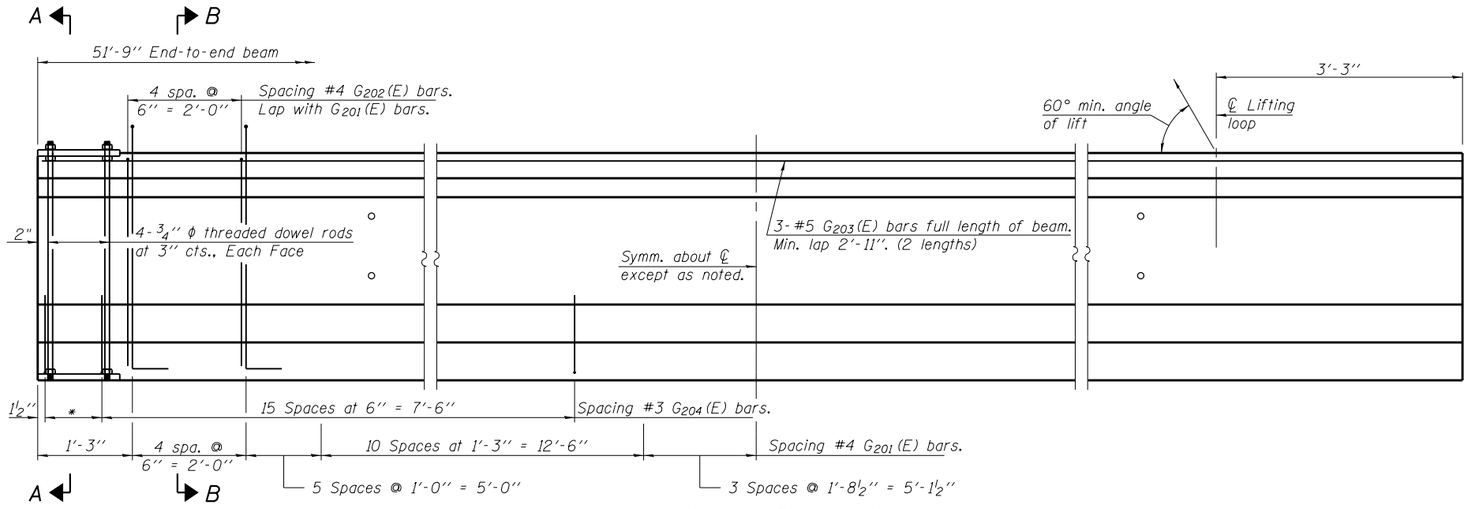
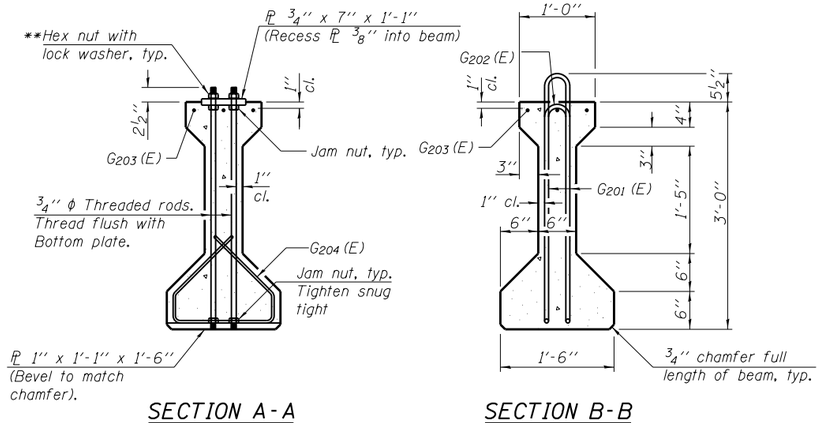


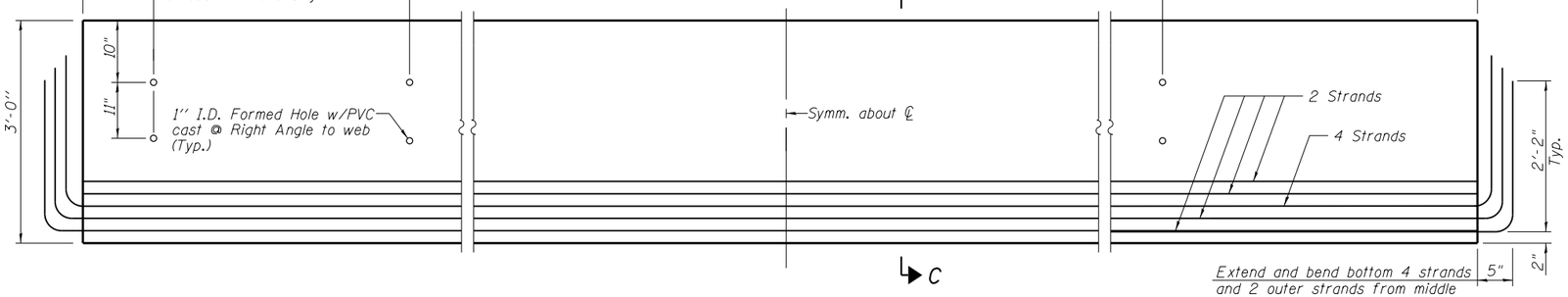
* 3 spaces at 3" = 9"

ELEVATION OF BEAM
(Showing reinforcement & dimensions)

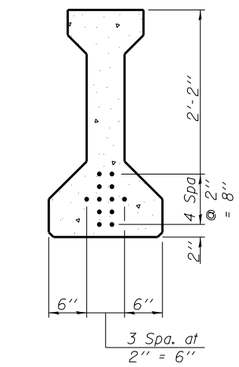


SECTION A-A
**Only tighten sufficiently to compress lock washers

SECTION B-B



ELEVATION OF BEAM
(Showing prestressing steel)



SECTION C-C
(12-½" ϕ 270 ksi strands)

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
G201(E)	45	#4	7'-7"	
G202(E)	8	#4	5'-8"	
G203(E)	6	#5	27'-6"	
G204(E)	38	#3	4'-1"	

Notes:
See sheet 18 of 26 for additional details and Bill of Material.
See sheet 15 of 26 for permanent bracing details.

PI-4-36

10-7-2016

CMT

USER NAME =	DESIGNED DRC	REVISED
...\98850-0062.017-36 PPC I Beam Sp 2.dgn	CHECKED LM	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

36" PPC I-BEAM SPAN 2
STRUCTURE NO. 039-0062
SHEET NO. 17 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)IR-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	101
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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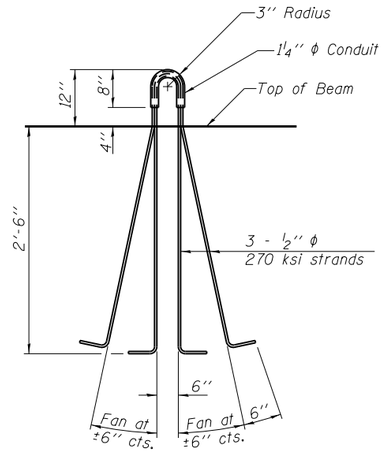


LIFTING LOOP DETAIL

NOTES

Inserts for ¾'' ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½'' and the nominal cross-sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 6000 psi and a release concrete compressive strength, f'ci, of 5000 psi.

A minimum 2½'' ϕ lifting pin shall be used to engage the lifting loops during handling.

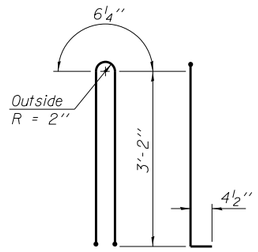
The top and bottom plates shall be AASHTO M270 Grade 50.

The top and bottom plates shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

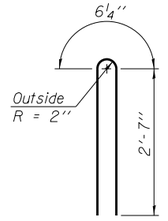
Threaded rods shall be ASTM F 1554 Grade 55.

Beams shall not be released from the fabricator until they have attained 45 days of age or older.

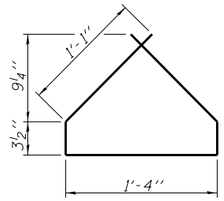
Bend the extended strands inward on the fascia beams to maintain 1½" clearance inside the pier diaphragm.



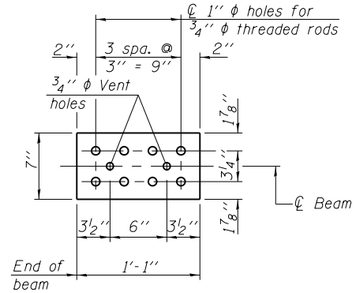
BAR G201(E)



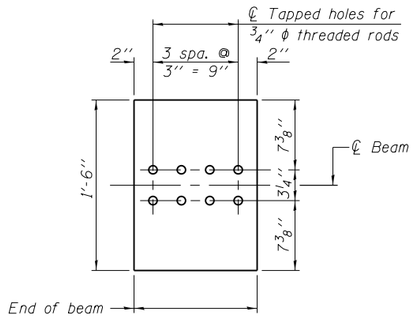
BAR G202(E)



BAR G204(E)



TOP PLATE



BOTTOM PLATE

See bearing details for pintle hole locations when required.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 36''	Ft.	433

PI-4-36D

11-22-16

USER NAME =	DESIGNED	DRC	REVISED
...\98850-0062.018-36 PPC I Beam Dtls.dgn	CHECKED	LM	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

CMT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

36" PPC I-BEAM DETAILS
STRUCTURE NO. 039-0062
SHEET NO. 18 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	102
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		

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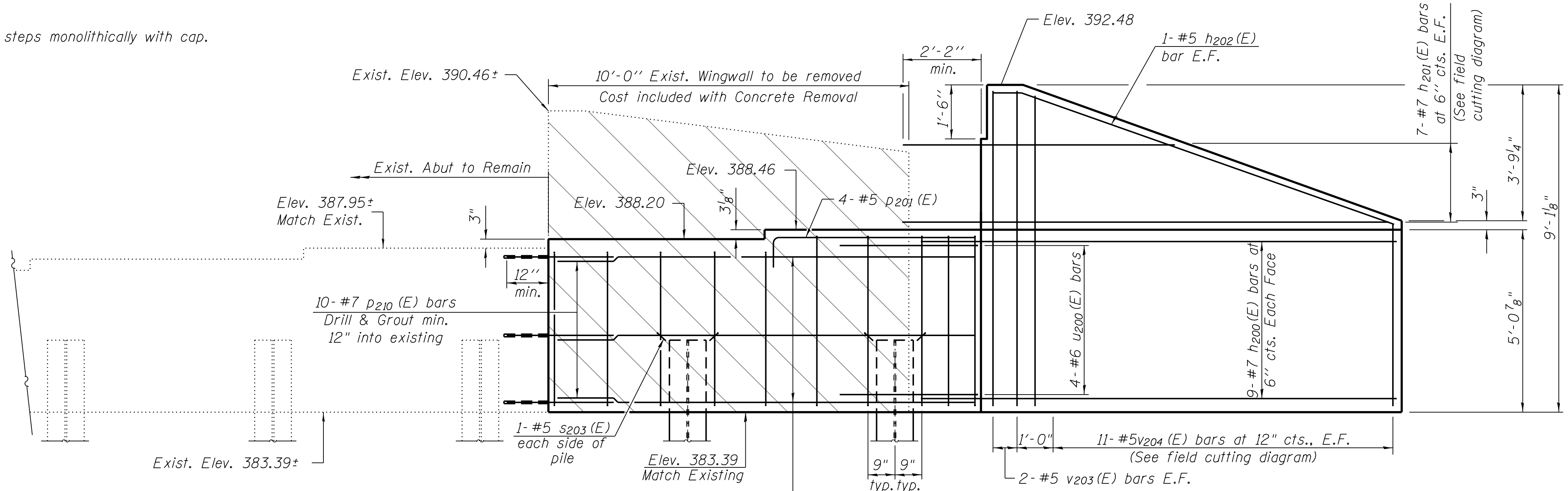
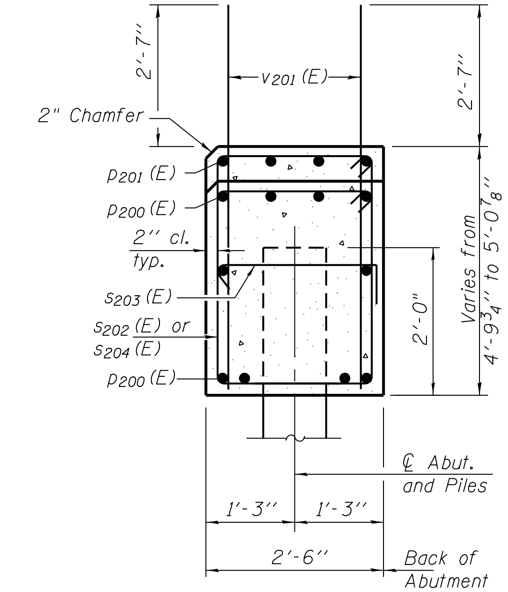
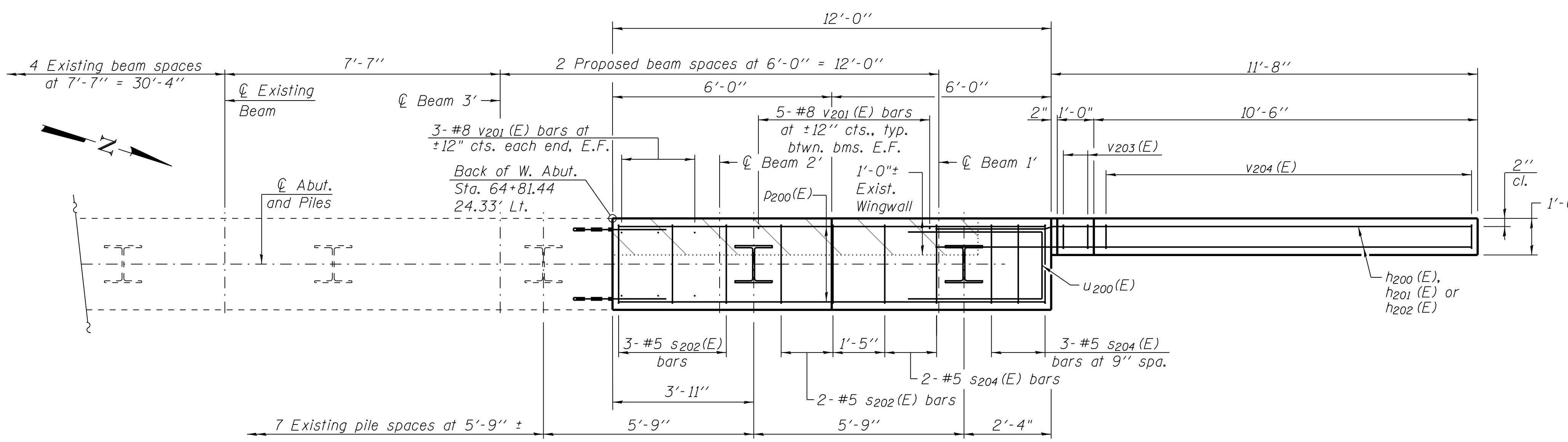
Notes:
Pour steps monolithically with cap.



ELEVATION



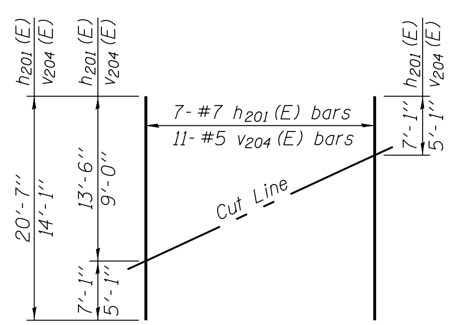
SEC. THRU ABUT.



PLAN

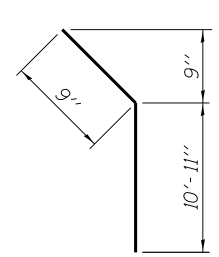
PILE DATA

Type: HP 12x74
Nominal Required Bearing: 589 kips
Allowable Resistance Available: 196 kips
Est. Length: 64'-0''
No. Production Piles: 1
No. Test Piles: 1

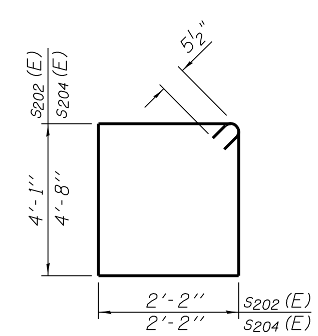


FIELD CUTTING DIAGRAM

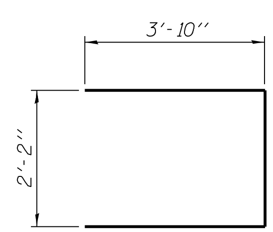
Order h_{201}(E) and v_{204}(E) full length. Cut as shown and use remainder of bars in opposite face.



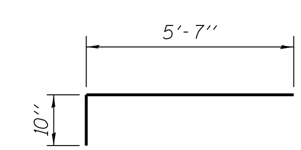
BAR h_{202}(E)



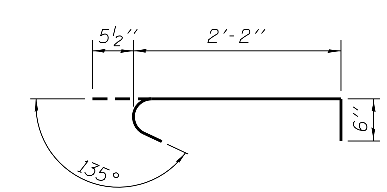
BAR s_{202}(E), BAR s_{204}(E)



BAR u_{200}(E)



BAR p_{201}(E)



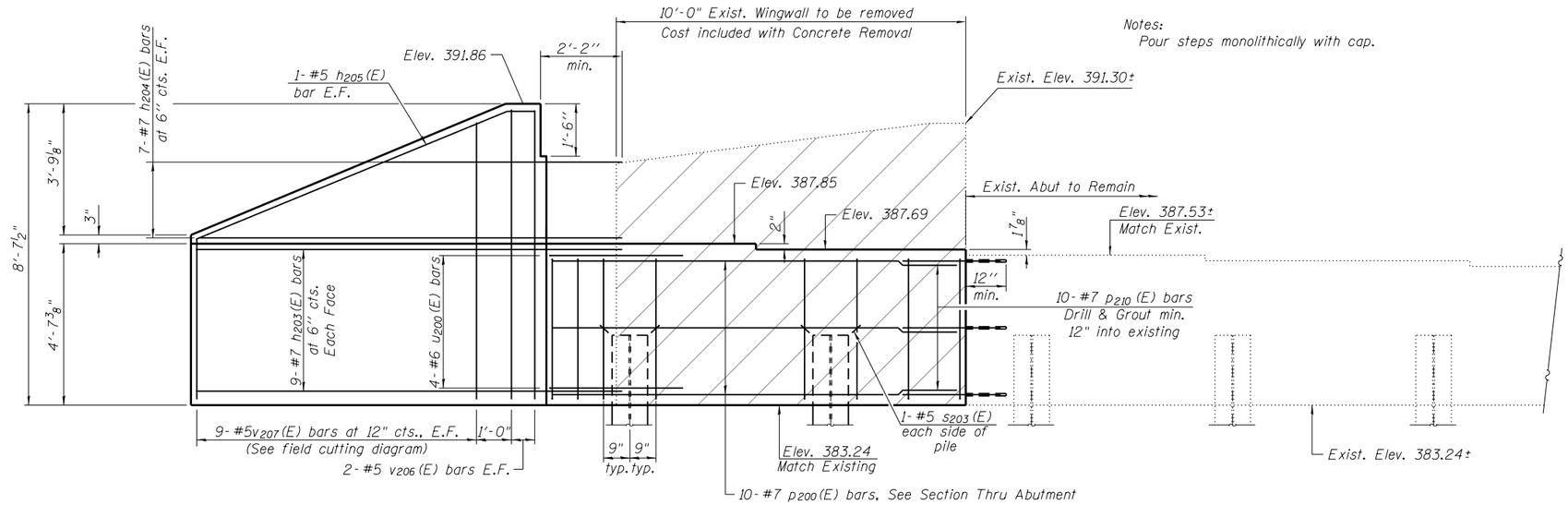
BAR s_{203}(E)

BILL OF MATERIAL

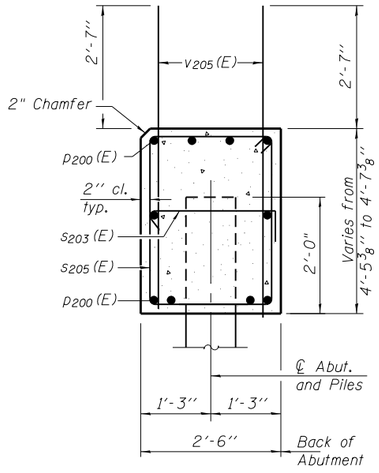
Bar	No.	Size	Length	Shape
h_{200}(E)	18	#7	13'-8''	straight
h_{201}(E)	7	#7	21'-0''	straight
h_{202}(E)	2	#5	11'-8''	bent
p_{200}(E)	10	#7	11'-8''	straight
p_{201}(E)	4	#5	6'-5''	hooked
p_{210}(E)	10	#7	4'-2''	straight
s_{202}(E)	5	#5	13'-5''	stirrup
s_{203}(E)	4	#5	3'-2''	hooked
s_{204}(E)	5	#5	14'-7''	stirrup
u_{200}(E)	4	#6	9'-10''	U
v_{201}(E)	22	#8	6'-11''	straight
v_{203}(E)	4	#5	8'-9"	straight
v_{204}(E)	11	#5	13'-8"	straight

Item	Unit	Quantity
Structure Excavation	Cu. Yd.	66
Concrete Removal	Cu. Yd.	3
Concrete Structures	Cu. Yd.	8.7
Reinforcement Bars, Epoxy Coated	Pound	2,000
Furnishing Steel Piles, HP 12x74	Foot	64
Driving Piles	Foot	64
Test Pile, Steel HP 12x74	Each	1
Drill and Grout Bars	Each	10
Protective Coat	Sq. Yd.	11

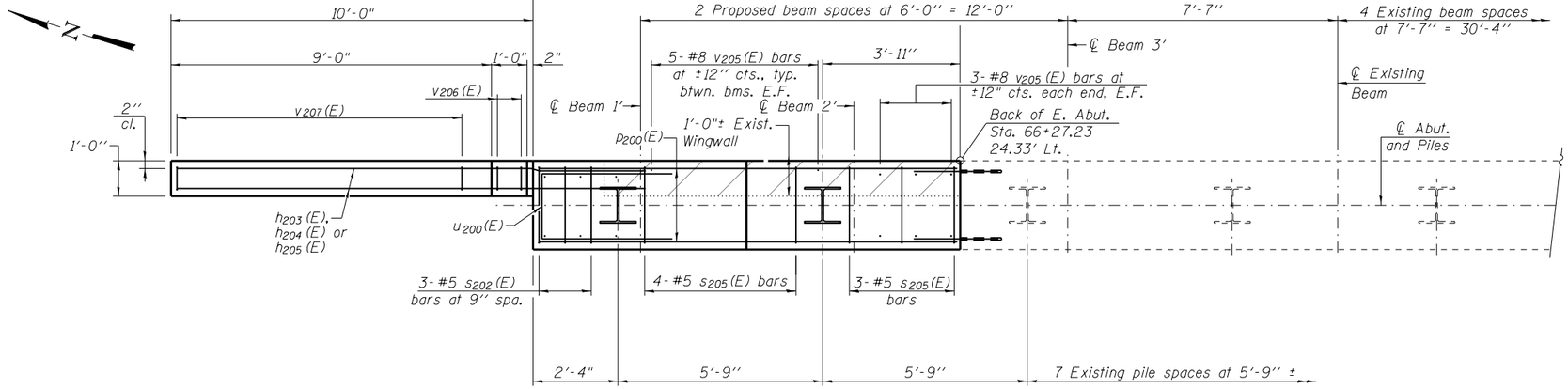
For details of piles see sheets 23 of 26.



ELEVATION



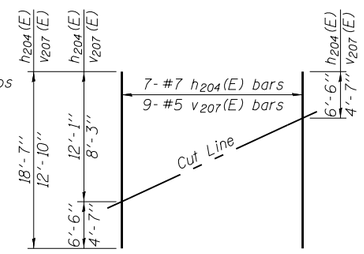
SEC. THRU ABUT.



PLAN

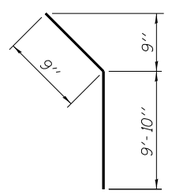
PILE DATA

Type: HP 12x74
Nominal Required Bearing: 589 kips
Allowable Resistance Available: 196 kips
Est. Length: 62'-0"
No. Production Piles: 1
No. Test Piles: 1

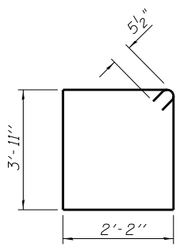


FIELD CUTTING DIAGRAM

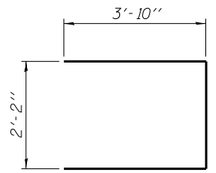
Order h_{204}(E) and v_{207}(E) full length. Cut as shown and use remainder of bars in opposite face.



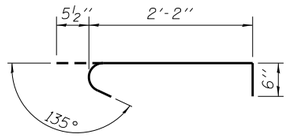
BAR h_{205}(E)



BAR s_{205}(E)



BAR u_{200}(E)



BAR s_{203}(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{203}(E)	18	#7	12'-2"	
h_{204}(E)	7	#7	18'-11"	
h_{205}(E)	2	#5	10'-5"	
p_{200}(E)	10	#7	11'-8"	
p_{210}(E)	10	#7	4'-2"	
s_{203}(E)	4	#5	3'-2"	
s_{205}(E)	10	#5	13'-1"	
u_{200}(E)	4	#6	9'-10"	
v_{205}(E)	22	#8	6'-10"	
v_{206}(E)	4	#5	8'-2"	
v_{207}(E)	9	#5	12'-6"	

Structure Excavation	Cu. Yd.	58
Concrete Removal	Cu. Yd.	3
Concrete Structures	Cu. Yd.	7.7
Reinforcement Bars, Epoxy Coated	Pound	1,860
Furnishing Steel Piles, HP 12x74	Foot	62
Driving Piles	Foot	62
Test Pile, HP 12x74	Each	1
Drill and Grout Bars	Each	10
Protective Coat	Sq. Yd.	9

For details of piles see sheet 23 of 26.

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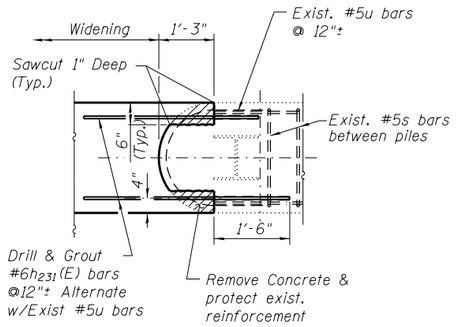
CMT

USER NAME =	DESIGNED DRC	REVISED
...\98850-0062_020-East Abutment.dgn	CHECKED LM	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

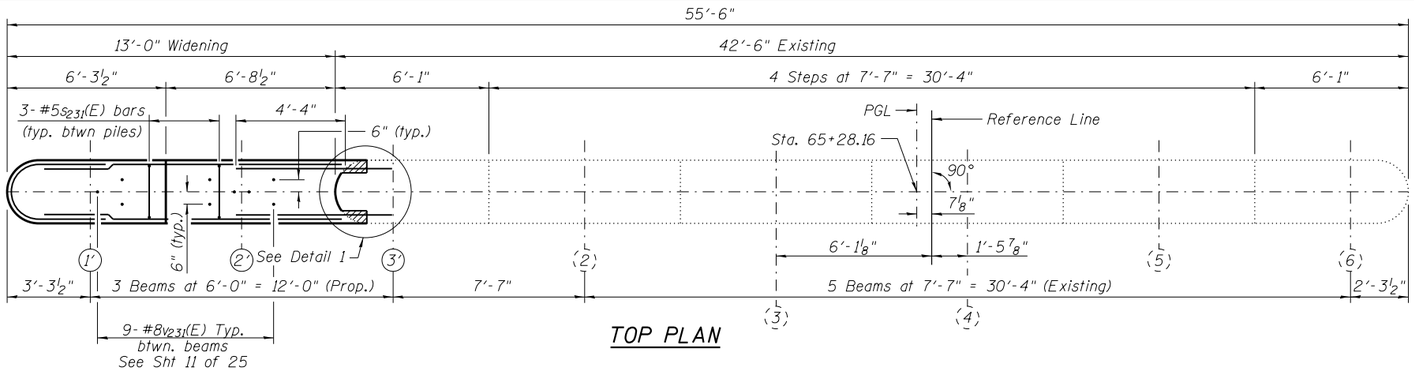
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT
STRUCTURE NO. 039-0062
SHEET NO. 20 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	104
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



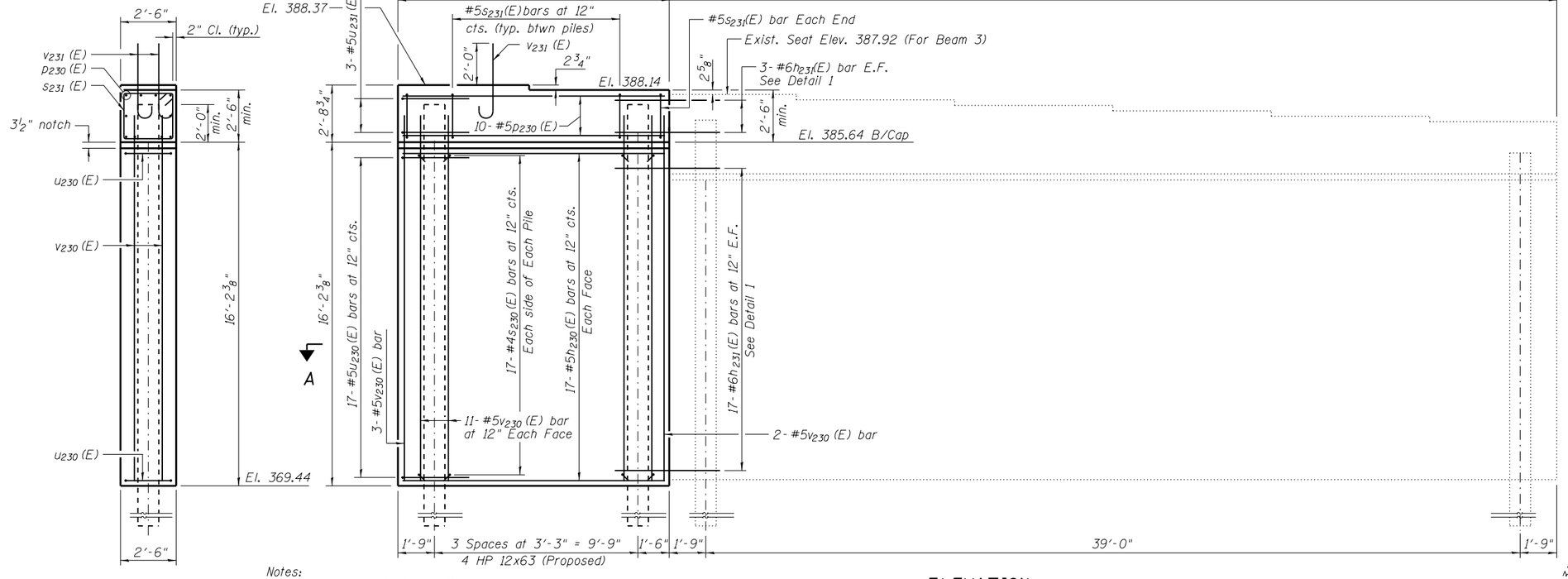
DETAIL 1



TOP PLAN

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_{230}(E)$	34	#5	12'-5"	
$h_{231}(E)$	40	#6	5'-4"	
$p_{230}(E)$	10	#5	11'-7"	
$s_{230}(E)$	136	#4	3'-3"	
$s_{231}(E)$	11	#5	9'-7"	
$u_{230}(E)$	17	#5	8'-3"	
$u_{231}(E)$	3	#5	6'-7"	
$v_{230}(E)$	27	#5	18'-2"	
$v_{231}(E)$	9	#8	4'-2"	
Reinforcement Bars, Epoxy Coated		Lbs.	2,070	
Concrete Structure		Cu. Yd.	24.8	
Furnishing Steel Piles, HP 12x63		Foot	186	
Driving Piles		Foot	186	
Test Pile Steel HP 12x63		Each	1	
Structure Excavation		Cu. Yd.	11	
Concrete Removal		Cu. Yd.	1	
Drill and Grout Bars		Each	40	



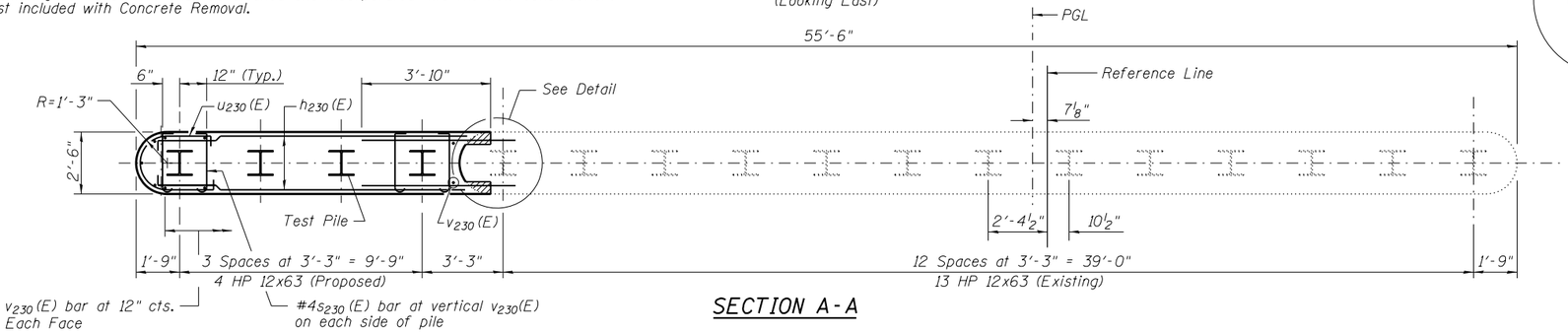
PIER - END VIEW

ELEVATION
(Looking East)

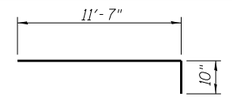
Notes:
Pour steps monolithically with cap.
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

PILE DATA

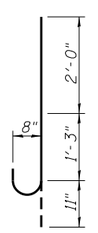
Type: HP 12x63
Nominal Required Bearing: 497 kips
Allowable Resistance Available: 165 kips
Est. Length: 62 ft.
No. Production Piles: 3
No. Test Piles: 1



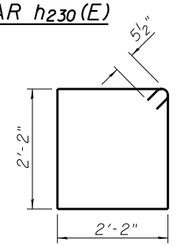
SECTION A-A



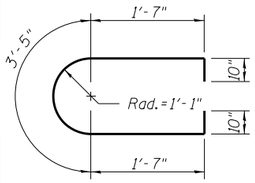
BAR $h_{230}(E)$



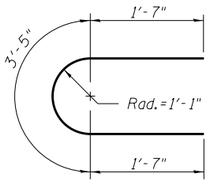
BAR $v_{231}(E)$



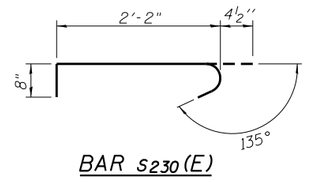
BAR $s_{231}(E)$



BAR $u_{230}(E)$



BAR $u_{231}(E)$



BAR $s_{230}(E)$

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CMT

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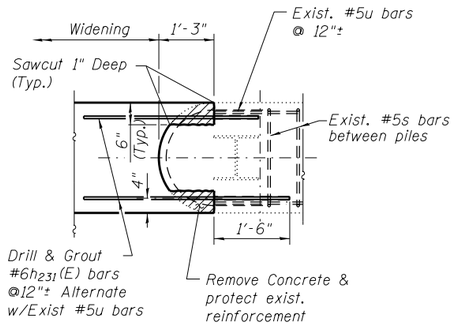
...\98850-0062.021-Pier 1.dgn	CHECKED	LM	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

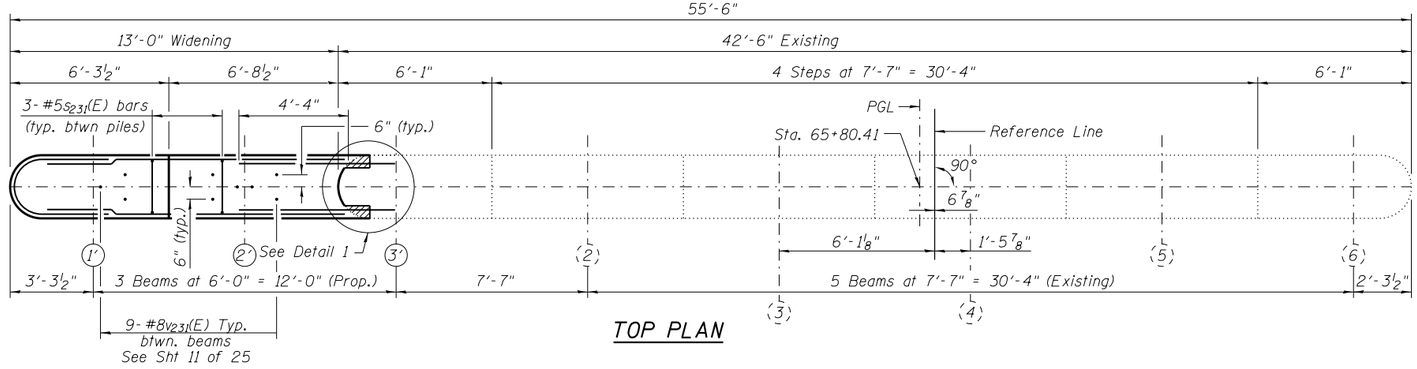
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 – DETAILS
STRUCTURE NO. 039-0062
SHEET NO. 21 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	105
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



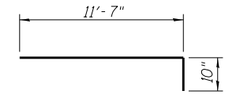
DETAIL 1



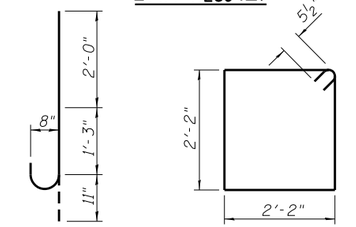
TOP PLAN

BILL OF MATERIAL

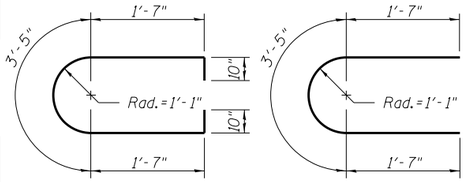
Bar	No.	Size	Length	Shape
$h_{230}(E)$	34	#5	12'-5"	
$h_{231}(E)$	40	#6	5'-4"	
$p_{230}(E)$	10	#5	11'-7"	
$s_{230}(E)$	136	#4	3'-3"	
$s_{231}(E)$	11	#5	9'-7"	
$u_{230}(E)$	17	#5	8'-3"	
$u_{231}(E)$	3	#5	6'-7"	
$v_{230}(E)$	27	#5	18'-2"	
$v_{231}(E)$	9	#8	4'-2"	
Reinforcement Bars, Epoxy Coated		Lbs.	2,070	
Concrete Structure		Cu. Yd.	24.5	
Furnishing Steel Piles, HP 12x63		Foot	183	
Driving Piles		Foot	183	
Test Pile Steel HP 12x63		Each	1	
Structure Excavation		Cu. Yd.	11	
Concrete Removal		Cu. Yd.	1	
Drill and Grout Bars		Each	40	



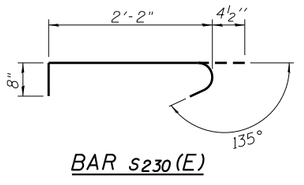
BAR $h_{230}(E)$



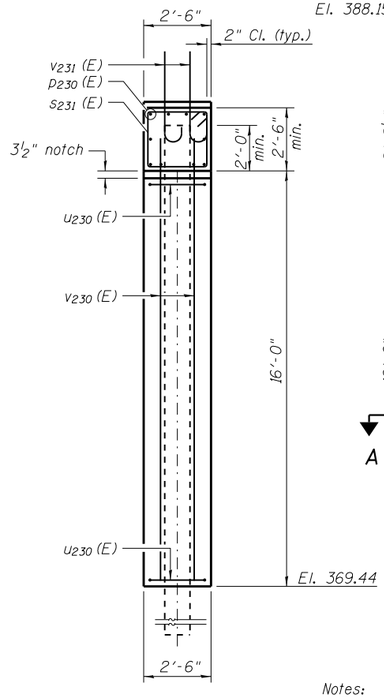
BAR $v_{231}(E)$ BAR $s_{231}(E)$



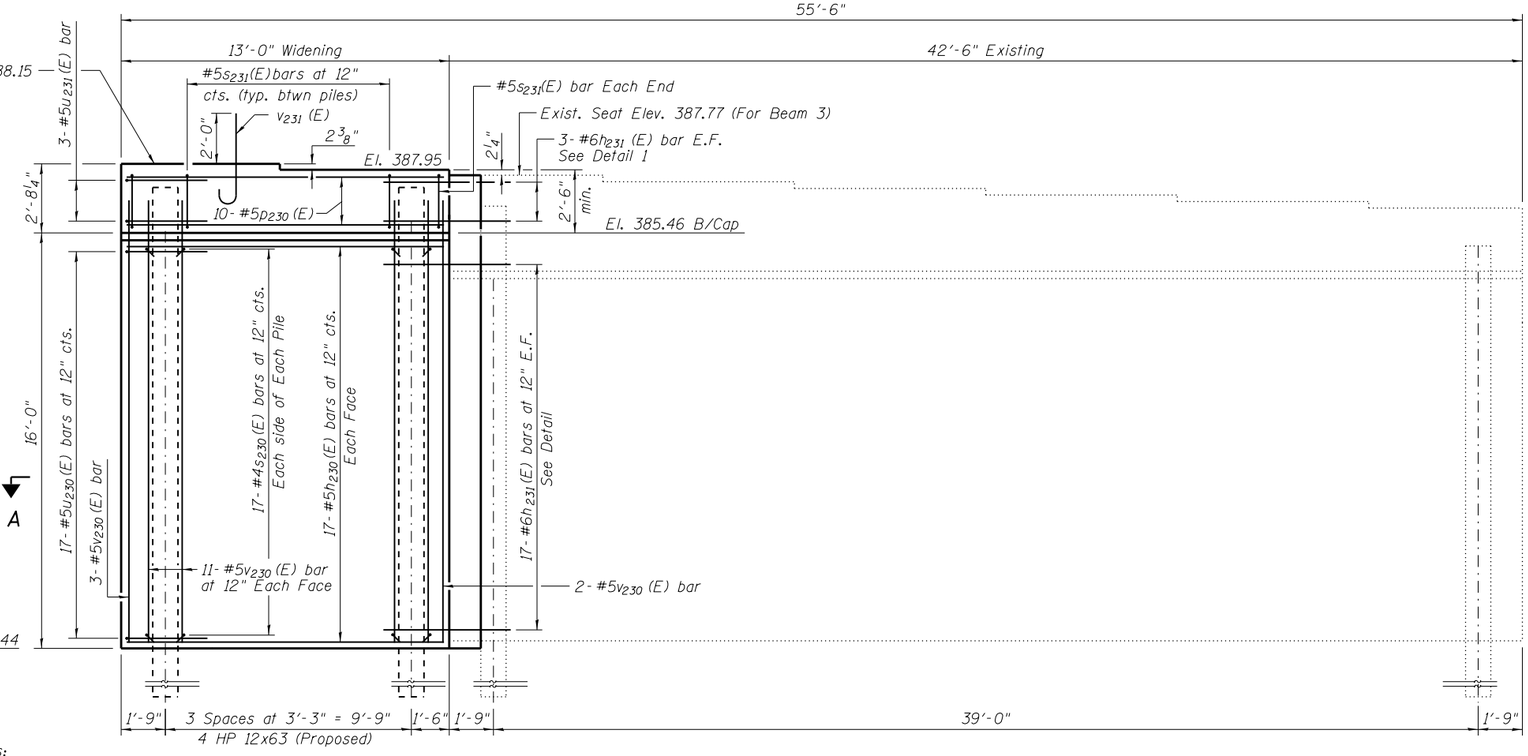
BAR $u_{230}(E)$ BAR $u_{231}(E)$



BAR $s_{230}(E)$



PIER - END VIEW

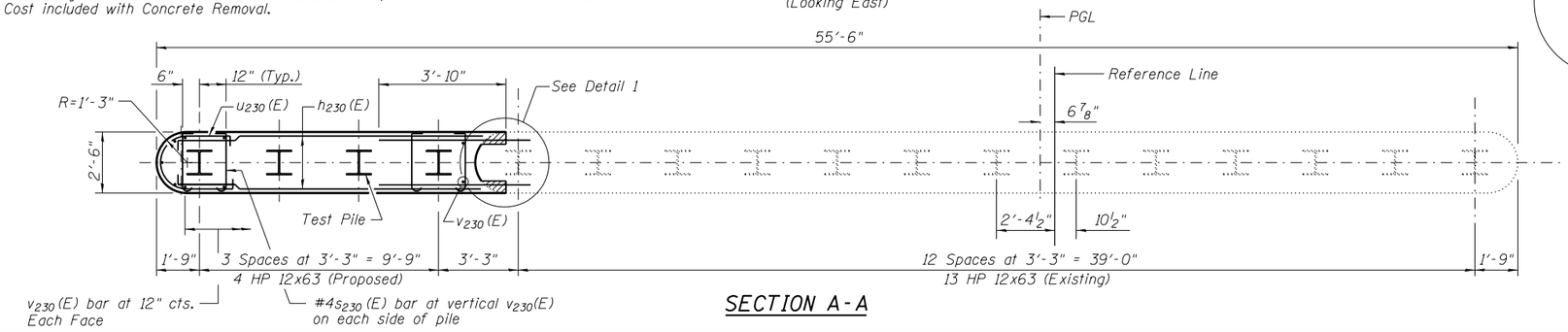


ELEVATION
(Looking East)

Notes:
Pour steps monolithically with cap.
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

PILE DATA

Type: HP 12x63
Nominal Required Bearing: 497 kips
Allowable Resistance Available: 165 kips
Est. Length: 61 ft.
No. Production Piles: 3
No. Test Piles: 1



SECTION A-A

USER NAME =	DESIGNED	DRC	REVISED
...\98850-0062_022-Pier 2.dgn	CHECKED	LM	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 – DETAILS
STRUCTURE NO. 039-0062
SHEET NO. 22 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	106
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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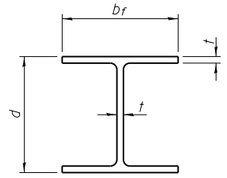
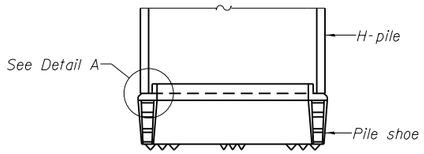
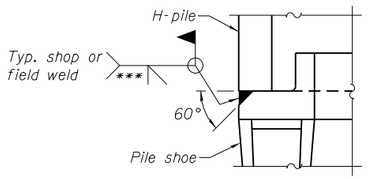


STEEL PILE TABLE

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''

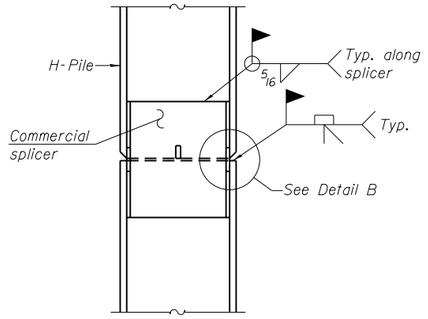


ELEVATION

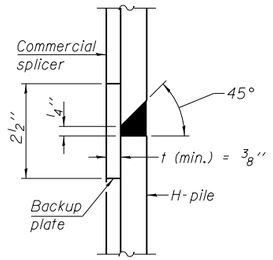


DETAIL A

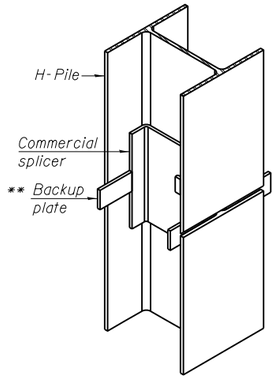
H-PILE SHOE ATTACHMENT



ELEVATION

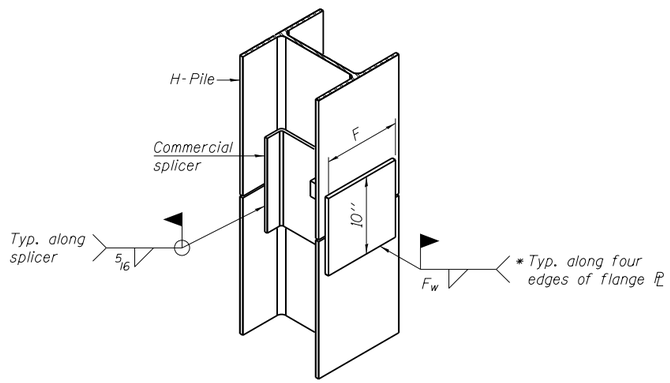


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



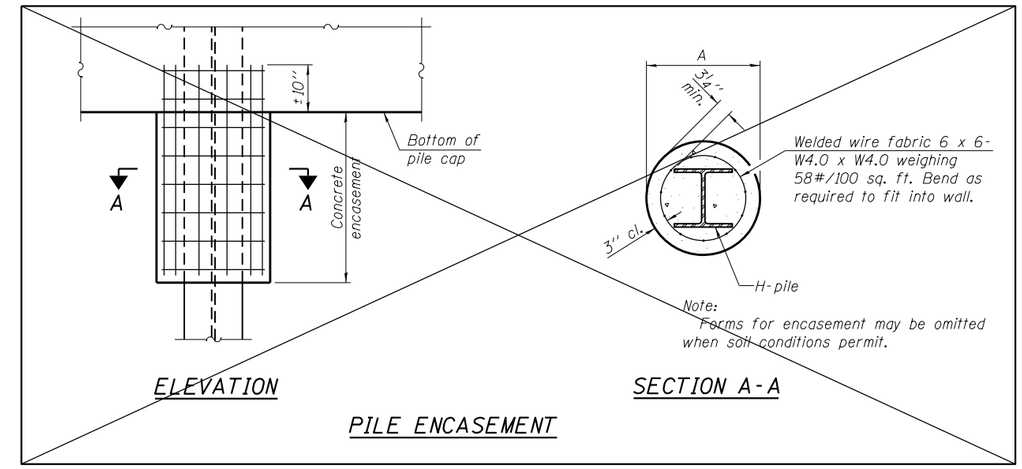
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

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

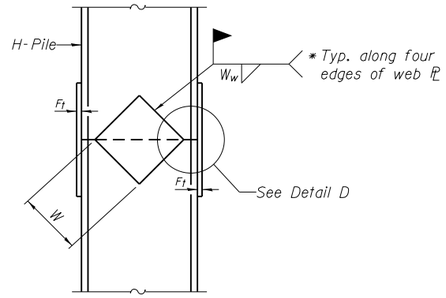
** Remove portions of backup plates that extend outside the flanges.

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

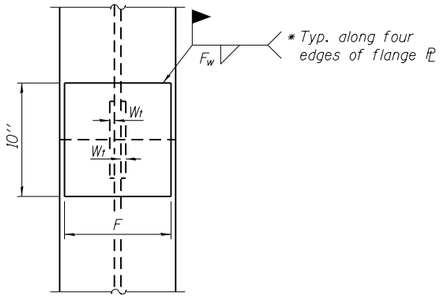


ELEVATION SECTION A-A

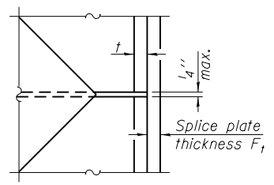
PILE ENCASEMENT



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 1-27-12

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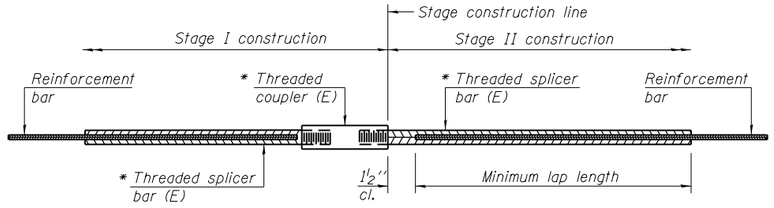
CMT

USER NAME =	DESIGNED	DRC	REVISED
...\98850-0062_023-Steel H Pile.dgn	CHECKED	LM	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 039-0062
SHEET NO. 23 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	107
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

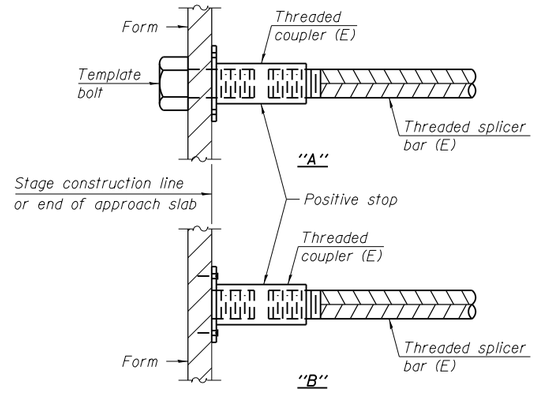


STANDARD BAR SPLICER ASSEMBLY

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

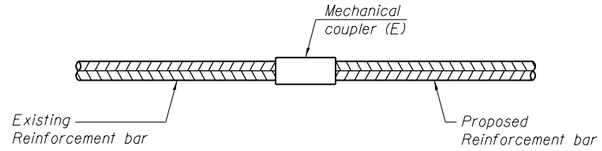
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length



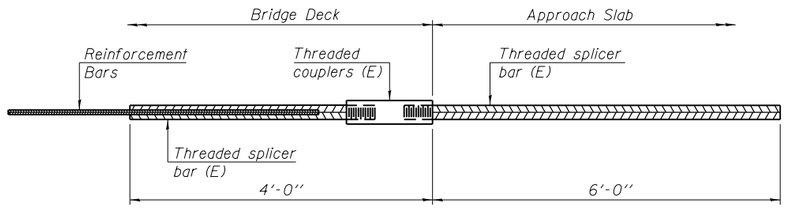
INSTALLATION AND SETTING METHODS

"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.



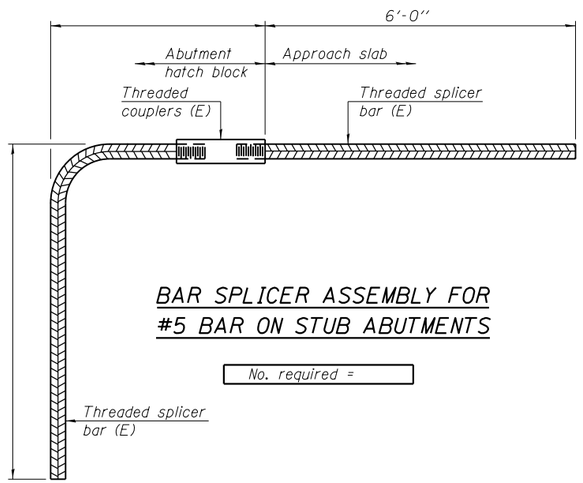
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



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

No. required = 44



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

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

11-22-2016

CMT

USER NAME =	DESIGNED	DRC	REVISED
...\98850-0062_024-Bar Splicer Details.dgn	CHECKED	LM	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 039-0062
SHEET NO. 24 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	108
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		

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ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

Sheet 1 of 2

Westbound FAP 331 (IL 13) Over Crab Orchard Creek Overflow

Route: FAP 331 (IL 13) Structure Number: 039-0062 Date: 7/22/2014

Section (5B-2) DR Bored By: R Moberly

County: Jackson Location: 0.4 mi East of Giant City Road Checked By: R Graeff

Boring No 1-S
Station 164+48
Offset 16' Lt CL WBL
Ground Surface 391.4 Ft

Surf Wat Elev:
Ground Water Elevation
when Drilling 369.4
At Completion
At: Hrs:

	DEPTH	BLOWS	Qu tsf	W%
Asphalt over crushed aggregate				
		3		
		4		
387.9		5		
Very stiff, moist, brown, Silty Clay to Clay A7-6				
	5.0	1		
		2	2.3B	22
		4		
384.4				
Medium to soft, very moist, brown and grey, Silty Clay to Clay A7-6		1		
		1	0.5B	25
		2		
381.9				
Stiff, moist, brown, Clay A7-6	10.0	WH		
		2	1.6B	25
		3		
379.4				
Very stiff, moist, brown, Clay to Silty Clay A7-6		1		
		2	2.9B	18
		4		
376.9				
Very soft, very moist, grey, Clay A7-6	15.0	WH		
		1	0.2B	31
		1		
374.4				
Stiff, moist, grey, Clay A7-6		1		
		2	1.9B	33
		4		
371.9				
Very stiff, moist, grey and brown, Clay A7-6	20.0	1		
		3	2.5B	35
		4		
369.4				
Stiff, moist, brown and grey, Clay A7-6		1		
		1	1.6B	33
		1		
	25.0	1		

	DEPTH	BLOWS	Qu tsf	W%
Stiff, moist, brown and grey, Clay A7-6		1	1.2B	26
		2		
		1		
		2	1.8B	26
		3		
	30.0	1		
		2	1.9B	29
		3		
		1		
		2	1.9B	31
356.9		4		
Very stiff, moist, grey and brown, Clay A7-6	35.0	1		
		3	2.0B	27
		5		
		1		
		3	2.7S	31
		4		
	40.0	1		
		4	2.5S	28
		6		
346.9				
Hard, moist, brown, Clay A7-6	45.0	2		
		6	4.5B	24
		8		
341.4	50.0	2		

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: FAP 331 (IL 13) Date: 7/22/2014

Section: (5B-2) DR

County: Jackson

Boring No: 1-S
Station: 164+48
Offset: 16' Lt CL WBL
Ground Surface: 391.4 Ft

	DEPTH	BLOWS	Qu tsf	W%
Very stiff, moist, brown, Clay A7-6		4	2.7B	23
		6		
330.9				
Medium, very moist, brown and black, Sandy Clay Loam to Clay Loam A-4 with coal and sand layers	55.0	WH		
		1	0.6B	25
		2		
	60.0	2		
		6	0.8S	18
		6		
328.9				
Hard, dry, grey, Clay Shale				
	65.0	100/6"		
Hard, dry, grey, Clay Shale 321.4	70.0	100/2"		
Bottom of hole = 69.7 feet				
Free water observed at 22.0 feet				
Elevation referenced to BM at SE corner of 039-0019; Elevation = 385.1 feet	75.0			

Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)

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

DEPTH	BLOWS	Qu tsf	W%
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)

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USER NAME =	DESIGNED	DRC	REVISED
...\98850-0062.025-Boring Logs 1.dgn	CHECKED	LM	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 1
STRUCTURE NO. 039-0062
SHEET NO. 25 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	109
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

Westbound FAP 331 (IL 13) Over Crab Orchard Creek Overflow — Sheet 1 of 2

Route: FAP 331 (IL 13) Structure Number: 039-0062 Date: 7/18/2014

Section (5B-2) DR Bored By: R Moberly

County: Jackson Location: 0.4 mi East of Giant City Road Checked By: R Graeff

Boring No 2-S
Station 166+64
Offset 15' Lt CL WBL
Ground Surface 390.7 Ft

Surf Wat Elev:
Ground Water Elevation
when Drilling 366.2
At Completion
At: Hrs:

Description	DEPTH	BLOWS	Qu tsf	W%
Asphalt over crushed aggregate				
		2		
387.7		2		
Stiff, moist to very moist, brown, Clay A7-6		1	1.1B	29
386.2				
Medium, moist to v. moist, brown, Clay A7-6	5.0	1		
		1	0.7B	27
		1		
383.7				
Medium, moist to very moist, grey, Silty Clay A-6 (poor embankment construction)		WH		
		1	0.7B	25
		1		
381.2				
Stiff, moist, brown, Clay A7-6	10.0	1		
		1	1.4B	26
		3		
378.7				
Very stiff, moist, brown and grey, Clay A7-6		1		
		3	2.9B	24
		3		
	15.0	1		
		4	2.9B	23
		4		
373.7				
Soft to medium, very moist, grey mottled brown, Silt Loam to Silty Clay Loam A-4		1		
		WH	0.5B	25
		1		
371.2				
Stiff, moist, grey and brown, Silt Loam to Silty Clay Loam A-4	20.0	1		
		3	1.2S	22
		4		
368.7				
Soft, very moist, brown, Silty Clay Loam A-6		WH		
		WH	0.4B	29
		1		
366.2				
	25.0	WH		

Description	DEPTH	BLOWS	Qu tsf	W%
Very soft, wet, brown, Silty Clay Loam A-6		1	0.2B	30
		1		
363.7				
Soft, very moist, brown, Silty Clay Loam A-6		WH		
		WH	0.3B	28
		WH		
361.2				
Very soft, wet, brown, Silty Clay Loam A-6	30.0	WH		
		WH	0.1B	29
		WH		
		WH		
		WH	0.2B	31
		WH		
356.2				
Stiff, moist, grey, Clay A7-6	35.0	1		
		2	1.6B	31
		4		
353.7				
Very stiff, moist, grey, Clay A7-6		1		
		2	3.1B	29
		4		
	40.0	2		
		4	2.7B	33
		5		
346.2				
Very stiff, moist, brown, Clay A7-6	45.0	2		
		5	3.9B	24
		7		
	50.0	2		

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: FAP 331 (IL 13) Date: 7/18/2014
Section: (5B-2) DR
County: Jackson

Boring No: 2-S
Station: 166+64
Offset: 15' Lt CL WBL
Ground Surface: 390.7 Ft

Description	DEPTH	BLOWS	Qu tsf	W%
Very stiff, moist, brown, Clay A7-6		5	2.9B	25
		7		
	55.0	2		
		4	2.3B	26
		5		
331.2				
Stiff, moist, grey, Clay A7-6	60.0	1		
		2	1.5B	19
		3		
Sand blow-In; washout procedures used 327.2				
Hard, dry, grey, Limestone 326.7		100/0.5"		
Cored 63.6 to 68.6 feet	65.0			
+/- 2' Limestone over Hard, dry, grey and black, Clay Shale				
53% Recovery; 0% RQD				
322.2				
Bottom of hole = 68.6 feet				
Free water observed at 24.5 feet	70.0			
Elevation referenced to BM at SE corner of 039-0019; Elevation = 385.1 feet				
Borehole advanced with hollow stem auger (6" O.D, 3.25" I.D.)				
To convert "N" values to "N60" multiply by 1.25	75.0			

Description	DEPTH	BLOWS	Qu tsf	W%
Note: Sand was encountered directly above the Limestone layer. We were unable to seal the augers in the Limestone which allowed sand to continually seep into the bore hole. This caused difficulty in removing the core barrel. I did not want to take a chance of losing the second barrel so the hole was abandoned RM	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)

CMT

USER NAME =	DESIGNED DRC	REVISED
...\98850-0062.026-Boring Logs 2.dgn	CHECKED LM	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

BORING LOGS 2
STRUCTURE NO. 039-0062

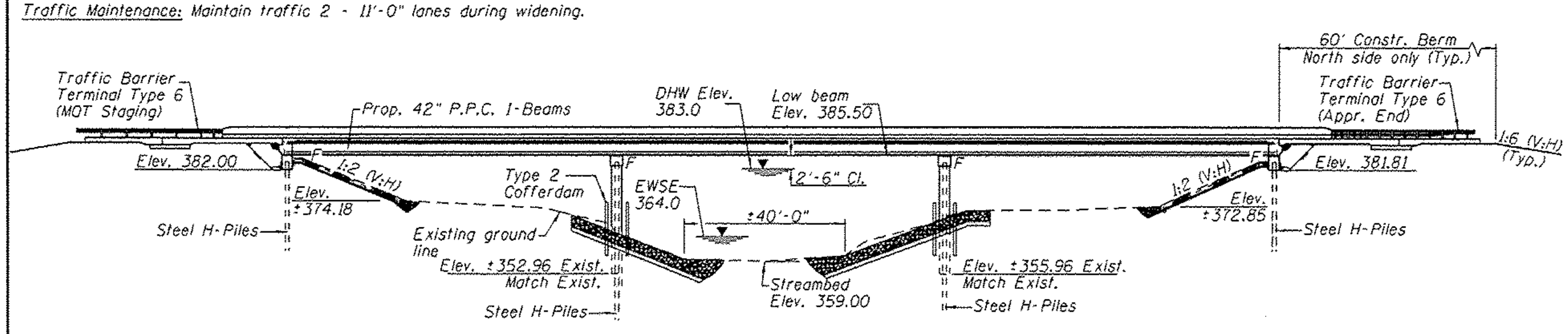
SHEET NO. 26 OF 26 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	110

CONTRACT NO. 78295

ILLINOIS FED. AID PROJECT

Bench Mark: Cut square on Southwest corner of Structure 039-0061 of Illinois Route 13 WBL @ Sta. 86+65±, Elev. 390.262
Existing Structure: S.N. 039-0061, built in 1995 is a three span P.P.C. I-Beam Bridge. Substructure consists of intergral abutments supported on steel piles and solid wall pile bent piers. Bk. to Bk. abutments measures 247'-4 3/4" and out-to-out width of 43'-2".
Salvage: Existing bridge to remain and shall be widened.
Traffic Maintenance: Maintain traffic 2 - 11'-0" lanes during widening.

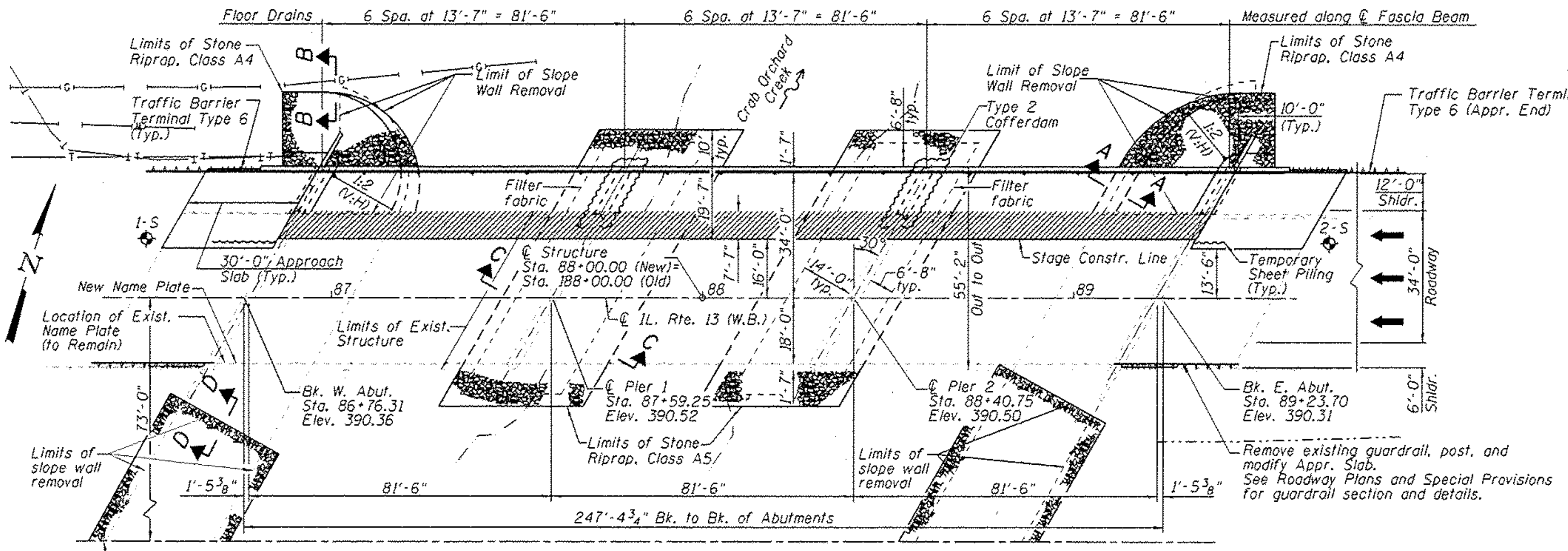


ELEVATION

STATION 88+00.00
RE-BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RT 331 SEC (5-3) BR-2
LOADING HS20-44
STRUCTURE NO. 039-0061

NAME PLATE

See Std. 515001



PLAN

INDEX OF SHEETS

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Construction
1995 FHWA Seismic Retrofit Manual (500 Year)

LOADING HS 20-44

Allow 25 psf for future wearing surface

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi (concrete)
f'c = 4,000 psi (Superstr. concrete)
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi (concrete)
f'ci = 5,000 psi
fpu = 270,000 psi (1/2"φ low lax strands)
fpbt = 201,960 psi (1/2"φ low lax strands)

SEISMIC DATA

Seismic Performance Category, SPC = C
Horizontal Bedrock Acceleration, A = 0.14g
Site Coefficient, s = 1.5

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

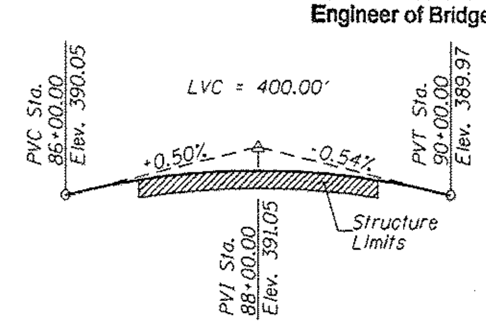
04-13-2017

LICENSED STRUCTURAL ENGINEER
WILLIAM L. BAILEY, JR.
081-005087
STATE OF ILLINOIS

Exp. 11-30-2018

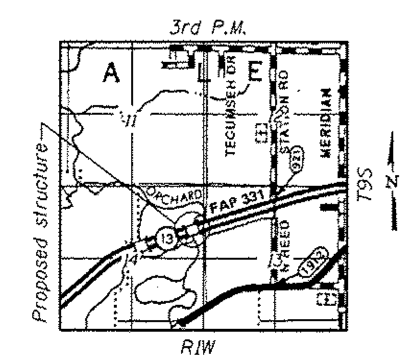
DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.) W. Abut.	Pier 1	Pier 2	E. Abut.	Item 113
Q100	382.00	346.80	349.80	381.81	5
Q200	382.00	345.80	348.80	381.81	
Design	382.00	352.96	355.96	381.81	



PROFILE GRADE

(Along ℄ IL. Rte. 13 W.B.)
(Existing Profile)



LOCATION SKETCH

GENERAL PLAN
F.A.P. ROUTE 331 (IL 13 W.B.)
OVER CRAB ORCHARD CREEK
SECTION (5-3) BR-2
JACKSON COUNTY
STATION 88+00.00
STRUCTURE NO. 039-0061

CMT	USER NAME :	DESIGNED DRC	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN STRUCTURE NO. 039-0061
	...\98850-0061.001-General Plan.dgn	CHECKED WLB	REVISED		
	PLOT SCALE :	DRAWN GLD	REVISED		
	PLOT DATE :	CHECKED WLB/JMM	REVISED		SHEET NO. 1 OF 29 SHEETS

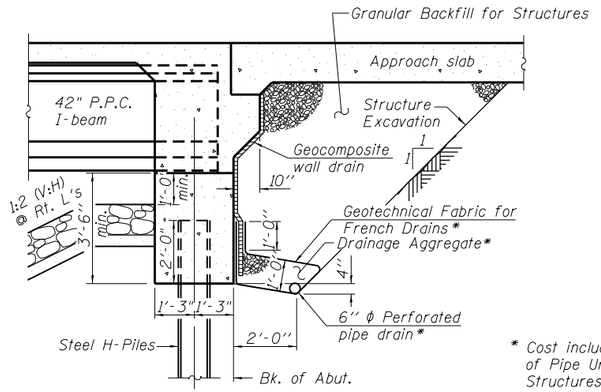
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	111
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
3. Layout of slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
4. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
5. Seal coat thickness design is based on the Cofferdam Design Water Elevation (CDWE). Cofferdam design details and proposed changes in seal coat thickness shall be submitted to the engineer for approval with cofferdam design.
6. Slipforming of the parapets is not allowed.

NOTE TO CONTRACTOR:

Approach Slabs, Abutments and Piers have removal limits that differ from the stage construction line location shown on the Stage Construction Details sheet. See Approach Slab Details, Abutment Details and Pier Details for more information.



SECTION THRU INTEGRAL ABUTMENT

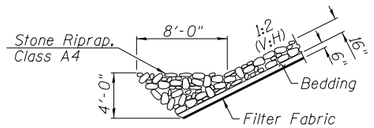
(Horiz. dim. @ Rt. L's)
(Match Existing Abutment)

* Cost included in the cost of Pipe Underdrains for Structures (See special provision).

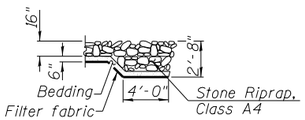
Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall, except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101.)

TOTAL BILL OF MATERIAL

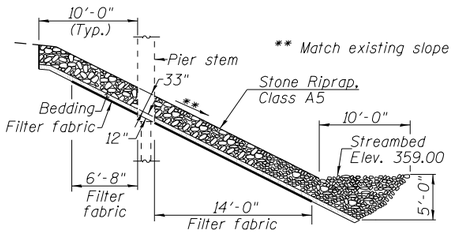
ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.		512	512
Stone Riprap, Class A5	Sq. Yd.		648	648
Filter Fabric	Sq. Yd.		945	945
Concrete Removal	Cu. Yd.	112	7	119
Slope Wall Removal	Sq. Yd.		404	404
Structure Excavation	Cu. Yd.		111	111
Cofferdam Excavation	Cu. Yd.		117	117
Cofferdam (Type 2) (Location-1)	Each		1	1
Cofferdam (Type 2) (Location-2)	Each		1	1
Floor Drains	Each	15		15
Concrete Structures	Cu. Yd.	15.3	103.3	118.6
Concrete Superstructure	Cu. Yd.	168.7		168.7
Bridge Deck Grooving	Sq. Yd.	599		599
Seal Coat Concrete	Cu. Yd.		21.6	21.6
Protective Coat	Sq. Yd.	746	15	761
Concrete Superstructure (Approach Slab)	Cu. Yd.	76.1		76.1
Furnishing and Erecting Precast Prestresed Concrete I-Beams, 42 IN.	Foot	734		734
Reinforcement Bars, Epoxy Coated	Pound	68,680	9,950	78,630
Bar Splicers	Each	42		42
Furnishing Steel Piles HP 12x63	Foot		544	544
Furnishing Steel Piles HP 12x74	Foot		204	204
Driving Piles	Foot		748	748
Test Pile Steel HP 12x74	Each		1	1
Name Plates	Each	1		1
Temporary Sheet Piling	Sq. Ft.		260	260
Geocomposite Wall Drain	Sq. Yd.		21	21
Granular Backfill for Structures	Cu. Yd.		37	37
Pipe Underdrains for Structures 6"	Foot		68	68
Drill and Grout Bars	Each	246	168	414
Removal of Existing Concrete I-Beam	Each	3		3



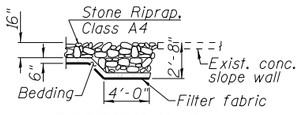
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

WATERWAY INFORMATION

Drainage Area = 255 Sq. Mi.

Exist. Low Grade Elev. 388.69 @ Sta. 80+50.00
Prop. Low Grade Elev. 388.88 @ Sta. 80+50.00

Flood	Freq. Yr.	Structure Number	Q (C.F.S.) Exist.	Q (C.F.S.) Prop.	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	039-0061/79	6,158	6,628	2,342	2,367	381.2	0.2	0.1	381.4	381.3
		0'flow Culvert	186	137	67	67					
		039-0062/78	2,056	1,635	779	772					
		Total	8,400		3,188	3,206					
Design	50	039-0061/79	8,788	9,417	2,682	2,715	383.0	0.3	0.2	383.3	383.2
		0'flow Culvert	269	235	85	85					
		039-0062/78	3,343	2,748	995	987					
		Total	12,400		3,762	3,787					
Base	100	039-0061/79	9,878	10,577	2,857	2,894	383.9	0.3	0.3	384.2	384.2
		0'flow Culvert	326	269	94	94					
		039-0062/78	3,896	3,254	1,109	1,099					
		Total	14,100		4,060	4,087					
Scour Design Check	200	039-0061/79	11,055	11,616	2,995	3,036	384.6	0.4	0.3	385.0	384.9
		0'flow Culvert	379	332	101	101					
		039-0062/78	4,576	4,062	1,200	1,189					
		Total	16,010		4,296	4,326					
Max. Calc.	500	039-0061/79	12,694	12,917	3,116	3,158	385.2	0.5	0.4	385.7	385.6
		0'flow Culvert	417	393	107	107					
		039-0062/78	5,389	5,190	1,279	1,268					
		Total	18,500		4,502	4,533					

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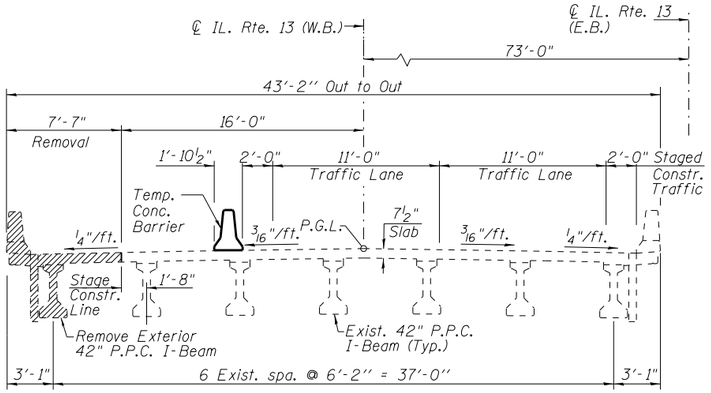
USER NAME =	DESIGNED	CJW	REVISED
...\98850-0061.002-General Data.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

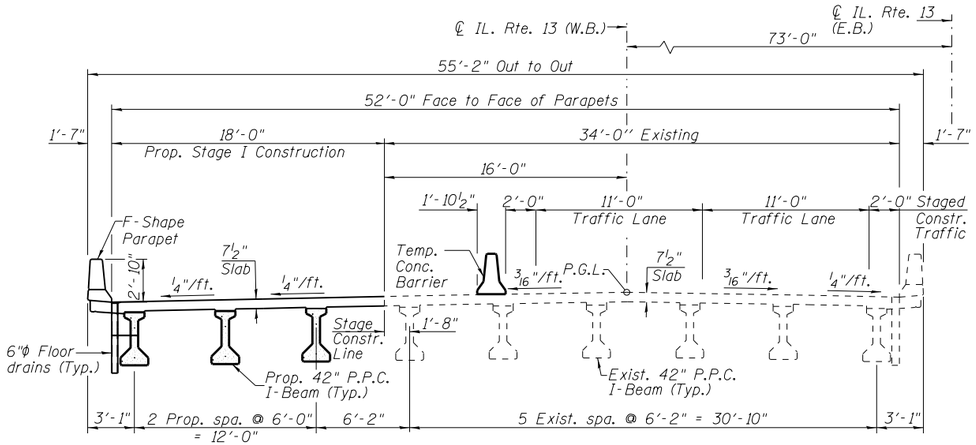
GENERAL DATA
STRUCTURE NO. 039-0061
SHEET NO. 2 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	112
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



CROSS SECTION - SHOWING REMOVAL

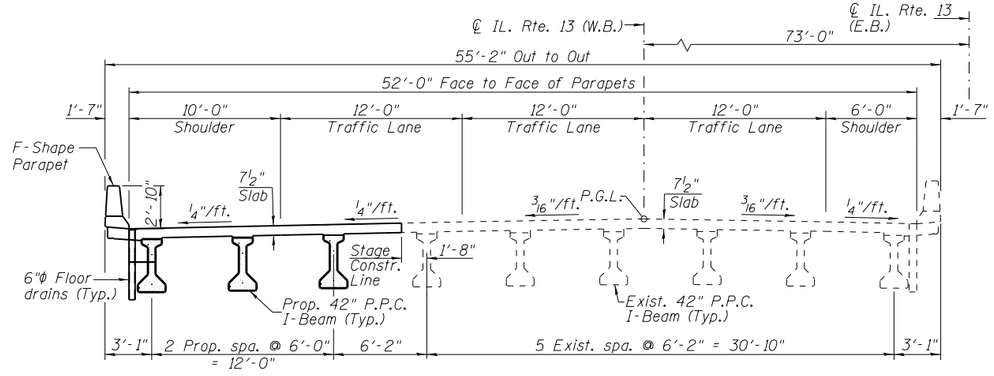
(Looking East)



CROSS SECTION - STAGE I CONSTRUCTION

(Looking East)

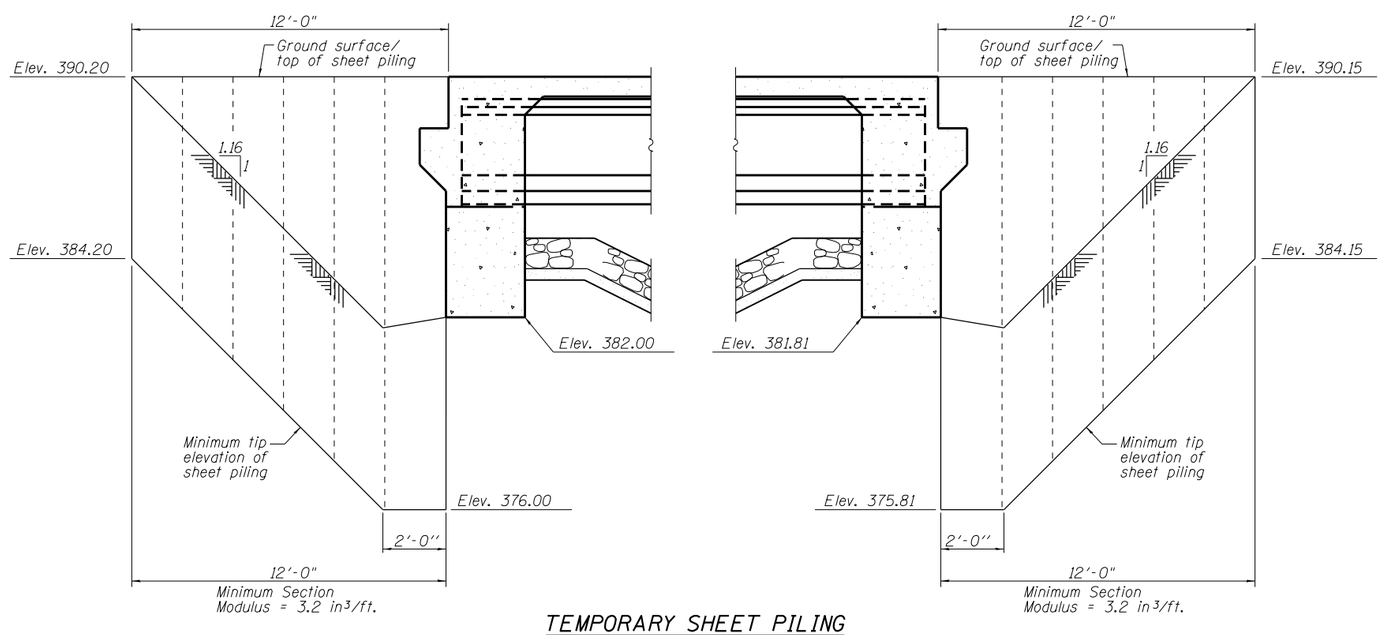
Note:
Work associated with south side guardrail and bridge approach slab curb shall be accomodated prior to Stage 1. See Roadway Plans and Special Provisions for details.



