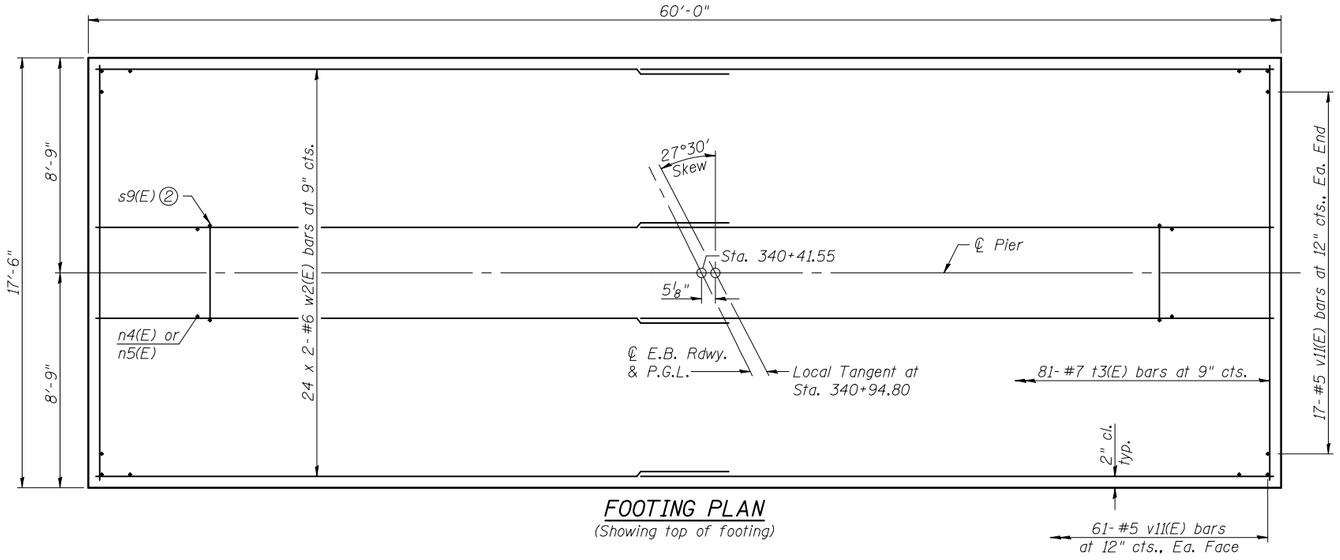
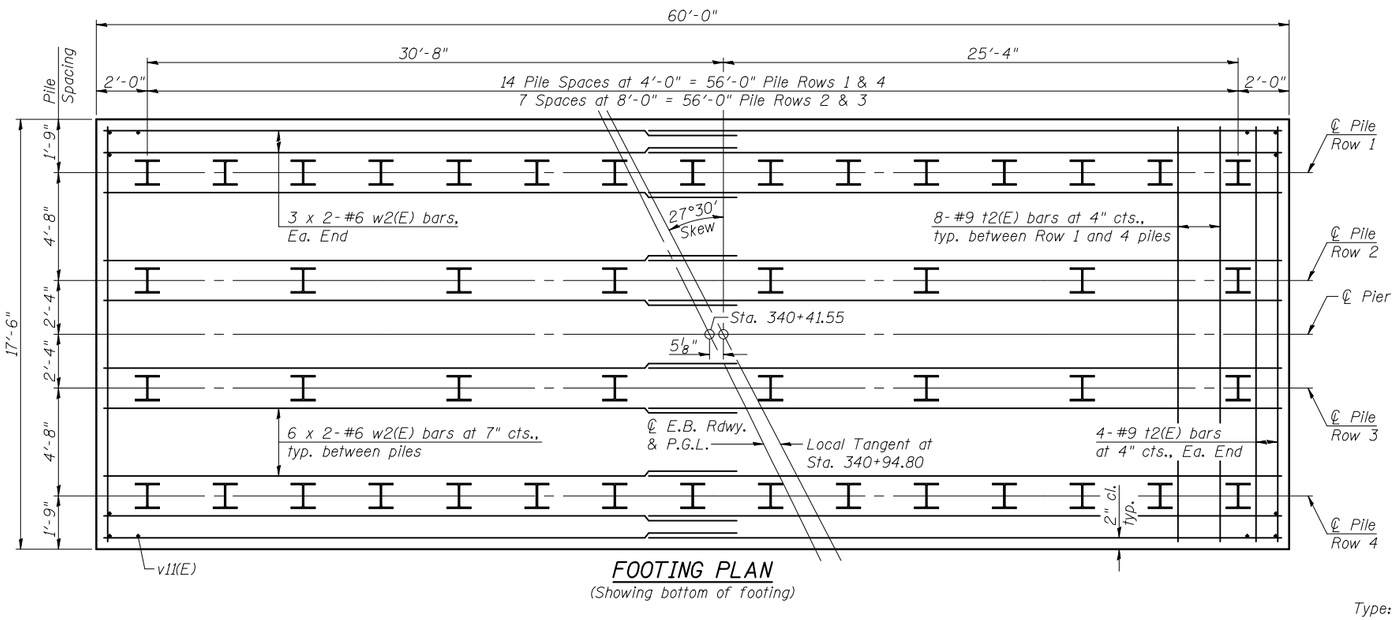
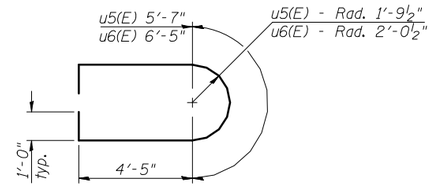


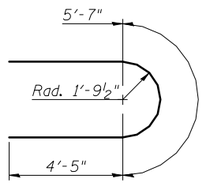
FOOTING PLAN
(Showing top of footing)



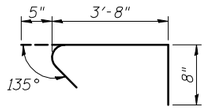
FOOTING PLAN
(Showing bottom of footing)



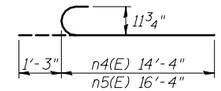
BARS u5(E) & u6(E)



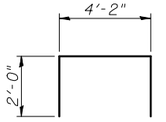
BAR u4(E)



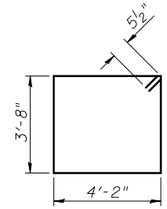
BAR s9(E)



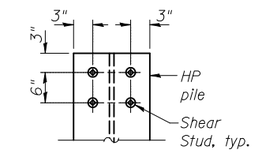
BARS n4(E) & n5(E)



BAR s8(E)



BAR s7(E)



PILE STUD DETAIL ③

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7(E)	328	#6	27'-9"	——
h8(E)	156	#6	21'-1"	——
n4(E)	114	#9	15'-7"	⌒
n5(E)	114	#9	17'-7"	⌒
p1(E)	6	#4	18'-3"	——
p4(E)	36	#8	29'-4"	——
p5(E)	6	#4	16'-11"	——
s7(E)	52	#5	16'-7"	□
s8(E)	34	#4	8'-2"	⊓
s9(E)	8,384	#4	4'-9"	⊐
t2(E)	120	#9	17'-2"	——
t3(E)	87	#7	17'-2"	——
u4(E)	78	#6	14'-5"	⊔
u5(E)	164	#6	16'-5"	⊔
u6(E)	12	#6	17'-3"	⊔
v8(E)	228	#9	18'-3"	——
v9(E)	114	#9	26'-0"	——
v10(E)	114	#9	24'-0"	——
v11(E)	156	#5	4'-1"	——
w2(E)	108	#6	32'-1"	——
Cofferdam Excavation			Cu. Yd.	1,118
Cofferdam (Type 2) (Location-1)			Each	1
Concrete Structures			Cu. Yd.	622.0
Seal Coat Concrete			Cu. Yd.	485.9
Reinforcement Bars, Epoxy Coated			Pound	117,610
Furnishing Steel Piles HP14x73			Foot	1,575
Driving Piles			Foot	1,575
Test Pile Steel HP14x73			Each	1
Mechanical Splicers			Each	690

MIN. BAR LAP
#6 bar = 4'-5"

PILE DATA
Type: Steel HP 14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 320 kips
Est. Length: 35 ft
No. Production Piles: 45
No. Test Piles: 1

Notes:
① For details of piles, see sheet 46 of 53.
② Alternate s9(E) bars end for end as shown in Section B-B on sheet 41 of 53.
③ Provide 4 - ¾" ϕ x 4" granular or solid flux filled headed studs conforming to Article 1006.32 of the Standard Specifications automatically end welded to piling, each flange, each pile. Cost included with Furnishing Steel Piles HP14x73.
④ Bars indicated thus 24 x 2-#6 etc. indicates 24 lines of bars with 2 lengths per line.

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Laclede Gas Building
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St. Louis, MO 63101
tel 314.666.6581
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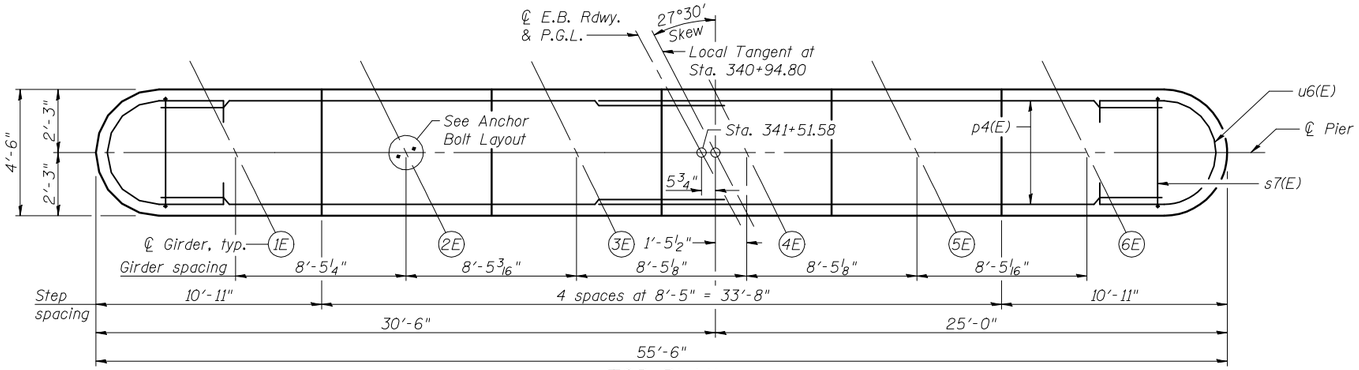
USER NAME =	DESIGNED - JAD	REVISED -	
	CHECKED - DGL	REVISED -	
PLOT SCALE =	DRAWN - JAD	REVISED -	
PLOT DATE =	CHECKED - MAG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 DETAILS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 42 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	101
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



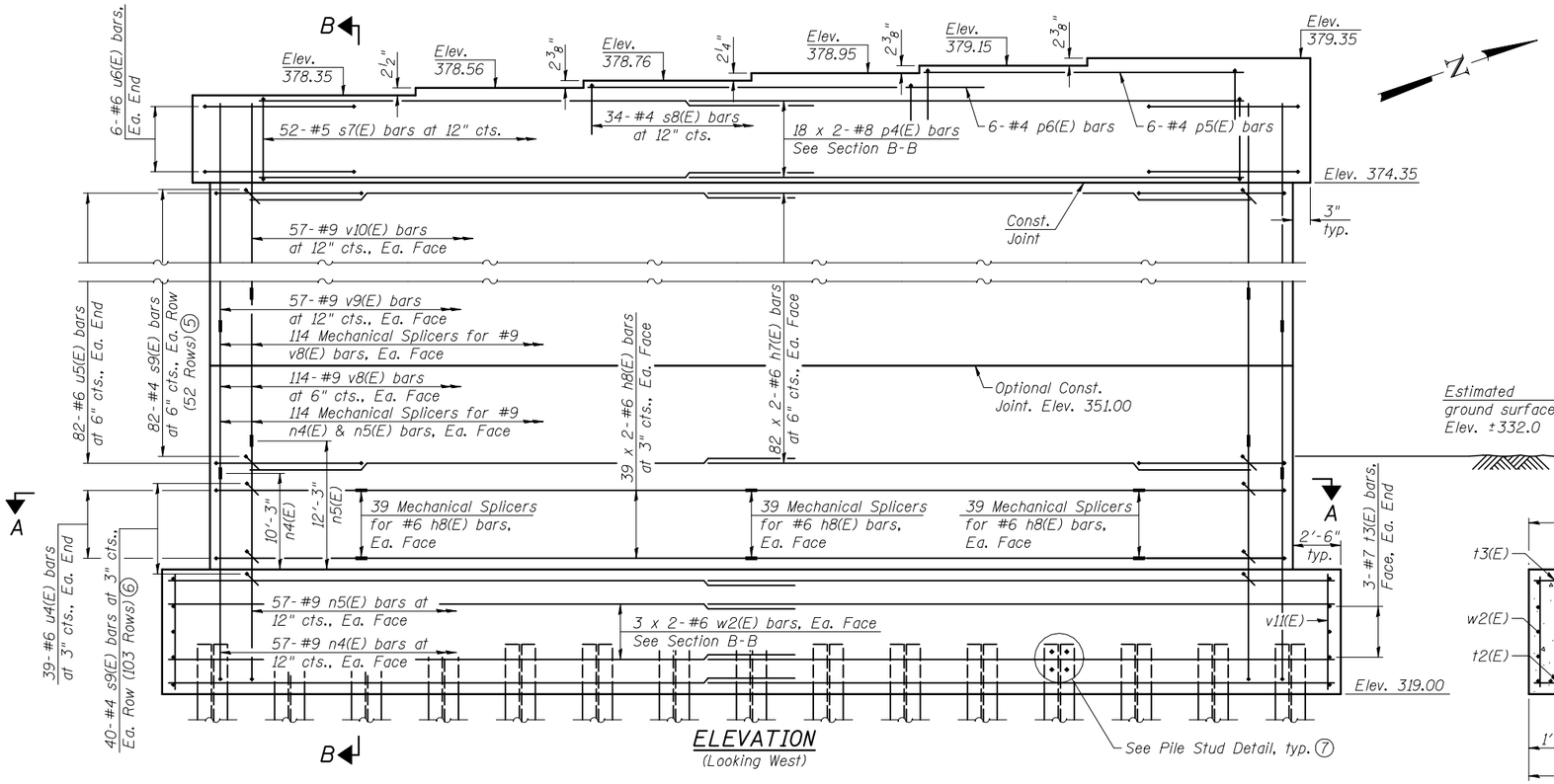
TOP PLAN

Notes:

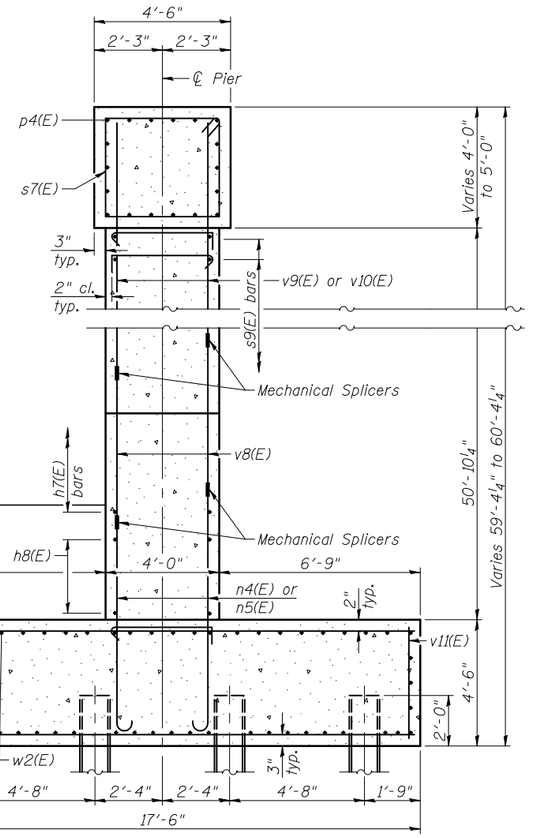
1. Pour steps monolithically with cap.
2. For details of Mechanical Splicers, see sheet 47 of 53.
3. For details of Cofferdam (Type 2), see sheet 4 of 53.
4. Space reinforcement in cap to miss anchor bolts.
5. Space s9(E) bars horizontally with each v8(E) & v9(E) or v8(E) & v10(E) bar and vertically with h7(E) bars. Alternate s9(E) bars end for end as shown in Section B-B.
6. Space s9(E) bars horizontally with each n4(E) & n5(E) bar and vertically with h8(E) bars. Alternate s9(E) bars end for end as shown in Section B-B. Total includes one row of bars in top of footing.
7. For Bill of Materials, Bar Details, Pile Stud Detail, Footing Plan, and footing reinforcement, see sheet 44 of 53.
8. Bars indicated thus 18 x 2-#8 etc. indicates 18 lines of bars with 2 lengths per line.

MIN. BAR LAP

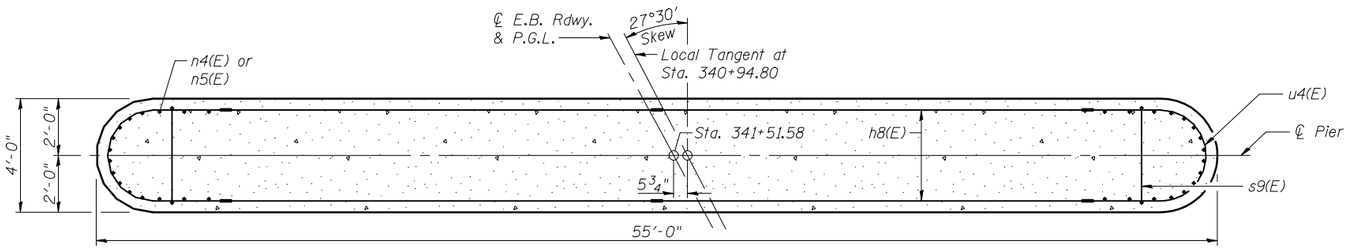
#8 bar = 7'-8"
#6 bar = 4'-5"



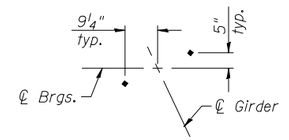
ELEVATION
(Looking West)



SECTION B-B



SECTION A-A



ANCHOR BOLT LAYOUT ④

USER NAME =	DESIGNED - JAD	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
	CHECKED - DGL	REVISED -	
PLOT SCALE =	DRAWN - JAD	REVISED -	
PLOT DATE =	CHECKED - MAG	REVISED -	

PIER 3 DETAILS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 43 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	102
		CONTRACT NO. 78056		
ILLINOIS FED. AID PROJECT				

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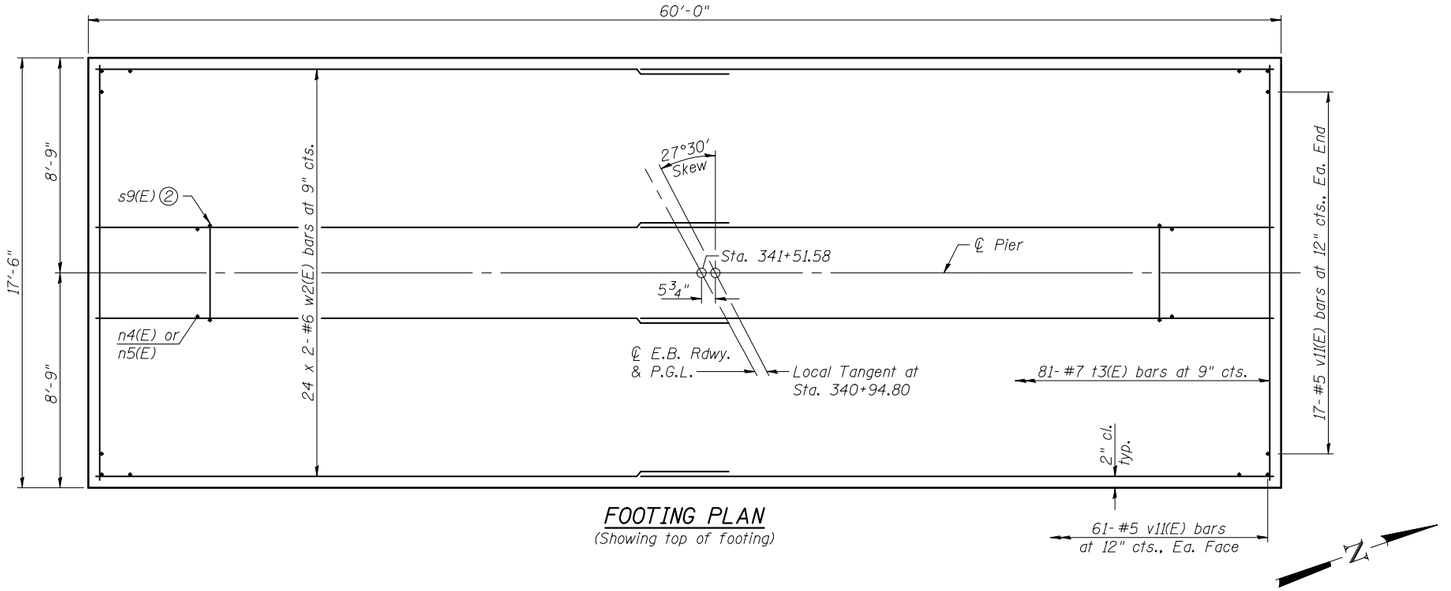
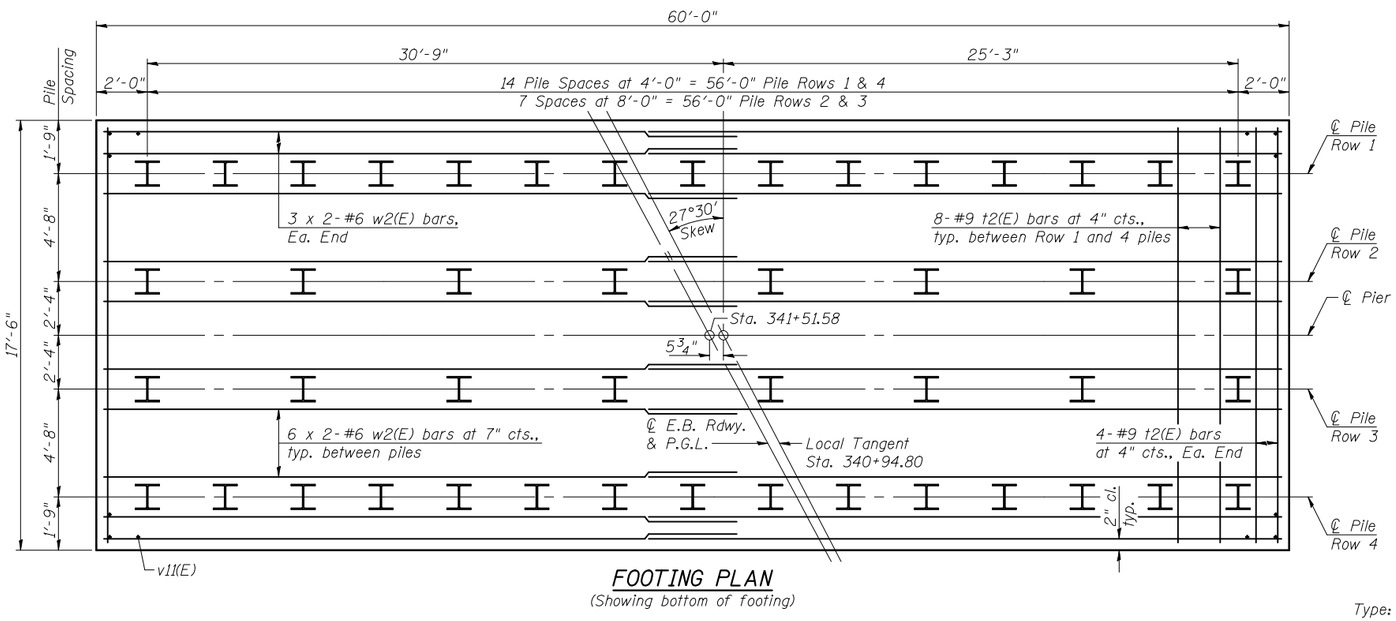


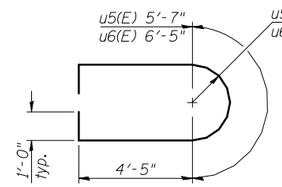
FOOTING PLAN
(Showing top of footing)



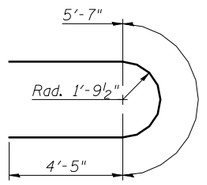
FOOTING PLAN
(Showing bottom of footing)

MIN. BAR LAP

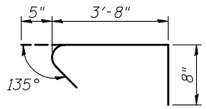
#6 bar = 4'-5"



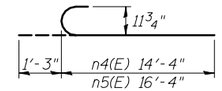
BARS u5(E) & u6(E)



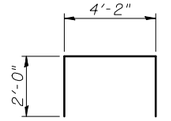
BAR u4(E)



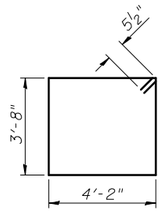
BAR s9(E)



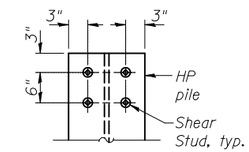
BARS n4(E) & n5(E)



BAR s8(E)



BAR s7(E)



PILE STUD DETAIL ③

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7(E)	328	#6	27'-9"	
h8(E)	156	#6	21'-1"	
n4(E)	114	#9	15'-7"	
n5(E)	114	#9	17'-7"	
p4(E)	36	#8	29'-4"	
p5(E)	6	#4	16'-11"	
p6(E)	6	#4	18'-10"	
s7(E)	52	#5	16'-7"	
s8(E)	34	#4	8'-2"	
s9(E)	8,384	#4	4'-9"	
t2(E)	120	#9	17'-2"	
t3(E)	87	#7	17'-2"	
u4(E)	78	#6	14'-5"	
u5(E)	164	#6	16'-5"	
u6(E)	12	#6	17'-3"	
v8(E)	228	#9	18'-3"	
v9(E)	114	#9	26'-0"	
v10(E)	114	#9	24'-0"	
v11(E)	156	#5	4'-1"	
w2(E)	108	#6	32'-1"	
Cofferdam Excavation		Cu. Yd.	1,118	
Cofferdam (Type 2) (Location-2)		Each	1	
Concrete Structures		Cu. Yd.	623.8	
Seal Coat Concrete		Cu. Yd.	485.9	
Reinforcement Bars, Epoxy Coated		Pound	117,610	
Furnishing Steel Piles HP14x73		Foot	1,575	
Driving Piles		Foot	1,575	
Test Pile Steel HP14x73		Each	1	
Mechanical Splicers		Each	690	

PILE DATA

Type: Steel HP 14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 320 kips
Est. Length: 35 ft
No. Production Piles: 45
No. Test Piles: 1

Notes:
① For details of piles, see sheet 46 of 53.
② Alternate s9(E) bars end for end as shown in Section B-B on sheet 43 of 53.
③ Provide 4 - 3/4" ϕ x 4" granular or solid flux filled headed studs conforming to Article 1006.32 of the Standard Specifications automatically end welded to piling, each flange, each pile. Cost included with Furnishing Steel Piles HP14x73.
④ Bars indicated thus 24 x 2-#6 etc. indicates 24 lines of bars with 2 lengths per line.

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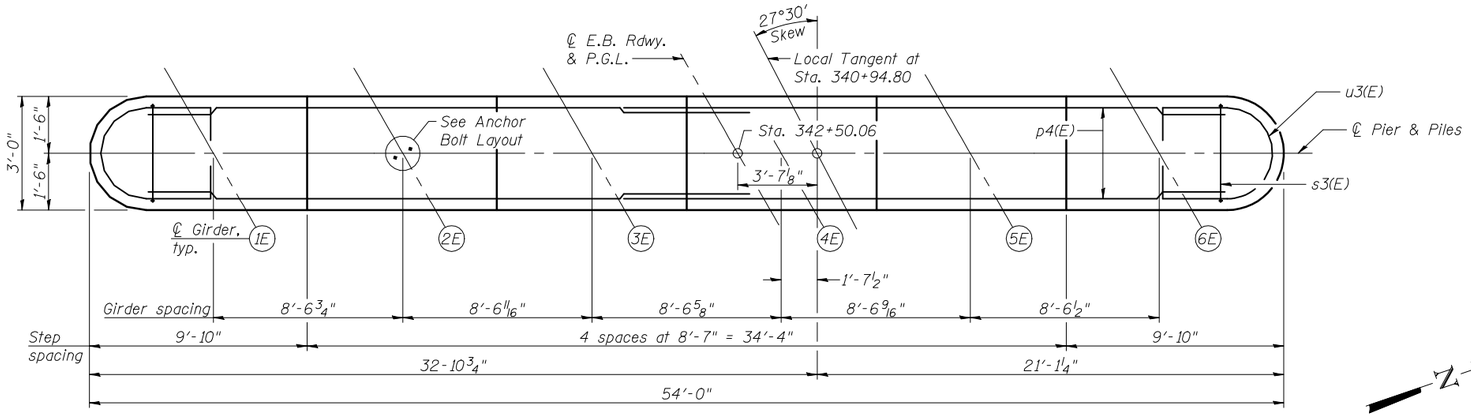
	CHECKED - DGL	REVISED -	
PLOT SCALE =	DRAWN - JAD	REVISED -	
PLOT DATE =	CHECKED - MAG	REVISED -	

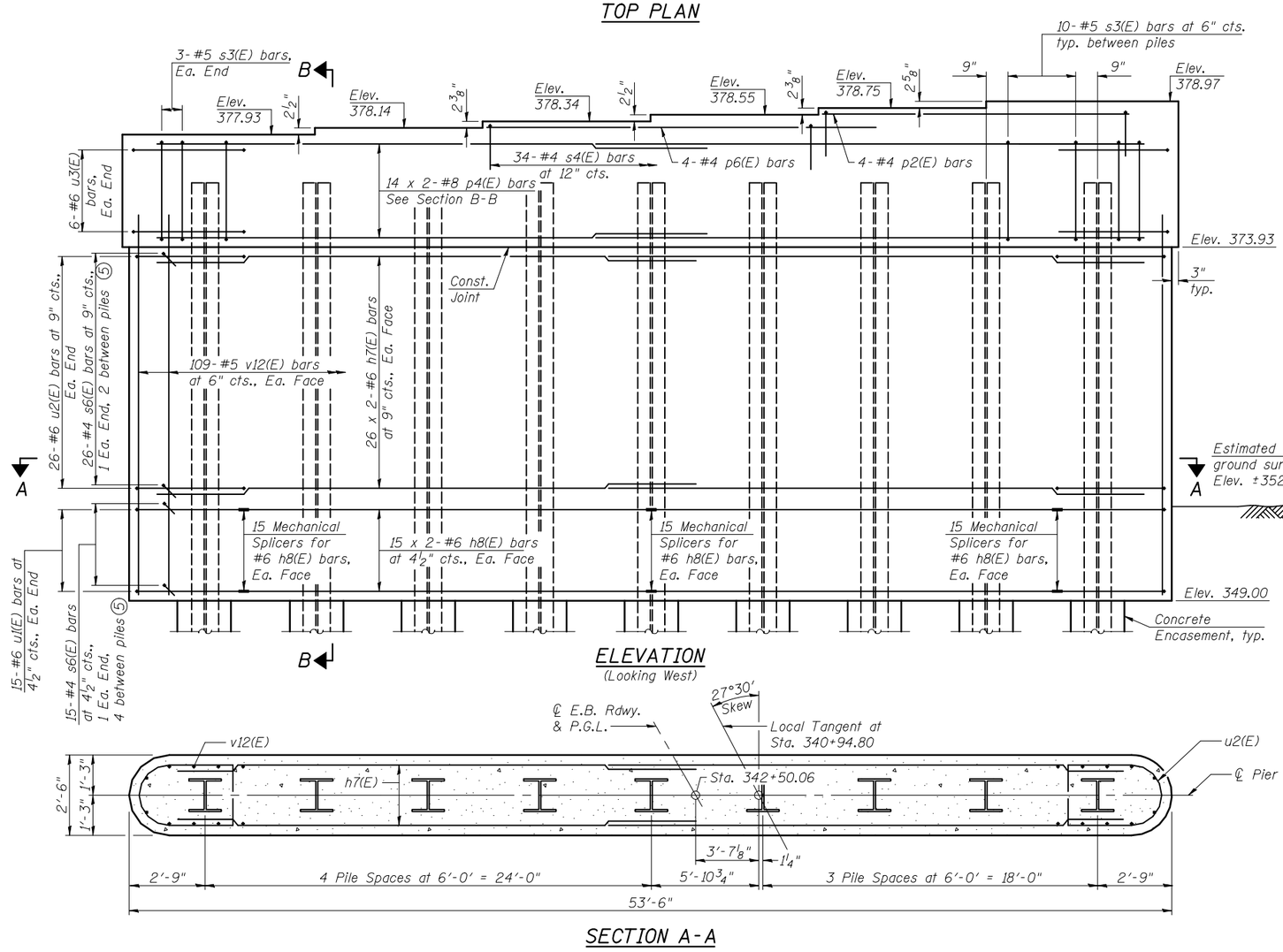
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 DETAILS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 44 OF 53 SHEETS

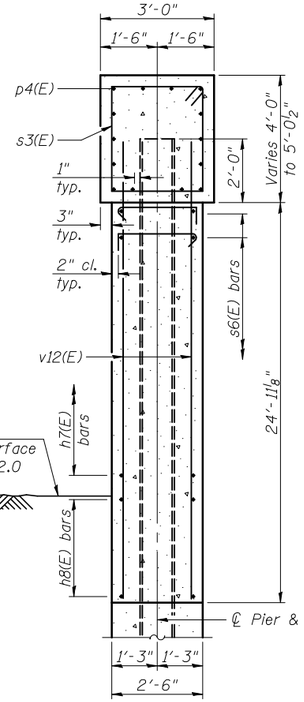
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	103
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



TOP PLAN

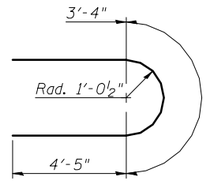


ELEVATION
(Looking West)

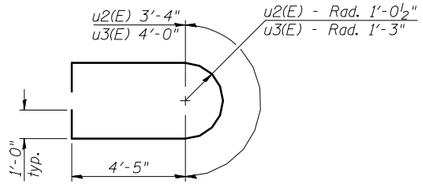


SECTION B-B

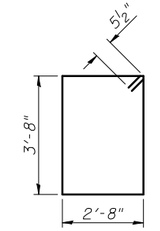
SECTION A-A



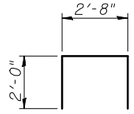
BAR u1(E)



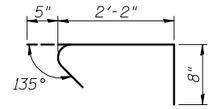
BARS u2(E) & u3(E)



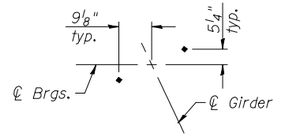
BAR s3(E)



BAR s4(E)



BAR s6(E)



ANCHOR BOLT LAYOUT ④

MIN. BAR LAP

#8 bar = 7'-8"
#6 bar = 4'-5"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h7(E)	104	#6	27'-9"	
h8(E)	60	#6	21'-1"	
p2(E)	4	#4	16'-7"	
p4(E)	28	#8	29'-4"	
p6(E)	4	#4	18'-10"	
s3(E)	86	#5	13'-7"	
s4(E)	34	#4	6'-8"	
s5(E)	-	-	-	
s6(E)	978	#4	3'-3"	
u1(E)	30	#6	12'-2"	
u2(E)	52	#6	14'-2"	
u3(E)	12	#6	14'-10"	
v12(E)	218	#5	26'-8"	
Structure Excavation		Cu. Yd.	42	
Concrete Structures		Cu. Yd.	149.0	
Concrete Encasement		Cu. Yd.	4.9	
Reinforcement Bars, Epoxy Coated		Pound	20,000	
Furnishing Steel Piles HP14x73		Foot	720	
Driving Piles		Foot	720	
Test Pile Steel HP14x73		Each	1	
Mechanical Splicers		Each	90	

PILE DATA

Type: Steel HP 14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 320 kips
Est. Length: 90 ft
No. Production Piles: 8
No. Test Piles: 1

Notes:
① Pour steps monolithically with cap.
② For details of Bar Splicers, see sheet 47 of 53.
③ For details of piles and Concrete Encasement, see sheet 46 of 53.
④ Space reinforcement in cap to miss anchor bolts.
⑤ Alternate s6(E) bars end for end as shown in Section B-B.
⑥ Bars indicated thus 14 x 2-#8 etc. indicates 14 lines of bars with 2 lengths per line.

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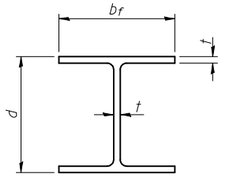
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

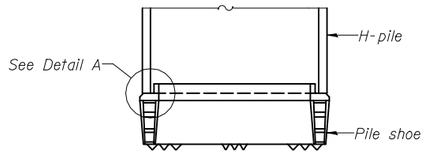
PIER 4 DETAILS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 45 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	104
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

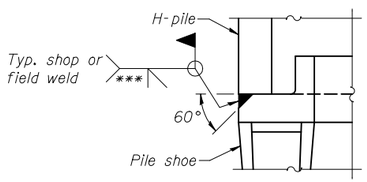


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

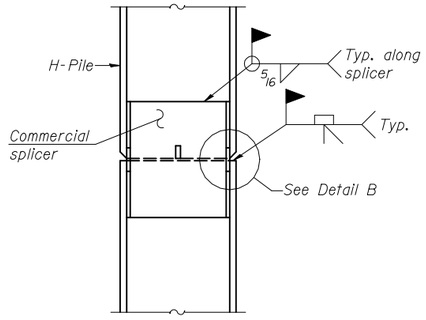


ELEVATION

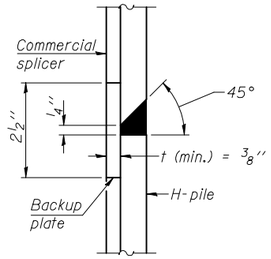


DETAIL A

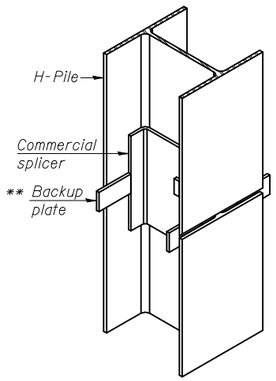
H-PILE SHOE ATTACHMENT



ELEVATION

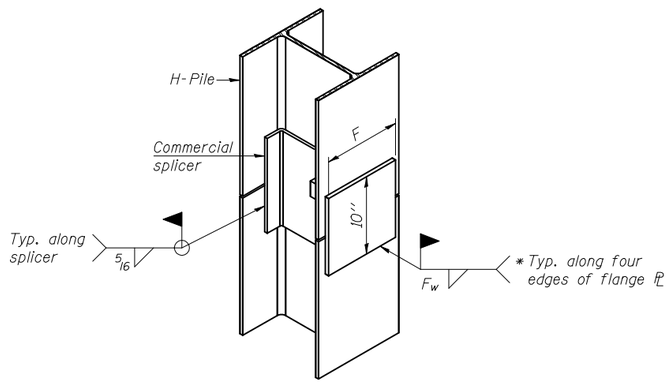


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



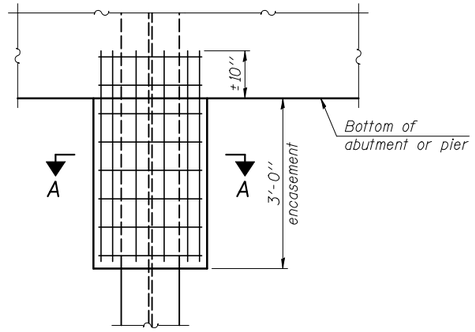
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

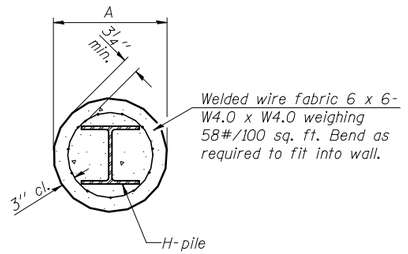
* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



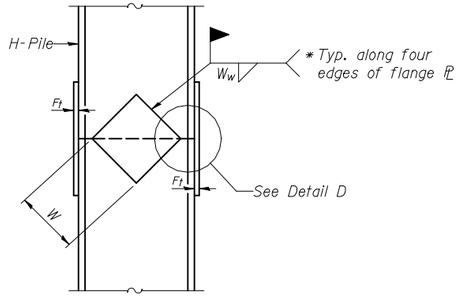
ELEVATION



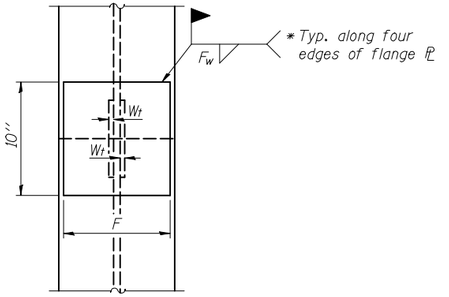
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

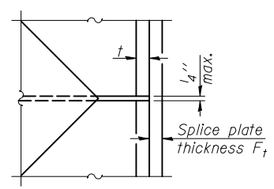
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

F-HP 7-1-10

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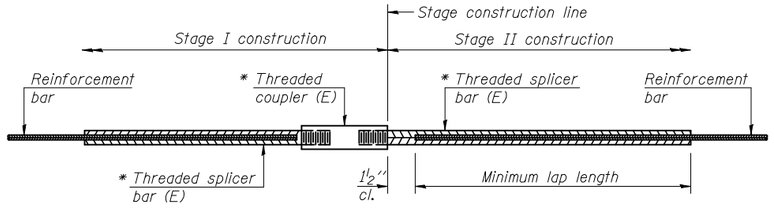
HP PILE DETAILS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 46 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	105
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

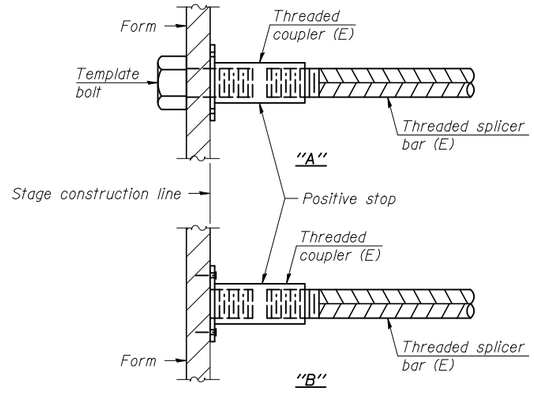
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1½" + thread length

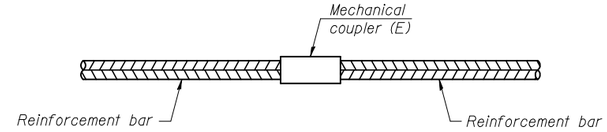
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



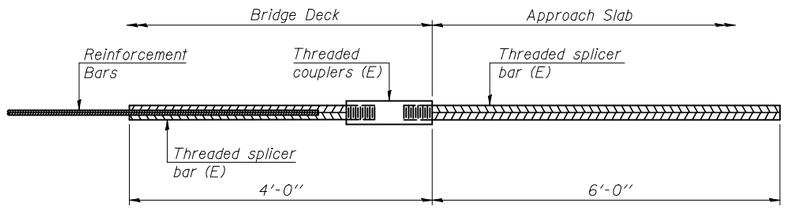
INSTALLATION AND SETTING METHODS

"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.



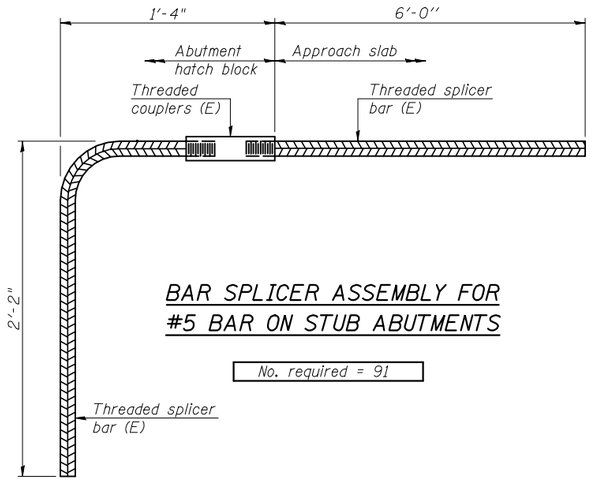
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 1	#6	90
Pier 2	#6	234
Pier 2	#9	456
Pier 3	#6	234
Pier 3	#9	456
Pier 4	#6	90



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 91

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 7-1-10

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 47 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	106
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

Sheet 1 of 3

ILL 13 Over Big Muddy River

Route: ILL 13 Structure Number: 039-0013 and 039-0049 Date: 10/20/2004

Section Bored By: Bryan Keller

County: Jackson Location: E. Edge of Murphysboro Checked By: Rob Graeff

Boring No 1-S
Station 338+68
Offset 28' LT WB CL
Ground Surface 383.2 Ft

Surf Wat Elev: 339.7
Ground Water Elevation
when Drilling 343.7
At Completion 351.4
At: 24 Hrs: 355.0

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Very stiff, damp, brown, Silty Clay A-6				Stiff, very moist, brown mottled grey, Silty Clay to Clay A7-6	3	1.9B	23
					5		
	5						
	9	2.9B	13		1		
	10				2	1.3B	26
378.7				353.7	3		
Stiff, moist, brown, Silty Clay Loam A-6	5.0 2			Stiff, very moist, brown, Clay to Silty Clay A7-6	30.0 1		
	5	1.7B	16		2	1.2B	23
	7				3		
				351.2			
	1			Very stiff, very moist, brown	1		
	5	1.2S	15	mottled, grey, Clay to Silty Clay	3	2.4B	22
	7			A7-6	4		
				348.7			
	10.0 1			Medium, very moist, brown	35.0 WH		
	5	1.2S	19	mottled grey, Clay to Silty Clay	3	0.9B	25
	5			A7-6	3		
371.2				346.2			
Very stiff, moist, brown, Silty	1			Stiff, very moist, brown	1		
Clay Loam A-6	5	2.4S	17	mottled grey, Clay to Silty Clay	2	1.7B	25
	6			A7-6	3		
368.7				343.7			
Very stiff, moist, brown mottled	15.0 1			Stiff, very moist, grey, Silty Clay	40.0 1		
grey, Silty Clay A-6	4	2.6B	23	Loam A-6	1	1.5P	31
	5				1		
366.2							
Stiff, very moist, brown	1						
mottled grey, Silty Clay A-6	3	1.2B	25				
	3						
363.7				338.7			
Stiff, moist, grey, Silt Loam	20.0 1			Stiff, wet, grey, Clay	45.0 WH		
A-4	5	1.2B	21	A7-6	1	1.1B	55
	4				WH		
361.2							
Stiff, moist to very moist, grey,	1						
Silty Clay A-6	2	1.6B	22				
	4						
358.7				333.7			
	25.0 1				50.0 WH		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

(1)

Route: ILL 13
Section:
County: Jackson

Sheet 2 of 3
Date: 10/20/2004

Boring No: 1-S
Station: 338+68
Offset: 28' LT WB CL
Ground Surface: 383.2 Ft

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Very stiff, moist, brown, Clay A7-6 with Sand Layers	1	2.6B	19	Medium, wet. brown. Clay A7-6	1	0.9B	52
	2				3		
328.7				303.7			
Stiff, very moist, grey, Clay A7-6 with Sand and Silt Loam Layers	55.0 1			Medium, very moist, brown, Clay A7-6 with Sand Layers	80.0 WH		
	3	1.8S	26		3	0.6B	25
	9				5		
	60.0 1				85.0		
	2	1.1B	35				
	6						
318.7				293.7			
Stiff, very moist, brown, Clay A7-6	65.0 2			Medium, wet, grey, fine to medium Sand 93% Sand 3% Silt 4% Clay	90.0 10		
	4	1.8S	32		13		21
	4				16		
313.7				288.7			
Very stiff, very moist, brown, Clay A7-6	70.0 3			Hard, dry, grey, Clay Shale over Coal	95.0 100/11"		
	6	2.1B	31	287.7			
	7			Bottom of hole = 95.5 ft Free water observed at 39.5 ft. Elevation referenced to Bk .E. Abut Sta 338+89 Elevation = 383.47 ft. To convert "N" values to "N60" valuesmultiply by 1.25.			
308.7							
	75.0 WH				100.0		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

(1)

Note:
(1) Only 2 Boring 1-S sheets.

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log
Sheet 1 of 2

ILL 13 EB Over Big Muddy River

Route: ILL 13 Structure Number: 039-0013 and 039-0049 Date: 10/5/2004
Section Bored By: Bryan Keller
County: Jackson Location: E. Edge of Murphysboro Checked By: Rob Graeff

Boring No 3-S
Station 339+94
Offset 30' LT CL
Ground Surface 353.7 Ft

Surf Wat Elev: 338.5
Ground Water Elevation
when Drilling 324.2
At Completion
At: 24 Hrs: 350.4

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Hard, damp, brown, Silty Clay A7-6				Medium, very moist, grey, Silty Clay A-6	WH	0.6B	28
					WH		
				326.7			
	2			Medium, very moist, grey, Clay	WH		
	8	4.5P	17	A7-6	WH	0.7B	26
	15				WH		
349.2				324.2			
Very stiff, damp to moist, brown, Silty Clay A7-6 5.0	2			Medium, very moist, grey, Clay 30.0	WH		
	3	2.5P	16	to Silty Clay A7-6 with	3	0.7B	32
	3			Sand layers	2		
346.7				321.7			
Stiff, moist, brown, Silty Clay	WH			Very loose, wet, grey, fine	WH		
to Clay A7-6	1	1.2B	17	Silty Sand with Silty Clay Layers	WH		24
	1			90% Sand; 7% Silt; 3% Clay	WH		
344.2				319.2			
Soft, very moist, grey, Clay to 10.0	WH			Mdium, wey, grey, Sandy 35.0	WH		
Silty Clay A7-6	1	0.4B	31	Gravel	9		14
	WH			45% Sand	8		
				11% Silt			
				3% Clay; 41% Gravel 316.7			
	WH			Loose, wet, grey, Sandy	4		
	WH	0.3B	33	Gravel	4		
	WH			45% Sand	4		
				11% Silt			
				3% Clay; 41% Gravel 314.2			
15.0	WH			Stiff, very moist, brown, Clay 40.0	1		
	WH	0.3B	31	A7-6 with some Gravel	1	1.2B	30
	WH				2		
336.7				309.2			
Soft to medium, very moist, grey,	WH						
Clay to Silty Clay A7-6	WH	0.5B	29				
	WH						
20.0	WH			Medium, very moist, grey, Clay 45.0	1		
	WH	0.5B	29	A7-6	2	0.8B	34
	WH				2		
331.7							
Soft, very moist, grey, Clay to	WH						
Silty Clay A7-6	WH	0.3B	30				
	WH						
329.2				304.2			
25.0	WH			50.0	WH		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 2 of 2

Route: ILL 13 Date: 10/5/2004
Section:
County: Jackson

Boring No: 3 S
Station: 339+94
Offset: 30' LT CL
Ground Surface: 353.7 Ft

DEPTH	BLOW	Qu tsf	W%		DEPTH	BLOW	Qu tsf	W%
Soft, wet, brown, Silty Clay	4	0.4B	27					
A7-6 with Silt Loam layers	3							
				Bottom of hole = 75.0 ft				
				Free water observed at 29.5 ft				
				Elevation referenced to Bk				
				East Abut Sta 338+89				
299.2				Elevation = 383.47 ft.				
Very loose, wet, grey, fine 55.0	1				80.0			
Silty Sand 298.2	1		18	To convert "N" values to "N60"				
Medium, wet, brown,	2	0.9B	43	values multiply by 1.25.				
Clay A7-6								
294.2								
Medium, very moist, brown, 60.0	2				85.0			
Clay A7-6	3	0.6B	29					
	7							
289.2								
Hard, dry, black Coal 65.0	100/5"				90.0			
Hard, dry, black Coal 70.0	100/3"				95.0			
Hard, dry, black Coal								
278.7	75.0	100/3"			100.0			

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 49 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	108
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation
Boring Log
Sheet 1 of 2

ILL 13 EB Over Big Muddy River

Route: ILL 13 Structure Number: 039-0013 and 039-0049 Date: 10/4/2004
Section Bored By: Bryan Keller
County: Jackson Location: E. Edge of Murphysboro Checked By: Rob Graeff

Boring No 5 S
Station 341+88
Offset 22' RT CL
Ground Surface 351.6 Ft

Surf Wat Elev: 338.5
Ground Water Elevation
when Drilling 312.1
At Completion
At: 24 Hrs: 346.4

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Stiff, very moist, brown, Silty Clay A-6				Medium, very moist, grey, Silty Clay to Clay A7-6	WH	0.6B	29
					WH		
	1				WH		
	3	1.6S	23		WH	0.8B	28
	3				1		
347.1							
Stiff, very moist, grey, Clay to Silty Clay A7-6 5.0	1			30.0	WH		
	3	1.2B	22		1	0.9B	25
	4				1		
344.6				319.6			
Very soft, wet, grey, Silty Clay A-6	WH			Medium to stiff, very moist, grey, Clay to Silty Clay A7-6	WH		
	1	0.2B	30		WH	1.0B	25
	1				3		
10.0	WH			317.1			
	1	0.2B	33	Stiff, very moist, grey, Clay A7-6 35.0	WH		
	1				1	1.1B	24
339.6					2		
Soft, wet, grey mottled brown, Silty Clay A-6	WH			314.6			
	WH	0.3B	29	Medium, very moist, brown, Clay A7-6 with Silt Loam seams	1		
	WH				2	0.9S	35
337.1					2		
Soft, wet, grey, Clay to Silty Clay A7-6 15.0	WH			312.1			
	WH	0.4B	30	Stiff, very moist, brown, Clay A7-6 with fine Sand layers 40.0	WH		
	WH				2	1.1S	27
334.6					2		
Medium, very moist, grey, Clay to Silty Clay A7-6	WH						
	WH	0.6B	27				
	WH						
332.1				307.1			
Soft, very moist, grey, Silty Clay Loam A-6 20.0	WH			Very stiff, very moist, grey, Clay Loam A-6 with Sand layers 45.0	3		
	WH	0.4B	27		6	2.6P	28
	WH				5		
329.6							
Medium, very moist, grey, Silty Clay to Clay A7-6	WH						
	WH	0.6B	27				
	WH						
				302.1			
25.0	WH			50.0	WH		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 2 of 2

Route: ILL 13 Date: 10/4/2004
Section:
County: Jackson

Boring No: 5-S
Station: 341+88
Offset: 22' RT CL
Ground Surface: 351.6 Ft

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Very loose, wet, grey, very fine Silty Sand 93% Sand 5% Silt 2% Clay	2		21				
	1						
297.1							
Stiff, wet, brown, Clay A7-6 with Sand layers 55.0	WH			80.0			
	4	1.1B	51				
	10						
292.1							
Medium, wet, grey, fine Sand with Gravel and Coal Chips 291.1 60.0	4		25	85.0			
	18						
Hard, dry, grey, weathered Clay Shale	49						
289.6							
Hard, dry, grey, Clay Shale over Coal 288.6	100/5"						
Bottom of hole = 63.0 ft.							
Free water observed at 39.5 ft. 65.0				90.0			
Elevation referenced to BK of W Abut Sta 343+06 CL Elevation = 383.47 ft.							
To convert "N" values to "N60" values multiply by 1.25.							
70.0				95.0			
75.0				100.0			

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 50 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	109
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation
Boring Log
Sheet 1 of 3

ILL 13 Over Big Muddy River

Route: ILL 13 Structure Number: 039-0013 and 039-0049 Date: 10/8/2004
Section: Bored By: Bryan Keller
County: Jackson Location: E. Edge of Murphysboro Checked By: Rob Graeff

Boring No 6-S
Station 343+17
Offset 22' RT EB CL
Ground Surface 383.0 Ft

Surf Wat Elev: 338.5
Ground Water Elevation
when Drilling 333
At Completion
At: 68 Hrs: 357.5

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Very stiff, damp, brown, Silty Clay A-6				Very stiff, moist, brown, Silty Clay A-6	3 4	2.1B	21
	1			356.0			
	4 8	2.5B	11	Soft, very moist, brown, Silty Clay loam A-6	WH 1 2	0.4B	24
				353.5			
5.0	2			Stiff, moist to very moist, grey, Clay A7-6	30.0 WH		
	4 3	2.1B	15		2 2	1.1B	21
376.0				351.0			
Very stiff, moist to very moist, brown, Silty Clay A-6	1			Medium, very moist, grey, Clay A7-6	WH		
	3 3	2.1B	20		2 2	0.9B	29
373.5							
Stiff, very moist, brown, Silty Clay A7-6 10.0	1			35.0	WH		
	2 2	1.1B	24		1 2	0.8B	29
371.0				346.0			
Stiff, moist to very moist, brown, Silty Clay to Silty Clay Loam A-6	1			Medium, very moist, brown mottled grey, Clay to Silty Clay A7-6	WH		
	3 4	1.3S	20		2 3	0.9B	27
				343.5			
15.0	1			Medium, very moist, grey, Clay A7-6	40.0 WH		
	2 4	1.3S	23		1 3	0.7B	26
366.0							
Medium, very moist, brown, Silty Clay Loam A-6	WH						
	2 2	0.7S	22				
363.5				338.5			
Medium, very moist, brown, Silty Clay to Silty Clay Loam A-6 20.0	WH			Stiff, very moist, brown, Clay A7-6	45.0 WH		
	1 1	0.6S	25		1 1	1.2S	31
361.0							
Medium, moist to very moist, grey, Clay Loam A-6	WH						
	3 3	0.9B	20				
358.5				333.5			
25.0	WH			50.0	WH		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 2 of 3

Route: ILL 13 Date: 10/8/2004
Section:
County: Jackson

Boring No: 6-S
Station: 343+17
Offset: 22' RT EB CL
Ground Surface: 383.0 Ft

DEPTH	BLOW	Qu tsf	W%		DEPTH	BLOW	Qu tsf	W%
Medium, very moist, brown, Clay A7-6	2 1	0.8S	28	Medium, very moist, brown, Clay A7-6 with Sand Layers		4 2	0.9B	32
328.5				303.5				
Stiff, very moist, brown, Clay A7-6 55.0	1			Loose to medium, wet, grey, fine Sand with Coal Chips and some Gravel 57% Sand 6% Silt 4% Clay 33% Gravel	80.0	4		
	1 1	1.4S	30			5 5		23
323.5								
Soft to medium, very moist, grey, Clay to Silty Clay A7-6 with Sand Layers 60.0	WH				85.0			
	2 2	0.5B	24					
318.5				293.5				
Stiff, very moist, brown, Clay A7-6 with Clay Loam and Sand Layers 65.0	4			Medium, wet, grey, Sandy Gravel 72% Sand; 15% Silt 6% Clay; 7% Gravel	90.0	4		
	7 4	1.3B	32			10 15		17
313.5				291.0				
Stiff, very moist, brown, Clay A7-6 with Sand Layers 70.0	WH			Hard, dry, black Coal		100/3"		
	3 3	1.1S	35		95.0			
308.5				Hard, dry, black Coal		100/5"		
75.0	1				100.0			

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 3 of 3

Route: ILL 13 Date: 10/8/2004
Section:
County: Jackson

Boring No: 6-S
Station: 343+17
Offset: 22' RT EB CL
Ground Surface: 383.0 Ft

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Hard, dry, black Clay Shale 280.5	100/3"						
Bottom of hole = 102.5 ft.							
Free water observed at 50.0 ft.							
105.0				130.0			
Elevation referenced to Bk W Abut Str # 039-0013 Sta 343+06 Elevation = 383.47							
To convert "N" values to "N60" values multiply by 1.25.							
110.0				135.0			
115.0				140.0			
120.0				145.0			
125.0				150.0			

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 51 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	110
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Page 1 of 1

Date 07/15/09

ROUTE FAP 331 **DESCRIPTION** Structure Replacement crossing Big Muddy River **LOGGED BY** SCI

SECTION 12-2B-2 **LOCATION** East of Murphysboro; SW 1/4, **SEC.** 3, **TWP.** 9S, **RNG.** 2W

COUNTY Jackson **DRILLING METHOD** CME 750 w/HSA **HAMMER TYPE** Automatic

STRUCT. NO. 039-0013
Station 340+71.00

BORING NO. B-101
Station 339+28
Offset 75 ft Lt EB
Ground Surface Elev. 363.0 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 345.0 ft ▼
Upon Completion - ft
After - **Hrs.** - ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SILTY CLAY: Brown (A-7)
				Classification of materials in upper 20 feet based on observation of augered cuttings.
-5				Temporary benchmark - brass disk at southeast corner of east abutment. USGS Topographic Map - El. 384
-10				
-15				
343.0 -20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				SILTY CLAY: Gray, some fine sand (A-6)
				ST pushed 20' to 22'. Recovery 22"; UU - 1.0 tsf; DD - 94.2 pcf; MC - 28%
				Becomes brownish gray, trace fine sand
				ST pushed 22' to 24'. Recovery 24"; UU - 1.2 tsf; DD - 92.9 pcf; MC - 29%
-25				Becomes gray, some fine sand 338.3
				SAND: Gray, fine (A-3)
				ST pushed 24' to 26'. 336.8 Recovery 23"; UU - 1.1 tsf; DD - 90.5 pcf; MC - 31% 336.0
				CLAY: Gray, trace fine sand (A-7)
				ST pushed from 26' to 28'. Recovery 23"; UU - 1.1 tsf; DD - 87.7 pcf; MC- 33%
-30				SILTY CLAY: Gray, some fine sand (A-6)
				Becomes maroon and gray
				Triaxial shear test performed on ST pushed from 28' to 30'; LL-25, PL-18, PI-7
				331.0 SAND: Maroon and gray, fine (A-3) 329.8
-35				SILTY CLAY: Maroon, some fine sand (A-6) 329.0
				ST pushed 32' to 34'. Recovery 23"; UU - 3.0 tsf; DD - 99.7 pcf; MC - 25%
				SAND: Brown, fine (A-3) 327.0
-40				Boring terminated at 36.0 ft.

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 7/13,14/2009

ROUTE FAP 331 DESCRIPTION Structure Replacement crossing Big Muddy River LOGGED BY SCI

SECTION 12-2B-2 LOCATION East of Murphysboro; SW 1/4, SEC. 3, TWP. 9S, RNG. 2W

COUNTY Jackson DRILLING METHOD CME 750 w/HSA HAMMER TYPE Automatic

STRUCT. NO. 039-0013
Station 340+71.00

BORING NO. B-104
Station 343+61
Offset 14 ft Rt EB
Ground Surface Elev. 383.0 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 343.0 ft ▼
Upon Completion - ft
After - Hrs. - ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
ASPHALT - 9 inches	382.3			
CRUSHED ROCK	382.0			
FILL: Brown, sandy clay, some gravel, cinders (A-4)	380.8	12 9 5	4.5 P	7
FILL: Brown, sandy clay (A-6)				
Becomes reddish brown		3 3 4	2.0 B	21
	-5			
	377.5			
FILL: Brown, silty clay, trace to some sand (A-7)		3 3 3	2.3 P	21
Poor recovery				
		1 2 4	1.5 P	24
	-10			
Temporary benchmark - brass disk at southeast corner of east abutment. USGS Topographic Map - El. 384		3 4 5	2.0 P	22
Poor recovery				
Becomes gray		1 3 4	1.7 B	29
Becomes brown and gray	-15			
	367.5			
FILL: Gray, silty clay (A-6)		2 3 5	1.2 B	23
Becomes brown and gray, trace to some sand		2 4 7	2.8 B	22
	363.0 -20			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
FILL: Brown, clay (A-7)		4 6 9	3.0 P	28
FILL: Gray, clayey silt (A-4)	361.5			
FILL: Gray, silty clay, trace to some sand (A-7)	360.0	1 3 5	1.4 B	25
	-25			
		3 4 8	2.3 P	22
SILTY CLAY: Gray (A-6)	355.0			
		1 1 3	0.6 B	25
	-30			
CLAY: Brown, trace sand (A-7)	351.0			
		2 4 4	1.2 B	24
SILTY CLAY: Brown (A-7)	348.8 -35			
CLAY: Gray and brown, trace shells (A-7)	346.0			
		3 5 6	3.1 S/10	44
	-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
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Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 7/13,14/2009

ROUTE FAP 331 DESCRIPTION Structure Replacement crossing Big Muddy River LOGGED BY SCI

SECTION 12-2B-2 LOCATION East of Murphysboro; SW 1/4, SEC. 3, TWP. 9S, RNG. 2W

COUNTY Jackson DRILLING METHOD CME 750 w/HSA HAMMER TYPE Automatic

STRUCT. NO. 039-0013
Station 340+71.00

BORING NO. B-104
Station 343+61
Offset 14 ft Rt EB
Ground Surface Elev. 383.0 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 343.0 ft ▼
Upon Completion - ft
After - Hrs. - ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	342.0			
SAND: Greenish gray, fine to medium (A-3)		WH 3 5	1.0 B	65
CLAY: Gray (A-7)	339.0			
Interbedded with of brown, clayey silt	-45			
Becomes brown and interbedded with brown, silty clay		2 3 3	0.4 B	33
	-50			
Interbedded with of brown, clayey silt		3 5 4	1.2 B	32
	-55			
Interbedded with brown, clayey silt and gray, fine to medium sand		2 4 7	0.6 B	40
	-60			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY: Gray (A-7) *(continued)*	321.0			
SANDY CLAY: Brown (A-6)		3 2 3	0.5 B	24
CLAY: Brown (A-7)	318.5 -65			
		3 3 3	1.1 B	29
	-70			
SAND: Gray, fine, some clay and with clay and sandy clay deposits (A-2)	311.0			
		5 6 9	-	
	-75			
CLAY: Brown (A-7)	306.0			
		13 14 13	3.8 P	25
	-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
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Illinois Department of Transportation
Division of Highways
SCI Engineering

SOIL BORING LOG

Date 7/13,14/2009

ROUTE FAP 331 DESCRIPTION Structure Replacement crossing Big Muddy River LOGGED BY SCI

SECTION 12-2B-2 LOCATION East of Murphysboro; SW 1/4, SEC. 3, TWP. 9S, RNG. 2W

COUNTY Jackson DRILLING METHOD CME 750 w/HSA HAMMER TYPE Automatic

STRUCT. NO. 039-0013
Station 340+71.00

BORING NO. B-104
Station 343+61
Offset 14 ft Rt EB
Ground Surface Elev. 383.0 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 343.0 ft ▼
Upon Completion - ft
After - Hrs. - ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND: Bluish gray, greenish gray, and gray, fine to coarse, trace weathered shale fragments and gravel (A-1) *(continued)*	301.0			
SAND: Greenish gray and gray, fine to medium, trace fine gravel (A-3)		11 17 16	-	
	-85			
Becomes brown		13 12 12	-	25
CLAY: Brown, with trace limestone fragments (A-7)	293.8 -90			
COAL	291.5			
		50/1.5" 50/1"	-	37
	-95			
		50/2" 50/0.5"	-	24
CLAYEY SHALE: Grayish brown	285.0			
	284.0	50/5"	-	13
Boring terminated at 99.0 ft.		50/1.5"		
	-100			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NO. 039-0075 (E.B.)
SHEET NO. 53 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	112
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

Bench Mark: F-291. NGS Monument on east abutment of S.N. 039-0013, 22' left of Sta. 339+04, Elev. 373.18.

Existing Structure: S.N. 039-0049 was originally built in 1974 along F.A. 14, Section 12-2B-2. The back to back abutment length is 416'-5" and the out-to-out deck width is 42'-0". The structure consists of a three span continuous steel plate girder superstructure horizontally curved supported on pile stub abutments and solid wall piers. Structure to be removed and replaced.

Traffic Control: Traffic will be maintained by providing a temporary crossover from the existing eastbound roadway to the existing westbound structure for Stage I. Upon completion of the new eastbound structure, traffic will be maintained with a temporary crossover from the existing westbound roadway to the eastbound structure for Stage II.

Salvage: None

Notes:
1. Bridge Fence Railing, Std. R-33 on north side of structure and light poles not shown for clarity.
2. Measured radially.
3. For Section A-A, see sheet 2 of 53.
4. DS-11 Drainage Scuppers to be located on the south side only at each end of the structure.
5. For light pole locations, pole heights, and anchor bolt patterns, see Lighting Plan Details.
6. Slope 1:2 (V:H) at right angles to abutment along face of wingwalls, typical.
7. Permanent Ground Anchor and Tie Rod, typical.

DESIGN SPECIFICATIONS

2010 AASHTO LRFD Bridge Design Specifications

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (AASHTO M 270 Grade 50W)
fy = 50,000 psi (AASHTO M 270 Grade 50)
fy = 150,000 psi (AASHTO M 275 Grade 150)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.35g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.82g
Soil Site Class = D

LOADING HL-93

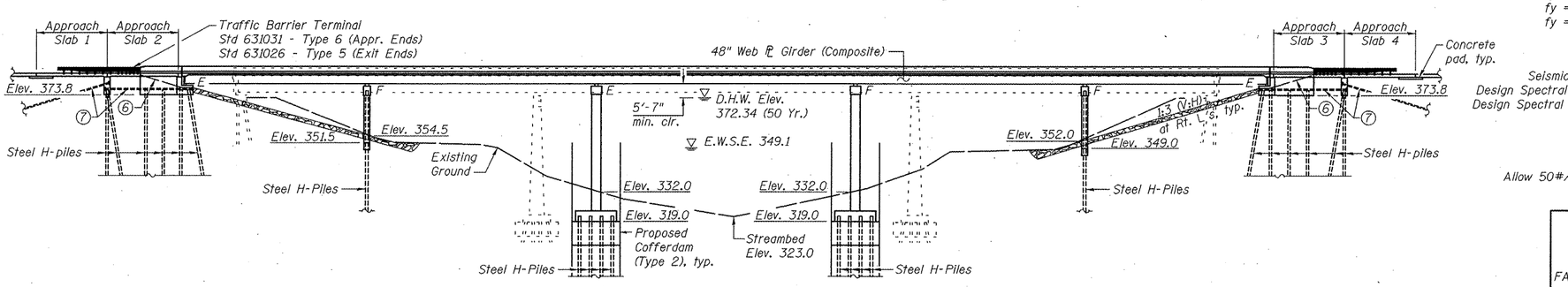
Allow 50#/sq. ft. for future wearing surface.

