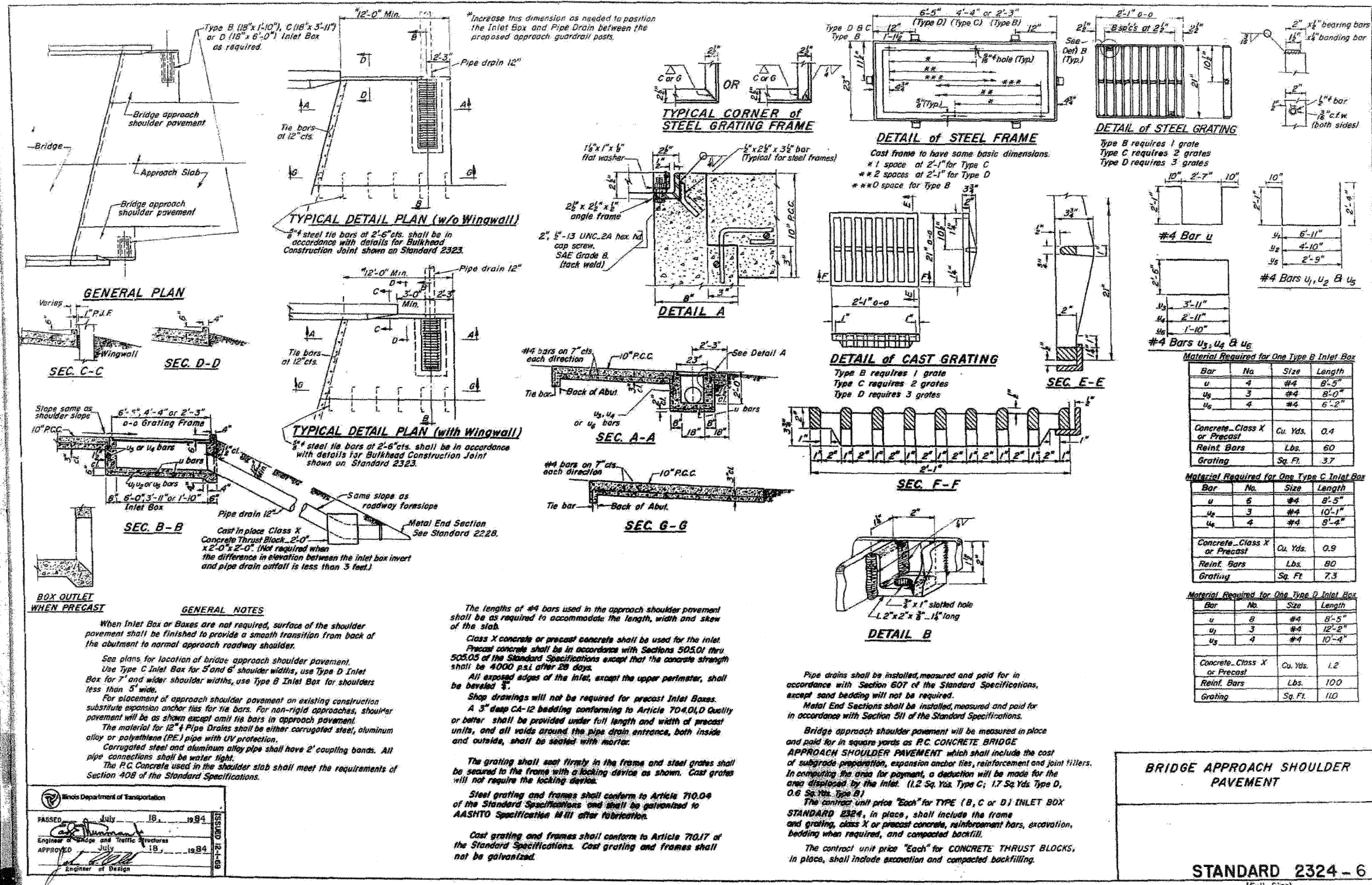
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312-665-0460 Job No. 10050

SHEET NO. 17 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 490
	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BRIDGE APPROACH SHOULDER PAVEMENT

STANDARD 2324 - 6
(Full Size)

H-125

EXISTING PLAN INFORMATION 3 OF 13
STRUCTURE NO. 022-0112

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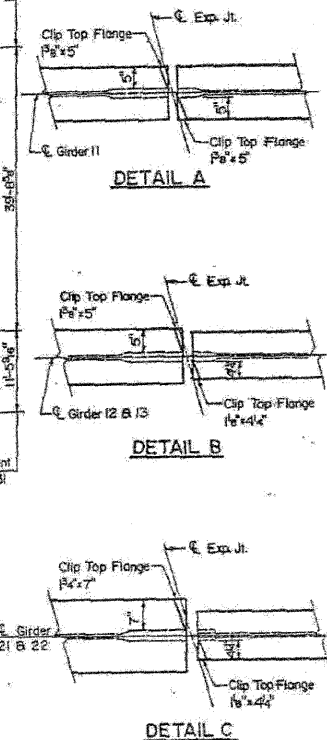
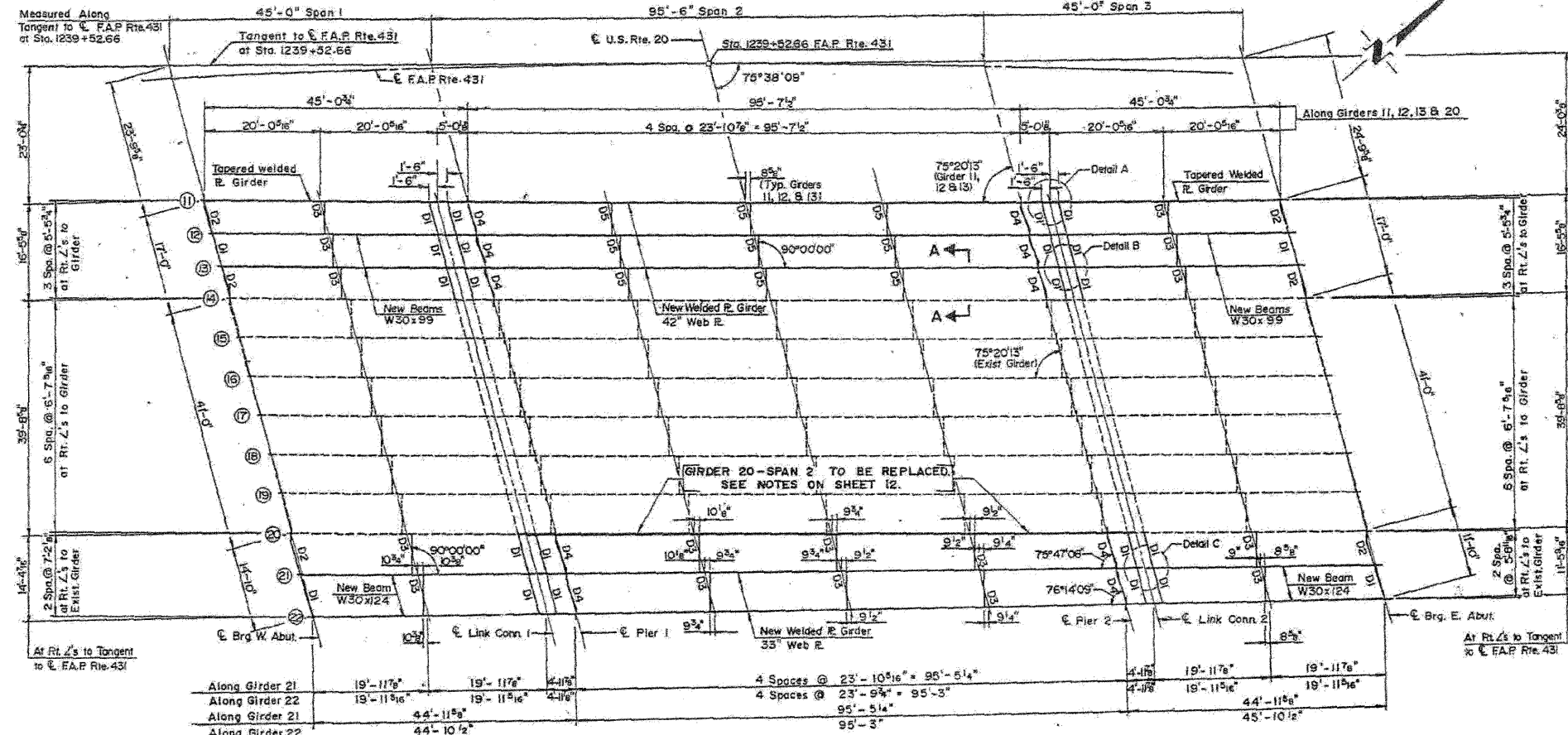
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312-565-0450 Job No. 10050

