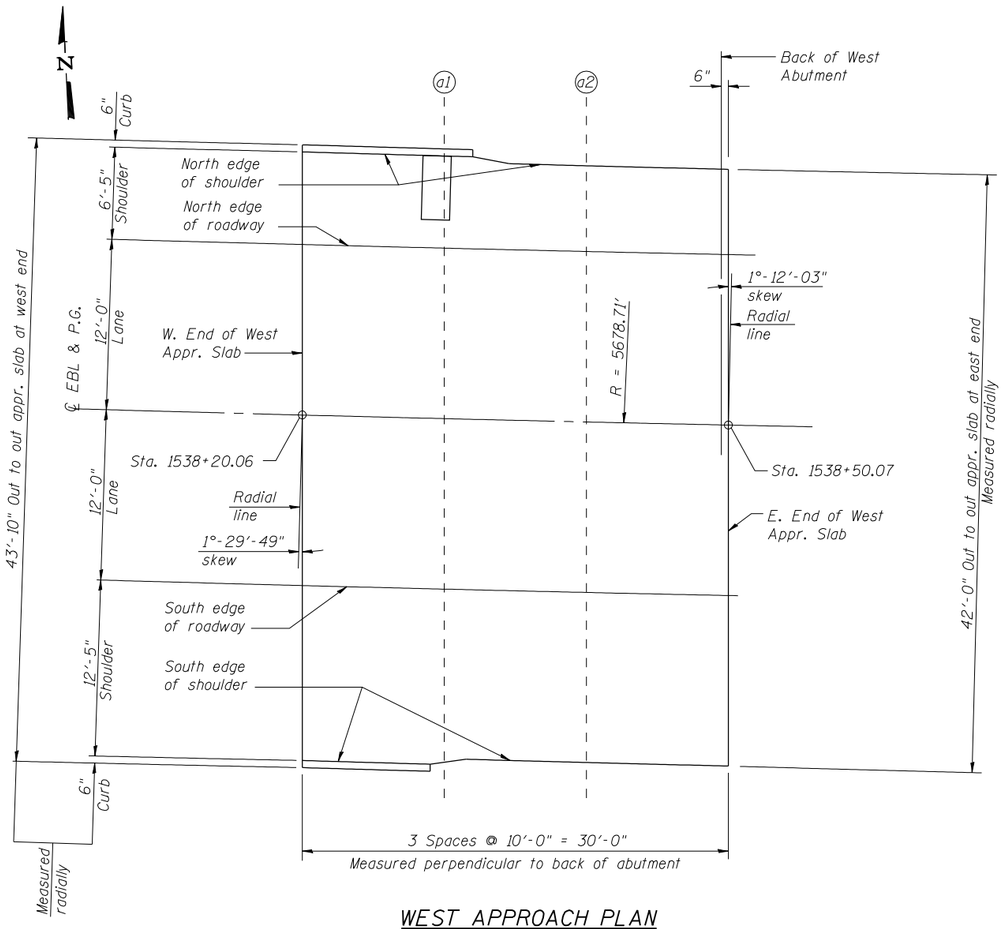
GIRDER 12

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Back W. Abut.	1538+50.03	-22.38	498.44	498.46
℄ Expansion jt.	1538+53.03	-22.38	498.45	498.47
W. end of deck	1538+53.54	-22.38	498.45	498.48
℄ Brg. W. Abut.	1538+54.93	-22.38	498.46	498.48
1A	1538+64.89	-22.38	498.52	498.58
1B	1538+74.85	-22.38	498.57	498.66
1C	1538+84.81	-22.38	498.63	498.75
1D	1538+94.77	-22.38	498.68	498.82
1E	1539+04.73	-22.38	498.74	498.89
1F	1539+14.70	-22.38	498.79	498.95
1G	1539+24.66	-22.38	498.85	499.00
1H	1539+34.62	-22.38	498.90	499.04
1I	1539+44.58	-22.38	498.96	499.07
1J	1539+54.54	-22.38	499.01	499.10
1K	1539+64.50	-22.38	499.06	499.13
1L	1539+74.46	-22.38	499.12	499.16
1M	1539+84.42	-22.38	499.17	499.20
℄ Brg. Pier 1	1539+97.25	-22.38	499.24	499.27
2A	1540+07.21	-22.38	499.30	499.33
2B	1540+17.17	-22.38	499.35	499.39
2C	1540+27.14	-22.38	499.41	499.47
2D	1540+37.10	-22.38	499.46	499.55
2E	1540+47.06	-22.38	499.52	499.63
2F	1540+57.02	-22.38	499.57	499.71
2G	1540+66.98	-22.38	499.63	499.79
2H	1540+76.94	-22.38	499.68	499.86
2I	1540+86.90	-22.38	499.74	499.93
2J	1540+96.86	-22.38	499.77	499.96
2K	1541+06.82	-22.38	499.74	499.92
2L	1541+16.78	-22.38	499.72	499.89
2M	1541+26.74	-22.38	499.70	499.84
2N	1541+36.72	-22.38	499.67	499.79
2O	1541+46.72	-22.38	499.65	499.74
2P	1541+56.72	-22.38	499.63	499.69
2Q	1541+66.72	-22.38	499.61	499.64
2R	1541+76.72	-22.38	499.58	499.61
℄ Brg. Pier 2	1541+82.76	-22.38	499.57	499.59
3A	1541+92.76	-22.38	499.55	499.57
3B	1542+02.76	-22.38	499.52	499.55
3C	1542+12.76	-22.38	499.50	499.55
3D	1542+22.76	-22.38	499.48	499.55
3E	1542+32.76	-22.38	499.45	499.54
3F	1542+42.76	-22.38	499.43	499.54
3G	1542+52.76	-22.38	499.40	499.52
3H	1542+62.76	-22.38	499.38	499.52
3I	1542+72.76	-22.38	499.42	499.56
3J	1542+82.76	-22.38	499.46	499.60
3K	1542+92.76	-22.38	499.49	499.62
3L	1543+02.76	-22.38	499.52	499.63
3M	1543+12.76	-22.38	499.54	499.64
3N	1543+22.76	-22.38	499.56	499.64
3O	1543+32.76	-22.38	499.58	499.63
3P	1543+42.76	-22.38	499.59	499.63
3Q	1543+52.76	-22.38	499.60	499.62
3R	1543+62.76	-22.38	499.61	499.63

GIRDER 12 (CONTINUED)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
℄ Brg. Pier 3	1543+68.84	-22.38	499.61	499.63
4A	1543+78.84	-22.38	499.61	499.64
4B	1543+88.84	-22.38	499.61	499.66
4C	1543+98.84	-22.38	499.60	499.68
4D	1544+08.84	-22.38	499.59	499.70
4E	1544+18.84	-22.38	499.57	499.72
4F	1544+28.84	-22.38	499.55	499.73
4G	1544+38.84	-22.38	499.53	499.73
4H	1544+48.84	-22.38	499.51	499.73
4I	1544+58.84	-22.38	499.48	499.71
4J	1544+68.84	-22.38	499.44	499.68
4K	1544+78.84	-22.38	499.41	499.64
4L	1544+88.84	-22.38	499.37	499.58
4M	1544+98.84	-22.38	499.32	499.51
4N	1545+08.84	-22.38	499.28	499.44
4O	1545+18.84	-22.38	499.22	499.35
4P	1545+28.84	-22.38	499.17	499.27
4Q	1545+38.84	-22.38	499.11	499.18
4R	1545+48.84	-22.38	499.05	499.09
℄ Brg. Pier 4	1545+61.93	-22.38	498.96	498.98
5A	1545+71.93	-22.38	498.89	498.91
5B	1545+81.93	-22.38	498.82	498.84
5C	1545+91.93	-22.38	498.74	498.77
5D	1546+01.93	-22.38	498.67	498.71
5E	1546+11.93	-22.38	498.59	498.66
5F	1546+21.93	-22.38	498.52	498.60
5G	1546+31.93	-22.38	498.45	498.53
5H	1546+41.93	-22.38	498.37	498.46
5I	1546+51.93	-22.38	498.30	498.39
5J	1546+61.93	-22.38	498.22	498.31
5K	1546+71.93	-22.38	498.15	498.22
5L	1546+81.93	-22.38	498.08	498.13
5M	1546+91.93	-22.38	498.00	498.04
5N	1547+01.93	-22.38	497.93	497.95
5O	1547+11.93	-22.38	497.85	497.86
5P	1547+21.93	-22.38	497.78	497.78
5Q	1547+31.93	-22.38	497.71	497.70
5R	1547+41.93	-22.38	497.63	497.64
℄ Brg. Pier 5	1547+48.00	-22.38	497.59	497.61
6A	1547+58.00	-22.38	497.51	497.56
6B	1547+68.00	-22.38	497.44	497.52
6C	1547+78.00	-22.38	497.36	497.50
6D	1547+88.00	-22.38	497.29	497.47
6E	1547+98.00	-22.38	497.22	497.45
6F	1548+08.00	-22.38	497.14	497.43
6G	1548+18.00	-22.38	497.07	497.40
6H	1548+28.00	-22.38	496.99	497.36
6I	1548+38.00	-22.38	496.92	497.31
6J	1548+48.00	-22.38	496.85	497.25
6K	1548+58.00	-22.38	496.77	497.18
6L	1548+68.00	-22.38	496.70	497.09
6M	1548+78.00	-22.38	496.62	496.98
6N	1548+88.00	-22.38	496.55	496.86
6O	1548+98.00	-22.38	496.48	496.73
6P	1549+08.00	-22.38	496.40	496.59
6Q	1549+18.00	-22.38	496.33	496.44
℄ Brg. E. Abut.	1549+30.03	-22.38	496.24	496.26
E. end of deck	1549+31.42	-22.38	496.23	496.25
℄ Expansion jt.	1549+31.94	-22.38	496.23	496.25
Back E. Abut.	1549+34.95	-22.38	496.20	496.22



WEST APPROACH PLAN

NORTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End West Appr. Slab	1538+19.57	-18.42	496.63	496.65
a1	1538+29.61	-18.42	496.69	496.71
a2	1538+39.65	-18.00	496.76	496.78
E. End West Appr. Slab	1538+49.69	-18.00	496.82	496.84

NORTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End West Appr. Slab	1538+19.75	-12.00	496.89	496.91
a1	1538+29.77	-12.00	496.95	496.97
a2	1538+39.79	-12.00	497.00	497.02
E. End West Appr. Slab	1538+49.81	-12.00	497.06	497.08

℄ EBL & PROFILE GRADE

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End West Appr. Slab	1538+20.06	0.00	497.37	497.39
a1	1538+30.06	0.00	497.43	497.45
a2	1538+40.07	0.00	497.48	497.50
E. End West Appr. Slab	1538+50.07	0.00	497.54	497.56

SOUTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End West Appr. Slab	1538+20.37	12.00	497.85	497.87
a1	1538+30.35	12.00	497.91	497.93
a2	1538+40.33	12.00	497.96	497.98
E. End West Appr. Slab	1538+50.31	12.00	498.02	498.04

SOUTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End West Appr. Slab	1538+20.69	24.42	498.35	498.37
a1	1538+30.64	24.24	498.40	498.42
a2	1538+40.60	24.00	498.45	498.47
E. End West Appr. Slab	1538+50.56	24.00	498.50	498.52

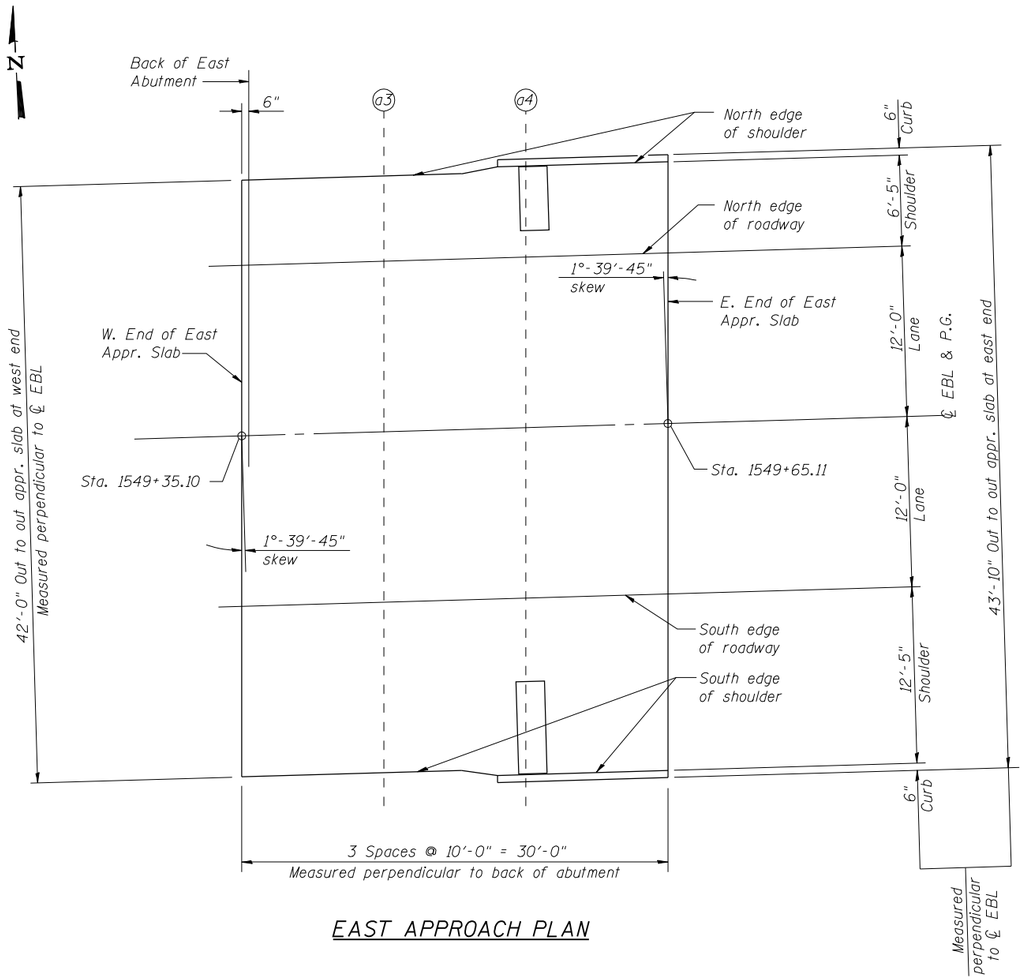
ESCA CORPORATION, INC.

USER NAME = has	DESIGNED - SHL 06/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - MTD 08/13	REVISED -	
PLOT SCALE = 0.2 ' / IN.	DRAWN - DWH 08/13	REVISED -	
PLOT DATE = 1/28/2014 11:28:42 AM	CHECKED - ELH 10/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS – EB
STRUCTURE NO. 026-0107
SHEET NO. 22 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	102
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



EAST APPROACH PLAN

NORTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End East Appr. Slab	1549+35.62	-18.00	496.29	496.31
a3	1549+45.62	-18.00	496.21	496.23
a4	1549+55.64	-18.42	496.13	496.15
E. End East Appr. Slab	1549+65.64	-18.42	496.06	496.08

NORTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End East Appr. Slab	1549+35.45	-12.00	496.42	496.44
a3	1549+45.45	-12.00	496.34	496.36
a4	1549+55.46	-12.00	496.27	496.29
E. End East Appr. Slab	1549+65.46	-12.00	496.19	496.21

℄ EBL & PROFILE GRADE

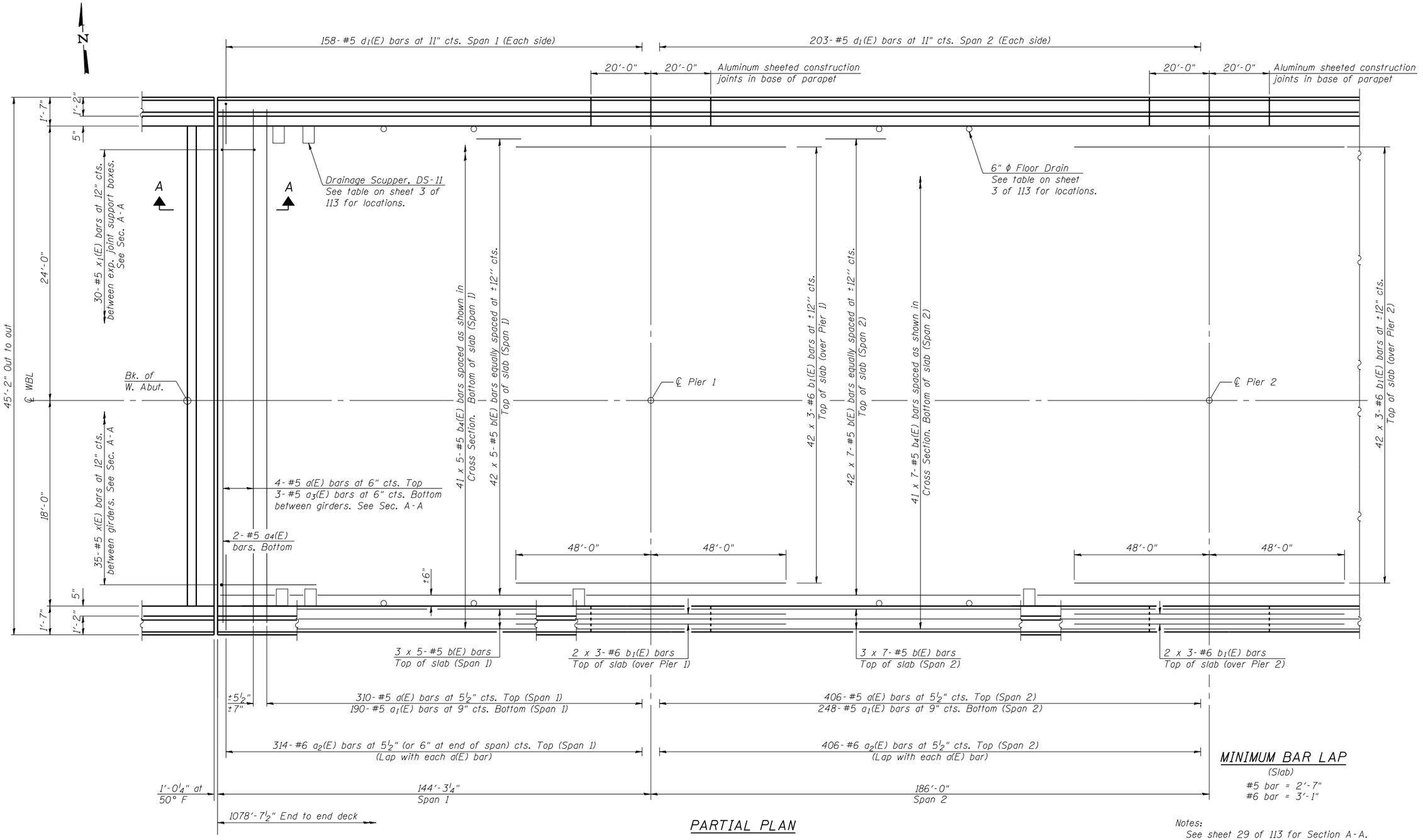
Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End East Appr. Slab	1549+35.10	0.00	496.61	496.63
a3	1549+45.10	0.00	496.53	496.55
a4	1549+55.11	0.00	496.46	496.48
E. End East Appr. Slab	1549+65.11	0.00	496.38	496.40

SOUTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End East Appr. Slab	1549+34.75	12.00	496.42	496.44
a3	1549+44.75	12.00	496.35	496.37
a4	1549+54.76	12.00	496.27	496.29
E. End East Appr. Slab	1549+64.76	12.00	496.20	496.22

SOUTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End East Appr. Slab	1549+34.40	24.00	496.17	496.19
a3	1549+44.40	24.00	496.10	496.12
a4	1549+54.40	24.42	496.02	496.04
E. End East Appr. Slab	1549+64.40	24.42	495.94	495.96



PARTIAL PLAN

MINIMUM BAR LAP
(Slab)
#5 bar = 2'-7"
#6 bar = 3'-1"

Notes:
See sheet 29 of 113 for Section A-A.
See sheets 28 thru 30 of 113 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 28 of 113 for parapet reinforcement.
See sheet 27 of 113 for Cross Section.

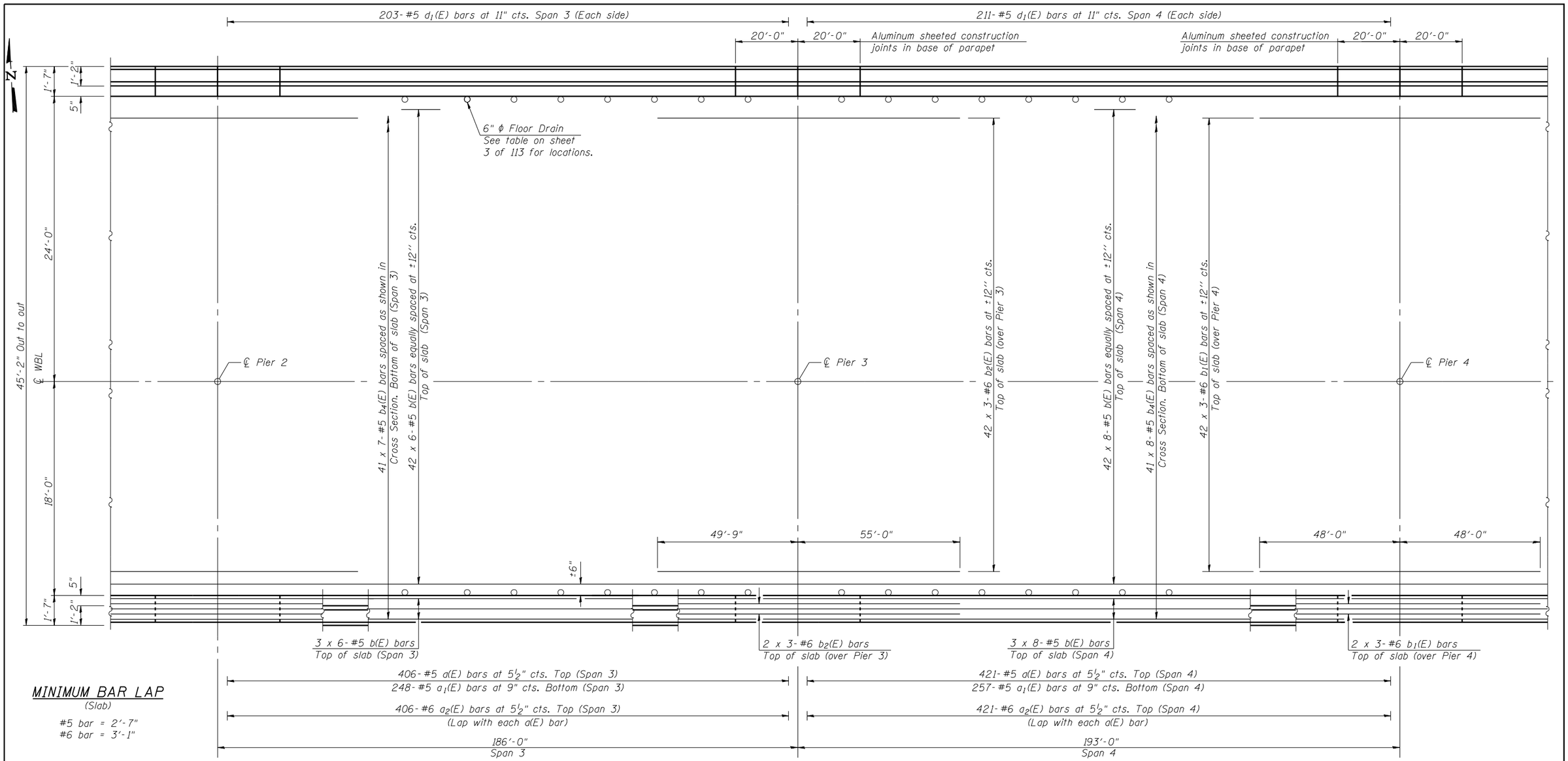
ESCA CONSULTANTS, INC.

USER NAME = has	DESIGNED - SHL	06/13	REVISED -
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -
	DRAWN - DWH	08/13	REVISED -
PLOT DATE = 1/28/2014 11:26:12 AM	CHECKED - ELH	01/14	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE PLAN – WB
STRUCTURE NO. 026-0106
SHEET NO. 24 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	104
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

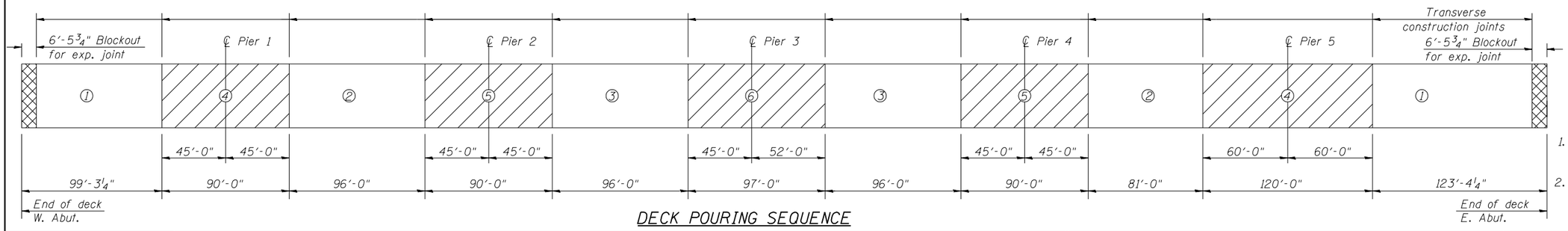


MINIMUM BAR LAP

(Slab)

#5 bar = 2'-7"
#6 bar = 3'-1"

PARTIAL PLAN



DECK POURING SEQUENCE

Note:
When the deck pour is stopped for the day at one or more of the transverse bonded construction joints in the deck pouring sequence as shown, the next pour shall not begin until both of the following are met:

1. At least 72 hours shall have elapsed from the end of the previous pour.
2. The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

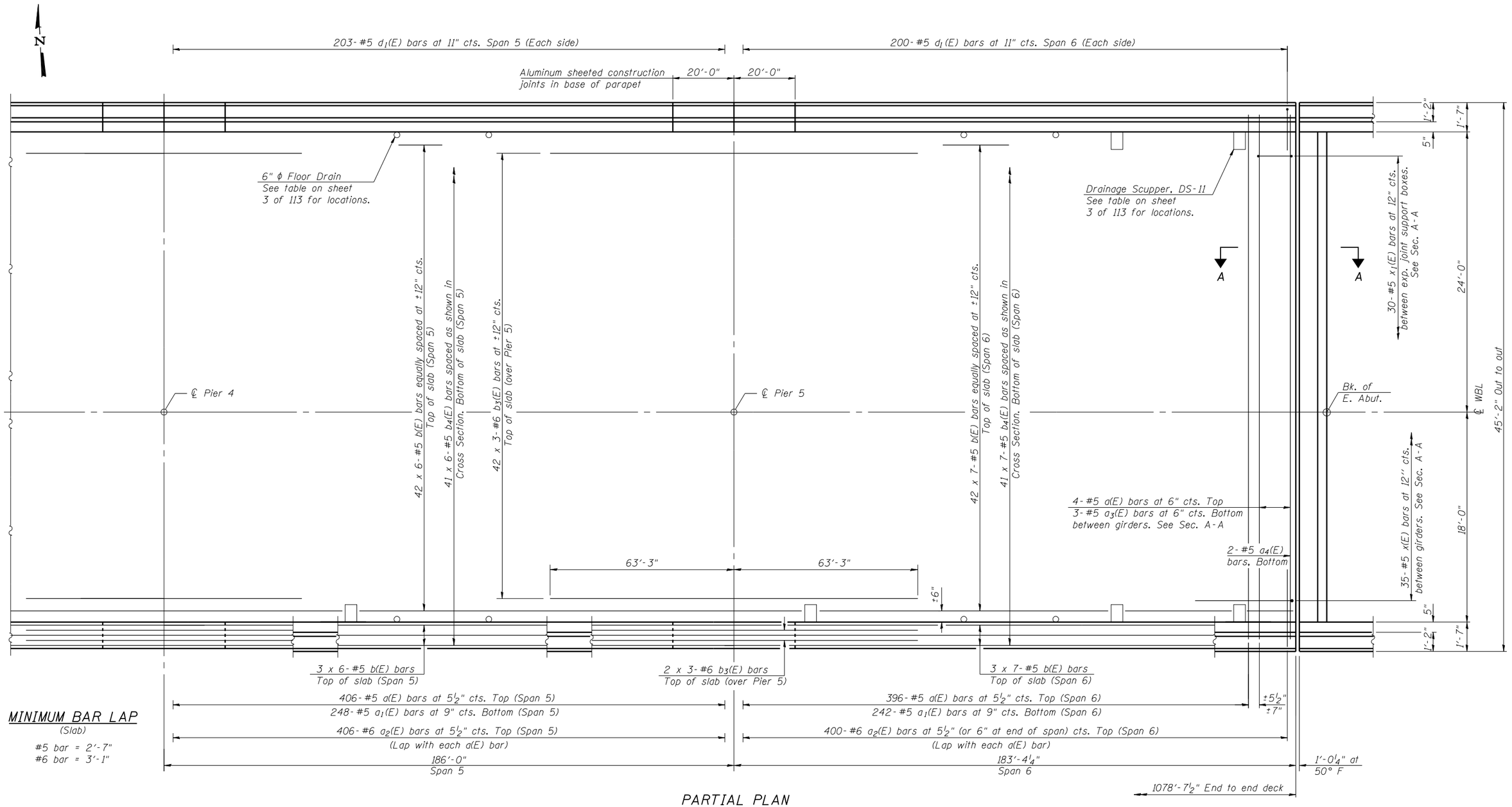
ESCA CORPORATION, INC.

USER NAME = has		DESIGNED - SHL	06/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014	11:30:47 AM	CHECKED - ELH	01/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE PLAN – WB
STRUCTURE NO. 026-0106
SHEET NO. 25 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	105
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



MINIMUM BAR LAP

(Slab)

#5 bar = 2'-7"
#6 bar = 3'-1"

PARTIAL PLAN

Notes:
See sheet 29 of 113 for Section A-A.
See sheets 28 thru 30 of 113 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 28 of 113 for parapet reinforcement.
See sheet 27 of 113 for Cross Section.

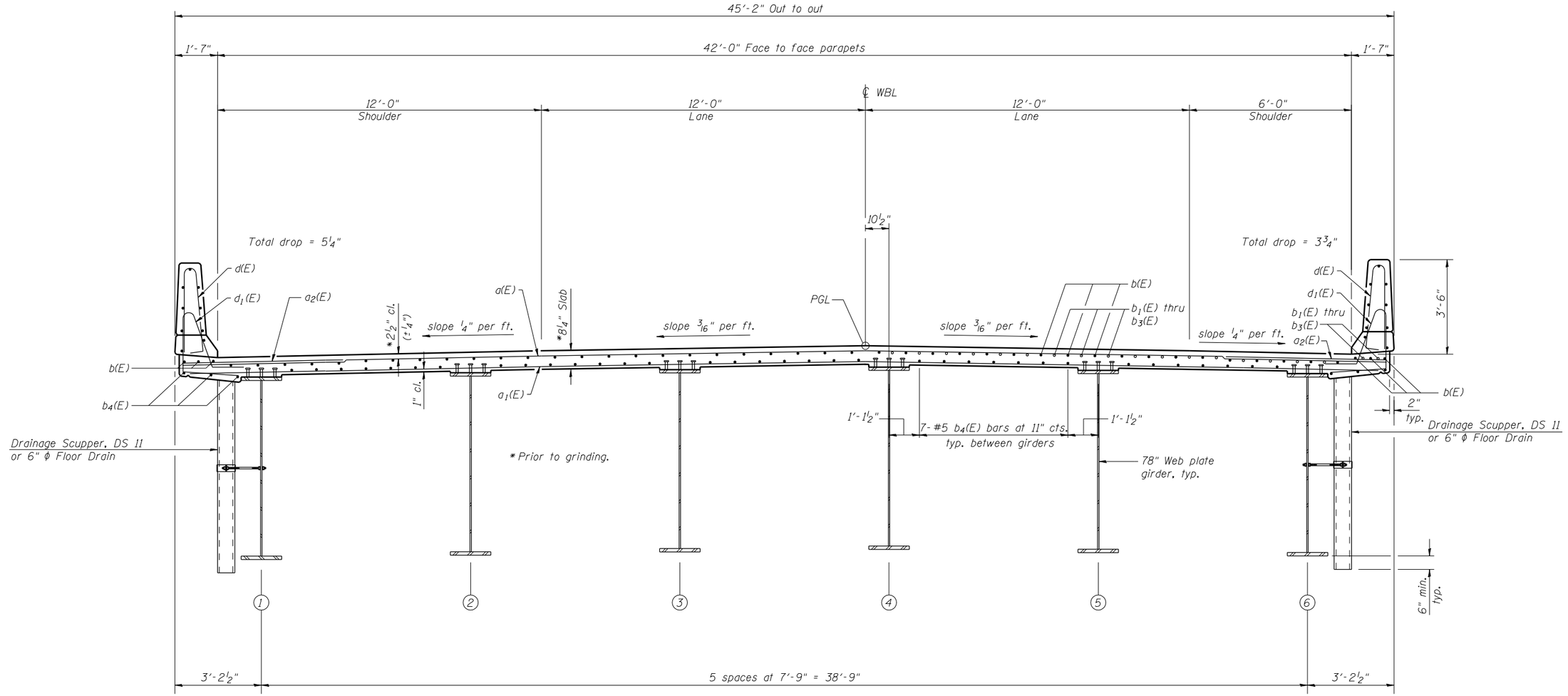
ESCA CONSULTANTS, INC.

USER NAME = has		DESIGNED - SHL	06/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014	11:32:21 AM	CHECKED - ELH	01/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE PLAN – WB
STRUCTURE NO. 026-0106
SHEET NO. 26 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	106
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



NEAR MIDSPAN NEAR PIER

CROSS SECTION

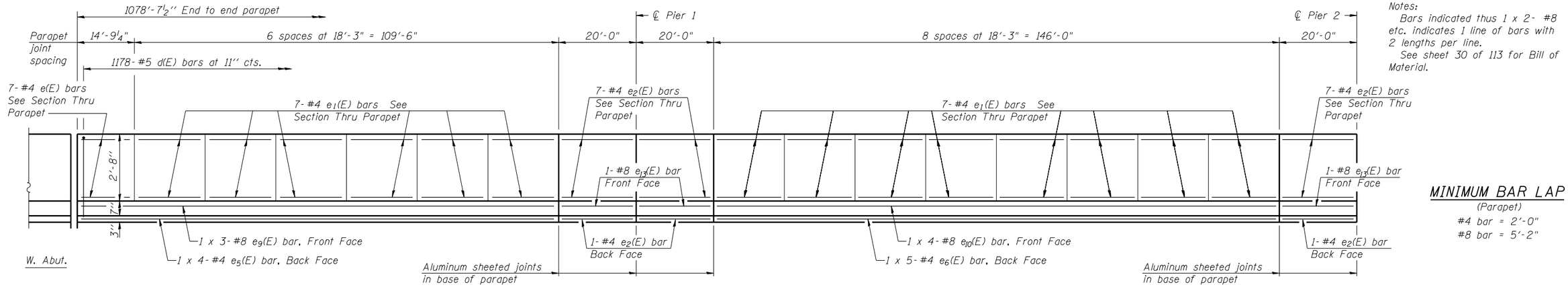
(Looking East)

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - SHL	06/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 11:34:31 AM	CHECKED - ELH	10/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK CROSS SECTION – WB
STRUCTURE NO. 026-0106
SHEET NO. 27 OF 113 SHEETS

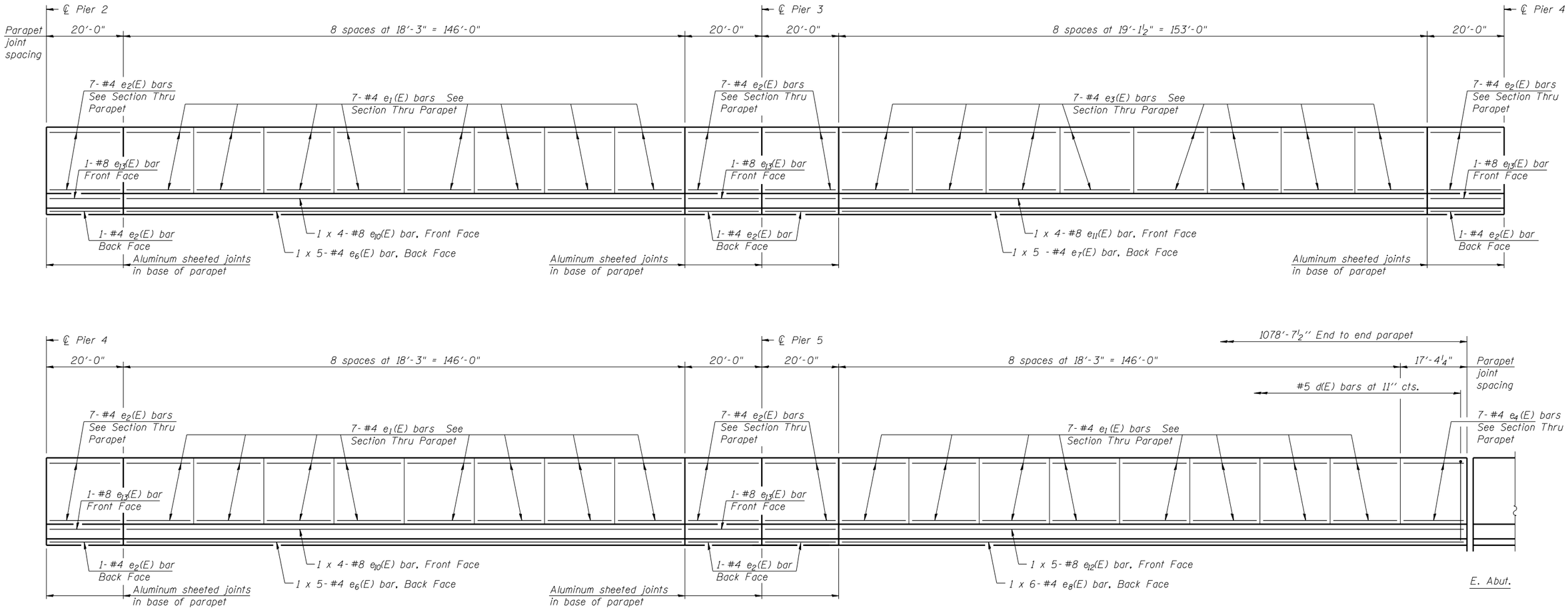
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	107
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



Notes:
Bars indicated thus 1 x 2- #8 etc. indicates 1 line of bars with 2 lengths per line.
See sheet 30 of 113 for Bill of Material.

MINIMUM BAR LAP

(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"



INSIDE ELEVATION OF NORTH PARAPET

(South parapet similar)

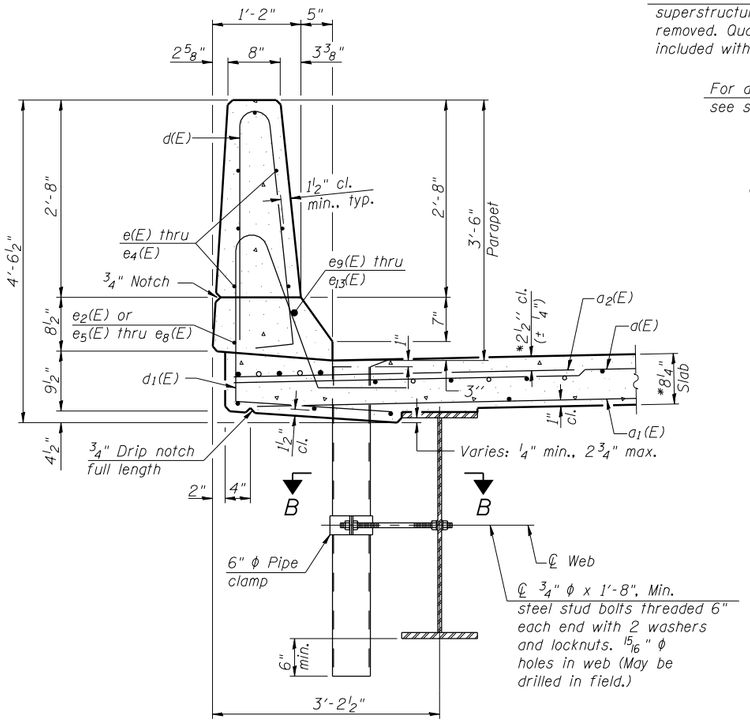
ESCA CONSULTANTS, INC.

USER NAME = has	DESIGNED - SHL	06/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 11:33:43 AM	CHECKED - ELH	10/13	REVISED -	

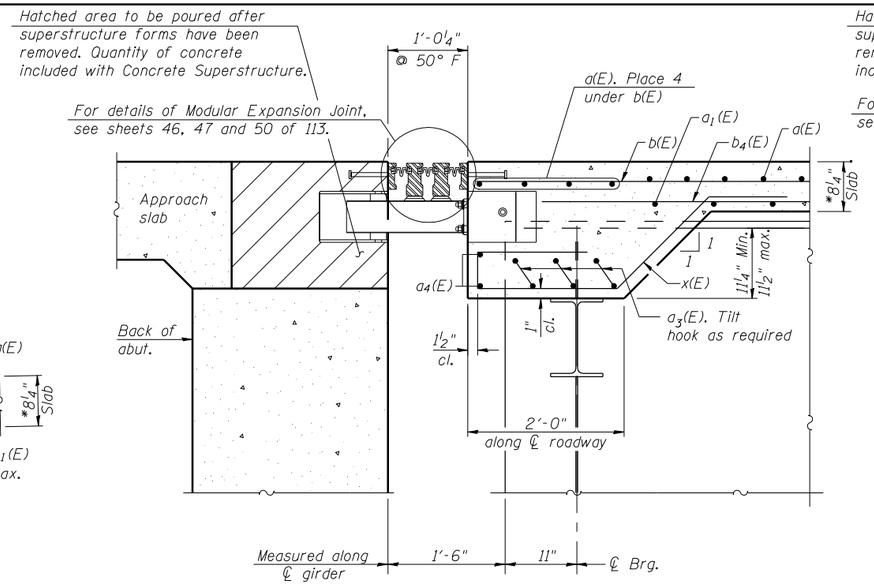
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS – WB
STRUCTURE NO. 026-0106
SHEET NO. 28 OF 113 SHEETS

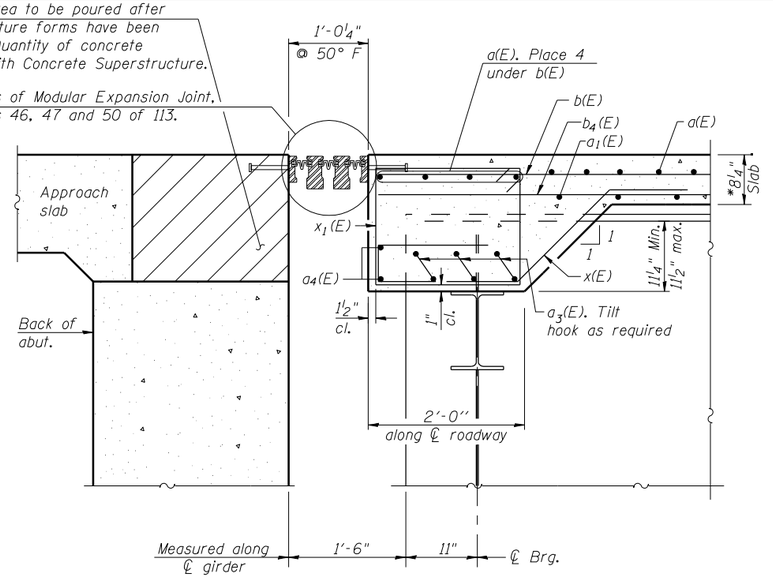
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	108
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



SECTION THRU PARAPET

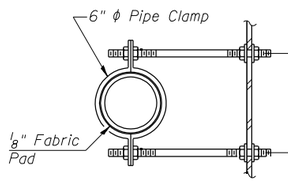


SECTION A-A
(At support boxes)

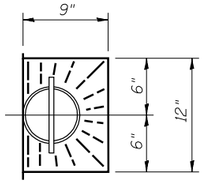


SECTION A-A
(Between support boxes)

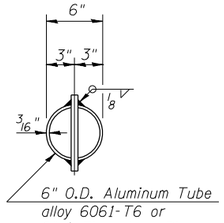
* Prior to grinding.



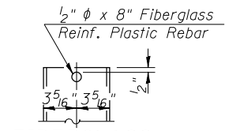
SECTION B-B
** Dimension as required by Pipe Clamp



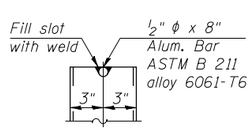
TOP PLAN



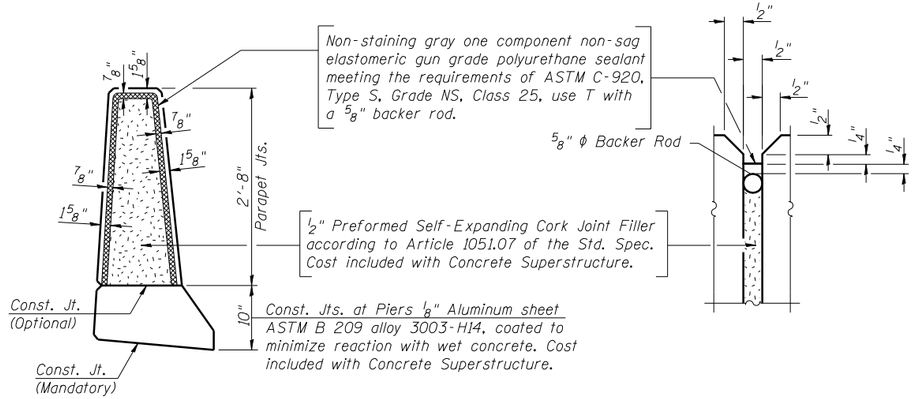
TOP PLAN
(Showing Aluminum Tube)



FIBERGLASS PIPE



ALUMINUM TUBE



PARAPET JOINT DETAILS

Notes:

Drains shall be located clear of all cross frames.

The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the Standard Specifications for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP1 prior to painting.

Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - SHL	06/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
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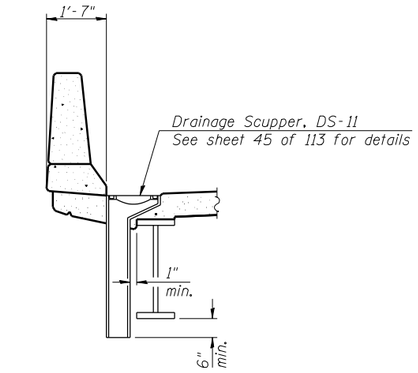
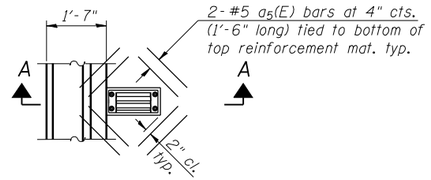
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS – WB
STRUCTURE NO. 026-0106
SHEET NO. 29 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	109
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

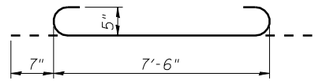


SECTION A-A

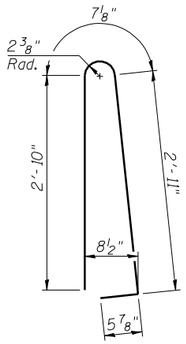


PLAN AT SCUPPER

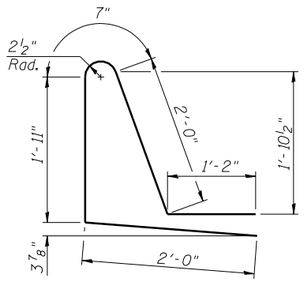
Note:
Cut longitudinal reinforcement to clear drainage scuppers.



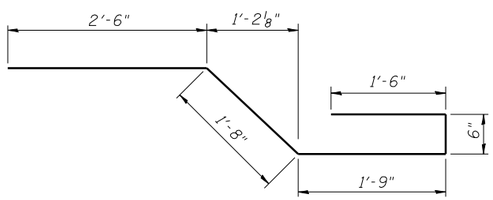
a3(E) BAR



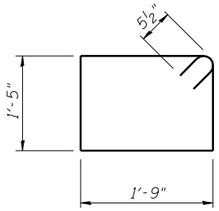
BAR d(E)



BAR d1(E)



BAR x(E)



BAR x1(E)

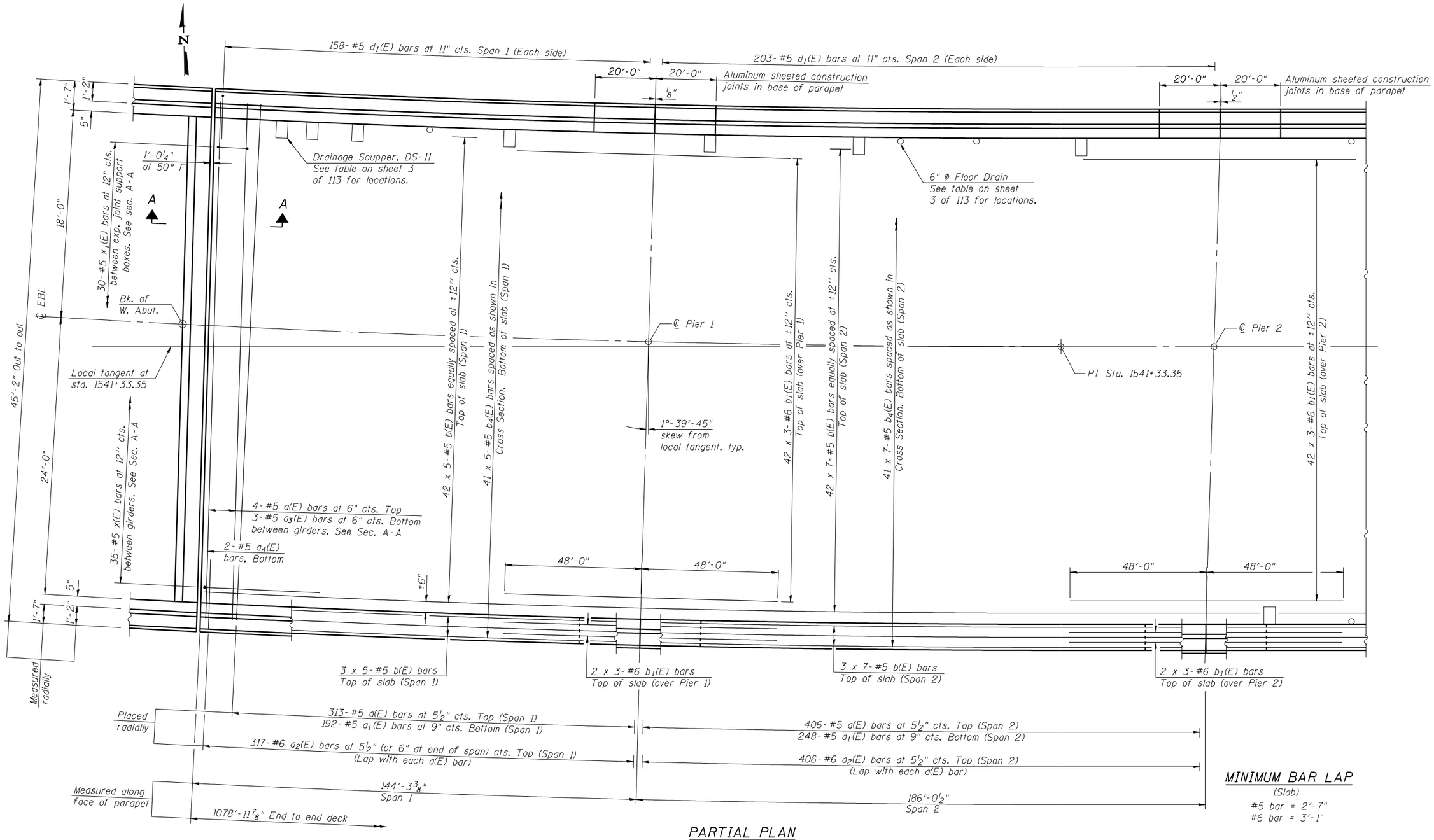
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	2353	#5	44'-7"	
a1(E)	1433	#5	43'-6"	
a2(E)	4706	#6	6'-6"	
a3(E)	30	#5	8'-8"	
a4(E)	4	#5	38'-5"	
a5(E)	96	#5	1'-6"	
b(E)	1872	#5	30'-3"	
b1(E)	414	#6	34'-1"	
b2(E)	138	#6	37'-0"	
b3(E)	138	#6	44'-3"	
b4(E)	1640	#5	29'-6"	
d(E)	2356	#5	6'-10"	
d1(E)	2356	#5	7'-8"	
e(E)	14	#4	14'-6"	
e1(E)	532	#4	17'-11"	
e2(E)	160	#4	19'-8"	
e3(E)	112	#4	18'-10"	
e4(E)	14	#4	17'-1"	
e5(E)	8	#4	32'-6"	
e6(E)	30	#4	30'-9"	
e7(E)	10	#4	32'-2"	
e8(E)	12	#4	28'-10"	
e9(E)	6	#8	44'-10"	
e10(E)	24	#8	40'-4"	
e11(E)	8	#8	42'-1"	
e12(E)	10	#8	36'-9"	
e13(E)	20	#8	19'-8"	
x(E)	70	#5	7'-11"	
x1(E)	60	#5	7'-3"	
Reinforcement Bars, Epoxy Coated			Pound	422830
Concrete Superstructure			Cu. Yds.	1632.3

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - SHL	06/13	REVISED -	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 1:00:09 PM	CHECKED - ELH	10/13	REVISED -	

SUPERSTRUCTURE DETAILS – WB
STRUCTURE NO. 026-0106
SHEET NO. 30 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	110
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



PARTIAL PLAN

MINIMUM BAR LAP
(Slab)
#5 bar = 2'-7"
#6 bar = 3'-1"

Notes:
See sheet 36 of 113 for Section A-A.
See sheets 35 thru 37 of 113 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 35 of 113 for parapet reinforcement.
See sheet 34 of 113 for Cross Section.
The "b" bars are placed concentrically.

ESCA CONSULTANTS, INC.