STATION 340+69.53
BUILT 20__ BY
STATE OF ILLINOIS
FAP ROUTE 331 SEC (12-1)B-1
LOADING HL-93
STRUCTURE NO. 039-0076

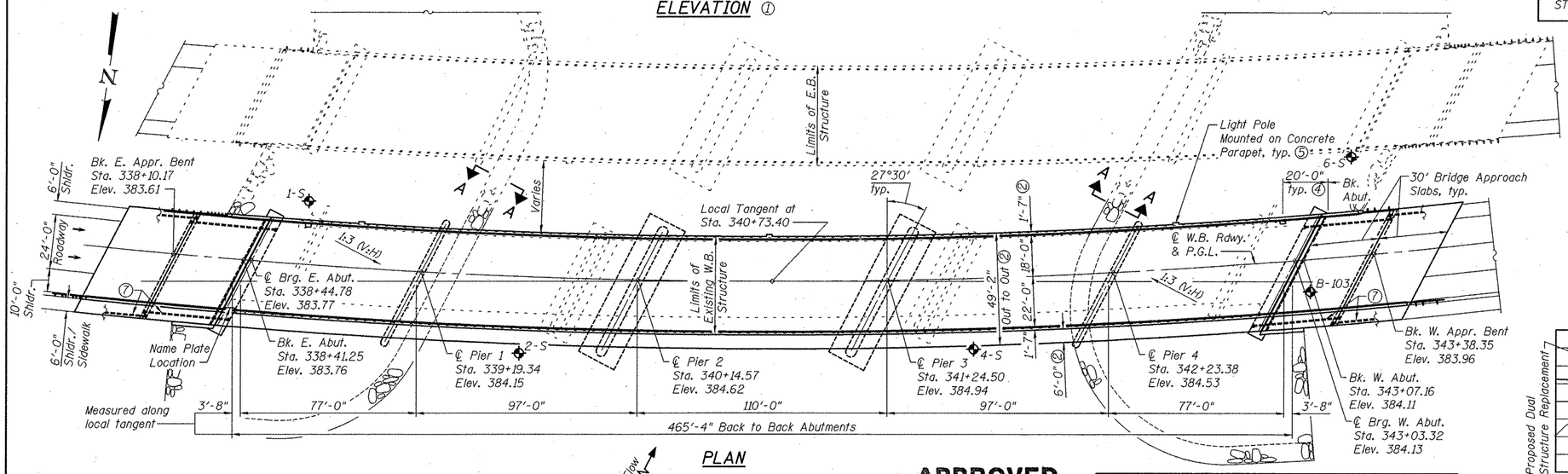
NAME PLATE

See Std. 515001

ELEVATION ①



PLAN



WATERWAY INFORMATION

Drainage Area = 2,159 Sq. Mi.
Exist. Low Grade Elev. 382.5 @ Sta. 337+50
Prop. Low Grade Elev. 382.5 @ Sta. 337+50

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	26,344	7,286	7,458	366.94	0.05	0.05	366.99	366.99
Design	50	38,509	9,259	9,562	372.34	0.08	0.07	372.42	372.41
Base	100	43,714	10,054	10,601	374.84	0.23	0.14	375.07	374.98
Overtopping	-	-	-	-	-	-	-	-	-
Max. Calc.	500	55,669	10,054	11,926	378.10	0.27	0.18	378.37	378.28

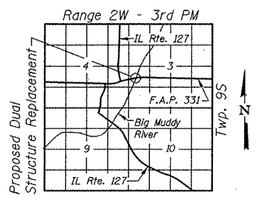
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	E. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	W. Abut.
	373.8	349.1	314.8	314.8	345.0	373.8

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

Plans prepared by Oates Associates, Inc. Sheets 1-12, 18-24 & 27-53 of 53
Exp. 11-30-12
LICENSED STRUCTURAL ENGINEER * DANIEL GEORGE LUTZ 081 006772 * STATE OF ILLINOIS
1-24-12

Plans prepared by Coombe-Bloxdorf P.C. Sheets 13-17 & 25-26 of 53
Exp. 11-30-12
LICENSED STRUCTURAL ENGINEER * MARY COOMBE BLOXDORF 4859 SPRINGFIELD * STATE OF ILLINOIS
1-23-12



LOCATION SKETCH

GENERAL PLAN & ELEVATION
IL RTE. 13 OVER BIG MUDDY RIVER
F.A.P. RTE. 331 - SEC. (12-1)B-1
JACKSON COUNTY
STATION 340+69.53 (W.B.)
STRUCTURE NO. 039-0076 (W.B.)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	113
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts in painted areas and M164 Type 3 in unpainted areas. Bolts $\frac{7}{8}$ in. ϕ, holes $\frac{15}{16}$ in. ϕ, unless otherwise noted.

Calculated weight of Structural Steel = AASHTO M 270 Grade 50W = 627,070 pounds

All structural steel shall be AASHTO M 270 Grade 50W except expansion joints which shall be AASHTO M 270 Grade 50.

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

Concrete Sealer shall be applied to the designated areas of the abutments.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

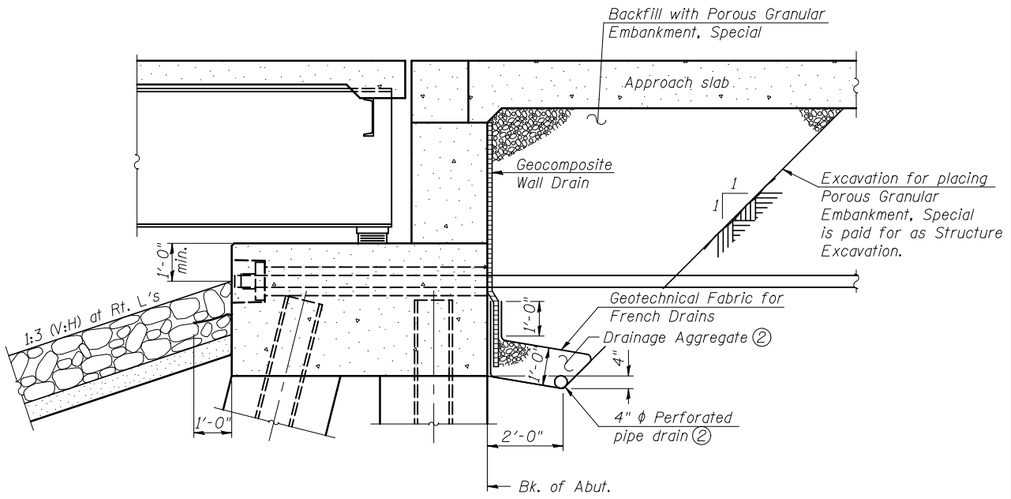
All structural steel and exposed surfaces of bearings within a distance of 10 ft. each way from the deck joints shall be painted.

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

Slipforming of the parapets is not allowed.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	SUPER	SUB	TOTAL
(3)	Stone Riprap, Class A4	Sq. Yd.	-	2,445	2,445
(3)	Filter Fabric	Sq. Yd.	-	2,445	2,445
	Removal of Existing Structures	Each	-	-	1
	Structure Excavation	Cu. Yd.	-	1,238	1,238
	Cofferdam Excavation	Cu. Yd.	-	2,514	2,514
	Cofferdam (Type 2) (Location-3)	Each	-	1	1
	Cofferdam (Type 2) (Location-4)	Each	-	1	1
	Concrete Structures	Cu. Yd.	-	2,133.9	2,133.9
	Concrete Superstructure	Cu. Yd.	995.3	-	995.3
	Bridge Deck Grooving	Sq. Yd.	2,467	-	2,467
	Seal Coat Concrete	Cu. Yd.	-	1,093.4	1,093.4
	Concrete Encasement	Cu. Yd.	-	31.8	31.8
	Protective Coat	Sq. Yd.	3,654	-	3,654
	Furnishing and Erecting Structural Steel	L. Sum	0.5	-	0.5
	Stud Shear Connectors	Each	8,136	-	8,136
	Reinforcement Bars, Epoxy Coated	Pound	292,890	354,310	647,200
	Bar Splicers	Each	-	108	108
	Bridge Fence Railing (Sidewalk)	Foot	575	-	575
	Parapet Railing	Foot	571	-	571
	Furnishing Steel Piles HP14x73	Foot	-	5,208	5,208
	Furnishing Steel Piles HP14x89	Foot	-	4,995	4,995
	Driving Piles	Foot	-	10,203	10,203
	Test Pile Steel HP14x73	Each	-	4	4
	Test Pile Steel HP14x89	Each	-	2	2
	Name Plates	Each	1	-	1
	Preformed Joint Strip Seal	Foot	122	-	122
	Elastomeric Bearing Assembly, Type I	Each	6	-	6
	Elastomeric Bearing Assembly, Type II	Each	12	-	12
	Anchor Bolts, 1"	Each	60	-	60
	Anchor Bolts, $1\frac{1}{2}$"	Each	12	-	12
	Concrete Sealer	Sq. Ft.	-	1,325	1,325
	Geocomposite Wall Drain	Sq. Yd.	-	108	108
	Drainage Scuppers, DS-11	Each	2	-	2
	Pipe Underdrains for Structures 4"	Foot	180	-	180
	Permanent Ground Anchor	Each	-	16	16
	Porous Granular Embankment, Special	Cu. Yd.	-	245	245
	Mechanical Splicers	Each	-	1,688	1,688
	Tie Rod	Each	-	16	16



SECTION THRU PILE SUPPORTED STUB ABUTMENT (1)

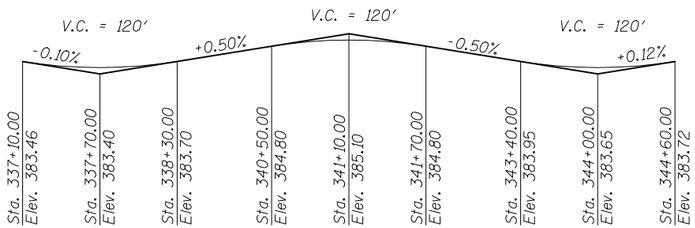
(Horiz. dim. at Rt. L's)

CURVE DATA - IL RTE. 13 (W.B.)

Δ = 20°22'01"
D = 2°00'28"
R = 2,853.59'
T = 512.59'
L = 1,014.37'
E = 45.67'
S.E. = 0.025'/'
P.C. Sta. = 336+80.97
P.I. Sta. = 341+93.56
P.T. Sta. = 346+95.33

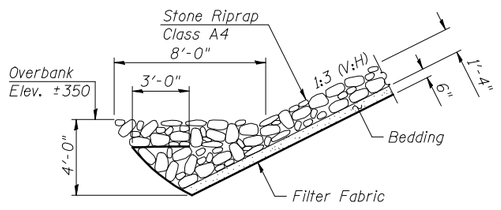
INDEX OF SHEETS

Sheet No.	Description
1	General Plan & Elevation
2	General Data
3	Footing Layout
4	Construction Details
5-8	Top of Slab Elevations
9-12	Top of Approach Slab Elevations
13-14	Superstructure
15-17	Superstructure Details
18-23	Bridge Approach Slab Details
24	Bridge Fence Railing, Sidewalk Mounted
25	Preformed Joint Strip Seal
26	Drainage Scupper, DS-11
27	Framing Plan and Girder Details
28-29	Girder Details
30-31	Bearing Details
32	East Approach Bent Details
33	West Approach Bent Details
34-36	East Abutment Details
37-39	West Abutment Details
40	Tie Rod and Permanent Ground Anchor Details
41	Pier 1 Details
42-43	Pier 2 Details
44-45	Pier 3 Details
46	Pier 4 Details
47	HP Pile Details
48	Bar Splicer Assembly and Mechanical Splicer Details
49-53	Soil Boring Logs

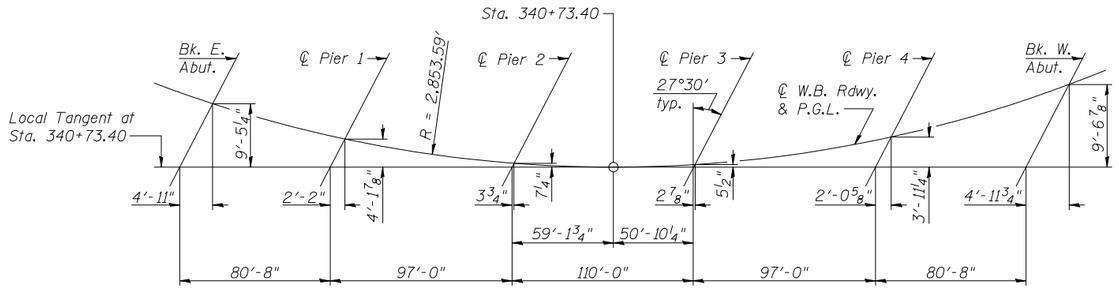


PROFILE GRADE - IL RTE. 13 (W.B.)

(along ℄ roadway)



SECTION A-A



OFFSET SKETCH - IL RTE. 13 (W.B.)

Notes:
(1) All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls. The pipe shall extend under the wingwall until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).
(2) Included in the cost of Pipe Underdrains for Structures 4".
(3) Quantity is total assumed to be placed during construction of S.N. 039-0076. Actual quantity as directed by the Engineer.

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STATE OF ILLINOIS
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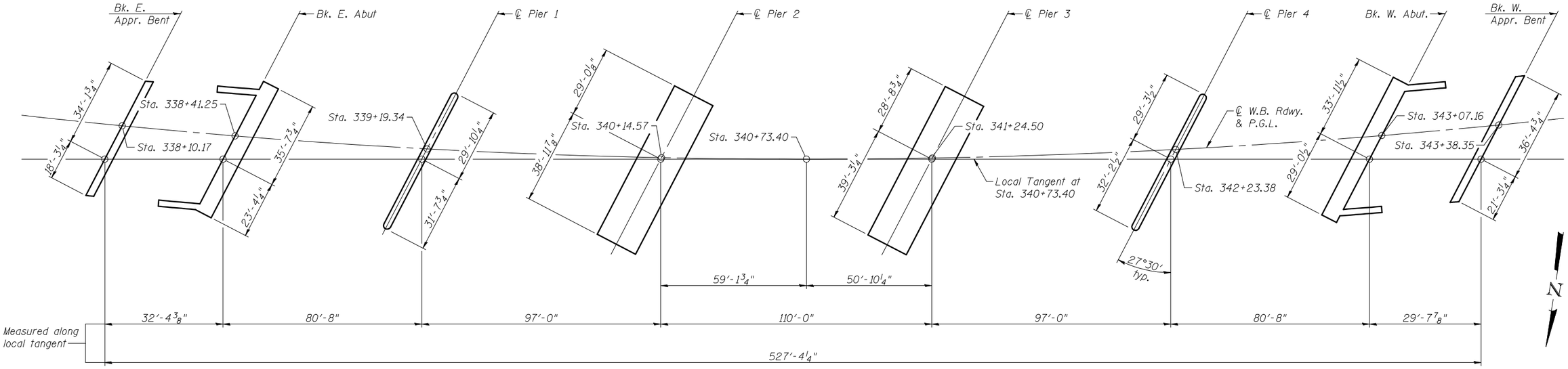
GENERAL DATA
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 2 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	114
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



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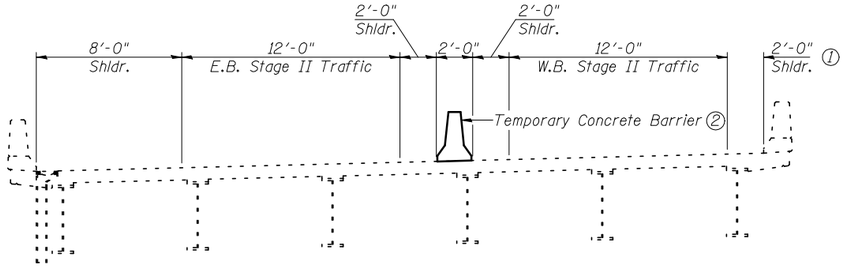
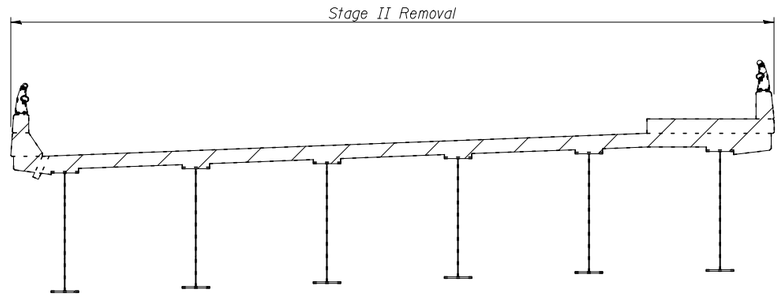
FOOTING LAYOUT
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 3 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	115
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



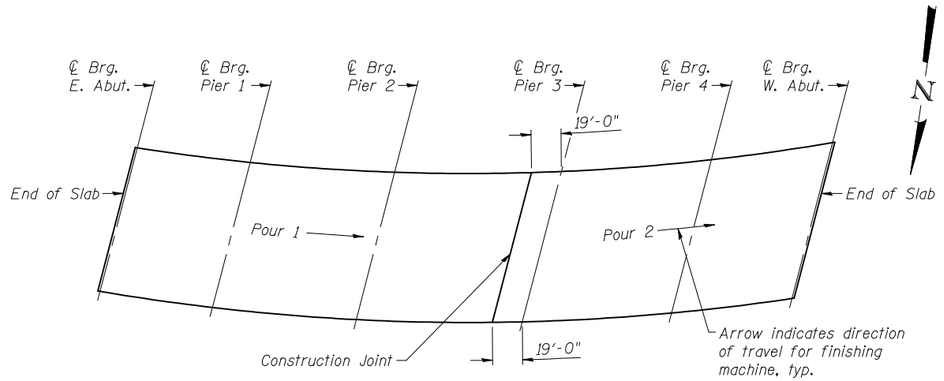
EASTBOUND



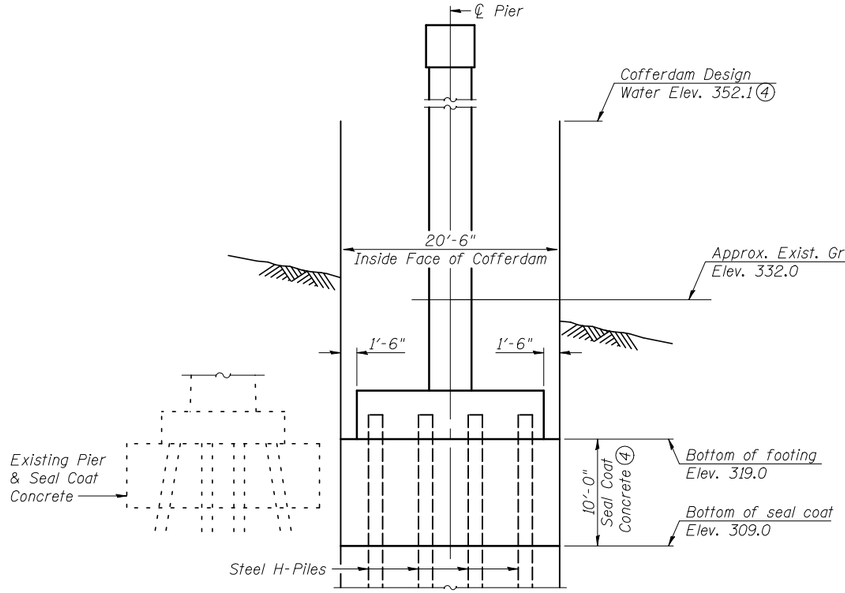
WESTBOUND

STAGE II REMOVAL & TRAFFIC STAGING

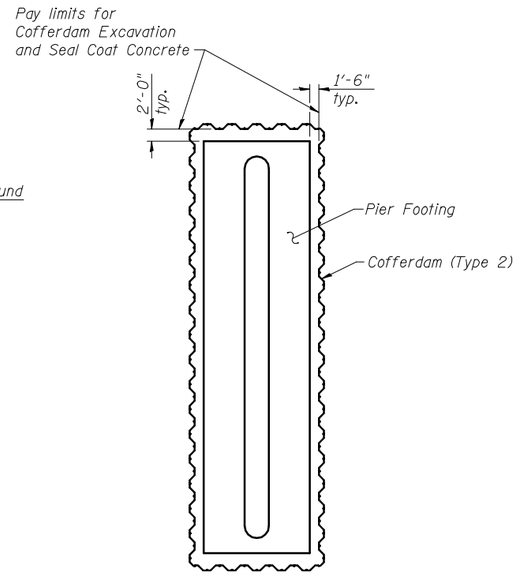
(Looking West)



DECK POURING SEQUENCE



COFFERDAM DETAIL



COFFERDAM PLAN

Notes:

① Measured radially, typ.

② See roadway plans for quantity of Temporary Concrete Barrier and related traffic control.

③ When the deck pour is stopped for the day at the transverse bonded construction joint in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:
1) At least 72 hours shall have elapsed from the end of the previous pour.
2) The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

④ Seal coat thickness design is based on the Cofferdam Design Water Elevation shown. Cofferdam design details and proposed changes in seal coat thickness shall be submitted to the Engineer for approval with the cofferdam design. See Special Provisions.

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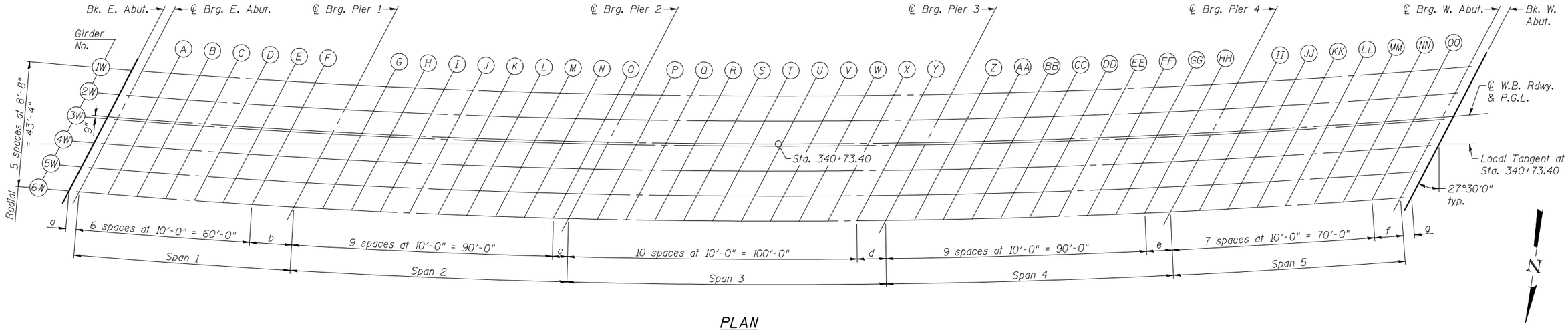
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS
STRUCTURE NO. 039-0076 (W.B.)

SHEET NO. 4 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	116
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

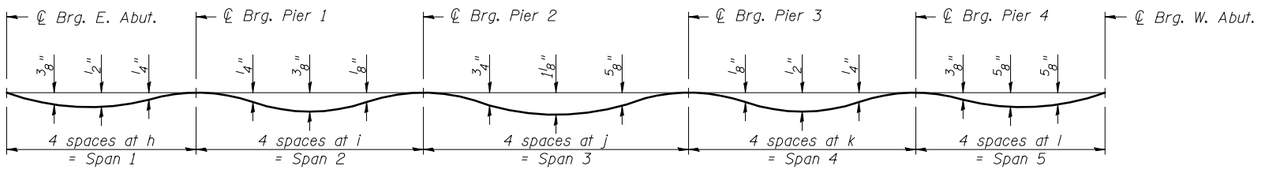


PLAN

DIMENSION TABLE ①

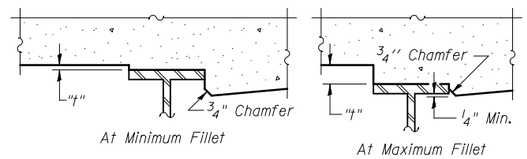
Girder	Radius	Span 1	Span 2	Span 3	Span 4	Span 5	a	b	c	d	e	f	g	h	i	j	k	l
1W	2837.01'	74'-7 13/16"	95'-4 3/16"	110'-1 1/4"	99'-0 13/16"	80'-1 7/16"	3'-6 3/8"	14'-7 13/16"	5'-4 3/16"	10'-1 1/4"	9'-0 13/16"	10'-1 7/16"	3'-10 3/16"	18'-7 15/16"	23'-10 1/16"	27'-6 5/16"	24'-9 3/16"	20'-0 3/8"
2W	2845.68'	74'-7 5/16"	95'-3 3/8"	110'-0 1/8"	98'-11 5/8"	80'-0 3/8"	3'-6 3/8"	14'-7 5/16"	5'-3 3/8"	10'-0 1/8"	8'-11 5/8"	10'-0 3/8"	3'-10 1/8"	18'-7 13/16"	23'-9 7/8"	27'-6 1/16"	24'-8 15/16"	20'-0 1/8"
℄ Rdwy.	2853.59'	74'-6 3/4"	95'-2 11/16"	109'-11 7/8"	98'-10 9/16"	79'-11 3/8"	3'-6 5/16"	14'-6 3/4"	5'-2 11/16"	9'-11 7/8"	8'-10 9/16"	9'-11 3/8"	3'-10 1/16"	18'-7 11/16"	23'-9 11/16"	27'-5 3/4"	24'-8 5/8"	19'-11 13/16"
3W	2854.34'	74'-6 13/16"	95'-2 5/8"	109'-11 1/16"	98'-10 1/16"	79'-11 1/4"	3'-6 5/16"	14'-6 13/16"	5'-2 5/8"	9'-11 1/16"	8'-10 1/16"	9'-11 1/4"	3'-10 1/16"	18'-7 11/16"	23'-9 11/16"	27'-5 3/4"	24'-8 5/8"	19'-11 13/16"
4W	2863.01'	74'-6 1/4"	95'-1 13/16"	109'-10"	98'-9 5/16"	79'-10 3/16"	3'-6 5/16"	14'-6 1/4"	5'-1 13/16"	9'-10"	8'-9 5/16"	9'-10 3/16"	3'-10"	18'-7 9/16"	23'-9 7/16"	27'-5 1/2"	24'-8 5/16"	19'-11 9/16"
5W	2871.68'	74'-5 3/4"	95'-1 1/16"	109'-8 15/16"	98'-8 3/16"	79'-9 1/8"	3'-6 5/16"	14'-5 3/4"	5'-1 1/16"	9'-8 15/16"	8'-8 3/16"	9'-9 1/8"	3'-9 15/16"	18'-7 7/16"	23'-9 1/4"	27'-5 1/4"	24'-8 1/16"	19'-11 5/16"
6W	2880.34'	74'-5 1/4"	95'-0 5/16"	109'-7 1/8"	98'-7 1/16"	79'-8 1/8"	3'-6 1/4"	14'-5 1/4"	5'-0 5/16"	9'-7 1/8"	8'-7 1/16"	9'-8 1/8"	3'-9 1/8"	18'-7 5/16"	23'-9 1/16"	27'-5"	24'-7 3/4"	19'-11"

Notes:
① Horizontal dimensions are taken along centerline of each individual girder.
② The Girder Dead Load Deflections are not to be used in the field if the Engineer is working from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" as shown on sheets 6 thru 8 of 53.
③ To determine "f": After all structural steel has been erected, elevations of the top flanges of the girders shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 6 thru 8 of 53, minus slab thickness, equals the fillet heights "f" above top flange of girders.



DEAD LOAD DEFLECTION DIAGRAM ②

(Includes weight of concrete only.)



FILLET HEIGHTS ③

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TOP OF SLAB ELEVATIONS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 5 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	117
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

GIRDER 1W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	338+48.28	-16.58	383.38	383.38
℄ Brg. E. Abut.	338+51.83	-16.58	383.39	383.39
A	338+61.89	-16.58	383.44	383.47
B	338+71.95	-16.58	383.50	383.54
C	338+82.00	-16.58	383.55	383.60
D	338+92.06	-16.58	383.60	383.64
E	339+02.12	-16.58	383.65	383.68
F	339+12.18	-16.58	383.70	383.71
℄ Brg. Pier 1	339+26.92	-16.58	383.77	383.77
G	339+36.98	-16.58	383.82	383.83
H	339+47.03	-16.58	383.87	383.89
I	339+57.09	-16.58	383.92	383.95
J	339+67.15	-16.58	383.97	384.01
K	339+77.21	-16.58	384.02	384.06
L	339+87.27	-16.58	384.07	384.10
M	339+97.33	-16.58	384.12	384.14
N	340+07.39	-16.58	384.17	384.18
O	340+17.44	-16.58	384.22	384.22
℄ Brg. Pier 2	340+22.82	-16.58	384.25	384.25
P	340+32.88	-16.58	384.30	384.32
Q	340+42.94	-16.58	384.35	384.39
R	340+53.00	-16.58	384.40	384.47
S	340+63.06	-16.58	384.44	384.53
T	340+73.12	-16.58	384.48	384.58
U	340+83.17	-16.58	384.51	384.61
V	340+93.23	-16.58	384.52	384.61
W	341+03.29	-16.58	384.53	384.60
X	341+13.35	-16.58	384.53	384.58
Y	341+23.41	-16.58	384.53	384.54
℄ Brg. Pier 3	341+33.57	-16.58	384.51	384.51
Z	341+43.63	-16.58	384.49	384.49
AA	341+53.69	-16.58	384.46	384.47
BB	341+63.75	-16.58	384.42	384.44
CC	341+73.80	-16.58	384.37	384.41
DD	341+83.86	-16.58	384.32	384.36
EE	341+93.92	-16.58	384.27	384.31
FF	342+03.98	-16.58	384.22	384.25
GG	342+14.04	-16.58	384.17	384.18
HH	342+24.10	-16.58	384.11	384.12
℄ Brg. Pier 4	342+33.22	-16.58	384.07	384.07
II	342+43.27	-16.58	384.02	384.03
JJ	342+53.33	-16.58	383.97	384.00
KK	342+63.39	-16.58	383.92	383.97
LL	342+73.45	-16.58	383.87	383.93
MM	342+83.51	-16.58	383.82	383.88
NN	342+93.57	-16.58	383.77	383.82
OO	343+03.62	-16.58	383.72	383.75
℄ Brg. W. Abut.	343+13.81	-16.58	383.67	383.67
Bk. W. Abut.	343+17.68	-16.58	383.65	383.65

GIRDER 2W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	338+44.59	-7.92	383.58	383.58
℄ Brg. E. Abut.	338+48.13	-7.92	383.59	383.59
A	338+58.16	-7.92	383.64	383.67
B	338+68.19	-7.92	383.69	383.73
C	338+78.21	-7.92	383.74	383.79
D	338+88.24	-7.92	383.79	383.83
E	338+98.27	-7.92	383.84	383.87
F	339+08.30	-7.92	383.89	383.91
℄ Brg. Pier 1	339+22.95	-7.92	383.97	383.97
G	339+32.98	-7.92	384.02	384.02
H	339+43.00	-7.92	384.07	384.08
I	339+53.03	-7.92	384.12	384.14
J	339+63.06	-7.92	384.17	384.20
K	339+73.09	-7.92	384.22	384.25
L	339+83.11	-7.92	384.27	384.29
M	339+93.14	-7.92	384.32	384.33
N	340+03.17	-7.92	384.37	384.37
O	340+13.20	-7.92	384.42	384.42
℄ Brg. Pier 2	340+18.49	-7.92	384.44	384.44
P	340+28.52	-7.92	384.49	384.51
Q	340+38.55	-7.92	384.54	384.58
R	340+48.58	-7.92	384.60	384.66
S	340+58.61	-7.92	384.64	384.73
T	340+68.63	-7.92	384.68	384.78
U	340+78.66	-7.92	384.71	384.81
V	340+88.69	-7.92	384.73	384.82
W	340+98.72	-7.92	384.75	384.81
X	341+08.75	-7.92	384.75	384.79
Y	341+18.77	-7.92	384.75	384.76
℄ Brg. Pier 3	341+28.81	-7.92	384.74	384.74
Z	341+38.84	-7.92	384.72	384.72
AA	341+48.87	-7.92	384.69	384.70
BB	341+58.90	-7.92	384.65	384.67
CC	341+68.92	-7.92	384.61	384.64
DD	341+78.95	-7.92	384.56	384.59
EE	341+88.98	-7.92	384.51	384.54
FF	341+99.01	-7.92	384.46	384.48
GG	342+09.04	-7.92	384.41	384.42
HH	342+19.06	-7.92	384.36	384.36
℄ Brg. Pier 4	342+28.06	-7.92	384.31	384.31
II	342+38.08	-7.92	384.26	384.27
JJ	342+48.11	-7.92	384.21	384.24
KK	342+58.14	-7.92	384.16	384.21
LL	342+68.17	-7.92	384.11	384.17
MM	342+78.19	-7.92	384.06	384.12
NN	342+88.22	-7.92	384.01	384.06
OO	342+98.25	-7.92	383.96	383.99
℄ Brg. W. Abut.	343+08.31	-7.92	383.91	383.91
Bk. W. Abut.	343+12.16	-7.92	383.89	383.89

℄ W.B. RDWY. & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	338+41.25	0.00	383.76	383.76
℄ Brg. E. Abut.	338+44.78	0.00	383.77	383.77
A	338+54.78	0.00	383.82	383.84
B	338+64.78	0.00	383.87	383.91
C	338+74.78	0.00	383.92	383.96
D	338+84.78	0.00	383.97	384.01
E	338+94.78	0.00	384.02	384.05
F	339+04.78	0.00	384.07	384.09
℄ Brg. Pier 1	339+19.34	0.00	384.15	384.15
G	339+29.34	0.00	384.20	384.20
H	339+39.34	0.00	384.25	384.26
I	339+49.34	0.00	384.30	384.32
J	339+59.34	0.00	384.35	384.37
K	339+69.34	0.00	384.40	384.42
L	339+79.34	0.00	384.45	384.47
M	339+89.34	0.00	384.50	384.51
N	339+99.34	0.00	384.55	384.55
O	340+09.34	0.00	384.60	384.60
℄ Brg. Pier 2	340+14.57	0.00	384.62	384.62
P	340+24.57	0.00	384.67	384.69
Q	340+34.57	0.00	384.72	384.76
R	340+44.57	0.00	384.77	384.83
S	340+54.57	0.00	384.82	384.90
T	340+64.57	0.00	384.86	384.95
U	340+74.57	0.00	384.90	384.99
V	340+84.57	0.00	384.92	385.00
W	340+94.57	0.00	384.94	385.00
X	341+04.57	0.00	384.95	384.98
Y	341+14.57	0.00	384.95	384.96
℄ Brg. Pier 3	341+24.50	0.00	384.94	384.94
Z	341+34.50	0.00	384.93	384.93
AA	341+44.50	0.00	384.90	384.91
BB	341+54.50	0.00	384.87	384.88
CC	341+64.50	0.00	384.83	384.85
DD	341+74.50	0.00	384.78	384.81
EE	341+84.50	0.00	384.73	384.76
FF	341+94.50	0.00	384.68	384.70
GG	342+04.50	0.00	384.63	384.64
HH	342+14.50	0.00	384.58	384.58
℄ Brg. Pier 4	342+23.38	0.00	384.53	384.53
II	342+33.38	0.00	384.48	384.49
JJ	342+43.38	0.00	384.43	384.46
KK	342+53.38	0.00	384.38	384.42
LL	342+63.38	0.00	384.33	384.39
MM	342+73.38	0.00	384.28	384.34
NN	342+83.38	0.00	384.23	384.28
OO	342+93.38	0.00	384.18	384.21
℄ Brg. W. Abut.	343+03.32	0.00	384.13	384.13
Bk. W. Abut.	343+07.16	0.00	384.11	384.11

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 6 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	118
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

GIRDER 3W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	338+40.93	0.75	383.77	383.77
℄ Brg. E. Abut.	338+44.46	0.75	383.79	383.79
A	338+54.46	0.75	383.84	383.86
B	338+64.45	0.75	383.89	383.93
C	338+74.45	0.75	383.94	383.98
D	338+84.45	0.75	383.99	384.03
E	338+94.45	0.75	384.04	384.07
F	339+04.44	0.75	384.09	384.11
℄ Brg. Pier 1	339+19.00	0.75	384.16	384.16
G	339+29.00	0.75	384.21	384.22
H	339+39.00	0.75	384.26	384.27
I	339+49.00	0.75	384.31	384.33
J	339+58.99	0.75	384.36	384.39
K	339+68.99	0.75	384.41	384.44
L	339+78.99	0.75	384.46	384.48
M	339+88.99	0.75	384.51	384.52
N	339+98.98	0.75	384.56	384.57
O	340+08.98	0.75	384.61	384.61
℄ Brg. Pier 2	340+14.20	0.75	384.64	384.64
P	340+24.19	0.75	384.69	384.71
Q	340+34.19	0.75	384.74	384.78
R	340+44.19	0.75	384.79	384.85
S	340+54.19	0.75	384.84	384.92
T	340+64.18	0.75	384.88	384.97
U	340+74.18	0.75	384.92	385.00
V	340+84.18	0.75	384.94	385.02
W	340+94.17	0.75	384.96	385.02
X	341+04.17	0.75	384.97	385.00
Y	341+14.17	0.75	384.97	384.98
℄ Brg. Pier 3	341+24.09	0.75	384.96	384.96
Z	341+34.09	0.75	384.94	384.94
AA	341+44.08	0.75	384.92	384.93
BB	341+54.08	0.75	384.89	384.91
CC	341+64.08	0.75	384.85	384.87
DD	341+74.08	0.75	384.80	384.83
EE	341+84.07	0.75	384.75	384.78
FF	341+94.07	0.75	384.70	384.72
GG	342+04.07	0.75	384.65	384.66
HH	342+14.06	0.75	384.60	384.60
℄ Brg. Pier 4	342+22.93	0.75	384.55	384.55
II	342+32.93	0.75	384.50	384.51
JJ	342+42.93	0.75	384.45	384.48
KK	342+52.93	0.75	384.40	384.45
LL	342+62.92	0.75	384.35	384.41
MM	342+72.92	0.75	384.30	384.36
NN	342+82.92	0.75	384.25	384.30
OO	342+92.91	0.75	384.20	384.23
℄ Brg. W. Abut.	343+02.85	0.75	384.15	384.15
Bk. W. Abut.	343+06.69	0.75	384.14	384.14

GIRDER 4W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	338+37.30	9.42	383.97	383.97
℄ Brg. E. Abut.	338+40.81	9.42	383.99	383.99
A	338+50.78	9.42	384.04	384.06
B	338+60.74	9.42	384.09	384.12
C	338+70.71	9.42	384.14	384.18
D	338+80.68	9.42	384.19	384.23
E	338+90.65	9.42	384.24	384.27
F	339+00.61	9.42	384.29	384.30
℄ Brg. Pier 1	339+15.09	9.42	384.36	384.36
G	339+25.05	9.42	384.41	384.41
H	339+35.02	9.42	384.46	384.47
I	339+44.99	9.42	384.51	384.53
J	339+54.96	9.42	384.56	384.58
K	339+64.92	9.42	384.61	384.63
L	339+74.89	9.42	384.66	384.68
M	339+84.86	9.42	384.71	384.72
N	339+94.82	9.42	384.76	384.76
O	340+04.79	9.42	384.81	384.81
℄ Brg. Pier 2	340+09.93	9.42	384.84	384.84
P	340+19.89	9.42	384.88	384.90
Q	340+29.86	9.42	384.93	384.97
R	340+39.83	9.42	384.98	385.04
S	340+49.79	9.42	385.03	385.11
T	340+59.76	9.42	385.08	385.17
U	340+69.73	9.42	385.12	385.21
V	340+79.70	9.42	385.15	385.23
W	340+89.66	9.42	385.17	385.23
X	340+99.63	9.42	385.18	385.22
Y	341+09.60	9.42	385.19	385.20
℄ Brg. Pier 3	341+19.40	9.42	385.18	385.18
Z	341+29.36	9.42	385.17	385.17
AA	341+39.33	9.42	385.15	385.16
BB	341+49.30	9.42	385.12	385.14
CC	341+59.27	9.42	385.08	385.11
DD	341+69.23	9.42	385.04	385.07
EE	341+79.20	9.42	384.99	385.02
FF	341+89.17	9.42	384.94	384.96
GG	341+99.13	9.42	384.89	384.90
HH	342+09.10	9.42	384.84	384.84
℄ Brg. Pier 4	342+17.85	9.42	384.80	384.80
II	342+27.81	9.42	384.75	384.76
JJ	342+37.78	9.42	384.70	384.72
KK	342+47.75	9.42	384.65	384.69
LL	342+57.72	9.42	384.60	384.65
MM	342+67.68	9.42	384.55	384.60
NN	342+77.65	9.42	384.50	384.54
OO	342+87.62	9.42	384.45	384.47
℄ Brg. W. Abut.	342+97.44	9.42	384.40	384.40
Bk. W. Abut.	343+01.26	9.42	384.38	384.38

GIRDER 5W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	338+33.68	18.08	384.17	384.17
℄ Brg. E. Abut.	338+37.19	18.08	384.19	384.19
A	338+47.12	18.08	384.24	384.26
B	338+57.06	18.08	384.29	384.32
C	338+67.00	18.08	384.34	384.38
D	338+76.93	18.08	384.39	384.43
E	338+86.87	18.08	384.44	384.47
F	338+96.81	18.08	384.49	384.50
℄ Brg. Pier 1	339+11.20	18.08	384.56	384.56
G	339+21.13	18.08	384.61	384.61
H	339+31.07	18.08	384.66	384.67
I	339+41.01	18.08	384.71	384.73
J	339+50.94	18.08	384.76	384.79
K	339+60.88	18.08	384.81	384.83
L	339+70.82	18.08	384.86	384.88
M	339+80.75	18.08	384.91	384.92
N	339+90.69	18.08	384.96	384.96
O	340+00.63	18.08	385.01	385.00
℄ Brg. Pier 2	340+05.68	18.08	385.03	385.03
P	340+15.62	18.08	385.08	385.10
Q	340+25.56	18.08	385.13	385.17
R	340+35.50	18.08	385.18	385.25
S	340+45.43	18.08	385.23	385.32
T	340+55.37	18.08	385.28	385.38
U	340+65.31	18.08	385.32	385.42
V	340+75.24	18.08	385.35	385.44
W	340+85.18	18.08	385.38	385.44
X	340+95.12	18.08	385.39	385.43
Y	341+05.06	18.08	385.40	385.42
℄ Brg. Pier 3	341+14.74	18.08	385.40	385.40
Z	341+24.67	18.08	385.39	385.39
AA	341+34.61	18.08	385.38	385.39
BB	341+44.55	18.08	385.35	385.37
CC	341+54.49	18.08	385.32	385.35
DD	341+64.42	18.08	385.28	385.31
EE	341+74.36	18.08	385.23	385.26
FF	341+84.30	18.08	385.18	385.20
GG	341+94.23	18.08	385.13	385.14
HH	342+04.17	18.08	385.08	385.08
℄ Brg. Pier 4	342+12.80	18.08	385.04	385.04
II	342+22.73	18.08	384.99	385.00
JJ	342+32.67	18.08	384.94	384.97
KK	342+42.61	18.08	384.89	384.94
LL	342+52.55	18.08	384.84	384.90
MM	342+62.48	18.08	384.79	384.85
NN	342+72.42	18.08	384.74	384.79
OO	342+82.36	18.08	384.69	384.72
℄ Brg. W. Abut.	342+92.06	18.08	384.64	384.64
Bk. W. Abut.	342+95.86	18.08	384.62	384.62

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 7 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	119
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

GIRDER 6W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. E. Abut.	338+30.10	26.75	384.23	384.23
℄ Brg. E. Abut.	338+33.58	26.75	384.24	384.24
A	338+43.49	26.75	384.29	384.32
B	338+53.40	26.75	384.34	384.38
C	338+63.31	26.75	384.39	384.44
D	338+73.21	26.75	384.44	384.49
E	338+83.12	26.75	384.49	384.52
F	338+93.03	26.75	384.54	384.56
℄ Brg. Pier 1	339+07.33	26.75	384.61	384.61
G	339+17.24	26.75	384.66	384.67
H	339+27.14	26.75	384.71	384.73
I	339+37.05	26.75	384.76	384.79
J	339+46.96	26.75	384.81	384.85
K	339+56.87	26.75	384.86	384.89
L	339+66.77	26.75	384.91	384.94
M	339+76.68	26.75	384.96	384.98
N	339+86.59	26.75	385.01	385.01
O	339+96.49	26.75	385.06	385.06
℄ Brg. Pier 2	340+01.47	26.75	385.08	385.08
P	340+11.38	26.75	385.13	385.15
Q	340+21.29	26.75	385.18	385.22
R	340+31.19	26.75	385.23	385.30
S	340+41.10	26.75	385.28	385.37
T	340+51.01	26.75	385.33	385.43
U	340+60.92	26.75	385.38	385.47
V	340+70.82	26.75	385.41	385.50
W	340+80.73	26.75	385.44	385.51
X	340+90.64	26.75	385.46	385.50
Y	341+00.54	26.75	385.47	385.49
℄ Brg. Pier 3	341+10.11	26.75	385.48	385.48
Z	341+20.02	26.75	385.47	385.47
AA	341+29.92	26.75	385.46	385.47
BB	341+39.83	26.75	385.44	385.47
CC	341+49.74	26.75	385.41	385.45
DD	341+59.65	26.75	385.37	385.42
EE	341+69.55	26.75	385.33	385.37
FF	341+79.46	26.75	385.28	385.31
GG	341+89.37	26.75	385.23	385.25
HH	341+99.27	26.75	385.18	385.18
℄ Brg. Pier 4	342+07.78	26.75	385.14	385.14
II	342+17.69	26.75	385.09	385.10
JJ	342+27.60	26.75	385.04	385.07
KK	342+37.50	26.75	384.99	385.04
LL	342+47.41	26.75	384.94	385.00
MM	342+57.32	26.75	384.89	384.95
NN	342+67.23	26.75	384.84	384.89
OO	342+77.13	26.75	384.79	384.82
℄ Brg. W. Abut.	342+86.72	26.75	384.74	384.74
Bk. W. Abut.	342+90.51	26.75	384.72	384.72

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 8 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	120
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

SOUTH EDGE OF SHOULDER

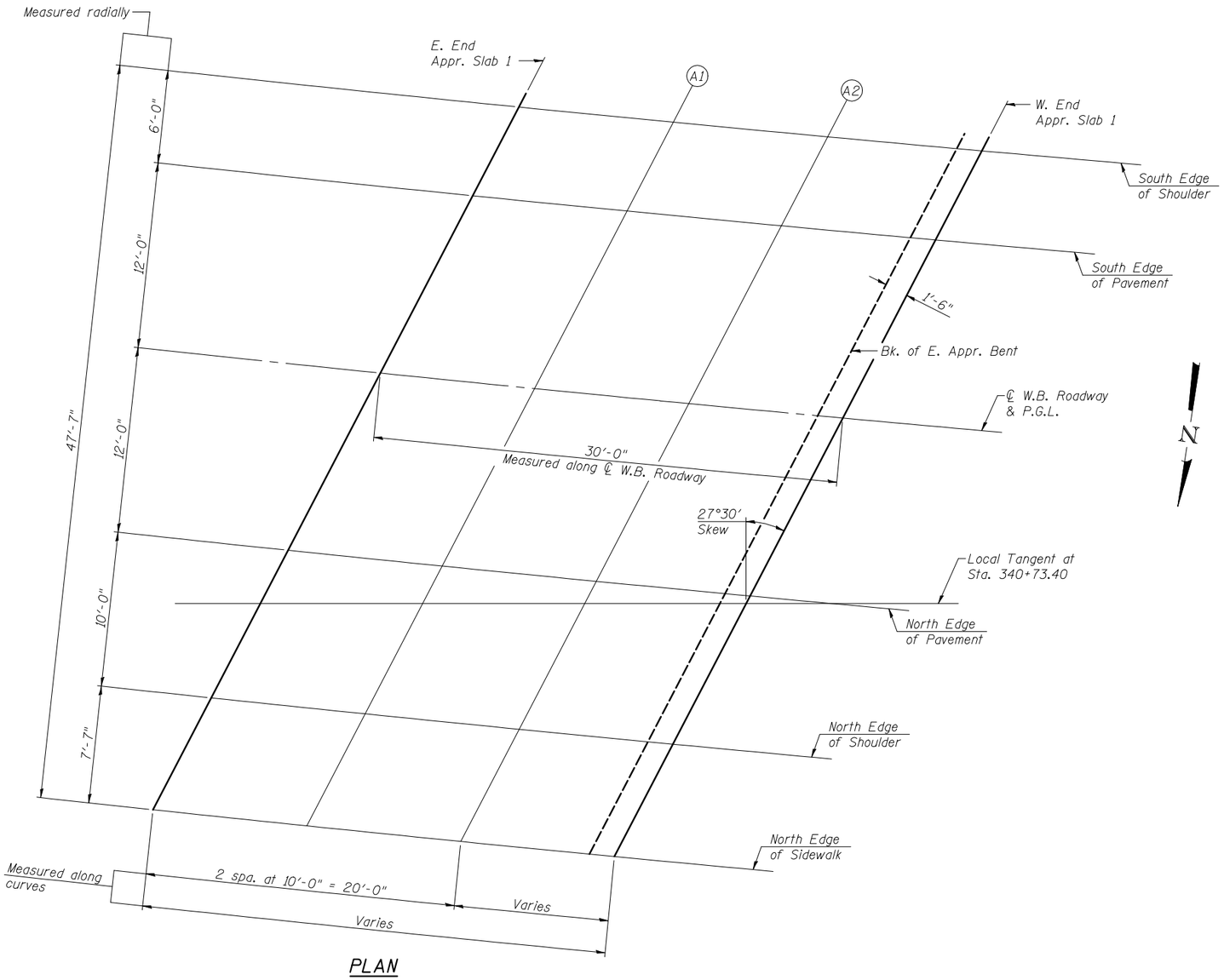
Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 1	337+88.98	-18.00	383.09
A1	337+99.05	-18.00	383.12
A2	338+09.11	-18.00	383.16
W. End Appr. Slab 1	338+19.20	-18.00	383.20

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 1	337+86.57	-12.00	383.23
A1	337+96.62	-12.00	383.26
A2	338+06.66	-12.00	383.30
W. End Appr. Slab 1	338+16.72	-12.00	383.34

℄ W.B. ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 1	337+81.79	0.00	383.52
A1	337+91.79	0.00	383.55
A2	338+01.79	0.00	383.58
W. End Appr. Slab 1	338+11.79	0.00	383.62



PLAN

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 1	337+77.05	12.00	383.81
A1	337+87.01	12.00	383.83
A2	337+96.97	12.00	383.86
W. End Appr. Slab 1	338+06.90	12.00	383.90

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 1	337+73.13	22.00	384.05
A1	337+83.06	22.00	384.07
A2	337+92.98	22.00	384.10
W. End Appr. Slab 1	338+02.87	22.00	384.13

NORTH EDGE OF SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 1	337+70.18	29.58	383.96
A1	337+80.08	29.58	383.98
A2	337+89.97	29.58	384.01
W. End Appr. Slab 1	337+99.82	29.58	384.04

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB 1 ELEVATIONS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 9 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	121
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

SOUTH EDGE OF SHOULDER

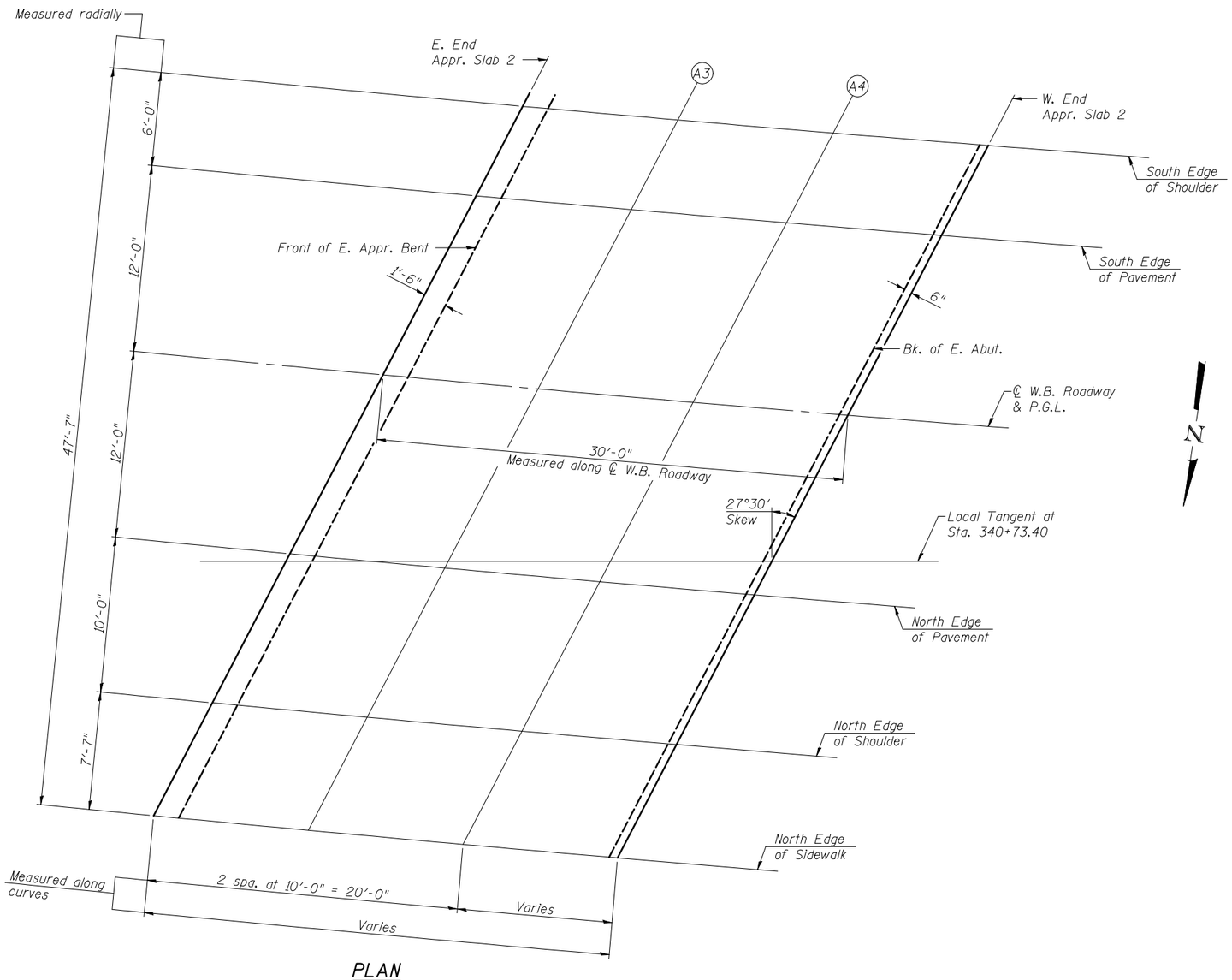
Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 2	338+19.20	-18.00	383.20
A3	338+29.27	-18.00	383.25
A4	338+39.33	-18.00	383.30
W. End Appr. Slab 2	338+49.43	-18.00	383.35

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 2	338+16.72	-12.00	383.34
A3	338+26.76	-12.00	383.38
A4	338+36.81	-12.00	383.43
W. End Appr. Slab 2	338+46.87	-12.00	383.48

℄ W.B. ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 2	338+11.79	0.00	383.62
A3	338+21.79	0.00	383.66
A4	338+31.79	0.00	383.71
W. End Appr. Slab 2	338+41.79	0.00	383.76



PLAN

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 2	338+06.90	12.00	383.90
A3	338+16.86	12.00	383.94
A4	338+26.82	12.00	383.98
W. End Appr. Slab 2	338+36.76	12.00	384.03

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 2	338+02.87	22.00	384.13
A3	338+12.79	22.00	384.17
A4	338+22.71	22.00	384.21
W. End Appr. Slab 2	338+32.60	22.00	384.26

NORTH EDGE OF SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 2	337+99.82	29.58	384.04
A3	338+09.72	29.58	384.08
A4	338+19.62	29.58	384.12
W. End Appr. Slab 2	338+29.46	29.58	384.17

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB 2 ELEVATIONS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 10 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	122
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

SOUTH EDGE OF SHOULDER

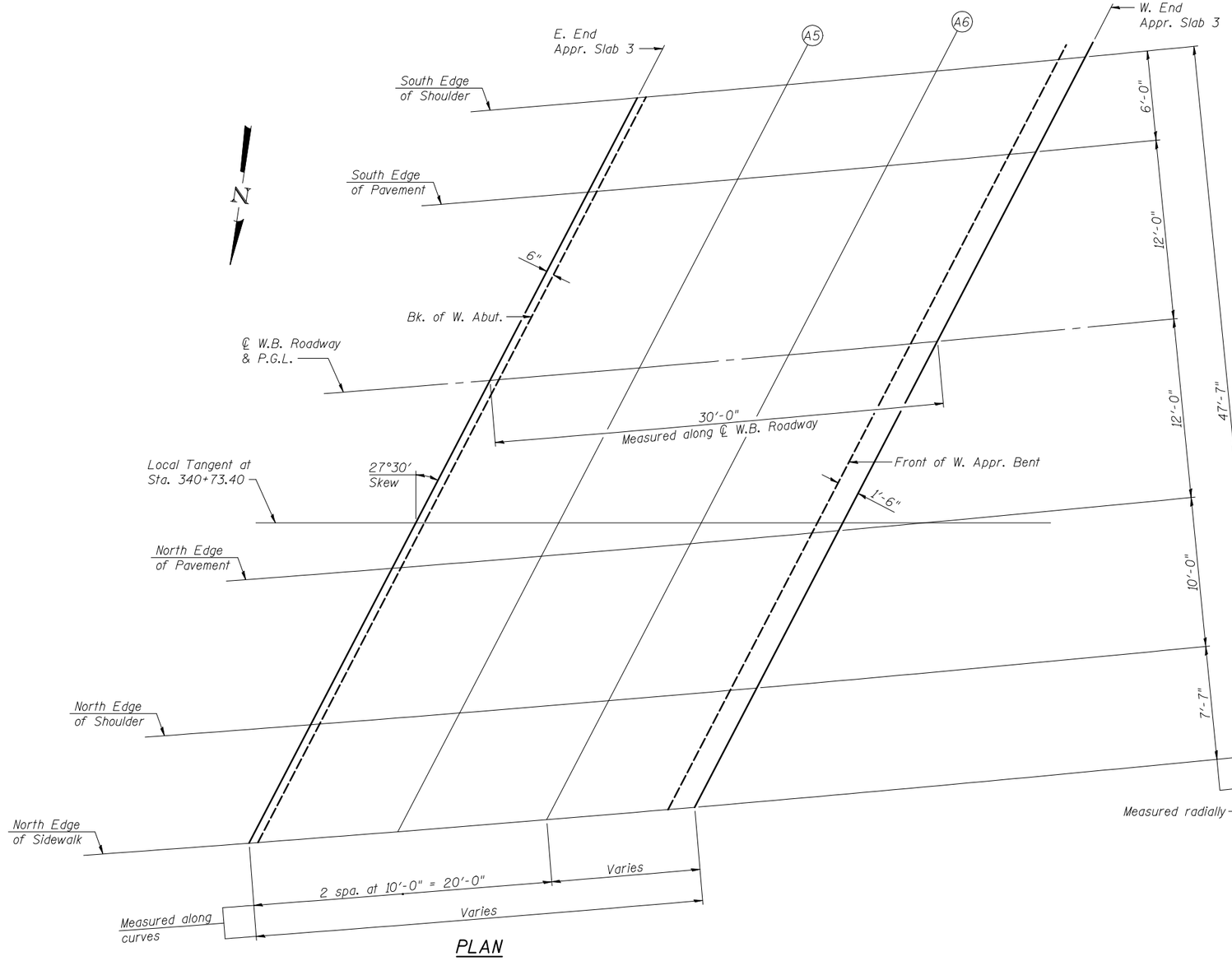
Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 3	343+17.98	-18.00	383.61
A5	343+28.05	-18.00	383.56
A6	343+38.11	-18.00	383.51
W. End Appr. Slab 3	343+48.25	-18.00	383.46

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 3	343+14.16	-12.00	383.78
A5	343+24.20	-12.00	383.73
A6	343+34.25	-12.00	383.68
W. End Appr. Slab 3	343+44.34	-12.00	383.63

℄ W.B. ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 3	343+06.57	0.00	384.12
A5	343+16.57	0.00	384.07
A6	343+26.57	0.00	384.02
W. End Appr. Slab 3	343+36.57	0.00	383.97



PLAN

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 3	342+99.06	12.00	384.45
A5	343+09.02	12.00	384.40
A6	343+18.97	12.00	384.36
W. End Appr. Slab 3	343+28.88	12.00	384.31

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 3	342+92.85	22.00	384.74
A5	343+02.78	22.00	384.69
A6	343+12.70	22.00	384.64
W. End Appr. Slab 3	343+22.53	22.00	384.59

NORTH EDGE OF SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 3	342+88.18	29.58	384.68
A5	342+98.08	29.58	384.63
A6	343+07.98	29.58	384.58
W. End Appr. Slab 3	343+17.75	29.58	384.53

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB 3 ELEVATIONS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 11 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	123
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

SOUTH EDGE OF SHOULDER

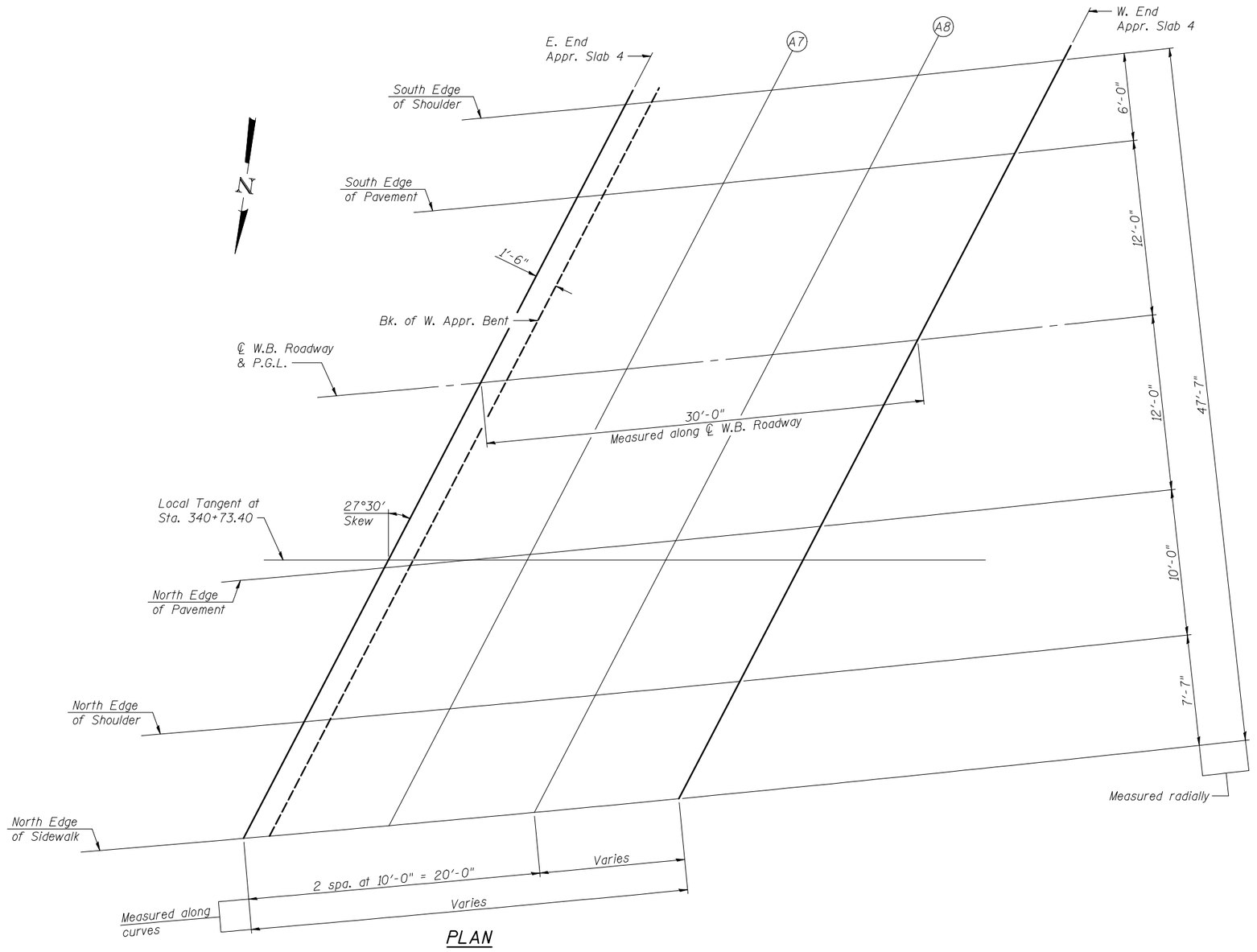
Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 4	343+48.25	-18.00	383.46
A7	343+58.32	-18.00	383.42
A8	343+68.38	-18.00	383.38
W. End Appr. Slab 4	343+78.52	-18.00	383.35

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 4	343+44.34	-12.00	383.63
A7	343+54.38	-12.00	383.58
A8	343+64.42	-12.00	383.54
W. End Appr. Slab 4	343+74.52	-12.00	383.51

℄ W.B. ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 4	343+36.57	0.00	383.97
A7	343+46.57	0.00	383.92
A8	343+56.57	0.00	383.87
W. End Appr. Slab 4	343+66.57	0.00	383.84



PLAN

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 4	343+28.88	12.00	384.31
A7	343+38.84	12.00	384.26
A8	343+48.80	12.00	384.21
W. End Appr. Slab 4	343+58.70	12.00	384.17

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 4	343+22.53	22.00	384.59
A7	343+32.45	22.00	384.54
A8	343+42.38	22.00	384.49
W. End Appr. Slab 4	343+52.21	22.00	384.44

NORTH EDGE OF SIDEWALK

Location	Station	Offset	Theoretical Grade Elevations
E. End Appr. Slab 4	343+17.75	29.58	384.53
A7	343+27.65	29.58	384.48
A8	343+37.55	29.58	384.43
W. End Appr. Slab 4	343+47.32	29.58	384.38

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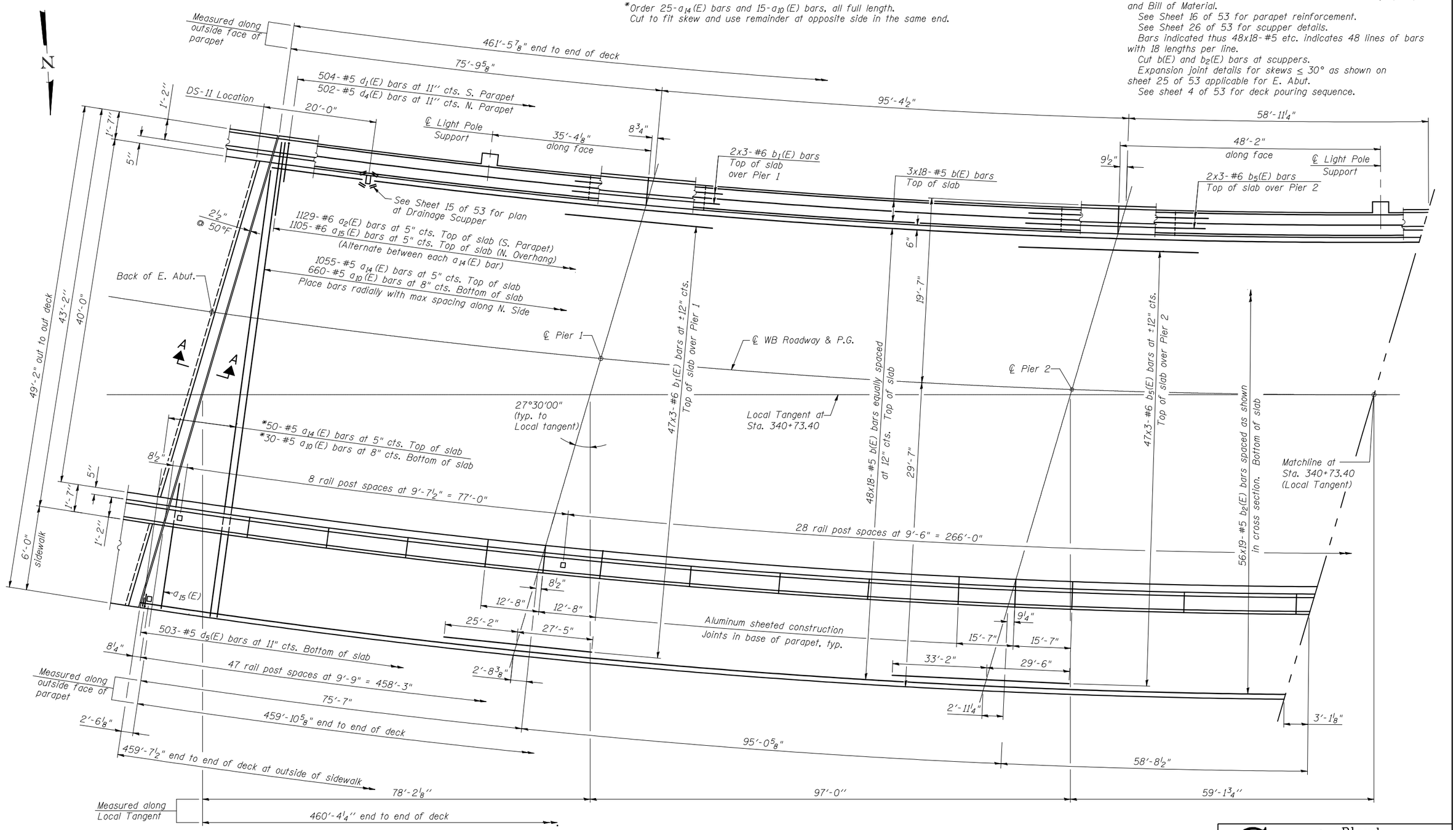
TOP OF APPROACH SLAB 4 ELEVATIONS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 12 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	124
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



PARTIAL PLAN

MINIMUM BAR LAP

#5 bar = 2'-7"
#6 bar = 3'-1" bars over piers
#6 bar = 4'-5" bars at end of deck

Coombe-Bloxdorf P.C.
-CIVIL ENGINEERS-
-STRUCTURAL ENGINEERS-
-LAND SURVEYORS-
Design Firm License No. 184-002703

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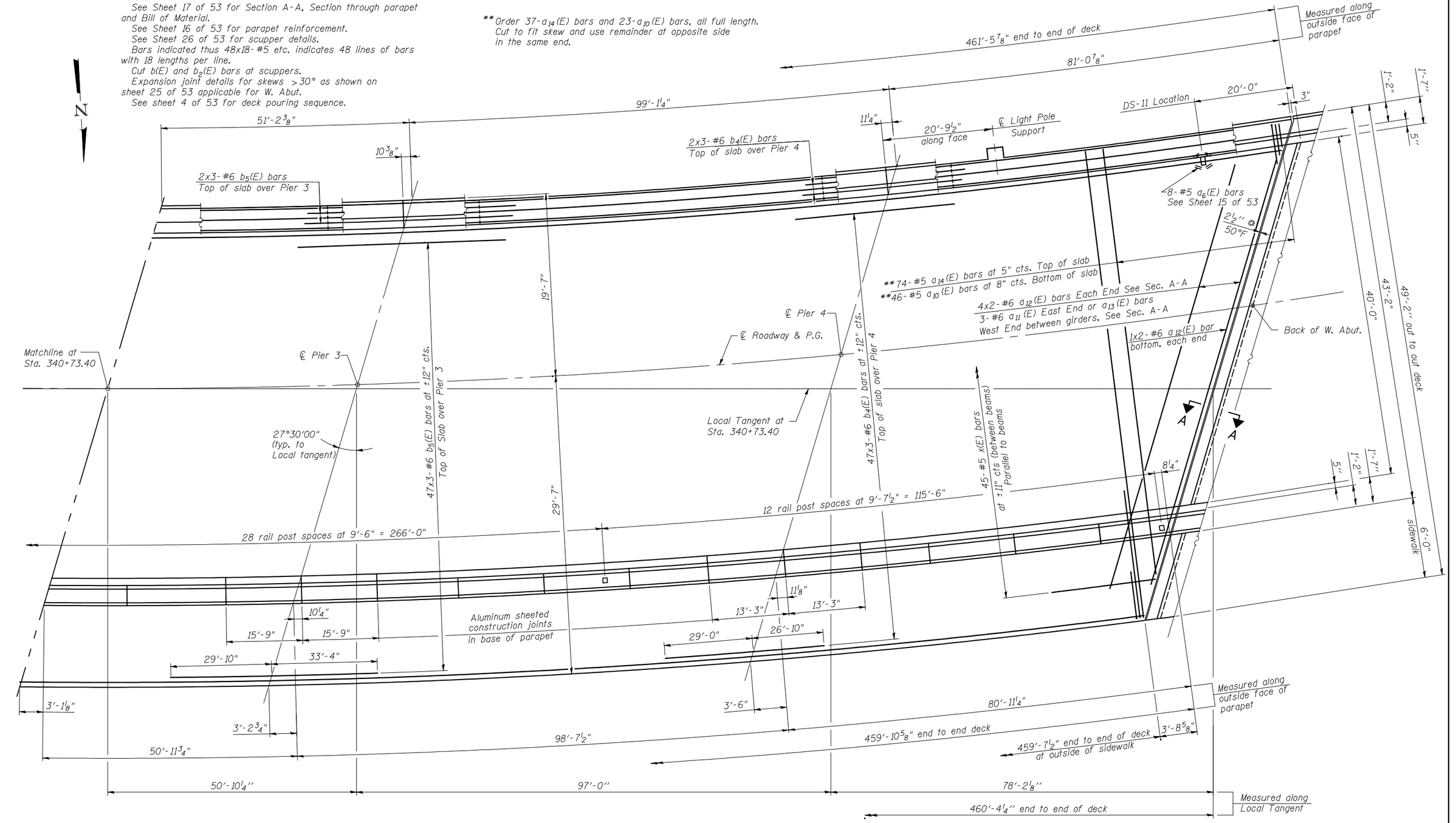
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 039-0076 (WB)
SHEET NO. 13 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	125
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

Notes:
See Sheet 17 of 53 for Section A-A, Section through parapet and Bill of Material.
See Sheet 16 of 53 for parapet reinforcement.
See Sheet 26 of 53 for scupper details.
Bars indicated thus 48x18-#5 etc. indicates 48 lines of bars with 18 lengths per line.
Cut b(E) and b_2(E) bars at scuppers.
Expansion joint details for skews >30° as shown on sheet 25 of 53 applicable for W. Abut.
See sheet 4 of 53 for deck pouring sequence.