SHEET NO. 18 28 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 491
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

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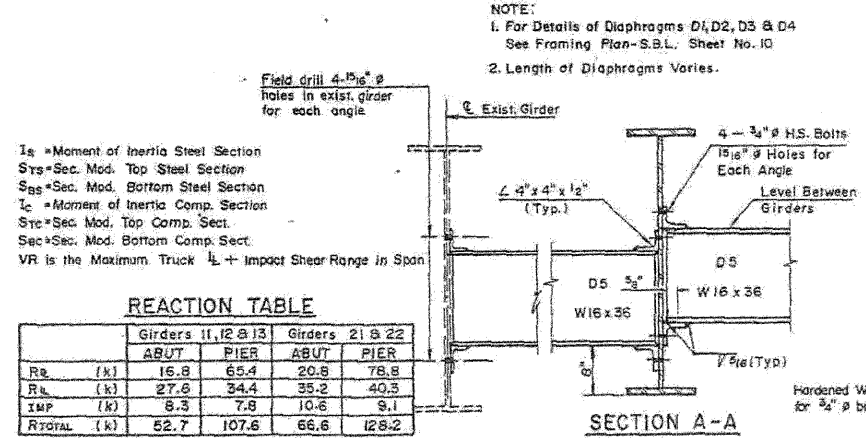
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 431	22-5HB	DUPAGE	151	56
PER ROAD DIST. NO. 7	ILLINOIS PROJECT			
SHEET 11 OF 39				



FRAMING PLAN
(Showing Existing and New Girders)

MOMENT TABLE
Composite in Positive Moment Areas of Span 2 only

	MOMENT TABLE For Girders 11, 12 & 13		MOMENT TABLE For Girders 21 & 22	
	0.5 Span 1 or 3	0.5 Span 2	0.5 Span 1 or 3	0.5 Span 2
I _s (in ⁴)	3,990	16,244	5,360	17,043
S _{TS} (in ³)	289	574	355	781
S _{BS} (in ³)	289	996	355	1,182
I _c (in ⁴)	—	43,079	—	38,751
S _{TC} (in ³)	—	3,573	—	3,922
S _{BC} (in ³)	—	1,318	—	1,469
I _c (in ⁴)	0.63	0.71	0.78	0.86
M _g (k)	126	738	166	896
I _s NON-COMP (ksi)	3.62	15.43	5.27	9.10
S _g (k/in)	0.21	0.21	0.24	0.23
M _{SE} (k)	42	216	48	236
M _{UL} (k)	225	721	287	846
M _{IMP} (k)	67	164	86	192
TOTAL (k)	334	1,101	421	1,274
I _s COMP (ksi)	14.90	3.70	14.23	10.40
I _s TOTAL (ksi)	20.52	19.13	19.50	19.50
VR (k)	—	41.6	—	48.8



GIRDER ELEVATIONS

LOCATION	GIRDER					Replacement 20
	11	12	13	21	22	
Brig. W. Abut.	765.10	765.89	765.57	762.60	762.19	—
Link Conn 1	765.91	765.59	765.26	762.51	761.92	762.83
Pier 1	765.96	765.64	765.33	762.37	761.96	762.85
Pier 2	765.64	765.33	765.02	762.09	761.75	762.53
Link Conn 2	765.56	765.27	764.96	762.02	761.68	762.48
Brig. E. Abut.	765.50	765.28	764.96	762.05	761.72	—

Elevations are given to Top of Flange of Beams and to Top of Web of Girders.
Elevations at Link Connection have been adjusted for Camber.
Elevations for Fabrication only.
For Top of Flange Elevation at Link Connection add 0.06 to Top of Web Elevation given in table.
For Camber diaphragm see Sheet No. 13.