CROSS SECTION

(Looking East)

Note:
For quantity of Temporary Concrete Barrier, see Roadway Plans.



TEMPORARY SHEET PILING

If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for the review and acceptance by the engineer.

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CMT

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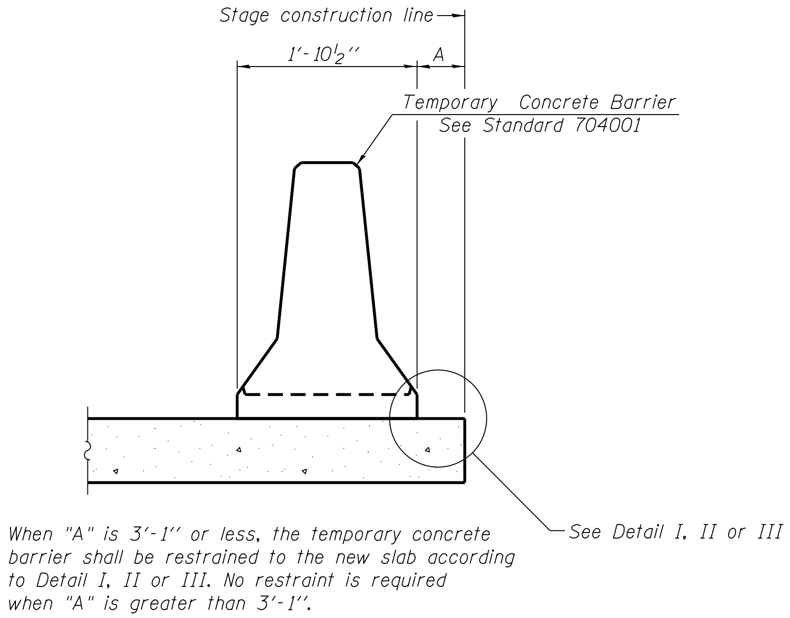
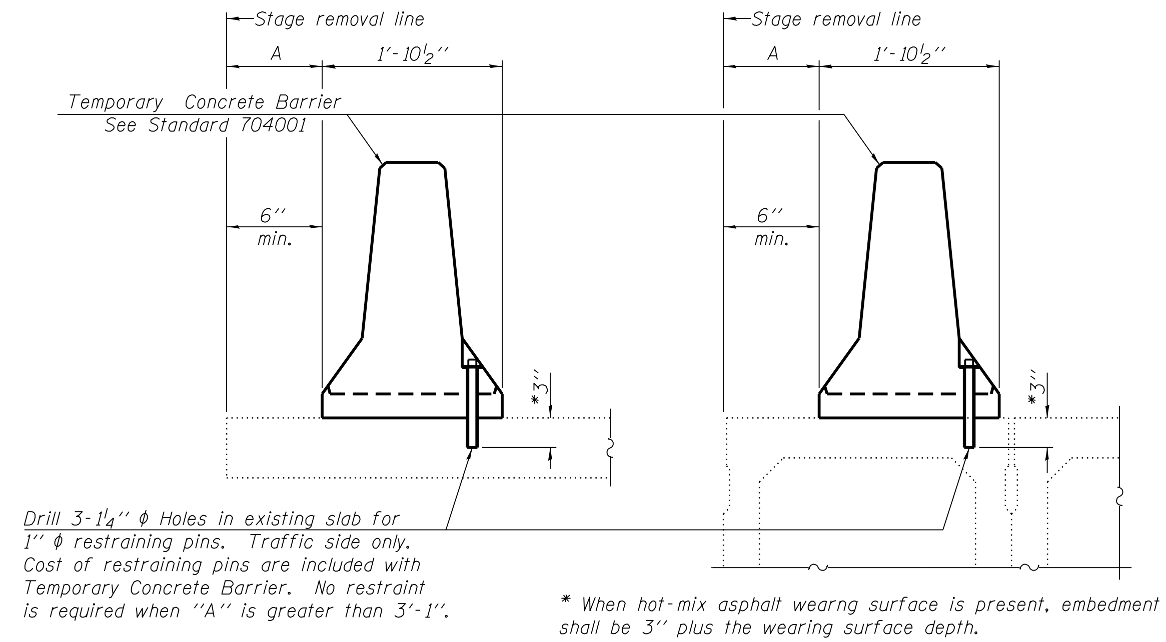
...\98850-0061.003-Stage Constr Details.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

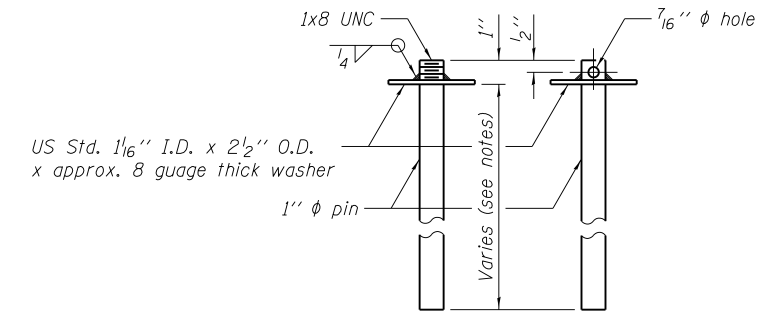
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 039-0061
SHEET NO. 3 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	113
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

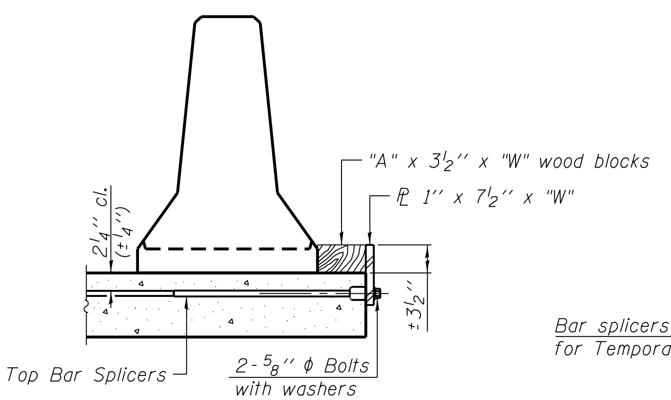




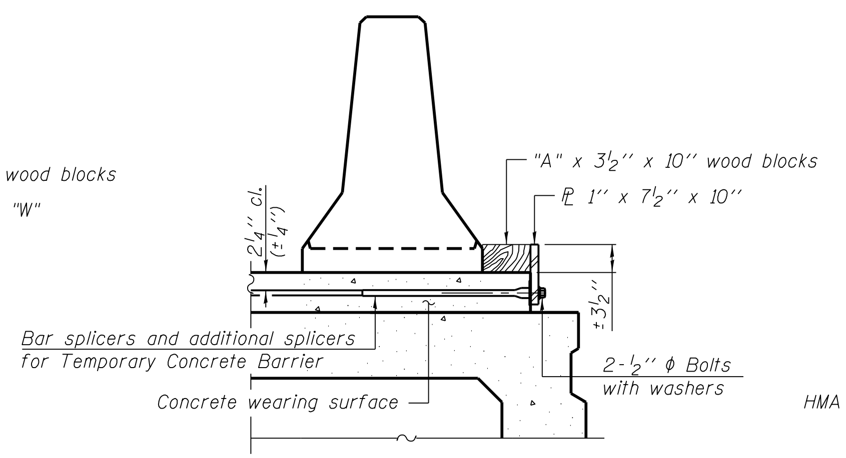
SECTIONS THRU SLAB OR DECK BEAM



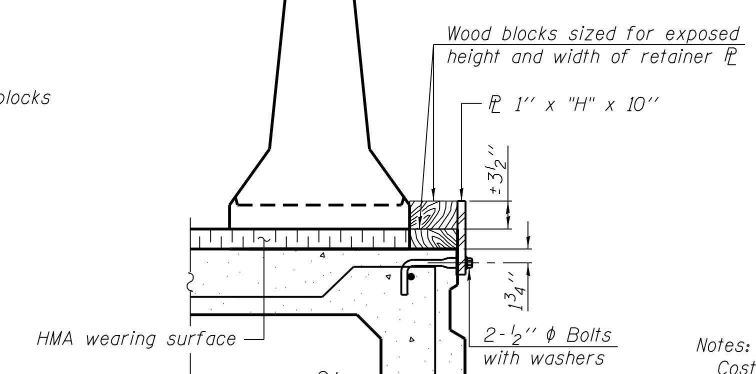
RESTRAINING PIN



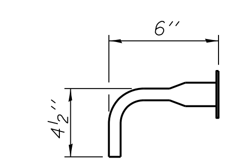
DETAIL I



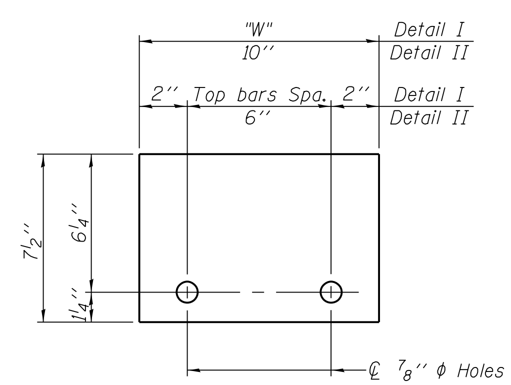
DETAIL II



DETAIL III

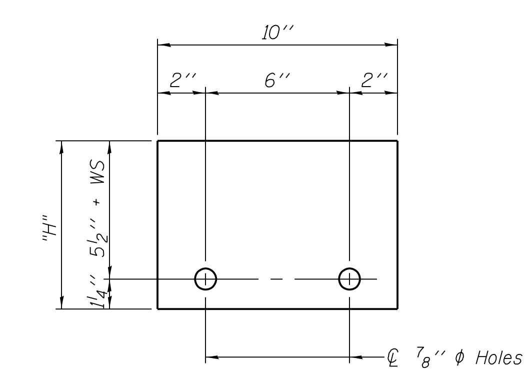


BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER PL 1'' x 7½'' x "W"

(Detail I and II)



STEEL RETAINER PL 1'' x "H" x 10''

(Detail III)

Notes:
Cost of retainer assembly is included with Temporary Concrete Barrier.
A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.
The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.
When the 'A' dimension is less than 1½'', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate.
For deck beam applications the minimum required 'A' distance is 6'' to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0'' centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6'' apart, shall be placed at 6'-0'' centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

R-27

11-22-2016

CMT

USER NAME =	DESIGNED	CJW	REVISED	
...\98850-0061.004-Temp Conc Barrier.dgn	CHECKED	WLB	REVISED	
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PLOT DATE =	CHECKED	WLB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 039-0061

SHEET NO. 4 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	114
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		

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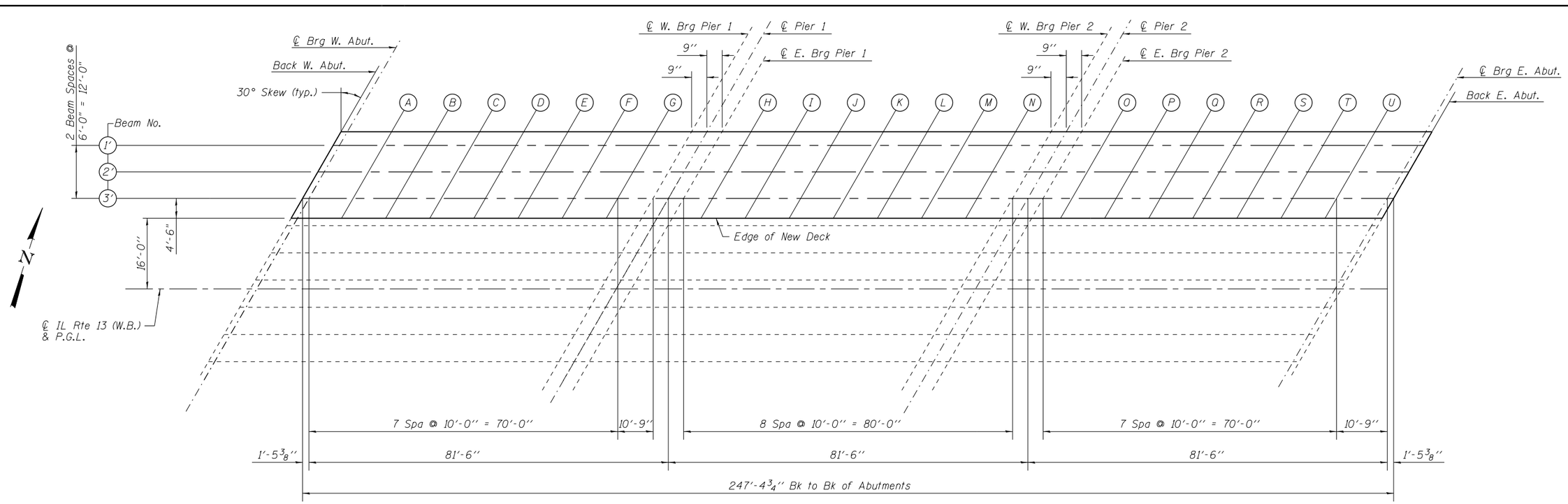
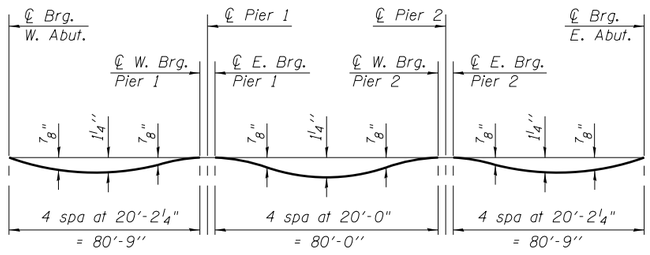


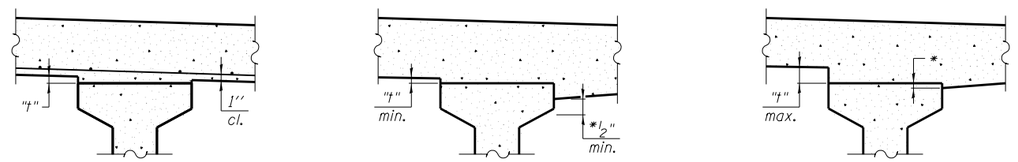


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only, excluding beams)

Note:

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections. As shown on Sheets 6 & 7 of 29.



INTERIOR BEAMS

EXTERIOR BEAMS

To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown on Sheets 6 & 7 of 29, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS

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CMT

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PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK ELEVATIONS – 1
STRUCTURE NO. 039–0061
SHEET NO. 5 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	115
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

BEAM 1'

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	86+95.07	-32.50	389.92	389.92
CL Brg. W. Abut.	86+96.52	-32.50	389.93	389.93
A	87+06.52	-32.50	389.97	390.02
B	87+16.52	-32.50	390.02	390.10
C	87+26.52	-32.50	390.03	390.13
D	87+36.52	-32.50	390.06	390.16
E	87+46.52	-32.50	390.05	390.14
F	87+56.52	-32.50	390.04	390.12
G	87+66.52	-32.50	390.04	390.08
CL W. Brg. Pier 1	87+77.27	-32.50	390.04	390.04
CL Pier 1	87+78.02	-32.50	390.04	390.04
CL E. Brg. Pier 1	87+78.77	-32.50	390.04	390.04
H	87+88.77	-32.50	390.04	390.08
I	87+98.77	-32.50	390.04	390.11
J	88+08.77	-32.50	390.03	390.12
K	88+18.77	-32.50	390.02	390.12
L	88+28.77	-32.50	390.01	390.11
M	88+38.77	-32.50	390.01	390.08
N	88+48.77	-32.50	390.00	390.03
CL W. Brg. Pier 2	88+58.77	-32.50	390.00	390.00
CL Pier 2	88+59.52	-32.50	390.00	390.00
CL E. Brg. Pier 2	88+60.27	-32.50	389.99	389.99
O	88+70.27	-32.50	389.97	390.02
P	88+80.27	-32.50	389.96	390.04
Q	88+90.27	-32.50	389.94	390.04
R	89+00.27	-32.50	389.92	390.02
S	89+10.27	-32.50	389.88	389.98
T	89+20.27	-32.50	389.83	389.90
U	89+30.27	-32.50	389.78	389.82
CL Brg. E. Abut.	89+41.02	-32.50	389.74	389.74
Bk. E. Abut.	89+42.46	-32.50	389.73	389.73

BEAM 2'

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	86+91.61	-26.50	390.04	390.04
CL Brg. W. Abut.	86+93.05	-26.50	390.04	390.04
A	87+03.05	-26.50	390.08	390.13
B	87+13.05	-26.50	390.13	390.21
C	87+23.05	-26.50	390.15	390.25
D	87+33.05	-26.50	390.17	390.28
E	87+43.05	-26.50	390.18	390.27
F	87+53.05	-26.50	390.17	390.24
G	87+63.05	-26.50	390.17	390.21
CL W. Brg. Pier 1	87+73.80	-26.50	390.16	390.16
CL Pier 1	87+74.55	-26.50	390.16	390.16
CL E. Brg. Pier 1	87+75.30	-26.50	390.16	390.16
H	87+85.30	-26.50	390.16	390.21
I	87+95.30	-26.50	390.16	390.24
J	88+05.30	-26.50	390.15	390.25
K	88+15.30	-26.50	390.14	390.25
L	88+25.30	-26.50	390.14	390.23
M	88+35.30	-26.50	390.14	390.21
N	88+45.30	-26.50	390.13	390.16
CL W. Brg. Pier 2	88+55.30	-26.50	390.13	390.13
CL Pier 2	88+56.05	-26.50	390.13	390.13
CL E. Brg. Pier 2	88+56.80	-26.50	390.13	390.13
O	88+66.80	-26.50	390.10	390.14
P	88+76.80	-26.50	390.09	390.18
Q	88+86.80	-26.50	390.07	390.17
R	88+96.80	-26.50	390.05	390.16
S	89+06.80	-26.50	390.02	390.12
T	89+16.80	-26.50	389.98	390.05
U	89+26.80	-26.50	389.92	389.96
CL Brg. E. Abut.	89+37.55	-26.50	389.87	389.87
Bk. E. Abut.	89+39.00	-26.50	389.87	389.87

BEAM 3'

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	86+88.15	-20.50	390.13	390.13
CL Brg. W. Abut.	86+89.59	-20.50	390.15	390.15
A	86+99.59	-20.50	390.19	390.23
B	87+09.59	-20.50	390.24	390.30
C	87+19.59	-20.50	390.27	390.35
D	87+29.59	-20.50	390.29	390.37
E	87+39.59	-20.50	390.31	390.38
F	87+49.59	-20.50	390.29	390.35
G	87+59.59	-20.50	390.29	390.32
CL W. Brg. Pier 1	87+70.34	-20.50	390.29	390.29
CL Pier 1	87+71.09	-20.50	390.29	390.29
CL E. Brg. Pier 1	87+71.84	-20.50	390.29	390.29
H	87+81.84	-20.50	390.29	390.32
I	87+91.84	-20.50	390.29	390.34
J	88+01.84	-20.50	390.28	390.36
K	88+11.84	-20.50	390.27	390.35
L	88+21.84	-20.50	390.27	390.34
M	88+31.84	-20.50	390.27	390.32
N	88+41.84	-20.50	390.26	390.28
CL W. Brg. Pier 2	88+51.84	-20.50	390.25	390.25
CL Pier 2	88+52.59	-20.50	390.25	390.25
CL E. Brg. Pier 2	88+53.34	-20.50	390.25	390.25
O	88+63.34	-20.50	390.23	390.27
P	88+73.34	-20.50	390.22	390.28
Q	88+83.34	-20.50	390.20	390.28
R	88+93.34	-20.50	390.18	390.26
S	89+03.34	-20.50	390.16	390.23
T	89+13.34	-20.50	390.12	390.17
U	89+23.34	-20.50	390.07	390.10
CL Brg. E. Abut.	89+34.09	-20.50	390.02	390.02
Bk. E. Abut.	89+35.53	-20.50	390.01	390.01

Note:
All deck elevations are based on field survey taken along the proposed construction joint.

EDGE OF NEW DECK

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. W. Abut.	86+85.55	- 16.00	390.19	390.19
CL Brg. W. Abut.	86+86.99	- 16.00	390.21	390.21
A	86+96.99	- 16.00	390.27	390.31
B	87+06.99	- 16.00	390.32	390.38
C	87+16.99	- 16.00	390.36	390.44
D	87+26.99	- 16.00	390.38	390.46
E	87+36.99	- 16.00	390.40	390.48
F	87+46.99	- 16.00	390.39	390.44
G	87+56.99	- 16.00	390.39	390.42
CL W. Brg. Pier 1	87+67.74	- 16.00	390.38	390.38
CL Pier 1	87+68.49	- 16.00	390.38	390.39
CL E. Brg. Pier 1	87+69.24	- 16.00	390.38	390.38
H	87+79.24	- 16.00	390.38	390.41
I	87+89.24	- 16.00	390.38	390.44
J	87+99.24	- 16.00	390.38	390.45
K	88+09.24	- 16.00	390.37	390.45
L	88+19.24	- 16.00	390.36	390.43
M	88+29.24	- 16.00	390.36	390.41
N	88+39.24	- 16.00	390.36	390.38
CL W. Brg. Pier 2	88+49.24	- 16.00	390.34	390.34
CL Pier 2	88+49.99	- 16.00	390.34	390.35
CL E. Brg. Pier 2	88+50.74	- 16.00	390.34	390.34
O	88+60.74	- 16.00	390.34	390.37
P	88+70.74	- 16.00	390.31	390.37
Q	88+80.74	- 16.00	390.30	390.38
R	88+90.74	- 16.00	390.28	390.36
S	89+00.74	- 16.00	390.26	390.33
T	89+10.74	- 16.00	390.22	390.28
U	89+20.74	- 16.00	390.17	390.20
CL Brg. E. Abut.	89+31.49	- 16.00	390.12	390.12
Bk. E. Abut.	89+32.93	- 16.00	390.11	390.11

Note:
All deck elevations are based on field survey taken along the proposed construction joint.

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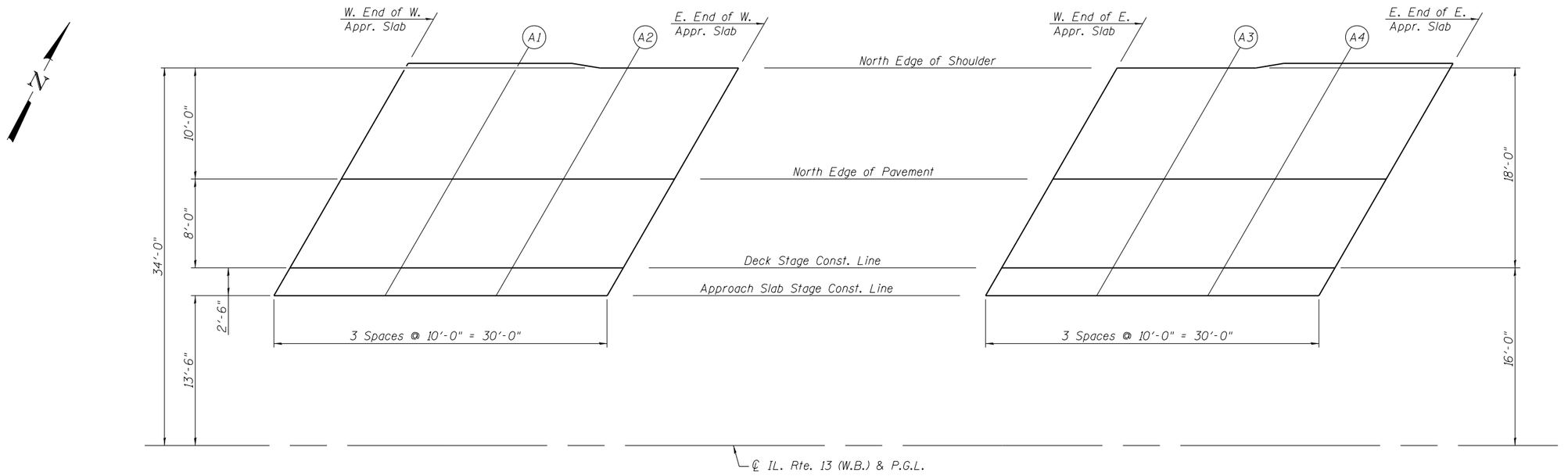
CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0061_007-Deck Elev 3.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK ELEVATIONS – 3
STRUCTURE NO. 039–0061
SHEET NO. 7 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	117
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		



WEST APPROACH SLAB **EAST APPROACH SLAB**

PLAN

NORTH EDGE OF SHOULDER

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	86+65.93	-34.00	389.61
A1	86+75.93	-34.00	389.71
A2	86+85.93	-34.00	389.82
E. End of W. Appr.	86+95.93	-34.00	389.90

DECK STAGE CONST. LINE

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	86+55.54	-16.00	389.93
A1	86+65.54	-16.00	389.99
A2	86+75.54	-16.00	390.09
E. End of W. Appr.	86+85.54	-16.00	390.19

NORTH EDGE OF SHOULDER

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	89+43.32	-34.00	389.70
A3	89+53.32	-34.00	389.60
A4	89+63.32	-34.00	389.54
E. End of E. Appr.	89+73.32	-34.00	389.44

DECK STAGE CONST. LINE

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	89+32.93	-16.00	390.11
A3	89+42.93	-16.00	390.08
A4	89+52.93	-16.00	389.98
E. End of E. Appr.	89+62.93	-16.00	389.93

NORTH EDGE OF PAVEMENT

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	86+60.16	-24.00	389.79
A1	86+70.16	-24.00	389.86
A2	86+80.16	-24.00	389.97
E. End of W. Appr.	86+90.16	-24.00	390.08

APPROACH SLAB STAGE CONST. LINE

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	86+54.09	-13.50	389.98
A1	86+64.09	-13.50	390.04
A2	86+74.09	-13.50	390.14
E. End of W. Appr.	86+84.09	-13.50	390.24

NORTH EDGE OF PAVEMENT

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	89+37.55	-24.00	389.93
A3	89+47.55	-24.00	389.88
A4	89+57.55	-24.00	389.77
E. End of E. Appr.	89+67.55	-24.00	389.71

APPROACH SLAB STAGE CONST. LINE

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	89+31.48	-13.50	390.17
A3	89+41.48	-13.50	390.13
A4	89+51.48	-13.50	390.03
E. End of E. Appr.	89+61.48	-13.50	389.98

* Offsets are from P.G.L.

Note:
All deck elevations are based on field survey taken along the proposed construction joint.

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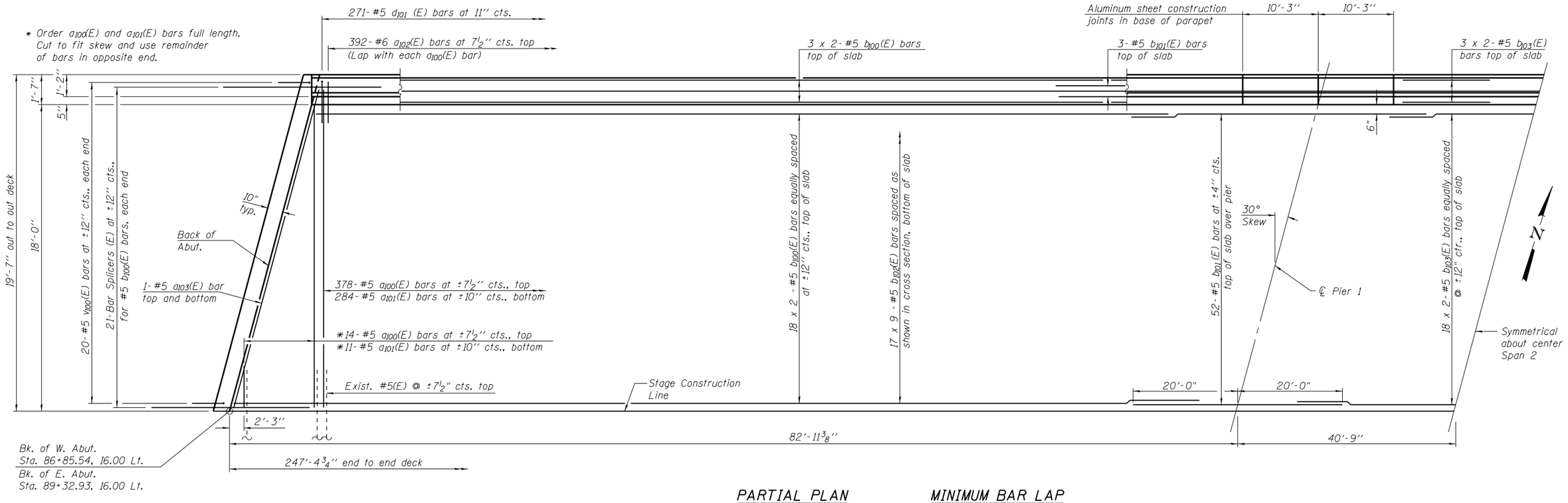
CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0061_008-Approach Slab Elev.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB ELEVATIONS
STRUCTURE NO. 039-0061
SHEET NO. 8 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	118
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



PARTIAL PLAN

MINIMUM BAR LAP

#5 BAR = 2'-7"

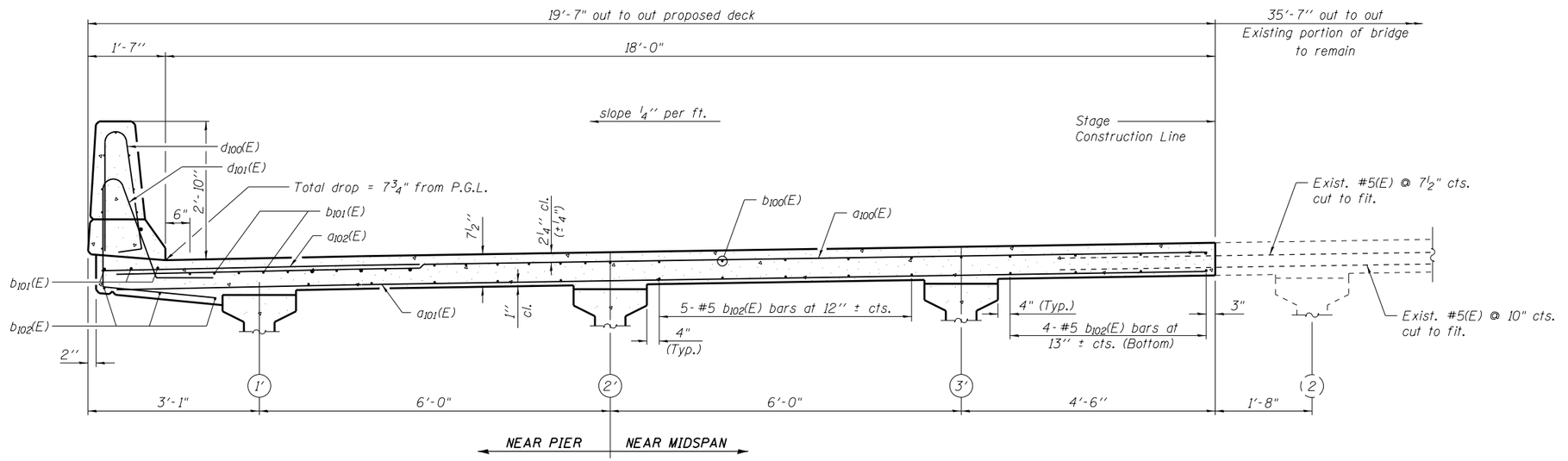
Notes:

See Sheet 10 of 29 for superstructure details and Bill of Material.

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

See Sheet 10 of 29 for parapet reinforcement.

Existing reinforcement to be cleaned and incorporated into the new construction. Cost included with concrete removal.



CROSS SECTION

(Looking East)

PII-2-L

6-8-15

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CMT

USER NAME =	DESIGNED	CJW	REVISED
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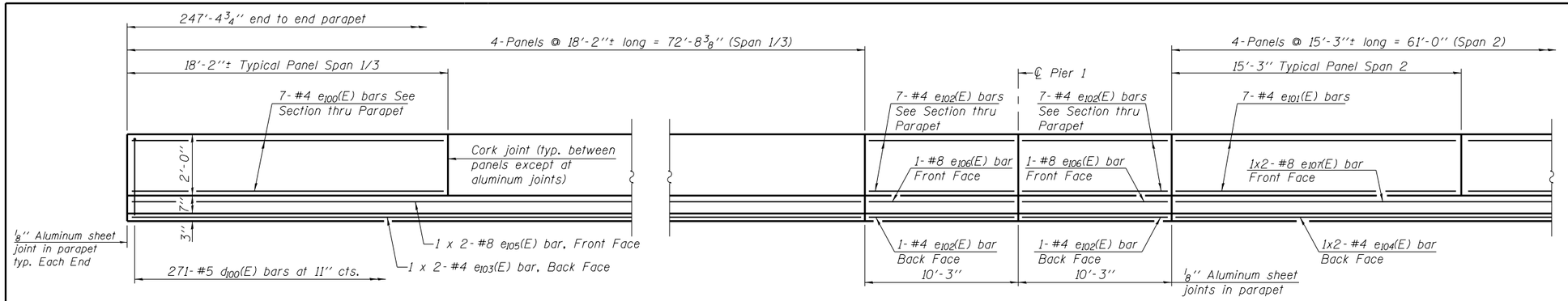
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

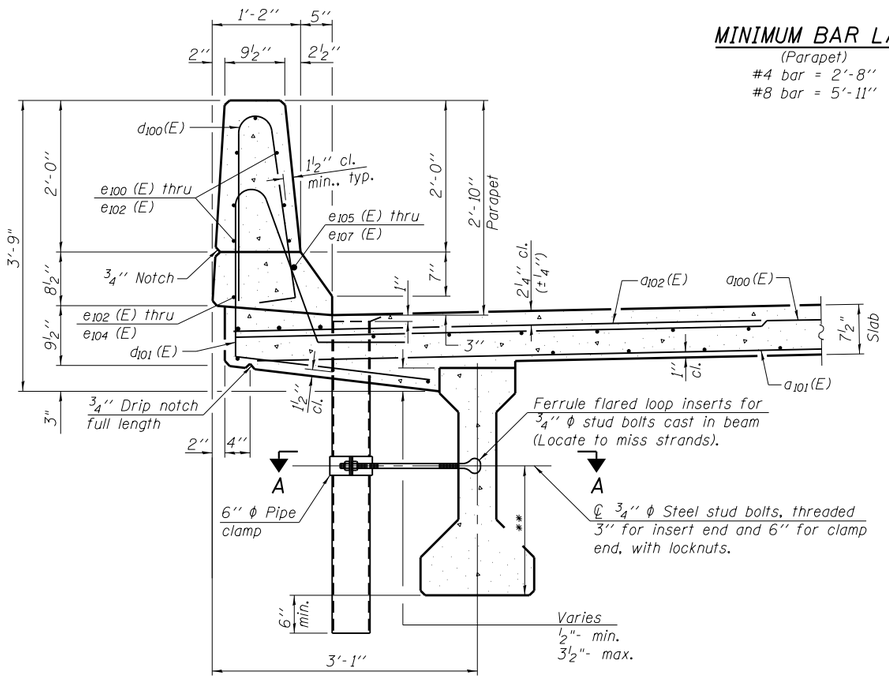
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 039-0061
SHEET NO. 9 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	119
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



INSIDE ELEVATION OF NORTH PARAPET

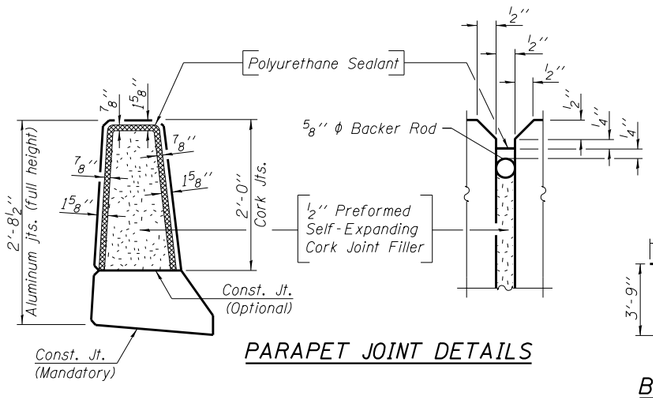


SECTION THRU PARAPET

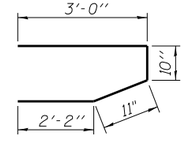
** For insert locations, see sheets 18 & 19 of 29

MINIMUM BAR LAP

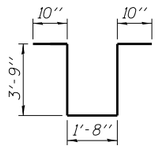
(Parapet)
#4 bar = 2'-8"
#8 bar = 5'-11"



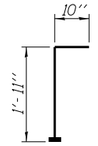
PARAPET JOINT DETAILS



BAR s110(E)

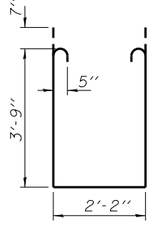


BAR s120 (E)



BAR v100(E)

(Headed)



BAR s111(E)

Notes:

Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

The exterior surfaces of the fiberglass floor drains shall be pigmented by the manufacturer with a color that matches the concrete.

The top portion of aluminum floor drains shall be coated to minimize reaction with wet concrete.

The clamping device and inserts shall be galvanized according to AASHTO M 232. Cost of clamping device included with Floor Drains.

The 1/8" Aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.

The Polyurethane Sealant shall be non-staining gray one component non-sag elastomeric gun grade meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25. Use T with a 5/8" backer rod.

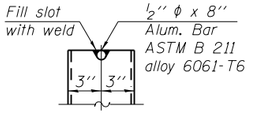
The 1/2" Preformed Self-Expanding Cork Joint Filler shall be according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

Headed bars shall conform to ASTM A970 Class HA. Cost included with Reinforcement Bars, Epoxy Coated.

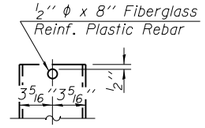
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_{100}(E)$	392	#5	19'-3"	
$a_{101}(E)$	295	#5	19'-0"	
$a_{102}(E)$	392	#6	6'-6"	
$a_{103}(E)$	4	#5	22'-3"	
$b_{100}(E)$	84	#5	34'-11"	
$b_{101}(E)$	110	#5	40'-0"	
$b_{102}(E)$	153	#5	29'-9"	
$b_{103}(E)$	42	#5	26'-0"	
$d_{100}(E)$	271	#5	5'-7"	
$d_{101}(E)$	271	#5	8'-7"	
$e_{100}(E)$	56	#4	17'-10"	
$e_{101}(E)$	28	#4	14'-11"	
$e_{102}(E)$	32	#4	9'-11"	
$e_{103}(E)$	4	#4	37'-7"	
$e_{104}(E)$	2	#4	31'-8"	
$e_{105}(E)$	4	#8	39'-2"	
$e_{106}(E)$	4	#8	9'-11"	
$e_{107}(E)$	2	#8	33'-4"	
$m_{110}(E)$	10	#6	22'-1"	
$m_{111}(E)$	8	#6	6'-0"	
$m_{112}(E)$	4	#6	3'-1"	
$m_{113}(E)$	4	#6	4'-5"	
$m_{114}(E)$	2	#6	2'-5"	
$m_{115}(E)$	12	#5	4'-0"	
$m_{116}(E)$	4	#6	3'-11"	
$m_{117}(E)$	2	#6	3'-3"	
$m_{120}(E)$	8	#6	4'-5"	
$m_{121}(E)$	16	#6	6'-0"	
$m_{122}(E)$	6	#5	4'-0"	
$m_{123}(E)$	8	#5	3'-11"	
$m_{124}(E)$	4	#5	3'-3"	
$s_{110}(E)$	34	#5	6'-11"	
$s_{111}(E)$	34	#5	10'-10"	
$s_{120}(E)$	28	#5	10'-10"	
$v_{100}(E)$	40	#5	2'-9"	
Reinforcement Bars, Epoxy Coated		Lbs.	39,050	
Concrete Superstructure		Cu. Yd.	165.4	
Concrete Removal		Cu. Yd.	82	
Bridge Deck Grooving		Sq. Yd.	468	
Protective Coat		Sq. Yd.	594	

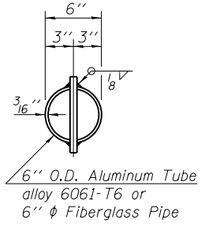
Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.



ALUMINUM TUBE

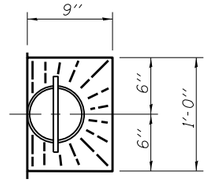


FIBERGLASS PIPE

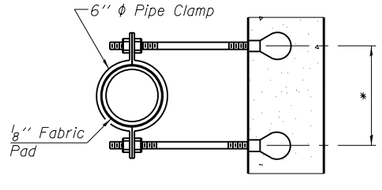


TOP PLAN

(Showing Aluminum Tube)

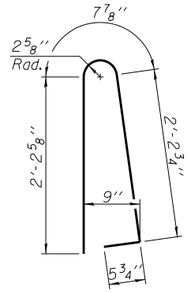


TOP PLAN

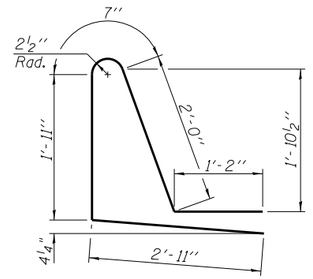


SECTION A-A

*Dimension as required by Pipe Clamp



BAR d100(E)



BAR d101(E)

SDI-I3642-2 10-7-2016

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PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 039-0061
SHEET NO. 10 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	120
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		

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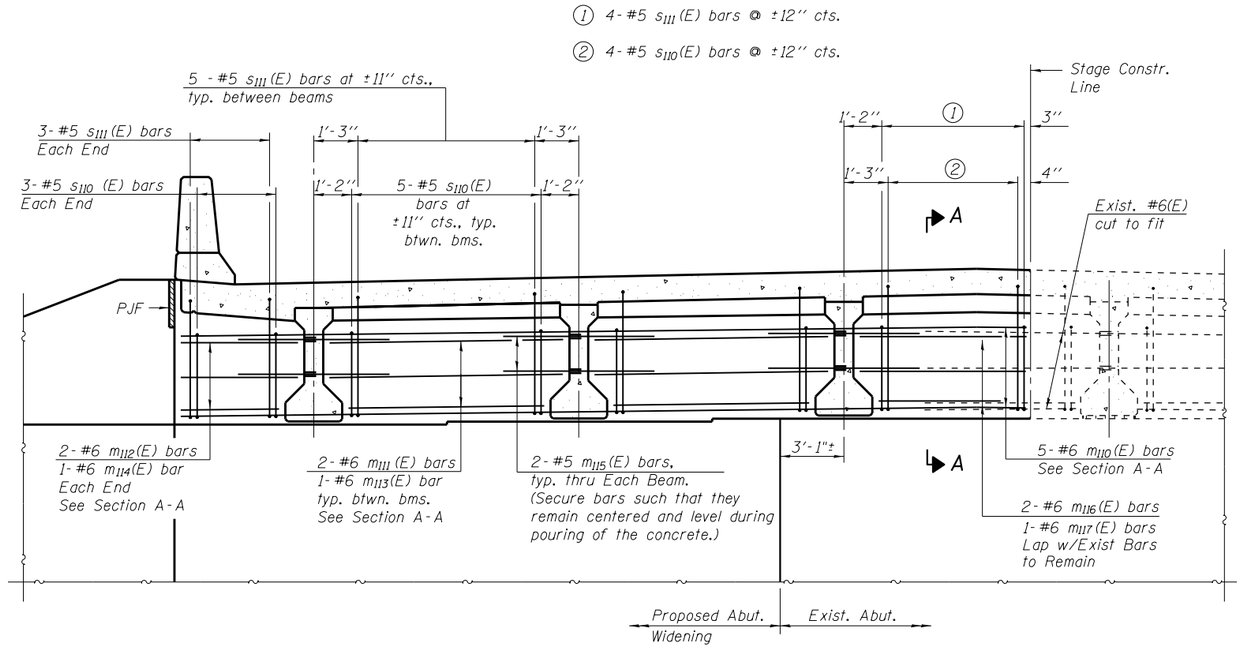
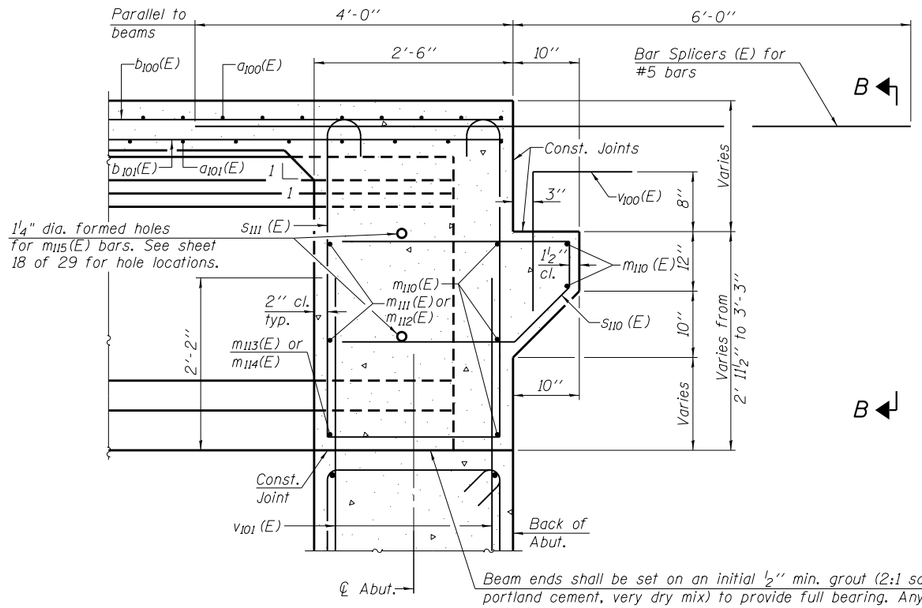


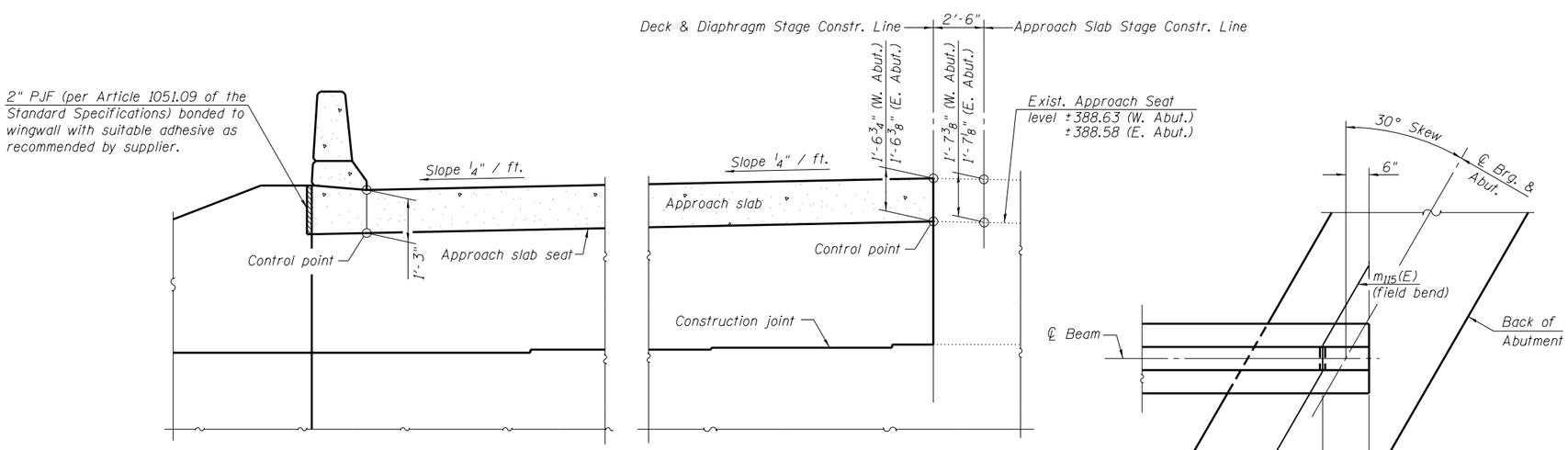
DIAPHRAGM AT ABUTMENT

East Abutment shown, West Abutment similar.

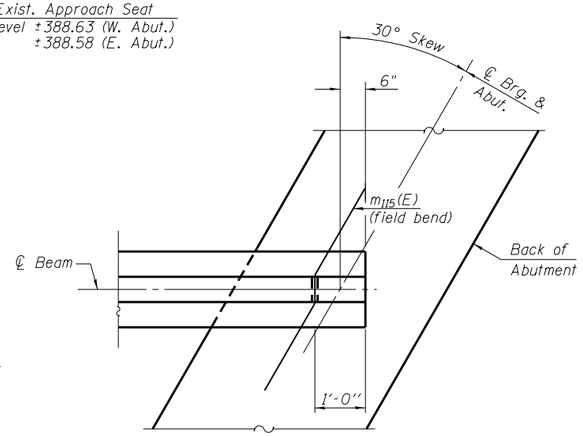


SECTION A-A

Dimensions at right angles to abutment, except as shown.



SECTION B-B



PLAN AT ABUTMENT

(Showing bottom flange of beam)

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 10 of 29.

Concrete in diaphragm is included with Concrete Superstructure on sheet 10 of 29.

For details of bars s_{110}(E), s_{111}(E) and v_{100}(E) see sheet 10 of 29.

The s_{110} (E) and s_{111}(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

The new approach slab seat shall have a constant slope determined from the control points shown.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

Existing reinforcement to be cleaned and incorporated into the new construction. Cost included with concrete removal.

All elevations are based on field survey.

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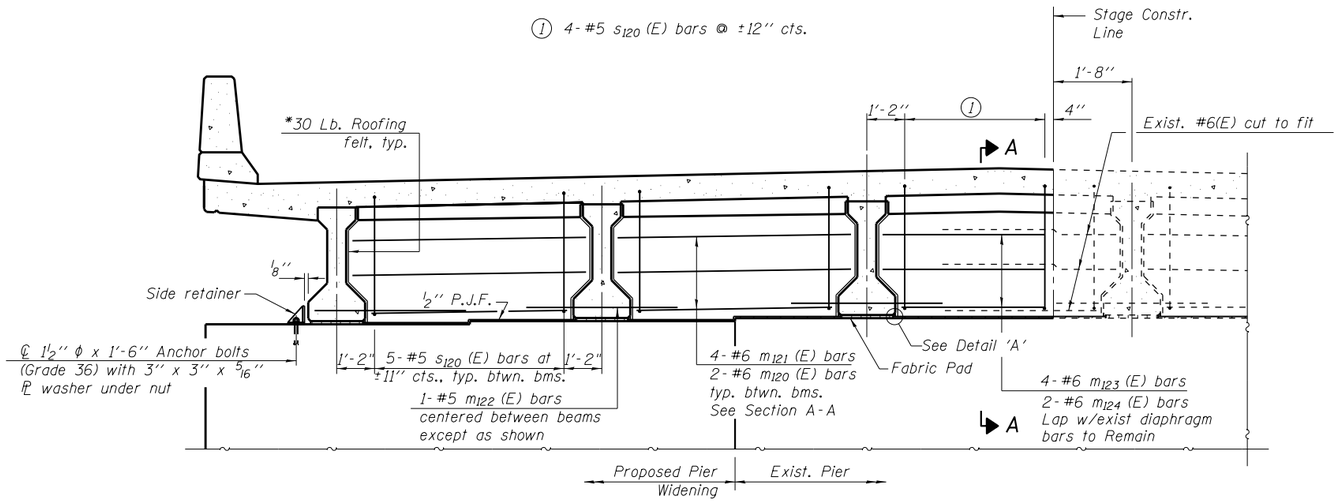
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

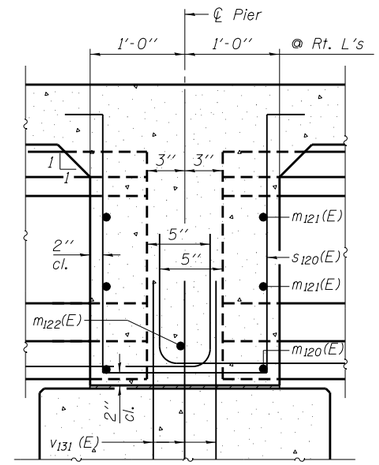
INTERGRAL ABUTMENT DIAPHRAGM DETAILS
STRUCTURE NO. 039-0061
SHEET NO. 11 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	121
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



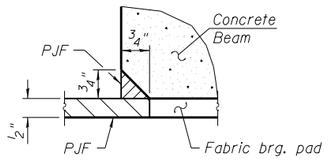
DIAPHRAGM AT PIER

*Bonded to sides of beams embedded into diaphragm.

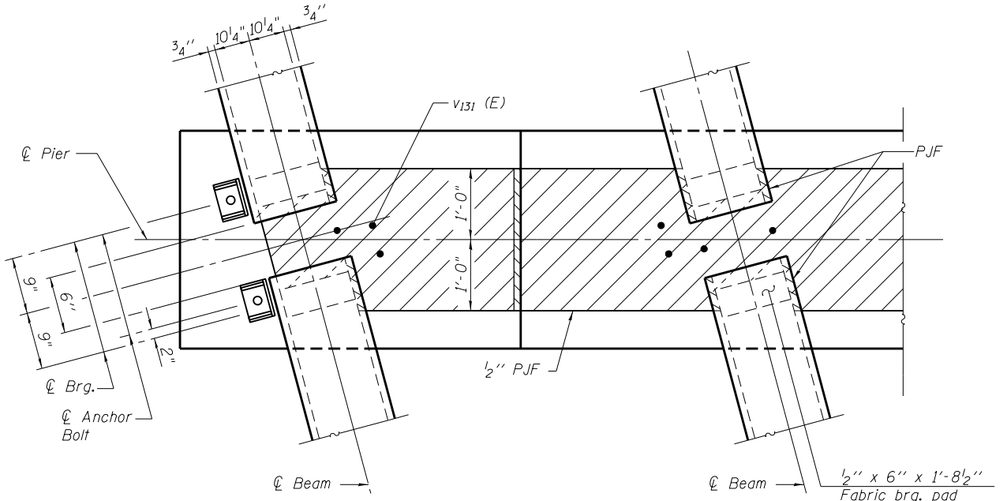


SECTION A-A

(Dimensions along ℄ of beam except as shown)

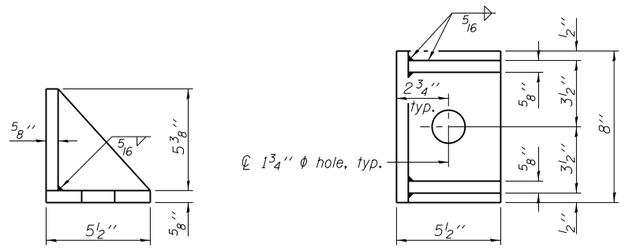


DETAIL 'A'



PLAN AT PIER

(Showing bearing pads and PJF details)



SIDE RETAINER

(2 required each side of pier).
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 10 of 29.

Concrete in diaphragm is included with Concrete Superstructure on sheet 10 of 29.

Cost of 30 Lb. roofing felt is included with Concrete Superstructure.

Cost of side retainer and anchor bolts shall be included with Concrete Structures.

For details of bar s_{120} (E) see sheet 10 of 29.

The s_{120} (E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

Anchor bolts and side retainers shall be according to Article 521.06 of the Standard Specifications. Side retainers shall be hot dip galvanized.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

Anchor bolts and side retainers shall be installed as each exterior beam is erected unless an equivalent temporary means of lateral restraint is used.

Anchor bolts and side retainers shall also be installed on the south end of the existing pier cap adjacent to the existing exterior beam.

Existing reinforcement to be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

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PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

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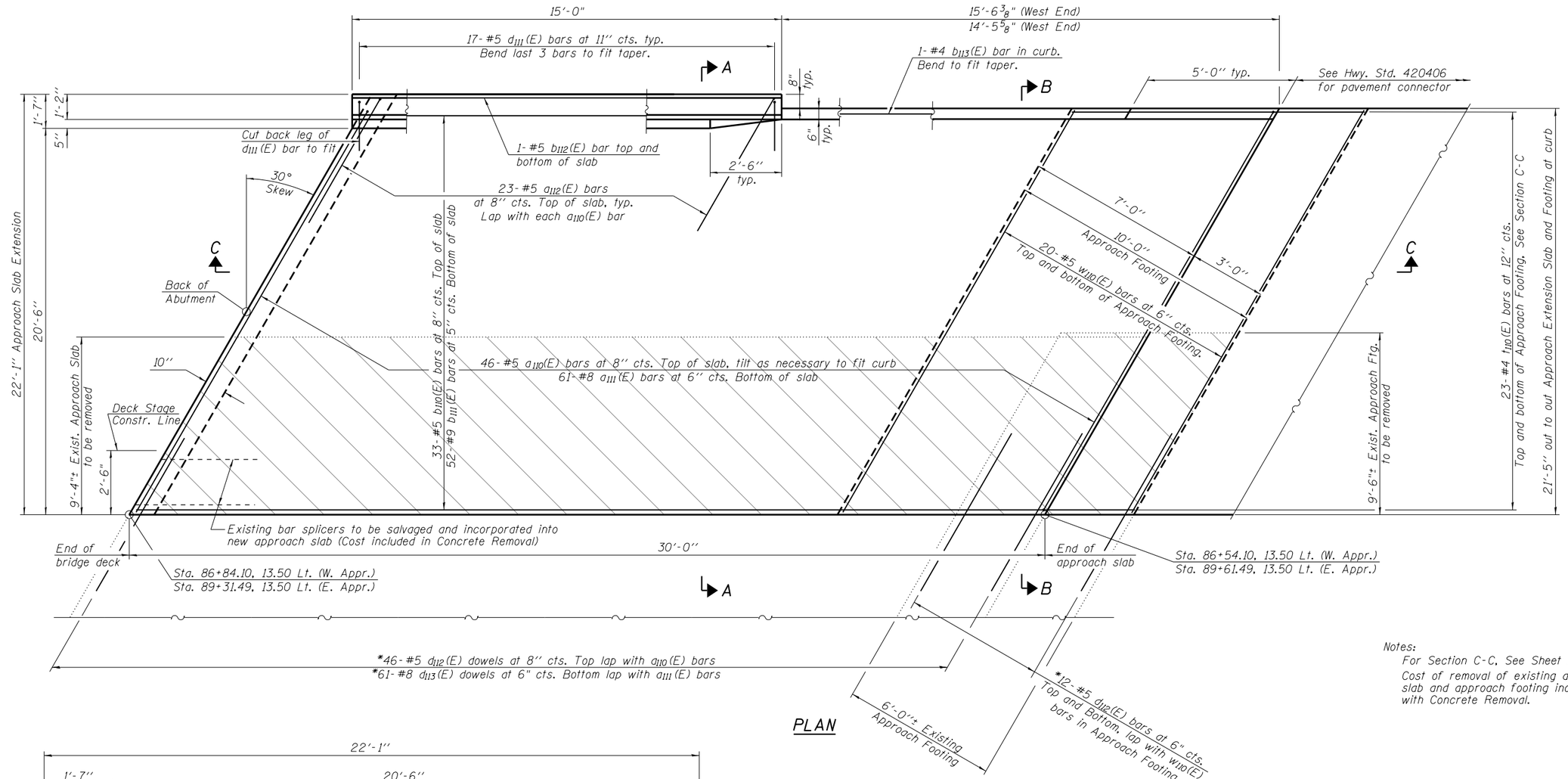
DEPARTMENT OF TRANSPORTATION

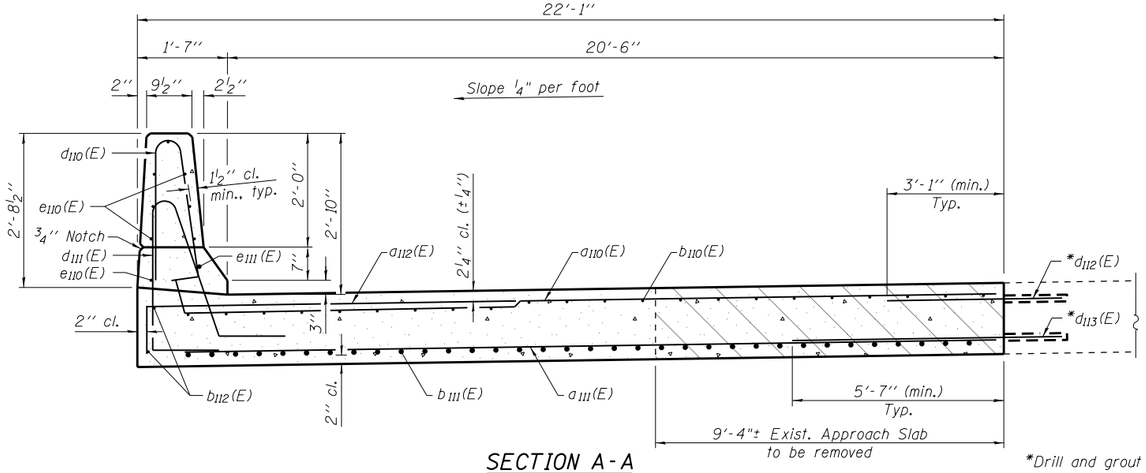
PIER DIAPHRAGM DETAILS
STRUCTURE NO. 039-0061
SHEET NO. 12 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	122
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		



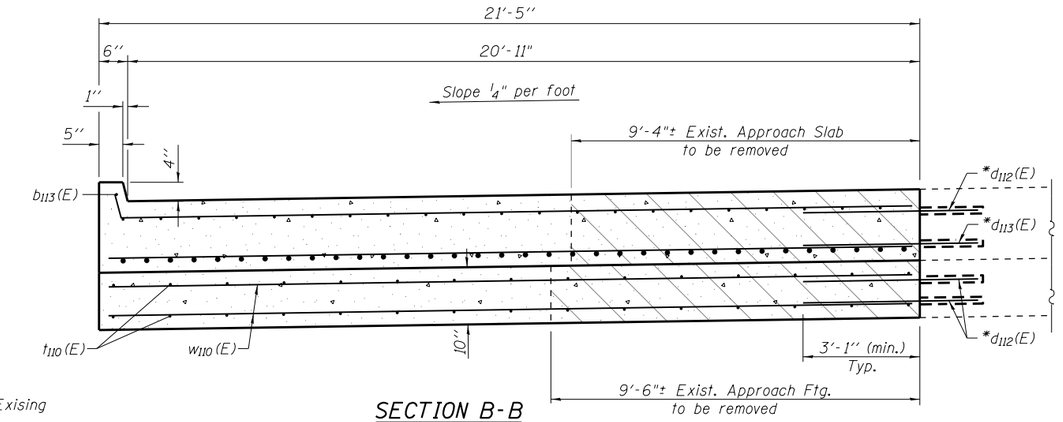
PLAN

Notes:
For Section C-C, See Sheet 14 of 29.
Cost of removal of existing approach slab and approach footing included with Concrete Removal.



SECTION A-A

*Drill and grout into Exising
Concrete Min 12"



SECTION B-B

BAIA-CIP-34FS-L(≤30°) 11-22-2016

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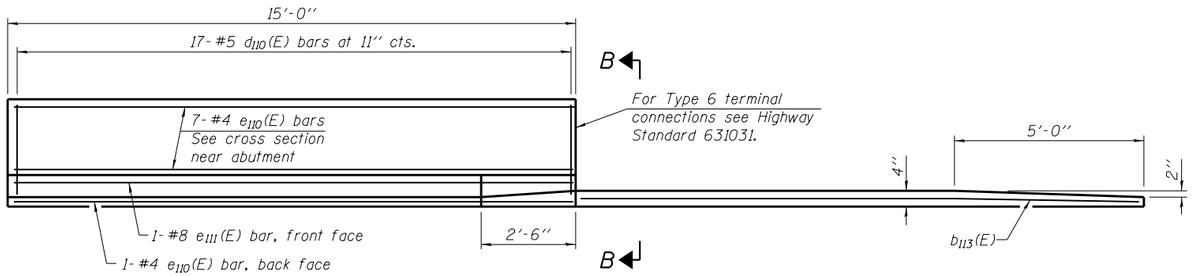
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS – 1
STRUCTURE NO. 039–0061
SHEET NO. 13 OF 29 SHEETS

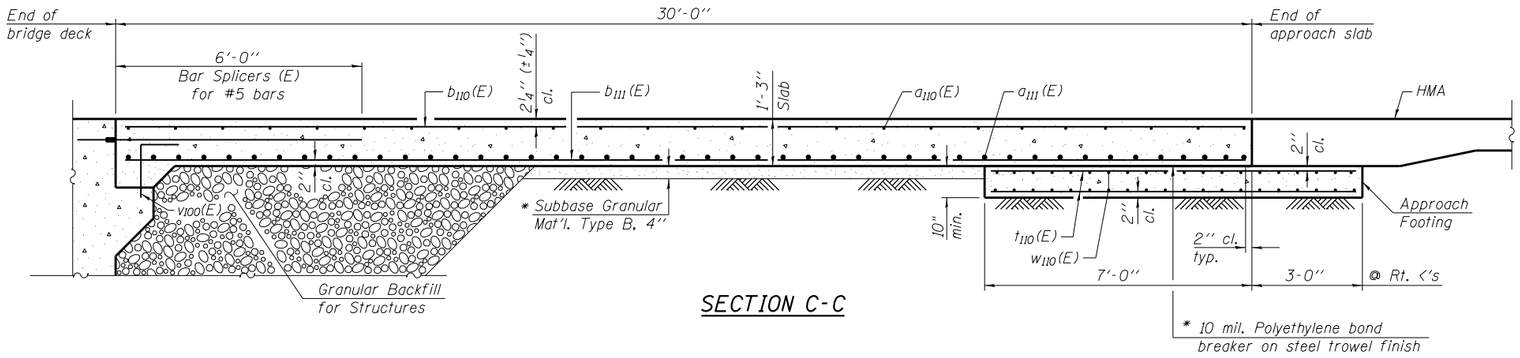
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	123
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

Notes:

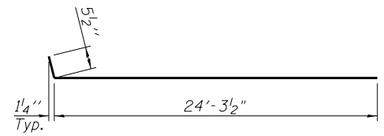
Parapet concrete shall be paid for as Concrete Superstructure.
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
Approach footing concrete shall be paid for as Concrete Structures.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 29.
Dowels shall be installed per Article 584 of Standard Specifications. The embedment depth shall be per manufacturer recommendation for developing full tensile strength of dowel in 3500 psi concrete.



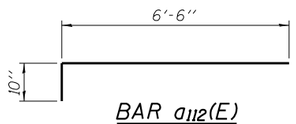
INSIDE ELEVATION OF PARAPET AND CURB



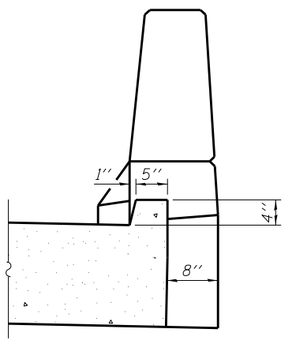
SECTION C-C



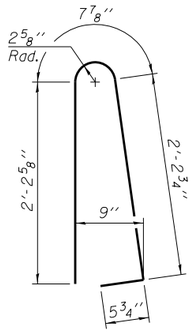
BAR $a_{110}(E)$



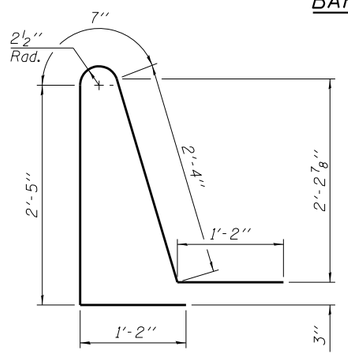
BAR $a_{112}(E)$



VIEW B-B



BAR $d_{110}(E)$



BAR $d_{111}(E)$

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_{110}(E)$	92	#5	24'-9"	
$a_{111}(E)$	122	#8	24'-4"	
$a_{112}(E)$	46	#5	7'-4"	
$b_{110}(E)$	66	#5	29'-8"	
$b_{111}(E)$	104	#9	29'-8"	
$b_{112}(E)$	10	#5	14'-8"	
$b_{113}(E)$	2	#5	15'-2"	
$d_{110}(E)$	34	#5	5'-7"	
$d_{111}(E)$	34	#5	7'-8"	
$d_{112}(E)$	140	#5	4'-1"	
$d_{113}(E)$	122	#8	6'-8"	
$d_{114}(E)$	32	#5	2'-0"	
$e_{110}(E)$	16	#4	14'-8"	
$e_{111}(E)$	2	#8	14'-8"	
$t_{110}(E)$	92	#4	11'-2"	
$w_{110}(E)$	80	#5	24'-4"	
Concrete Superstructure		Cu. Yd.	3.3	
Concrete Superstructure (Approach Slab)		Cu. Yd.	76.1	
Concrete Structures		Cu. Yd.	15.3	
Reinforcement Bars, Epoxy Coated		Pound	29,630	
Drill and Grout Bars		Each	294	
Concrete Removal		Cu. Yd.	30	
Bridge Deck Grooving		Sq. Yd.	131	
Protective Coat		Sq. Yd.	152	

BAIA-CIP-34FS-L(≤30°) 11-22-2016

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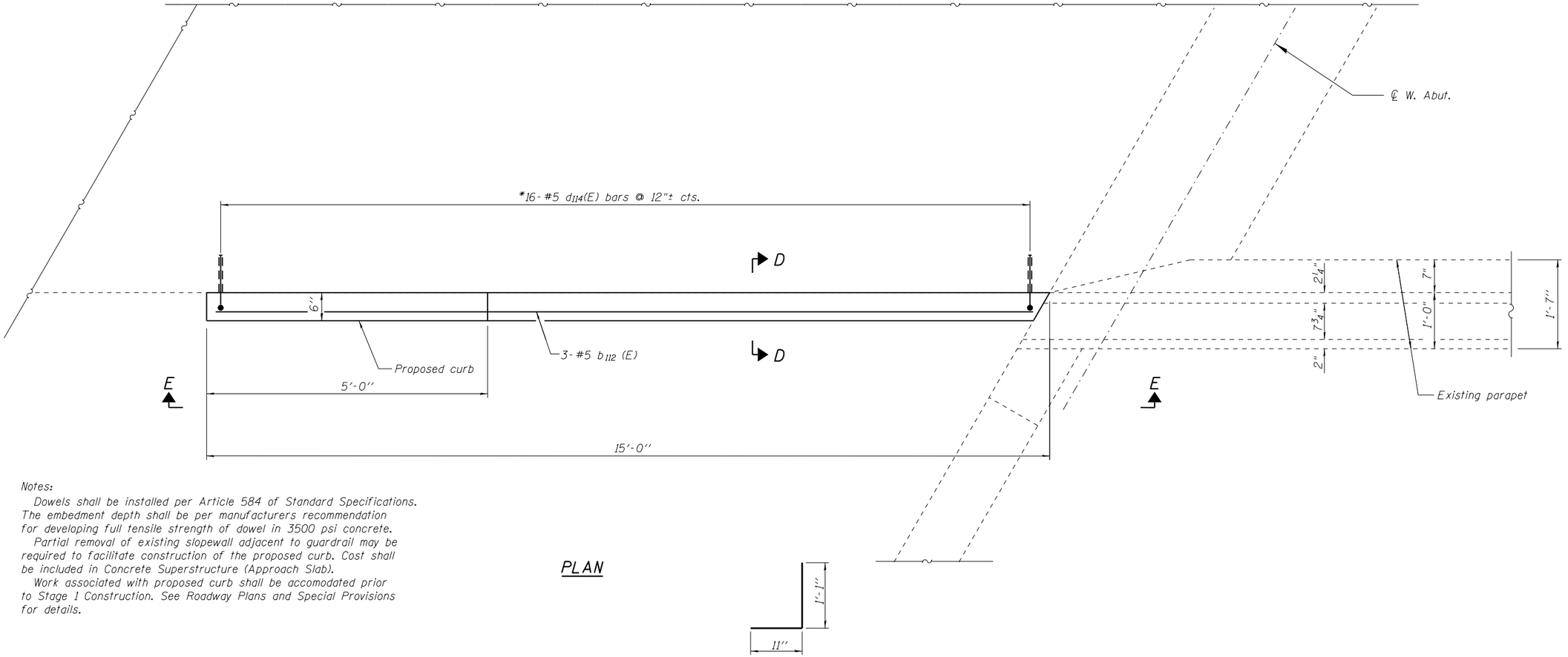
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS – 2
STRUCTURE NO. 039–0061
SHEET NO. 14 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	124
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



Notes:

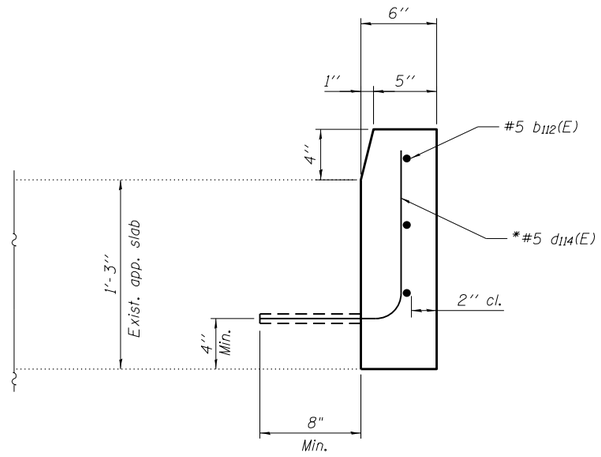
Dowels shall be installed per Article 584 of Standard Specifications. The embedment depth shall be per manufacturers recommendation for developing full tensile strength of dowel in 3500 psi concrete.

Partial removal of existing slopewall adjacent to guardrail may be required to facilitate construction of the proposed curb. Cost shall be included in Concrete Superstructure (Approach Slab).

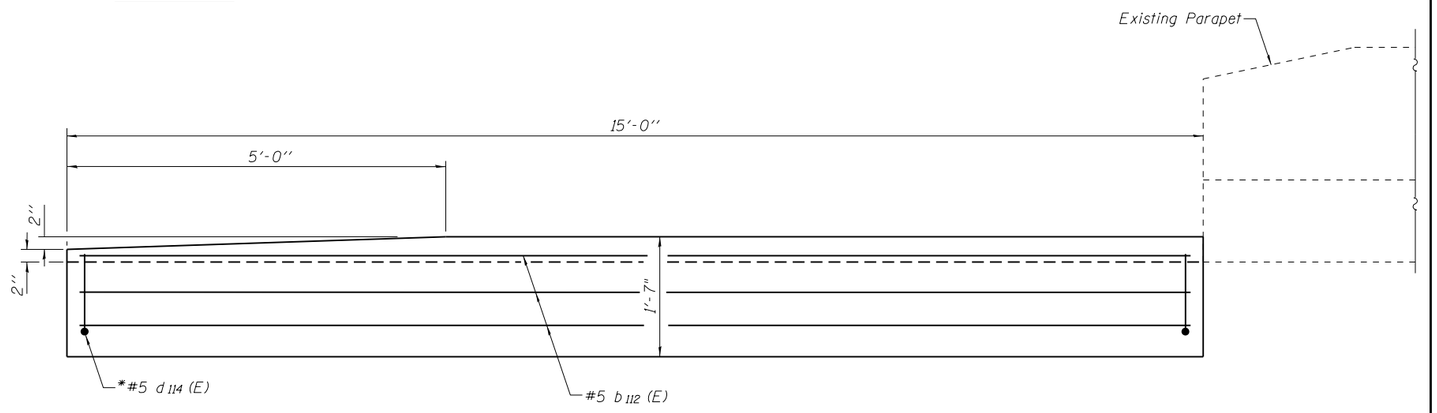
Work associated with proposed curb shall be accomodated prior to Stage 1 Construction. See Roadway Plans and Special Provisions for details.

PLAN

BAR d114(E)



SECTION D-D



*Drill and grout into Exising Concrete Min 8"

VIEW E-E

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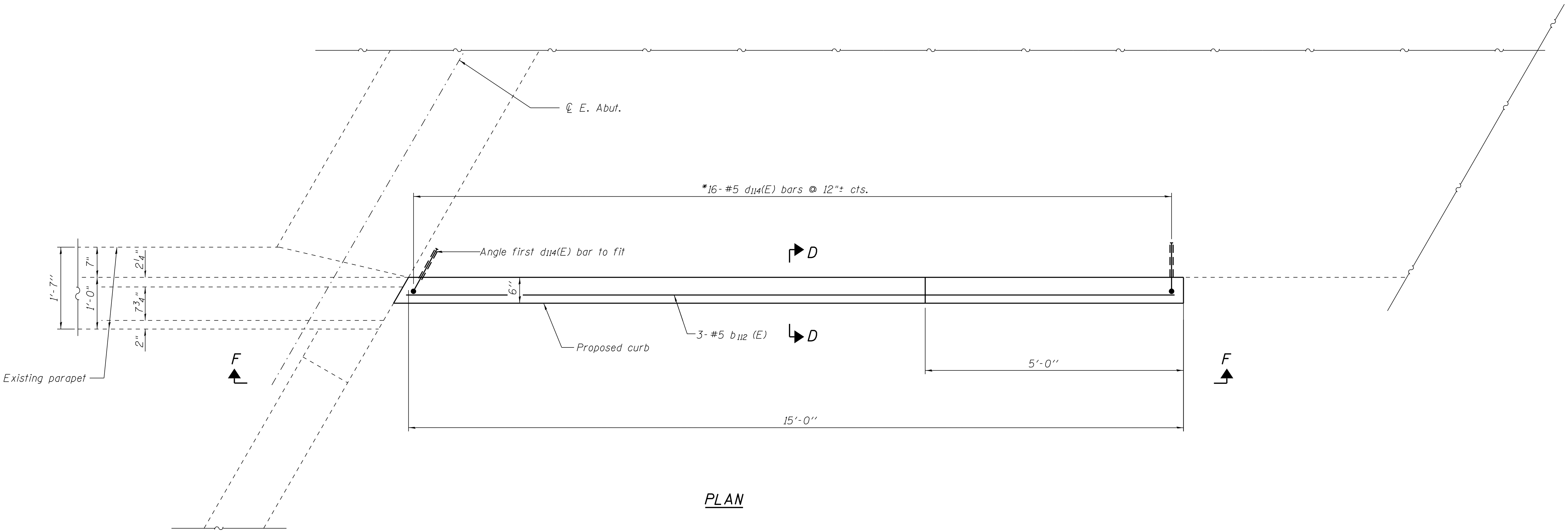
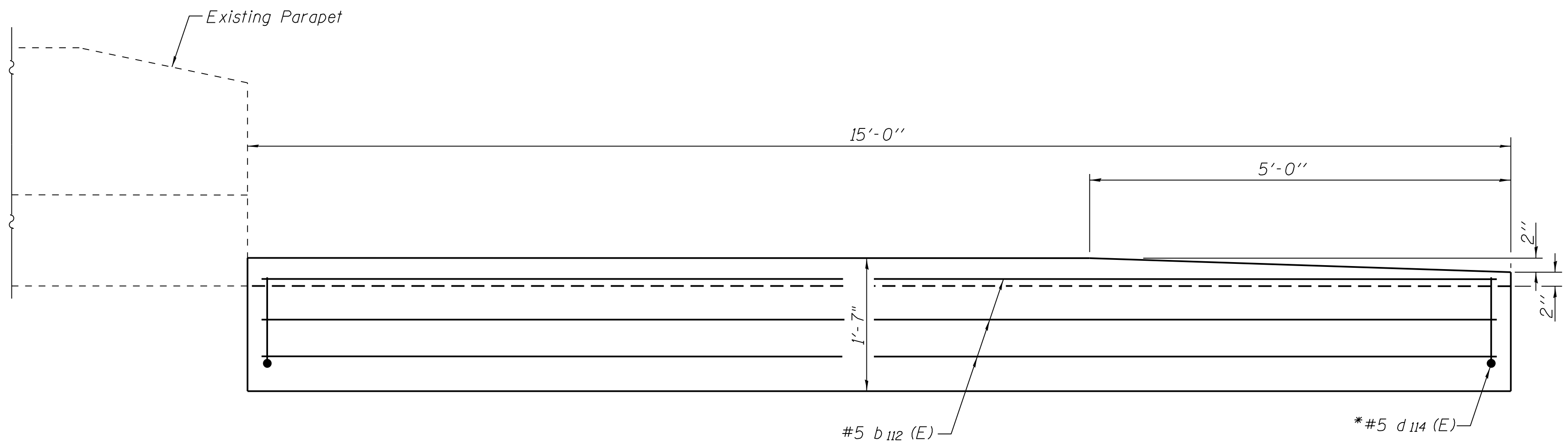
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB MODIFICATIONS DETAILS – 1
STRUCTURE NO. 039–0061
SHEET NO. 15 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	125
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



PLAN



VIEW F-F

*Drill and grout into Exising
Concrete Min 8

Notes:
Dowels shall be installed per Article 584 of Standard Specifications. The embedment depth shall be per manufacturers recommendation for developing full tensile strength of dowel in 3500 psi concrete.
For Section D-D, see sheet 15 of 29.
Partial removal of existing slopewall adjacent to guardrail may be required to facilitate construction of the proposed curb. Cost shall be included in Concrete Superstructure (Approach Slab).
Work associated with proposed curb shall be accomodated prior to Stage 1 Construction. See Roadway Plans and Special Provisions for details.