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	DRAWN - DWH	08/13	REVISED -
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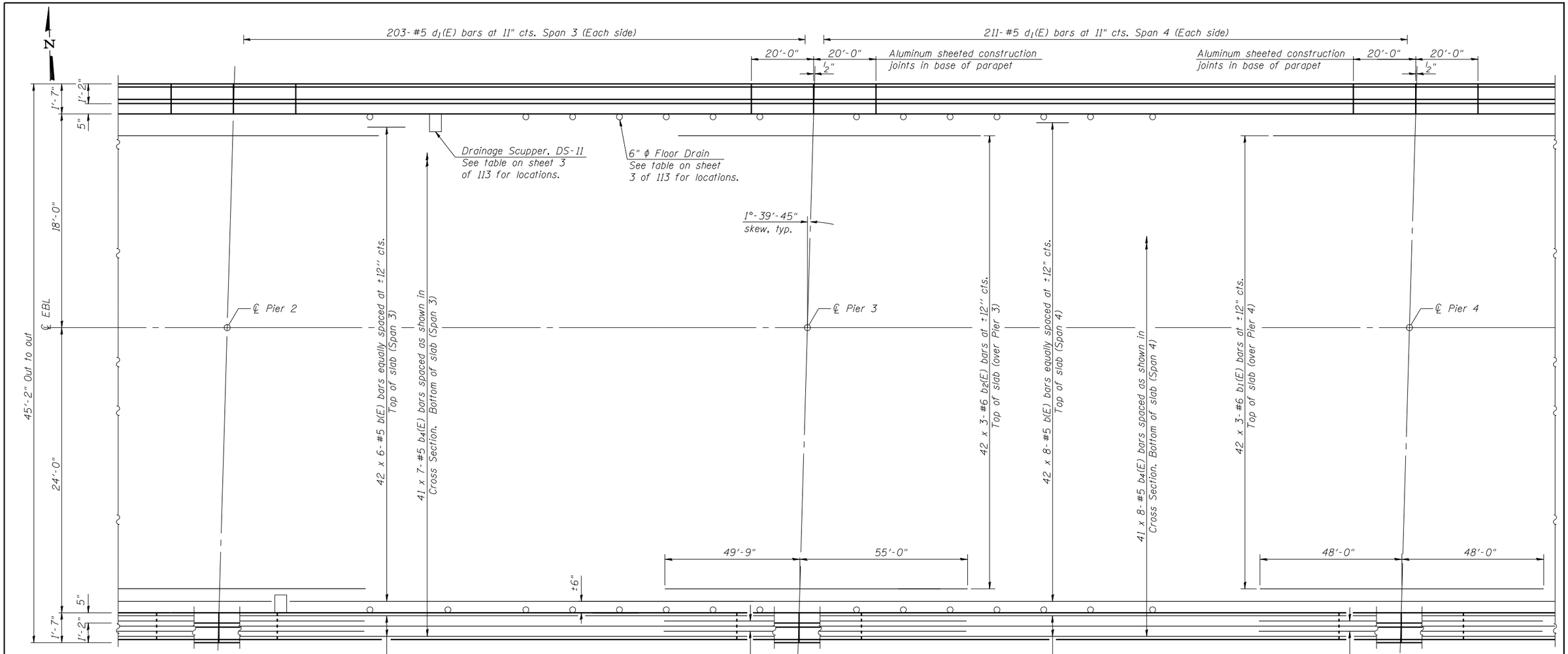
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE PLAN – EB
STRUCTURE NO. 026-0107
SHEET NO. 31 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	111
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



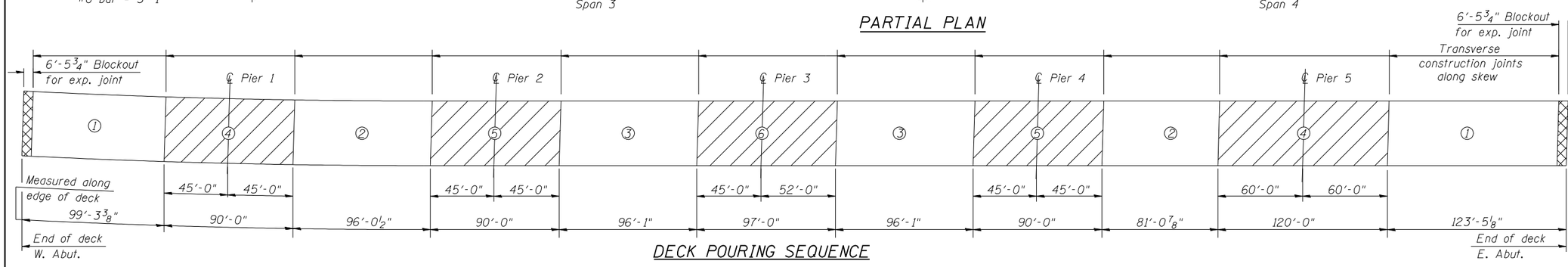
MINIMUM BAR LAP
(Slab)

#5 bar = 2'-7"
#6 bar = 3'-1"

406-#5 a(E) bars at 5½" cts. Top (Span 3)
248-#5 a1(E) bars at 9" cts. Bottom (Span 3)
406-#6 a2(E) bars at 5½" cts. Top (Span 3)
(Lap with each a(E) bar)
186'-1"
Span 3

421-#5 a(E) bars at 5½" cts. Top (Span 4)
257-#5 a1(E) bars at 9" cts. Bottom (Span 4)
421-#6 a2(E) bars at 5½" cts. Top (Span 4)
(Lap with each a(E) bar)
193'-1"
Span 4

PARTIAL PLAN



DECK POURING SEQUENCE

Note:
When the deck pour is stopped for the day at one or more of the transverse bonded construction joints in the deck pouring sequence as shown, the next pour shall not begin until both of the following are met:

1. At least 72 hours shall have elapsed from the end of the previous pour.
2. The concrete strength shall have attained a minimum flexural strength of 650 psi or a minimum compressive strength of 3500 psi.

ESCA CONSULTANTS, INC.

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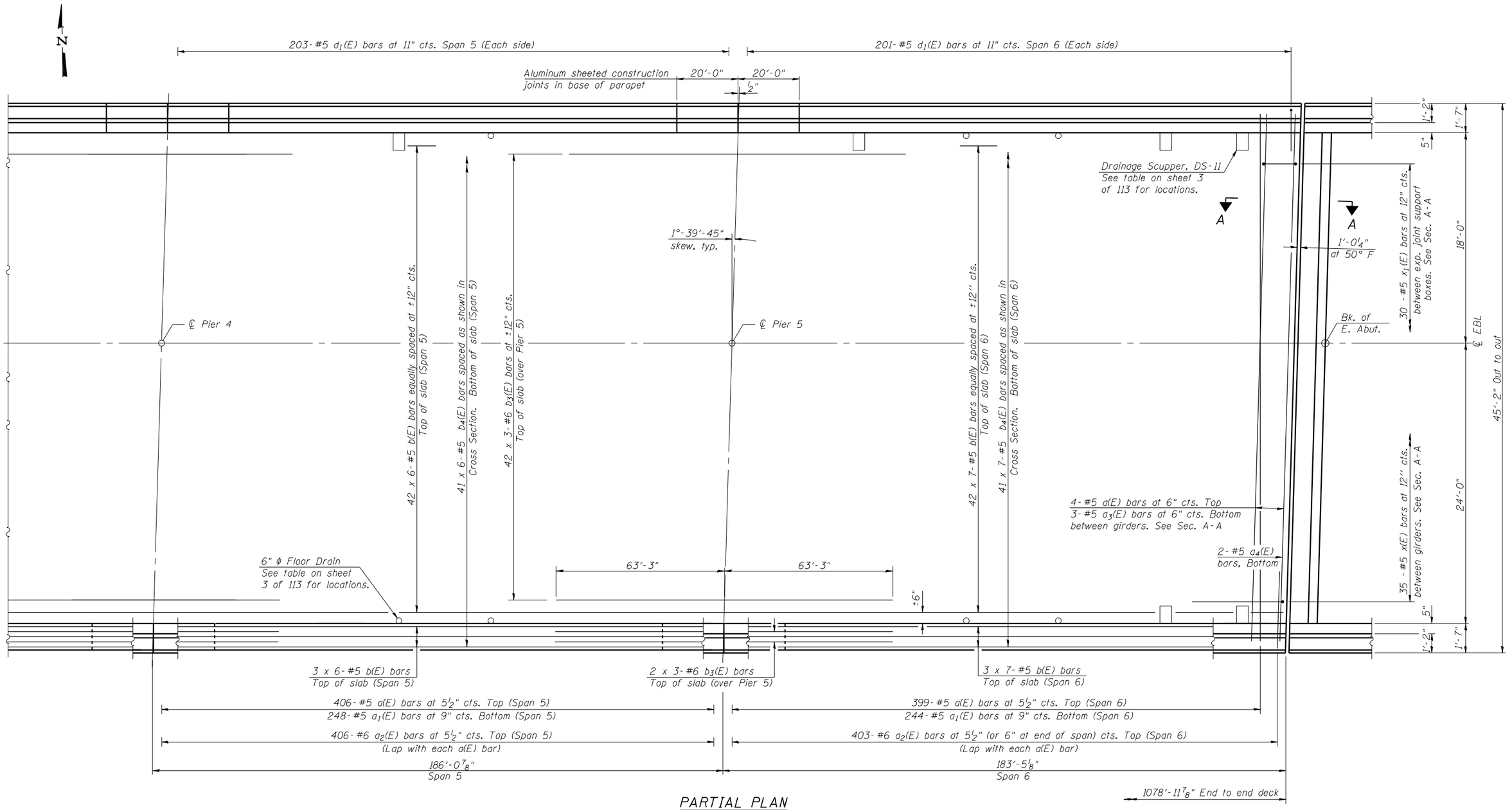
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:01:55 PM	CHECKED - ELH	01/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE PLAN – EB
STRUCTURE NO. 026-0107
SHEET NO. 32 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	112
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



PARTIAL PLAN

MINIMUM BAR LAP

(Slab)

#5 bar = 2'-7"
#6 bar = 3'-1"

Notes:
See sheet 36 of 113 for Section A-A.
See sheets 35 thru 37 of 113 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 35 of 113 for parapet reinforcement.
See sheet 34 of 113 for Cross Section.

ESCA CONSULTANTS, INC. BRIDGE & STRUCTURAL ENGINEERS

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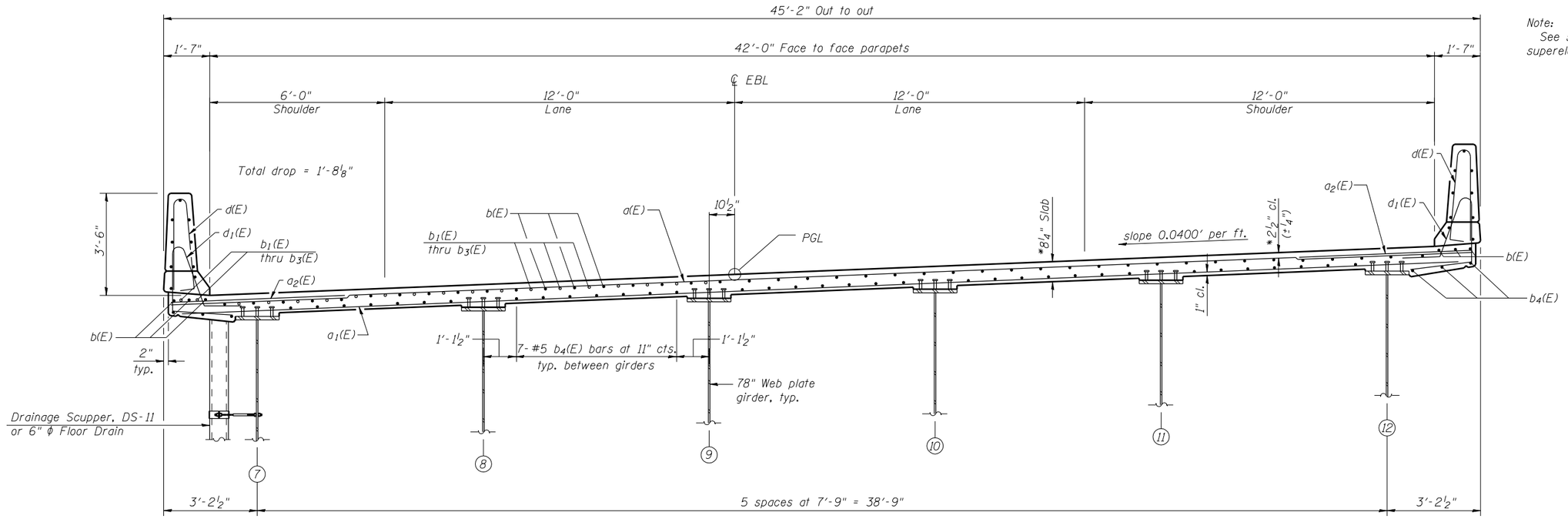
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:03:23 PM	CHECKED - ELH	01/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE PLAN – EB
STRUCTURE NO. 026-0107
SHEET NO. 33 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	113
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

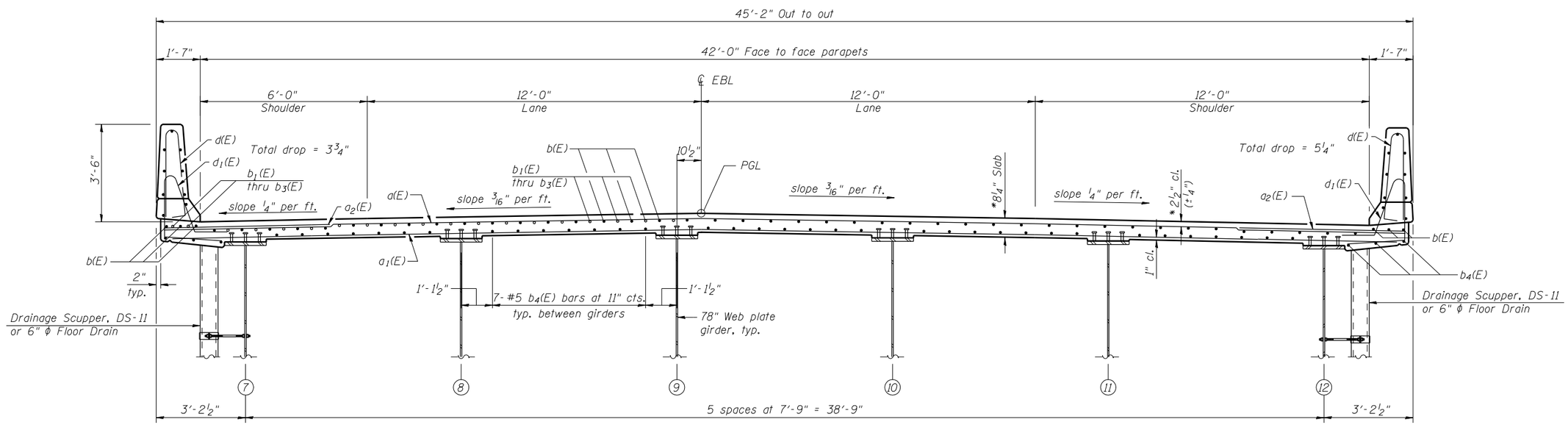


Note:
See sheet 16 of 113 for superelevation transition details.

CROSS SECTION - FULL SUPERELEVATION

(Looking East)

* Prior to grinding.



CROSS SECTION - NORMAL CROWN

(Looking East)

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - SHL	06/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
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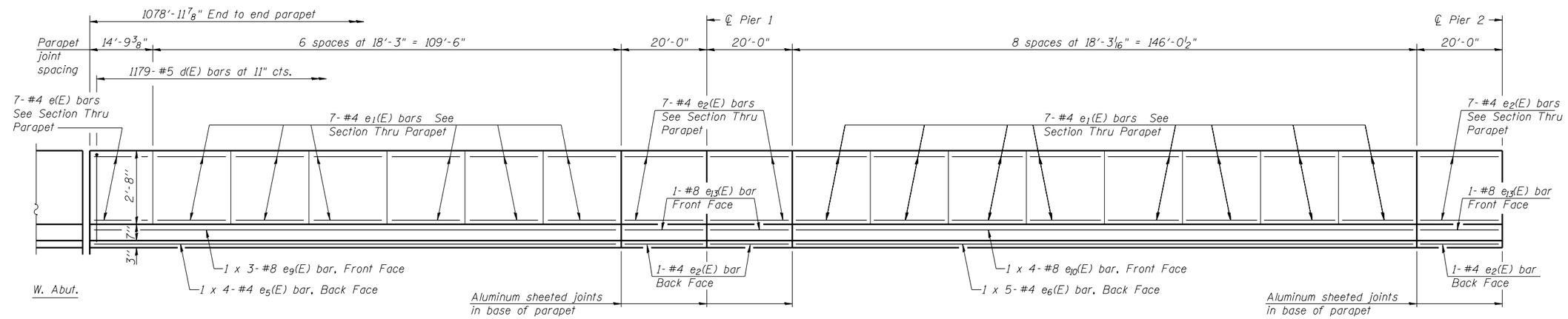
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK CROSS SECTION – EB
STRUCTURE NO. 026-0107
SHEET NO. 34 OF 113 SHEETS

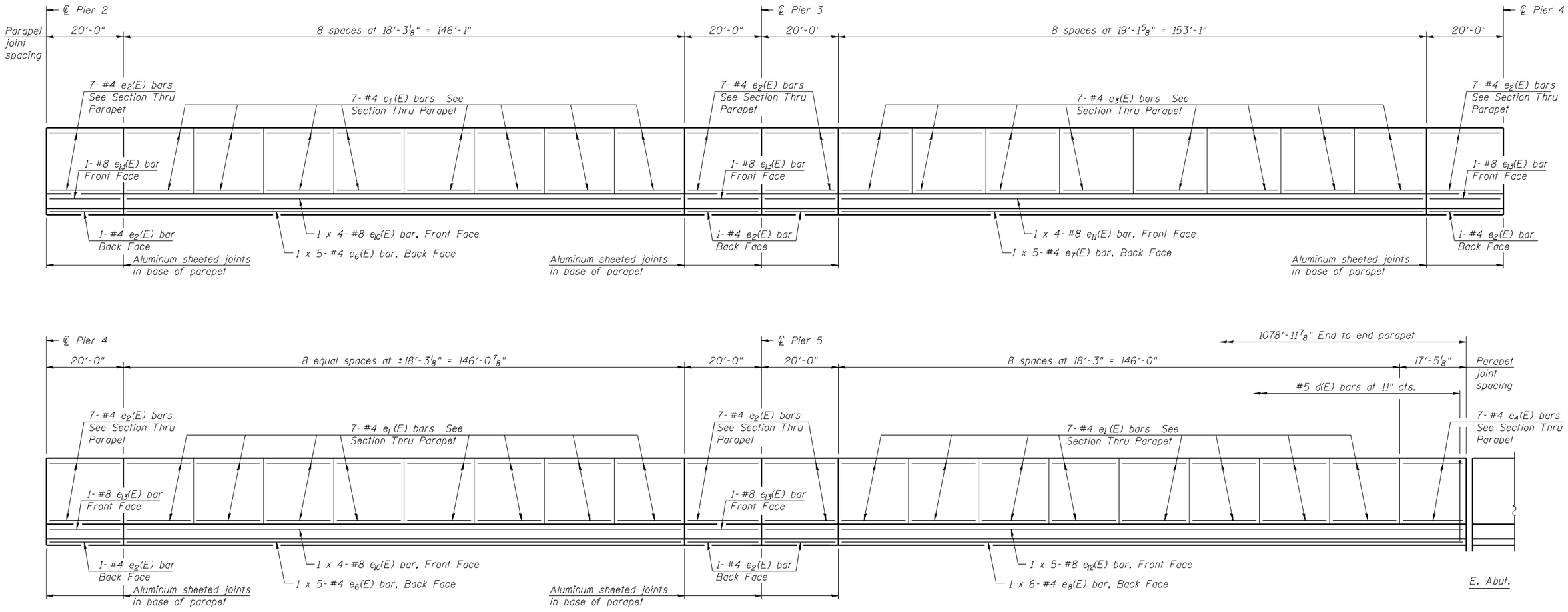
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	114
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



Notes:
Bars indicated thus 1 x 2- #8 etc. indicates 1 line of bars with 2 lengths per line.
See sheet 37 of 113 for Bill of Material.

MINIMUM BAR LAP

(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"



INSIDE ELEVATION OF NORTH PARAPET

(South parapet similar)

ESCA CONSULTANTS, INC.

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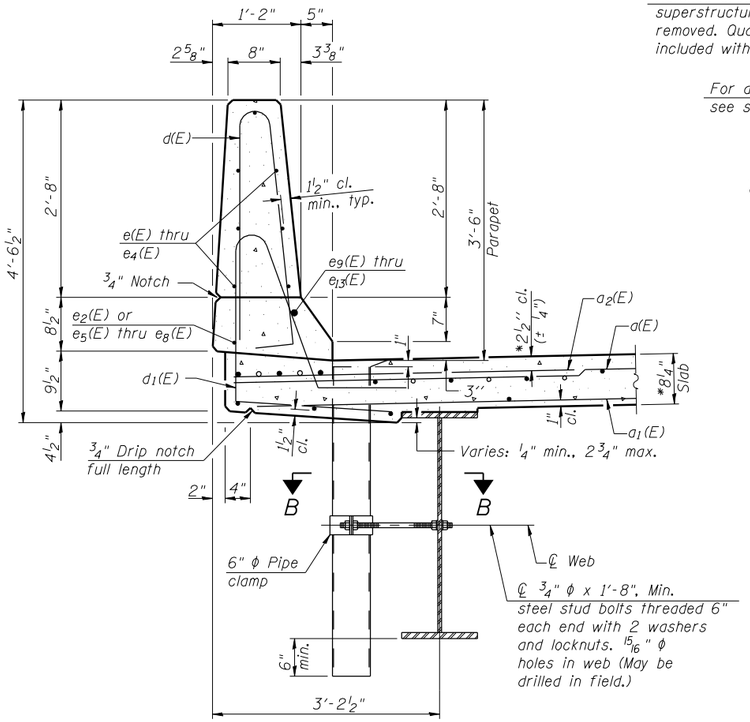
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:04:58 PM	CHECKED - ELH	10/13	REVISED -	

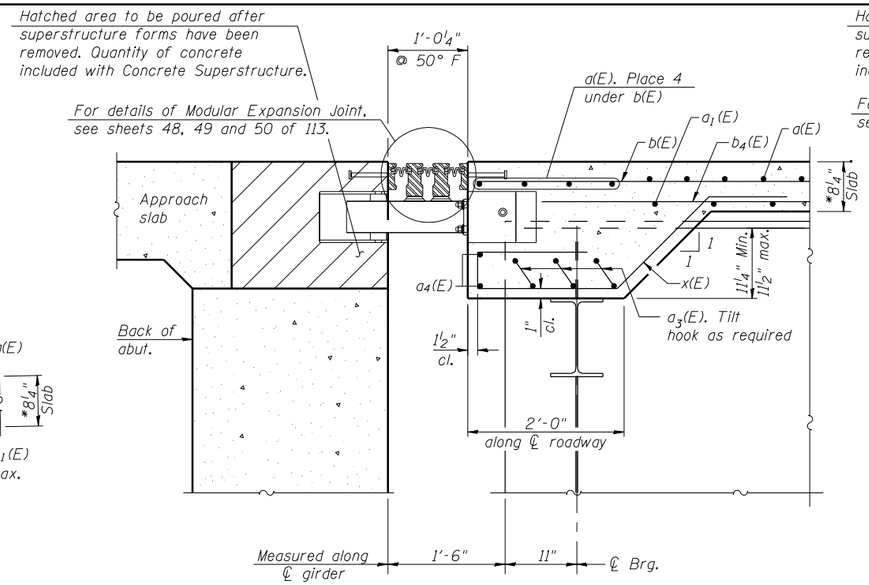
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS – EB
STRUCTURE NO. 026-0107
SHEET NO. 35 OF 113 SHEETS

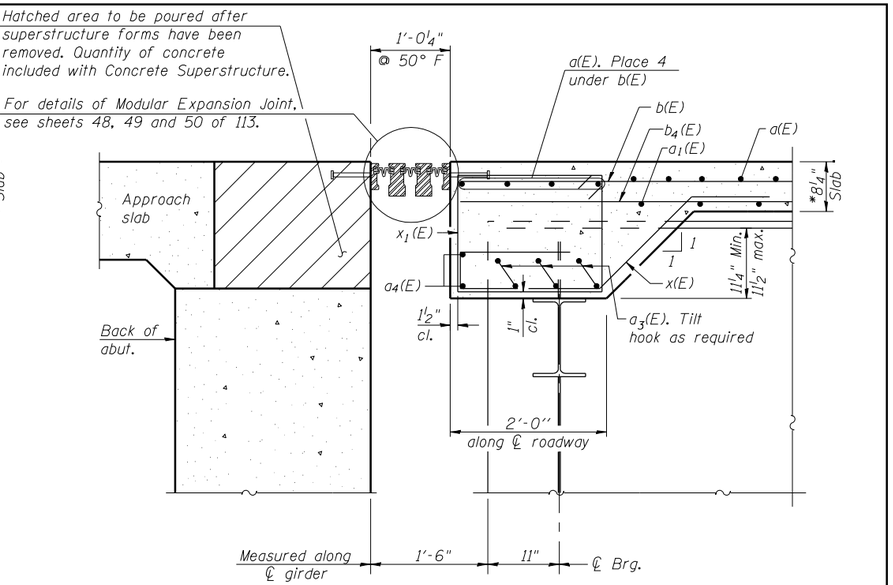
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	115
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



SECTION THRU PARAPET

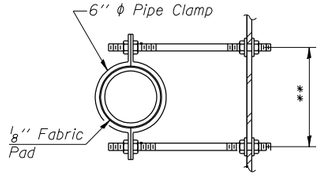


SECTION A-A
(At support boxes)

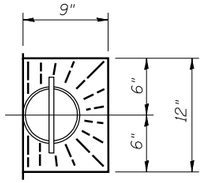


SECTION A-A
(Between support boxes)

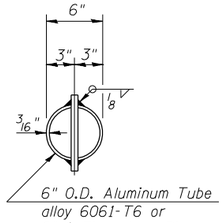
*Prior to grinding.



SECTION B-B
** Dimension as required by Pipe Clamp

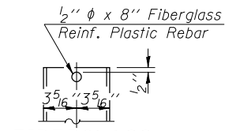


TOP PLAN

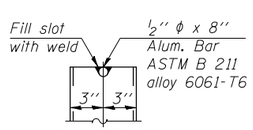


6" O.D. Aluminum Tube alloy 6061-T6 or 6" ϕ Fiberglass Pipe

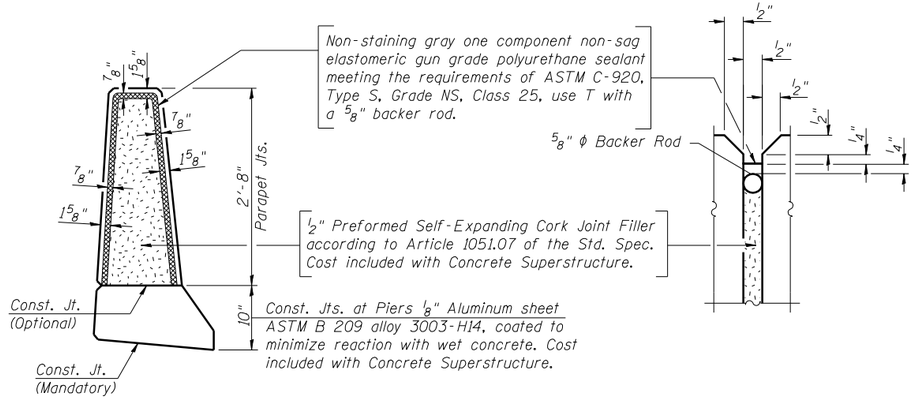
TOP PLAN
(Showing Aluminum Tube)



FIBERGLASS PIPE



ALUMINUM TUBE



PARAPET JOINT DETAILS

Notes:
Drains shall be located clear of all cross frames.
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the Standard Specifications for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP1 prior to painting.
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.
Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.

ESCA CORPORATION, INC.	USER NAME = has	DESIGNED - SHL	06/13	REVISED -	
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		DRAWN - DWH	08/13	REVISED -	
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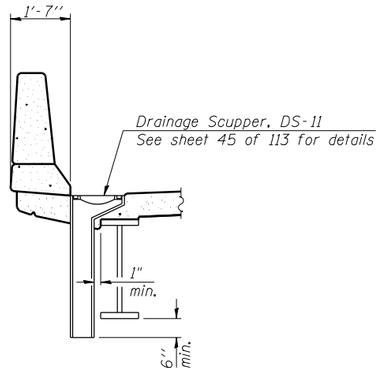
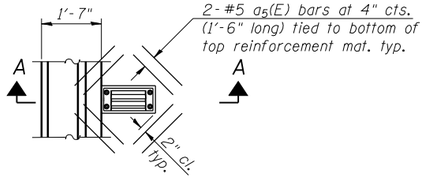
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS – EB
STRUCTURE NO. 026-0107
SHEET NO. 36 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	116
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			

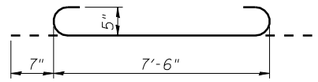


SECTION A-A

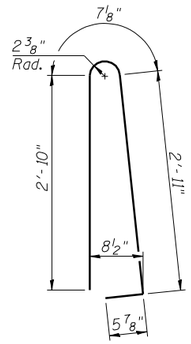


PLAN AT SCUPPER

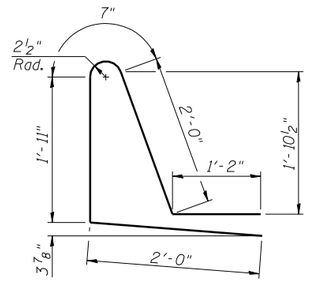
Note:
Cut longitudinal reinforcement to clear drainage scuppers.



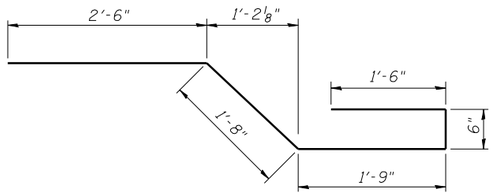
a3(E) BAR



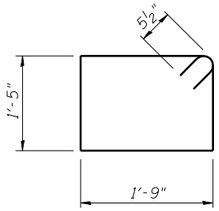
BAR d(E)



BAR d1(E)



BAR x(E)



BAR x1(E)

SUPERSTRUCTURE BILL OF MATERIAL

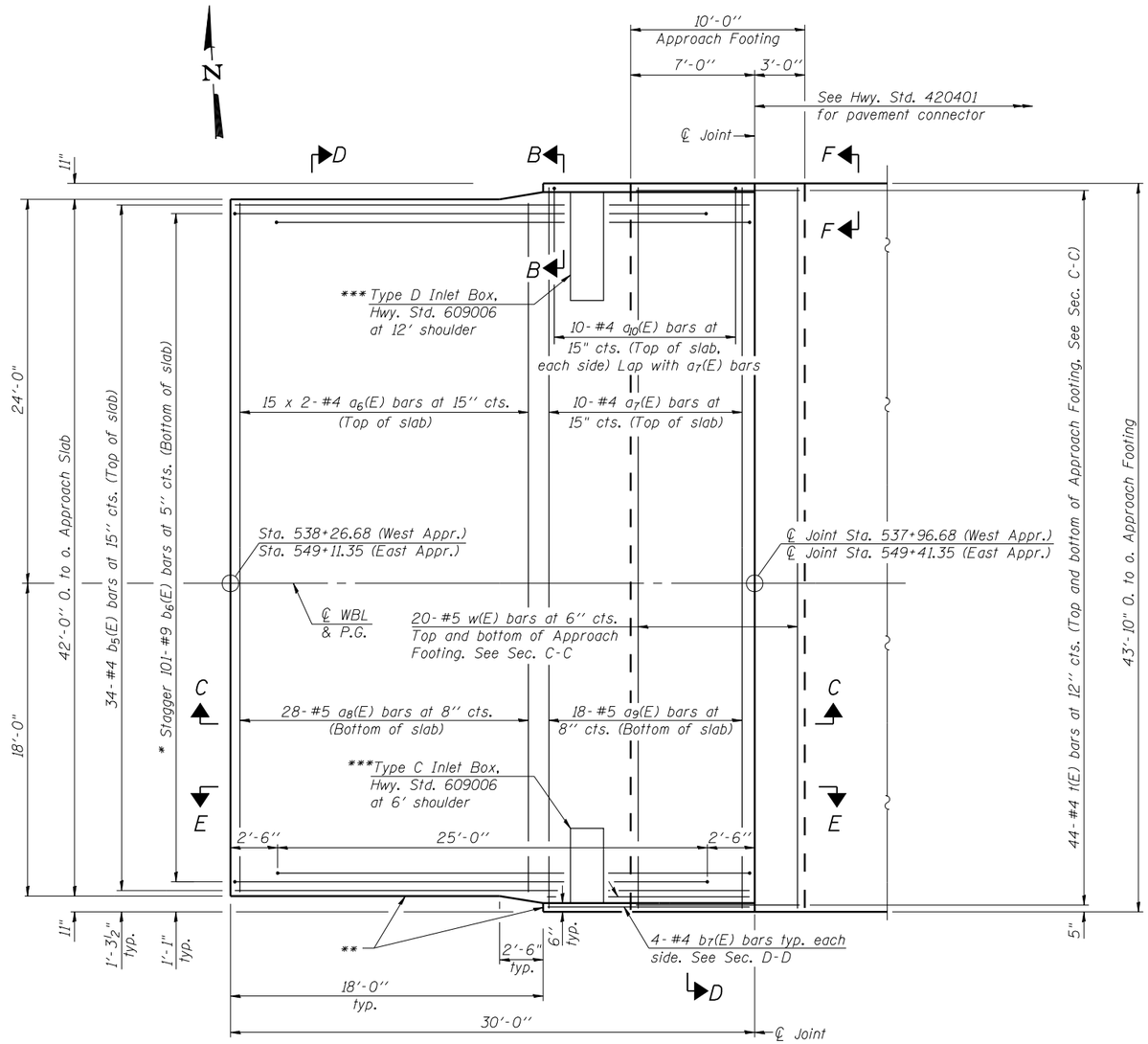
Bar	No.	Size	Length	Shape
a(E)	2359	#5	44'-7"	
a1(E)	1437	#5	43'-6"	
a2(E)	4718	#6	6'-6"	
a3(E)	30	#5	8'-8"	
a4(E)	4	#5	38'-5"	
a5(E)	120	#5	1'-6"	
b(E)	1872	#5	30'-3"	
b1(E)	414	#6	34'-1"	
b2(E)	138	#6	37'-0"	
b3(E)	138	#6	44'-3"	
b4(E)	1640	#5	29'-6"	
d(E)	2358	#5	6'-10"	
d1(E)	2358	#5	7'-8"	
e(E)	14	#4	14'-6"	
e1(E)	532	#4	17'-11"	
e2(E)	160	#4	19'-8"	
e3(E)	112	#4	18'-10"	
e4(E)	14	#4	17'-1"	
e5(E)	8	#4	32'-6"	
e6(E)	30	#4	30'-9"	
e7(E)	10	#4	32'-2"	
e8(E)	12	#4	28'-10"	
e9(E)	6	#8	44'-10"	
e10(E)	24	#8	40'-4"	
e11(E)	8	#8	42'-1"	
e12(E)	10	#8	36'-9"	
e13(E)	20	#8	19'-8"	
x(E)	70	#5	7'-11"	
x1(E)	60	#5	7'-3"	

Reinforcement Bars, Epoxy Coated	Pound	423470
Concrete Superstructure	Cu. Yds.	1631.3

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

USER NAME = has	DESIGNED - SHL	06/13	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS – EB STRUCTURE NO. 026-0107
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -		
	DRAWN - DWH	08/13	REVISED -		
PLOT DATE = 1/28/2014 1:06:44 PM	CHECKED - ELH	11/13	REVISED -		SHEET NO. 37 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	117
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



PLAN

(East approach shown; west approach opposite hand)

* Tilt #9 $b_6(E)$ bars as required to maintain clearance.

** Preformed flexible foam expansion joint filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of wingwall. Typ. each wingwall.

*** See Roadway plans for details and quantities.

MINIMUM BAR LAP

(Approach slab)

#4 bar = 2'-4"

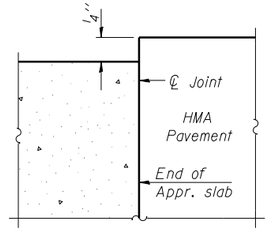
Notes:

See sheet 39 of 113 for Sections C-C & D-D and View E-E.

$a_6(E)$ thru $a_{10}(E)$ bar spacings measured along ℄ WBL.

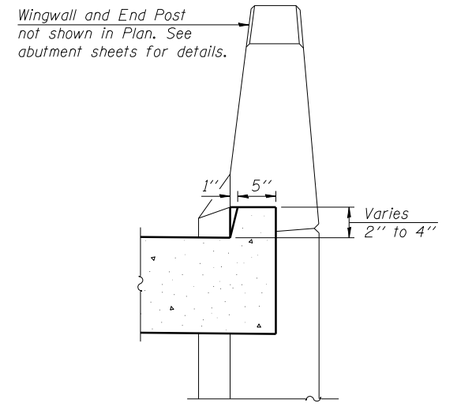
Bars indicated thus 15 x 2-#4 etc. indicates 15 lines of bars with 2 lengths per line.

Order all bars full length. Cut bars in field to fit inlet boxes.

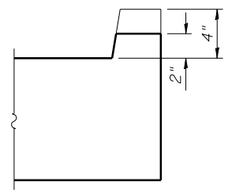


FLEXIBLE PAVEMENT

DETAIL A



VIEW B-B



VIEW F-F

ESCA CONSULTANTS, INC.

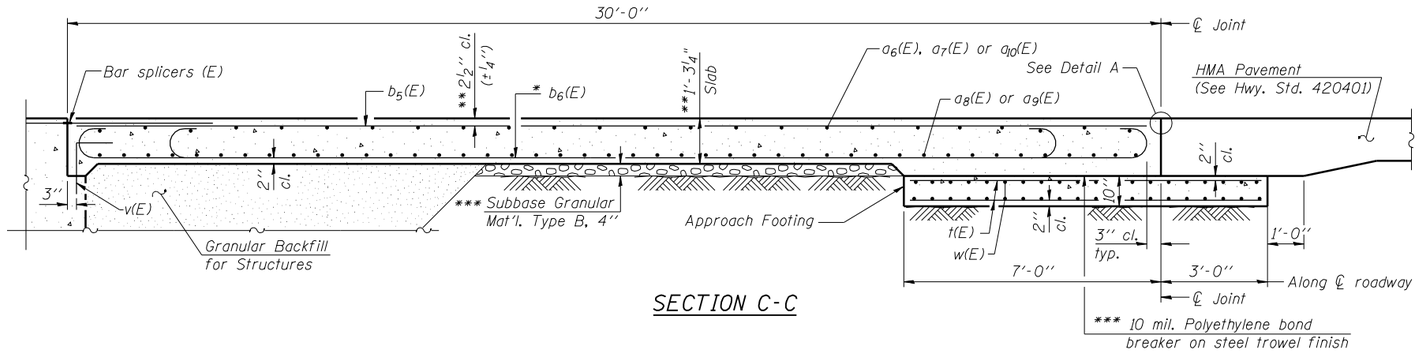
USER NAME = has	DESIGNED - SHL	06/13	REVISED -		
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -		
	DRAWN - DWH/JPC	08/13	REVISED -		
PLOT DATE = 1/28/2014 1:07:36 PM	CHECKED - ELH	10/13	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

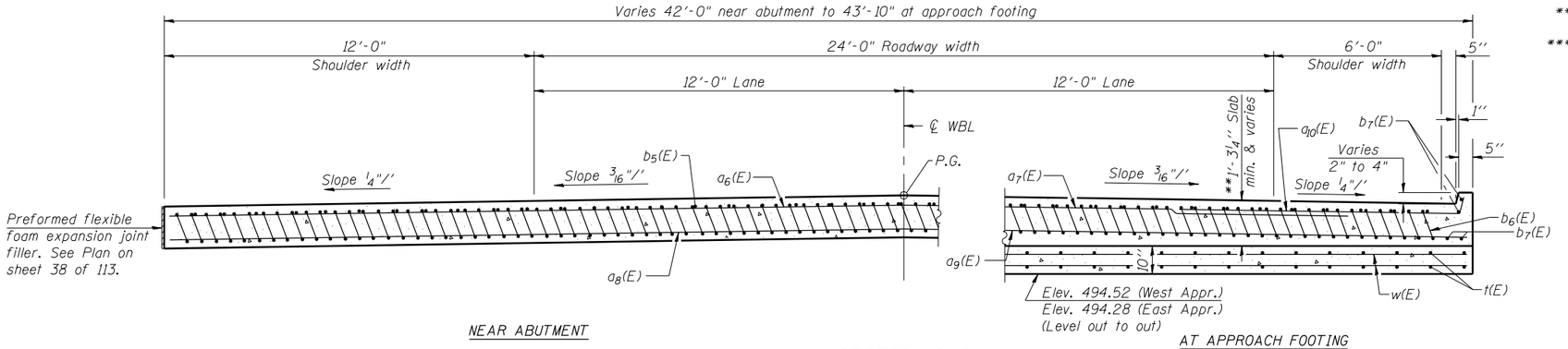
BRIDGE APPROACH SLAB DETAILS – WB
STRUCTURE NO. 026-0106

SHEET NO. 38 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	118
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



SECTION C-C

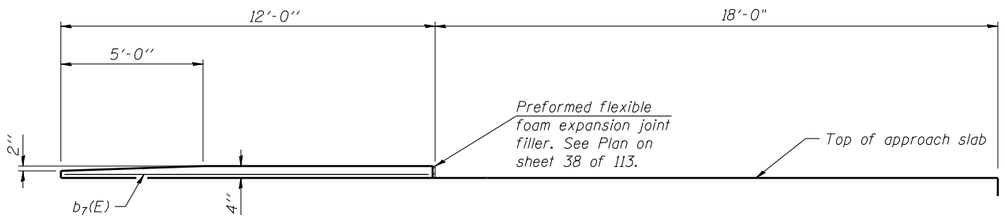


NEAR ABUTMENT

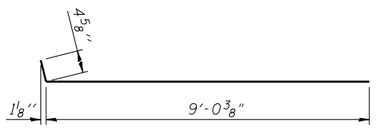
AT APPROACH FOOTING

SECTION D-D

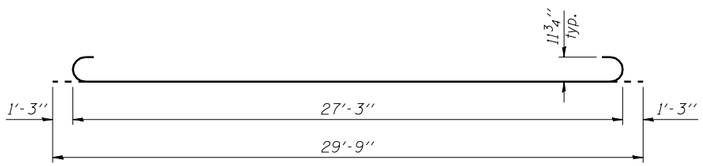
(See Plan for dimensions not shown)



VIEW E-E



BAR a10(E)



BAR b6(E)

Notes:

See sheet 38 of 113 for Detail A and View B-B.
Approach slab and curb concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v(E) bar details, see sheets 74 and 77 of 113.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet 107 of 113.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill for Structures and drainage treatment details, see sheet 3 of 113.

* Tilt #9 $b_6(E)$ bars as required to maintain clearance.

** Prior to grinding.

*** Cost included with Concrete Superstructure.

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_6(E)$	60	#4	22'-5"	———
$a_7(E)$	20	#4	30'-0"	———
$a_8(E)$	56	#5	41'-8"	———
$a_9(E)$	36	#5	43'-6"	———
$a_{10}(E)$	40	#4	9'-5"	———
$b_5(E)$	68	#4	29'-8"	———
$b_6(E)$	202	#9	29'-9"	———
$b_7(E)$	16	#4	11'-8"	———
t(E)	176	#4	9'-8"	———
w(E)	80	#5	43'-6"	———
Concrete Superstructure			Cu. Yd.	127.6
Concrete Structures			Cu. Yd.	27.2
Reinforcement Bars, Epoxy Coated			Pound	32290

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = has		DESIGNED - SHL	06/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH/JPC	08/13	REVISED -	
PLOT DATE = 1/28/2014	1:09:27 PM	CHECKED - ELH	10/13	REVISED -	

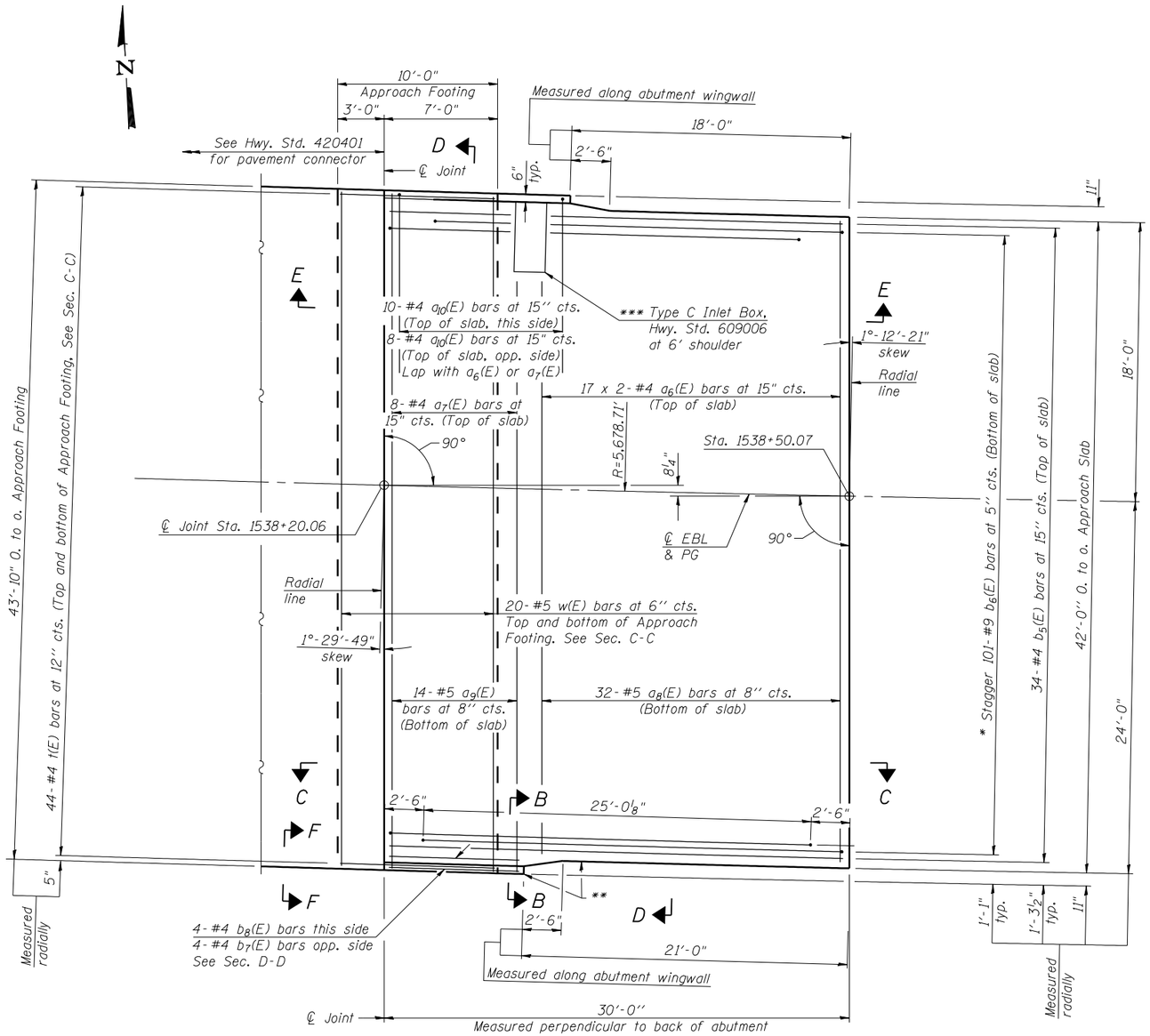
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS – WB
STRUCTURE NO. 026-0106

SHEET NO. 39 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	119
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT AID		

Notes:
See sheet 41 of 113 for Sections C-C & D-D and View E-E.
$a_6(E)$ thru $a_{10}(E)$ bar spacings measured perpendicular to back of abutment.
Bars indicated thus 15 x 2-#4 etc. indicates 15 lines of bars with 2 lengths per line.
Order all bars full length. Cut bars in field to fit inlet box.

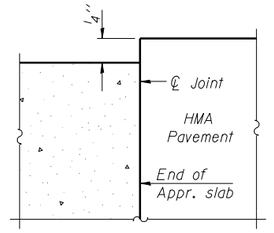


PLAN - WEST APPROACH

* Tilt #9 $b_6(E)$ bars as required to maintain clearance.

** Preformed flexible foam expansion joint filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of wingwall. Typ. each wingwall.

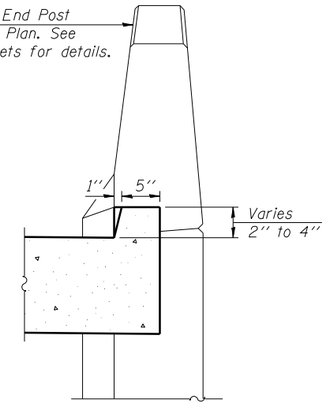
*** See Roadway plans for details and quantities.



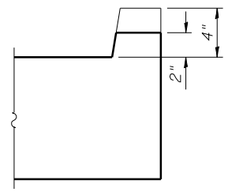
FLEXIBLE PAVEMENT

DETAIL A

MINIMUM BAR LAP
(Approach slab)
#4 bar = 2'-4"



VIEW B-B



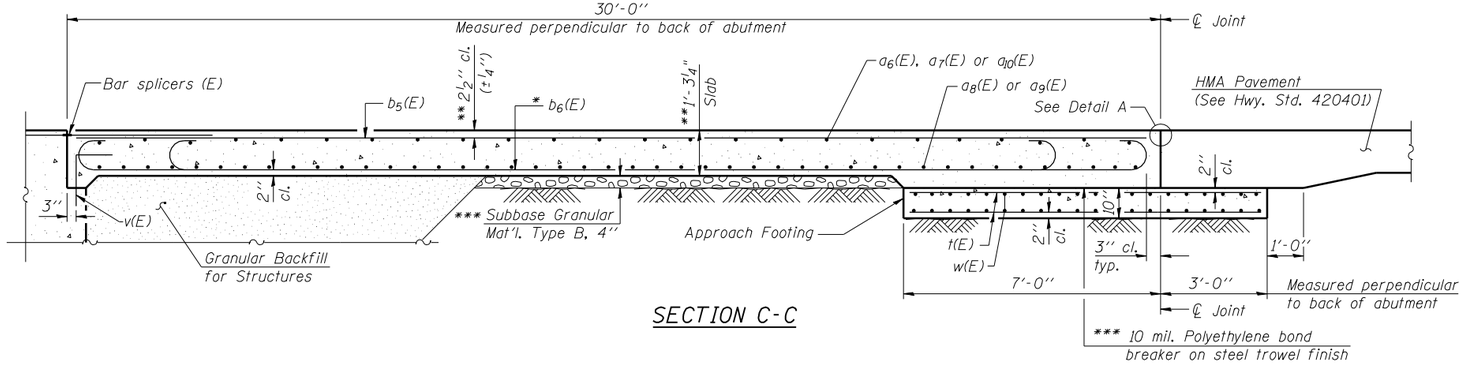
VIEW F-F

ESCA CORPORATION, INC.	USER NAME = has	DESIGNED - MTD	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - SHL	08/13	REVISED -	
		DRAWN - DWH/JPC	08/13	REVISED -	
	PLOT DATE = 1/28/2014 1:10:08 PM	CHECKED - ELH	10/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

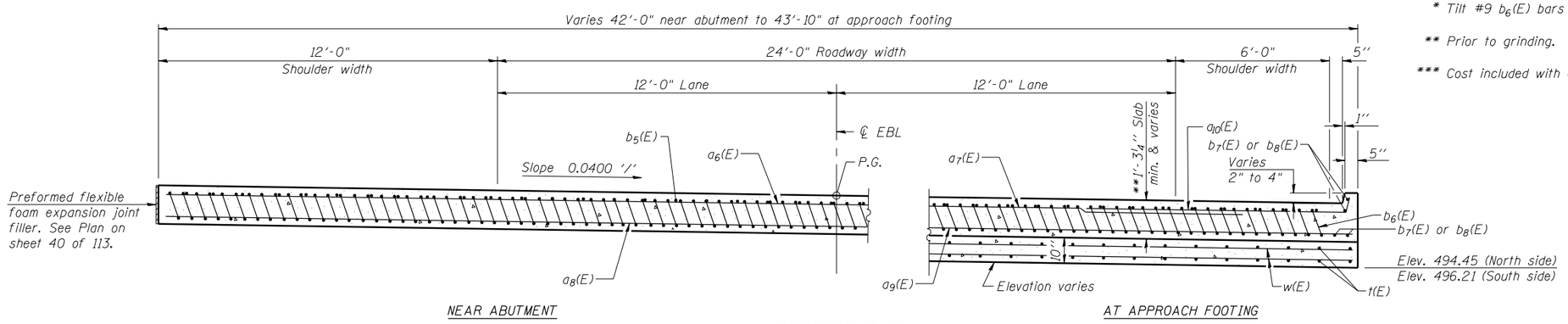
WEST BRIDGE APPROACH SLAB DETAILS – EB
STRUCTURE NO. 026-0107
SHEET NO. 40 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	120
		CONTRACT NO. 74175		
		ILLINOIS FED. AID PROJECT		



SECTION C-C

Notes:
See sheet 40 of 113 for Detail A and View B-B.
Approach slab and curb concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v(E) bar details, see sheet 80 of 113.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet 107 of 113.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill for Structures and drainage treatment details, see sheet 3 of 113.



NEAR ABUTMENT

AT APPROACH FOOTING

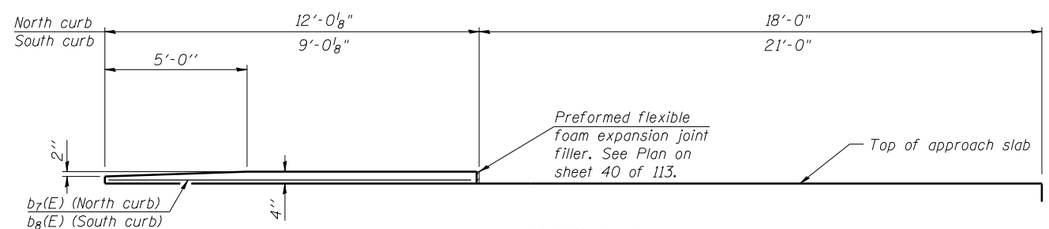
SECTION D-D

(See Plan for dimensions not shown, horizontal dimensions measured radially)

* Tilt #9 $b_6(E)$ bars as required to maintain clearance.

** Prior to grinding.

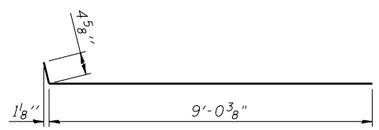
*** Cost included with Concrete Superstructure.



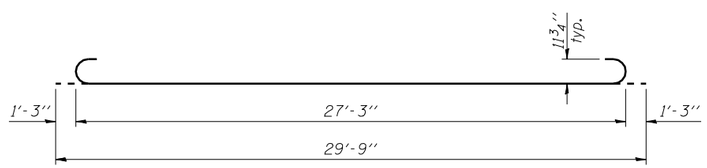
VIEW E-E

WEST APPROACH
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_6(E)$	34	#4	22'-5"	———
$a_7(E)$	8	#4	30'-0"	———
$a_8(E)$	32	#5	41'-8"	———
$a_9(E)$	14	#5	43'-6"	———
$a_{10}(E)$	18	#4	9'-5"	———
$b_5(E)$	34	#4	29'-8"	———
$b_6(E)$	101	#9	29'-9"	———
$b_7(E)$	4	#4	11'-8"	———
$b_8(E)$	4	#4	8'-8"	———
t(E)	88	#4	9'-8"	———
w(E)	40	#5	43'-6"	———
Concrete Superstructure			Cu. Yd.	61.1
Concrete Structures			Cu. Yd.	13.6
Reinforcement Bars, Epoxy Coated			Pound	16140



BAR $a_{10}(E)$



BAR $b_6(E)$

ESCA CONSULTANTS, INC.