** Order 37-a_{14}(E) bars and 23-a_{10}(E) bars, all full length. Cut to fit skew and use remainder at opposite side in the same end.



MINIMUM BAR LAP

#5 bar = 2'-7"
#6 bar = 3'-1" bars over piers
#6 bar = 4'-5" bars at end of deck

PARTIAL PLAN

Coombe-Bloxdorf P.C.
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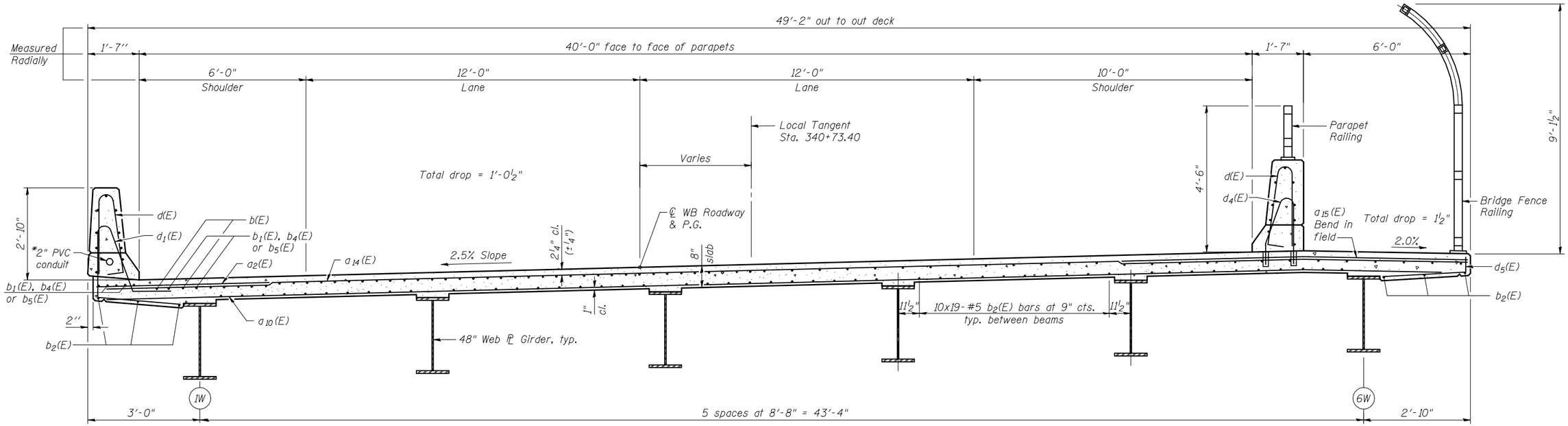
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 039-0076 (WB)
SHEET NO. 14 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	126
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



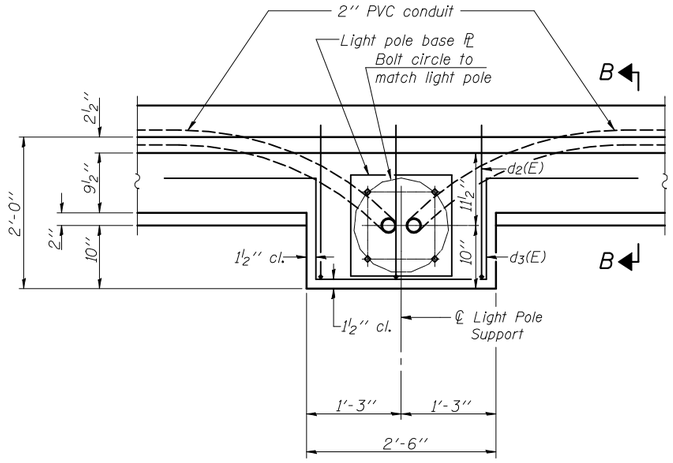
NEAR PIER

NEAR MIDSPAN

*Conduit shall have a minimum clearance of 1 1/2" from all reinforcement

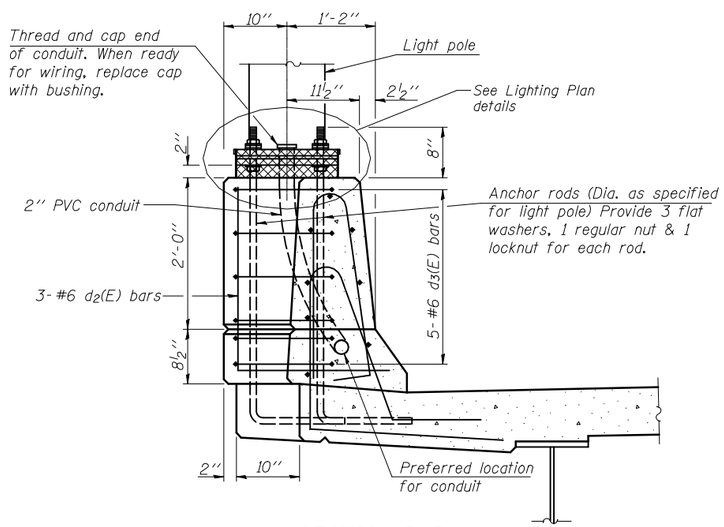
CROSS SECTION

(Looking West)



PLAN

Note:
Cost of anchor rods is included with Concrete Superstructure.
Conduit is paid for as Conduit Embedded in Structure, 2"ϕ PVC. See Lighting Plan.

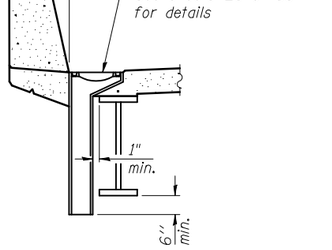


SECTION B-B

(three locations)
See Lighting Plan Details for dimensions and requirements not shown.

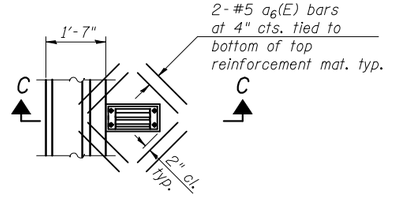
LIGHT POLE DETAIL

(at south parapet)



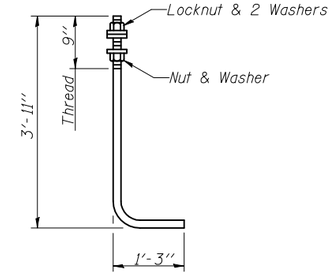
SECTION C-C

(At SE and SW Corners)



PLAN AT DRAINAGE SCUPPER

Note:
Cut longitudinal reinforcement to clear drainage scuppers.



ANCHOR ROD

Diameter as specified for light poles.
(ASTM F 1554 Grade 105)

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STATE OF ILLINOIS
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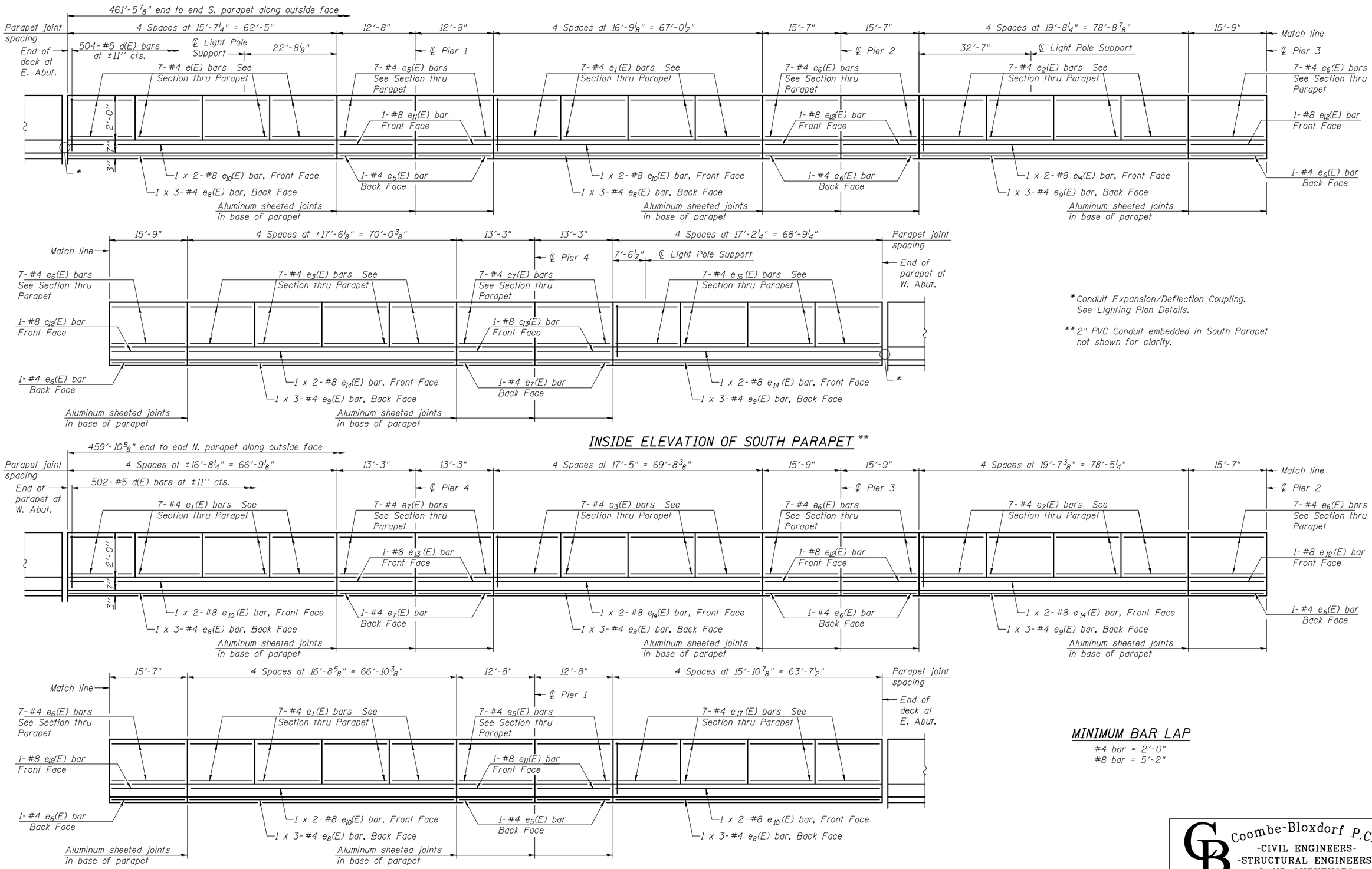
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 039-0076 (WB)
SHEET NO. 15 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	127
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		



INSIDE ELEVATION OF SOUTH PARAPET **

INSIDE ELEVATION OF NORTH PARAPET

MINIMUM BAR LAP

#4 bar = 2′-0″
#8 bar = 5′-2″

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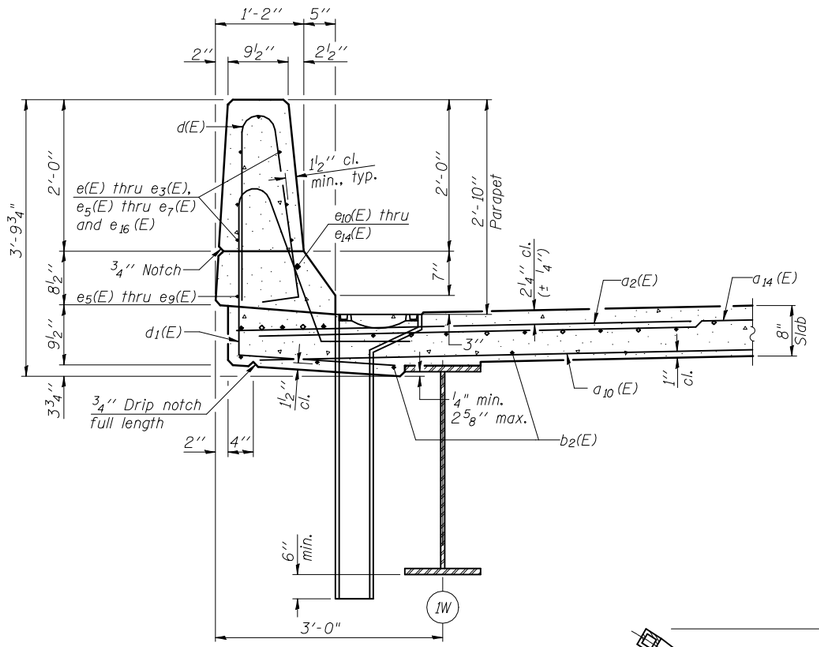
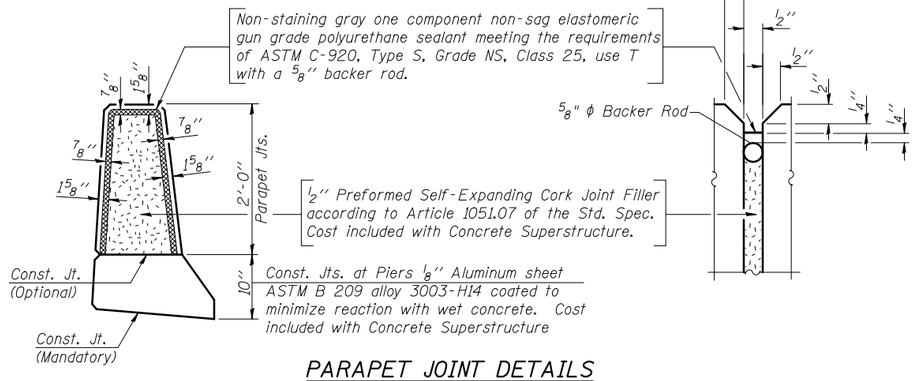
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 039-0076 (WB)
SHEET NO. 16 OF 53 SHEETS

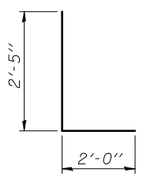
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	128
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		



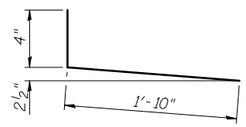
SECTION THRU SOUTH PARAPET



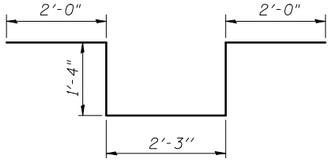
PARAPET JOINT DETAILS



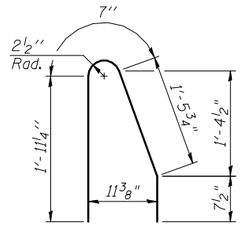
BAR $d_2(E)$



BAR $d_5(E)$



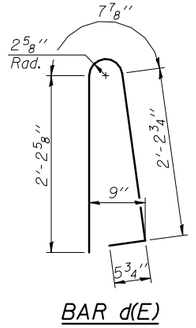
BAR $d_3(E)$



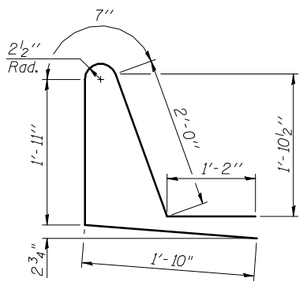
BAR $d_4(E)$

SUPERSTRUCTURE BILL OF MATERIAL

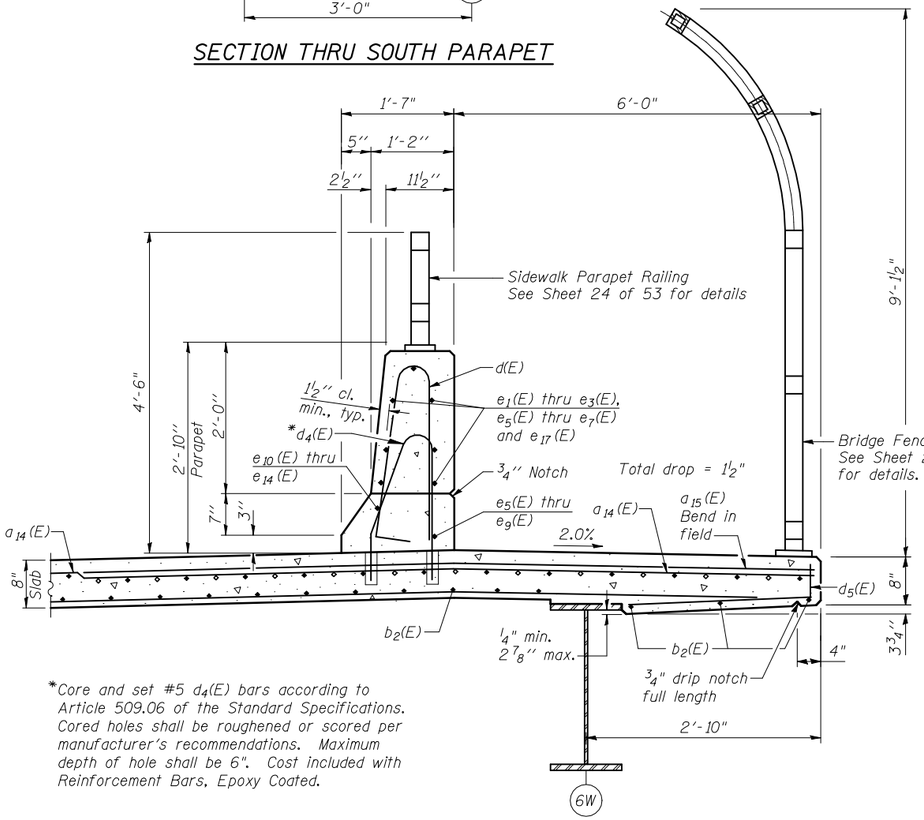
Bar	No.	Size	Length	Shape
$a_2(E)$	1129	#6	6'-6"	
$a_6(E)$	16	#5	1'-6"	
$a_{10}(E)$	698	#5	47'-10"	
$a_{11}(E)$	15	#6	10'-5"	
$a_{12}(E)$	20	#6	30'-11"	
$a_{13}(E)$	15	#6	11'-2"	
$a_{14}(E)$	1117	#5	48'-8"	
$a_{15}(E)$	1105	#6	12'-8"	
$b(E)$	918	#5	28'-1"	
$b_1(E)$	147	#6	19'-7"	
$b_2(E)$	1064	#5	26'-9"	
$b_4(E)$	147	#6	20'-8"	
$b_5(E)$	294	#6	23'-2"	
$d(E)$	1006	#5	5'-7"	
$d_1(E)$	504	#5	7'-6"	
$d_2(E)$	9	#6	4'-5"	
$d_3(E)$	15	#6	8'-11"	
$d_4(E)$	502	#5	4'-8"	
$d_5(E)$	503	#5	2'-2"	
$e(E)$	28	#4	15'-3"	
$e_1(E)$	84	#4	16'-4"	
$e_2(E)$	56	#4	19'-3"	
$e_3(E)$	56	#4	17'-1"	
$e_5(E)$	32	#4	12'-4"	
$e_6(E)$	64	#4	15'-3"	
$e_7(E)$	32	#4	12'-11"	
$e_8(E)$	15	#4	23'-10"	
$e_9(E)$	15	#4	27'-7"	
$e_{10}(E)$	10	#8	36'-3"	
$e_{11}(E)$	4	#8	12'-4"	
$e_{12}(E)$	8	#8	15'-3"	
$e_{13}(E)$	4	#8	12'-11"	
$e_{14}(E)$	10	#8	41'-11"	
$e_{16}(E)$	28	#4	16'-8"	
$e_{17}(E)$	28	#4	15'-6"	
$x(E)$	90	#5	6'-5"	
Reinforcement Bars, Epoxy Coated		Pound	222,500	
Concrete Superstructure		Cu. Yds.	701.7	



BAR $d(E)$

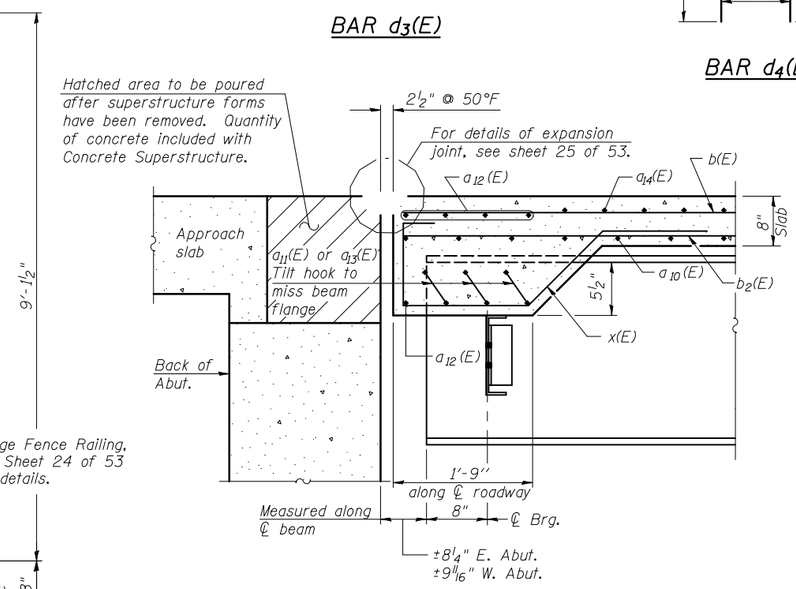


BAR $d_1(E)$

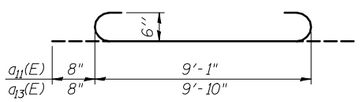


*Core and set #5 $d_4(E)$ bars according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of hole shall be 6". Cost included with Reinforcement Bars, Epoxy Coated.

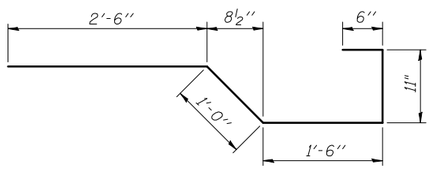
SECTION THRU NORTH PARAPET



SECTION A-A



$a_{11}(E)$ & $a_{13}(E)$ BAR



BAR $x(E)$

Coombe-Bloxdorf P.C.
-CIVIL ENGINEERS-
-STRUCTURAL ENGINEERS-
-LAND SURVEYORS-
Design Firm License No. 184-002703

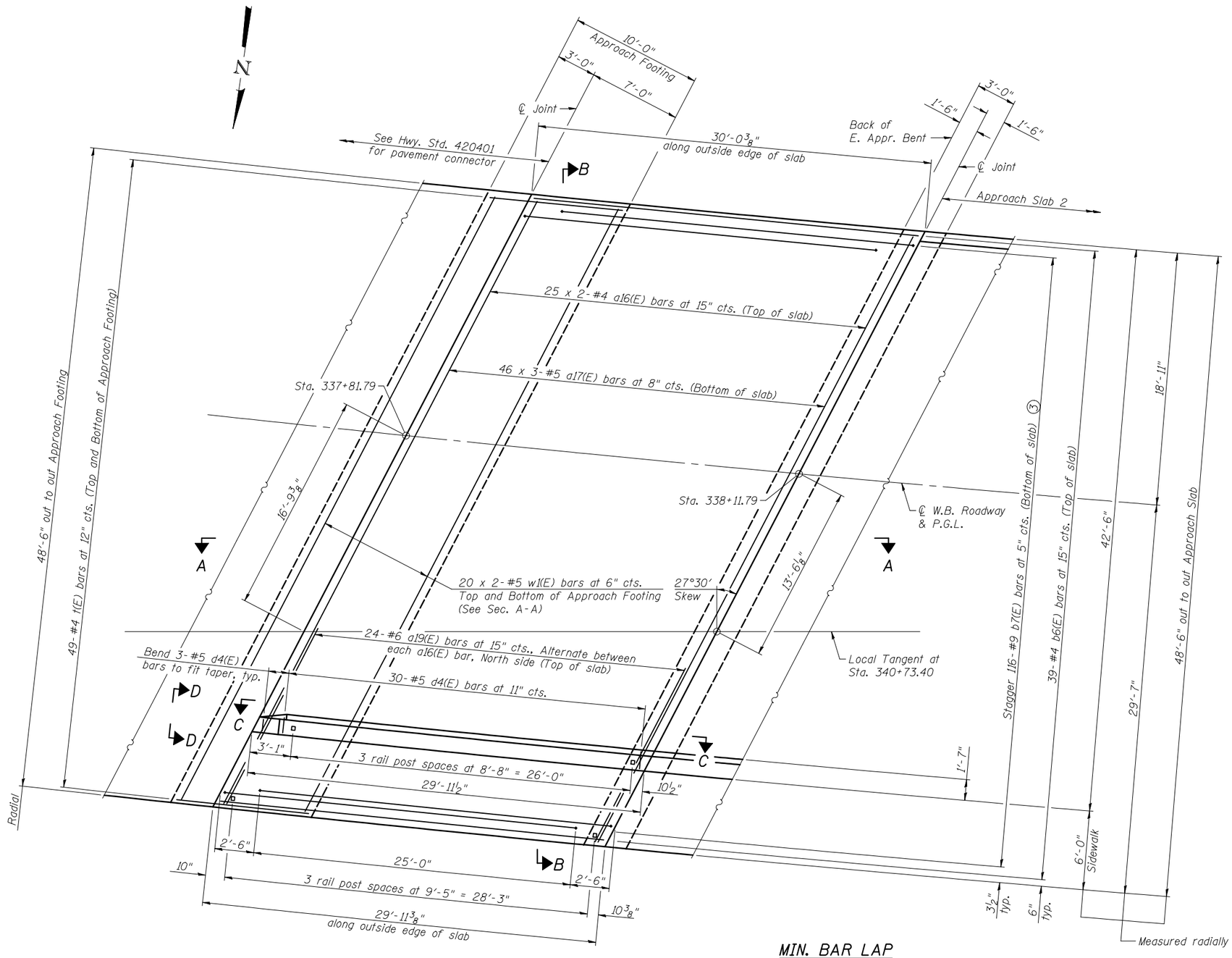
FILE NAME = $FILE1$	USER NAME = $USER$	DESIGNED - GB	REVISED -
		CHECKED - MCB	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - MML	REVISED -
CB PROJECT NO. 08024-2	PLOT DATE = $DATE$	CHECKED - MCB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 039-0076 (WB)
SHEET NO. 17 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	129
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

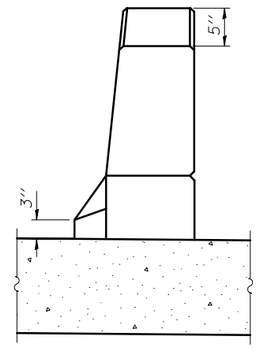
Notes:
1. For Sections A-A, B-B and View C-C, see sheet 20 of 53.
2. a16(E), a17(E) and a19(E) bar spacings measured along ℄ Roadway.
3. Tilt #9 b7(E) bars as required to maintain clearance.



PLAN

MIN. BAR LAP

#4 bar = 2'-4"
#5 bar = 2'-11"

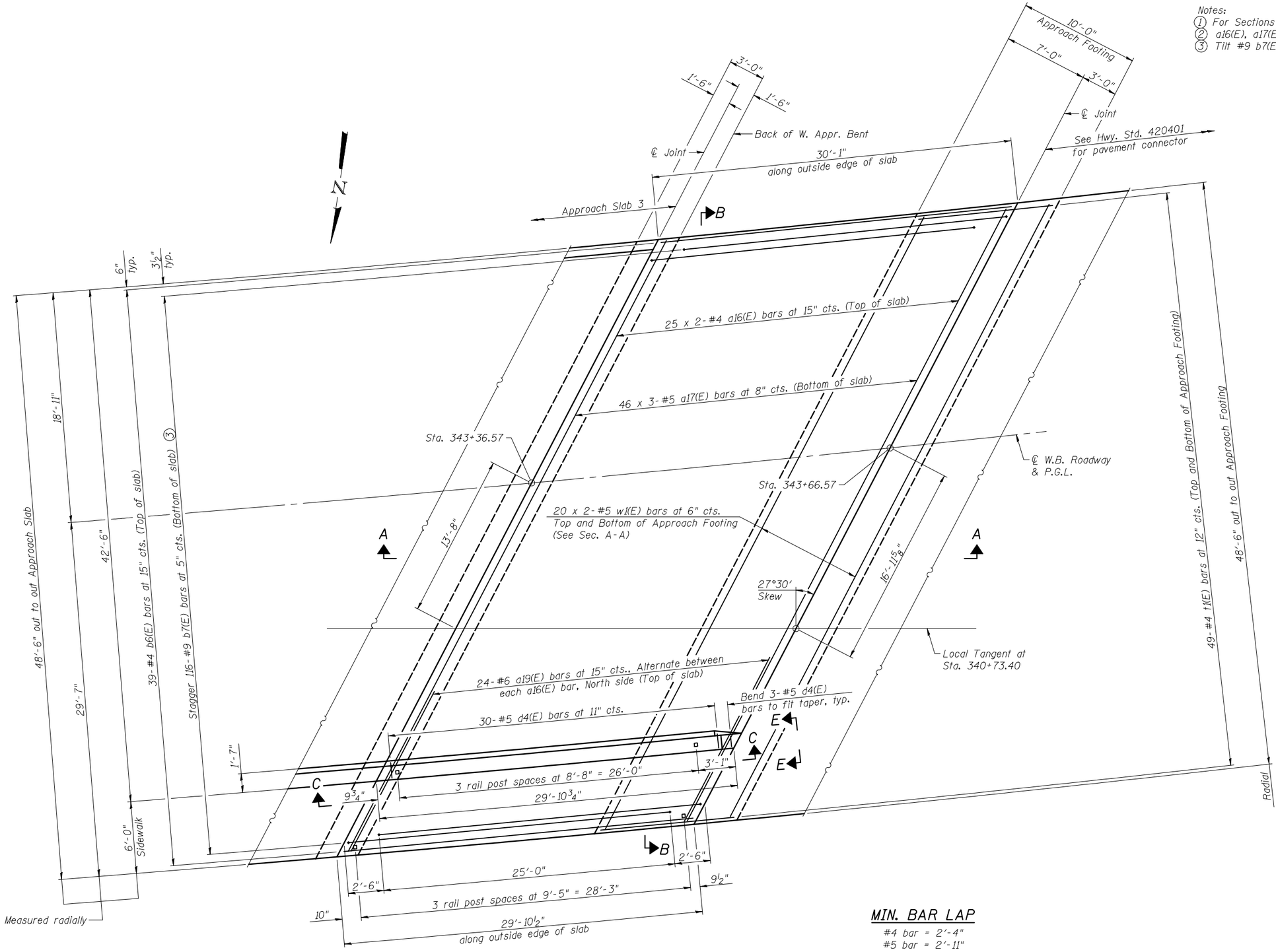


VIEW D-D

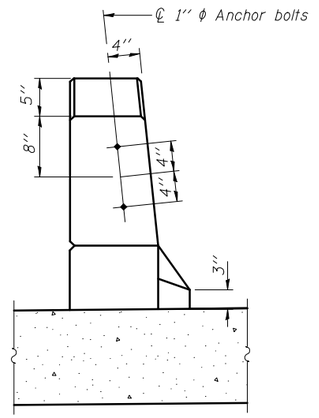
BATES ASSOCIATES Engineering + Architecture	USER NAME =	DESIGNED - MAG	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB 1 DETAILS STRUCTURE NO. 039-0076 (W.B.)
		CHECKED - JAD	REVISED -		
	PLOT SCALE =	DRAWN - MAG	REVISED -		SHEET NO. 18 OF 53 SHEETS
	PLOT DATE =	CHECKED - JAD	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	130
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

Notes:
1. For Sections A-A, B-B and View C-C, see sheet 20 of 53.
2. a16(E), a17(E) and a19(E) bar spacings measured along ℄ Roadway.
3. Tilt #9 b7(E) bars as required to maintain clearance.



PLAN



VIEW E-E

MIN. BAR LAP

#4 bar = 2'-4"
#5 bar = 2'-11"

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PLOT DATE =	CHECKED - JAD	REVISED -	

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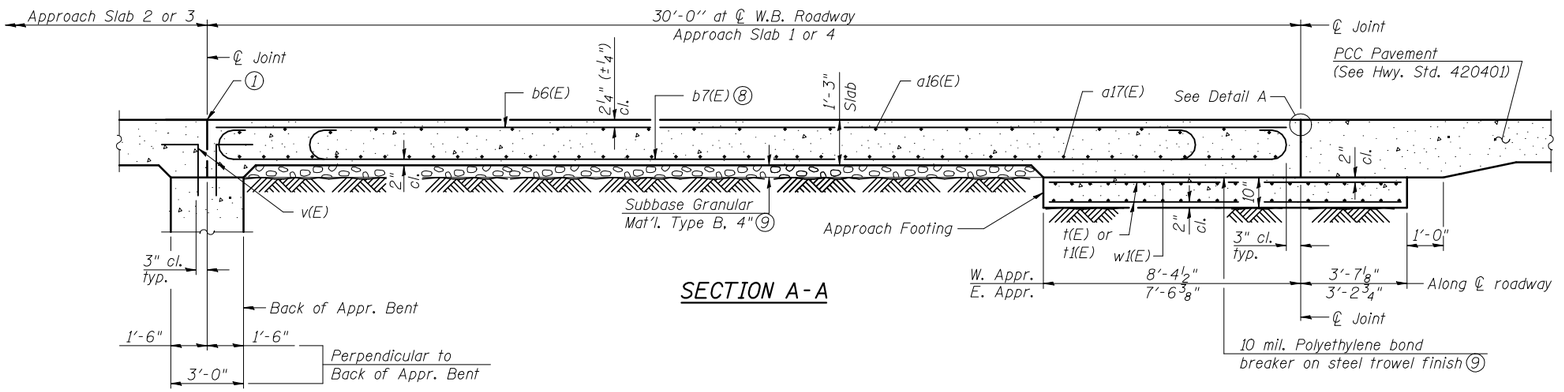
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB 4 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 19 OF 53 SHEETS

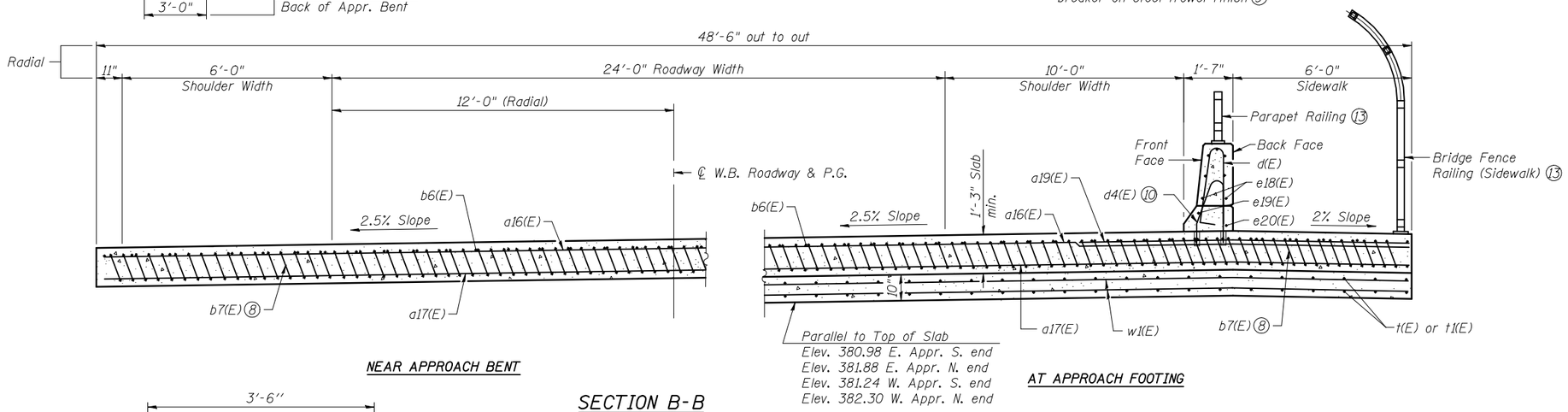
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	131
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



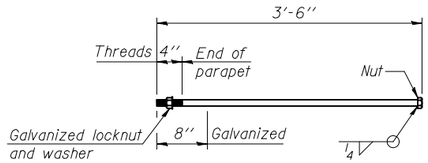
SECTION A-A

Notes:

① ¼" x ¾" formed joint with concrete joint sealer without the backer rod (full width). Cost included with Concrete Superstructure.
② Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
③ Approach footing concrete shall be paid for as Concrete Structures.
④ Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
⑤ For v(E) bar details, see sheets 32 and 33 of 53.
⑥ The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
⑦ Cost of excavation for approach footing included with Concrete Structures.
⑧ Tilt #9 b7(E) bars as required to maintain clearance.
⑨ Cost included with Concrete Superstructure.
⑩ Core and set #5 d4(E) bars according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of hole shall be 6". Cost included with Reinforcement Bars, Epoxy Coated.
⑪ For additional parapet details and parapet joint details, see sheets 17 thru 19 of 53.
⑫ Parapet dimensions taken along back face of parapet.
⑬ For Bridge Fence Railing (Sidewalk) details and Parapet Railing details, see sheet 24 of 53.
⑭ Cut e18(E) bars as required to fit skew.
⑮ For View E-E, see sheet 19 of 53.



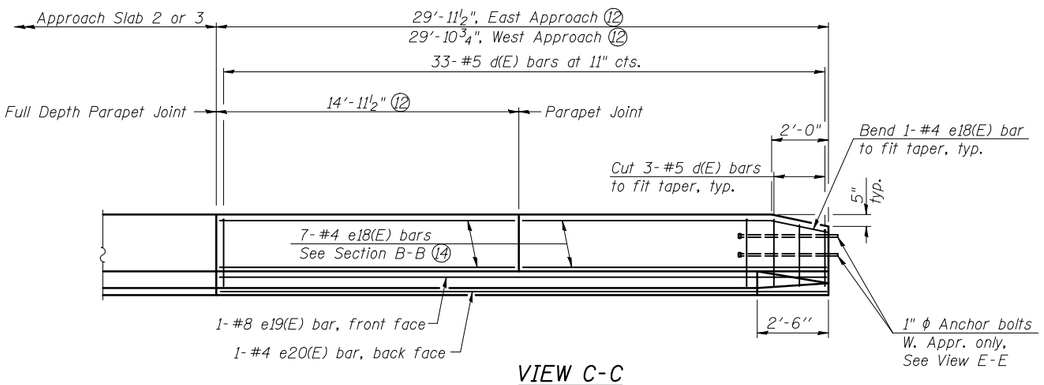
NEAR APPROACH BENT



1"ϕ ANCHOR BOLT ⑨

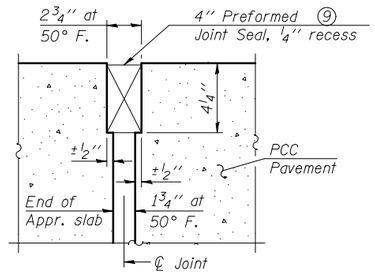
SECTION B-B

(See Plan for dimensions not shown)
(Looking West)



VIEW C-C

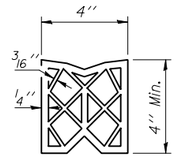
AT APPROACH FOOTING



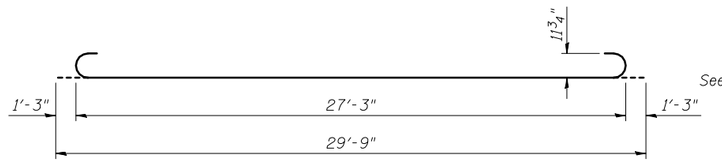
RIGID PAVEMENT

DETAIL A

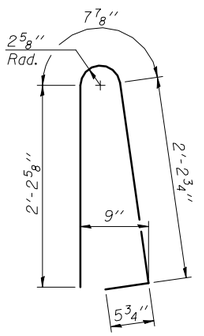
Note:
Minimum dimensions shown, actual dimensions per manufacturer's recommendation.



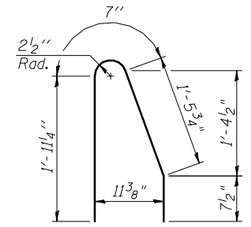
PREFORMED JOINT SEAL



BAR b7(E)



BAR d(E)



BAR d4(E)

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a16(E)	100	#4	29'-11"	
a17(E)	276	#5	21'-2"	
a19(E)	48	#6	14'-11"	
b6(E)	78	#4	29'-8"	
b7(E)	232	#9	29'-9"	
d(E)	66	#5	5'-7"	
d4(E)	66	#5	4'-8"	
e18(E)	28	#4	14'-7"	
e19(E)	2	#8	29'-6"	
e20(E)	2	#4	29'-6"	
t(E)	98	#4	10'-5"	
t1(E)	98	#4	11'-5"	
w1(E)	160	#5	30'-3"	
Concrete Superstructure			Cu. Yd.	143.1
Concrete Structures			Cu. Yd.	33.9
Reinforcement Bars, Epoxy Coated			Pound	41,840

Note A: 35,360 lbs. (Superstr.)
6,480 lbs. (Substr.)

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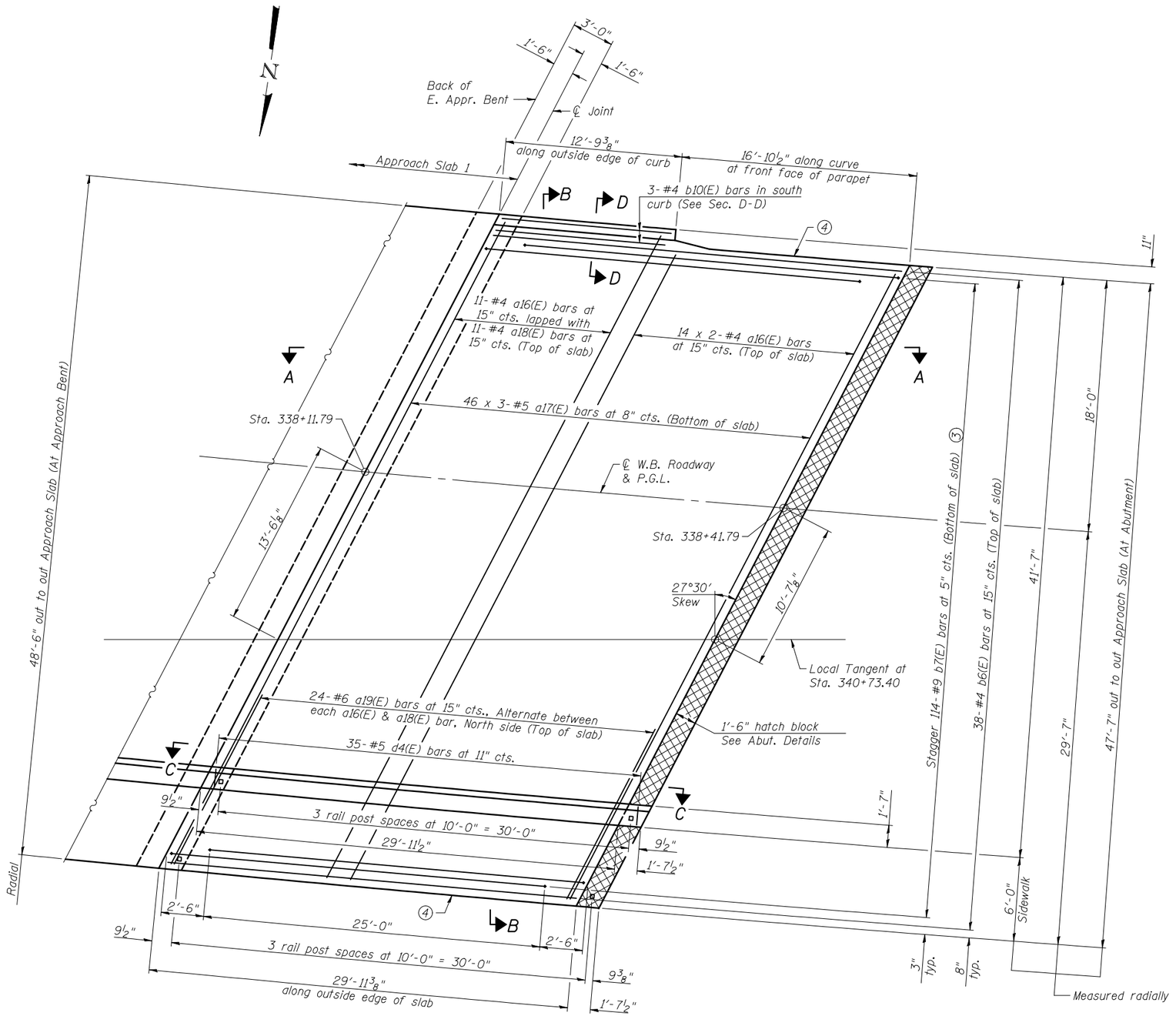
PLOT SCALE =	DRAWN - MAG	REVISED -	
PLOT DATE =	CHECKED - JAD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB 1 AND 4 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 20 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	132
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

Notes:
1. For Sections A-A, B-B, D-D and View C-C, see sheet 23 of 53.
2. a16(E), a17(E), a18(E) and a19(E) bar spacings measured along ℄ Roadway.
3. Tilt #9 b7(E) bars as required to maintain clearance.
4. Flexible foam expansion joint filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of parapet. Cost included with Concrete Superstructure.



PLAN

MIN. BAR LAP

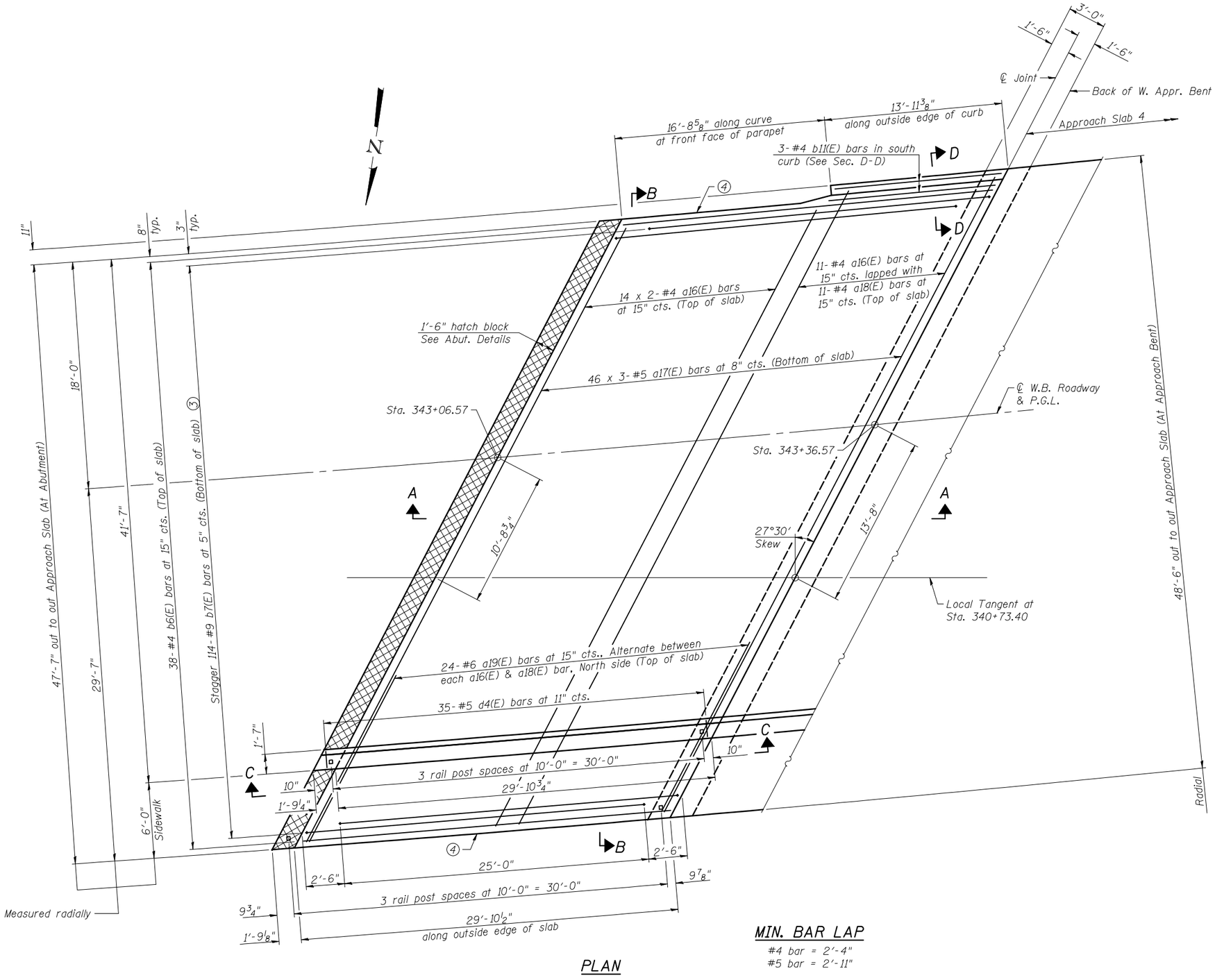
#4 bar = 2'-4"
#5 bar = 2'-11"

BATES ASSOCIATES Engineering + Architecture	ILLINOIS: Eastport Business Center 1, 100 Lanter Court, Suite 1, Collinsville, IL 62234, tel 618.345.2220, fax 618.345.7220 — MISSOURI: Laclede Gas Building, 720 Olive, Suite 1600, St. Louis, MO 63101, tel 314.588.8001, fax 314.588.8005 — www.oatesassociates.com	USER NAME =	DESIGNED - MAG	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
			CHECKED - JAD	REVISED -	
		PLOT SCALE =	DRAWN - MAG	REVISED -	
		PLOT DATE =	CHECKED - JAD	REVISED -	

BRIDGE APPROACH SLAB 2 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 21 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	133
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

Notes:
1. For Sections A-A, B-B, D-D and View C-C, see sheet 23 of 53.
2. a16(E), a17(E), a18(E) and a19(E) bar spacings measured along ℄ Roadway.
3. Tilt #9 b7(E) bars as required to maintain clearance.
4. Flexible foam expansion joint filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of parapet. Cost included with Concrete Superstructure.



PLAN

MIN. BAR LAP

#4 bar = 2'-4"
#5 bar = 2'-11"

USER NAME =	DESIGNED - MAG	REVISED -	
	CHECKED - JAD	REVISED -	
PLOT SCALE =	DRAWN - MAG	REVISED -	
PLOT DATE =	CHECKED - JAD	REVISED -	

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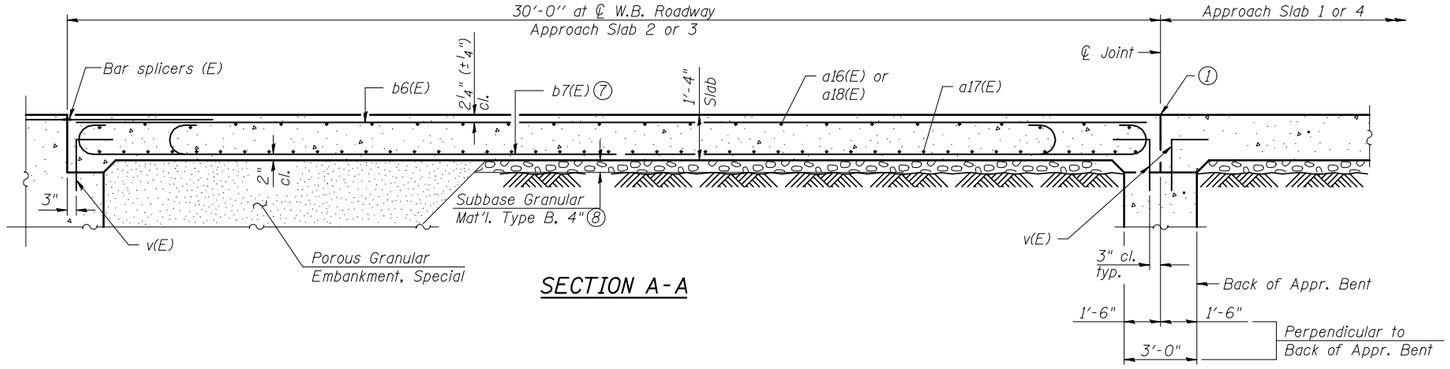
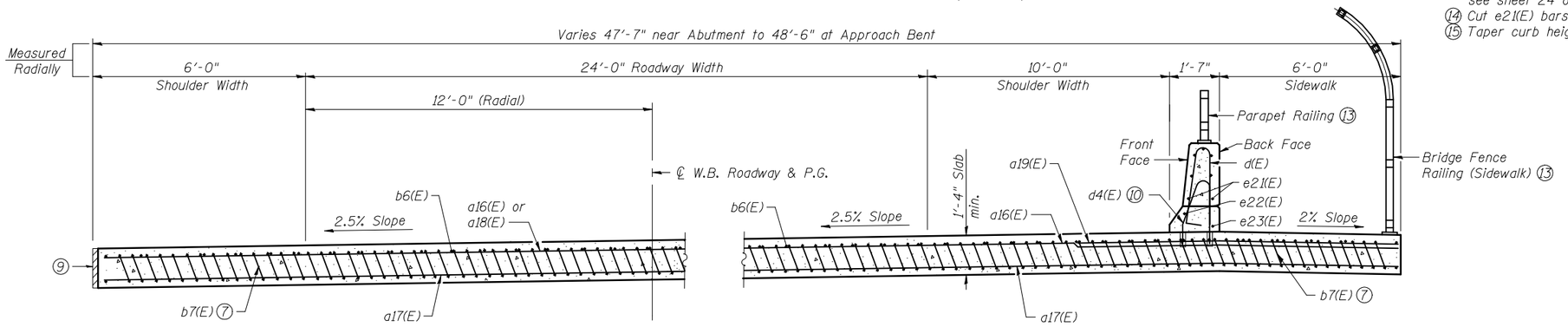
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB 3 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 22 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	134
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

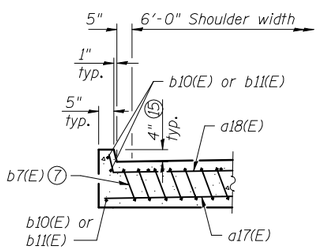


SECTION A-A



NEAR ABUTMENT

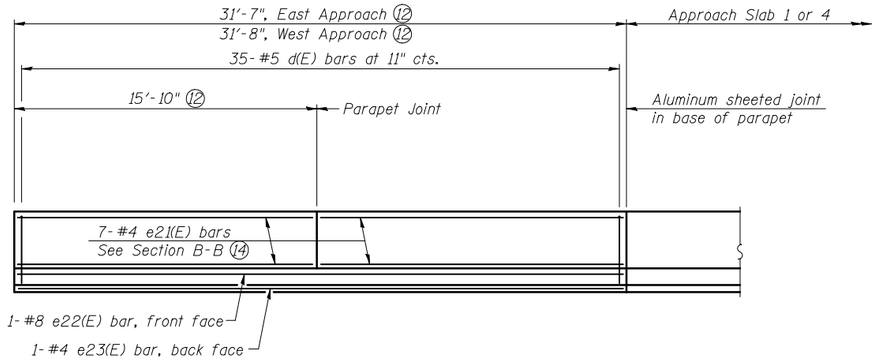
NEAR APPROACH BENT



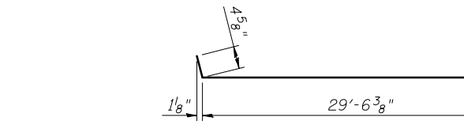
SECTION B-B

(See Plan for dimensions not shown)
(Looking West)

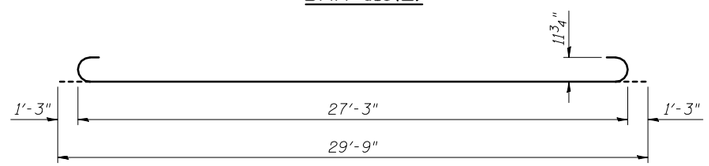
SECTION D-D



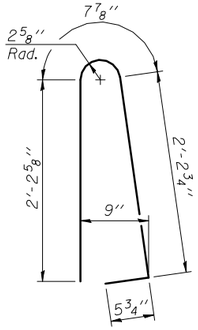
VIEW C-C



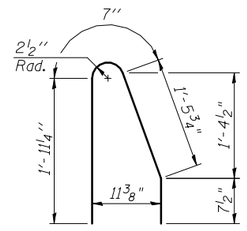
BAR a18(E)



BAR b7(E)



BAR d(E)



BAR d4(E)

Notes:
① ¼" x ¾" formed joint with concrete joint sealer without the backer rod (full width). Cost included with Concrete Superstructure.
② Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
③ Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
④ For v(E) bar details, see sheets 32 thru 39 of 53.
⑤ For bar splicer details, see sheet 48 of 53.
⑥ For Porous Granular Embankment, Special and drainage treatment details, see sheet 2 of 53.
⑦ Tilt #9 b7(E) bars as required to maintain clearance.
⑧ Cost included with Concrete Superstructure
⑨ Flexible foam expansion joint filler. Cost included with Concrete Superstructure. See Plan on sheets 21 and 22 of 53.
⑩ Core and set #5 d4(E) bars according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of hole shall be 6". Cost included with Reinforcement Bars, Epoxy Coated.
⑪ For additional parapet details and parapet joint details, see sheets 17, 21 and 22 of 53.
⑫ Parapet dimensions taken along back face of parapet.
⑬ For Bridge Fence Railing (Sidewalk) details and Parapet Railing details, see sheet 24 of 53.
⑭ Cut e21(E) bars as required to fit skew.
⑮ Taper curb height to 2" in 5'-0" at E. End Appr. Slab 2 and W. End Appr. Slab 3.

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a16(E)	78	#4	29'-11"	
a17(E)	276	#5	21'-2"	
a18(E)	22	#4	29'-11"	
a19(E)	48	#6	14'-11"	
b6(E)	76	#4	29'-8"	
b7(E)	228	#9	29'-9"	
b10(E)	3	#4	12'-5"	
b11(E)	3	#4	13'-7"	
d(E)	70	#5	5'-7"	
d4(E)	70	#5	4'-8"	
e21(E)	28	#4	15'-5"	
e22(E)	2	#8	31'-3"	
e23(E)	2	#4	31'-3"	
Concrete Superstructure			Cu. Yd.	150.5
Reinforcement Bars, Epoxy Coated			Pound	35,030

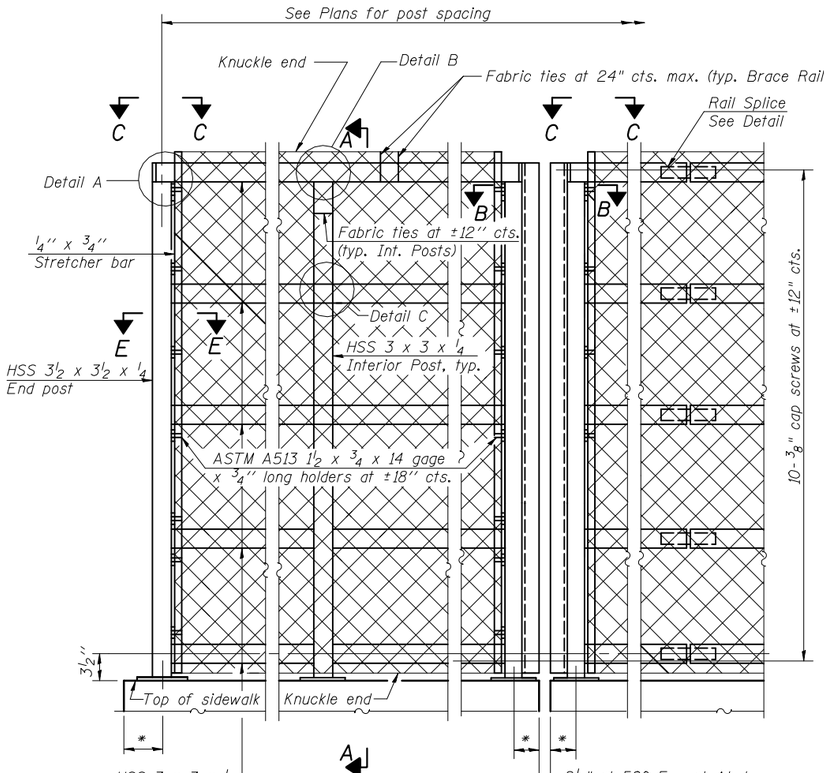
BATES ASSOCIATES Engineering + Architecture
ILLINOIS: Eastport Business Center 1, 100 Lantar Court, Suite 1, Collinsville, IL 62234, tel 618.345.2220, fax 618.345.7220
MISSOURI: Laclede Gas Building, 720 Olive, Suite 1650, St. Louis, MO 63101, tel 314.588.8581, fax 314.588.8605
www.batesassociates.com

USER NAME =	DESIGNED - MAG	REVISED -	
	CHECKED - JAD	REVISED -	
PLOT SCALE =	DRAWN - MAG	REVISED -	
PLOT DATE =	CHECKED - JAD	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB 2 AND 3 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 23 OF 53 SHEETS

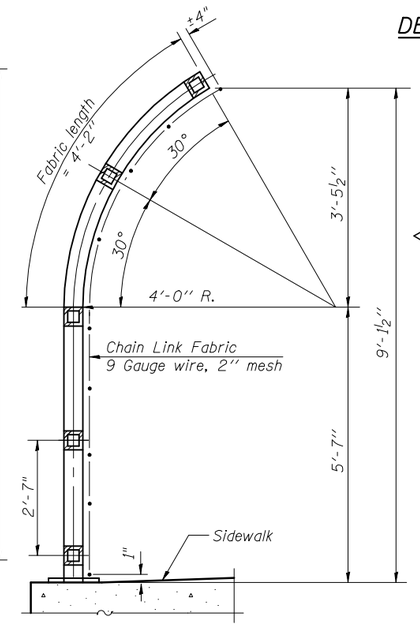
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	135
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



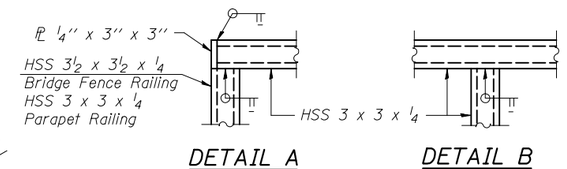
ELEVATION
(Inside Face)

*See Sheets 13, 14, 18, 19, 21 and 22 of 53 for dimensions

(10'-0" Maximum Post Spacing)

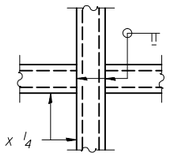


SECTION A-A



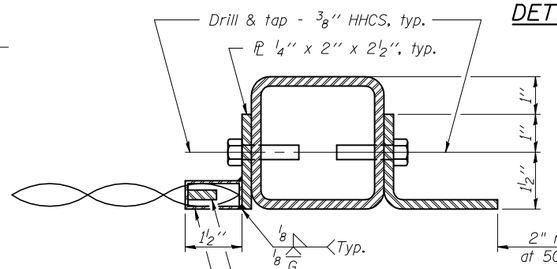
DETAIL A

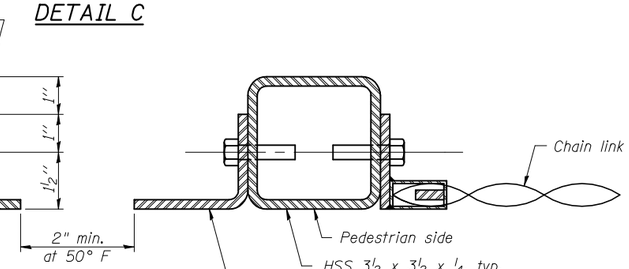
DETAIL B



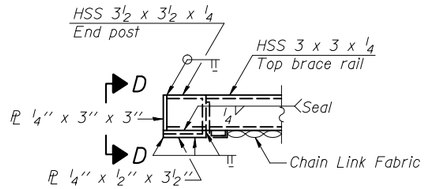
DETAIL C

Note:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.