FRAMING PLAN-N.B.L.
FAP ROUTE 431
SECTION 22-5HB
DU PAGE COUNTY
STATION 1239+52.66
STRUCTURE NO. 022-0112

MYA, INCORPORATED
DESIGNED BY MJS
CHECKED BY PBL
DATE: 10/11/00

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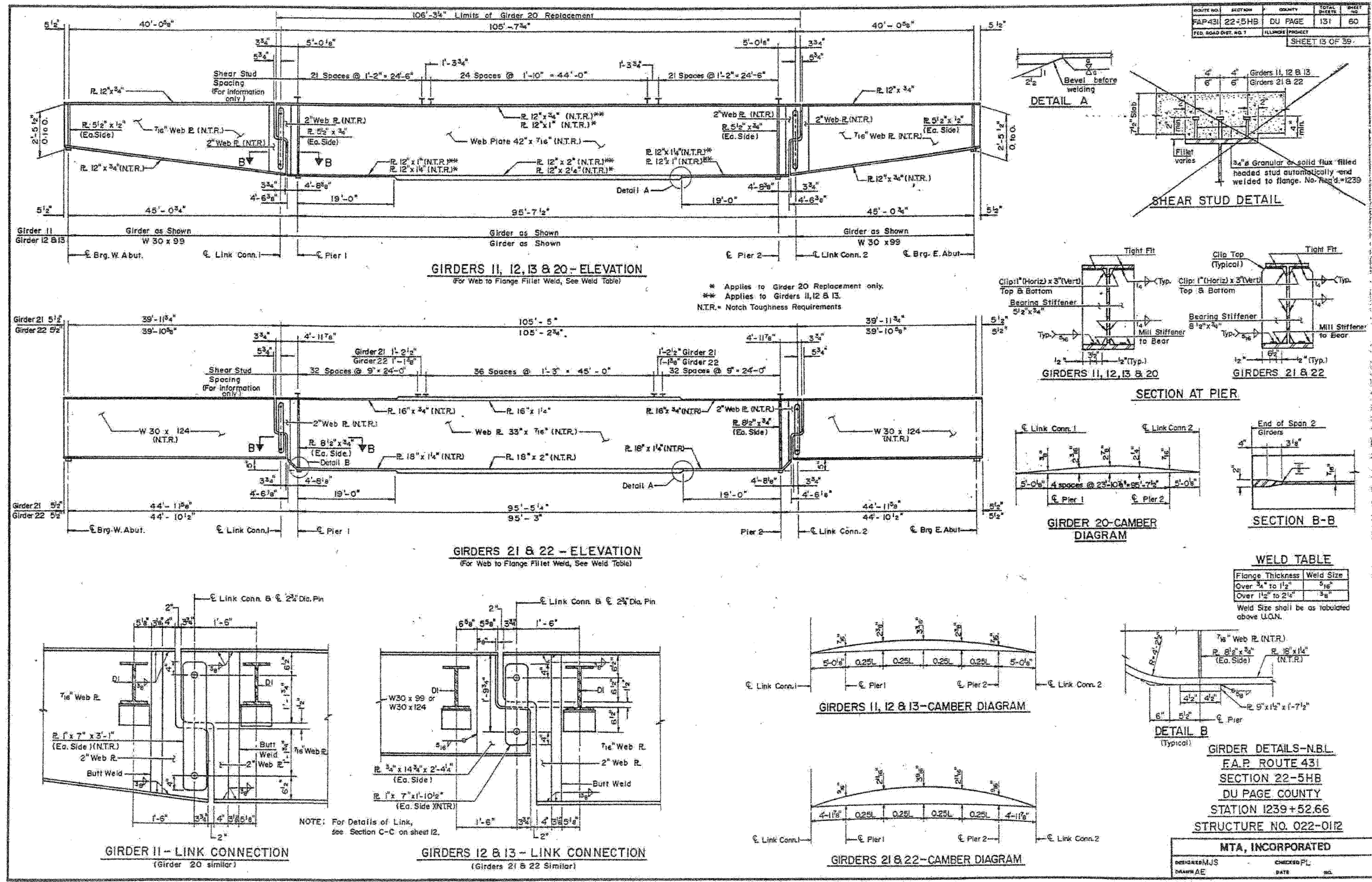
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SHEET NO. 19 28 SHEETS	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 492
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

EXISTING PLAN INFORMATION 4 OF 13
STRUCTURE NO. 022-0112

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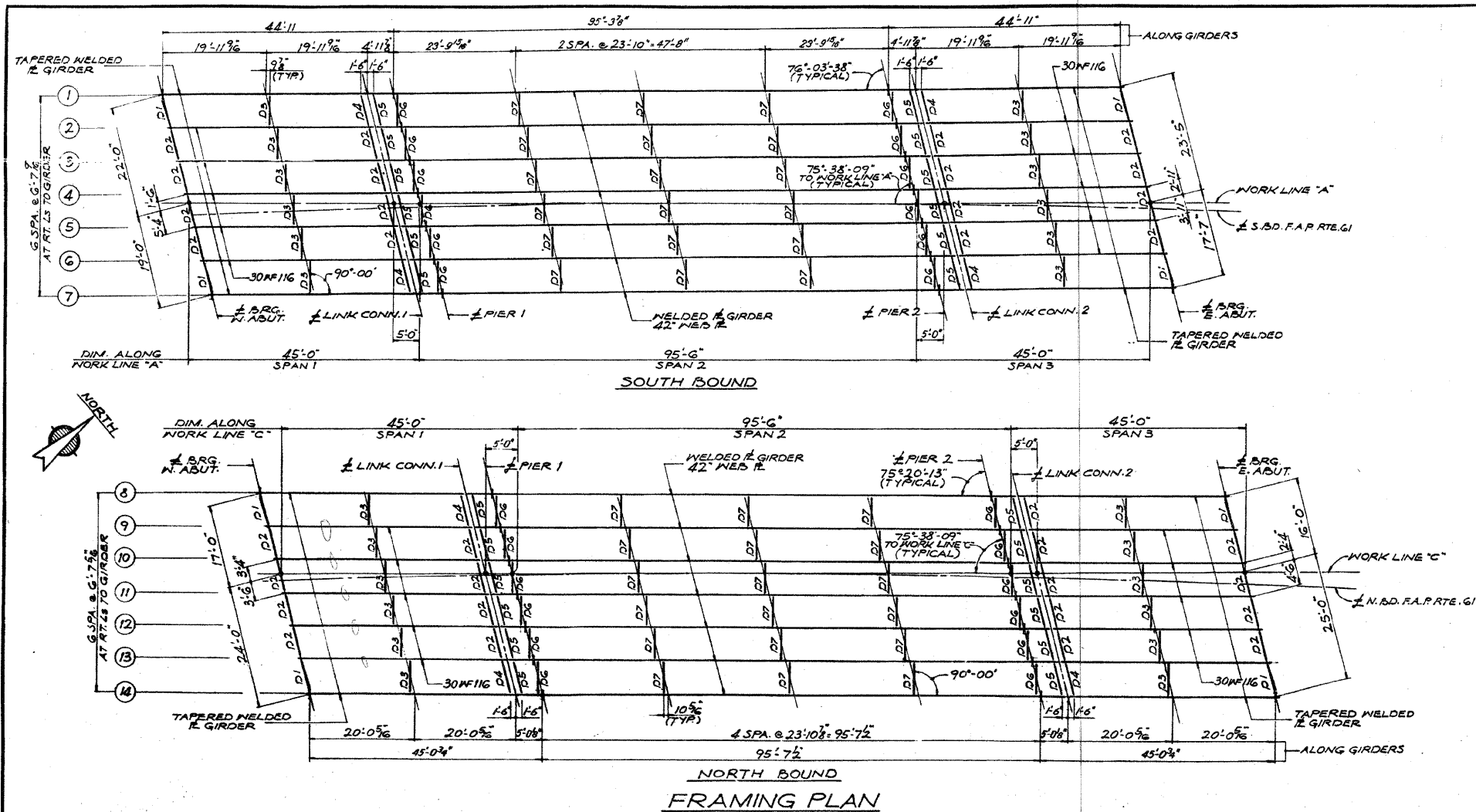
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	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

EXISTING PLAN INFORMATION 5 OF 13
STRUCTURE NO. 022-012

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P.R.T.E. 22-5HD		DUPAGE	181	74
SHEET 10 OF 23				



STRESS TABLE 'A'

TABLE OF MOMENTS AND REACTIONS - INTERIOR BEAMS

	MOMENTS (FT. KIPS)		REACTIONS (KIPS)	
	0.5 SPAN 1	PIER 1	0.5 SPAN 2	PIERS
D.L.	150	-85	15.0	57.9
S.D.L.	50	-29	5.0	18.3
L.L.	265	-163	30.9	37.0
IMP.	80	-40	9.3	8.3
TOTAL	546	-328	60.2	121.5
SEC. MOD. PROVIDED	328	486		

STRESS TABLE 'B'

INTERIOR BEAM

	0.5 SPAN 2	
	STEEL SECTION	COMPOSITE SECTION
D.L.	870	257
S.D.L.	883	191
L.L.	191	1301
IMP.	1301	
TOTAL	1301	

GIRDER PROPERTIES

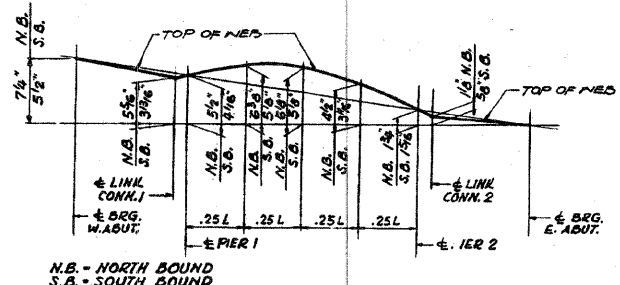
STEEL SECTION		COMPOSITE SECTION	
I_x	10,472	I_x	47,308
S_{xt}	698	S_{xt}	3,755
S_{xb}	1,123	S_{xc}	1,443