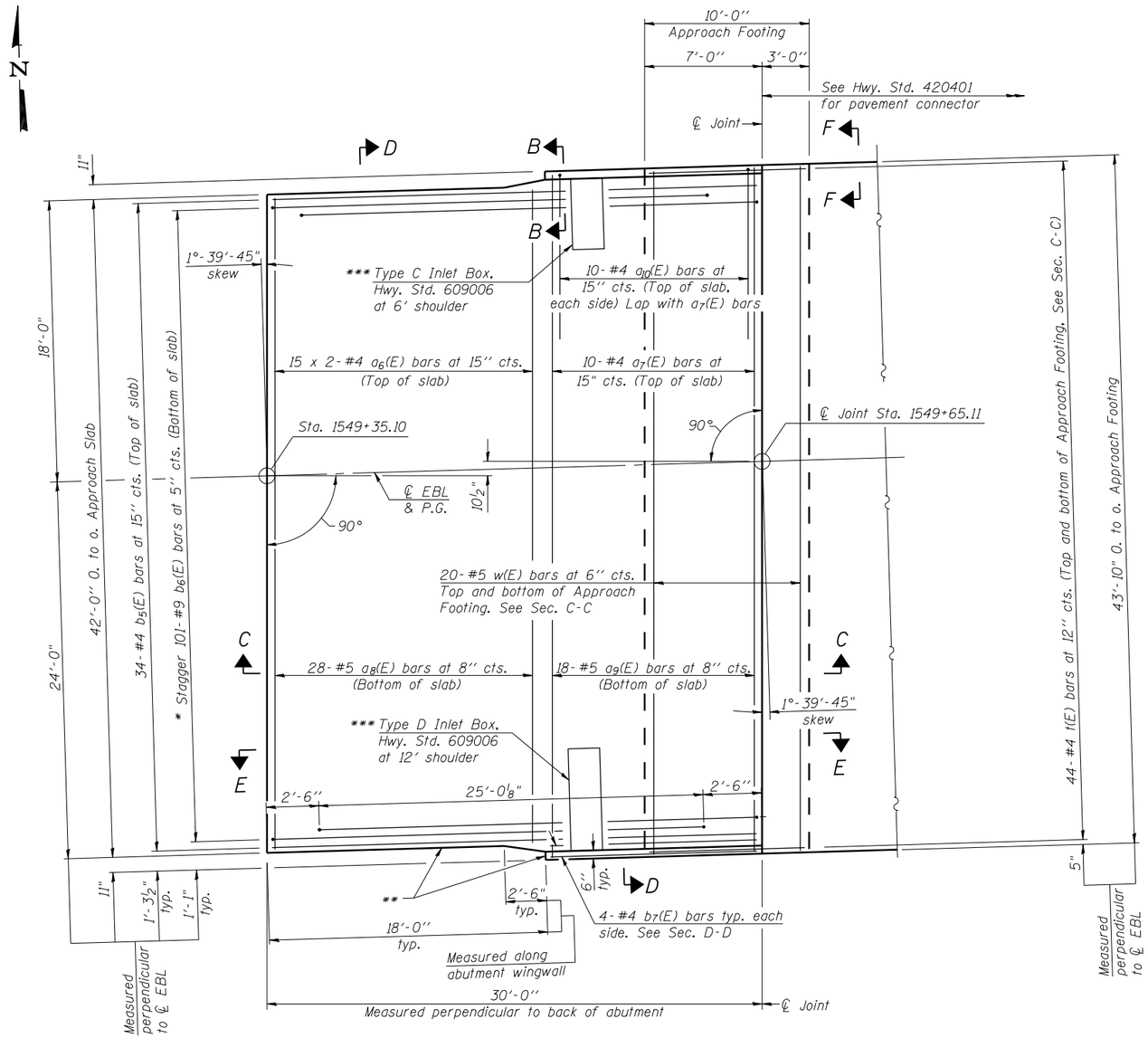
USER NAME = has		DESIGNED - MTD	08/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - SHL	08/13	REVISED -	
		DRAWN - DWH/JPC	08/13	REVISED -	
PLOT DATE = 1/28/2014	1:11:06 PM	CHECKED - ELH	11/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST BRIDGE APPROACH SLAB DETAILS – EB
STRUCTURE NO. 026-0107

SHEET NO. 41 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(13))BR	FAYETTE	277	121
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			



PLAN - EAST APPROACH

* Tilt #9 $b_6(E)$ bars as required to maintain clearance.

** Preformed flexible foam expansion joint filler according to Article 1051.09 of the Std. Specifications; full depth of slab, full length of wingwall. Typ. each wingwall.

*** See Roadway plans for details and quantities.

MINIMUM BAR LAP

(Approach slab)

#4 bar = 2'-4"

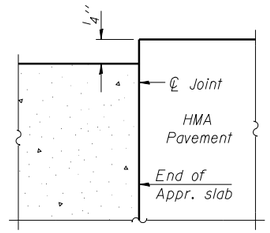
Notes:

See sheet 43 of 113 for Sections C-C & D-D and View E-E.

$a_6(E)$ thru $a_{10}(E)$ bar spacings measured perpendicular to back of abutment.

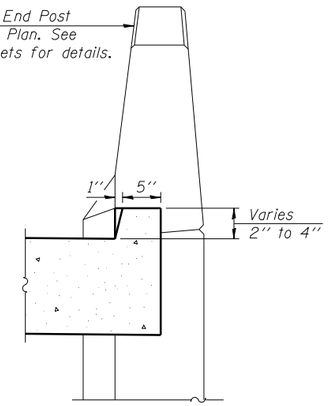
Bars indicated thus 15 x 2-#4 etc. indicates 15 lines of bars with 2 lengths per line.

Order all bars full length. Cut bars in field to fit inlet boxes.

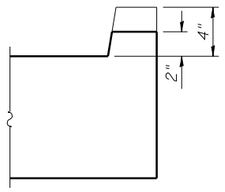


FLEXIBLE PAVEMENT

DETAIL A



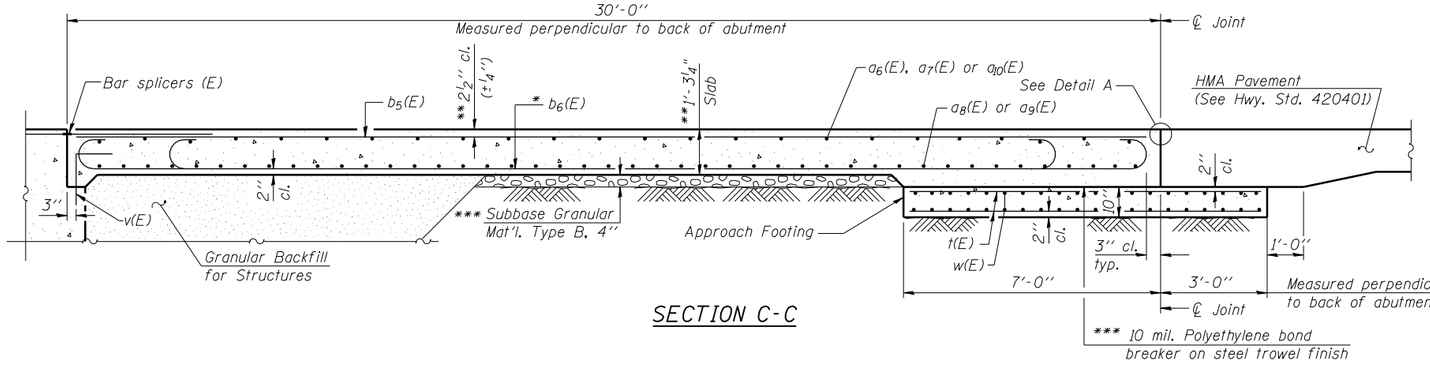
VIEW B-B



VIEW F-F

(Sheet 1 of 2)

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - MTD	08/13	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EAST BRIDGE APPROACH SLAB DETAILS – EB STRUCTURE NO. 026-0107	F.A.I. RTE. 70
	ESCA PROJECT NO. 1070.09	CHECKED - SHL	08/13	REVISED -			SECTION (26-3B-1, 3B-1(3))BR
		DRAWN - DWH/JPC	08/13	REVISED -			COUNTY FAYETTE
	PLOT DATE = 1/28/2014 1:11:42 PM	CHECKED - ELH	10/13	REVISED -		SHEET NO. 42 OF 113 SHEETS	TOTAL SHEETS 277
							SHEET NO. 122
							CONTRACT NO. 74175
							ILLINOIS FED. AID PROJECT



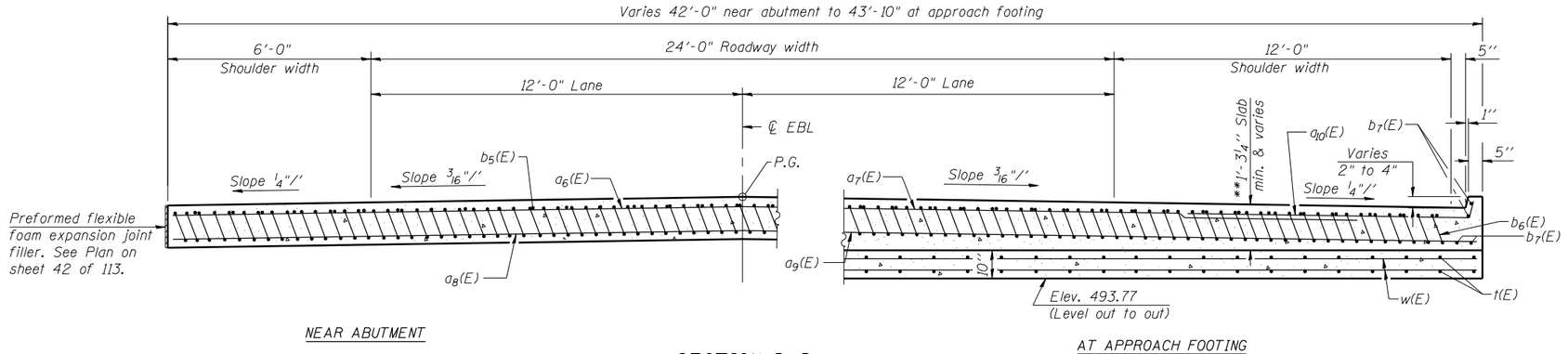
SECTION C-C

Notes:
See sheet 42 of 113 for Detail A and View B-B.
Approach slab and curb concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v(E) bar details, see sheet 83 of 113.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet 107 of 113.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill for Structures and drainage treatment details, see sheet 3 of 113.

* Tilt #9 $b_6(E)$ bars as required to maintain clearance.

** Prior to grinding.

*** Cost included with Concrete Superstructure.

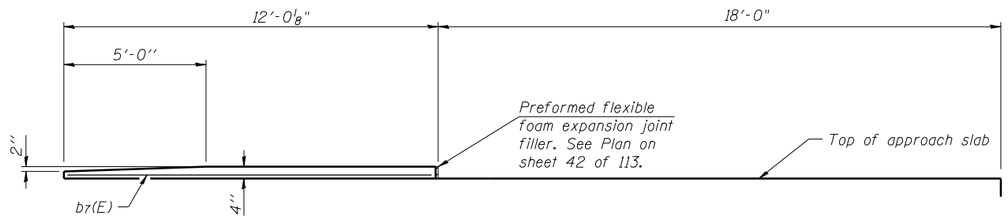


NEAR ABUTMENT

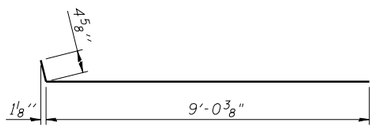
AT APPROACH FOOTING

SECTION D-D

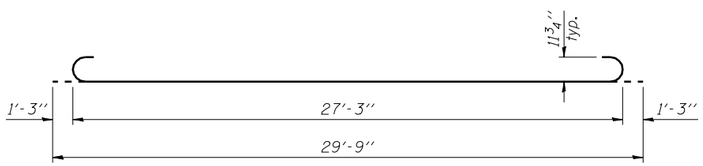
(See Plan for dimensions not shown)



VIEW E-E



BAR $a_{10}(E)$



BAR $b_6(E)$

EAST APPROACH
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_6(E)$	30	#4	22'-5"	———
$a_7(E)$	10	#4	30'-0"	———
$a_8(E)$	28	#5	41'-8"	———
$a_9(E)$	18	#5	43'-6"	———
$a_{10}(E)$	20	#4	9'-5"	———
$b_5(E)$	34	#4	29'-8"	———
$b_6(E)$	101	#9	29'-9"	———
$b_7(E)$	8	#4	11'-8"	———
$t(E)$	88	#4	9'-8"	———
$w(E)$	40	#5	43'-6"	———
Concrete Superstructure			Cu. Yd.	63.8
Concrete Structures			Cu. Yd.	13.6
Reinforcement Bars, Epoxy Coated			Pound	16150

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

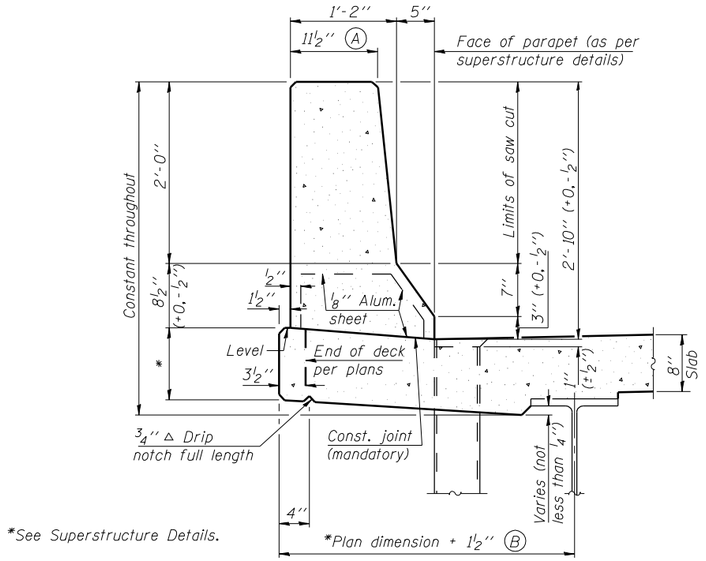
USER NAME = has		DESIGNED - MTD	08/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - SHL	08/13	REVISED -	
		DRAWN - DWH/JPC	08/13	REVISED -	
PLOT DATE = 1/28/2014	1:12:50 PM	CHECKED - ELH	11/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST BRIDGE APPROACH SLAB DETAILS – EB
STRUCTURE NO. 026-0107

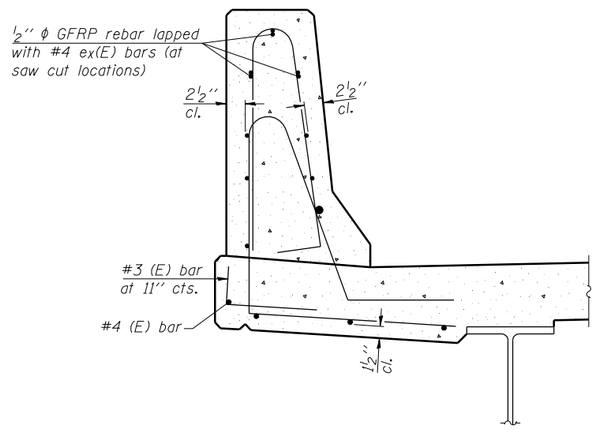
SHEET NO. 43 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	123
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



34'' F SHAPE PARAPET SECTION

(Showing dimensions)



SECTION

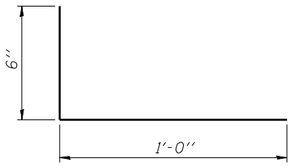
(34'' parapet shown - 42'' parapet similar)
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

GENERAL NOTES

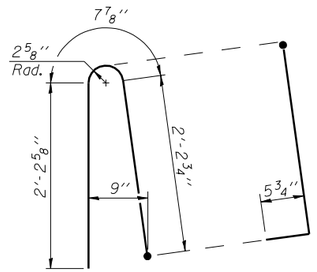
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. for 34'' parapet or = 0.0223 cu. yds./ft. for 42'' parapet.

Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.

Steel superstructure shown. Other superstructure types similar.



#3 (E) BAR

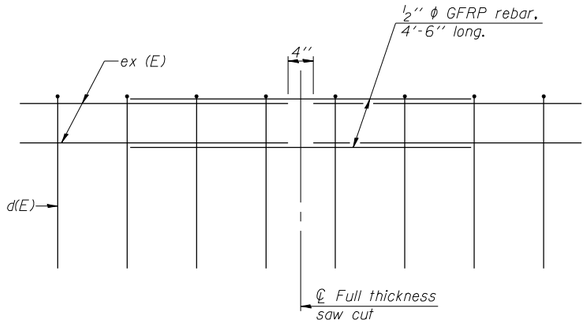


ALTERNATE BAR d(E)

(For 34'' parapet when conduit is present)

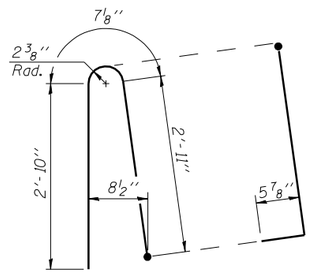
42'' F SHAPE PARAPET SECTION

(Showing dimensions)



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)



ALTERNATE BAR d(E)

(For 42'' parapet when conduit is present)

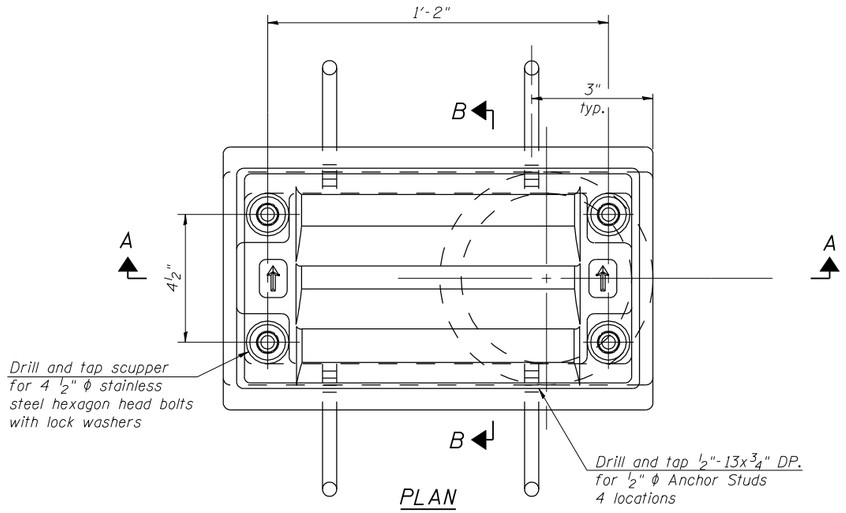
SFP 34-42 8-16-12

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 1:13:20 PM	CHECKED - ELH	08/13	REVISED -	

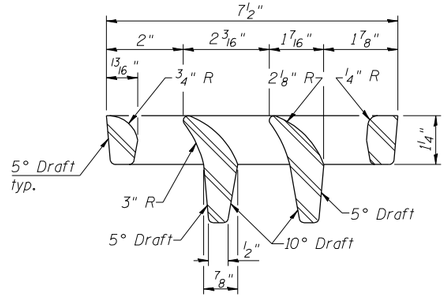
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NOS. 026-0106 & 026-0107
SHEET NO. 44 OF 113 SHEETS

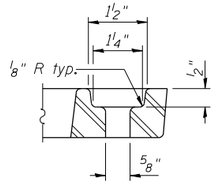
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	124
		CONTRACT NO. 74175		
		ILLINOIS FED. AID PROJECT		



PLAN



VANE GRATE DETAIL



BOLT HOLE DETAIL

Notes:

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

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

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

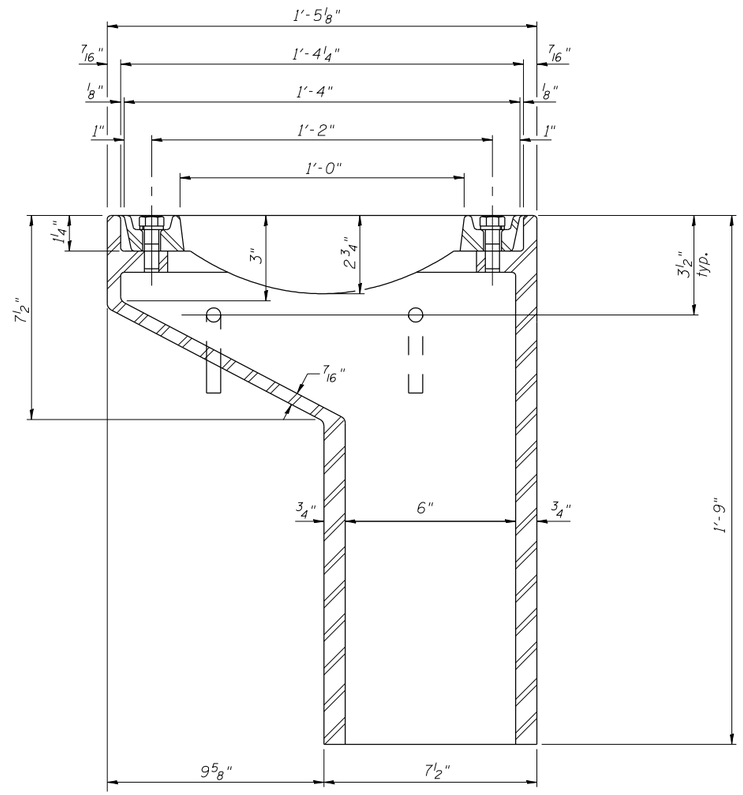
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

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

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

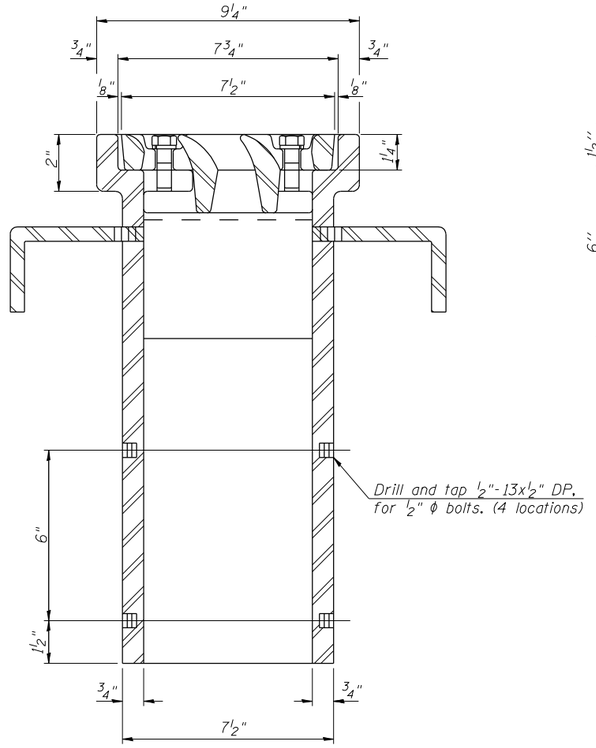
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-11.

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

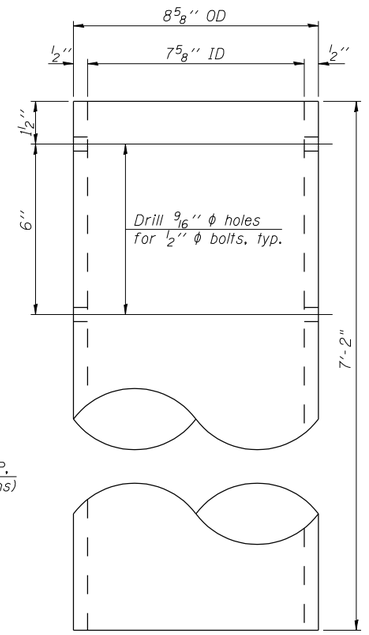


SECTION A-A

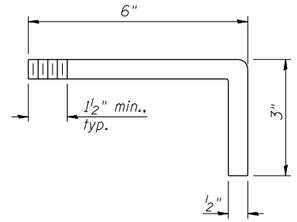
See sheets 30 and 37 of 113 for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR STUD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	27

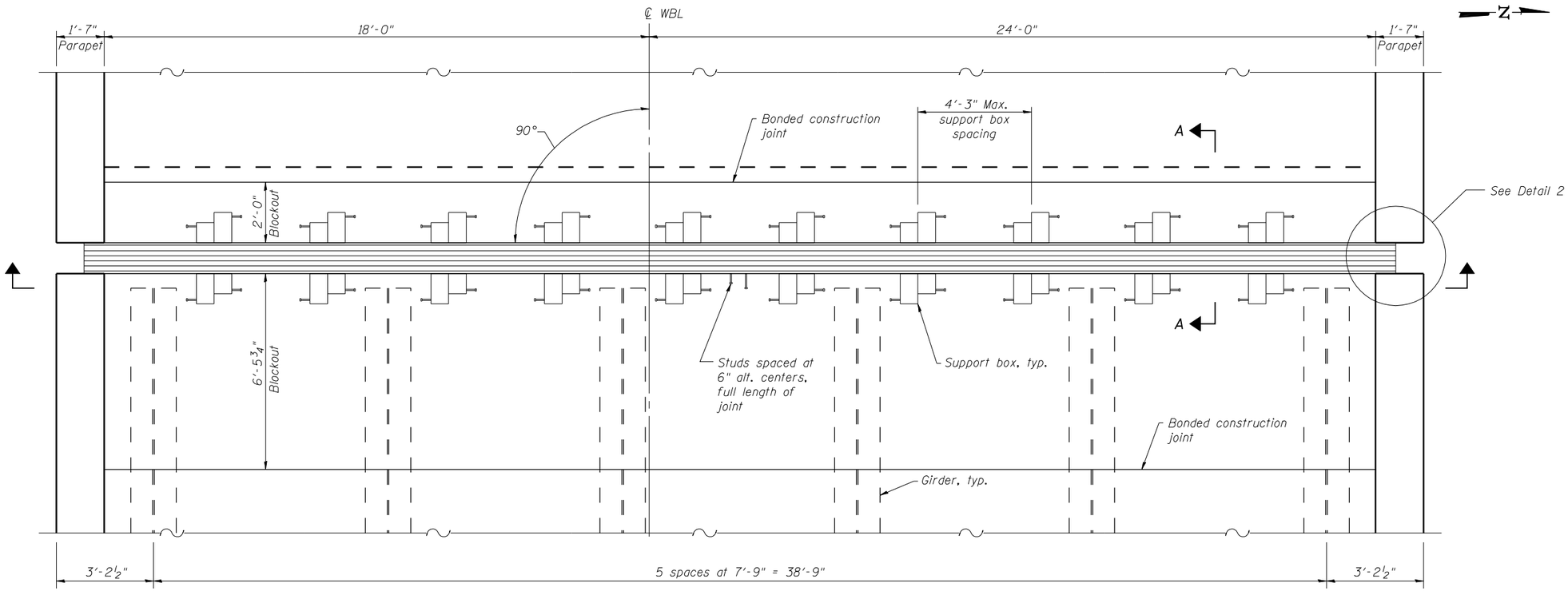
DS-11 7-1-10

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 1:14:29 PM	CHECKED - ELH	01/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

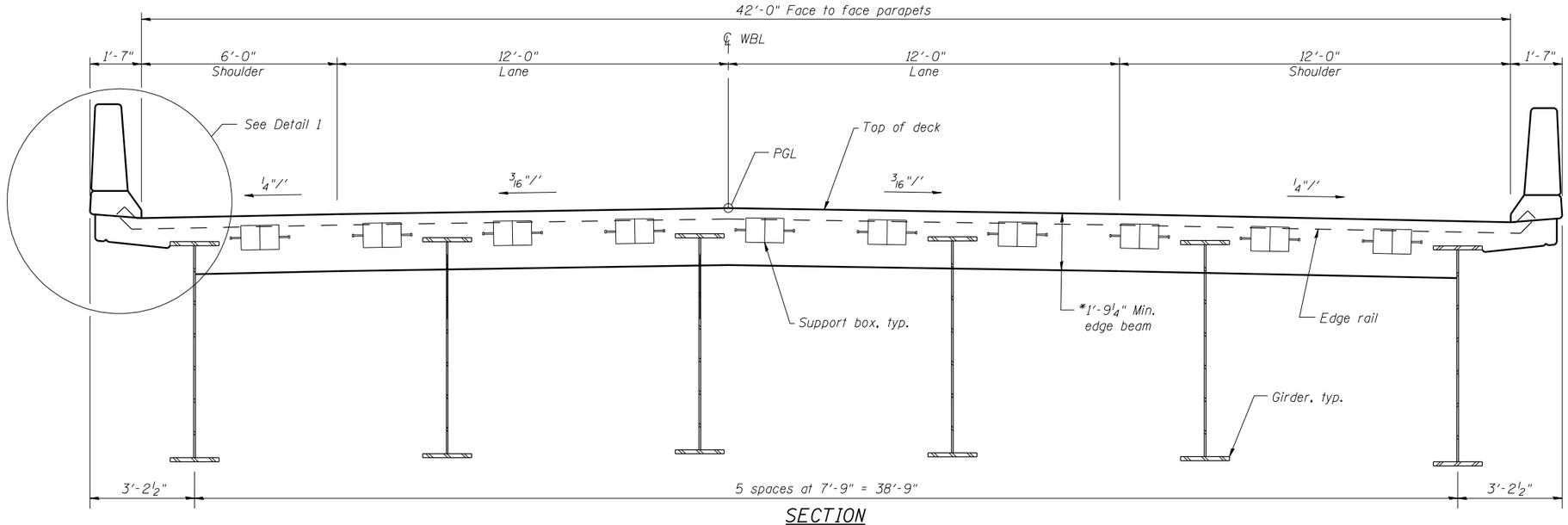
DRAINAGE SCUPPER, DS-11
STRUCTURE NOS. 026-0106 & 026-0107
SHEET NO. 45 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	125
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



WEST JOINT PLAN

*Prior to grinding



SECTION
(Looking West)

Notes:
End cross frames and parapet sliding plates not shown for clarity.
See sheet 50 of 113 for sections, details, and notes.

MOVEMENT TABLE

LOCATION	TOTAL LONGITUDINAL MOVEMENT (INCH)	JOINT SIZE (INCH)
West Abutment - WB	7½"	9"

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Modular Expansion Joint, 9"	Foot	42

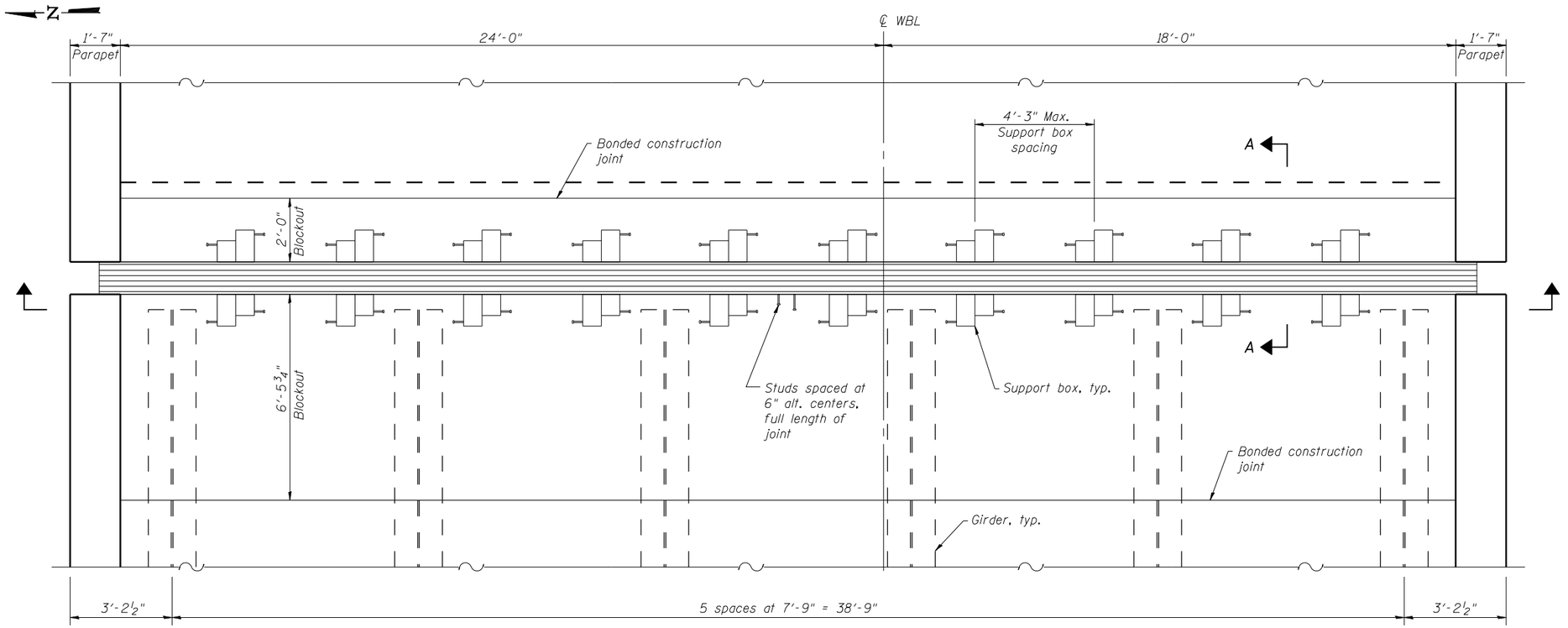
ESCA CORPORATION, INC.

USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:14:44 PM	CHECKED - ELH	08/13	REVISED -	

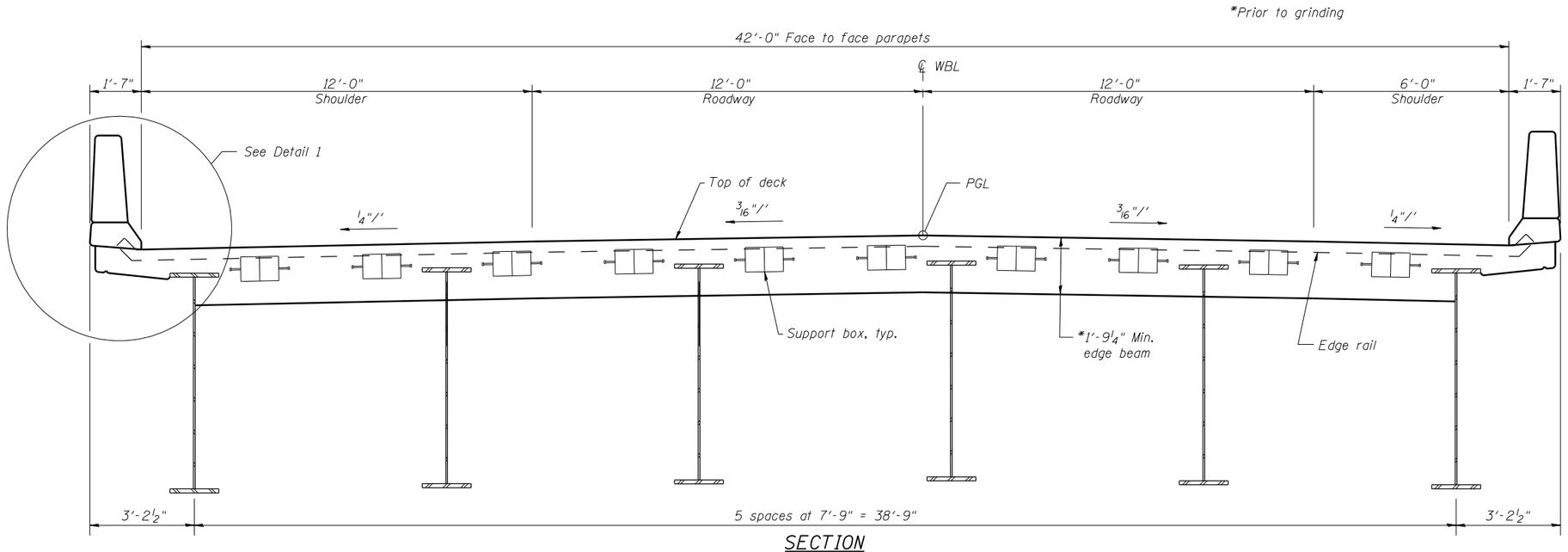
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MODULAR EXPANSION JOINT – WB
STRUCTURE NO. 026-0106
SHEET NO. 46 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	126
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			



EAST JOINT PLAN



SECTION
(Looking East)

Notes:
End cross frames and parapet sliding plates not shown for clarity.
See sheet 50 of 113 for sections, details, and notes.

MOVEMENT TABLE

LOCATION	TOTAL LONGITUDINAL MOVEMENT (INCH)	JOINT SIZE (INCH)
East Abutment - WB	8¼"	9"

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Modular Expansion Joint, 9"	Foot	42

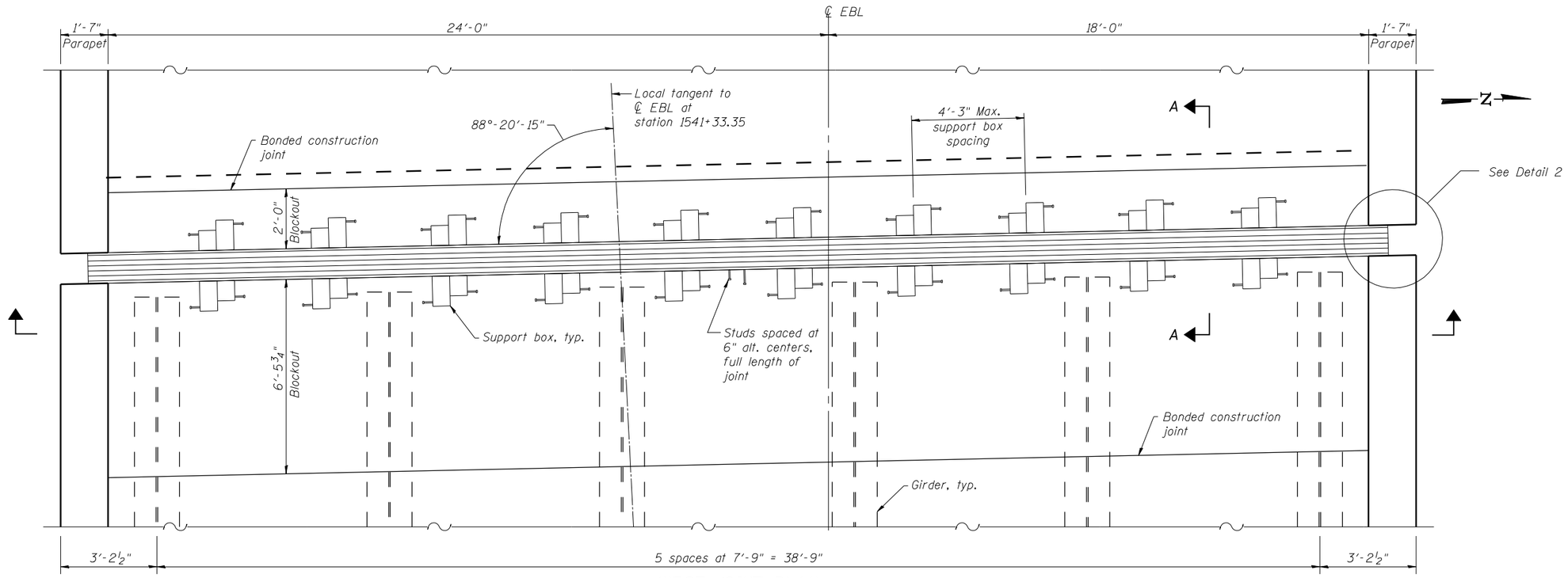
ESCA CORPORATION, INC.

USER NAME = has		DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - RDP	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014	1:16:01 PM	CHECKED - ELH	08/13	REVISED -	

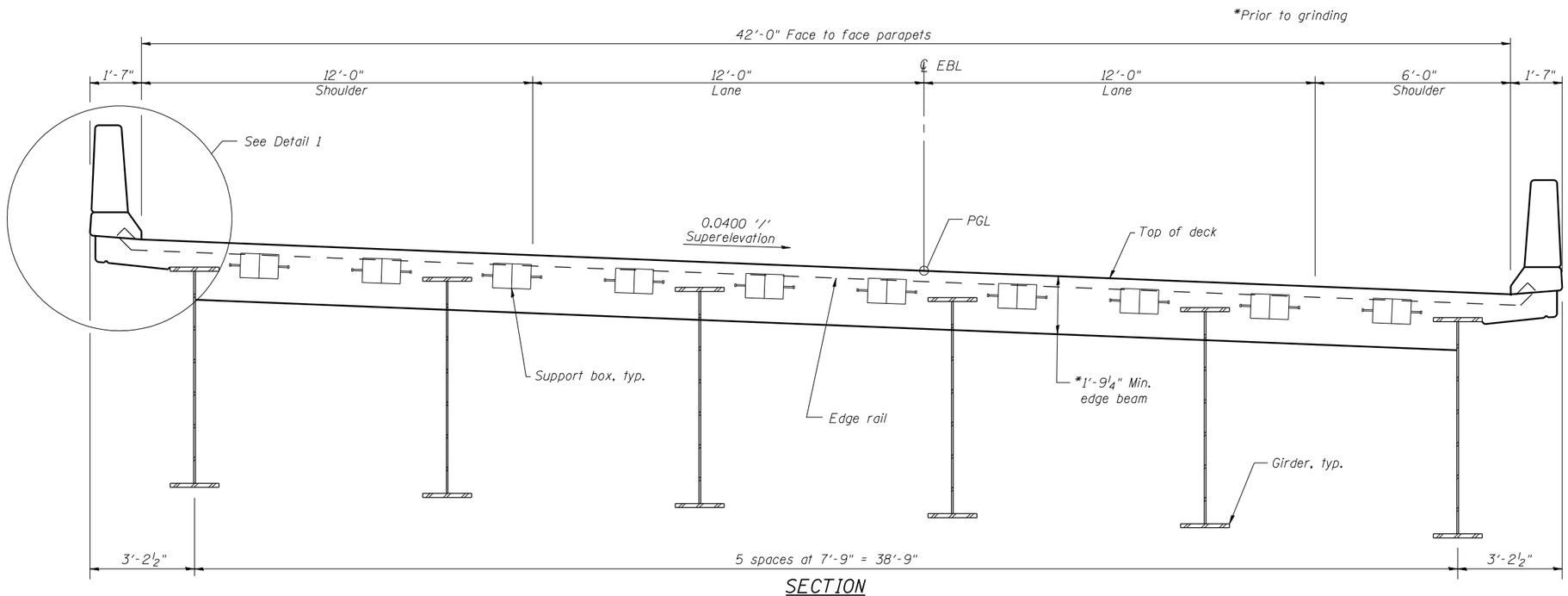
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MODULAR EXPANSION JOINT – WB
STRUCTURE NO. 026-0106
SHEET NO. 47 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	127
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



WEST JOINT PLAN



SECTION
(Looking West)

Notes:
End cross frames and parapet sliding plates not shown for clarity.
See sheet 50 of 113 for sections, details, and notes.
Horizontal dimensions shown are radial dimensions since this joint is located within a 5,678.71 foot radius horizontal curve.
This joint is skewed 1°-39'-45" from a line perpendicular to the local tangent at station 1541+33.35.

MOVEMENT TABLE

LOCATION	TOTAL LONGITUDINAL MOVEMENT (INCH)	JOINT SIZE (INCH)
West Abutment - EB	7 1/2"	9"

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Modular Expansion Joint, 9"	Foot	42

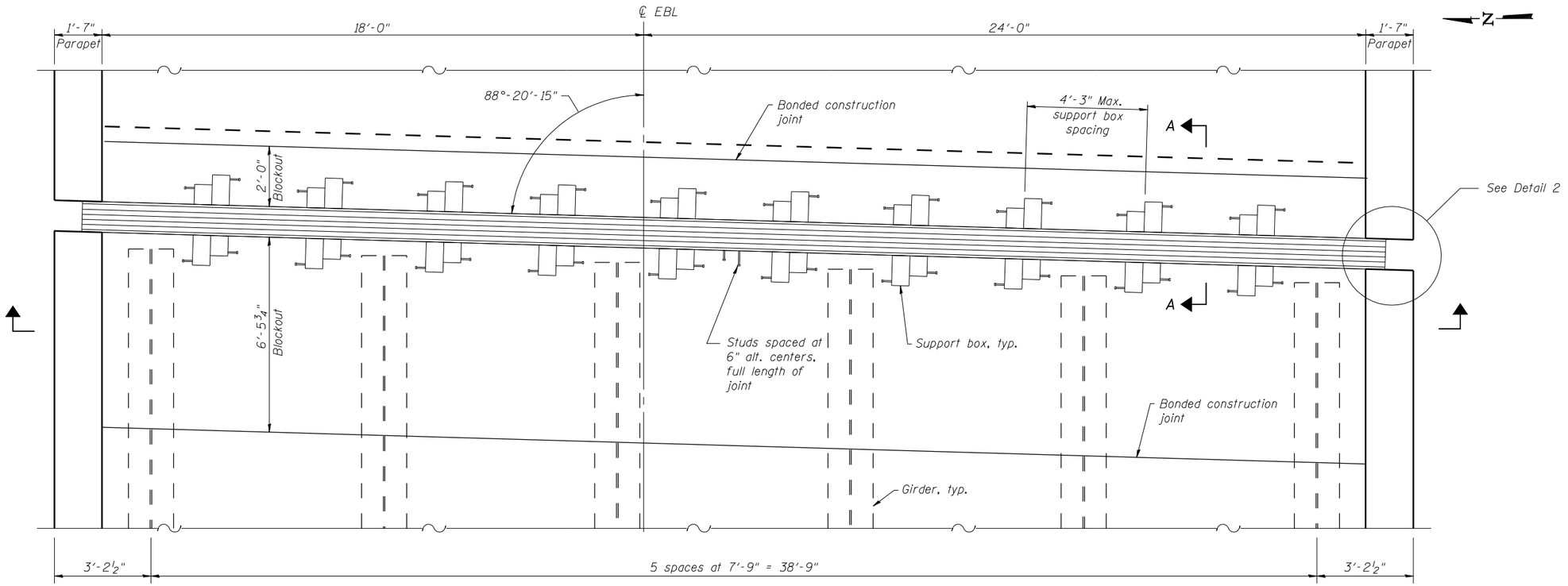
ESCA CORPORATION, INC.

USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:16:31 PM	CHECKED - ELH	08/13	REVISED -	

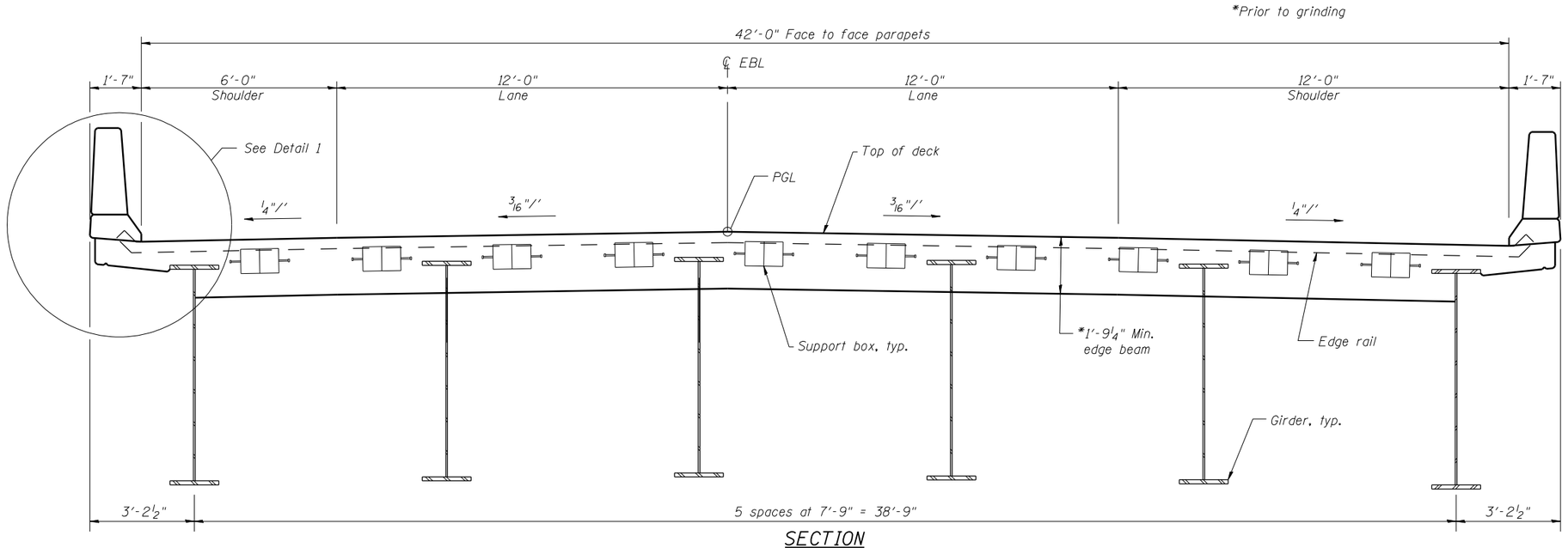
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MODULAR EXPANSION JOINT – EB
STRUCTURE NO. 026-0107
SHEET NO. 48 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	128
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



EAST JOINT PLAN



SECTION
(Looking East)

Notes:
End cross frames and parapet sliding plates not shown for clarity.
See sheet 50 of 113 for sections, details, and notes.
This joint is skewed 1°-39'-45".

MOVEMENT TABLE

LOCATION	TOTAL LONGITUDINAL MOVEMENT (INCH)	JOINT SIZE (INCH)
East Abutment - EB	8 1/4"	9"

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Modular Expansion Joint, 9"	Foot	42

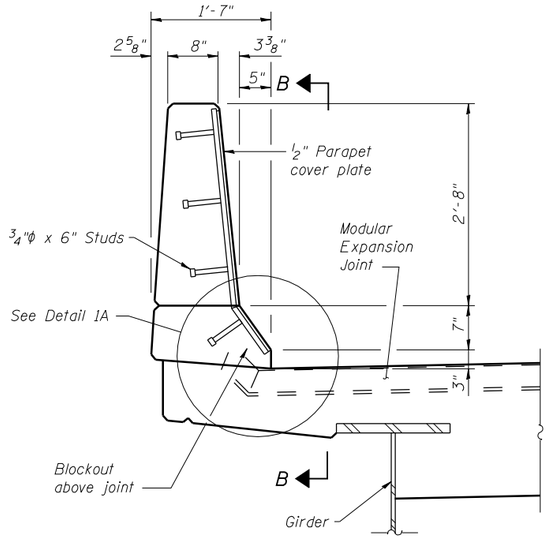
ESCA CORPORATION, INC.

USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:17:30 PM	CHECKED - ELH	08/13	REVISED -	

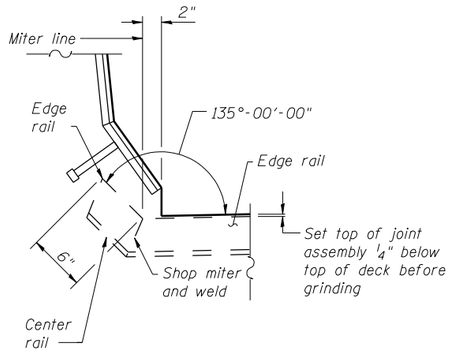
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MODULAR EXPANSION JOINT – EB
STRUCTURE NO. 026-0107
SHEET NO. 49 OF 113 SHEETS

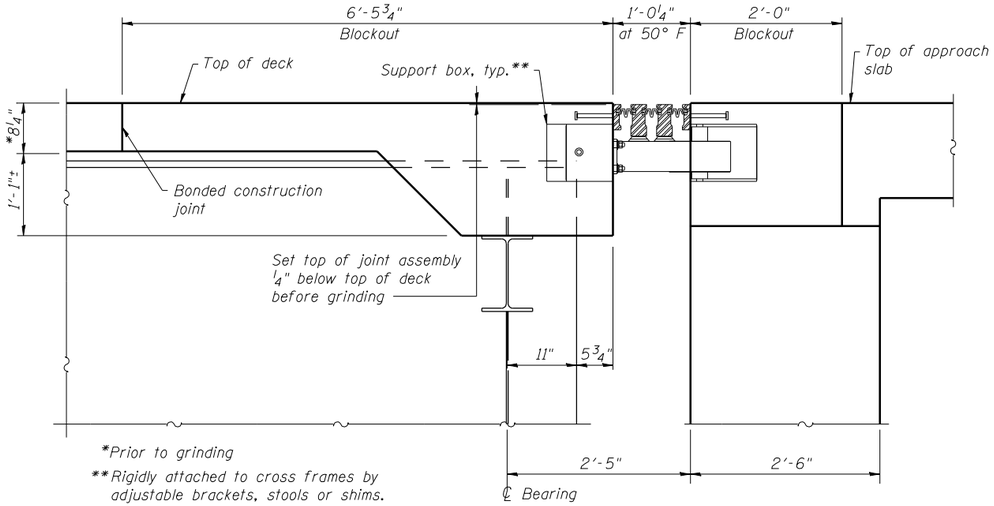
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	129
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



DETAIL 1



DETAIL 1A



*Prior to grinding

**Rigidly attached to cross frames by adjustable brackets, stools or shims.

SECTION A-A

VIEW B-B

DETAIL 2

SECTION C-C

GENERAL NOTES

1. Joint openings shall be adjusted according to Article 520.04 of the Standard Specifications when the concrete blockouts are cast at an ambient temperature other than 50° F.
2. The structural steel plates of the parapet sliding plate assemblies shall conform to the requirements of AASHTO M270 Grade 50, and be hot-dipped galvanized according to AASHTO M111 after fabrication.
3. The cost of furnishing and installing the parapet sliding plate assemblies is included in the cost of Modular Expansion Joints.
4. Countersunk bolts shall be in accordance with ASTM A307, Grade A.
5. Countersunk bolts and concrete inserts shall be hot-dipped galvanized according to AASHTO M232.
6. Concrete anchor studs shall be in accordance with Article 1006.32 of the Standard Specifications.
7. The modular joints shall be fabricated to conform to the roadway profile and cross slope.
8. Support box size and spacing to be determined by manufacturer. Support boxes must be spaced clear of girders to avoid interference.
9. Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.
10. Blockout areas to be poured after superstructure false work has been removed and modular joint is fixed in position. Quantity of concrete is included with Concrete Superstructure.
11. The modular joint assembly shall be set 1/4" below the top of concrete to allow grinding. The Contractor shall not gouge or nick the joint assembly during grinding operations.

ESCA CONSULTANTS, INC.