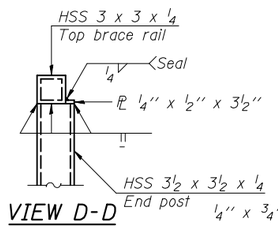




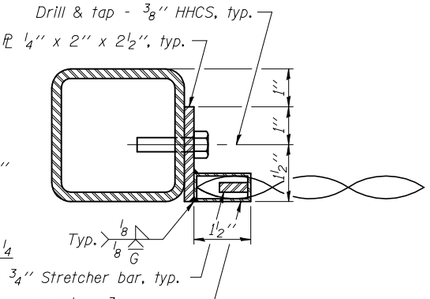
SECTION B-B



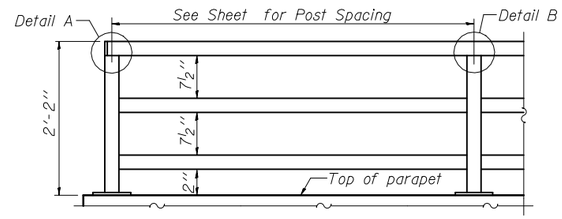
VIEW C-C



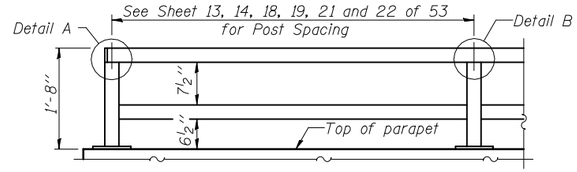
VIEW D-D



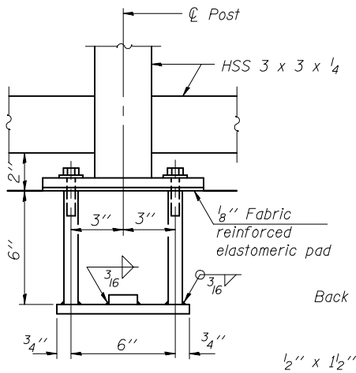
SECTION E-E

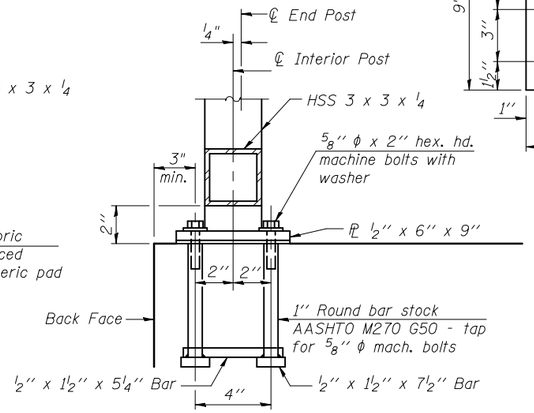


PARAPET RAILING ELEVATION
(Inside Face of Three Element Rail)



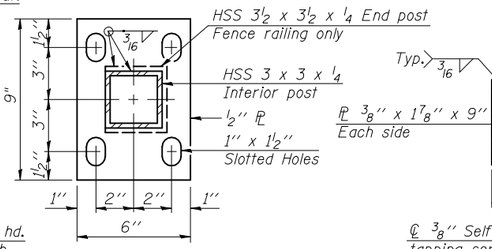
PARAPET RAILING ELEVATION
(Inside face of two element rail)



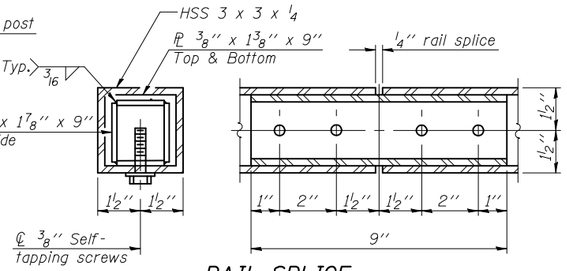


ANCHOR BOLT DETAILS

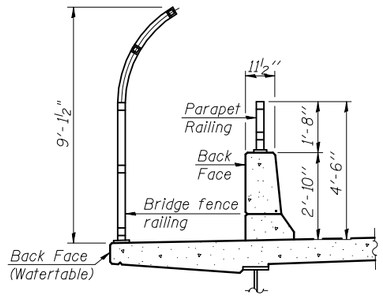
In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



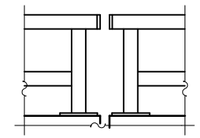
BASE PL



RAIL SPLICE



SECTION THRU DECK



PARAPET RAILING ELEVATION AT ABUTMENT AND APPROACH BENT JOINT
(Two element rail shown - Three element rail similar)

BILL OF MATERIAL

Item	Unit	Quantity
Bridge Fence Railing (Sidewalk)	Foot	575
Parapet Railing	Foot	571

BATES ASSOCIATES
Engineering + Architecture
ILLINOIS
Bayport Business Center 1
100 Lanter Court, Suite 1
Collinsville, IL 62234
tel 618.345.2220
fax 618.345.7233
MISSOURI
Laclede Gas Building
720 Olive, Suite 1600
St. Louis, MO 63101
tel 314.588.9301
fax 314.588.9905
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	CHECKED - JAD	REVISED -
PLOT SCALE =	DRAWN - MAG	REVISED -
PLOT DATE =	CHECKED - JAD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE FENCE RAILING, SIDEWALK MOUNTED
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 24 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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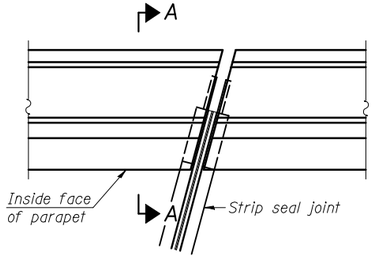
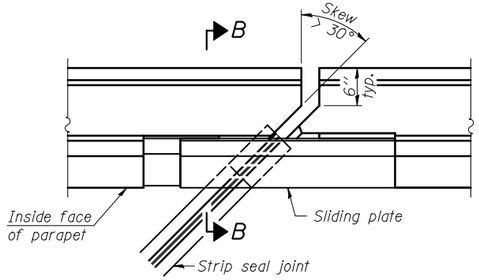
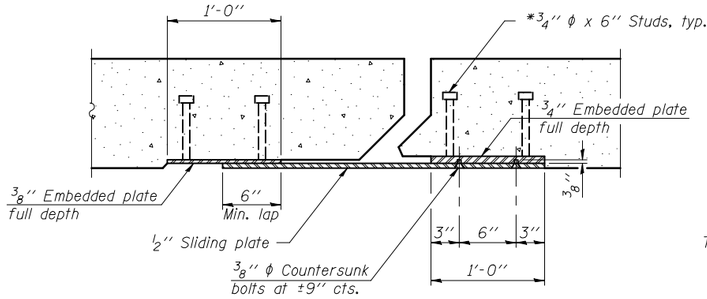
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



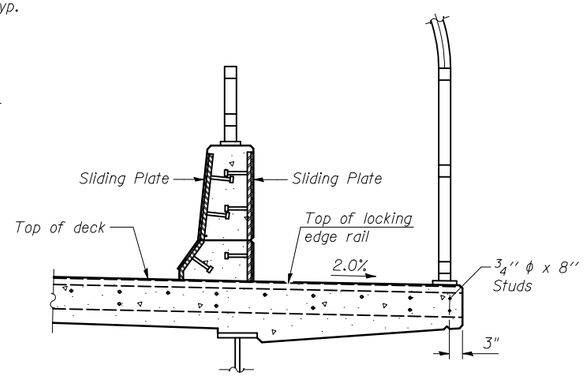
PLAN
(For skews ≤ 30°)



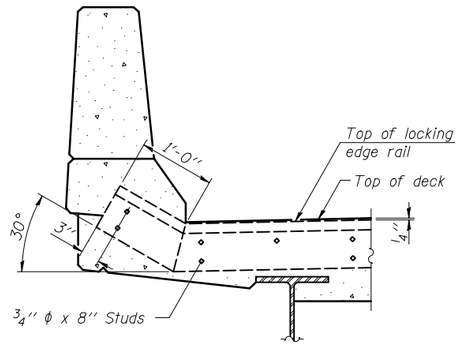
PLAN AT SOUTH PARAPET
(For skews > 30°)
Showing point block



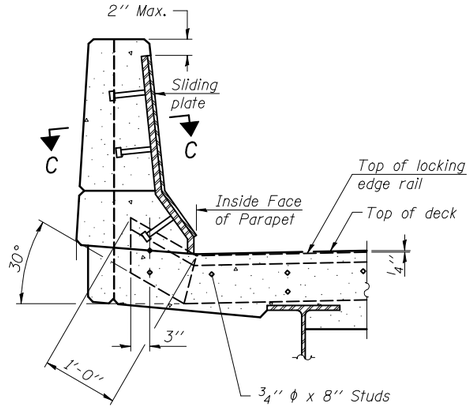
SECTION C-C



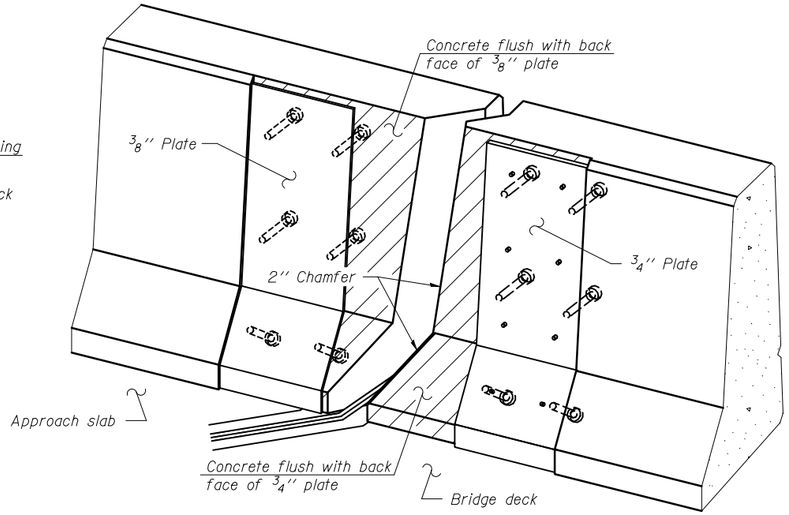
TYPICAL END TREATMENT AT SIDEWALK



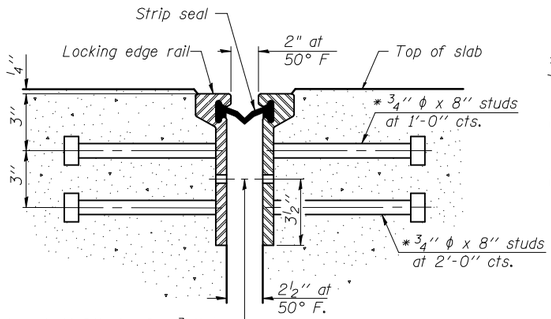
SECTION A-A



SECTION B-B

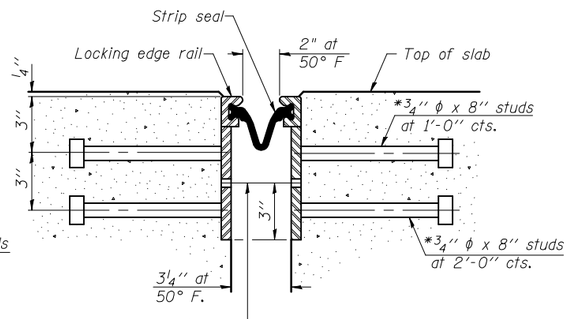


TRIMETRIC VIEW
(Showing back plates only)



7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

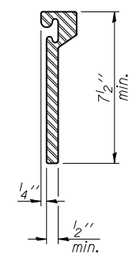
SECTION THRU ROLLED RAIL JOINT



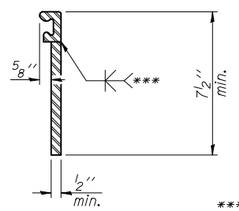
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

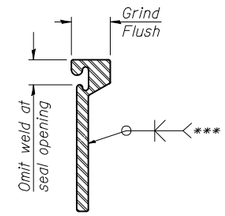
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



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

LOCKING EDGE RAIL SPLICE

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

Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS

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 Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. 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.

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.

Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.

Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	122

EJ-SSJ 7-1-10

Coombe-Bloxdorf P.C.
-CIVIL ENGINEERS-
-STRUCTURAL ENGINEERS-
-LAND SURVEYORS-
Design Firm License No. 184-002703

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - GB	REVISED -
		CHECKED - MCB	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - MML	REVISED -
CB PROJECT NO. 08024-2	PLOT DATE = $DATE$	CHECKED - MCB	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 039-0076 (WB)
SHEET NO. 25 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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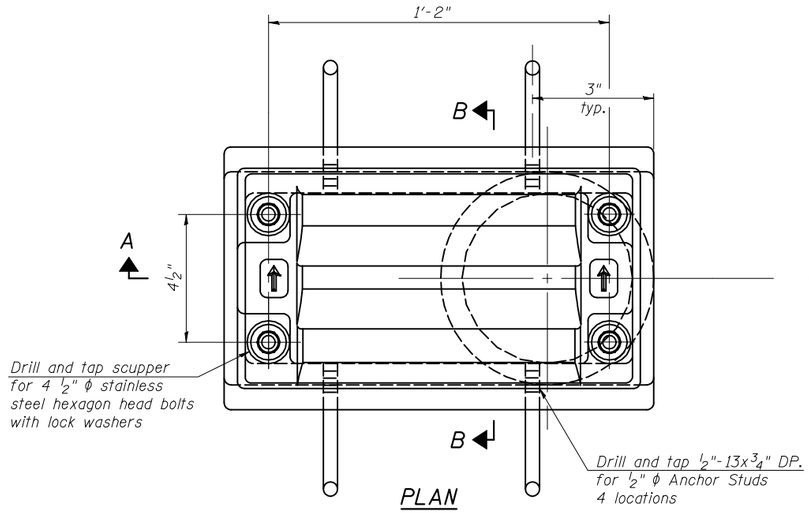
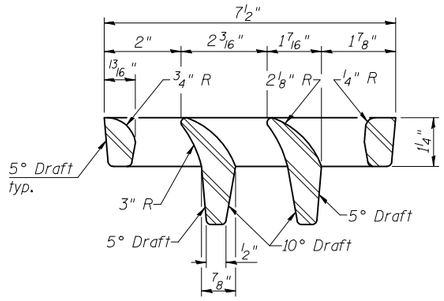
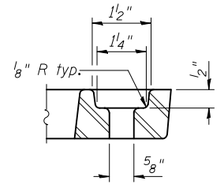
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		



PLAN



VANE GRATE DETAIL



BOLT HOLE DETAIL

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M 105, Class 35B.

Bolts, anchor studs, washers and nuts shall conform to the requirements of ASTM A 307 and shall be galvanized according to AASHTO M 232.

Downspouts located on the exterior side of a painted steel fascia beam shall be painted with the finish coat specified for the exterior side of the fascia beam.

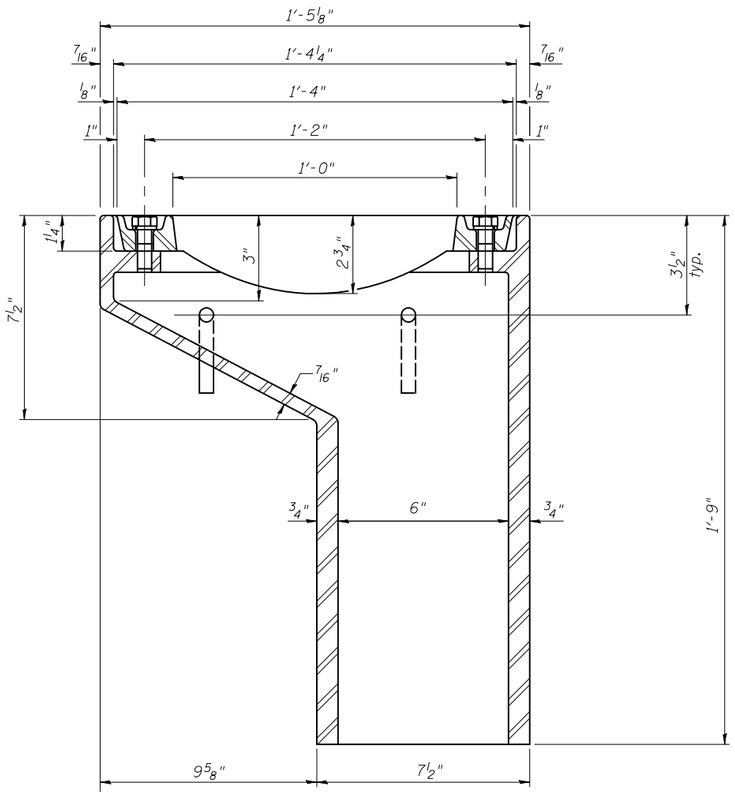
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frame. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval. Structural steel weldments shall not be substituted for the cast iron scupper grate. Structural steel frames and downspouts shall be galvanized according to AASHTO M111.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

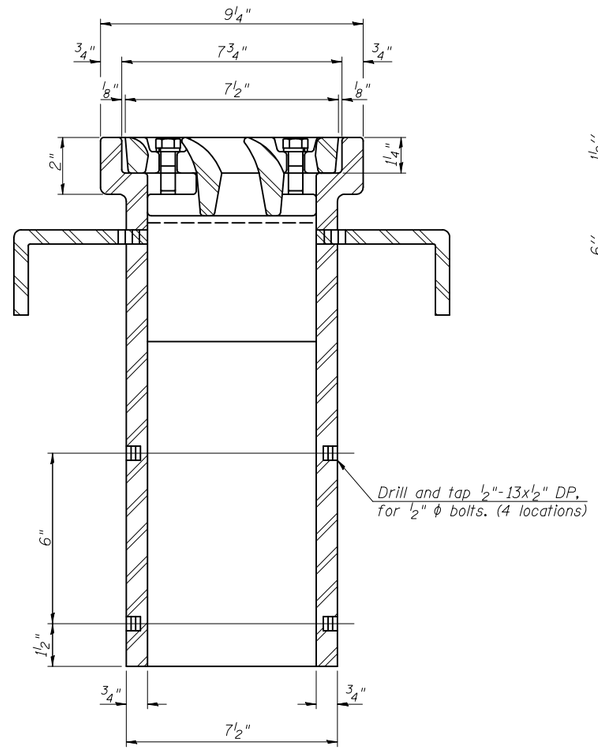
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scuppers, DS-11.

Alternate fiberglass downspout conforming to ASTM D 2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. may be used in lieu of the cast iron or steel equivalent.

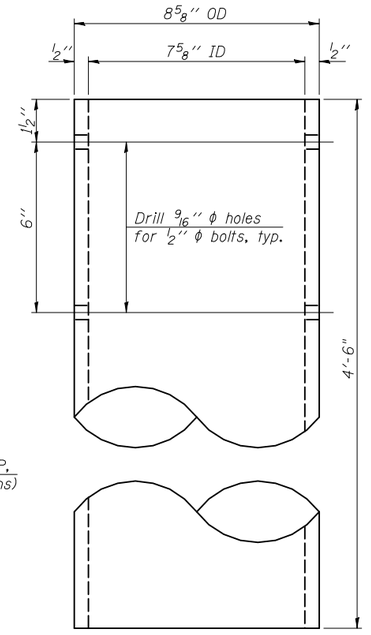


SECTION A-A

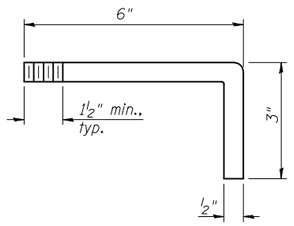
See sheets 15 & 17 of 53 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-11	Each	2

DS-11

7-1-10

FILE NAME = $FILE$	USER NAME = $USER$	DESIGNED - GB	REVISED -
		CHECKED - MCB	REVISED -
	PLOT SCALE = $SCALE$	DRAWN - MML	REVISED -
CB PROJECT NO. 08024-2	PLOT DATE = $DATE$	CHECKED - MCB	REVISED -

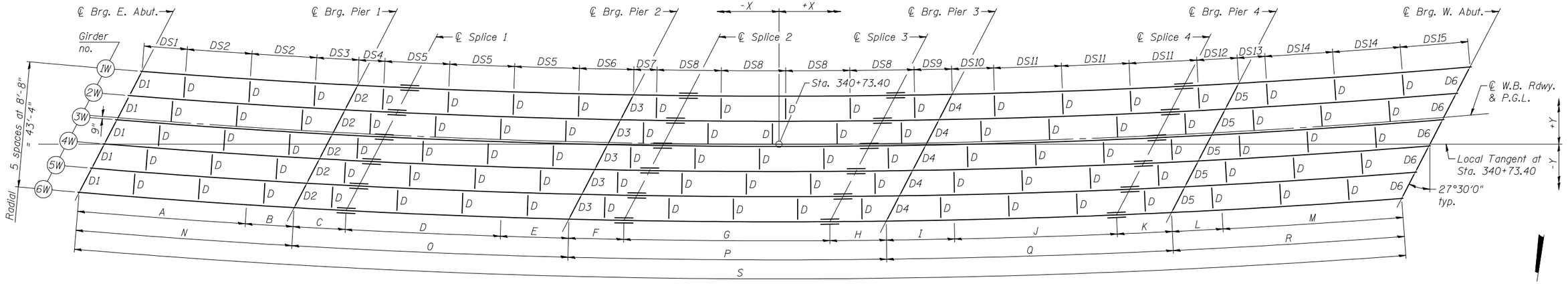
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER, DS-11
STRUCTURE NO. 039-0076 (WB)

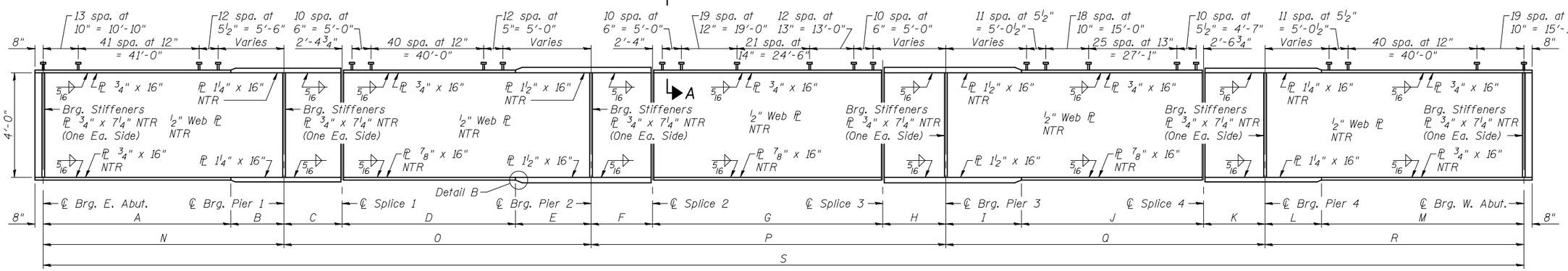
SHEET NO. 26 OF 53 SHEETS

Coombe-Bloxdorf P.C.
-CIVIL ENGINEERS-
-STRUCTURAL ENGINEERS-
-LAND SURVEYORS-
Design Firm License No. 184-002703

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	138
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



PLAN



ELEVATION

DIAPHRAGM SPACING

Girder	Location	DS1	DS2	DS3	DS4	DS5	DS6	DS7	DS8	DS9	DS10	DS11	DS12	DS13	DS14	DS15
1W	North Face	15'-0"	22'-6"	14'-7 13/16"	9'-0"	22'-6"	18'-10 3/16"	8'-0"	22'-3 5/16"	13'-0"	14'-6 13/16"	23'-6"	14'-0"	9'-7 1/16"	23'-6"	23'-6"
2W	South Face	18'-8 13/16"	22'-6 13/16"	10'-8 1/8"	12'-11 13/16"	22'-6 13/16"	14'-7 1/8"	12'-4 1/16"	22'-4 1/8"	8'-3 9/16"	19'-4 1/4"	23'-6 7/8"	8'-10 3/4"	14'-9 9/16"	23'-6 7/8"	18'-1 1/16"
2W	North Face	15'-0"	22'-6"	14'-7 5/16"	9'-0"	22'-6"	18'-9 3/8"	8'-0"	22'-3 1/16"	13'-0"	14'-5 5/8"	23'-6"	14'-0"	9'-6 3/8"	23'-6"	23'-6"
3W	South Face	18'-8 5/8"	22'-6 13/16"	10'-8 9/16"	12'-11 1/16"	22'-6 13/16"	14'-6 1/2"	12'-3 13/16"	22'-3 7/8"	8'-3 3/4"	19'-2 13/16"	23'-6 7/8"	8'-11"	14'-8 3/16"	23'-6 7/8"	18'-1 5/16"
3W	North Face	15'-0"	22'-6"	14'-6 13/16"	9'-0"	22'-6"	18'-8 5/8"	8'-0"	22'-2 3/4"	13'-0"	14'-4 1/16"	23'-6"	14'-0"	9'-5 1/4"	23'-6"	23'-6"
4W	South Face	18'-8 1/2"	22'-6 13/16"	10'-8 1/8"	12'-11 1/2"	22'-6 13/16"	14'-5 7/8"	12'-3 3/4"	22'-3 5/16"	8'-4"	19'-1 7/16"	23'-6 7/8"	8'-11 1/4"	14'-6 3/16"	23'-6 7/8"	18'-1 5/8"
4W	North Face	15'-0"	22'-6"	14'-6 1/4"	9'-0"	22'-6"	18'-7 13/16"	8'-0"	22'-2 1/2"	13'-0"	14'-3 5/16"	23'-6"	14'-0"	9'-4 3/16"	23'-6"	23'-6"
5W	South Face	18'-8 5/16"	22'-6 13/16"	10'-7 13/16"	12'-11 5/16"	22'-6 13/16"	14'-5 5/16"	12'-3 1/2"	22'-3 5/16"	8'-4 3/16"	19'-0 1/16"	23'-6 7/8"	8'-11 1/2"	14'-5 1/2"	23'-6 7/8"	18'-1 7/8"
5W	North Face	15'-0"	22'-6"	14'-5 3/4"	9'-0"	22'-6"	18'-7 1/16"	8'-0"	22'-2 1/4"	13'-0"	14'-2 3/16"	23'-6"	14'-0"	9'-3 1/8"	23'-6"	23'-6"
6W	South Face	18'-8 3/16"	22'-6 13/16"	10'-7 1/16"	12'-11 1/8"	22'-6 13/16"	14'-4 3/4"	12'-3 1/4"	22'-3 1/16"	8'-4 3/8"	18'-10 1/16"	23'-6 7/8"	8'-11 3/4"	14'-4 3/16"	23'-6 7/8"	18'-2 3/16"

TOP OF WEB ELEVATIONS*

	Girder 1W	Girder 2W	Girder 3W	Girder 4W	Girder 5W	Girder 6W
℄ Brg. E. Abut.	382.60	382.80	383.00	383.20	383.40	383.45
℄ Brg. Pier 1	382.91	383.10	383.29	383.49	383.69	383.75
℄ Splice 1	382.95	383.14	383.34	383.53	383.73	383.79
℄ Brg. Pier 2	383.34	383.54	383.73	383.93	384.12	384.16
℄ Splice 2	383.39	383.59	383.78	383.97	384.17	384.21
℄ Splice 3	383.61	383.82	384.03	384.25	384.46	384.51
℄ Brg. Pier 3	383.60	383.82	384.04	384.26	384.48	384.54
℄ Splice 4	383.26	383.50	383.74	383.98	384.22	384.33
℄ Brg. Pier 4	383.20	383.45	383.69	383.93	384.17	384.27
℄ Brg. W. Abut.	382.87	383.12	383.36	383.61	383.85	383.95

*For fabrication only.

LAYOUT DIMENSIONS

Girder	℄ Brg. E. Abut.		℄ Brg. Pier 1		℄ Splice 1		℄ Brg. Pier 2		℄ Splice 2		℄ Splice 3		℄ Brg. Pier 3		℄ Splice 4		℄ Brg. Pier 4		℄ Brg. W. Abut.	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1W	-220'-0 11/16"	25'-1 9/16"	-145'-6 3/4"	20'-3 13/16"	-128'-1"	19'-5 11/16"	-50'-3 5/16"	17'-0 3/8"	-31'-3 3/8"	16'-9 1/16"	40'-3 7/8"	16'-10 7/16"	59'-9 13/16"	17'-2 9/16"	139'-10"	20'-0 3/8"	158'-9 11/16"	21'-0 3/8"	238'-8 3/4"	26'-7 3/4"
2W	-224'-4 7/8"	16'-9 3/8"	-149'-11 9/16"	11'-10 7/16"	-132'-5 13/16"	11'-0"	-54'-8 15/16"	8'-5 5/16"	-35'-9"	8'-1 11/16"	35'-9 1/8"	8'-1 11/16"	55'-3 1/8"	8'-5 7/16"	135'-2 1/8"	11'-1 9/16"	154'-1 7/8"	12'-1 1/8"	233'-11 15/16"	17'-6 5/8"
3W	-228'-9"	8'-5 3/16"	-154'-4 5/16"	3'-5 1/8"	-136'-10 7/16"	2'-6 7/16"	-59'-2 9/16"	1 5/8"	-40'-2 9/16"	5 5/8"	31'-2 7/16"	6 15/16"	50'-8 7/16"	3 5/8"	130'-6 3/8"	2'-2 13/16"	149'-6 1/16"	3'-2"	229'-3 1/4"	8'-5 11/16"
4W	-233'-1 1/8"	1 1/16"	-158'-9"	-5'-0 1/8"	-141'-3 5/16"	-5'-11 1/8"	-63'-8 1/8"	-8'-8 1/2"	-44'-8 1/8"	-9'-0 13/16"	26'-7 15/16"	-9'-3 1/2"	46'-1 13/16"	-9'-0 9/16"	125'-10 5/8"	-6'-7 3/4"	144'-10 3/8"	-5'-9"	224'-6 9/16"	7 3/16"
5W	-237'-5 1/4"	-8'-3"	-163'-1 11/16"	-13'-5 3/8"	-145'-8"	-14'-4 5/8"	-68'-1 5/8"	-17'-3 5/16"	-49'-1 11/16"	-17'-7 15/16"	22'-1 1/4"	-18'-0"	41'-7 1/4"	-17'-9 3/8"	121'-3"	-15'-6 1/4"	140'-2 3/4"	-14'-7 7/8"	219'-10"	-9'-7 7/8"
6W	-241'-9 5/16"	-16'-7"	-167'-6 5/16"	-21'-10 1/2"	-150'-0 11/16"	-22'-10 1/16"	-72'-7 1/16"	-25'-10"	-53'-7 1/8"	-26'-3"	17'-6 11/16"	-26'-8 3/8"	37'-0 11/16"	-26'-6 1/8"	116'-7 3/8"	-24'-4 11/16"	135'-7 1/8"	-23'-6 11/16"	215'-1 7/16"	-18'-8 1/16"

GIRDER DIMENSIONS

Girder	Radius	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1W	2837.01'	58'-1 13/16"	16'-6"	17'-6"	54'-4 3/16"	23'-6"	19'-0"	71'-7 1/4"	19'-6"	23'-6"	56'-6 13/16"	19'-0"	17'-6"	62'-7 7/16"	74'-7 13/16"	95'-4 3/16"	110'-1 1/4"	99'-0 13/16"	80'-1 7/16"	459'-3 1/2"
2W	2845.68'	58'-1 5/16"	16'-6"	17'-6"	54'-3 3/8"	23'-6"	19'-0"	71'-6 1/8"	19'-6"	23'-6"	56'-5 5/8"	19'-0"	17'-6"	62'-6 3/8"	74'-7 5/16"	95'-3 3/8"	110'-0 1/8"	98'-11 5/8"	80'-0 3/8"	458'-10 13/16"
3W	2854.34'	58'-0 13/16"	16'-6"	17'-6"	54'-2 5/8"	23'-6"	19'-0"	71'-5 1/16"	19'-6"	23'-6"	56'-4 7/16"	19'-0"	17'-6"	62'-5 1/4"	74'-6 13/16"	95'-2 5/8"	109'-11 1/16"	98'-10 7/16"	79'-11 1/4"	458'-6 3/16"
4W	2863.01'	58'-0 1/4"	16'-6"	17'-6"	54'-1 13/16"	23'-6"	19'-0"	71'-4"	19'-6"	23'-6"	56'-3 5/16"	19'-0"	17'-6"	62'-4 3/16"	74'-6 1/4"	95'-1 13/16"	109'-10"	98'-9 5/16"	79'-10 3/16"	458'-1 9/16"
5W	2871.68'	57'-11 3/4"	16'-6"	17'-6"	54'-1 1/16"	23'-6"	19'-0"	71'-2 15/16"	19'-6"	23'-6"	56'-2 3/16"	19'-0"	17'-6"	62'-3 1/8"	74'-5 3/4"	95'-1 1/16"	109'-8 15/16"	98'-8 3/16"	79'-9 1/8"	457'-9 1/16"
6W	2880.34'	57'-11 1/4"	16'-6"	17'-6"	54'-0 5/16"	23'-6"	19'-0"	71'-1 7/8"	19'-6"	23'-6"	56'-1 1/16"	19'-0"	17'-6"	62'-2 1/8"	74'-5 1/4"	95'-0 5/16"	109'-7 7/8"	98'-7 1/16"	79'-8 1/8"	457'-4 5/8"

Notes:
1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
2. All diaphragms between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
3. For diaphragm and splice details, Section A-A, and Detail B, see sheet 29 of 53.
4. Girder dimensions, diaphragm spacing, and shear stud spacing are taken along centerline of each individual girder.

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USER NAME =	DESIGNED - JAD	REVISED -	
	CHECKED - DGL	REVISED -	
PLOT SCALE =	DRAWN - JAD	REVISED -	
PLOT DATE =	CHECKED - DGL	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN AND GIRDER DETAILS
STRUCTURE NO. 036-0076 (W.B.)
SHEET NO. 27 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	139
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

GIRDER MOMENT TABLE (GIRDER 6W)										
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.6 Sp. 5
I_s	(in^4)	18,869	28,869	20,051	34,020	20,051	34,020	20,051	28,869	18,869
$I_c(n)$	(in^4)	45,477	-	49,247	-	49,247	-	43,247	-	45,477
$I_c(3n)$	(in^4)	34,543	-	37,078	-	37,078	-	37,078	-	35,543
$I_c(cr)$	(in^4)	-	-	-	-	-	-	-	-	-
S_s	(in^3)	762	1,143	840	1,334	840	1,334	840	1,143	762
$S_c(n)$	(in^3)	1,041	-	1,140	-	1,140	-	1,140	-	1,041
$S_c(3n)$	(in^3)	960	-	1,053	-	1,053	-	1,053	-	960
$S_c(cr)$	(in^3)	-	-	-	-	-	-	-	-	-
S_{xc}	(in^3)	995	1,143	1,107	1,334	1,082	1,334	1,105	1,143	988
DC1	(k/')	1.096	1.160	1.105	1.191	1.105	1.191	1.105	1.160	1.096
M_{DC1}	('k)	347.9	681.9	247.9	964.9	446.3	986.1	267.4	772.1	407.4
② DC2	(k/')	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450	0.450
M_{DC2}	('k)	150.5	314.6	129.7	409.6	164.9	423.3	135.3	349.9	163.8
③ DW	(k/')	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385	0.385
M_{DW}	('k)	127.0	193.1	103.7	291.4	190.9	298.0	114.9	217.7	145.5
M_{L+IM}	('k)	1,062.0	1,040.6	1,167.7	1,416.2	1,388.6	1,395.3	1,220.2	1,166.3	1,136.9
f_t (Strength I)	(ksi)	4.47	1.53	3.87	3.85	4.91	4.25	4.43	1.84	5.33
$M_u + \frac{1}{3} f_t S_{xc}$	('k)	2,795.5	3,404.8	2,790.0	4,776.3	3,627.9	4,807.9	2,946.9	3,828.5	3,068.1
$\phi_f M_n$	('k)	-	-	-	-	-	-	-	-	-
f_s DC1	(ksi)	5.48	7.16	3.54	8.68	6.38	8.87	3.82	8.11	6.42
f_s DC2	(ksi)	1.88	3.30	1.48	3.68	1.88	3.81	1.54	3.67	2.05
f_s DW	(ksi)	1.59	2.03	1.18	2.62	2.18	2.68	1.31	2.29	1.82
f_s (L+IM)	(ksi)	12.24	10.92	12.29	12.74	14.62	12.55	12.84	12.25	13.11
f_t (Service II)	(ksi)	3.35	1.07	2.90	2.04	3.68	2.16	3.32	1.23	4.00
$f_s + f_f/2$ (Service II)	(ksi)	26.54	27.23	23.63	32.56	31.29	32.76	25.02	30.62	29.33
$0.95R_hF_{yf}$	(ksi)	47.50	-	47.50	-	47.50	-	47.50	-	47.50
$0.80R_hF_{yf}$	(ksi)	-	40.00	-	40.00	-	40.00	-	40.00	-
$f_s + f_f/3$ (Total)(Strength I)	(ksi)	34.50	35.74	30.84	42.96	40.82	43.25	32.62	40.21	38.04
$\phi_f F_n$	(ksi)	50.00	46.02	50.00	43.51	50.00	43.19	50.00	45.91	50.00
V_r	(k)	57.3	-	48.2	-	56.1	-	50.7	-	62.2

GIRDER REACTION TABLE (GIRDER 6W)							
		E. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	W. Abut.
R_{DC1}	(k)	26.0	86.7	100.9	102.0	91.9	27.6
R_{DC2}	(k)	13.3	44.5	48.5	49.9	46.8	14.7
R_{DW}	(k)	8.2	25.9	30.0	31.4	26.9	10.0
R_{L+IM}	(k)	69.4	121.5	137.5	142.8	133.1	92.7
R_{Total}	(k)	116.9	278.6	316.9	326.1	298.7	145.0

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads ($in.^4$ and $in.^3$).

$I_c(n)$, $S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short term composite live loads ($in.^4$ and $in.^3$).

$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite dead loads ($in.^4$ and $in.^3$).

S_{xc}: Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange ($in.^3$).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact)(kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

f_t: Factored calculated normal stress at edge of flange for controlling steel flange plate due to lateral bending, Strength I or Service II as applicable (ksi).

$\phi_f M_n$: Factored resistance available according to A6.1.1 (k).

f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
M_{DC1} / S_{nc}

f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
$M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.

f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
$M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s (L+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live plus impact loads as calculated below (ksi).
$M_{L+IM} / S_c(3n)$ or $M_{L+IM} / S_c(cr)$ as applicable.

$f_s + f_f/2$ (Service II): Sum of stresses as computed below (ksi).
$f_{s\,DC1} + f_{sDC2} + f_{sDW} + 1.3\ f_{sL+IM} + f_f/2$

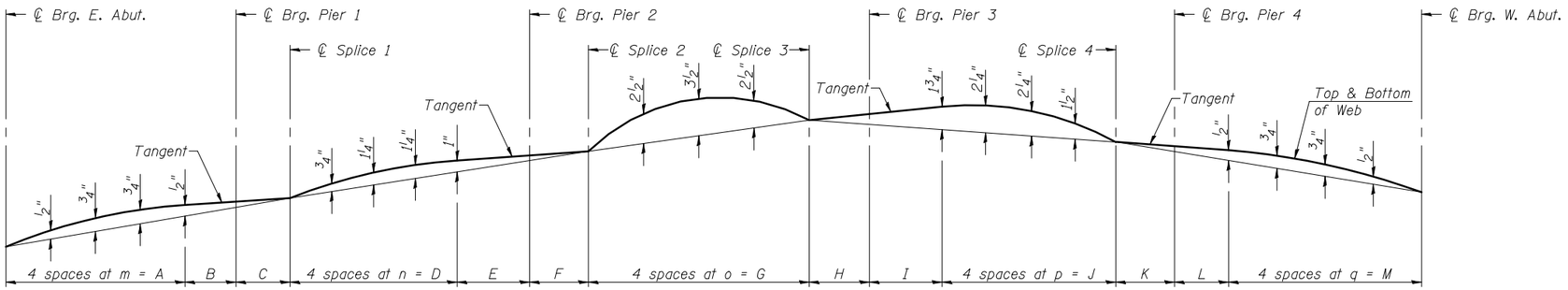
$0.95R_hF_{yf}$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

$f_s + f_f/3$ (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
$1.25\ (f_{sDC1} + f_{sDC2}) + 1.5\ f_{sDW} + 1.75\ f_{sL+IM} + f_f/3$

$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7.2 (ksi).

V_r: Maximum factored shear range computed according to Article 6.10.10.

Note:
M_L and R_L include the effects of centrifugal force and superelevation.



CAMBER DIAGRAM

DIMENSION TABLE ①

Girder	A	B	C	D	E	F	G	H	I	J	K	L	M	m	n	o	p	q
1W	58'-1 13/16"	16'-6"	17'-6"	54'-4 3/16"	23'-6"	19'-0"	71'-7 1/4"	19'-6"	23'-6"	56'-6 13/16"	19'-0"	17'-6"	62'-7 7/16"	14'-6 7/16"	13'-7 1/16"	17'-10 13/16"	14'-1 11/16"	15'-7 7/8"
2W	58'-1 5/16"	16'-6"	17'-6"	54'-3 3/8"	23'-6"	19'-0"	71'-6 1/8"	19'-6"	23'-6"	56'-5 5/8"	19'-0"	17'-6"	62'-6 3/8"	14'-6 5/16"	13'-6 7/8"	17'-10 9/16"	14'-1 1/16"	15'-7 9/16"
3W	58'-0 13/16"	16'-6"	17'-6"	54'-2 5/8"	23'-6"	19'-0"	71'-5 1/16"	19'-6"	23'-6"	56'-4 7/16"	19'-0"	17'-6"	62'-5 1/4"	14'-6 3/16"	13'-6 1/16"	17'-10 1/4"	14'-1 1/8"	15'-7 5/16"
4W	58'-0 1/4"	16'-6"	17'-6"	54'-1 13/16"	23'-6"	19'-0"	71'-4"	19'-6"	23'-6"	56'-3 5/16"	19'-0"	17'-6"	62'-4 3/16"	14'-6 1/16"	13'-6 1/16"	17'-10"	14'-0 13/16"	15'-7 1/16"
5W	57'-11 3/4"	16'-6"	17'-6"	54'-1 1/16"	23'-6"	19'-0"	71'-2 15/16"	19'-6"	23'-6"	56'-2 3/16"	19'-0"	17'-6"	62'-3 1/8"	14'-5 15/16"	13'-6 1/4"	17'-9 3/4"	14'-0 9/16"	15'-6 3/4"
6W	57'-11 1/4"	16'-6"	17'-6"	54'-0 5/16"	23'-6"	19'-0"	71'-1 7/8"	19'-6"	23'-6"	56'-1 1/16"	19'-0"	17'-6"	62'-2 1/8"	14'-5 13/16"	13'-6 1/16"	17'-9 1/2"	14'-0 1/4"	15'-6 9/16"

Notes:
① Horizontal dimensions are taken along centerline of each individual girder.
② Analyzed in model as a 0.450k/ft line load applied at the edge of deck.
③ Analyzed in model as a 0.050 ksf area load applied from face to face of parapets.

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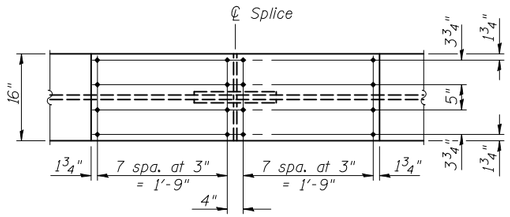
		CHECKED - DGL	REVISED -	
PLOT SCALE =		DRAWN - JAD	REVISED -	
PLOT DATE =		CHECKED - DGL	REVISED -	

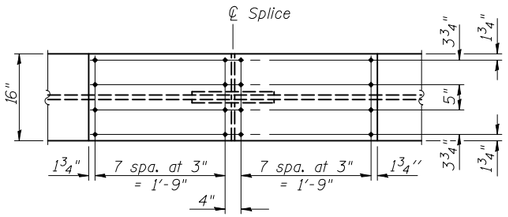
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 28 OF 53 SHEETS

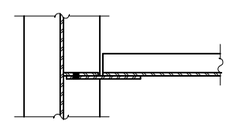
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	140
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



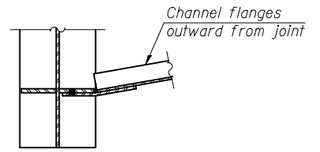
TOP & BOTTOM PLAN



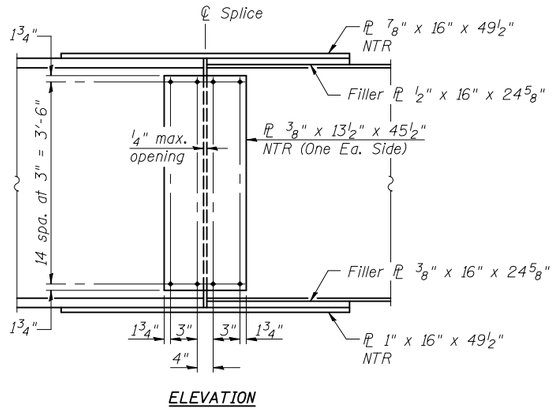
TOP PLAN



SECTION B-B



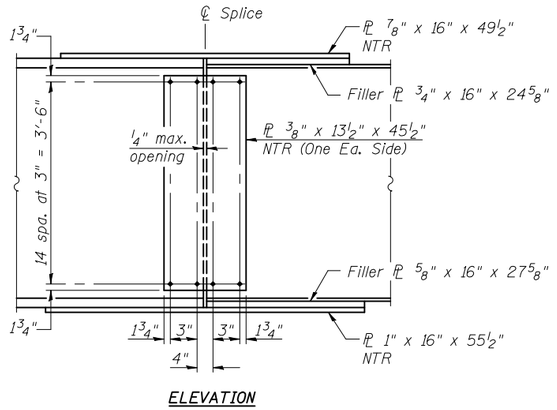
SECTION C-C



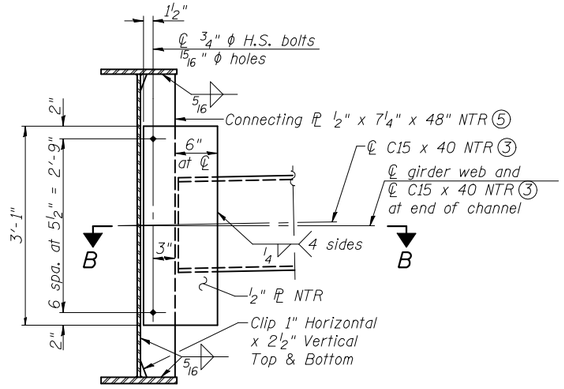
ELEVATION

SPLICE 1 & 4 DETAIL

(12 Required)

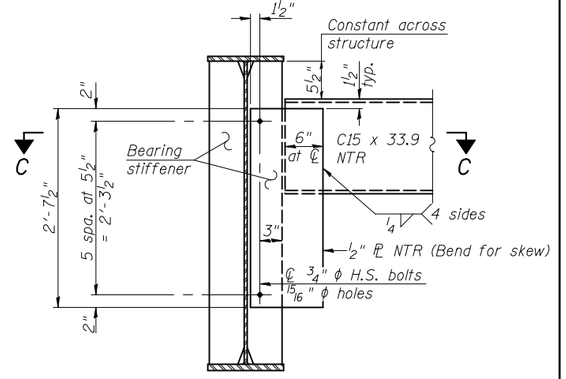


ELEVATION



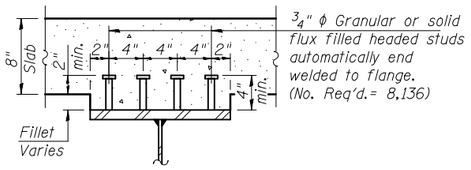
INTERIOR DIAPHRAGM D

(95 Required)



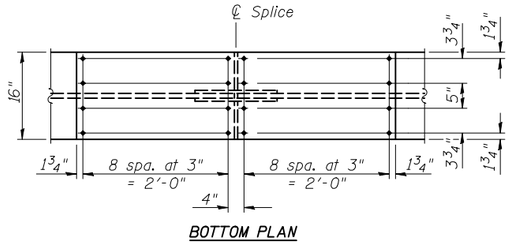
END DIAPHRAGM D1 or D6 ④

(5 of Each Required)



¾" ϕ Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.= 8,136)

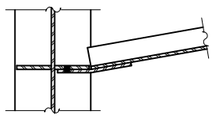
SECTION A-A



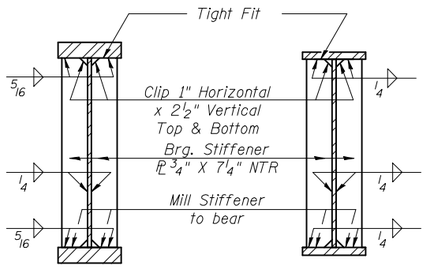
BOTTOM PLAN

SPLICE 2 & 3 DETAIL

(12 Required)

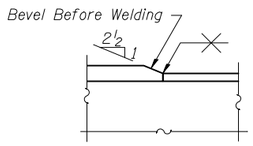


SECTION D-D

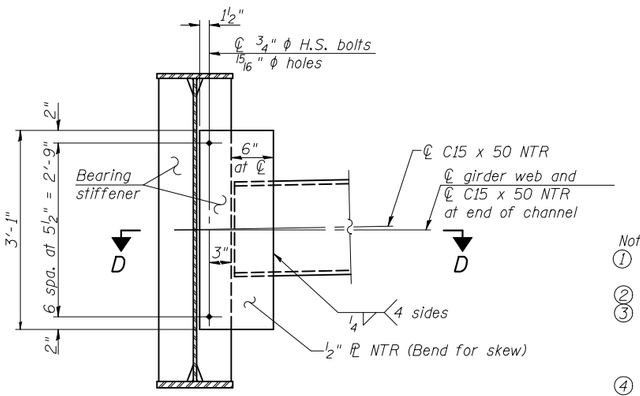


SECTION AT PIER SECTION AT ABUTMENT

BEARING STIFFENER



DETAIL B



INTERIOR DIAPHRAGM D2, D3, D4, or D5 ④

(5 of Each Required)

Notes:

1. Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
2. Two hardened washers required for each set of oversized holes.
3. Alternate channels C15x50 are permitted to facilitate material acquisition. Calculated weight of structural steel is based on C15x40 sections. The alternate, if utilized, shall be provided at no extra cost to the department.
4. Similar diaphragms are numbered uniquely due to a difference in length.
5. Do not provide plate on exterior face of fascia girders.

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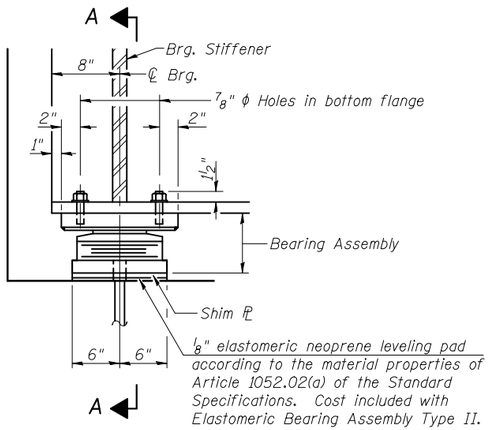
PLOT DATE =	CHECKED - DGL	REVISED -

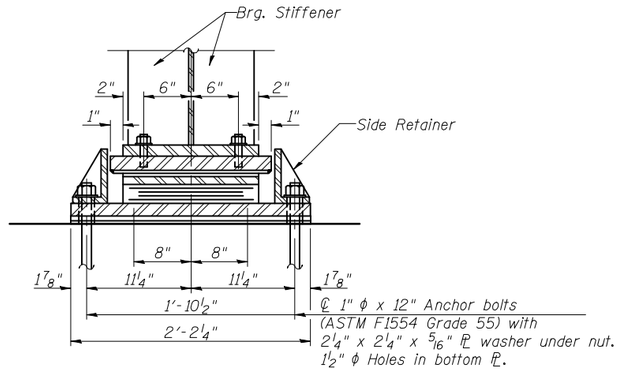
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 29 OF 53 SHEETS

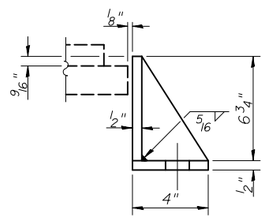
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	141
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

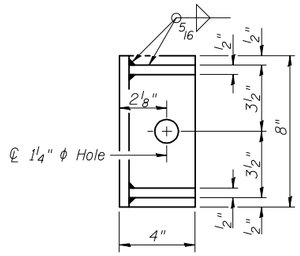


ELEVATION

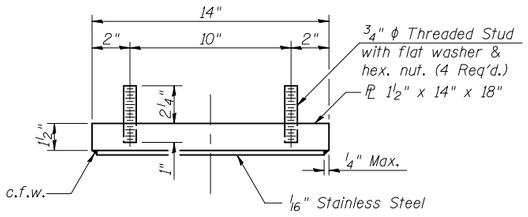


SECTION A-A

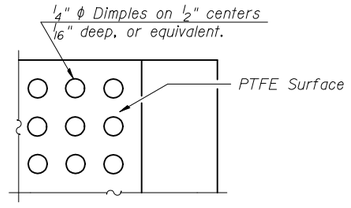




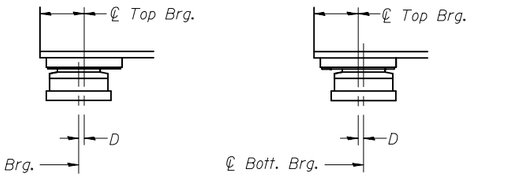
SIDE RETAINER ⑩



TOP BEARING ASSEMBLY



PLAN-PTFE SURFACE

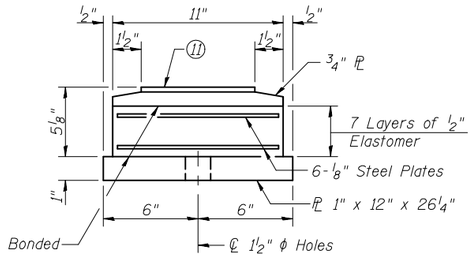


BELOW 50°F.
(Move bott. brg. away from fixed brg.)

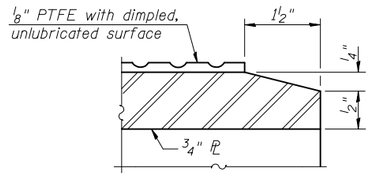
ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

D= 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F. Design Expansion Lengths are: E. Abut. = 272'
W. Abut. = 187'



BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE

TYPE II ELASTOMERIC EXP. BRG.
(EAST & WEST ABUTMENTS)

Notes:
① Anchor bolts shall be ASTM F1554 all-thread or an Engineer-approved alternate material of the grade and diameter specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
② Anchor bolts for Type II bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.
③ Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
④ Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type II.
⑤ The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.
⑥ Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.
⑦ The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50W.
⑧ Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
⑨ The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.
⑩ Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.
⑪ 1/8" PTFE dimpled, unlubricated.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	12
Anchor Bolts, 1"	Each	24

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ILLINOIS Eastport Business Center 1 100 Lantar Court, Suite 1 Collinsville, IL 62234 tel 618.345.2220 fax 618.345.7233
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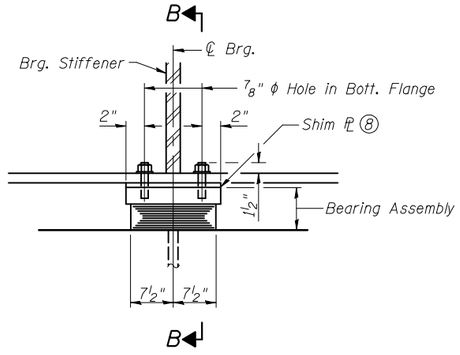
	CHECKED - DGL	REVISED -	
PLOT SCALE =	DRAWN - JAD	REVISED -	
PLOT DATE =	CHECKED - DGL	REVISED -	

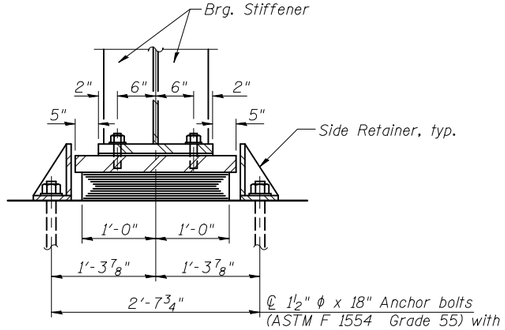
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 036-0076 (W.B.)
SHEET NO. 30 OF 53 SHEETS

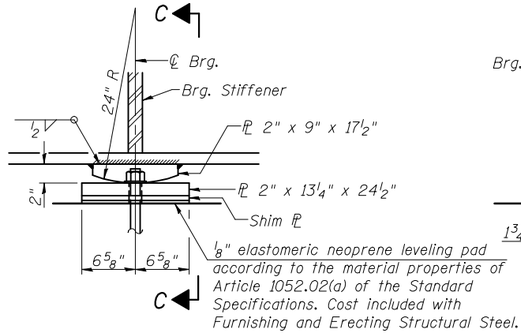
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	142
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



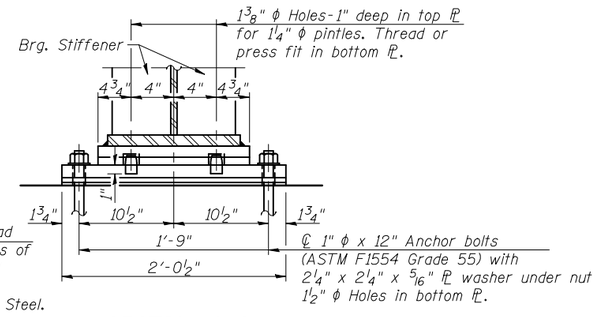
ELEVATION



SECTION B-B

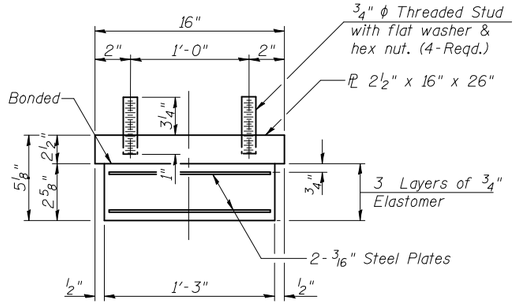


ELEVATION

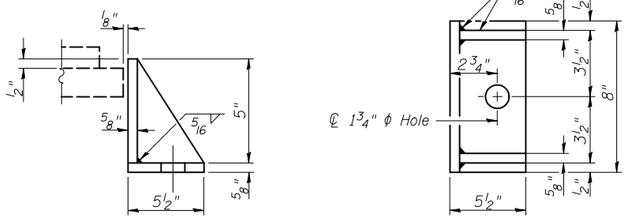


SECTION C-C

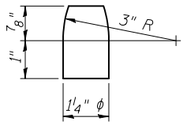
FIXED BEARING (PIER 1, 3, & 4)



BEARING ASSEMBLY ⑧



SIDE RETAINER ⑨



PINTLE

TYPE I ELASTOMERIC EXP. BRG. (PIER 2)

BEARING SHIM PLATES

	Girder 1W	Girder 2W	Girder 3W	Girder 4W	Girder 5W	Girder 6W
Pier 2	-	-	-	-	1/4"	-

Notes:

① Anchor bolts shall be ASTM F1554 all-thread or an Engineer-approved alternate material of the grades and diameters specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

② Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

③ Anchor bolts for side retainers may be cast in place or installed in holes drilled before or after members are in place.

④ Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

⑤ Side retainers and other steel members required for the elastomeric bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

⑥ The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50W.

⑦ Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

⑧ Shim plates shall not be placed under Bearing Assembly.

⑨ Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

⑩ The anchor bolt sizes and grades shown constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6
Anchor Bolts, 1"	Each	36
Anchor Bolts, 1 1/2"	Each	12

BATES ASSOCIATES Engineering + Architecture
ILLINOIS: Belmont Business Center 1, 100 Lanter Court, Suite 1, Collinsville, IL 62234, tel 618.343.2220, fax 618.343.7220
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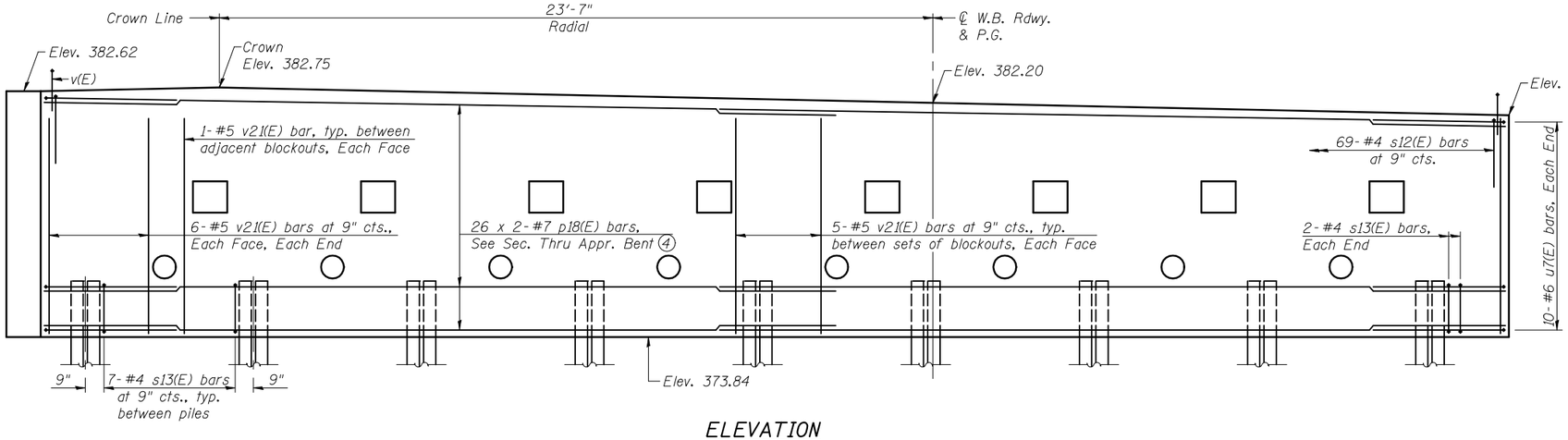
	CHECKED - DGL	REVISED -	
PLOT SCALE =	DRAWN - JAD	REVISED -	
PLOT DATE =	CHECKED - DGL	REVISED -	

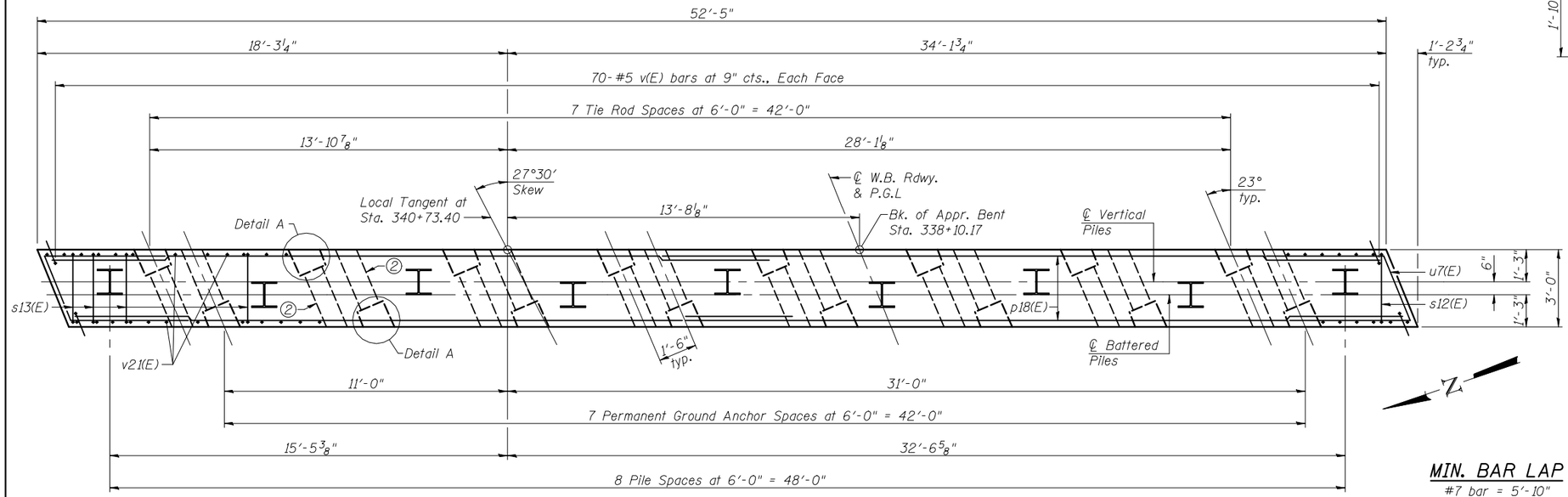
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 31 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	143
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		



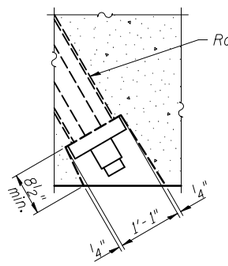
ELEVATION
(Looking East)



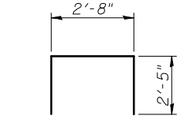
PLAN

PILE DATA

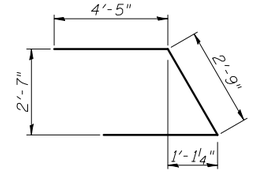
Type: Steel HP 14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 390 kips
Est. Length: 94 ft
No. Production Piles: 9
No. Test Piles: 0



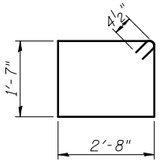
DETAIL A ③



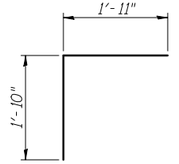
BARS s12(E)



BAR u7(E)



BARS s13(E)



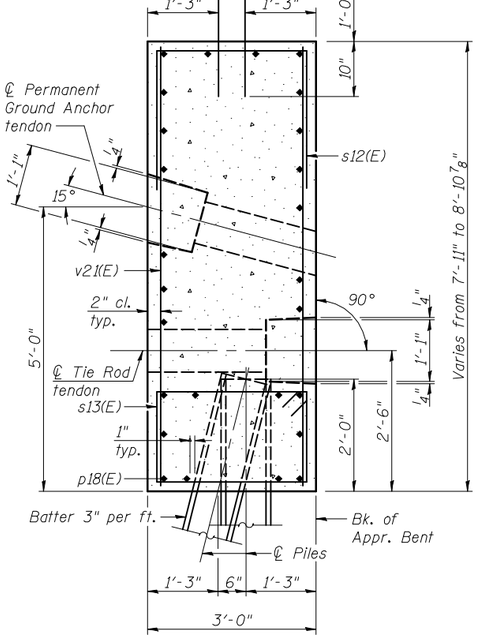
BAR v(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
p18(E)	52	#7	29'-0"	
s12(E)	69	#4	7'-6"	
s13(E)	60	#4	9'-3"	
u7(E)	20	#6	11'-7"	
v(E)	140	#5	3'-9"	
v21(E)	110	#5	7'-7"	
Structure Excavation		Cu. Yd.	143	
Concrete Structures		Cu. Yd.	48.3	
Reinforcement Bars, Epoxy Coated		Pound	5,560	
Furnishing Steel Piles HP14x89		Foot	846	
Driving Piles		Foot	846	

MIN. BAR LAP
#7 bar = 5'-10"

Notes:
1. For details of piles, see sheet 47 of 53.
2. Round HSS9.625x0.188 conforming to the requirements of ASTM A500 Grade B cast into bent for Tie Rod and Permanent Ground Anchor blockouts. Cost included with Concrete Structures.
3. For details of Tie Rod and Permanent Ground Anchor, see sheet 40 of 53.
4. Fan bars located above the Permanent Ground Anchor blockouts.
5. Bars indicated thus 26 x 2-#7 etc. indicates 26 lines of bars with 2 lengths per line.