NOTE: SHEAR (KIP)
SUPPT. 0.25 PT. 0.5 PT.
S.D.L. 12.0 6.0 0
L.L. 36.8 27.8 17.0
IMP. 8.2 6.2 3.8
TOTAL 57.0 40.0 20.8

GIRDER ELEVATIONS FOR FABRICATION ONLY

GIRDERS & BEAMS LOCATION	SOUTH-BOUND							NORTH-BOUND						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
E BRG. N. ABUT.	765.580	765.278	764.903	764.527	764.152	763.777	763.329	765.228	764.925	764.550	764.174	763.799	763.424	762.975
E LINK CONN. 1	763.452	763.077	764.701	764.326	763.951	763.575	763.200	763.070	764.694	764.319	763.943	763.567	763.192	762.816
E PIER NO. 1	763.466	763.091	764.716	764.340	763.965	763.590	763.214	763.080	764.704	764.329	763.953	763.578	763.202	762.826
E PIER NO. 2	765.233	764.857	764.481	764.106	763.730	763.354	762.979	764.769	764.393	764.017	763.641	763.265	762.889	762.512
E LINK CONN. 2	765.195	764.820	764.444	764.068	763.693	763.317	762.941	764.727	764.351	763.975	763.599	763.222	762.846	762.469
E BRG. E. ABUT.	765.127	764.824	764.449	764.072	763.696	763.320	762.944	764.625	764.249	763.873	763.497	763.121	762.745	762.369

ELEVATIONS ARE GIVEN TO TOP OF HEBS OF PLATE GIRDERS AND TO TOP OF FLANGE OF ROLLED BEAMS AND TO TOP OF STR. IN A DIMENSION OF 8 1/2" TO TOP OF HEBS OF PLATE GIRDERS AND 7 1/2" TO TOP OF FLANGE OF ROLLED BEAMS. DIMENSIONS ABSTRACTED FROM TOP OF SLAB ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTION.



CAMBER DIAGRAM

NOTE: CAMBER DIAGRAM BASED ON CONCRETE & STEEL D.L. DEFLECTION + VERTICAL CURVE CORRECTION.

NOTE: FOR ELECTRICAL SUPPORT DETAILS SEE SH. 12

FRAMING PLAN
F.A. ROUTE 61 OVER
F.A. ROUTE 6 (LAKE STREET)
PROJECT
SECTION 22-5HD
DU PAGE COUNTY
STATION 1239+49.90

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
191 N. WASHINGTON, CHICAGO, ILLINOIS

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SHEET NO. 21	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 494
28 SHEETS				CONTRACT NO. 60G51	
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

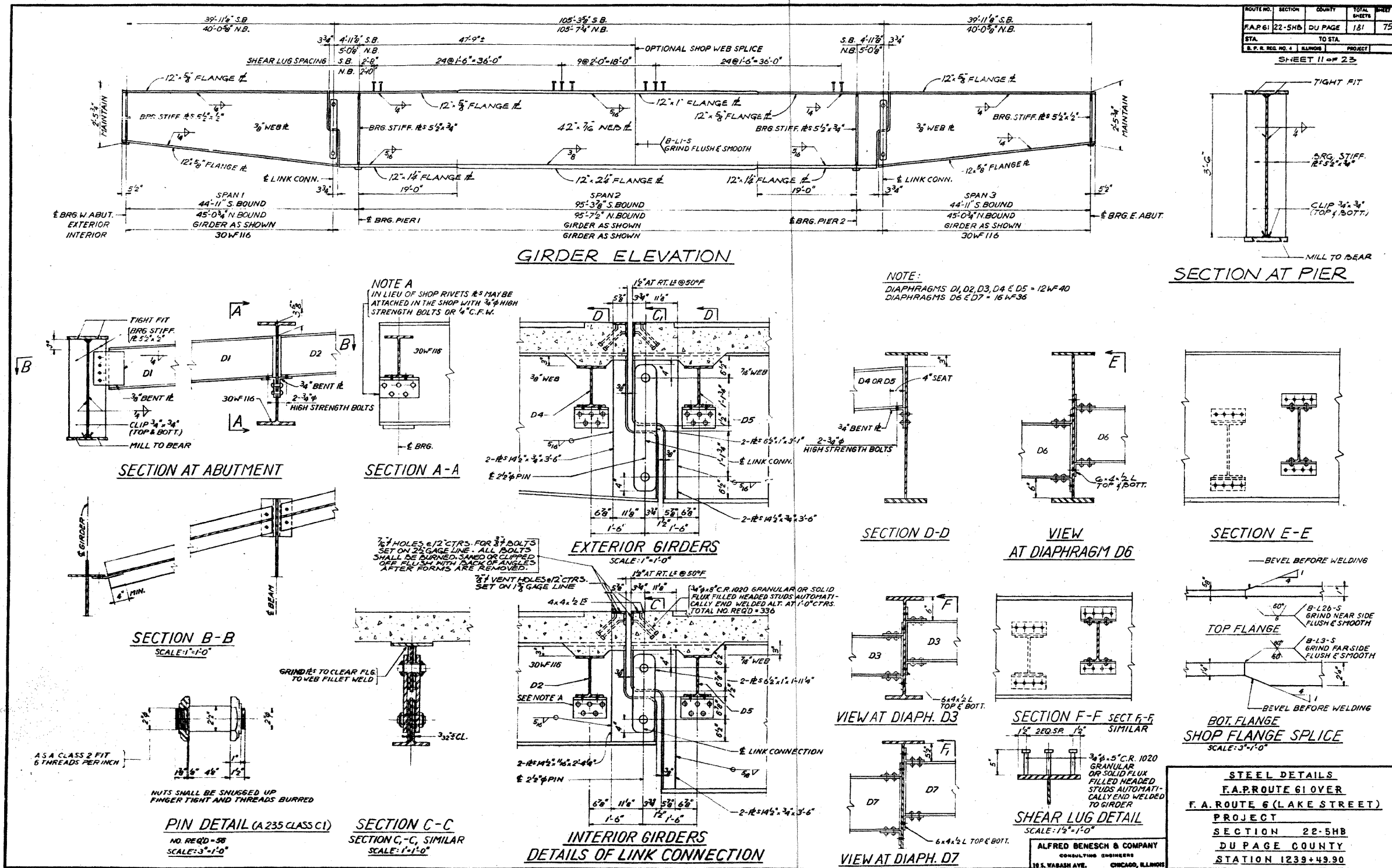
EXISTING PLAN INFORMATION 6 OF 13
STRUCTURE NO. 022-0112

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 61	22-5HB	DUPAGE	181	75
STA.	TO STA.			
S.P.R. REG. NO. 4	ILLINOIS	PROJECT		