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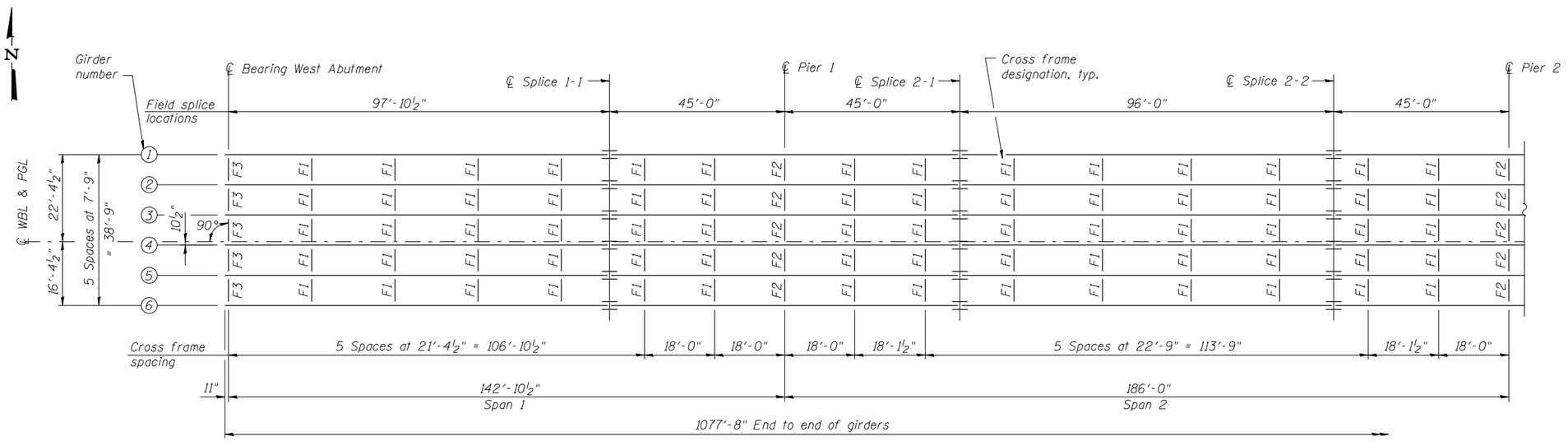
		DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014	1:17:57 PM	CHECKED - ELH	08/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

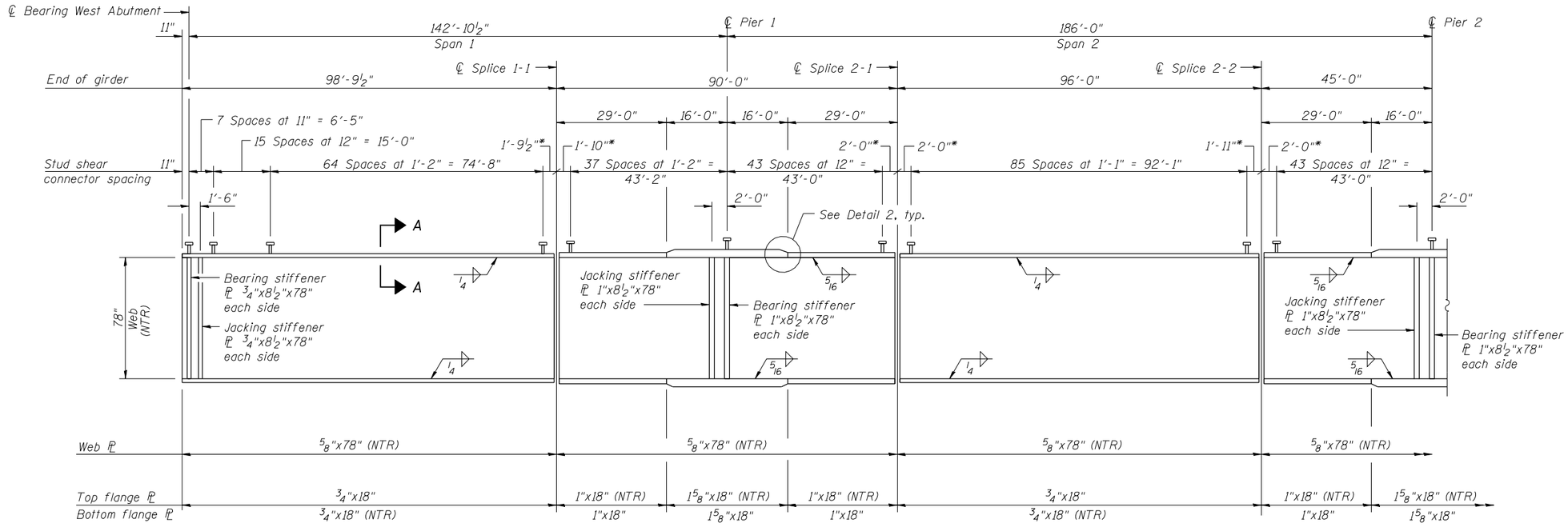
MODULAR EXPANSION JOINT DETAILS
STRUCTURE NOS. 026-0106 & 026-0107

SHEET NO. 50 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	130
		CONTRACT NO. 74175		
ILLINOIS	FED. AID PROJECT			



FRAMING PLAN - SPANS 1 AND 2



GIRDER ELEVATION - SPANS 1 AND 2

*Omit shear connectors over splice

NOTES

1. For additional steel details, see sheets 62 thru 67 of 113.
2. AASHTO M270 grade 50 steel shall be used for all flange plates, web plates, bearing stiffeners, and jacking stiffeners.
3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
4. All cross frames between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.

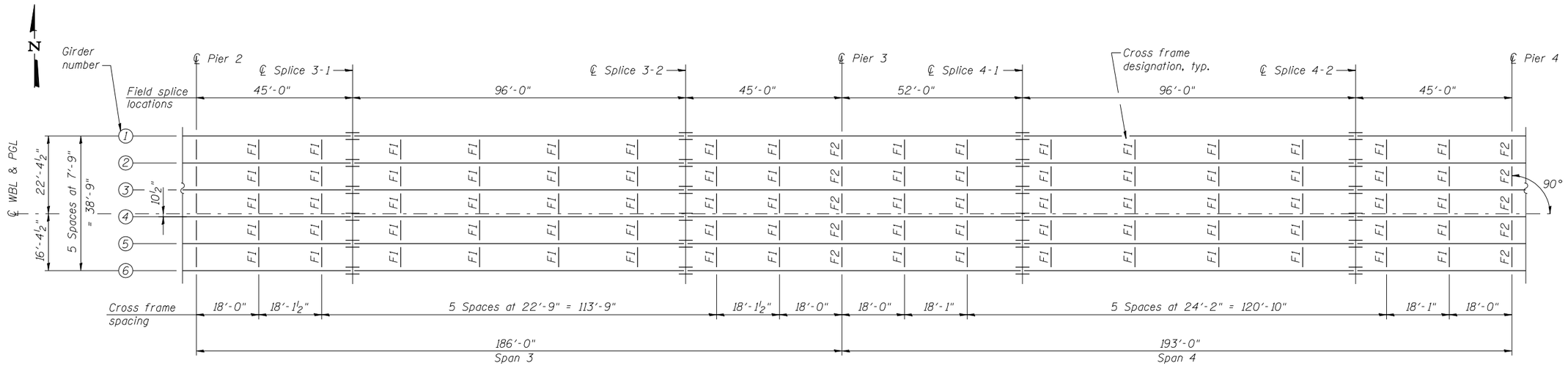
ESCA CONSULTANTS, INC. BRIDGE & STRUCTURAL ENGINEERS

USER NAME = has		DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - RDP	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014	1:19:24 PM	CHECKED - ELH	08/13	REVISED -	

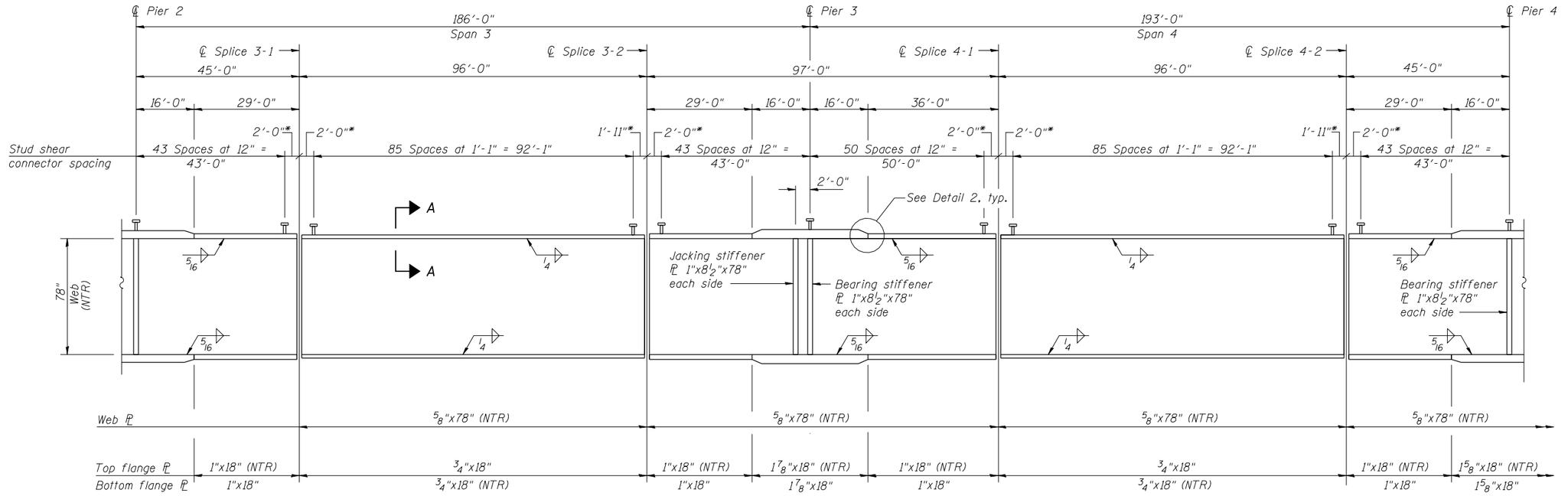
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL FRAMING PLAN – WB
STRUCTURE NO. 026-0106
SHEET NO. 51 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	131
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



FRAMING PLAN - SPANS 3 AND 4



GIRDER ELEVATION - SPANS 3 AND 4

*Omit shear connectors over splice

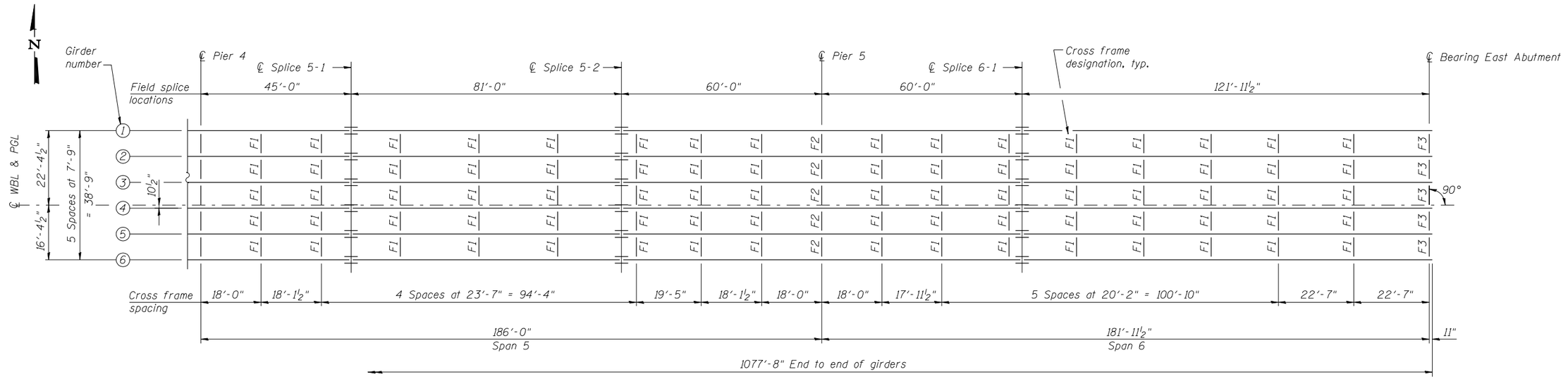
ESCA CONSULTANTS, INC.

USER NAME = has		DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - RDP	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014	1:19:47 PM	CHECKED - ELH	08/13	REVISED -	

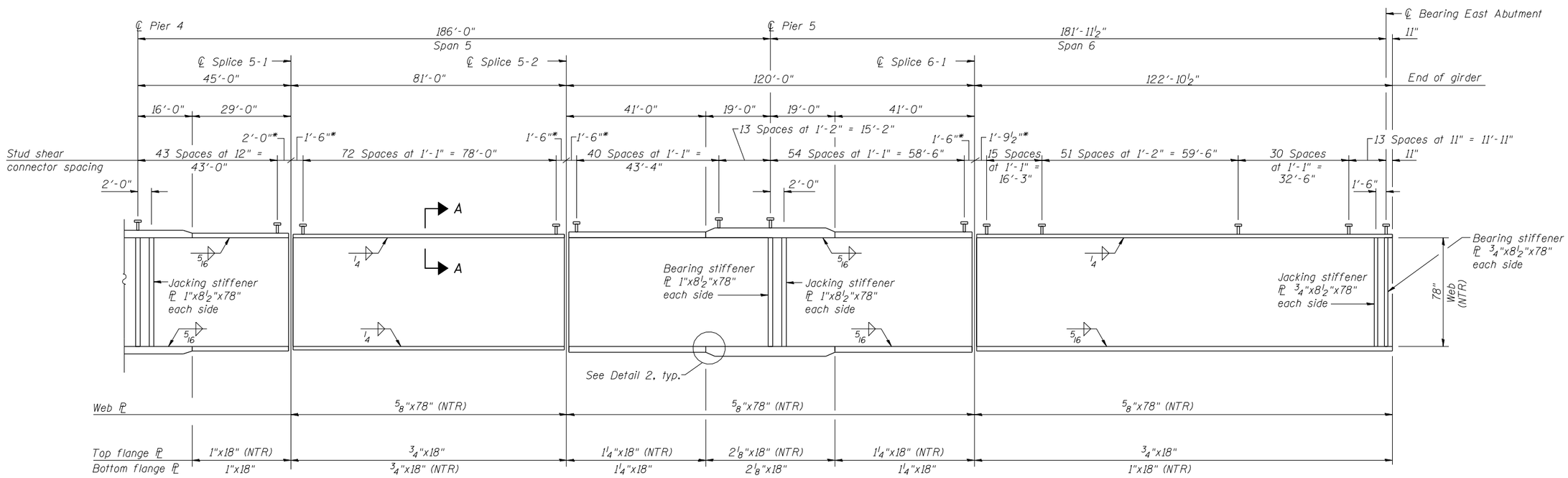
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL FRAMING PLAN – WB
STRUCTURE NO. 026-0106
SHEET NO. 52 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	132
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



FRAMING PLAN - SPANS 5 AND 6



GIRDER ELEVATION - SPANS 5 AND 6

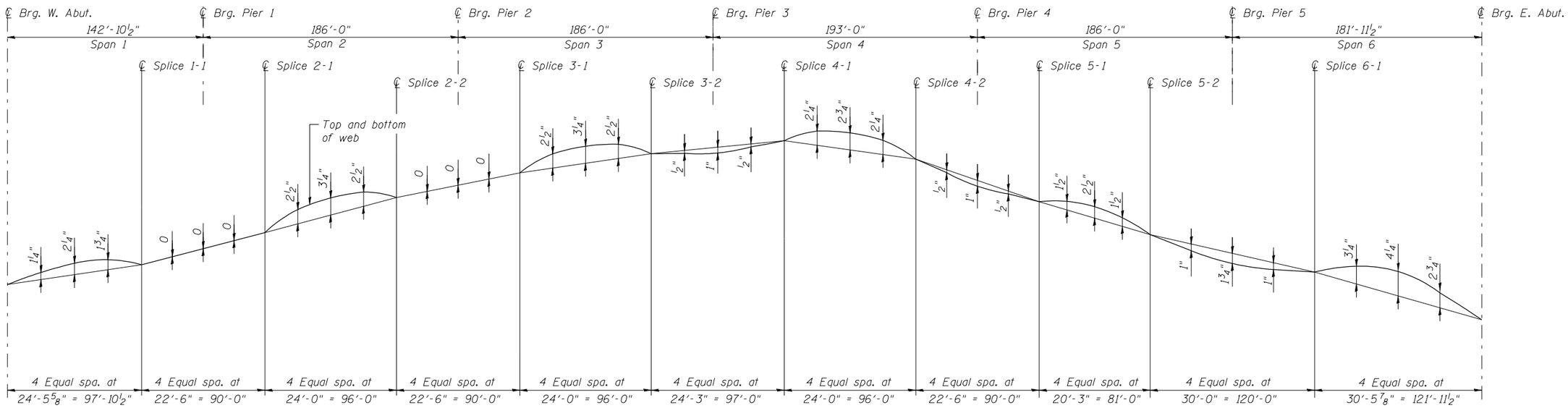
*Omit shear connectors over splice

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 1:21:10 PM	CHECKED - ELH	11/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL FRAMING PLAN – WB
STRUCTURE NO. 026-0106
SHEET NO. 53 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	133
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

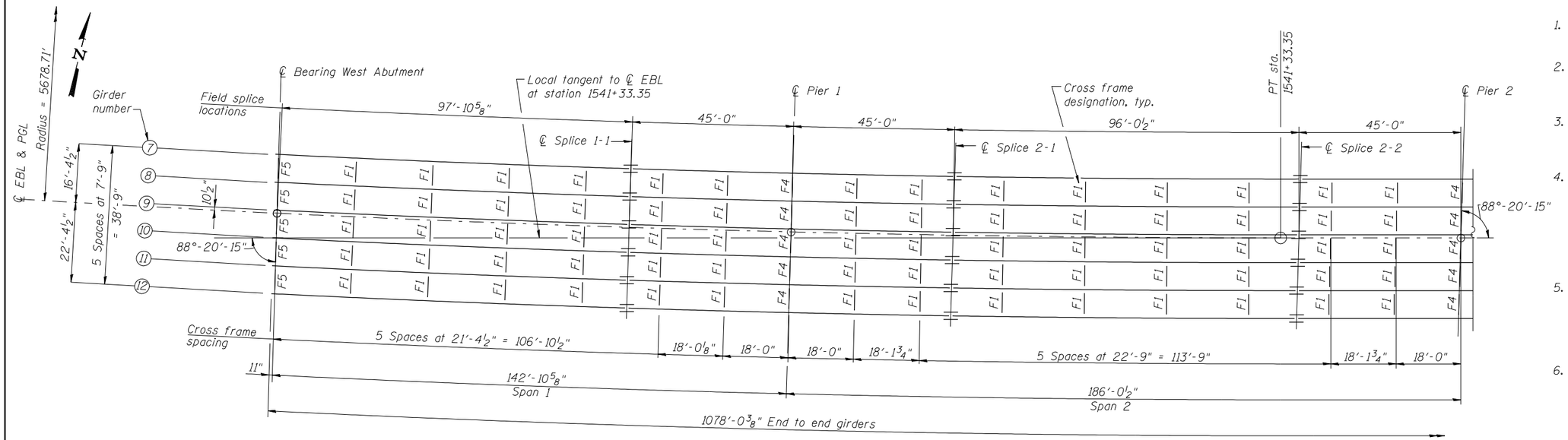


CAMBER DIAGRAM - GIRDERS 1 THRU 6

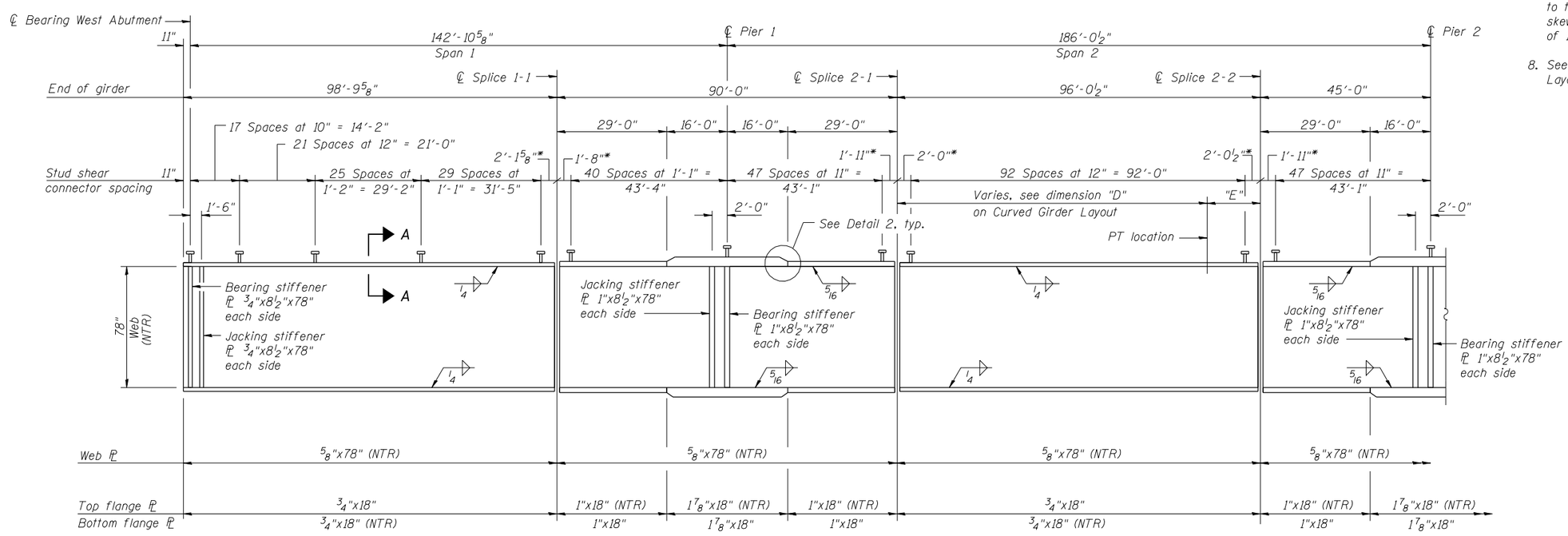
NOTE:

1. Plate girder camber dimensions take deck pouring sequence into account. See sheet 25 of 113 for required pouring sequence.

ESCA CORPORATION, INC.	USER NAME = has	DESIGNED - ELH	08/13	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CAMBER DIAGRAM – WB STRUCTURE NO. 026-0106	F.A.I. RTE. 70
	ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -			SECTION (26-3B-1, 3B-1(3))BR
		DRAWN - HAS	08/13	REVISED -			COUNTY FAYETTE
	PLOT DATE = 1/28/2014 1:21:22 PM	CHECKED - ELH	08/13	REVISED -		SHEET NO. 54 OF 113 SHEETS	TOTAL SHEETS 277
							SHEET NO. 134
							CONTRACT NO. 74175
							ILLINOIS FED. AID PROJECT AID



FRAMING PLAN - SPANS 1 AND 2



GIRDER ELEVATION - SPANS 1 AND 2

*Omit shear connectors over splice

NOTES

1. For additional steel details, see sheets 62 thru 67 of 113.
2. AASHTO M270 grade 50 steel shall be used for all flange plates, web plates, bearing stiffeners, and jacking stiffeners.
3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
4. All cross frames between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.
5. All longitudinal dimensions shown are measured along the centerline of EBL & PGL. The centerlines of splices shall be located parallel to adjacent substructure elements in all spans.
6. All bearing stiffeners shall be oriented to allow the End Cross Frames and Pier Cross Frames to be located along the skew and parallel to the substructure units.
7. All connection plates for Interior Cross Frames shall be perpendicular to the girders. Interior Cross Frames shall be located radially within the horizontal curve limits. All other Interior Cross Frames shall be located perpendicular to the girders and staggered along the skew line. See detail on sheet 65 of 113.
8. See sheet 61 of 113 for Curved Girder Layout.

ESCA CONSULTANTS, INC. BRIDGE & STRUCTURAL ENGINEERING

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ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
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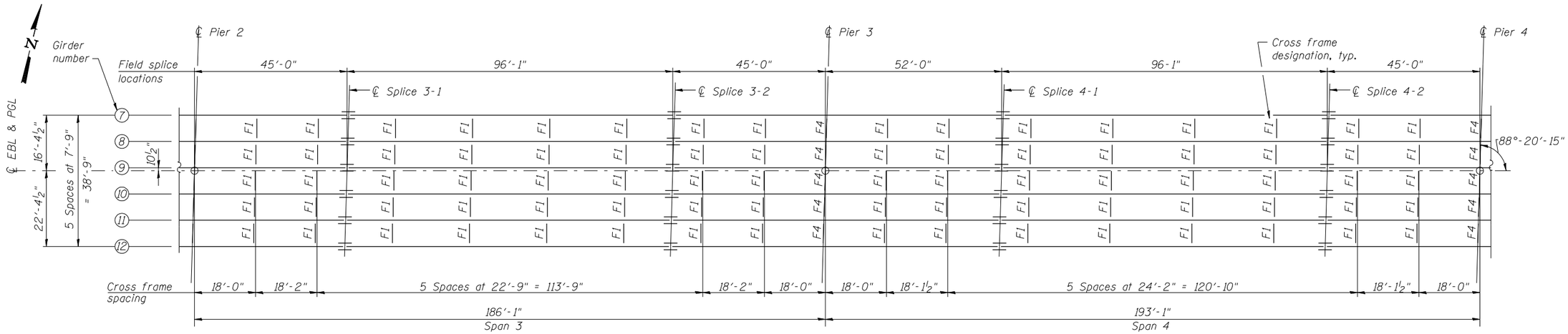
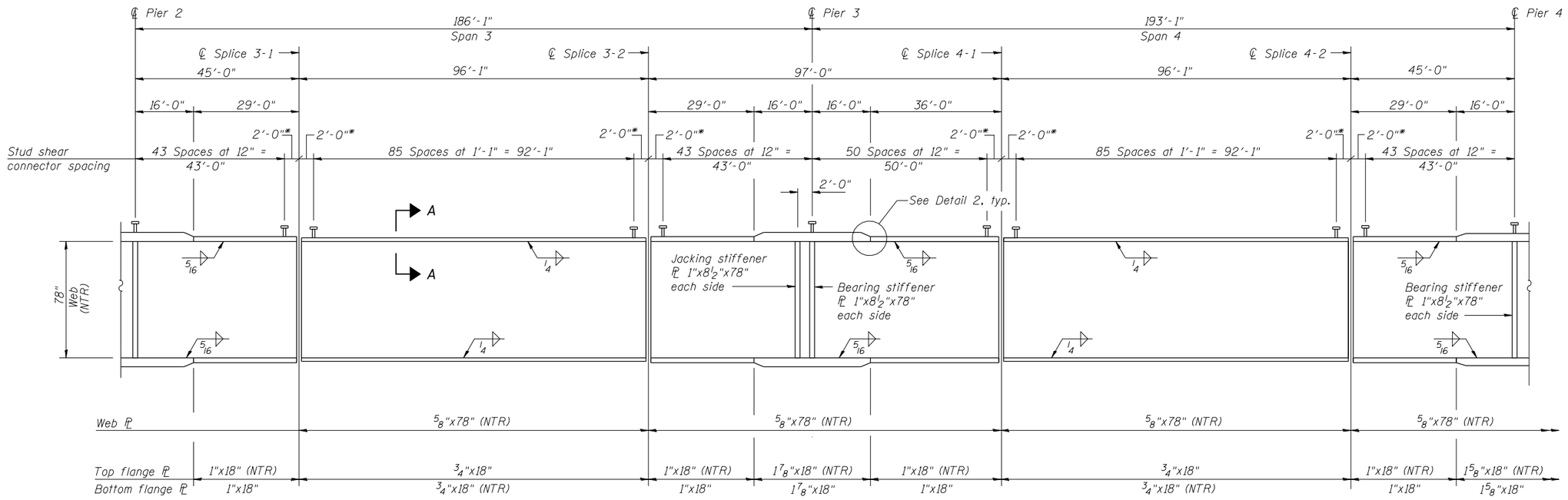
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL FRAMING PLAN – EB
STRUCTURE NO. 026-0107
SHEET NO. 55 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	135
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



FRAMING PLAN - SPANS 3 AND 4



GIRDER ELEVATION - SPANS 3 AND 4

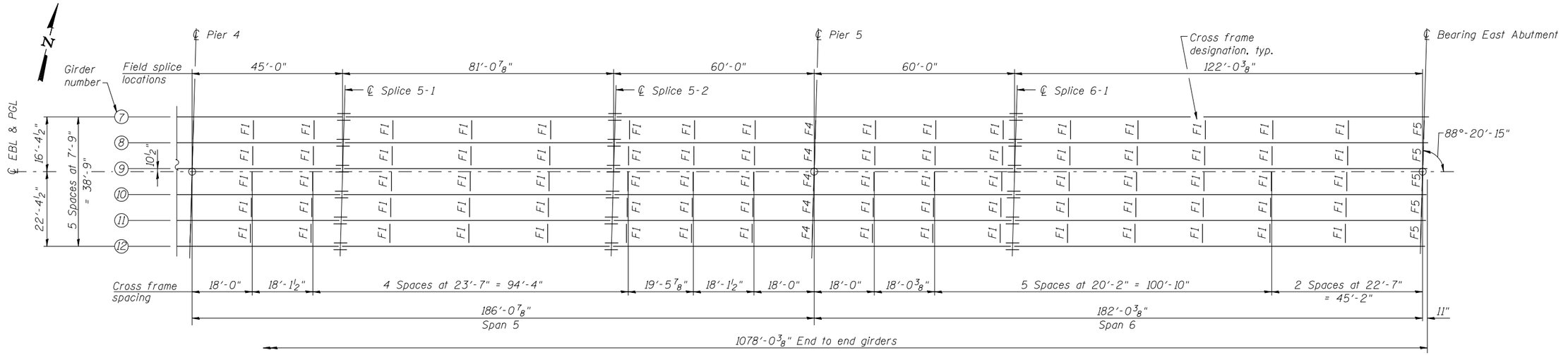
*Omit shear connectors over splice

ESCA CORPORATION, INC.	USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 1:22:54 PM	CHECKED - ELH	08/13	REVISED -	

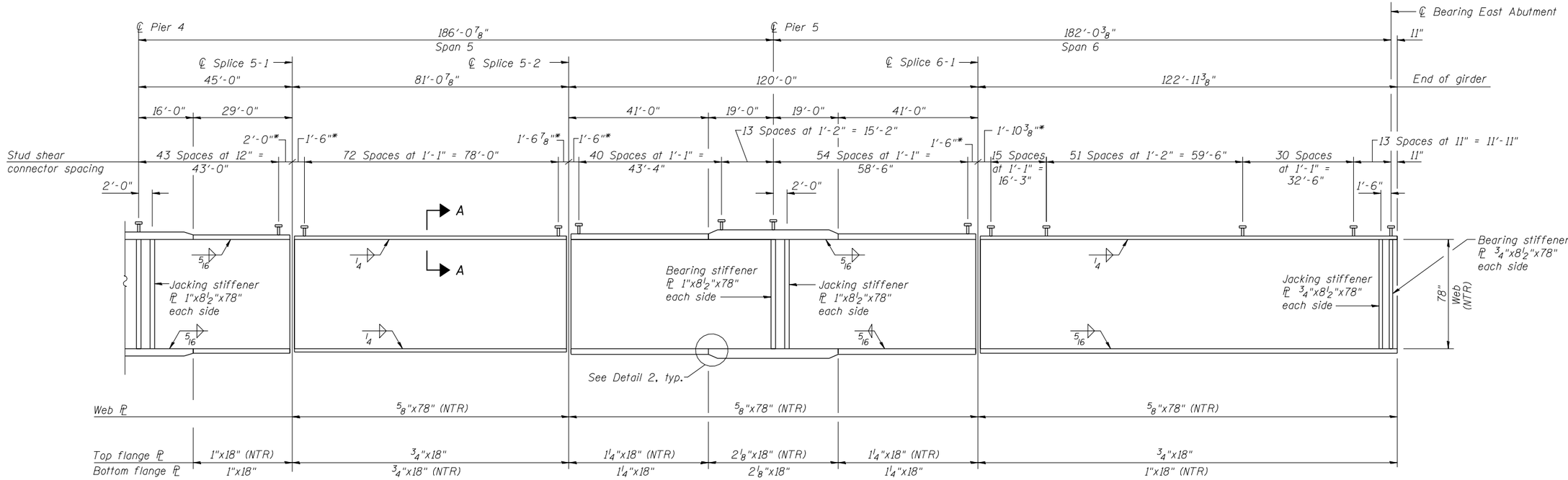
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL FRAMING PLAN – EB
STRUCTURE NO. 026-0107
SHEET NO. 56 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	136
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



FRAMING PLAN - SPANS 5 AND 6



GIRDER ELEVATION - SPANS 5 AND 6

*Omit shear connectors over splice

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = has		DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - RDP	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
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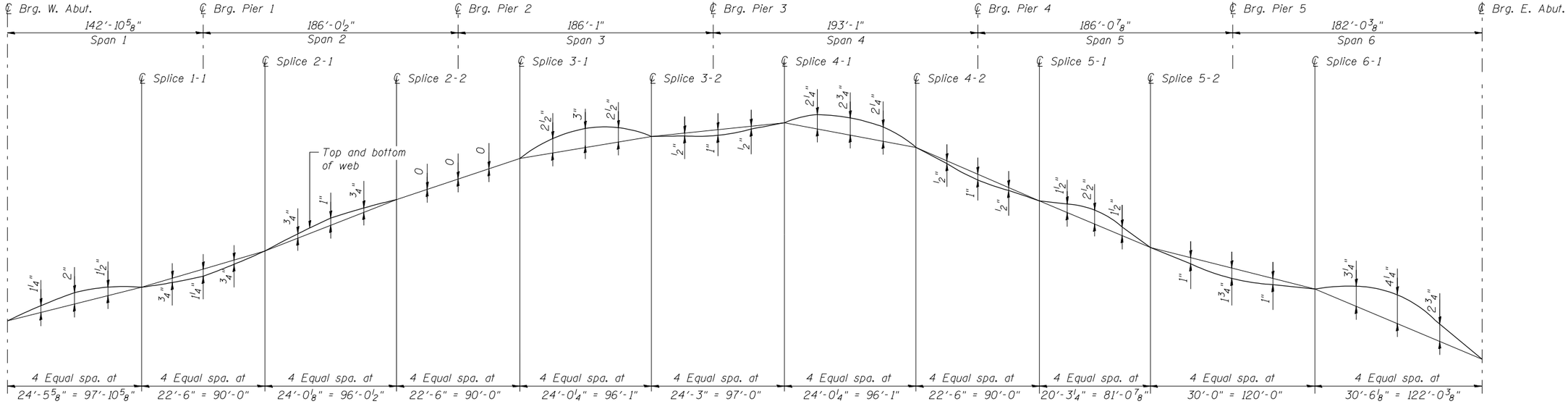
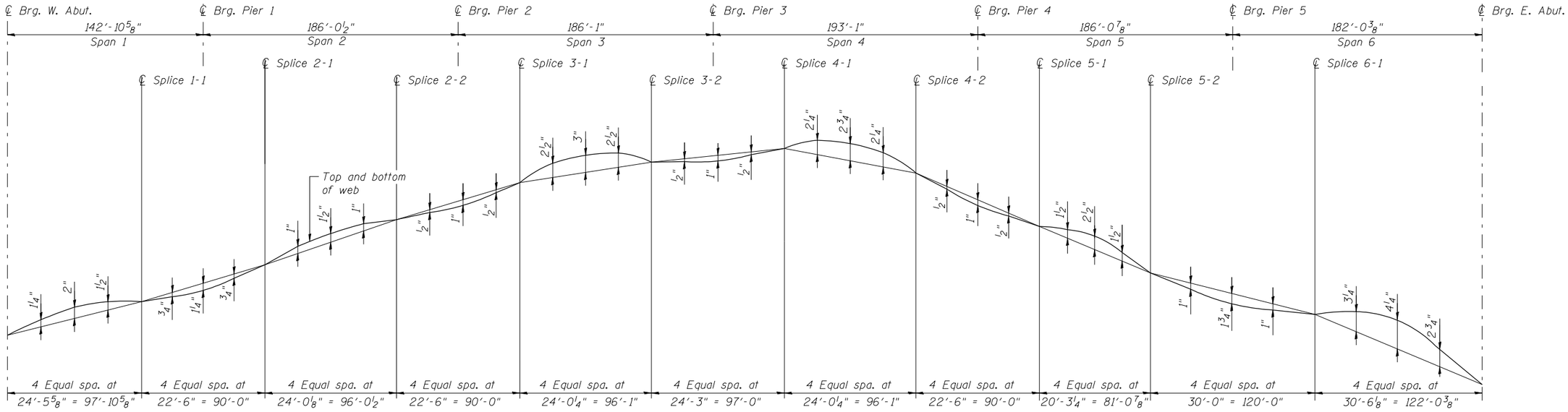
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL FRAMING PLAN – EB
STRUCTURE NO. 026-0107
SHEET NO. 57 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	137
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



CAMBER DIAGRAM - GIRDER 7



CAMBER DIAGRAM - GIRDER 8

NOTE:

1. Plate girder camber dimensions take deck pouring sequence into account. See sheet 32 of 113 for required pouring sequence.

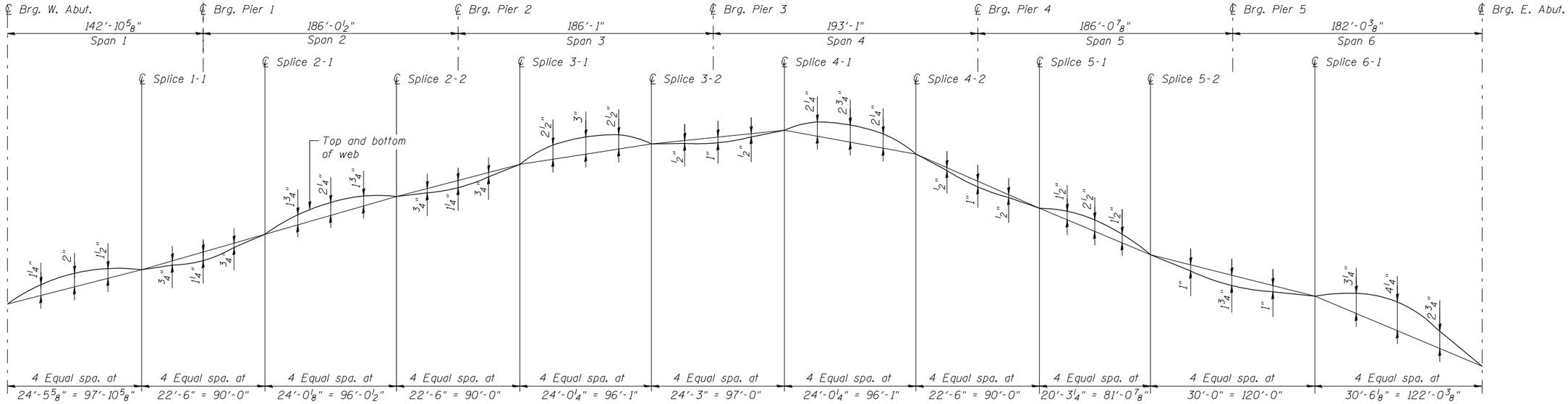
ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
	DRAWN - HAS	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:24:08 PM	CHECKED - ELH	08/13	REVISED -	

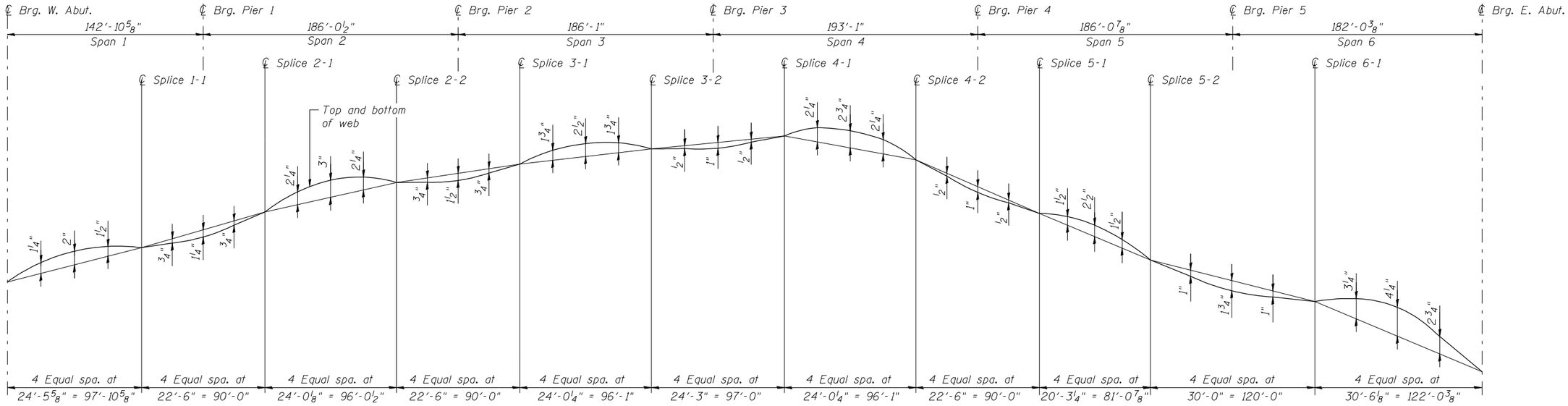
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CAMBER DIAGRAMS – EB
STRUCTURE NO. 026–0107
SHEET NO. 58 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	138
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			



CAMBER DIAGRAM - GIRDER 9



CAMBER DIAGRAM - GIRDER 10

NOTE:

1. Plate girder camber dimensions take deck pouring sequence into account. See sheet 32 of 113 for required pouring sequence.

ESCA CONSULTANTS, INC. BRIDGE & ROADWAY DESIGNERS

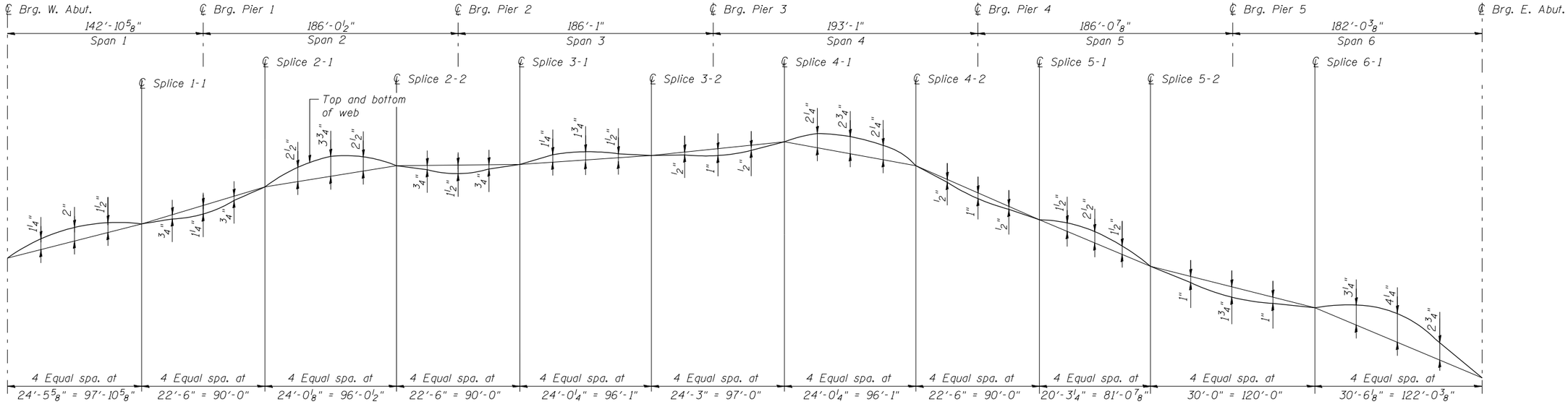
USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
	DRAWN - HAS	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:25:11 PM	CHECKED - ELH	08/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

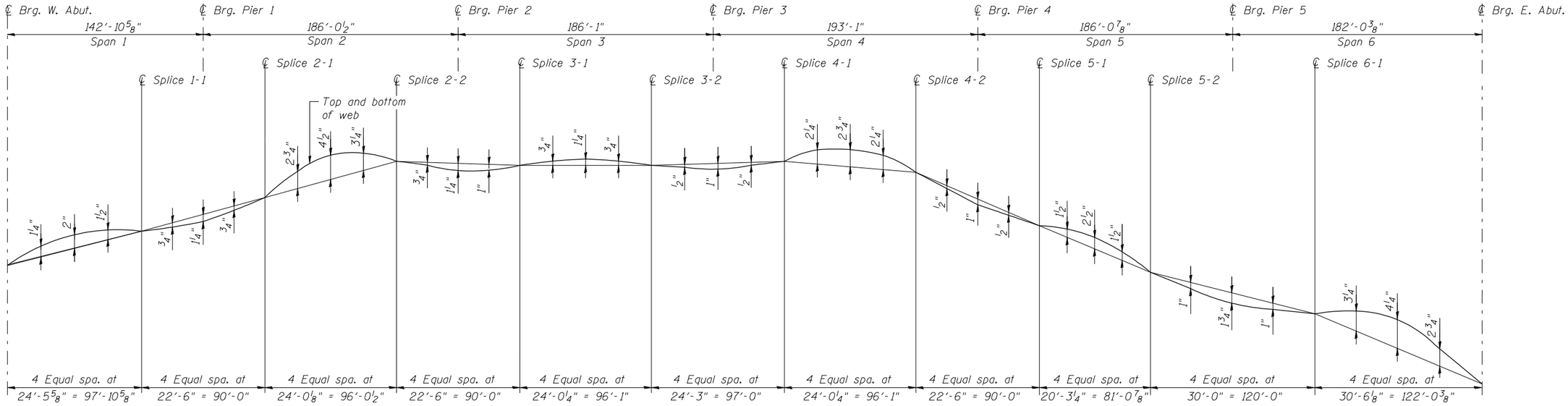
CAMBER DIAGRAMS – EB
STRUCTURE NO. 026-0107

SHEET NO. 59 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	139
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



CAMBER DIAGRAM - GIRDER 11



CAMBER DIAGRAM - GIRDER 12

NOTE:

1. Plate girder camber dimensions take deck pouring sequence into account. See sheet 32 of 113 for required pouring sequence.

ESCA CONSULTANTS, INC. BRIDGE & ROADWAY DESIGNERS

USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
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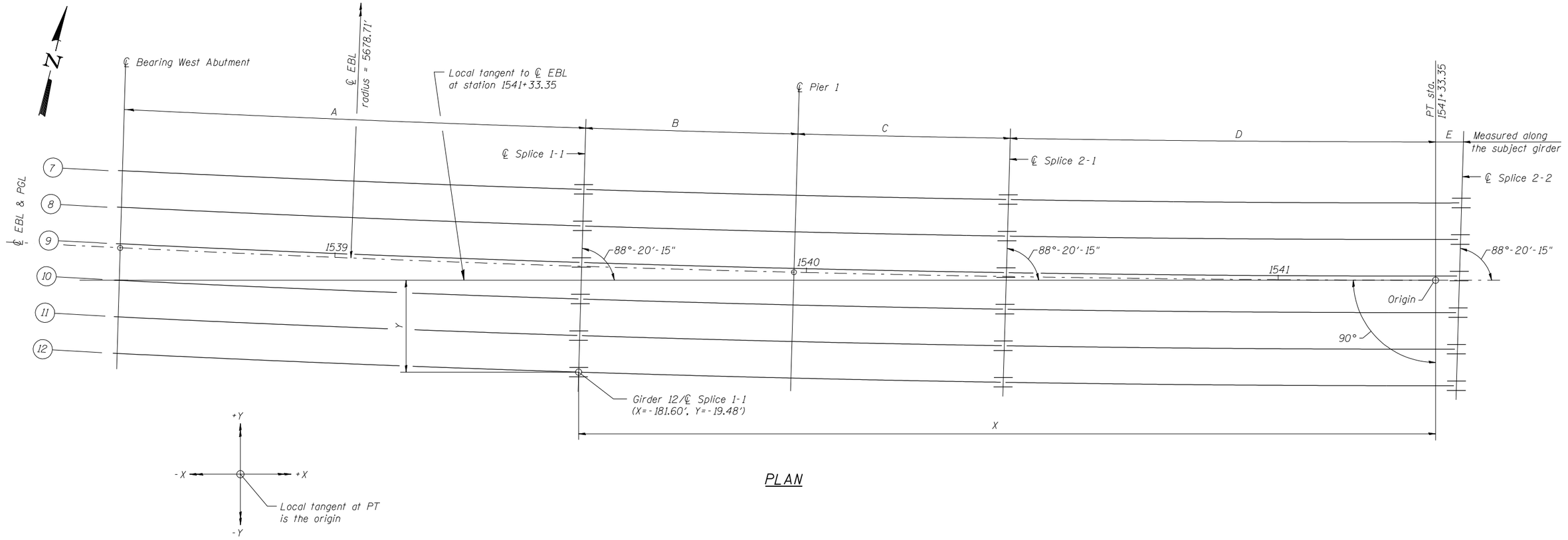
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CAMBER DIAGRAMS – EB
STRUCTURE NO. 026-0107

SHEET NO. 60 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	140
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



PLAN

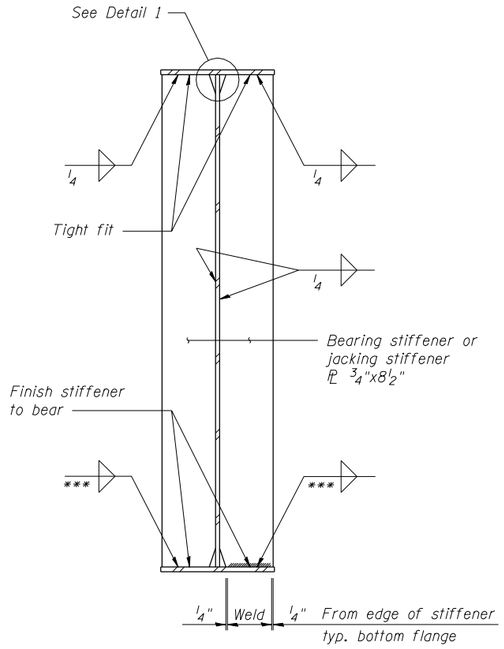
LEGEND

GIRDER DIMENSIONS (in feet)

Girder	Radius	A	B	C	D	E
7	5662.335	97.883	45.000	45.002	90.507	5.535
8	5670.085	97.883	45.000	45.002	90.732	5.310
9	5677.835	97.883	45.000	45.002	90.957	5.085
10	5685.585	97.883	45.000	45.002	91.182	4.860
11	5693.335	97.883	45.000	45.002	91.406	4.636
12	5701.085	97.883	45.000	45.002	91.631	4.411

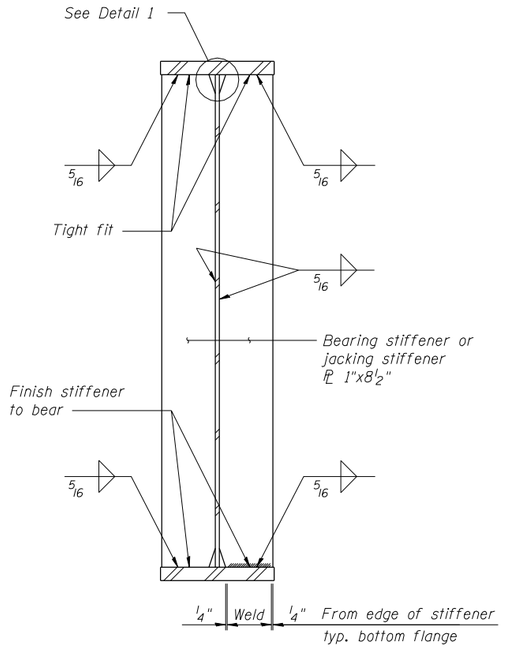
LAYOUT DIMENSIONS (in feet)

Girder	℄ Brg. W. Abut.		℄ Splice 1-1		℄ Pier 1		℄ Splice 2-1		PT		℄ Splice 2-2	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
7	-278.28	23.22	-180.48	19.25	-135.50	18.00	-90.50	17.10	0.00	16.38	5.54	16.38
8	-278.51	15.47	-180.70	11.51	-135.72	10.25	-90.73	9.35	0.00	8.63	5.31	8.63
9	-278.73	7.72	-180.93	3.76	-135.95	2.50	-90.95	1.60	0.00	0.88	5.09	0.88
10	-278.95	-0.03	-181.15	-3.99	-136.17	-5.24	-91.18	-6.14	0.00	-6.88	4.86	-6.88
11	-279.18	-7.78	-181.38	-11.74	-136.40	-12.99	-91.40	-13.89	0.00	-14.63	4.64	-14.63
12	-279.40	-15.52	-181.60	-19.48	-136.62	-20.74	-91.63	-21.64	0.00	-22.38	4.41	-22.38

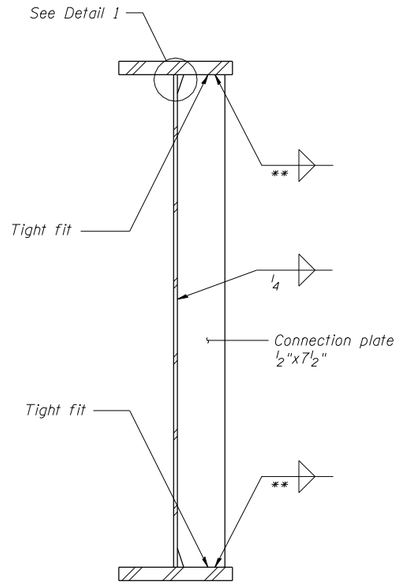


*** 1/4" at West Abutments; 5/16" at East Abutments

BEARING STIFFENER AND JACKING STIFFENER DETAIL AT ABUTMENTS



BEARING STIFFENER AND JACKING STIFFENER DETAIL AT PIERS

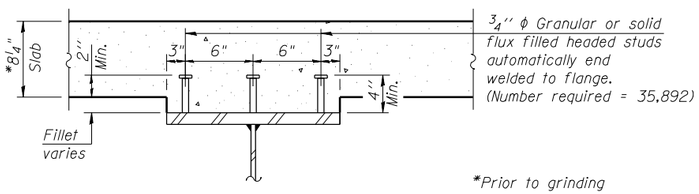


** Connection plate welds to 3/4" flanges shall be 1/4" fillet welds. Use 5/16" fillet welds at other locations.

CONNECTION PL DETAIL

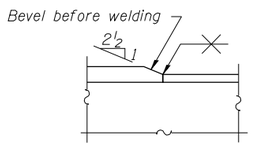
GENERAL NOTES

1. For locations of stiffeners and connection plates, see sheets 51 thru 53 and sheets 55 thru 57 of 113.
2. All stiffener and cross frame connection plates shall be AASHTO M270 Grade 50 steel.
3. All cross frame connection plates shall be welded perpendicular to the web. All bearing stiffeners shall be oriented along the skew line.