SEC. THRU APPR. BENT

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PLOT DATE =	CHECKED - DGL	REVISED -

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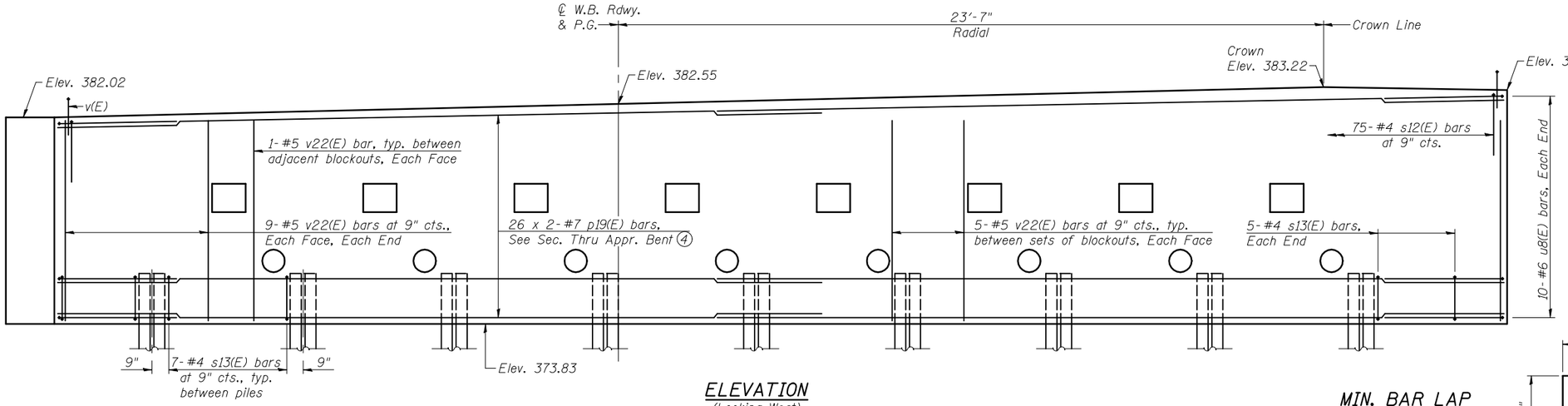
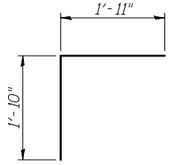
DEPARTMENT OF TRANSPORTATION

EAST APPROACH BENT DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 32 OF 53 SHEETS

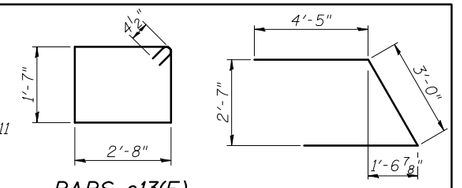
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	144
		CONTRACT NO. 78056		
		ILLINOIS	FED. AID PROJECT	



ELEVATION
(Looking West)

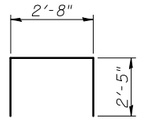


MIN. BAR LAP
#7 bar = 5'-10"



BARS s13(E)

BAR u8(E)

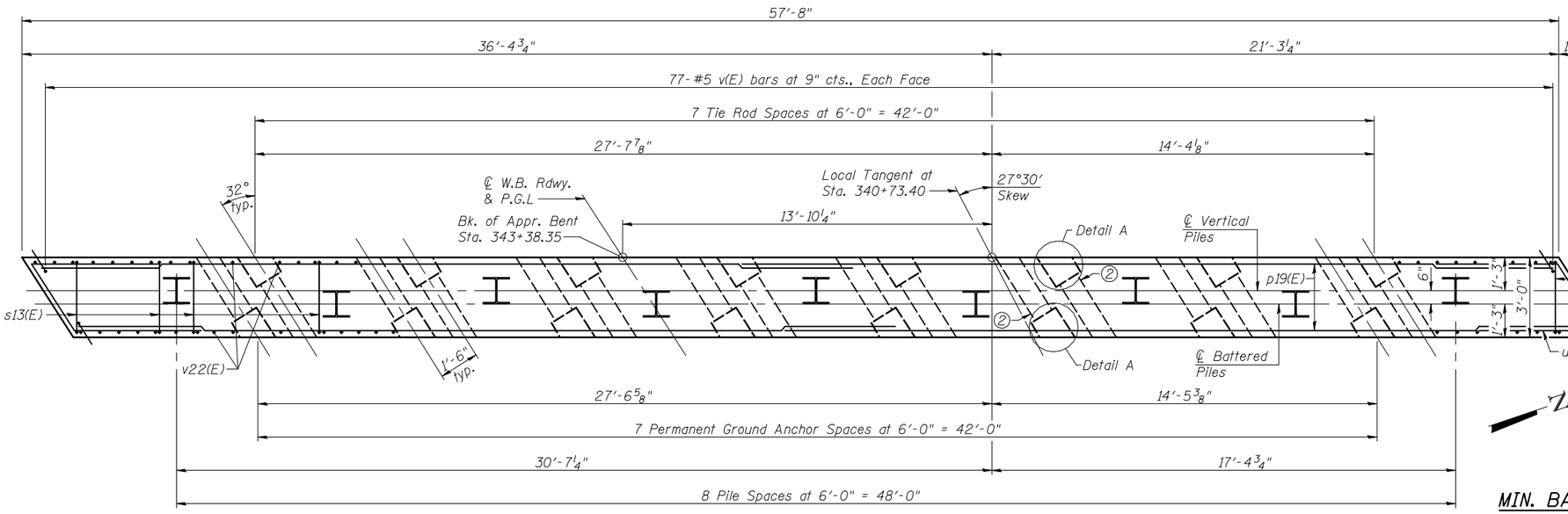


BARS s12(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
p19(E)	52	#7	31'-7"	
s12(E)	75	#4	7'-6"	
s13(E)	66	#4	9'-3"	
u8(E)	20	#6	11'-10"	
v(E)	154	#5	3'-9"	
v22(E)	122	#5	7'-10"	
Structure Excavation		Cu. Yd.	157	
Concrete Structures		Cu. Yd.	55.7	
Reinforcement Bars, Epoxy Coated		Pound	6,090	
Furnishing Steel Piles HP14x89		Foot	819	
Driving Piles		Foot	819	

BAR v(E)

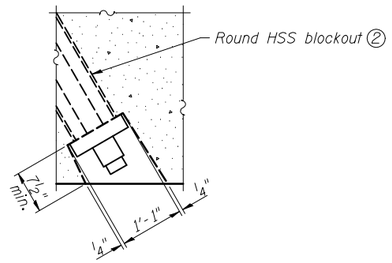


PLAN

MIN. BAR LAP
#7 bar = 5'-10"

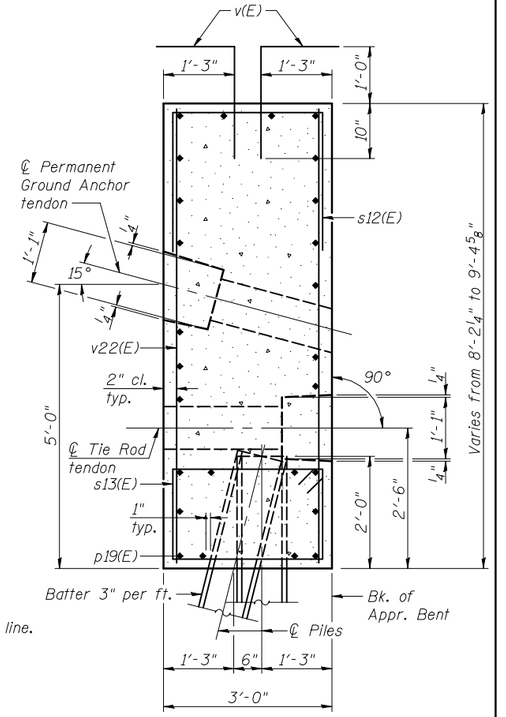
PILE DATA

Type: Steel HP 14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 390 kips
Est. Length: 91 ft
No. Production Piles: 9
No. Test Piles: 0



DETAIL A (3)

Notes:
(1) For details of piles, see sheet 47 of 53.
(2) Round HSS9.625x0.188 conforming to the requirements of ASTM A500 Grade B cast into bent for Tie Rod and Permanent Ground Anchor blockouts. Cost included with Concrete Structures.
(3) For details of Tie Rod and Permanent Ground Anchor, see sheet 40 of 53.
(4) Fan bars located above the Permanent Ground Anchor blockouts.
(5) Bars indicated thus 26 x 2-#7 etc. indicates 26 lines of bars with 2 lengths per line.



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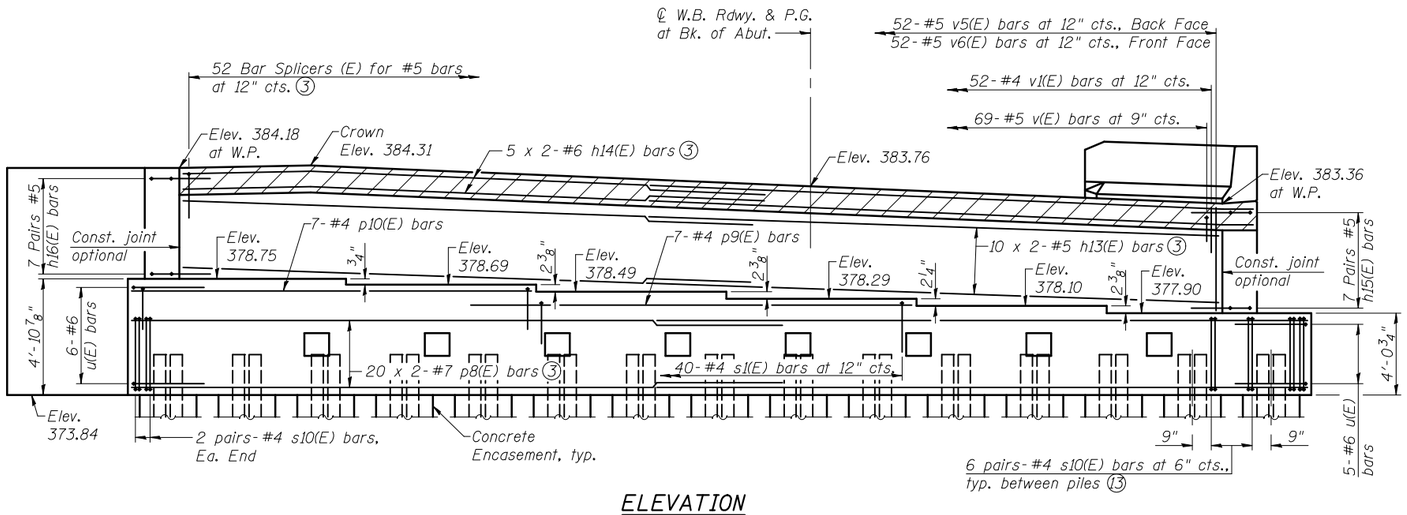
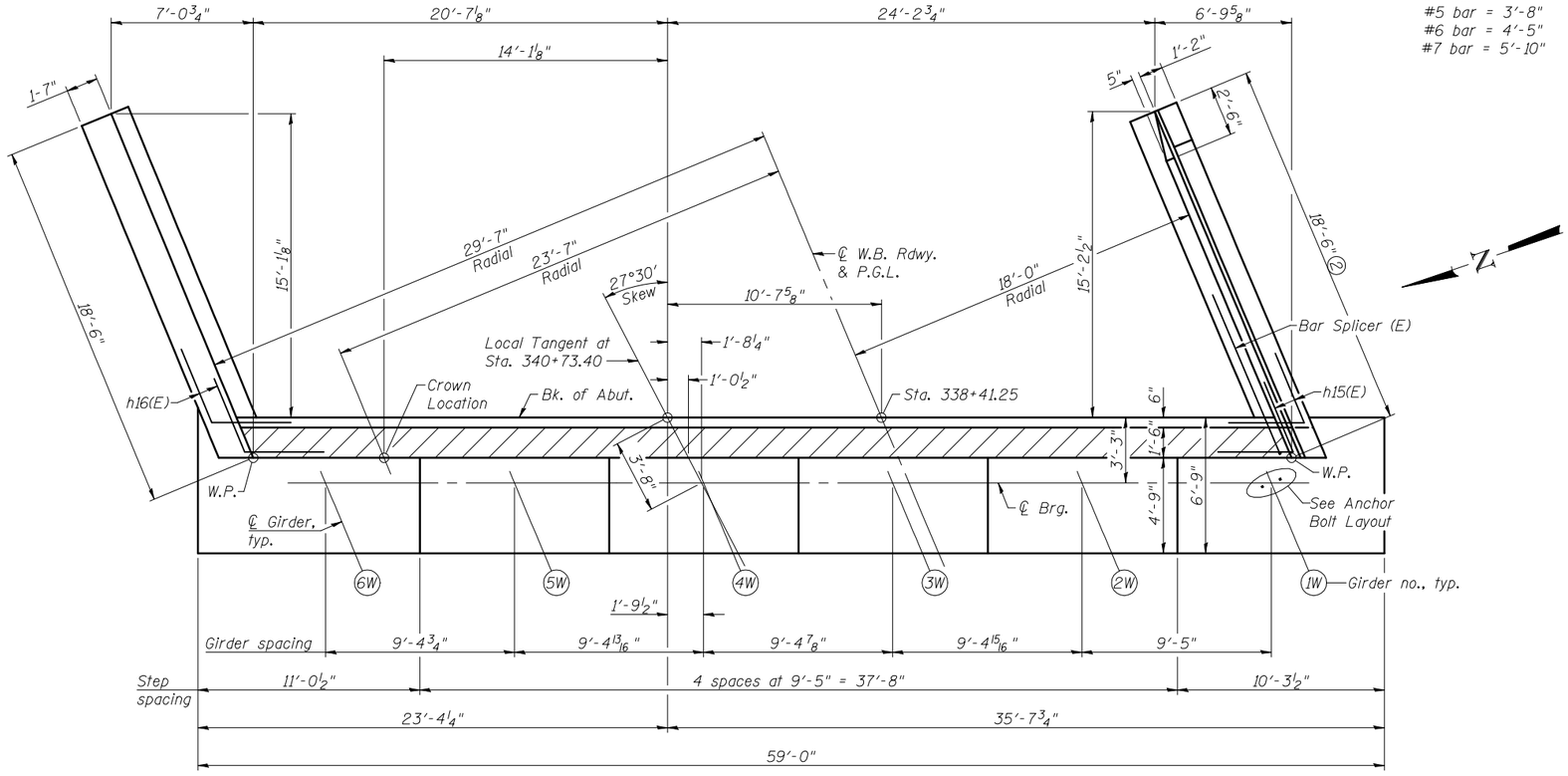
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST APPROACH BENT DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 33 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	145
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



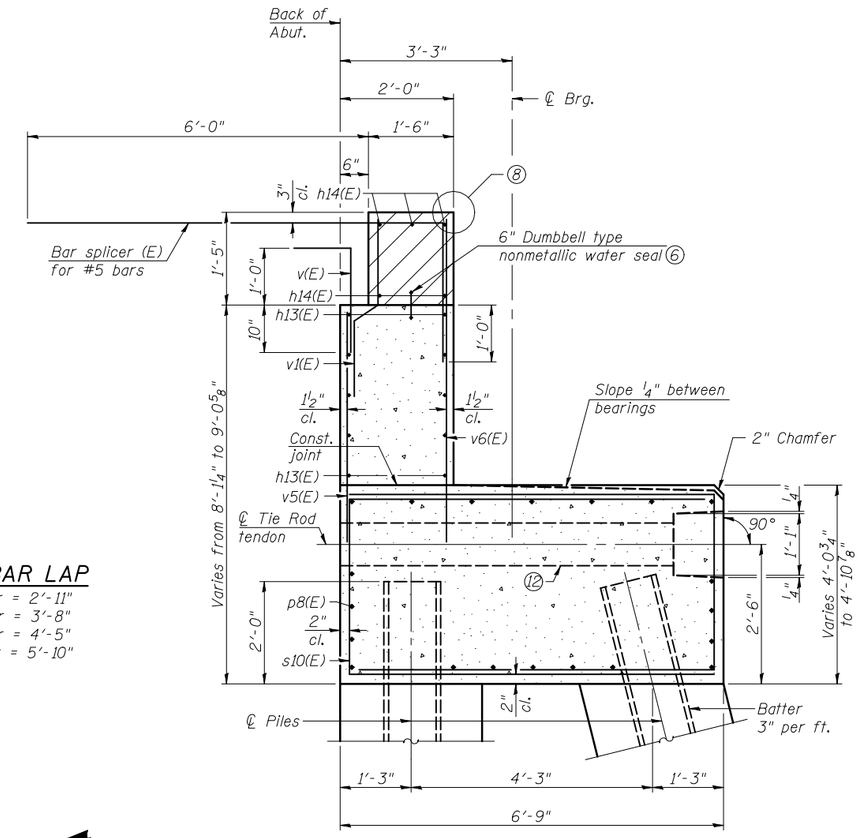
ELEVATION



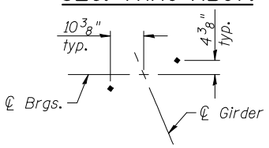
TOP VIEW

MIN. BAR LAP

#4 bar = 2'-11"
#5 bar = 3'-8"
#6 bar = 4'-5"
#7 bar = 5'-10"



SEC. THRU ABUT.



ANCHOR BOLT LAYOUT ④

Notes:
1. For details of Bar Splicers, see sheet 48 of 53.
2. Wingwall length is along front face of end post.
3. For bar locations, see Sec. Thru Abut.
4. Space reinforcement in cap to miss anchor bolts.
5. Hatched area to be poured after superstructure falsework has been removed. Cost of concrete included with Concrete Superstructure on sheet 17 of 53.
6. 6" Dumbbell type nonmetallic water seal shall be in accordance with Sections 503.12 and 1054 of the Standard Specifications. Cost included with Concrete Structures.
7. Pour steps monolithically with cap.
8. For Expansion Joint details, see sheet 25 of 53.
9. Expansion joint details for skews less than 30°, as shown on sheet 25 of 53, are applicable for the East Abutment.
10. The abutments shall have all exposed surfaces of backwalls, bridge seats, and front faces of pile caps treated with Concrete Sealer.
11. Bars indicated thus 20 x 2-#7 etc. indicates 20 lines of bars with 2 lengths per line.
12. Round HSS blockout cast into cap for Tie Rod. For additional details, see sheet 35 of 53.
13. Adjust orientation of pairs of s10(E) bars as needed to miss piles and round HSS blockouts by varying bar lap.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 34 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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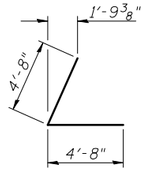
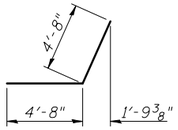
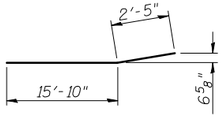
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



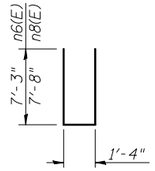
BAR h15(E)



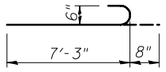
BAR h16(E)



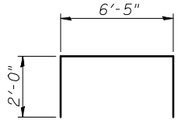
BAR h4(E)



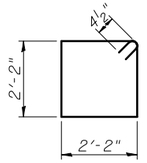
BARS n6(E) & n8(E)



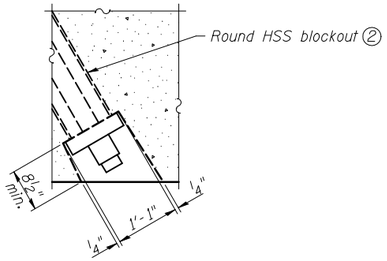
BAR n7(E)



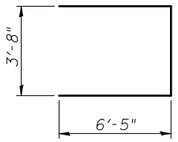
BAR s1(E)



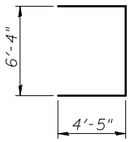
BARS s2(E)



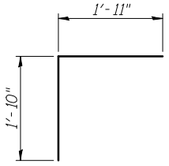
DETAIL A (3)



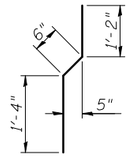
BAR s10(E)



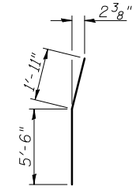
BAR u(E)



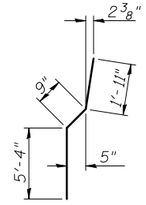
BAR v(E)



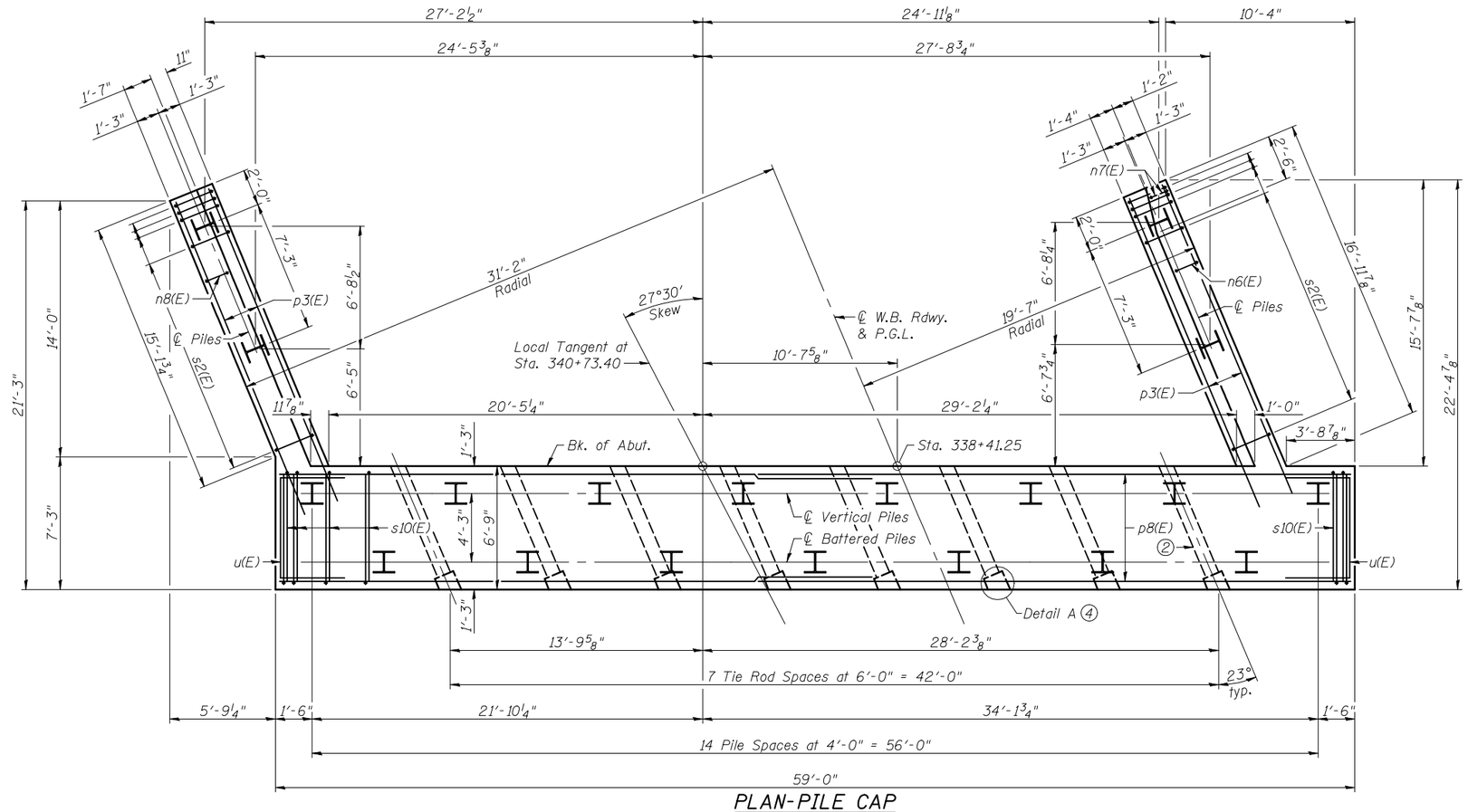
BAR v1(E)



BAR v3(E)



BAR v4(E)



PLAN-PILE CAP

EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h4(E)	8	#4	18'-3"	
h5(E)	7	#4	17'-5"	
h6(E)	12	#4	18'-9"	
h13(E)	20	#5	27'-6"	
h14(E)	10	#6	28'-9"	
h15(E)	14	#5	9'-4"	
h16(E)	14	#5	9'-4"	
h17(E)	7	#4	18'-2"	
n6(E)	16	#6	15'-10"	
n7(E)	6	#6	7'-11"	
n8(E)	18	#6	16'-8"	
p3(E)	12	#7	20'-0"	
p8(E)	40	#7	32'-3"	
p9(E)	7	#4	20'-11"	
p10(E)	7	#4	19'-10"	
s1(E)	40	#4	10'-5"	
s2(E)	56	#4	9'-5"	
s10(E)	176	#4	16'-6"	
u(E)	11	#6	15'-2"	
v(E)	69	#5	3'-9"	
v1(E)	52	#4	3'-0"	
v2(E)	19	#6	7'-6"	
v3(E)	3	#6	7'-5"	
v4(E)	16	#6	8'-0"	
v5(E)	52	#5	6'-0"	
v6(E)	52	#5	7'-4"	
v13(E)	36	#6	5'-1"	
Structure Excavation			Cu. Yd.	410
Concrete Structures			Cu. Yd.	104.4
Concrete Encasement			Cu. Yd.	10.4
Reinforcement Bars, Epoxy Coated			Pound	10,550
Furnishing Steel Piles HP14x89			Foot	1,692
Driving Piles			Foot	1,692
Test Pile Steel HP14x89			Each	1
Concrete Sealer			Sq. Ft.	627

PILE DATA

Type: Steel HP 14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 390 kips
Est. Length: 94 ft
No. Production Piles: 18
No. Test Piles: 1

Notes:
(1) For details of piles and Concrete Encasement, see sheet 47 of 53.
(2) Round HSS9.625x0.188 conforming to the requirements of ASTM A500 Grade B cast into cap for Tie Rod. Cost included with Concrete Structures. Adjust location as necessary to miss anchor bolts and adjust corresponding approach bent location.
(3) For details of Tie Rod, see sheet 40 of 53.
(4) Cut piles as necessary to provide clearance for blockouts.

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PLOT DATE =	CHECKED - MAG	REVISED -	

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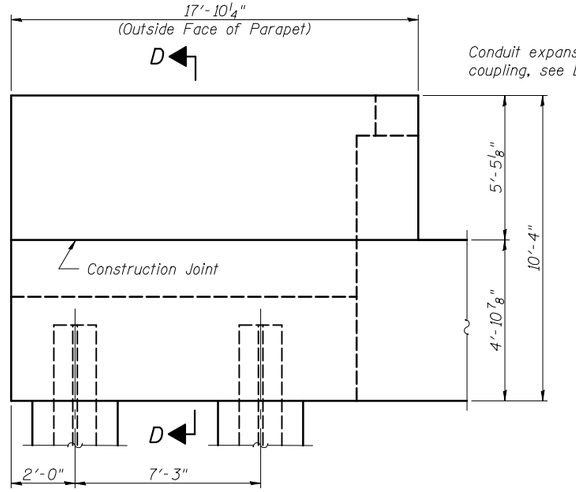
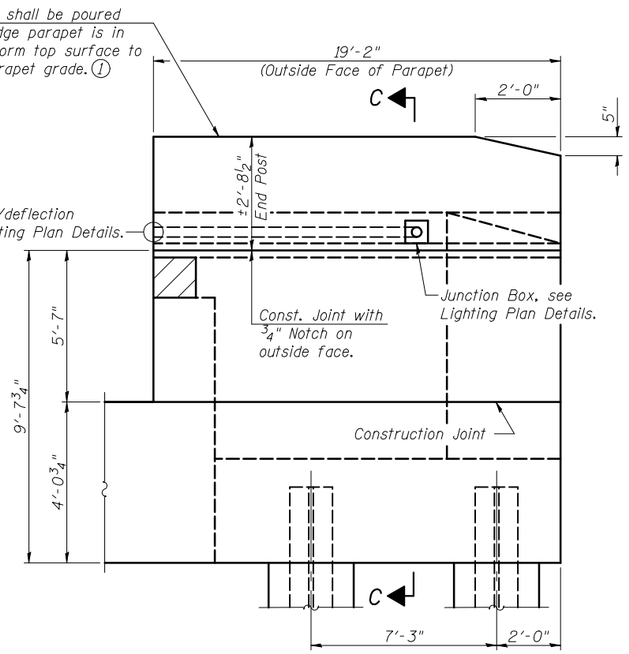
EAST ABUTMENT DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 35 OF 53 SHEETS

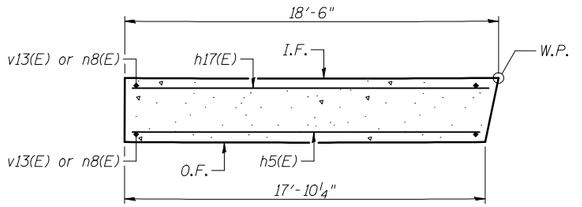
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	147
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		



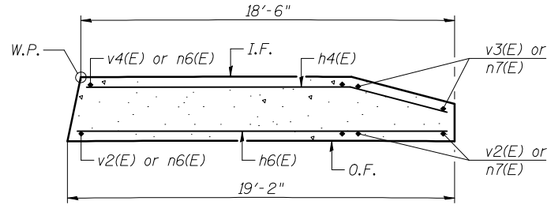
NORTH WINGWALL ELEVATION
Showing Dimensions (Looking South)



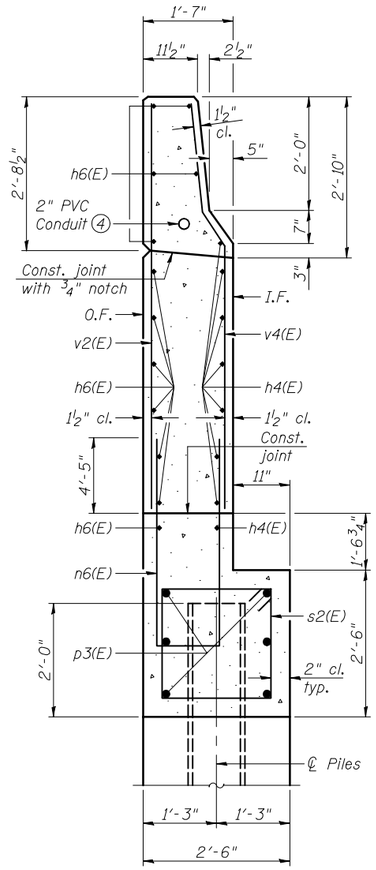
SOUTH WINGWALL ELEVATION
Showing Dimensions (Looking North)



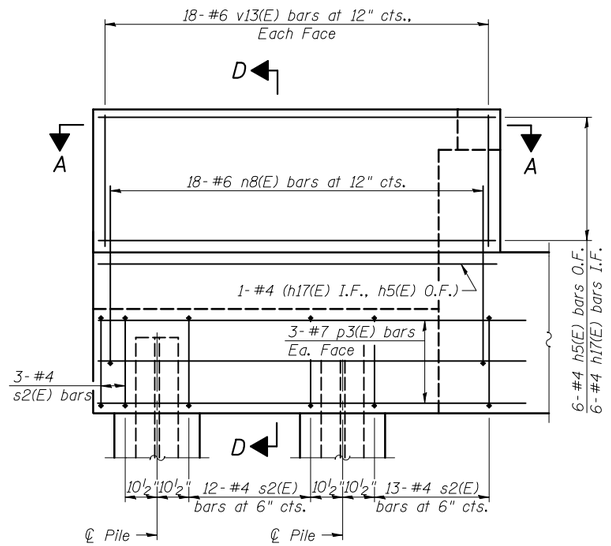
SECTION A-A



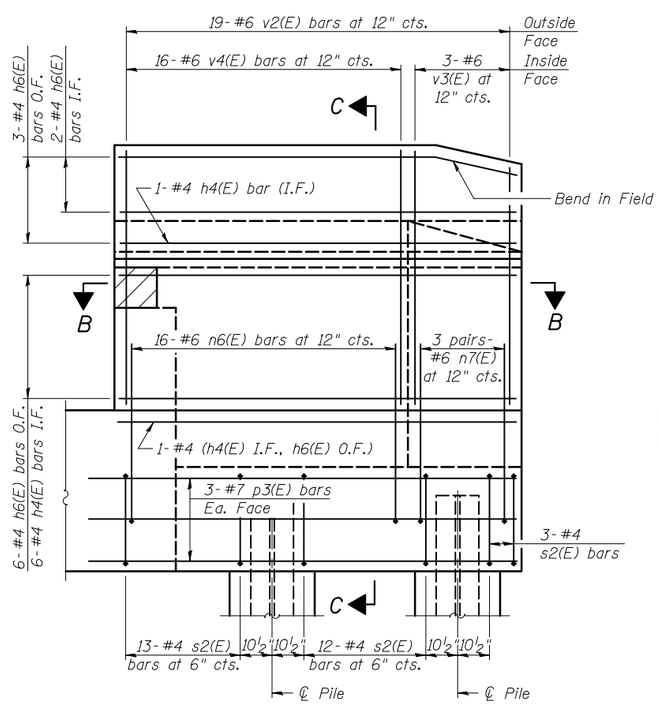
SECTION B-B



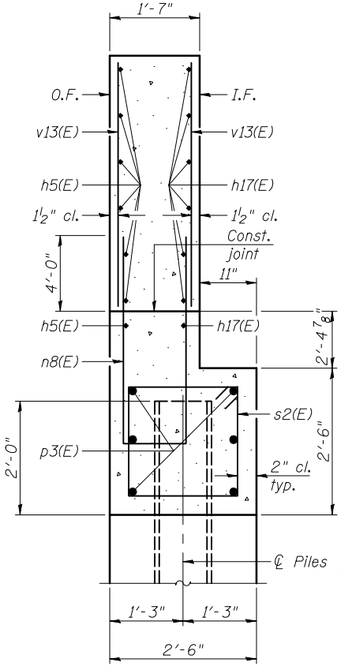
SECTION C-C



NORTH WINGWALL ELEVATION
Showing Reinforcement (Looking South)



SOUTH WINGWALL ELEVATION (5)
Showing Reinforcement (Looking North)



SECTION D-D

Notes:
1. Quantity of concrete in end post included with Concrete Superstructure on sheet 17 of 53.
2. For Concrete Encasement details, see sheet 47 of 53.
3. I.F. denotes inside face and O.F. denotes outside face.
4. Conduit shall have a minimum 1½" clearance from all reinforcement. See Lighting Plan Details for additional requirements.
5. Conduit not shown for clarity.
6. Hatched area to be poured after superstructure falsework has been removed.

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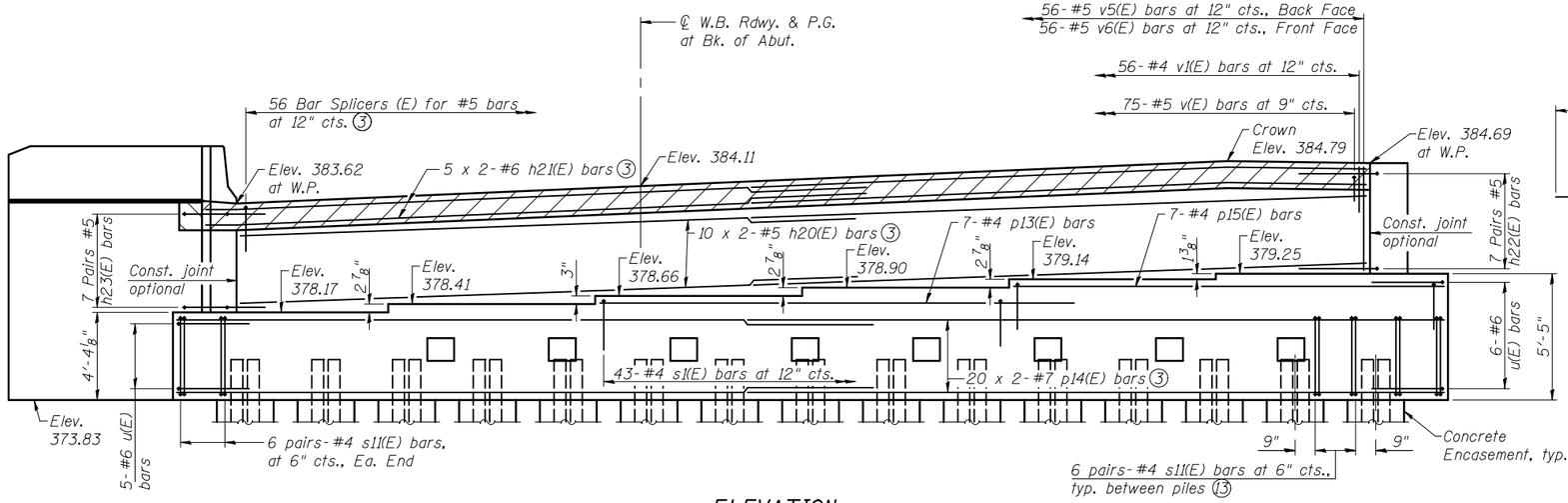
PLOT DATE =	CHECKED - MAG	REVISED -	

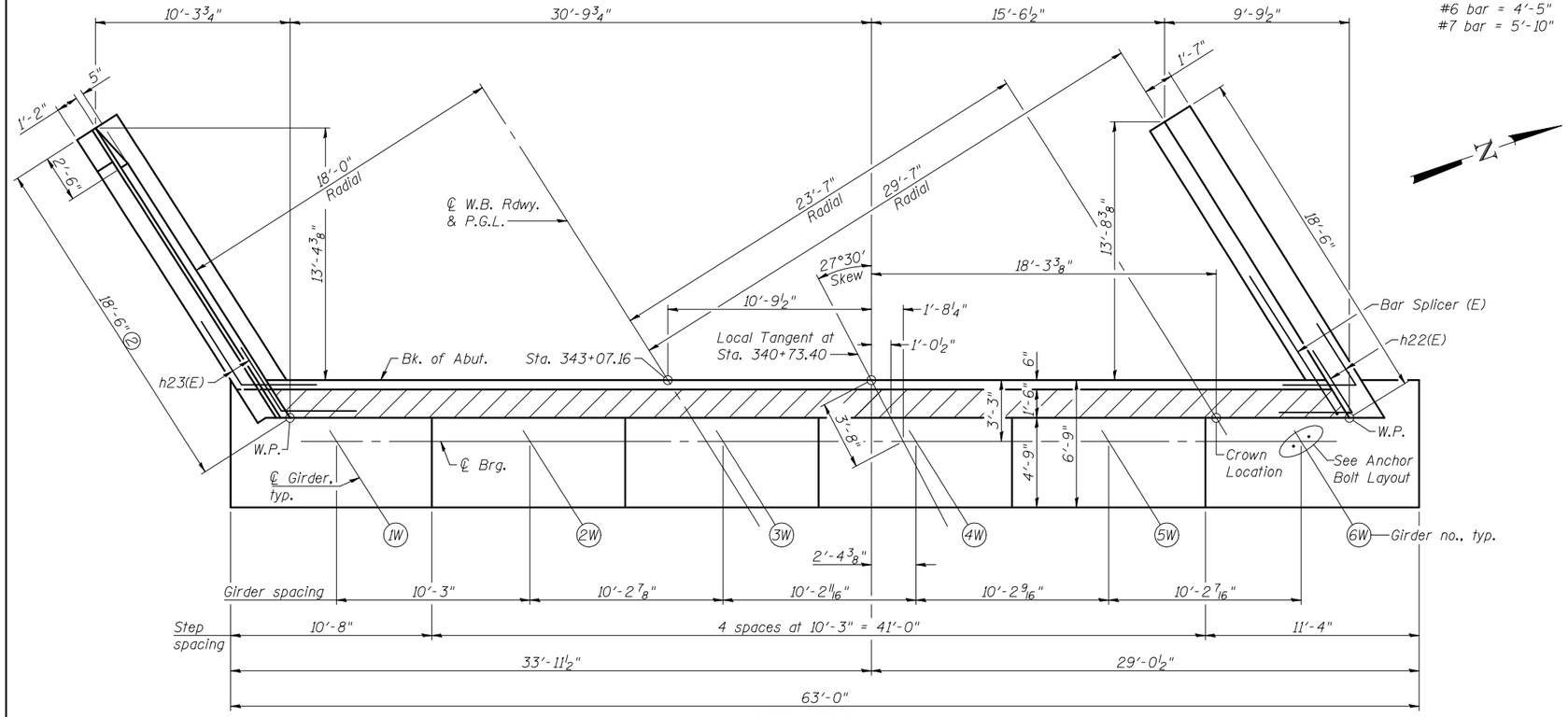
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 36 OF 53 SHEETS

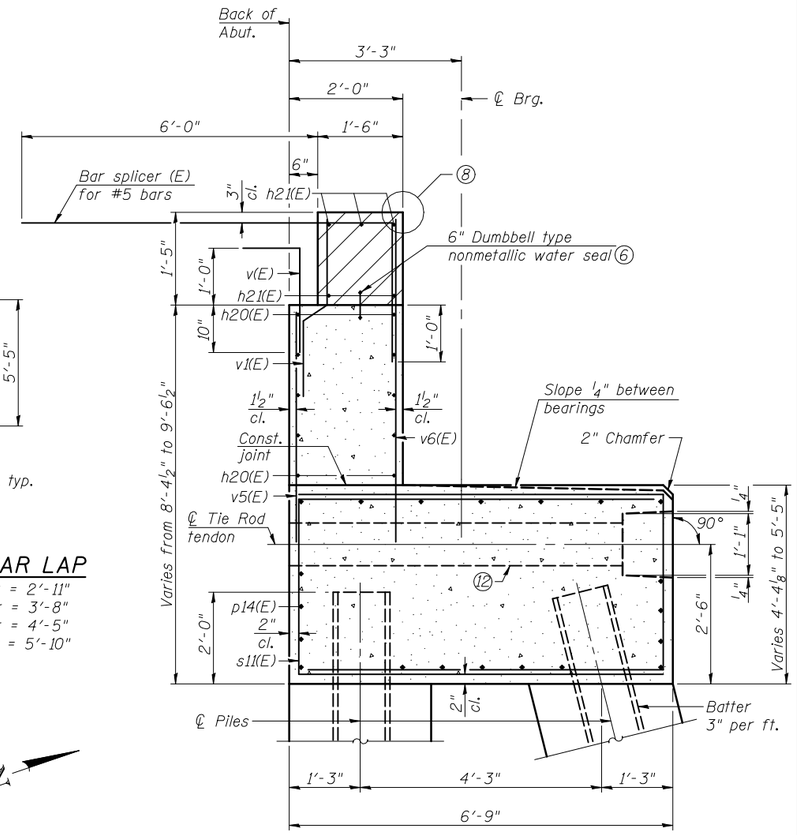
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	148
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		



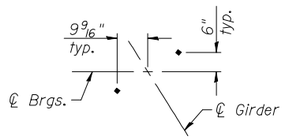
ELEVATION



TOP VIEW



SEC. THRU ABUT.



ANCHOR BOLT LAYOUT (4)

MIN. BAR LAP

#4 bar = 2'-11"
#5 bar = 3'-8"
#6 bar = 4'-5"
#7 bar = 5'-10"

Notes:
1. For details of Bar Splicers, see sheet 48 of 53.
2. Wingwall length is along front face of end post.
3. For bar locations, see Sec. Thru Abut.
4. Space reinforcement in cap to miss anchor bolts.
5. Hatched area to be poured after superstructure falsework has been removed. Cost of concrete included with Concrete Superstructure on sheet 17 of 53.
6. 6" Dumbbell type nonmetallic water seal shall be in accordance with Sections 503.12 and 1054 of the Standard Specifications. Cost included with Concrete Structures.
7. Pour steps monolithically with cap.
8. For Expansion Joint details, see sheet 25 of 53.
9. Expansion joint details for skews greater than 30°, as shown on sheet 25 of 53, are applicable for the West Abutment.
10. The abutments shall have all exposed surfaces of backwalls, bridge seats, and front faces of pile caps treated with Concrete Sealer.
11. Bars indicated thus 20 x 2-#7 etc. indicates 20 lines of bars with 2 lengths per line.
12. Round HSS blockout cast into cap for Tie Rod. For additional details, see sheet 38 of 53.
13. Adjust orientation of pairs of s11(E) bars as needed to miss piles and round HSS blockouts by varying bar lap.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 37 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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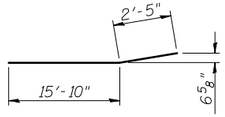
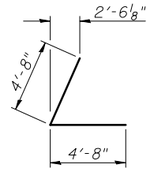
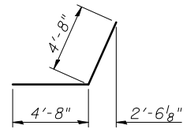
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



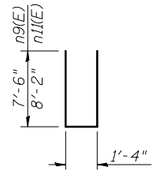
BAR h4(E)



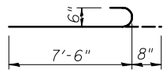
BAR h22(E)



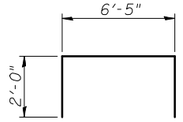
BAR h23(E)



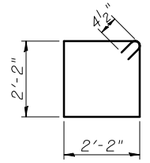
BARS n9(E) & n11(E)



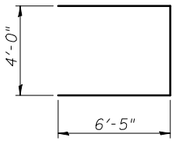
BAR n10(E)



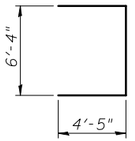
BAR s1(E)



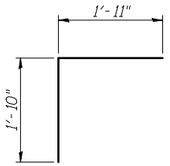
BARS s2(E)



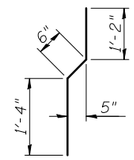
BAR s11(E)



BAR u(E)



BAR v(E)



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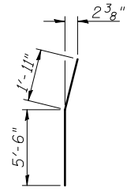
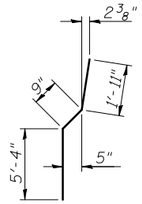
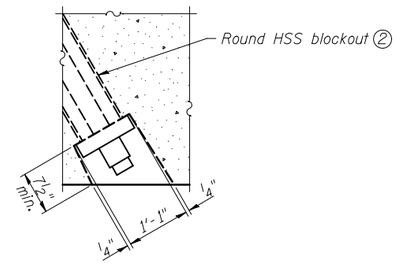


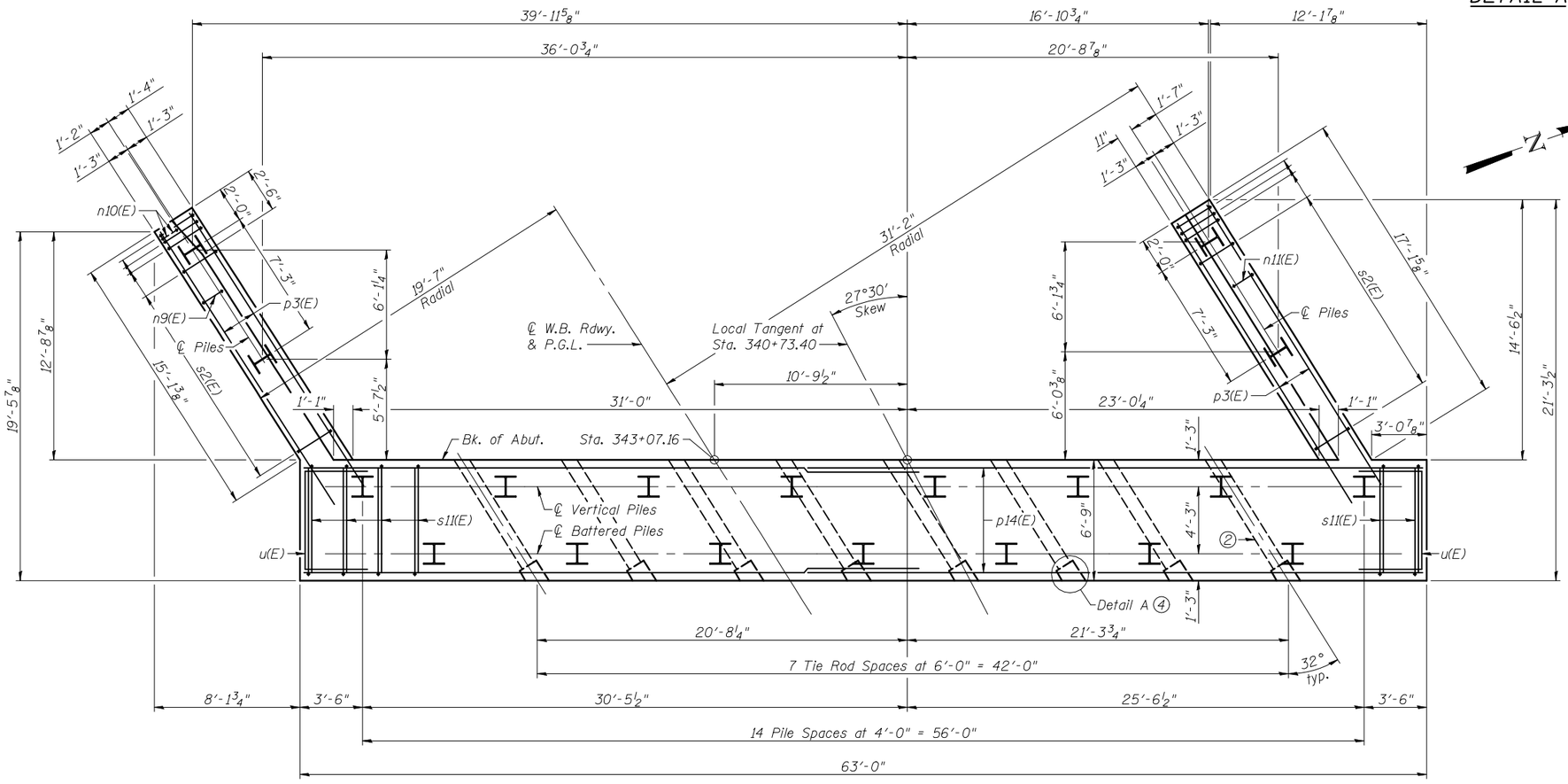
BAR v3(E)



BAR v4(E)



DETAIL A ③



PLAN-PILE CAP

WEST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h4(E)	8	#4	18'-3"	
h5(E)	12	#4	17'-5"	
h17(E)	7	#4	18'-2"	
h20(E)	20	#5	29'-9"	
h21(E)	10	#6	31'-1"	
h22(E)	14	#5	9'-4"	
h23(E)	14	#5	9'-4"	
h24(E)	7	#4	19'-1"	
n9(E)	16	#6	16'-4"	
n10(E)	6	#6	8'-2"	
n11(E)	19	#6	17'-8"	
p3(E)	12	#7	20'-0"	
p13(E)	7	#4	22'-1"	
p14(E)	40	#7	34'-3"	
p15(E)	7	#4	21'-3"	
s1(E)	43	#4	10'-5"	
s2(E)	56	#4	9'-5"	
s11(E)	192	#4	16'-10"	
u(E)	11	#6	15'-2"	
v(E)	75	#5	3'-9"	
v1(E)	56	#4	3'-0"	
v2(E)	18	#6	7'-6"	
v3(E)	3	#6	7'-5"	
v4(E)	16	#6	8'-0"	
v5(E)	56	#5	6'-0"	
v6(E)	56	#5	7'-4"	
v13(E)	38	#6	5'-1"	
Structure Excavation		Cu. Yd.	432	
Concrete Structures		Cu. Yd.	117.4	
Concrete Encasement		Cu. Yd.	10.4	
Reinforcement Bars, Epoxy Coated		Pound	11,200	
Furnishing Steel Piles HP14x89		Foot	1,638	
Driving Piles		Foot	1,638	
Test Pile Steel HP14x89		Each	1	
Concrete Sealer		Sq. Ft.	698	

PILE DATA

Type: Steel HP 14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 390 kips
Est. Length: 91 ft
No. Production Piles: 18
No. Test Piles: 1

Notes:
① For details of piles and Concrete Encasement, see sheet 47 of 53.
② Round HSS9.625x0.188 conforming to the requirements of ASTM A500 Grade B cast into cap for Tie Rod. Cost included with Concrete Structures. Adjust location as necessary to miss anchor bolts and adjust corresponding approach bent location.
③ For details of Tie Rod, see sheet 40 of 53.
④ Cut piles as necessary to provide clearance for blockouts.

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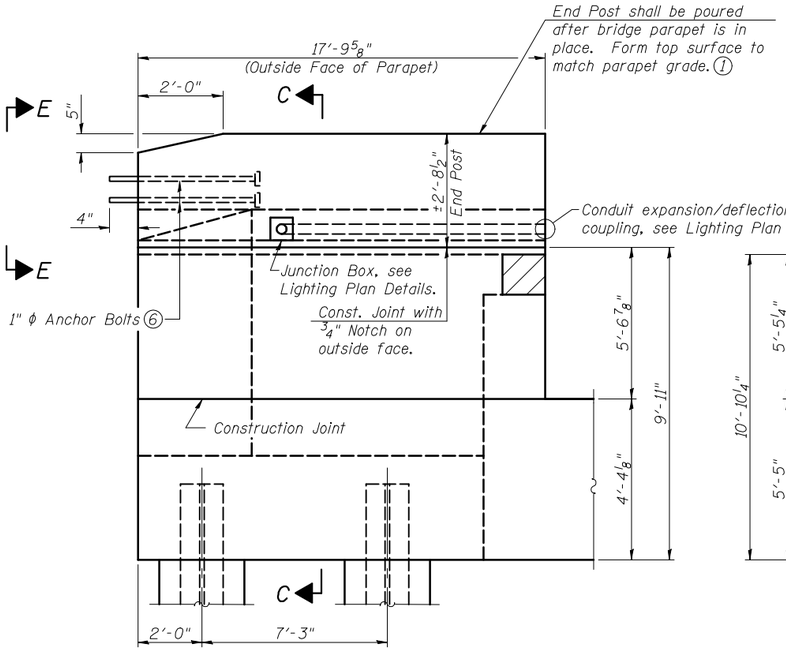
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

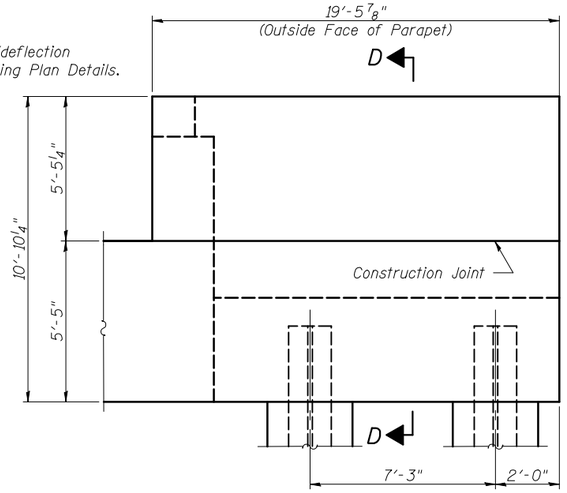
WEST ABUTMENT DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 38 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	150
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



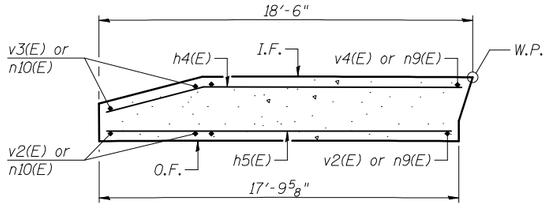
SOUTH WINGWALL ELEVATION

Showing Dimensions (Looking North)

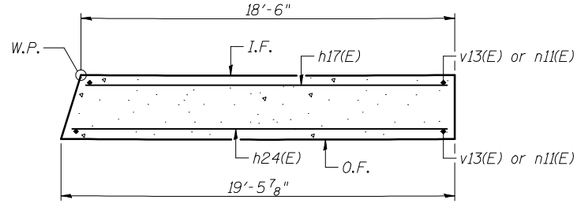


NORTH WINGWALL ELEVATION

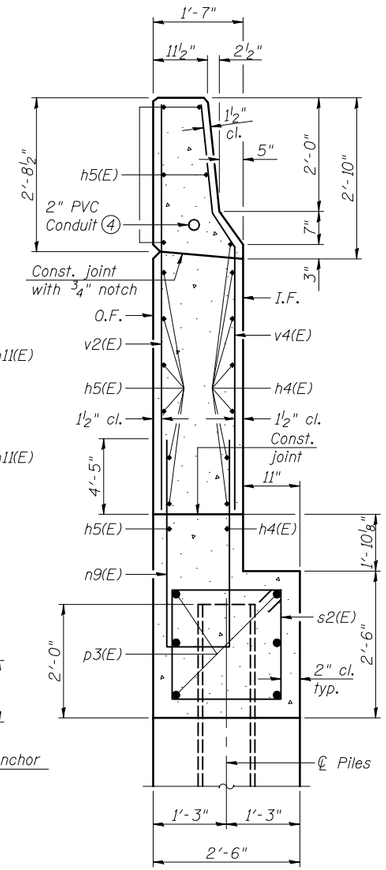
Showing Dimensions (Looking South)



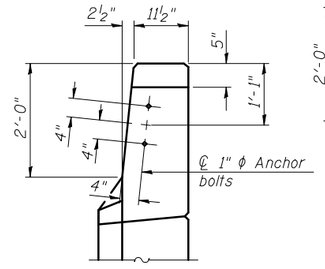
SECTION A-A



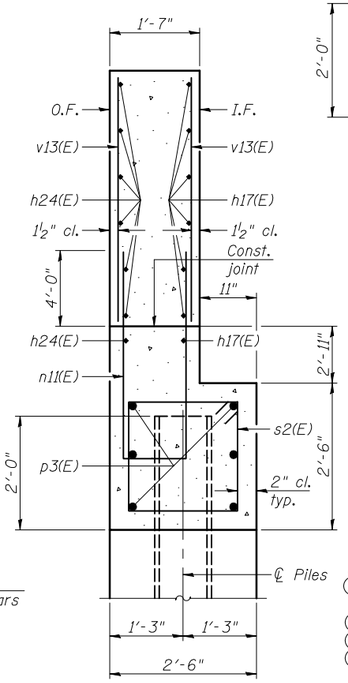
SECTION B-B



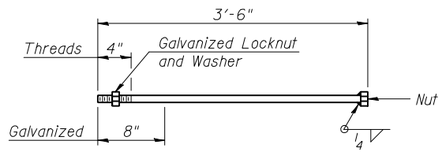
SECTION C-C



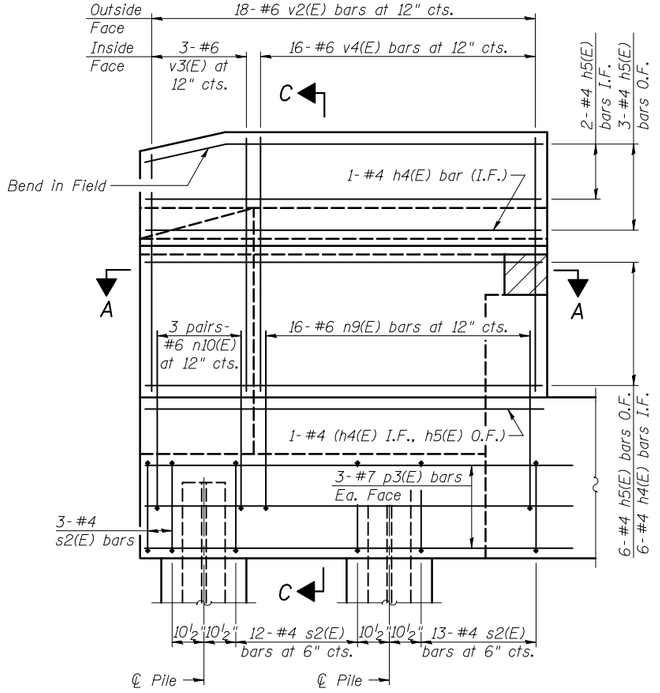
VIEW E-E



SECTION D-D

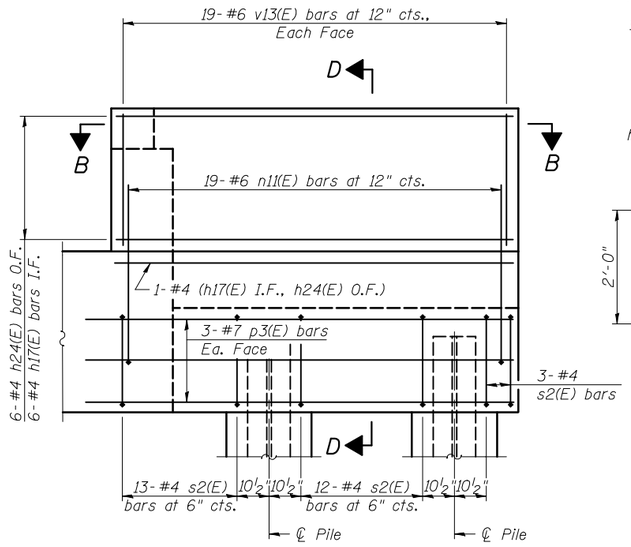


1" ϕ ANCHOR BOLT



SOUTH WINGWALL ELEVATION (5)

Showing Reinforcement (Looking North)



NORTH WINGWALL ELEVATION

Showing Reinforcement (Looking South)

Notes:

1. Quantity of concrete in end post included with Concrete Superstructure on sheet 17 of 53.
2. For Concrete Encasement details, see sheet 47 of 53.
3. I.F. denotes inside face and O.F. denotes outside face.
4. Conduit shall have a minimum 1 1/2" clearance from all reinforcement. See Lighting Plan Details for additional requirements.
5. Conduit not shown for clarity.
6. Cost included with Concrete Superstructure on sheet 17 of 53.
7. Hatched area to be poured after superstructure falsework has been removed.

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	CHECKED - DGL	REVISED -	
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PLOT DATE =	CHECKED - MAG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 39 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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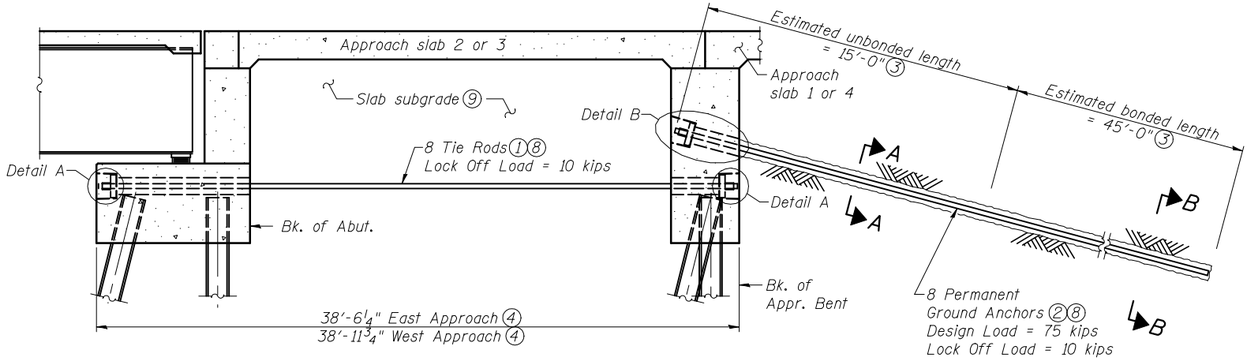
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

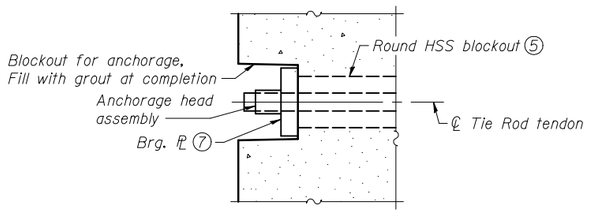


ABUTMENT

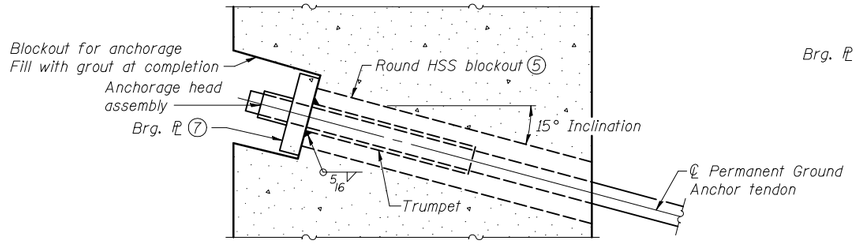
APPROACH BENT

SEQUENCE OF ABUTMENT & APPROACH BENT SYSTEM CONSTRUCTION

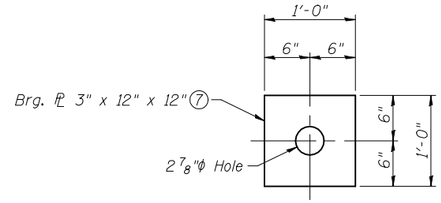
1. Construct abutments and approach bents.
2. Install Tie Rod assemblies. Apply a 10 kip tensile load to each Tie Rod and transfer load to anchorage device in accordance with the Special Provisions.
3. Grout Tie Rod anchorage head assembly and round HSS blockout.
4. Backfill behind approach bent.
5. Install Permanent Ground Anchor system and load test in accordance with the Special Provisions. Reduce test load to specified lock off load and transfer load to anchorage device.
6. Grout Permanent Ground Anchor anchorage head assembly and round HSS blockout if not previously grouted.
7. Backfill between abutment and approach bent as required and construct approach slabs.



DETAIL A



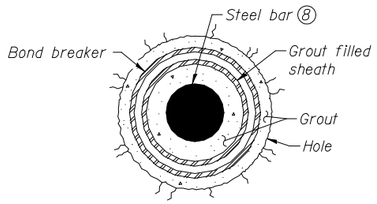
DETAIL B



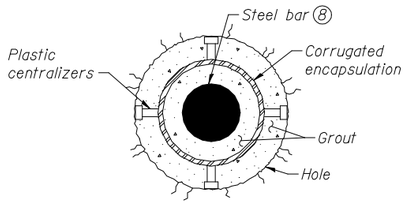
BEARING PLATE

BILL OF MATERIAL

Item	Unit	Quantity
Permanent Ground Anchor	Each	16
Tie Rod	Each	16



SECTION A-A



SECTION B-B

Notes:

1. For Tie Rod spacing, see Abutment and Approach Bent details. Self weight of Tie Rod tendon shall be supported its entire length before tendons are stressed.
2. For Permanent Ground Anchor spacing, see Approach Bent Details.
3. Actual length as required by Contractor design.
4. Length measured along ℄ Tie Rod.
5. For round HSS blockout details, see Abutment and Approach Bent details. Fill round HSS blockout with grout after completion.
6. The design of the Tie Rod tendon and Permanent Ground Anchor tendon is based on deflection requirements. Substitution of a smaller diameter or material other than those specified will not be allowed.
7. The structural steel bearing plates shall conform to the requirements of AASHTO M 270 Grade 50.
8. Round solid steel bars conforming to the requirements of AASHTO M 275 Grade 150 with a nominal diameter of 2½" shall be used for the tendons of both the Tie Rod and the Permanent Ground Anchor.
9. For subgrade below slab, see Section Thru Pile Supported Stub Abutment on sheet 2 of 53 and Section A-A on sheets 20 and 23 of 53.

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STATE OF ILLINOIS
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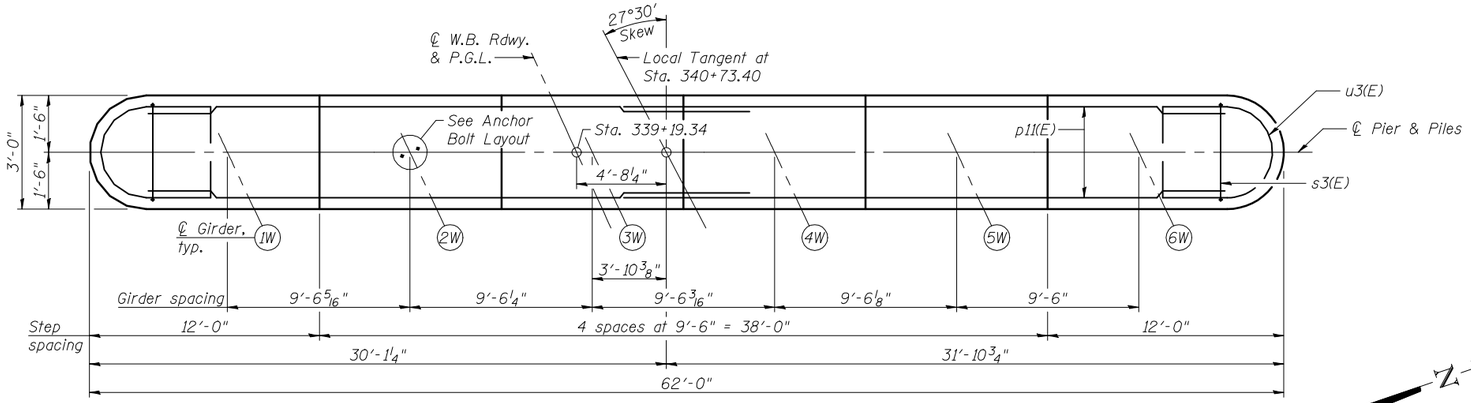
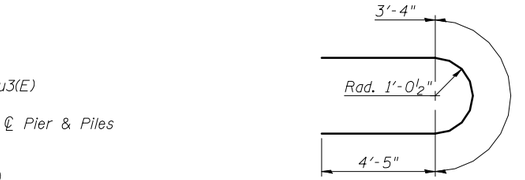
TIE ROD AND PERMANENT GROUND ANCHOR DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 40 OF 53 SHEETS

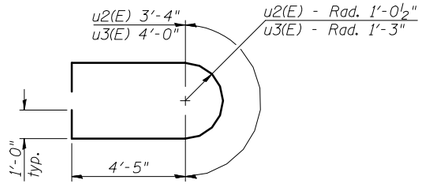
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	152
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		



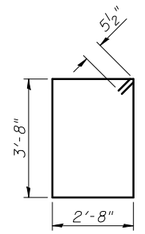
TOP PLAN



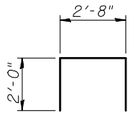
BAR u1(E)



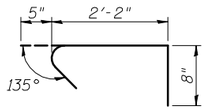
BARS u2(E) & u3(E)



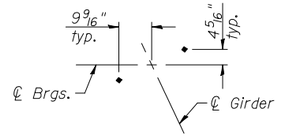
BAR s3(E)



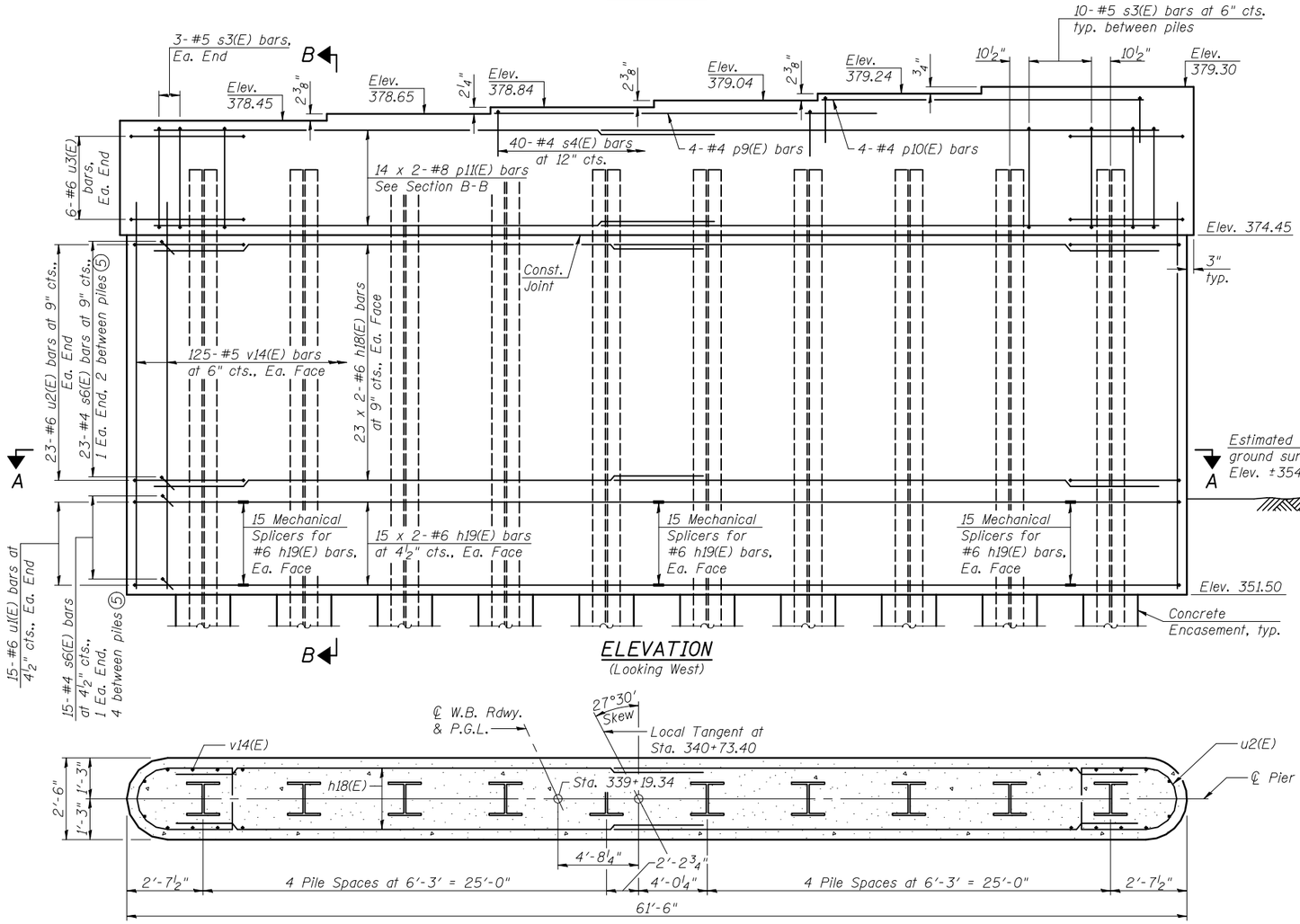
BAR s4(E)



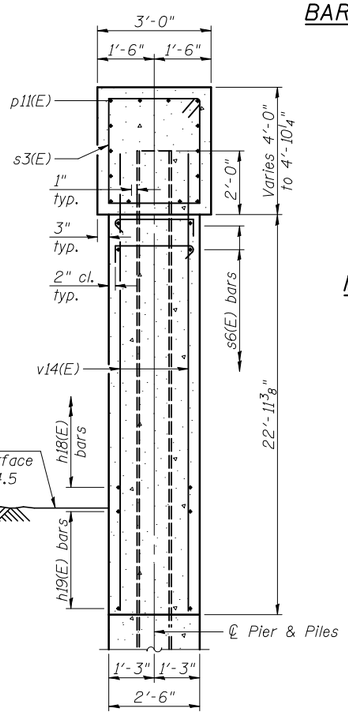
BAR s6(E)



ANCHOR BOLT LAYOUT ④



ELEVATION
(Looking West)



SECTION B-B

MIN. BAR LAP
#8 bar = 7'-8"
#6 bar = 4'-5"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h18(E)	92	#6	31'-9"	——
h19(E)	60	#6	25'-1"	——
p9(E)	4	#4	20'-11"	——
p10(E)	4	#4	19'-10"	——
p11(E)	28	#8	33'-4"	——
s3(E)	96	#5	13'-7"	⌐
s4(E)	40	#4	6'-8"	⊓
s5(E)	-	-	-	
s6(E)	1,030	#4	3'-3"	⌐
u1(E)	30	#6	12'-2"	⊃
u2(E)	46	#6	14'-2"	⊃
u3(E)	12	#6	14'-10"	⊃
v14(E)	250	#5	24'-9"	——
Structure Excavation		Cu. Yd.	48	
Concrete Structures		Cu. Yd.	160.0	
Concrete Encasement		Cu. Yd.	5.5	
Reinforcement Bars, Epoxy Coated		Pound	21,270	
Furnishing Steel Piles HP14x73		Foot	819	
Driving Piles		Foot	819	
Test Pile Steel HP14x73		Each	1	
Mechanical Splicers		Each	90	

SECTION A-A

PILE DATA
Type: Steel HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 320 kips
Est. Length: 91'
No. Production Piles: 9
No. Test Piles: 1

Notes:
① Pour steps monolithically with cap.
② For details of Mechanical Splicers, see sheet 48 of 53.
③ For details of piles and Concrete Encasement, see sheet 47 of 53.
④ Space reinforcement in cap to miss anchor bolts.
⑤ Alternate s6(E) bars end for end as shown in Section B-B.
⑥ Bars indicated thus 14 x 2-#8 etc. indicates 14 lines of bars with 2 lengths per line.