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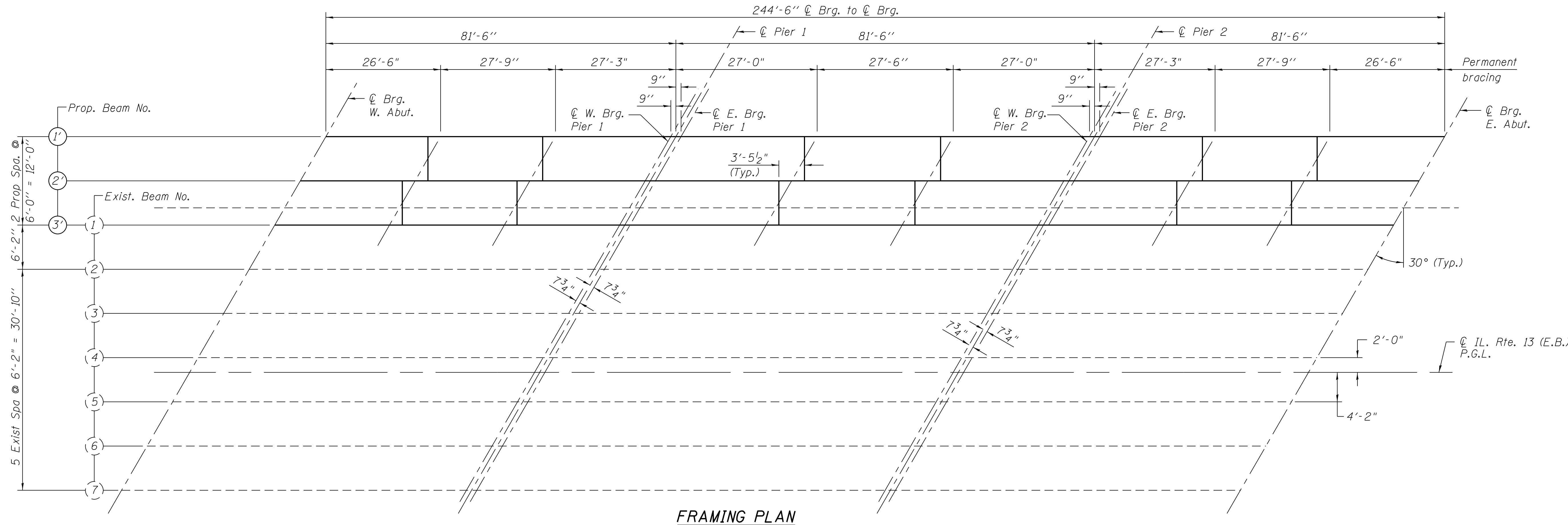
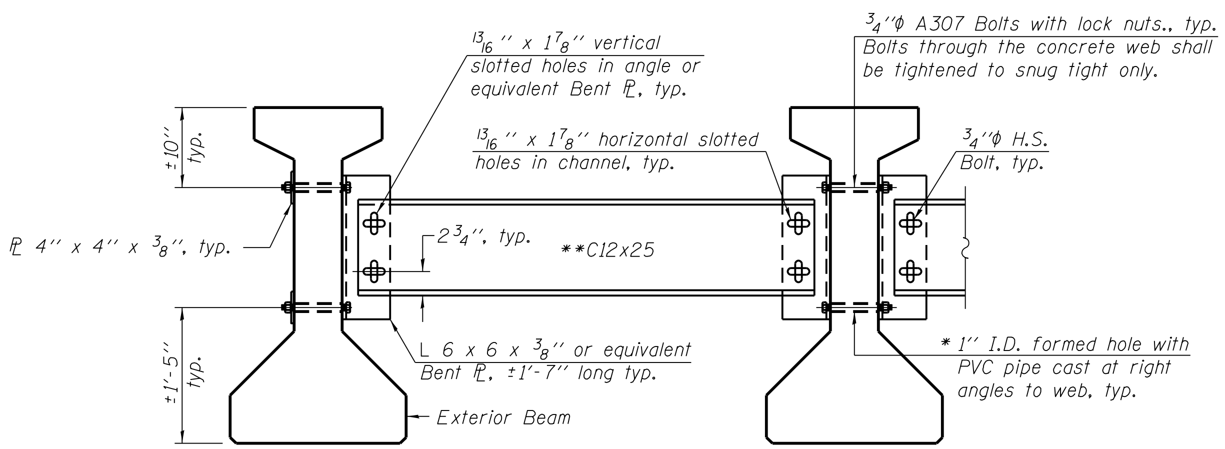
APPROACH SLAB MODIFICATIONS DETAILS – 2
STRUCTURE NO. 039–0061
SHEET NO. 16 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	126
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		



FRAMING PLAN



Notes:

All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.

Two hardened washers are required for each set of oversized holes.

All holes shall be 15/16"φ unless otherwise noted.

5/16" x 3" x 3" plate washers are required over all slotted holes.

All bolts shall be galvanized according to AASHTO M232.

Bracing shall be installed as beams are erected and tightened as soon as possible during erection.

Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete I-Beams.

* Fabricator shall locate to miss strands within permissible tolerances.

** Alternate C12x30 channels are permitted to facilitate material acquisition.

PERMANENT BRACING DETAILS FOR 42" PPC I-BEAMS

INTERIOR BEAM MOMENT TABLE

		0.4 Sp. 1 0.6 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I	(in^4)	90,956		90,956
I'	(in^4)	266,676	266,676	266,676
S_b	(in^3)	5,152.7		5,152.7
S_b'	(in^3)	8,613.6	8,613.6	8,613.6
S_t	(in^3)	3,735.6		3,735.6
S_t'	(in^3)	14,384	14,384	14,384
ℚ	(k/')	1.06	1.06	1.06
Mℚ	('k)	840		860
sℚ	(k/')	0.24	0.24	0.24
M_sℚ	('k)	130	155	41
LLDF		0.553	0.553	0.553
M℄	('k)	518	402	429
M_I	('k)	126	98	105

INTERIOR BEAM REACTION TABLE

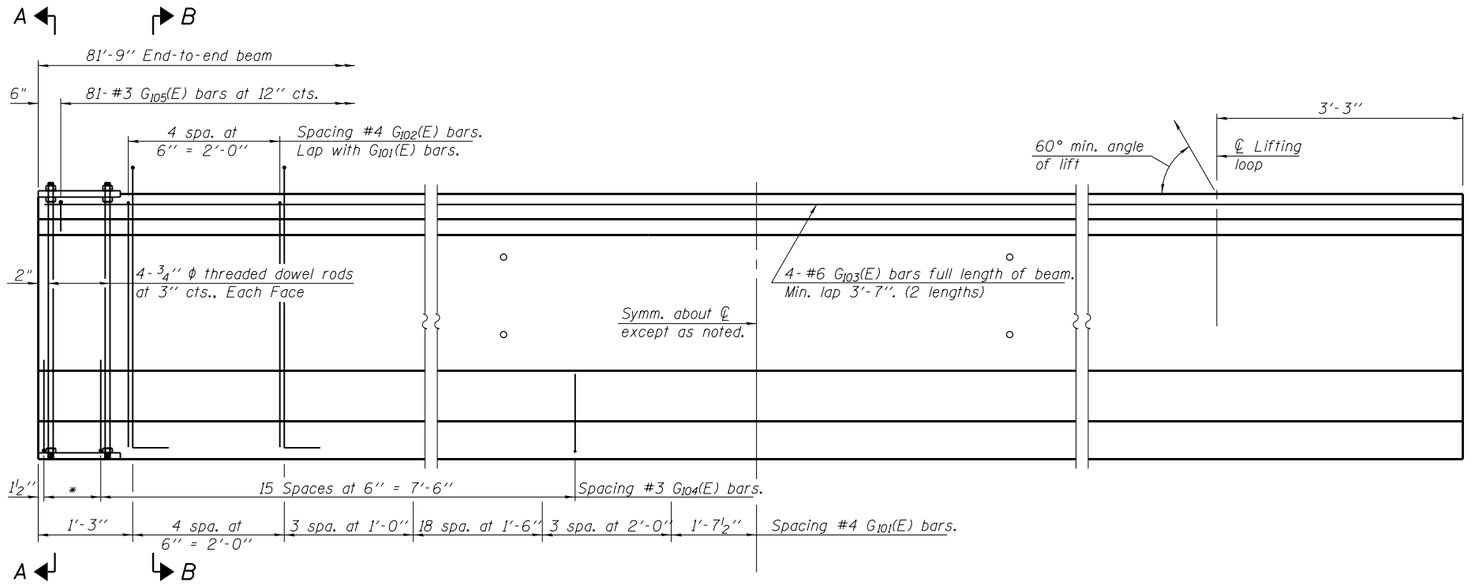
	Abut.	Pier 1 Span 1 Pier 2 Span 3	Pier 1 Span 2 Pier 2 Span 2
LLDF	0.680	0.553	0.553
Rℚ	43.3	43.3	43.0
*** R_sℚ	8.0	11.0	11.0
*** R℄	41.9	24.5	24.5
*** R_I	10.2	6.0	6.0
R_{Total}	103.4	84.7	84.5

*** At continuous piers, reactions from composite loads are assumed to be equally distributed to each bearing line.

I: Non-composite moment of inertia of beam section ($in.^4$).
I': Composite moment of inertia of beam section ($in.^4$).
S_b: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_b': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_t: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).
S_t': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).
ℚ: Un-factored non-composite dead load (kips/ft.).
Mℚ: Un-factored moment due to non-composite dead load (kip-ft.).
sℚ: Un-factored long-term composite (superimposed) dead load (kips/ft.).
M_sℚ: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
M_s℄: Un-factored live load moment on the composite section (kip-ft.).
M_I: Un-factored moment due to impact on the composite section (kip-ft.).

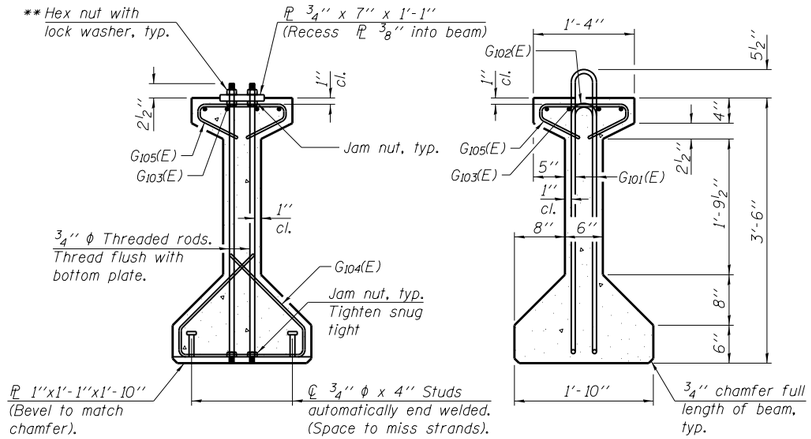
L:\IDOT\0806610\W0.31\Draw\CADD_Sheets\Final Plans\Str No 039-0061\..

CMT	USER NAME =	DESIGNED DRC	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FRAMING PLAN AND DETAILS STRUCTURE NO. 039-0061	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	...\98850-0061_017-Framing Plan and Dtls.dgn	CHECKED LM	REVISED			331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	127
	PLOT SCALE =	DRAWN GLD	REVISED			CONTRACT NO. 78295				
	PLOT DATE =	CHECKED WLB	REVISED		SHEET NO. 17 OF 29 SHEETS	ILLINOIS FED. AID PROJECT				



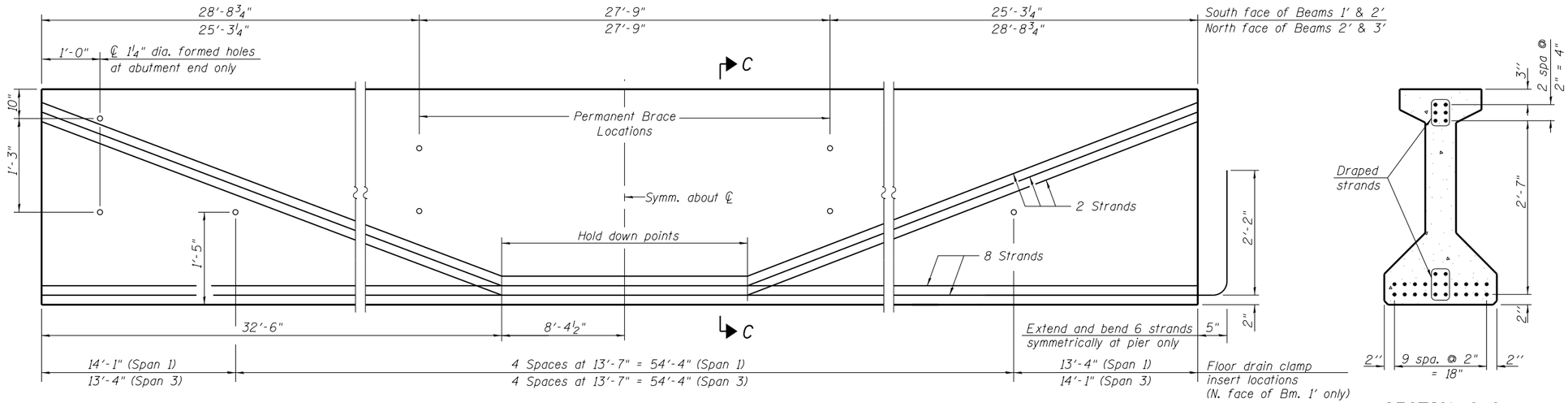
* 3 spaces at 3" = 9"

ELEVATION OF BEAM
(Showing reinforcement & dimensions)



SECTION A-A
**Only tighten sufficiently to compress lock washers

SECTION B-B



ELEVATION OF BEAM
(Showing prestressing steel)
Looking South, except as noted)

SECTION C-C
(22-1/2" ϕ 270 ksi strands)

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
$G_{101}(E)$	59	#4	8'-7"	⊓L
$G_{102}(E)$	10	#4	6'-8"	⊓
$G_{103}(E)$	8	#6	42'-6"	——
$G_{104}(E)$	19	#3	4'-11"	⊂⊃
$G_{105}(E)$	81	#3	2'-6"	⊂⊃

Notes:
See sheet 20 of 29 for additional details and Bill of Material.
See sheet 17 of 29 for permanent bracing details.

PI-4-42 10-7-16

CMT

USER NAME =	DESIGNED	DRC	REVISED
...\98850-0061_018-42 PPC I Beam Sp 1 and 3.dgn	CHECKED	LM	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

42" PPC I-BEAM SPAN 1 & 3
STRUCTURE NO. 039-0061
SHEET NO. 18 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	128
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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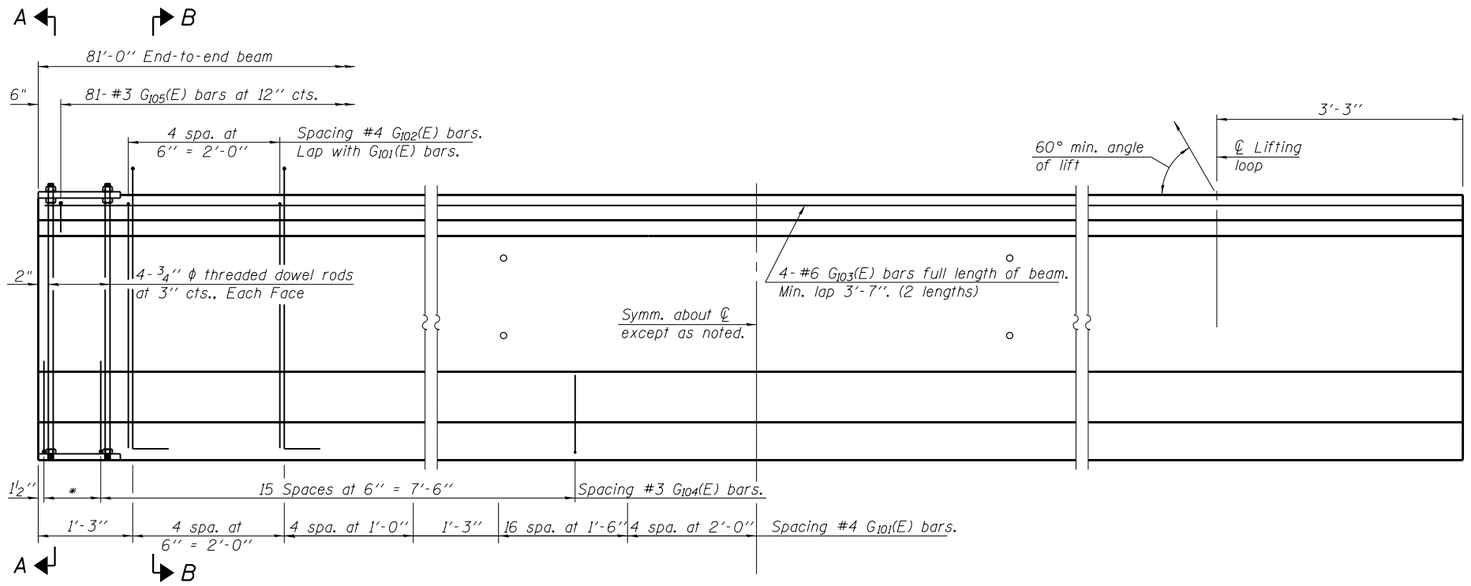
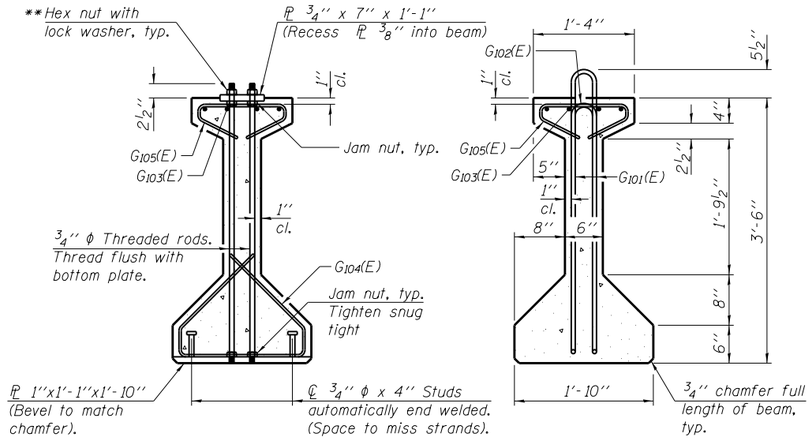


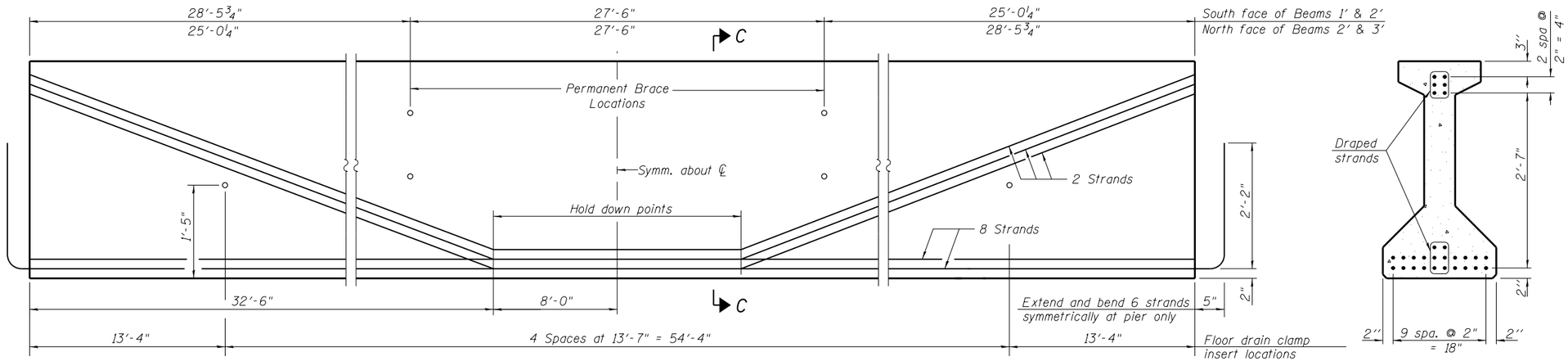
* 3 spaces at 3" = 9"

ELEVATION OF BEAM
(Showing reinforcement & dimensions)



SECTION A-A
**Only tighten sufficiently to compress lock washers

SECTION B-B



ELEVATION OF BEAM
(Showing prestressing steel)
Looking South, except as noted)

SECTION C-C
(22-½" ϕ 270 ksi strands)

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
G101(E)	59	#4	8'-7"	
G102(E)	10	#4	6'-8"	
G103(E)	8	#6	42'-6"	
G104(E)	19	#3	4'-11"	
G105(E)	81	#3	2'-6"	

Notes:
See sheet 20 of 29 for additional details and Bill of Material.
See sheet 17 of 29 for permanent bracing details.

PI-4-42 10-7-16

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CMT

USER NAME =	DESIGNED	DRC	REVISED
...\98850-0061_019-42 PPC I Beam Sp 2.dgn	CHECKED	LM	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

42" PPC I-BEAM SPAN 2
STRUCTURE NO. 039-0061
SHEET NO. 19 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	129
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

NOTES

Inserts for $\frac{3}{4}$'' ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be $\frac{1}{2}$'' and the nominal cross-sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 6000 psi and a release concrete compressive strength, f'ci, of 5000 psi.

A minimum 2$\frac{1}{2}$'' ϕ lifting pin shall be used to engage the lifting loops during handling.

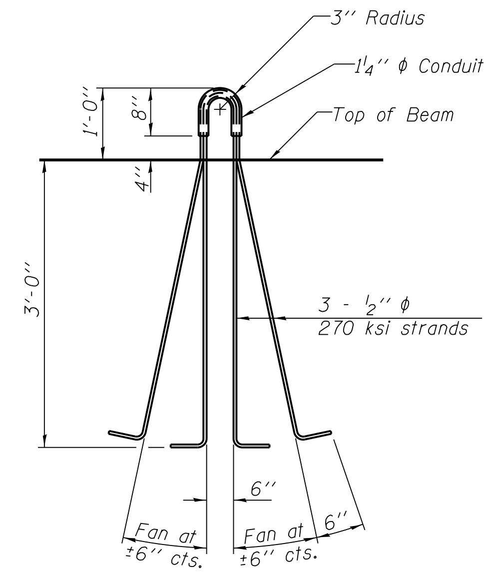
The top and bottom plates shall be AASHTO M270 Grade 50.

The top and bottom plates shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

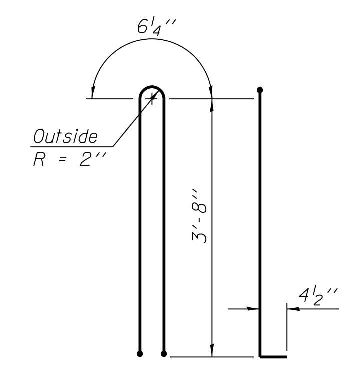
Threaded rods shall be ASTM F 1554 Grade 55.

Beams shall not be released from the fabricator until they have attained 45 days of age or older.

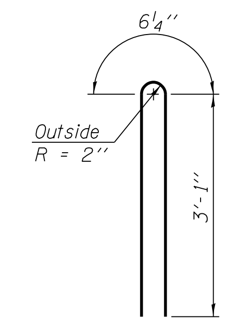
Bend the extended strands inward on the fascia beams to maintain 1$\frac{1}{2}$" clearance inside the pier diaphragm.



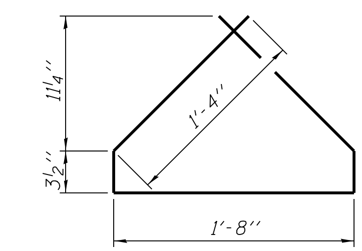
LIFTING LOOP DETAIL



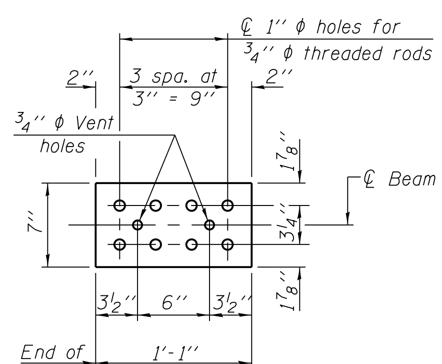
BAR G101(E)



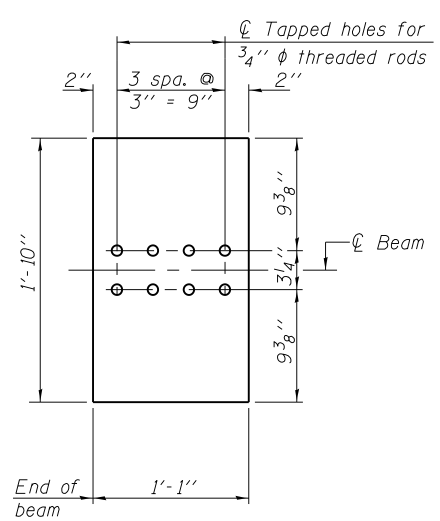
BAR G102(E)



BAR G104(E)

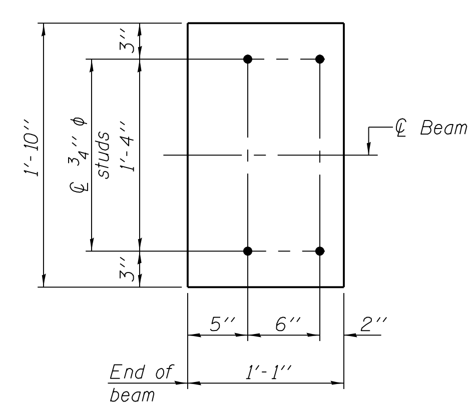


TOP PLATE



BOTTOM PLATE

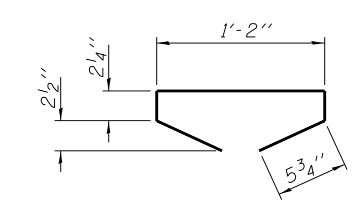
(Showing threaded rods)



BOTTOM PLATE

(Showing studs)

See bearing details for pintle hole locations when required.



BAR G105(E)

BILL OF MATERIAL

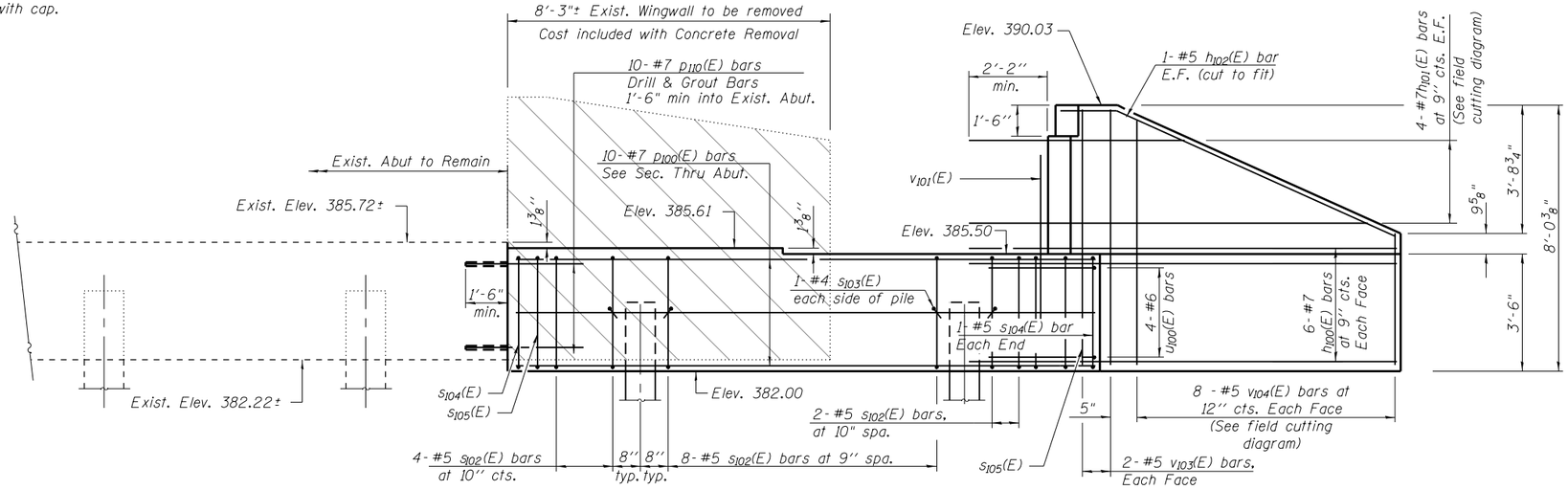
Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 42''	Ft.	734

PI-4-42D   11-22-16

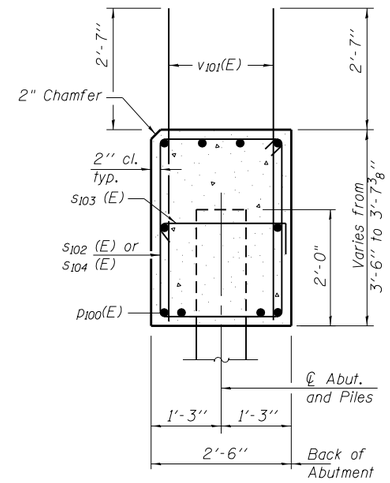
CMT	USER NAME =	DESIGNED CJW	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	42" PPC I-BEAM DETAILS STRUCTURE NO. 039-0061
	...\98850-0061.020-42 PPC I Beam Dtls.dgn	CHECKED WLB	REVISED		
	PLOT SCALE =	DRAWN GLD	REVISED		
	PLOT DATE =	CHECKED WLB	REVISED		SHEET NO. 20 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	130
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		

Notes:
Pour steps monolithically with cap.

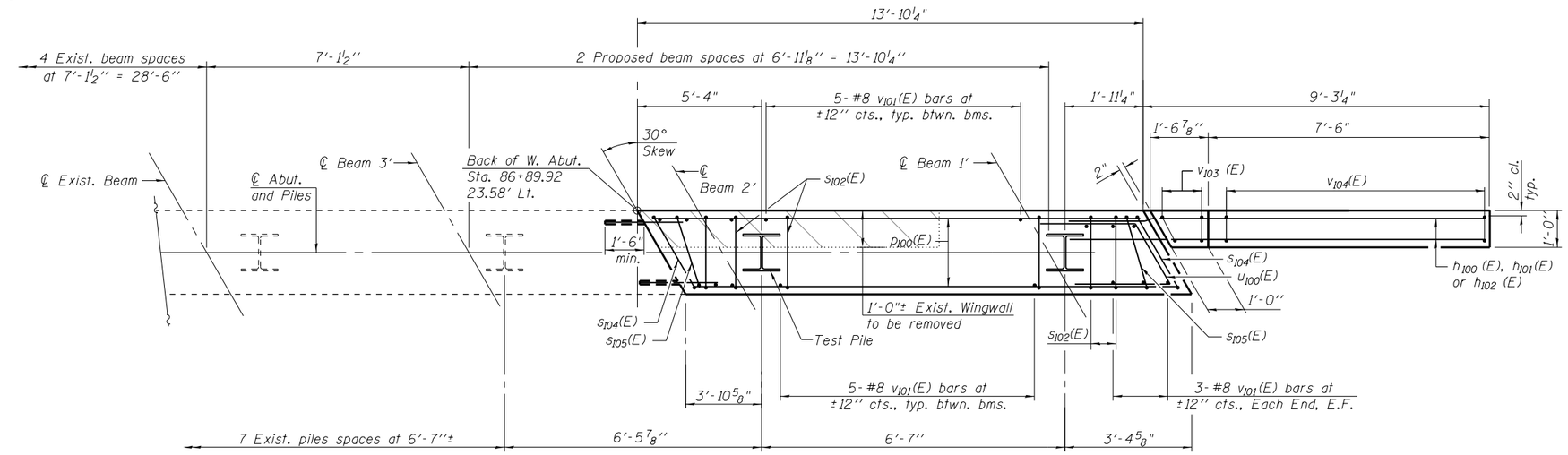


ELEVATION



SEC. THRU ABUT.

Dimensions at right angles to abutment.



PLAN

BILL OF MATERIAL

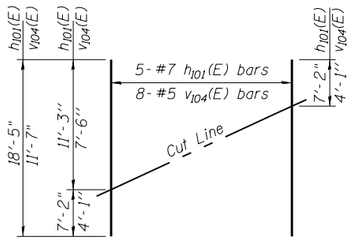
Bar	No.	Size	Length	Shape
$h_{100}(E)$	12	#7	11'-3"	
$h_{101}(E)$	5	#7	18'-5"	
$h_{102}(E)$	2	#5	9'-6"	
$p_{100}(E)$	10	#7	13'-6"	
$p_{110}(E)$	10	#7	4'-8"	
$s_{102}(E)$	15	#5	11'-7"	
$s_{103}(E)$	4	#5	3'-2"	
$s_{104}(E)$	2	#5	12'-3"	
$s_{105}(E)$	2	#5	11'-11"	
$u_{100}(E)$	4	#6	10'-2"	
$v_{101}(E)$	22	#8	5'-11"	
$v_{103}(E)$	4	#5	8'-6"	
$v_{104}(E)$	8	#5	11'-7"	

Structure Excavation	Cu. Yd.	56
Concrete Removal	Cu. Yd.	2
Concrete Structures	Cu. Yd.	6.7
Reinforcement Bars, Epoxy Coated	Pound	1640
Furnishing Steel Piles HP 12x74	Foot	68
Driving Piles	Foot	68
Test Pile Steel HP 12x74	Each	1
Drill and Grout Bars	Each	10
Protective Coat	Sq. Yd.	7

For details of piles see sheet 26 of 29.

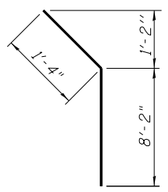
PILE DATA

Type: HP 12x74
Nominal Required Bearing: 589 kips
Allowable Resistance Available: 196 kips
Est. Length: 68'-0"
No. Production Piles: 1
No. Test Piles: 1

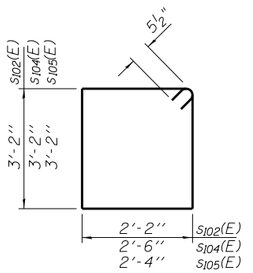


FIELD CUTTING DIAGRAM

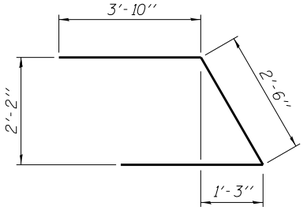
Order $h_{101}(E)$ and $v_{104}(E)$ full length. Cut as shown and use remainder of bars in opposite face.



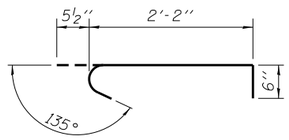
BAR $h_{102}(E)$



BAR $s_{102}(E)$, $s_{104}(E)$ & $s_{105}(E)$



BAR $u_{100}(E)$



BAR $s_{103}(E)$

USER NAME =	DESIGNED	DRC	REVISED
...\98850-0061_021-West Abutment.dgn	CHECKED	LM	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT
STRUCTURE NO. 039-0061
SHEET NO. 21 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	131
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		

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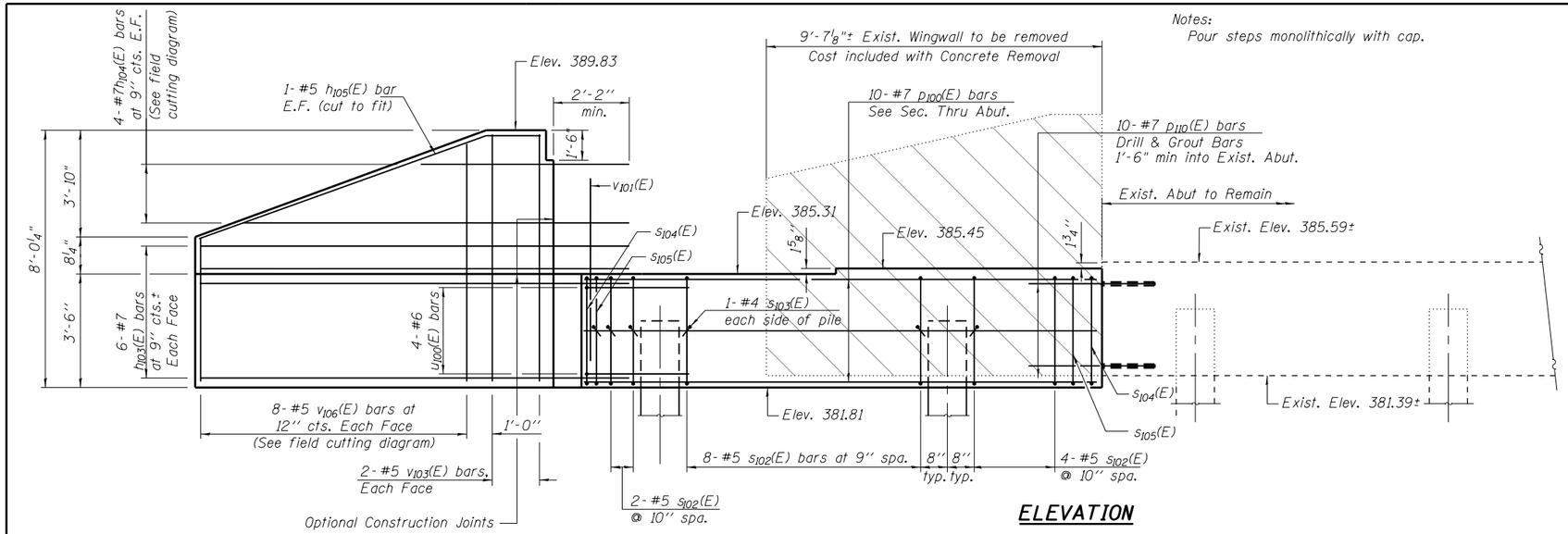
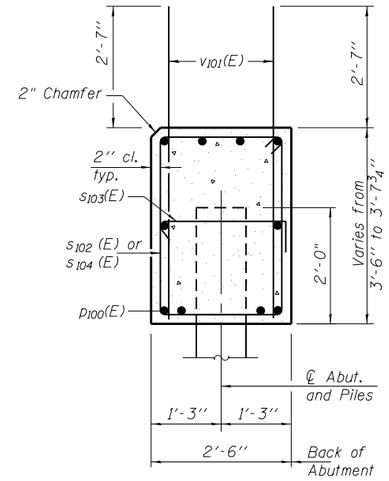
Notes:
Pour steps monolithically with cap.

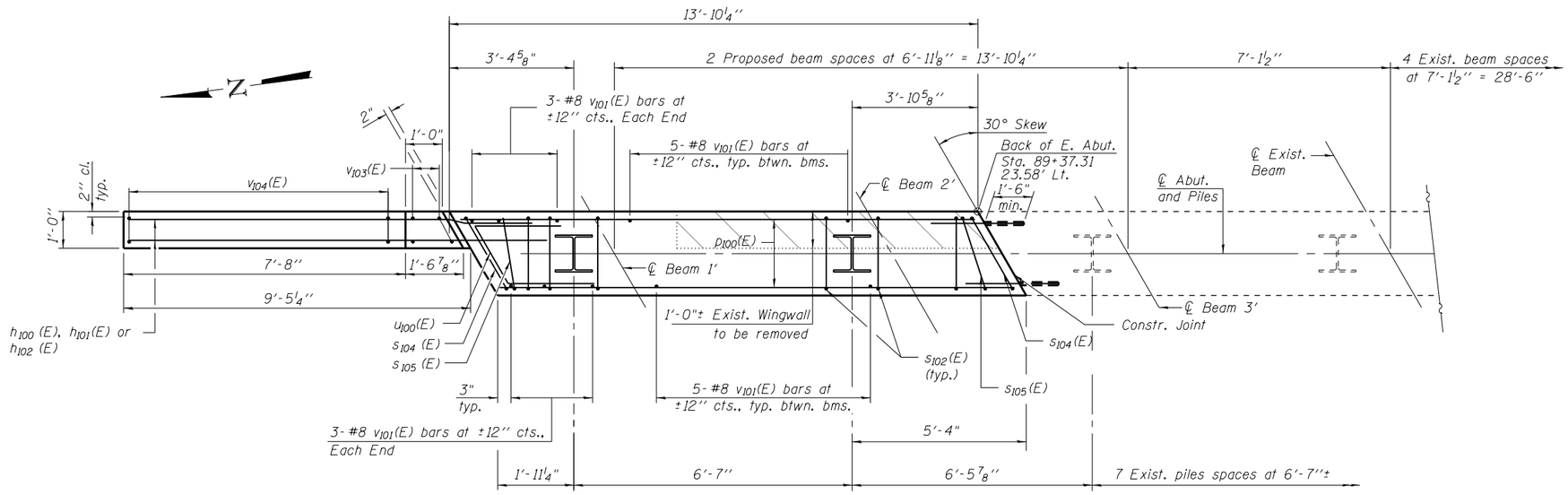


ELEVATION



SEC. THRU ABUT.

Dimensions at right angles to abutment.



PLAN

BILL OF MATERIAL

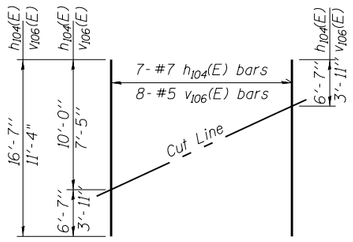
Bar	No.	Size	Length	Shape
h_{103}(E)	12	#7	11'-9''	
h_{104}(E)	7	#7	16'-7''	
h_{105}(E)	4	#5	9'-9''	
p_{100}(E)	10	#7	13'-6"	
p_{110}(E)	10	#7	4'-8''	
s_{102}(E)	15	#5	11'-7''	
s_{103}(E)	4	#5	3'-2''	
s_{104}(E)	2	#5	12'-3''	
s_{105}(E)	2	#5	11'-11''	
u_{100}(E)	4	#6	10'-2''	
v_{101}(E)	22	#8	5'-11''	
v_{105}(E)	4	#5	7'-8''	
v_{106}(E)	8	#5	11'-4"	

Structure Excavation	Cu. Yd.	55
Concrete Removal	Cu. Yd.	3
Concrete Structures	Cu. Yd.	6.7
Reinforcement Bars, Epoxy Coated	Pound	1710
Furnishing Steel Piles, HP 12x74	Foot	136
Driving Piles	Foot	136
Drill and Grout Bars	Each	10
Protective Coat	Sq. Yd.	8

For details of piles see sheet 26 of 29.

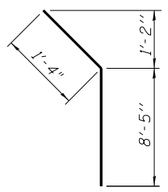
PILE DATA

Type: HP 12x74
Nominal Required Bearing: 589 kips
Allowable Resistance Available: 196 kips
Est. Length: 68'-0''
No. Production Piles: 2
No. Test Piles: 0

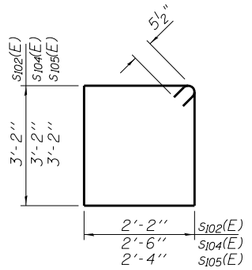


FIELD CUTTING DIAGRAM

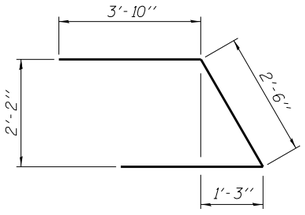
Order h_{101}(E) and v_{104}(E) full length. Cut as shown and use remainder of bars in opposite face.



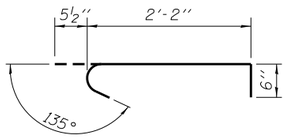
BAR h_{102}(E)



BAR s_{102}(E), s_{104}(E) & s_{105}(E)



BAR u_{100}(E)



BAR s_{103}(E)

CMT	USER NAME =	DESIGNED DRC	REVISED
	...\98850-0061_022-East Abutment.dgn	CHECKED LM	REVISED
	PLOT SCALE =	DRAWN GLD	REVISED
	PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT
STRUCTURE NO. 039-0061
SHEET NO. 22 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	132
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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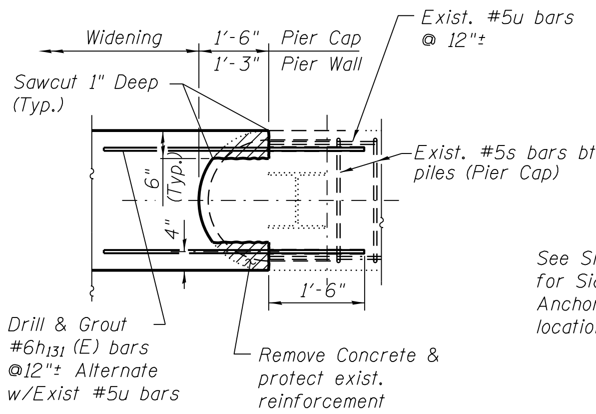
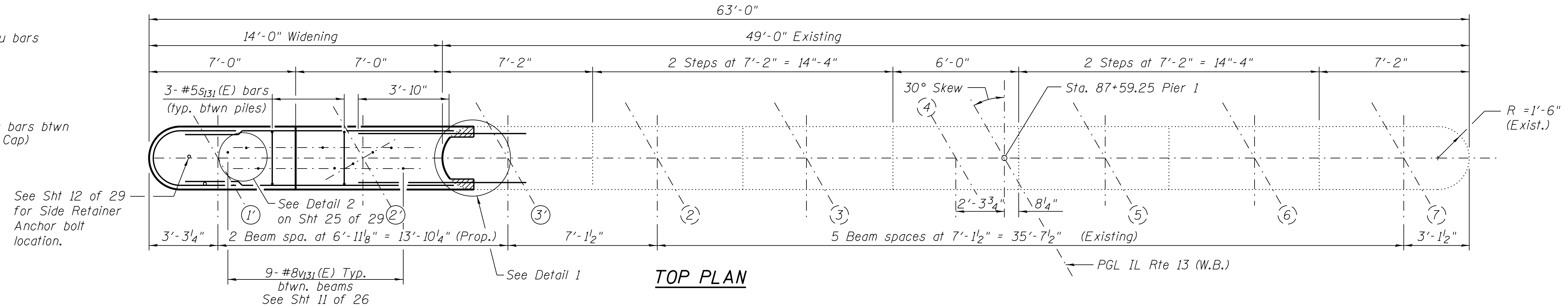
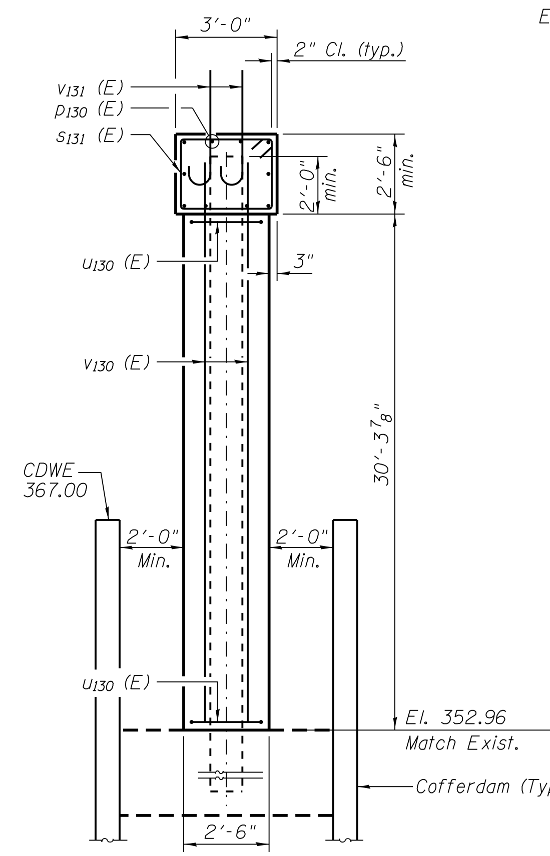


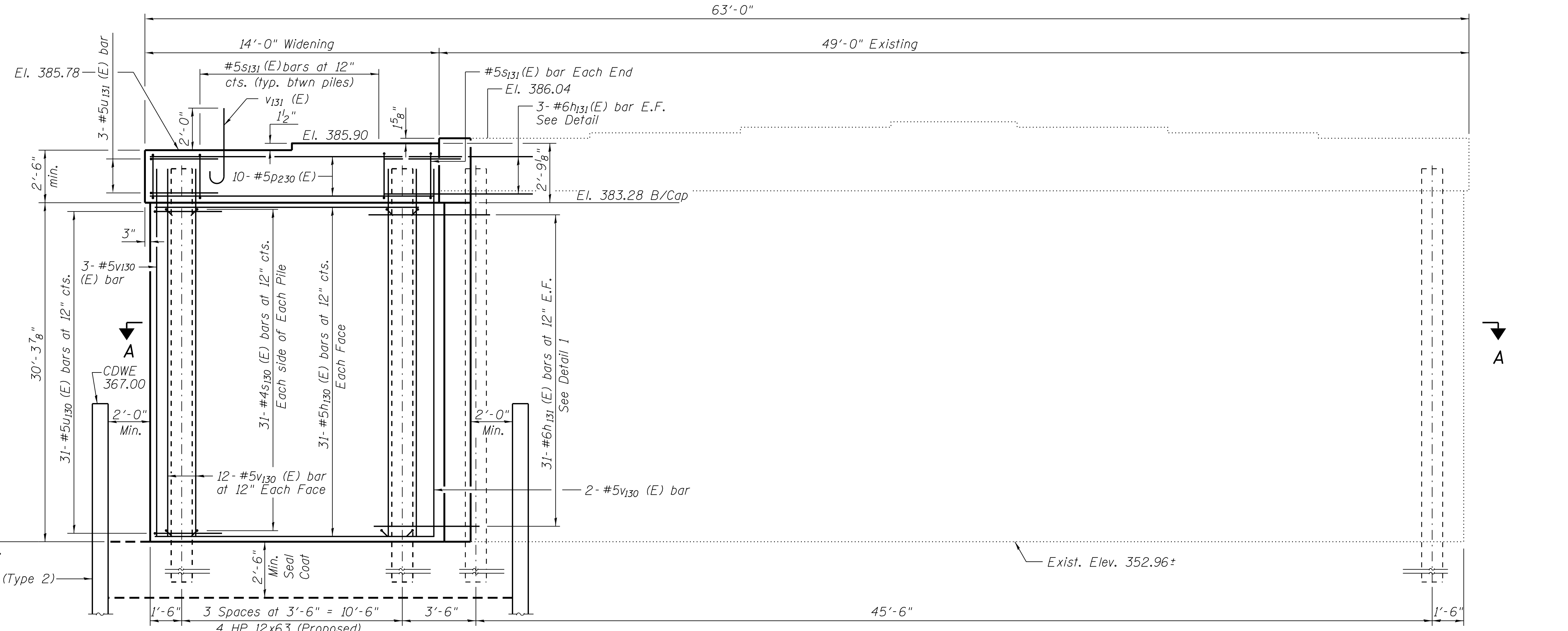
DETAIL 1



TOP PLAN



PIER - END VIEW



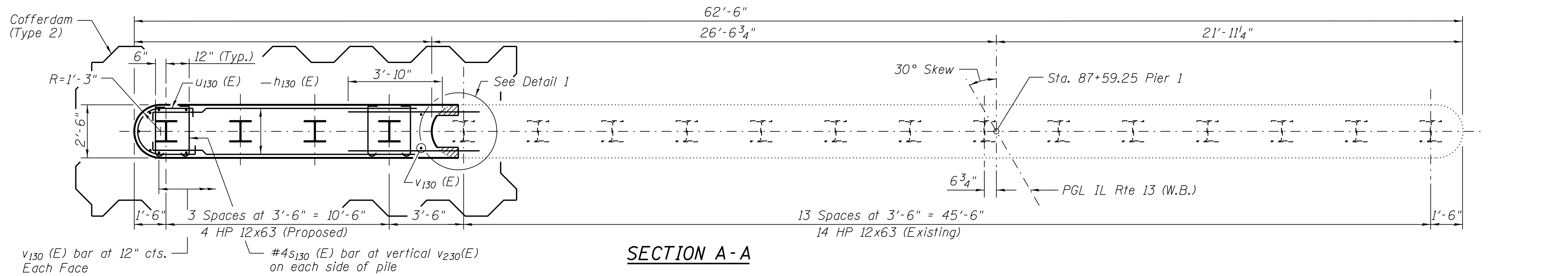
ELEVATION
(Looking East)

PILE DATA

Type: HP 12x63
Nominal Required Bearing: 497 kips
Allowable Resistance Available: 165 kips
Est. Length: 68 ft.
No. Production Piles: 4
No. Test Piles: 0

MIN LAP SPLICE

#5 bar 3'-2"
#6 bar 3'-10"



SECTION A-A

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CMT

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...\98850-0061.023-Pier 1.dgn	CHECKED	DRC	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

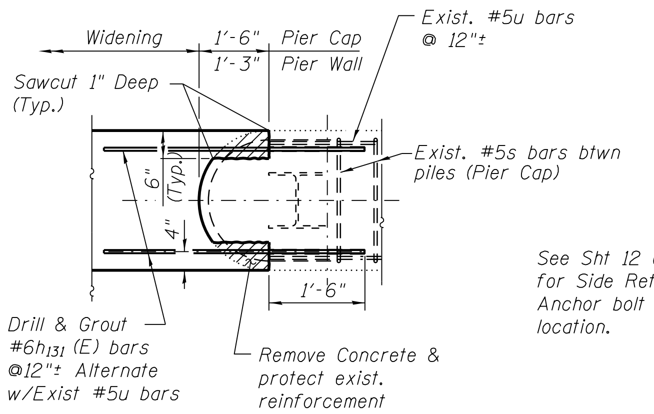
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 – DETAILS
STRUCTURE NO. 039-0061
SHEET NO. 23 OF 29 SHEETS

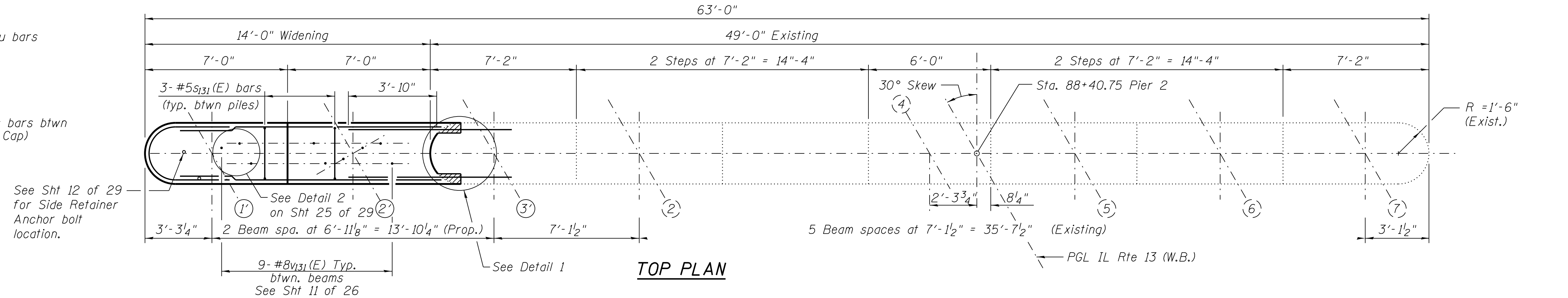
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	133

CONTRACT NO. 78295

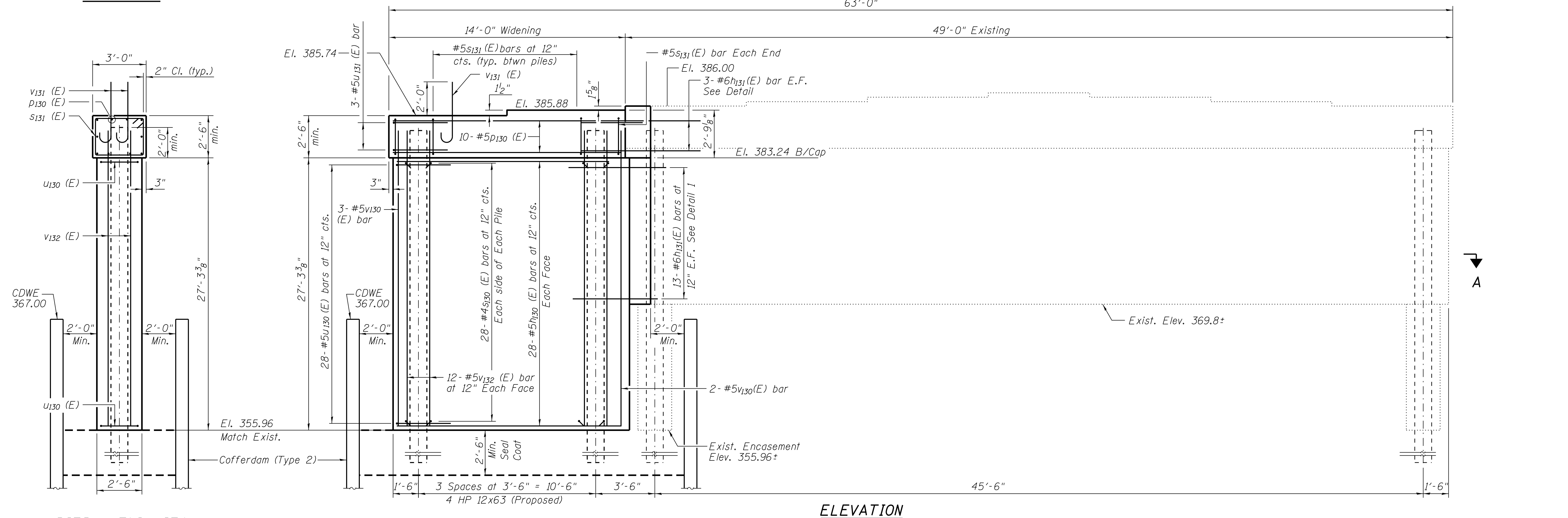
ILLINOIS FED. AID PROJECT



DETAIL 1

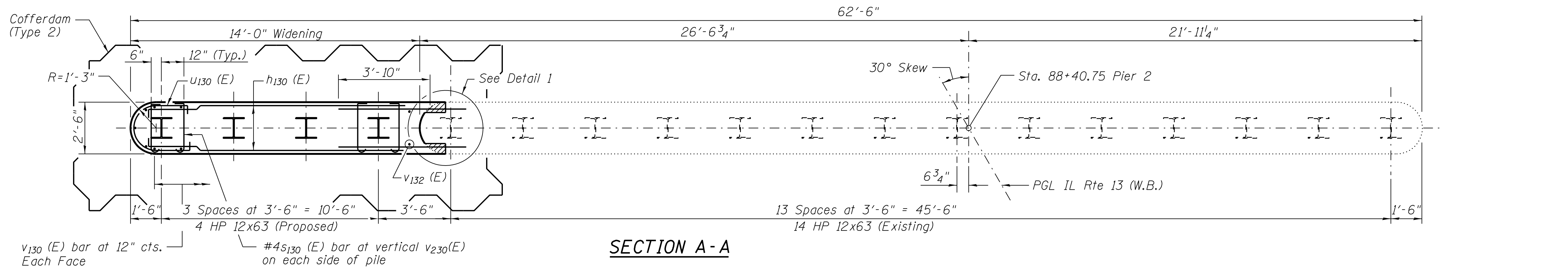


TOP PLAN



PIER - END VIEW

ELEVATION
(Looking East)



SECTION A-A

PILE DATA

Type: HP 12x63
Nominal Required Bearing: 497 kips
Allowable Resistance Available: 157 kips
Est. Length: 68 ft.
No. Production Piles: 4
No. Test Piles: 0

MIN LAP SPLICE

#5 bar 3'-2"
#6 bar 3'-10"

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CMT

USER NAME =	DESIGNED LM	REVISED
...\98850-0061.024-Pier 2.dgn	CHECKED WLB	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

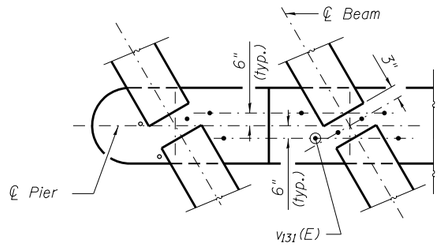
PIER 2 - DETAILS
STRUCTURE NO. 039-0061

SHEET NO. 24 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	134

CONTRACT NO. 78295

ILLINOIS FED. AID PROJECT



DETAIL 2

BILL OF MATERIAL - PIER 1

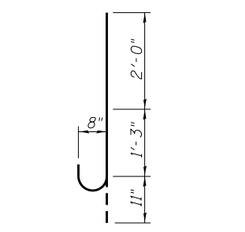
Bar	No.	Size	Length	Shape
h_{130} (E)	62	#5	13'-5"	
h_{131} (E)	68	#6	5'-4"	
p_{130} (E)	10	#5	12'-2"	
s_{130} (E)	248	#4	3'-3"	
s_{131} (E)	11	#5	11'-7"	
u_{130} (E)	31	#5	8'-3"	
u_{131} (E)	3	#5	7'-2"	
v_{130} (E)	29	#5	32'-0"	
v_{131} (E)	9	#8	4'-2"	
Cofferdam Excavation			Cu. Yd.	56
Cofferdam (Type 2) (Location - 1)			Each	1
Reinforcement Bars, Epoxy Coated			Pound	3,570
Concrete Structure			Cu. Yd.	47.1
Furnishing Steel Piles, HP 12x63			Foot	272
Driving Piles			Foot	272
Concrete Removal			Cu. Yd.	1
Seal Coat Concrete			Cu. Yd.	10.8
Drill and Grount Bars			Each	68

BILL OF MATERIAL - PIER 2

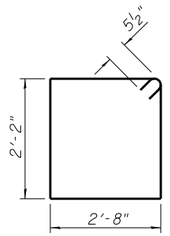
Bar	No.	Size	Length	Shape
h_{130} (E)	56	#5	13'-5"	
h_{131} (E)	32	#6	5'-4"	
p_{130} (E)	10	#5	12'-2"	
s_{130} (E)	224	#4	3'-3"	
s_{131} (E)	11	#5	11'-7"	
u_{130} (E)	28	#5	8'-3"	
u_{131} (E)	3	#5	7'-2"	
v_{131} (E)	9	#8	4'-2"	
v_{132} (E)	29	#5	29'-0"	
Cofferdam Excavation			Cu. Yd.	61
Cofferdam (Type 2) (Location - 2)			Each	1
Reinforcement Bars, Epoxy Coated			Pound	3,030
Concrete Structure			Cu. Yd.	42.8
Furnishing Steel Piles, HP 12x63			Foot	272
Driving Piles			Foot	272
Concrete Removal			Cu. Yd.	1
Seal Coat Concrete			Cu. Yd.	10.8
Drill and Grout Bars			Each	32

Pier Notes:

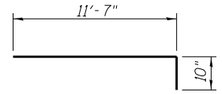
1. Space reinforcement in cap to miss anchor bolts.
2. Pour steps monolithically with cap.
3. Existing reinforcement to be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
4. Cost of saw cutting concrete included with Concrete Removal.
5. Seal coat thickness is based on the Cofferdam Design Water Elevation (CDWE) Cofferdam design details and proposed changes in seal coat thickness shall be submitted to the Engineer for approval with the cofferdam design.



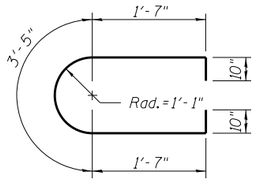
BAR v_{131} (E)



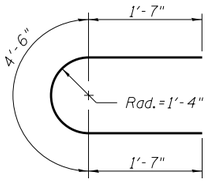
BAR s_{131} (E)



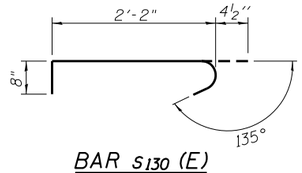
BAR h_{130} (E)



BAR u_{130} (E)



BAR u_{131} (E)



BAR s_{130} (E)

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	PLOT DATE =	CHECKED WLB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER DETAILS
STRUCTURE NO. 039-0061
SHEET NO. 25 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	135
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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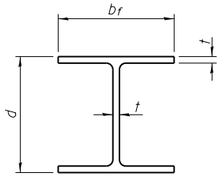
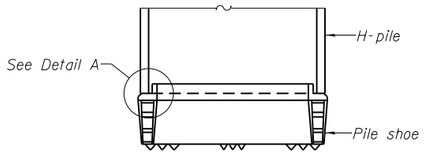
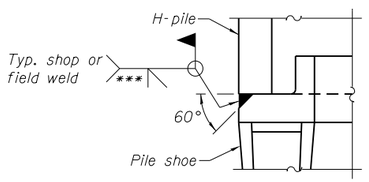


STEEL PILE TABLE

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''

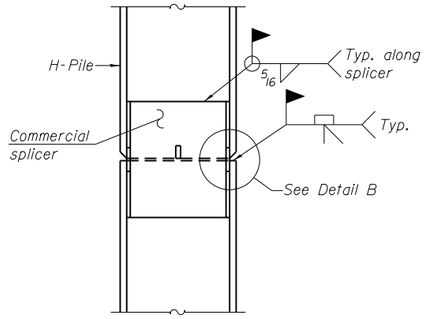


ELEVATION

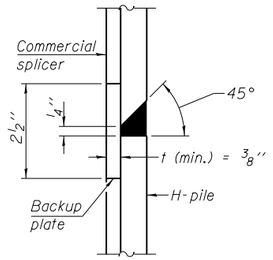


DETAIL A

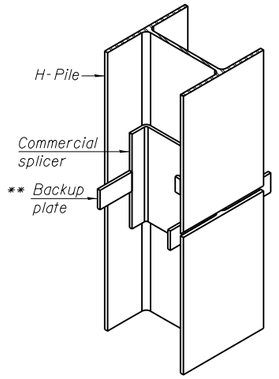
H-PILE SHOE ATTACHMENT



ELEVATION

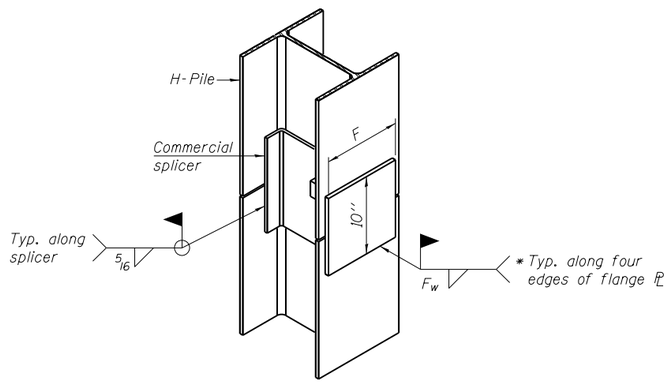


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



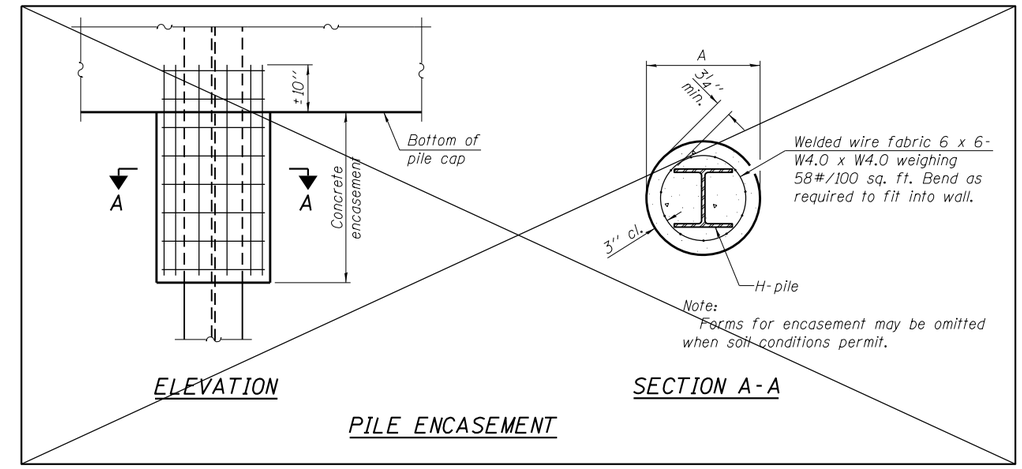
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

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

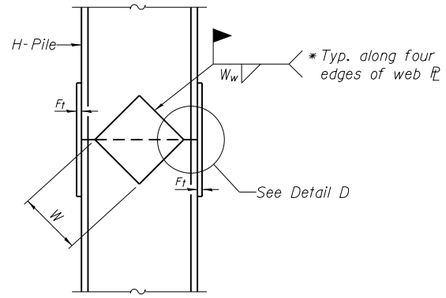
** Remove portions of backup plates that extend outside the flanges.

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

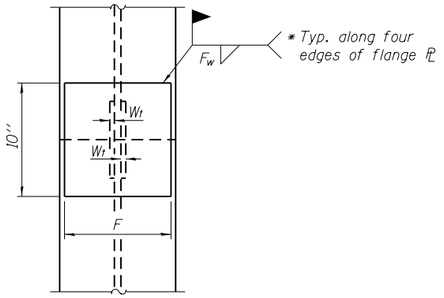


ELEVATION SECTION A-A

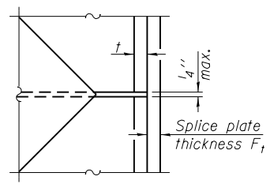
PILE ENCASEMENT



ELEVATION



END VIEW



DETAIL D

Designation	F	F_f	F_w	W	W_f	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 1-27-12

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CMT

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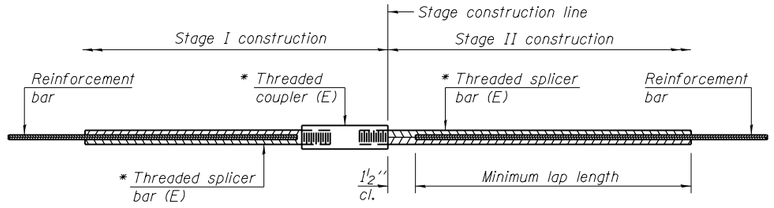
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 039-0061
SHEET NO. 26 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	136
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

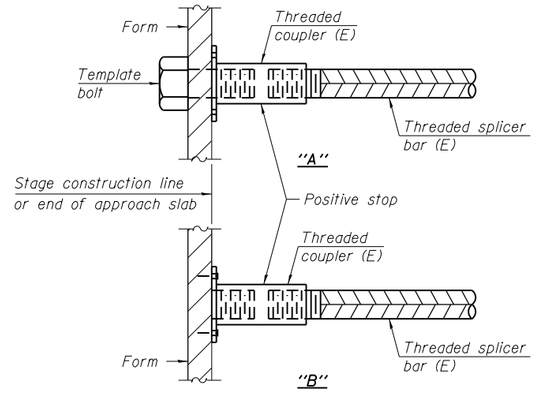


STANDARD BAR SPLICER ASSEMBLY

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

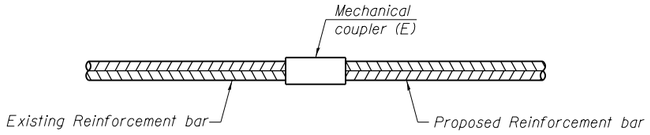
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length



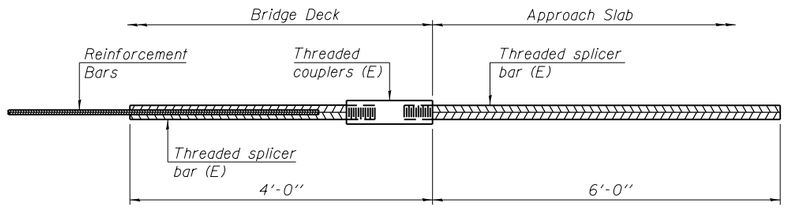
INSTALLATION AND SETTING METHODS

"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.



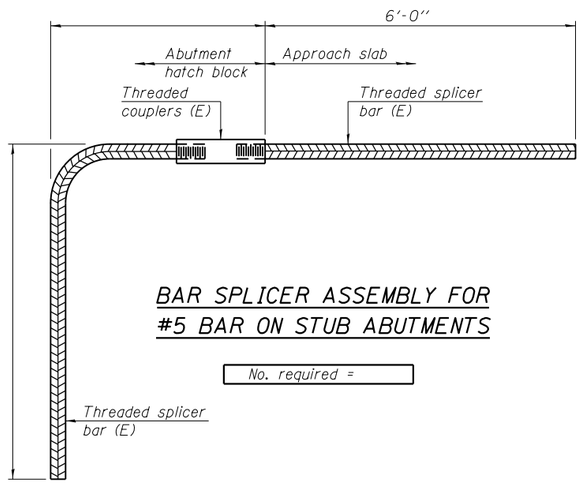
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



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

No. required = 42



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

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.

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...\98850-0061_027-Bar Splicer Details.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 039-0061
SHEET NO. 27 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	137
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation
Boring Log
Sheet 1 of 2

Westbound FAP 331 (IL 13) Over Crab Orchard Creek

Route: FAP 331 (IL 13) Structure Number: 039-0061 Date: 7/16/2014
Section 5-3B-2 Bored By: R Moberly
County: Jackson Location: 0.6 mi West of Reed Station Road Checked By: R Graeff

Boring No 1-S
Station 186+50
Offset 16' Lt CL WBL
Ground Surface 390.1 Ft

Surf Wat Elev: 362.1
Ground Water Elevation
when Drilling 363.1
At Completion
At: Hrs:

DEPTH	BLOWS	Qu tsf	W%	DESCRIPTION
				Asphalt over crushed aggregate
387.6	2			
				Stiff, moist, grey, Clay A7-6
	2	1.2B	28	
	1			
385.6				
5.0	1			Very stiff, moist, grey and brown,
	2	3.5S	19	Clay to Silty Clay A7-6
	3			
383.1				
	1			Stiff, moist, grey, Silty Clay A-6
	3	1.7S	20	
	3			
380.6				
10.0	1			Very stiff, moist, grey, Silty Clay
	3	2.7S	19	A-6
	4			
	1			
	2	2.1B	20	
	3			
15.0	1			
	2	2.5B	22	
	3			
	1			
	2	2.5B	23	
	3			
370.6				
20.0	WH			Soft, very moist, grey, Silty Clay
	WH	0.3B	29	Loam A-6
	1			
368.1				
	WH			Very soft, very moist, grey, Silt
	WH	0.2B	30	Loam to Silty Clay Loam A-4
	WH			
25.0	WH			

DEPTH	BLOWS	Qu tsf	W%	DESCRIPTION
	WH	0.1B	29	Very soft, very moist, grey, Silt
	WH			Loam to Silty Clay Loam A-4
363.1				
	WH			Soft, very moist, grey, Silty Clay to
	WH	0.4B	28	Silty Clay Loam A-6
	WH			
360.6				
30.0	WH			Soft to medium, very moist, brown
	WH	0.5B	27	mottled grey, Silty Clay to Silty
	WH			Clay Loam A-6
	WH			
	WH	0.6B	28	
	WH			
355.6				
35.0	WH			Medium, very moist, grey, Clay
	WH	0.7B	30	A7-6
	2			
353.1				
	1			Stiff, moist, grey, Clay A7-6
	2	1.8B	29	
	4			
350.6				
40.0	1			Very stiff, moist, grey mottled
	3	2.1B	27	brown, Clay A7-6
	4			
345.6				
45.0	1			Stiff, moist, grey, Clay A7-6
	3	1.6B	26	
	4			
340.1	50.0	WH		

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

Sheet 2 of 2

Route: FAP 331 (IL 13)
Section: 5-3B-2
County: Jackson
Date: 7/16/2014

Boring No: 1-S
Station: 186+50
Offset: 16' Lt CL WBL
Ground Surface: 390.1 Ft

DEPTH	BLOWS	Qu tsf	W%	DESCRIPTION
	1		23	Layers of loose, wet grey, Sand
	1			and stiff, moist, grey Clay A7-6
				and soft, very moist, grey, Sand
				Loam to Sandy Clay Loam A-4
				5' sand blow-in
				wash-out procedures used
55.0	WH			
	1			
	1			
				wash-out procedures used 330.6
60.0	5			Medium dense, very moist, grey,
	10		21	Sand with some pea gravel
	16			78% Sand
				8% Silt
				8% Clay
				6% Gravel
				wash-out procedures used 325.1
65.0				
	2			Soft to medium, very moist, grey,
	5	0.5	18	Sandy Clay Loam with sand and
	3			clay layers
323.1				
				Hard, dry, grey, Clay Shale
320.6	100/6"			
70.0				
				Bottom of hole = 69.5 feet
				Free water observed at 27.0 feet
				Elevation referenced to BM 22 at
				SW corner SN 039-0061; Elev.=
				390.3 feet
75.0				

DEPTH	BLOWS	Qu tsf	W%	DESCRIPTION
80.0				
				Borehole advanced with hollow
				stem auger (8" O.D, 3.25" I.D.)
				To convert "N" values to "N60"
85.0				multiply by 1.25
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)

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CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0061_028-Boring Logs 1.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – 1
STRUCTURE NO. 039-0061
SHEET NO. 28 OF 29 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	138
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

Sheet 1 of 2

Westbound FAP 331 (IL 13) Over Crab Orchard Creek

Route: FAP 331 (IL 13) Structure Number: 039-0061 Date: 7/15/2014

Section 5-3B-2 Bored By: R Moberly

County: Jackson Location: 0.6 mi West of Reed Station Road Checked By: R Graeff

Boring No 2-S
Station 189+69
Offset 15' Lt CL WBL
Ground Surface 390.0 Ft

Surf Wat Elev: 362.1
Ground Water Elevation
when Drilling 363.1
At Completion
At: Hrs:

	DEPTH	BLOWS	Qu tsf	W%
Asphalt over crushed aggregate				
		3		
	387.0	3		
Very stiff, moist, grey and brown, Clay A7-6		2	2.3B	17
	385.5			
Stiff, moist, brown and grey, Clay A7-6	5.0	1		
		2	1.7B	21
		3		
	383.0			
Very stiff, moist, brown, Clay to Silty Clay A7-6		1		
		2	2.9B	17
		4		
	10.0	1		
		1	2.1B	19
		2		
		1		
		3	2.7B	19
		4		
	15.0	1		
		3	2.3B	21
		3		
	373.0			
Very stiff, moist, grey, Silt Loam to Silty Clay Loam A-4		3		
		4	3.3B	20
		6		
	370.5			
Medium, very moist, grey, Silt Loam to Silty Clay Loam A-4	20.0	WH		
		1	0.6B	27
		1		
	368.0			
Soft, very moist, grey, Silt Loam to Silty Clay Loam A-4		WH		
		WH	0.3B	29
		1		
	25.0	WH		

	DEPTH	BLOWS	Qu tsf	W%
Soft, very moist, grey, Silt Loam to Silty Clay Loam A-4		WH	0.3B	30
		WH		
	363.0			
Very soft, very moist, brown mottled grey, Silty Clay Loam A-6		WH		
		WH	0.2B	32
		WH		
	360.5			
Soft to medium, very moist, grey mottled brown, Silty Clay Loam A-6 with Sand seams	30.0	WH		
		WH	0.5B	32
		1		
		WH		
		WH	0.3B	31
		WH		
	355.5			
Medium, very moist, grey, Silty Clay Loam A-6 with sand and clay layers	35.0	WH		
		WH	0.6B	35
		WH		
	353.0			
Medium, very moist, grey, Clay A7-6 with sand seams		WH		
		WH	0.7B	35
		1		
	350.5			
Very stiff, moist, grey mottled brown, Clay A7-6	40.0	1		
		3	2.3B	36
		3		
	45.0	1		
		3	2.9B	25
		4		
	341.5			
5' blow-in Very loose, wet, grey, Sand with Clay layers	50.0	WR		

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: FAP 331 (IL 13)
Section: 5-3B-2
County: Jackson
Date: 7/15/2014

Boring No: 2-S
Station: 189+69
Offset: 15' Lt CL WBL
Ground Surface: 390.0 Ft

	DEPTH	BLOWS	Qu tsf	W%
Very loose, wet, grey, Sand with Clay layers 76% Sand 11% Silt 13% Clay		WR		26
		WR		
Wash-out procedures used 335.5				
Medium, very moist, grey, Silty Clay A-6 with sand layers	55.0	2		
		2	0.8B	21
		3		
	330.5			
Stiff, very moist, grey, Clay Loam to Sandy Clay Loam A-6 with sand layers	60.0	1		
		3	1.1S	17
		5		
	65.0	1		
(lost sample - broken retainer)		2		
		3		
	322.5			
Hard, dry, grey, Clay Shale				
	70.0	100/6"		
	316.0			
Hard, dry, grey and black, Clay Shale with Coal	75.0	100/2"		

	DEPTH	BLOWS	Qu tsf	W%
Hard, dry, grey and black, Clay Shale with Coal				
	310.0	80.0	100/3"	
Bottom of hole = 79.8 feet				
Free water observed at 27.0 feet				
Elevation referenced to BM 22 at SW corner SN 039-0061; Elev.= 390.3 feet	85.0			
Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)				
To convert "N" values to "N60" multiply by 1.25				
	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)

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USER NAME =	DESIGNED	CJW	REVISED
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PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

CMT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS – 2
STRUCTURE NO. 039-0061
SHEET NO. 29 OF 29 SHEETS

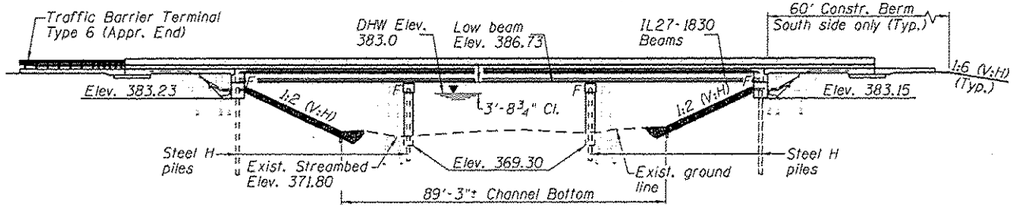
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	139
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

Bench Mark: Cut square on Southwest corner of Structure 039-0062 of Illinois Route 13 WBL @ Sta. 64+81±. Elev. 390.24

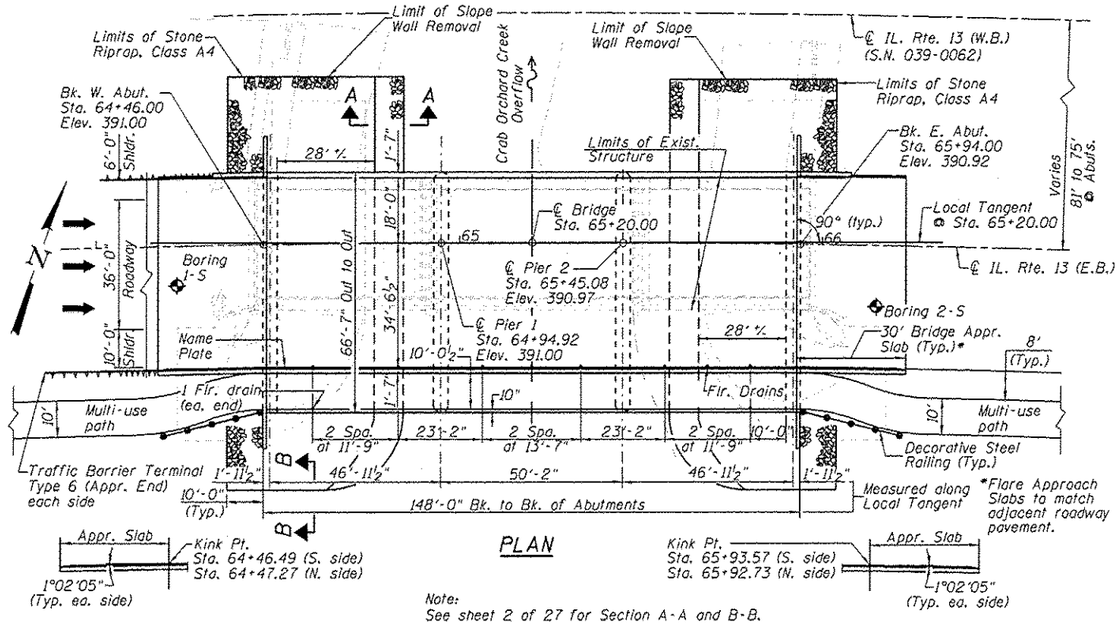
Existing Structure: S.N. 039-0019, built in 1965 is a three span 30WF108 beam bridge. Substructure consists of pile bent abutments supported on steel H-piles and solid wall pile bent piers supported on steel H-piles. Bk. to Bk. abutments measures 156'-0" and out-to-out width of 36'-7½".