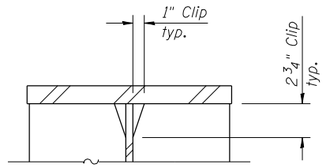


*Prior to grinding

SECTION A-A



DETAIL 2



DETAIL 1

(Typical top & bottom flanges)

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
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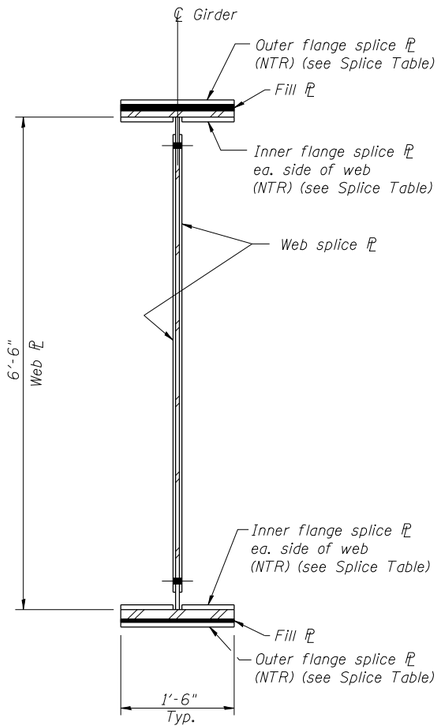
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

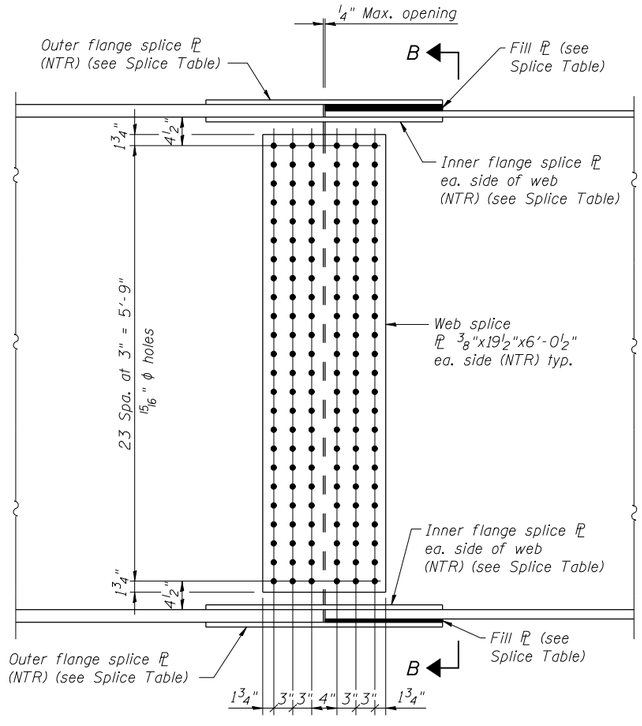
STEEL FRAMING DETAILS
STRUCTURE NOS. 026-0106 & 026-0107

SHEET NO. 62 OF 113 SHEETS

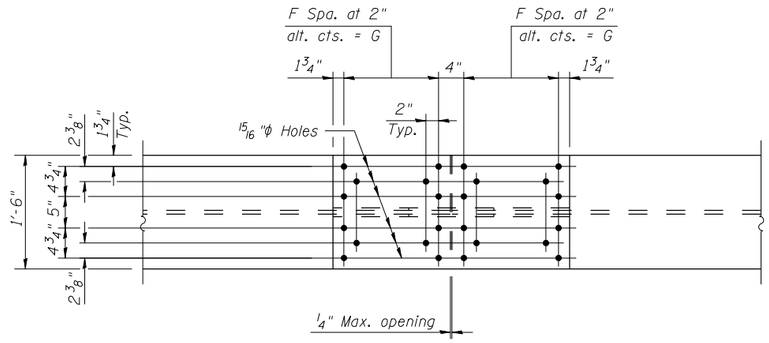
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	142
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



SECTION B-B



ELEVATION



FLANGE SPLICE

(Top and Bottom Flanges)

SN 026-0106 SPLICE TABLE

Splice Location	Top Flange						Bottom Flange					
	Outer Flange PL	Inner Flange PL	Fill PL	F	G	No. Bolts	Outer Flange PL	Inner Flange PL	Fill PL	F	G	No. Bolts
Field Splice 1-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 2-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 2-2	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 3-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 3-2	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 4-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 4-2	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 5-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 5-2	1/2"x18"x2'-7 1/2"	2-1/2"x8 1/4"x2'-7 1/2"	1/2"x18"x1'-3 5/8"	6	12"	44	1/2"x18"x2'-7 1/2"	2-1/2"x8 1/4"x2'-7 1/2"	1/2"x18"x1'-3 5/8"	6	12"	44
Field Splice 6-1	1/2"x18"x2'-7 1/2"	2-1/2"x8 1/4"x2'-7 1/2"	1/2"x18"x1'-3 5/8"	6	12"	44	5/8"x18"x2'-7 1/2"	2-5/8"x8 1/4"x2'-7 1/2"	1/4"x18"x1'-3 5/8"	6	12"	44

SN 026-0107 SPLICE TABLE

Splice Location	Top Flange						Bottom Flange					
	Outer Flange PL	Inner Flange PL	Fill PL	F	G	No. Bolts	Outer Flange PL	Inner Flange PL	Fill PL	F	G	No. Bolts
Field Splice 1-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 2-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 2-2	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 3-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 3-2	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 4-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 4-2	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 5-1	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32	1/2"x18"x1'-11 1/2"	2-1/2"x8 1/4"x1'-11 1/2"	1/4"x18"x11 5/8"	4	8"	32
Field Splice 5-2	1/2"x18"x2'-7 1/2"	2-1/2"x8 1/4"x2'-7 1/2"	1/2"x18"x1'-3 5/8"	6	12"	44	1/2"x18"x2'-7 1/2"	2-1/2"x8 1/4"x2'-7 1/2"	1/2"x18"x1'-3 5/8"	6	12"	44
Field Splice 6-1	1/2"x18"x2'-7 1/2"	2-1/2"x8 1/4"x2'-7 1/2"	1/2"x18"x1'-3 5/8"	6	12"	44	5/8"x18"x2'-7 1/2"	2-5/8"x8 1/4"x2'-7 1/2"	1/4"x18"x1'-3 5/8"	6	12"	44

NOTES:

1. All splice plates shall be AASHTO M270 Grade 50 steel, except fill plates which may be AASHTO M270 Grade 36 or 50.
2. All splice bolts shall be 7/8"ϕ ASTM A325 High Strength with 15/16"ϕ holes.
3. Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

ESCA CORPORATION, INC.

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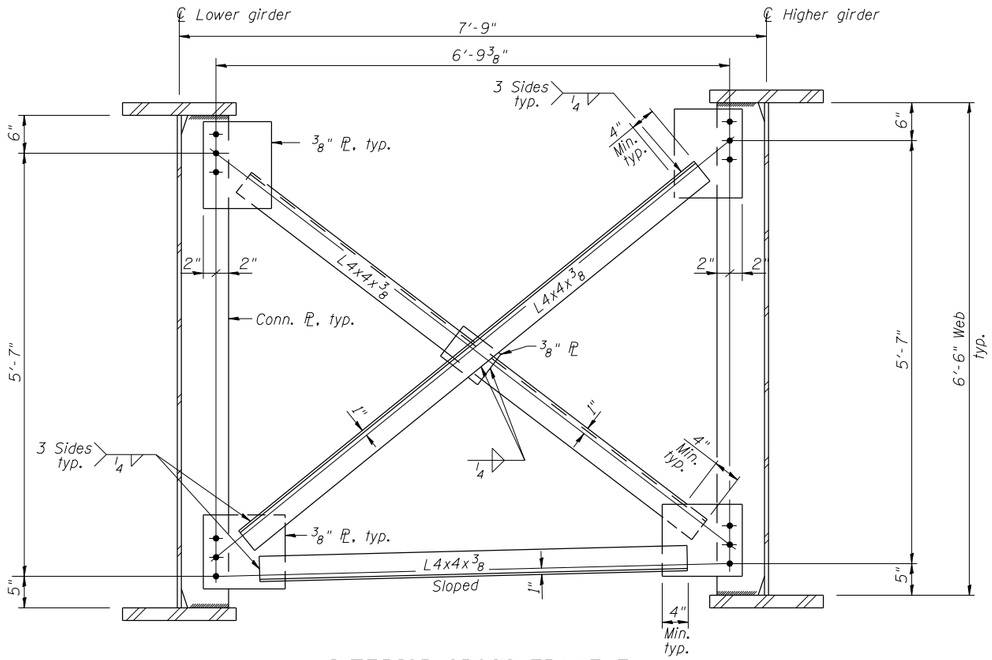
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

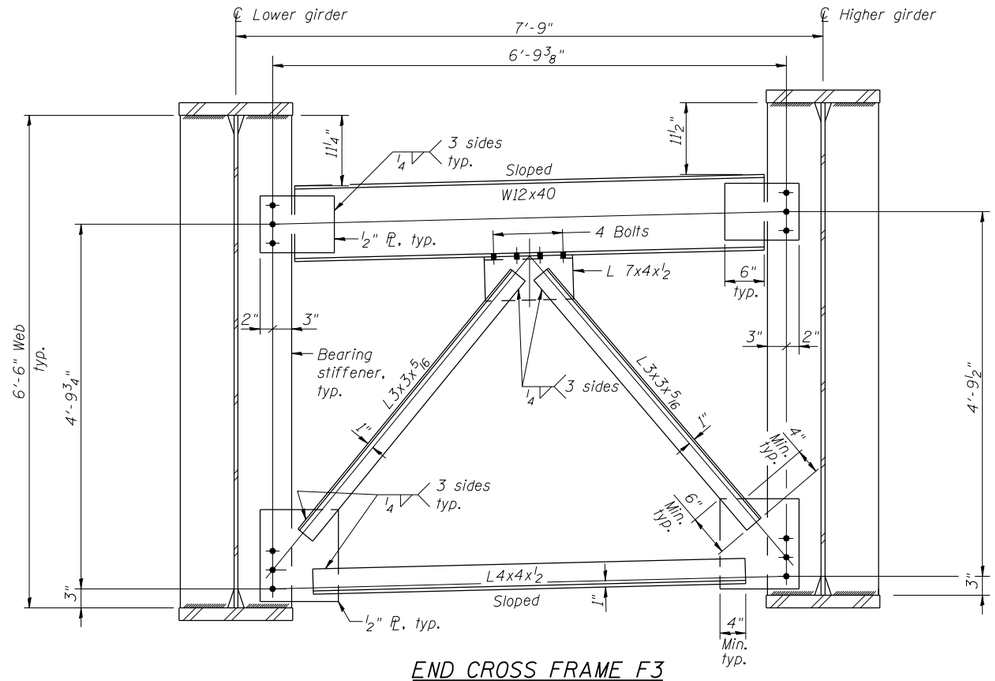
STEEL FRAMING DETAILS
STRUCTURE NOS. 026-0106 & 026-0107

SHEET NO. 63 OF 113 SHEETS

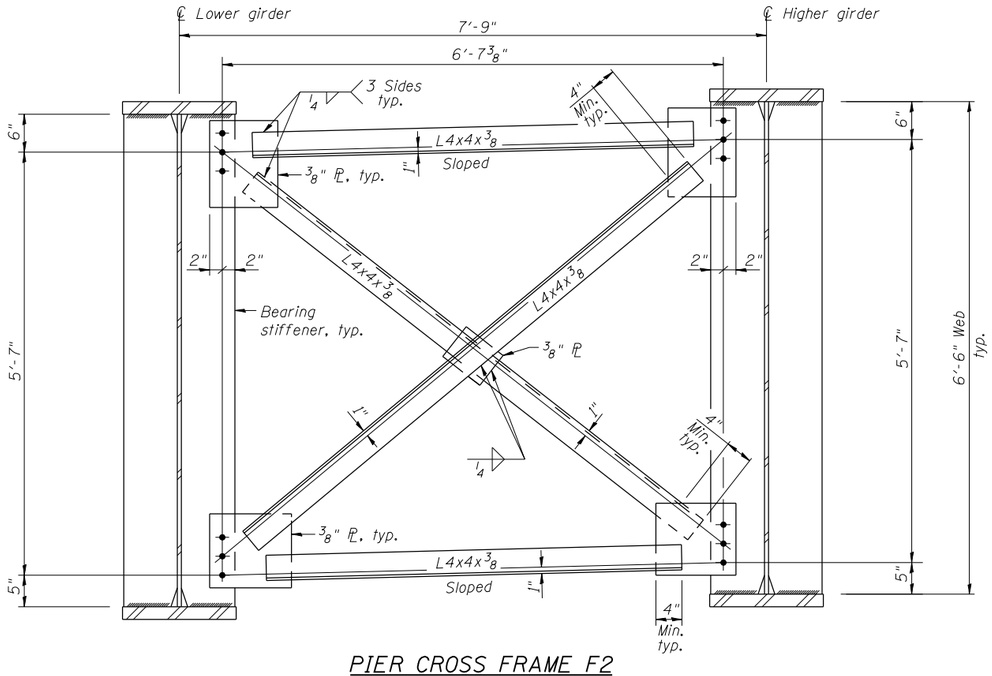
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	143
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



INTERIOR CROSS FRAME F1



END CROSS FRAME F3



PIER CROSS FRAME F2

NOTES:

1. Detail 15/16"ϕ holes for all 3/4"ϕ ASTM A325 Type 1, mechanically galvanized bolts.
2. Two hardened washers are required for each set of oversized holes.
3. AASHTO M270 Grade 50 steel shall be used for all cross frames, connection plates, and bearing stiffeners.
4. All cross frames between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.
5. Place end cross frames F3 and F5 with outstanding angle legs outward, away from abutment backwalls.

ESCA CORPORATION, INC.

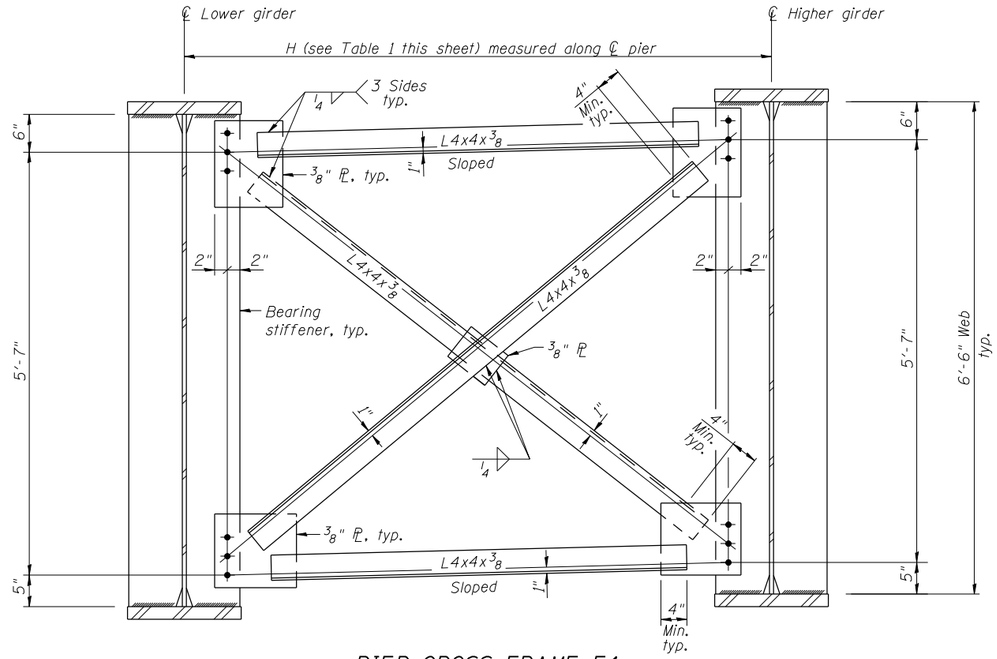
USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:29:12 PM	CHECKED - ELH	08/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

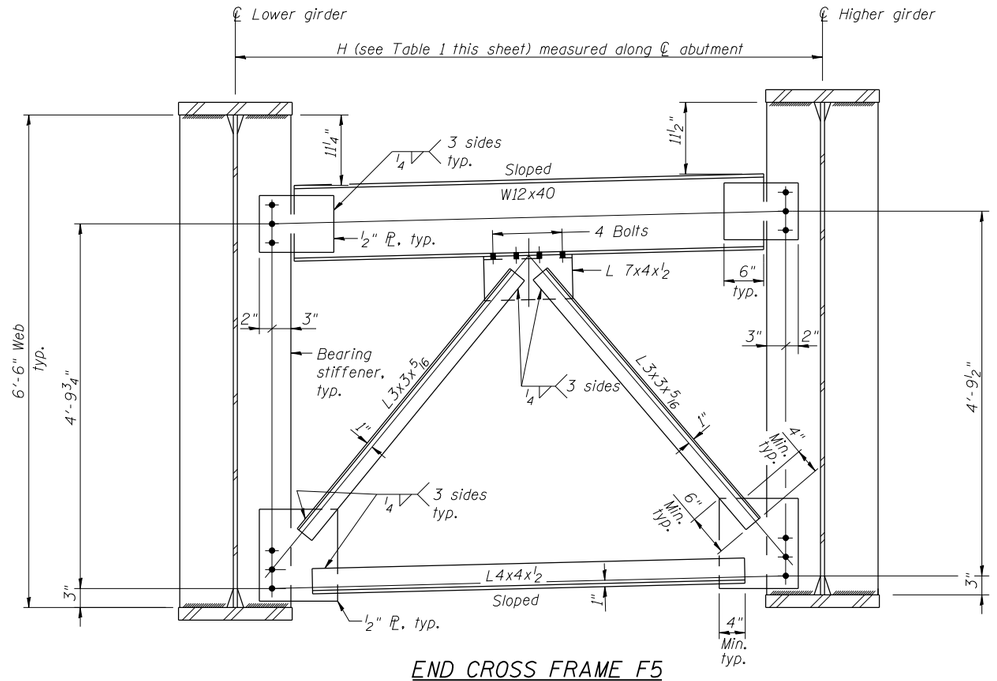
STEEL FRAMING DETAILS
STRUCTURE NOS. 026-0106 & 026-0107

SHEET NO. 64 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	144
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



PIER CROSS FRAME F4



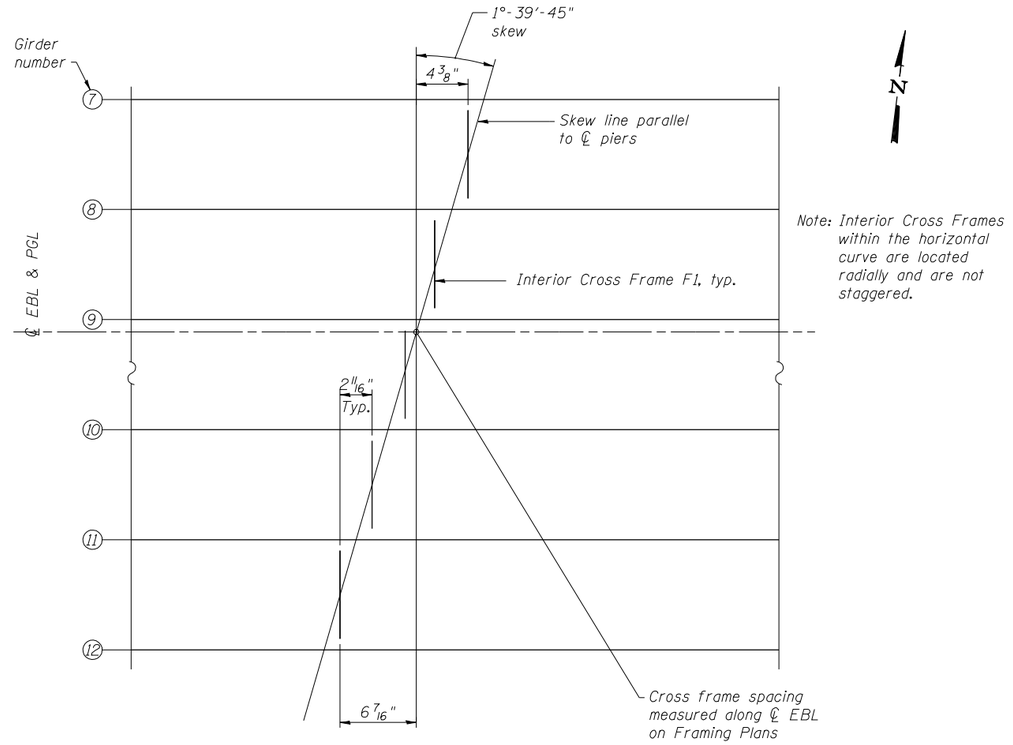
END CROSS FRAME F5

CROSS FRAME TABLE

Name	Quantity
Interior Cross Frame F1	460
Pier Cross Frame F2	25
End Cross Frame F3	10
Pier Cross Frame F4	25
End Cross Frame F5	10

TABLE 1
DIMENSIONS BETWEEN GIRDERS ALONG CENTERLINE PIER

SN 026-0107 Location	H feet
West Abutment	7.752
Pier 1	7.750
Pier 2	7.753
Pier 3	7.753
Pier 4	7.753
Pier 5	7.753
East Abutment	7.753



Note: Interior Cross Frames within the horizontal curve are located radially and are not staggered.

TYPICAL INTERIOR CROSS FRAME PLAN AT SN 026-0107

ESCA CONSULTANTS, INC.

USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL FRAMING DETAILS
STRUCTURE NOS. 026-0106 & 026-0107

SHEET NO. 65 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	145
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

INTERIOR GIRDER MOMENT TABLE - SN 026-0106												
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.5 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in^4)	66,578	117,454	66,578	117,454	66,578	132,399	66,578	117,454	66,578	147,528	73,332
$I_c(n)$	(in^4)	145,296	214,011	145,296	214,011	145,296	233,407	145,296	214,011	145,296	252,771	162,716
$I_c(3n)$	(in^4)	106,737	-	106,737	-	106,737	-	106,737	-	106,737	-	118,283
$I_c(cr)$	(in^4)	-	132,639	-	132,639	-	147,835	-	132,639	-	163,206	-
S_s	(in^3)	1,675	2,891	1,675	2,891	1,675	3,239	1,675	2,891	1,675	3,587	1,942
$S_c(n)$	(in^3)	2,307	-	2,307	-	2,307	-	2,307	-	2,307	-	2,647
$S_c(3n)$	(in^3)	2,068	-	2,068	-	2,068	-	2,068	-	2,068	-	2,380
$S_c(cr)$	(in^3)	-	3,031	-	3,031	-	3,376	-	3,031	-	3,721	-
DC1	(k/')	1.160	1.220	1.165	1.225	1.165	1.230	1.165	1.225	1.165	1.250	1.170
M_{DC1}	('k)	1365	3692	1400	3579	1310	3876	1731	3505	876	4915	2721
DC2	(k/')	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173	0.173
M_{DC2}	('k)	223	511	234	518	204	571	266	508	160	669	420
DW	(k/')	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350	0.350
M_{DW}	('k)	451	1032	474	1047	413	1154	539	1028	323	1352	850
M_{L+IM}	('k)	2,384	2,924	2,396	3,076	2,462	3,257	2,572	3,143	2,436	3,463	3,050
M_u (Strength I)	('k)	6,834	11,918	6,946	12,074	6,820	12,989	7,805	12,059	6,043	15,069	10,538
$\phi_f M_n$	('k)	11,515	-	11,488	-	11,563	-	11,264	-	11,857	-	12,469
f_s DC1	(ksi)	9.8	15.3	10.0	14.9	9.4	14.4	12.4	14.5	6.3	16.4	16.8
f_s DC2	(ksi)	1.3	2.0	1.4	2.0	1.2	2.0	1.5	2.0	0.9	2.2	2.1
f_s DW	(ksi)	2.6	4.1	2.7	4.1	2.4	4.1	3.1	4.1	1.9	4.4	4.3
f_s (L+IM)	(ksi)	12.4	11.6	12.5	12.2	12.8	11.6	13.4	12.4	12.7	11.2	13.8
f_s (Service II)	(ksi)	29.8	36.5	30.3	36.9	29.6	35.5	34.5	36.8	25.6	37.5	41.2
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
f_s (Total)(Strength I)	(ksi)	-	48.1	-	48.7	-	46.9	-	48.6	-	49.3	-
$\phi_f F_n$	(ksi)	-	50.0	-	50.0	-	50.0	-	50.0	-	50.0	-
V_f	(k)	67.9	72.9	-	73.2	-	72.9	-	74.1	-	73.4	67.8

INTERIOR GIRDER MOMENT TABLE - SN 026-0107												
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.5 Sp. 4	Pier 4	0.5 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in^4)	66,578	132,399	66,578	132,399	66,578	132,399	66,578	117,454	66,578	147,528	73,332
$I_c(n)$	(in^4)	145,296	233,407	145,296	233,407	145,296	233,407	145,296	214,011	145,296	252,771	162,716
$I_c(3n)$	(in^4)	106,737	-	106,737	-	106,737	-	106,737	-	106,737	-	118,283
$I_c(cr)$	(in^4)	-	147,835	-	147,835	-	147,835	-	132,639	-	163,206	-
S_s	(in^3)	1,675	3,239	1,675	3,239	1,675	3,239	1,675	2,891	1,675	3,587	1,942
$S_c(n)$	(in^3)	2,307	-	2,307	-	2,307	-	2,307	-	2,307	-	2,647
$S_c(3n)$	(in^3)	2,068	-	2,068	-	2,068	-	2,068	-	2,068	-	2,380
$S_c(cr)$	(in^3)	-	3,376	-	3,376	-	3,376	-	3,031	-	3,721	-
S_{xc}	(in^3)	2,123	3,328	2,121	3,330	2,134	3,327	2,086	2,982	2,184	3,665	2,303
DC1	(k/')	1.160	1.225	1.165	1.230	1.165	1.230	1.165	1.225	1.165	1.250	1.170
M_{DC1}	('k)	1344	3750	1350	3632	1293	3863	1735	3509	875	4913	2718
DC2	(k/')	0.260	0.260	0.260	0.260	0.173	0.173	0.173	0.173	0.173	0.173	0.173
M_{DC2}	('k)	326	775	343	785	202	570	267	509	160	670	420
DW	(k/')	0.388	0.388	0.388	0.388	0.350	0.350	0.350	0.350	0.350	0.350	0.350
M_{DW}	('k)	488	1159	514	1176	409	1152	540	1029	324	1354	850
M_{L+IM}	('k)	2,557	3,218	2,569	3,383	2,455	3,256	2,574	3,133	2,434	3,465	3,052
f_l (Strength I)	(ksi)	2.7	1.7	3.1	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$M_u + 1/3\ f_l\ S_{xc}$	('k)	7,453	13,183	7,565	13,363	6,779	12,967	7,817	12,049	6,038	15,073	10,538
$\phi_f M_n$	('k)	11,500	-	11,489	-	11,563	-	11,261	-	11,858	-	12,470
f_s DC1	(ksi)	9.6	13.9	9.7	13.5	9.3	14.3	12.4	14.6	6.3	16.4	16.8
f_s DC2	(ksi)	1.9	2.8	2.0	2.8	1.2	2.0	1.5	2.0	0.9	2.2	2.1
f_s DW	(ksi)	2.8	4.1	3.0	4.2	2.4	4.1	3.1	4.1	1.9	4.4	4.3
f_s (L+IM)	(ksi)	13.3	11.4	13.4	12.0	12.8	11.6	13.4	12.4	12.7	11.2	13.8
f_l (Service II)	(ksi)	2.0	1.1	2.3	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$f_s + f_l/2$ (Service II)	(ksi)	32.6	36.2	33.2	36.6	29.4	35.5	34.5	36.8	25.5	37.5	41.2
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
$f_s + f_l/3$ (Total)(Strength I)	(ksi)	-	47.6	-	48.2	-	46.8	-	48.5	-	49.3	-
$\phi_f F_n$	(ksi)	-	50.0	-	50.0	-	50.0	-	50.0	-	50.0	-
V_f	(k)	73.9	79.0	-	79.1	-	73.0	-	74.1	-	73.4	68.2

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1.

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

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

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

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

f_s (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(L+IM)$

$f_s + f_l/2$ (Service II): Sum of stresses as computed from the moments below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(L+IM) + f_l/2$

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

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

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

$\phi_f F_n$: Non-compact composite negative stress capacity for Strength I loading according to 6.10.8 (ksi).

V_f: Maximum factored shear range in span computed according to Article 6.10.10.

Note:
M_{L+IM} and R_{L+IM} include the effects of centrifugal force and superelevation.

SN 026-0106 - TOP OF WEB ELEVATIONS

(For fabrication only)

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6
Brg. W. Abut.	496.06	496.22	496.36	496.45	496.33	496.19
Splice 1-1	496.35	496.51	496.65	496.74	496.62	496.47
Brg. Pier 1	496.58	496.74	496.88	496.97	496.85	496.70
Splice 2-1	496.81	496.97	497.11	497.20	497.08	496.94
Splice 2-2	497.30	497.46	497.60	497.70	497.58	497.43
Brg. Pier 2	497.50	497.66	497.80	497.89	497.77	497.62
Splice 3-1	497.69	497.85	497.99	498.08	497.96	497.81
Splice 3-2	497.97	498.13	498.27	498.37	498.25	498.10
Brg. Pier 3	497.97	498.13	498.27	498.37	498.25	498.10
Splice 4-1	498.14	498.30	498.44	498.53	498.41	498.26
Splice 4-2	497.86	498.02	498.16	498.26	498.13	497.99
Brg. Pier 4	497.48	497.64	497.78	497.88	497.75	497.61
Splice 5-1	497.27	497.43	497.57	497.66	497.54	497.39
Splice 5-2	496.78	496.94	497.08	497.17	497.05	496.90
Brg. Pier 5	496.51	496.67	496.81	496.90	496.78	496.63
Splice 6-1	496.54	496.70	496.84	496.93	496.81	496.66
Brg. E. Abut.	495.83	495.99	496.13	496.22	496.10	495.96

Note: Top of web elevations are based on a "no-load" condition prior to any dead load deflection.

INTERIOR GIRDER REACTION TABLE - SN 026-0106								
		W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	E. Abut.
R_{DC1}	(k)	60.6	221.9	218.5	229.1	215.8	258.6	83.5
R_{DC2}	(k)	8.8	32.0	32.0	33.4	31.6	36.4	12.1
R_{DW}	(k)	17.8	64.7	64.6	67.6	63.9	73.6	24.4
R_{LL+IM}	(k)	105.0	221.0	227.7	232.8	230.1	236.2	113.6
R_{Total}	(k)	192.2	539.6	542.8	562.9	541.4	604.8	233.6

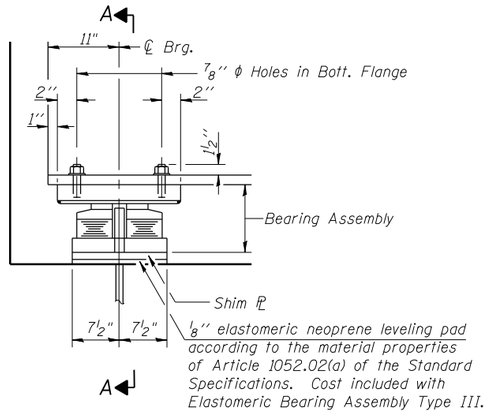
SN 026-0107 - TOP OF WEB ELEVATIONS

(For fabrication only)

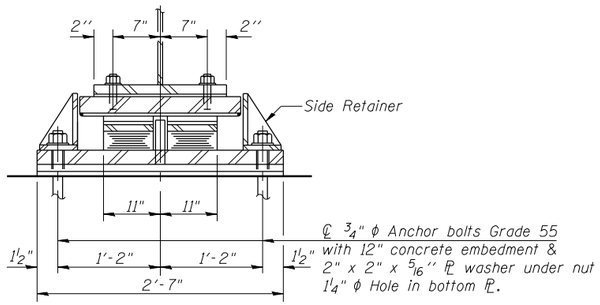
Location	Girder 7	Girder 8	Girder 9	Girder 10	Girder 11	Girder 12
Brg. W. Abut.	496.09	496.40	496.71	497.02	497.33	497.64
Splice 1-1	496.58	496.89	497.20	497.51	497.82	498.14
Brg. Pier 1	496.74	497.05	497.36	497.67	497.98	498.29
Splice 2-1	497.11	497.42	497.73	498.03	498.34	498.65
Splice 2-2	497.87	498.10	498.29	498.47	498.67	498.84
Brg. Pier 2	498.17	498.28	498.42	498.48	498.56	498.62
Splice 3-1	498.46	498.63	498.75	498.74	498.69	498.60
Splice 3-2	498.78	498.95	499.07	498.96	498.84	498.66
Brg. Pier 3	498.79	498.94	499.06	498.97	498.83	498.67
Splice 4-1	498.97	499.10	499.22	499.14	498.99	498.84
Splice 4-2	498.61	498.76	498.89	498.79	498.66	498.49
Brg. Pier 4	498.14	498.29	498.42	498.32	498.19	498.02
Splice 5-1	497.84	497.99	498.11	498.02	497.88	497.72
Splice 5-2	497.16	497.30	497.42	497.34	497.20	497.04
Brg. Pier 5	496.74	496.88	497.01	496.92	496.79	496.63
Splice 6-1	496.62	496.76	496.89	496.79	496.67	496.51
Brg. E. Abut.	495.55	495.70	495.82	495.73	495.59	495.43

Note: Top of web elevations are based on a "no-load" condition prior to any dead load deflection.

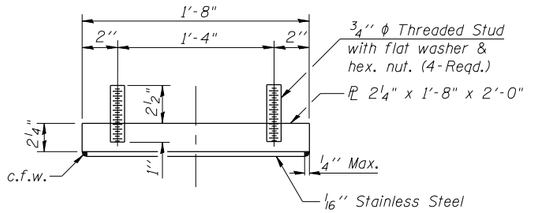
INTERIOR GIRDER REACTION TABLE - SN 026-0107								
		W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	E. Abut.
R_{DC1}	(k)	60.2	223.2	219.9	228.8	216.0	258.6	83.5
R_{DC2}	(k)	13.2	48.0	48.0	33.4	31.6	36.4	12.1
R_{DW}	(k)	19.6	71.9	71.8	67.5	64.0	73.6	24.4
R_{LL+IM}	(k)	114.1	239.4	246.6	232.8	230.1	236.1	114.4
R_{Total}	(k)	207.1	582.5	586.3	562.5	541.7	604.7	234.4



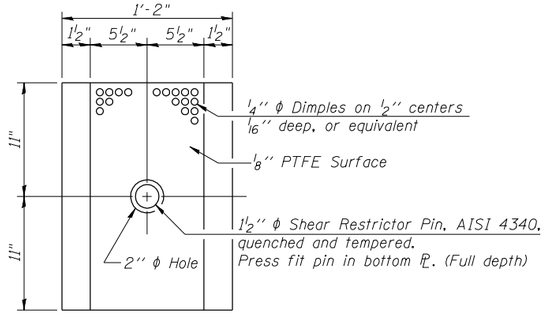
ELEVATION



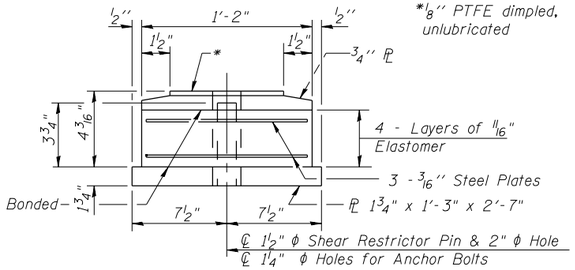
SECTION A-A



TOP BEARING ASSEMBLY

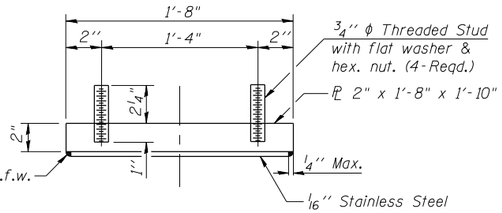


PLAN-PTFE ELASTOMERIC BRG.

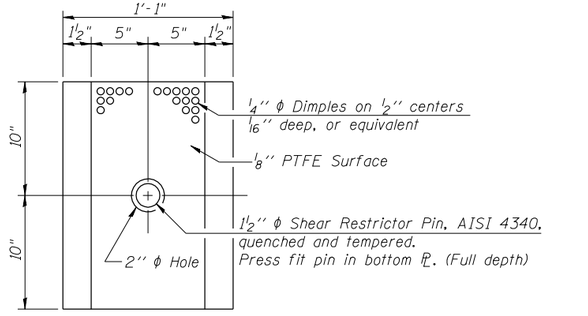


BOTTOM BEARING ASSEMBLY

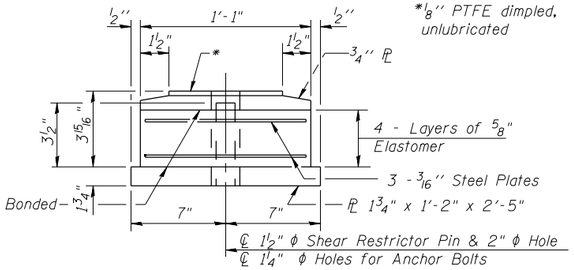
TYPE III ELASTOMERIC EXP. BRG. AT EAST ABUT'S. (EB & WB)



TOP BEARING ASSEMBLY

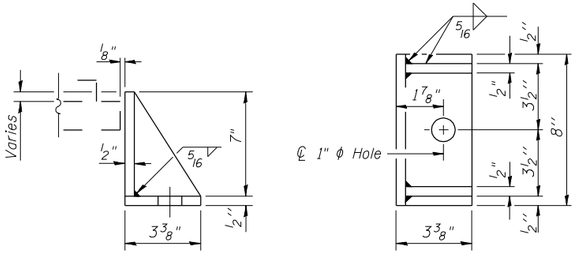


PLAN-PTFE ELASTOMERIC BRG.



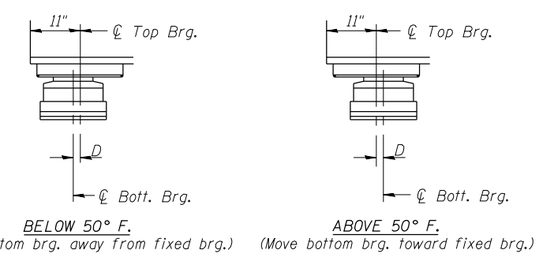
BOTTOM BEARING ASSEMBLY

TYPE III ELASTOMERIC EXP. BRG. AT WEST ABUT. (WB)



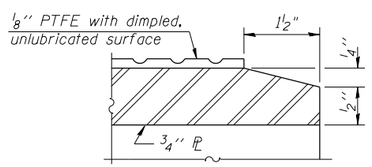
SIDE RETAINER

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



SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100° of expansion for every 15° temp. change from the normal temp. of 50° F.



SECTION THRU PTFE

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type III	Each	18
Anchor Bolts, 3/4"	Each	36

Notes:

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

Anchor bolts for Type III bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place. Side retainers shall be placed after bolts are installed.

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

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

The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" PTFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

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

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

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

ESCA CONSULTANTS, INC.

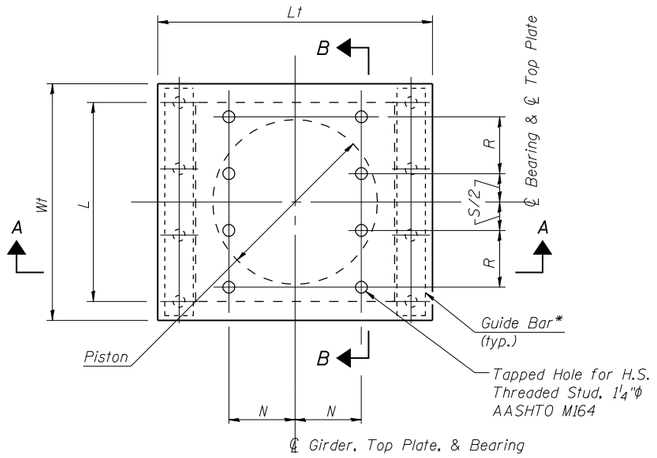
USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - SHL	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 1:32:03 PM	CHECKED - RDP/ELH	01/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

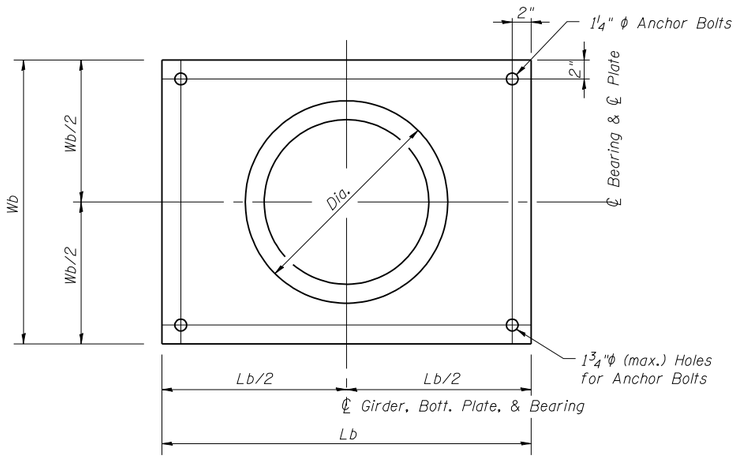
ELASTOMERIC BEARING DETAILS
STRUCTURE NOS. 026-0106 & 026-0107

SHEET NO. 68 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	148
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



TOP BEARING ℄ AND PISTON PLAN



BOTTOM BEARING ℄ AND BASE CYLINDER PLAN

Notes:

The Structural Steel for the top & bottom bearing plates shall be AASHTO M270 Grade 50.

Top & bottom plates, threaded studs, washers & shim plates are included in the cost of the bearings.

Anchor bolts for bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place.

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

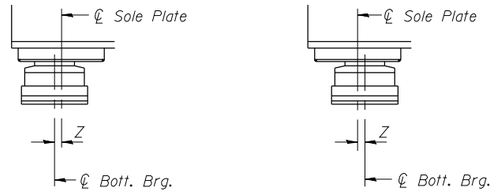
The ⅛" PTFE sheet shall be bonded directly to the piston with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

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

Bearing dimensions and details shown are for pot type HLMR bearings. Disc type HLMR bearing dimensions and details will vary.

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

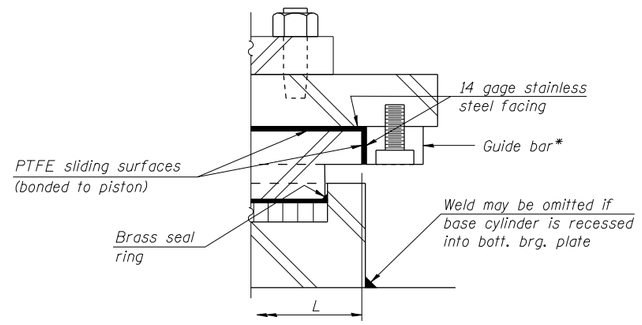


BELOW 50° F.
(Move bottom brg. away from fixed brg.)

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

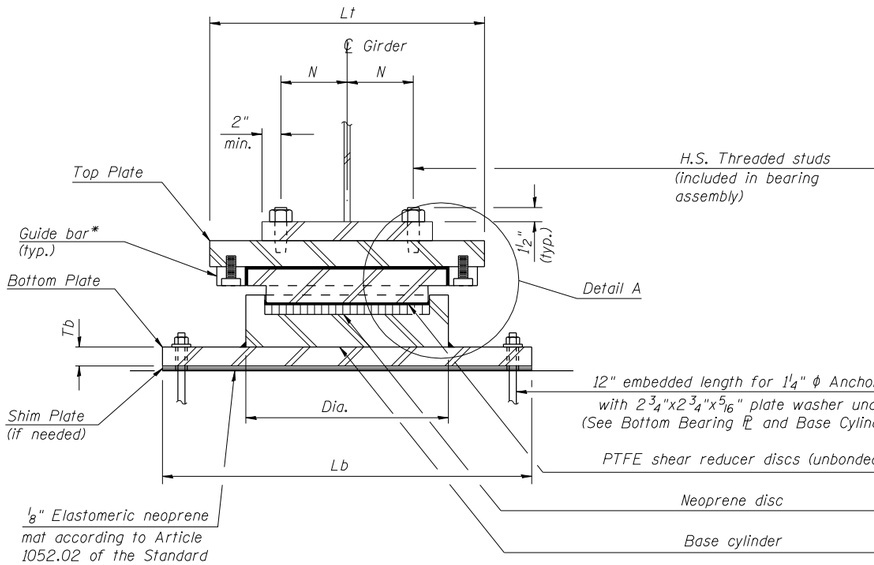
SETTING ANCHOR BOLTS AT EXP. BRG.

Z=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F. See Bearing Orientation Details for Expansion/Contraction lengths.

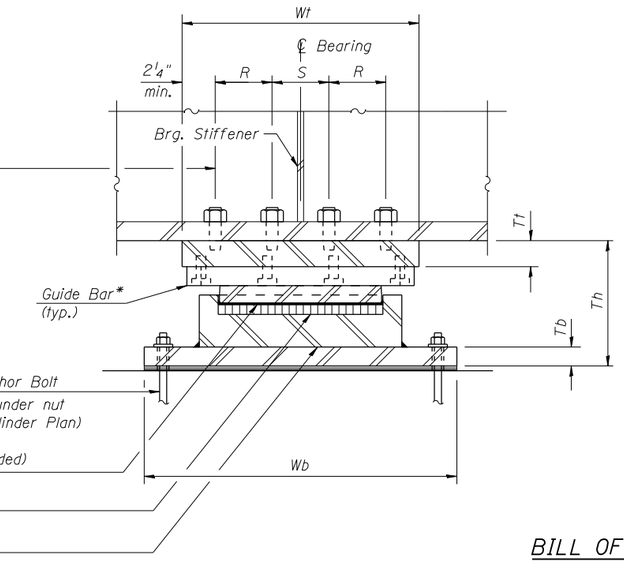


DETAIL A

*As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece. Avoid interference with guide bar bolts and top plate mounting bolts.



SECTION A-A



SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings. Guided Expansion 550k	Each	24
Anchor Bolts, 1¼"	Each	96

GUIDED EXPANSION BEARING TABLE - WB BRIDGE

Bearing Location	HLMR Bearing Capacity (kips)	Vertical Design Load (kips)	Lateral Design Load (kips)	**Maximum Factored Ultimate (Strength) Design Rotation (Radians)	Total Required Movement (In.)	Bottom Bearing Plate			Top Bearing Plate									Anchor Bolt Size & Grade
						Tb (In.)	Lb (In.)	Wb (In.)	Tt (In.)	Lt (In.)	Wt (In.)	N (In.)	R (In.)	S (In.)	Th (In.)	L (In.)	Dia. (In.)	
Pier 1 WB	550	485	97***	0.03	2 3/8	2 1/4	39	30	2 3/4	29	25	7	6	6	13 1/4	21	21 3/8	1¼" Diameter Grade 36
Pier 2 WB	550	486	97***	0.03	1¼	2 1/4	39	30	2 3/4	29	25	7	6	6	13 1/4	21	21 3/8	1¼" Diameter Grade 36
Pier 4 WB	550	484	97***	0.03	1¼	2 1/4	39	30	2 3/4	29	25	7	6	6	13 1/4	21	21 3/8	1¼" Diameter Grade 36
Pier 5 WB	550	546	110***	0.03	2 3/8	2 1/8	40	35	3	30	26	7	6	6	13 1/4	22	23 5/8	1¼" Diameter Grade 55

** Includes rotation allowances for fabrication tolerances (0.005 radians) and installation uncertainties (0.005 radians)

*** The Lateral Design Loads are greater than 10% of the Vertical Design Loads. The Fabricator shall modify components of the bearings as required to meet the lateral load demands.

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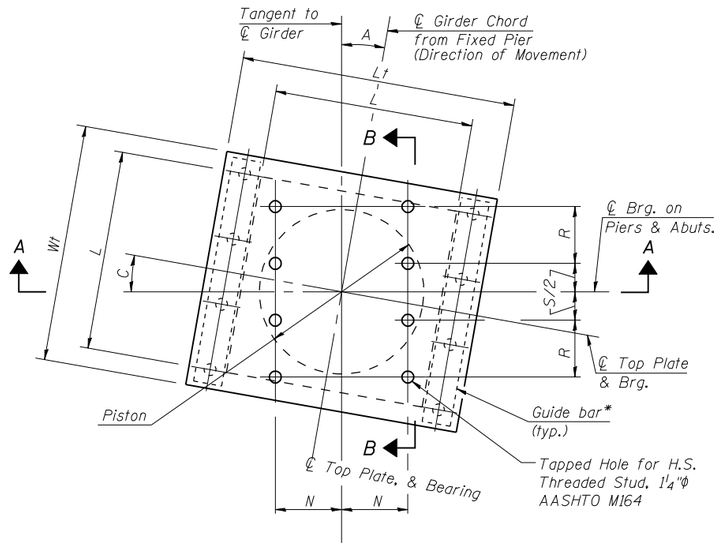
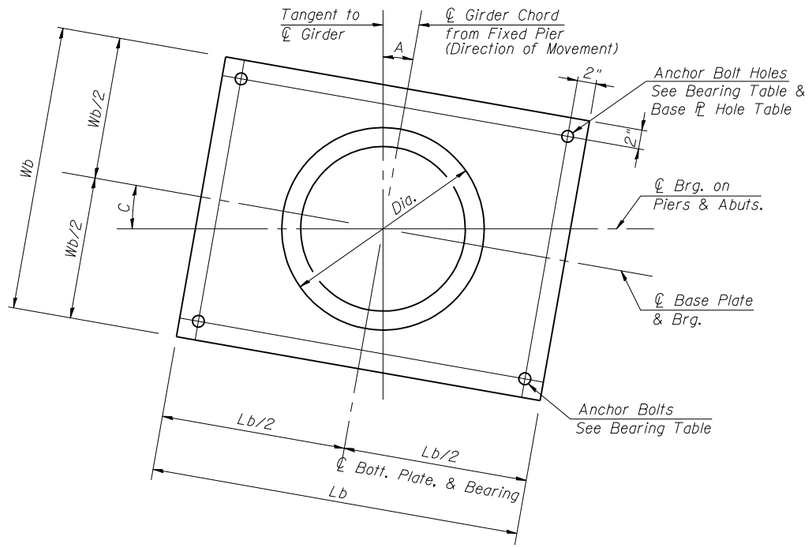
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXPANSION POT BEARING DETAILS – WB
STRUCTURE NO. 026-0106
SHEET NO. 69 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	149
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			



TOP BEARING ℄ AND PISTON PLAN



BOTTOM BEARING ℄ AND BASE CYLINDER PLAN

Notes:

The Structural Steel for the top & bottom bearing plates shall be AASHTO M270 Grade 50.

For anchor bolt type and details see bearing table.

Top & bottom plates, threaded studs, washers & shim plates are included in the cost of the bearings.

Anchor bolts for bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place.

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

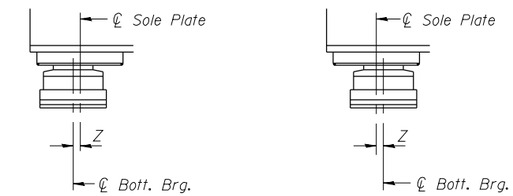
The ⅛" PTFE sheet shall be bonded directly to the piston with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

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

Bearing dimensions and details shown are for pot type HLMR bearings. Disc type HLMR bearing dimensions and details will vary.

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

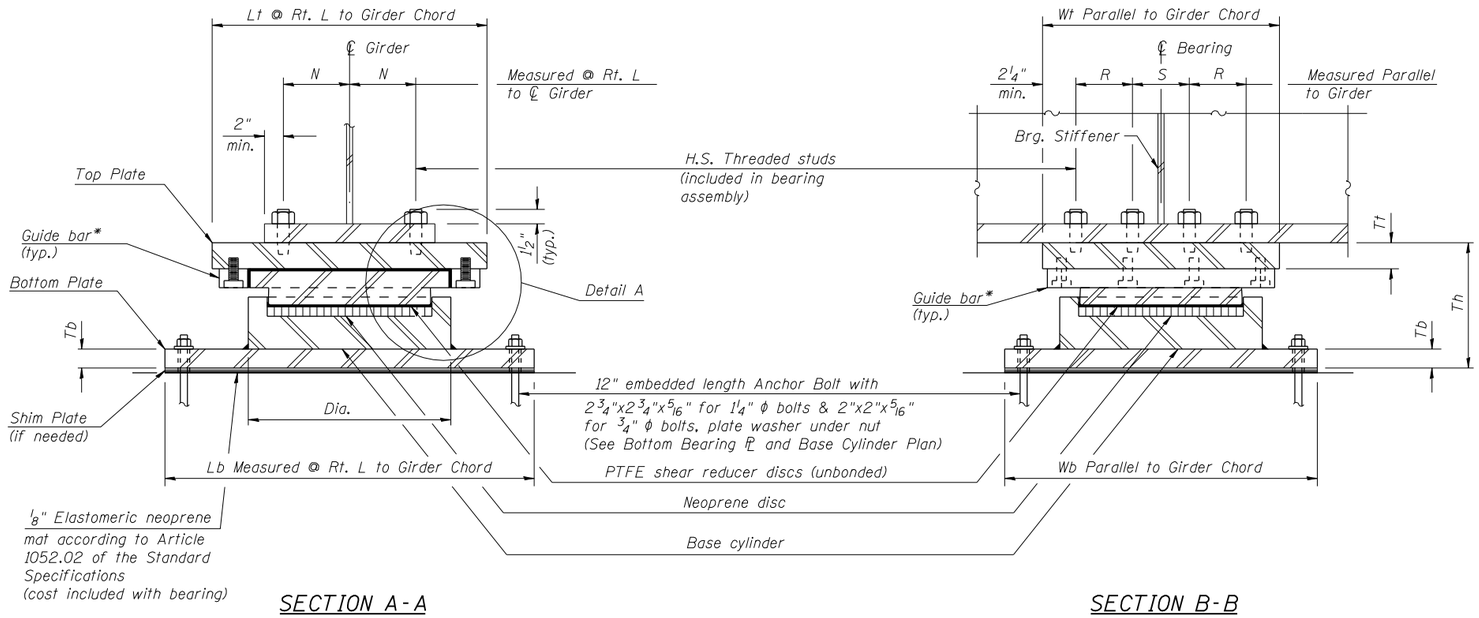


BELOW 50° F. (Move bottom brg. away from fixed brg.)

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

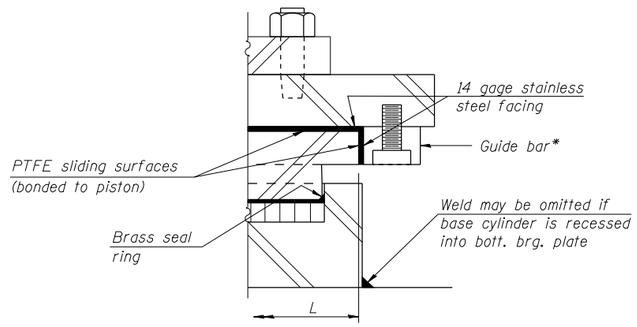
SETTING ANCHOR BOLTS AT EXP. BRG.

Z=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50° F. See Bearing Orientation Details for Expansion/Contraction lengths.



SECTION A-A

SECTION B-B



DETAIL A

*As alternates to the bolted connection shown, the guide bars may be connected to the top bearing plate by groove welds or the guide bars and top bearing plate may be fabricated as a single piece. Avoid interference with guide bar bolts and top plate mounting bolts.