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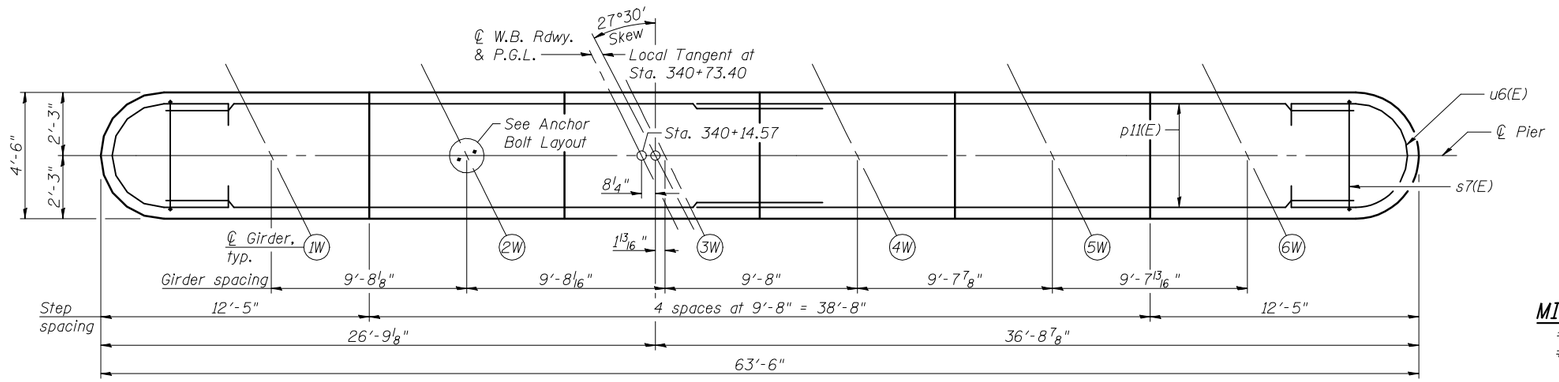
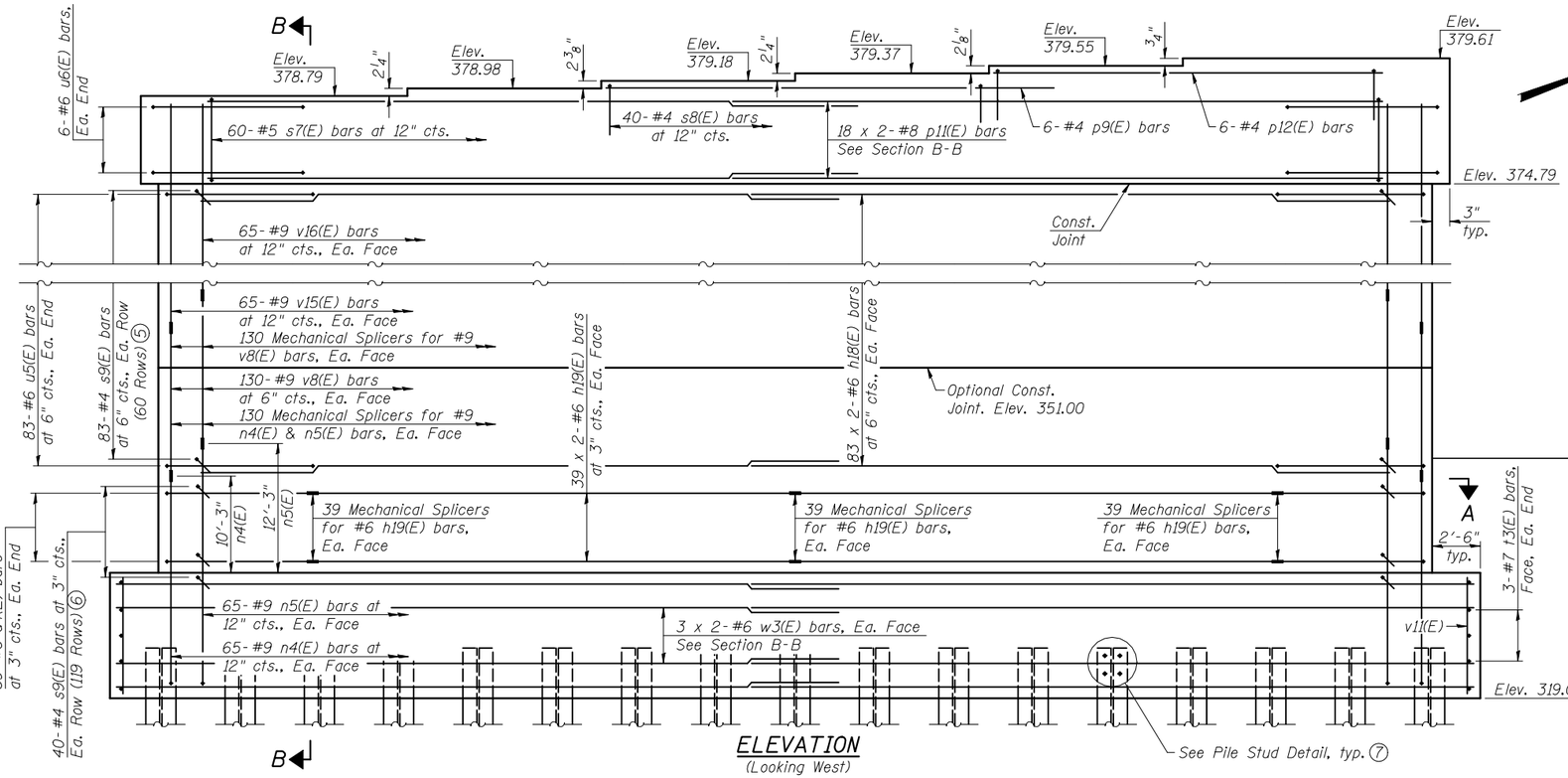
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 41 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	153
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

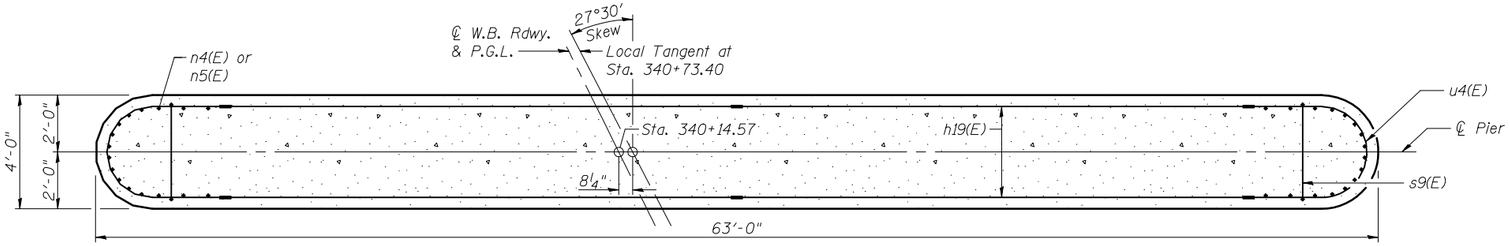


TOP PLAN

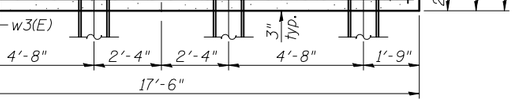


ELEVATION
(Looking West)

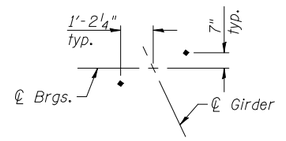
MIN. BAR LAP
#8 bar = 7'-8"
#6 bar = 4'-5"



SECTION A-A



SECTION B-B



ANCHOR BOLT LAYOUT ④

Notes:
1. Pour steps monolithically with cap.
2. For details of Mechanical Splicers, see sheet 48 of 53.
3. For details of Cofferdam (Type 2), see sheet 4 of 53.
4. Space reinforcement in cap to miss anchor bolts.
5. Space s9(E) bars horizontally with each v8(E) & v15(E) or v8(E) & v16(E) bar and vertically with h18(E) bars. Alternate s9(E) bars end for end as shown in Section B-B.
6. Space s9(E) bars horizontally with each n4(E) & n5(E) bar and vertically with h19(E) bars. Alternate s9(E) bars end for end as shown in Section B-B. Total includes one row of bars in top of footing.
7. For Bill of Materials, Bar Details, Pile Stud Detail, Footing Plan, and footing reinforcement, see sheet 43 of 53.
8. Bars indicated thus 18 x 2-#8 etc. indicates 18 lines of bars with 2 lengths per line.

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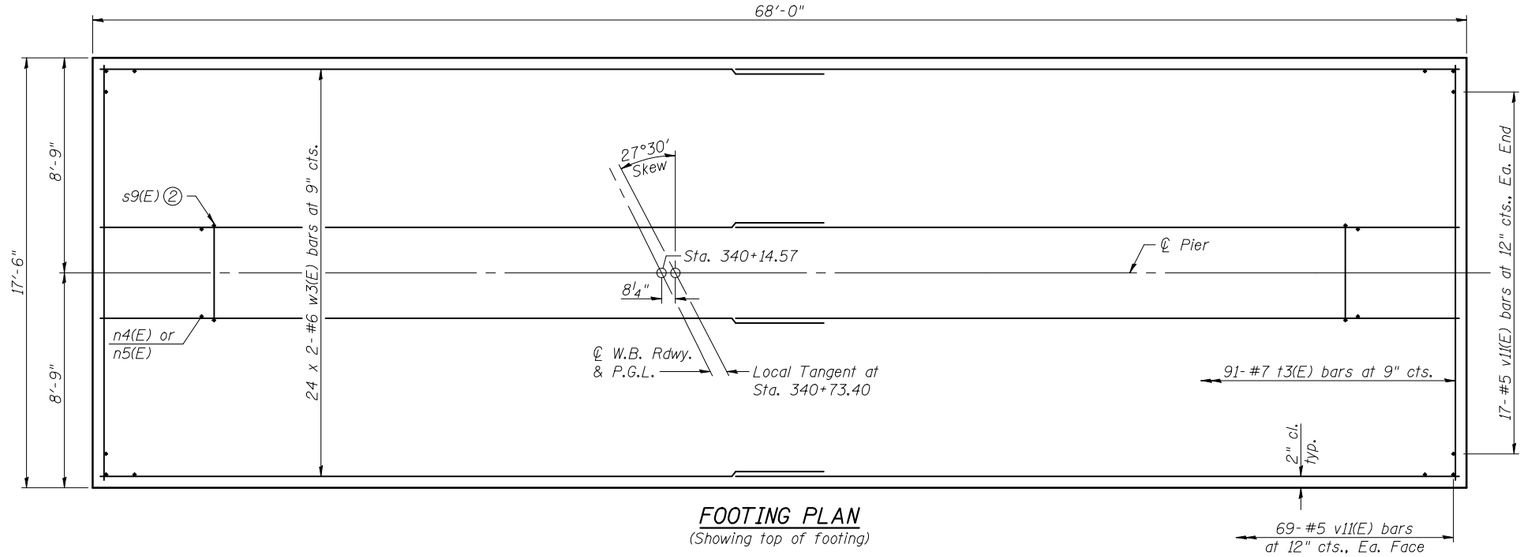
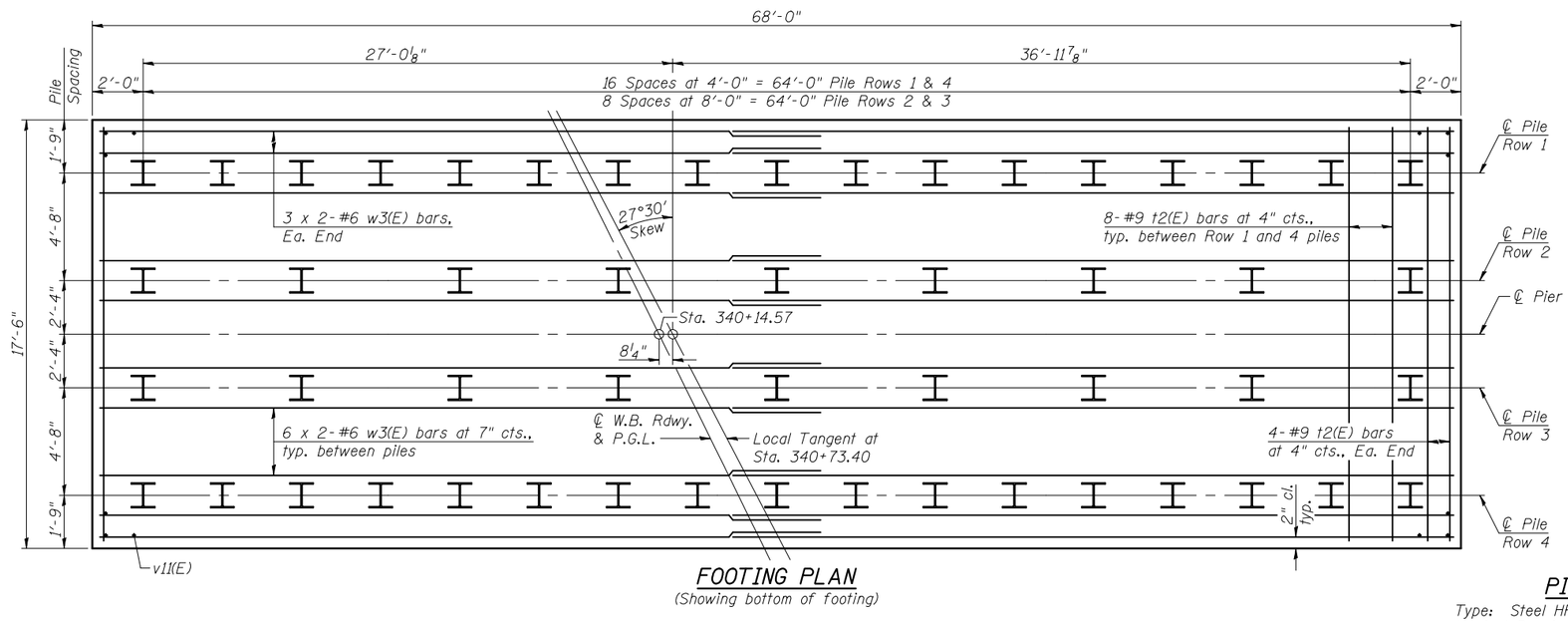
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 42 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	154
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

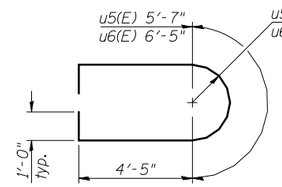


FOOTING PLAN
(Showing top of footing)

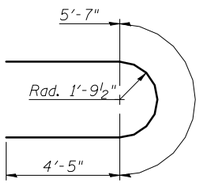


FOOTING PLAN
(Showing bottom of footing)

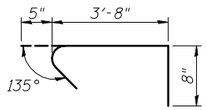
MIN. BAR LAP
#6 bar = 4'-5"



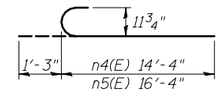
BARS u5(E) & u6(E)



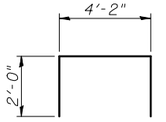
BAR u4(E)



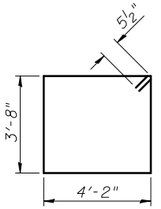
BAR s9(E)



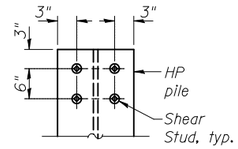
BARS n4(E) & n5(E)



BAR s8(E)



BAR s7(E)



PILE STUD DETAIL (3)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h18(E)	332	#6	31'-9"	
h19(E)	156	#6	25'-1"	
n4(E)	130	#9	15'-7"	
n5(E)	130	#9	17'-7"	
p9(E)	6	#4	20'-11"	
p11(E)	36	#8	33'-4"	
p12(E)	6	#4	19'-4"	
s7(E)	60	#5	16'-7"	
s8(E)	40	#4	8'-2"	
s9(E)	9,740	#4	4'-9"	
t2(E)	136	#9	17'-2"	
t3(E)	97	#7	17'-2"	
u4(E)	78	#6	14'-5"	
u5(E)	166	#6	16'-5"	
u6(E)	12	#6	17'-3"	
v8(E)	260	#9	18'-3"	
v11(E)	172	#5	4'-1"	
v15(E)	130	#9	26'-7"	
v16(E)	130	#9	24'-7"	
w3(E)	108	#6	36'-1"	
Cofferdam Excavation		Cu. Yd.	1,257	
Cofferdam (Type 2) (Location-3)		Each	1	
Concrete Structures		Cu. Yd.	716.9	
Seal Coat Concrete		Cu. Yd.	546.7	
Reinforcement Bars, Epoxy Coated		Pound	134,660	
Furnishing Steel Piles HP14x73		Foot	1,785	
Driving Piles		Foot	1,785	
Test Pile Steel HP14x73		Each	1	
Mechanical Splicers		Each	754	

PILE DATA
Type: Steel HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 320 kips
Est. Length: 35'
No. Production Piles: 51
No. Test Piles: 1

Notes:
(1) For details of piles, see sheet 47 of 53.
(2) Alternate s9(E) bars end for end as shown in Section B-B on sheet 42 of 53.
(3) Provide 4 - ¾" ϕ x 4" granular or solid flux filled headed studs conforming to Article 1006.32 of the Standard Specifications automatically end welded to piling, each flange, each pile. Cost included with Furnishing Steel Piles HP14x73.
(4) Bars indicated thus 24 x 2-#6 etc. indicates 24 lines of bars with 2 lengths per line.

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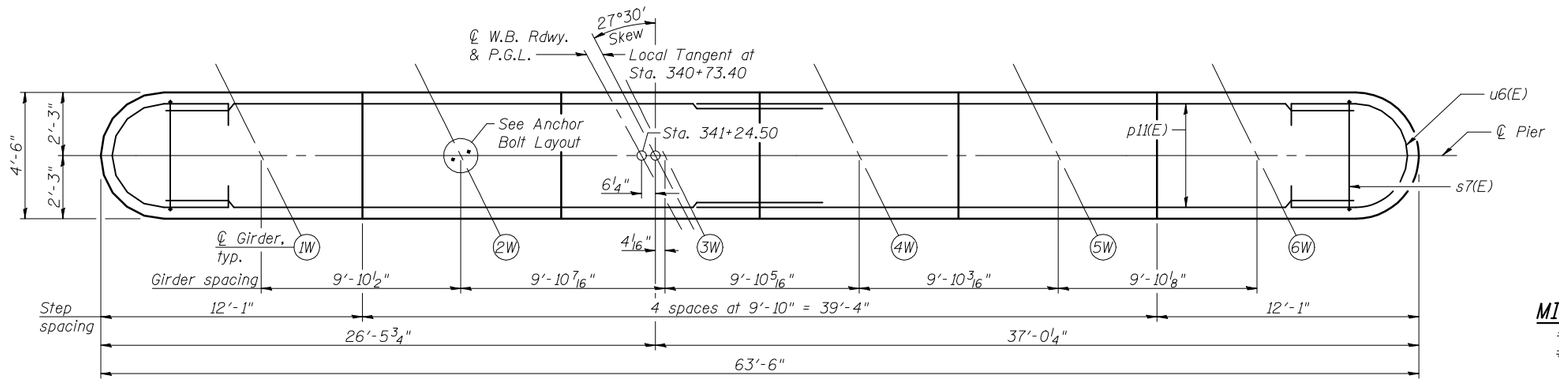
PIER 2 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 43 OF 53 SHEETS

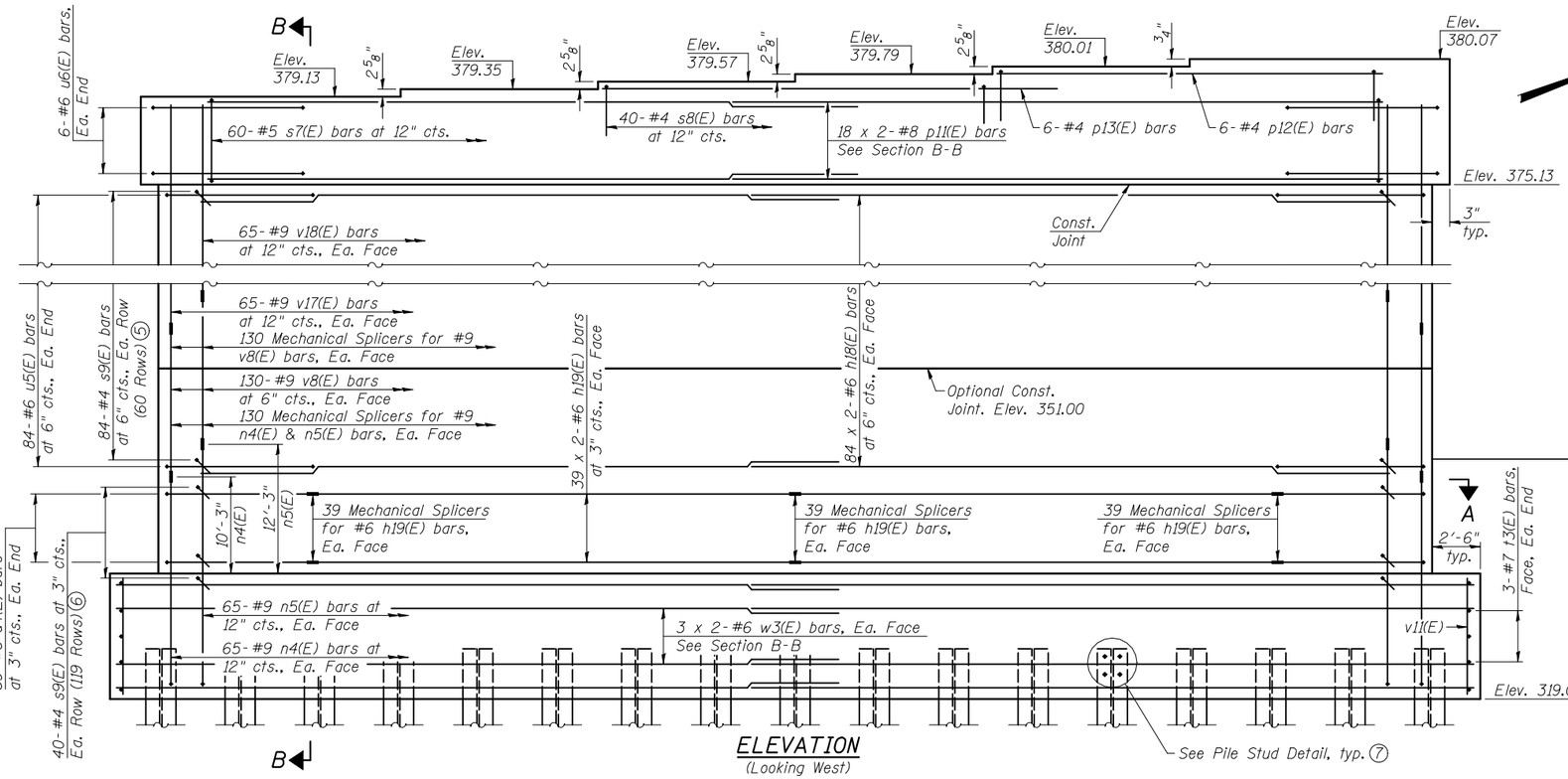
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	155
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



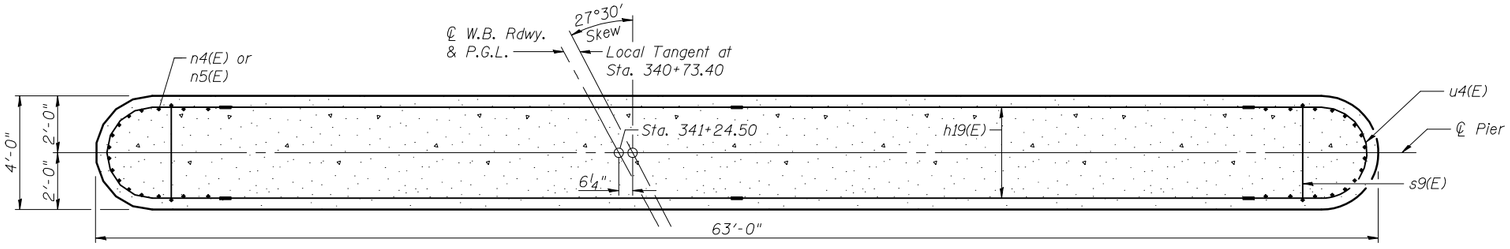
TOP PLAN

MIN. BAR LAP
#8 bar = 7'-8"
#6 bar = 4'-5"

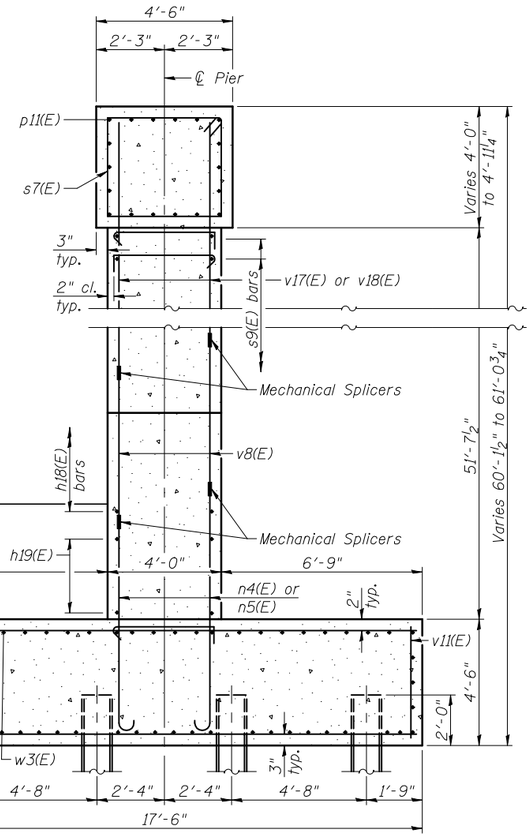
Notes:
1. Pour steps monolithically with cap.
2. For details of Mechanical Splicers, see sheet 48 of 53.
3. For details of Cofferdam (Type 2), see sheet 4 of 53.
4. Space reinforcement in cap to miss anchor bolts.
5. Space s9(E) bars horizontally with each v8(E) & v17(E) or v8(E) & v18(E) bar and vertically with h18(E) bars. Alternate s9(E) bars end for end as shown in Section B-B.
6. Space s9(E) bars horizontally with each n4(E) & n5(E) bar and vertically with h19(E) bars. Alternate s9(E) bars end for end as shown in Section B-B. Total includes one row of bars in top of footing.
7. For Bill of Materials, Bar Details, Pile Stud Detail, Footing Plan, and footing reinforcement, see sheet 45 of 53.
8. Bars indicated thus 18 x 2-#8 etc. indicates 18 lines of bars with 2 lengths per line.



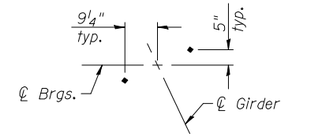
ELEVATION
(Looking West)



SECTION A-A



SECTION B-B



ANCHOR BOLT LAYOUT ④

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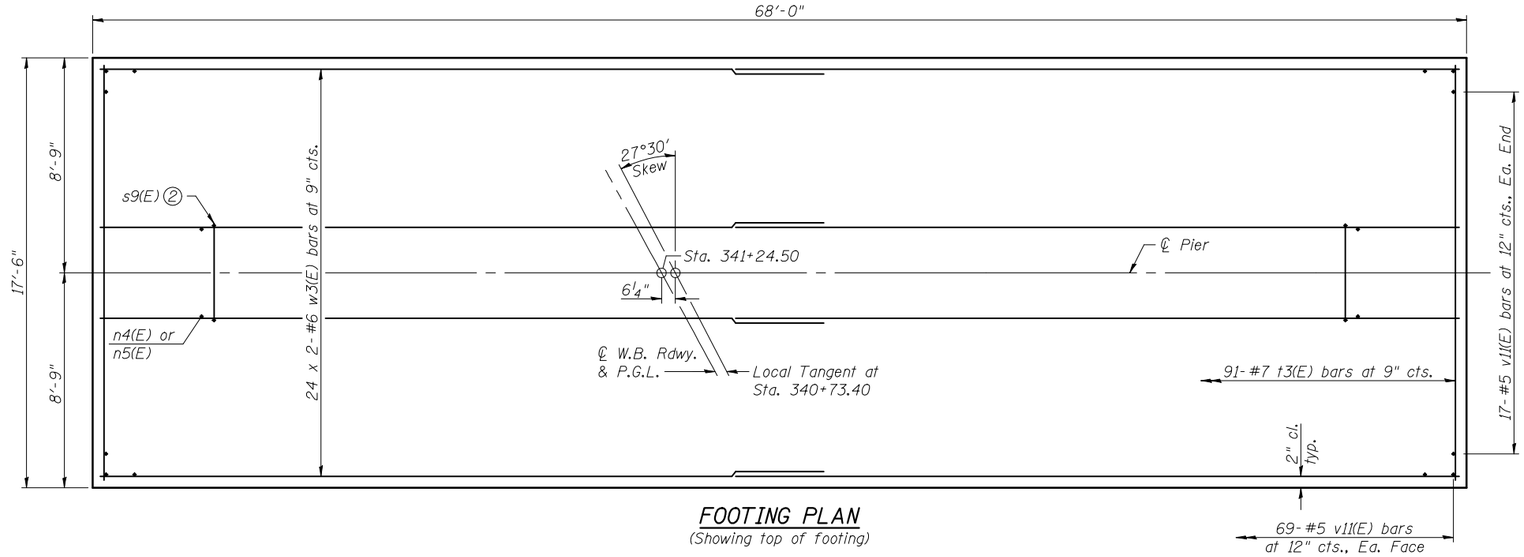
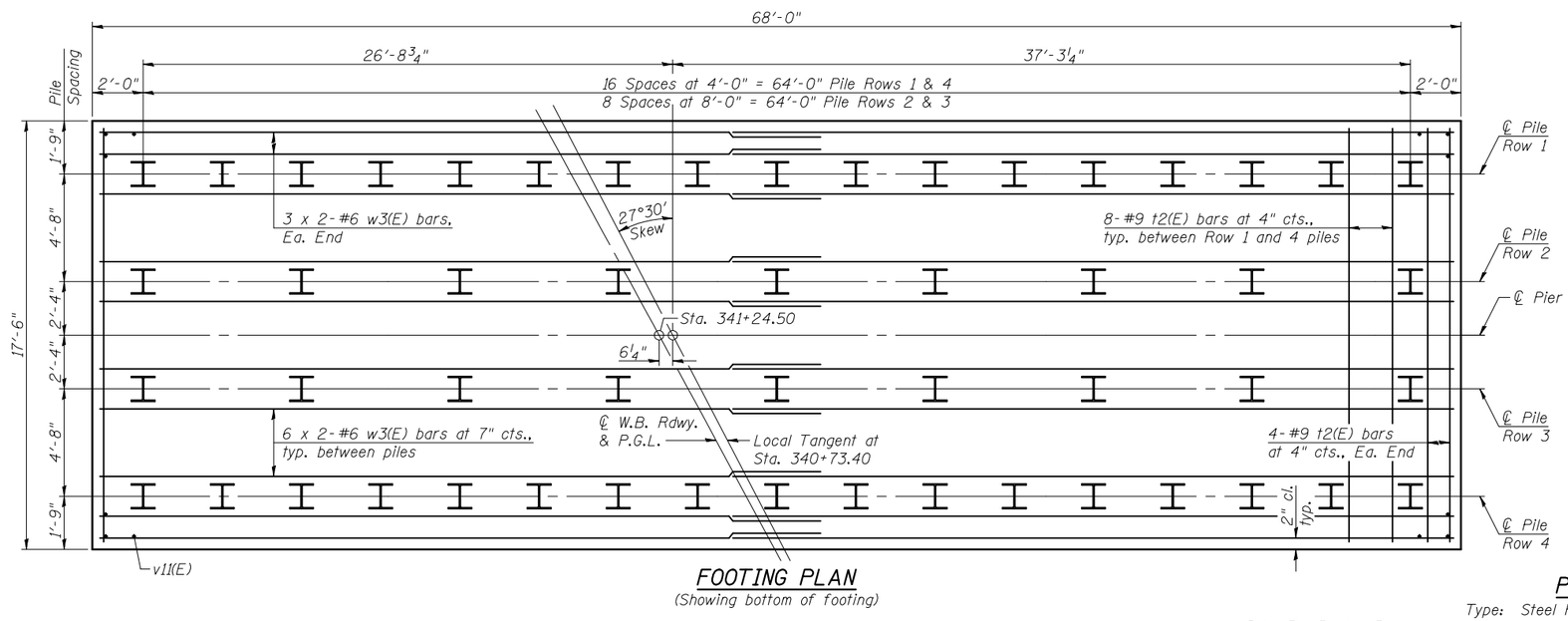
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 44 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	156
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

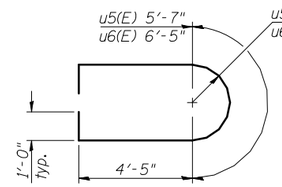


FOOTING PLAN
(Showing top of footing)

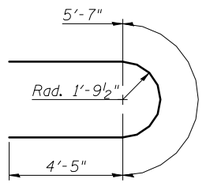


FOOTING PLAN
(Showing bottom of footing)

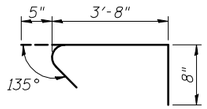
MIN. BAR LAP
#6 bar = 4'-5"



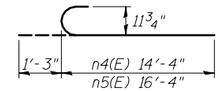
BARS u5(E) & u6(E)



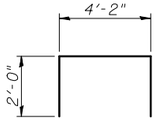
BAR u4(E)



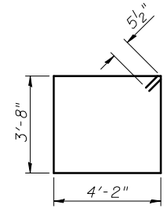
BAR s9(E)



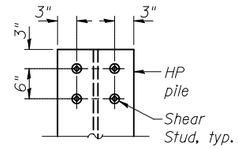
BARS n4(E) & n5(E)



BAR s8(E)



BAR s7(E)



PILE STUD DETAIL (3)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h18(E)	336	#6	31'-9"	
h19(E)	156	#6	25'-1"	
n4(E)	130	#9	15'-7"	
n5(E)	130	#9	17'-7"	
p11(E)	36	#8	33'-4"	
p12(E)	6	#4	19'-4"	
p13(E)	6	#4	22'-1"	
s7(E)	60	#5	16'-7"	
s8(E)	40	#4	8'-2"	
s9(E)	9,800	#4	4'-9"	
t2(E)	136	#9	17'-2"	
t3(E)	97	#7	17'-2"	
u4(E)	78	#6	14'-5"	
u5(E)	168	#6	16'-5"	
u6(E)	12	#6	17'-3"	
v8(E)	260	#9	18'-3"	
v11(E)	172	#5	4'-1"	
v17(E)	130	#9	26'-11"	
v18(E)	130	#9	24'-11"	
w3(E)	108	#6	36'-1"	
Cofferdam Excavation		Cu. Yd.	1,257	
Cofferdam (Type 2) (Location-4)		Each	1	
Concrete Structures		Cu. Yd.	720.7	
Seal Coat Concrete		Cu. Yd.	546.7	
Reinforcement Bars, Epoxy Coated		Pound	135,400	
Furnishing Steel Piles HP14x73		Foot	1,785	
Driving Piles		Foot	1,785	
Test Pile Steel HP14x73		Each	1	
Mechanical Splicers		Each	754	

PILE DATA
Type: Steel HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 320 kips
Est. Length: 35'
No. Production Piles: 51
No. Test Piles: 1

Notes:
(1) For details of piles, see sheet 47 of 53.
(2) Alternate s9(E) bars end for end as shown in Section B-B on sheet 44 of 53.
(3) Provide 4 - ¾" ϕ x 4" granular or solid flux filled headed studs conforming to Article 1006.32 of the Standard Specifications automatically end welded to piling, each flange, each pile. Cost included with Furnishing Steel Piles HP14x73.
(4) Bars indicated thus 24 x 2-#6 etc. indicates 24 lines of bars with 2 lengths per line.

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STATE OF ILLINOIS
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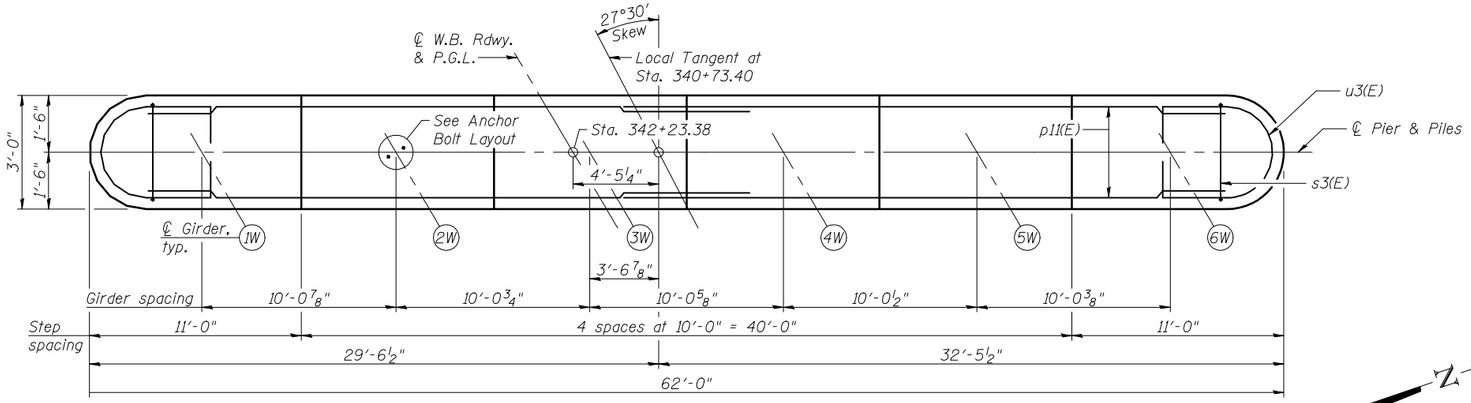
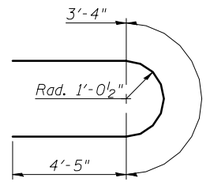
PIER 3 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 45 OF 53 SHEETS

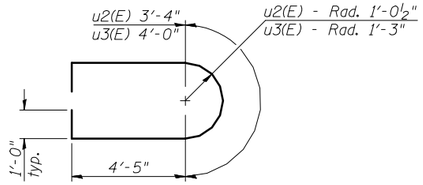
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	157
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



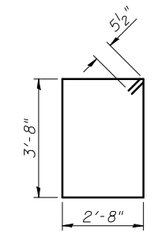
TOP PLAN



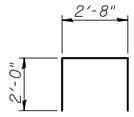
BAR u1(E)



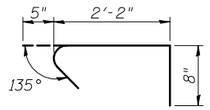
BARS u2(E) & u3(E)



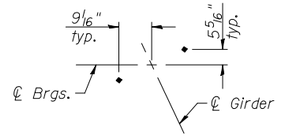
BAR s3(E)



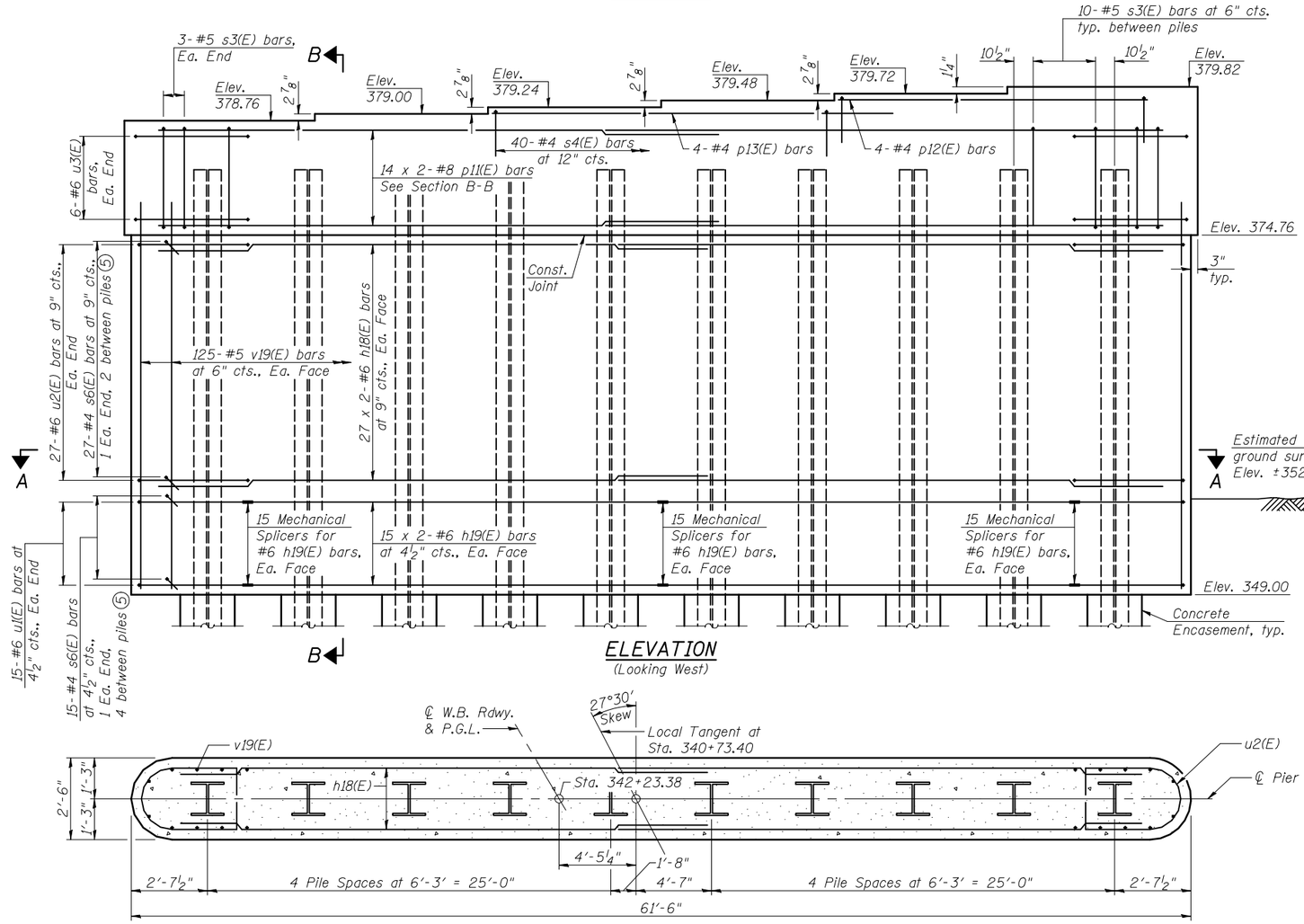
BAR s4(E)



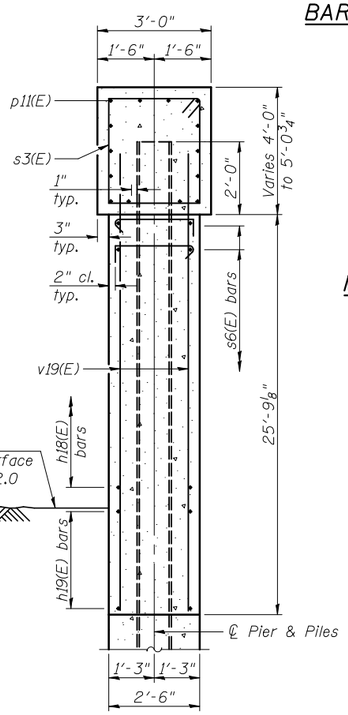
BAR s6(E)



ANCHOR BOLT LAYOUT ④



ELEVATION
(Looking West)



SECTION B-B

SECTION A-A

MIN. BAR LAP

#8 bar = 7'-8"
#6 bar = 4'-5"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h18(E)	108	#6	31'-9"	——
h19(E)	60	#6	25'-1"	——
p11(E)	28	#8	33'-4"	——
p12(E)	4	#4	19'-4"	——
p13(E)	4	#4	22'-1"	——
s3(E)	96	#5	13'-7"	⌐
s4(E)	40	#4	6'-8"	⊓
s5(E)	-	-	-	
s6(E)	1,110	#4	3'-3"	⊐
u1(E)	30	#6	12'-2"	⊃
u2(E)	54	#6	14'-2"	⊃
u3(E)	12	#6	14'-10"	⊃
v19(E)	250	#5	27'-6"	——
Structure Excavation		Cu. Yd.	48	
Concrete Structures		Cu. Yd.	176.6	
Concrete Encasement		Cu. Yd.	5.5	
Reinforcement Bars, Epoxy Coated		Pound	23,100	
Furnishing Steel Piles HP14x73		Foot	819	
Driving Piles		Foot	819	
Test Pile Steel HP14x73		Each	1	
Mechanical Splicers		Each	90	

PILE DATA

Type: Steel HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 320 kips
Est. Length: 91'
No. Production Piles: 9
No. Test Piles: 1

Notes:
① Pour steps monolithically with cap.
② For details of Mechanical Splicers, see sheet 48 of 53.
③ For details of piles and Concrete Encasement, see sheet 47 of 53.
④ Space reinforcement in cap to miss anchor bolts.
⑤ Alternate s6(E) bars end for end as shown in Section B-B.
⑥ Bars indicated thus 14 x 2-#8 etc. indicates 14 lines of bars with 2 lengths per line.

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STATE OF ILLINOIS
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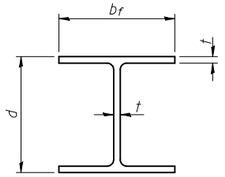
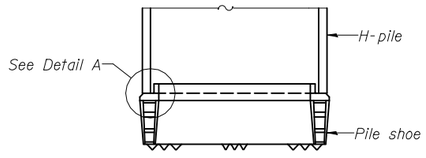
PIER 4 DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 46 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	158
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

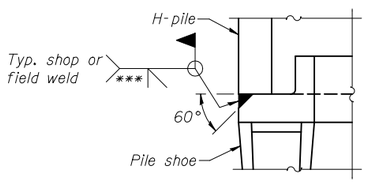


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"

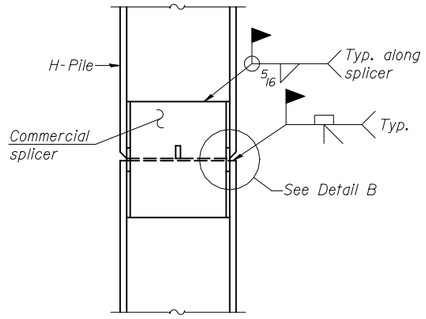


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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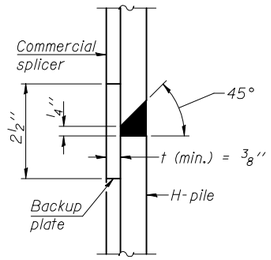
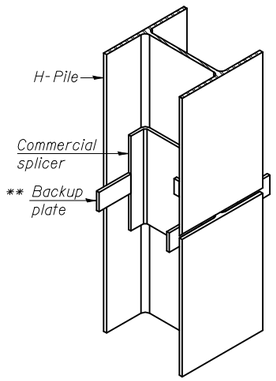
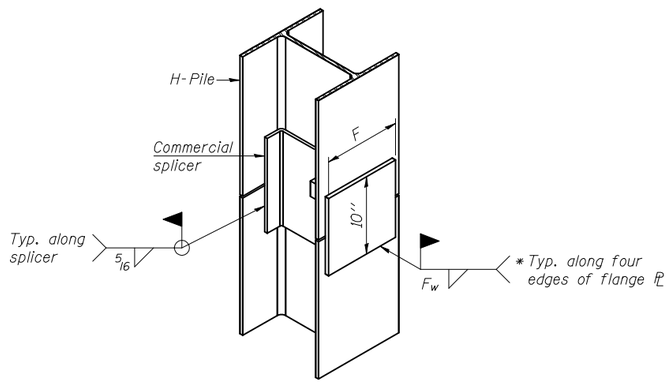


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



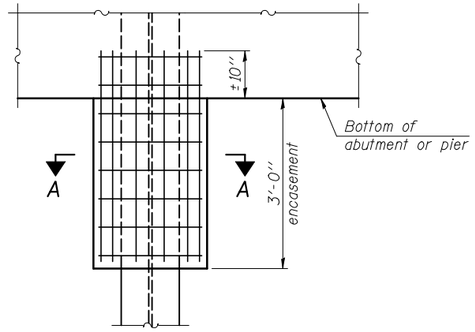
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

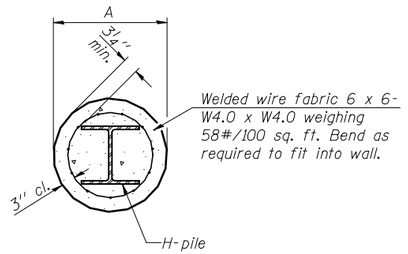
* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



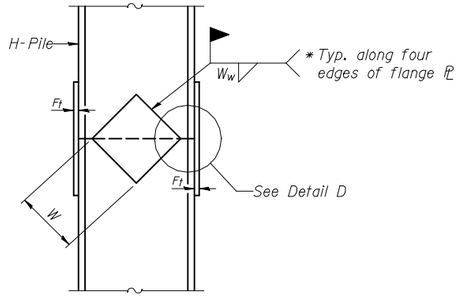
ELEVATION



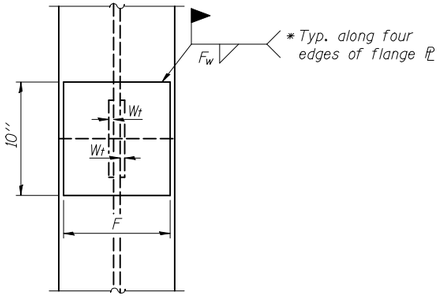
Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

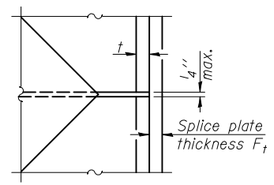
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_t	F_w	W	W_t	W_w
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.

F-HP 7-1-10

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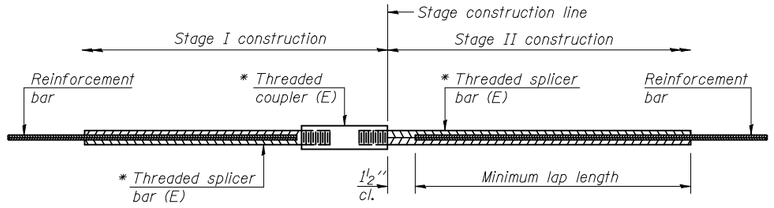
HP PILE DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 47 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	159
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

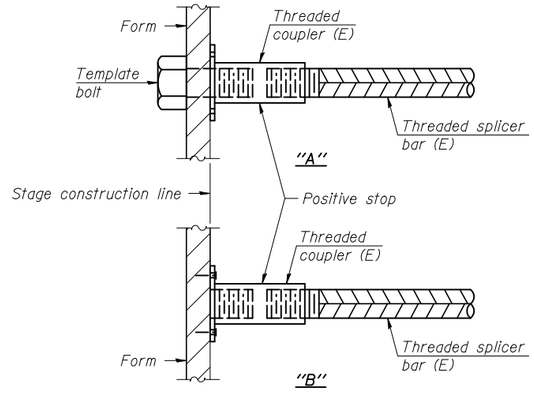
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1½" + thread length

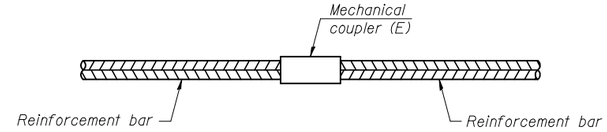
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length



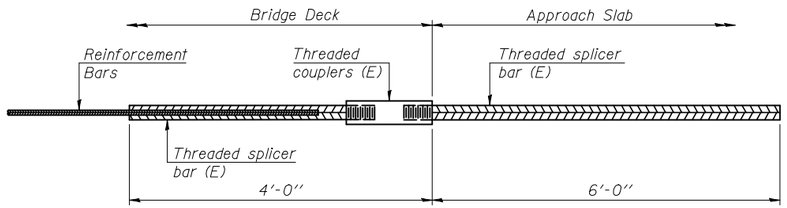
INSTALLATION AND SETTING METHODS

"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.



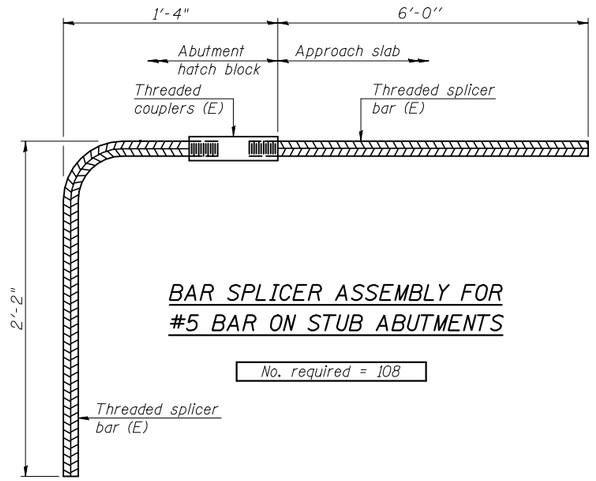
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 1	#6	90
Pier 2	#6	234
Pier 2	#9	520
Pier 3	#6	234
Pier 3	#9	520
Pier 4	#6	90



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 108

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 7-1-10

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PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 48 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	160
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

Sheet 1 of 3

ILL 13 Over Big Muddy River

Route: ILL 13 Structure Number: 039-0013 and 039-0049 Date: 10/20/2004

Section Bored By: Bryan Keller

County: Jackson Location: E. Edge of Murphysboro Checked By: Rob Graeff

Boring No 1-S
Station 338+68
Offset 28' LT WB CL
Ground Surface 383.2 Ft

Surf Wat Elev: 339.7
Ground Water Elevation
when Drilling 343.7
At Completion 351.4
At: 24 Hrs: 355.0

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Very stiff, damp, brown, Silty Clay A-6				Stiff, very moist, brown mottled grey, Silty Clay to Clay A7-6	3	1.9B	23
					5		
	5						
	9	2.9B	13		1		
	10				2	1.3B	26
378.7				353.7	3		
Stiff, moist, brown, Silty Clay Loam A-6	5.0 2			Stiff, very moist, brown, Clay to Silty Clay A7-6	30.0 1		
	5	1.7B	16		2	1.2B	23
	7				3		
				351.2			
	1			Very stiff, very moist, brown mottled, grey, Clay to Silty Clay A7-6	1		
	5	1.2S	15		3	2.4B	22
	7				4		
				348.7			
	10.0 1			Medium, very moist, brown mottled grey, Clay to Silty Clay A7-6	35.0 WH		
	5	1.2S	19		3	0.9B	25
	5				3		
371.2				346.2			
Very stiff, moist, brown, Silty Clay Loam A-6	1			Stiff, very moist, brown mottled grey, Clay to Silty Clay A7-6	1		
	5	2.4S	17		2	1.7B	25
	6				3		
368.7				343.7			
Very stiff, moist, brown mottled grey, Silty Clay A-6	15.0 1			Stiff, very moist, grey, Silty Clay Loam A-6	40.0 1		
	4	2.6B	23		1	1.5P	31
	5				1		
366.2				338.7			
Stiff, very moist, brown mottled grey, Silty Clay A-6	1						
	3	1.2B	25				
	3						
363.7							
Stiff, moist, grey, Silt Loam A-4	20.0 1			Stiff, wet, grey, Clay A7-6	45.0 WH		
	5	1.2B	21		1	1.1B	55
	4				WH		
361.2							
Stiff, moist to very moist, grey, Silty Clay A-6	1						
	2	1.6B	22				
	4						
358.7				333.7			
	25.0 1				50.0 WH		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

Route: ILL 13
Section:
County: Jackson

Sheet 2 of 3
Date: 10/20/2004

Boring No: 1-S
Station: 338+68
Offset: 28' LT WB CL
Ground Surface: 383.2 Ft

DEPTH	BLOW	Qu tsf	W%		DEPTH	BLOW	Qu tsf	W%
Very stiff, moist, brown, Clay A7-6 with Sand Layers	1	2.6B	19	Medium, wet. brown. Clay A7-6		1	0.9B	52
	2					3		
328.7				303.7				
Stiff, very moist, grey, Clay A7-6 with Sand and Silt Loam Layers	55.0 1			Medium, very moist, brown, Clay A7-6 with Sand Layers	80.0	WH		
	3	1.8S	26			3	0.6B	25
	9					5		
	60.0 1				85.0			
	2	1.1B	35					
	6							
318.7				293.7				
Stiff, very moist, brown, Clay A7-6	65.0 2			Medium, wet, grey, fine to medium Sand 93% Sand 3% Silt 4% Clay	90.0	10		
	4	1.8S	32			13		21
	4					16		
313.7				288.7				
Very stiff, very moist, brown, Clay A7-6	70.0 3			Hard, dry, grey, Clay Shale over Coal	95.0	100/11"		
	6	2.1B	31	287.7				
	7			Bottom of hole = 95.5 ft Free water observed at 39.5 ft. Elevation referenced to Bk .E. Abut Sta 338+89 Elevation = 383.47 ft. To convert "N" values to "N60" valuesmultiply by 1.25.				
308.7								
	75.0 WH				100.0			

N-Std Pentr Test: 2" OD Sampler,
[illegible] Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

Note:
(1) Only 2 Boring 1-S sheets.

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log
Sheet 1 of 2

ILL 13 WB Over Big Muddy River

Route: ILL 13 Structure Number: 039-0013 and 039-0049 Date: 10/7/2004
Section Bored By: Bryan Keller
County: Jackson Location: E. Edge of Murphysboro Checked By: Rob Graeff

Boring No 2-S
Station 339+62
Offset 36' RT CL
Ground Surface 354.4 Ft

Surf Wat Elev: 338.5
Ground Water Elevation
when Drilling 322.4
At Completion
At: 24 Hrs: 349.6

DEPTH	BLOW	Qu tsf	W%
Very stiff, moist, brown, Silty Clay A-6			
	2		
	5	2.6B	17
349.9	8		
Stiff, moist, brown, Silty Clay A-6 5.0	2		
	4	1.7S	20
347.4	5		
Medium, very moist, grey, Clay A7-6	1		
	2	0.7B	39
344.9	2		
Soft to medium, very moist, grey, Clay to Silty Clay A7-6 10.0	WH		
	1	0.5B	31
342.4	1		
Very soft, very moist, grey, Clay to Silty Clay A7-6	WH		
	WH	0.2B	32
339.9	WH		
Soft, very moist, grey, Clay to Silty Clay A7-6 15.0	WH		
	WH	0.3B	32
337.4	WH		
Soft to medium, very moist, grey, Clay A7-6	WR		
	WH	0.5B	29
334.9	WH		
Soft, very moist, grey, Clay A7-6 20.0	WH		
	WH	0.4B	29
	WH		
	WH		
	WH	0.4B	29
25.0	WH		
327.4	WH	0.4B	27
	WH		
Medium, very moist, grey, Clay A7-6	WR		
	WH	0.7B	24
324.9	WH		
Medium, very moist, brown, Clay A7-6 30.0	1		
	2	0.7B	28
322.4	2		
Soft, wet, brown, Clay A7-6 with Sand layers	WH		
	1	0.4B	29
319.9	1		
Medium, wet, brown, Clay to Silty Clay A7-6 35.0	WH		
	3	0.8B	26
317.4	5		
Stiff, very moist, brown, Clay A7-6 with some Gravel	1		
	2	1.3S	34
314.9	2		
Dense, wet, grey, Sandy Gravel 33% Sand 17% Silt 6% Clay 44% Gravel 40.0	1		
	20		14
309.9	21		
Stiff, wet, brown, Clay A7-6 45.0	WH		
	1	1.1S	43
	2		
304.9			
50.0	1		

N-Std Pentr Test: 2" OD Sampler,

Sheet 2 of 2

Route: ILL 13
Section:
County: Jackson
Date: 10/7/2004

Boring No: 2-S
Station: 339+62
Offset: 36' RT CL
Ground Surface: 354.4 Ft

DEPTH	BLOW	Qu tsf	W%
Stiff, very moist, grey, Clay A7-6 with Sand layers	1	1.3B	28
	2		
299.9			
Very loose, wet, grey, very fine Silty Sand 92% Sand 2% Silt 6% Clay 55.0	WR		
	WR		25
	WR		
294.9			
Medium, wet, grey, very fine Silty Sand with some Gravel and Clay layers 79% Sand 4% Silt 8% Clay 9% Gravel 60.0	4		
	5		21
	7		
289.9			
Hard, dry, black Clay Shale 289.4	65.0 100/8"		
Bottom of hole = 65.0 ft.			
Free water observed at 32.0 ft.			
Elevation referenced to Bk East Abutment Sta 338+65 Elevation = 383.64 ft.			
To convert "N" values to "N60" values multiply by 1.25.	70.0		
	75.0		

DEPTH	BLOW	Qu tsf	W%
80.0			
85.0			
90.0			
95.0			
100.0			

N-Std Pentr Test: 2" OD Sampler,

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DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 50 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	162
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log
Sheet 1 of 2

ILL 13 WB Over Big Muddy River

Route: ILL 13 Structure Number: 039-0013 and 039-0049 Date: 9/29/2004
Section Bored By: Bryan Keller
County: Jackson Location: E. Edge of Murphysboro Checked By: Rob Graeff

Boring No 4-S
Station 341+61
Offset 31' RT CL
Ground Surface 351.7 Ft

Surf Wat Elev: 339.7
Ground Water Elevation
when Drilling 342.2
At Completion
At: 96 Hrs: 344.7

	DEPTH	BLOW	Qu tsf	W%
Stiff, very moist, brown, Silty Clay A7-6				
		1		
		2	1.2B	28
		3		
	347.2			
Soft, very moist, brown mottled grey, Silty Clay A-6	5.0	1		
		1	0.4B	28
		2		
	344.7			
Very soft, wet, grey mottled brown, Silty Clay A-6		WH		
		WH	0.2B	31
		WH		
	342.2			
Soft, wet, grey, Clay to Silty Clay A7-6	10.0	WH		
		1	0.3B	31
		WH		
	339.7			
Soft to medium, wet, brown mottled grey, Silty Clay to Clay A7-6		WH		
		WH	0.5B	29
		WH		
	337.2			
Soft, wet, brown mottled grey, Silty Clay to Clay A7-6	15.0	WH		
		WH	0.4B	28
		WH		
		WH		
		WH	0.4B	28
		WH		
	20.0	WH		
		WH	0.4B	28
		WH		
	329.7			
Medium, very moist, grey, Clay to Silty Clay A7-6		WH		
		WH	0.7B	26
		WH		
	327.2			
	25.0	WH		

	DEPTH	BLOW	Qu tsf	W%
Soft to medium, very moist, grey, Clay A7-6		WH	0.5B	28
		WH		
		WH		
		WH	0.5B	26
		WH		
	322.2			
Medium, very moist, brown mottled grey, Clay to Silty Clay A7-6	30.0	WH		
		WH	0.6B	26
		WH		
	319.7			
Stiff, very moist, grey, Clay A7-6		1		
		2	1.2B	24
		2		
	317.2			
Medium, very moist, grey, Clay A7-6	35.0	WH		
		WH	0.7B	24
		WH		
		WH		
	312.2			
Stiff, very moist, brown, Clay A7-6	40.0	WH		
		1	1.2B	27
		1		
	307.2			
Stiff, wet, brown, Clay A7-6 with fine Sand layers	45.0	2		
		2	1.2B	43
		WH		
	302.2			
	50.0	1		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 2 of 2

Route: ILL 13
Section:
County: Jackson
Date: 9/29/2004

Boring No: 4-S
Station: 341+61
Offset: 31' RT CL
Ground Surface: 351.7 Ft

	DEPTH	BLOW	Qu tsf	W%
Medium, wet, grey, Silty Clay A-6		4	0.7S	27
		4		
	297.2			
Loose to medium, wet, grey, fine Silty Sand with some Gravel 81% Sand 7% Silt 4% Clay 8% Gravel	55.0	1		
		5		21
		5		
	292.2			
Medium, wet, grey, fine Silty Sand with some Gravel 69% Sand 9% Silt 7% Clay 15% Gravel	60.0	3		
		6		21
		10		
	288.7			
Hard, dry, black Coal	65.0	100/3"		
Hard, moist, black, Coal with Clay Shale Layers	70.0	100/5"		
Hard, dry, grey, Clay Shale	276.7	75.0	100/3"	
		100.0		

Botom of hole = 75.0ft.

Free water observed at 9.5 ft.

Elevation referenced to BK W. Abut Elevation = 383.64 ft.

To convert "N" values to "N60" values multiply by 1.25.