SHEET 11 OF 23



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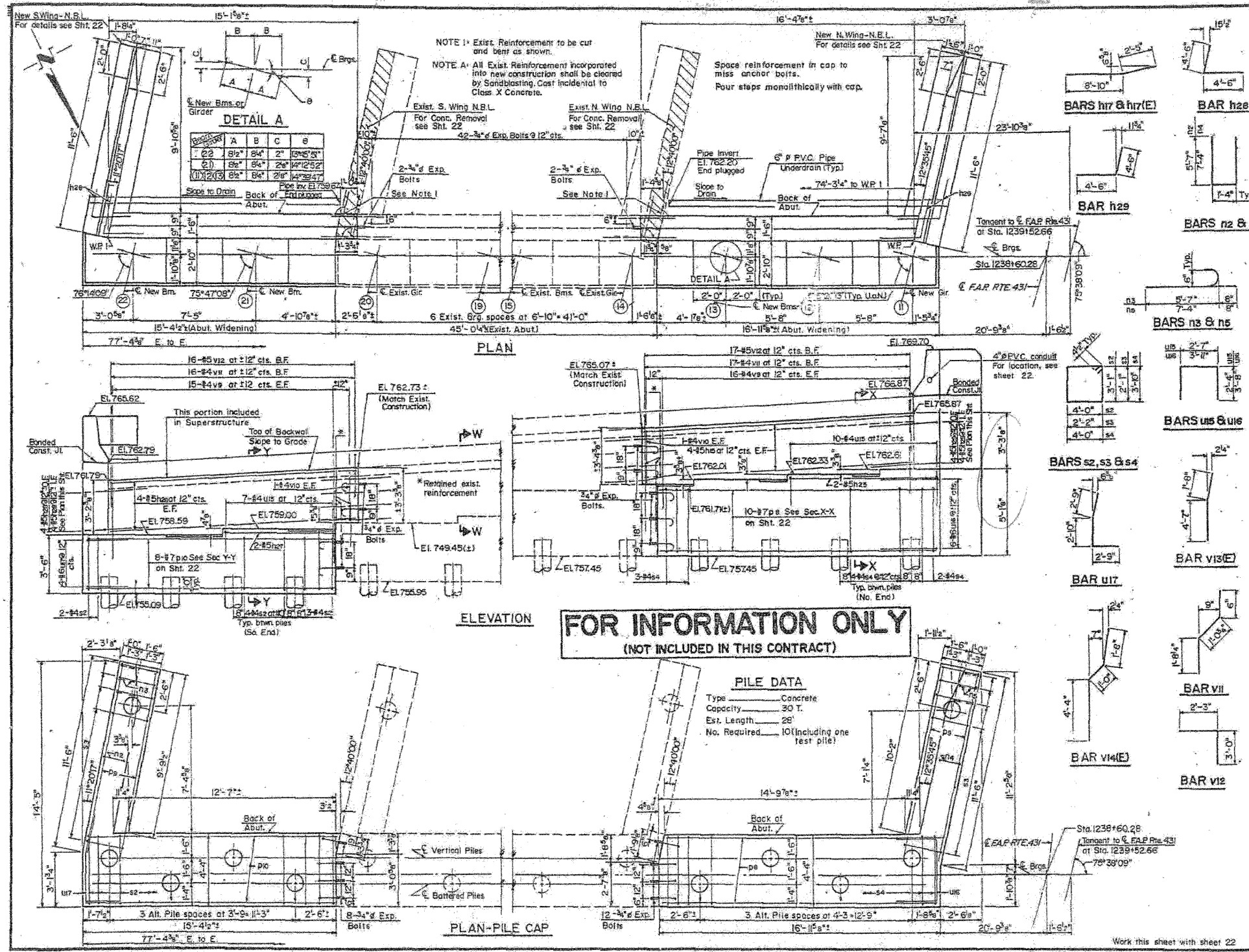
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SHEET NO. 22	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 495
28 SHEETS	355	CONTRACT NO. 60G51			
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT			

EXISTING PLAN INFORMATION 7 OF 13
STRUCTURE NO. 022-0112

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



PROJECT NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
EAR 431	22-5HB	DUPAGE	131	67
FED. ROAD DIST. NO.	ILLINOIS PROJECT	SHEET 20 OF 39		

BILL OF MATERIAL

BAR NO.	NO.	SIZE	LENGTH	SHAPE
h15	8	#5	15'-6"	
h17	14	#4	11'-3"	
h17(E)	2	#4	11'-3"	
h18	14	#4	11'-3"	
h18(E)	10	#4	11'-3"	
h23	2	#5	8'-0"	
h26	8	#5	15'-0"	
h27	2	#5	6'-6"	
h28	8	#5	9'-0"	
h28	8	#5	9'-0"	
n2	9	#6	12'-6"	
n3	6	#6	6'-3"	
n4	9	#6	16'-0"	
n5	6	#6	8'-0"	
p8	10	#7	16'-6"	
p9	12	#7	11'-3"	
p10	6	#7	15'-0"	
s2	17	#4	14'-11"	
s3	24	#4	9'-3"	
s4	17	#4	16'-5"	
u15	17	#4	7'-3"	
u16	5	#6	11'-3"	
u17	4	#6	6'-4"	
v9	62	#4	4'-9"	
v10	4	#4	2'-6"	
v11	53	#4	3'-3"	
v12	33	#5	5'-3"	
v13(E)	6	#6	6'-3"	
v14(E)	18	#6	7'-0"	
v15(E)	24	#6	6'-3"	

ITEM	UNIT	QUANTITY
Class X Concrete	Cu. Yds.	42.1
Reinforcement Bars (Epoxy Coated)	Lbs.	580
Reinforcement Bars	Lbs.	3,230
Concrete Piles	L in. Ft.	252
Test Pile Concrete	Each	1
Expansion Bolts (2"x6")	Each	66
Concrete Removal	Cu. Yds.	4
Structure Excavation	Cu. Yds.	55
Pipe Underdrain 6"	L in. Ft.	33
Porous Granular Embankment	CU. Yds.	316