BASE PLATE HOLE TABLE

Anchor Bolt ϕ	Max. Hole ϕ
1¼"	1¾"
¾"	1¼"

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXPANSION POT BEARING DETAILS – EB
STRUCTURE NO. 026-0107
SHEET NO. 70 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	150
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			

GUIDED EXPANSION BEARING TABLE - EB BRIDGE

Bearing Location	HLMR Bearing Capacity (kips)	Vertical Design Load (kips)	Lateral Design Load (kips)	**Maximum Factored Ultimate (Strength) Design Rotation (Radians)	Total Required Movement (In.)	Bottom Bearing Plate			Top Bearing Plate									Anchor Bolt Size & Grade	Setting Angle "C" (Degrees)	Setting Angle "A" (Degrees)*
						Tb (In.)	Lb (In.)	Wb (In.)	Tt (In.)	Lt (In.)	Wt (In.)	N (In.)	R (In.)	S (In.)	Th (In.)	L (In.)	Dia. (In.)			
W. Abut. EB	250	179	36***	0.03	3 1/4	1 5/8	28	20	1 1/2	18	17	5	3 3/4	5	8 1/8	10	11 3/4	3/4" Diameter Grade 36	-0°-54'-02"	-2°-03'-07"
Pier 1 EB	550	523	105***	0.03	1 1/4	2 1/4	39	30	2 3/4	29	25	7	6	6	13 1/4	21	21 3/8	1 1/4" Diameter Grade 36	-1°-24'-43"	-1°-07'-17"
Pier 2 EB	550	525	105***	0.03	1 1/4	2 1/4	39	30	2 3/4	29	25	7	6	6	13 1/4	21	21 3/8	1 1/4" Diameter Grade 36	-1°-39'-45"	0
Pier 4 EB	550	484	97***	0.03	1 1/4	2 1/4	39	30	2 3/4	29	25	7	6	6	13 1/4	21	21 3/8	1 1/4" Diameter Grade 36	-1°-39'-45"	0
Pier 5 EB	550	546	110***	0.03	2 3/8	2 1/4	40	35	3	30	26	7	6	6	13 1/4	22	23 5/8	1 1/4" Diameter Grade 55	-1°-39'-45"	0

** Includes rotation allowances for fabrication tolerances (0.005 radians) and installation uncertainties (0.005 radians)

*** The Lateral Design Loads are greater than 10% of the Vertical Design Loads. The Fabricator shall modify components of the bearings as required to meet the lateral load demands.

* ℄ Girder Tangent to Movement Direction

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Guided Expansion 250k	Each	6
High Load Multi-Rotational Bearings, Guided Expansion 550k	Each	24
Anchor Bolts, 1 1/4"	Each	96
Anchor Bolts, 3/4"	Each	24

ESCA CORPORATION, INC.

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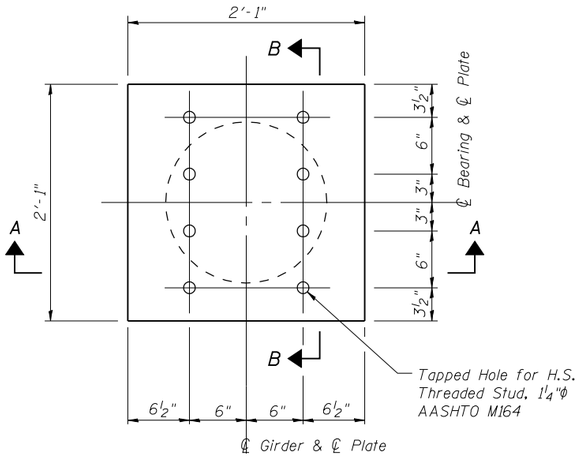
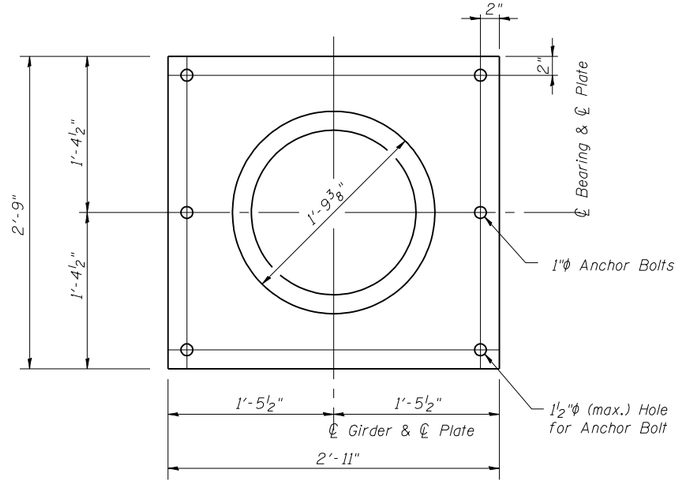
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXPANSION POT BEARING DETAILS – EB
STRUCTURE NO. 026-0107
SHEET NO. 71 OF 113 SHEETS

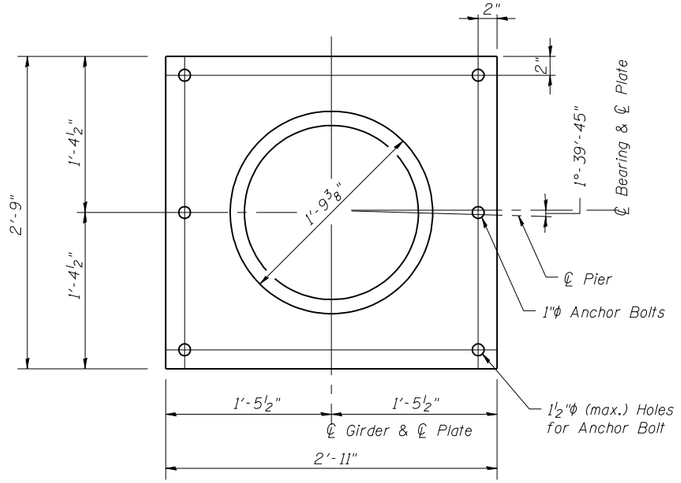
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	151
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



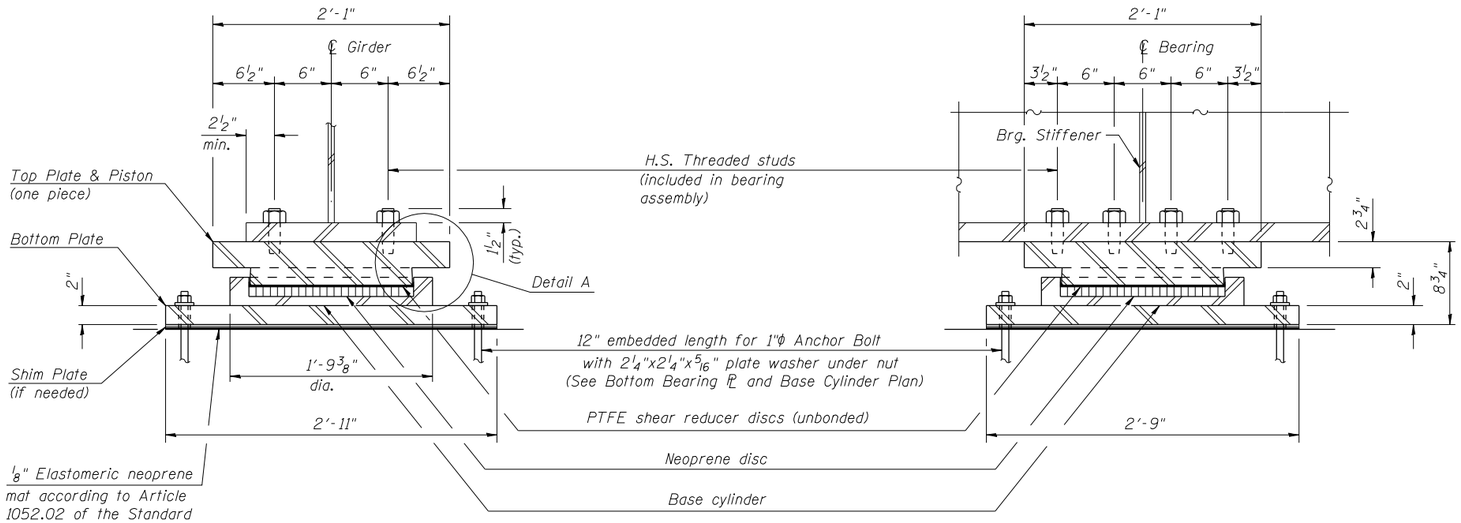
TOP BEARING ℄ AND PISTON PLAN



BOTTOM BEARING ℄ AND BASE CYLINDER PLAN - PIER 3 WB

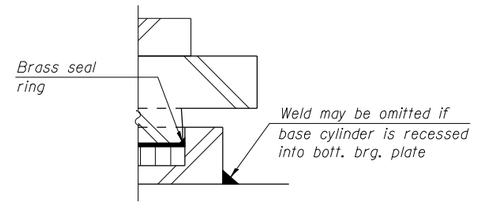


BOTTOM BEARING ℄ AND BASE CYLINDER PLAN - PIER 3 EB



SECTION A-A

SECTION B-B



DETAIL A

BEARING TABLE

Location	No. Req'd.	HLMR Bearing Capacity (kips)	Vertical Design Load (kips)	Lateral Design Load (kips)	**Maximum Factored Ultimate (Strength) Design Rotation (Radians)
Pier 3 WB	6	550	505	101***	0.03
Pier 3 EB	6	550	505	101***	0.03

** Includes rotation allowances for fabrication tolerances (0.005 radians) and installation uncertainties (0.005 radians)

*** The Lateral Design Loads are greater than 10% of the Vertical Design Loads. The Fabricator shall modify components of the bearings as required to meet the lateral load demands.

BILL OF MATERIAL

Item	Unit	Total
High Load Multi-Rotational Bearings, Fixed 550k	Each	12
Anchor Bolts, 1"	Each	72

Notes:

The Structural Steel for the top & bottom bearing plates shall be AASHTO M270 Grade 50.

Top & bottom plates, threaded studs, washers & shim plates are included in the cost of the bearings.

Anchor bolts for bearings shall be placed in holes drilled in the concrete through holes in the bottom bearing plate after members are in place.

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

Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

Anchor bolts shall be ASTM F1554 Grade 36 all-thread of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

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

Bearing dimensions and details shown are for pot type HLMR bearings. Disc type HLMR bearing dimensions and details will vary.

ESCA CONSULTANTS, INC. BRIDGE & STRUCTURAL ENGINEERING

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STATE OF ILLINOIS
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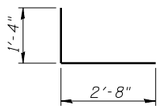
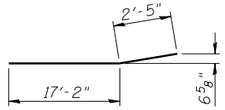
FIXED POT BEARING DETAILS
STRUCTURE NOS. 026-0106 & 026-0107

SHEET NO. 72 OF 113 SHEETS

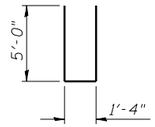
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	152
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



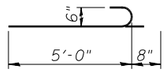
BAR h_2(E)



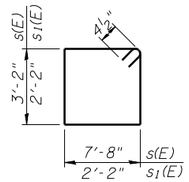
BAR h_4(E)



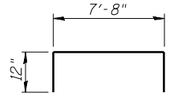
BAR n(E)



BAR n_1(E)



BARS s(E) & s_1(E)



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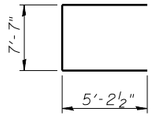
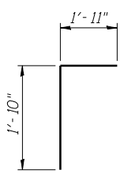
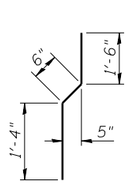


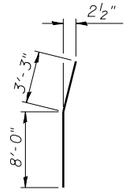
BAR u(E)



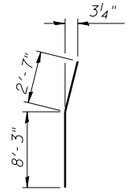
BAR v(E)



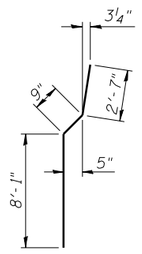
BAR v_1(E)



BAR v_2(E)



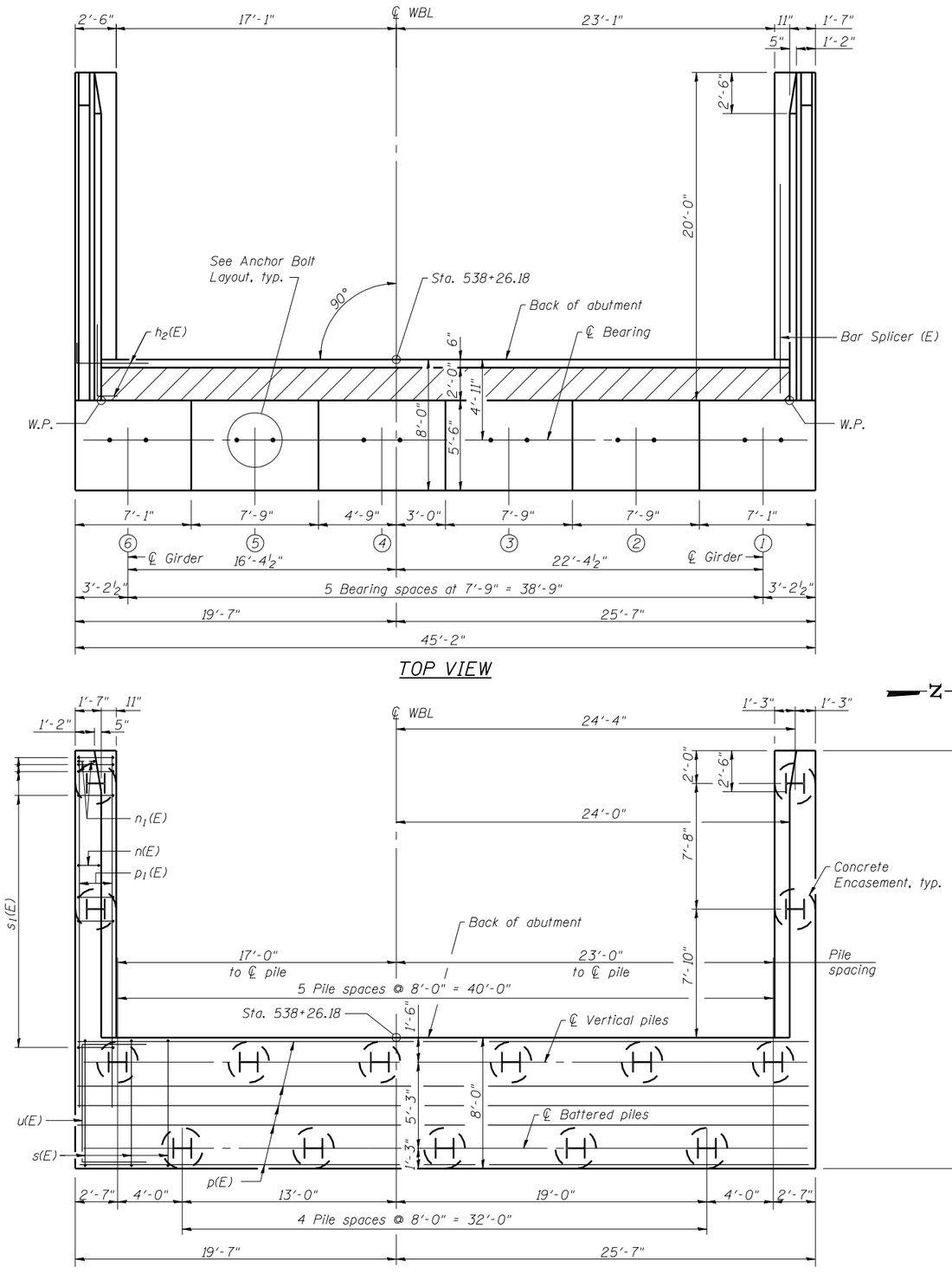
BAR v_3(E)



BAR v_4(E)

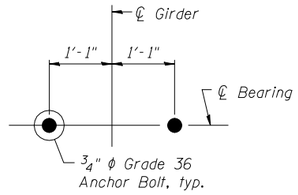
PILE DATA

Type: HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 94 feet
No. Production Piles: 15
No. Test Piles: 0



TOP VIEW

PLAN-PILE CAP



ANCHOR BOLT LAYOUT

WEST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	14	#5	41'-8"	
h_1(E)	5	#6	41'-8"	
h_2(E)	32	#5	4'-0"	
h_3(E)	32	#4	19'-8"	
h_4(E)	20	#4	19'-7"	
h_5(E)	5	#4	7'-5"	
n(E)	36	#6	11'-4"	
n_1(E)	12	#6	5'-8"	
p(E)	14	#7	44'-10"	
p_1(E)	12	#7	22'-0"	
s(E)	68	#4	22'-5"	
s_1(E)	36	#4	9'-5"	
s_2(E)	8	#4	9'-8"	
u(E)	8	#6	18'-0"	
v(E)	42	#5	3'-9"	
v_1(E)	42	#4	3'-4"	
v_2(E)	42	#6	11'-3"	
v_3(E)	6	#6	10'-10"	
v_4(E)	36	#6	11'-5"	
v_5(E)	42	#5	8'-10"	
v_6(E)	42	#5	7'-8"	

Structure Excavation	Cu. Yd.	240
Concrete Structures	Cu. Yd.	103.6
Reinforcement Bars, Epoxy Coated	Pound	8220
Furnishing Steel Piles HP14x73	Foot	1410
Driving Piles	Foot	1410
Concrete Encasement	Cu. Yd.	8.2
Concrete Sealer	Sq. Ft.	711
Granular Backfill for Structures	Cu. Yd.	125
Geocomposite Wall Drain	Sq. Yd.	47
Pipe Underdrains for Structures 4"	Foot	75

For details of Bar Splicers, see sheet 107 of 113.
For details of piles and Concrete Encasement, see sheet 106 of 113.
The locations of some abutment piles may need to be adjusted in the field. Otherwise, conflicts may occur between the proposed back row of abutment piles and the battered piles in the front row of the existing abutments. The concrete caps at the exisitng abutments shall be removed and locations of existing piles verified prior to driving any proposed piles. If conflicts exist, the proposed pile locations shall be adjusted and reinforcement stirrups relocated as directed by the Engineer. The maximum pile spacing in the back row of the proposed abutments shall be 8'-9".

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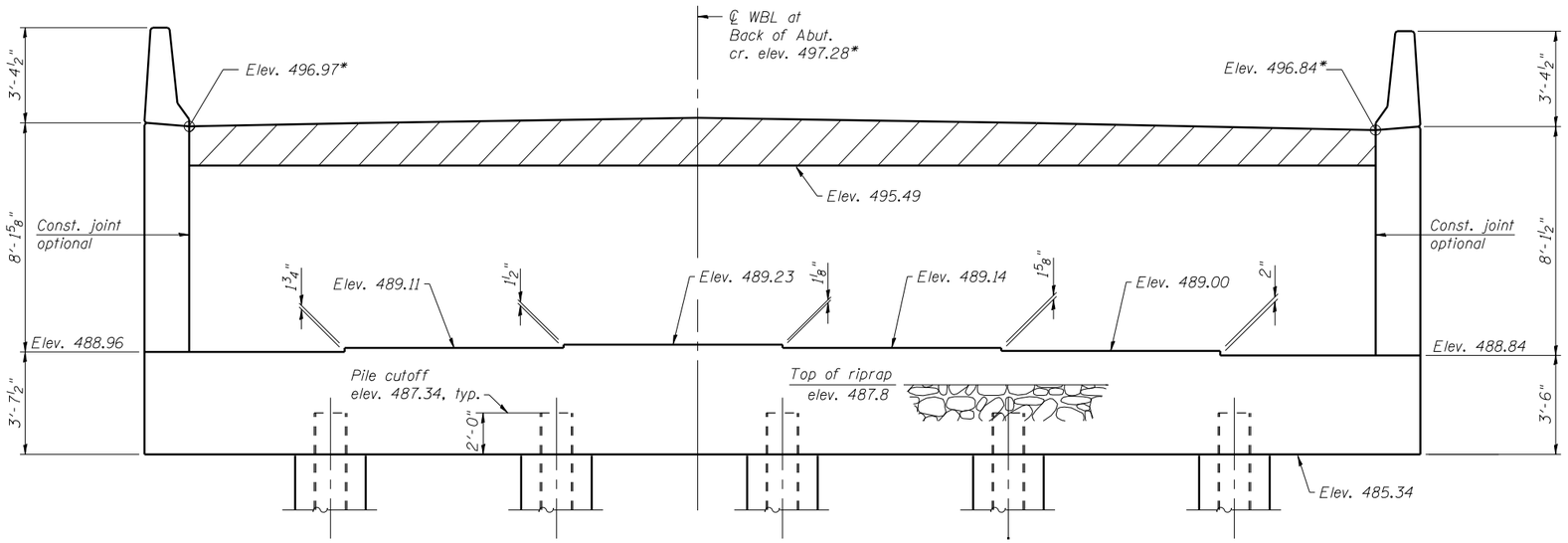
		DRAWN - DWH	10/13	REVISED -	
PLOT DATE = 3/19/2014	7:12:11 AM	CHECKED - RDP	03/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

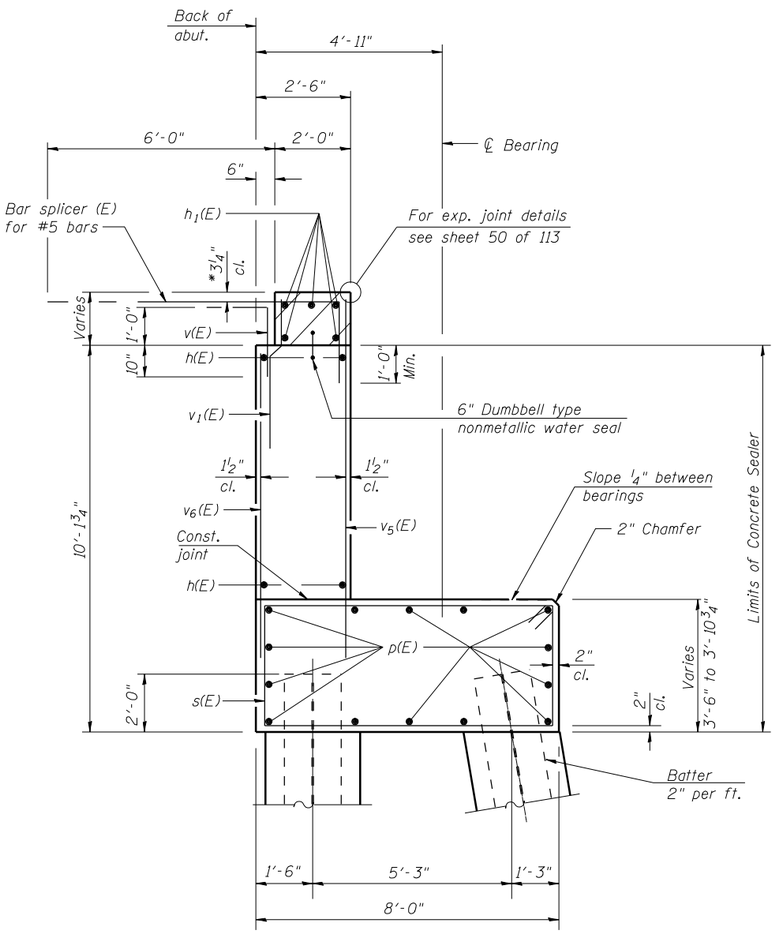
WEST ABUTMENT – WB
STRUCTURE NO. 026-0106
SHEET NO. 73 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	153
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

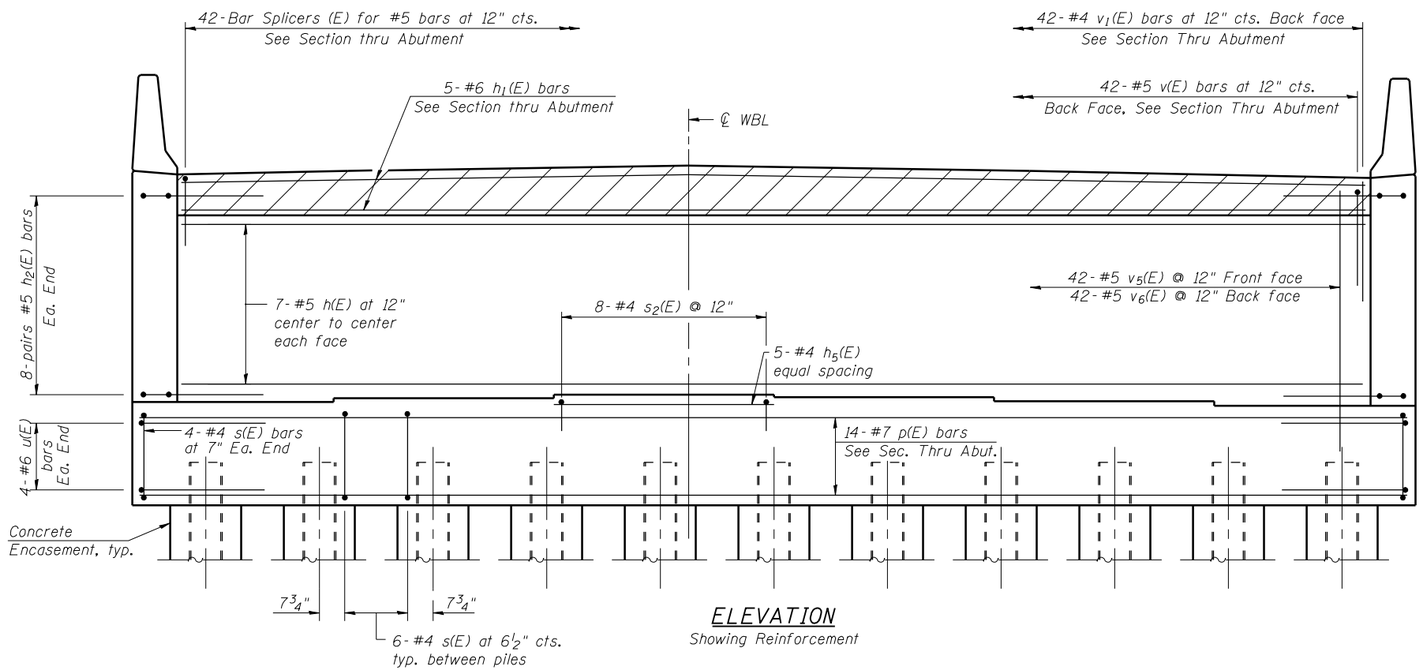


ELEVATION
Showing Dimensions

*Prior to grinding



SECTION THRU ABUTMENT



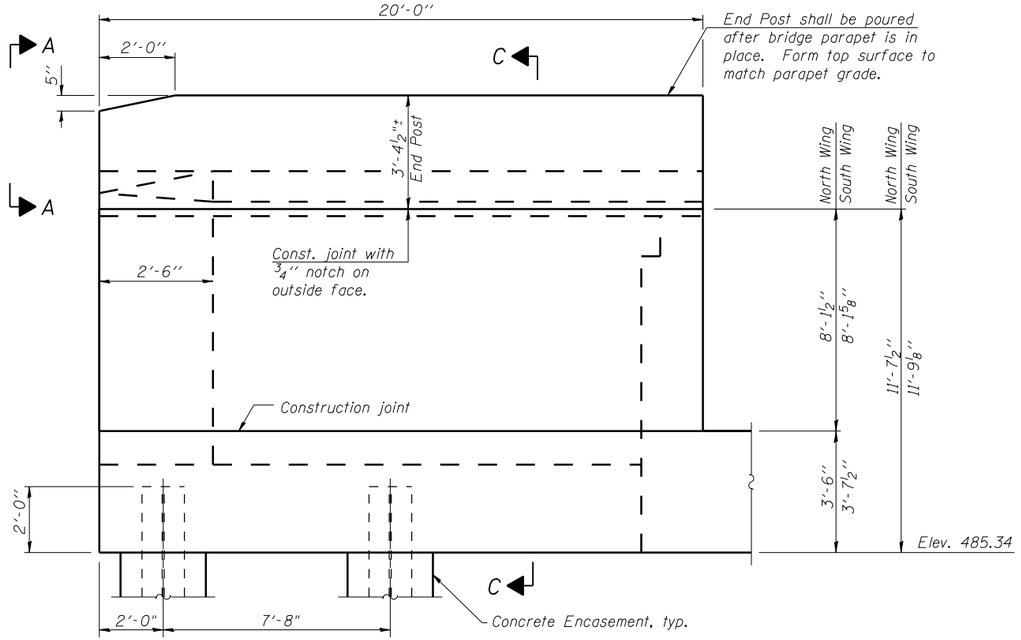
ELEVATION
Showing Reinforcement

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	10/13	REVISED -
	ESCA PROJECT NO. 1070.09	CHECKED - ELH	10/13	REVISED -
		DRAWN - DWH	10/13	REVISED -
	PLOT DATE = 1/28/2014 2:08:54 PM	CHECKED - RDP	10/13	REVISED -

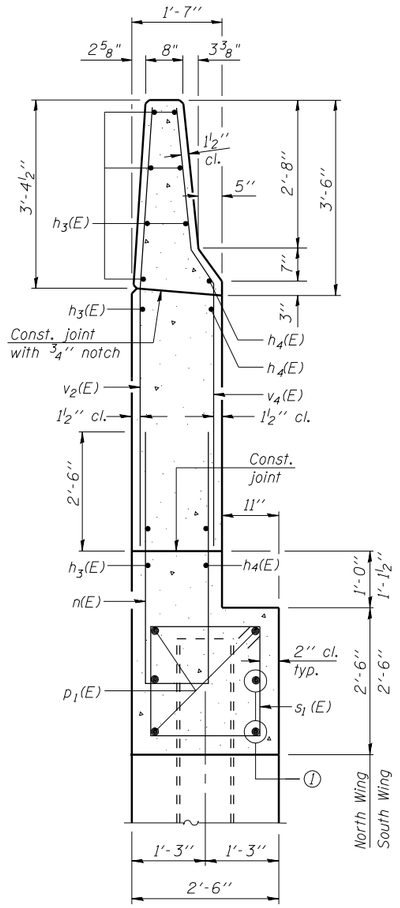
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT – WB
STRUCTURE NO. 026-0106
SHEET NO. 74 OF 113 SHEETS

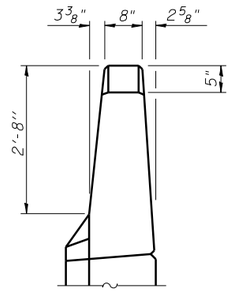
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	154
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



WING WALL ELEVATION
Showing Dimensions

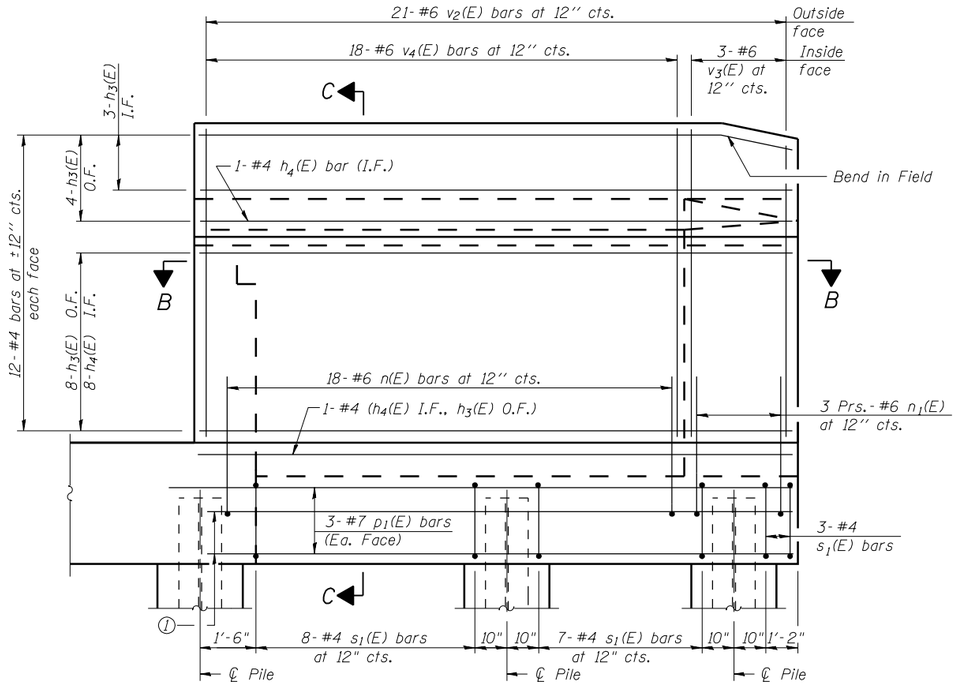


SECTION C-C



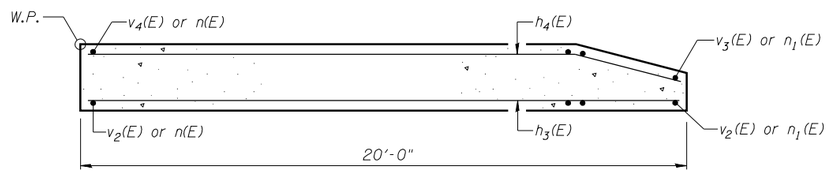
VIEW A-A

Notes:
Hatched area to be poured after superstructure false work has been removed and modular joint is fixed in position. Quantity of concrete included with Concrete Superstructure.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet 30 of 113.
For Concrete Encasement details, see sheet 106 of 113.



WING WALL ELEVATION
Showing Reinforcement

① Field cut 2-p_1(E) bars to clear pile at abut. backwall. See Wing Wall Elevation and Section C-C.



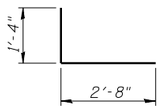
SECTION B-B

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	10/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - ELH	10/13	REVISED -	
		DRAWN - DWH	10/13	REVISED -	
	PLOT DATE = 1/28/2014 2:09:05 PM	CHECKED - RDP	10/13	REVISED -	

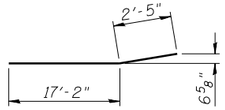
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT – WB
STRUCTURE NO. 026-0106
SHEET NO. 75 OF 113 SHEETS

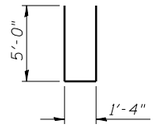
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	155
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			



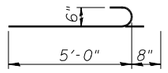
BAR h_2(E)



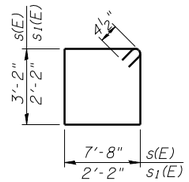
BAR h_4(E)



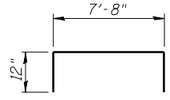
BAR n(E)



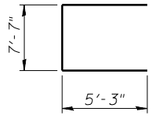
BAR n_1(E)



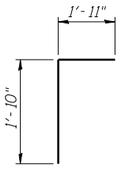
BARS s(E) & s_1(E)



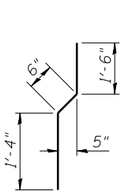
BAR s_2(E)



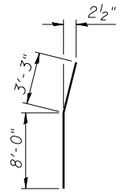
BAR u_1(E)



BAR v(E)



BAR v_1(E)



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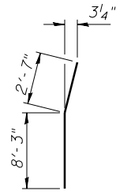
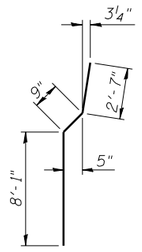


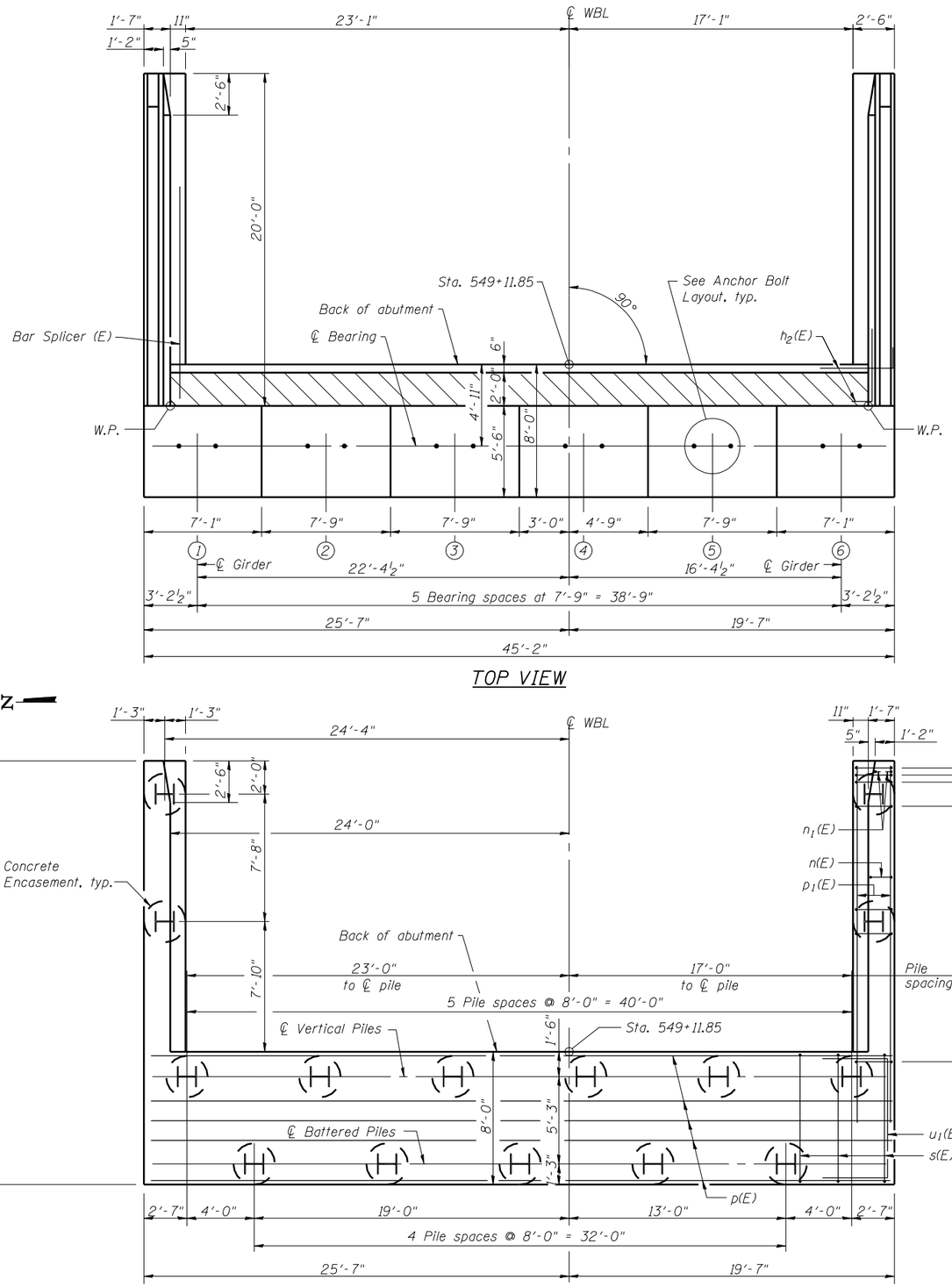
BAR v_3(E)



BAR v_4(E)

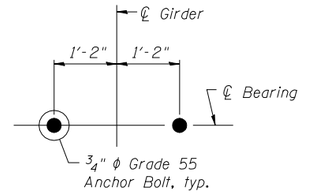
PILE DATA

Type: HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 93 feet
No. Production Piles: 15
No. Test Piles: 0



TOP VIEW

PLAN-PILE CAP



ANCHOR BOLT LAYOUT

EAST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	14	#5	41'-8"	
h_1(E)	5	#6	41'-8"	
h_2(E)	32	#5	4'-0"	
h_3(E)	32	#4	19'-8"	
h_4(E)	20	#4	19'-7"	
h_5(E)	5	#4	7'-5"	
n(E)	36	#6	11'-4"	
n_1(E)	12	#6	5'-8"	
p(E)	14	#7	44'-10"	
p_1(E)	12	#7	22'-0"	
s(E)	78	#4	22'-5"	
s_1(E)	36	#4	9'-5"	
s_2(E)	8	#4	9'-8"	
u_1(E)	8	#6	18'-1"	
v(E)	42	#5	3'-9"	
v_1(E)	42	#4	3'-4"	
v_2(E)	42	#6	11'-3"	
v_3(E)	6	#6	10'-10"	
v_4(E)	36	#6	11'-5"	
v_5(E)	42	#5	8'-10"	
v_6(E)	42	#5	7'-8"	

Structure Excavation	Cu. Yd.	240
Concrete Structures	Cu. Yd.	103.9
Reinforcement Bars, Epoxy Coated	Pound	8370
Furnishing Steel Piles HP14x73	Foot	1395
Driving Piles	Foot	1395
Concrete Encasement	Cu. Yd.	8.2
Concrete Sealer	Sq. Ft.	713
Granular Backfill for Structures	Cu. Yd.	125
Geocomposite Wall Drain	Sq. Yd.	48
Pipe Underdrains for Structures 4"	Foot	75

For details of Bar Splicers, see sheet 107 of 113.
For details of piles and Concrete Encasement, see sheet 106 of 113.
The locations of some abutment piles may need to be adjusted in the field. Otherwise, conflicts may occur between the proposed back row of abutment piles and the battered piles in the front row of the existing abutments. The concrete caps at the exisitng abutments shall be removed and locations of existing piles verified prior to driving any proposed piles. If conflicts exist, the proposed pile locations shall be adjusted and reinforcement stirrups relocated as directed by the Engineer. The maximum pile spacing in the back row of the proposed abutments shall be 8'-9".

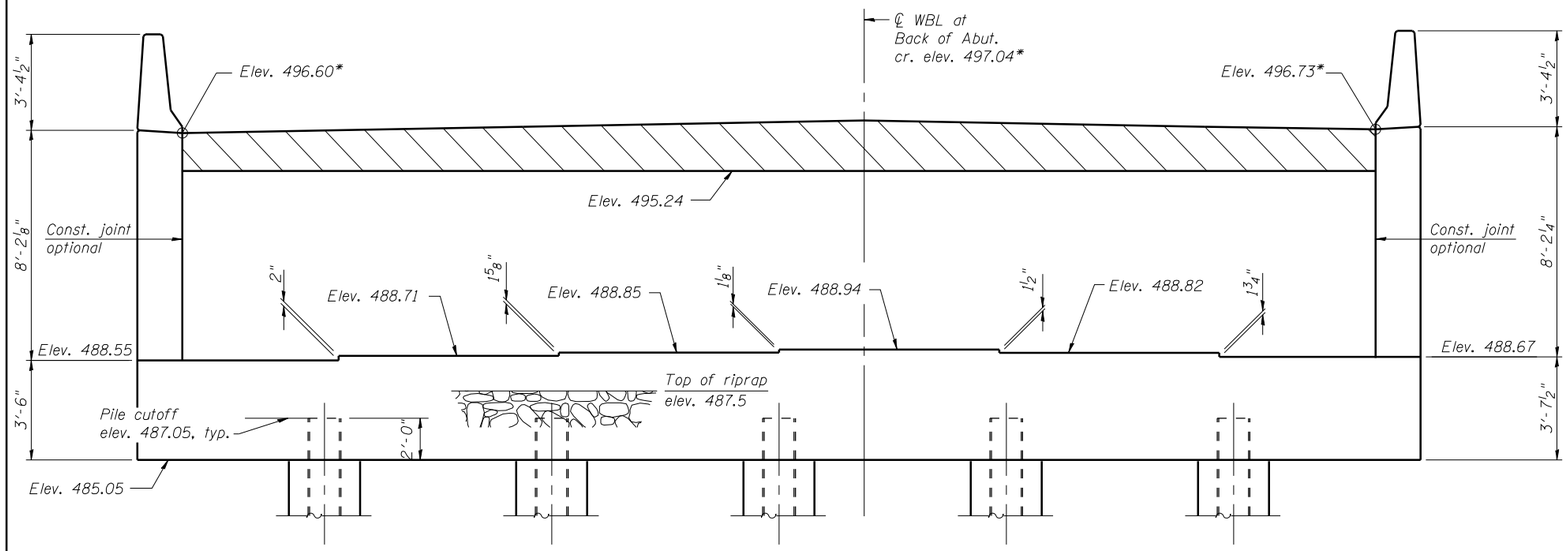
ESCA CONSULTANTS, INC. BRIDGE & STRUCTURAL ENGINEERING

USER NAME = has		DESIGNED - RDP	10/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - ELH	10/13	REVISED -	
		DRAWN - DWH	10/13	REVISED -	
PLOT DATE = 3/19/2014	7:12:23 AM	CHECKED - RDP	03/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

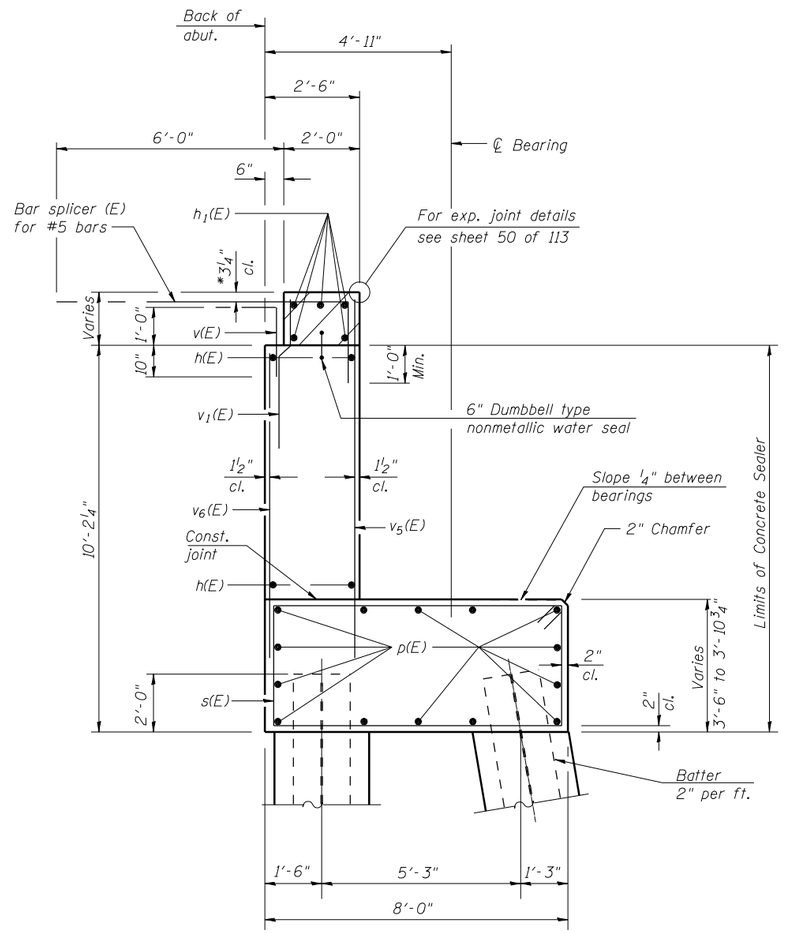
EAST ABUTMENT – WB
STRUCTURE NO. 026-0106
SHEET NO. 76 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	156
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

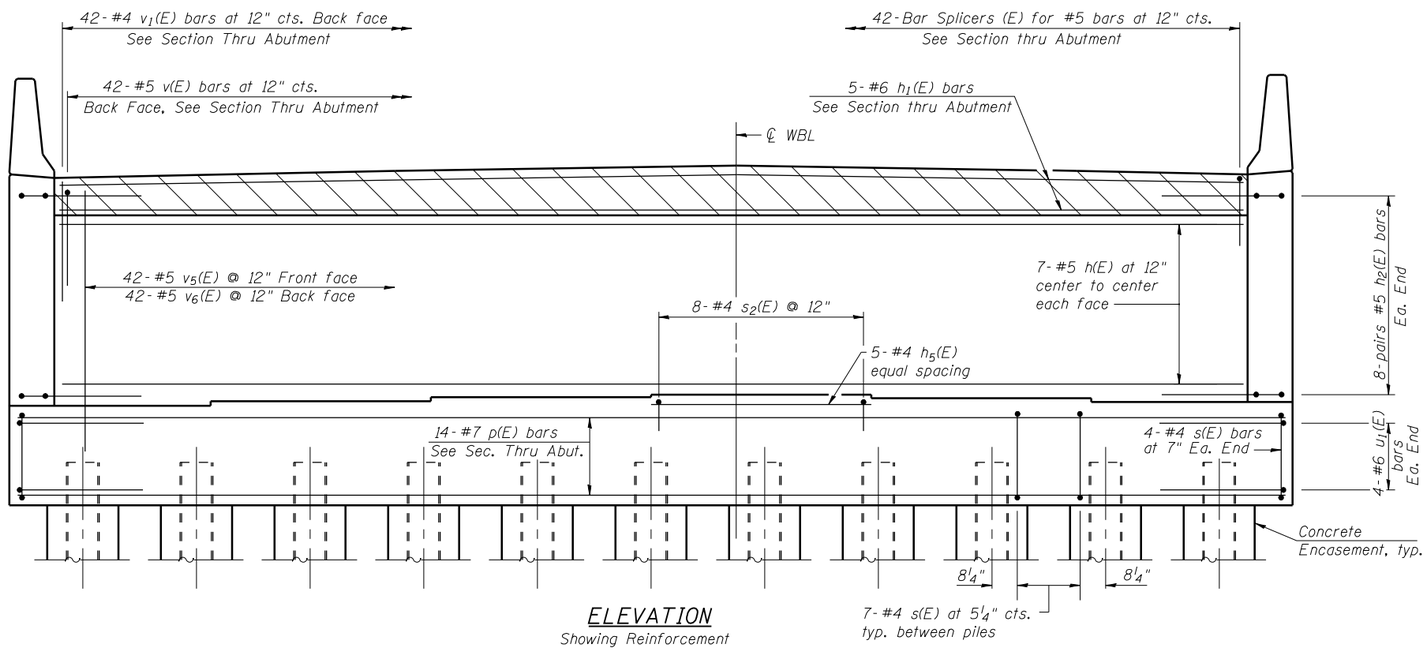


ELEVATION
Showing Dimensions

*Prior to grinding



SECTION THRU ABUTMENT



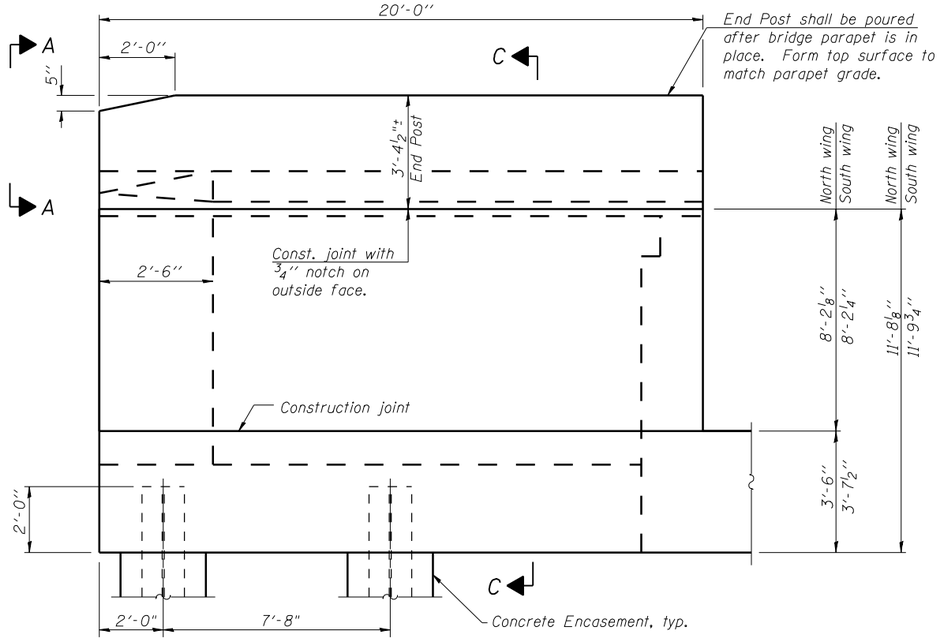
ELEVATION
Showing Reinforcement

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	10/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - ELH	10/13	REVISED -	
		DRAWN - DWH	10/13	REVISED -	
	PLOT DATE = 1/28/2014 2:10:52 PM	CHECKED - RDP	10/13	REVISED -	

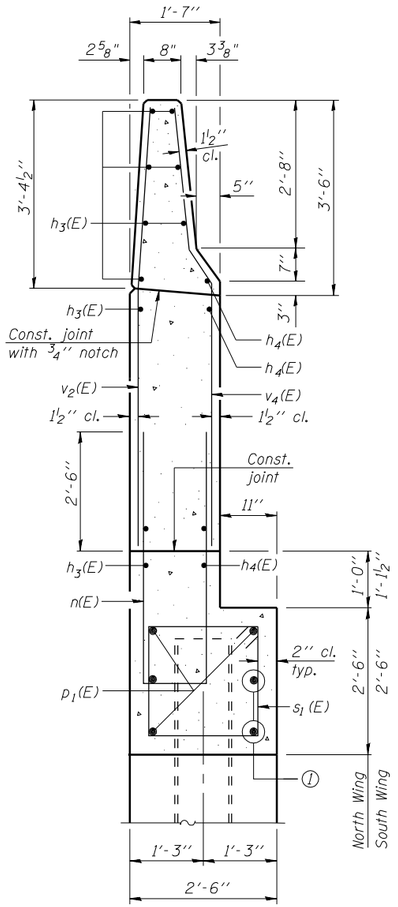
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT – WB
STRUCTURE NO. 026-0106
SHEET NO. 77 OF 113 SHEETS

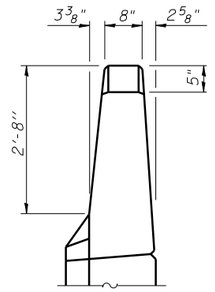
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	157
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



WING WALL ELEVATION
Showing Dimensions

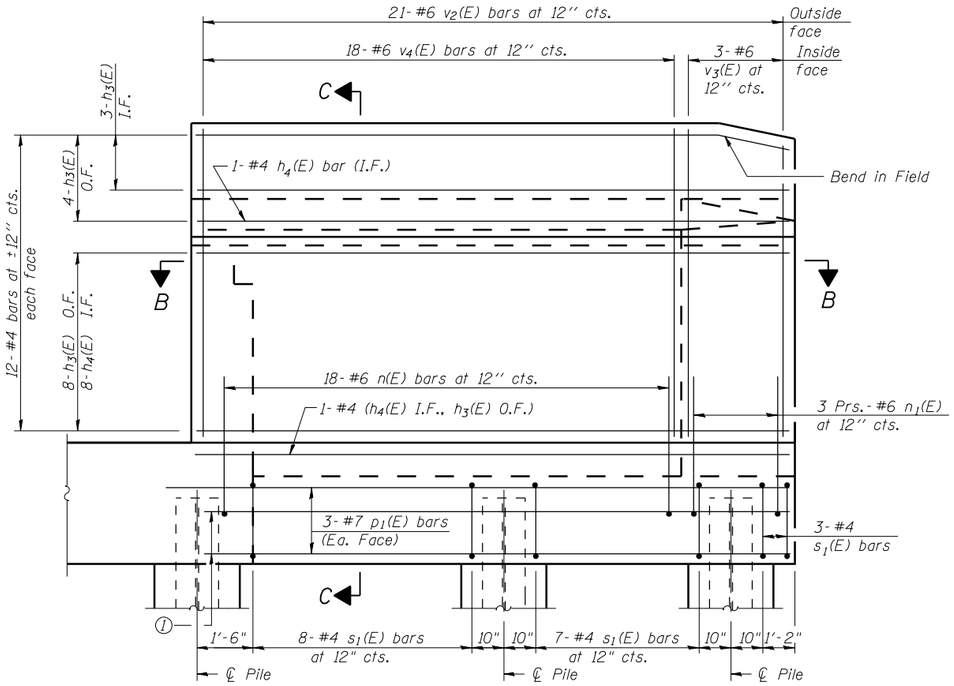


SECTION C-C



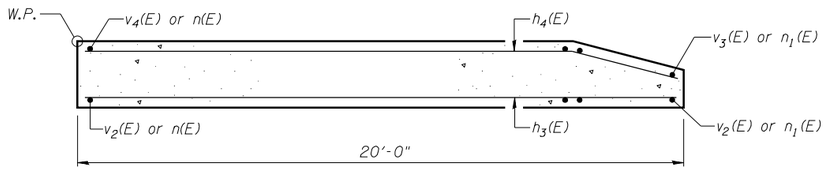
VIEW A-A

Notes:
Hatched area to be poured after superstructure false work has been removed and modular joint is fixed in position. Quantity of concrete included with Concrete Superstructure.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet 30 of 113.
For Concrete Encasement details, see sheet 106 of 113.