DEPTH
80.0
85.0
90.0
95.0
100.0

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation
Boring Log
Sheet 1 of 3

ILL 13 Over Big Muddy River

Route: ILL 13 Structure Number: 039-0013 and 039-0049 Date: 10/8/2004
Section: Bored By: Bryan Keller
County: Jackson Location: E. Edge of Murphysboro Checked By: Rob Graeff

Boring No 6-S
Station 343+17
Offset 22' RT EB CL
Ground Surface 383.0 Ft

Surf Wat Elev: 338.5
Ground Water Elevation
when Drilling 333
At Completion
At: 68 Hrs: 357.5

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Very stiff, damp, brown, Silty Clay A-6				Very stiff, moist, brown, Silty Clay A-6	3 4	2.1B	21
	1			356.0			
	4 8	2.5B	11	Soft, very moist, brown, Silty Clay loam A-6	WH 1 2	0.4B	24
				353.5			
5.0	2			Stiff, moist to very moist, grey, Clay A7-6	30.0 WH 2 3	1.1B	21
	4 3	2.1B	15	351.0			
376.0							
Very stiff, moist to very moist, brown, Silty Clay A-6	1 3 3	2.1B	20	Medium, very moist, grey, Clay A7-6	WH 2 2	0.9B	29
373.5							
Stiff, very moist, brown, Silty Clay A7-6	10.0 1 2 2	1.1B	24	35.0	WH 1 2	0.8B	29
371.0				346.0			
Stiff, moist to very moist, brown, Silty Clay to Silty Clay Loam A-6	1 3 4	1.3S	20	Medium, very moist, brown mottled grey, Clay to Silty Clay A7-6	WH 2 3	0.9B	27
				343.5			
15.0	1			Medium, very moist, grey, Clay A7-6	40.0 WH 1	0.7B	26
	2 4	1.3S	23		3		
366.0				338.5			
Medium, very moist, brown, Silty Clay Loam A-6	WH 2 2	0.7S	22				
363.5							
Medium, very moist, brown, Silty Clay to Silty Clay Loam A-6	20.0 WH 1 1	0.6S	25	Stiff, very moist, brown, Clay A7-6	45.0 WH 1 1	1.2S	31
361.0							
Medium, moist to very moist, grey, Clay Loam A-6	WH 3 3	0.9B	20				
358.5				333.5			
25.0	WH			50.0	WH		

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 2 of 3

Route: ILL 13 Date: 10/8/2004
Section:
County: Jackson

Boring No: 6-S
Station: 343+17
Offset: 22' RT EB CL
Ground Surface: 383.0 Ft

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Medium, very moist, brown, Clay A7-6	2 1	0.8S	28	Medium, very moist, brown, Clay A7-6 with Sand Layers	4 2	0.9B	32
328.5				303.5			
Stiff, very moist, brown, Clay A7-6	55.0 1 1 1	1.4S	30	Loose to medium, wet, grey, fine Sand with Coal Chips and some Gravel 57% Sand 6% Silt 4% Clay 33% Gravel	80.0 4 5 5		23
323.5							
Soft to medium, very moist, grey, Clay to Silty Clay A7-6 with Sand Layers	60.0 WH 2 2	0.5B	24		85.0		
318.5				293.5			
Stiff, very moist, brown, Clay A7-6 with Clay Loam and Sand Layers	65.0 4 7 4	1.3B	32	Medium, wet, grey, Sandy Gravel 72% Sand; 15% Silt 6% Clay; 7% Gravel	90.0 4 10 15		17
313.5				291.0			
Stiff, very moist, brown, Clay A7-6 with Sand Layers	70.0 WH 3 3	1.1S	35	Hard, dry, black Coal	95.0 100/3"		
308.5				Hard, dry, black Coal	100/5"		
75.0	1			100.0			

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 3 of 3

Route: ILL 13 Date: 10/8/2004
Section:
County: Jackson

Boring No: 6-S
Station: 343+17
Offset: 22' RT EB CL
Ground Surface: 383.0 Ft

DEPTH	BLOW	Qu tsf	W%	DEPTH	BLOW	Qu tsf	W%
Hard, dry, black Clay Shale 280.5	100/3"						
Bottom of hole = 102.5 ft.							
Free water observed at 50.0 ft.							
105.0				130.0			
Elevation referenced to Bk W Abut Str # 039-0013 Sta 343+06 Elevation = 383.47							
To convert "N" values to "N60" values multiply by 1.25.							
110.0				135.0			
115.0				140.0			
120.0				145.0			
125.0				150.0			

N-Std Pentr Test: 2" OD Sampler,
140# Hammer, 30" Fall (Type Fail, B-Bulge S-Shear E-Estimated P-Penetrometer)

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PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 52 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	164
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation

Division of Highways
SCI Engineering

SOIL BORING LOG

Date 07/14/09

ROUTE FAP 331 DESCRIPTION Structure Replacement crossing Big Muddy River LOGGED BY SCI

SECTION 12-2B-2 LOCATION East of Murphysboro; SW 1/4, SEC. 3, TWP. 9S, RNG. 2W

COUNTY Jackson DRILLING METHOD CME 750 w/HSA HAMMER TYPE Automatic

STRUCT. NO. 039-0049
Station 340+71.00

BORING NO. B-103
Station 343+09
Offset 14 ft Rt WB
Ground Surface Elev. 374.0 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 329.0 ft ▼
Upon Completion - ft
After - Hrs. - ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
ASPHALT - 4 inches	373.7			
CONCRETE - 9 inches	372.9			
CRUSHED ROCK	372.5			
FILL: Brown, silty clay, trace to some sand (A-6)				
Classification of materials based on observation of augered cuttings.	369.0	-5		
FILL: Gray, silty clay (A-7)				
Becomes brown Temporary benchmark - brass disk at southeast corner of east abutment. USGS Topographic Map - El. 384		-10		
FILL: Grayish brown, silty clay (A-6)	361.0	-15		
FILL: Gray, silty clay, trace to some sand (A-7)	358.5	-20		
FILL: Gray, silty clay, trace to some sand (A-7) *(continued)*	352.0			
CLAY: Brown and gray (A-7) ST pushed 22' to 24'. Recovery 16". UU - 2.3 tsf; DD - 97.4 pcf; MC - 24%	348.5	-25		
SILTY CLAY: Brown and gray (A-7) Triaxial shear test performed on ST pushed from 27' to 29'; LL-47, PL-17, PI-30	344.0	-30		
CLAY: Gray, some sand (A-7)	340.0	-35		
SILTY CLAY: Brown and gray (A-6) ST pushed 34' to 36'. Recovery 19". UU - 1.3 tsf; DD - 96.2 pcf; MC - 27%	334.0	-40		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation

Division of Highways
SCI Engineering

SOIL BORING LOG

Date 07/14/09

ROUTE FAP 331 DESCRIPTION Structure Replacement crossing Big Muddy River LOGGED BY SCI

SECTION 12-2B-2 LOCATION East of Murphysboro; SW 1/4, SEC. 3, TWP. 9S, RNG. 2W

COUNTY Jackson DRILLING METHOD CME 750 w/HSA HAMMER TYPE Automatic

STRUCT. NO. 039-0049
Station 340+71.00

BORING NO. B-103
Station 343+09
Offset 14 ft Rt WB
Ground Surface Elev. 374.0 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 329.0 ft ▼
Upon Completion - ft
After - Hrs. - ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY CLAY: Brown, trace to some sand (A-7)				
	329.0 ▼	-45		
SAND: Brown and gray, fine to coarse (A-1)	328.5			
CLAY: Gray (A-7) ST pushed 45' to 47'. Recovery 23". UU - 3.1 tsf; DD - 95.6 pcf; MC - 27%	327.5			
SILTY CLAY: Gray (A-6)	327.0			
Boring terminated at 47.0 ft.		-50		
		-55		
		-60		

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

BATES ASSOCIATES
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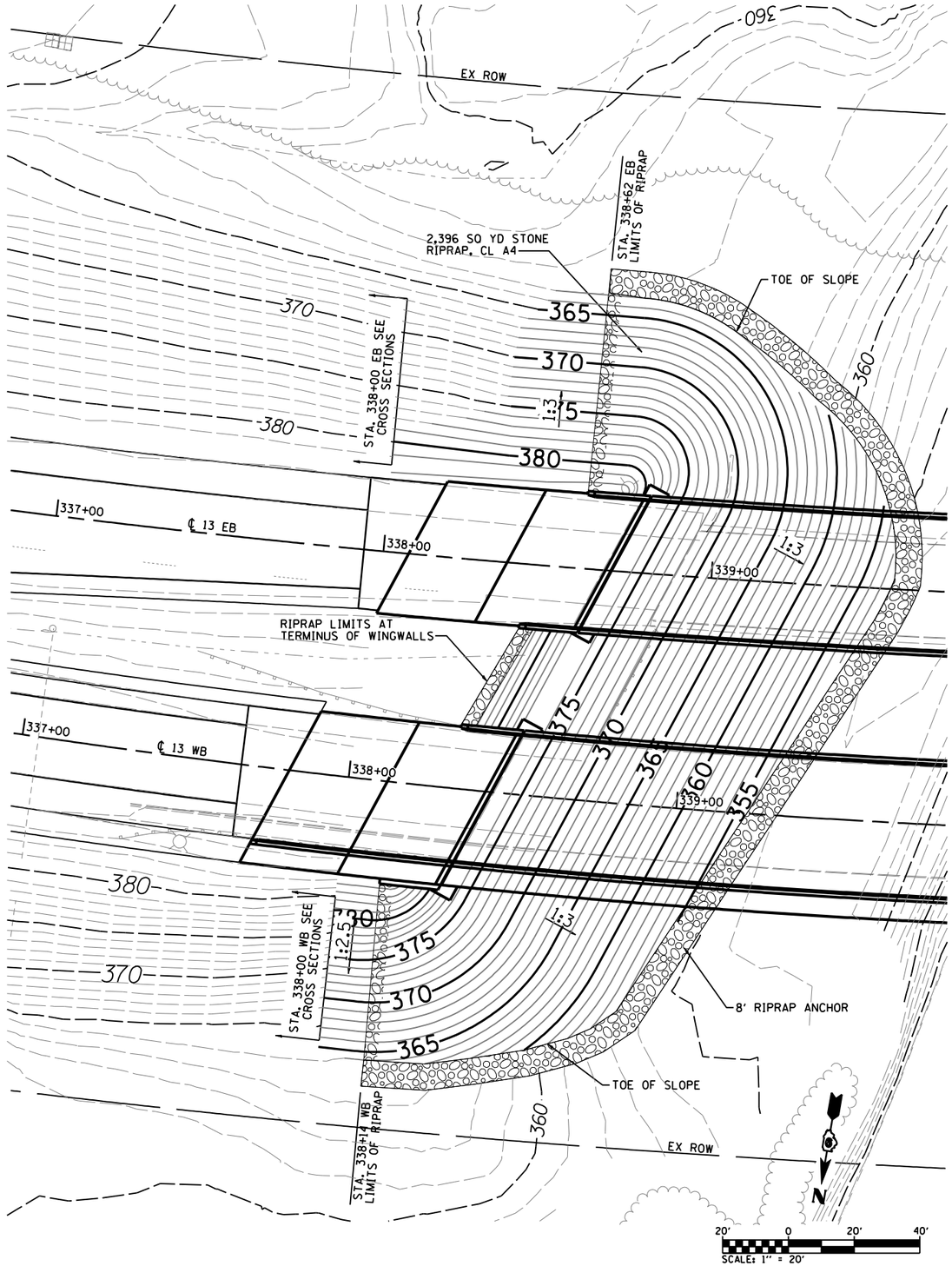
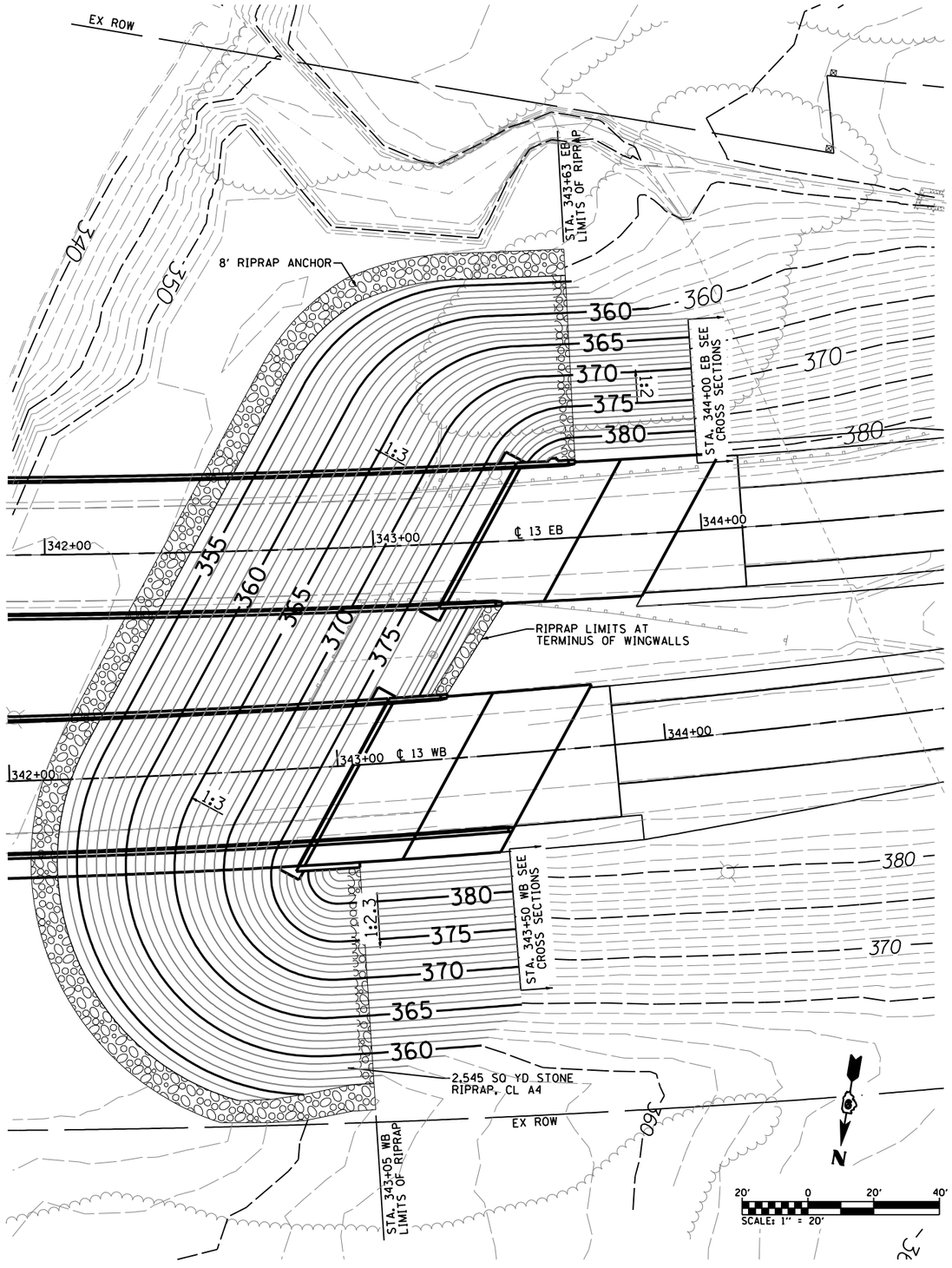
PLOT SCALE =	DRAWN -	REVISED -	
PLOT DATE =	CHECKED -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS
STRUCTURE NO. 039-0076 (W.B.)
SHEET NO. 53 OF 53 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	165
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		





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	PLOT DATE = 1/25/2012	DATE -	REVISED -

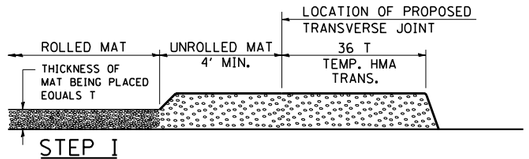
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GRADING PLAN
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: 1"=20' | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

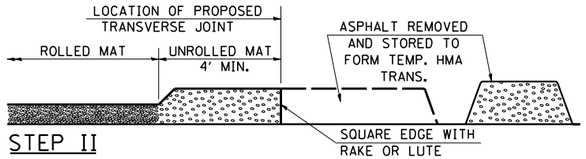
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)-B-1	JACKSON	200	166
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

TEMPORARY HOT-MIX ASPHALT TRANSITIONS



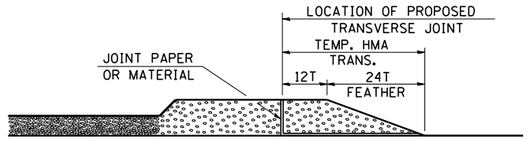
STEP I

1. PLACE HOT-MIX ASPHALT MAT, LENGTH 36 TIMES THE THICKNESS OF THE MAT BEING PLACED PAST THE PROPOSED TRANSVERSE JOINT LOCATION USING NORMAL OPERATING PROCEDURES.
2. EXTREME CARE SHOULD BE TAKEN TO MAINTAIN ENOUGH MATERIAL IN FRONT OF THE SCREED TO MAINTAIN REQUIRED PAVING DEPTH.



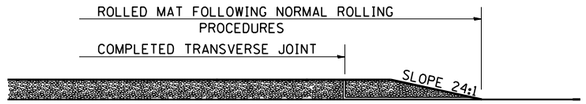
STEP II

1. MOVE THE PAVER OUT OF THE WAY AND REMOVE THE ASPHALT FROM THE AREA OF THE PROPOSED TEMPORARY HOT-MIX ASPHALT TRANSITION.
2. SQUARE UP THE END OF THE MAT WITH A RAKE OR LUTE.
3. NOTE THAT THE MAT WITHIN 4' OF THE END OF JOINT IS NOT TO BE ROLLED AT THIS TIME.



STEP III

1. JOINT PAPER OR OTHER PRESELECTED JOINT MATERIAL IS THEN PLACED IN THE CLEARED AREA AND THE EXCESS ASPHALT USED TO HAND FORM A TRANSITION TO THE DIMENSIONS SHOWN ABOVE.
2. NOTE THAT IN CONSTRUCTING THE TRANSITION, THE MAT DEPTH IS CONTINUED AS PART OF THE TRANSITION BEFORE FORMING THE FEATHER.



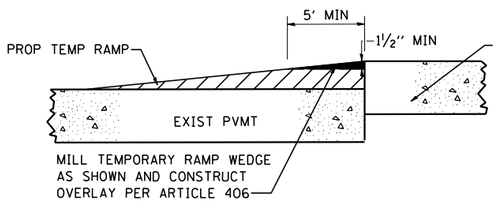
STEP IV

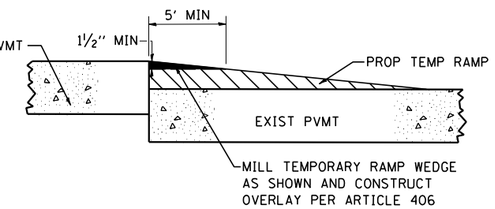
1. COMPLETE TEMPORARY TRANSITION BY ROLLING.
2. TO RESUME PAVING, AT THE JOINT, REMOVE TEMPORARY TRANSITION AND DISPOSE OF THE MATERIAL ACCORDING TO ART. 202.03 OF THE STD. SPECS. (COST INCLUDED IN THE CONTRACT).
3. CONSTRUCTING THE TEMPORARY TRANSITIONS WILL NOT BE PAID FOR SEPARATELY IN ACCORDANCE WITH ARTICLE 406.14 OF THE STANDARD SPECIFICATIONS.

STD. 9-26

REVISIONS	
REDRAWN	2-15-89
REVISED	8-16-94
REVISED	01-09-07
REVISED	

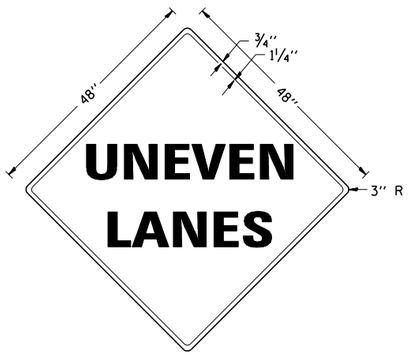
TEMPORARY RAMP REMOVAL AT PROPOSED STRUCTURES

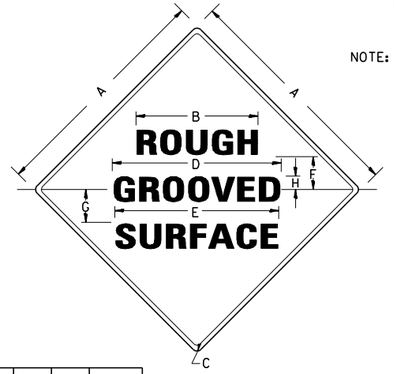




UNEVEN LANES / ROUGH GROOVED SURFACE SIGNS

W8-11 (48" x 48") / W8-I106 (48" x 48")





SIGN SIZE	SERIES LINES 1	2	3	MARGIN	BORDER	BLANK STD.
48X48	7C	7C	7C	0.8	1.2	B4-48D

ALL DIMENSIONS IN INCHES

COLORS:
LEGEND AND BORDER - BLACK NON-REFLECTORIZED
BACKGROUND - ORANGE REFLECTORIZED

NOTE: PRIOR TO ALLOWING TRAFFIC ON ANY PORTION OF THE ROADWAY THAT HAS BEEN COLDMILLED OR BEFORE RESURFACING OPERATIONS BEGIN, THE CONTRACTOR SHALL HAVE ERECTED "UNEVEN PAVEMENT" / "ROUGH GROOVED SURFACE" SIGNS THAT CONFORM TO THE ABOVE DETAILS. A MINIMUM OF ONE SIGN AT EACH END OF THE IMPROVEMENT WILL BE REQUIRED. THE CONTRACTOR SHALL MAINTAIN THE "UNEVEN PAVEMENT"/ "ROUGH GROOVED PAVEMENT" SIGNS UNTIL THE RESURFACING OPERATIONS ARE COMPLETED.

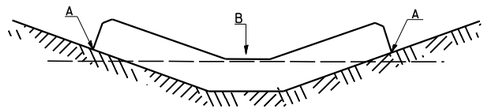
IF AT ANY TIME THE SIGNS ARE IN PLACE BUT NOT APPLICABLE, THEY SHALL BE TURNED FROM THE VIEW OF MOTORISTS OR COVERED AS DIRECTED BY THE ENGINEER.

THE COST OF FURNISHING, ERECTING, MAINTAINING, AND REMOVING THE REQUIRED SIGNS SHALL BE INCLUDED IN THE CONTRACT.

SIGN SIZE	DIMENSIONS A	B	C	D	E	F	G	H
48X48	48.0	24.1	3.0	34.0	33.0	6.0	13.0	3.5

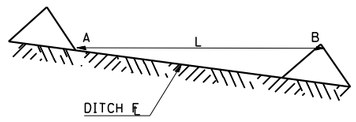
TEMPORARY DITCH CHECK DETAIL

PLACEMENT OF TEMPORARY DITCH CHECK IN DRAINAGE WAY



POINTS A SHOULD BE HIGHER THAN POINT B

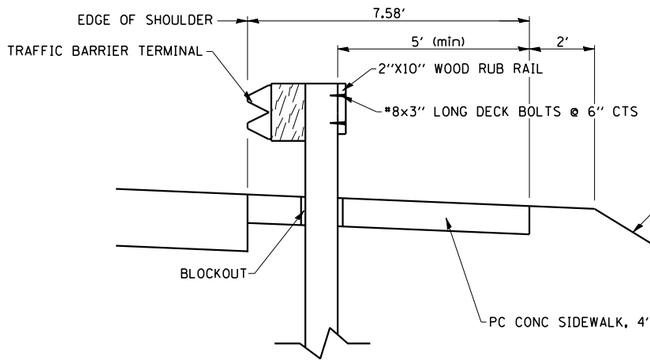
SPACING BETWEEN TEMPORARY DITCH CHECKS



L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

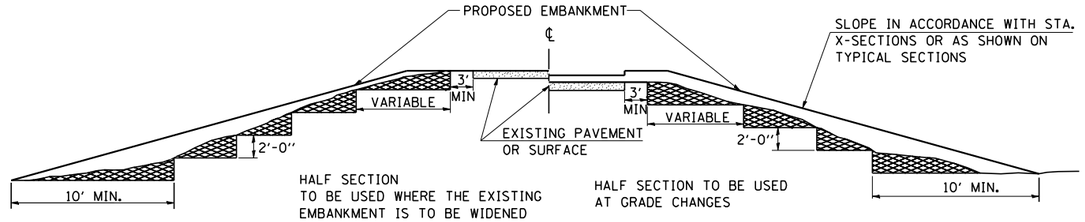
B = THE LOW POINT IN CENTER OF CHECK

TRAFFIC BARRIER TERMINAL WITH RUB RAIL



NOTE: CONSTRUCT PCC SIDEWALK, 4" PRIOR TO INSTALLATION OF THE STEEL PLATE BEAM GUARDRAIL. INSTALL BLOCKOUT AT ALL PROPOSED POST LOCATIONS. BACKFILL WITH GROUT TO PROPOSED GROUNDLINE.

TYPICAL CROSS SECTION SHOWING STEP CONSTRUCTION ON EXISTING FILL



HALF SECTION TO BE USED WHERE THE EXISTING EMBANKMENT IS TO BE WIDENED

HALF SECTION TO BE USED AT GRADE CHANGES

MATERIAL TO BE REMOVED AND REPLACED IN THE EMBANKMENT IN ACCORDANCE WITH ART. 205.04 OF THE STANDARD SPECIFICATION. COST TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED BECAUSE OF THIS WORK.

ROADWAY CROSS SECTION SHOWN.
BRIDGE CONE, INCLUDING END SLOPE, SIMILAR.

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		DATE -	REVISED -

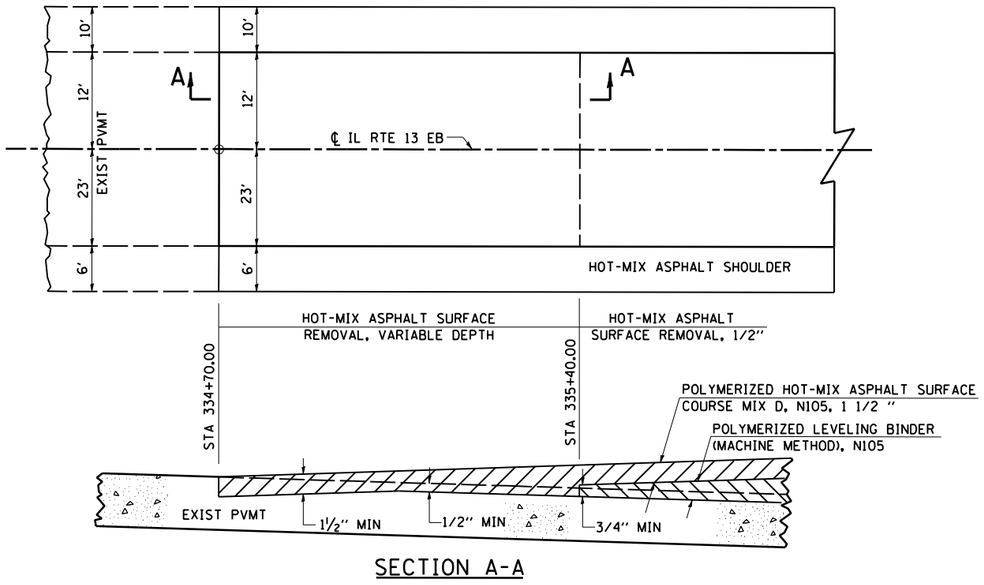
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAIL SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 1 OF 2 SHEETS | STA. | TO STA.

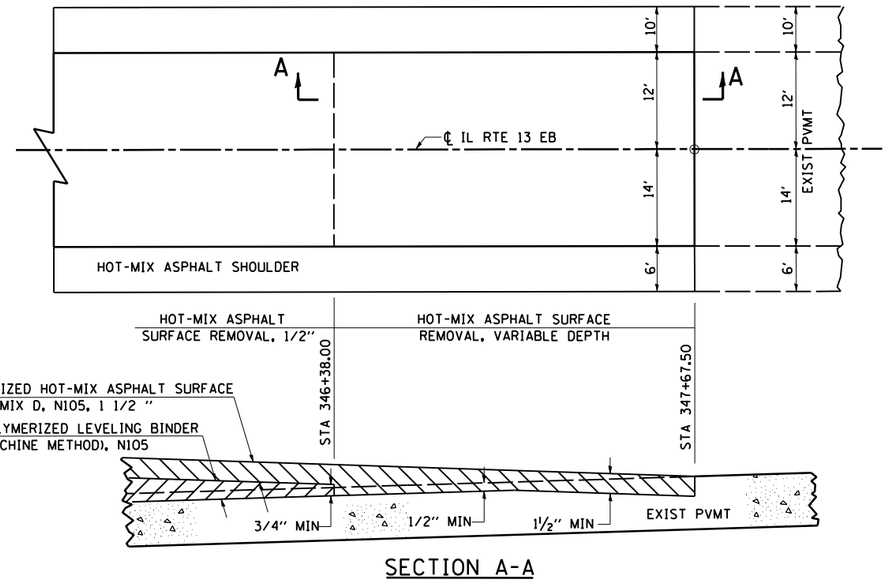
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)-B-1	JACKSON	200	167
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

EAST PAVEMENT TRANSITION
IL RTE 13 EB



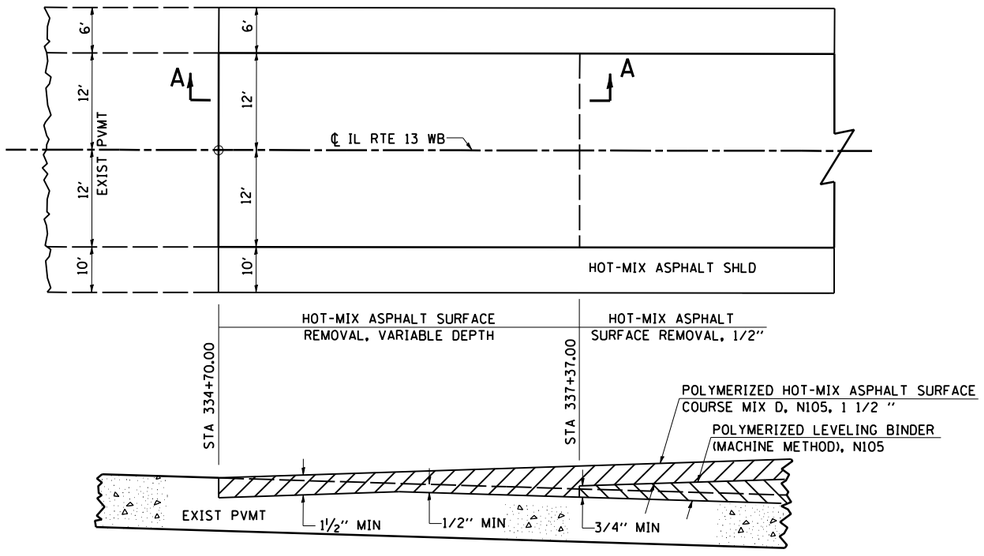
SECTION A-A

WEST PAVEMENT TRANSITION
IL RTE 13 EB



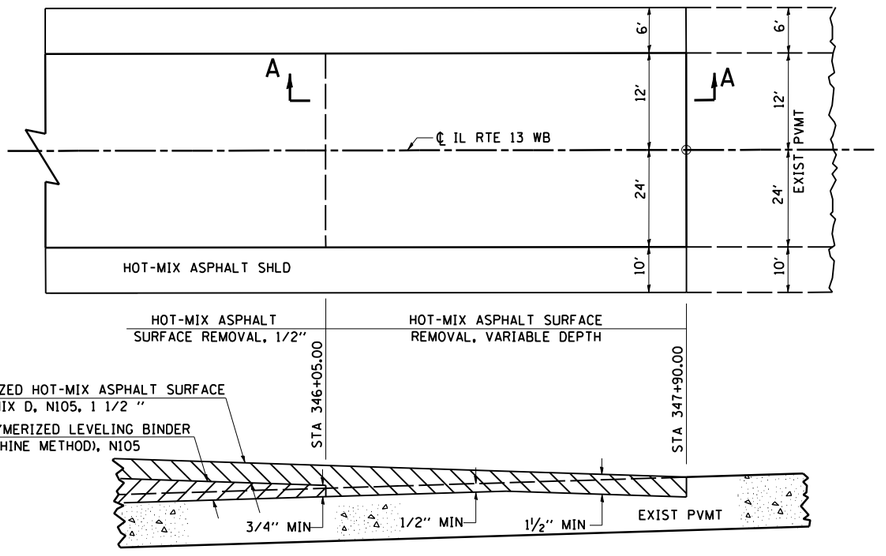
SECTION A-A

EAST PAVEMENT TRANSITION
IL RTE 13 WB



SECTION A-A

WEST PAVEMENT TRANSITION
IL RTE 13 WB



SECTION A-A

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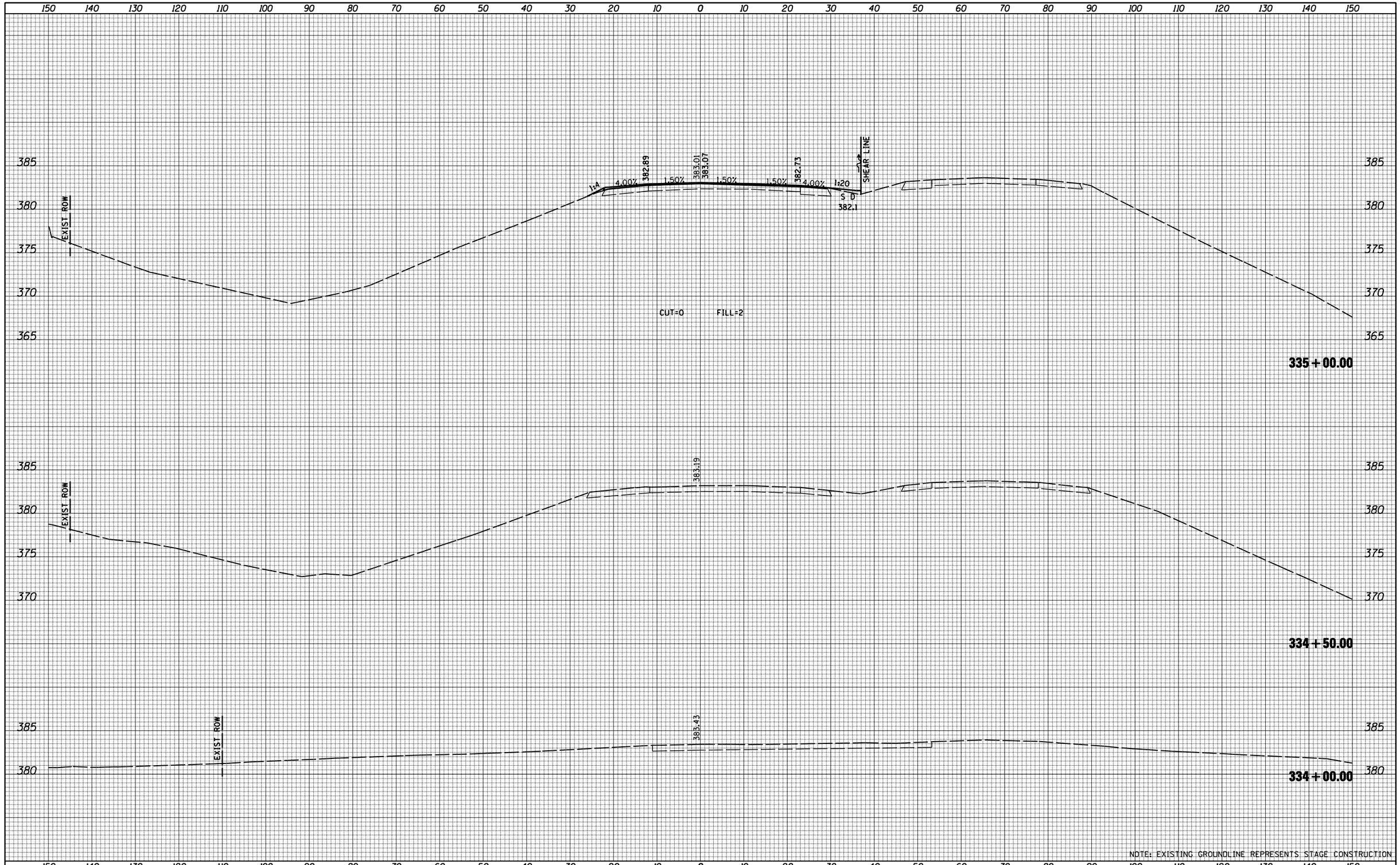
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAIL SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 2 OF 2 SHEETS | STA. | TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)-B-1	JACKSON	200	168
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		



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SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

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SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EASTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 1 OF 8 SHEETS | STA. 334+00.00 TO STA. 335+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	169
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

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NOTE BOOK	
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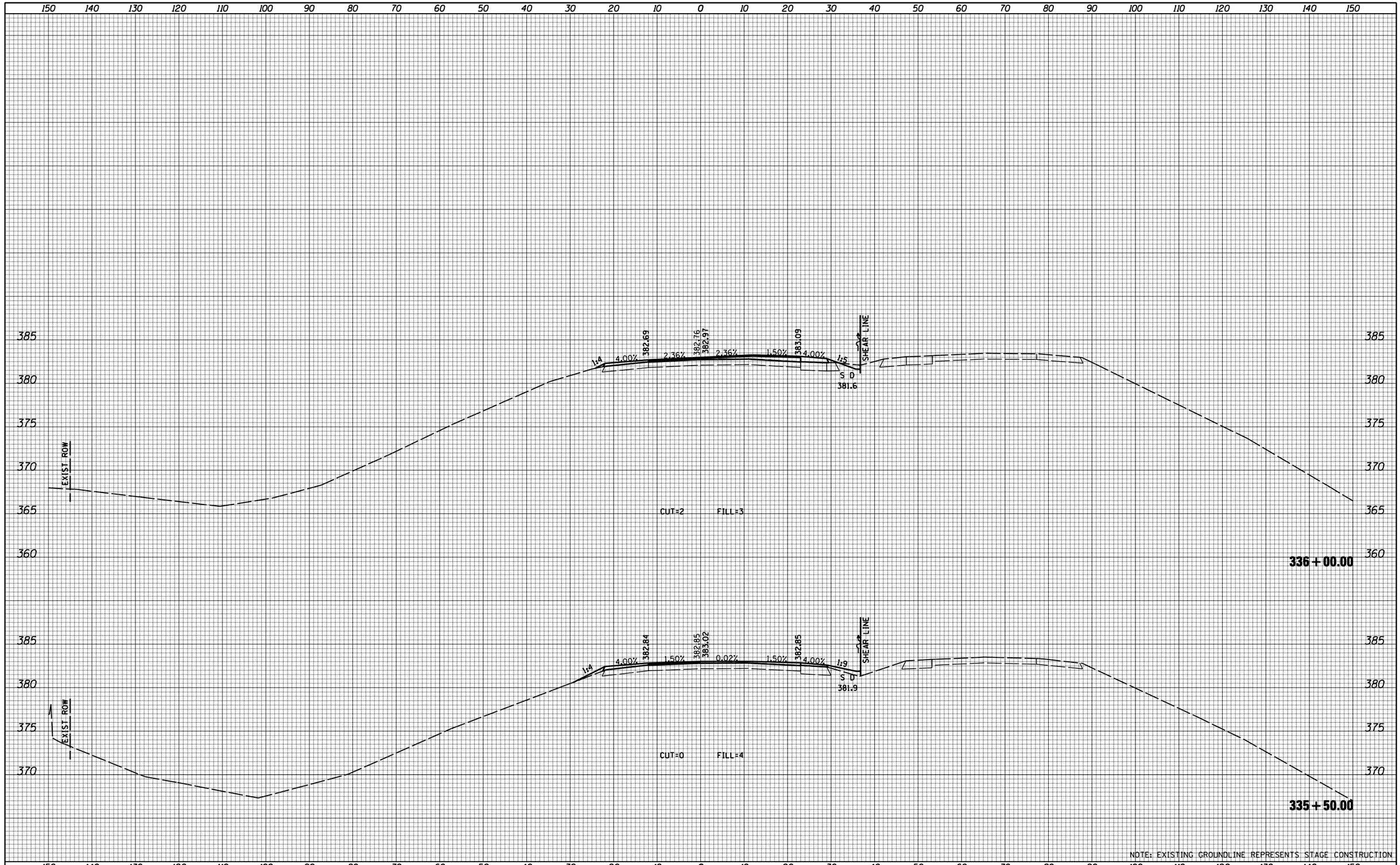

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SURVEYED		
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AREAS		
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EASTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 2 OF 8 SHEETS | STA. 335+50.00 TO STA. 336+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	170
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
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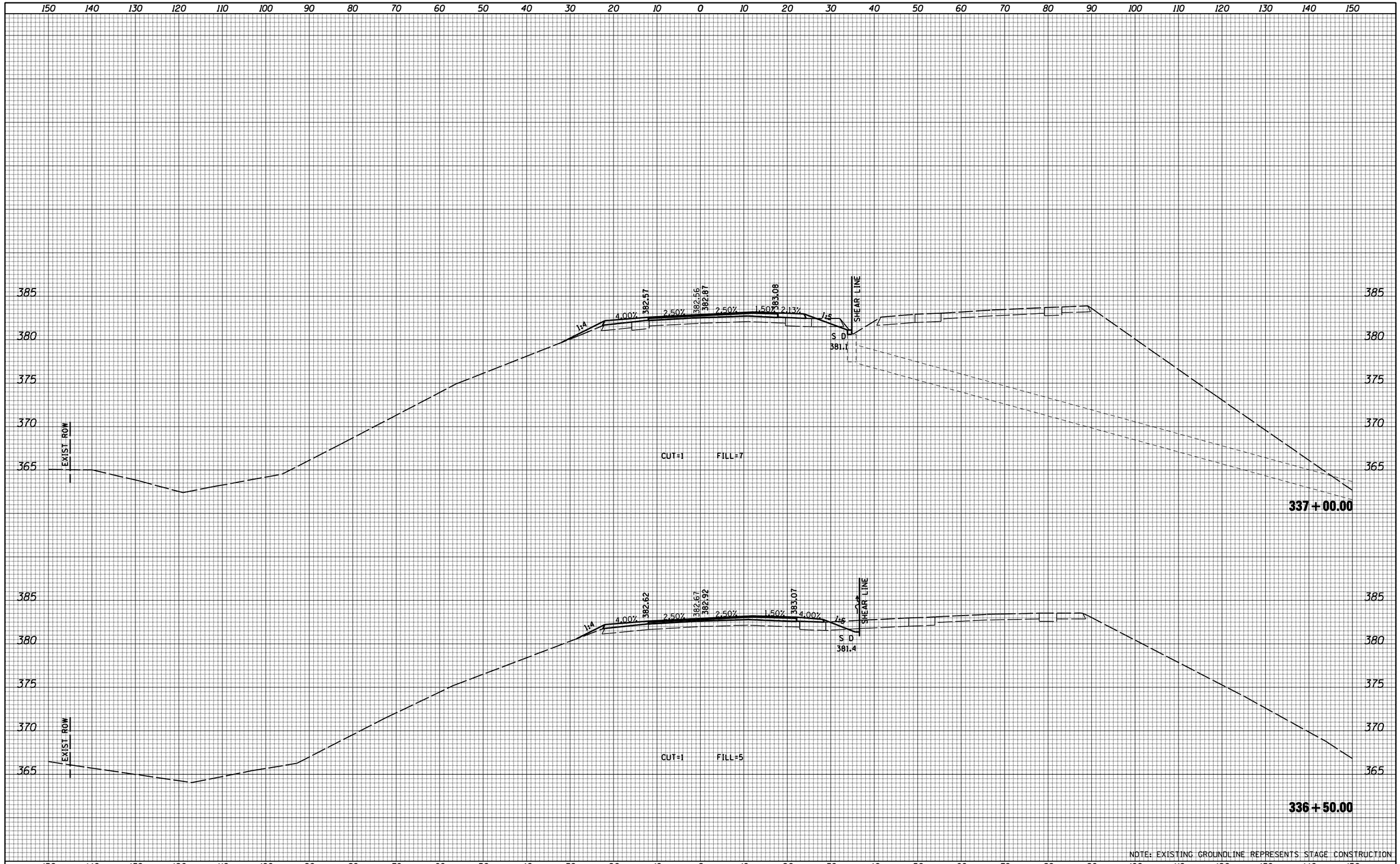
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	



ORIGINAL SURVEY	BY	DATE
SURVEYED		
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TEMPLATE		
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EASTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 3 OF 8 SHEETS | STA. 336+50.00 TO STA. 337+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	171
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

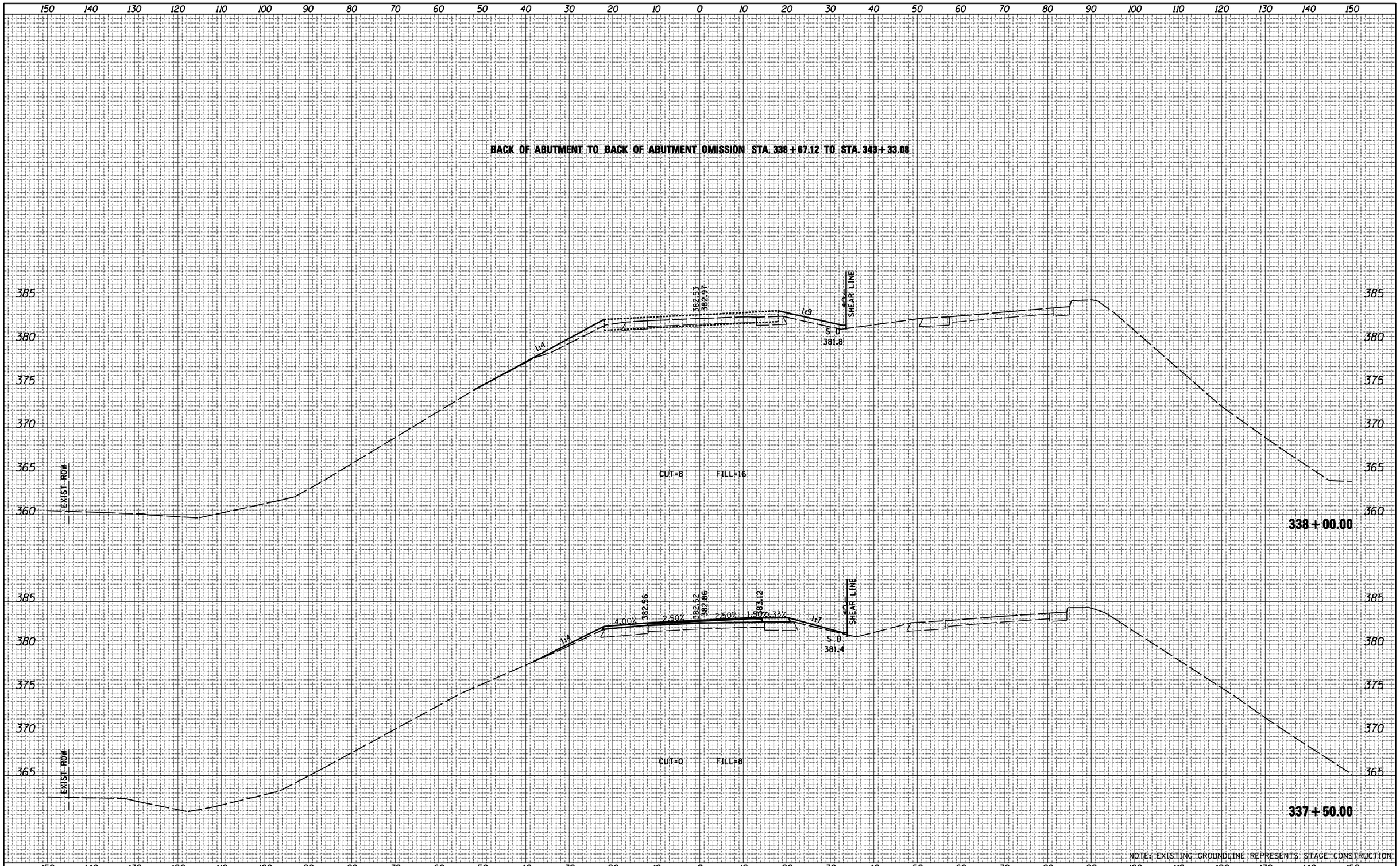
FINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BACK OF ABUTMENT TO BACK OF ABUTMENT OMISSION STA. 338+67.12 TO STA. 343+33.08



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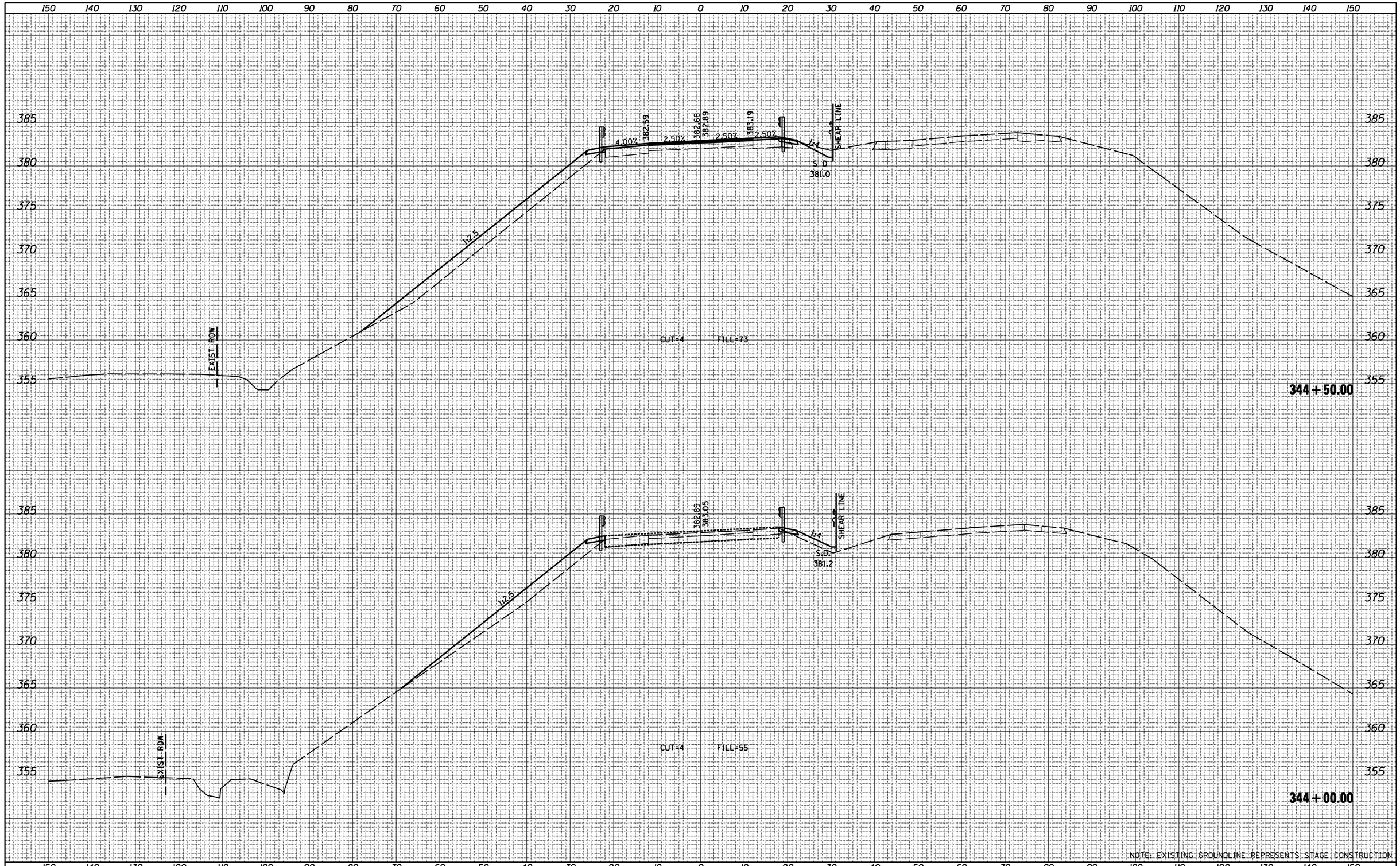
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EASTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 4 OF 8 SHEETS | STA. 337+50.00 TO STA. 338+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	172
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		



NOTE: EXISTING GROUNDLINE REPRESENTS STAGE CONSTRUCTION

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

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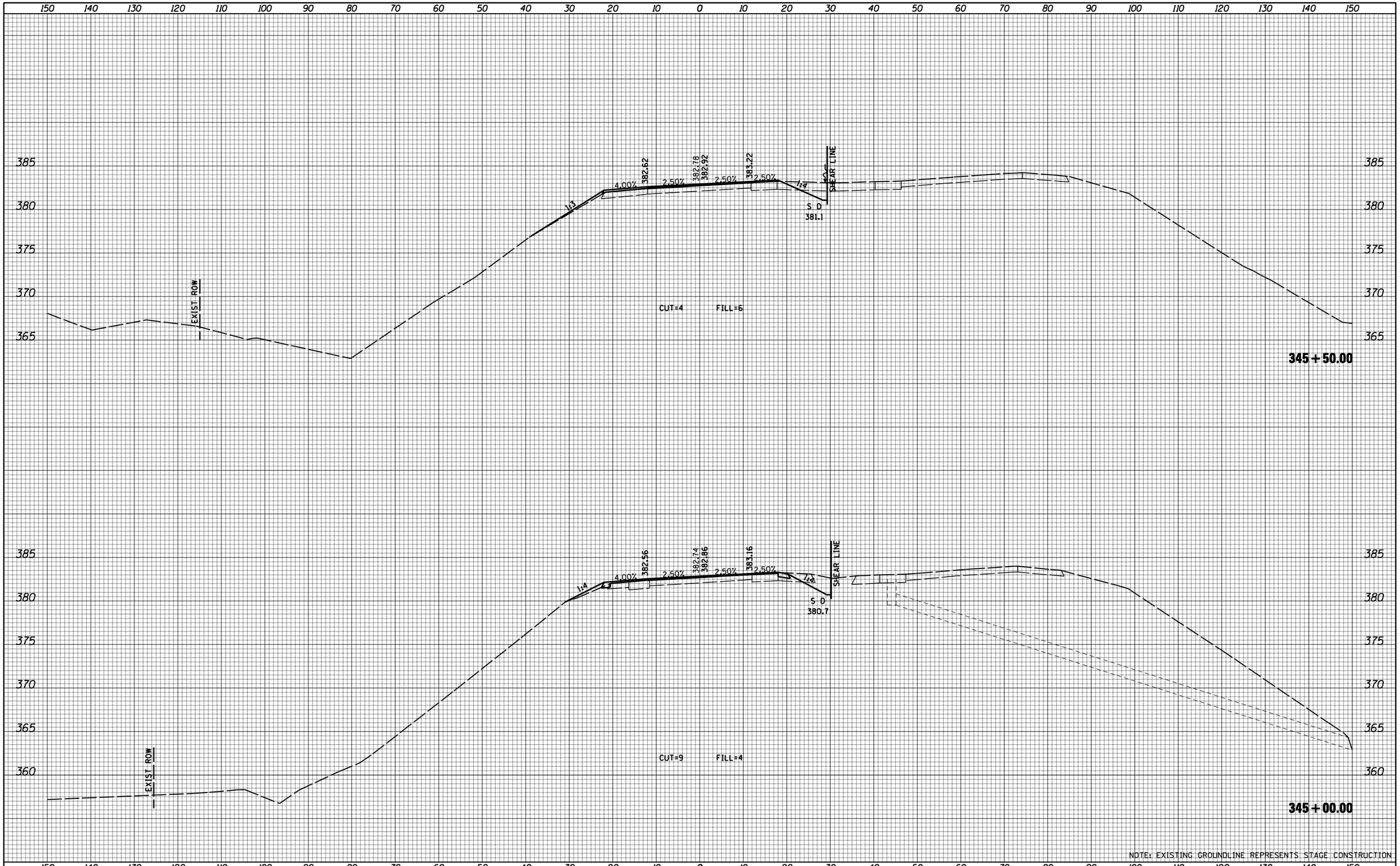
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EASTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 5 OF 8 SHEETS | STA. 343+50.00 TO STA. 344+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	173
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	BY
	PLOTTED	DATE
	TEMPLATE	
	AREAS	
	AREAS CHECKED	



ORIGINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	BY
	PLOTTED	DATE
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

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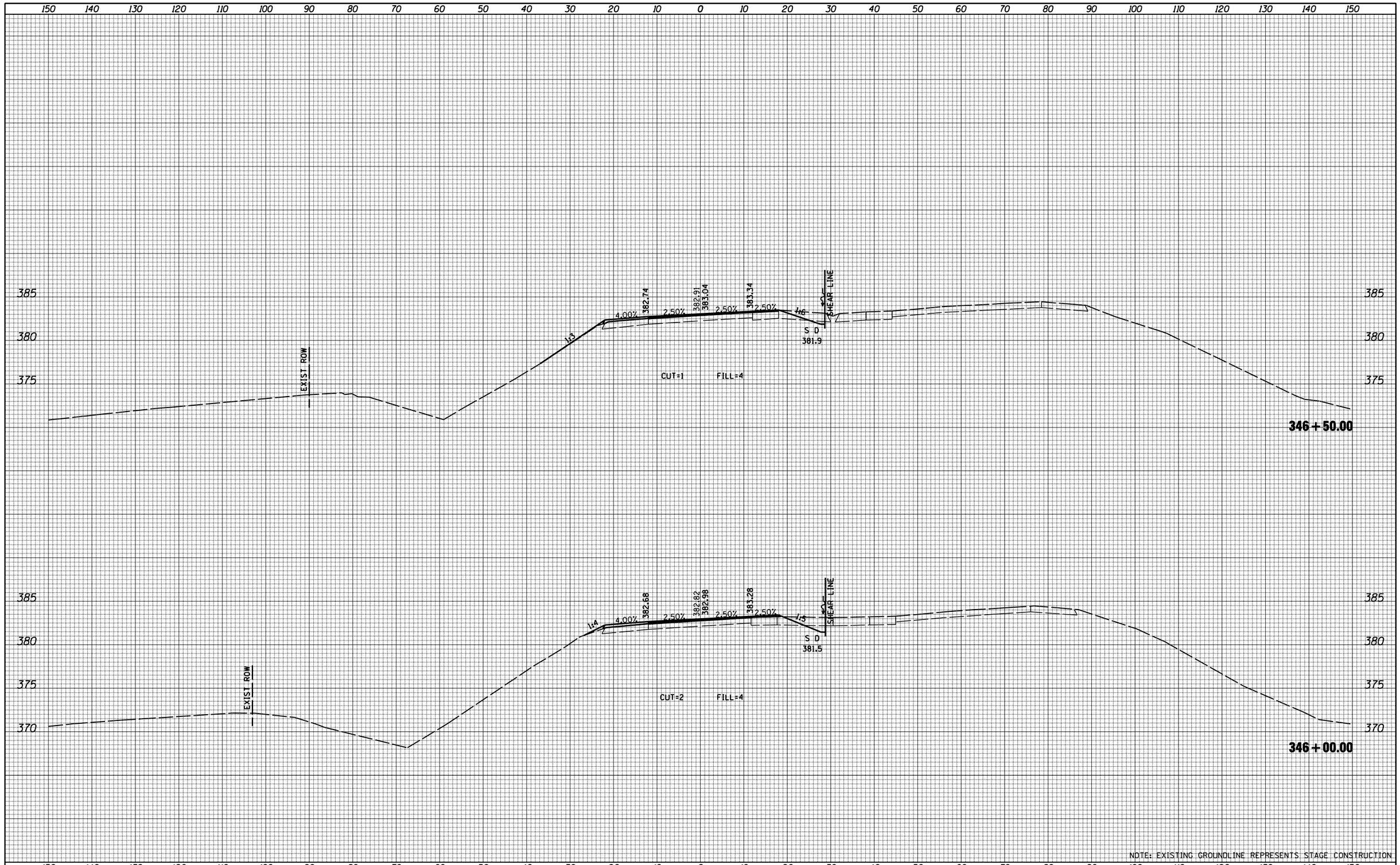
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EASTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 6 OF 8 SHEETS | STA. 344+50.00 TO STA. 345+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	174
		CONTRACT NO. 78056		
		ILLINOIS	FED. AID PROJECT	



FINAL SURVEY

NOTE BOOK	BY	DATE
NO.		

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

ORIGINAL SURVEY

NOTE BOOK	BY	DATE
NO.		