Salvage: None

Traffic Maintenance: Traffic to be maintained utilizing median cross-overs, onto W.B. bridge (039-0062).



ELEVATION



PLAN

Note:
See sheet 2 of 27 for Section A-A and B-B.

STATION 65+20.00
BUILT 201_ BY
STATE OF ILLINOIS
F.A.P. RTE. 331 SEC. (5-3) B-5
LOADING HL-93
STRUCTURE NO. 039-0078

NAME PLATE

See Std. 515001

INDEX OF SHEETS

SHEET NO.	TITLE
1.	General Plan
2.	General Data
3.	Deck Elevations - 1
4.	Deck Elevations - 2
5.	Approach Slab Elevations
6.	Superstructure - 1
7.	Superstructure - 2
8.	Superstructure Details - 1
9.	Superstructure Details - 2
10.	Diaphragm Details - 1
11.	Diaphragm Details - 2
12.	Bridge Approach Slab Details - 1
13.	Bridge Approach Slab Details - 2
14.	Railing Details
15.	Framing Plan and Details
16.	IL27-1830 Beam Span 1 & 3
17.	IL27-1830 Beam Span 2
18.	IL27-1830 Beam Details
19.	West Abutment
20.	East Abutment
21.	Abutment Details
22.	Pier 1
23.	Pier 2
24.	Pier Details
25.	HP Pile Details
26.	Boring Logs - 1
27.	Boring Logs - 2

DESIGN SPECIFICATIONS

2014 AASHTO LRFD Bridge
Specifications, 7th Edition
with 2015 & 2016 Interims

LOADING HL-93

Allow 50 psf for future
wearing surface

APPROVED
For Structural Adequacy Only
D. Carl Puzey
Engineer of Bridges & Structures

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi (concrete)
f'c = 4,000 psi (Superstr. concrete)
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 8,500 psi (concrete)
f'ci = 7,000 psi
fpu = 270,000 psi (0.6"ɸ low lax strands)
fpbt = 202,300 psi (0.6"ɸ low lax strands)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec (SD1) = 0.360g
Design Spectral Acceleration at 0.2 sec (SDS) = 0.845g
Soil Site Class = D

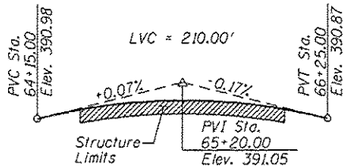
01-13-2017

WILLIAM L. BAILEY, JR.
081-005087

Exp. 11-30-2018

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)				
	W. Abut.	Pier 1	Pier 2	E. Abut.	Item 113
0100	383.23	365.80	365.80	383.15	5
0200	383.23	364.80	364.80	383.15	
Design	383.23	365.80	365.80	383.15	
Check	383.23	365.80	365.80	383.15	

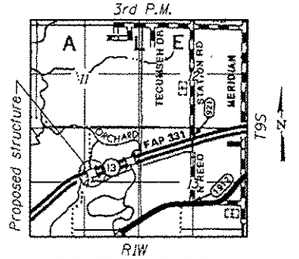


PROFILE GRADE

(Along ℄ IL. Rte. 13 E.B.)

CURVE DATA

P.I. Sta. = 58+23.81
Δ = 22°27'48" Rt.
D = 1°10'04"
R = 4,906.95
T = 974.42'
L = 1,923.82'
E = 95.81
S.E. = 0.03'/'
P.C. Sta. = 48+49.39
P.T. Sta. = 67+73.20



LOCATION SKETCH

GENERAL PLAN
F.A.P. ROUTE 331 (IL 13 E.B.)
OVER CRAB ORCHARD CREEK OVERFLOW
SECTION (5-3) B-5
JACKSON COUNTY
STATION 65+20.00
STRUCTURE NO. 039-0078

CMT

USER NAME =	DESIGNED	CJW	REVISED		
...\98850-0078.001-General Plan.dgn	CHECKED	WLB/JMM	REVISED		
PLOT SCALE =	DRAWN	GLD	REVISED		
PLOT DATE =	CHECKED	WLB/JMM	REVISED		

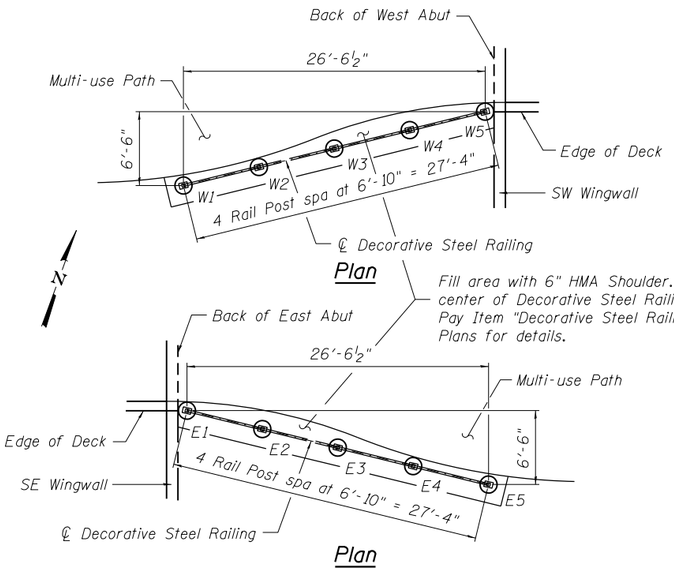
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
STRUCTURE NO. 039-0078
SHEET NO. 1 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	140
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting the new Parapet Railing and Decorative Steel Railing except where otherwise noted. The entire sytem shall be shop applied. Damaged areas shall be touched up in the field. The color of the final finish coat for all steel surfaces of the Railings shall be Reddish Brown, Munsell No. 2.5YR 3/4.
3. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
4. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
5. Slipforming of the parapets is not allowed.



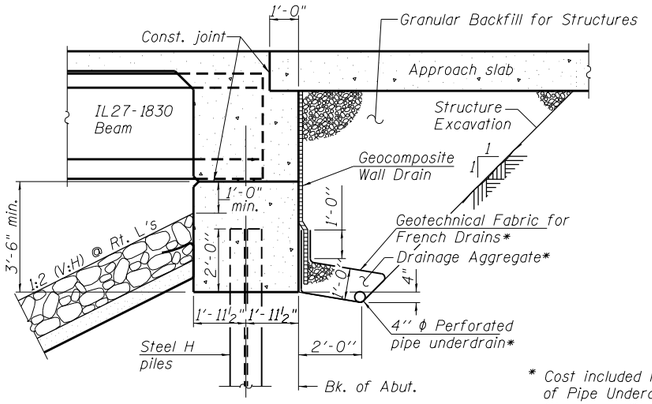
Fill area with 6" HMA Shoulder. Extend 18" behind center of Decorative Steel Railing. Cost included in Pay Item "Decorative Steel Railing". See Roadway Plans for details.

DECORATIVE RAILING DETAIL

Note:
For railing post foundation details, see sheet 14 of 27

RAILING FOUNDATION ELEVATION INFORMATION

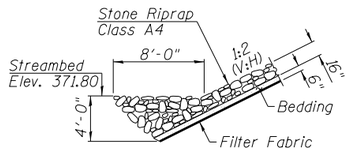
East Foundation Elevations		West Foundation Elevations	
No.	Elev.	No.	Elev.
E1	389.71	W1	389.69
E2	389.67	W2	389.72
E3	389.64	W3	389.74
E4	389.62	W4	389.76
E5	389.57	W5	389.79



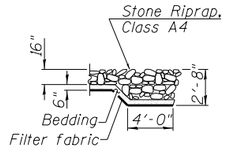
* Cost included in the cost of Pipe Underdrains for Structures (See special provision).

SECTION THRU INTEGRAL ABUTMENT

Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall, except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101.)



SECTION A-A



SECTION B-B

TOTAL BILL OF MATERIAL

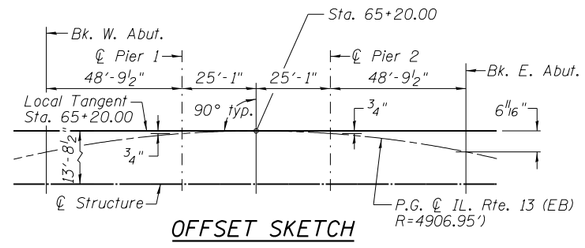
ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.		1,027	1,027
Filter Fabric	Sq. Yd.		1,027	1,027
Removal of Existing Structures No. 1	Each			1
Structure Excavation	Cu. Yd.		222	222
Floor Drains	Each	11		11
Concrete Structures	Cu. Yd.	34.0	316.9	350.9
Concrete Superstructure	Cu. Yd.	371.4		371.4
Bridge Deck Grooving	Sq. Yd.	1,157		1,157
Protective Coat	Sq. Yd.	1,589		1,589
Concrete Superstructure (Approach Slab)	Cu. Yd.	154.0		154.0
Furnishing and Erecting Precast Prestressed Concrete Beams, IL27N	Foot	1004		1004
Reinforcement Bars, Epoxy Coated	Pound	163,350	31,860	195,210
Parapet Railing	Foot	145		145
Furnishing Steel Piles HP 10x42	Foot		1,107	1,107
Furnishing Steel Piles HP 14x73	Foot		1,125	1,125
Driving Piles	Foot		2,232	2,232
Test Pile Steel HP 10x42	Each		2	2
Test Pile Steel HP 14x73	Each		2	2
Name Plates	Each	1		1
Geocomposite Wall Drain	Sq. Yd.		102	102
Decorative Steel Railing	Foot	198		198
Granular Backfill for Structures	Cu. Yd.		166	166
Pipe Underdrains for Structures 4"	Foot		202	202

WATERWAY INFORMATION

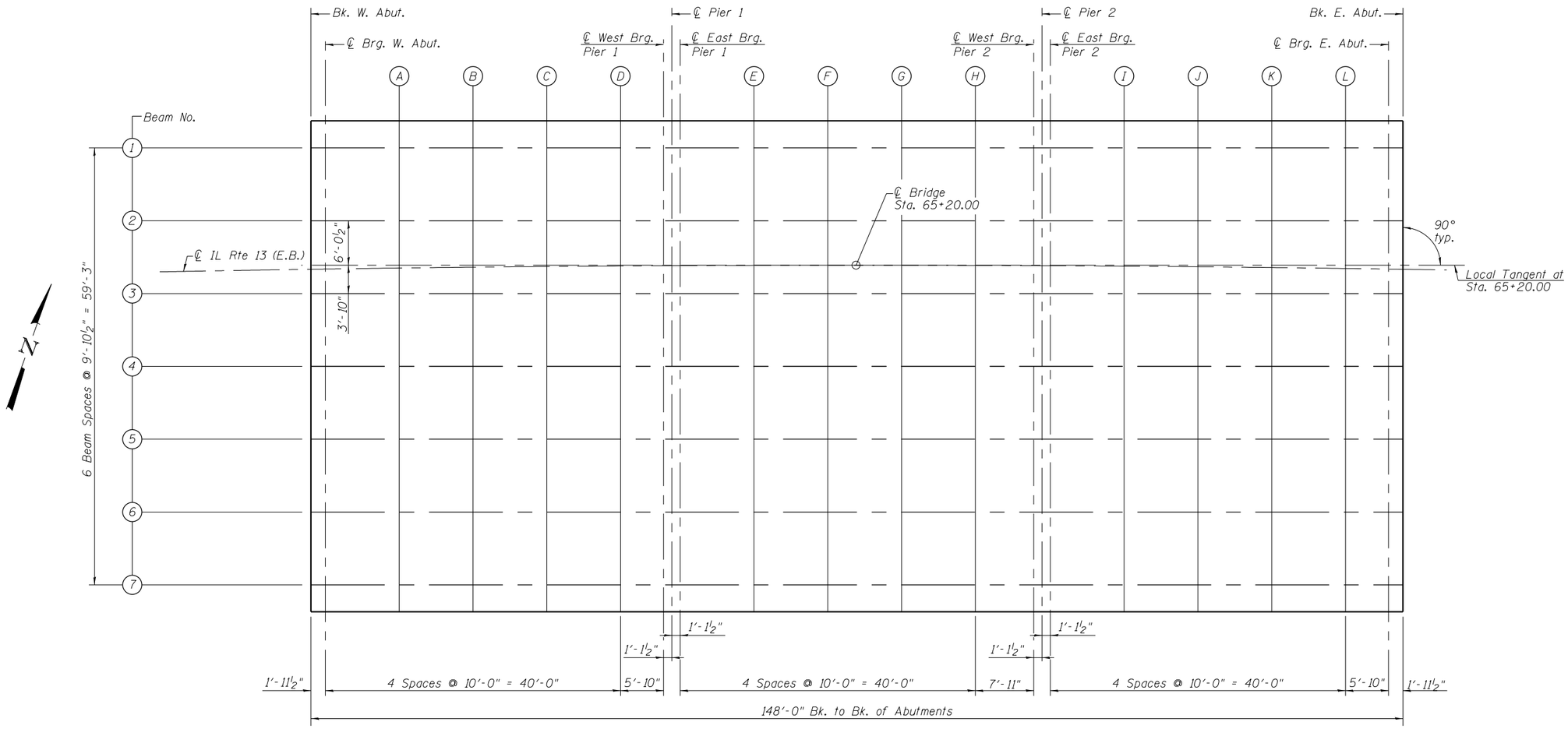
Drainage Area = 255 Sq. Mi.

Exist. Low Grade Elev. 388.69 @ Sta. 80+50.00
Prop. Low Grade Elev. 388.88 @ Sta. 80+50.00

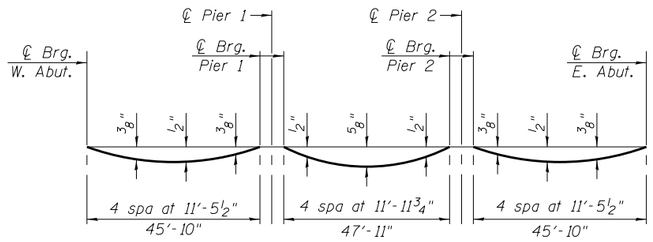
Flood	Freq. Yr.	Structure Number	Q (C.F.S.) Exist.	Q (C.F.S.) Prop.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	039-0061/79	6,158	6,628	2,342	2,367	381.2	0.2	0.1	381.4	381.3
		0'flow Culvert	186	137	67	67					
		039-0062/78	2,056	1,635	779	772					
		Total	8,400		3,188	3,206					
Design	50	039-0061/79	8,788	9,417	2,682	2,715	383.0	0.3	0.2	383.3	383.2
		0'flow Culvert	269	235	85	85					
		039-0062/78	3,343	2,748	995	987					
		Total	12,400		3,762	3,787					
Base	100	039-0061/79	9,878	10,577	2,857	2,894	383.9	0.3	0.3	384.2	384.2
		0'flow Culvert	326	269	94	94					
		039-0062/78	3,896	3,254	1,109	1,099					
		Total	14,100		4,060	4,087					
Scour Design Check	200	039-0061/79	11,055	11,616	2,995	3,036	384.6	0.4	0.3	385.0	384.9
		0'flow Culvert	379	332	101	101					
		039-0062/78	4,576	4,062	1,200	1,189					
		Total	16,010		4,296	4,326					
Max. Calc.	500	039-0061/79	12,694	12,917	3,116	3,158	385.2	0.5	0.4	385.7	385.6
		0'flow Culvert	417	393	107	107					
		039-0062/78	5,389	5,190	1,279	1,268					
		Total	18,500		4,502	4,533					



OFFSET SKETCH



LAYOUT PLAN FOR DECK ELEVATIONS

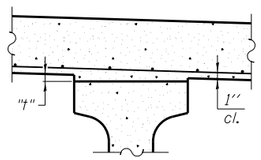


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only, excluding beams)

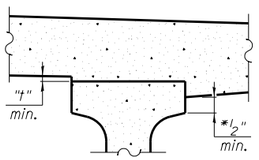
Note:

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections, as shown on Sheet 4 of 27.

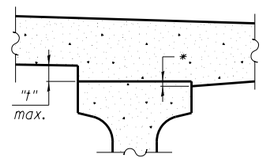


INTERIOR BEAMS

* Variable (not less than ½")



At Minimum Fillet



At Maximum Fillet

EXTERIOR BEAMS

FILLET HEIGHTS

After all beams have been erected, elevations of the top flanges of the beam shall be taken at the intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheet 4 of 27, minus slab thickness equals the fillet heights "t" above top flange of beams.

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CMT

USER NAME =	DESIGNED CJW	REVISED
	CHECKED WLB	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK ELEVATIONS – 1
STRUCTURE NO. 039–0078
SHEET NO. 3 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	142
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

BEAM 1

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	64+46.24	-16.47	391.49	391.49
℄ Brg. W. Abut.	64+48.20	-16.44	391.49	391.49
A	64+58.16	-16.31	391.49	391.51
B	64+68.13	-16.19	391.48	391.52
C	64+78.10	-16.10	391.48	391.52
D	64+88.06	-16.02	391.48	391.49
℄ W. Pier 1 Brg.	64+93.88	-15.99	391.48	391.48
℄ Pier 1	64+95.00	-15.98	391.48	391.48
℄ E. Pier 1 Brg.	64+96.12	-15.98	391.47	391.47
E	65+06.09	-15.94	391.47	391.50
F	65+16.05	-15.92	391.47	391.51
G	65+26.02	-15.92	391.46	391.50
H	65+35.99	-15.94	391.45	391.48
℄ W. Pier 2 Brg.	65+43.88	-15.98	391.45	391.45
℄ Pier 2	65+45.00	-15.98	391.45	391.45
℄ E. Pier 2 Brg.	65+46.12	-15.99	391.45	391.45
I	65+56.09	-16.05	391.44	391.47
J	65+66.06	-16.13	391.43	391.47
K	65+76.02	-16.24	391.43	391.46
L	65+85.99	-16.36	391.42	391.43
℄ Brg. E. Abut.	65+91.80	-16.44	391.41	391.41
Bk. East Abut.	65+93.76	-16.47	391.41	391.41

BEAM 2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	64+46.10	-6.60	391.19	391.19
℄ Brg. W. Abut.	64+48.05	-6.57	391.19	391.19
A	64+58.04	-6.43	391.19	391.22
B	64+68.02	-6.32	391.19	391.23
C	64+78.01	-6.22	391.18	391.22
D	64+88.00	-6.15	391.18	391.20
℄ W. Pier 1 Brg.	64+93.82	-6.11	391.18	391.18
℄ Pier 1	64+94.95	-6.11	391.18	391.18
℄ E. Pier 1 Brg.	64+96.07	-6.10	391.18	391.18
E	65+06.06	-6.06	391.17	391.21
F	65+16.05	-6.04	391.17	391.22
G	65+26.03	-6.05	391.16	391.21
H	65+36.02	-6.07	391.16	391.19
℄ W. Pier 2 Brg.	65+43.93	-6.10	391.15	391.15
℄ Pier 2	65+45.05	-6.11	391.15	391.15
℄ E. Pier 2 Brg.	65+46.18	-6.11	391.15	391.15
I	65+56.16	-6.18	391.14	391.17
J	65+66.15	-6.26	391.14	391.18
K	65+76.14	-6.36	391.13	391.17
L	65+86.12	-6.49	391.12	391.14
℄ Brg. E. Abut.	65+91.95	-6.57	391.12	391.12
Bk. East Abut.	65+93.90	-6.60	391.11	391.11

P.G.L. (E.B.)

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	64+46.00	0.00	390.99	390.99
℄ Brg. W. Abut.	64+47.96	0.00	390.99	390.99
A	64+57.96	0.00	391.00	391.03
B	64+67.96	0.00	391.00	391.04
C	64+77.96	0.00	391.00	391.04
D	64+87.96	0.00	391.00	391.01
℄ W. Pier 1 Brg.	64+93.79	0.00	391.00	391.00
℄ Pier 1	64+94.92	0.00	391.00	391.00
℄ E. Pier 1 Brg.	64+96.04	0.00	391.00	391.00
E	65+06.04	0.00	390.99	391.03
F	65+16.04	0.00	390.99	391.04
G	65+26.04	0.00	390.98	391.03
H	65+36.04	0.00	390.98	391.00
℄ W. Pier 2 Brg.	65+43.96	0.00	390.97	390.97
℄ Pier 2	65+45.08	0.00	390.97	390.97
℄ E. Pier 2 Brg.	65+46.21	0.00	390.97	390.97
I	65+56.21	0.00	390.96	390.99
J	65+66.21	0.00	390.95	390.99
K	65+76.21	0.00	390.94	390.98
L	65+86.21	0.00	390.93	390.94
℄ Brg. E. Abut.	65+92.04	0.00	390.92	390.92
Bk. East Abut.	65+94.00	0.00	390.92	390.92

BEAM 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	64+45.95	3.28	390.90	390.90
℄ Brg. W. Abut.	64+47.91	3.30	390.90	390.90
A	64+57.91	3.44	390.89	390.92
B	64+67.92	3.56	390.89	390.94
C	64+77.93	3.65	390.89	390.93
D	64+87.93	3.73	390.89	390.90
℄ W. Pier 1 Brg.	64+93.77	3.76	390.88	390.88
℄ Pier 1	64+94.90	3.77	390.88	390.88
℄ E. Pier 1 Brg.	64+96.02	3.78	390.88	390.88
E	65+06.03	3.81	390.88	390.91
F	65+16.04	3.83	390.87	390.92
G	65+26.05	3.83	390.87	390.92
H	65+36.05	3.81	390.86	390.89
℄ W. Pier 2 Brg.	65+43.98	3.78	390.86	390.86
℄ Pier 2	65+45.10	3.77	390.86	390.86
℄ E. Pier 2 Brg.	65+46.23	3.76	390.86	390.86
I	65+56.24	3.70	390.85	390.88
J	65+66.24	3.62	390.84	390.88
K	65+76.25	3.51	390.83	390.87
L	65+86.26	3.39	390.82	390.84
℄ Brg. E. Abut.	65+92.09	3.30	390.82	390.82
Bk. East Abut.	65+94.05	3.28	390.82	390.82

BEAM 4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	64+45.80	13.15	390.60	390.60
℄ Brg. W. Abut.	64+47.76	13.18	390.60	390.60
A	64+57.79	13.32	390.60	390.63
B	64+67.81	13.43	390.60	390.64
C	64+77.84	13.53	390.59	390.63
D	64+87.87	13.60	390.59	390.61
℄ W. Pier 1 Brg.	64+93.72	13.64	390.59	390.59
℄ Pier 1	64+94.85	13.64	390.59	390.59
℄ E. Pier 1 Brg.	64+95.97	13.65	390.59	390.59
E	65+06.00	13.69	390.58	390.61
F	65+16.03	13.71	390.58	390.63
G	65+26.06	13.71	390.57	390.62
H	65+36.09	13.68	390.57	390.59
℄ W. Pier 2 Brg.	65+44.03	13.65	390.56	390.56
℄ Pier 2	65+45.15	13.64	390.56	390.56
℄ E. Pier 2 Brg.	65+46.28	13.64	390.56	390.56
I	65+56.31	13.57	390.55	390.58
J	65+66.34	13.49	390.54	390.59
K	65+76.36	13.39	390.54	390.58
L	65+86.39	13.26	390.53	390.55
℄ Brg. E. Abut.	65+92.24	13.18	390.52	390.52
Bk. East Abut.	65+94.20	13.15	390.52	390.52

BEAM 5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	64+45.65	23.02	390.30	390.30
℄ Brg. W. Abut.	64+47.62	23.05	390.30	390.30
A	64+57.66	23.19	390.30	390.33
B	64+67.71	23.31	390.30	390.34
C	64+77.76	23.40	390.30	390.34
D	64+87.80	23.48	390.29	390.31
℄ W. Pier 1 Brg.	64+93.67	23.51	390.29	390.29
℄ Pier 1	64+94.80	23.52	390.29	390.29
℄ E. Pier 1 Brg.	64+95.93	23.52	390.29	390.29
E	65+05.97	23.56	390.29	390.32
F	65+16.02	23.58	390.28	390.33
G	65+26.07	23.58	390.28	390.32
H	65+36.12	23.56	390.27	390.30
℄ W. Pier 2 Brg.	65+44.07	23.53	390.26	390.26
℄ Pier 2	65+45.20	23.52	390.26	390.26
℄ E. Pier 2 Brg.	65+46.33	23.51	390.26	390.26
I	65+56.38	23.45	390.26	390.28
J	65+66.43	23.37	390.25	390.29
K	65+76.48	23.26	390.24	390.28
L	65+86.52	23.13	390.23	390.25
℄ Brg. E. Abut.	65+92.38	23.05	390.23	390.23
Bk. East Abut.	65+94.35	23.02	390.23	390.23

BEAM 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	64+45.50	32.90	390.01	390.01
℄ Brg. W. Abut.	64+47.47	32.93	390.01	390.01
A	64+57.54	33.06	390.01	390.03
B	64+67.60	33.18	390.00	390.05
C	64+77.67	33.28	390.00	390.04
D	64+87.74	33.35	390.00	390.01
℄ W. Pier 1 Brg.	64+93.61	33.39	389.99	389.99
℄ Pier 1	64+94.74	33.39	389.99	389.99
℄ E. Pier 1 Brg.	64+95.88	33.40	389.99	389.99
E	65+05.95	33.44	389.99	390.02
F	65+16.01	33.46	389.98	390.04
G	65+26.08	33.46	389.98	390.03
H	65+36.15	33.43	389.97	390.00
℄ W. Pier 2 Brg.	65+44.12	33.40	389.97	389.97
℄ Pier 2	65+45.26	33.39	389.97	389.97
℄ E. Pier 2 Brg.	65+46.39	33.39	389.97	389.97
I	65+56.46	33.32	389.96	389.99
J	65+66.52	33.24	389.95	390.00
K	65+76.59	33.13	389.94	389.98
L	65+86.66	33.01	389.94	389.95
℄ Brg. E. Abut.	65+92.53	32.93	389.93	389.93
Bk. East Abut.	65+94.50	32.90	389.93	389.93

BEAM 7

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	64+45.35	42.77	389.84	389.84
℄ Brg. W. Abut.	64+47.32	42.80	389.84	389.84
A	64+57.41	42.94	389.84	389.87
B	64+67.50	43.06	389.84	389.88
C	64+77.58	43.15	389.84	389.87
D	64+87.67	43.23	389.83	389.85
℄ W. Pier 1 Brg.	64+93.56	43.26	389.83	389.83
℄ Pier 1	64+94.69	43.27	389.83	389.83
℄ E. Pier 1 Brg.	64+95.83	43.27	389.83	389.83
E	65+05.92	43.31	389.82	389.85
F	65+16.01	43.33	389.82	389.87
G	65+26.10	43.33	389.81	389.86
H	65+36.18	43.31	389.81	389.83
℄ W. Pier 2 Brg.	65+44.17	43.27	389.80	389.80
℄ Pier 2	65+45.31	43.27	389.80	389.80
℄ E. Pier 2 Brg.	65+46.44	43.26	389.80	389.80
I	65+56.53	43.20	389.80	389.82
J	65+66.62	43.11	389.79	389.83
K	65+76.71	43.01	389.78	389.81
L	65+86.79	42.88	389.77	389.79
℄ Brg. E. Abut.	65+92.68	42.80	389.77	389.77
Bk. East Abut.	65+94.65	42.77	389.76	389.76

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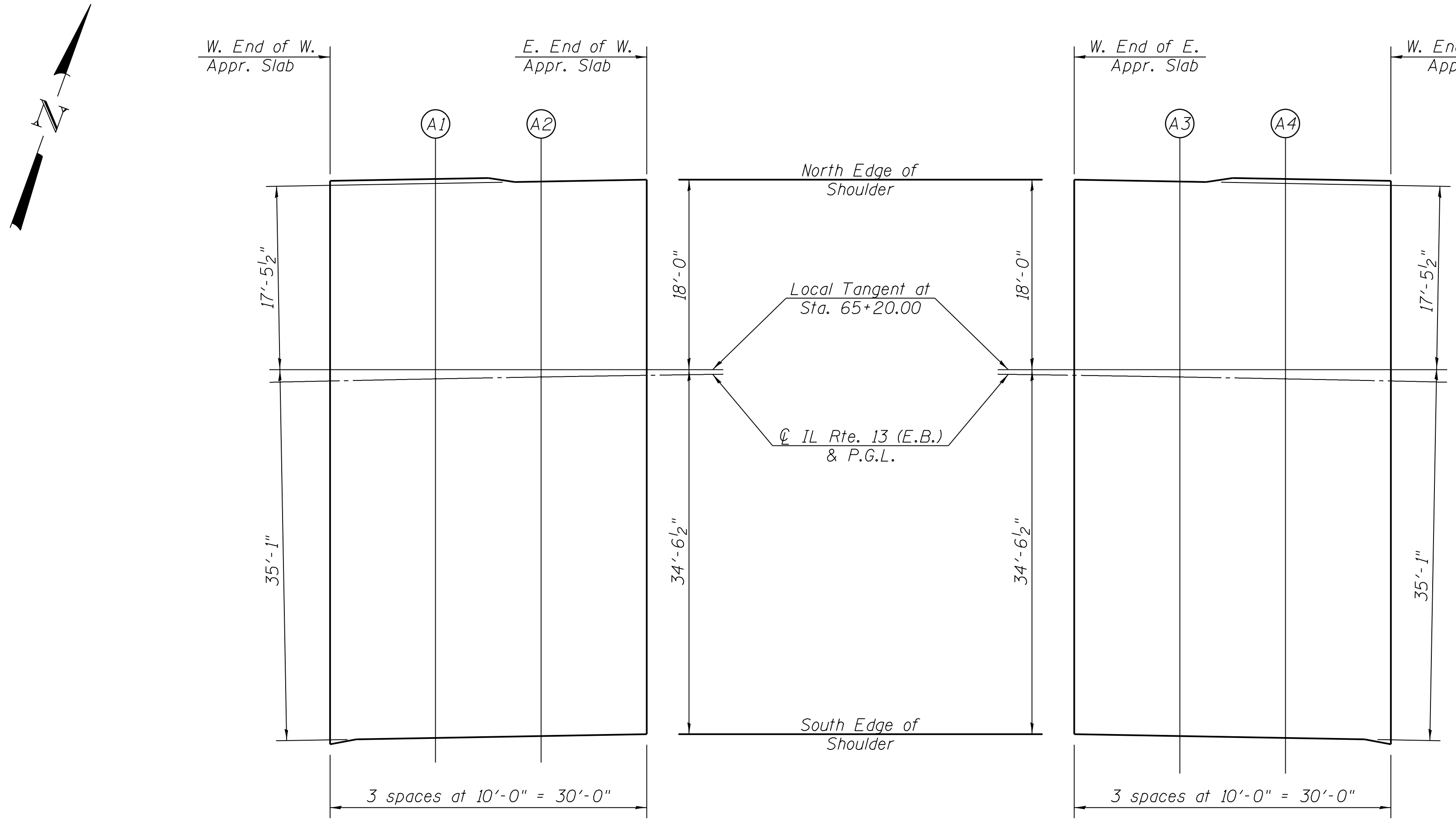
USER NAME =	DESIGNED	CJW	REVISED
	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK ELEVATIONS – 2
STRUCTURE NO. 039–0078
SHEET NO. 4 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	143
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



WEST APPROACH SLAB

EAST APPROACH SLAB

PLAN

Note:

See Sheet 12 of 27 for additional Approach Slab Details.

NORTH EDGE OF SHOULDER (West)

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	64+17.38	-18.54	391.54
A1	64+27.35	-18.52	391.54
A2	64+37.31	-18.52	391.55
E. End of W. Appr.	64+47.27	-18.54	391.55

℄ ROADWAY & P.G.L. (West)

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	64+17.00	0.00	390.98
A1	64+27.00	0.00	390.99
A2	64+37.00	0.00	390.99
E. End of W. Appr.	64+47.00	0.00	390.99

SOUTH EDGE OF SHOULDER (West)

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	64+16.28	34.00	389.96
A1	64+26.35	34.02	389.97
A2	64+36.42	34.02	389.97
E. End of W. Appr.	64+46.49	34.00	389.97

NORTH EDGE OF SHOULDER (East)

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	65+92.73	-18.54	391.47
A3	66+02.69	-18.52	391.46
A4	66+12.65	-18.52	391.44
E. End of E. Appr.	66+22.61	-18.54	391.43

℄ ROADWAY & P.G.L. (East)

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	65+93.00	0.00	390.92
A3	66+03.00	0.00	390.90
A4	66+13.00	0.00	390.89
E. End of E. Appr.	66+23.00	0.00	390.87

SOUTH EDGE OF SHOULDER (East)

LOCATION	STATION	* OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	65+93.51	34.00	389.90
A3	66+03.58	34.02	389.88
A4	66+13.65	34.02	389.87
E. End of E. Appr.	66+23.72	34.00	389.85

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PLOT SCALE =	DRAWN	GLD	REVISED	
PLOT DATE =	CHECKED	WLB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

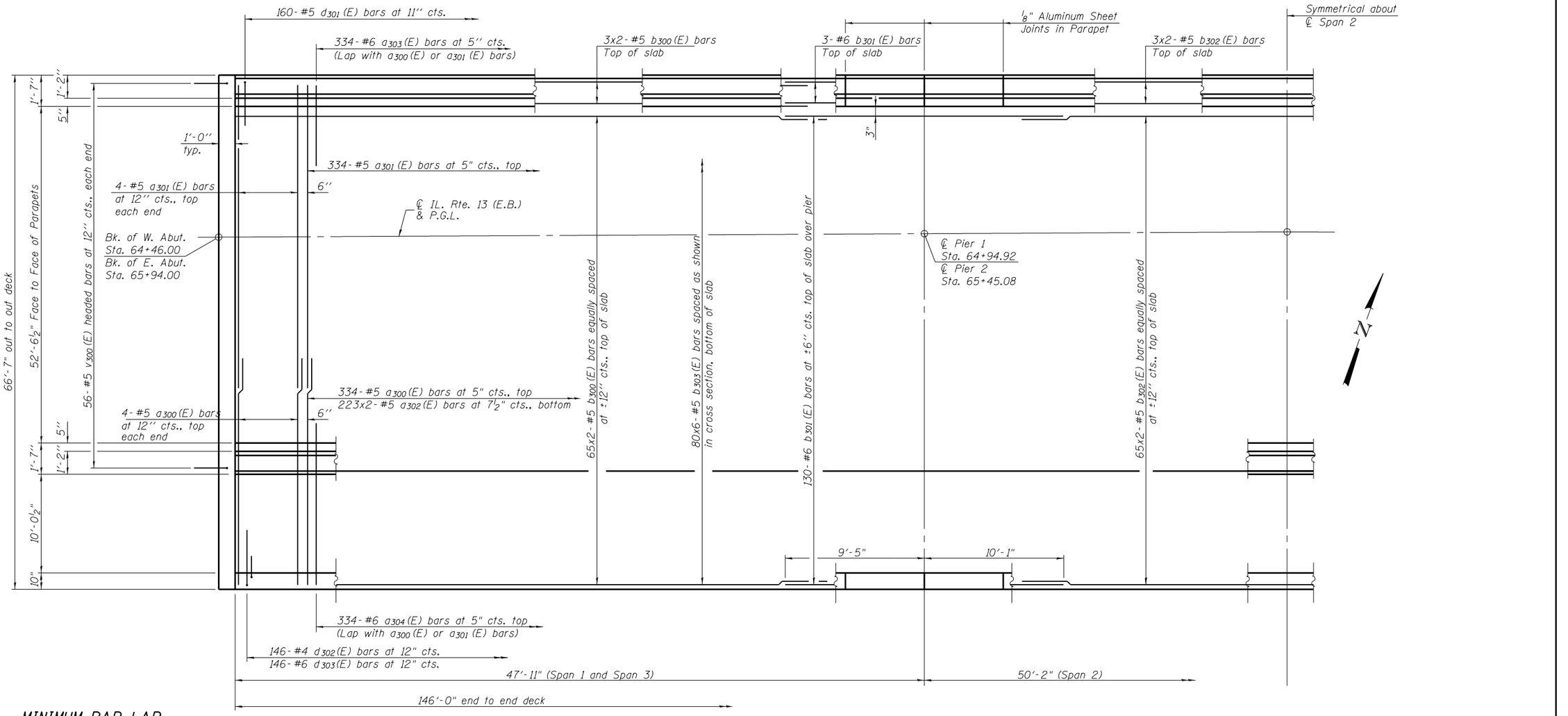
APPROACH SLAB ELEVATIONS
STRUCTURE NO. 039-0078

SHEET NO. 5 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	144

CONTRACT NO. 78295

ILLINOIS FED. AID PROJECT



MINIMUM BAR LAP

#5 bar = 3'-6''

PARTIAL PLAN

Notes:
See sheet 7 of 27 for Cross Section.
See sheet 9 of 27 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

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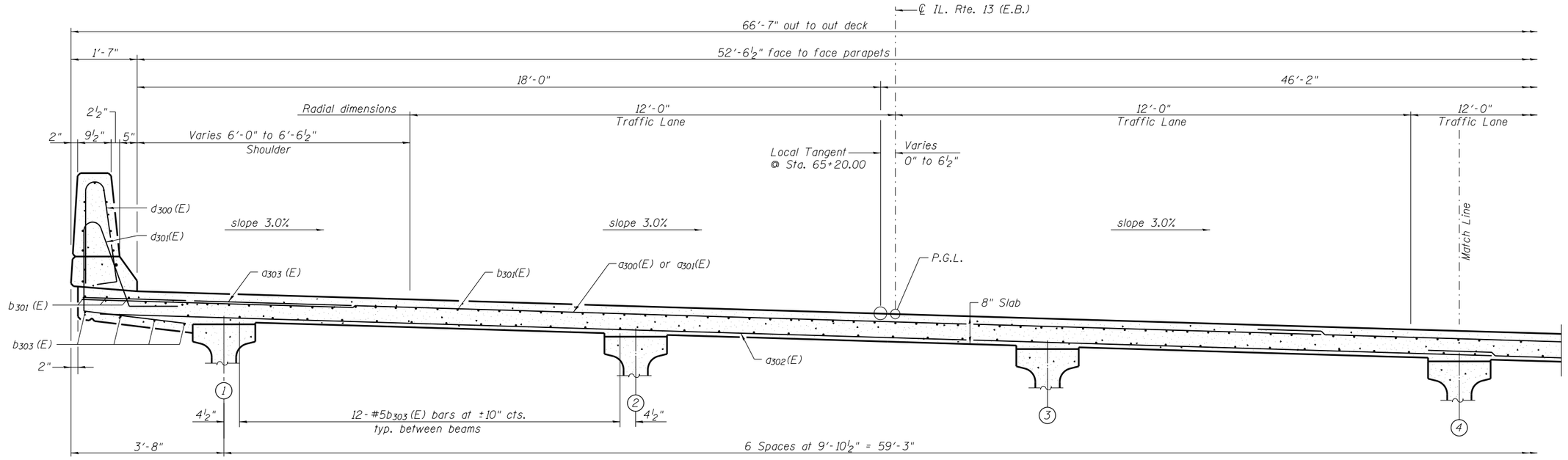
	PLOT SCALE =	DRAWN GLD	REVISED
	PLOT DATE =	CHECKED WLB	REVISED

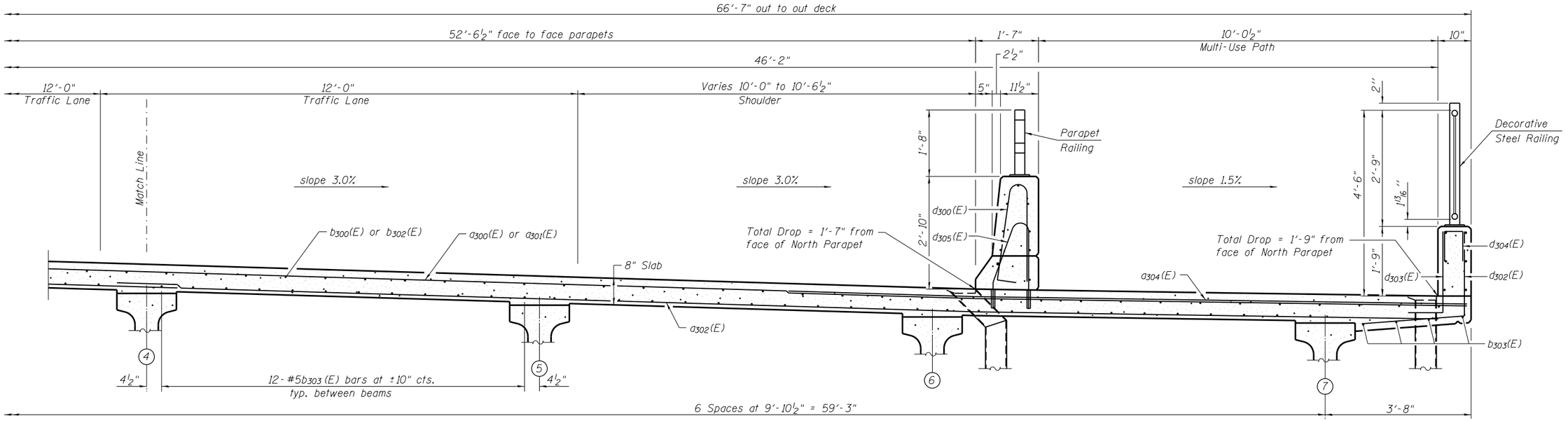
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE – 1
STRUCTURE NO. 039–0078
SHEET NO. 6 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	145
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



NEAR PIER



NEAR MIDSPAN

CROSS SECTION
(Looking East)

Note:
Cross-slope changes from 3.0% to 1.5% at the toe of the parapet.

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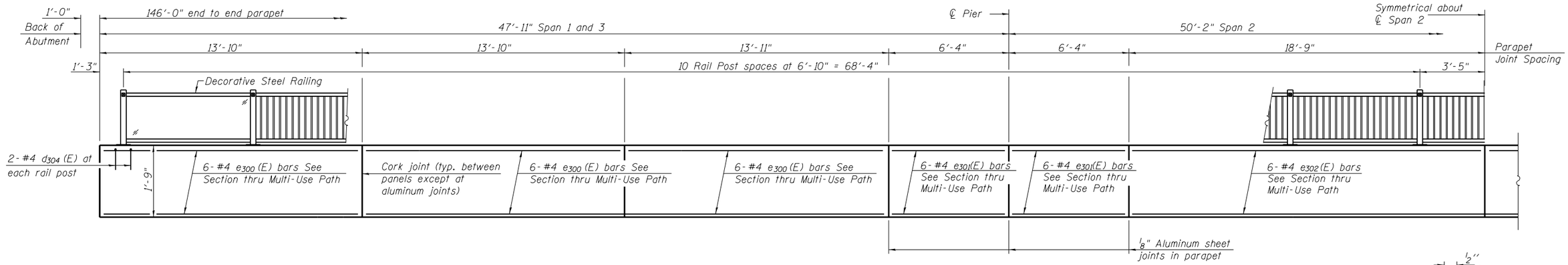
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

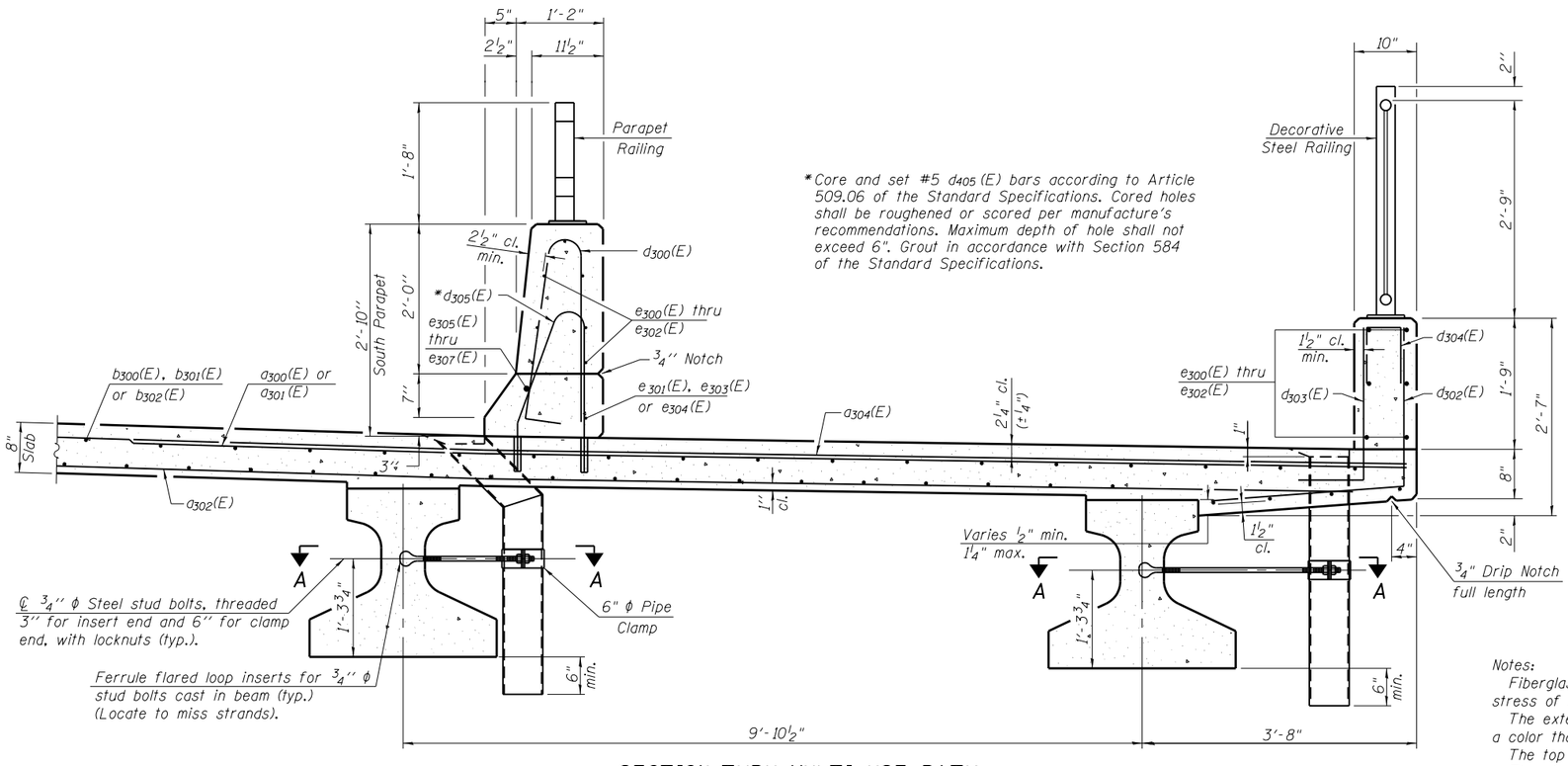
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE – 2
STRUCTURE NO. 039–0078
SHEET NO. 7 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	146
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

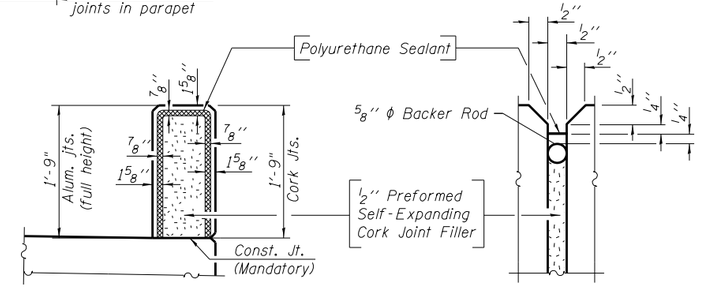


INSIDE ELEVATION OF MULTI-USE PATH PARAPET

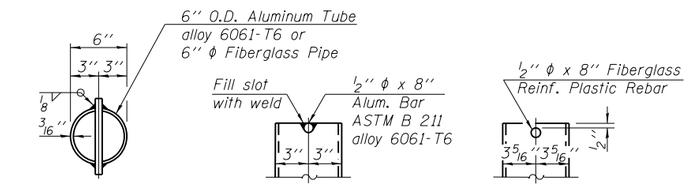


* Core and set #5 d405(E) bars according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacture's recommendations. Maximum depth of hole shall not exceed 6". Grout in accordance with Section 584 of the Standard Specifications.

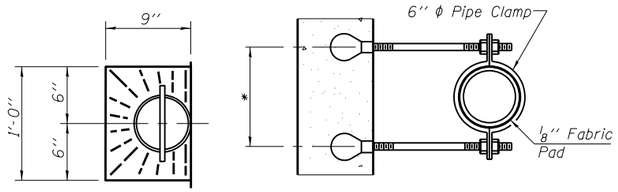
SECTION THRU MULTI-USE PATH



MULTI-USE PATH PARAPET JOINT DETAILS



TOP PLAN (Showing Aluminum Tube) | ALUMINUM TUBE | FIBERGLASS PIPE



TOP PLAN | SECTION A-A

*Dimension as required by Pipe Clamp

Notes:

Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

The exterior surfaces of the fiberglass floor drains shall be pigmented by the manufacturer with a color that matches the concrete.

The top portion of aluminum floor drains shall be coated to minimize reaction with wet concrete.

The clamping device and inserts shall be galvanized according to AASHTO M 232. Cost of clamping device and inserts included with Floor Drains.

The 1/8" Aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.

The Polyurethane Sealant shall be non-staining gray one component non-sag elastomeric gun grade meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25. Use T with a 5/8" backer rod.

The 1/2" Preformed Self-Expanding Cork Joint Filler shall be according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

For Decorative Steel Railing and Parapet Railing details see sheet 14 of 27.

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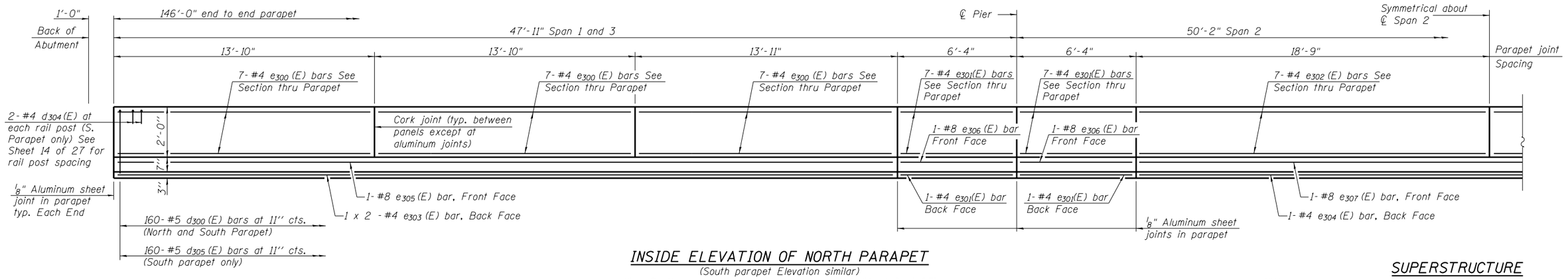
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

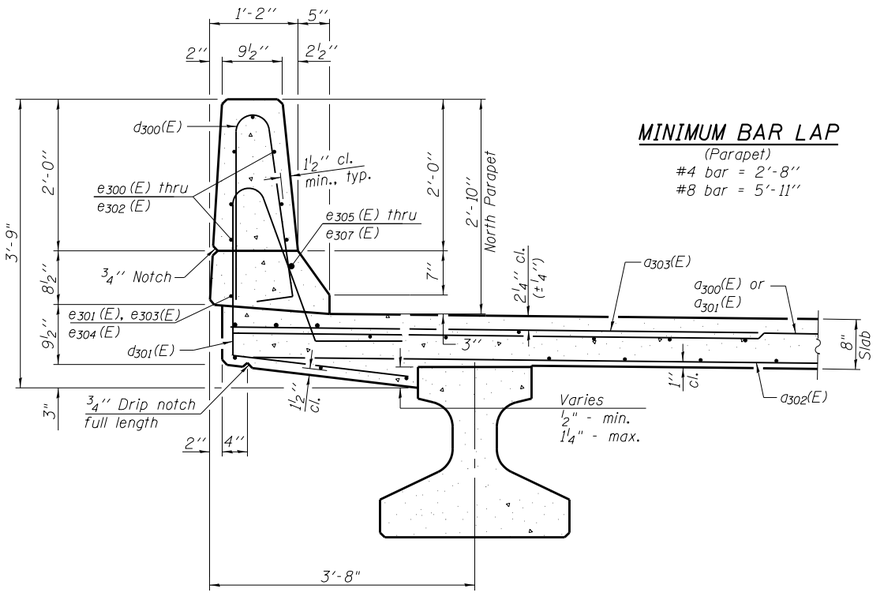
SUPERSTRUCTURE DETAILS – 1
STRUCTURE NO. 039–0078
SHEET NO. 8 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	147
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



INSIDE ELEVATION OF NORTH PARAPET

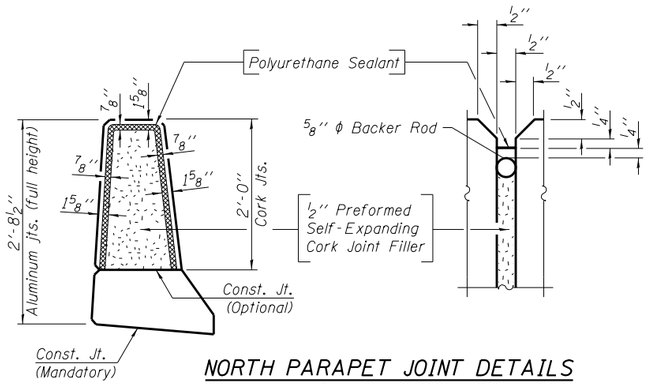
(South parapet Elevation similar)
(See South parapet Section Thru Multiuse Path Sheet 8 of 27)



SECTION THRU PARAPET

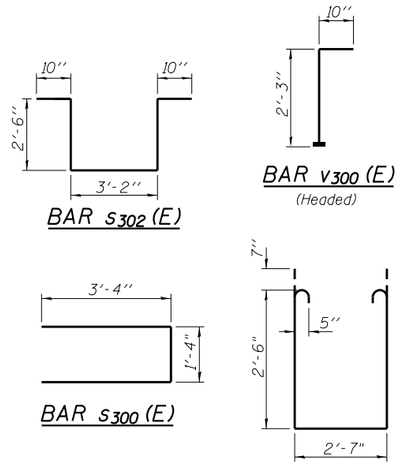
MINIMUM BAR LAP

(Parapet)
#4 bar = 2'-8"
#8 bar = 5'-11"



NORTH PARAPET JOINT DETAILS

(South parapet similar)



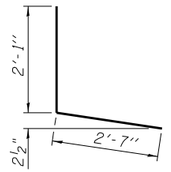
BAR s302 (E)

BAR s300 (E)

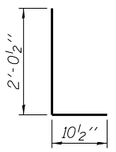
BAR v300 (E)

(Headed)

BAR s301 (E)



BAR d302 (E)



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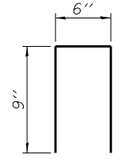
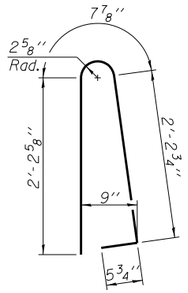
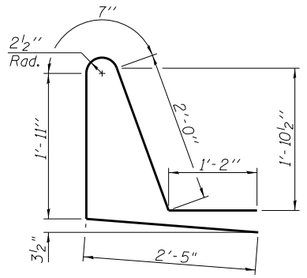


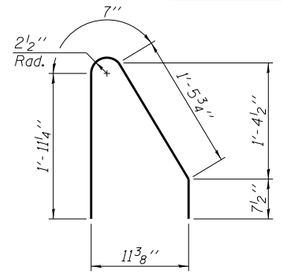
BAR d304 (E)



BAR d300 (E)



BAR d301(E)



BAR d305 (E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a300(E)	342	#5	39'-8"	
a301(E)	342	#5	29'-11"	
a302(E)	446	#5	34'-10"	
a303(E)	334	#6	6'-6"	
a304(E)	334	#6	17'-2"	
b300(E)	272	#5	22'-9"	
b301(E)	266	#6	19'-6"	
b302(E)	136	#5	20'-9"	
b303(E)	480	#5	27'-3"	
d300(E)	320	#5	5'-7"	
d301(E)	160	#5	8'-1"	
d302(E)	146	#4	4'-8"	
d303(E)	146	#6	2'-11"	
d304(E)	88	#4	2'-0"	
d305(E)	160	#5	4'-8"	
e300(E)	120	#4	13'-7"	
e301(E)	88	#4	6'-0"	
e302(E)	40	#4	18'-5"	
e303(E)	8	#4	22'-0"	
e304(E)	2	#4	37'-2"	
e305(E)	4	#8	41'-3"	
e306(E)	8	#8	6'-0"	
e307(E)	2	#8	37'-2"	
m300(E)	16	#6	34'-11"	
m301(E)	72	#6	8'-8"	
m302(E)	8	#6	2'-11"	
m303(E)	36	#6	7'-0"	
m304(E)	4	#6	2'-1"	
m305(E)	56	#5	4'-0"	
s300(E)	108	#5	8'-0"	
s301(E)	108	#5	8'-9"	
s302(E)	96	#5	9'-10"	
v300(E)	112	#5	3'-1"	
Concrete Superstructure			Cu. Yd.	361.4
Bridge Deck Grooving			Sq. Yds.	820
Protective Coat			Sq. Yds.	1,200
Reinforcement Bars, Epoxy Coated			Lbs.	97,470

Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.

Notes:

The 1/8" Aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.

The Polyurethane Sealant shall be non-staining gray one component non-sag elastomeric gun grade meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25. Use T with a 5/8" backer rod.

The 1/2" Preformed Self-Expanding Cork Joint Filler shall be according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

Headed bars shall conform to ASTM A970 Class HA. Cost included with Reinforcement Bars, Epoxy Coated.

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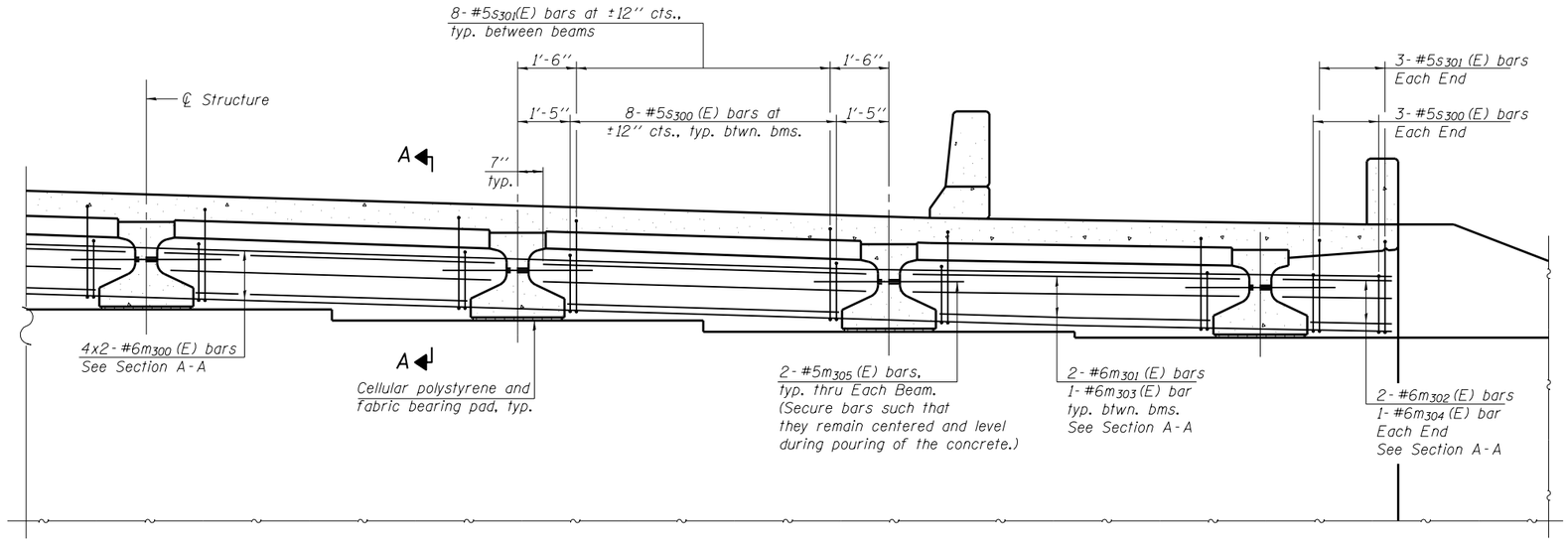
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

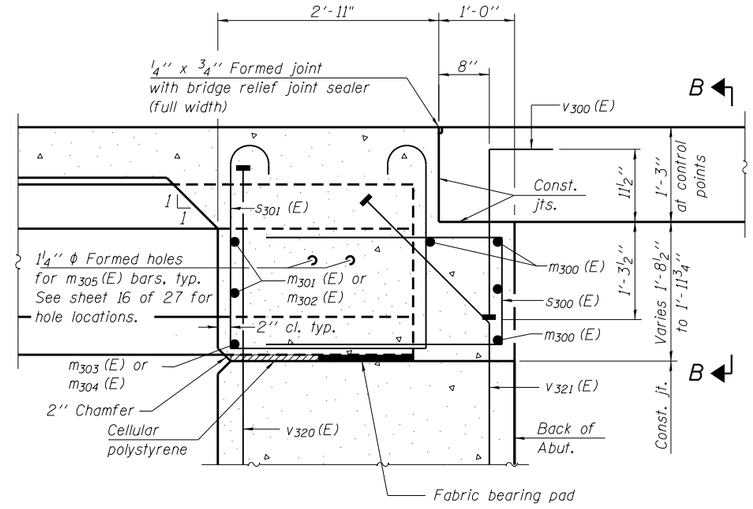
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS – 2
STRUCTURE NO. 039-0078
SHEET NO. 9 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	148
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



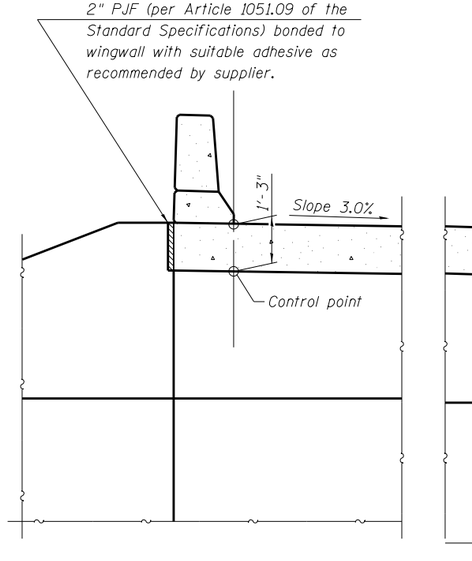
DIAPHRAGM AT ABUTMENT



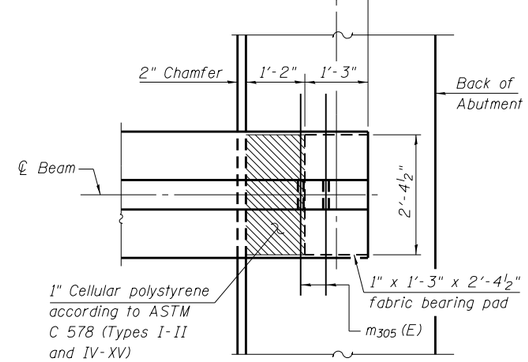
SECTION A-A

MIN. BAR LAP

#6 bar = 3'-7"



SECTION B-B



PLAN AT ABUTMENT

(Showing bottom flange of beam)

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 9 of 27.

Concrete in diaphragm is included with Concrete Superstructure on sheet 9 of 27.

For details of bars s_{300}(E), s_{301} (E) and v_{300} (E) see sheet 9 of 27.

The approach slab seat shall have a constant slope determined from the control points shown.

Cost of cellular polystyrene is included with Concrete Superstructure.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

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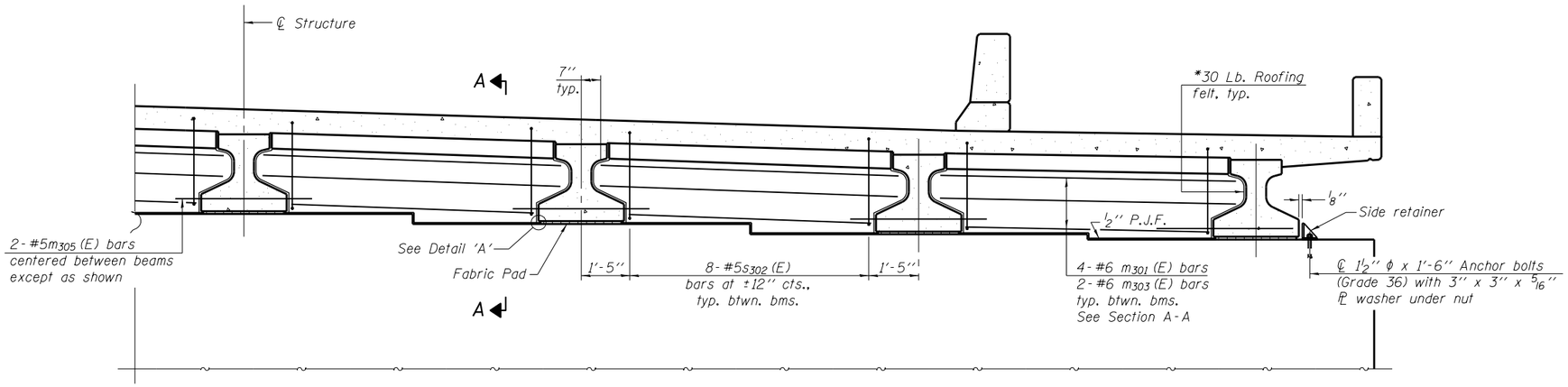
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

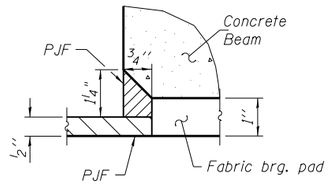
DIAPHRAGM DETAILS – 1
STRUCTURE NO. 039–0078
SHEET NO. 10 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	149
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

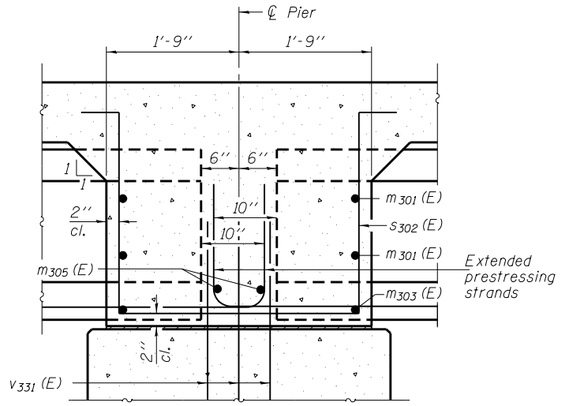


DIAPHRAGM AT PIER

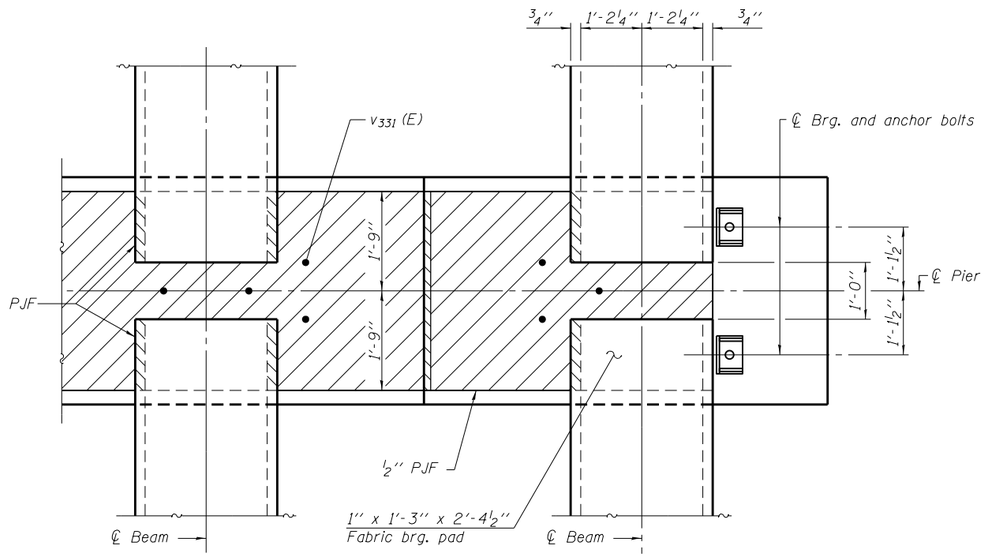
*Bonded to sides of beams embedded into diaphragm.



DETAIL 'A'

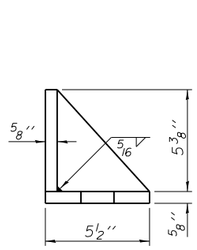


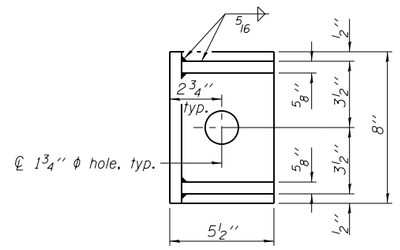
SECTION A-A



PLAN AT PIER

(Showing bearing pads and PJF details)





SIDE RETAINER

(2 required each side of pier).
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 9 of 27.

Concrete in diaphragm is included with Concrete Superstructure on sheet 9 of 27.

Cost of 30 Lb. roofing felt is included with Concrete Superstructure.

Cost of side retainer and anchor bolts shall be included with Concrete Structures.

For details of bar s302 (E) see sheet 9 of 27.

Anchor bolts and side retainers shall be according to Article 521.06 of the Standard Specifications. Side retainers shall be hot dip galvanized.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

Anchor bolts and side retainers shall be installed as each exterior beam is erected unless an equivalent temporary means of lateral restraint is used.

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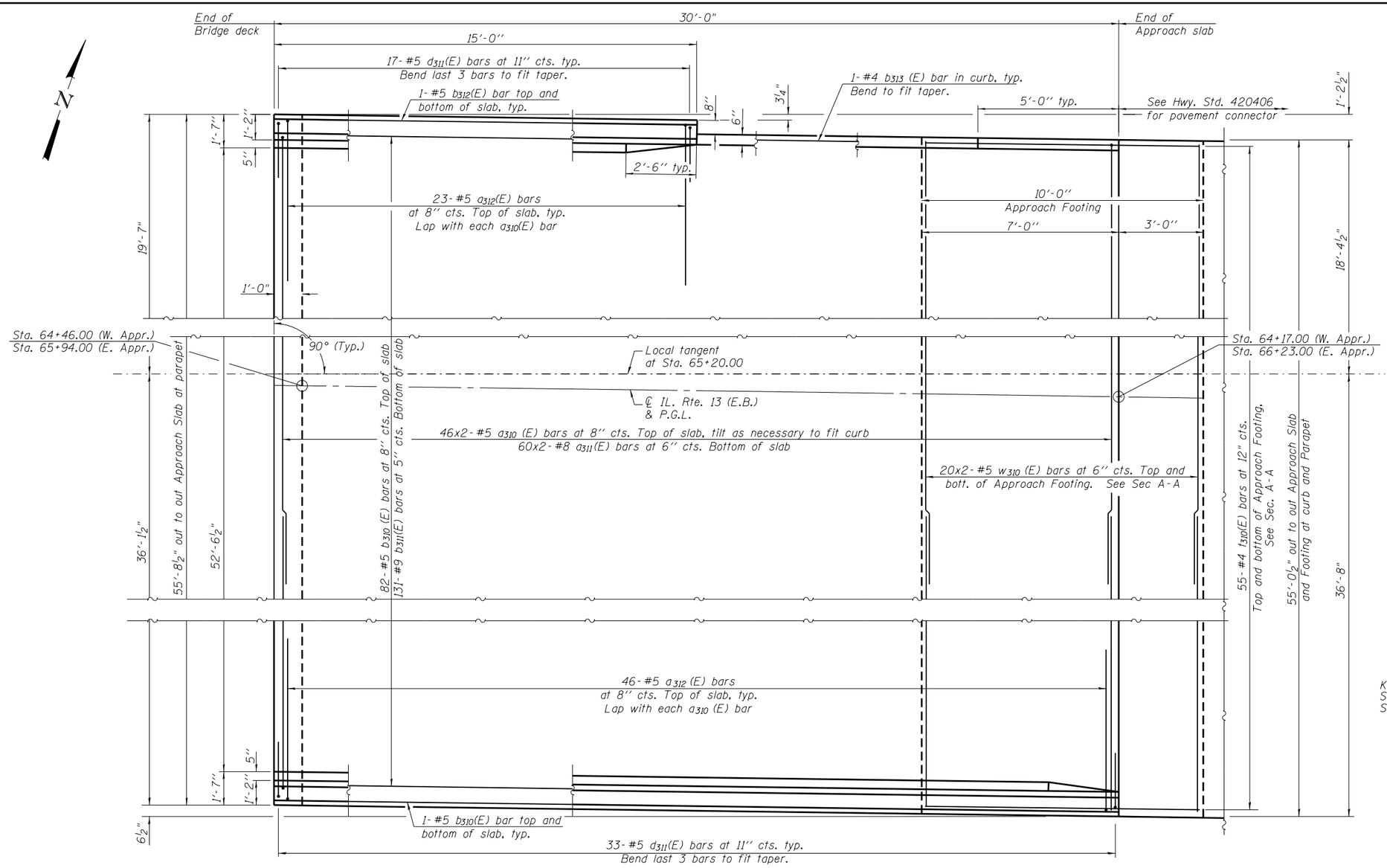
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

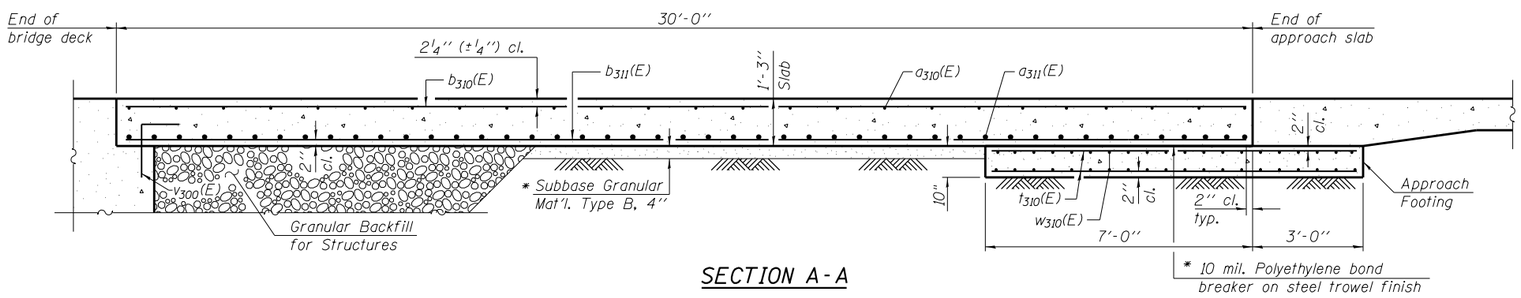
DIAPHRAGM DETAILS – 2
STRUCTURE NO. 039–0078
SHEET NO. 11 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	150
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

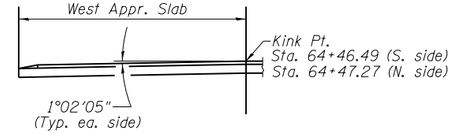


PLAN

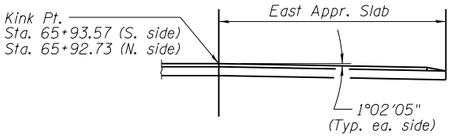
(E. Approach shown. W. Approach opposite)



SECTION A-A



PLAN



PLAN

MINIMUM BAR LAP

#5 bar = 3'-9"
#8 bar = 4'-9"

Note:

Bars indicated thus 20x2-#5 etc., indicates 20 lines of bars with 2 lengths per line.

* Cost included with Concrete Superstructure (Approach Slab).

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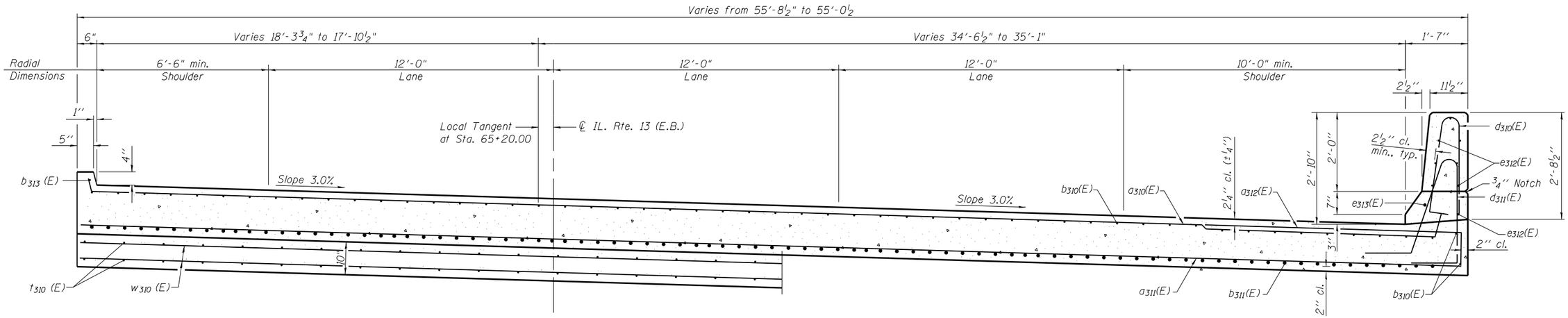
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS – 1
STRUCTURE NO. 039–0078
SHEET NO. 12 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	151
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

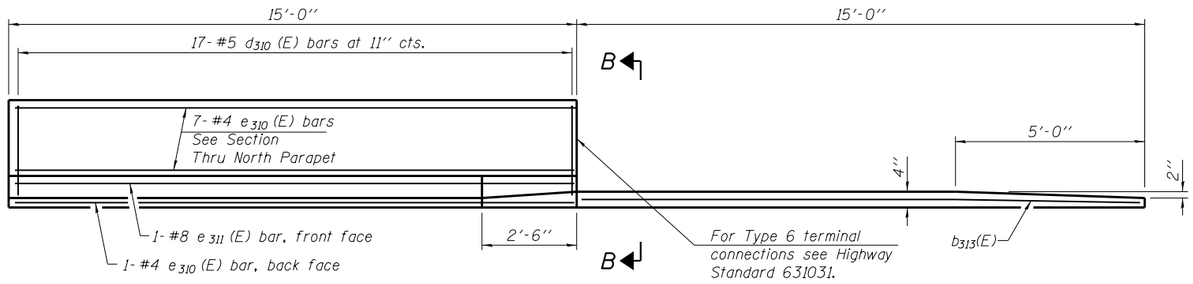


AT APPROACH FOOTING

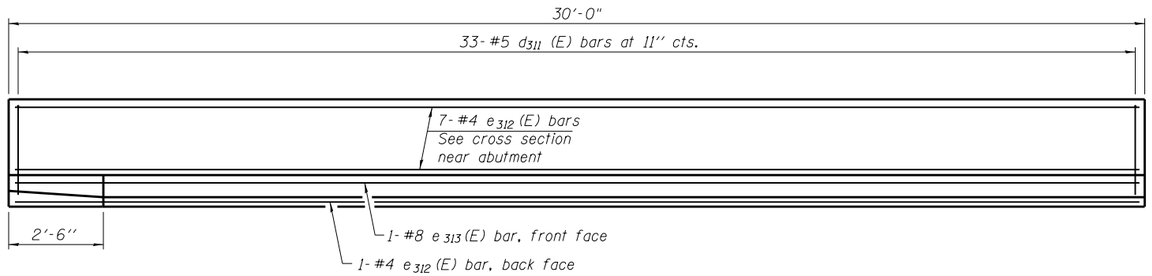
CROSS SECTION

(Looking East)

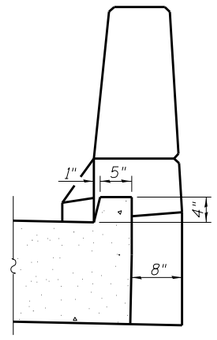
NEAR ABUTMENT



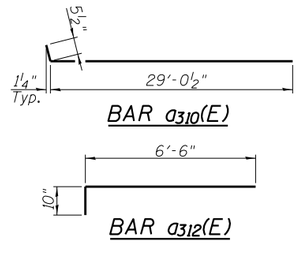
INSIDE ELEVATION OF NORTH PARAPET AND CURB



INSIDE ELEVATION OF SOUTH PARAPET

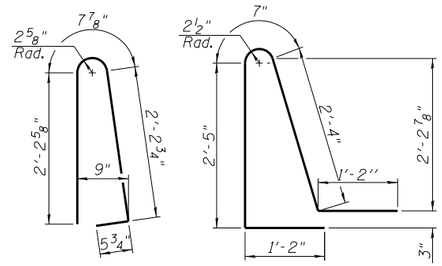


VIEW B-B



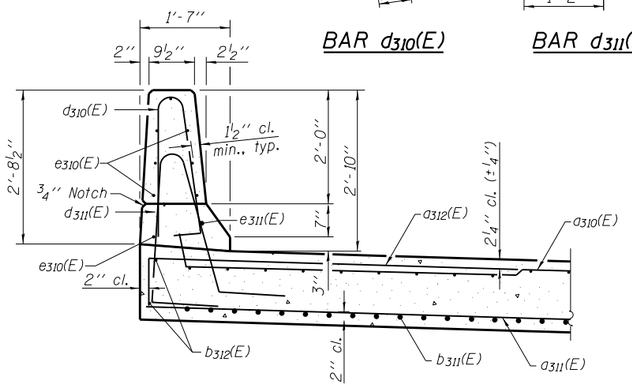
BAR a310(E)

BAR a312(E)



BAR d310(E)

BAR d311(E)



SECTION THRU NORTH PARAPET

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a310(E)	184	#5	29'-6"	
a311(E)	240	#8	29'-9"	
a312(E)	138	#5	7'-4"	
b310(E)	168	#5	29'-8"	
b311(E)	262	#9	29'-8"	
b312(E)	4	#5	14'-8"	
b313(E)	2	#4	14'-8"	
d310(E)	100	#5	5'-7"	
d311(E)	100	#5	7'-8"	
e310(E)	16	#4	14'-8"	
e311(E)	2	#8	14'-8"	
e312(E)	16	#4	29'-8"	
e313(E)	2	#8	29'-8"	
t310(E)	220	#4	9'-8"	
w310(E)	160	#5	29'-3"	
Concrete Structures			Cu. Yd.	34.0
Concrete Superstructure			Cu. Yd.	10.0
Bridge Deck Grooving			Sq. Yds.	337
Protective Coat			Sq. Yds.	389
Concrete Superstructure (Approach Slab)			Cu. Yd.	154.0
Reinforcement Bars, Epoxy Coated			Pound	65,880

Notes:

Parapet concrete shall be paid for as Concrete Superstructure.

Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 27.

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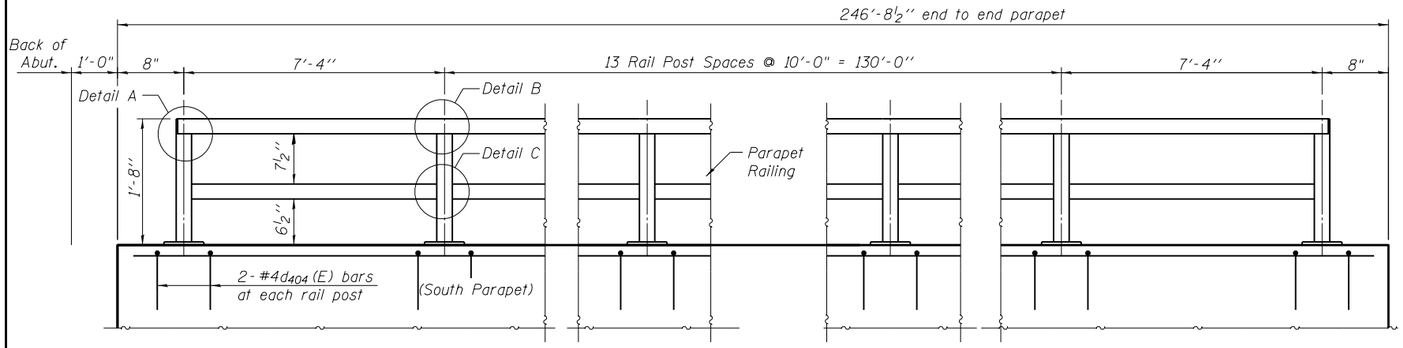
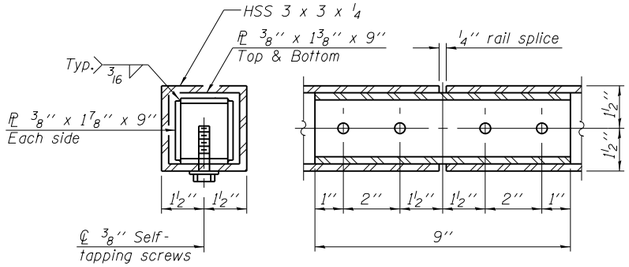
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS – 2
STRUCTURE NO. 039–0078
SHEET NO. 13 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	152
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



INSIDE ELEVATION OF SOUTH PARAPET



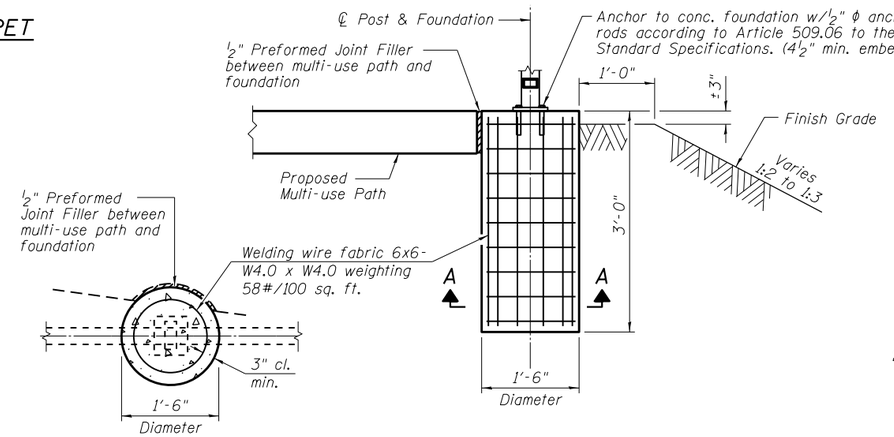
RAIL SPLICE

Note:
All structural steel tubing, post and railing, for parapet railing shall be CVN tested according to 1006.34(b) of the Standard Specifications.

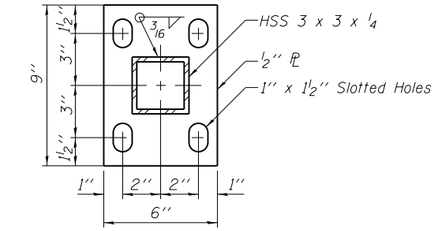
DETAIL A DETAIL B DETAIL C

NOTE:
All necessary excavation, backfilling, disposal of unsuitable or surplus material, formwork and furnishing and placing the Class SI Concrete and reinforcement shall be included in the Pay Item "Decorative Steel Railing". See Sheet 2 for foundation layout and elevations.

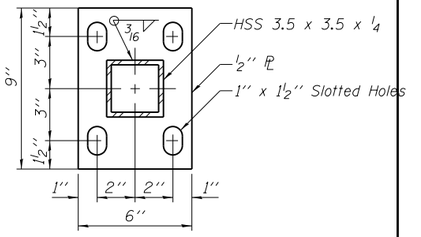
POST FOUNDATION DETAILS



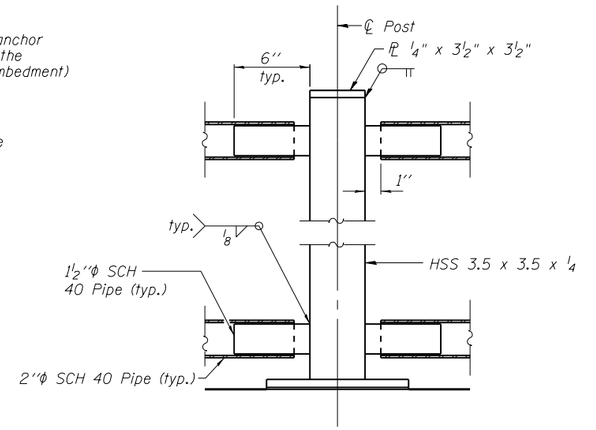
SECTION A-A ELEVATION



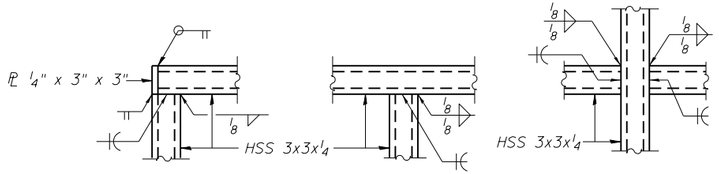
BASE PL



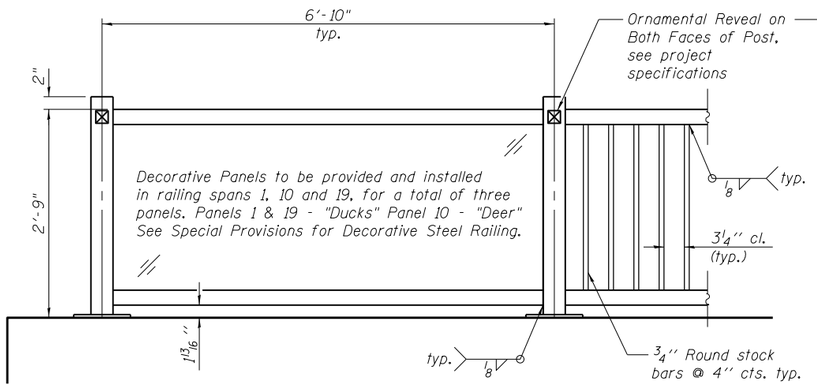
DECORATIVE STEEL RAILING BASE PL



DECORATIVE STEEL RAILING POST

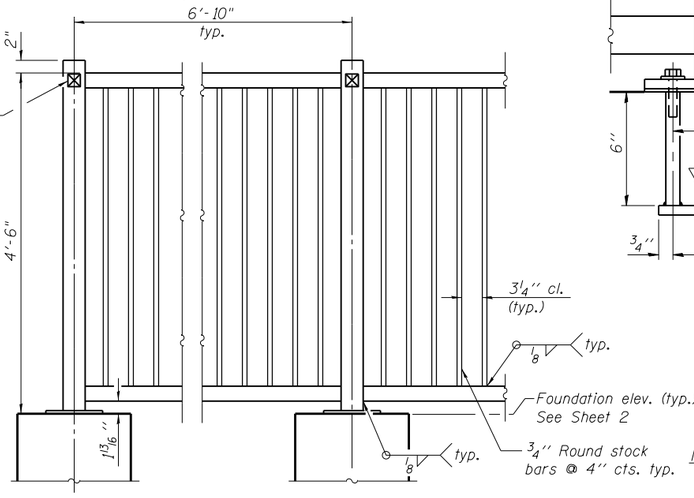


DETAIL A DETAIL B DETAIL C

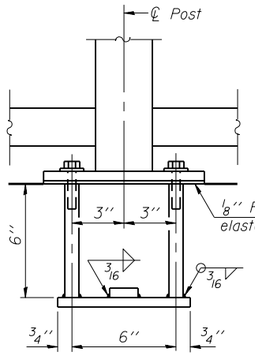


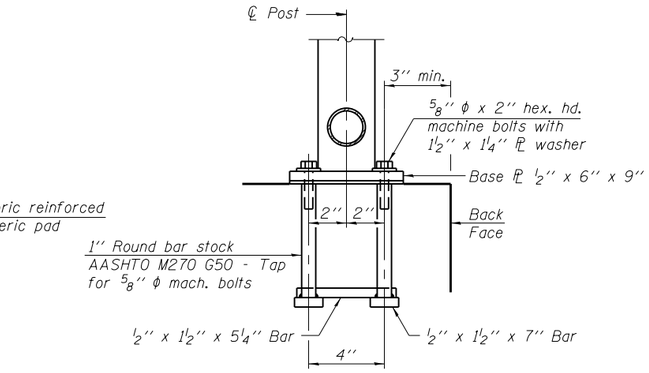
DECORATIVE STEEL RAILING ELEVATION

Aesthetic details to be coordinated with the District



STEEL RAILING ELEVATION-OFF BRIDGE





ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting ⅝" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

Note:
All post, railing, splices, anchor devices and bent plates shall be painted per the project specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Decorative Steel Railing	Foot	198
Parapet Railing	Foot	145

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CMT

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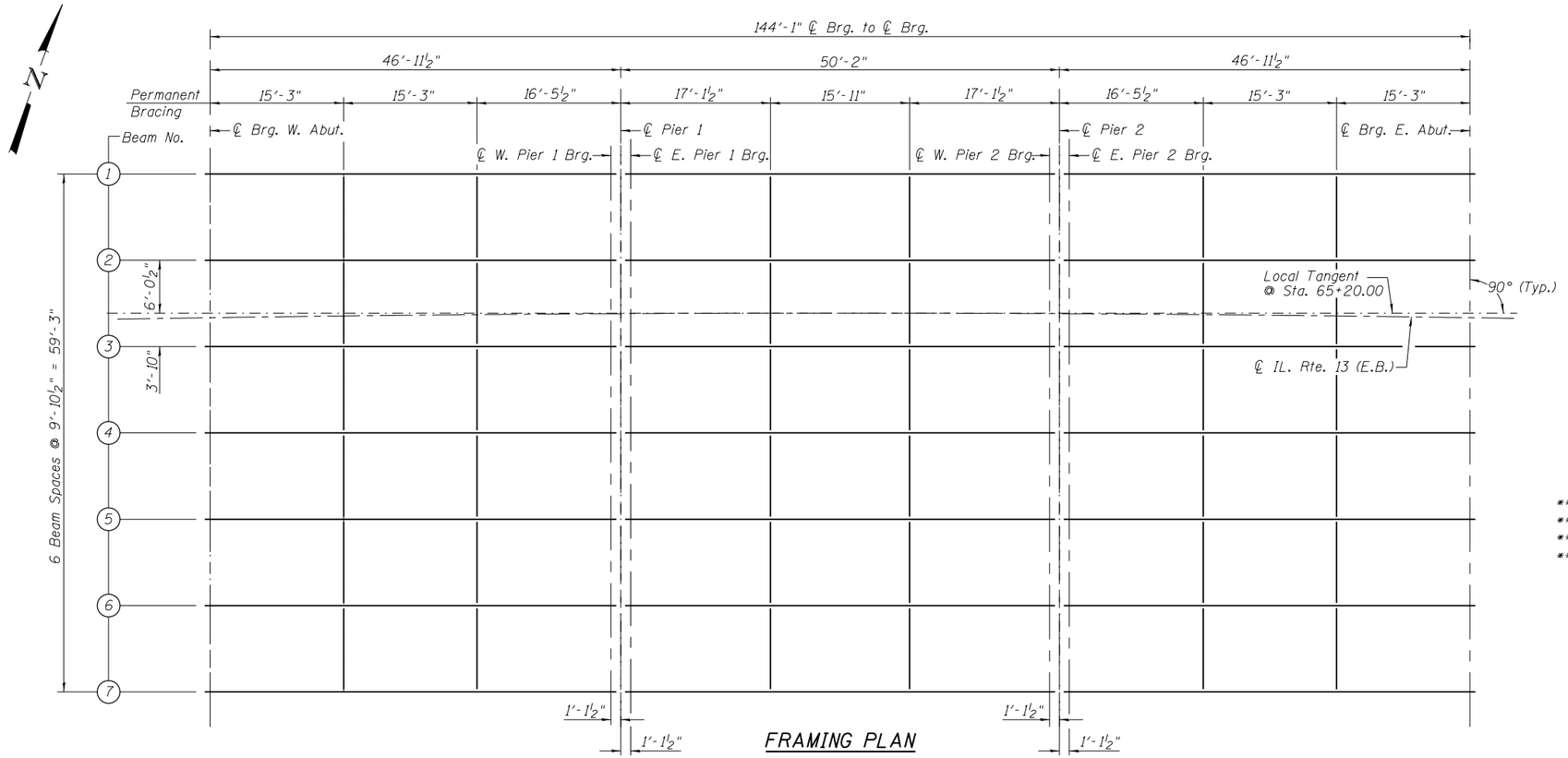
...\98850-0078_014-Railing Details.dgn	CHECKED WLB	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

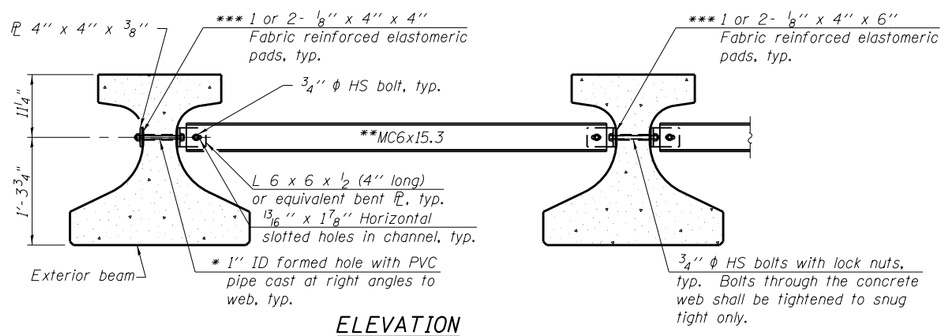
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAILING DETAILS
STRUCTURE NO. 039-0078
SHEET NO. 14 OF 27 SHEETS

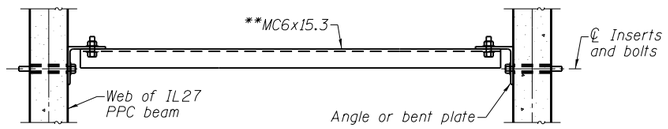
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	153
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



FRAMING PLAN



ELEVATION



PLAN

INTERIOR BEAM MOMENT TABLE				
		0.4 Sp. 1 0.6 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I	(in^4)	33,879		33,879
I'	(in^4)	144,353		144,353
S_b	(in^3)	3,060.4		3,060.4
S_b'	(in^3)	6,334.0		6,334.0
S_t	(in^3)	2,126.7		2,126.7
S_t'	(in^3)	34,288		34,288
DC1	(k/')	1.49	1.49	1.49
M_{DC1}	('k)	375	0	428
DC2	(k/')	0.17	0.17	0.17
M_{DC2}	('k)	29	35	13
DW	(k/')	0.375	0.375	0.375
M_{DW}	('k)	64	78	30
LLDF		0.840	0.834	0.829
M_{LL+IM}	('k)	598	436	520

BEAM REACTION TABLE							
		Abut.		Pier 1 Span 1 Pier 2 Span 3		Pier 1 Span 2 Pier 2 Span 2	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
LLDF		0.943	0.763	0.943	0.763	0.943	0.763
OCF		—	—	—	—	—	—
R_{DC1}	(k)	34.1	31.1	34.1	31.1	35.6	32.6
**** R_{DC2}	(k)	3.09	3.09	4.5	4.5	4.5	4.5
**** R_{DW}	(k)	6.93	6.93	10.1	10.1	10.1	10.1
**** R_{LL}	(k)	64.3	52.0	49.5	40.0	49.5	40.0
**** R_{IM}	(k)	17.0	13.7	10.5	8.5	10.5	8.5
R_{Total}	(k)	125.4	106.8	108.7	94.2	110.2	95.7

**** At continuous piers, reactions from composite loads are assumed to be equally distributed to each bearing line.

I: Non-composite moment of inertia of beam section ($in.^4$).
I': Composite moment of inertia of beam section ($in.^4$).
S_b: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_b': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_t: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).
S_t': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).
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_{LL+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

Notes:
All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.
Two hardened washers are required for each set of oversized holes.
All holes shall be 15/16" ϕ unless otherwise noted.
5/16" x 3" x 3" plate washers are required over all slotted holes.
All bolts shall be galvanized according to AASHTO M232.
Bracing shall be installed as beams are erected and tightened as soon as possible during erection.
Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Beams.

* Fabricator shall locate to miss strands within permissible tolerances.

** Alternate MC6x18 channels are permitted to facilitate material acquisition.

*** Place pads as necessary to provide a flat mounting surface between the steel and concrete.

PERMANENT BRACING DETAILS FOR IL27 PPC BEAMS

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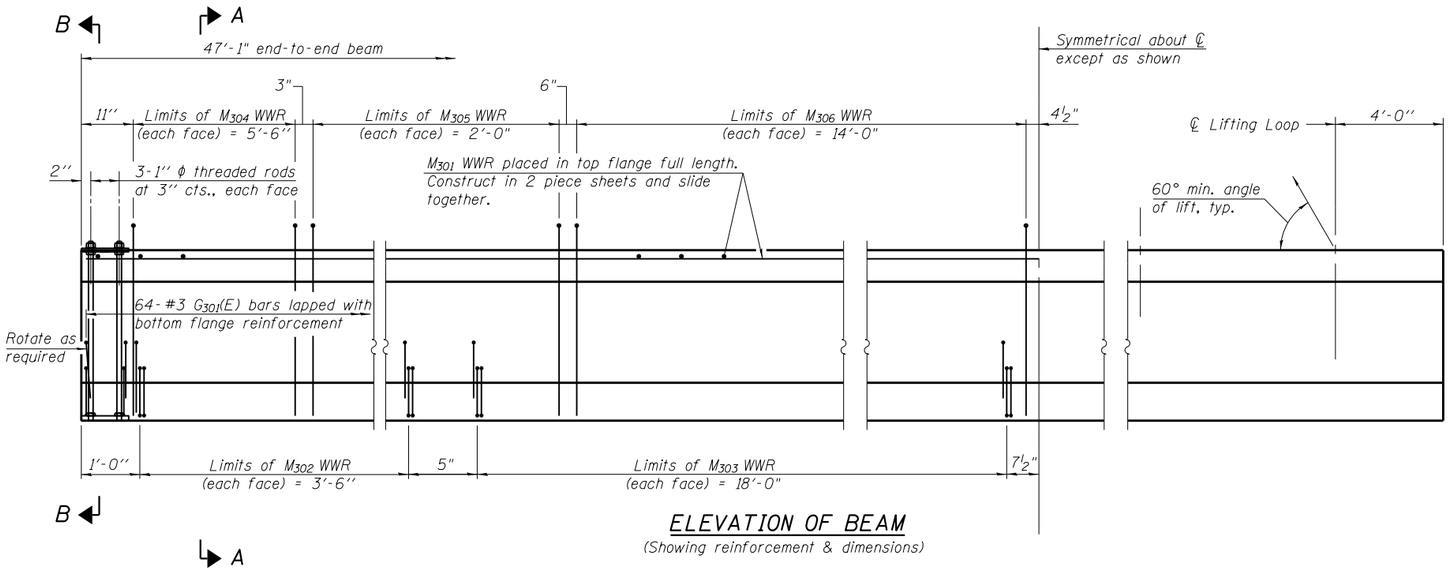
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

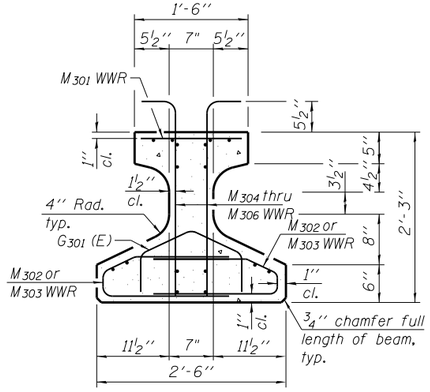
FRAMING PLAN AND DETAILS
STRUCTURE NO. 039-0078
SHEET NO. 15 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	154
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		

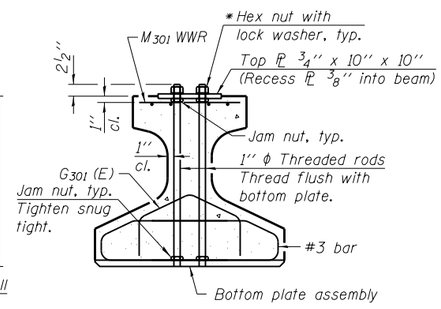


ELEVATION OF BEAM

(Showing reinforcement & dimensions)

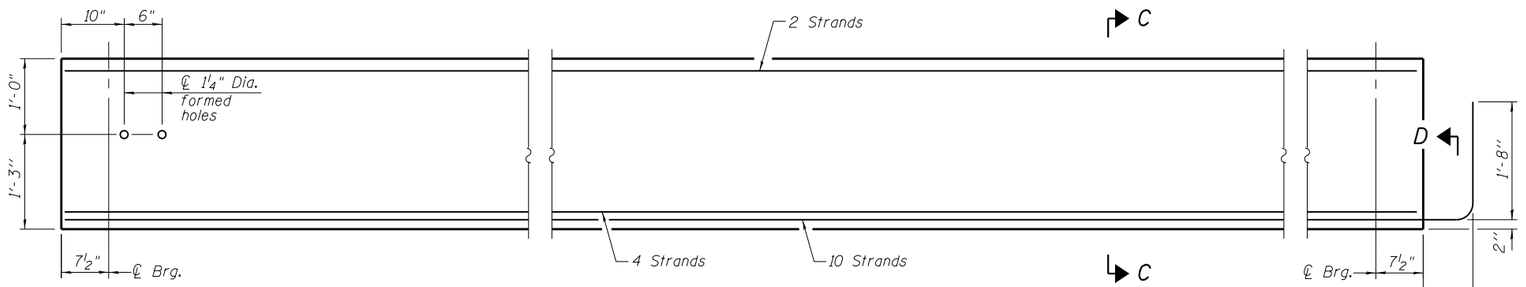


SECTION A-A



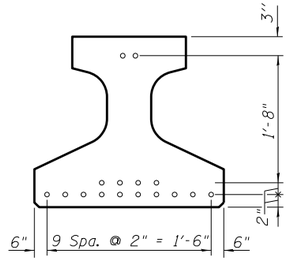
SECTION B-B

* Only tighten sufficiently to compress lock washers



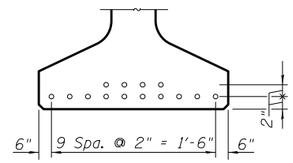
ELEVATION OF BEAM

(Showing prestressing steel)



SECTION C-C

16-0.6" ϕ 270 ksi strands)



VIEW D-D

○ Fully bonded strand

▲ Partially debonded strand

Note:
See sheet 18 of 27 for additional details and Bill of Material.

IL27-1830

10-7-16

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0078.016-1127-1830 Beam Sp 1 and 3.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

CMT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL27-1830 BEAM SPAN 1 & 3
STRUCTURE NO. 039-0078
SHEET NO. 16 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	155
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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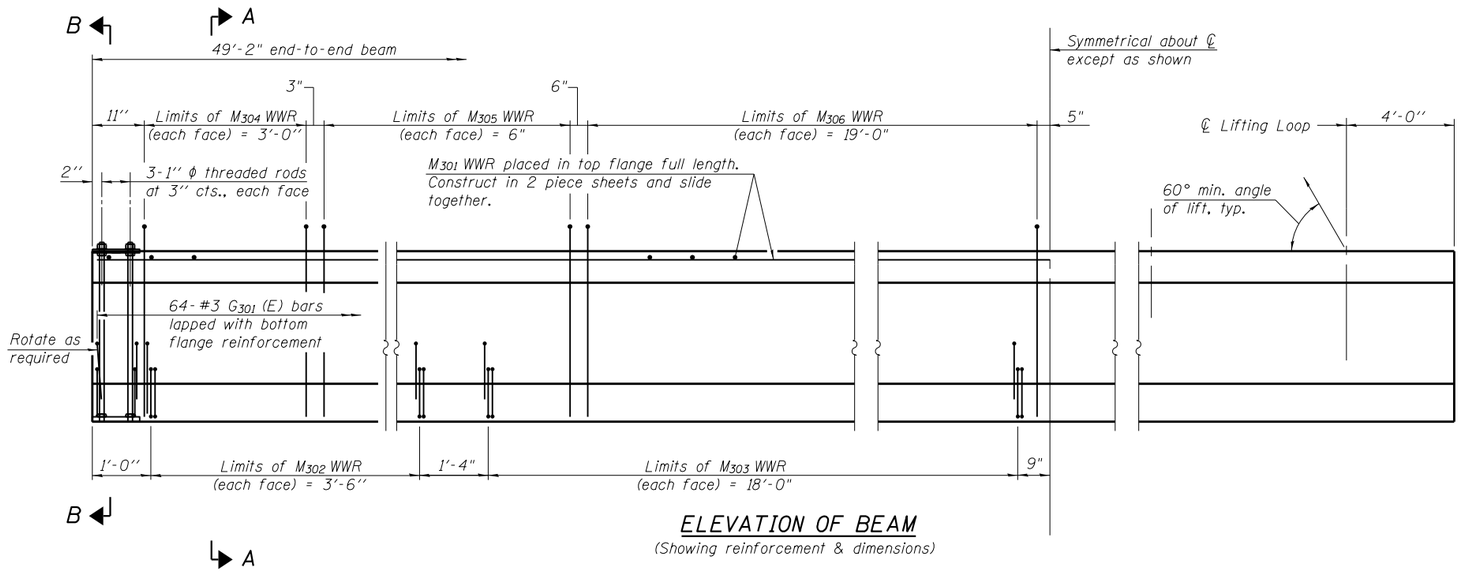
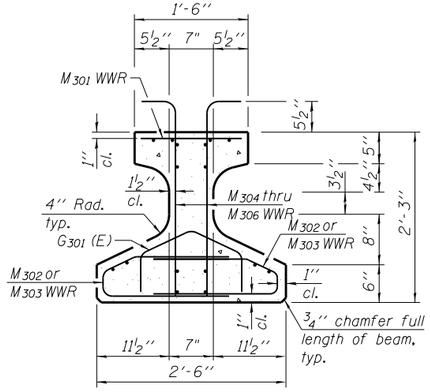
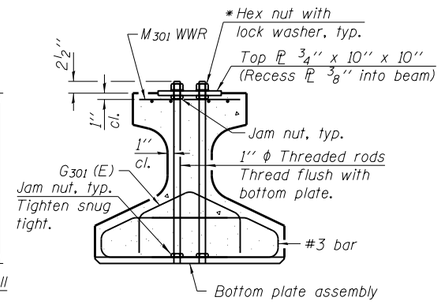


ELEVATION OF BEAM
(Showing reinforcement & dimensions)

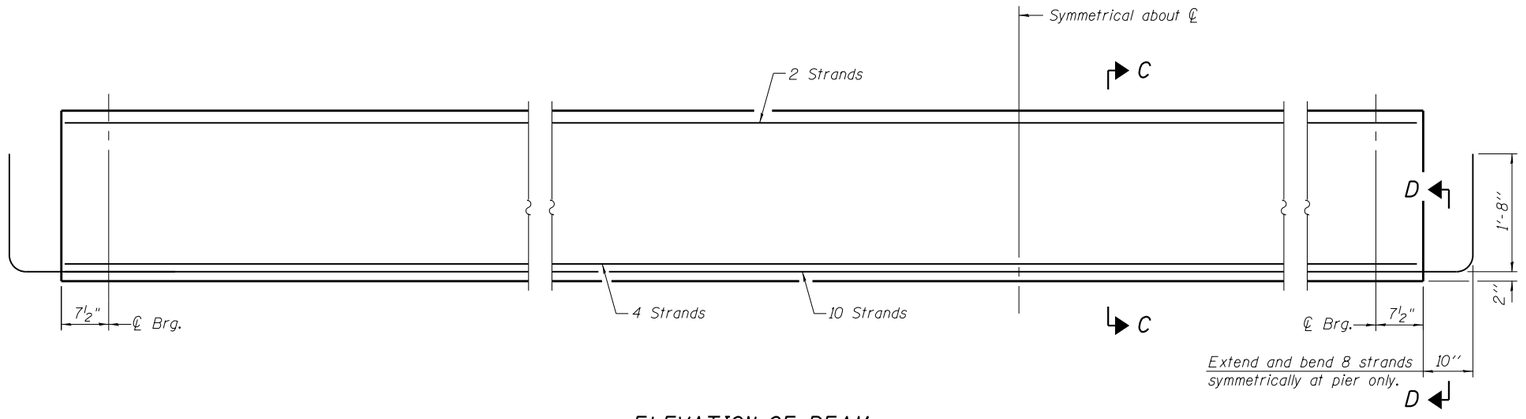


SECTION A-A

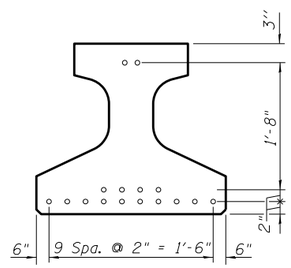


SECTION B-B

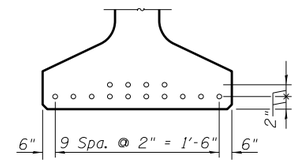
* Only tighten sufficiently to compress lock washers



ELEVATION OF BEAM
(Showing prestressing steel)



SECTION C-C
16-0.6" ϕ 270 ksi strands)



VIEW D-D

○ Fully bonded strand

▲ Partially debonded strand

Note:
See sheet 18 of 27 for additional details and Bill of Material.

IL27-1830

10-7-16

USER NAME =	DESIGNED	CJW	REVISED
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PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL27-1830 BEAM SPAN 2
STRUCTURE NO. 039-0078
SHEET NO. 17 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	156
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		

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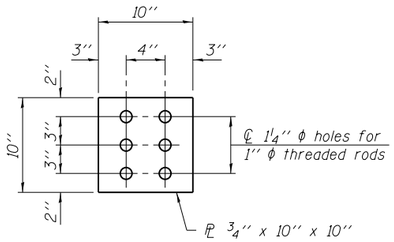
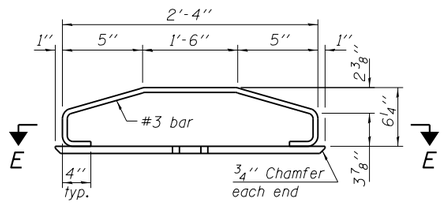
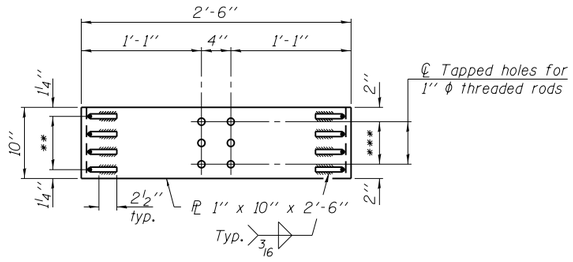


PLAN - TOP PLATE



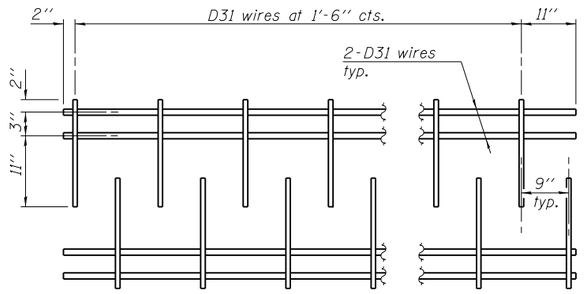
ELEVATION - BOTTOM PLATE ASSEMBLY



SECTION E-E

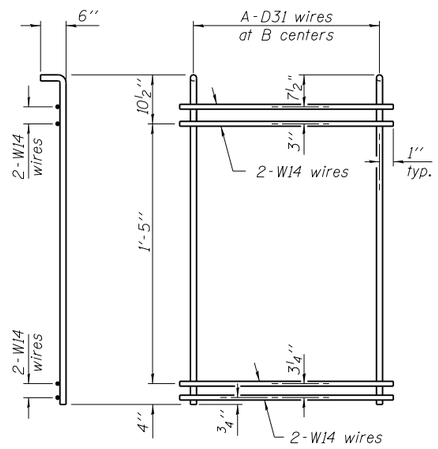
** 3 Spaces at 2½'' = 7½''

*** 2 Spaces at 3'' = 6''



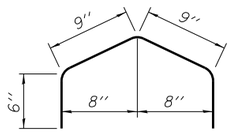
M301 WWR DETAIL

When multiple sheets of M301 WWR are required along the beam length, #5(E) bars (5'-0'' long) shall be used to splice the longitudinal D31 wires together. (Min. Lap 2'-2'').

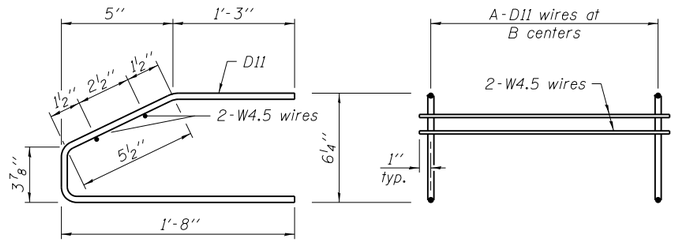


M304 THRU M306 WWR DETAIL

(See Table of Dimensions)



BAR G301 (E)



M302 AND M303 WWR DETAIL

(See Table of Dimensions)

NOTES

Inserts for ¾'' ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6'' and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for lifting loops shall be ½'' and the nominal cross sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 7000 psi.

A minimum 2½'' ϕ lifting pin shall be used to engage the lifting loops during handling.

Bend the extended strands inward on the fascia beams to maintain 1½'' clearance inside the pier diaphragm.

The top and bottom plates shall be AASHTO M270 Grade 50.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

Beams shall not be released from the fabricator until they have attained 45 days of age or older.

Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.

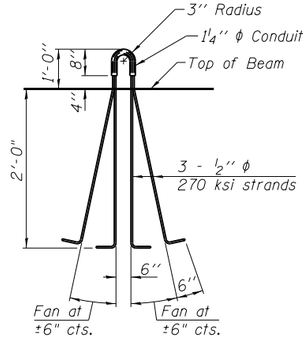
TABLE OF DIMENSIONS

SPAN 1 AND 3

WWR	A	B
M302	15	3''
M303	13	1'-6''
M304	23	3''
M305	5	6"
M306	15	1'-0''

SPAN 2

WWR	A	B
M302	15	3''
M303	13	1'-6''
M304	13	3''
M305	2	6"
M306	20	1'-0''



LIFTING LOOP DETAIL

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Beams, IL27N	Ft.	1004

IL27-1830D 10-7-16

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0078.018-1127-1830 Beam Details.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL27-1830 BEAM DETAILS
STRUCTURE NO. 039-0078
SHEET NO. 18 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	157
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		

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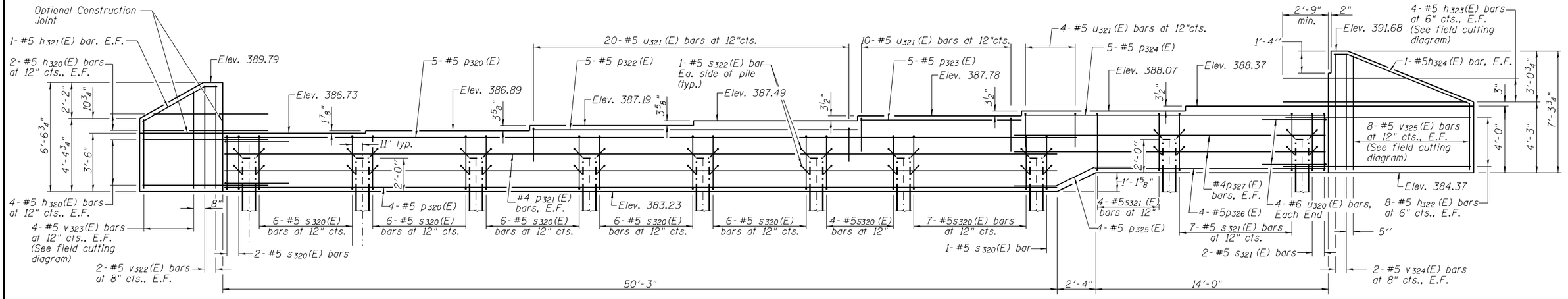
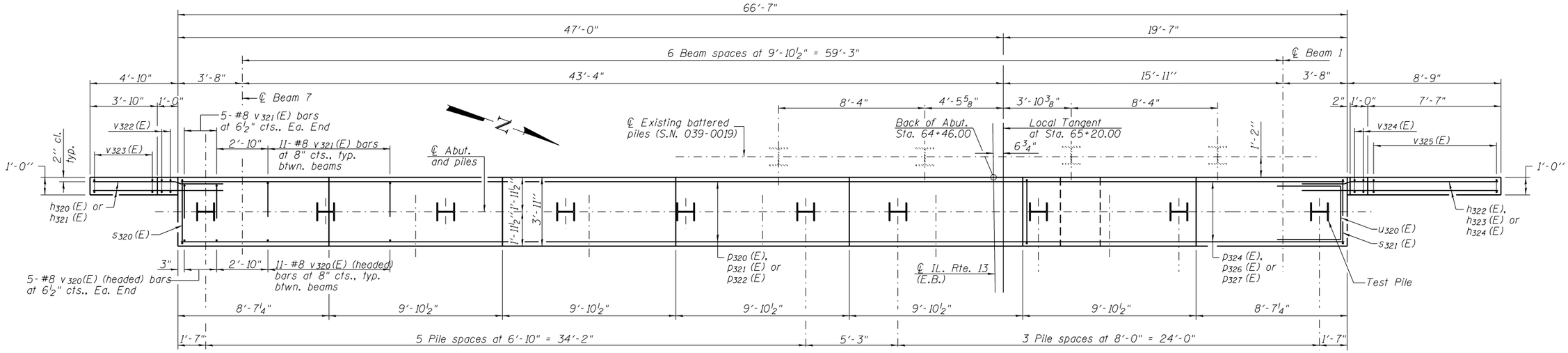


ELEVATION



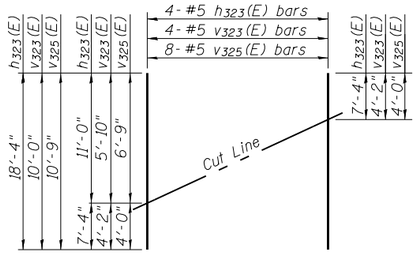
PLAN

PILE DATA

Type: HP 10x42
Nominal Required Bearing: 335kips
Factored Resistance Available: 184kips
Est. Length: 61 ft.
No. Production Piles: 9
No. Test Piles: 1

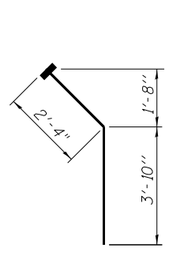
Notes:

1. See sheet 21 of 27 for section thru Abutment and Bill of Materials.
2. For Details of piles see sheet 25 of 27.
3. Pour steps monolothically with cap.
4. See sheet 2 of 27 for Abutment backfill details

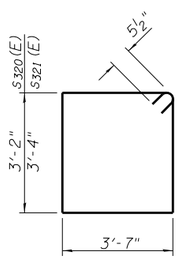


FIELD CUTTING DIAGRAM

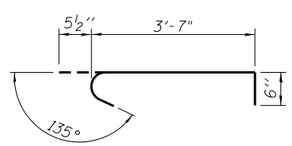
Order $h_{323}(E)$, $v_{323}(E)$ and $v_{325}(E)$ full length. Cut as shown and use remainder of bars in opposite face.



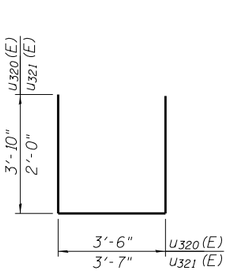
BAR $v_{321}(E)$
(headed)



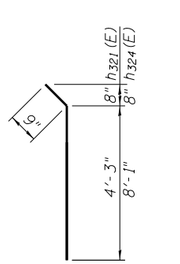
BAR $s_{320}(E)$ & $s_{321}(E)$



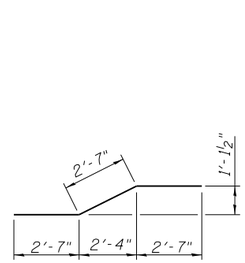
BAR $s_{322}(E)$



BAR $u_{320}(E)$ & BAR $u_{321}(E)$



BAR $h_{321}(E)$ & BAR $h_{324}(E)$



BAR $p_{325}(E)$

CMT	USER NAME =	DESIGNED	CJW	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEST ABUTMENT STRUCTURE NO. 039-0078	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	...\98850-0078_019-West Abutment.dgn	CHECKED	WLB	REVISED			331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	158
	PLOT SCALE =	DRAWN	GLD	REVISED		SHEET NO. 19 OF 27 SHEETS			CONTRACT NO. 78295		
	PLOT DATE =	CHECKED	WLB	REVISED					ILLINOIS FED. AID PROJECT		

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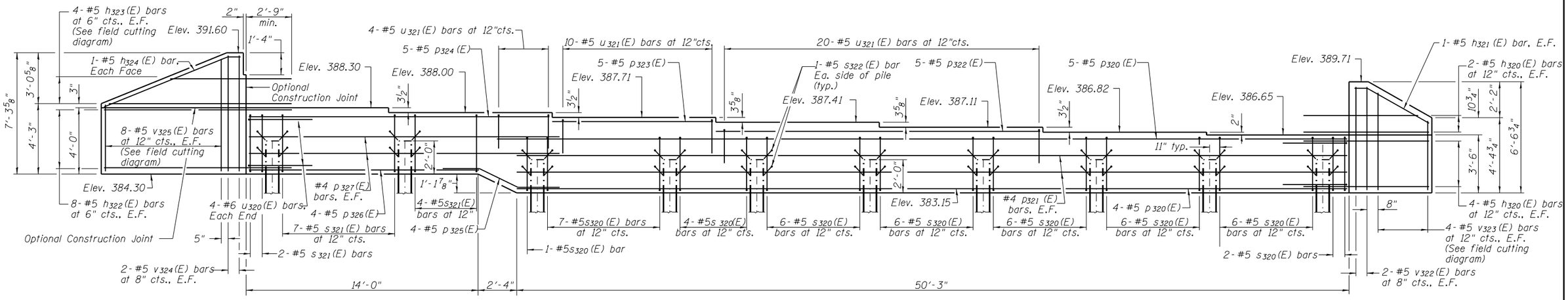
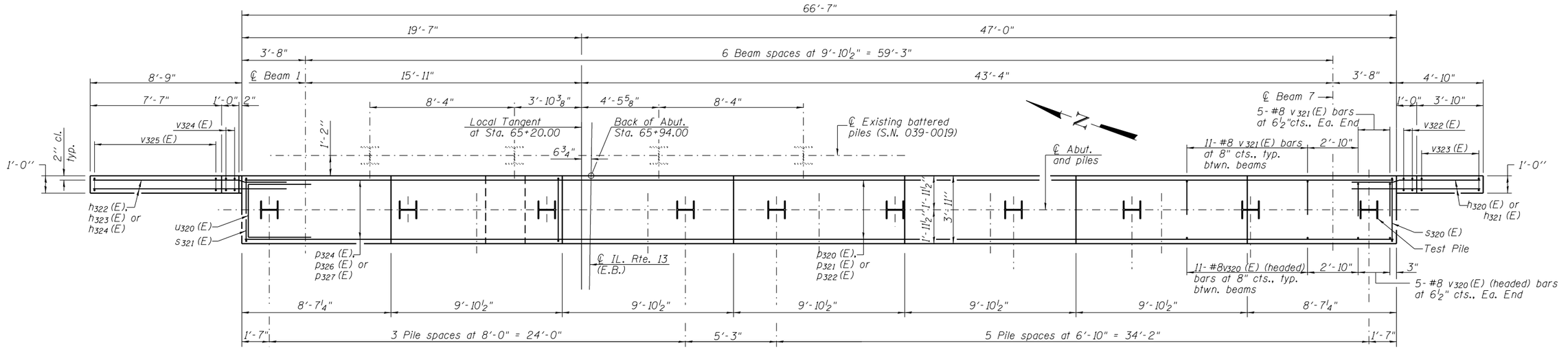


ELEVATION



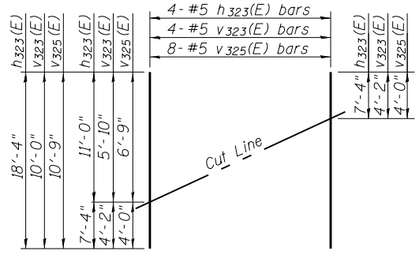
PLAN

PILE DATA

Type: HP 10x42
Nominal Required Bearing: 335 kips
Factored Resistance Available: 184 kips
Est. Length: 62 ft.
No. Production Piles: 9
No. Test Piles: 1

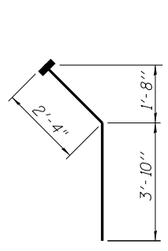
Notes:

1. See sheet 21 of 27 for section thru Abutment and Bill of Materials.
2. For Details of piles see sheet 25 of 27.
3. Pour steps monolothically with cap.
4. See sheet 2 of 27 for Abutment backfill details



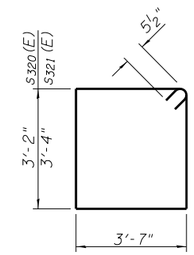
FIELD CUTTING DIAGRAM

Order $h_{323}(E)$, $v_{323}(E)$ and $v_{325}(E)$ full length. Cut as shown and use remainder of bars in opposite face.

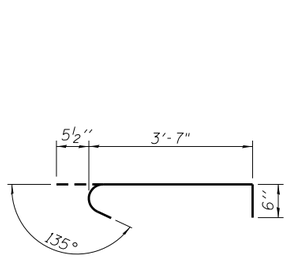


BAR $v_{321}(E)$

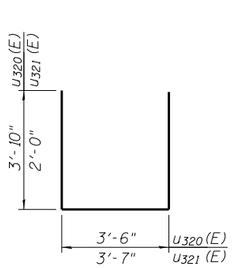
(headed)



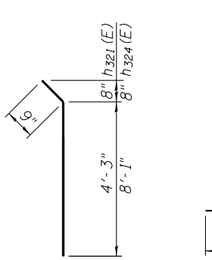
BAR $s_{320}(E)$ & $s_{321}(E)$



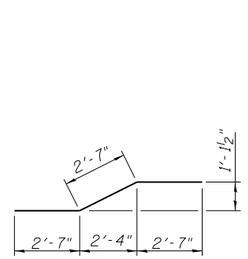
BAR $s_{322}(E)$



BAR $u_{320}(E)$ & BAR $u_{321}(E)$



BAR $h_{321}(E)$ & BAR $h_{324}(E)$



BAR $p_{325}(E)$

CMT	USER NAME =	DESIGNED CJW	REVISED
	...\98850-0078_020-East Abutment.dgn	CHECKED WLB	REVISED
	PLOT SCALE =	DRAWN GLD	REVISED
	PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT
STRUCTURE NO. 039-0078
SHEET NO. 20 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	159
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		

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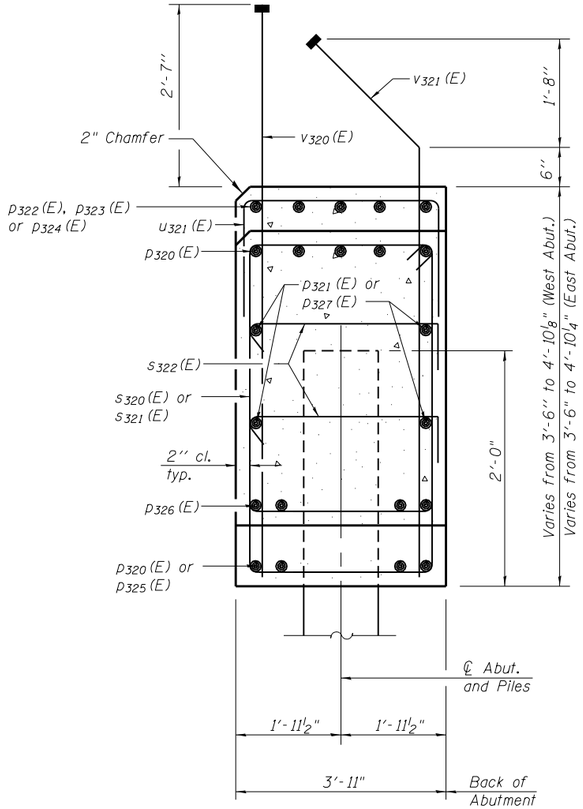

SEC. THRU ABUT.

WEST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h320 (E)	12	#5	7'-7"	
h321 (E)	2	#5	5'-0"	
h322 (E)	16	#5	11'-4"	
h323 (E)	4	#5	18'-4"	
h324 (E)	2	#5	8'-10"	
p320 (E)	9	#5	50'-1"	
p321 (E)	4	#4	50'-1"	
p322 (E)	5	#5	19'-7"	
p323 (E)	5	#5	9'-9"	
p324 (E)	5	#5	18'-1"	
p325 (E)	4	#5	7'-9"	
p326 (E)	4	#5	13'-11"	
p327 (E)	4	#4	18'-9"	
s320 (E)	44	#5	14'-5"	
s321 (E)	13	#5	14'-9"	
s322 (E)	40	#5	4'-7"	
u320 (E)	8	#6	11'-2"	
u321 (E)	34	#5	7'-7"	
v320 (E)	76	#8	5'-11"	
v321 (E)	76	#8	6'-2"	
v322 (E)	4	#5	6'-2"	
v323 (E)	4	#5	10'-0"	
v324 (E)	4	#5	7'-0"	
v325 (E)	8	#5	10'-9"	

Structure Excavation	Cu. Yd.	57
Concrete Structures	Cu. Yd.	41.7
Reinforcement Bars, Epoxy Coated	Pound	5,480
Furnishing Steel Piles, HP 10x42	Foot	549
Driving Piles	Foot	549
Test Pile Steel HP 10x42	Each	1

EAST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h320 (E)	12	#5	7'-7"	
h321 (E)	2	#5	5'-0"	
h322 (E)	16	#5	11'-4"	
h323 (E)	4	#5	18'-4"	
h324 (E)	2	#5	8'-10"	
p320 (E)	9	#5	50'-1"	
p321 (E)	4	#4	50'-1"	
p322 (E)	5	#5	19'-7"	
p323 (E)	5	#5	9'-9"	
p324 (E)	5	#5	18'-1"	
p325 (E)	4	#5	7'-9"	
p326 (E)	4	#5	13'-11"	
p327 (E)	4	#4	18'-9"	
s320 (E)	44	#5	14'-5"	
s321 (E)	13	#5	14'-9"	
s322 (E)	40	#5	4'-7"	
u320 (E)	8	#6	11'-2"	
u321 (E)	34	#5	7'-7"	
v320 (E)	76	#8	5'-11"	
v321 (E)	76	#8	6'-2"	
v322 (E)	4	#5	6'-2"	
v323 (E)	4	#5	10'-0"	
v324 (E)	4	#5	7'-0"	
v325 (E)	8	#5	10'-9"	

Structure Excavation	Cu. Yd.	57
Concrete Structures	Cu. Yd.	41.7
Reinforcement Bars, Epoxy Coated	Pound	5,480
Furnishing Steel Piles, HP 10x42	Foot	558
Driving Piles	Foot	558
Test Pile Steel HP 10x42	Each	1

Notes:
For details of Piles, see Sheet 25 of 27.
Headed bars shall conform to ASTM A970 Class HA. Cost included with Reinforcement Bars, Epoxy Coated.

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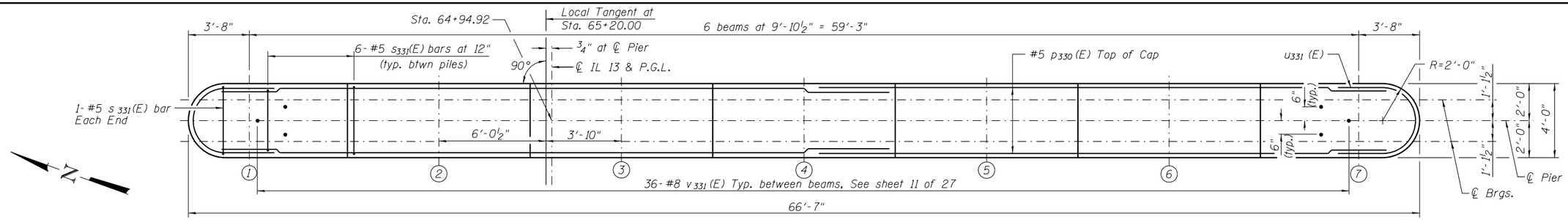
CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0078_021-E and W Abut Dtls.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

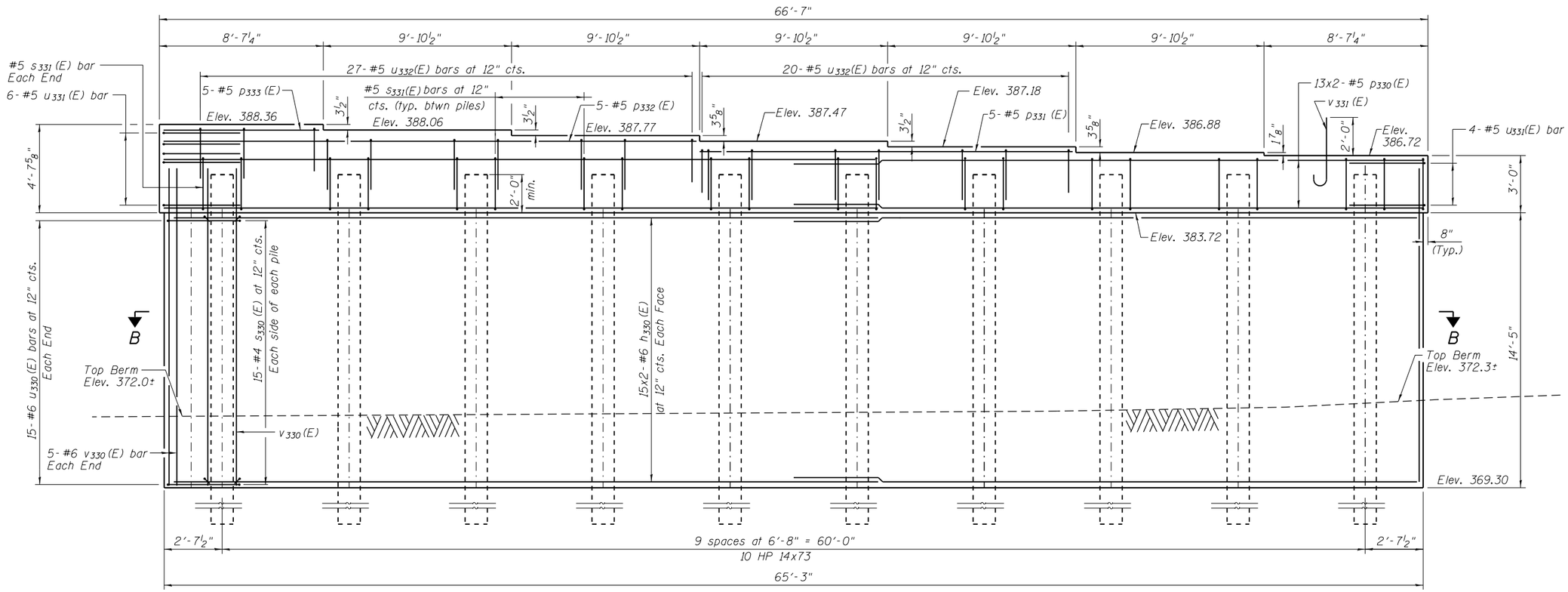
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT DETAILS
STRUCTURE NO. 039-0078
SHEET NO. 21 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	160
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		



TOP PLAN



MIN. BAR LAP

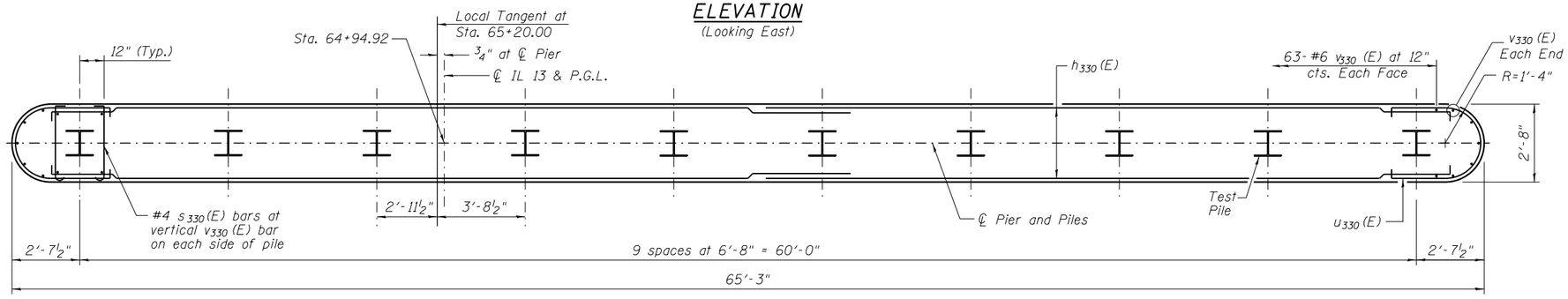
#5 bar = 3'-7"
#6 bar = 4'-4"

PILE DATA

Type: HP 14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 62 ft.
No. Production Piles: 9
No. Test Piles: 1

ELEVATION

(Looking East)



SECTION B-B

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0078_022-Pier 1.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1
STRUCTURE NO. 039-0078
SHEET NO. 22 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	161
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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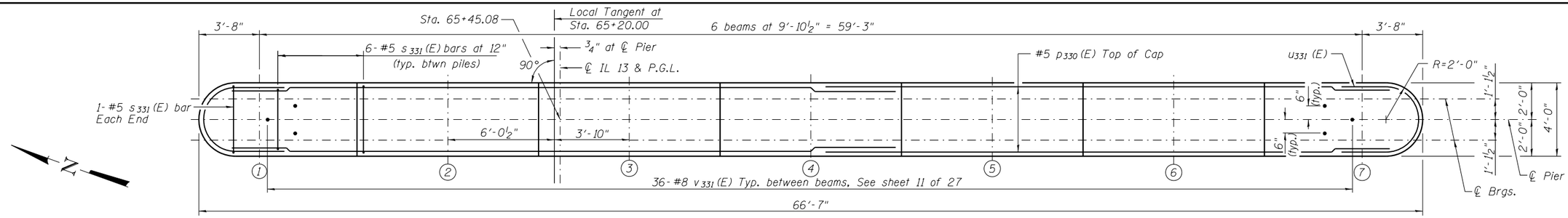
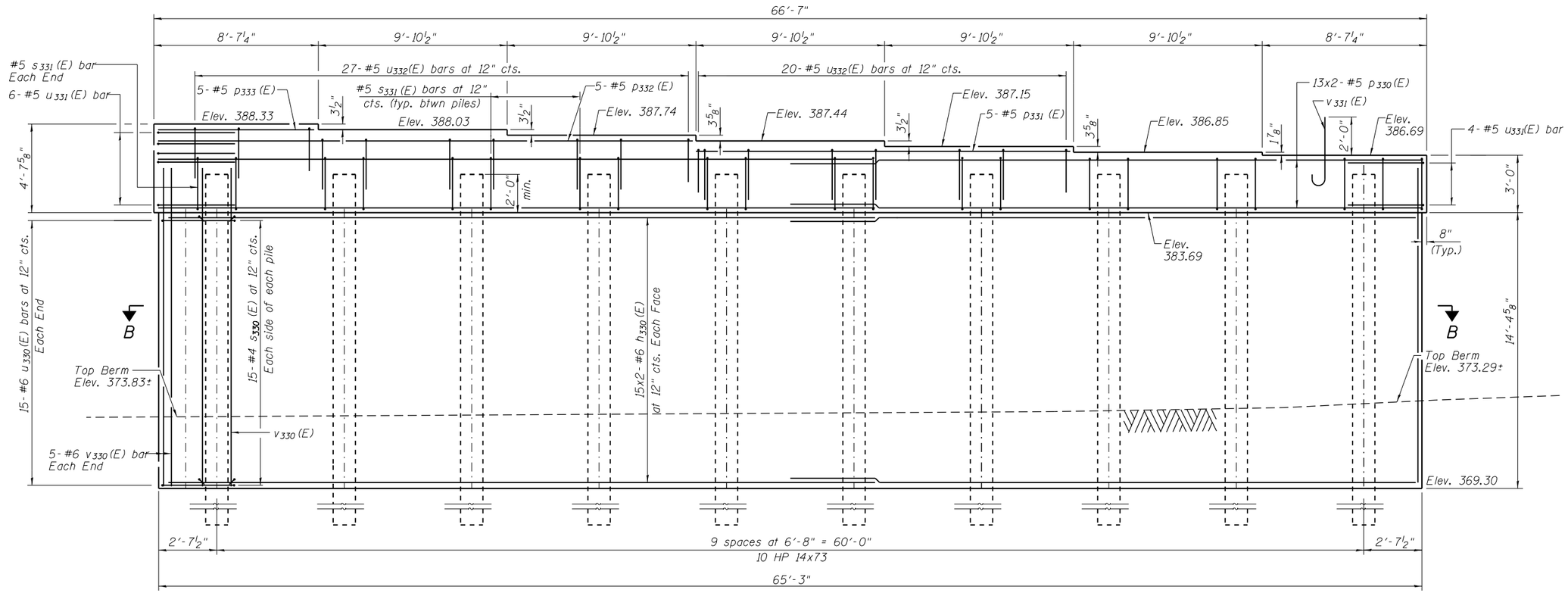


TOP PLAN



MIN. BAR LAP

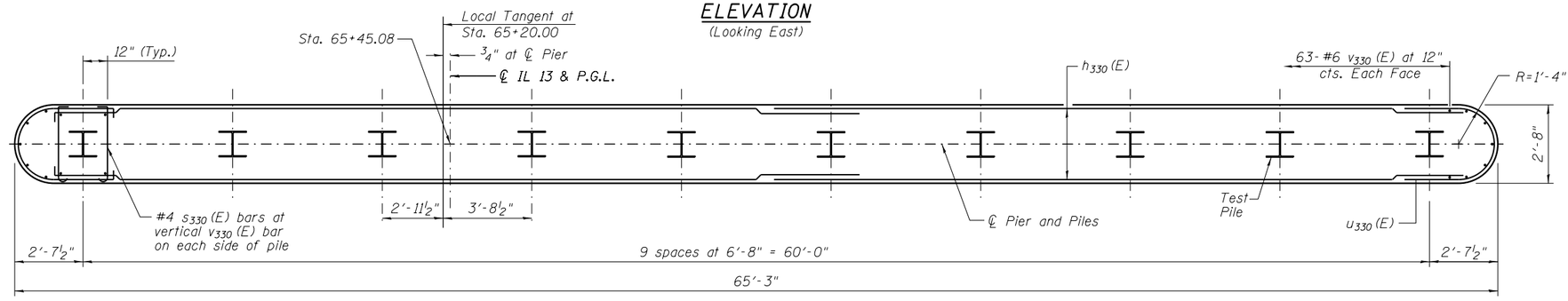
#5 bar = 3'-7"
#6 bar = 4'-4"

PILE DATA

Type: HP 14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 63 ft.
No. Production Piles: 9
No. Test Piles: 1

ELEVATION

(Looking East)



SECTION B-B

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0078_023-Pier 2.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2
STRUCTURE NO. 039-0078
SHEET NO. 23 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	162
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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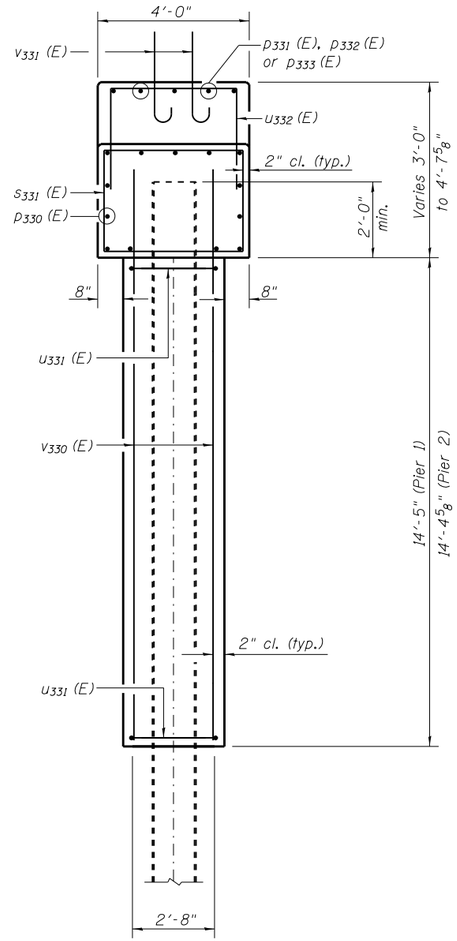


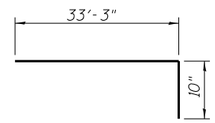
PIER - END VIEW

PIER 1
BILL OF MATERIAL

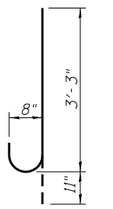
Bar	No.	Size	Length	Shape
h_{330}(E)	60	#6	34'-4"	
p_{330}(E)	26	#5	33'-3"	
p_{331}(E)	5	#5	19'-7"	
p_{332}(E)	5	#5	26'-2"	
p_{333}(E)	5	#5	6'-6"	
s_{330}(E)	300	#4	2'-7"	
s_{331}(E)	56	#5	13'-7"	
u_{330}(E)	30	#6	11'-0"	
u_{331}(E)	10	#5	11'-1"	
u_{332}(E)	47	#5	9'-0"	
v_{330}(E)	136	#6	16'-9"	
v_{331}(E)	36	#8	4'-2"	
Reinforcement Bars, Epoxy Coated			Lbs.	10,450
Concrete Structure			Cu. Yds.	116.8
Furnishing Steel Piles, HP 14x73			Foot	558
Driving Piles			Foot	558
Test Pile Steel HP 14x73			Each	1
Structure Excavation			Cu. Yds.	43

PIER 2
BILL OF MATERIAL

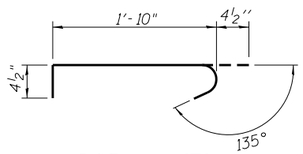
Bar	No.	Size	Length	Shape
h_{330}(E)	60	#6	34'-4"	
p_{330}(E)	26	#5	33'-3"	
p_{331}(E)	5	#5	19'-7"	
p_{332}(E)	5	#5	26'-2"	
p_{333}(E)	5	#5	6'-6"	
s_{330}(E)	300	#4	2'-7"	
s_{331}(E)	56	#5	13'-7"	
u_{330}(E)	30	#6	11'-0"	
u_{331}(E)	10	#5	11'-1"	
u_{332}(E)	47	#5	9'-0"	
v_{330}(E)	136	#6	16'-9"	
v_{331}(E)	36	#8	4'-2"	
Reinforcement Bars, Epoxy Coated			Lbs.	10,450
Concrete Structure			Cu. Yds.	116.7
Furnishing Steel Piles, HP 14x73			Foot	567
Driving Piles			Foot	567
Test Pile Steel HP 14x73			Each	1
Structure Excavation			Cu. Yds.	65



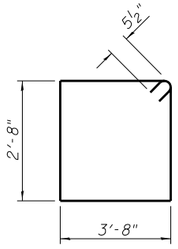
BAR h_{330}(E)



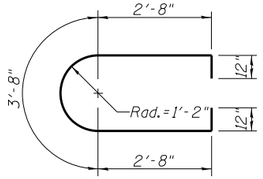
BAR v_{331}(E)



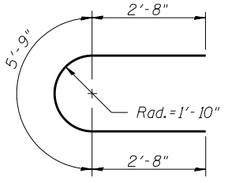
BAR s_{330}(E)



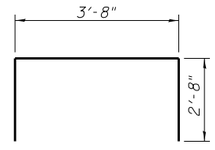
BAR s_{331}(E)



BAR u_{330}(E)



BAR u_{331}(E)



BAR u_{332}(E)

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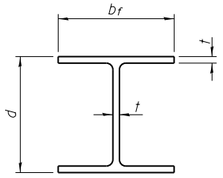
USER NAME =	DESIGNED	CJW	REVISED
...\98850-0078_024-Pier Details.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

CMT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

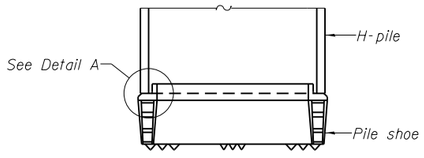
PIER DETAILS
STRUCTURE NO. 039-0078
SHEET NO. 24 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	163
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

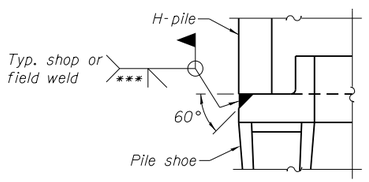


STEEL PILE TABLE

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''

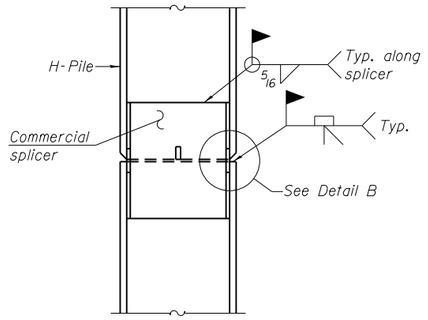


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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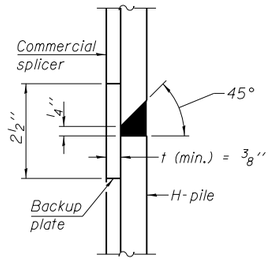
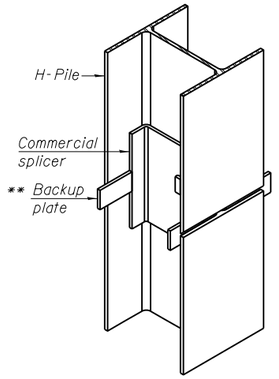
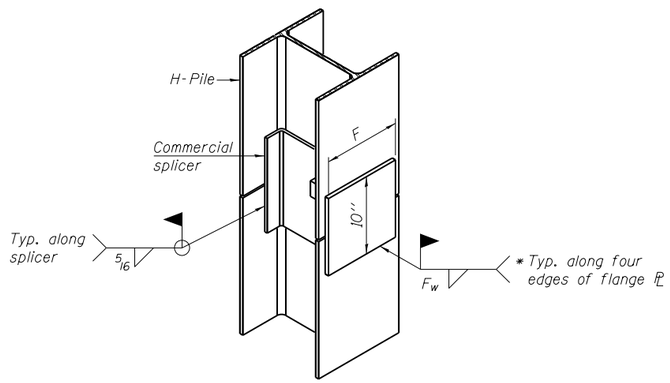


DETAIL "B"



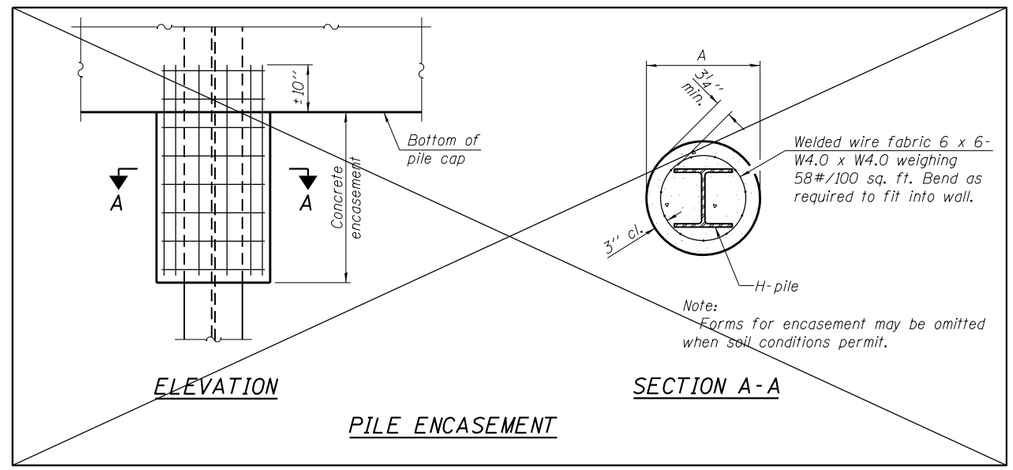
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW

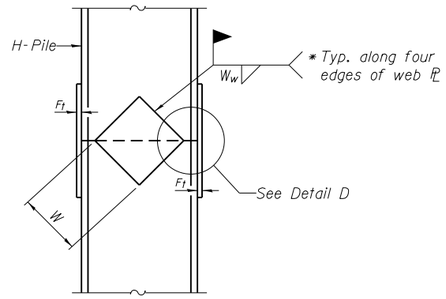
WELDED COMMERCIAL SPLICE ALTERNATE



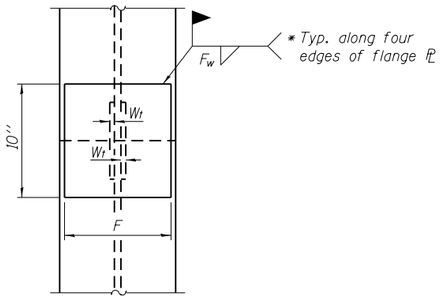
ELEVATION

SECTION A-A

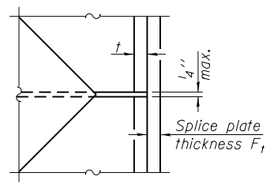
PILE ENCASEMENT



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

* 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.).

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

F-HP 1-27-12

CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0078_025-HP Pile Details.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 039-0078
SHEET NO. 25 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	164
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

Sheet 1 of 2

Eastbound FAP 331 (IL 13) Over Crab Orchard Creek Overflow

Route: FAP 331 (IL 13) Structure Number: 039-0019 Date: 6/25/2014

Section (5B-2) DR-1, (5B-2) Bored By: R Moberly

County: Jackson Location: 0.4 mi East of Giant City Road Checked By: R Graeff

Boring No 1-S
Station 164+22
Offset 11' Rt CL EBL
Ground Surface 390.5 Ft

Surf Wat Elev:
Ground Water Elevation
when Drilling 365.5
At Completion
At: Hrs:

DEPTH	BLOWS	Qu tsf	W%	DEPTH	BLOWS	Qu tsf	W%
4.5" Asphalt and 13.5" Concrete				Very soft, very moist, brown, Silty Clay Loam A-6	1	0.2B	30
389.0				363.5	WH		
Medium, very moist, grey and brow Clay A7-6	1	0.8B	25	Medium, very moist, grey mottled brown, Silty Clay A-6	WH		
	1				1	0.8B	30
386.0				361.0	1		
Very stiff, moist, grey, Clay A7-6 5.0	1			Stiff, moist, brown mottled grey, Clay A7-6 30.0	1		
	1	3.3B	19		2	1.8B	30
	4				3		
383.5				358.5			
Stiff, moist, brown and grey, Clay A7-6	1			Very stiff, moist, brown and grey, Clay A7-6	1		
	3	1.9B	21		2	2.7B	27
	3				3		
10.0	1			35.0	1		
	2	1.1B	28		3	2.3B	31
	2				4		
378.5							
Medium, verfy moist, brown, Clay A7-6	WH				1		
	1	0.6B	29		3	2.5B	32
	1				5		
376.0							
Very stiff, moist, brown, Clay A7-6 15.0	1			40.0	2		
	3	2.3B	20		4	2.9B	35
	5				5		
373.5							
Medium, very moist, grey mottled brown, Clay to silty Clay A7-6	1						
	1	0.8B	25				
	2						
371.0							
Medium, very moist, grey mottled brown, Silty Clay Loam A-6 20.0	1			45.0	3		
	1	0.6B	27		7	2.7B	26
	1				8		
368.5							
Soft, very moist, grey mottled brown, Silty Clay Loam A-6	WH						
	1	0.4B	28				
	WH						
366.0							
25.0	WH			50.0	2		

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: FAP 331 (IL 13)
Section: (5B-2) DR-1, (5B-2) DR
County: Jackson
Date: 6/25/2014

Boring No: 1-S
Station: 164+22
Offset: 11' Rt CL EBL
Ground Surface: 390.5 Ft

DEPTH	BLOWS	Qu tsf	W%
Very stiff, moist, brown, Clay A7-6	5	3.9B	25
	7		
336.0			
Loose to very loose, wet, grey, Fine Sand Loam 73% Sand 16% Silt 11% Clay 55.0	1		
	2		23
	2		
331.0			
Stiff, moist, grey, brown and black, Conglomerate with weathered Clay Shale 60.0	1		
	7	1.2S	18
	11		
327.5			
Hard, dry, grey, Clay Shale			
65.0	100/4"		
321.0			
Hard, dry, grey Clay Shale with layers of softer Shale and Coal 70.0	14		
	100/6"		
315.5	75.0	100/4"	

Bottom of hole = 74.8 feet

Free water observed at 25.0 feet

Elevation referenced to BM at SE corner of 039-0019; Elevation = 385.1 feet

Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)

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

DEPTH	BLOWS	Qu tsf	W%
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)

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CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0078.026-Boring Logs 1.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 1
STRUCTURE NO. 039-0078
SHEET NO. 26 OF 27 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	165
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

Route: FAP 331 (IL 13)
Section: (5B-2) DR-1, (5B-2) DR
County: Jackson
Date: 6/26/2014

Boring No: 2-S
Station: 166+15
Offset: 14' Rt CL EBL
Ground Surface: 390.3 Ft

	DEPTH	BLOWS	Qu tsf	W%
Stiff, moist, brown, Clay A7-6		3 4	1.5B	27
	335.8			
Stiff, moist, brown, Clay A7-6 with sand seams	55.0	1 3 4	1.7B	26
	330.8			
Stiff, moist, grey and brown, Clay A7-6 with some gravel	60.0	1 3 4	1.5B	23
	326.3			
Hard, dry grey, weathered Clay Shale	65.0	14		
	324.8	100/12		
Hard, dry, grey Clay Shale	324.3			
Bottom of hole = 66.0 feet				
Free water observed at 27.0 feet	70.0			
Elevation referenced to BM at SE corner of 039-0019; Elevation = 385.1 feet				
Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)				
To convert "N" values to "N60" multiply by 1.25	75.0			

DEPTH	BLOWS	Qu tsf	W%
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)

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CMT	USER NAME =	DESIGNED CJW	REVISED
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	PLOT SCALE =	DRAWN GLD	REVISED
	PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 2
STRUCTURE NO. 039-0078
SHEET NO. 27 OF 27 SHEETS

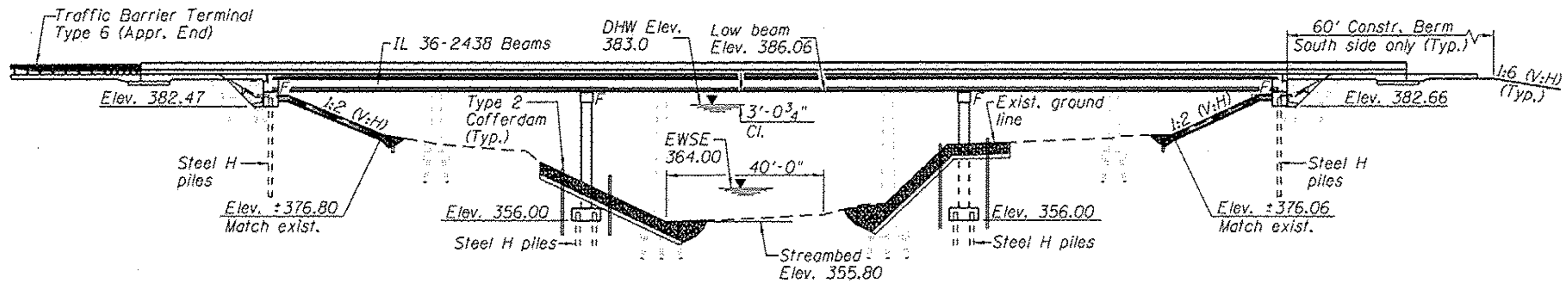
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	166
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

Bench Mark: Cut square on Southwest corner of Structure 039-0061 of Illinois Route 13 WBL @ Sta. 85+86±. Elev. 390.262

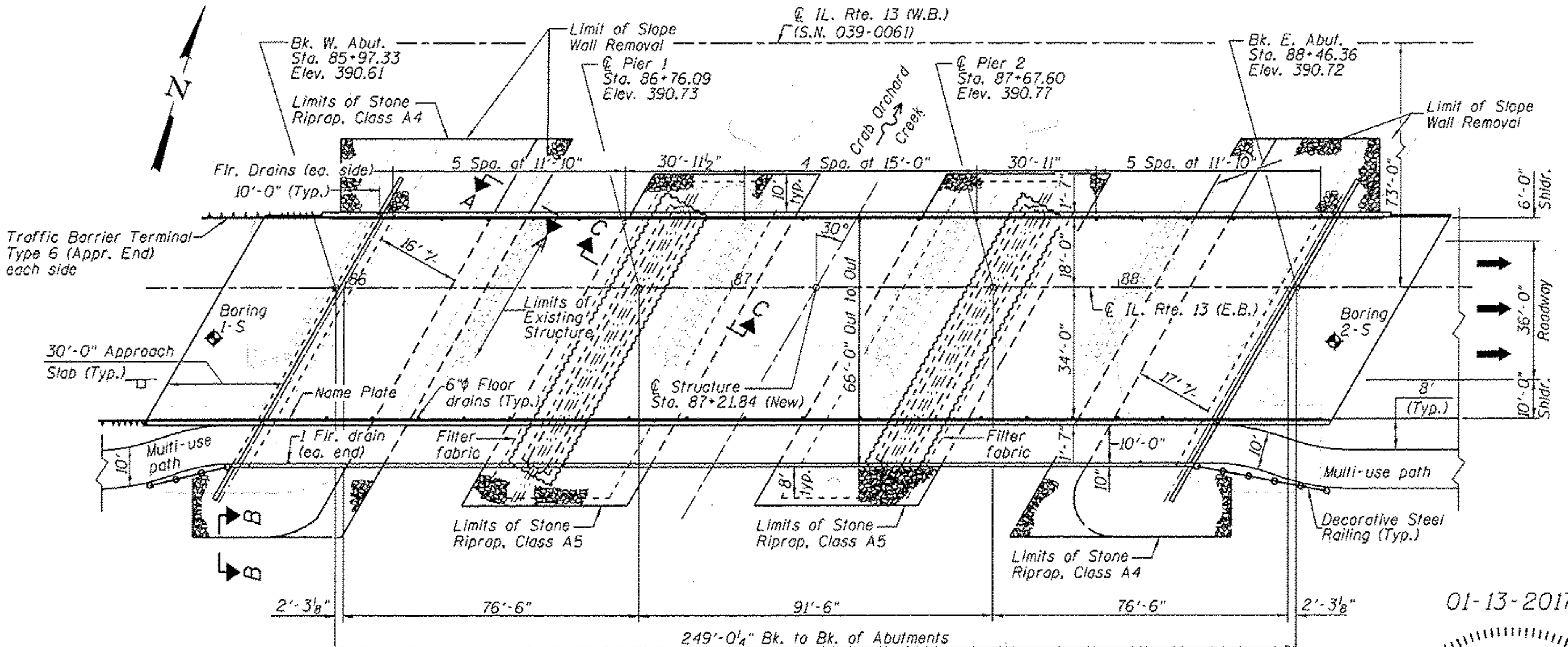
Existing Structure: S.N. 039-0021, built in 1965 is a five span continuous wide flange beam bridge. Substructure consists of pile bent abutments supported on steel piles and solid wall pile bent piers. Bk. to Bk. abutments measures 255'-9" and out-to-out width of 36'-0".