WING WALL ELEVATION
Showing Reinforcement

① *Field cut 2-p_1(E) bars to clear pile at abut. backwall. See Wing Wall Elevation and Section C-C.*



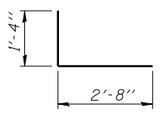
SECTION B-B

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	10/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - ELH	10/13	REVISED -	
		DRAWN - DWH	10/13	REVISED -	
	PLOT DATE = 1/28/2014 2:12:02 PM	CHECKED - RDP	10/13	REVISED -	

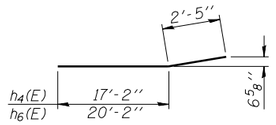
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT – WB
STRUCTURE NO. 026-0106
SHEET NO. 78 OF 113 SHEETS

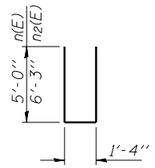
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	158
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



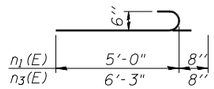
BAR $h_2(E)$



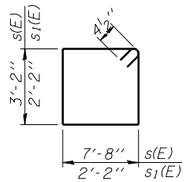
BARS $h_4(E)$ & $h_6(E)$



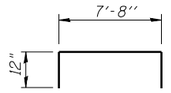
BARS $n(E)$ & $n_2(E)$



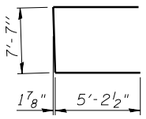
BARS $n_1(E)$ & $n_3(E)$



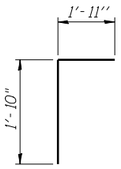
BARS $s(E)$ & $s_1(E)$



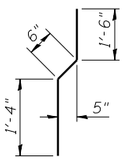
BAR $s_2(E)$



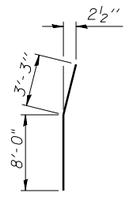
BAR $u_2(E)$



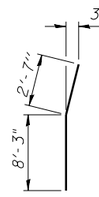
BAR $v(E)$



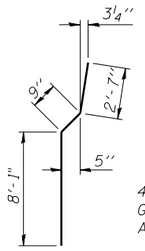
BAR $v_1(E)$



BAR $v_2(E)$



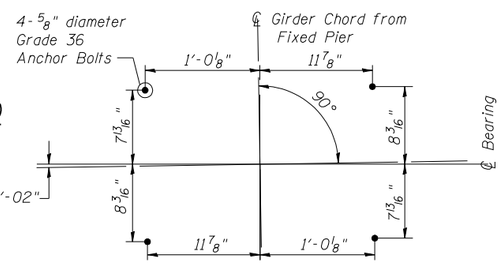
BAR $v_3(E)$



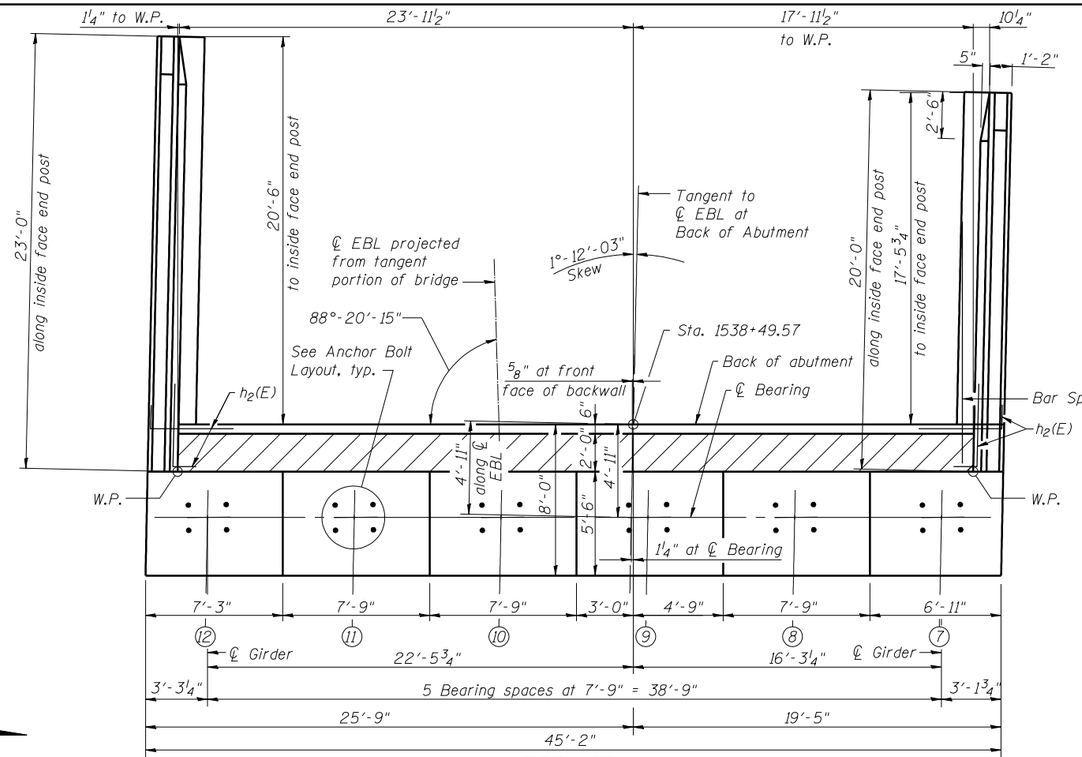
BAR $v_4(E)$

PILE DATA

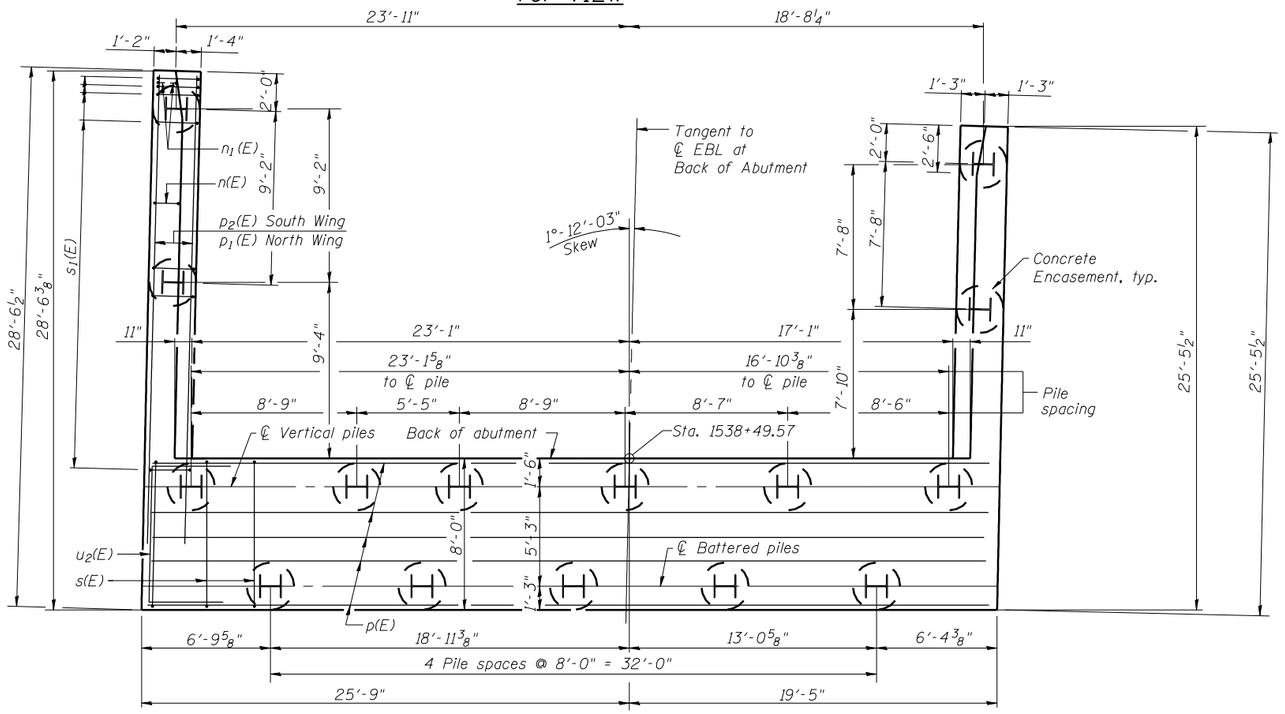
Type: HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 96 feet
No. Production Piles: 15
No. Test Piles: 0



ANCHOR BOLT LAYOUT



TOP VIEW



PLAN-PILE CAP

WEST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	14	#5	41'-8"	
h_1(E)	5	#6	41'-8"	
h_2(E)	32	#5	4'-0"	
h_3(E)	16	#4	19'-8"	
h_4(E)	10	#4	19'-7"	
h_6(E)	10	#4	22'-7"	
h_7(E)	16	#4	22'-8"	
h_8(E)	5	#4	14'-8"	
h_9(E)	5	#4	30'-2"	
n(E)	18	#6	11'-4"	
n_1(E)	6	#6	5'-8"	
n_2(E)	21	#6	13'-10"	
n_3(E)	6	#6	6'-11"	
p(E)	14	#7	44'-10"	
p_1(E)	6	#7	22'-0"	
p_2(E)	6	#7	25'-0"	
s(E)	73	#4	22'-5"	
s_1(E)	40	#4	9'-5"	
s_2(E)	47	#4	9'-8"	
u_2(E)	10	#6	18'-0"	
v(E)	42	#5	3'-9"	
v_1(E)	42	#4	3'-4"	
v_2(E)	45	#6	11'-3"	
v_3(E)	6	#6	10'-10"	
v_4(E)	39	#6	11'-5"	
v_5(E)	42	#5	8'-10"	
v_6(E)	42	#5	7'-8"	
Structure Excavation		Cu. Yd.	270	
Concrete Structures		Cu. Yd.	116.4	
Reinforcement Bars, Epoxy Coated		Pound	9090	
Furnishing Steel Piles, HP14x73		Foot	1440	
Driving Piles		Foot	1440	
Concrete Encasement		Cu. Yd.	8.2	
Concrete Sealer		Sq. Ft.	754	
Granular Backfill for Structures		Cu. Yd.	140	
Geocomposite Wall Drain		Sq. Yd.	51	
Pipe Underdrains for Structures 4"		Foot	75	

For details of Bar Splicers, see sheet 107 of 113.
For details of piles and Concrete Encasement, see sheet 106 of 113.

The locations of some abutment piles may need to be adjusted in the field. Otherwise, conflicts may occur between the proposed back row of abutment piles and the battered piles in the front row of the existing abutments. The concrete caps at the exisitng abutments shall be removed and locations of existing piles verified prior to driving any proposed piles. If conflicts exist, the proposed pile locations shall be adjusted and reinforcement stirrups relocated as directed by the Engineer. The maximum pile spacing in the back row of the proposed abutments shall be 8'-9".

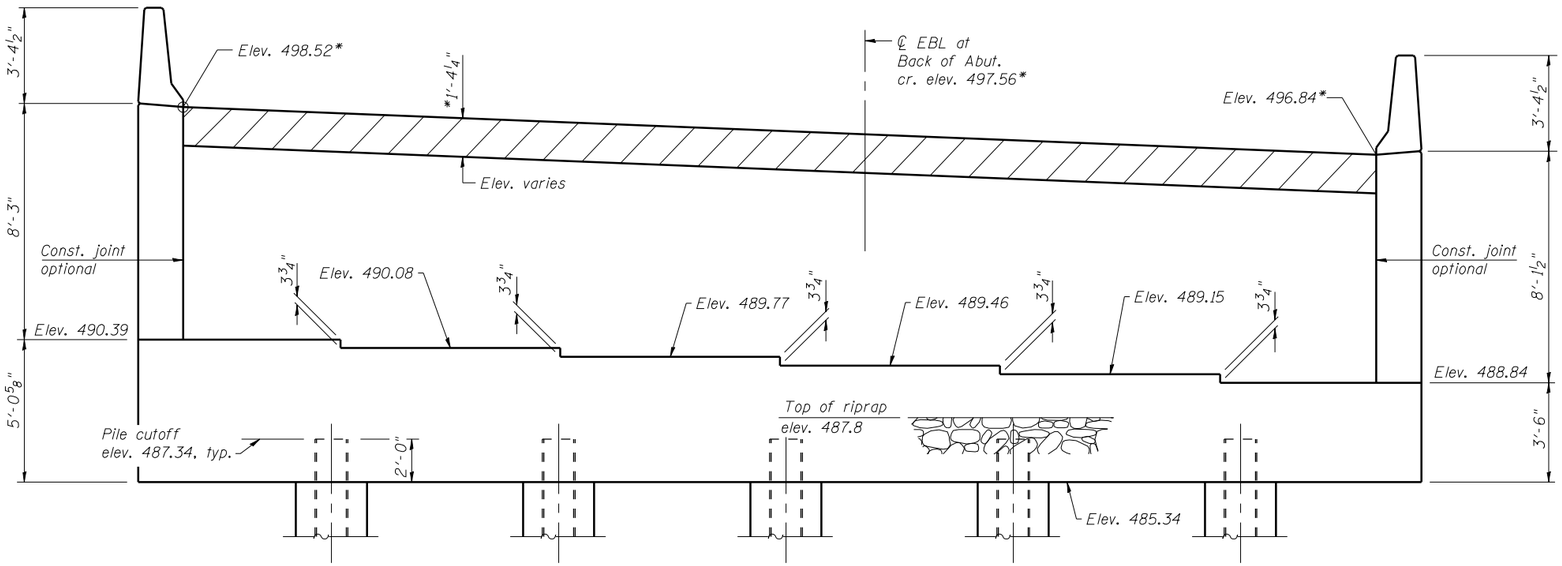
ESCA CONSULTANTS, INC.
BRIDGE & STRUCTURAL ENGINEERS

USER NAME = has	DESIGNED - RDP	10/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - ELH	10/13	REVISED -	
	DRAWN - DWH	10/13	REVISED -	
PLOT DATE = 3/19/2014 7:12:41 AM	CHECKED - RDP	03/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

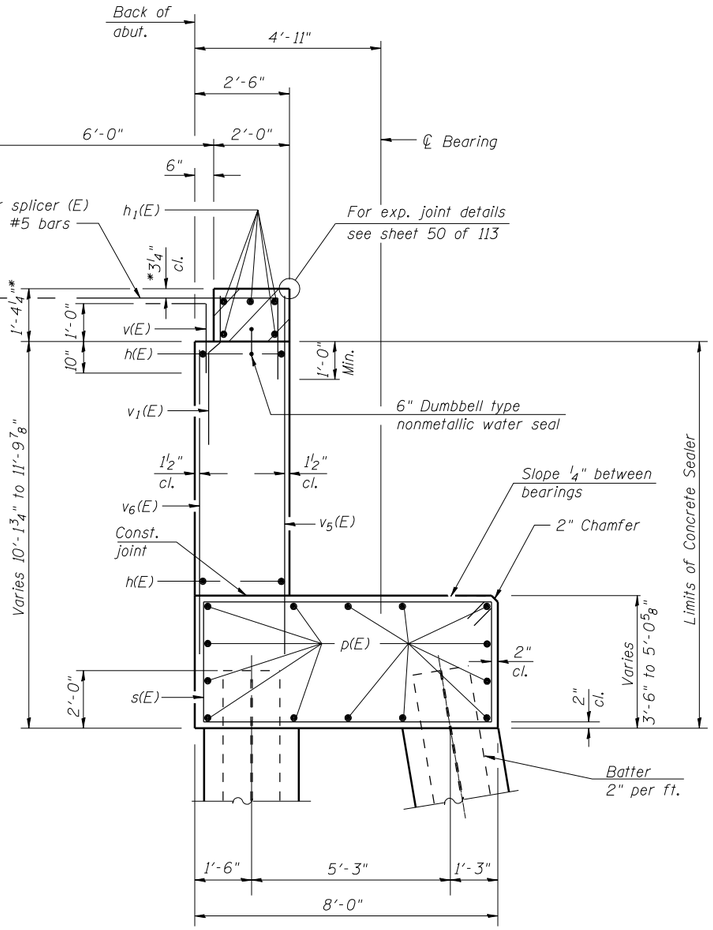
WEST ABUTMENT – EB
STRUCTURE NO. 026-0107
SHEET NO. 79 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	159
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

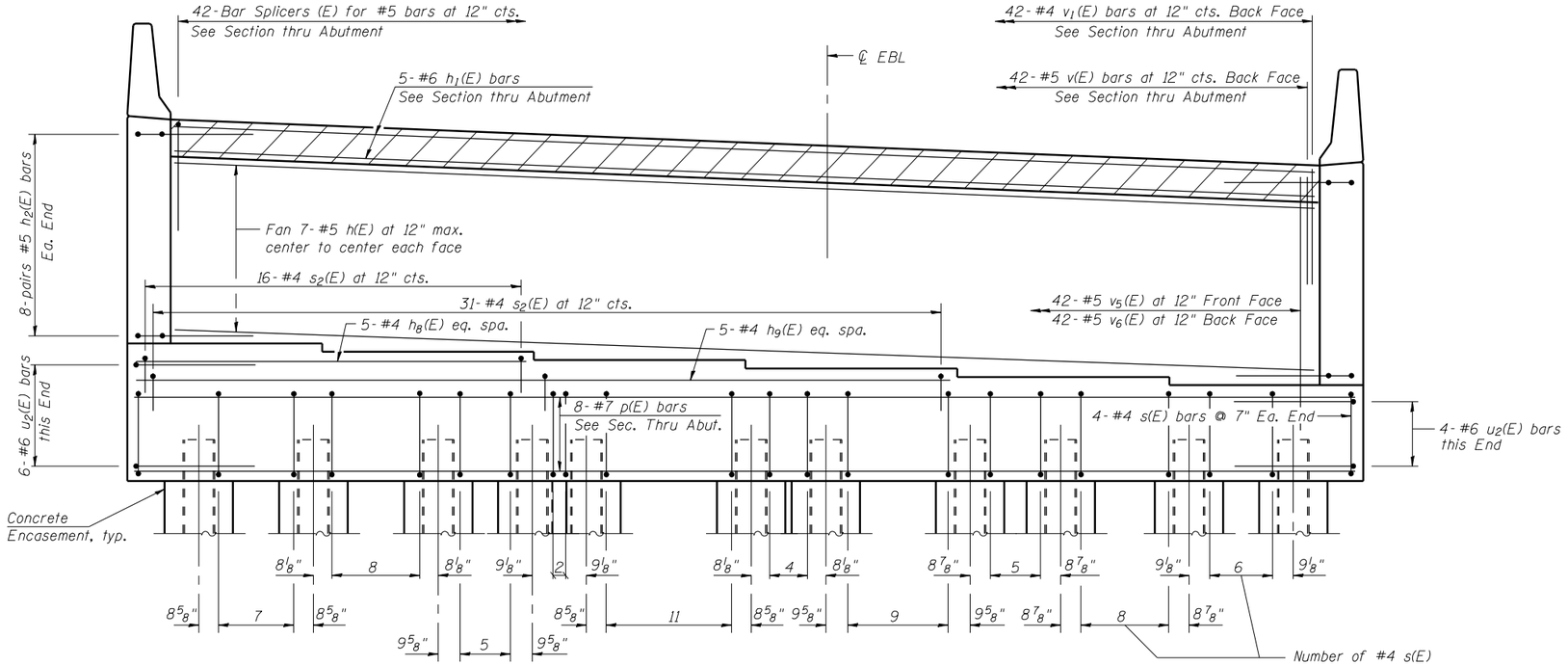


ELEVATION
Showing Dimensions

*Prior to grinding



SECTION THRU ABUTMENT
(Horizontal dim. at right angles)



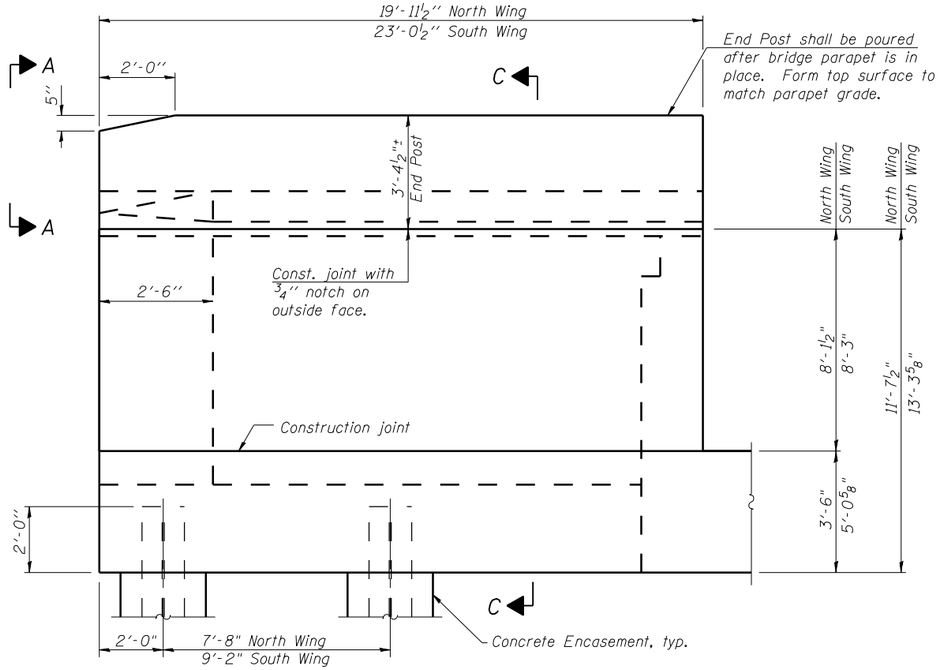
ELEVATION
Showing Reinforcement

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	10/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - ELH	10/13	REVISED -	
		DRAWN - DWH	10/13	REVISED -	
	PLOT DATE = 1/28/2014 2:13:49 PM	CHECKED - RDP	10/13	REVISED -	

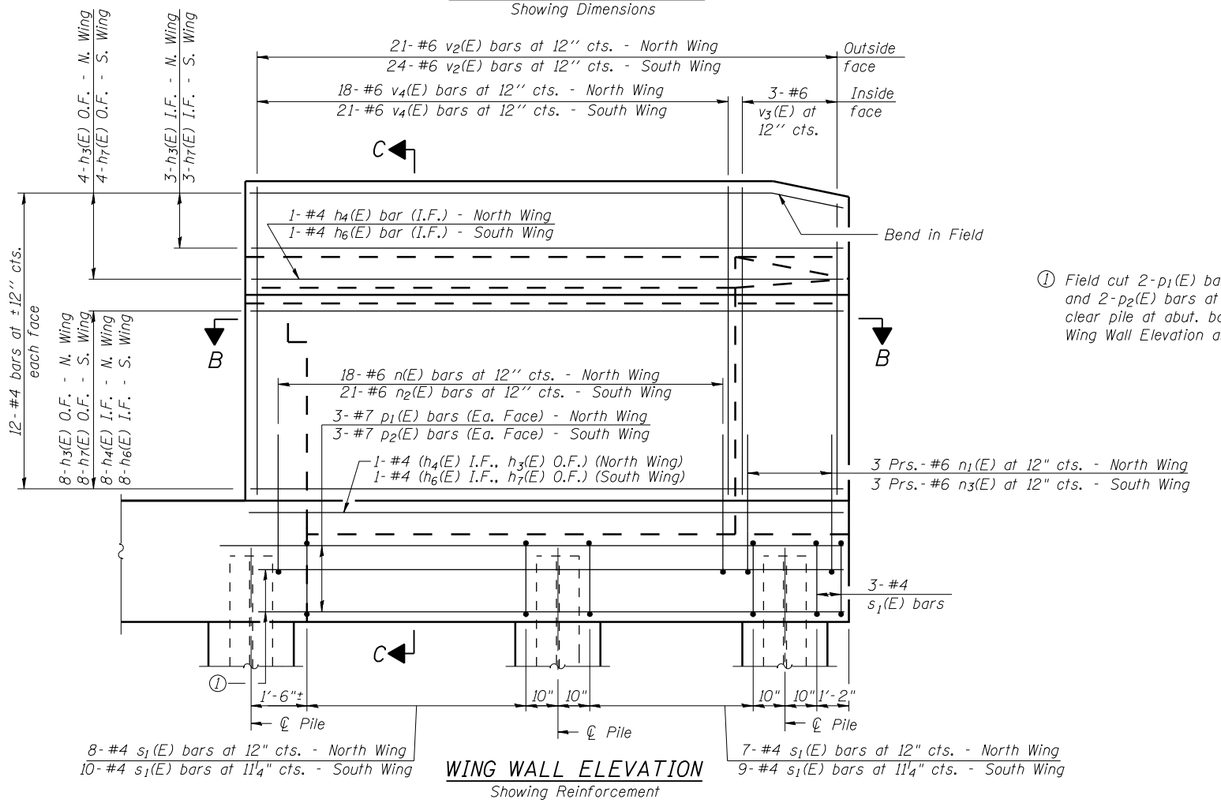
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT – EB
STRUCTURE NO. 026-0107
SHEET NO. 80 OF 113 SHEETS

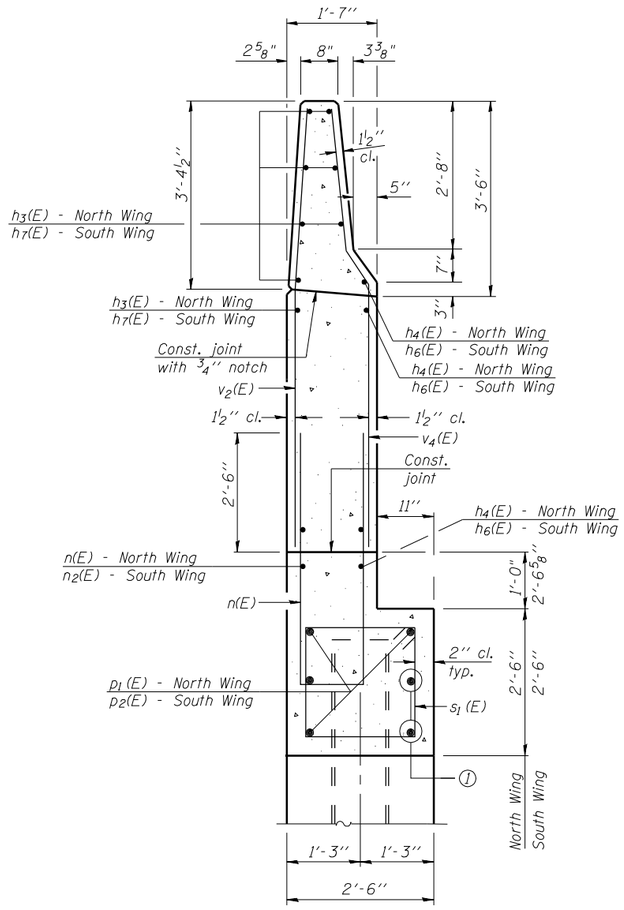
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	160
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



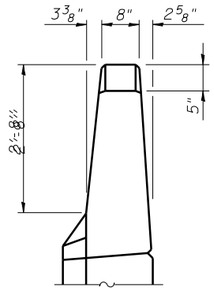
WING WALL ELEVATION
Showing Dimensions



WING WALL ELEVATION
Showing Reinforcement



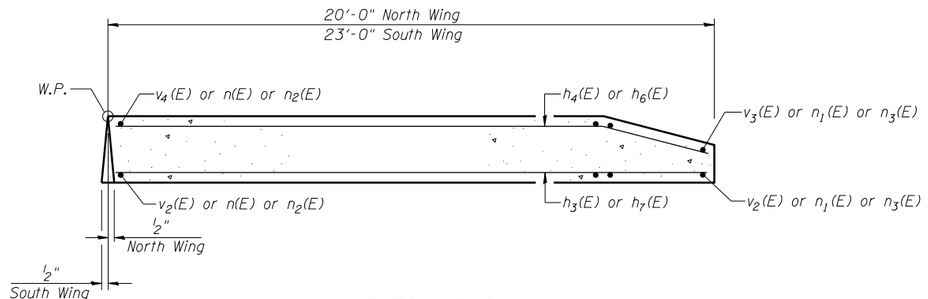
SECTION C-C



VIEW A-A

① Field cut 2-p_1(E) bars at North Wing and 2-p_2(E) bars at South Wing to clear pile at abut. backwall. See Wing Wall Elevation and Section C-C.

Notes:
Hatched area to be poured after superstructure false work has been removed and modular joint is fixed in position. Quantity of concrete included with Concrete Superstructure.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet 37 of 113.
For Concrete Encasement details, see sheet 106 of 113.



SECTION B-B

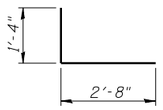
ESCA CONSULTANTS, INC.

USER NAME = has	DESIGNED - RDP	10/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - ELH	10/13	REVISED -	
	DRAWN - DWH	10/13	REVISED -	
PLOT DATE = 1/28/2014 2:14:02 PM	CHECKED - RDP	10/13	REVISED -	

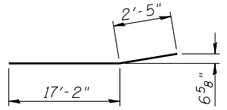
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT – EB
STRUCTURE NO. 026-0107
SHEET NO. 81 OF 113 SHEETS

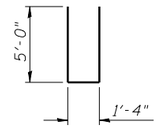
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	161
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			



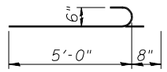
BAR h_2(E)



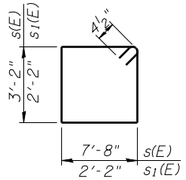
BAR h_4(E)



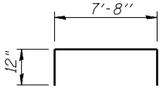
BAR n(E)



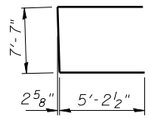
BAR n_1(E)



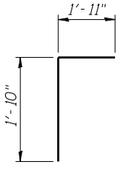
BARS s(E) & s_1(E)



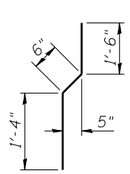
BAR s_2(E)



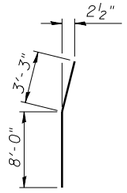
BAR u_3(E)



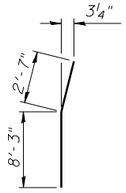
BAR v(E)



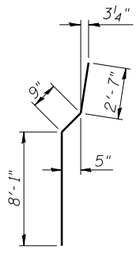
BAR v_1(E)



BAR v_2(E)



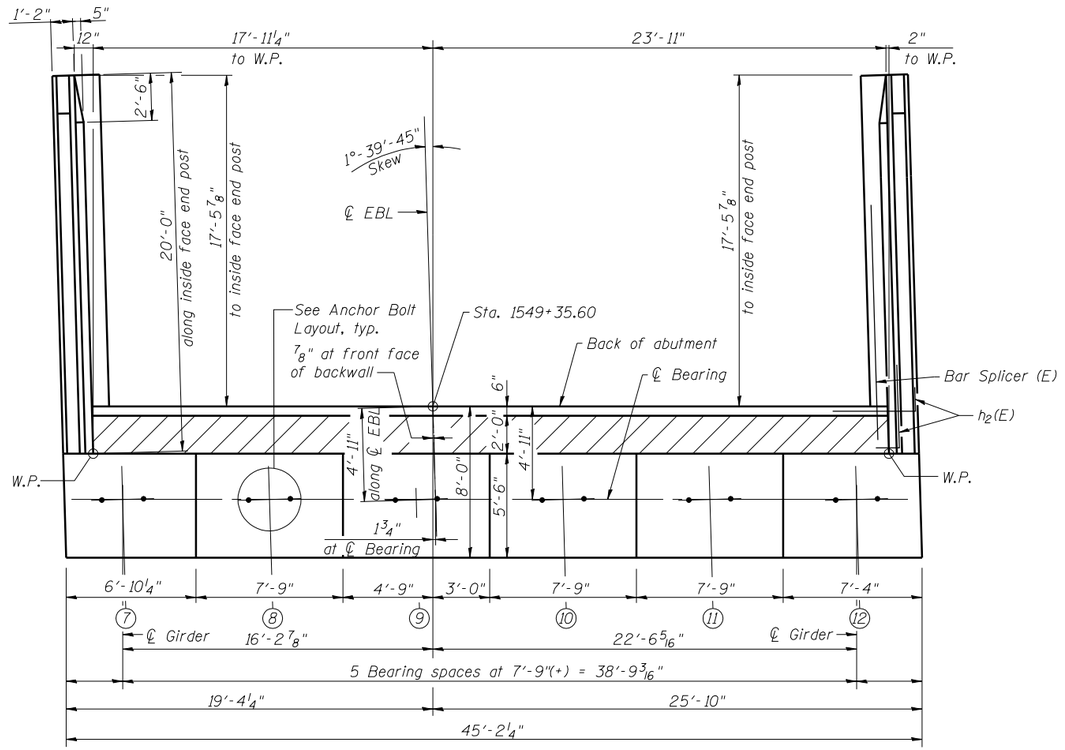
BAR v_3(E)



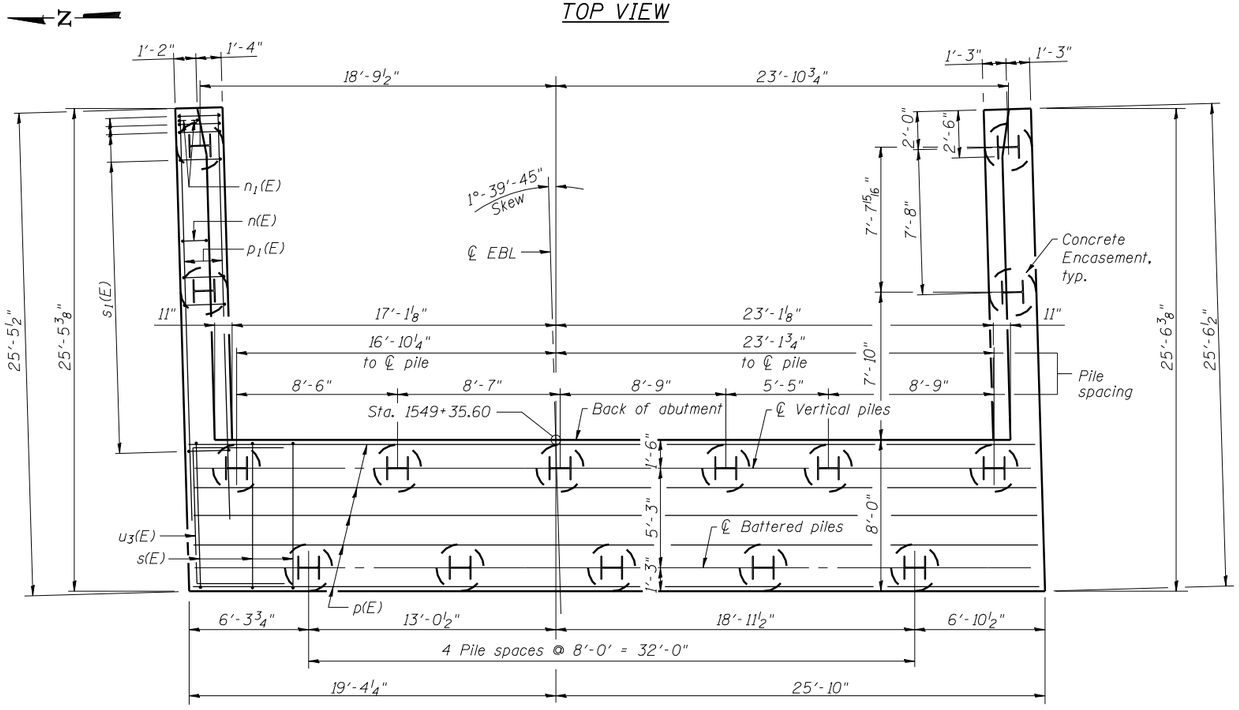
BAR v_4(E)

PILE DATA

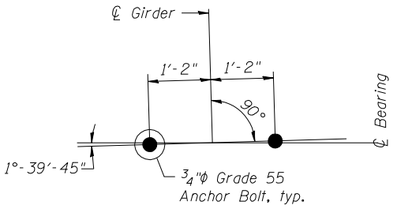
Type: HP14x73
Nominal Required Bearing: 578 kips
Factored Resistance Available: 318 kips
Est. Length: 92 feet
No. Production Piles: 15
No. Test Piles: 0



TOP VIEW



PLAN-PILE CAP



ANCHOR BOLT LAYOUT

EAST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	14	#5	41'-8"	
h_1(E)	5	#6	41'-8"	
h_2(E)	32	#5	4'-0"	
h_3(E)	32	#4	19'-8"	
h_4(E)	20	#4	19'-7"	
h_5(E)	5	#4	7'-5"	
n(E)	36	#6	11'-4"	
n_1(E)	12	#6	5'-8"	
p(E)	14	#7	44'-10"	
p_1(E)	12	#7	22'-0"	
s(E)	73	#4	22'-5"	
s_1(E)	36	#4	9'-5"	
s_2(E)	8	#4	9'-8"	
u_3(E)	8	#6	18'-0"	
v(E)	42	#5	3'-9"	
v_1(E)	42	#4	3'-4"	
v_2(E)	42	#6	11'-3"	
v_3(E)	6	#6	10'-10"	
v_4(E)	36	#6	11'-5"	
v_5(E)	42	#5	8'-10"	
v_6(E)	42	#5	7'-8"	

Structure Excavation	Cu. Yd.	270
Concrete Structures	Cu. Yd.	103.8
Reinforcement Bars, Epoxy Coated	Pound	8300
Furnishing Steel Piles HP14x73	Foot	1380
Driving Piles	Foot	1380
Concrete Encasement	Cu. Yd.	8.2
Concrete Sealer	Sq. Ft.	713
Granular Backfill for Structures	Cu. Yd.	125
Geocomposite Wall Drain	Sq. Yd.	48
Pipe Underdrains for Structures 4"	Foot	75

For details of Bar Splicers, see sheet 107 of 113.
For details of piles and Concrete Encasement, see sheet 106 of 113.

The locations of some abutment piles may need to be adjusted in the field. Otherwise, conflicts may occur between the proposed back row of abutment piles and the battered piles in the front row of the existing abutments. The concrete caps at the exisitng abutments shall be removed and locations of existing piles verified prior to driving any proposed piles. If conflicts exist, the proposed pile locations shall be adjusted and reinforcement stirrups relocated as directed by the Engineer. The maximum pile spacing in the back row of the proposed abutments shall be 8'-9".

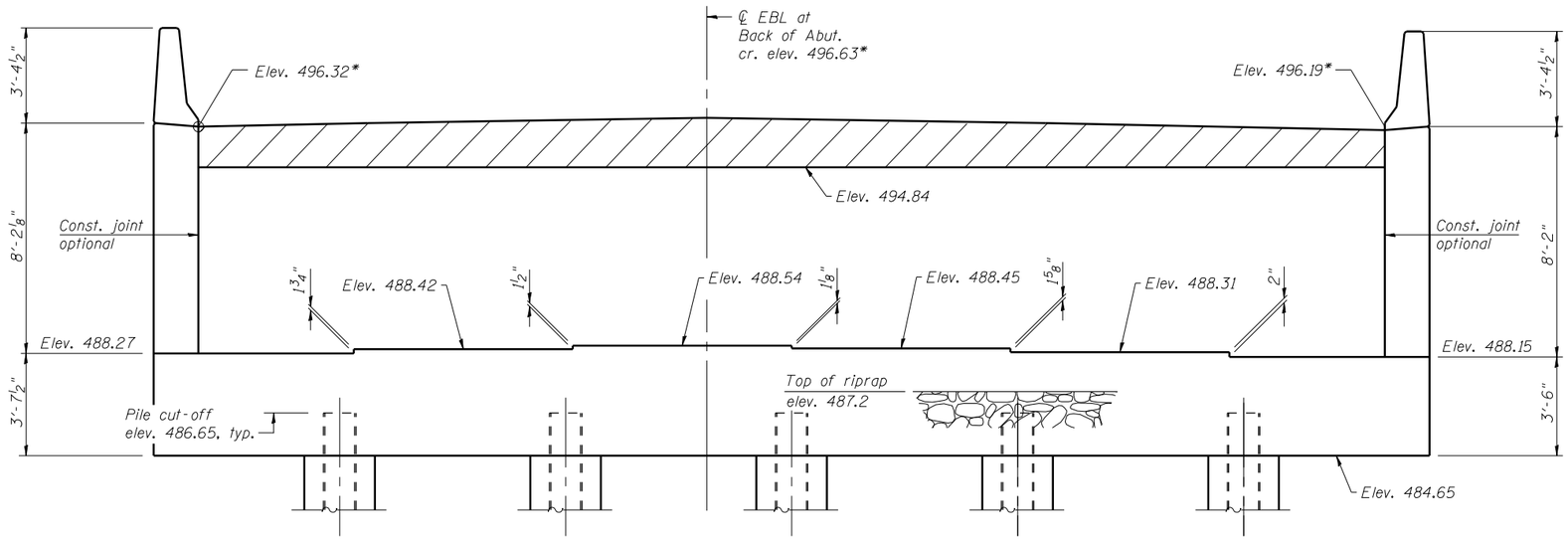
ESCA CONSULTANTS, INC. BRIDGE & STRUCTURAL ENGINEERING

USER NAME = has		DESIGNED - RDP	10/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - ELH	10/13	REVISED -	
		DRAWN - DWH	10/13	REVISED -	
PLOT DATE = 3/19/2014	7:11:50 AM	CHECKED - RDP	03/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

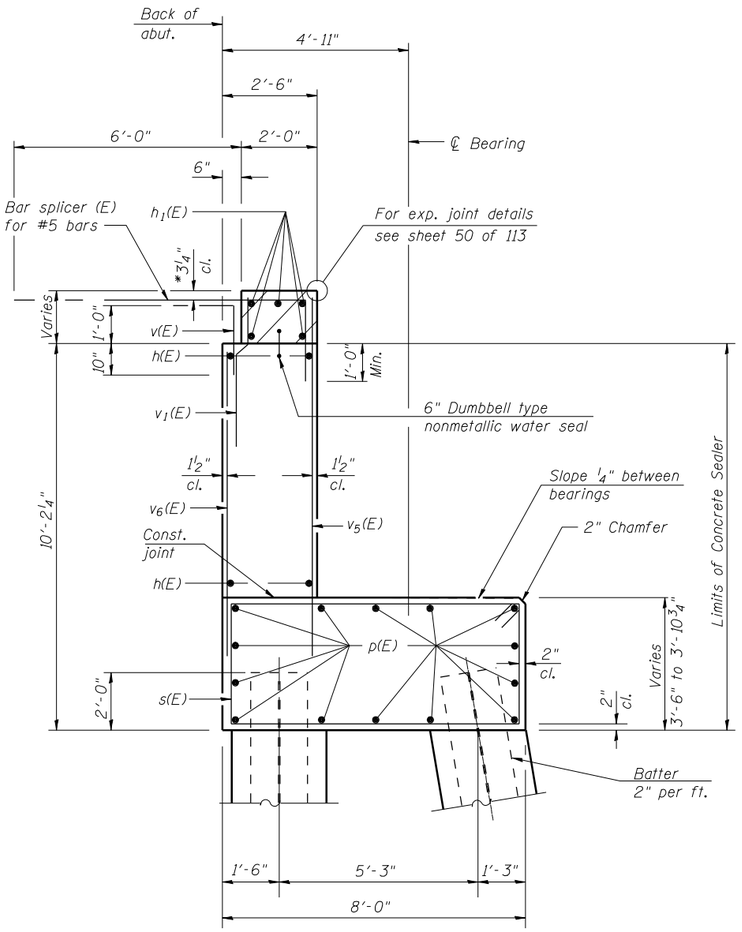
EAST ABUTMENT – EB
STRUCTURE NO. 026-0107
SHEET NO. 82 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	162
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

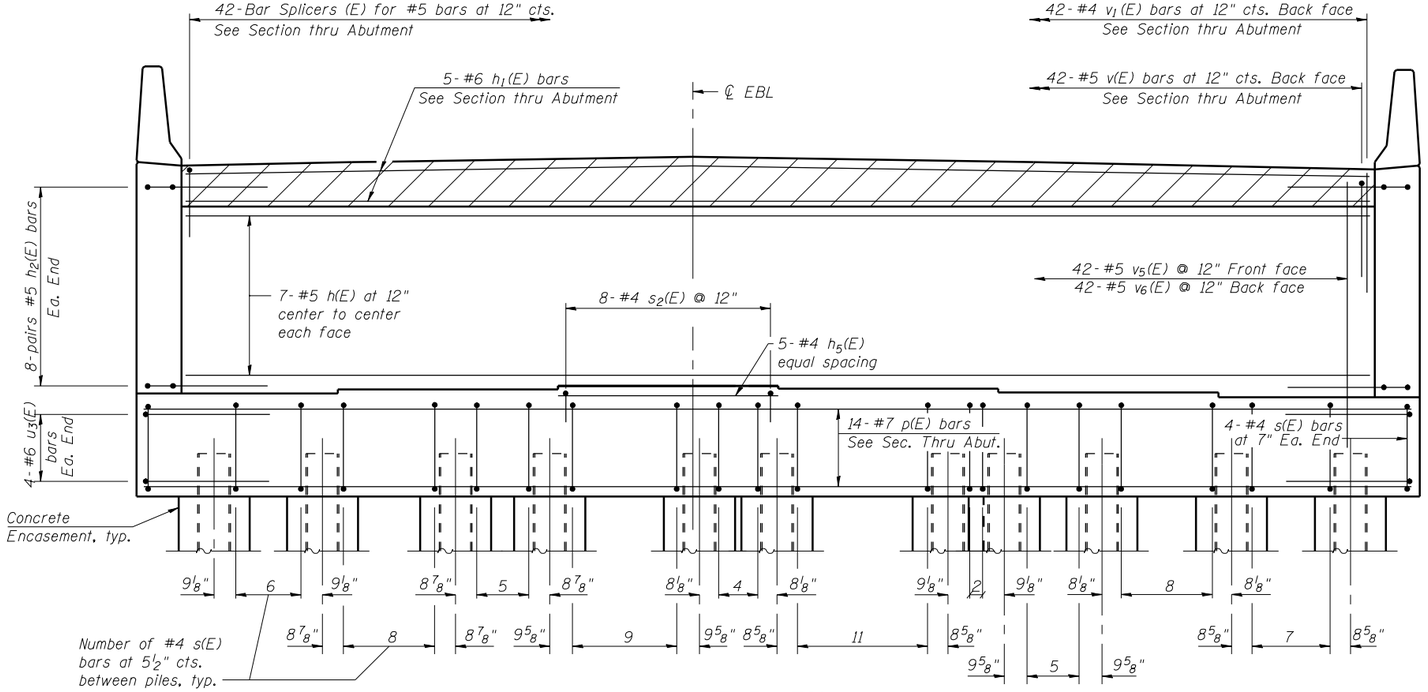


ELEVATION
Showing Dimensions

*Prior to grinding



SECTION THRU ABUTMENT
(Horizontal dim. at right angles)



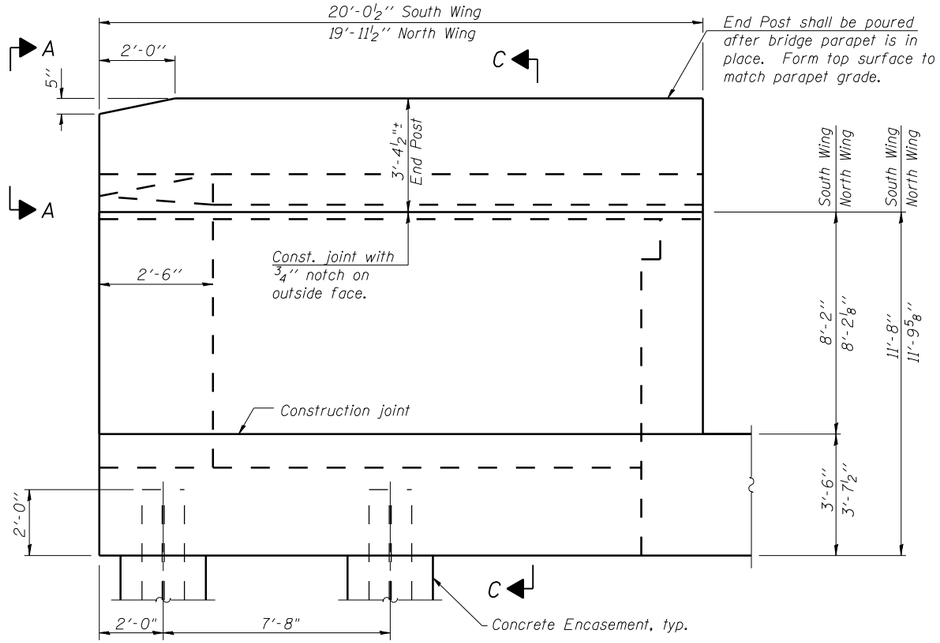
ELEVATION
Showing Reinforcement

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS	USER NAME = has	DESIGNED - RDP	10/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - ELH	10/13	REVISED -	
		DRAWN - DWH	10/13	REVISED -	
	PLOT DATE = 1/28/2014 2:15:29 PM	CHECKED - RDP	11/13	REVISED -	

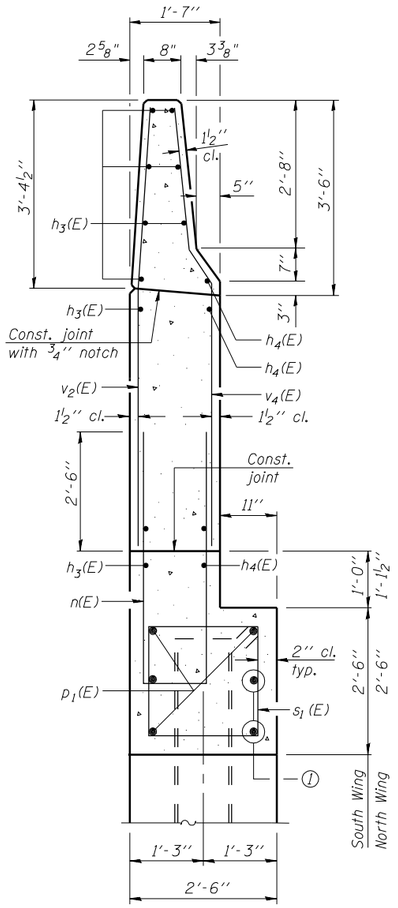
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT – EB
STRUCTURE NO. 026-0107
SHEET NO. 83 OF 113 SHEETS

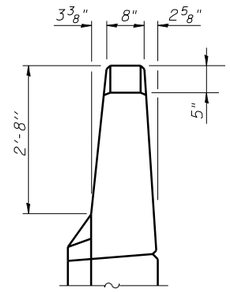
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	163
		CONTRACT NO. 74175		
		ILLINOIS	FED. AID PROJECT	



WING WALL ELEVATION
Showing Dimensions

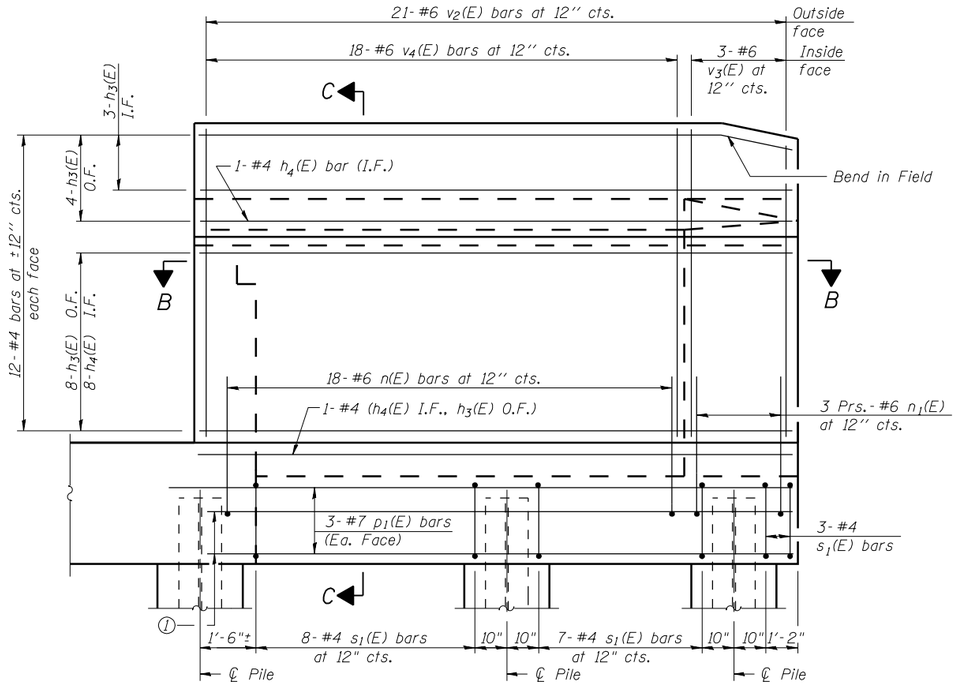


SECTION C-C



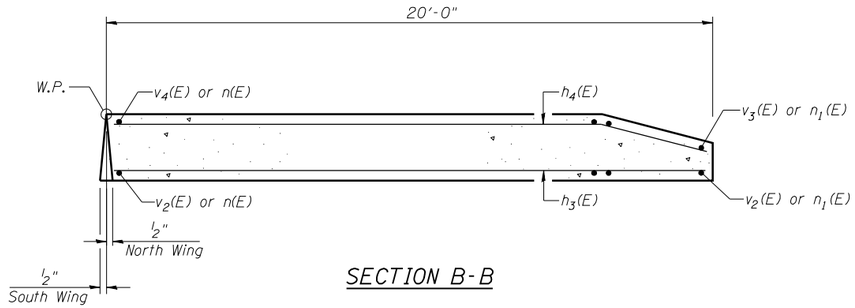
VIEW A-A

Notes:
Hatched area to be poured after superstructure false work has been removed and modular joint is fixed in position. Quantity of concrete included with Concrete Superstructure.
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Quantity of concrete in end post included with Concrete Superstructure on sheet 37 of 113.
For Concrete Encasement details, see sheet 106 of 113.



WING WALL ELEVATION
Showing Reinforcement

① Field cut 2-p_1(E) bars to clear pile at abut. backwall. See Wing Wall Elevation and Section C-C.