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

FILE NAME = D978056-sht-xssht EB.dgn	USER NAME = default	DESIGNED -	REVISED -
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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EASTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 7 OF 8 SHEETS | STA. 345+50.00 TO STA. 346+50.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	175
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

385 380 375 370

EXIST. ROW

388.37

348 + 00.00

385 380 375

EXIST. ROW

4.00% 382.86 2.50% 383.20 383.16 2.50% 383.50 2.50% 1:9 ℄ SHEAR LINE

1:4

S D 382.7

CUT=0 FILL=10

347 + 50.00

385 380 375

EXIST. ROW

4.00% 382.80 2.50% 383.05 383.10 2.50% 383.40 2.50% 1:8 ℄ SHEAR LINE

1:4

S D 382.3

CUT=0 FILL=28

347 + 00.00

NOTE: EXISTING GROUNDLINE REPRESENTS STAGE CONSTRUCTION

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

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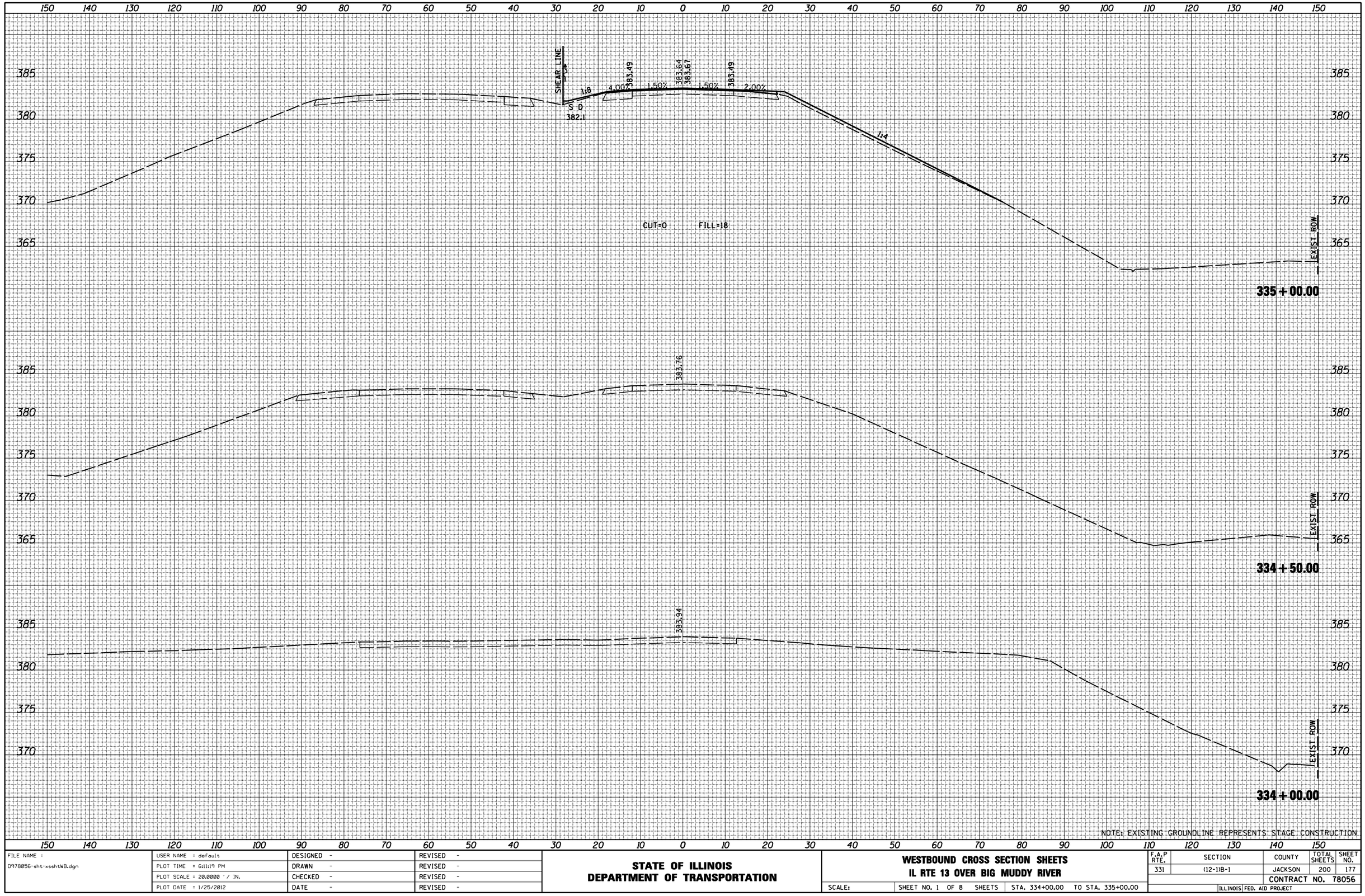
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EASTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 8 OF 8 SHEETS | STA. 347+00.00 TO STA. 348+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	176
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		



NOTE: EXISTING GROUNDLINE REPRESENTS STAGE CONSTRUCTION

FINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

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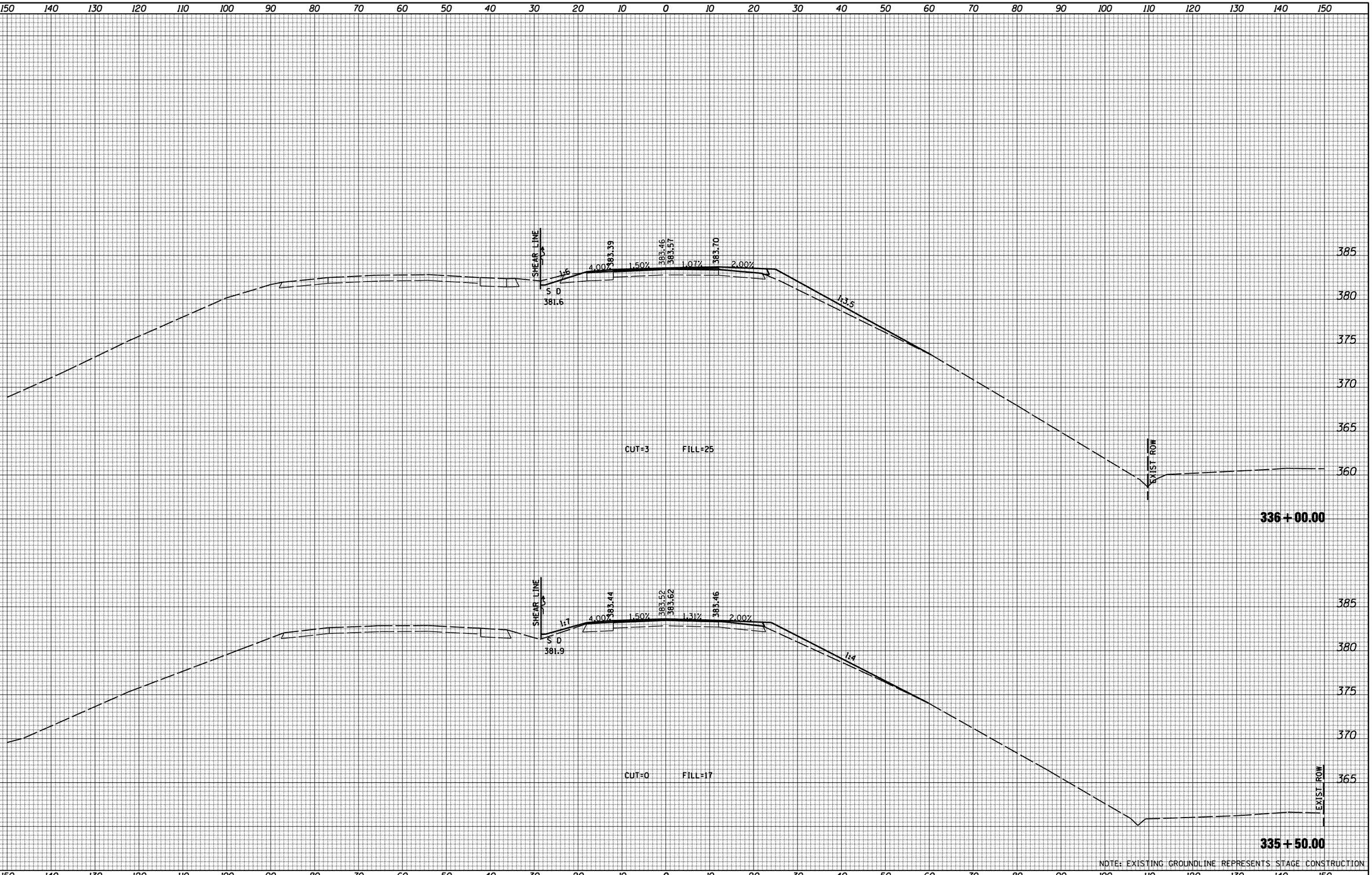
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WESTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 1 OF 8 SHEETS | STA. 334+00.00 | TO STA. 335+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	177
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED	DATE	



NOTE: EXISTING GROUNDLINE REPRESENTS STAGE CONSTRUCTION

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED	DATE	

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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

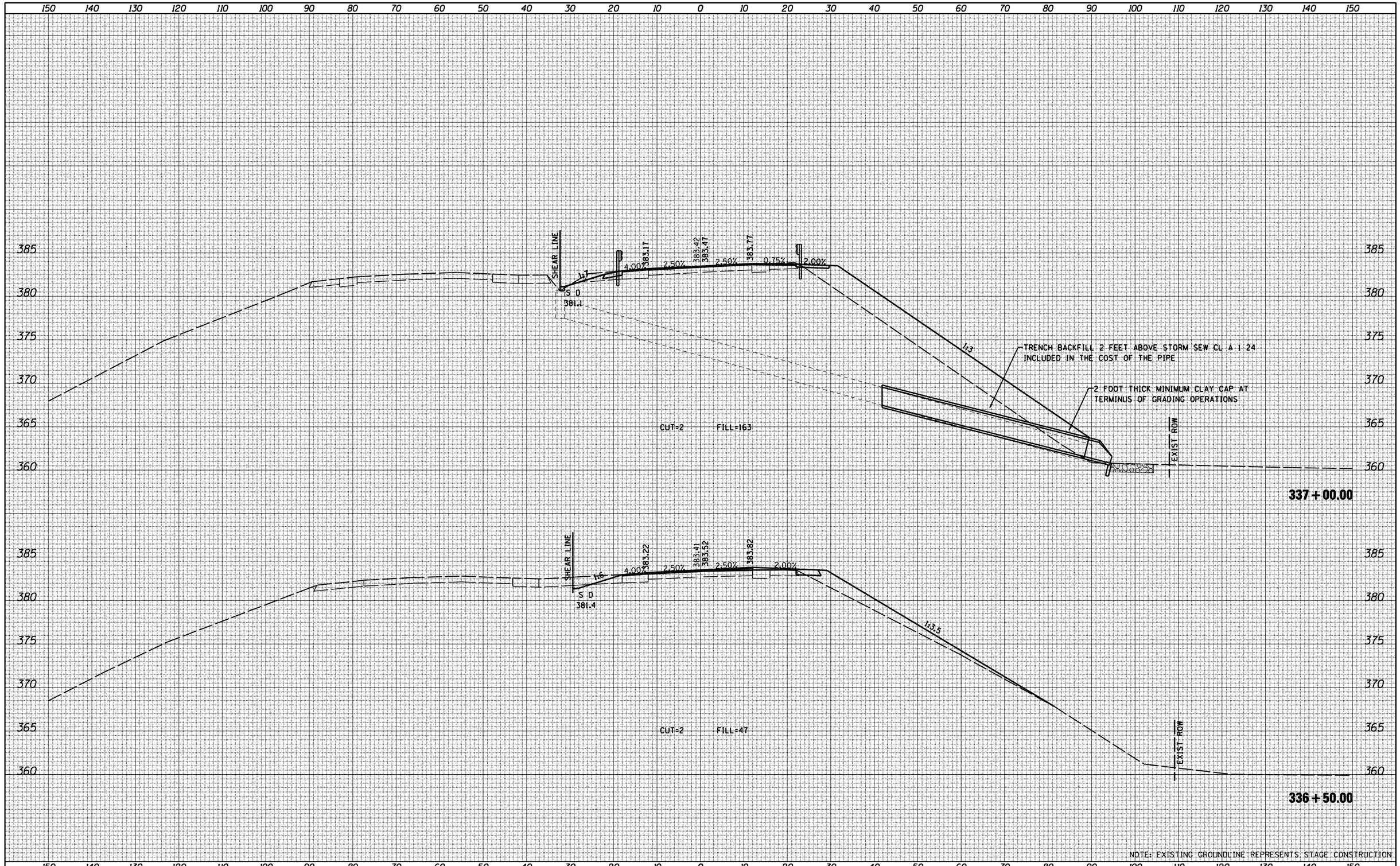
WESTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 2 OF 8 SHEETS | STA. 335+50.00 TO STA. 336+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	178
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	BY
	PLOTTED	DATE
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	BY
	PLOTTED	DATE
	TEMPLATE	
	AREAS	
	AREAS CHECKED	



NOTE: EXISTING GROUNDLINE REPRESENTS STAGE CONSTRUCTION

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WESTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 3 OF 8 SHEETS | STA. 336+50.00 TO STA. 337+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	179
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

BACK OF ABUTMENT TO BACK OF ABUTMENT OMISSION STA. 338+41.25 TO STA. 343+07.16

NOTE: EXISTING GROUNDLINE REPRESENTS STAGE CONSTRUCTION

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

FILE NAME = D978056-sht-xsshtWB.dgn	USER NAME = default	DESIGNED -	REVISED -
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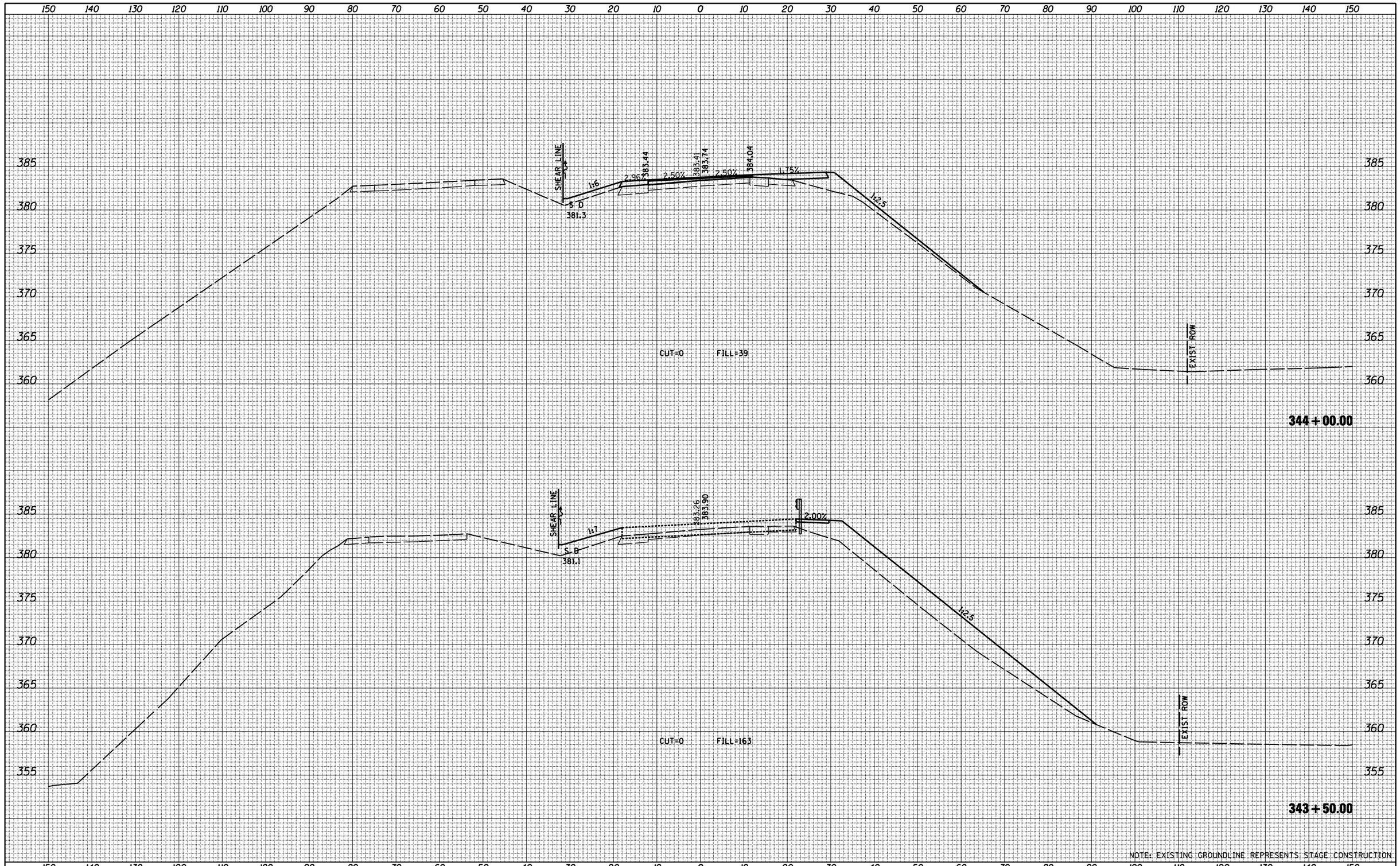
	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WESTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 4 OF 8 SHEETS | STA. 337+50.00 TO STA. 338+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	180
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		



FINAL SURVEY

NO.	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
		AREAS CHECKED		

ORIGINAL SURVEY

NO.	NOTE BOOK	SURVEYED	BY	DATE
		PLOTTED		
		TEMPLATE		
		AREAS		
		AREAS CHECKED		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

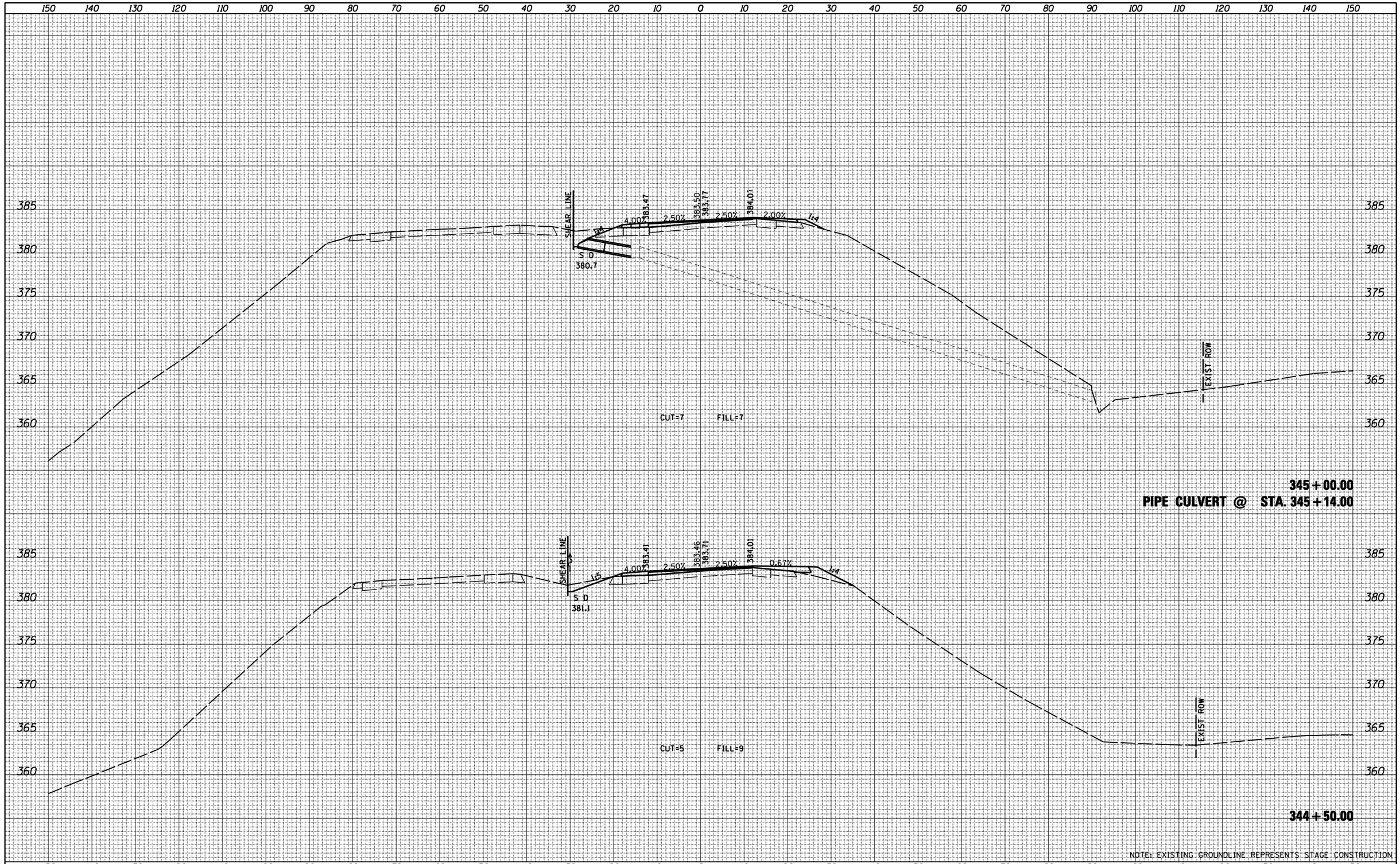
WESTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 5 OF 8 SHEETS | STA. 343+50.00 TO STA. 344+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	181
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WESTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 6 OF 8 SHEETS | STA. 344+50.00 TO STA. 345+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	182

CONTRACT NO. 78056

ILLINOIS | FED. AID PROJECT

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

385 380 375 370

SHEAR LINE

1:4

4.00%

383.65

2.50%

383.86

383.95

2.50%

2.50%

384.49

2.00%

1:4

S D
381.7

CUT=2 FILL=6

EXIST ROW

346 + 50.00

385 380 375 370

SHEAR LINE

1:4

4.00%

383.59

2.50%

383.73

383.89

2.50%

2.50%

384.34

2.00%

1:4

S D
381.3

CUT=3 FILL=4

EXIST ROW

346 + 00.00

385 380 375 370 365 360

SHEAR LINE

1:4

4.00%

383.53

2.50%

383.67

383.83

2.50%

2.50%

384.20

2.00%

1:4

S D
380.9

CUT=4 FILL=4

EXIST ROW

345 + 50.00

NOTE: EXISTING GROUNDLINE REPRESENTS STAGE CONSTRUCTION

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WESTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 7 OF 8 SHEETS | STA. 345+50.00 | TO STA. 346+50.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	183
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

385
380
375

384.24

EXIST ROW

348 + 00.00

SHEAR LINE
℄

1:6 4.00% 383.89 1.50% 384.11 384.07 0.04% 0.04% 384.08 2.00% 1:4

S D
382.5

CUT=1 FILL=1

EXIST ROW

347 + 50.00

SHEAR LINE
℄

1:5 4.00% 383.83 1.50% 383.93 384.01 1.31% 1.31% 384.32 2.00% 1:4

S D
382.1

CUT=0 FILL=7

EXIST ROW

347 + 00.00

NOTE: EXISTING GROUNDLINE REPRESENTS STAGE CONSTRUCTION

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

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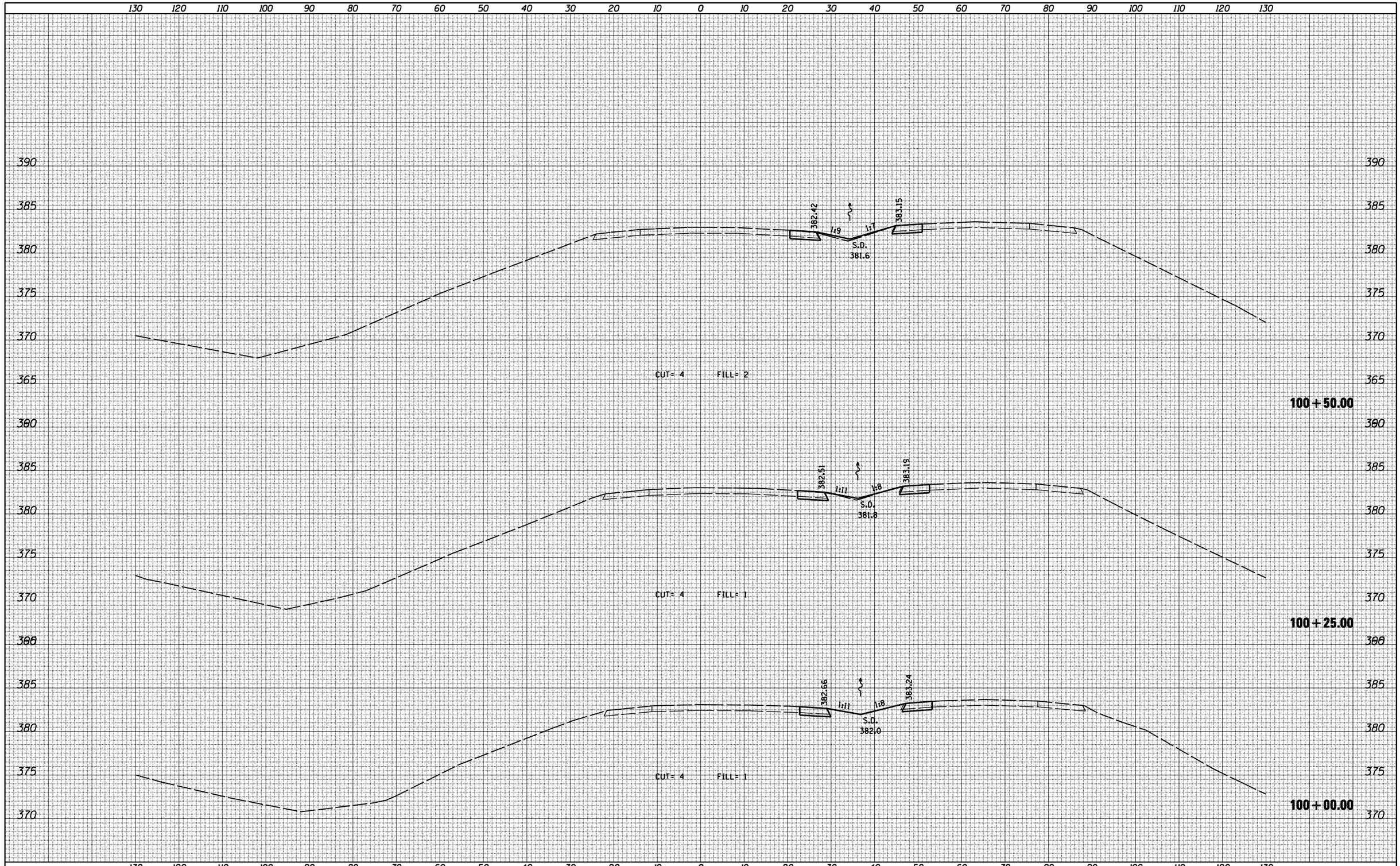
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WESTBOUND CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 8 OF 8 SHEETS | STA. 347+00.00 TO STA. 348+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	184
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

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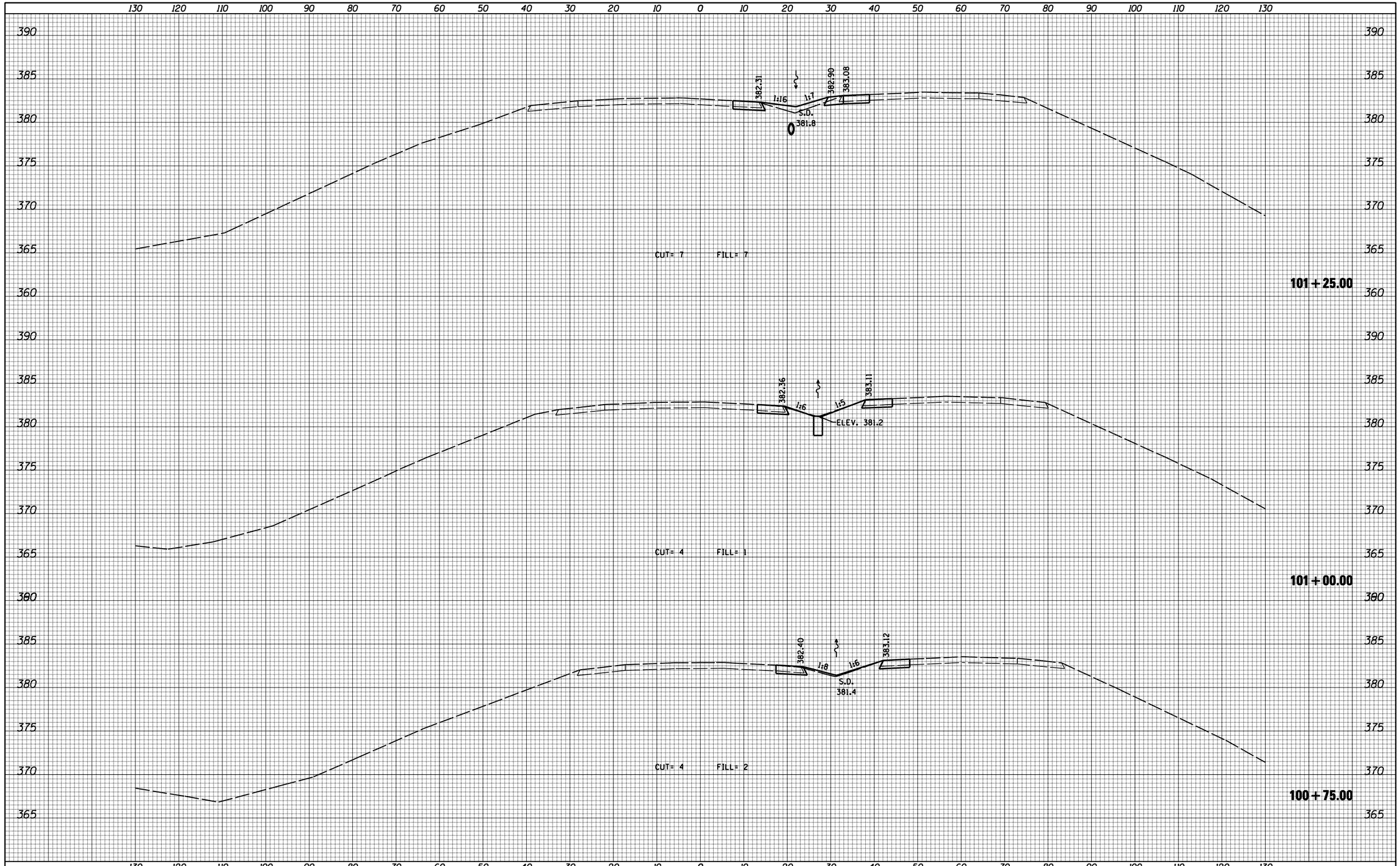
	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 1 OF 16 SHEETS | STA. 100+00.00 TO STA. 100+50.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	185
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		



FINAL SURVEY

NO.	NOTE BOOK	BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY

NO.	NOTE BOOK	BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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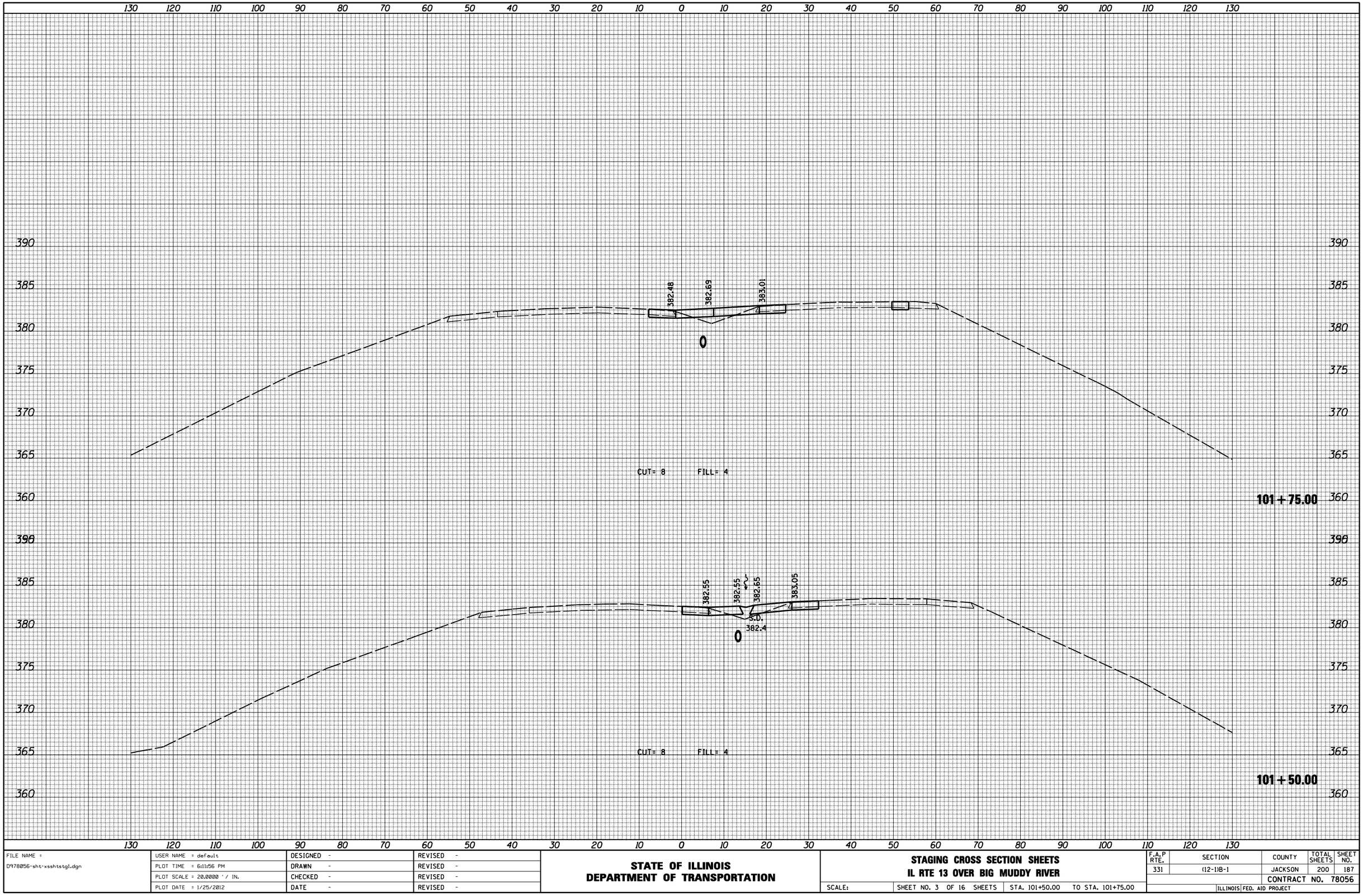
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 2 OF 16 SHEETS | STA. 100+75.00 TO STA. 101+25.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	186
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	



ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

FILE NAME = D978056-sht-xssht stgl.dgn	USER NAME = default	DESIGNED -	REVISED -
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	PLOT DATE = 1/25/2012	DATE -	REVISED -

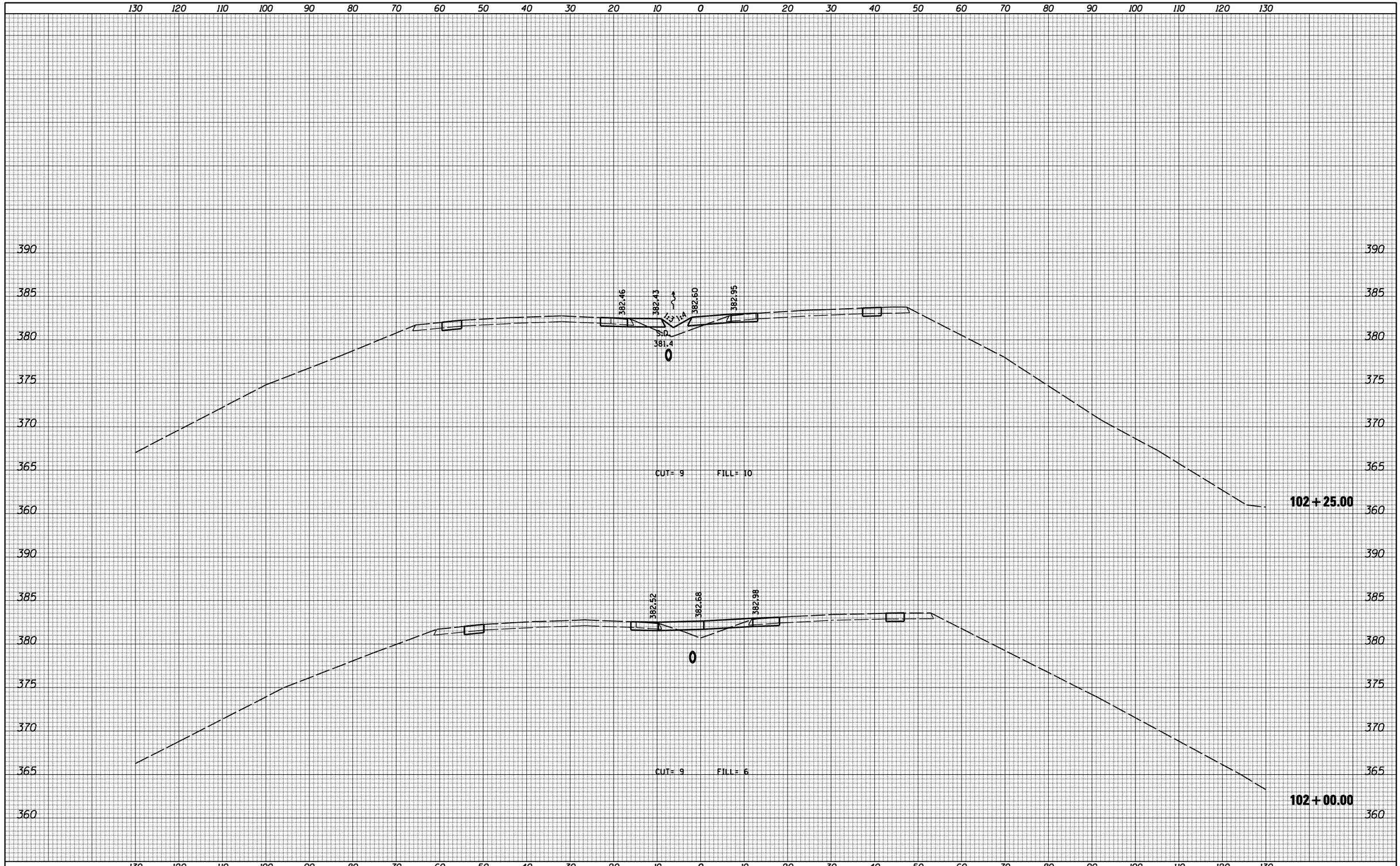
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 3 OF 16 SHEETS | STA. 101+50.00 | TO STA. 101+75.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	187
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	



ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 4 OF 16 SHEETS | STA. 102+00.00 TO STA. 102+25.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	188
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

390 385 380 375 370 365 360

382.27 382.59 382.56 1:7 1:8 382.58 382.65

S.D. 380.9

CUT= 12 FILL= 3

EXIST. ROW

102+75.00

382.52 382.40 1:5 1:5 382.68 382.81

S.D. 380.7

CUT= 9 FILL= 6

102+50.00

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

FILE NAME = D978056-sht-xssht stgl.dgn	USER NAME = default	DESIGNED -	REVISED -
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	PLOT DATE = 1/25/2012	DATE -	REVISED -

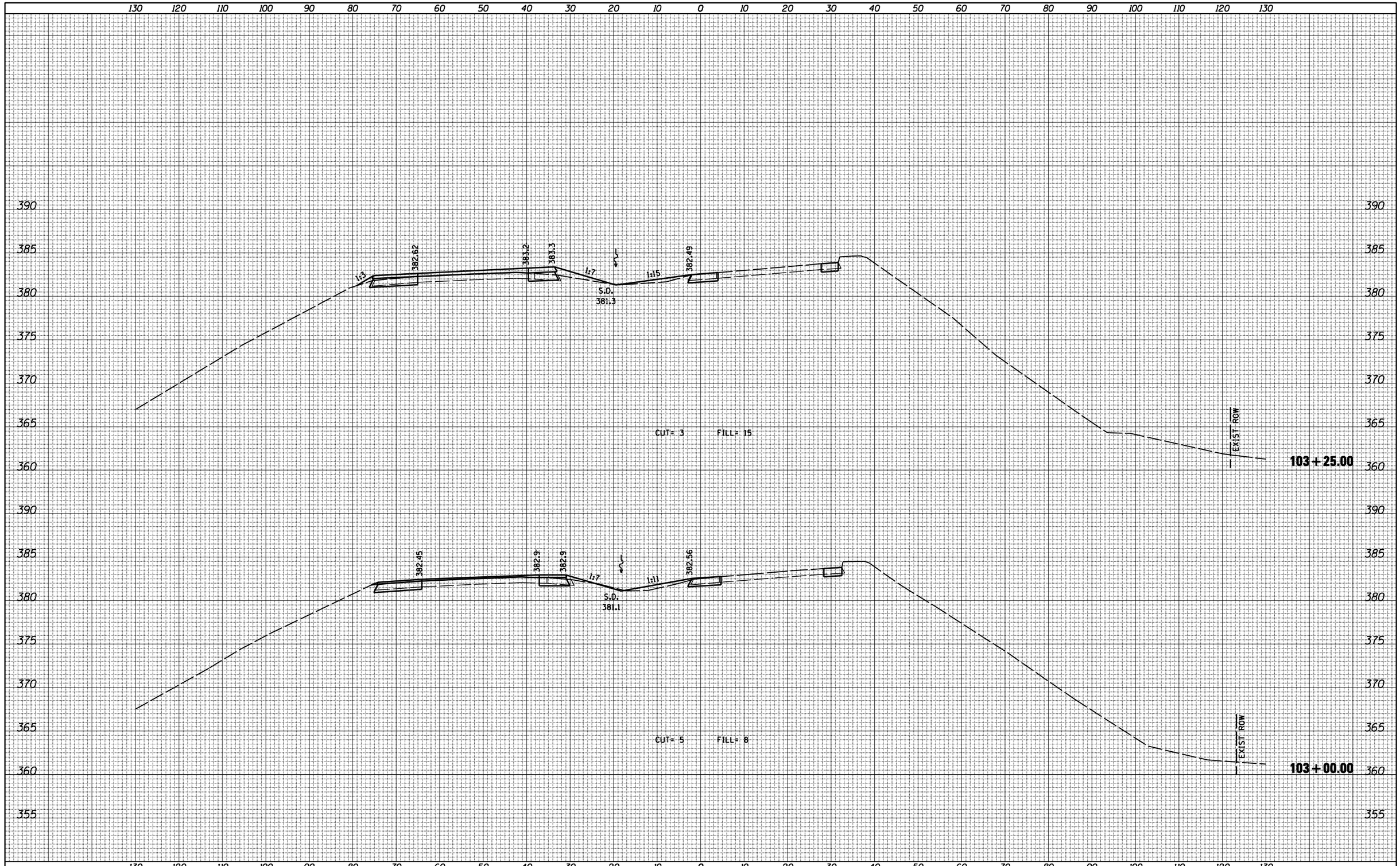
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 5 OF 16 SHEETS | STA. 102+50.00 TO STA. 102+75.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	189
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	



ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 6 OF 16 SHEETS | STA. 103+00.00 TO STA. 103+25.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	190
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

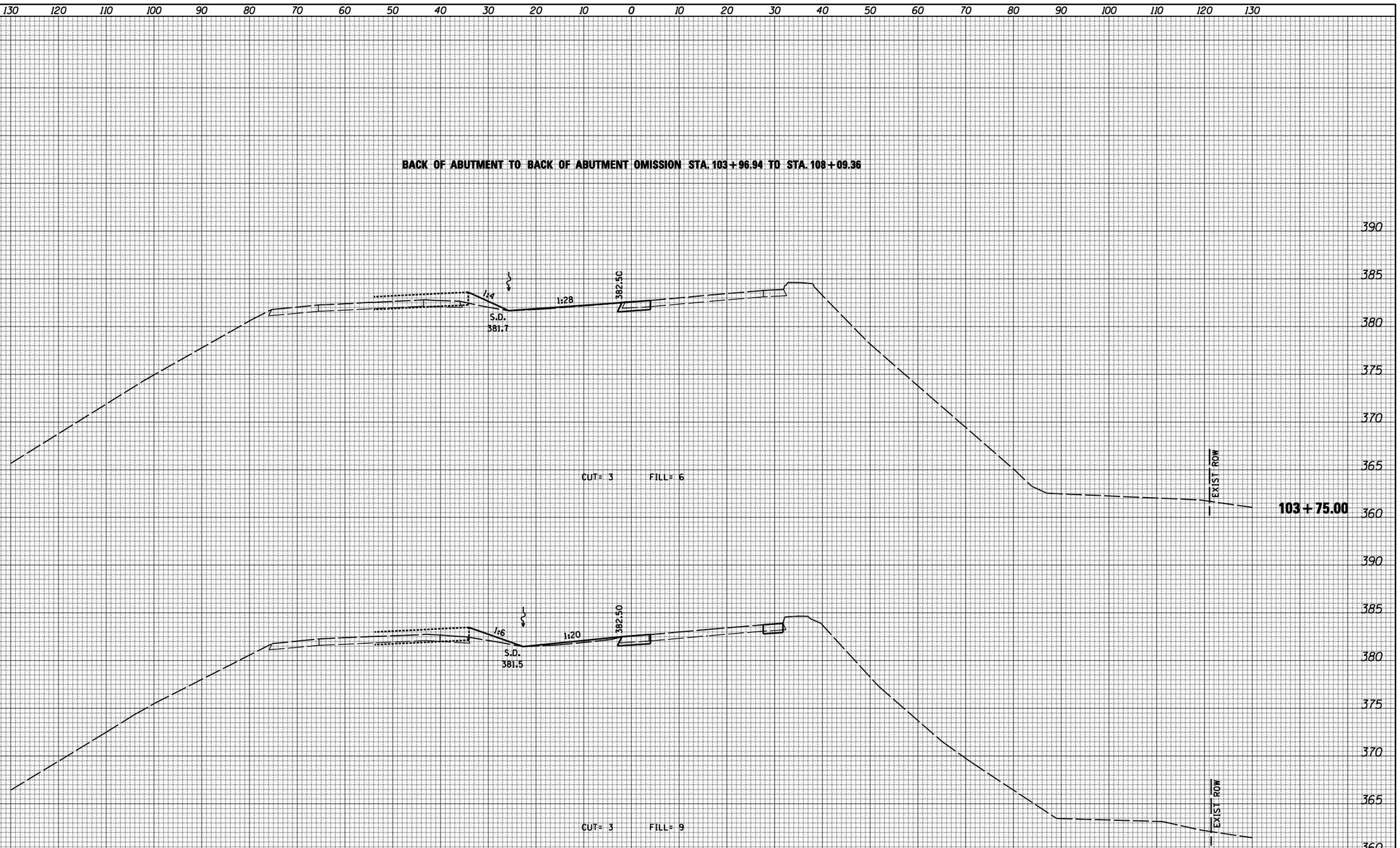
FINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

ORIGINAL SURVEY	
NOTE BOOK	
NO.	

	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BACK OF ABUTMENT TO BACK OF ABUTMENT OMISSION STA. 103+96.94 TO STA. 108+09.36



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	PLOT DATE = 1/25/2012	DATE -	REVISED -

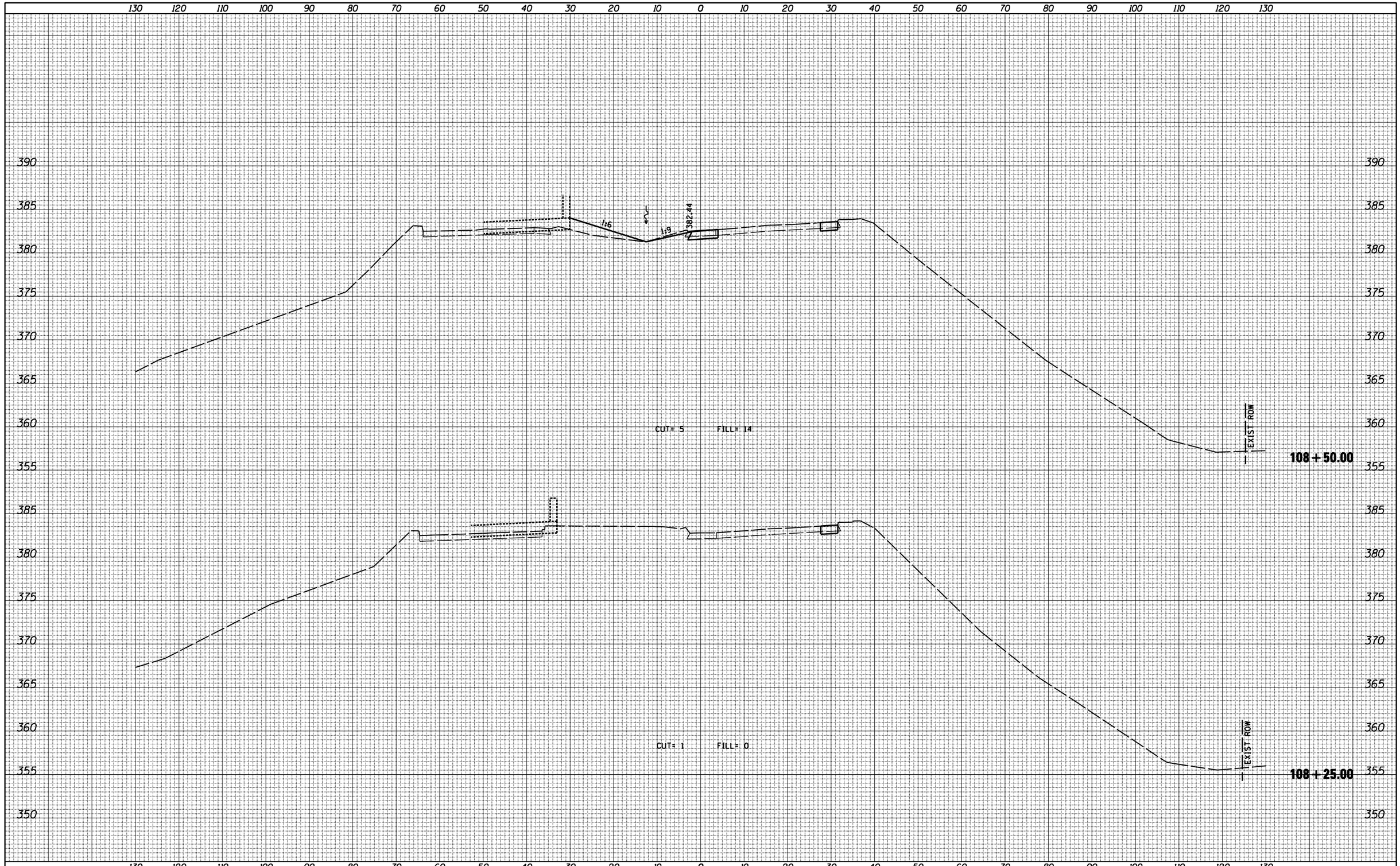
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 7 OF 16 SHEETS | STA. 103+50.00 TO STA. 103+75.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	191
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	



ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
NOTE BOOK		
AREAS		
NO.	AREAS CHECKED	

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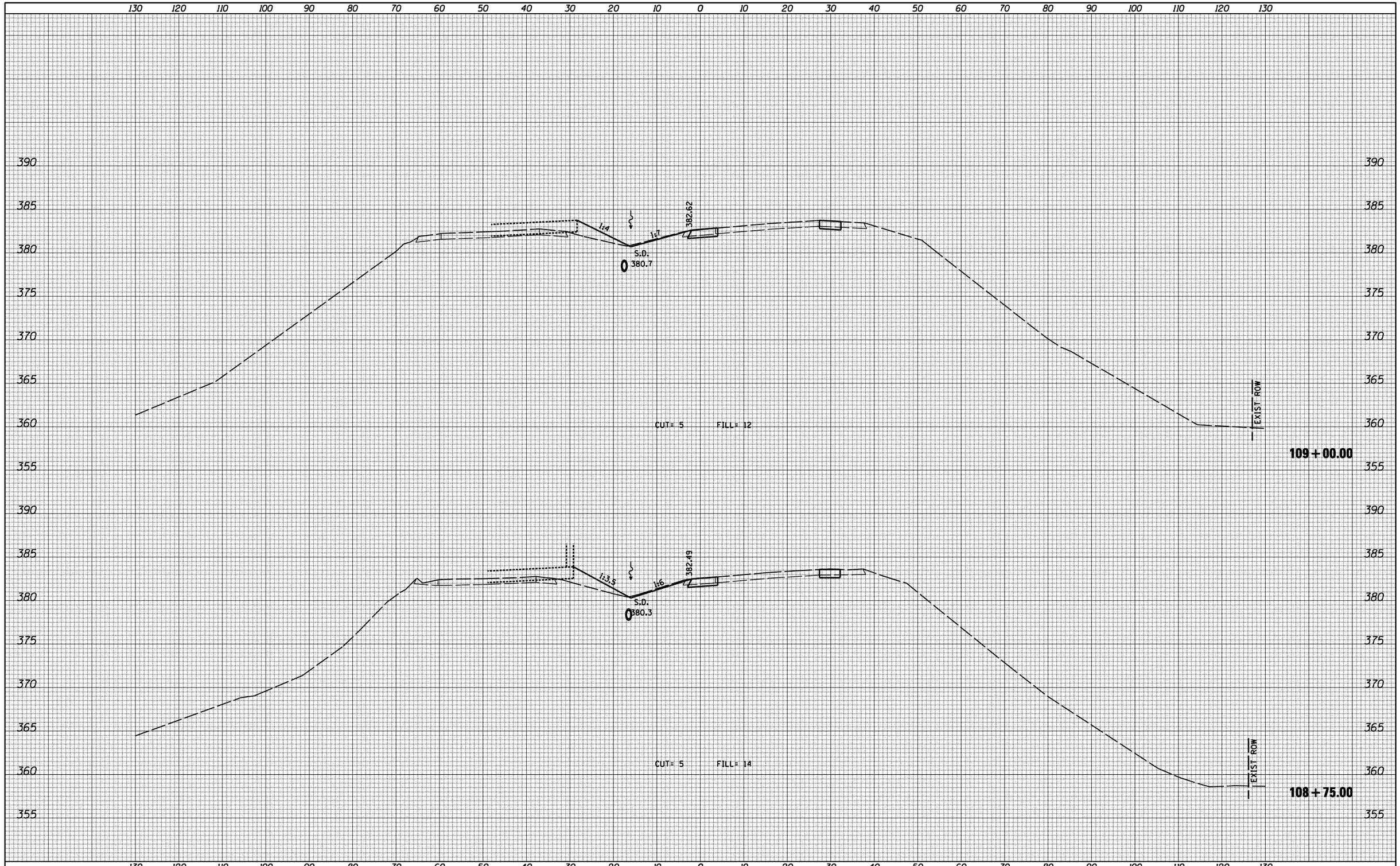
	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 8 OF 16 SHEETS | STA. 108+25.00 | TO STA. 108+50.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	192
		CONTRACT NO. 78056		
	ILLINOIS FED. AID PROJECT			



FINAL SURVEY

NOTE BOOK	SURVEYED	BY	DATE
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY

NOTE BOOK	SURVEYED	BY	DATE
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

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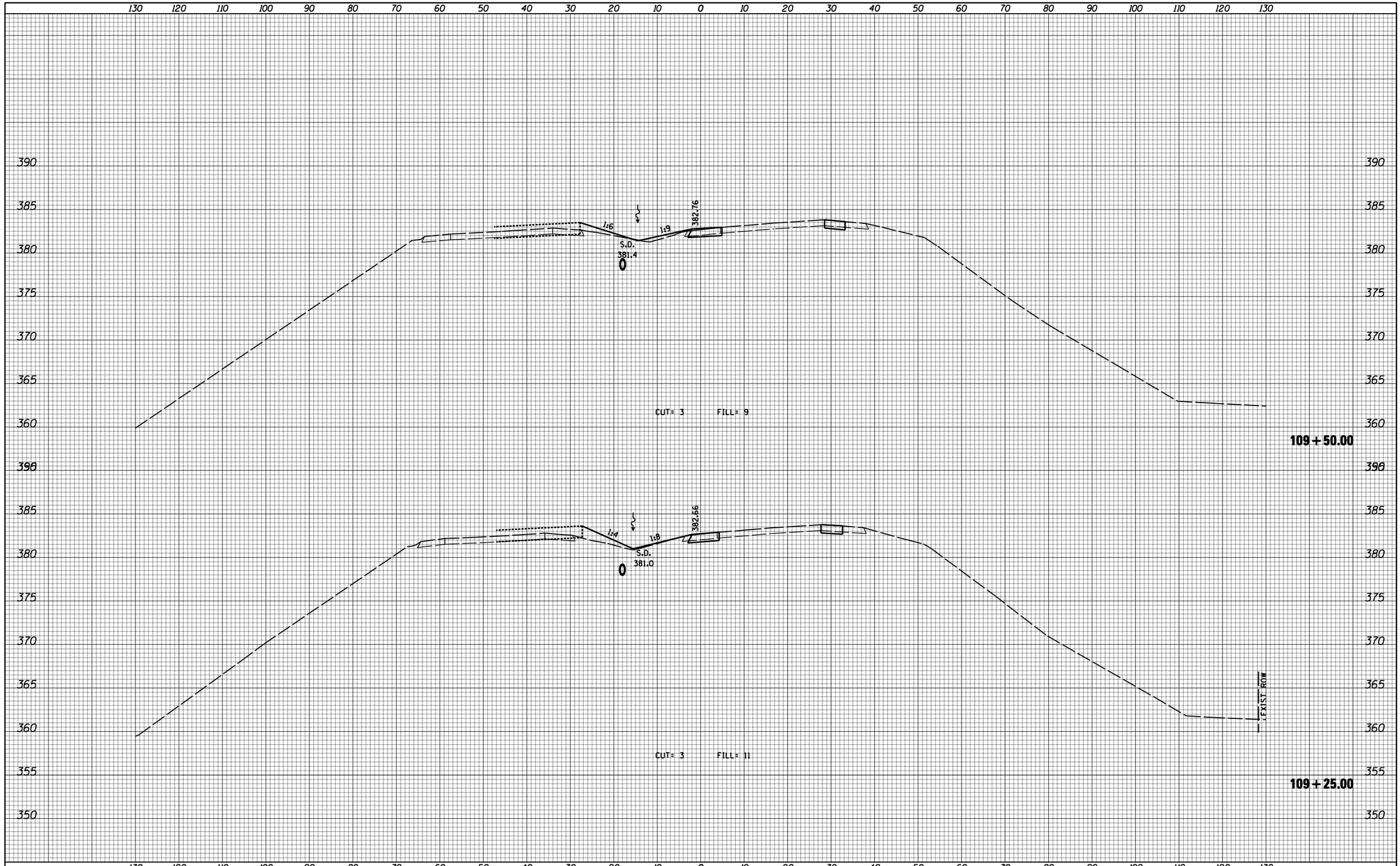
	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 9 OF 16 SHEETS | STA. 108+75.00 | TO STA. 109+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	193
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		



ORIGINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

FINAL SURVEY	BY	DATE
NOTE BOOK		
NO.		

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

FILE NAME =	USER NAME = default	DESIGNED -	REVISED -
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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

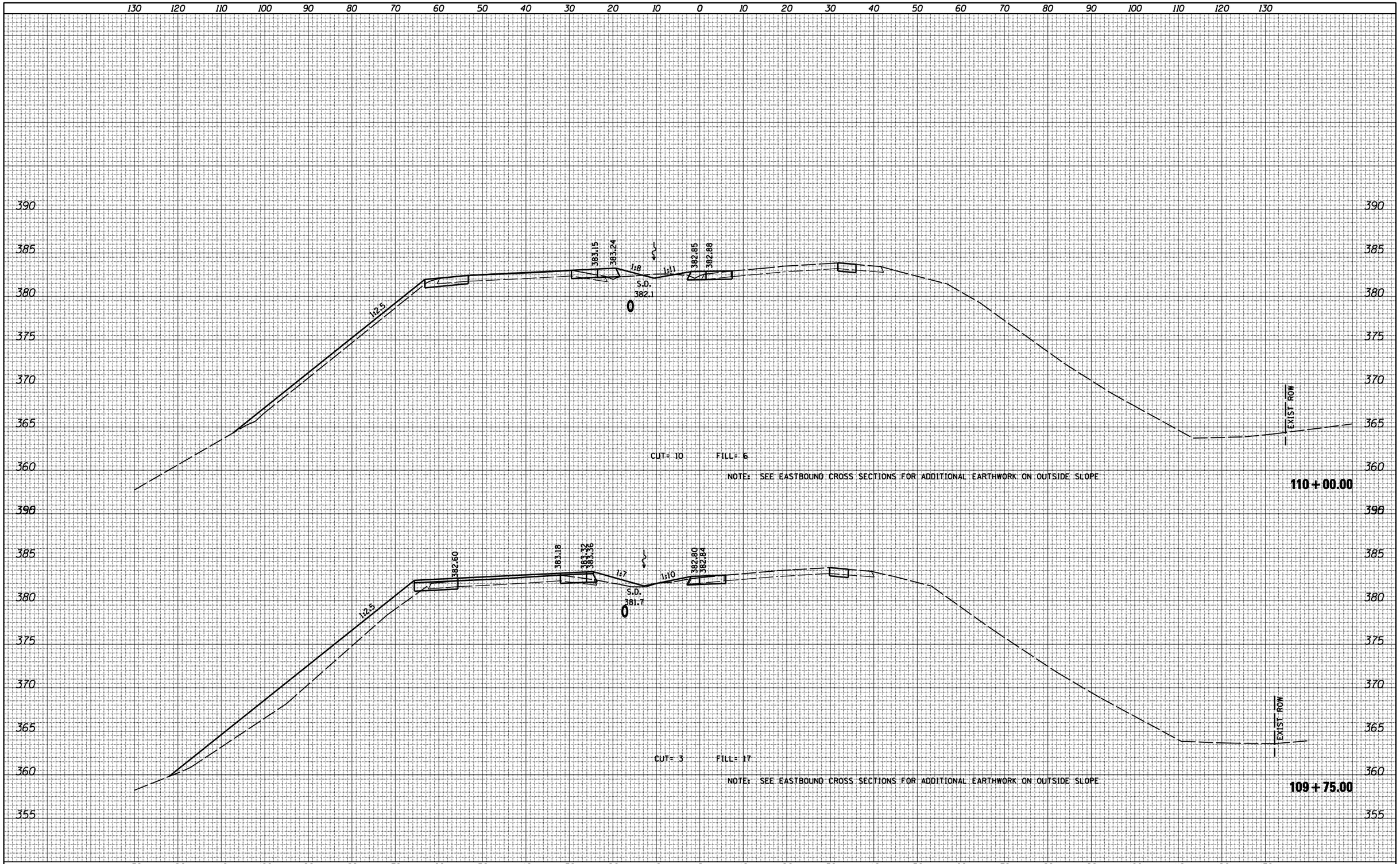
STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 10 OF 16 SHEETS | STA. 109+25.00 | TO STA. 109+50.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	194
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED	DATE	

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED	BY	
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED	DATE	



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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

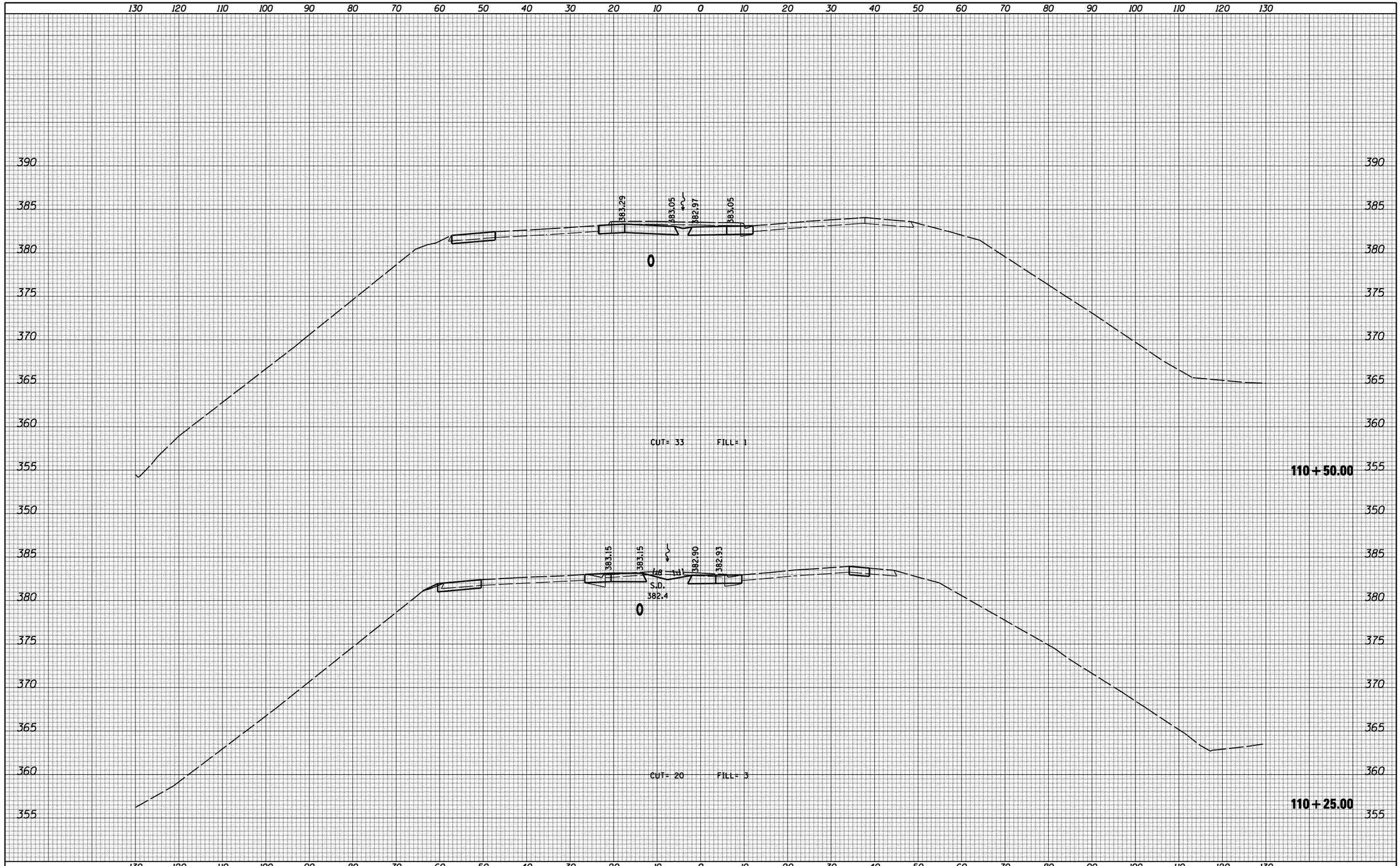
STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 11 OF 16 SHEETS | STA. 109+75.00 | TO STA. 110+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	195
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK	SURVEYED	
NO.	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	



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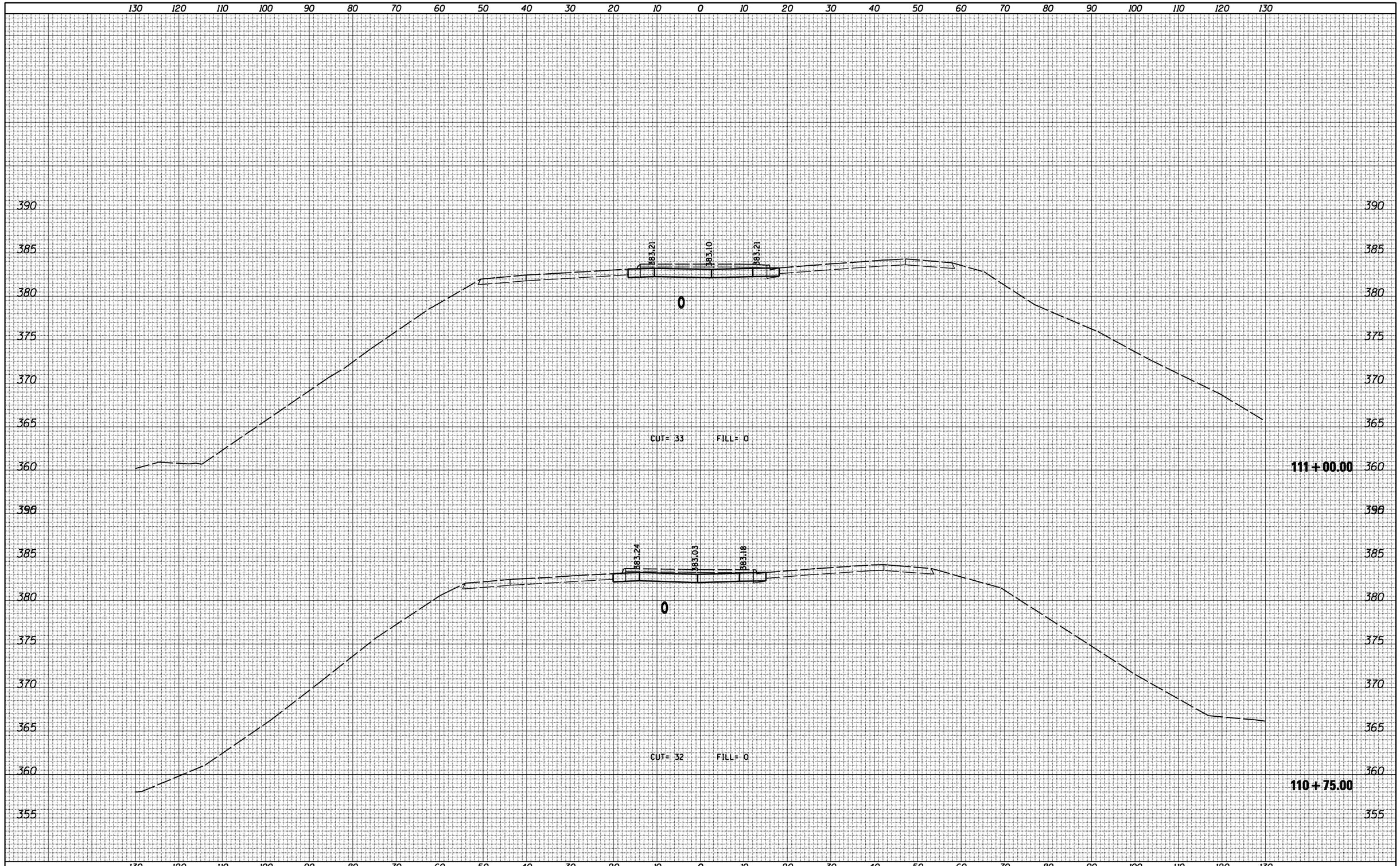
	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 12 OF 16 SHEETS | STA. 110+25.00 | TO STA. 110+50.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	196
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		



FINAL SURVEY

NO.	NOTE BOOK	BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY

NO.	NOTE BOOK	BY	DATE
	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

FILE NAME = D978056-sht-xssht stgl.dgn	USER NAME = default	DESIGNED -	REVISED -
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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

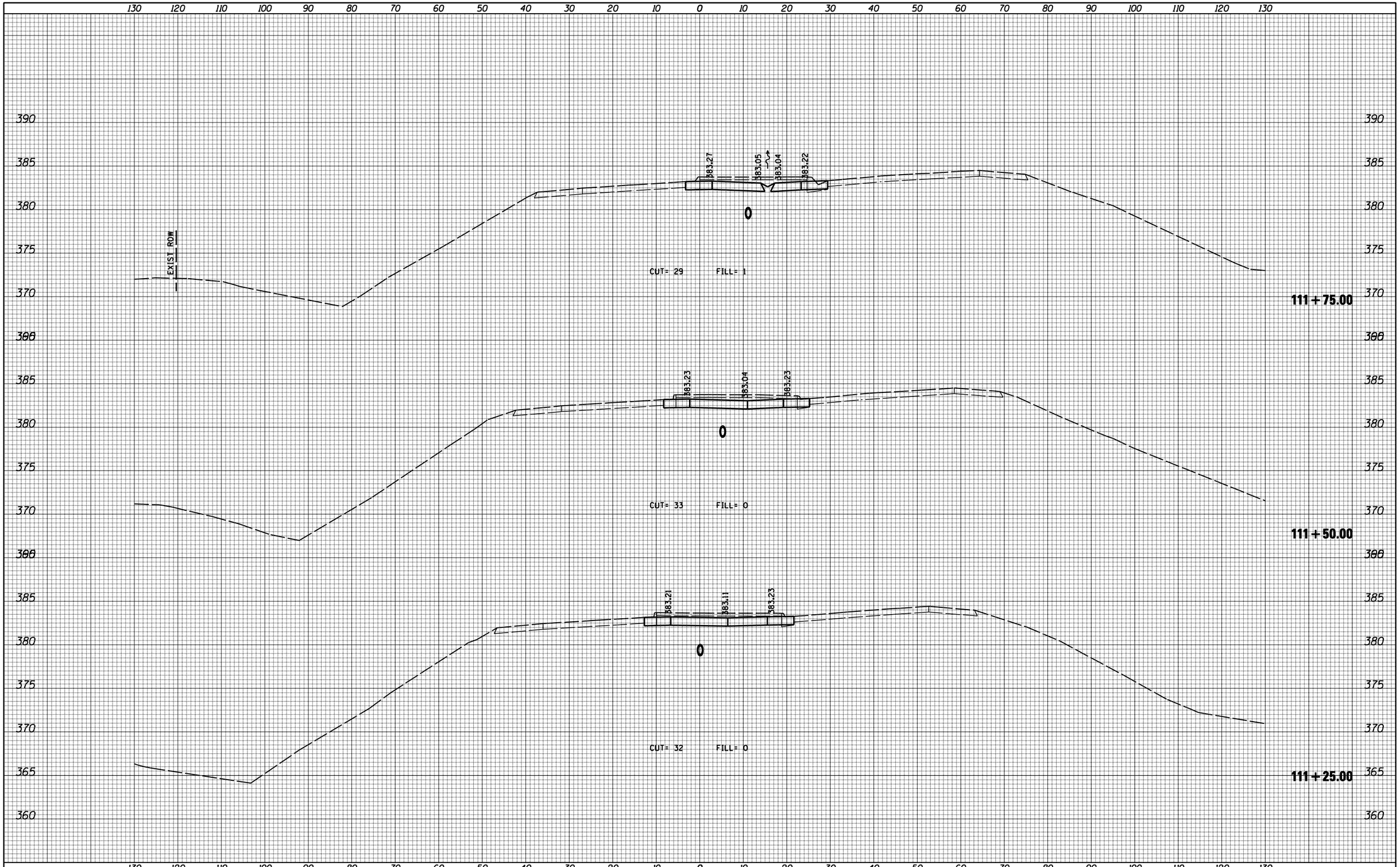
STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 13 OF 16 SHEETS | STA. 110+75.00 | TO STA. 111+00.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	197
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	BY
	PLOTTED	DATE
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	NOTE BOOK	NO.
	SURVEYED	BY
	PLOTTED	DATE
	TEMPLATE	
	AREAS	
	AREAS CHECKED	



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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 14 OF 16 SHEETS | STA. 111+25.00 | TO STA. 111+75.00

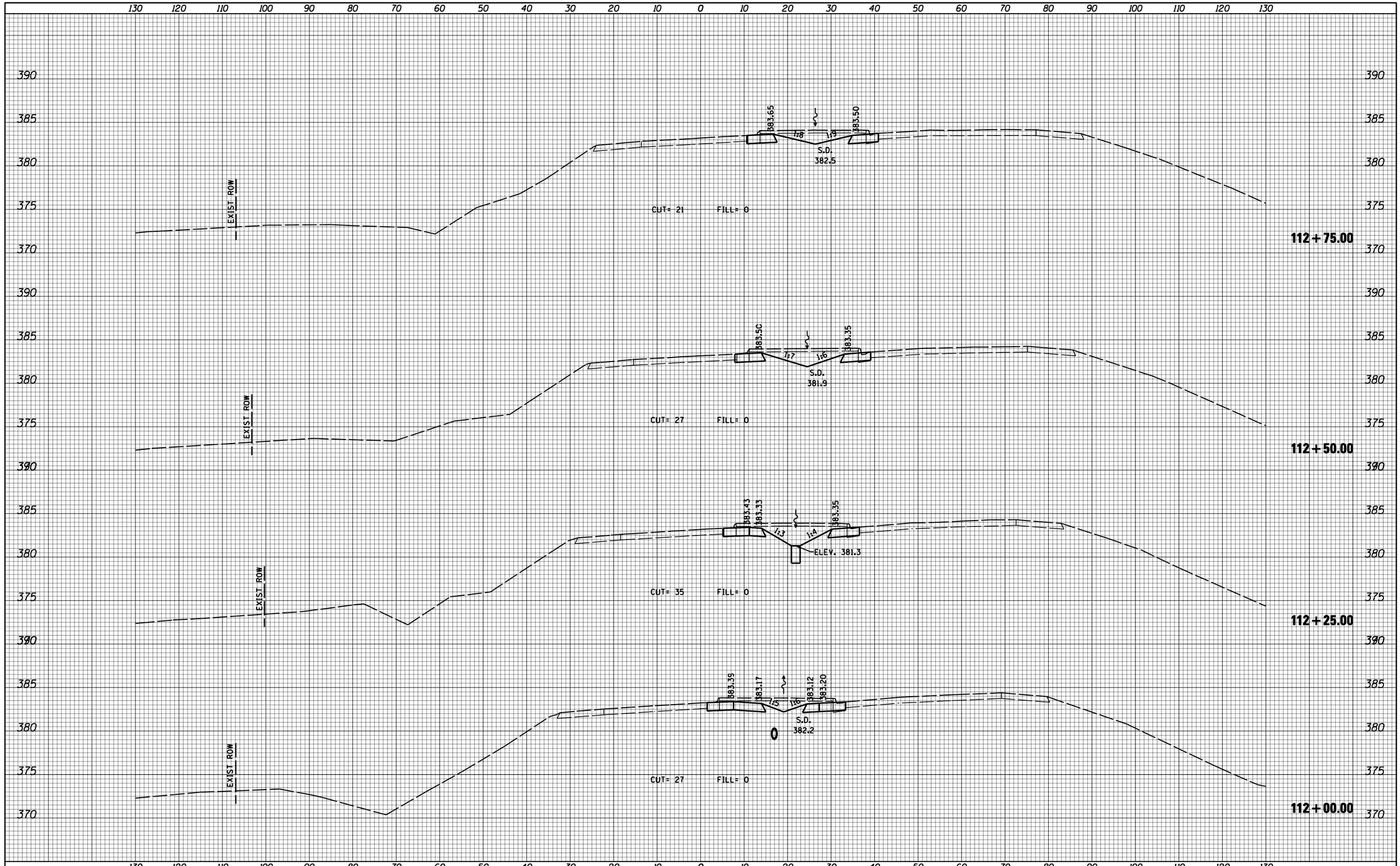
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	198
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE



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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 15 OF 16 SHEETS | STA. 112+00.00 | TO STA. 112+75.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	199
		CONTRACT NO. 78056		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

385 380 375 370 390 385 380 375 370

EXIST. ROW

113+25.00

583.71 1:8 1:20 583.66

S.D. 383.2

CUT= 15 FILL= 0

EXIST. ROW

113+00.00

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

ORIGINAL SURVEY		BY	DATE
	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

FILE NAME = D978056-sht-xssht stgl.dgn	USER NAME = default	DESIGNED -	REVISED -
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	PLOT DATE = 1/25/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING CROSS SECTION SHEETS
IL RTE 13 OVER BIG MUDDY RIVER

SCALE: | SHEET NO. 16 OF 16 SHEETS | STA. 113+00.00 | TO STA. 113+25.00

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(12-1)B-1	JACKSON	200	200
		CONTRACT NO. 78056		
	ILLINOIS	FED. AID PROJECT		