WEST ABUTMENT WIDENING-NBL
E.A.P. ROUTE 431
SECTION 22-5HB
DU PAGE COUNTY
STATION 1239+52.66
STRUCTURE NO. 022-0112

MFA, INCORPORATED
DESIGNED M.L.S. CHECKED R.L.
DRAWN G.S. DATE

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312-565-0450 Job No. 10050

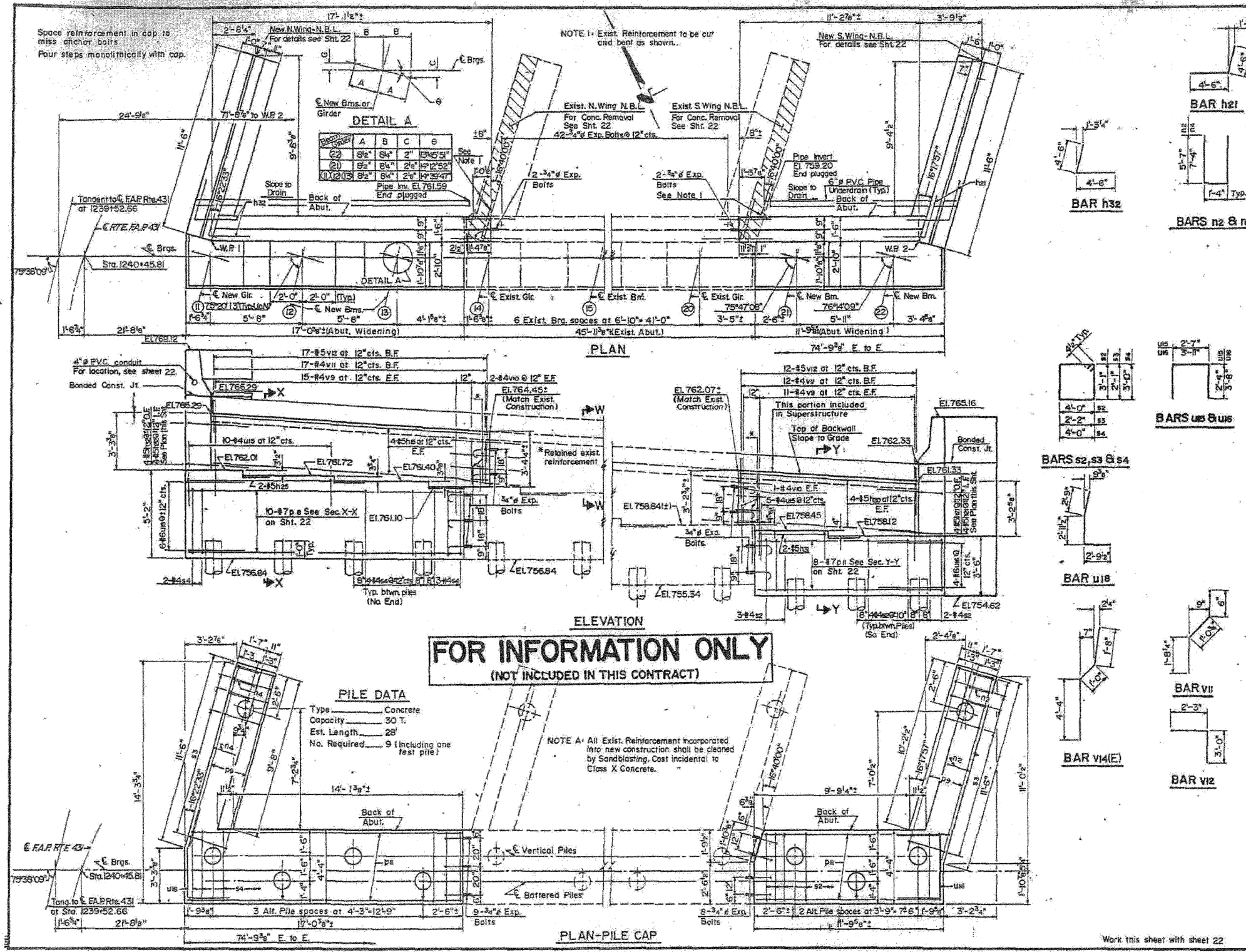
SHEET NO. 23	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 496
28 SHEETS	CONTRACT NO. 60G51		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 8 OF 13
STRUCTURE NO. 022-0112

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DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAR 431	22-5HB	DUPAGE	131	168
SHEET 21 OF 39				



BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h15	8	#5	16'-6"	
h18	28	#4	11'-3"	
h18(E)	12	#4	11'-3"	
h21	8	#5	9'-0"	
h22	2	#5	8'-0"	
h23	8	#5	11'-3"	
h24	2	#5	4'-3"	
h25	8	#5	9'-0"	
n2	12	#6	12'-6"	L
n4	12	#6	15'-0"	L
p8	10	#7	16'-6"	
p9	12	#7	11'-3"	
p11	8	#7	11'-6"	
s2	13	#4	14'-11"	
s3	24	#4	9'-3"	
s4	17	#4	15'-5"	
u15	15	#4	7'-3"	
u16	4	#6	11'-3"	
u18	6	#6	8'-6"	
v9	52	#4	4'-9"	
v10	6	#4	2'-6"	
v11	29	#4	3'-3"	
v12	29	#5	5'-3"	
v14(E)	24	#6	7'-0"	
v15(E)	24	#6	6'-5"	

ITEM	UNIT	QUANTITY
Class X Concrete	Cu. Yds.	38.9
Reinforcement Bars (Epoxy Coated)	Lbs.	590
Reinforcement Bars	Lbs.	3,010
Concrete Piles	Lin. Ft.	224
Test Pile Concrete	Each	1
Expansion Bolts (#4)	Each	63
Concrete Removal	Cu. Yds.	4
Structure Excavation	Cu. Yds.	60
Pipe Underdrain 6"	Lin. Ft.	29
Porous Granular Embankment	Cu. Yds.	28

EAST ABUTMENT WIDENING-NBL
FAR ROUTE 431
SECTION 22-5HB
DU PAGE COUNTY
STATION 1239+52.66
STRUCTURE NO.022-0112

MTA, INCORPORATED
DESIGNED BY: M.J.S.
CHECKED BY: G.S.

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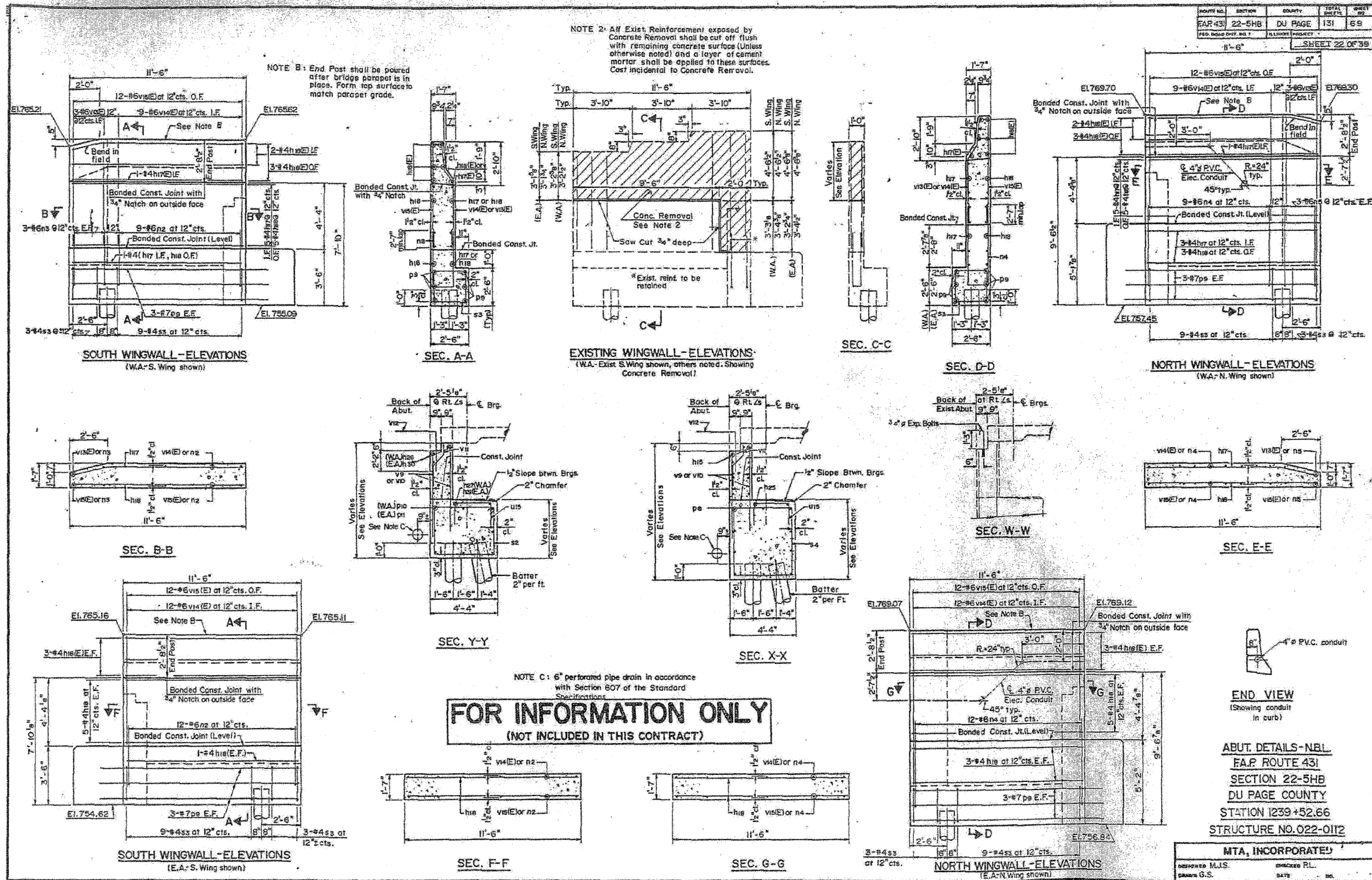
SHEET NO. 24	F.A.I. RTE. 290	SECTION 221, 1-1, 2&3RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 497
28 SHEETS	CONTRACT NO. 60G51		ILLINOIS FED. AID PROJECT		