Salvage: None

Traffic Maintenance: Traffic to be maintained utilizing median cross-overs, onto W.B. bridge (039-0061)



ELEVATION

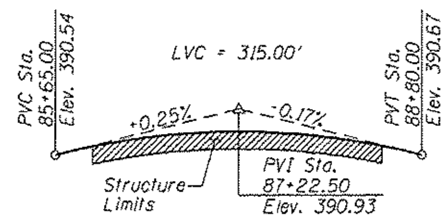


PLAN

Note:
See Sheet 2 of 28 for Section A-A, B-B and C-C.

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)				
	W. Abut.	Pier 1	Pier 2	E. Abut.	Item 113
Q100	382.47	340.61	351.07	382.66	5
Q200	382.47	339.61	350.07	382.66	
Design	382.47	340.61	351.07	382.66	
Check	382.47	339.61	350.07	382.66	



PROFILE GRADE
(Along ℄ IL. Rte. 13 E.B.)

STATION 87+21.84
BUILT 201_ BY
STATE OF ILLINOIS
F.A. RT 331 SEC (5-3) B-6
LOADING HL-93
STRUCTURE NO. 039-0079

NAME PLATE
See Std. 515001

APPROVED
For [illegible] Adequacy Only
Engineer of Bridges & Structures

01-13-2017

LICENSED STRUCTURAL ENGINEER
WILLIAM L. BAILEY, JR.
081-005087
STATE OF ILLINOIS

Exp. 11-30-2018

INDEX OF SHEETS

DESIGN SPECIFICATIONS
2014 AASHTO LRFD Bridge Specifications, 7th Edition with 2015 & 2016 Interims

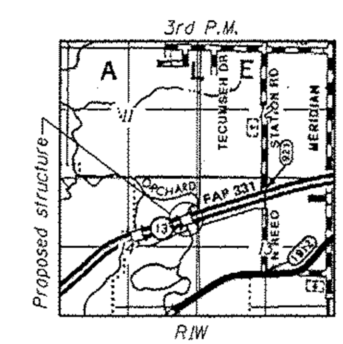
LOADING HL-93
Allow 50 psf for future wearing surface

DESIGN STRESSES

FIELD UNITS
- f'c = 3,500 psi (concrete)
- f'c = 4,000 psi (Superstr. concrete)
- fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS
- f'c = 8,500 psi (concrete)
- f'ci = 7,000 psi
- fpu = 270,000 psi (0.6"ϕ low lax strands)
- fpbt = 202,300 psi (0.6"ϕ low lax strands)

SEISMIC DATA
Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec (SD1) = 0.360g
Design Spectral Acceleration at 0.2 sec (SDS) = 0.845g
Soil Site Class = D



LOCATION SKETCH

GENERAL PLAN
F.A.P. ROUTE 331 (IL 13 E.B.)
OVER CRAB ORCHARD CREEK
SECTION (5-3) B-6
JACKSON COUNTY
STATION 87+21.84
STRUCTURE NO. 039-0079

CMT

USER NAME =	DESIGNED	CJW	REVISED		
...\98850-0079.001-General Plan.dgn	CHECKED	WLB	REVISED		
PLOT SCALE =	DRAWN	CLD	REVISED		
PLOT DATE =	CHECKED	WLB	REVISED		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
STRUCTURE NO. 039-0079
SHEET NO. 1 OF 28 SHEETS

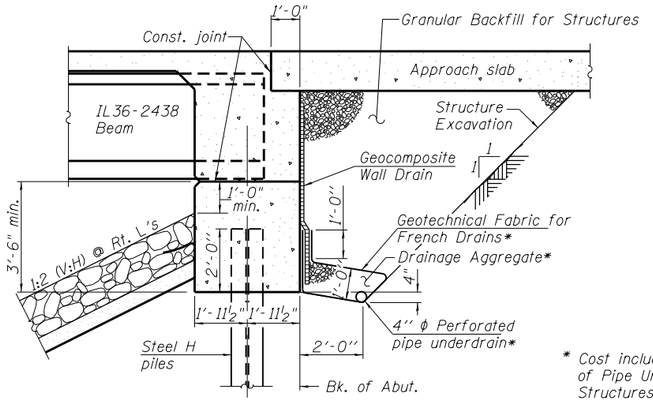
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	167

CONTRACT NO. 78295

ILLINOIS FED. AID PROJECT

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting the new Parapet Railing and Decorative Steel Railing except where otherwise noted. The entire sytem shall be shop applied. Damaged areas shall be touched up in the field. The color of the final finish coat for all steel surfaces of the Railings shall be Reddish Brown, Munsell No. 2.5YR 3/4.
3. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
4. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
5. Slipforming of the parapets is not allowed.

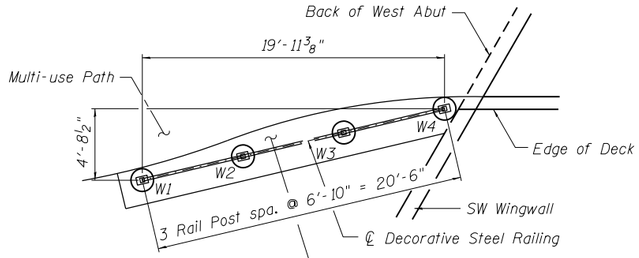


* Cost included in the cost of Pipe Underdrains for Structures (See special provision).

SECTION THRU INTEGRAL ABUTMENT

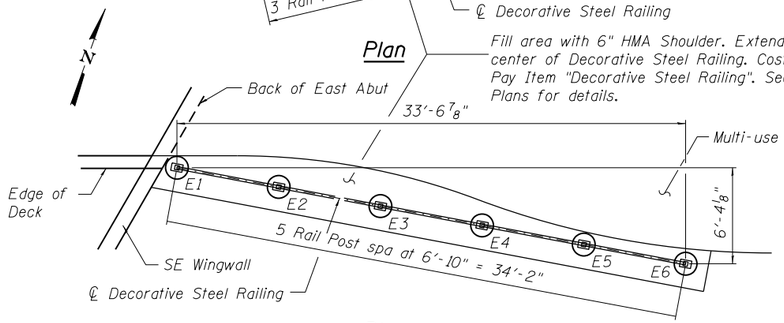
(Horiz. dim. at Rt. L's)

Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall, except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101.)

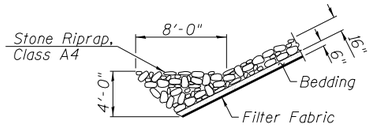


Plan

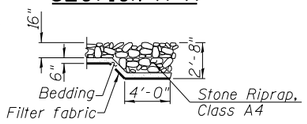
Fill area with 6" HMA Shoulder. Extend 18" behind center of Decorative Steel Railing. Cost included in Pay Item "Decorative Steel Railing". See Roadway Plans for details.



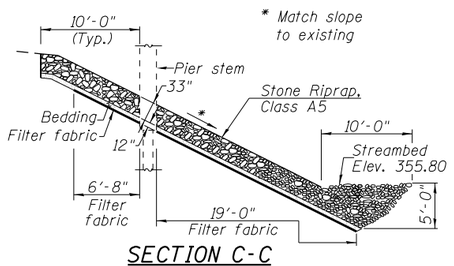
Plan



SECTION A-A



SECTION B-B



SECTION C-C

DECORATIVE RAILING DETAIL

Note:
For railing post foundation details, see sheet 14 of 28

RAILING FOUNDATION ELEVATION INFORMATION

East Foundation Elevations		West Foundation Elevations	
No.	Elev.	No.	Elev.
E1	389.95	W1	389.63
E2	389.91	W2	389.67
E3	389.88	W3	389.71
E4	389.86	W4	389.76
E5	389.84		
E6	389.82		

WATERWAY INFORMATION

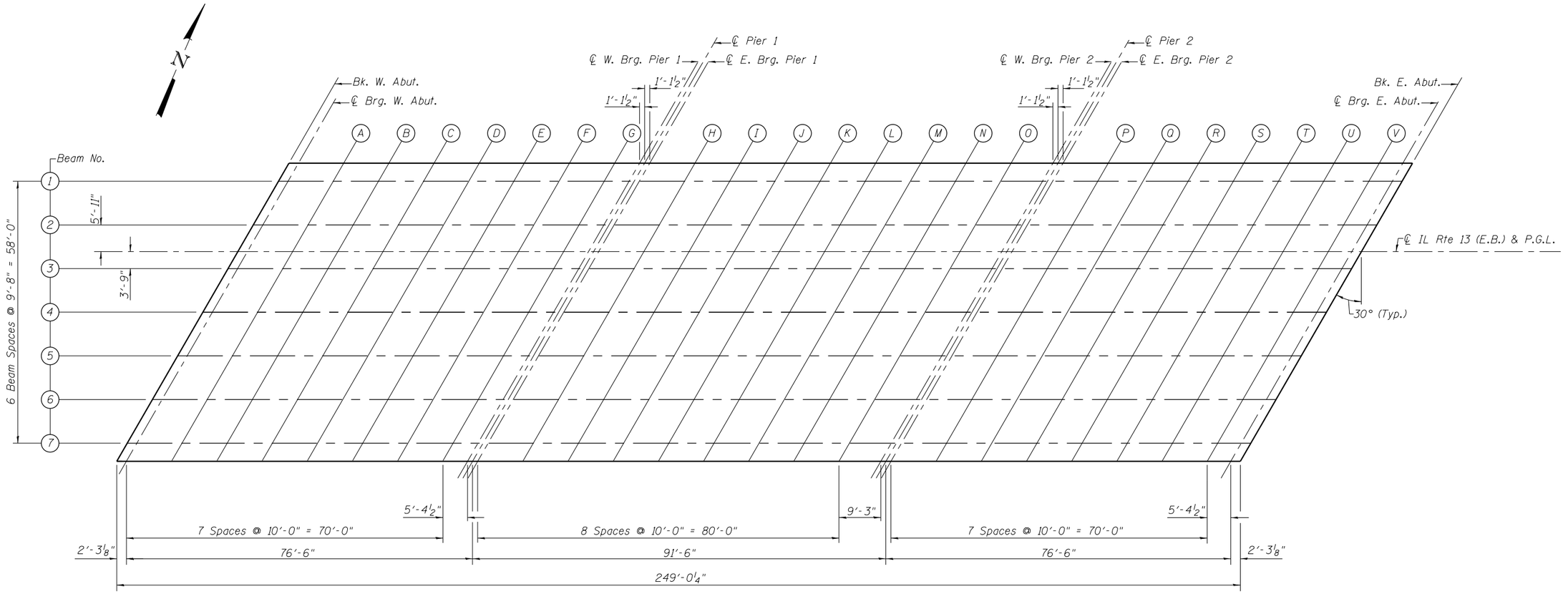
Drainage Area = 255 Sq. Mi.

Exist. Low Grade Elev. 388.69 @ Sta. 80+50.00
Prop. Low Grade Elev. 388.88 @ Sta. 80+50.00

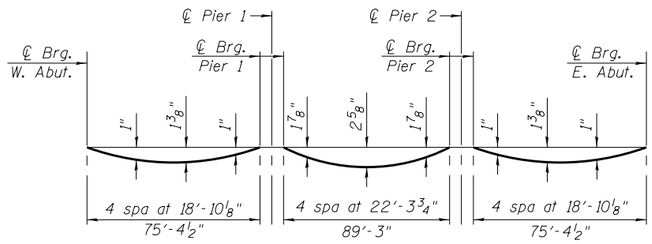
Flood	Freq. Yr.	Structure Number	Q (C.F.S.) Exist.	Q (C.F.S.) Prop.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	039-0061/79	6,158	6,628	2,342	2,367	381.2	0.2	0.1	381.4	381.3
		Overflow Culvert	186	137	67	67					
		039-0062/78	2,056	1,635	779	772					
		Total	8,400		3,188	3,206					
Design	50	039-0061/79	8,788	9,417	2,682	2,715	383.0	0.3	0.2	383.3	383.2
		Overflow Culvert	269	235	85	85					
		039-0062/78	3,343	2,748	995	987					
		Total	12,400		3,762	3,787					
Base	100	039-0061/79	9,878	10,577	2,857	2,894	383.9	0.3	0.3	384.2	384.2
		Overflow Culvert	326	269	94	94					
		039-0062/78	3,896	3,254	1,109	1,099					
		Total	14,100		4,060	4,087					
Scour Design Check	200	039-0061/79	11,055	11,616	2,995	3,036	384.6	0.4	0.3	385.0	384.9
		Overflow Culvert	379	332	101	101					
		039-0062/78	4,576	4,062	1,200	1,189					
		Total	16,010		4,296	4,326					
Max. Calc.	500	039-0061/79	12,694	12,917	3,116	3,158	385.2	0.5	0.4	385.7	385.6
		Overflow Culvert	417	393	107	107					
		039-0062/78	5,389	5,190	1,279	1,268					
		Total	18,500		4,502	4,533					

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.		908	908
Stone Riprap, Class A5	Sq. Yd.		778	778
Filter Fabric	Sq. Yd.		1,514	1,514
Removal of Existing Structures No. 2	Each			1
Structure Excavation	Cu. Yd.		162	162
Cofferdam Excavation	Cu. Yd.		1,513	1,513
Cofferdam (Type 2) (Location - 3)	Each			1
Cofferdam (Type 2) (Location - 4)	Each			1
Floor Drains	Each	32		32
Concrete Structures	Cu. Yd.	53.6	994.9	1,048.5
Concrete Superstructure	Cu. Yd.	609.2		609.2
Bridge Deck Grooving	Sq. Yd.	1,670		1,670
Protective Coat	Sq. Yd.	2,112		2,112
Concrete Superstructure (Approach Slab)	Cu. Yd.	152.5		152.5
Furnishing and Erecting Precast Prestressed Concrete Beams, IL 36N	Foot	1,707		1,707
Reinforcement Bars, Epoxy Coated	Pound	240,140	141,670	381,810
Mechanical Splicers	Each		736	736
Parapet Railing	Foot	246		246
Furnishing Steel Piles HP 12x53	Foot		1,290	1,290
Furnishing Steel Piles HP 14x117	Foot		3,375	3,375
Driving Piles	Foot		4,665	4,665
Test Pile Steel HP 14x117	Each		1	1
Name Plates	Each	1		1
Geocomposite Wall Drain	Sq. Yd.		129	129
Decorative Steel Railing	Foot	299		299
Granular Backfill for Structures	Cu. Yd.		223	223
Pipe Underdrains for Structures 4"	Foot		222	222



LAYOUT PLAN FOR DECK ELEVATIONS

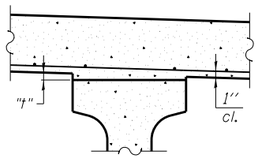


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only, excluding beams)

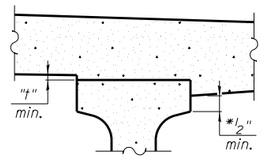
Note:

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections, as shown on Sheet 4 of 28.

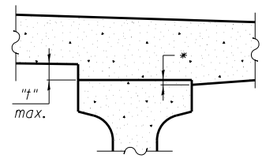


INTERIOR BEAMS

* Variable (not less than ½")



At Minimum Fillet



At Maximum Fillet

EXTERIOR BEAMS

FILLET HEIGHTS

After all beams have been erected, elevations of the top flanges of the beam shall be taken at the intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheet 4 of 28, minus slab thickness equals the fillet heights "t" above top flange of beams.

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CMT

USER NAME =	DESIGNED CJW	REVISED
...\98850-0079_003-Deck Elev 1.dgn	CHECKED WLB	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK ELEVATIONS – 1
STRUCTURE NO. 039–0079
SHEET NO. 3 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	169
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

BEAM 1

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	86+06.33	-15.58	390.38	390.38
℄ Brg. W. Abut.	86+08.59	-15.58	390.38	390.38
A	86+18.59	-15.58	390.40	390.44
B	86+28.59	-15.58	390.42	390.49
C	86+38.59	-15.58	390.43	390.53
D	86+48.59	-15.58	390.45	390.55
E	86+58.59	-15.58	390.46	390.55
F	86+68.59	-15.58	390.47	390.53
G	86+78.59	-15.58	390.48	390.51
℄ W. Brg. Pier 1	86+83.96	-15.58	390.49	390.49
℄ Pier 1	86+85.09	-15.58	390.49	390.49
℄ E. Brg. Pier 1	86+86.21	-15.58	390.49	390.49
H	86+96.21	-15.58	390.50	390.57
I	87+06.21	-15.58	390.51	390.64
J	87+16.21	-15.58	390.51	390.69
K	87+26.21	-15.58	390.52	390.71
L	87+36.21	-15.58	390.52	390.72
M	87+46.21	-15.58	390.52	390.69
N	87+56.21	-15.58	390.52	390.65
O	87+66.21	-15.58	390.52	390.59
℄ W. Brg. Pier 2	87+75.46	-15.58	390.52	390.52
℄ Pier 2	87+76.59	-15.58	390.52	390.52
℄ E. Brg. Pier 2	87+77.71	-15.58	390.52	390.52
P	87+87.71	-15.58	390.51	390.56
Q	87+97.71	-15.58	390.51	390.58
R	88+07.71	-15.58	390.50	390.60
S	88+17.71	-15.58	390.49	390.60
T	88+27.71	-15.58	390.49	390.57
U	88+37.71	-15.58	390.48	390.54
V	88+47.71	-15.58	390.46	390.49
℄ Brg. E. Abut.	88+53.09	-15.58	390.46	390.46
Bk. East Abut.	88+55.35	-15.58	390.45	390.45

BEAM 2

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	86+00.75	-5.92	390.53	390.53
℄ Brg. W. Abut.	86+03.01	-5.92	390.53	390.53
A	86+13.01	-5.92	390.55	390.60
B	86+23.01	-5.92	390.57	390.65
C	86+33.01	-5.92	390.59	390.69
D	86+43.01	-5.92	390.60	390.71
E	86+53.01	-5.92	390.62	390.71
F	86+63.01	-5.92	390.63	390.70
G	86+73.01	-5.92	390.64	390.67
℄ W. Brg. Pier 1	86+78.38	-5.92	390.65	390.65
℄ Pier 1	86+79.51	-5.92	390.65	390.65
℄ E. Brg. Pier 1	86+80.63	-5.92	390.65	390.65
H	86+90.63	-5.92	390.66	390.73
I	87+00.63	-5.92	390.67	390.81
J	87+10.63	-5.92	390.67	390.86
K	87+20.63	-5.92	390.68	390.89
L	87+30.63	-5.92	390.68	390.90
M	87+40.63	-5.92	390.68	390.87
N	87+50.63	-5.92	390.68	390.82
O	87+60.63	-5.92	390.68	390.76
℄ W. Brg. Pier 2	87+69.88	-5.92	390.68	390.68
℄ Pier 2	87+71.01	-5.92	390.68	390.68
℄ E. Brg. Pier 2	87+72.13	-5.92	390.68	390.68
P	87+82.13	-5.92	390.68	390.72
Q	87+92.13	-5.92	390.67	390.76
R	88+02.13	-5.92	390.67	390.78
S	88+12.13	-5.92	390.66	390.77
T	88+22.13	-5.92	390.65	390.75
U	88+32.13	-5.92	390.64	390.71
V	88+42.13	-5.92	390.63	390.66
℄ Brg. E. Abut.	88+47.51	-5.92	390.63	390.63
Bk. East Abut.	88+49.77	-5.92	390.62	390.62

P.G.L. (E.B.)

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	85+97.33	0.00	390.61	390.61
℄ Brg. W. Abut.	85+99.59	0.00	390.62	390.62
A	86+09.59	0.00	390.64	390.68
B	86+19.59	0.00	390.65	390.74
C	86+29.59	0.00	390.67	390.78
D	86+39.59	0.00	390.69	390.80
E	86+49.59	0.00	390.70	390.80
F	86+59.59	0.00	390.71	390.78
G	86+69.59	0.00	390.73	390.75
℄ W. Brg. Pier 1	86+74.97	0.00	390.73	390.73
℄ Pier 1	86+76.09	0.00	390.73	390.73
℄ E. Brg. Pier 1	86+77.22	0.00	390.73	390.73
H	86+87.22	0.00	390.74	390.82
I	86+97.22	0.00	390.75	390.89
J	87+07.22	0.00	390.76	390.95
K	87+17.22	0.00	390.76	390.98
L	87+27.22	0.00	390.77	390.98
M	87+37.22	0.00	390.77	390.96
N	87+47.22	0.00	390.77	390.91
O	87+57.22	0.00	390.77	390.84
℄ W. Brg. Pier 2	87+66.47	0.00	390.77	390.77
℄ Pier 2	87+67.60	0.00	390.77	390.77
℄ E. Brg. Pier 2	87+68.73	0.00	390.77	390.77
P	87+78.73	0.00	390.77	390.81
Q	87+88.73	0.00	390.77	390.85
R	87+98.73	0.00	390.76	390.87
S	88+08.73	0.00	390.75	390.86
T	88+18.73	0.00	390.75	390.84
U	88+28.73	0.00	390.74	390.80
V	88+38.73	0.00	390.73	390.75
℄ Brg. E. Abut.	88+44.10	0.00	390.72	390.72
Bk. East Abut.	88+46.36	0.00	390.72	390.72

BEAM 3

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	85+95.17	3.75	390.55	390.55
℄ Brg. W. Abut.	85+97.43	3.75	390.56	390.56
A	86+07.43	3.75	390.58	390.62
B	86+17.43	3.75	390.59	390.68
C	86+27.43	3.75	390.61	390.72
D	86+37.43	3.75	390.63	390.74
E	86+47.43	3.75	390.64	390.74
F	86+57.43	3.75	390.66	390.72
G	86+67.43	3.75	390.67	390.69
℄ W. Brg. Pier 1	86+72.80	3.75	390.67	390.67
℄ Pier 1	86+73.93	3.75	390.67	390.67
℄ E. Brg. Pier 1	86+75.05	3.75	390.68	390.68
H	86+85.05	3.75	390.69	390.76
I	86+95.05	3.75	390.69	390.84
J	87+05.05	3.75	390.70	390.89
K	87+15.05	3.75	390.71	390.92
L	87+25.05	3.75	390.71	390.93
M	87+35.05	3.75	390.71	390.90
N	87+45.05	3.75	390.72	390.86
O	87+55.05	3.75	390.72	390.79
℄ W. Brg. Pier 2	87+64.30	3.75	390.72	390.72
℄ Pier 2	87+65.43	3.75	390.72	390.72
℄ E. Brg. Pier 2	87+66.55	3.75	390.72	390.72
P	87+76.55	3.75	390.71	390.76
Q	87+86.55	3.75	390.71	390.79
R	87+96.55	3.75	390.70	390.81
S	88+06.55	3.75	390.70	390.81
T	88+16.55	3.75	390.69	390.79
U	88+26.55	3.75	390.68	390.75
V	88+36.55	3.75	390.67	390.70
℄ Brg. E. Abut.	88+41.93	3.75	390.67	390.67
Bk. East Abut.	88+44.19	3.75	390.66	390.66

BEAM 4

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	85+89.59	13.42	390.39	390.39
℄ Brg. W. Abut.	85+91.85	13.42	390.39	390.39
A	86+01.85	13.42	390.41	390.46
B	86+11.85	13.42	390.43	390.51
C	86+21.85	13.42	390.45	390.56
D	86+31.85	13.42	390.47	390.58
E	86+41.85	13.42	390.48	390.58
F	86+51.85	13.42	390.50	390.56
G	86+61.85	13.42	390.51	390.53
℄ W. Brg. Pier 1	86+67.22	13.42	390.52	390.52
℄ Pier 1	86+68.35	13.42	390.52	390.52
℄ E. Brg. Pier 1	86+69.47	13.42	390.52	390.52
H	86+79.47	13.42	390.53	390.60
I	86+89.47	13.42	390.54	390.68
J	86+99.47	13.42	390.55	390.74
K	87+09.47	13.42	390.55	390.77
L	87+19.47	13.42	390.56	390.77
M	87+29.47	13.42	390.56	390.75
N	87+39.47	13.42	390.56	390.70
O	87+49.47	13.42	390.56	390.64
℄ W. Brg. Pier 2	87+58.72	13.42	390.56	390.56
℄ Pier 2	87+59.85	13.42	390.56	390.56
℄ E. Brg. Pier 2	87+60.97	13.42	390.56	390.56
P	87+70.97	13.42	390.56	390.61
Q	87+80.97	13.42	390.56	390.64
R	87+90.97	13.42	390.56	390.66
S	88+00.97	13.42	390.55	390.66
T	88+10.97	13.42	390.54	390.64
U	88+20.97	13.42	390.54	390.60
V	88+30.97	13.42	390.53	390.55
℄ Brg. E. Abut.	88+36.35	13.42	390.52	390.52
Bk. East Abut.	88+38.61	13.42	390.52	390.52

BEAM 5

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	85+84.00	23.08	390.18	390.18
℄ Brg. W. Abut.	85+86.27	23.08	390.19	390.19
A	85+96.27	23.08	390.21	390.25
B	86+06.27	23.08	390.23	390.31
C	86+16.27	23.08	390.25	390.35
D	86+26.27	23.08	390.26	390.37
E	86+36.27	23.08	390.28	390.38
F	86+46.27	23.08	390.29	390.36
G	86+56.27	23.08	390.31	390.33
℄ W. Brg. Pier 1	86+61.64	23.08	390.32	390.32
℄ Pier 1	86+62.77	23.08	390.32	390.32
℄ E. Brg. Pier 1	86+63.89	23.08	390.32	390.32
H	86+73.89	23.08	390.33	390.41
I	86+83.89	23.08	390.34	390.48
J	86+93.89	23.08	390.35	390.54
K	87+03.89	23.08	390.35	390.57
L	87+13.89	23.08	390.36	390.58
M	87+23.89	23.08	390.37	390.55
N	87+33.89	23.08	390.37	390.51
O	87+43.89	23.08	390.37	390.44
℄ W. Brg. Pier 2	87+53.14	23.08	390.37	390.37
℄ Pier 2	87+54.27	23.08	390.37	390.37
℄ E. Brg. Pier 2	87+55.39	23.08	390.37	390.37
P	87+65.39	23.08	390.37	390.41
Q	87+75.39	23.08	390.37	390.45
R	87+85.39	23.08	390.36	390.47
S	87+95.39	23.08	390.36	390.47
T	88+05.39	23.08	390.35	390.45
U	88+15.39	23.08	390.35	390.41
V	88+25.39	23.08	390.34	390.36
℄ Brg. E. Abut.	88+30.77	23.08	390.33	390.33
Bk. East Abut.	88+33.03	23.08	390.33	390.33

BEAM 6

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	85+78.42	32.75	389.97	389.97
℄ Brg. W. Abut.	85+80.68	32.75	389.98	389.98
A	85+90.68	32.75	390.00	390.05
B	86+00.68	32.75	390.02	390.11
C	86+10.68	32.75	390.04	390.15
D	86+20.68	32.75	390.06	390.17
E	86+30.68	32.75	390.08	390.18
F	86+40.68	32.75	390.09	390.16
G	86+50.68	32.75	390.11	390.13
℄ W. Brg. Pier 1	86+56.06	32.75	390.11	390.11
℄ Pier 1	86+57.18	32.75	390.12	390.12
℄ E. Brg. Pier 1	86+58.31	32.75	390.12	390.12
H	86+68.31	32.75	390.13	390.21
I	86+78.31	32.75	390.14	390.28
J	86+88.31	32.75	390.15	390.34
K	86+98.31	32.75	390.16	390.37
L	87+08.31	32.75	390.16	390.38
M	87+18.31	32.75	390.17	390.36
N	87+28.31	32.75	390.17	390.31
O	87+38.31	32.75	390.18	390.25
℄ W. Brg. Pier 2	87+47.56	32.75	390.18	390.18
℄ Pier 2	87+48.68	32.75	390.18	390.18
℄ E. Brg. Pier 2	87+49.81	32.75	390.18	390.18
P	87+59.81	32.75	390.18	390.22
Q	87+69.81	32.75	390.18	390.26
R	87+79.81	32.75	390.17	390.28
S	87+89.81	32.75	390.17	390.28
T	87+99.81	32.75	390.16	390.26
U	88+09.81	32.75	390.16	390.22
V	88+19.81	32.75	390.15	390.17
℄ Brg. E. Abut.	88+25.18	32.75	390.14	390.14
Bk. East Abut.	88+27.45	32.75	390.14	390.14

BEAM 7

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
Bk. West Abut.	85+72.84	42.42	389.81	389.81
℄ Brg. W. Abut.	85+75.10	42.42	389.82	389.82
A	85+85.10	42.42	389.84	389.88
B	85+95.10	42.42	389.86	389.94
C	86+05.10	42.42	389.88	389.98
D	86+15.10	42.42	389.90	390.00
E	86+25.10	42.42	389.92	390.01
F	86+35.10	42.42	389.93	389.00
G	86+45.10	42.42	389.95	389.97
℄ W. Brg. Pier 1	86+50.48	42.42	389.96	389.96
℄ Pier 1	86+51.60	42.42	389.96	389.96
℄ E. Brg. Pier 1	86+52.73	42.42	389.96	389.96
H	86+62.73	42.42	389.97	390.04
I	86+72.73	42.42	389.98	390.11
J	86+82.73	42.42	389.99	390.17
K	86+92.73	42.42	390.00	390.20
L	87+02.73	42.42	390.01	390.21
M	87+12.73	42.42	390.02	390.19
N	87+22.73	42.42	390.02	390.15
O	87+32.73	42.42	390.02	390.09
℄ W. Brg. Pier 2	87+41.98	42.42	390.03	390.03
℄ Pier 2	87+43.10	42.42	390.03	390.03
℄ E. Brg. Pier 2	87+44.23	42.42	390.03	390.03
P	87+54.23	42.42	390.03	390.07
Q	87+64.23	42.42	390.03	390.10
R	87+74.23	42.42	390.02	390.12
S	87+84.23	42.42	390.02	390.12
T	87+94.23	42.42	390.02	390.10
U	88+04.23	42.42	390.01	390.07
V	88+14.23	42.42	390.00	390.03
℄ Brg. E. Abut.	88+19.60	42.42	390.00	390.00
Bk. East Abut.	88+21.86	42.42	390.00	390.00

CMT

USER NAME =	DESIGNED CJW	REVISED	
...\98850-0079_004-Deck Elev 2.dgn	CHECKED WLB	REVISED	
PLOT SCALE =	DRAWN GLD	REVISED	
PLOT DATE =	CHECKED WLB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK ELEVATIONS – 2
STRUCTURE NO. 039-0079
SHEET NO. 4 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	170
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

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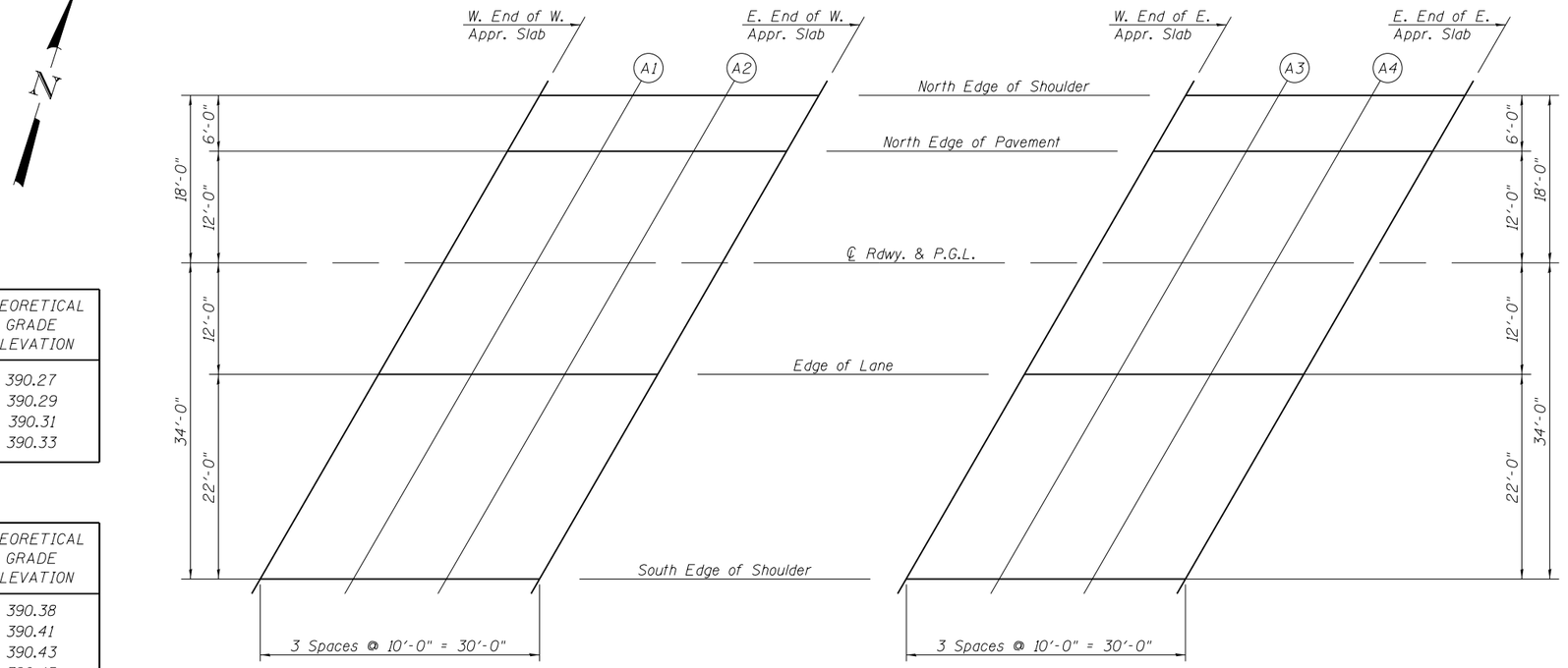

NORTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	85+78.88	-18.00	390.27
A1	85+88.88	-18.00	390.29
A2	85+98.88	-18.00	390.31
E. End of W. Appr.	86+08.88	-18.00	390.33

NORTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	85+75.41	-12.00	390.38
A1	85+85.41	-12.00	390.41
A2	85+95.41	-12.00	390.43
E. End of W. Appr.	86+05.41	-12.00	390.45

℄ ROADWAY & P.G.L.

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	85+68.49	0.00	390.55
A1	85+78.49	0.00	390.57
A2	85+88.49	0.00	390.59
E. End of W. Appr.	85+98.49	0.00	390.61

EDGE OF LANE

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	85+61.56	12.00	390.35
A1	85+71.56	12.00	390.37
A2	85+81.56	12.00	390.40
E. End of W. Appr.	85+91.56	12.00	390.42

SOUTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of W. Appr.	85+48.86	34.00	389.88
A1	85+58.86	34.00	389.90
A2	85+68.86	34.00	389.93
E. End of W. Appr.	85+78.86	34.00	389.95

WEST APPROACH SLAB

PLAN

EAST APPROACH SLAB

℄ ROADWAY & P.G.L.

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	88+45.20	0.00	390.72
A3	88+55.20	0.00	390.71
A4	88+65.20	0.00	390.69
E. End of E. Appr.	88+75.20	0.00	390.68

NORTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	88+55.59	-18.00	390.40
A3	88+65.59	-18.00	390.39
A4	88+75.59	-18.00	390.38
E. End of E. Appr.	88+85.59	-18.00	390.36

NORTH EDGE OF PAVEMENT

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	88+52.13	-12.00	390.53
A3	88+62.13	-12.00	390.52
A4	88+72.13	-12.00	390.50
E. End of E. Appr.	88+82.13	-12.00	390.48

EDGE OF LANE

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	88+38.27	12.00	390.55
A3	88+48.27	12.00	390.53
A4	88+58.27	12.00	390.52
E. End of E. Appr.	88+68.27	12.00	390.51

SOUTH EDGE OF SHOULDER

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION
W. End of E. Appr.	88+25.57	34.00	390.12
A3	88+35.57	34.00	390.11
A4	88+45.57	34.00	390.10
E. End of E. Appr.	88+55.57	34.00	390.08

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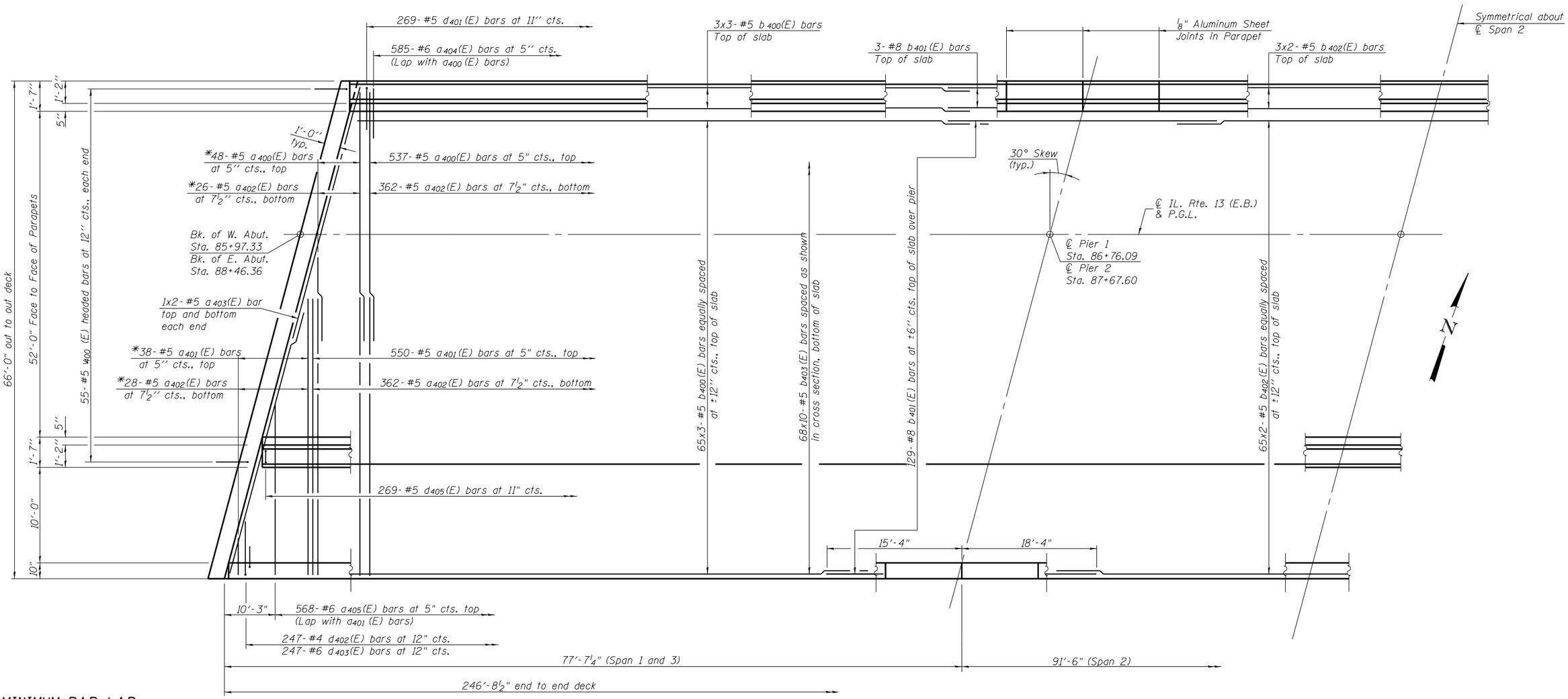
PLOT SCALE =	DRAWN GLD	REVISED	
PLOT DATE =	CHECKED WLB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB ELEVATIONS
STRUCTURE NO. 039-0079
SHEET NO. 5 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	171
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



MINIMUM BAR LAP

#5 bar = 3'-6"

*Order a400(E), a401(E) and a402(E) bars full length.
Cut to fit skew and use remainder of bars in opposite end.

PARTIAL PLAN

Notes:
See sheet 7 of 28 for Superstructure Cross Section.
See sheet 9 of 28 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3- #5 etc. indicates 20 lines of bars with 3 lengths per line.

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CMT

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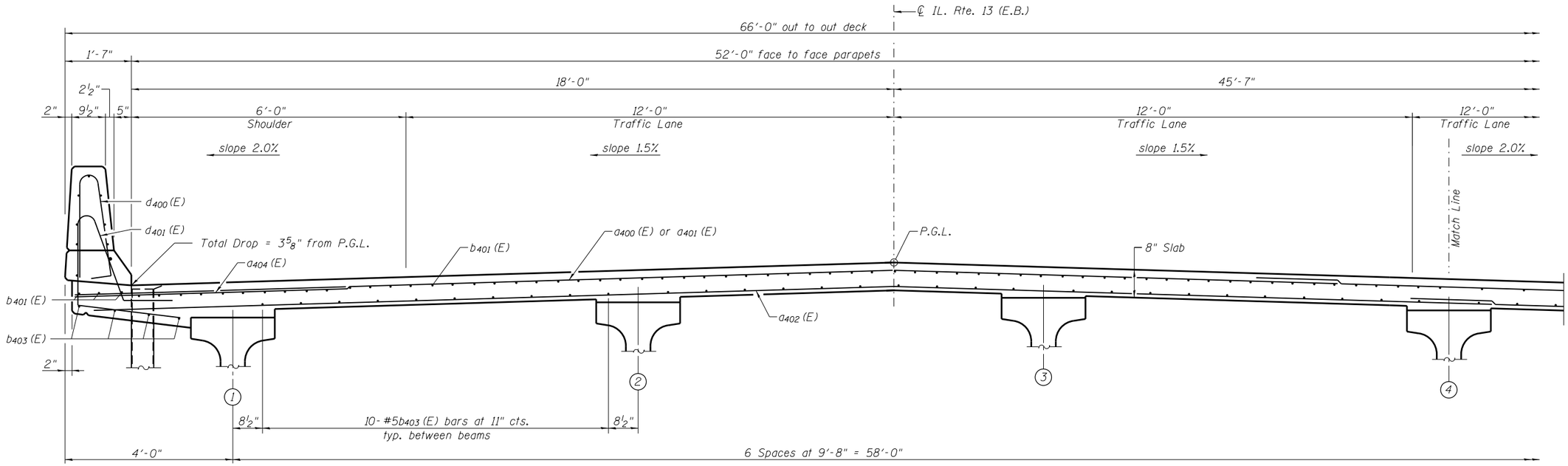
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

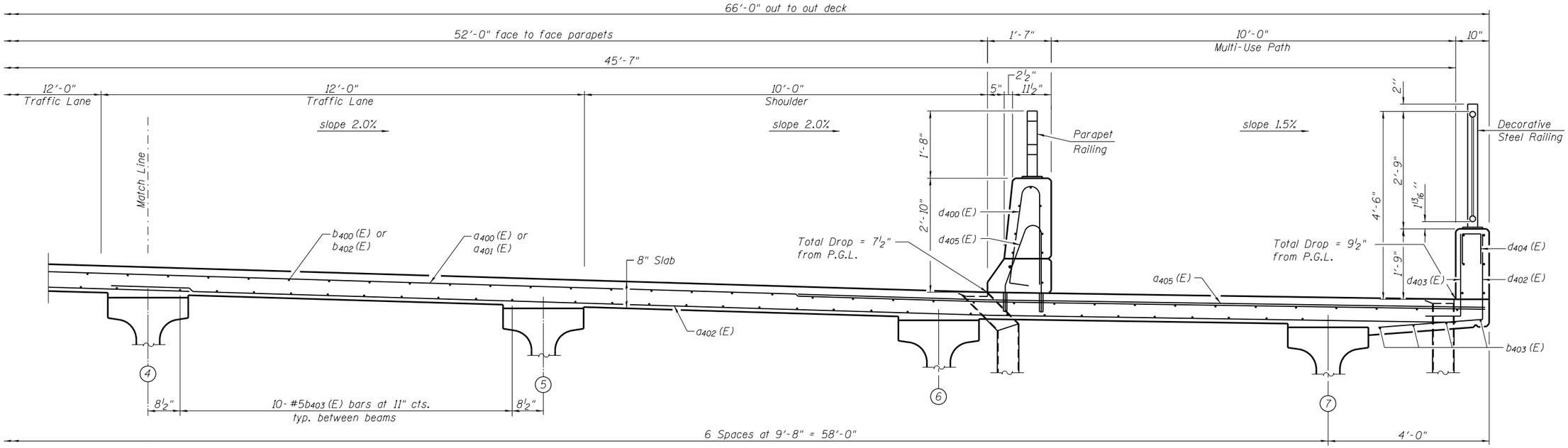
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE – 1
STRUCTURE NO. 039–0079
SHEET NO. 6 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	172
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		



NEAR PIER



NEAR MIDSPAN

CROSS SECTION
(Looking East)

Note:
Cross-slope changes from 2.0% to 1.5% at the toe of the parapet.

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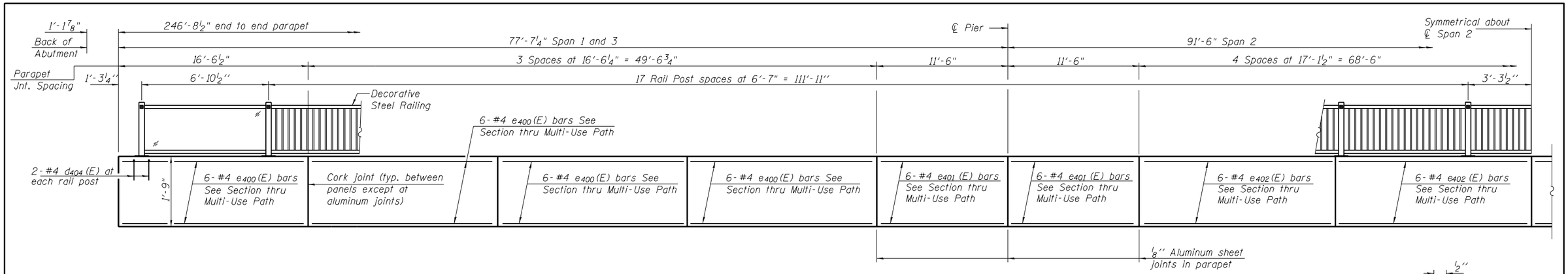
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

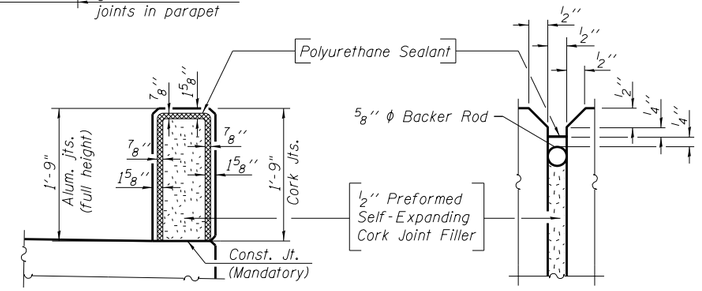
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE – 2
STRUCTURE NO. 039-0079
SHEET NO. 7 OF 28 SHEETS

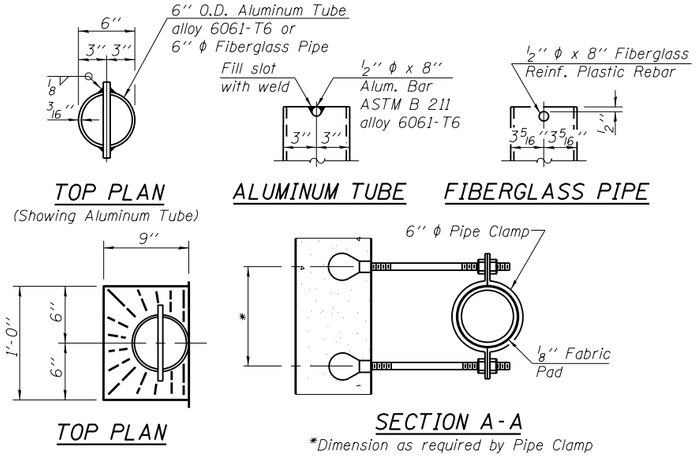
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	173
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		

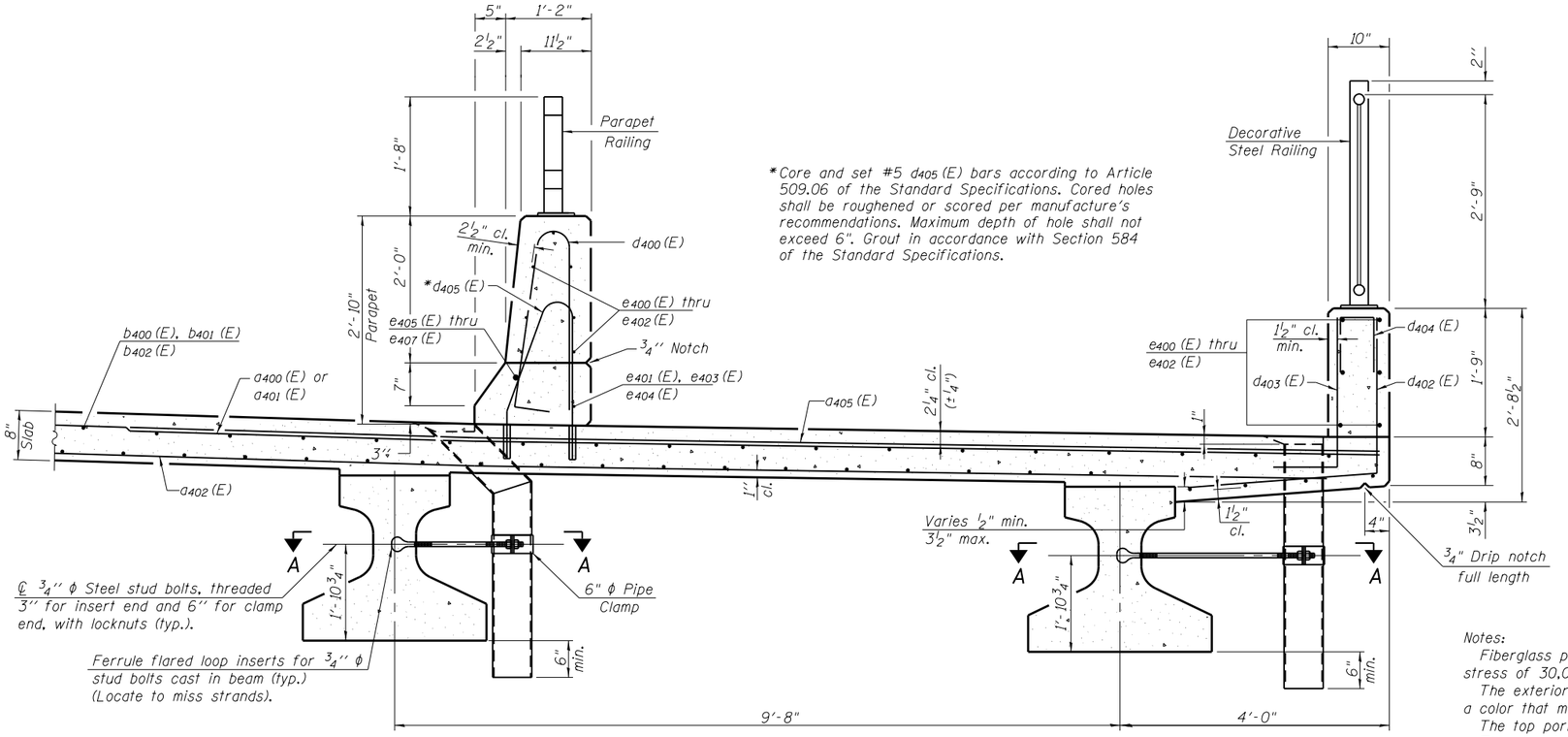


INSIDE ELEVATION OF MULTI-USE PATH PARAPET



MULTI-USE PATH PARAPET JOINT DETAILS





*Core and set #5 d405(E) bars according to Article 509.06 of the Standard Specifications. Cored holes shall be roughened or scored per manufacture's recommendations. Maximum depth of hole shall not exceed 6". Grout in accordance with Section 584 of the Standard Specifications.

SECTION THRU MULTI-USE PATH

Notes:

Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

The exterior surfaces of the fiberglass floor drains shall be pigmented by the manufacturer with a color that matches the concrete.

The top portion of aluminum floor drains shall be coated to minimize reaction with wet concrete.

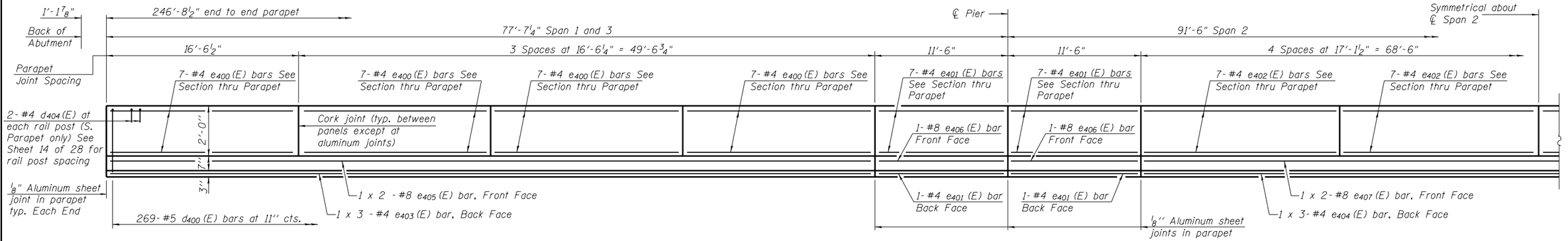
The clamping device and inserts shall be galvanized according to AASHTO M 232. Cost of clamping device and inserts included with Floor Drains.

The 1/8" Aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.

The Polyurethane Sealant shall be non-staining gray one component non-sag elastomeric gun grade meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25. Use T with a 5/8" backer rod.

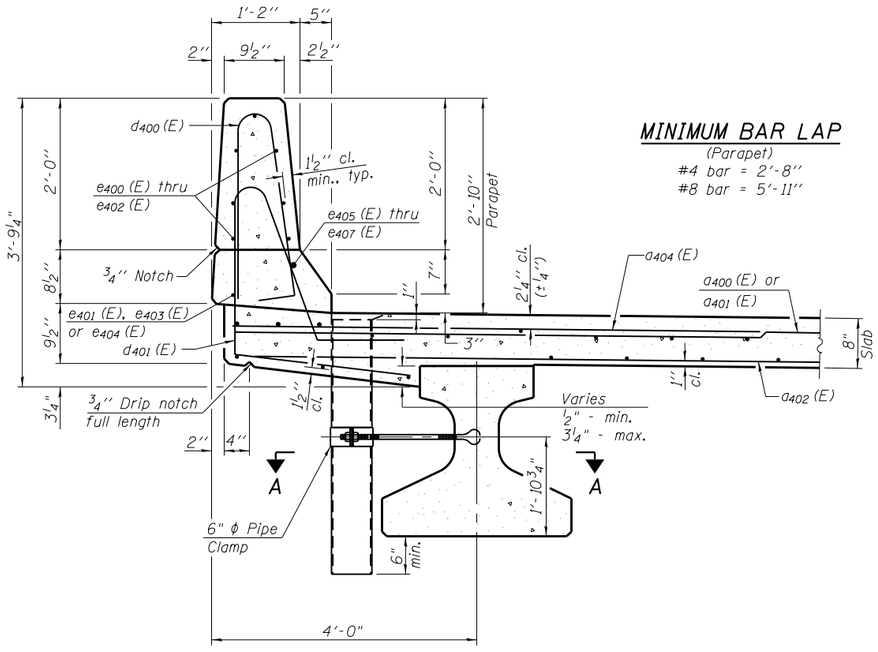
The 1/2" Preformed Self-Expanding Cork Joint Filler shall be according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

For Railing Details, See Sheet 14 of 28.



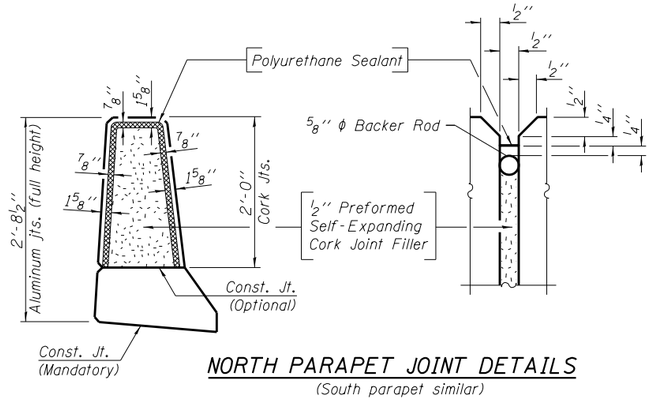
INSIDE ELEVATION OF NORTH PARAPET

(South parapet Elevation similar)
(See South parapet Section Thru Multi-Use Path Sheet 8 of 28)



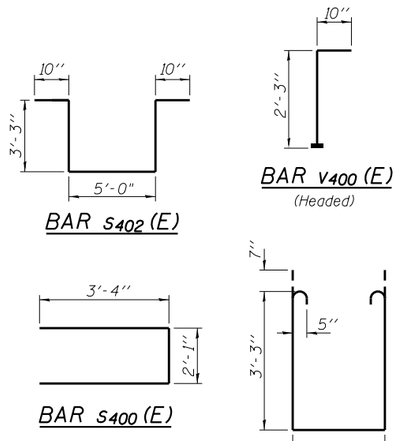
MINIMUM BAR LAP

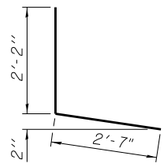
(Parapet)
#4 bar = 2'-8"
#8 bar = 5'-11"

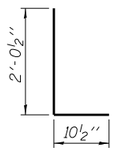


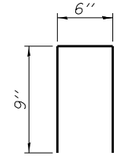
NORTH PARAPET JOINT DETAILS

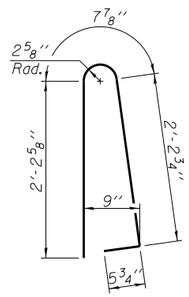
(South parapet similar)

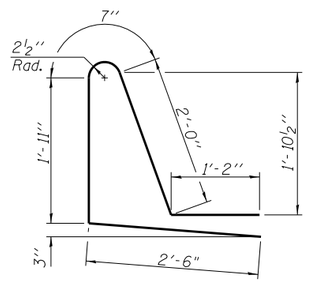


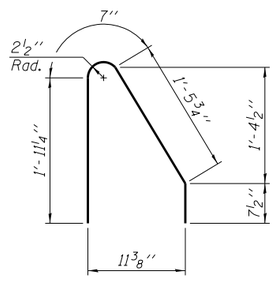












SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{400}(E)	585	#5	39'-3"	——
a_{401}(E)	588	#5	29'-9"	——
a_{402}(E)	778	#5	34'-6"	——
a_{403}(E)	8	#5	39'-7"	——
a_{404}(E)	585	#6	6'-6"	——
a_{405}(E)	568	#6	17'-2"	——
b_{400}(E)	408	#5	24'-8"	——
b_{401}(E)	264	#8	33'-8"	——
b_{402}(E)	136	#5	32'-8"	——
b_{403}(E)	680	#5	27'-10"	——
d_{400}(E)	538	#5	5'-7"	⌐
d_{401}(E)	269	#5	8'-2"	⌐
d_{402}(E)	247	#4	4'-9"	⌐
d_{403}(E)	247	#6	2'-11"	⌐
d_{404}(E)	152	#4	2'-0"	⌐
d_{405}(E)	269	#5	4'-8"	⌐
e_{400}(E)	160	#4	16'-2"	——
e_{401}(E)	88	#4	11'-2"	——
e_{402}(E)	80	#4	16'-9"	——
e_{403}(E)	12	#4	23'-9"	——
e_{404}(E)	6	#4	24'-6"	——
e_{405}(E)	8	#8	35'-11"	——
e_{406}(E)	8	#8	11'-2"	——
e_{407}(E)	4	#8	37'-1"	——
m_{400}(E)	16	#6	39'-9"	——
m_{401}(E)	24	#6	9'-7"	——
m_{402}(E)	8	#6	3'-8"	——
m_{403}(E)	12	#6	7'-1"	——
m_{404}(E)	4	#6	2'-5"	——
m_{405}(E)	28	#5	4'-0"	——
m_{406}(E)	24	#6	7'-1"	——
m_{407}(E)	48	#6	9'-7"	——
m_{408}(E)	28	#5	4'-0"	——
s_{400}(E)	96	#5	8'-9"	⊐
s_{401}(E)	96	#5	10'-8"	⊔
s_{402}(E)	84	#5	13'-2"	⊔
v_{400}(E)	110	#5	3'-1"	⊔
Concrete Superstructure		Cu. Yd.	598.8	
Bridge Deck Grooving		Sq. Yds.	1,343	
Protective Coat		Sq. Yds.	1,724	
Reinforcement Bars, Epoxy Coated		Lbs.	169,480	

Bars indicated thus 1 x 2 - #8 etc. indicates 1 line of bars with 2 lengths per line.

Notes:

The 1/8" Aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.

The Polyurethane Sealant shall be non-staining gray one component non-sag elastomeric gun grade meeting the requirements of ASTM C-920, Type S, Grade NS, Class 25. Use T with a 5/8" backer rod.

The 1/2" Preformed Self-Expanding Cork Joint Filler shall be according to Article 1051.07 of the Std. Spec. Cost included with Concrete Superstructure.

Headed bars shall conform to ASTM A970 Class HA. Cost included with Reinforcement Bars, Epoxy Coated.

See Sheet 8 of 28 for Section A-A and floor drain details.

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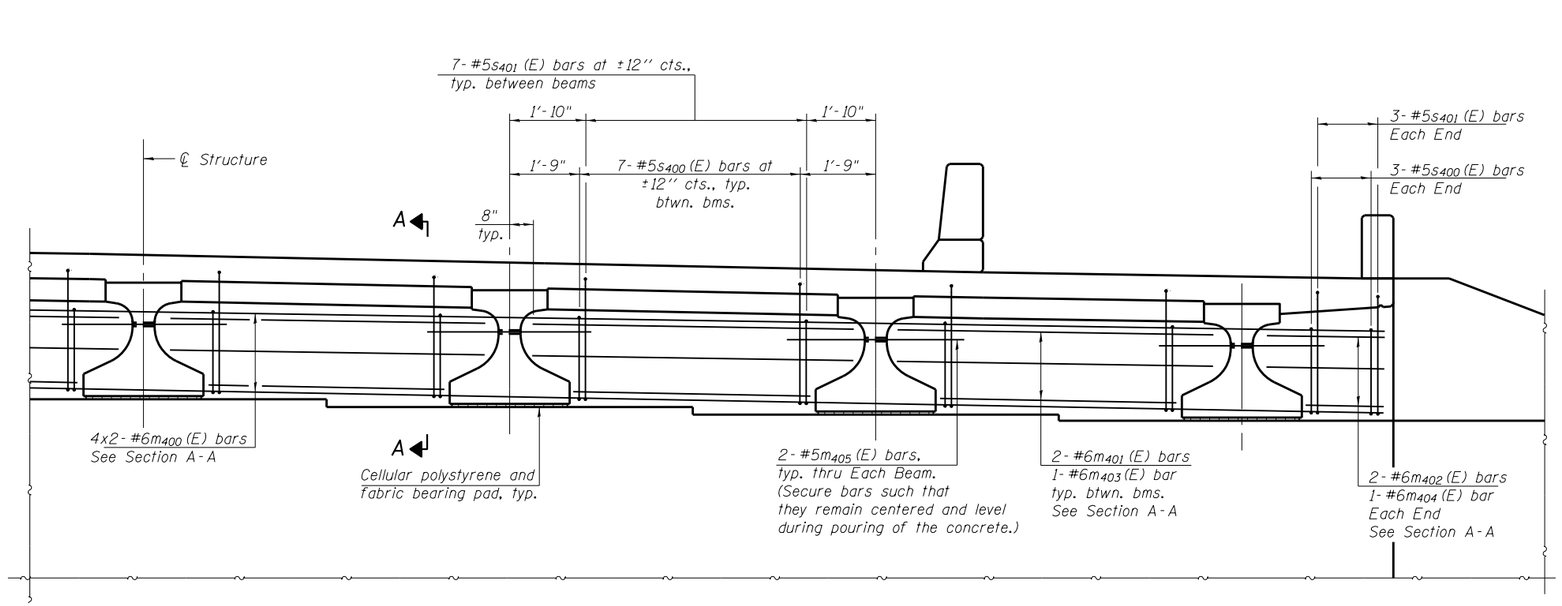
PLOT DATE =	CHECKED	WLB	REVISED

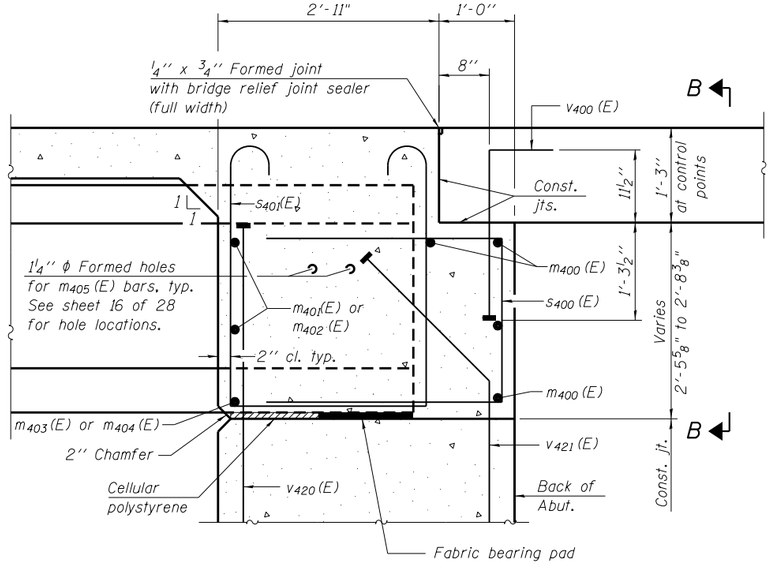
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS – 2
STRUCTURE NO. 039-0079
SHEET NO. 9 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	175
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

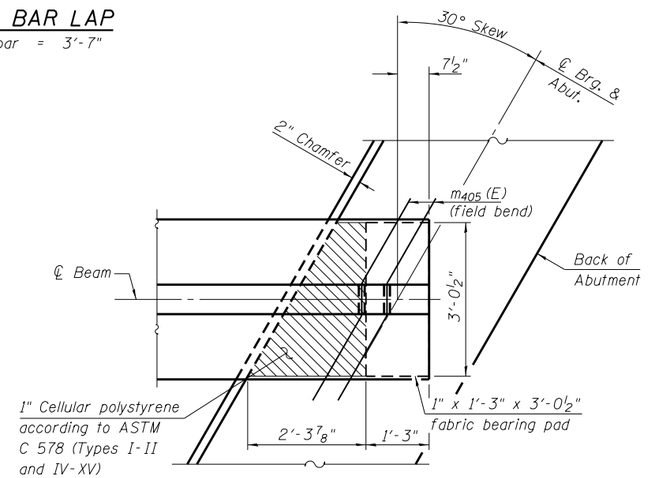


DIAPHRAGM AT ABUTMENT

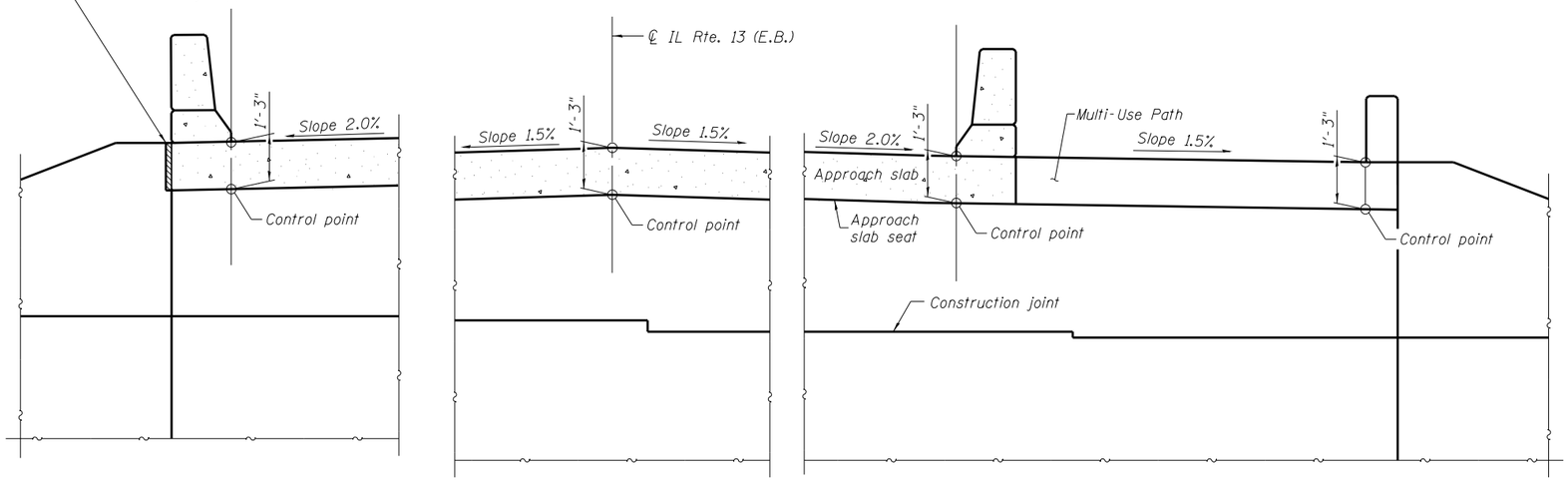


SECTION A-A
(at Rt. L's)

MIN. BAR LAP
#6 bar = 3'-7"



PLAN AT ABUTMENT
(Showing bottom flange of beam)



SECTION B-B

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 9 of 28.

Concrete in diaphragm is included with Concrete Superstructure on sheet 9 of 28.

For details of bars s_{400}(E), s_{401} (E) and v_{400}(E) see sheet 9 of 28.

The s_{400}(E) and s_{401} (E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

The approach slab seat shall have a constant slope determined from the control points shown.

Cost of cellular polystyrene is included with Concrete Superstructure.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

DIA-IL36N-L 10-7-2016

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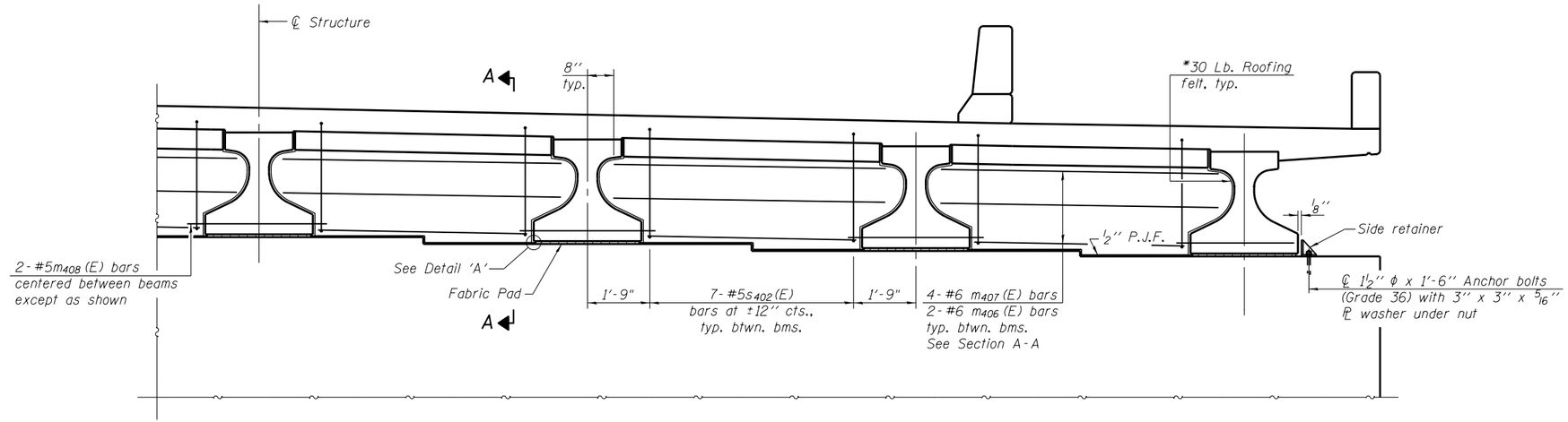
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

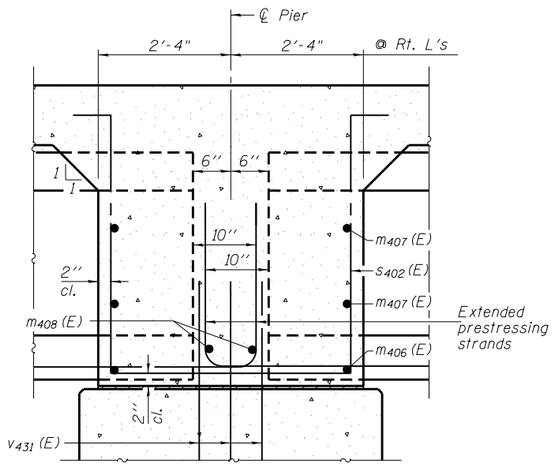
DIAPHRAGM DETAILS – 1
STRUCTURE NO. 039-0079
SHEET NO. 10 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	176
		CONTRACT NO. 78295		
	ILLINOIS	FED. AID PROJECT		



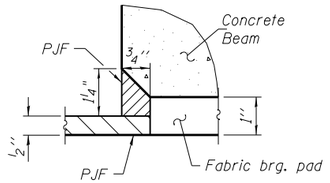
DIAPHRAGM AT PIER

*Bonded to sides of beams embedded into diaphragm.

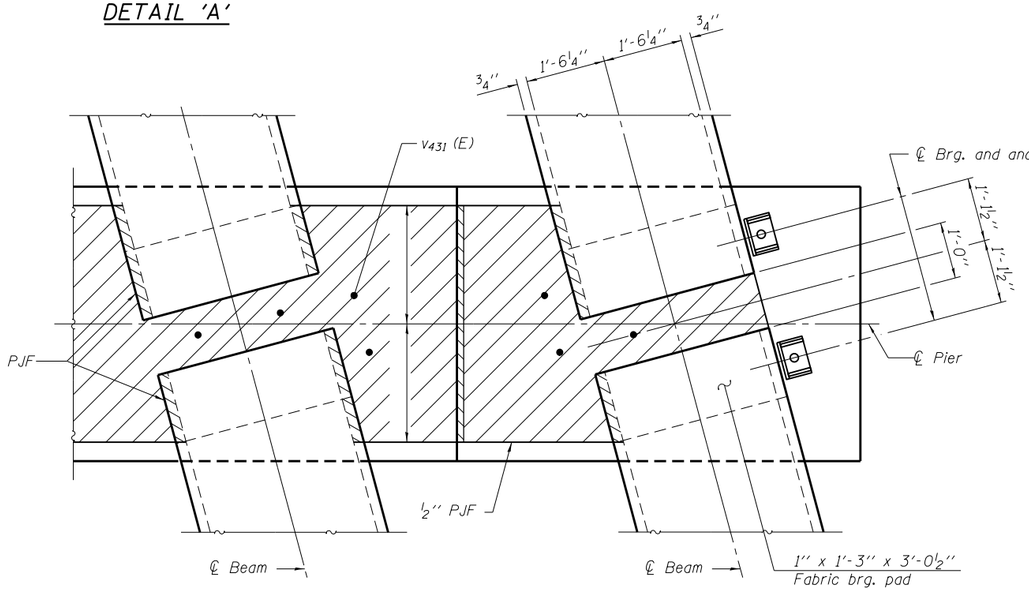


SECTION A-A

(Dimensions along ℄ of beam except as shown)

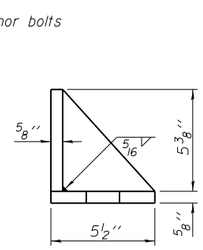


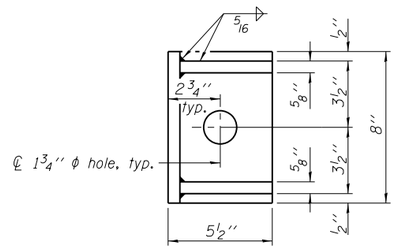
DETAIL 'A'



PLAN AT PIER

(Showing bearing pads and PJF details)





SIDE RETAINER

(2 required each side of pier).
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 9 of 28.

Concrete in diaphragm is included with Concrete Superstructure on sheet 9 of 28.

Cost of 30 Lb. roofing felt is included with Concrete Superstructure.

Cost of side retainer and anchor bolts shall be included with Concrete Structures.

For details of bar s402 (E) see sheet 9 of 28.

The s402 (E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

Anchor bolts and side retainers shall be according to Article 521.06 of the Standard Specifications. Side retainers shall be hot dip galvanized.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

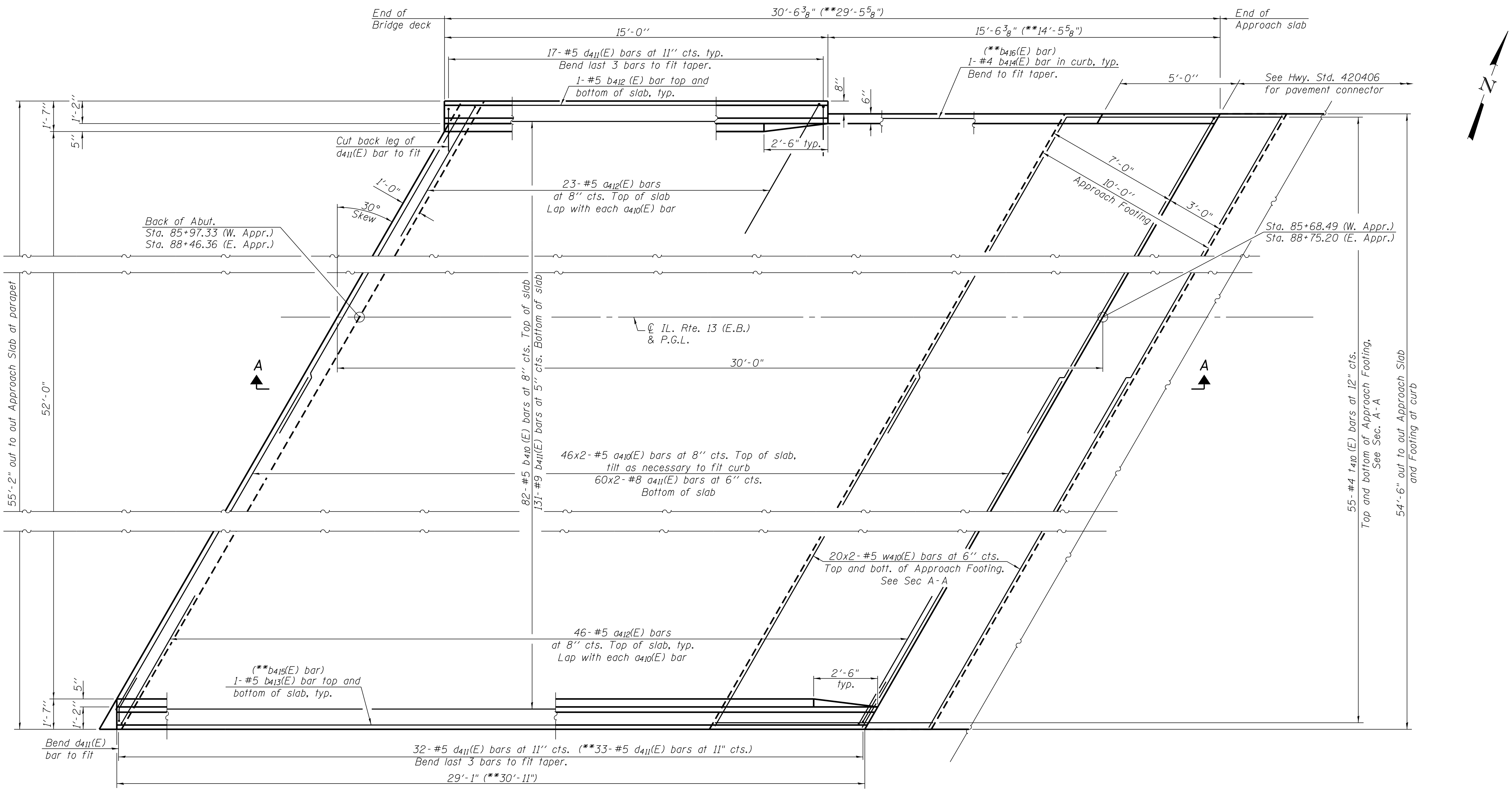
Anchor bolts and side retainers shall be installed as each exterior beam is erected unless an equivalent temporary means of lateral restraint is used.

CMT	USER NAME =	DESIGNED CJW	REVISED
	...\98850-0079_011-Diaphragm Details 2.dgn	CHECKED WLB	REVISED
	PLOT SCALE =	DRAWN GLD	REVISED
	PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS – 2
STRUCTURE NO. 039–0079
SHEET NO. 11 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	177
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

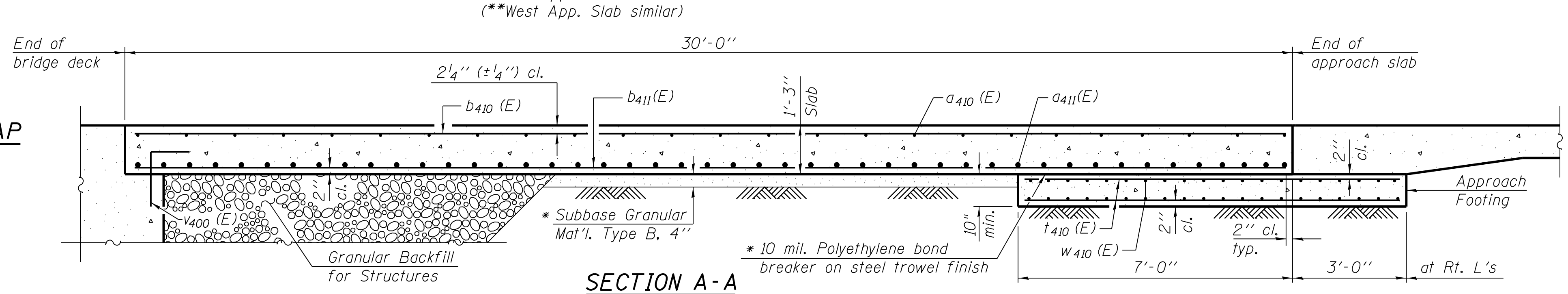


PLAN

East App. Slab shown
(**West App. Slab similar)

MINIMUM BAR LAP

#5 bar = 3'-9"
#8 bar = 6'-9"



SECTION A-A

Note:
Bars indicated thus 46x2 #5 etc. indicates 46 lines of bars with 2 lengths per line.

* Included in the Cost of Concrete Superstructure (Approach Slab)

CMT	USER NAME =	DESIGNED CJW	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS – 1 STRUCTURE NO. 039-0079
	...\98850-0079_012-App Slab Dtls 1.dgn	CHECKED WLB	REVISED		
	PLOT SCALE =	DRAWN GLD	REVISED		
	PLOT DATE =	CHECKED WLB	REVISED		SHEET NO. 12 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	178

CONTRACT NO. 78295
ILLINOIS FED. AID PROJECT

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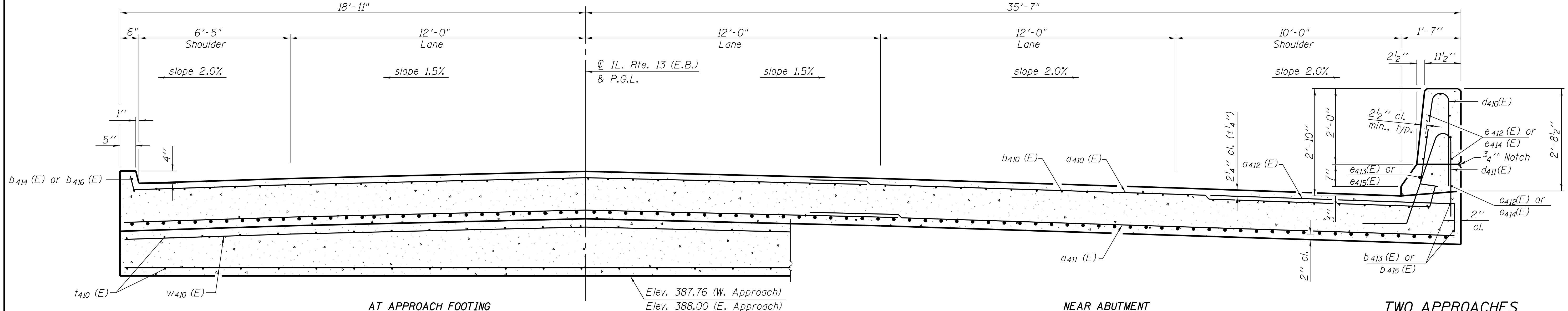
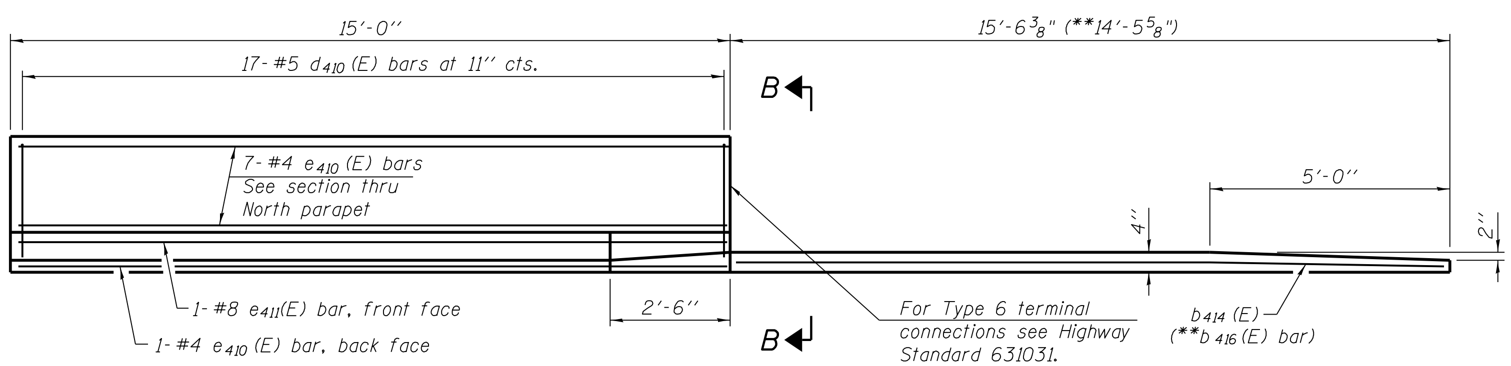


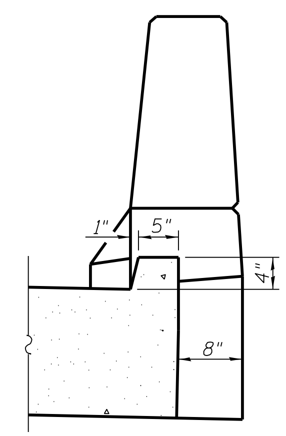
CROSS SECTION

(Looking East)

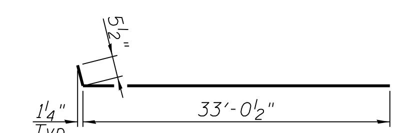


INSIDE ELEVATION OF NORTH PARAPET AND CURB

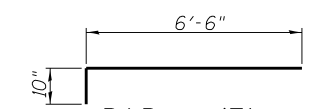
East App. Slab shown
(**West App. Slab similar)



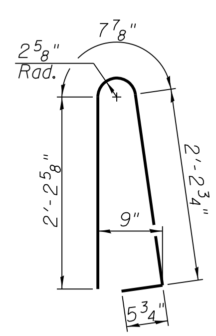
VIEW B-B



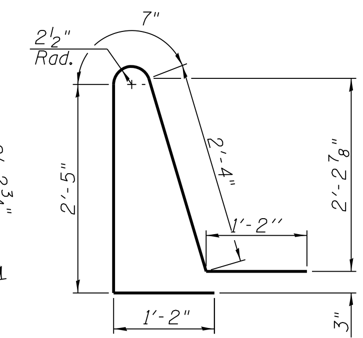
BAR a_{410}(E)



BAR a_{412}(E)



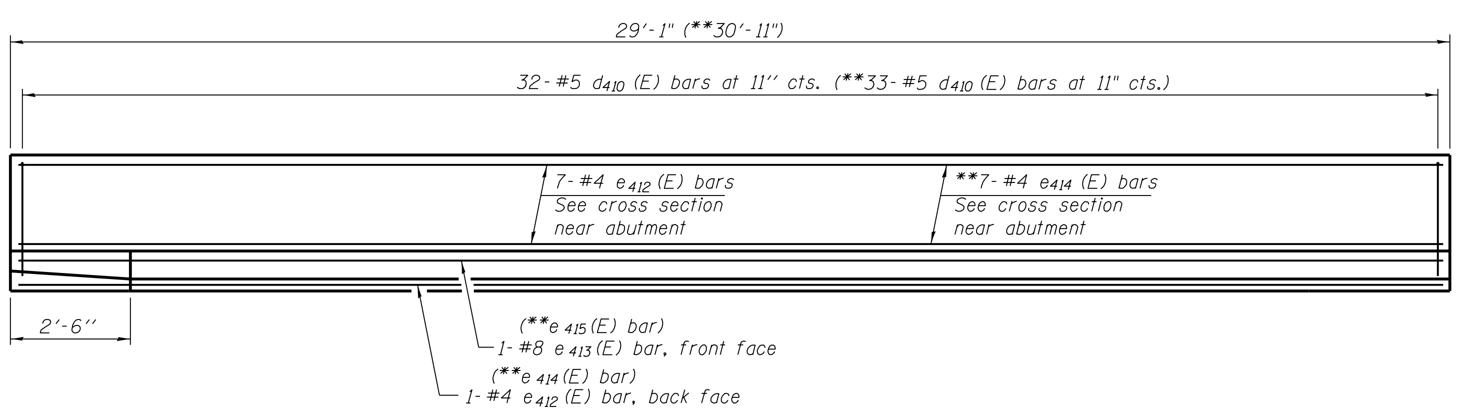
BAR d_{410}(E)



BAR d_{411}(E)

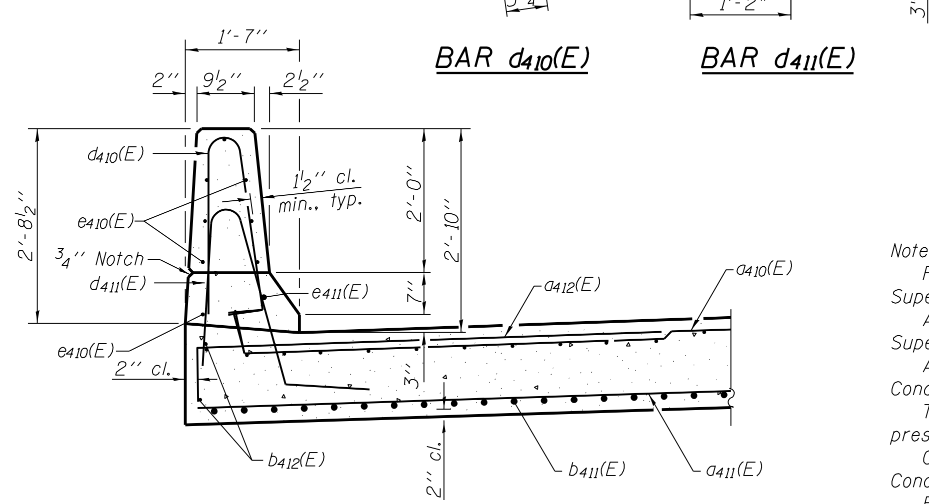
TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{410}(E)	184	#5	33'-6"	
a_{411}(E)	240	#8	34'-8"	
a_{412}(E)	138	#5	7'-4"	
b_{410}(E)	164	#5	29'-8"	
b_{411}(E)	262	#9	29'-8"	
b_{412}(E)	4	#5	14'-8"	
b_{413}(E)	2	#5	28'-9"	
b_{414}(E)	1	#4	15'-2"	
b_{415}(E)	2	#5	30'-7"	
b_{416}(E)	1	#4	14'-1"	
d_{410}(E)	99	#5	5'-7"	
d_{411}(E)	99	#5	7'-8"	
e_{410}(E)	16	#4	14'-8"	
e_{411}(E)	2	#8	14'-8"	
e_{412}(E)	8	#4	28'-9"	
e_{413}(E)	1	#8	28'-9"	
e_{414}(E)	8	#4	30'-7"	
e_{415}(E)	1	#8	30'-7"	
t_{410}(E)	220	#4	11'-2"	
w_{410}(E)	160	#5	33'-2"	
Concrete Structures			Cu. Yd.	53.6
Concrete Superstructure			Cu. Yd.	10.4
Bridge Deck Grooving			Sq. Yds.	327
Protective Coat			Sq. Yds.	388
Concrete Superstructure (Approach Slab)			Cu. Yd.	152.5
Reinforcement Bars, Epoxy Coated			Pound	70,660



INSIDE ELEVATION OF SOUTH PARAPET

East App. Slab shown
(**West App. Slab similar)



SECTION THRU NORTH PARAPET

Notes:

Parapet concrete shall be paid for as Concrete Superstructure.

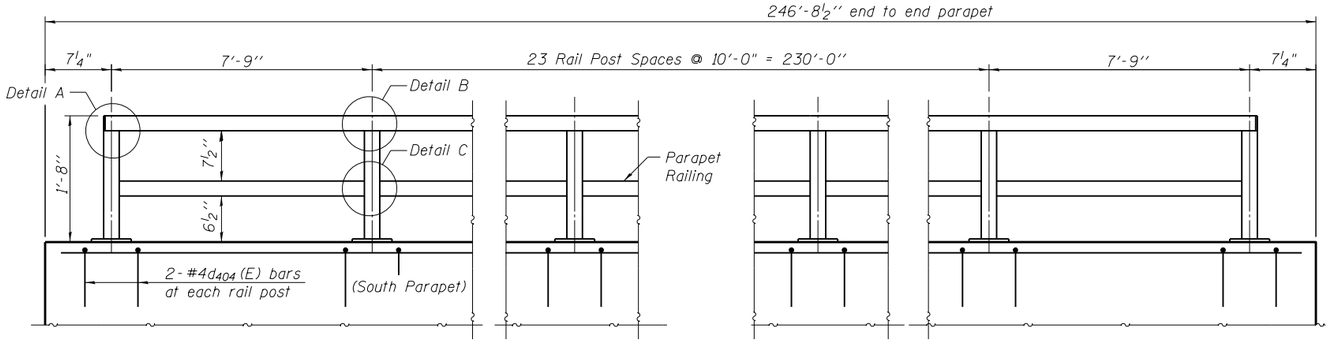
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

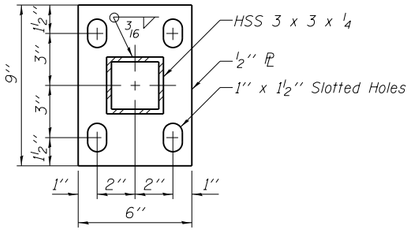
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

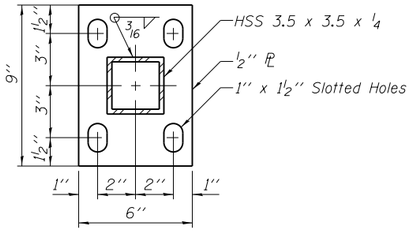
For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 28.



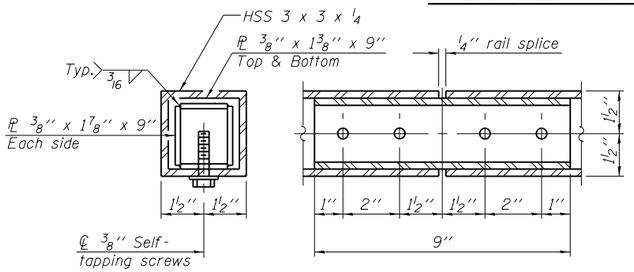
INSIDE ELEVATION OF SOUTH PARAPET



BASE PL

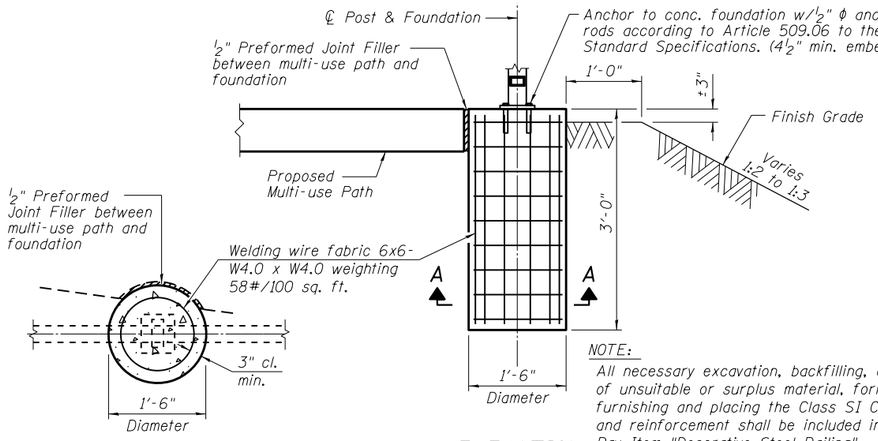


DECORATIVE STEEL RAILING BASE PL



RAIL SPLICE

Note:
All structural steel tubing, post and railing, for parapet railing shall be CVN tested according to 1006.34(b) of the Standard Specifications.

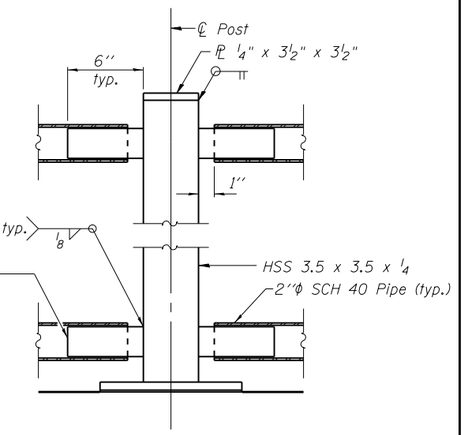


SECTION A-A

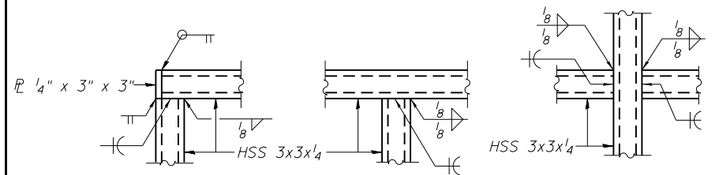
ELEVATION

NOTE:
All necessary excavation, backfilling, disposal of unsuitable or surplus material, formwork and furnishing and placing the Class SI Concrete and reinforcement shall be included in the Pay Item "Decorative Steel Railing".
See Sheet 2 for foundation layout and elevations.

POST FOUNDATION DETAILS



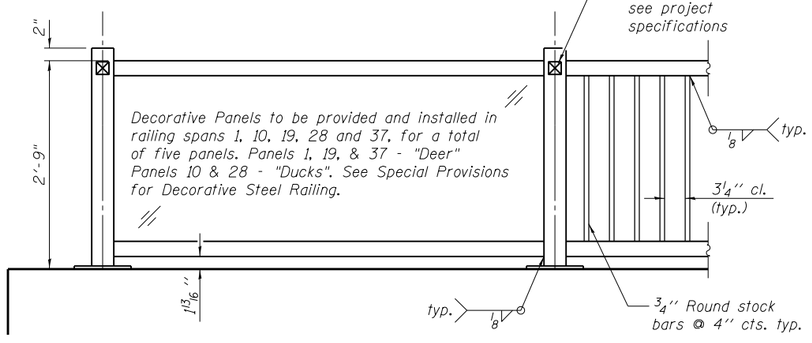
DECORATIVE STEEL RAILING POST



DETAIL A

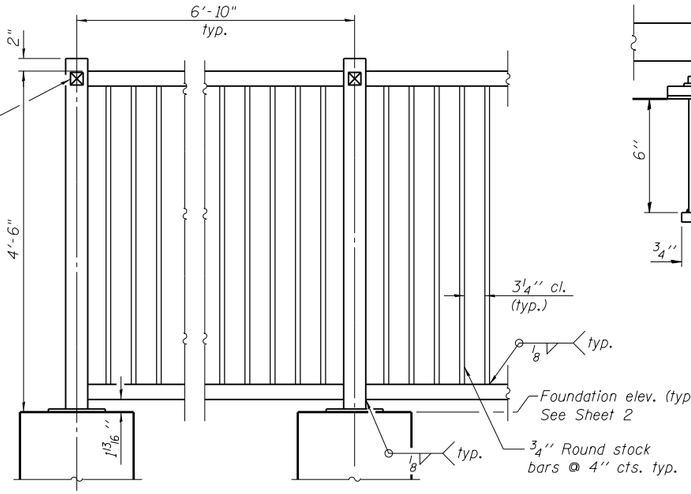
DETAIL B

DETAIL C

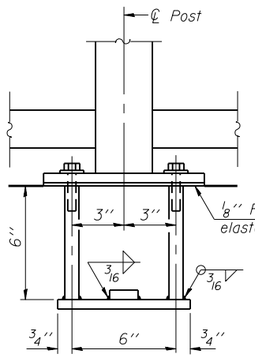


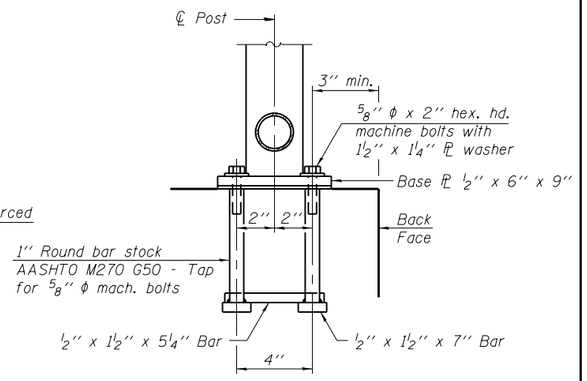
DECORATIVE STEEL RAILING ELEVATION

Aesthetic details to be coordinated with the District



STEEL RAILING ELEVATION-OFF BRIDGE





ANCHOR BOLT DETAILS

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting ⅝" ϕ anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.

Note:
All post, railing, splices, anchor devices and bent plates shall be painted per the project specifications.

BILL OF MATERIAL

Item	Unit	Quantity
Decorative Steel Railing	Foot	299
Parapet Railing	Foot	246

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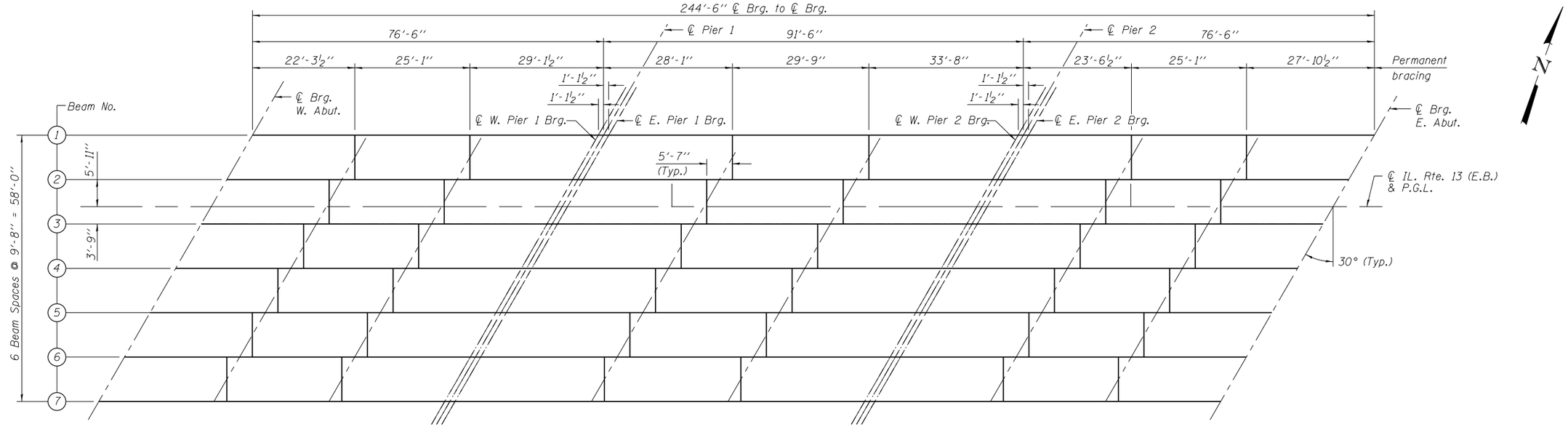
CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0079_014-Railing Details.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

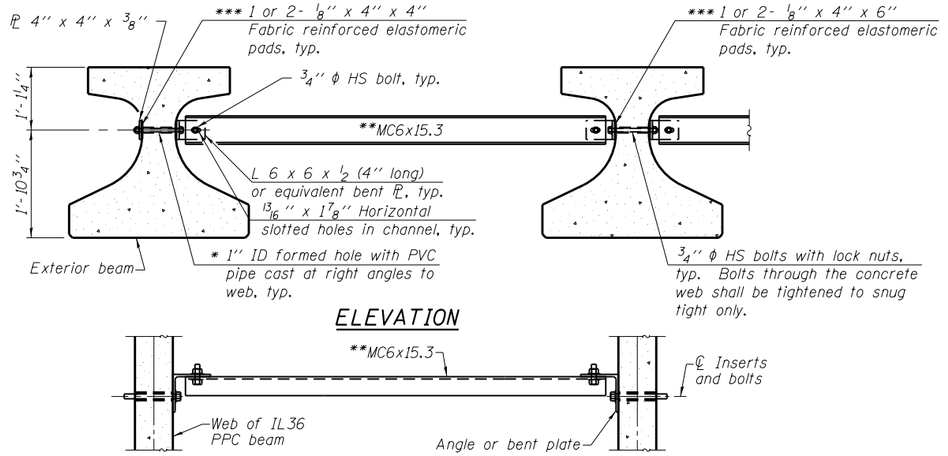
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RAILING DETAILS
STRUCTURE NO. 039-0079
SHEET NO. 14 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	180
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



FRAMING PLAN



PERMANENT BRACING DETAILS FOR IL36 PPC BEAMS

Notes:

All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.

Two hardened washers are required for each set of oversized holes.

All holes shall be 15/16" ϕ unless otherwise noted.

5/16" x 3" x 3" plate washers are required over all slotted holes.

All bolts shall be galvanized according to AASHTO M232.

Bracing shall be installed as beams are erected and tightened as soon as possible during erection.

Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Beams.

* Fabricator shall locate to miss strands within permissible tolerances.

** Alternate MC6x18 channels are permitted to facilitate material acquisition.

*** Place pads as necessary to provide a flat mounting surface between the steel and concrete.

BEAM MOMENT TABLE

		0.4 Sp. 1 0.6 Sp. 3		Pier 1 or 2		0.5 Sp. 2	
		Interior	Exterior	Interior	Exterior	Interior	Exterior
I	(in^4)	100,433				100,433	
I'	(in^4)	323,631				323,631	
S_b	(in^3)	6,832.1				6,832.1	
S_b'	(in^3)	12,153				12,153	
S_t	(in^3)	4,715.1				4,715.1	
S_t'	(in^3)	34,539				34,539	
$DC1$	(k/')	1.76	1.67	1.76	1.67	1.76	1.67
M_{DC1}	('k)	1,195	1,137	0	0	1747	1,662
$DC2$	(k/')	0.17	0.17	0.17	0.17	0.17	0.17
M_{DC2}	('k)	70	70	121	121	56	56
DW	(k/')	0.37	0.37	0.37	0.37	0.37	0.37
M_{DW}	('k)	156	156	263	263	125	125
LLDF		0.815	0.815	0.796	0.796	0.779	0.779
M_{L+IM}	('k)	1,266	1,266	1,374	1,374	1,195	1,195

I: Non-composite moment of inertia of beam section ($in.^4$).
I': Composite moment of inertia of beam section ($in.^4$).
S_b: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_b': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
S_t: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).
S_t': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).
$DC1$: 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.).

BEAM REACTION TABLE

			Abut.		Pier 1 Span 1 Pier 2 Span 3		Pier 1 Span 2 Pier 2 Span 2	
			Interior	Exterior	Interior	Exterior	Interior	Exterior
	LLDF		0.929	0.782	0.929	0.782	0.929	0.782
	OCF		—	1.10	—	—	—	—
	R_{DC1}	(k)	66.2	62.9	66.2	62.9	78.3	74.4
****	R_{DC2}	(k)	4.8	4.8	7.8	7.8	7.8	7.8
****	R_{DW}	(k)	10.8	10.8	17.3	17.3	17.3	17.3
****	R_{L}	(k)	77.6	71.8	74.8	63.0	74.8	63.0
****	R_{IM}	(k)	18.8	17.4	14.9	12.6	14.9	12.6
	R_{Total}	(k)	178.2	167.7	181.0	163.6	193.1	175.1

**** At continuous piers, reactions from composite loads are assumed to be equally distributed to each bearing line.

LL + IM DEFLECTIONS

	Span 1 & 3	Span 2
Calculated deflection	0.49 in.	0.58 in.
Allowable deflection	0.92 in.	1.10 in.

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CMT	USER NAME =	DESIGNED	CJW
	...\98850-0079_015-Framing Plan and Dtls.dgn	CHECKED	WLB
	PLOT SCALE =	DRAWN	GLD
	PLOT DATE =	CHECKED	WLB

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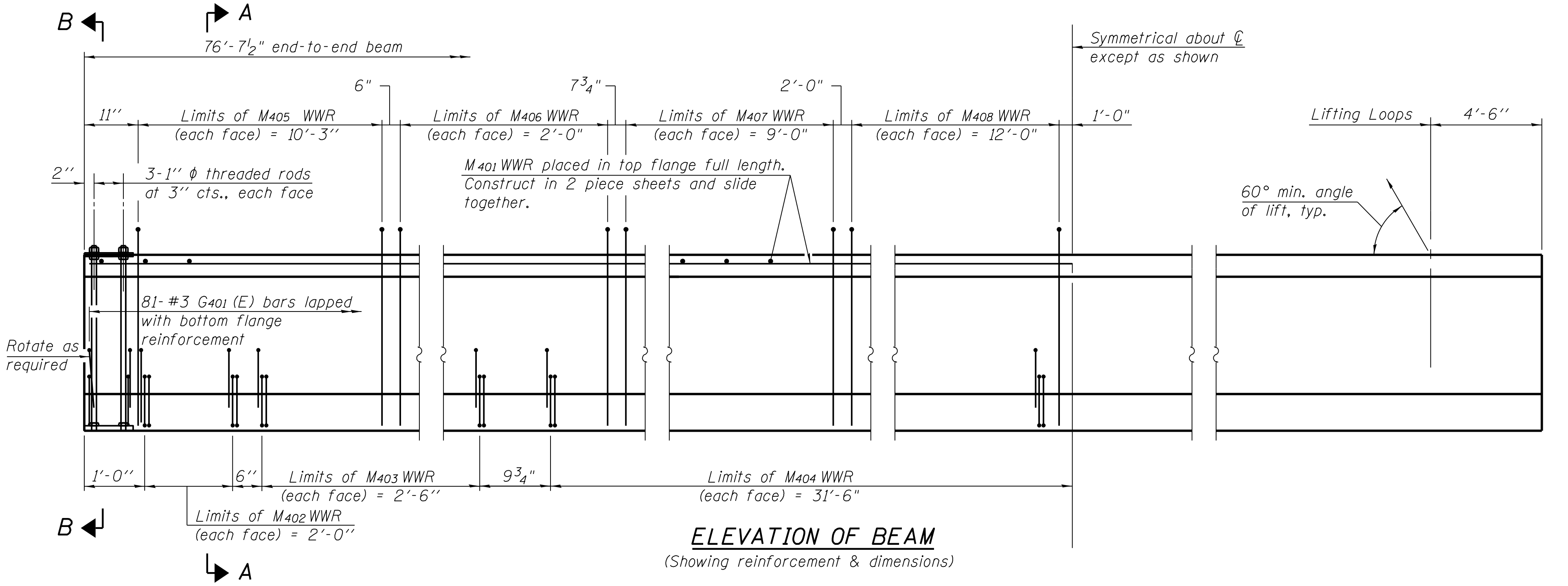
REVISED	
REVISED	
REVISED	

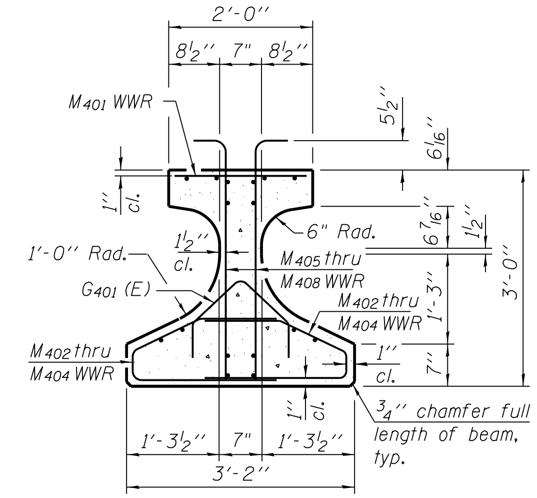
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN AND DETAILS
STRUCTURE NO. 039-0079
SHEET NO. 15 OF 28 SHEETS

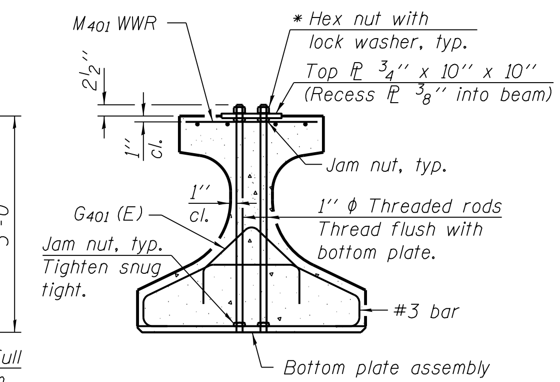
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	181
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



ELEVATION OF BEAM
(Showing reinforcement & dimensions)

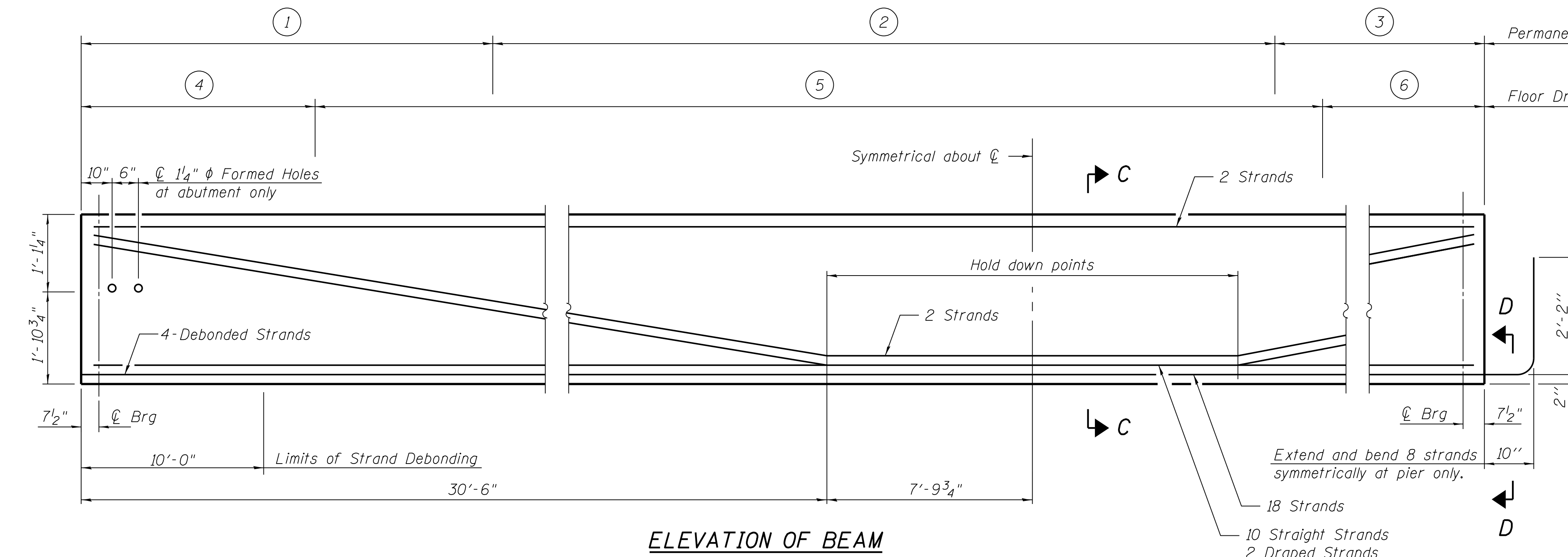


SECTION A-A

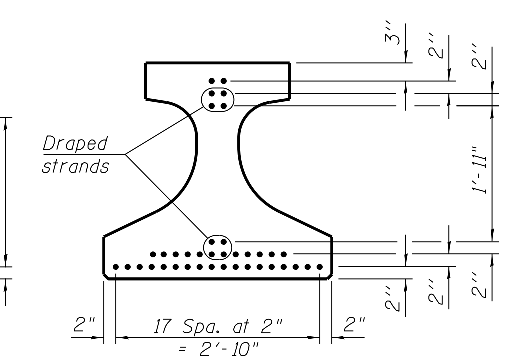


SECTION B-B

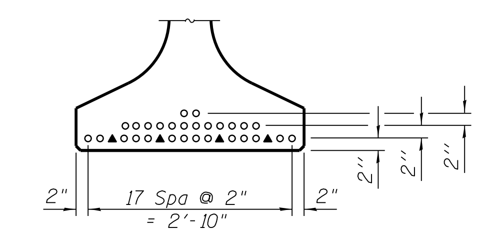
* Only tighten sufficiently to compress lock washers



ELEVATION OF BEAM
(Showing prestressing steel)



SECTION C-C
(34-0.6" ϕ 270 ksi strands)



VIEW D-D

○ Fully bonded strand

▲ Partially debonded strand

PERMANENT BRACING DIMENSION	1	2	3
Span 1 South Side	22'-11"	25'-1"	28'-7½"
Span 1 North Side	28'-6"	25'-1"	23'-0½"
Span 3 South Side	23'-0½"	25'-1"	28'-6"
Span 3 North Side	28'-7½"	25'-1"	22'-11"

FLOOR DRAIN CLAMP INSERT LOCATIONS BEAMS 1, 6 & 7	4	5	6
Span 1	14'-8½"	4 spaces at 11'-10"	14'-7"
Span 3	14'-9½"	4 spaces at 11'-10"	14'-6"

Note:
See sheet 18 of 28 for additional details and Bill of Material.

IL 36-2438 10-7-16

CMT

USER NAME =	DESIGNED CJW	REVISED
...\98850-0079.016-1136-2438 Beam Sp 1 and 3.dgn	CHECKED WLB	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

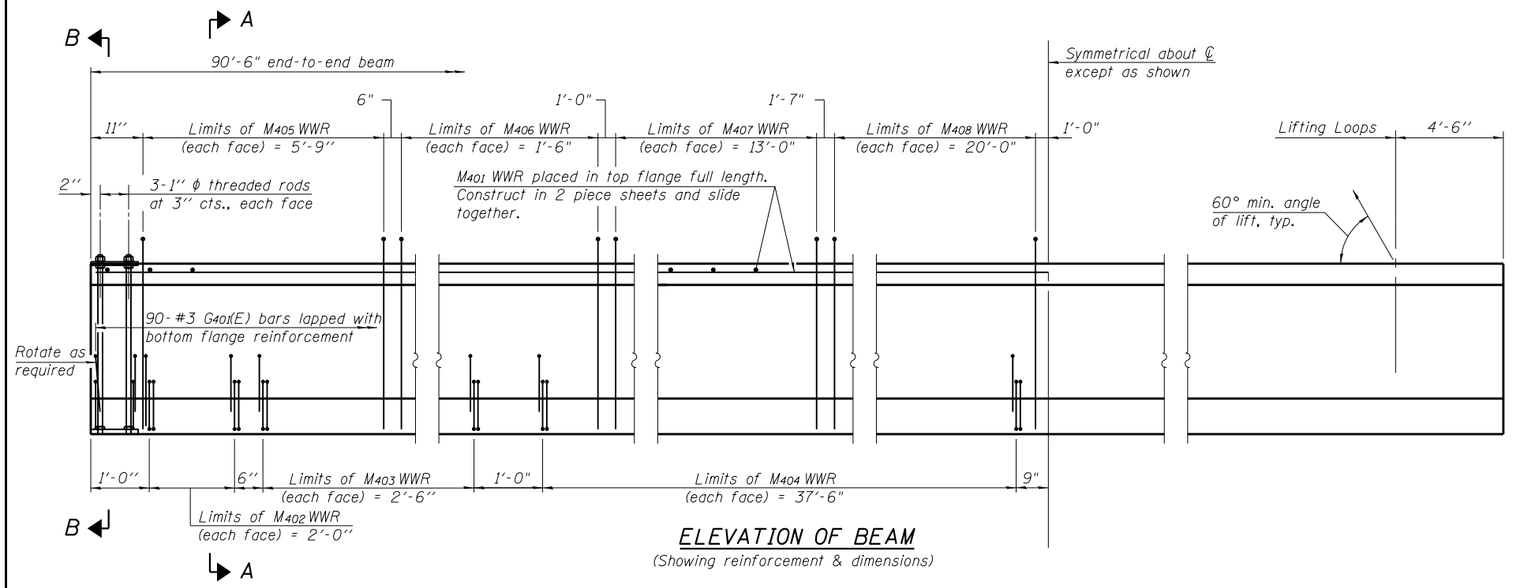
IL36-2438 BEAM SPAN 1 & 3
STRUCTURE NO. 039-0079

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	182

CONTRACT NO. 78295

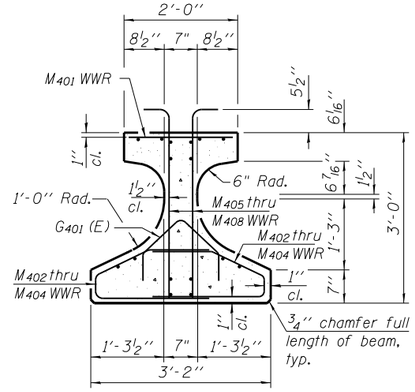
ILLINOIS FED. AID PROJECT

L:\IDOT\98806610\W0.31\Draw\CADD_Sheets\Final Plans\Str No 039-0079\...

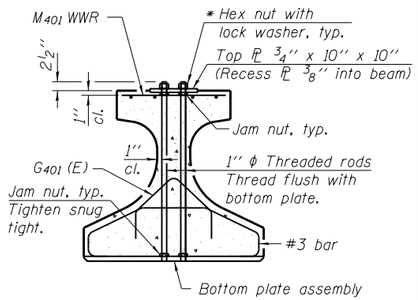


ELEVATION OF BEAM

(Showing reinforcement & dimensions)

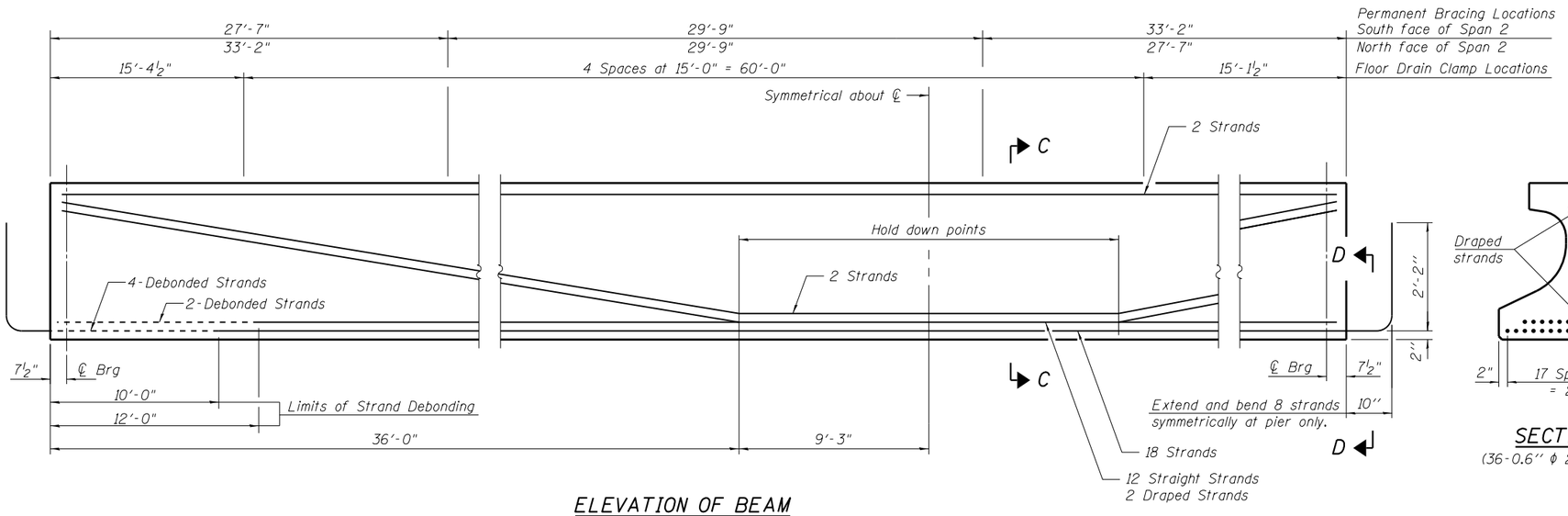


SECTION A-A



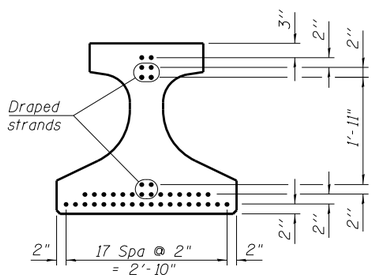
SECTION B-B

* Only tighten sufficiently to compress lock washers



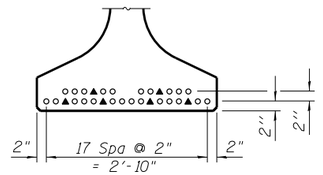
ELEVATION OF BEAM

(Showing prestressing steel)



SECTION C-C

(36-0.6" ϕ 270 ksi strands)



VIEW D-D

○ Fully bonded strand

▲ Partially debonded strand

Note:
See sheet 18 of 28 for additional details and Bill of Material.

IL36-2438

10-7-16

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0079_017-1136-2438 Beam Sp 2.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

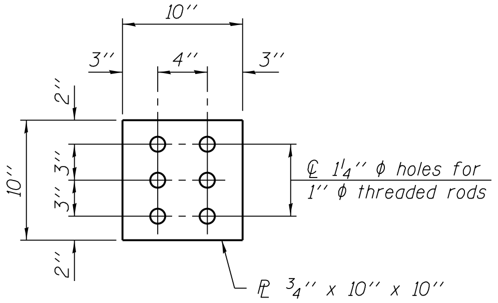
CMT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

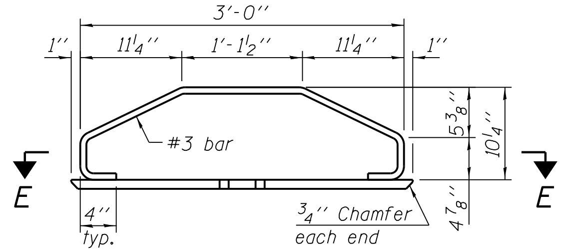
IL36-2438 BEAM SPAN – 2
STRUCTURE NO. 039-0079
SHEET NO. 17 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)IR-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	183
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

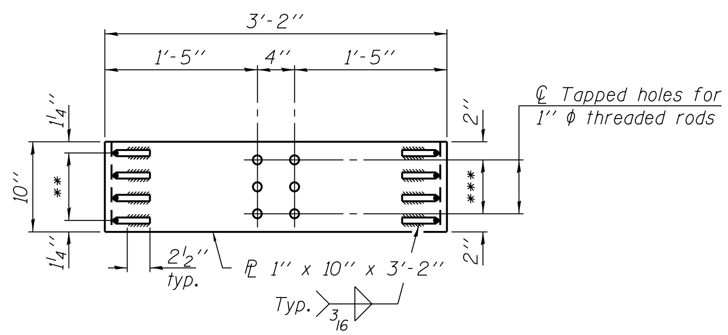
L:\IDOT\080868\80.3\Draw\CADD Sheets\Final Plans\Str No 039-0079...



PLAN - TOP PLATE



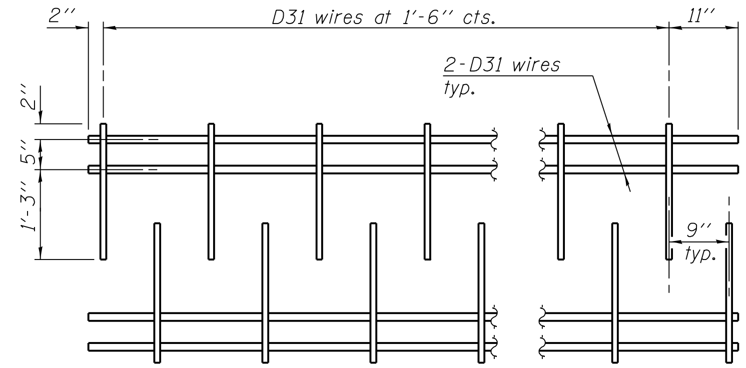
ELEVATION - BOTTOM PLATE ASSEMBLY



SECTION E-E

** 3 Spaces at 2½'' = 7½''

*** 2 Spaces at 3'' = 6''



M401 WWR DETAIL

When multiple sheets of M401 WWR are required along the beam length, #5(E) bars (5'-0'' long) shall be used to splice the longitudinal D31 wires together (Min. Lap 2'-2").

NOTES

Inserts for ¾'' ϕ threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6'' and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for lifting loops shall be ½'' and the nominal cross sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 7000 psi.

A minimum 2½'' ϕ lifting pin shall be used to engage the lifting loops during handling.

Bend the extended strands inward on the fascia beams to maintain 1½'' clearance inside the pier diaphragm.

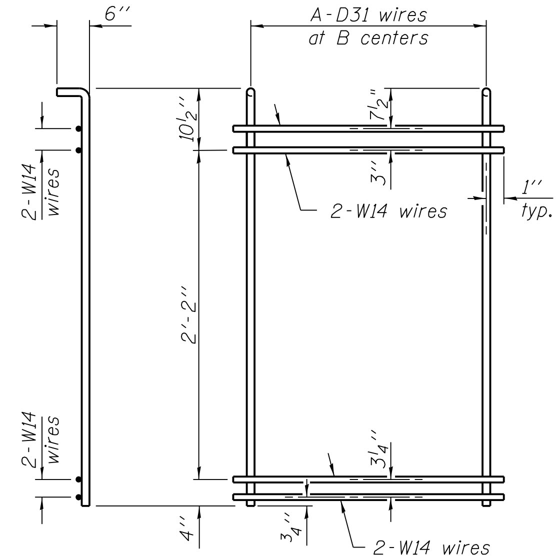
The top and bottom plates shall be AASHTO M270 Grade 50.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

Beams shall not be released from the fabricator until they have attained 45 days of age or older.

Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating.



M405 THRU M408 WWR DETAIL

(See Table of Dimensions)

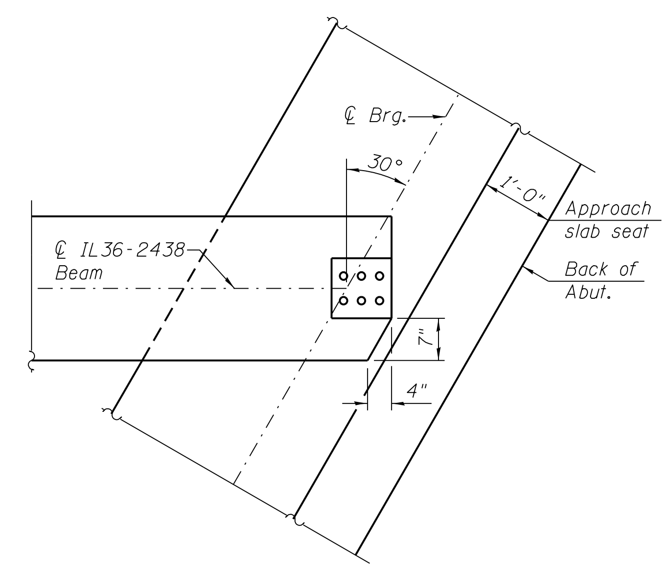
TABLE OF DIMENSIONS

SPAN 1 & 3

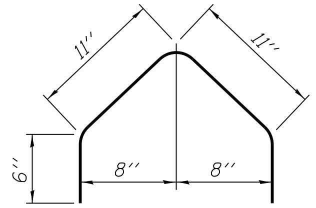
WWR	A	B
M402	9	3''
M403	6	6''
M404	22	1'-6''
M405	42	3''
M406	5	6"
M407	10	1'-0''
M408	7	2'-0''

SPAN 2

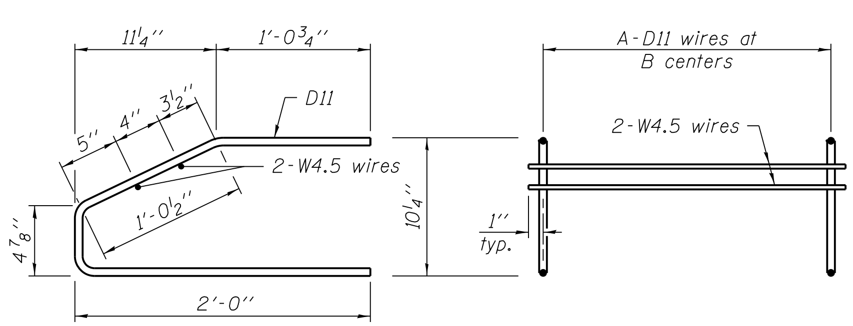
WWR	A	B
M402	9	3''
M403	6	6''
M404	26	1'-6''
M405	24	3''
M406	4	6"
M407	14	1'-0''
M408	11	2'-0''



TOP FLANGE PLAN - CLIPPED

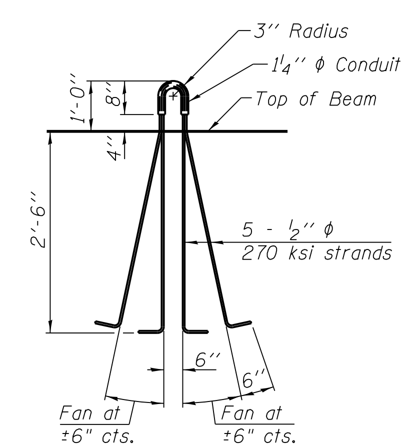


BAR G401 (E)



M402 THRU M404 WWR DETAIL

(See Table of Dimensions)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Beams, IL36N	Ft.	1707

IL36-2438D   10-7-16

CMT

USER NAME =	DESIGNED CJW	REVISED
...\98850-0079.018-1127-1830 Beam Details.dgn	CHECKED WLB	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL36-2438 BEAM DETAILS
STRUCTURE NO. 039-0079

SHEET NO. 18 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	184

CONTRACT NO. 78295

ILLINOIS FED. AID PROJECT

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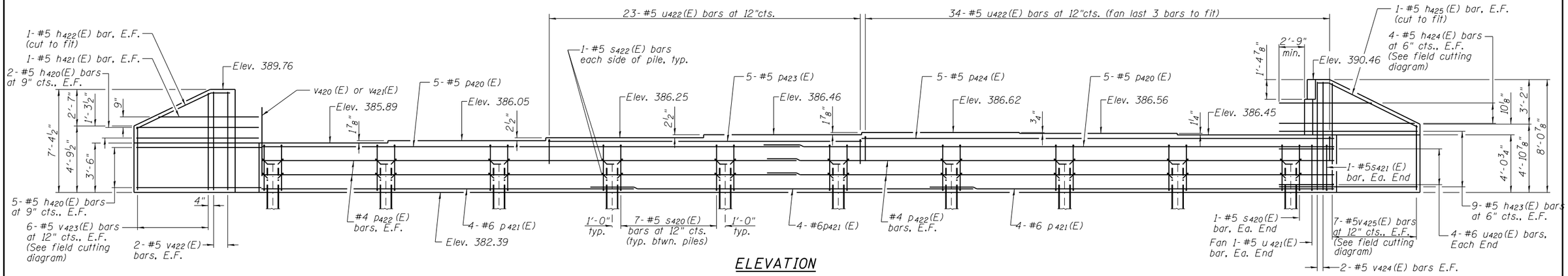
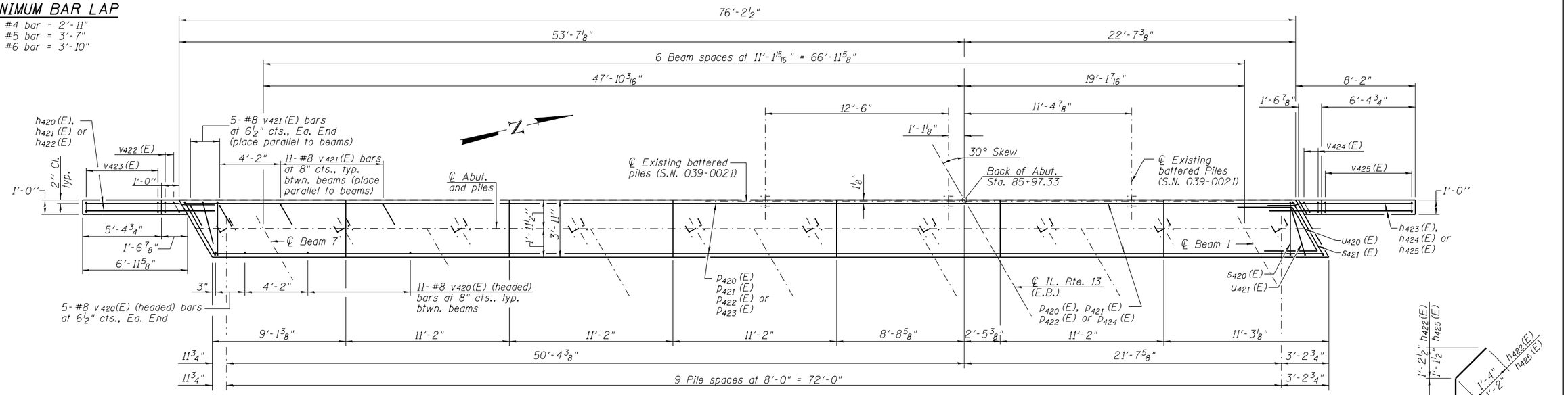


ELEVATION

MINIMUM BAR LAP

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



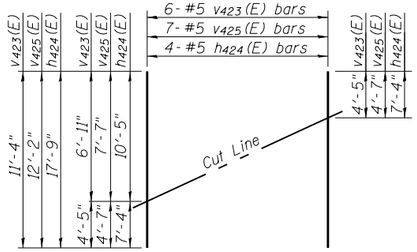
PLAN

PILE DATA

Type: HP 12x53
Nominal Required Bearing: 418kips
Factored Resistance Available: 230kips
Est. Length: 64 ft.
No. Production Piles: 10
No. Test Piles: 0

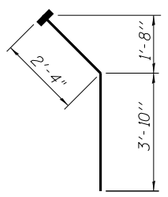
Notes:

1. See sheet 21 of 28 for section thru Abutment and Bill of Materials.
2. For Details of piles see sheet 25 of 28.
3. Pour steps monolothically with cap.
4. See sheet 2 of 28 for Abutment backfill details



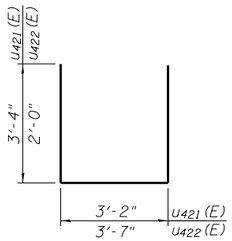
FIELD CUTTING DIAGRAM

Order $h_{424}(E)$, $v_{423}(E)$ and $v_{425}(E)$ full length. Cut as shown and use remainder of bars in opposite face.

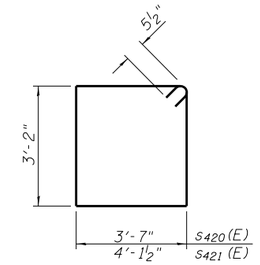


BAR v421 (E)

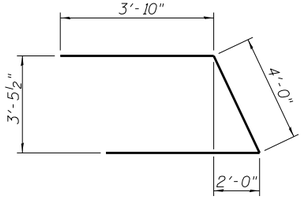
(headed)



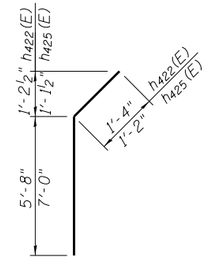
BAR u421 (E) & BAR u422 (E)



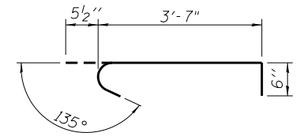
BAR s420(E) & s421 (E)



BAR u420(E)



BAR h422(E) & BAR h425(E)



BAR s422(E)

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0079_019-West Abutment.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

CMT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT
STRUCTURE NO. 039-0079
SHEET NO. 19 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	185
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		

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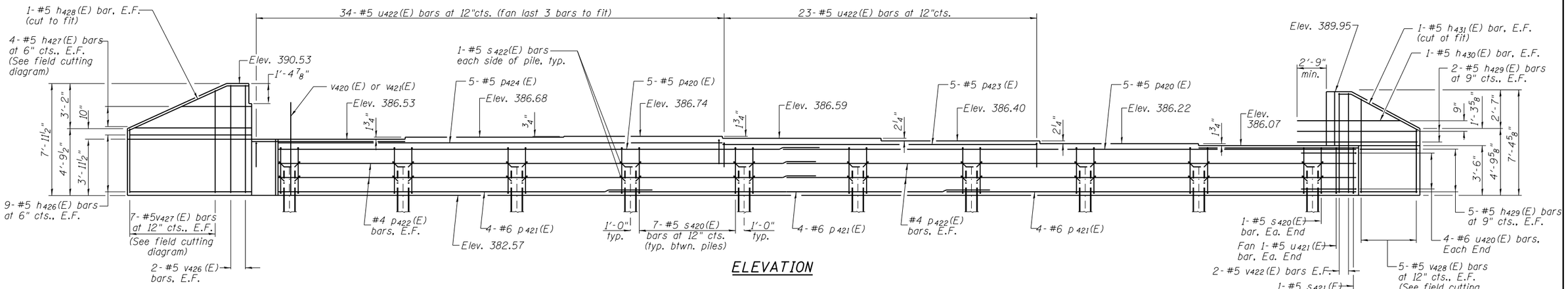
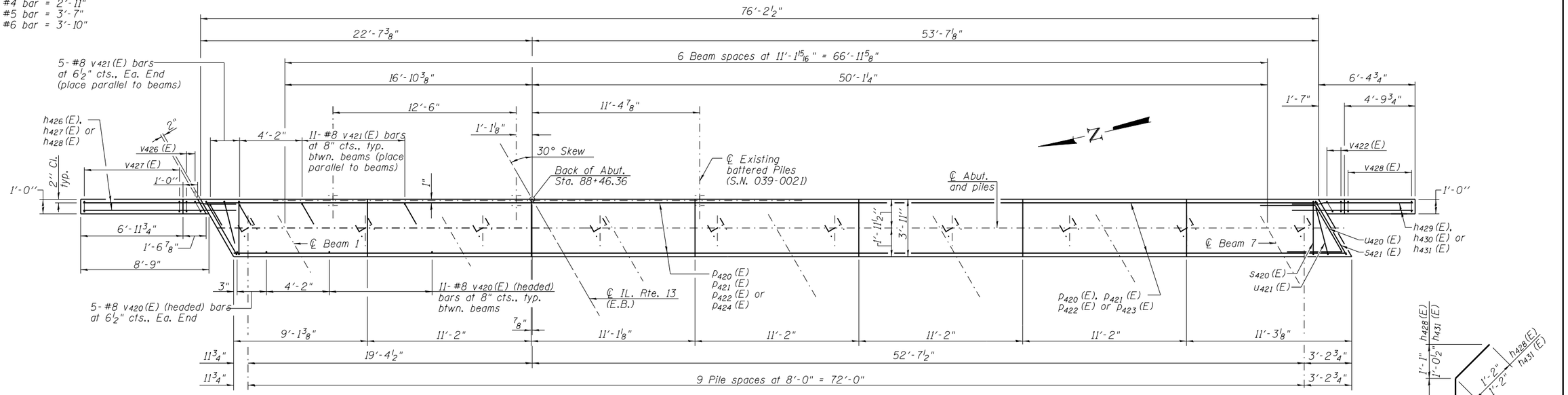


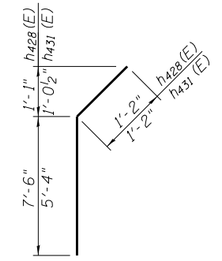
ELEVATION

MINIMUM BAR LAP

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



PLAN



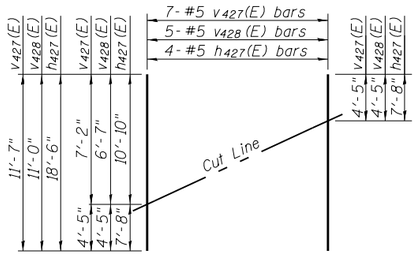
BAR h428 (E) & BAR h431 (E)

PILE DATA

Type: HP 12x53
Nominal Required Bearing: 418kips
Factored Resistance Available: 230kips
Est. Length: 65 ft.
No. Production Piles: 10
No. Test Piles: 0

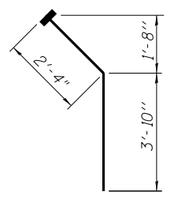
Notes:

1. See sheet 21 of 28 for section thru Abutment and Bill of Materials.
2. For Details of piles see sheet 25 of 28.
3. Pour steps monolothically with cap.
4. See sheet 2 of 28 for Abutment backfill details

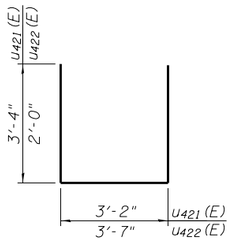


FIELD CUTTING DIAGRAM

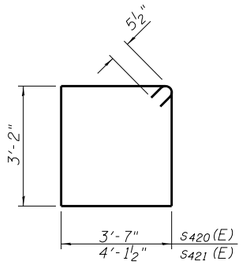
Order v_{427}(E), v_{428}(E) and h_{429}(E) full length. Cut as shown and use remainder of bars in opposite face.



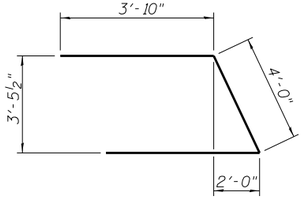
BAR v421 (E)
(headed)



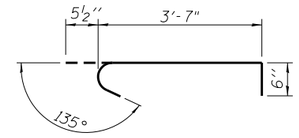
BAR u421 (E) & BAR u422 (E)



BAR s420(E) & s421 (E)



BAR u420(E)



BAR s422(E)

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0079_020-East Abutment.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

CMT

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT
STRUCTURE NO. 039-0079
SHEET NO. 20 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	186
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		

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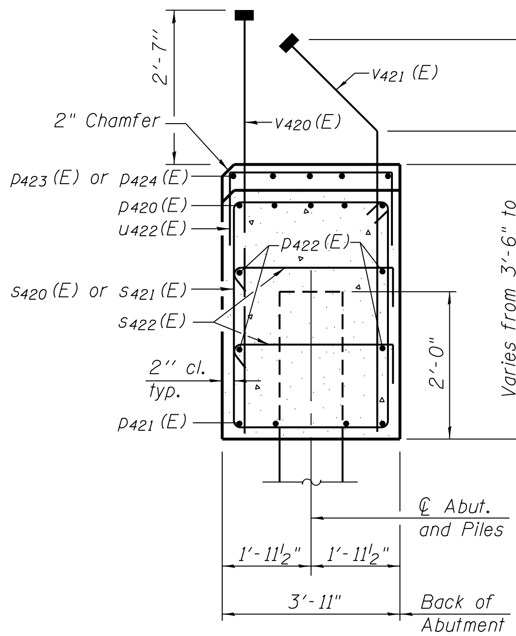


SEC. THRU ABUT.

WEST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{420}(E)	14	#5	9'-8"	
h_{421}(E)	2	#5	8'-1"	
h_{422}(E)	2	#5	7'-0"	
h_{423}(E)	18	#5	10'-7"	
h_{424}(E)	4	#5	17'-9"	
h_{425}(E)	2	#5	8'-2"	
p_{420}(E)	10	#5	39'-9"	
p_{421}(E)	12	#6	27'-10"	
p_{422}(E)	8	#4	39'-5"	
p_{423}(E)	5	#5	22'-2"	
p_{424}(E)	5	#5	33'-4"	
s_{420}(E)	65	#5	14'-5"	
s_{421}(E)	2	#5	15'-6"	
s_{422}(E)	40	#5	4'-7"	
u_{420}(E)	8	#6	11'-8"	
u_{421}(E)	2	#5	9'-10"	
u_{422}(E)	57	#5	7'-7"	
v_{420}(E)	76	#8	5'-11"	
v_{421}(E)	76	#8	6'-2"	
v_{422}(E)	4	#5	7'-0"	
v_{423}(E)	6	#5	11'-4"	
v_{424}(E)	4	#5	7'-8"	
v_{425}(E)	7	#5	12'-2"	

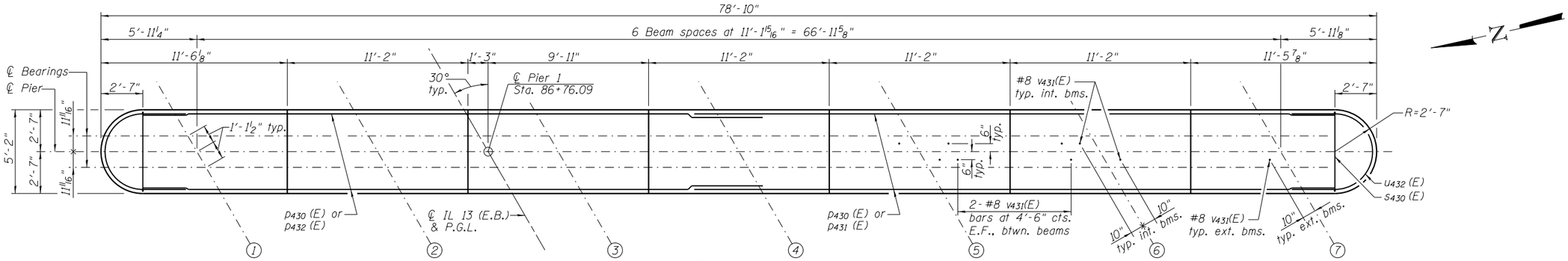
Structure Excavation	Cu. Yd.	81
Concrete Structures	Cu. Yd.	47.3
Reinforcement Bars, Epoxy Coated	Pound	6,360
Furnishing - Steel Piles, HP 12x53	Foot	640
Driving Piles	Foot	640

EAST ABUTMENT BILL OF MATERIAL

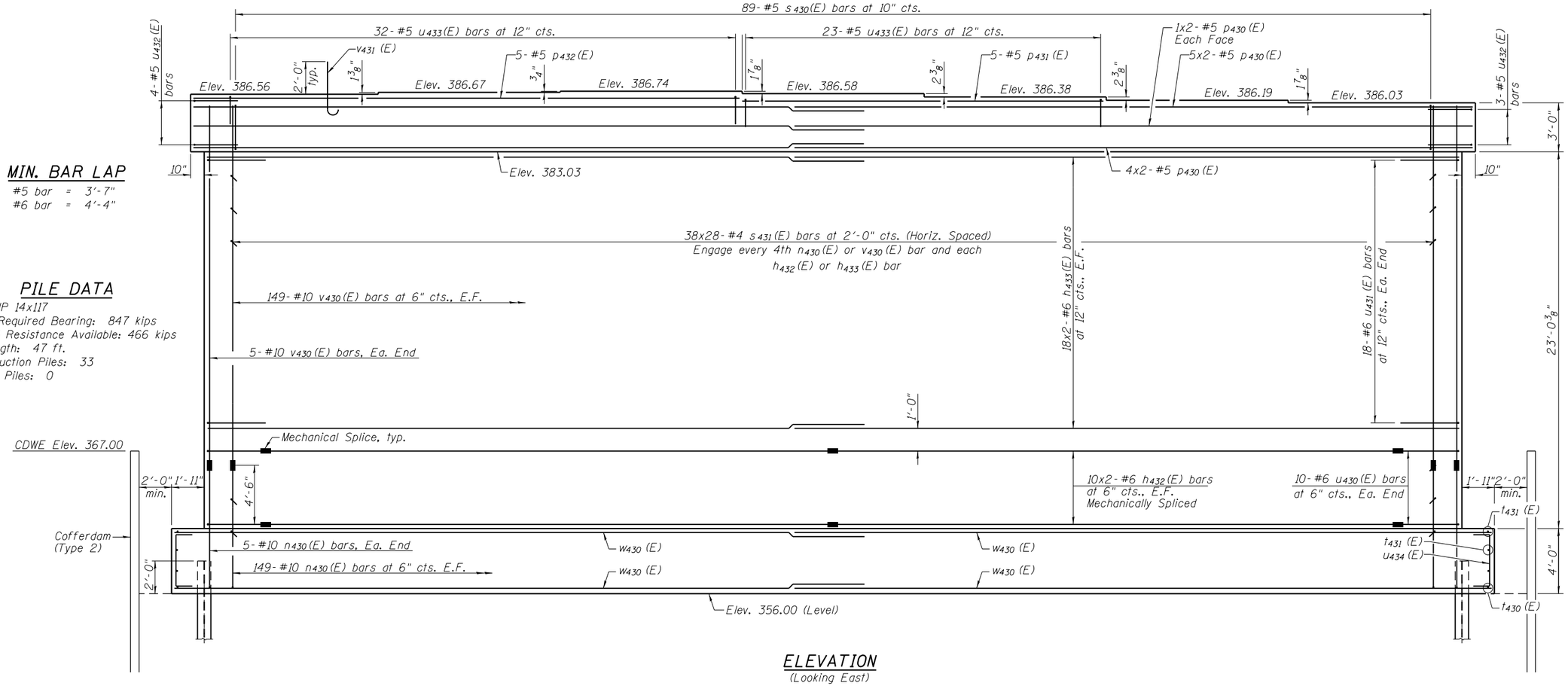
Bar	No.	Size	Length	Shape
h_{426}(E)	18	#5	11'-3"	
h_{427}(E)	4	#5	18'-6"	
h_{428}(E)	2	#5	8'-8"	
h_{429}(E)	14	#5	9'-1"	
h_{430}(E)	2	#5	7'-10"	
h_{431}(E)	2	#5	6'-6"	
p_{420}(E)	10	#5	39'-9"	
p_{421}(E)	12	#6	27'-10"	
p_{422}(E)	8	#4	39'-5"	
p_{423}(E)	5	#5	22'-2"	
p_{424}(E)	5	#5	33'-4"	
s_{420}(E)	65	#5	14'-5"	
s_{421}(E)	2	#5	15'-6"	
s_{422}(E)	40	#5	4'-7"	
u_{420}(E)	8	#6	11'-8"	
u_{421}(E)	2	#5	9'-10"	
u_{422}(E)	57	#5	7'-7"	
v_{420}(E)	76	#8	5'-11"	
v_{421}(E)	76	#8	6'-2"	
v_{422}(E)	4	#5	7'-0"	
v_{426}(E)	4	#5	7'-7"	
v_{427}(E)	7	#5	11'-7"	
v_{428}(E)	5	#5	11'-0"	

Structure Excavation	Cu. Yd.	81
Concrete Structures	Cu. Yd.	46.4
Reinforcement Bars, Epoxy Coated	Pound	6,350
Furnishing - Steel Piles, HP 12x53	Foot	650
Driving Piles	Foot	650

Notes:
For details of piles see sheet 25 of 28.
Headed bars shall conform to ASTM A970 Class HA.
Cost included with Reinforcement Bars, Epoxy Coated.



TOP PLAN



ELEVATION
(Looking East)

MIN. BAR LAP

#5 bar = 3'-7"
#6 bar = 4'-4"

PILE DATA

Type: HP 14x117
Nominal Required Bearing: 847 kips
Factored Resistance Available: 466 kips
Est. Length: 47 ft.
No. Production Piles: 33
No. Test Piles: 0

Notes:
See Sheet 24 of 28 for Footing Plan, Section Thru Pier, Bar Details and Bill of Material.
Bars indicated thus 5 x 2-#5 etc. indicates 5 lines of bars with 2 lengths per line.

L:\DOT\080610\WD_31\Dgn\CADD_Sheets\Final Plans\Str No 039-0079\...

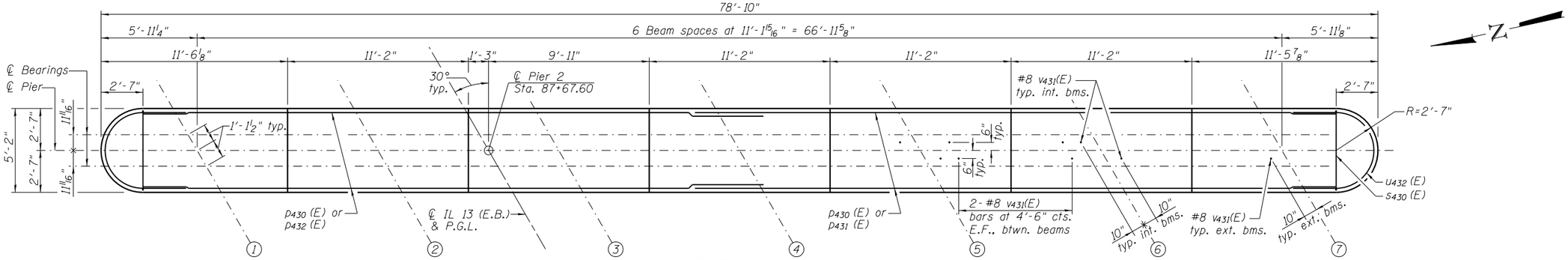
CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0079_022-Pier 1.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

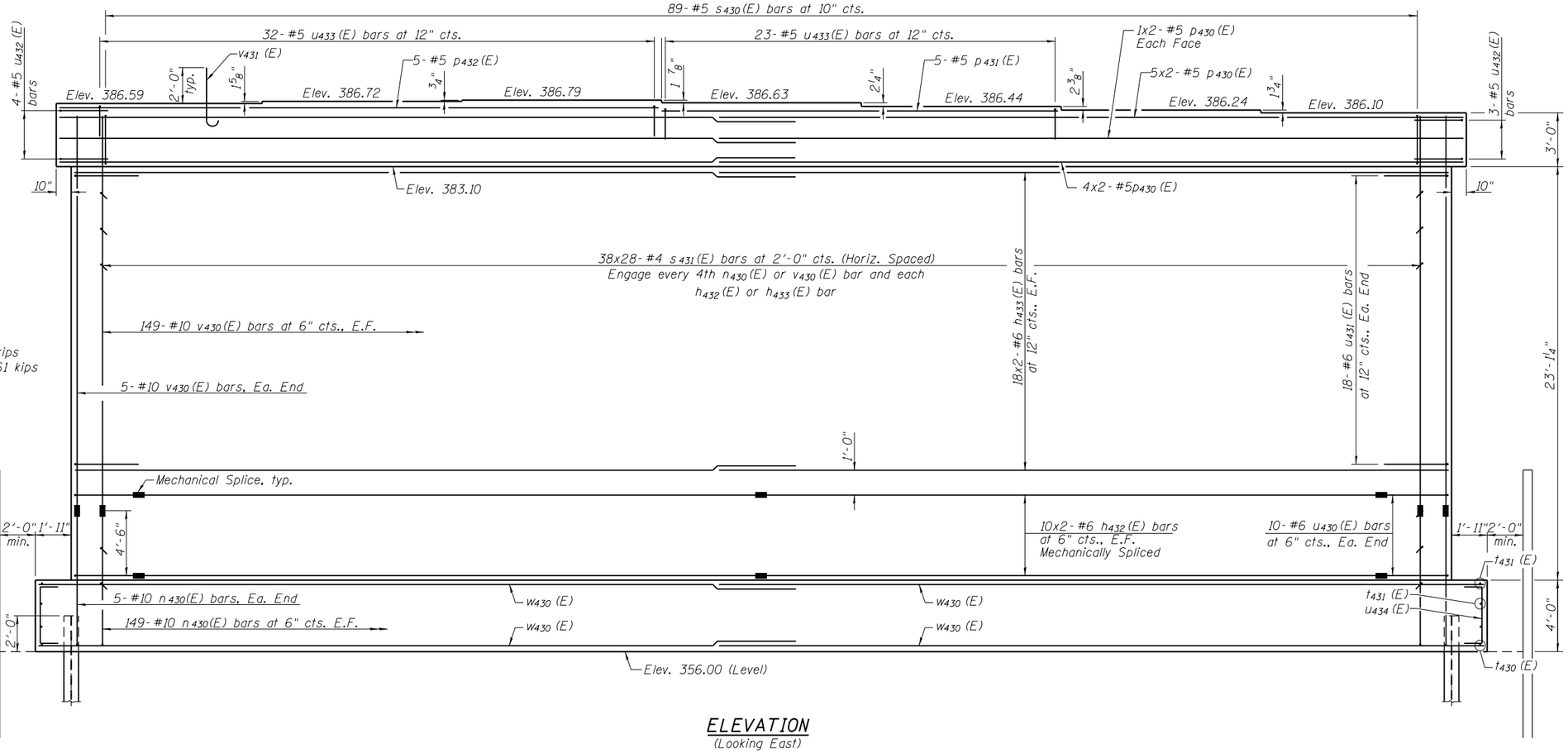
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1
STRUCTURE NO. 039-0079
SHEET NO. 22 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	188
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



TOP PLAN



ELEVATION
(Looking East)

MIN. BAR LAP

#5 bar = 3'-7"
#6 bar = 4'-4"

PILE DATA

Type: HP 14x117
Nominal Required Bearing: 839 kips
Factored Resistance Available: 461 kips
Est. Length: 57 ft.
No. Production Piles: 32
No. Test Piles: 1

Notes:
See Sheet 24 of 28 for Footing Plan, Section Thru Pier, Bar Details and Bill of Material.
Bars indicated thus 5 x 2-#5 etc. indicates 5 lines of bars with 2 lengths per line.