EXISTING PLAN INFORMATION 9 OF 13
STRUCTURE NO. 022-0112

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DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
EAR 431	22-5HB	DUPAGE	131	69
SHEET 22 OF 39				



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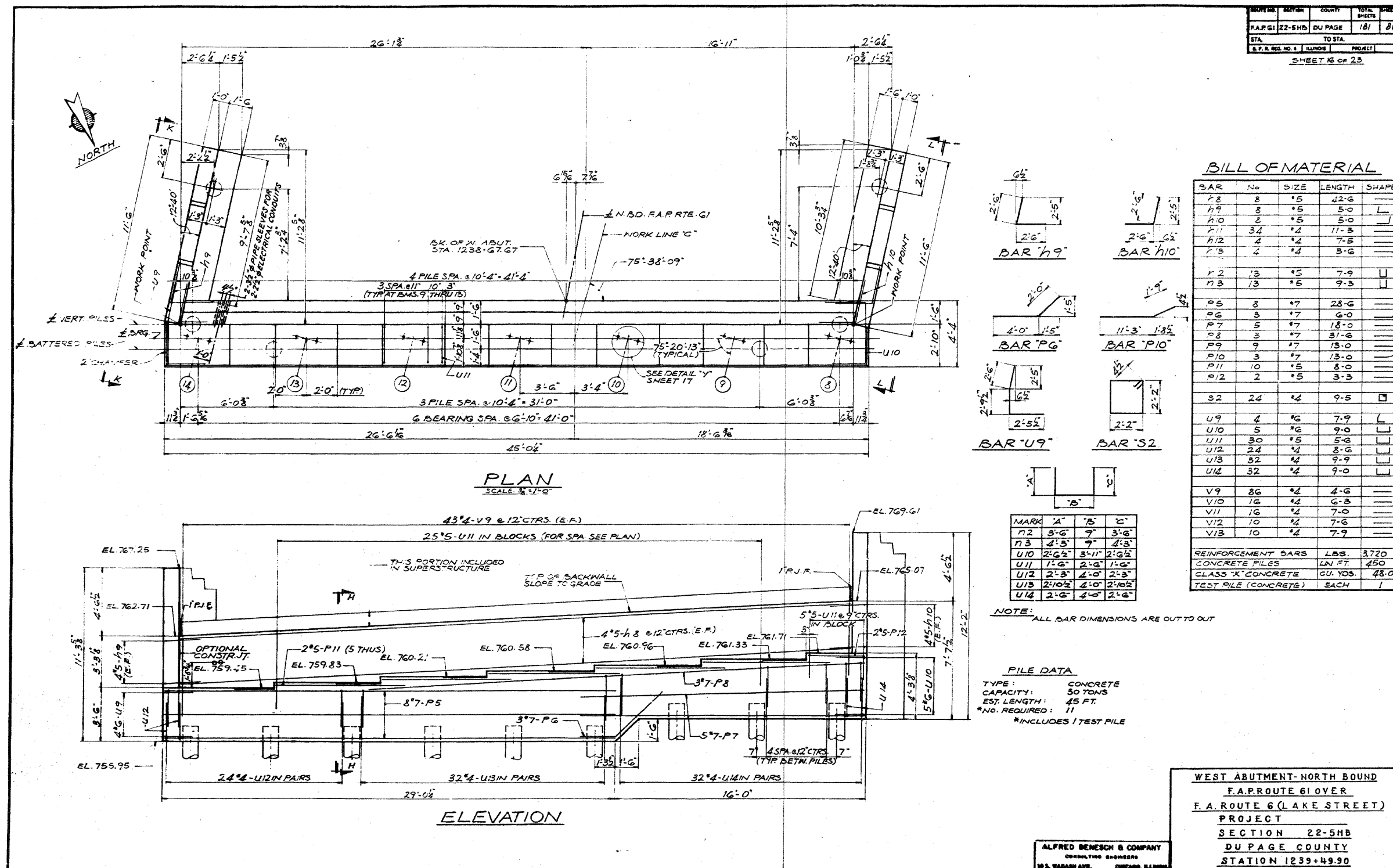
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SHEET NO. 25	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	290	22(1, 1-1, 2&3)RS-7	DUPAGE	546	498
28 SHEETS	CONTRACT NO. 60G51				
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BILL OF MATERIAL

BAR	No	SIZE	LENGTH	SHAPE
F8	8	#5	22-6	—
H9	3	#5	5-0	L
H10	2	#5	5-0	—
F11	34	#4	11-3	—
H12	4	#4	7-5	—
F13	4	#4	3-6	—
F2	13	#5	7-9	U
F3	13	#5	9-3	U
P5	8	#7	28-6	—
P6	3	#7	6-0	—
P7	5	#7	18-0	—
P8	3	#7	31-6	—
P9	9	#7	13-0	—
P10	3	#7	13-0	—
P11	10	#5	8-0	—
P12	2	#5	3-3	—
S2	24	#4	9-5	□
U9	4	#6	7-9	L
U10	5	#6	9-0	L
U11	30	#5	5-6	—
U12	24	#4	8-6	—
U13	32	#4	9-9	—
U14	32	#4	9-0	—
V9	86	#4	4-6	—
V10	16	#4	6-3	—
V11	16	#4	7-0	—
V12	10	#4	7-6	—
V13	10	#4	7-9	—
REINFORCEMENT BARS	LBS.	3720		
CONCRETE PILES	LN FT	450		
CLASS "K" CONCRETE	CU YDS	48.0		
TEST PILE (CONCRETE)	SACH	1		

MARK

MARK	A	B	C
F2	3'-6"	7'	3'-6"
F3	4'-3"	9'	4'-3"
U10	2'-6"	3'-11"	2'-6"
U12	2'-3"	4'-0"	2'-3"
U13	2'-10 1/2"	4'-0"	2'-10 1/2"
U14	2'-6"	4'-0"	2'-6"