L:\DOT\080610\WD_31\Dgn\CADD_Sheets\Final Plans\Str No 039-0079\...

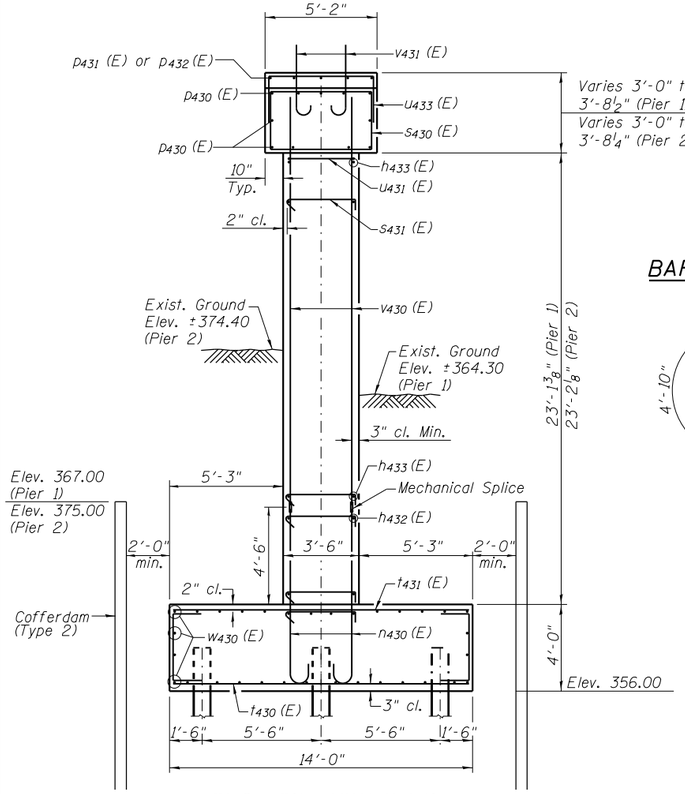
CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0079_023-Pier 2.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

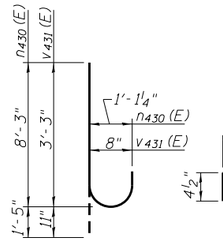
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2
STRUCTURE NO. 039-0079
SHEET NO. 23 OF 28 SHEETS

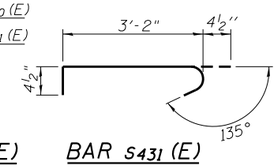
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	189
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			



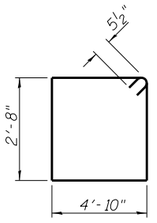
SECTION THRU PIER



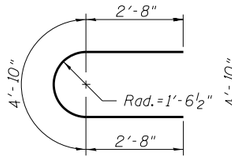
BAR n430 (E) & v431 (E)



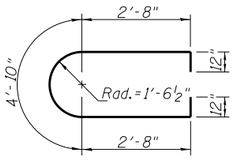
BAR s431 (E)



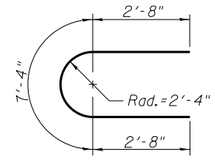
BAR s430 (E)



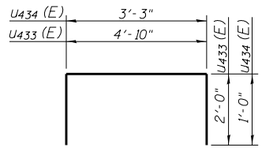
BAR u430 (E)



BAR u431 (E)

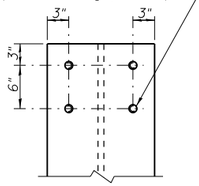


BAR u432 (E)



BAR u433 (E) & u434 (E)

*4-¾" Dia. x 4" Granular or solid flux filled headed studs automatically end welded (Typ. each flange, each pile)



SEISMIC PILE DETAIL

*Typical each flange, each pile. Cost included with Furnishing Piles.

NOTES:

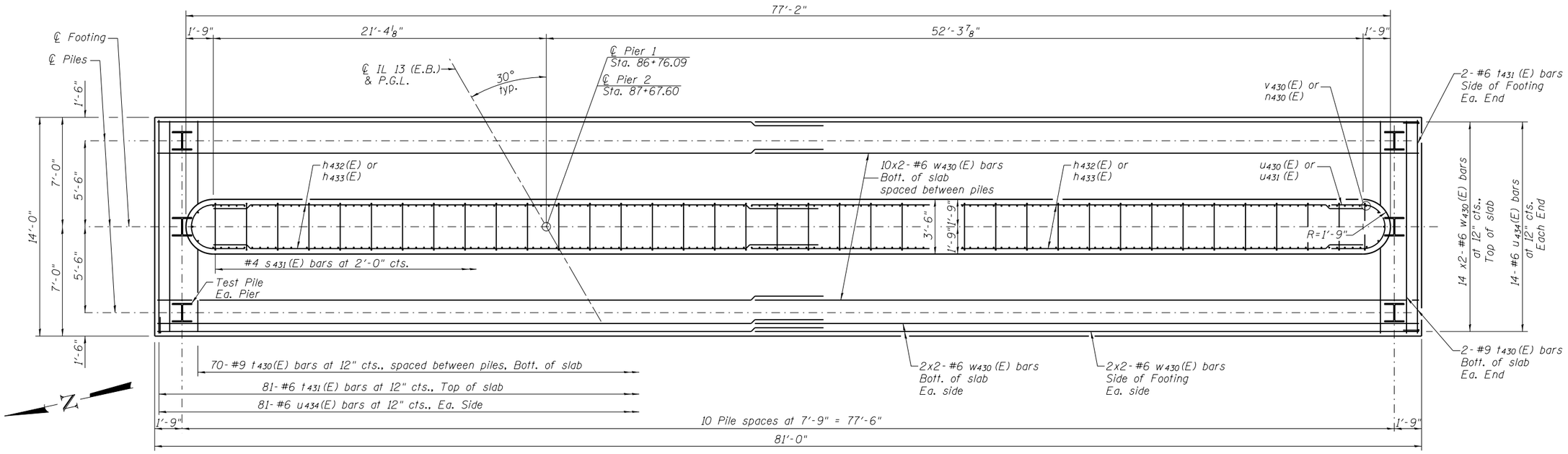
1. See Sheet 25 of 28 for Steel H-Pile Details.
2. See Sheet 26 of 28 for Mechanical Splicer Details.
3. Pour steps monolithically with cap.
4. Bars indicated thus 10 x 2-#6 etc. indicates 10 lines of bars with 2 lengths per line.

PIER 1
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{432}(E)	40	#6	34'-2"	—
h_{433}(E)	72	#6	39'-0"	—
n_{430}(E)	308	#10	9'-8"	⊂—
p_{430}(E)	22	#5	38'-8"	—
p_{431}(E)	5	#5	22'-2"	—
p_{432}(E)	5	#5	31'-1"	—
s_{430}(E)	89	#5	15'-11"	□
s_{431}(E)	1064	#4	3'-11"	⊐
t_{430}(E)	74	#9	13'-8"	—
t_{431}(E)	85	#6	13'-8"	—
u_{430}(E)	20	#6	10'-2"	⊂⊃
u_{431}(E)	36	#6	12'-2"	⊂⊃
u_{432}(E)	7	#5	12'-8"	⊂⊃
u_{433}(E)	55	#5	8'-10"	⊓
u_{434}(E)	190	#6	5'-3"	⊓
v_{430}(E)	308	#10	20'-8"	—
v_{431}(E)	26	#8	4'-2"	⊂—
w_{430}(E)	64	#6	42'-1"	—
Cofferdam Excavation		Cu. Yd.	470	
Cofferdam (Type 2) (Location - 3)		Each	1	
Concrete Structures		Cu. Yd.	450.4	
Reinforcement Bars, Epoxy Coated		Pound	64,480	
Furnishing Steel Piles HP 14x117		Foot	1,551	
Driving Piles		Foot	1,551	

PIER 2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{432}(E)	40	#6	34'-2"	—
h_{433}(E)	72	#6	39'-0"	—
n_{430}(E)	308	#10	9'-8"	⊂—
p_{430}(E)	22	#5	38'-8"	—
p_{431}(E)	5	#5	22'-2"	—
p_{432}(E)	5	#5	31'-1"	—
s_{430}(E)	89	#5	15'-11"	□
s_{431}(E)	1064	#4	3'-11"	⊐
t_{430}(E)	74	#9	13'-8"	—
t_{431}(E)	85	#6	13'-8"	—
u_{430}(E)	20	#6	10'-2"	⊂⊃
u_{431}(E)	36	#6	12'-2"	⊂⊃
u_{432}(E)	7	#5	12'-8"	⊂⊃
u_{433}(E)	55	#5	8'-10"	⊓
u_{434}(E)	190	#6	5'-3"	⊓
v_{430}(E)	308	#10	20'-8"	—
v_{431}(E)	26	#8	4'-2"	⊂—
w_{430}(E)	64	#6	42'-1"	—
Cofferdam Excavation		Cu. Yd.	1,043	
Cofferdam (Type 2) (Location - 4)		Each	1	
Concrete Structures		Cu. Yd.	450.8	
Reinforcement Bars, Epoxy Coated		Pound	64,480	
Furnishing Steel Piles HP 14x117		Foot	1,824	
Driving Piles		Foot	1,824	
Test Pile Steel HP 14x117		Each	1	



FOOTING PLAN (TYP. PIER 1 & PIER 2)

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CMT	USER NAME =	DESIGNED CJW	REVISED	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER DETAILS STRUCTURE NO. 039–0079	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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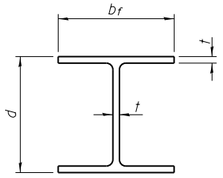
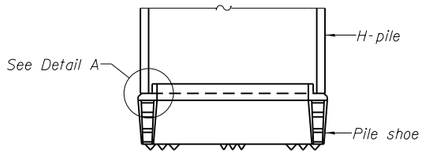
	PLOT SCALE =	DRAWN GLD	REVISED						CONTRACT NO. 78295	
	PLOT DATE =	CHECKED WLB	REVISED		SHEET NO. 24 OF 28 SHEETS			ILLINOIS FED. AID PROJECT		

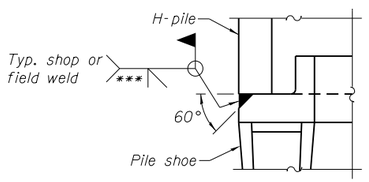


STEEL PILE TABLE

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''

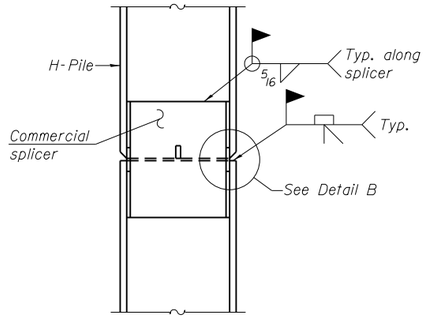


ELEVATION

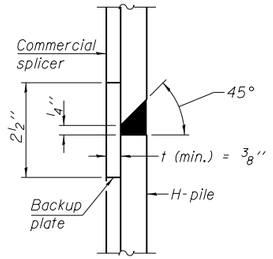


DETAIL A

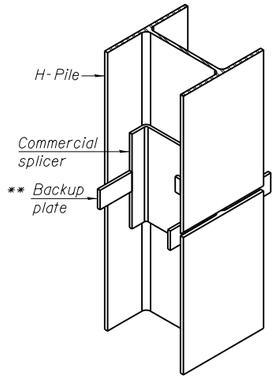
H-PILE SHOE ATTACHMENT



ELEVATION

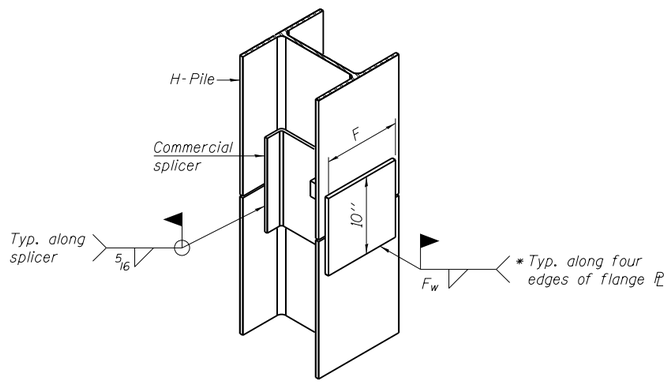


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



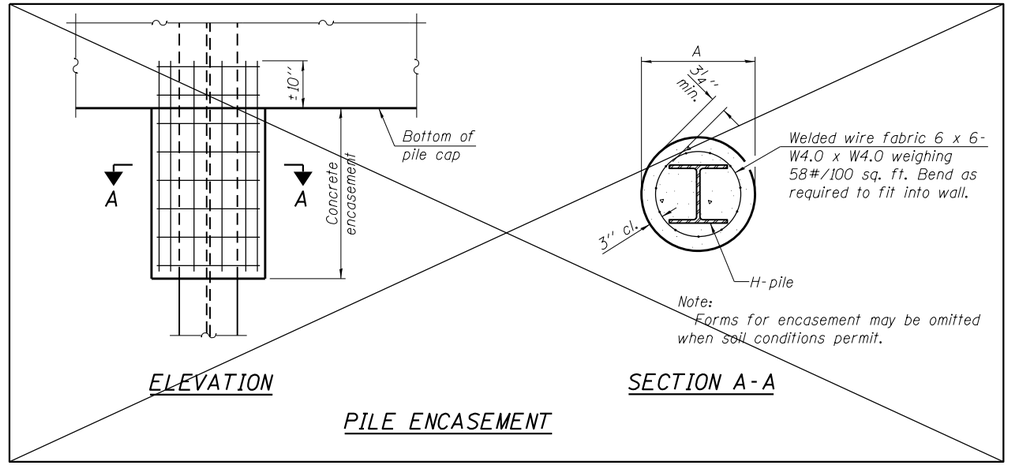
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

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

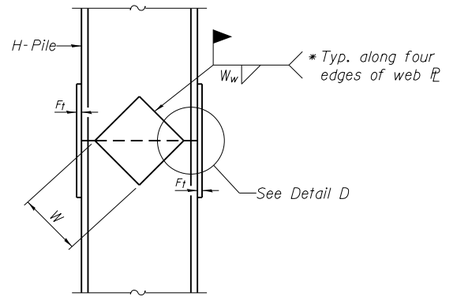
** Remove portions of backup plates that extend outside the flanges.

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

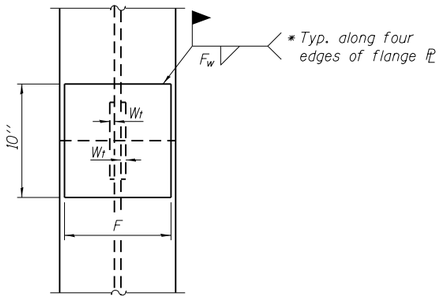


ELEVATION SECTION A-A

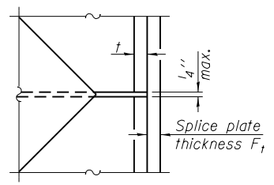
PILE ENCASEMENT



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 1-27-12

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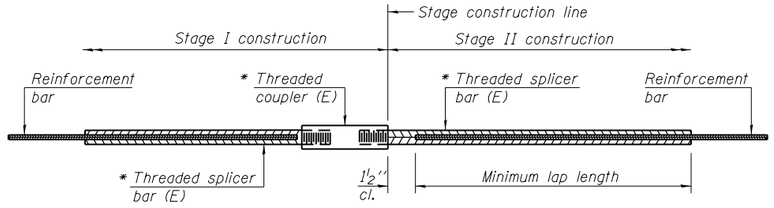
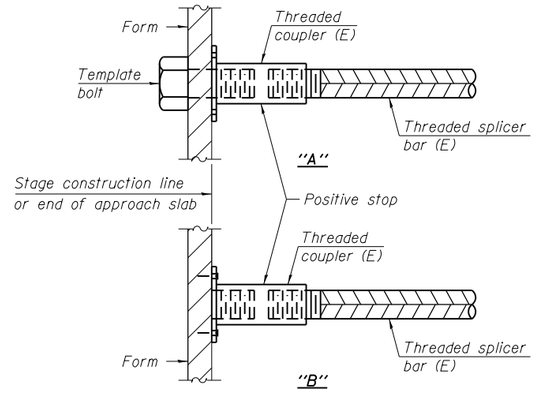


STANDARD BAR SPLICER ASSEMBLY

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

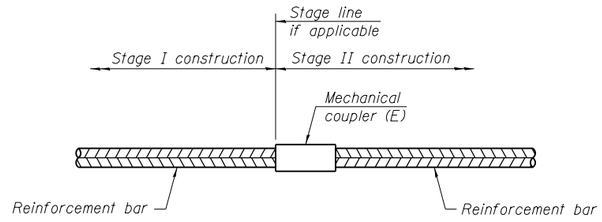
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length



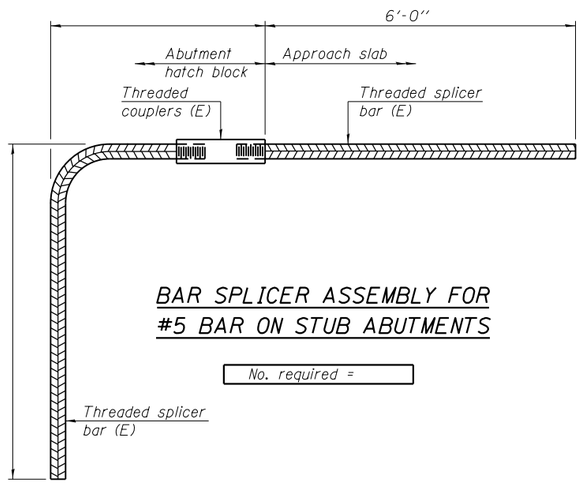
INSTALLATION AND SETTING METHODS

"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	#10	308
Pier 1	#6	60
Pier 2	#10	308
Pier 2	#6	60



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

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.

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BSD-1

11-22-2016

CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0079_026-Bar Splicer Details.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 039-0079
SHEET NO. 26 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	192
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation
Boring Log
Sheet 1 of 2

Eastbound FAP 331 (IL 13) Over Crab Orchard Creek

Route: FAP 331 (IL 13) Structure Number: 039-0021 Date: 6/30/2014
Section 5-3B-2 Bored By: R Moberly
County: Jackson Location: 0.6 mi West of Reed Station Road Checked By: R. Graeff

Boring No 1-S
Station 186+02
Offset 13' Rt CL EBL
Ground Surface 390.4 Ft

Surf Wat Elev: 362.1
Ground Water Elevation
when Drilling 355.4
At Completion
At: Hrs:

	DEPTH	BLOWS	Qu tsf	W%
Asphalt and crushed aggregate				
388.4				
Stiff, moist, grey and brown, Clay A7-6		3		
		3	1.4B	19
		2		
385.9				
Very soft, very moist, grey, Clay to Silty Clay A7-6	5.0	WH		
		1	0.2B	28
		1		
383.4				
Stiff, moist, grey and brown, Clay A7-6 (15) with medium layers		1		
		1	1.8B	21
		1		
380.9				
Very stiff, moist, brown, Clay A7-6	10.0	1		
		2	2.1B	19
		3		
		1		
		2	2.1B	22
		3		
	15.0	1		
		3	2.3B	22
		3		
373.4				
Medium, very moist, grey, Silty Clay A-6 with rotten organics		1		
		2	0.7B	30
		2		
370.9				
Medium, very moist, grey, Silty Clay Loam A-6	20.0	1		
		1	0.8B	24
		1		
368.4				
Stiff, moist, grey, Silty Clay Loam A-6		WH		
		1	1.1B	24
		2		
	25.0	1		

	DEPTH	BLOWS	Qu tsf	W%
Stiff, moist, grey, Silty Clay Loam A-6		1	1.2B	24
		2		
363.4				
Medium, very moist, brown mottled grey, Silty Clay Loam A-6		WH		
		1	0.6B	26
		1		
360.9				
Very soft, very moist, brown mottled grey, Silty Clay Loam A-6	30.0	WH		
		WH	0.2B	32
		WH		
358.4				
Medium, very moist, brown and grey, Silty Clay to Clay A7-6		WH		
		WH	0.7B	38
		1		
355.9				
Stiff, moist, grey, Clay A7-6	35.0	WH		
		1	1.5B	31
		2		
		1		
		1	1.8B	32
		2		
350.9				
Very stiff, moist, grey and brown, Clay A7-6	40.0	1		
		3	3.1B	29
		4		
345.9				
Stiff, moist, grey, Clay A7-6 with sandy layers	45.0	1		
		2	1.5B	22
		3		
340.4	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: FAP 331 (IL 13)
Section: 5-3B-2
County: Jackson
Date: 6/30/2014

Boring No: 1-S
Station: 186+02
Offset: 13' Rt CL EBL
Ground Surface: 390.4 Ft

	DEPTH	BLOWS	Qu tsf	W%
Medium, very moist, grey, Clay A7-6 with layers of wet fine Sand		1	0.8B	33
		1		
335.9				
Soft, very moist, grey, Sandy Clay Loam A-4 with Sand layers	55.0	WH		
		1	0.4B	30
		WH		
330.9		Washed		
Very loose, wet, grey, Sand (no recovery)	60.0	WH		
		1		
		2		
325.9				
Stiff, moist, grey and black, Clay A7-6 with Coal and weathered Clay Shale	65.0	3		
		6	1.8S	#188
		12		
323.4		14		
Hard, dry, grey, Clay Shale		100/8"		
	70.0			
		100/5"		
	75.0			

	DEPTH	BLOWS	Qu tsf	W%
Hard, dry, grey, Clay Shale				
312.9		100/4"		
Bottom of hole = 77.9 feet	60.0			
Free water observed at 35.0 feet				
Elevation referenced to BM 22 at SW corner SN 039-0061; Elev.= 390.3 feet				
Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)				
	85.0			
To convert "N" values to "N60" multiply by 1.25				
	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)

L:\IDOT\080610\WD_31\Dgn\CADD_Sheets\Final Plans\Str No 039-0079\...

CMT

USER NAME =	DESIGNED	CJW	REVISED
...\98850-0079_027-Boring Logs 1.dgn	CHECKED	WLB	REVISED
PLOT SCALE =	DRAWN	GLD	REVISED
PLOT DATE =	CHECKED	WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 1
STRUCTURE NO. 039-0079
SHEET NO. 27 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	193
		CONTRACT NO. 78295		
	ILLINOIS FED. AID PROJECT			

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

Eastbound FAP 331 (IL 13) Over Crab Orchard Creek

Route: FAP 331 (IL 13) Structure Number: 039-0021 Date: 7/1/2014
Section 5-3B-2 Bored By: R Moberly
County: Jackson Location: 0.6 mi West of Reed Station Road Checked By: R. Graeff

Boring No 2-S
Station 188+92
Offset 14' Rt CL EBL
Ground Surface 390.6 Ft

Surf Wat Elev: 362.1
Ground Water Elevation
when Drilling 336.4
At Completion
At: Hrs:

Description	Depth	Blows	Qu tsf	W%
Asphalt over crushed aggregate				
		2		
		4		
387.1		1		
Stiff, moist, grey and brown, Clay A7-6	5.0	1		
		1	1.2B	21
		2		
383.6				
Soft, very moist, grey and brown, Clay to Silty Clay A7-6		WH		
		WH	0.4B	27
		1		
381.1				
Very stiff, moist, brown and grey, Clay A7-6	10.0	1		
		3	2.1B	22
		3		
		1		
		3	2.5B	23
		4		
376.1				
Stiff, moist, brown and grey, Clay A7-6	15.0	1		
		3	1.6B	24
		4		
373.6				
Hard, damp, grey, Silt Loam to Silty Clay Loam A-4		1		
		6	5.5S	18
		7		
371.1				
Soft, very moist, grey, Silty Clay Loam A-4	20.0	WH		
		WH	0.3B	28
		1		
368.6				
Very soft, wet, grey, Silt Loam to Silty Clay Loam A-4		WH		
		WH	0.1B	31
		WH		
	25.0	WH		

Description	Depth	Blows	Qu tsf	W%
Very soft, wet, grey, Silt Loam to Silty Clay Loam A-4		WH	0.1B	30
		WH		
		WH		
		WH	0.2B	33
		WH		
361.1				
Soft, very moist, grey mottled brown, Silty Clay Loam A-6	30.0	WH		
		WH	0.3B	31
		WH		
358.6				
Medium, very moist, grey mottled brown, Silty Loam A-6		WH		
		WH	0.5B	31
		WH		
	35.0	WH		
		WH	0.6B	30
		1		
353.6				
Medium, very moist, grey, Silty Clay A-6 with organics		WH		
		WH	0.6B	45
		1		
351.1				
Very stiff, moist, grey mottled brown, Clay A7-6	40.0	1		
		3	2.5B	29
		4		
346.1				
Stiff, moist, grey, Clay A7-6	45.0	2		
		4	1.8B	28
		5		
340.6	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: FAP 331 (IL 13) Date: 7/1/2014
Section: 5-3B-2
County: Jackson

Boring No: 2-S
Station: 188+92
Offset: 14' Rt CL EBL
Ground Surface: 390.6 Ft

Description	Depth	Blows	Qu tsf	W%
Medium, very moist, grey, Clay Loam to Sandy Clay Loam A-6		1	0.6B	23
		2		
Washed 5' blow-in 336.6				
Loose, wet, grey, Sand with many Clay layers (not enough sample for grain-size)	55.0	1		
		2		
		3		
331.1				
Medium, very moist, grey, Clay A7-6	60.0	1		
		1	0.6B	21
		2		
326.1				
Soft, very moist, grey, Clay Loam to Sandy Clay Loam A-6	65.0	WH		
		1	0.4B	23
		1		
323.1				
Hard, dry, grey, Clay Shale				
320.6	70.0	100/6"		
Bottom of hole = 70.0 feet				
Free water observed at 54.0 feet				
	75.0			

Description	Depth	Blows	Qu tsf	W%
Bottom of hole = 70.0 feet				
Free water observed at 54.0 feet				
Elevation referenced to BM 22 at SW corner SN 039-0061; Elev.= 390.3 feet	80.0			
Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)				
To convert "N" values to "N60" multiply by 1.25				
	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)

CMT

USER NAME =	DESIGNED CJW	REVISED
...\98850-0079.028-Boring Logs 2.dgn	CHECKED WLB	REVISED
PLOT SCALE =	DRAWN GLD	REVISED
PLOT DATE =	CHECKED WLB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS 2
STRUCTURE NO. 039-0079

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	194

CONTRACT NO. 78295

ILLINOIS FED. AID PROJECT

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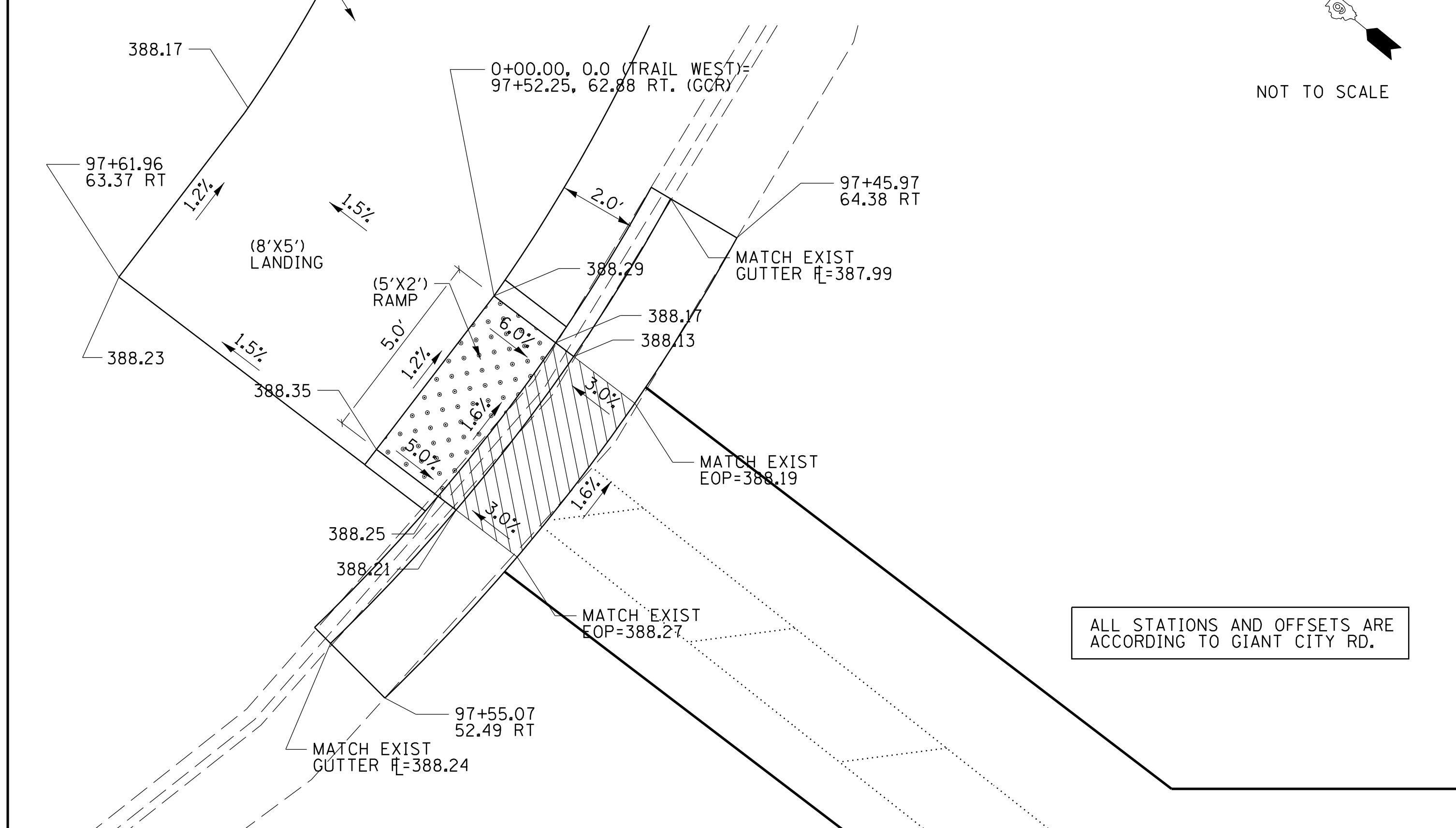
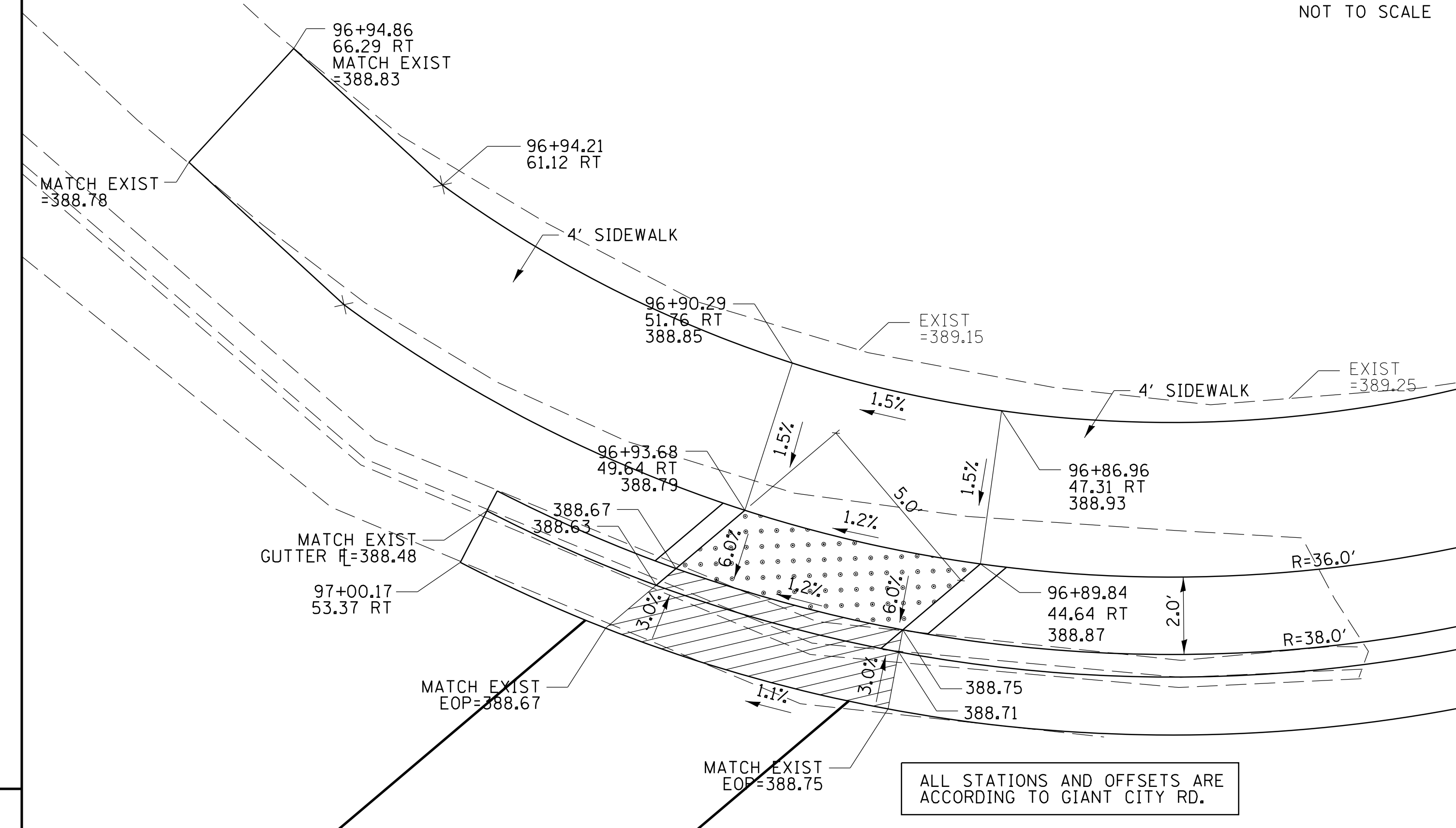
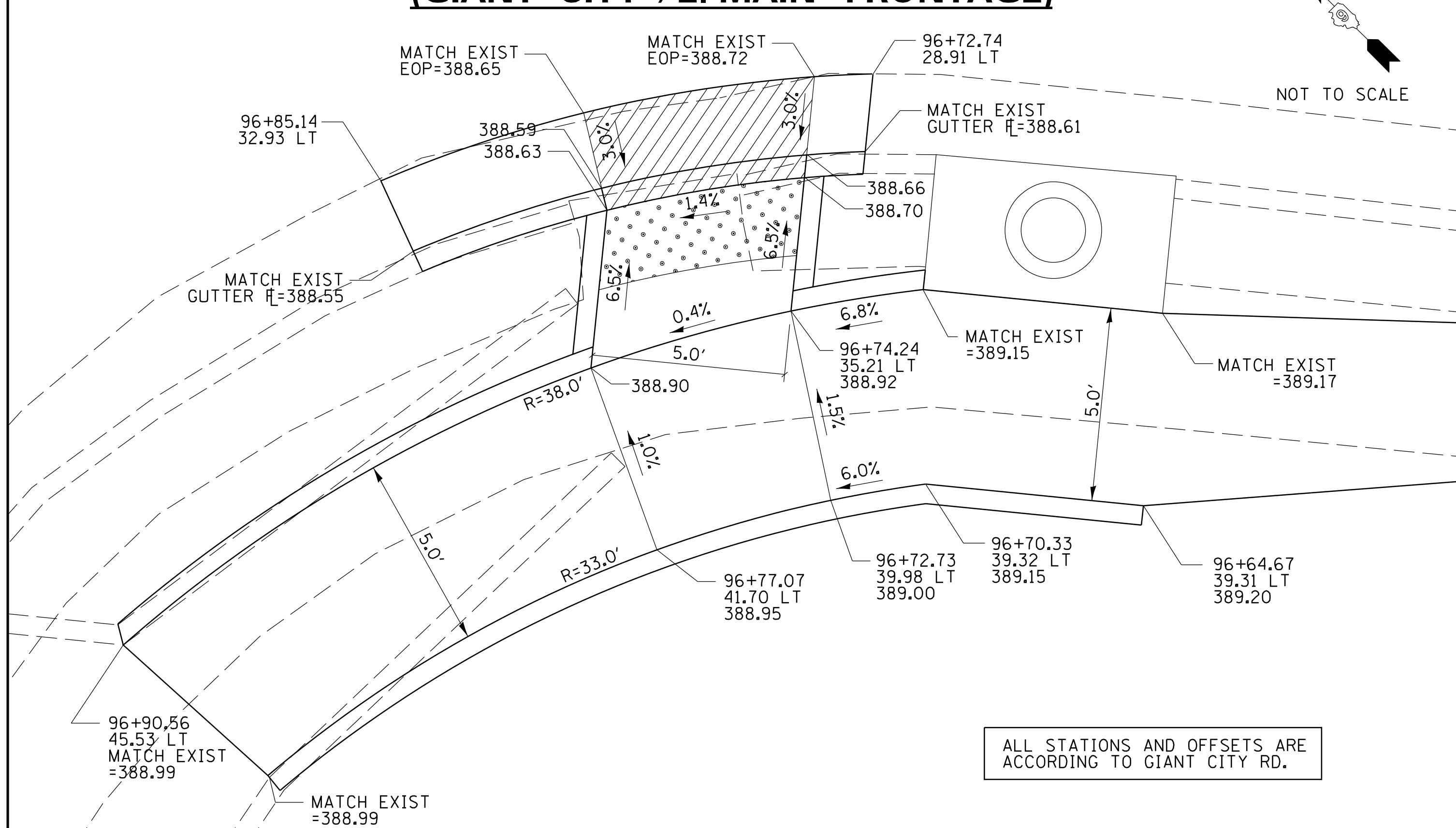
NORTHEAST CURB RAMP DETAILS (GIANT CITY /E. MAIN FRONTAGE)



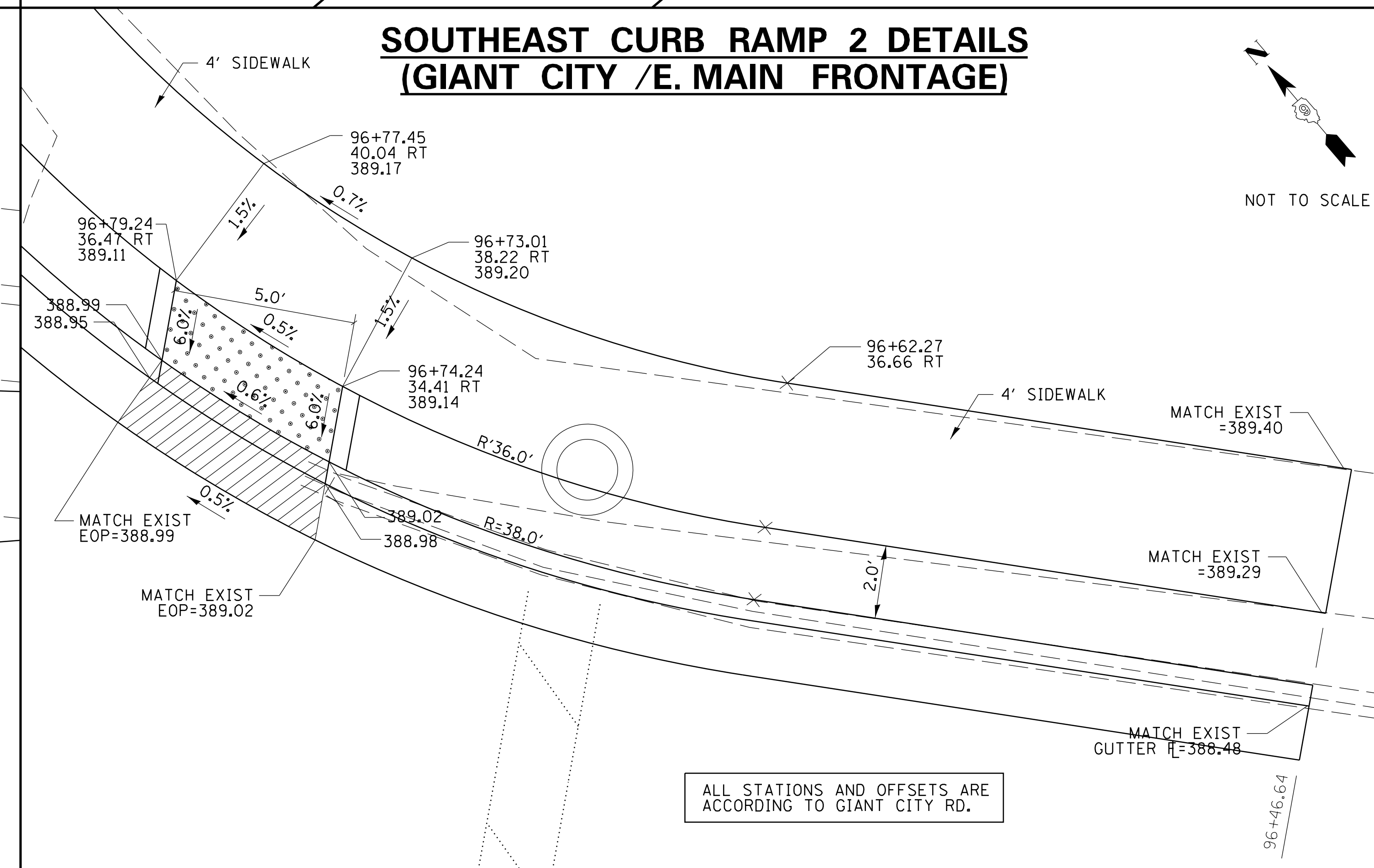
SOUTHEAST CURB RAMP 1 DETAILS (GIANT CITY /E. MAIN FRONTAGE)



SOUTHWEST CURB RAMP DETAILS (GIANT CITY /E. MAIN FRONTAGE)



SOUTHEAST CURB RAMP 2 DETAILS (GIANT CITY /E. MAIN FRONTAGE)



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Default	PLOT DATE = 3/24/2017	DATE -	REVISED -

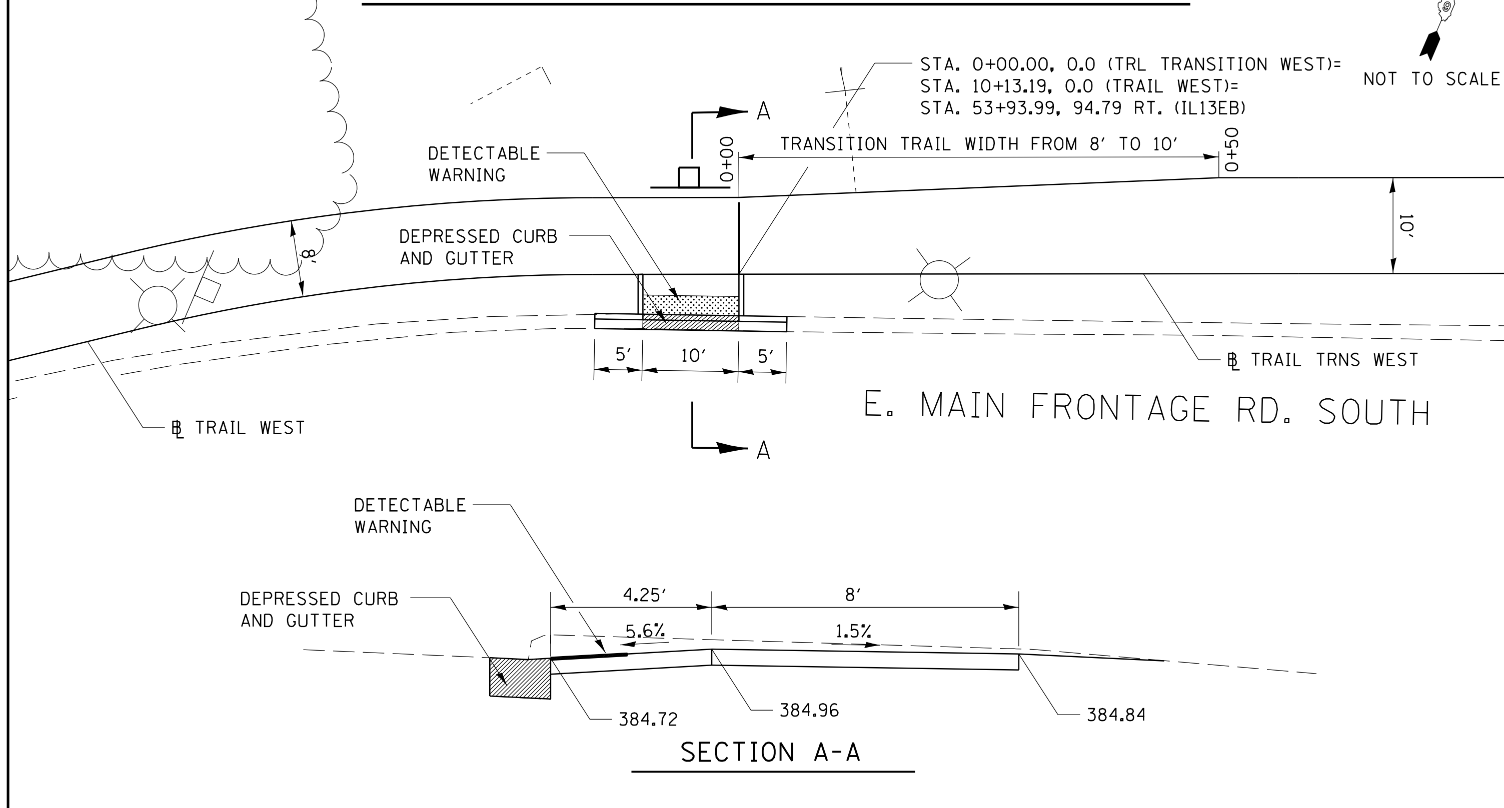
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS:
SIDEWALK CURB RAMPS AT GIANT CITY RD.

SCALE: | SHEET OF SHEETS | STA. TO STA.

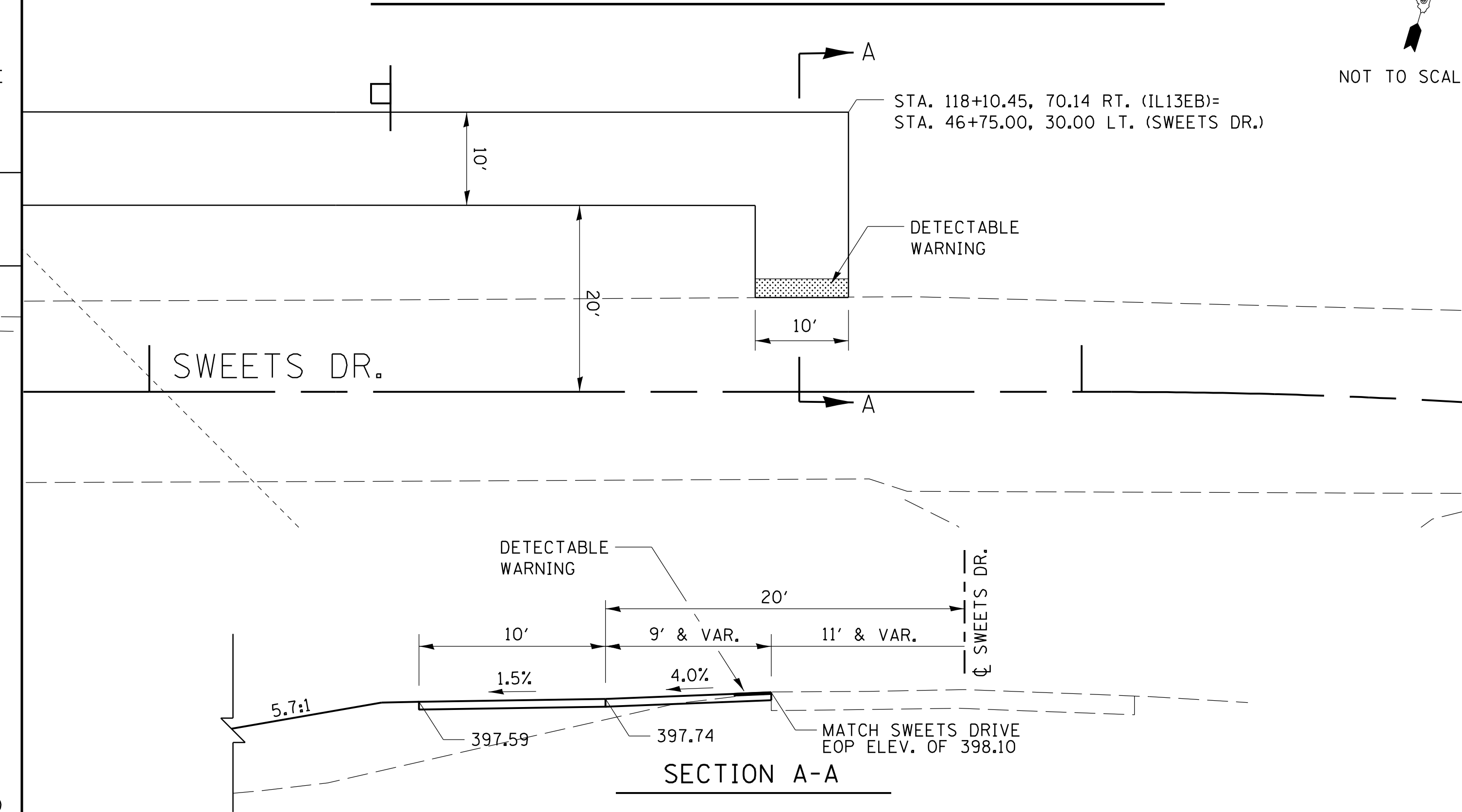
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	195
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		

MULTI–USE TRAIL WEST ENTRANCE RAMP

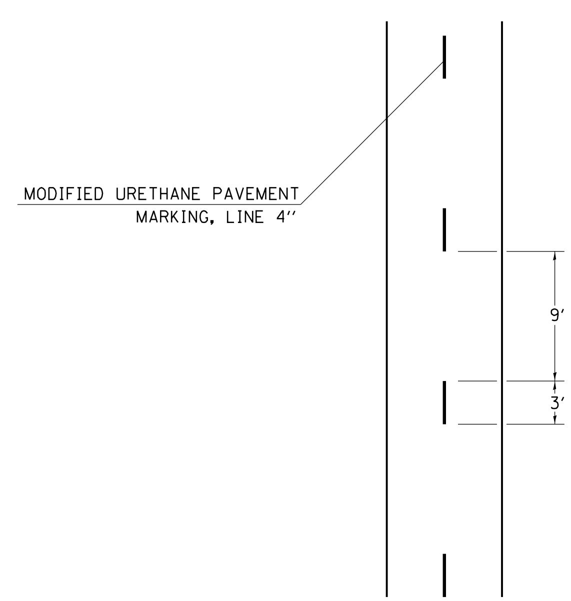


CONSTRUCT RAMP CURBS ACCORDING TO STANDARD 424016, MID-BLOCK CURB RAMPS FOR SIDEWALKS

MULTI–USE TRAIL EAST ENTRANCE RAMP

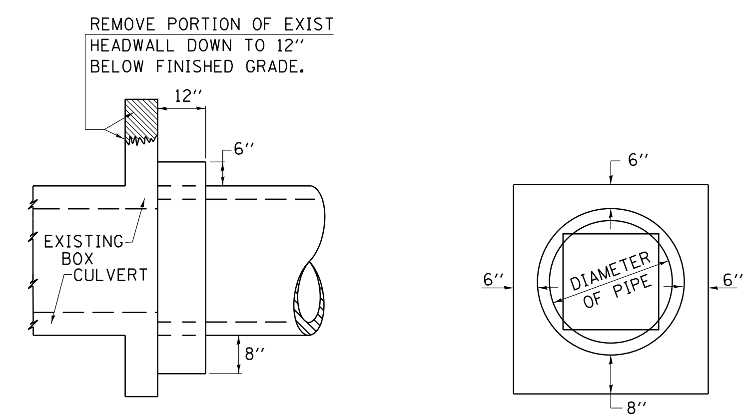


PAVEMENT MARKING DETAIL
MULTI–USE TRAIL



CONCRETE COLLAR

PIPE TO EXISTING BOX CULVERT



SIDE VIEW

END VIEW

TABULATION

DIAMETER OF PIPE	CL SI CONC CU YDS EST
12"	0.16
15"	0.19
18"	0.21
24"	0.29
30"	0.37
36"	0.44
42"	0.53
48"	0.62
54"	0.71
60"	0.81
72"	1.03

THE CONCRETE COLLAR SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC YARD FOR **CONCRETE COLLAR**, AS SHOWN ON THE PLANS, WHICH PRICE SHALL INCLUDE THE REMOVAL OF SUCH PORTIONS OF THE EXISTING HEADWALLS AS MAY BE REQUIRED.

CLASS SI CONCRETE SHALL BE USED THROUGHOUT.

REVISIONS

REDRAWN	2-15-89
REVISED	8-19-94
REVISED	3-25-08
REVISED	5-16-13

STD. 9-19

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	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 3/24/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS:
MULTI–USE TRAIL WEST RAMP, MULTI–USE TRAIL EAST RAMP, PAVEMENT MARKING FOR MULTI–USE TRAIL, CONCRETE COLLAR

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	196

CONTRACT NO. 78295

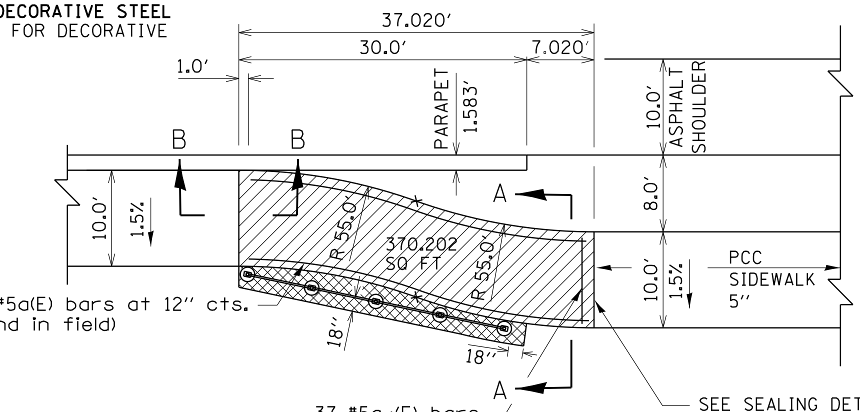
ILLINOIS FED. AID PROJECT

PCC SIDEWALK 6 INCH, SPECIAL

NOT TO SCALE

HMA SHOULDER 6″

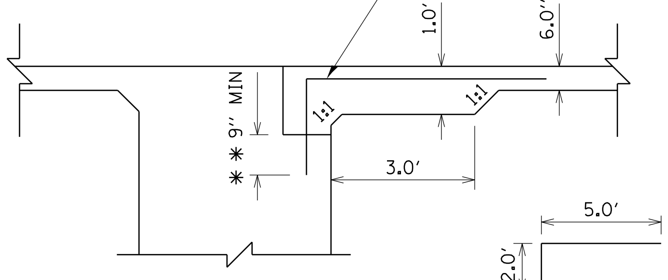
6″ HMA SHOULDER SHALL EXTEND TO 18″ BEHIND CENTER OF DECORATIVE STEEL RAILING AS SHOWN. COST OF 6″ HMA SHOULDER SHALL BE INCLUDED IN THE COST OF **DECORATIVE STEEL RAILING.** SEE STRUCTURE PLANS FOR DECORATIVE STEEL RAILING DETAILS.



PLAN

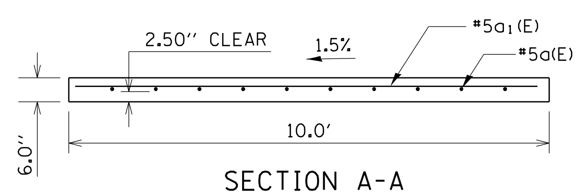
PCC SIDEWALK 6″

4 TOTAL LOCATIONS.
370.202 SQ FT PER LOCATION.
=1480.81 SQ FT (TOTAL)



SECTION B-B

BAR b(E)



SECTION A-A

✱✱ DRILL AND EPOXY GROUT 9″ MIN. INTO NEW CONCRETE ACCORDING TO ARTICLE 584 OFTHE STANDARD SPECIFICATIONS. COST INCLUDED IN PCC SIDEWALK 6″.

DESIGN STRESSES

fy = 60,000 PSI

f′c = 3,500 PSI

✱ BILL OF MATERIAL

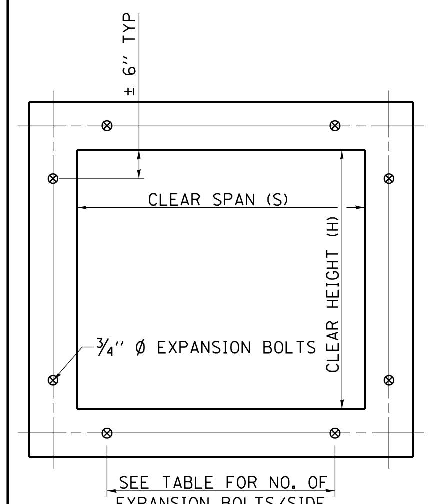
(TOTAL FOR 4 LOCATIONS)

BAR	No.	SIZE	LENGTH	SHAPE
a(E)	40	#5	37′-6″	——
a₁(E)	148	#5	9′-8″	——
b(E)	40	#5	7′-0″	⌐

ALL REINFORCEMENT BARS SHALL BE EPOXY COATED.

✱ ALL REINFORCEMENT BARS AND EXPANSION JOINTS WILL BE INCLUDED IN THE COST OF PCC SIDEWALK 6″.

EXPANSION BOLTS REQUIRED FOR CULVERT EXTENSIONS



CROSS SECTION THRU BARREL

EXPANSION BOLTS SHALL CONSIST OF SELF DRILLING EXPANSION SHIELDS AND ¾″ ∅ HOOKED BOLTS. HOOKED BOLTS SHALL EXTEND A MINIMUM OF 9″ INTO NEW CONCRETE.

MINIMUM CERTIFIED PROOF LOAD=7500 LBS.

BOLTS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR **EXPANSION BOLTS, ¾ INCH.**

H OR S	NO. EXPANSION BOLTS REQ′D/SIDE			
	EXTENSION ≤ 15′		EXTENSION > 15′	
	NO.	SPACING	NO.	SPACING
2.0	✱	✱	✱	✱
2.5	2	18″	2	18″
3.0	2	24″	2	24″
4.0	3	18″	3	18″
5.0	4	16″	3	24″
6.0	5	15″	4	20″
7.0	5	18″	4	24″
8.0	6	17″	5	21″
9.0	6	19″	5	24″
10.0	7	18″	6	21″
11.0	8	17″	6	24″
12.0	8	19″	7	22″

✱ NOTE: USE MINIMUM OF 1 EXPANSION BOLT AT EACH CORNER.

EXAMPLE:

6′ X 4′ BOX CULVERT TO BE EXTENDED 18′ AT ONE END ONLY.

FROM TABLE FIND:

6′ SIDE REQUIRES (4)-¾″ ∅ EXPANSION BOLTS AT 20″ CENTERS

4′ SIDE REQUIRES (3)-¾″ ∅ EXPANSION BOLTS AT 18″ CENTERS

TOTAL NO. REQUIRED
(4+3)2 = (14)-¾″ ∅ EXPAN. BOLTS

FOR ANCHOR BOLT REQUIREMENTS, SEE ARTICLE 1006.09 OF THE STANDARD SPECIFICATIONS.

STD. 9-9

REVISIONS	
REDRAWN	2-15-89
REVISED	8-15-94
REVISED	12-14-01
REVISED	3-26-08
REVISED	5-16-13

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PLOT SCALE = 20.0000 ′ / in. | DRAWN - | REVISED -
PLOT DATE = 5/11/2017 | CHECKED - | REVISED -
DATE - | REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS:
PCC SIDEWALK 6″, SPECIAL
EXPANSION BOLTS FOR CULVERT EXTENSIONS

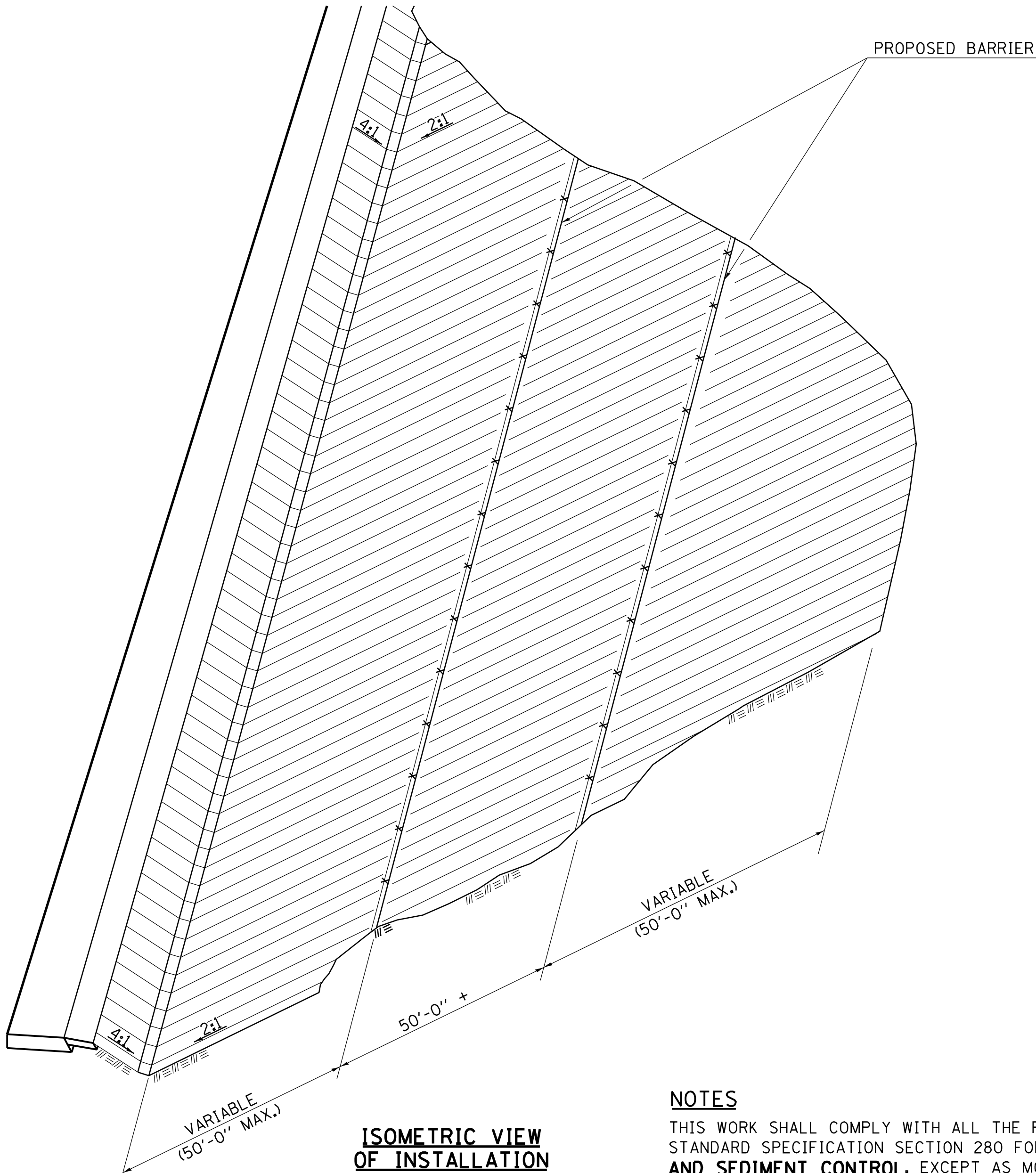
SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	197

CONTRACT NO. 78295

ILLINOIS FED. AID PROJECT

PERIMETER EROSION BARRIER
(SILT FILTER FENCE)



ISOMETRIC VIEW OF INSTALLATION

NOTES

THIS WORK SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE STANDARD SPECIFICATION SECTION 280 FOR **TEMPORARY EROSION AND SEDIMENT CONTROL**, EXCEPT AS MODIFIED IN THESE NOTES AND DETAILS.

THE BARRIER FABRIC SHALL MEET THE REQUIREMENTS OF ART. 208.02 AND 1080.02 FOR SILT FILTER FENCE AND ARTICLE 280.04(b) FOR PERIMETER EROSION BARRIER.

THE POSTS SHALL BE PLACED AS SHOWN ON HIGHWAY STANDARD 280001.

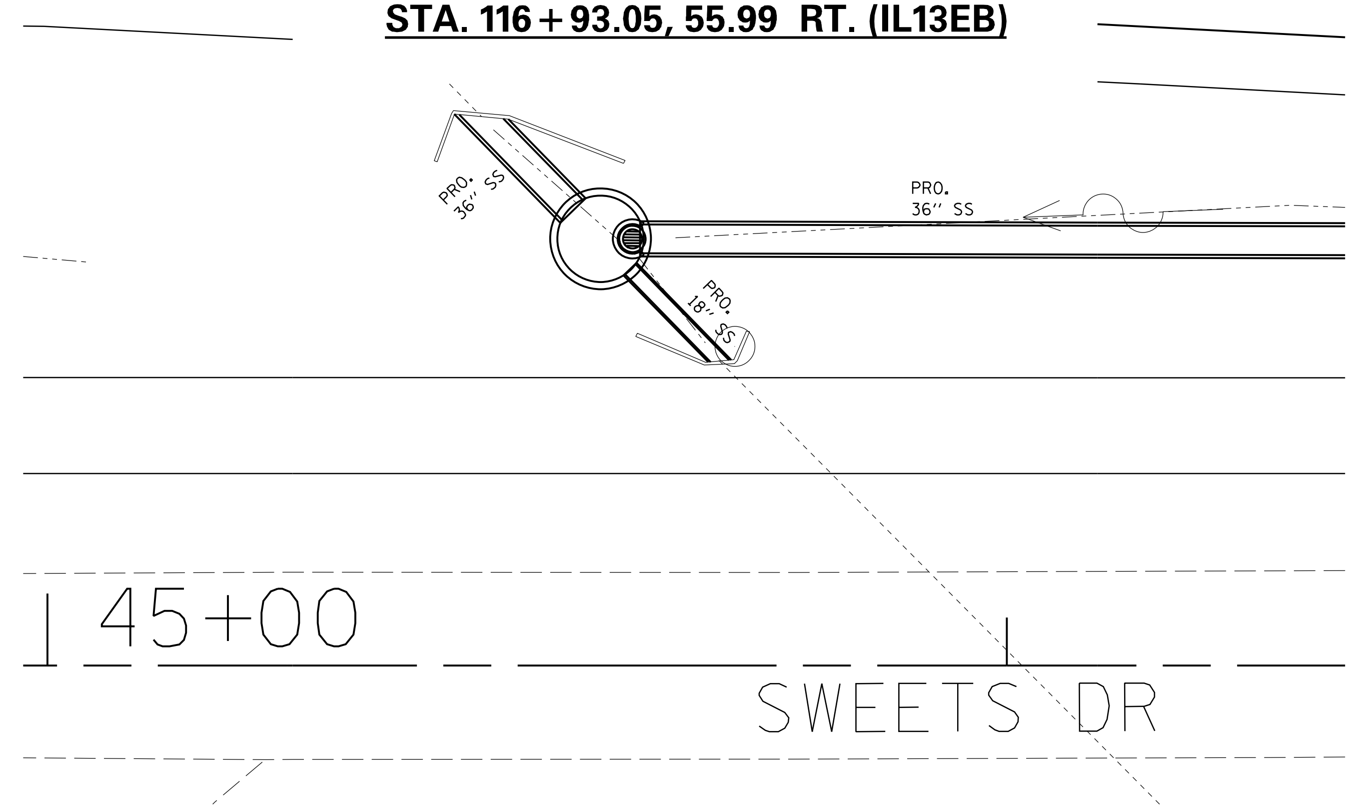
THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER FOOT FOR **PERIMETER EROSION BARRIER**, AS MEASURED IN PLACE. THE UNIT PRICE SHALL INCLUDE THE COST OF ALL MATERIAL, EQUIPMENT AND LABOR TO CONSTRUCT THE FENCE AS DESCRIBED.

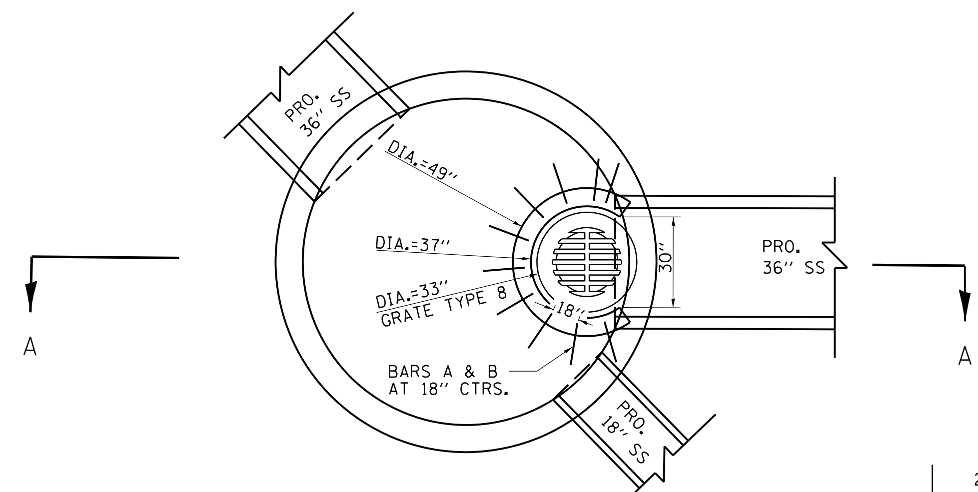
REVISIONS	
REDRAWN	2-15-89
REVISED	8-18-94
REVISED	10-3-94
REVISED	12-17-01
RESIZED	5-7-08
REVISED	5-17-13

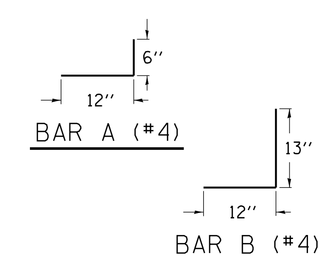
STD. 9-40

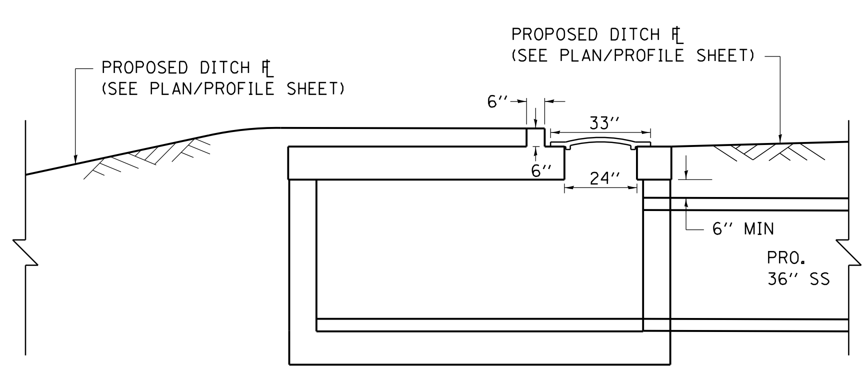
MANHOLE TYPE A, 9' DIAMETER, TYPE 8 GRATE, (SPECIAL)

STA. 116+93.05, 55.99 RT. (IL13EB)

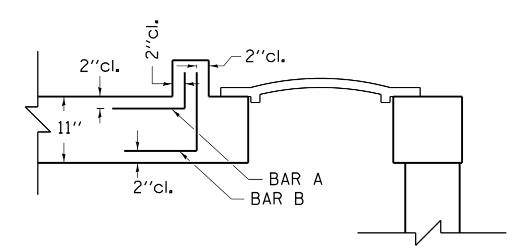








SEC A-A



SECTION THROUGH LID

* BARS A AND B ARE ADDITIONAL REINFORCEMENT TO BE ADDED TO THE REINFOREMCEMNT BARS SHOWN ON STANDARD 602421-05. THEY WILL NOT BE PAID FOR SEPERATLY BUT BE INCLUDED IN THE COST OF MANHOLE TYPE A 9' DIAMETER.

FILE NAME =	USER NAME = naasdp	DESIGNED -	REVISED -
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	PLOT SCALE = 20.0000 ' / in.	CHECKED -	REVISED -
Default	PLOT DATE = 3/24/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

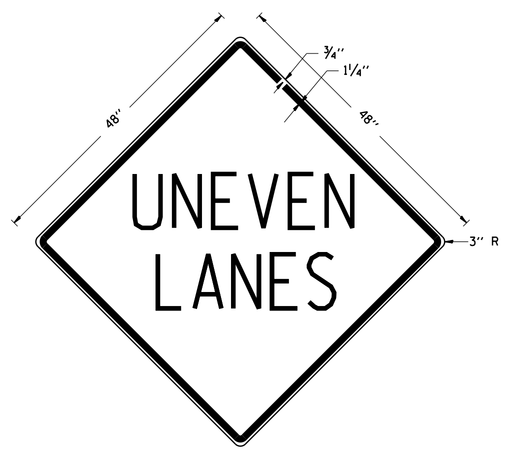
DETAILS:
PERIMETER EROSION BARRIER, MANHOLE TYPE A (9' DIA) SPECIAL,

SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	198
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		

UNEVEN LANES SIGN

W8-11 (48" x 48")



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" 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" 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.

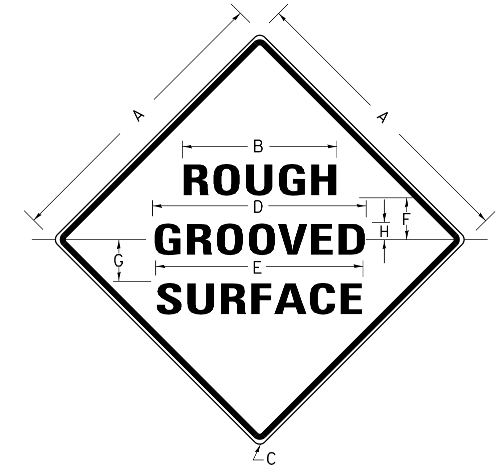
THE COST OF FURNISHING, ERECTING, MAINTAINING, AND REMOVING THE REQUIRED SIGNS SHALL BE INCLUDED IN THE CONTRACT.

REVISIONS

DRAWN	2-15-89
REVISED	4-06-93
REDSIGNED	7-23-04
RESIZED	5-08-08
REVIEWED	5-17-13

STD. 9-41

ILLINOIS STANDARD



COLORS:

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

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

SIGN SIZE	SERIES LINES			MAR-GIN	BOR-DER	BLANK STD.
	1	2	3			
48X48	7C	7C	7C	0.8	1.2	B4-48D

ALL DIMENSIONS IN INCHES

NOTES:

PRIOR TO ALLOWING TRAFFIC ON ANY PORTION OF THE ROADWAY THAT HAS BEEN COLDMILLED, THE CONTRACTOR SHALL HAVE ERECTED "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 "ROUGH GROOVED SURFACE" SIGNS UNTIL THE COLDMILLED SURFACE IS COVERED WITH LEVELING BINDER OR SURFACE COURSE.

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.

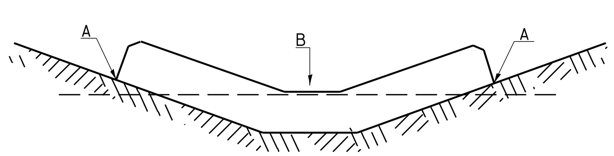
REVISIONS

REDRAWN	2-15-89
REVISED	4-6-93
REVISED	3-27-08
REVIEWED	5-17-13

STD. 9-39

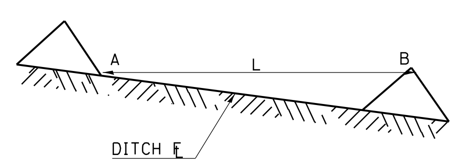
TEMPORARY DITCH CHECKS

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

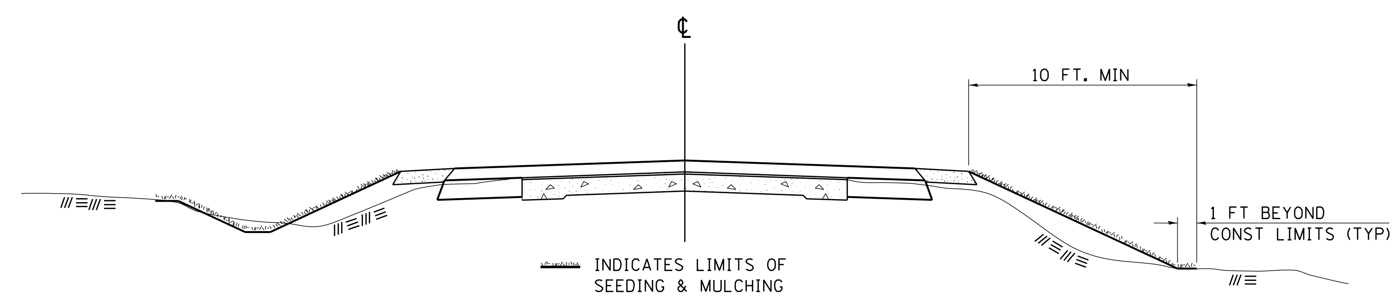
B = THE LOW POINT IN CENTER OF CHECK

REVISIONS

DRAWN	9-01-99
REVISED	10-3-01
RESIZED	5-8-08
REVISED	05-04-10
REVIEWED	5-17-13

STD. 9-108

SEEDING & MULCHING



GENERAL NOTES

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

ON DETOUR ROADS, SLOPES SHALL BE SEEDED IMMEDIATELY UPON COMPLETION OF ANY GIVEN STAGE GRADING. TEMPORARY SEEDING SHALL BE CLASS 7.

FERTILIZER NUTRIENTS SHALL BE APPLIED TO ALL SEEDED AREAS. LIMESTONE SHALL BE APPLIED TO ALL AREAS OF FINAL SEEDING.

THE RATES OF APPLICATION OF FERTILIZER, MULCH AND LIMESTONE SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR ROAD AND BRIDGE CONSTRUCTION.

SECTIONS 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.

REVISIONS

REDRAWN	2-15-89
REVISED	8-15-94
REVISED	6-3-99
REVISED	3-27-08
REVISED	5-16-13

STD. 9-12

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Default	PLOT DATE = 3/24/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS:
UNEVEN LANE SIGN, ROUGH GROOVED SURFACE SIGN, TEMPORARY DITCH CHECKS, SEEDING AND MULCHING

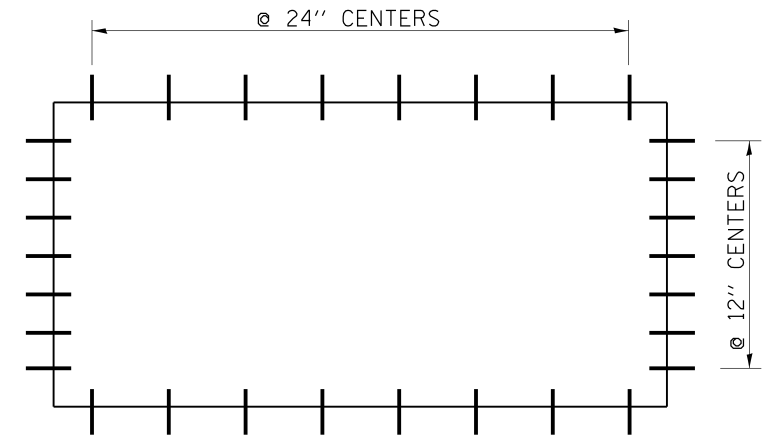
SCALE: | SHEET OF SHEETS | STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	199

CONTRACT NO. 78295

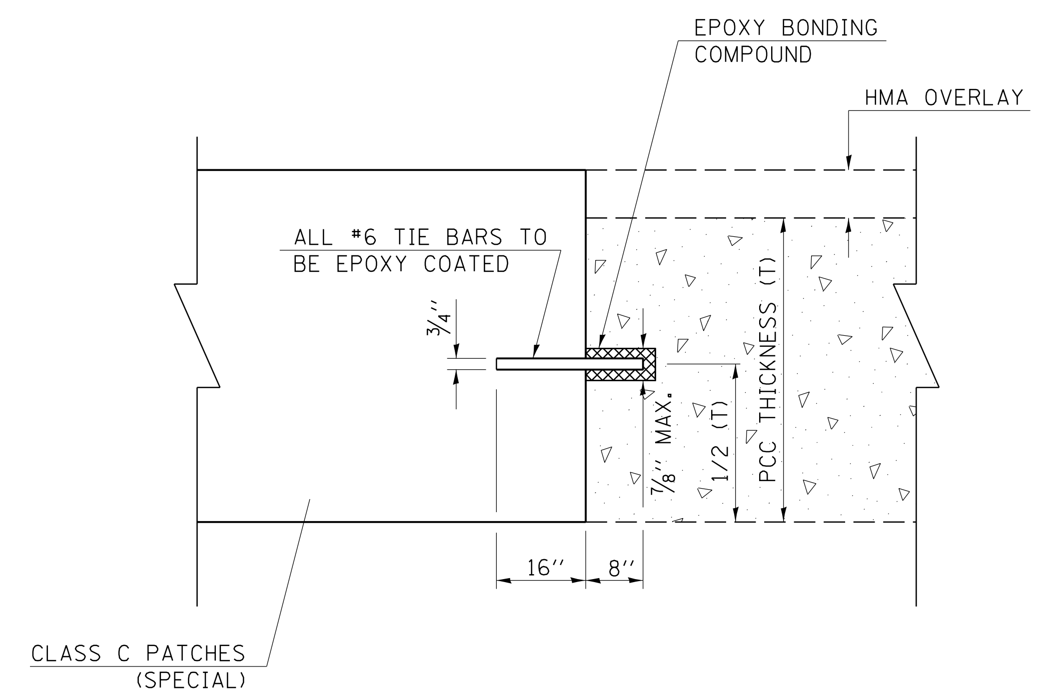
ILLINOIS | FED. AID PROJECT

CLASS C PATCHES (SPECIAL)



TIE BAR PLAN

(IF PAVED SHOULDER,
TIE BARS NOT USED)



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Default	PLOT DATE = 3/24/2017	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETAILS:
CLASS C PATCHES (SPECIAL)

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(5-3)R-1,N-1,B-5,BR-1,B-6,BR-2	JACKSON	325	200
		CONTRACT NO. 78295		
		ILLINOIS FED. AID PROJECT		