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT

FILE DATA
TYPE: CONCRETE
CAPACITY: 30 TONS
EST. LENGTH: 45 FT.
*NO. REQUIRED: 11
*INCLUDES 1 TEST PILE

WEST ABUTMENT-NORTH BOUND
F.A. ROUTE 61 OVER
F.A. ROUTE 6 (LAKE STREET)
PROJECT
SECTION 22-5HB
DU PAGE COUNTY
STATION 1239+49.90

ALFRED BENESCH & COMPANY
CONSULTING ENGINEERS
12 S. WASHINGTON AVE. CHICAGO, ILLINOIS

FOR INFORMATION ONLY

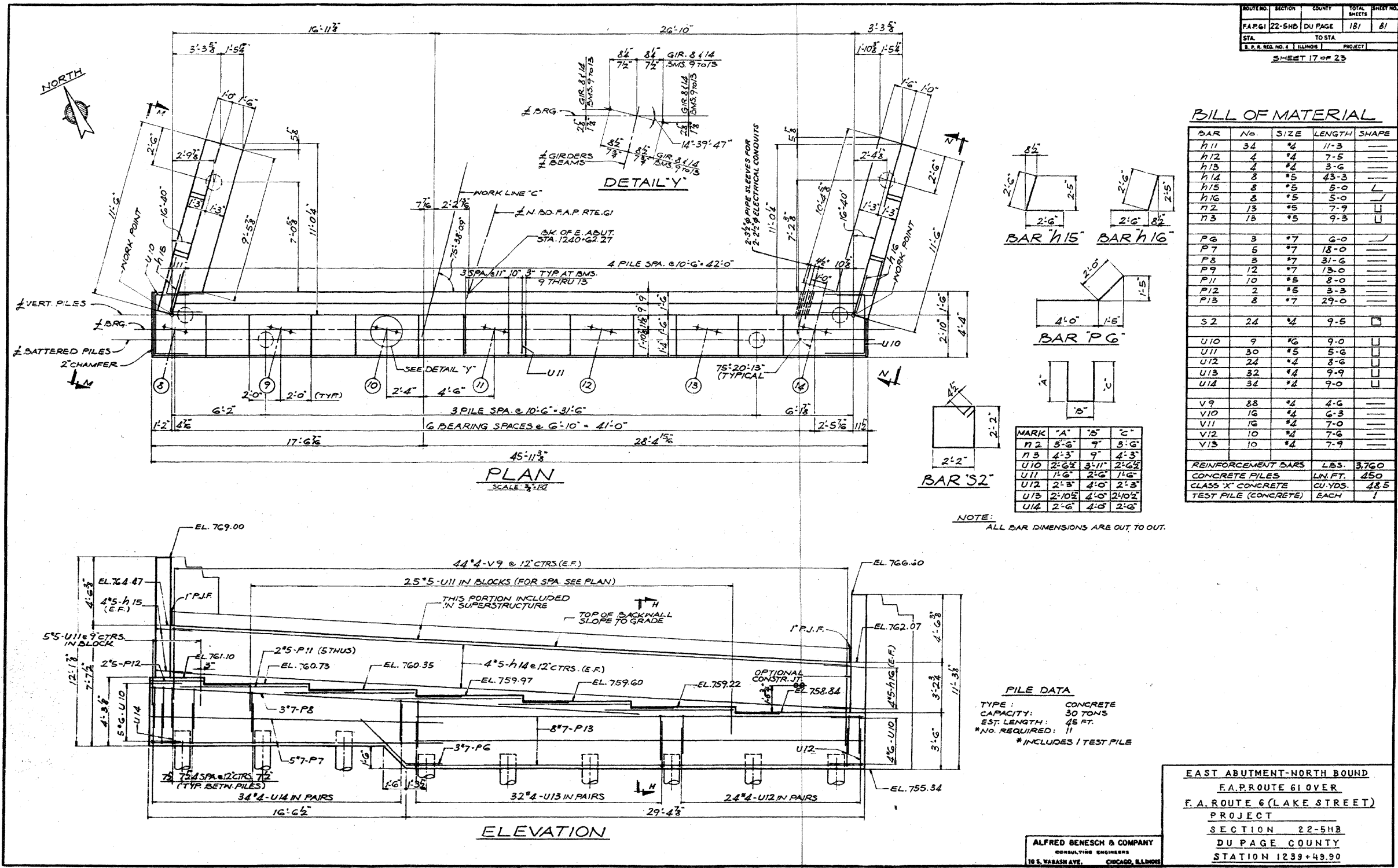
benesch
Engineers • Surveyors • Planners
205 North Michigan Avenue, Suite 2400
Chicago, Illinois 60601
312-555-0450 Job No. 10050

SHEET NO. 26	F.A.I. RTE. 290	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 499
28 SHEETS	FED. ROAD DIST. NO. ILLINOIS		FED. AID PROJECT		
CONTRACT NO. 60G51					

EXISTING PLAN INFORMATION 11 OF 13
STRUCTURE NO. 022-0112

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



BILL OF MATERIAL

BAR No.	SIZE	LENGTH	SHAPE
h11	#4	11-3	—
h12	#4	7-5	—
h13	#4	3-6	—
h14	#5	43-3	—
h15	#5	5-0	—
h16	#5	5-0	—
n2	#5	7-9	U
n3	#5	9-3	U
P6	#7	6-0	—
P7	#7	18-0	—
P8	#7	31-6	—
P9	#7	13-0	—
P11	#5	8-0	—
P12	#5	3-3	—
P13	#7	29-0	—
S2	#4	9-5	□
U10	#6	9-0	U
U11	#5	5-6	—
U12	#4	8-6	—
U13	#4	9-9	—
U14	#4	9-0	—
V9	#4	4-6	—
V10	#4	6-3	—
V11	#4	7-0	—
V12	#4	7-6	—
V13	#4	7-9	—
REINFORCEMENT BARS	LBS.	3760	
CONCRETE PILES	LN. FT.	450	
CLASS 'X' CONCRETE	CU. YDS.	485	
TEST PILE (CONCRETE)	EACH	1	

MARK	"A"	"B"	"C"
n2	3'-6"	7"	3'-6"
n3	4'-3"	9"	4'-3"
U10	2'-6"	3'-11"	2'-6"
U11	1'-6"	2'-6"	1'-6"
U12	2'-8"	4'-0"	2'-8"
U13	2'-10"	4'-0"	2'-10"
U14	2'-6"	4'-0"	2'-6"

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT.

PILE DATA

TYPE: CONCRETE
CAPACITY: 30 TONS
EST. LENGTH: 45 FT.
*NO. REQUIRED: 11
*INCLUDES 1 TEST PILE

EAST ABUTMENT-NORTH BOUND
F.A. ROUTE 61 OVER
F.A. ROUTE 6 (LAKE STREET)
PROJECT
SECTION 22-5HB
DU PAGE COUNTY
STATION 1239+49.90

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Chicago, Illinois 60601
312-565-0450 Job No. 10050

SHEET NO. 27 28 SHEETS	F.A.I. RTE. 290 355	SECTION 22(1, 1-1, 2&3)RS-7	COUNTY DUPAGE	TOTAL SHEETS 546	SHEET NO. 500
	CONTRACT NO. 60G51			FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT	

EXISTING PLAN INFORMATION 12 OF 13
STRUCTURE NO. 022-0112

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