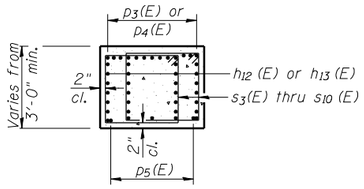


SECTION B-B

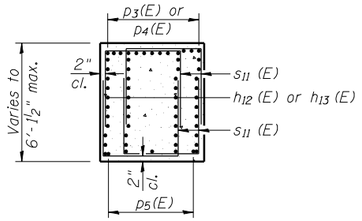
ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	10/13	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EAST ABUTMENT – EB STRUCTURE NO. 026-0107
	ESCA PROJECT NO. 1070.09	CHECKED - ELH	10/13	REVISED -		SHEET NO. 84 OF 113 SHEETS
		DRAWN - DWH	10/13	REVISED -		
	PLOT DATE = 1/28/2014 2:16:27 PM	CHECKED - RDP	10/13	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	164
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

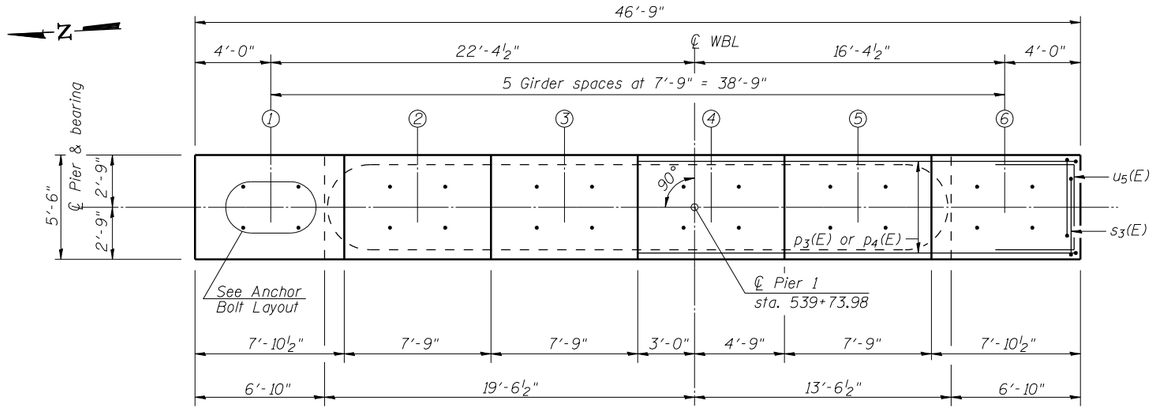
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.



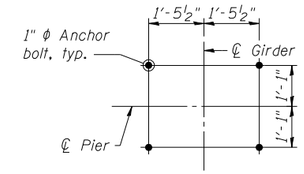
SECTION A-A



SECTION B-B

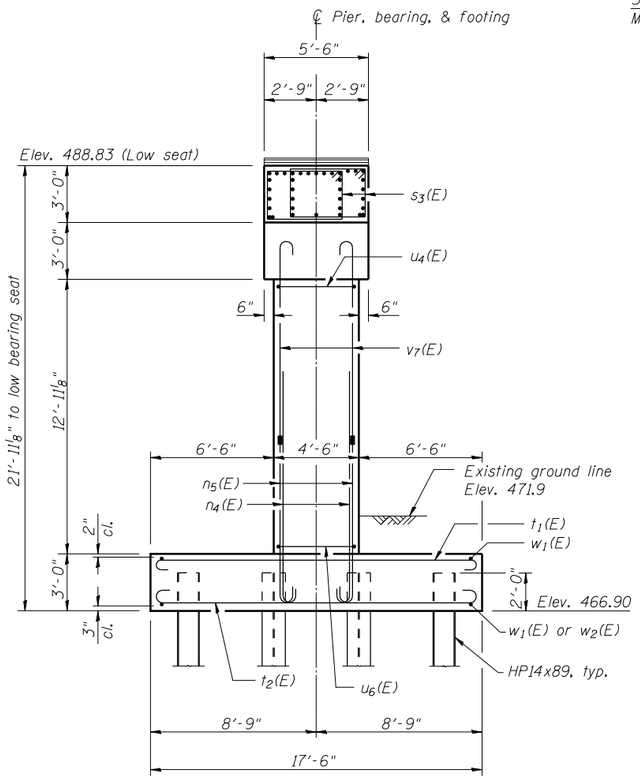


TOP PLAN

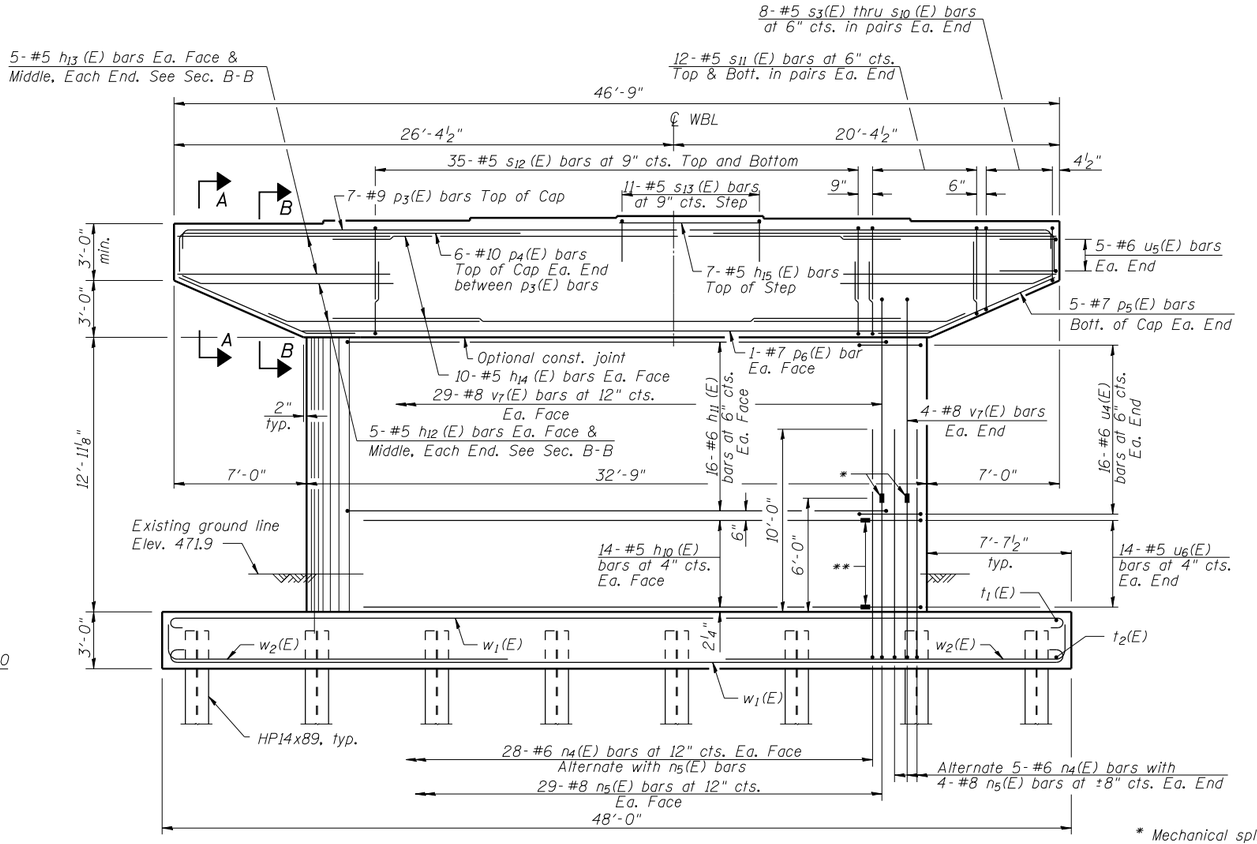


ANCHOR BOLT LAYOUT

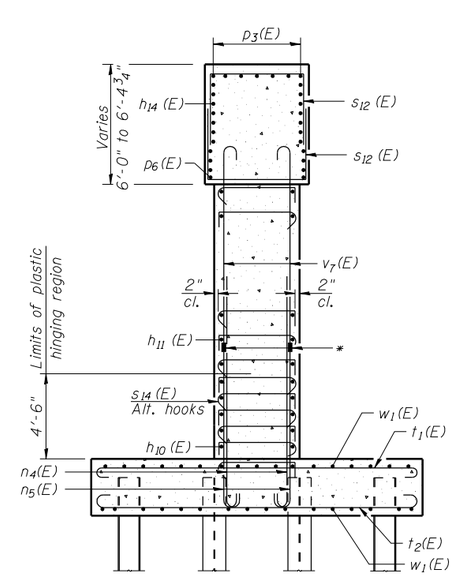
MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"



END VIEW



ELEVATION
(Looking East)



SECTION THRU PIER

* Mechanical splice on vertical bars.

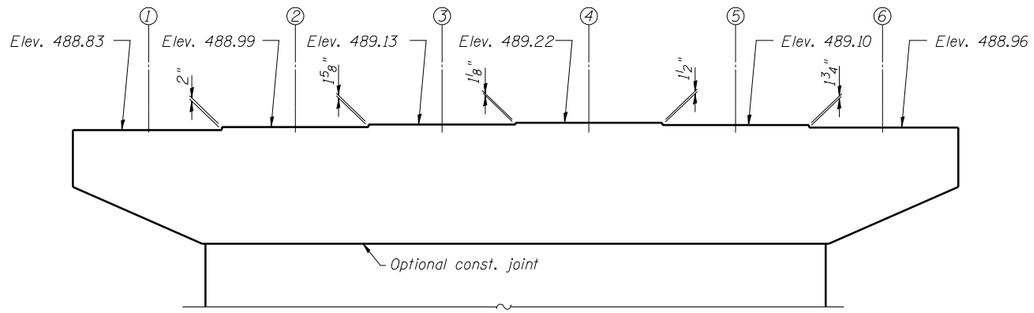
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH/JPC	08/13	REVISED -	
	PLOT DATE = 1/28/2014 2:16:54 PM	CHECKED - ELH	01/14	REVISED -	

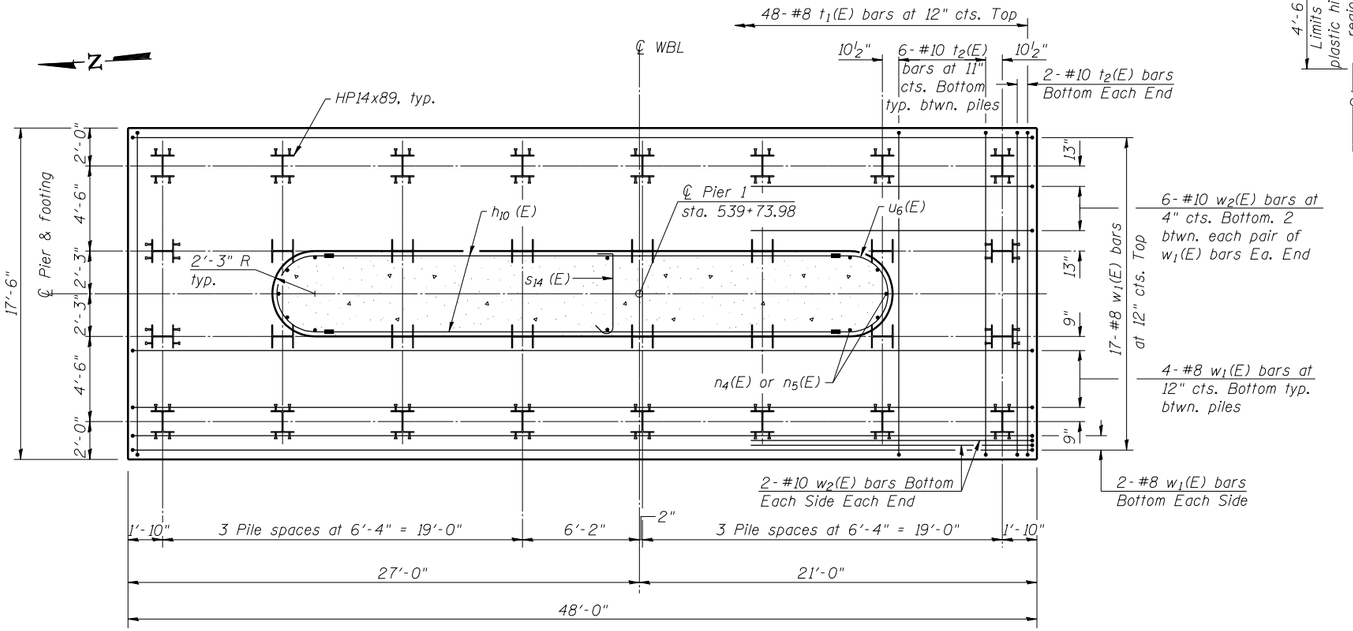
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 – WB
STRUCTURE NO. 026-0106
SHEET NO. 85 OF 113 SHEETS

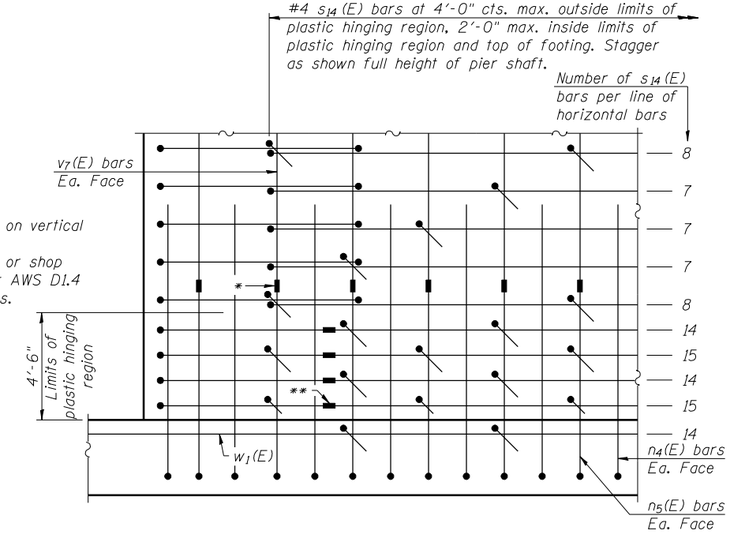
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	165
		CONTRACT NO. 74175		
		ILLINOIS FED. AID PROJECT		



TOP OF PIER



FOOTING PLAN



PARTIAL ELEVATION

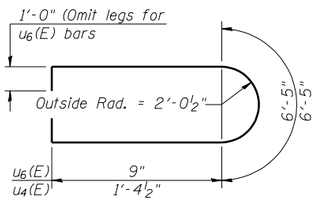
(Showing s_{14} (E) bar pattern)

Note:
Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

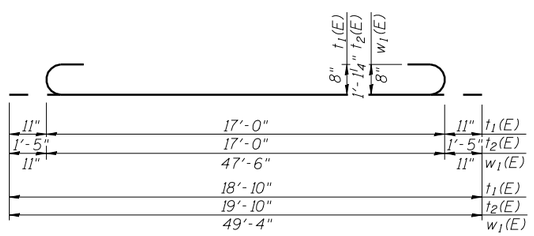
PIER 1 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10} (E)	28	#5	26'-9"	
h_{11} (E)	32	#6	30'-6"	
h_{12} (E)	40	#5	11'-3"	
h_{13} (E)	40	#5	11'-2"	
h_{14} (E)	20	#5	30'-0"	
h_{15} (E)	7	#5	7'-5"	
n_4(E)	66	#6	13'-4"	
n_5(E)	66	#8	9'-7"	
p_3(E)	7	#9	49'-5"	
p_4(E)	12	#10	20'-6"	
p_5(E)	10	#7	9'-9"	
p_6(E)	2	#7	33'-2"	
s_3(E)	4	#5	14'-7"	
s_4(E)	4	#5	15'-0"	
s_5(E)	4	#5	15'-5"	
s_6(E)	4	#5	15'-10"	
s_7(E)	4	#5	16'-3"	
s_8(E)	4	#5	16'-9"	
s_9(E)	4	#5	17'-2"	
s_{10} (E)	4	#5	17'-7"	
s_{11} (E)	96	#5	13'-0"	
s_{12} (E)	70	#5	14'-2"	
s_{13} (E)	11	#5	7'-6"	
s_{14} (E)	333	#4	5'-3"	
t_1(E)	48	#8	18'-10"	
t_2(E)	46	#10	19'-10"	
u_4(E)	32	#6	11'-2"	
u_5(E)	10	#6	11'-10"	
u_6(E)	28	#5	7'-11"	
v_7(E)	66	#8	9'-6"	
w_1(E)	33	#8	49'-4"	
w_2(E)	44	#10	19'-10"	

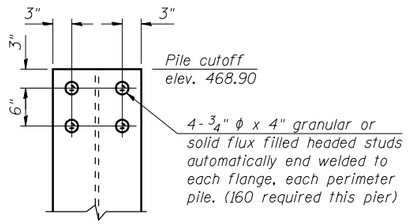
Structure Excavation	Cu. Yd.	210
Concrete Structures	Cu. Yd.	216.8
Reinforcement Bars, Epoxy Coated	Pound	30630
Furnishing Steel Piles HP14x89	Foot	2624
Driving Piles	Foot	2624



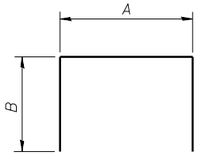
BARS u_4(E) & u_6(E)



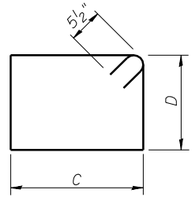
BARS t_1(E), t_2(E) & w_1(E)



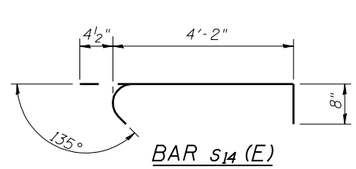
TOP OF PERIMETER PILE DETAIL



BARS



BARS s_3(E) thru s_{10} (E)



BAR s_{14} (E)

A & B DIMENSIONS

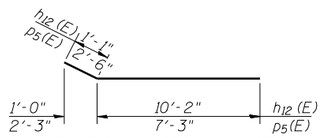
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"

C & D DIMENSIONS

Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0½"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5½"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1½"
s_{10} (E)	4'-0"	4'-4"

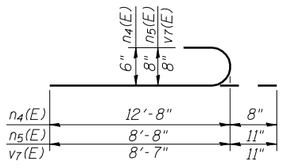
PILE DATA

Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 82 feet
No. Production Piles: 32
No. Test Piles: 0



BARS h_{12} (E) & p_5(E)

BARS p_4(E) & w_2(E)



BARS n_4(E), n_5(E) & v_7(E)

ESCA CONSULTANTS, INC.

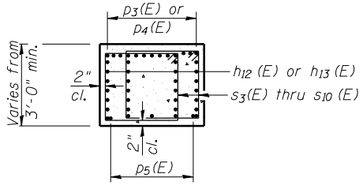
USER NAME = has		DESIGNED -	RDP	08/13	REVISED -
ESCA PROJECT NO. 1070.09		CHECKED -	MTD	08/13	REVISED -
		DRAWN -	DWH/JPC	08/13	REVISED -
PLOT DATE = 1/28/2014	2:17:59 PM	CHECKED -	ELH	01/14	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

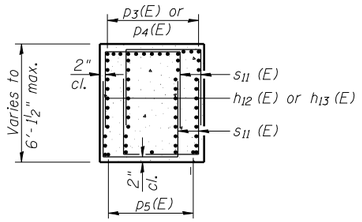
PIER 1 – WB
STRUCTURE NO. 026-0106
SHEET NO. 86 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	166
		CONTRACT NO. 74175		
		ILLINOIS FED. AID PROJECT		

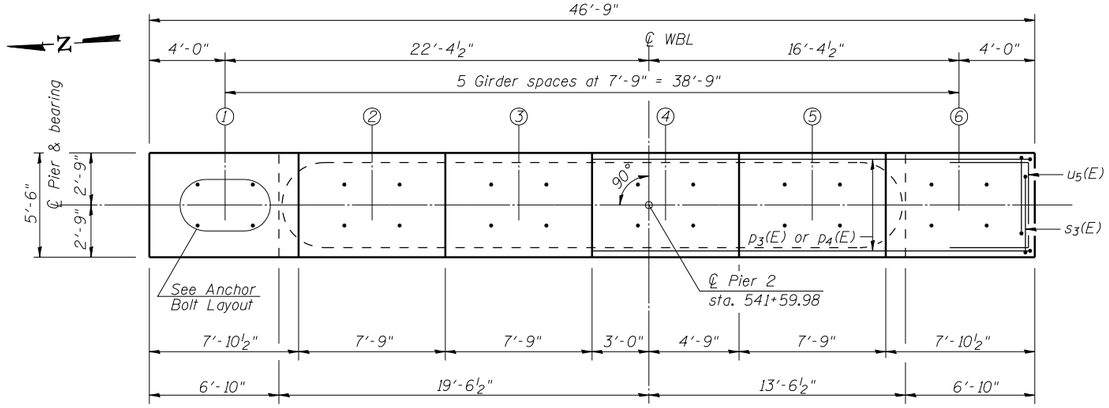
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.



SECTION A-A

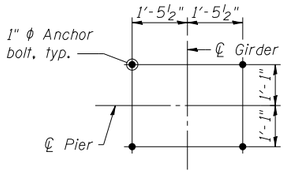


SECTION B-B

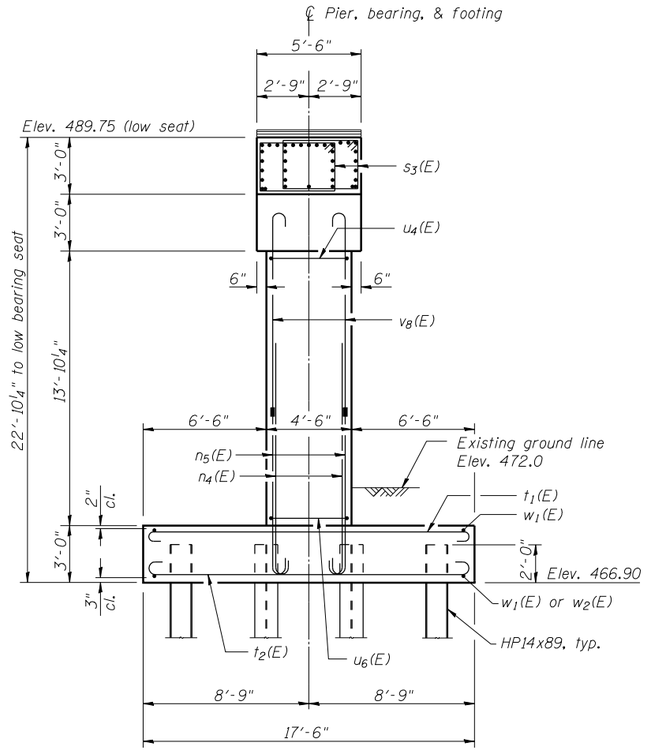


TOP PLAN

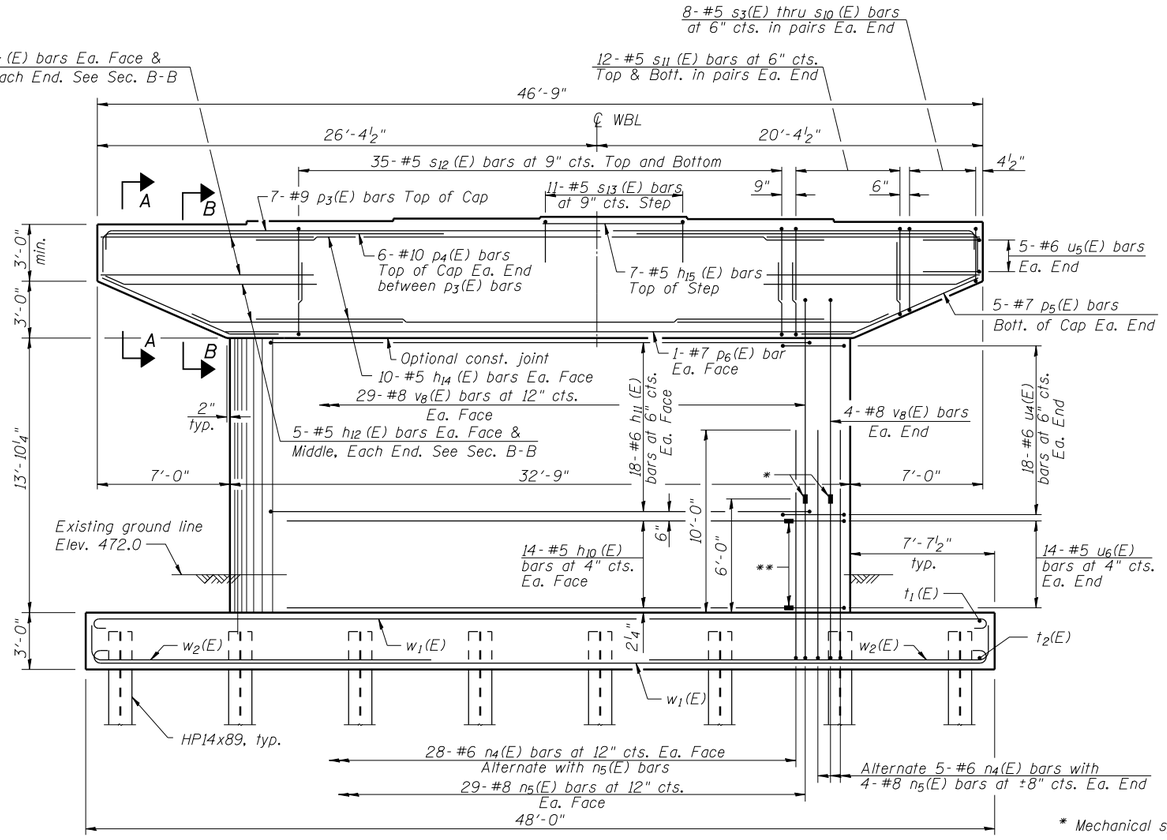
MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"



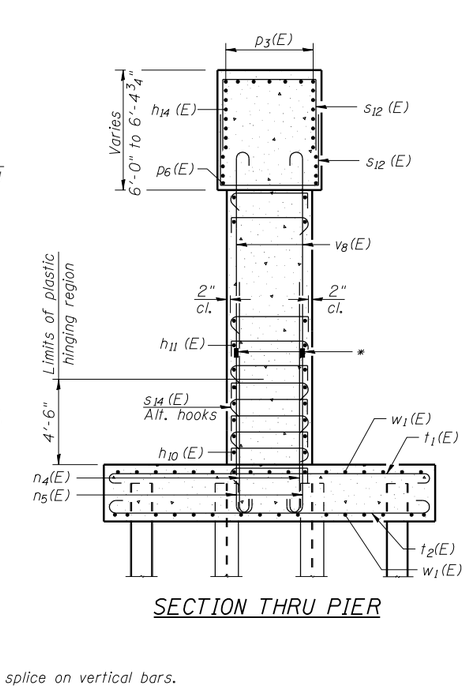
ANCHOR BOLT LAYOUT



END VIEW



ELEVATION
(Looking East)



SECTION THRU PIER

* Mechanical splice on vertical bars.

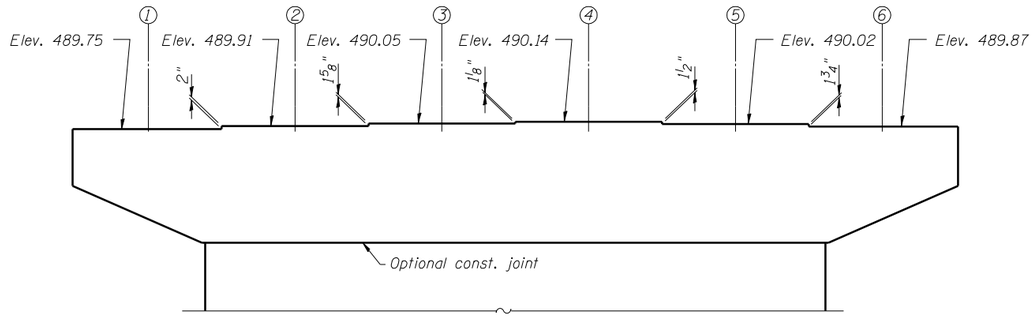
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 2:18:30 PM	CHECKED - ELH	01/14	REVISED -	

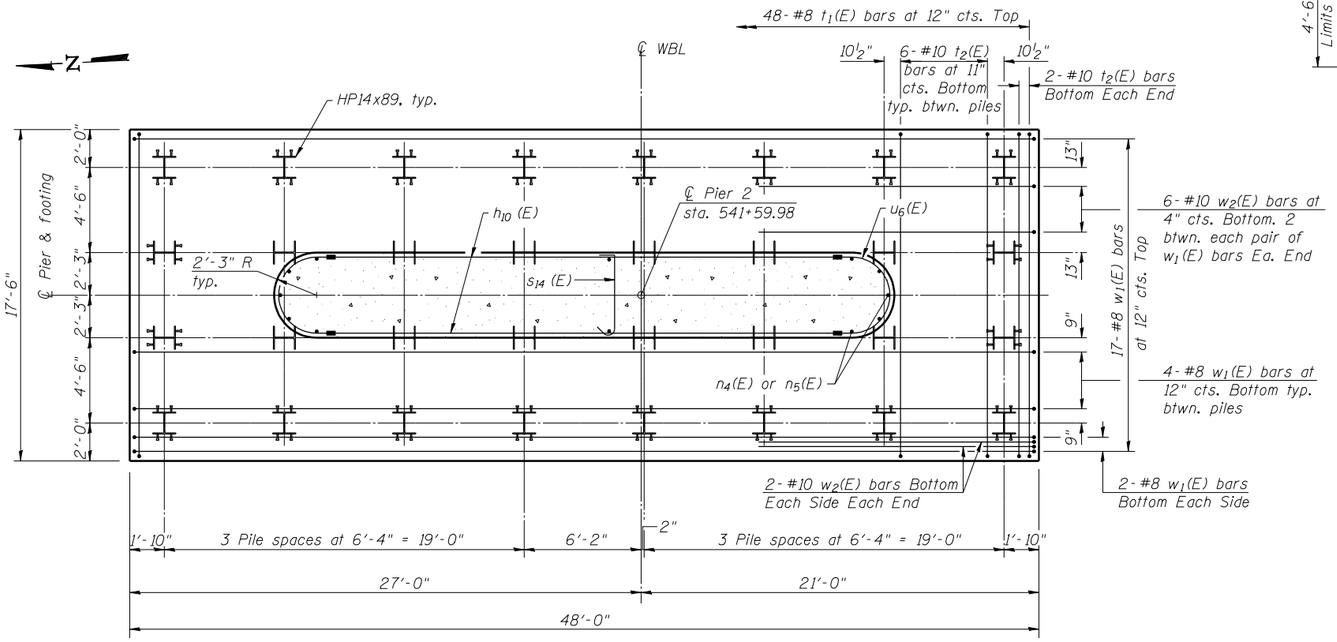
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 – WB
STRUCTURE NO. 026-0106
SHEET NO. 87 OF 113 SHEETS

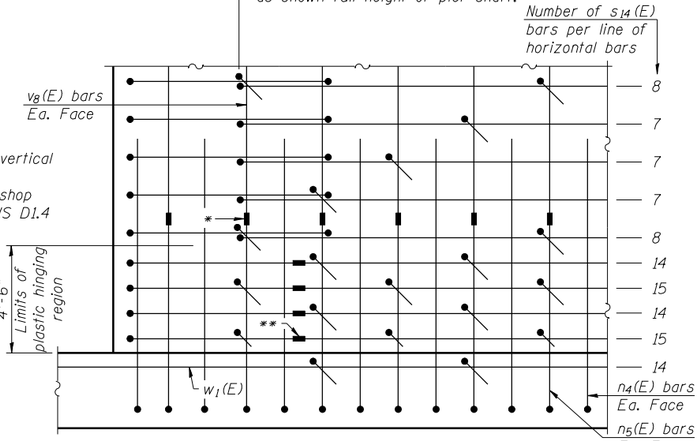
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	167
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



TOP OF PIER



FOOTING PLAN



* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

PARTIAL ELEVATION

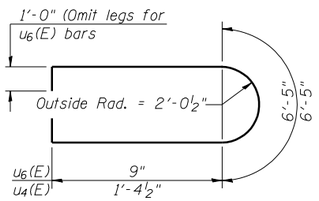
(Showing s_{14} (E) bar pattern)

Note:
Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

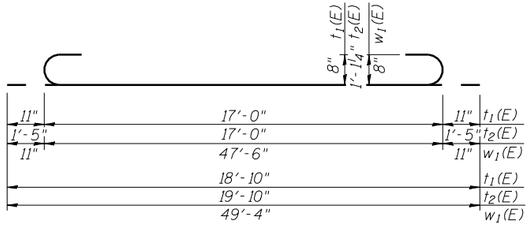
PIER 2
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10} (E)	28	#5	26'-9"	
h_{11} (E)	36	#6	30'-6"	
h_{12} (E)	40	#5	11'-3"	
h_{13} (E)	40	#5	11'-2"	
h_{14} (E)	20	#5	30'-0"	
h_{15} (E)	7	#5	7'-5"	
n_4(E)	66	#6	13'-4"	
n_5(E)	66	#8	9'-7"	
p_3(E)	7	#9	49'-5"	
p_4(E)	12	#10	20'-6"	
p_5(E)	10	#7	9'-9"	
p_6(E)	2	#7	33'-2"	
s_3(E)	4	#5	14'-7"	
s_4(E)	4	#5	15'-0"	
s_5(E)	4	#5	15'-5"	
s_6(E)	4	#5	15'-10"	
s_7(E)	4	#5	16'-3"	
s_8(E)	4	#5	16'-9"	
s_9(E)	4	#5	17'-2"	
s_{10} (E)	4	#5	17'-7"	
s_{11} (E)	96	#5	13'-0"	
s_{12} (E)	70	#5	14'-2"	
s_{13} (E)	11	#5	7'-6"	
s_{14} (E)	348	#4	5'-3"	
t_1(E)	48	#8	18'-10"	
t_2(E)	46	#10	19'-10"	
u_4(E)	36	#6	11'-2"	
u_5(E)	10	#6	11'-10"	
u_6(E)	28	#5	7'-11"	
v_8(E)	66	#8	10'-11"	
w_1(E)	33	#8	49'-4"	
w_2(E)	44	#10	19'-10"	

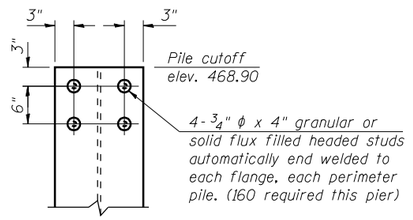
Structure Excavation	Cu. Yd.	220
Concrete Structures	Cu. Yd.	221.8
Reinforcement Bars, Epoxy Coated	Pound	31190
Furnishing Steel Piles HP14x89	Foot	2592
Driving Piles	Foot	2592



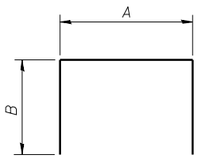
BARS u_4(E) & u_6(E)



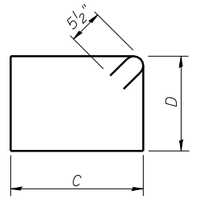
BARS t_1(E), t_2(E) & w_1(E)



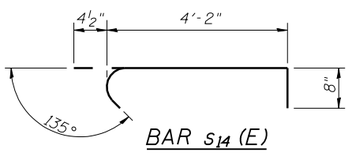
TOP OF PERIMETER PILE DETAIL



BARS



BARS s_3(E) thru s_{10} (E)



BAR s_{14} (E)

A & B DIMENSIONS

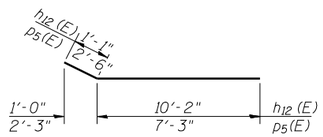
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"

C & D DIMENSIONS

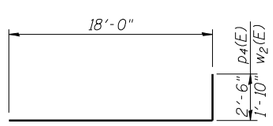
Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0½"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5½"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1½"
s_{10} (E)	4'-0"	4'-4"

PILE DATA

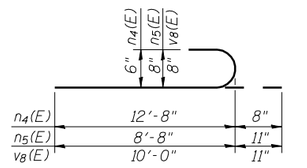
Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 81 feet
No. Production Piles: 32
No. Test Piles: 0



BARS h_{12} (E) & p_5(E)



BARS p_4(E) & w_2(E)



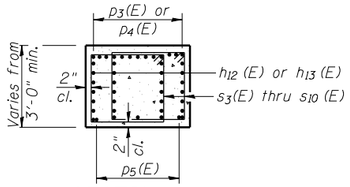
BARS n_4(E), n_5(E) & v_8(E)

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 2:19:45 PM	CHECKED - ELH	01/14	REVISED -	

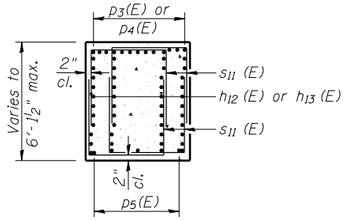
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 – WB
STRUCTURE NO. 026-0106
SHEET NO. 88 OF 113 SHEETS

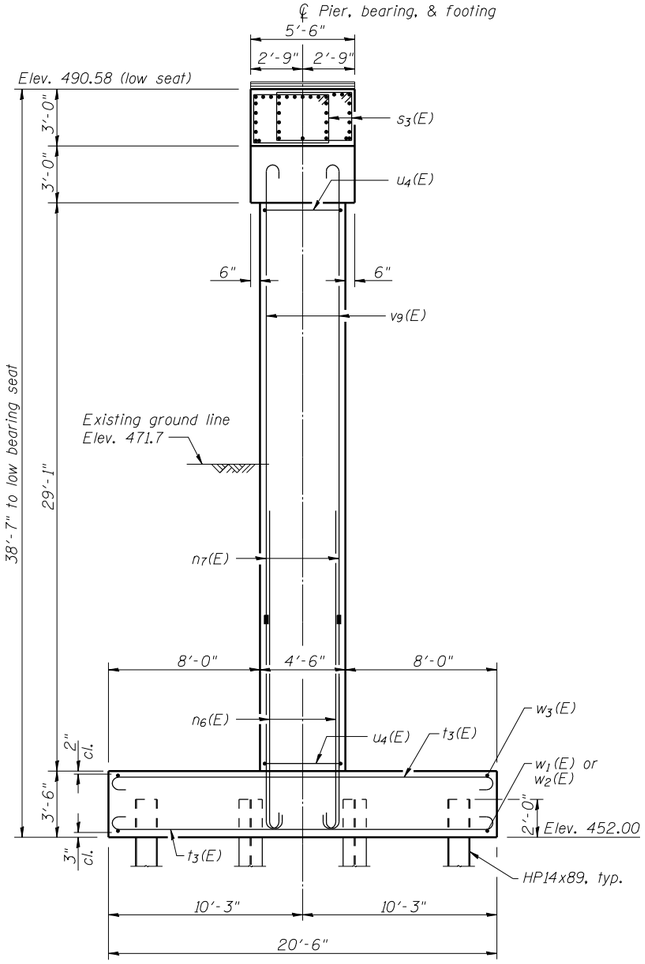
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	168
		CONTRACT NO. 74175		
		ILLINOIS FED. AID PROJECT		



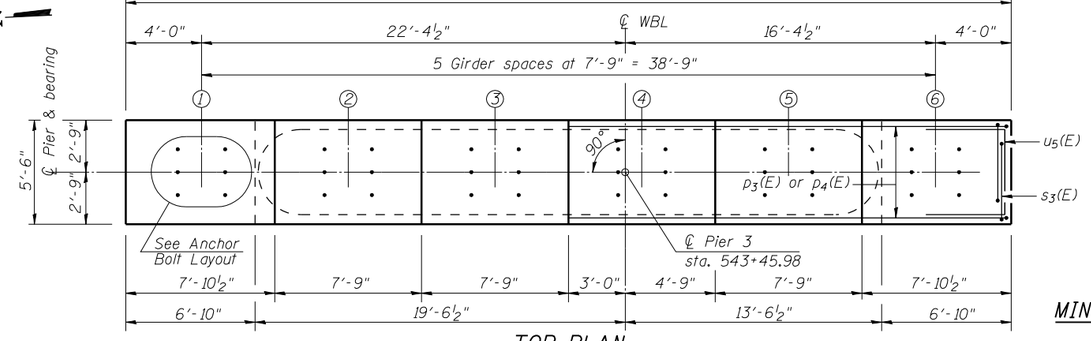
SECTION A-A



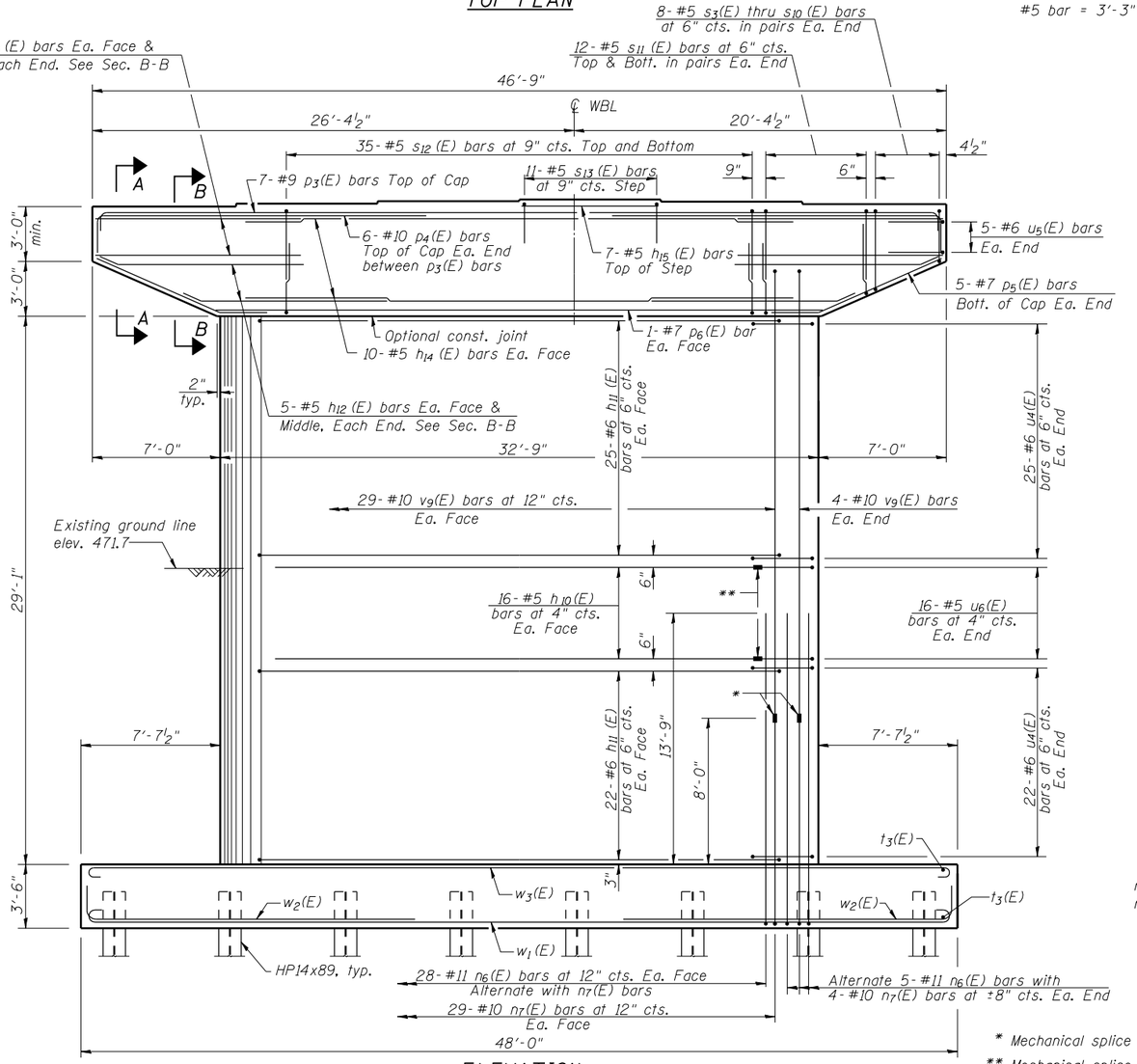
SECTION B-B



END VIEW



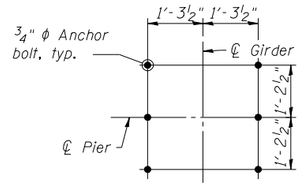
TOP PLAN



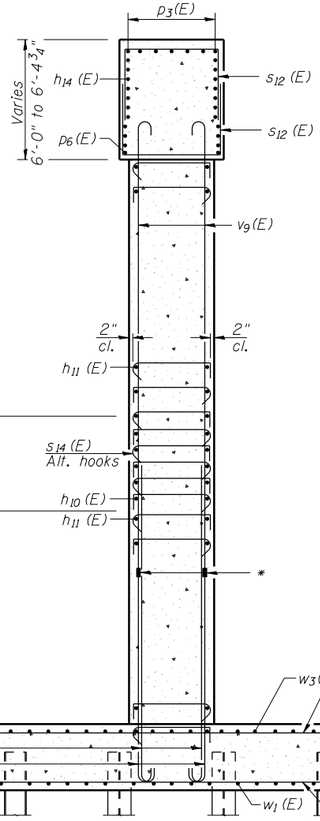
ELEVATION
(Looking East)

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.

MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"



ANCHOR BOLT LAYOUT



SECTION THRU PIER

* Mechanical splice on vertical bars.

** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

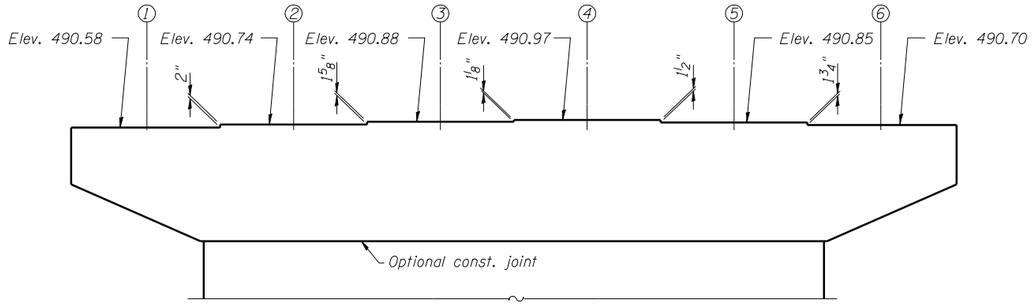
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 2:20:21 PM	CHECKED - ELH	01/14	REVISED -	

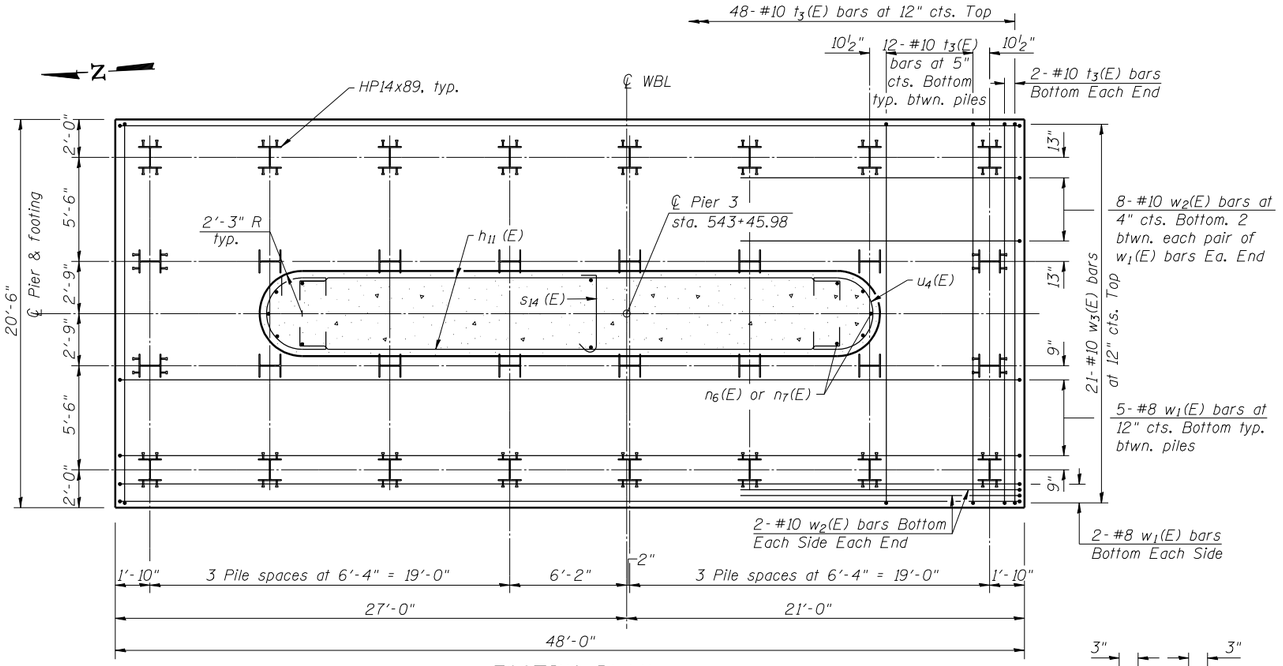
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 – WB
STRUCTURE NO. 026-0106
SHEET NO. 89 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	169
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

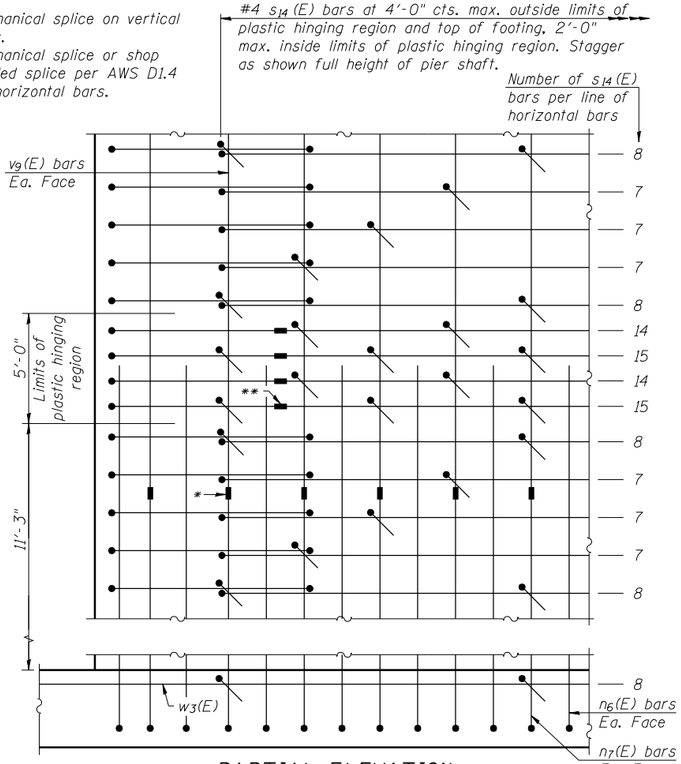


TOP OF PIER



FOOTING PLAN

* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.



PARTIAL ELEVATION

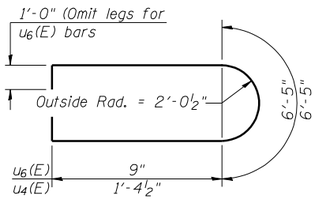
(Showing s_{14} (E) bar pattern)

Note:
Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

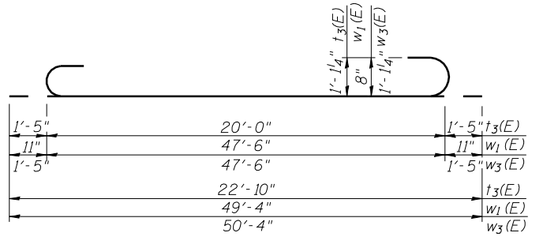
PIER 3
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10} (E)	32	#5	26'-9"	
h_{11} (E)	94	#6	30'-6"	
h_{12} (E)	40	#5	11'-3"	
h_{13} (E)	40	#5	11'-2"	
h_{14} (E)	20	#5	30'-0"	
h_{15} (E)	7	#5	7'-5"	
n_6(E)	66	#11	18'-6"	
n_7(E)	66	#10	12'-7"	
p_3(E)	7	#9	49'-5"	
p_4(E)	12	#10	20'-6"	
p_5(E)	10	#7	9'-9"	
p_6(E)	2	#7	33'-2"	
s_3(E)	4	#5	14'-7"	
s_4(E)	4	#5	15'-0"	
s_5(E)	4	#5	15'-5"	
s_6(E)	4	#5	15'-10"	
s_7(E)	4	#5	16'-3"	
s_8(E)	4	#5	16'-9"	
s_9(E)	4	#5	17'-2"	
s_{10} (E)	4	#5	17'-7"	
s_{11} (E)	96	#5	13'-0"	
s_{12} (E)	70	#5	14'-2"	
s_{13} (E)	11	#5	7'-6"	
s_{14} (E)	582	#4	5'-3"	
t_3(E)	136	#10	22'-10"	
u_4(E)	94	#6	11'-2"	
u_5(E)	10	#6	11'-10"	
u_6(E)	32	#5	7'-11"	
v_9(E)	66	#10	25'-1"	
w_1(E)	19	#8	49'-4"	
w_2(E)	56	#10	19'-10"	
w_3(E)	21	#10	50'-4"	
Cofferdam Excavation		Cu. Yd.	1630	
Cofferdam (Type 2) (Location-1)		Each	1	
Seal Coat Concrete		Cu. Yd.	192.9	
Concrete Structures		Cu. Yd.	336.7	
Reinforcement Bars, Epoxy Coated		Pound	58780	
Furnishing Steel Piles HP14x89		Foot	2144	
Driving Piles		Foot	2144	

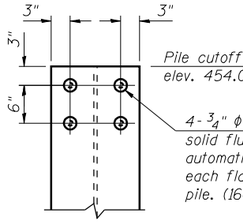
For cofferdam details, see sheet 105 of 113.



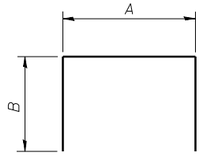
BARS u_4(E) & u_6(E)



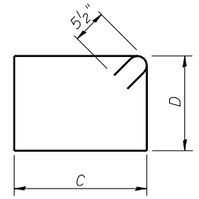
BARS t_3(E), w_1(E) & w_3(E)



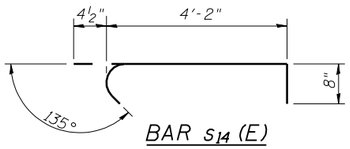
TOP OF PERIMETER PILE DETAIL



BARS



BARS s_3(E) thru s_{10} (E)



BAR s_{14} (E)

A & B DIMENSIONS

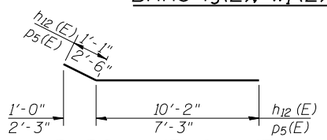
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"

C & D DIMENSIONS

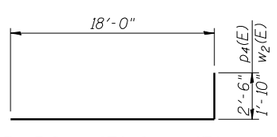
Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0 1/2"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5 1/2"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1 1/2"
s_{10} (E)	4'-0"	4'-4"

PILE DATA

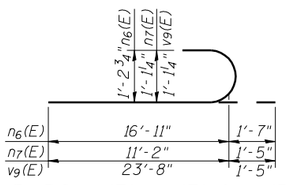
Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 67 feet
No. Production Piles: 32
No. Test Piles: 0



BARS h_{12} (E) & p_5(E)



BARS p_4(E) & w_2(E)



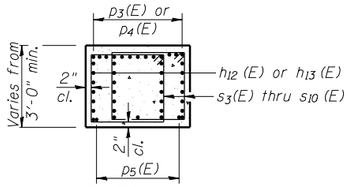
BARS n_6(E), n_7(E) & v_9(E)

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	08/13	REVISED -
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -
		DRAWN - DWH	08/13	REVISED -
	PLOT DATE = 1/28/2014 2:21:50 PM	CHECKED - ELH	01/14	REVISED -

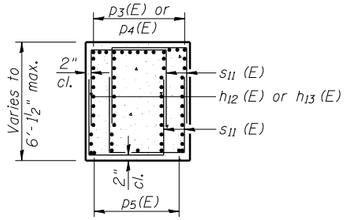
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 – WB
STRUCTURE NO. 026-0106
SHEET NO. 90 OF 113 SHEETS

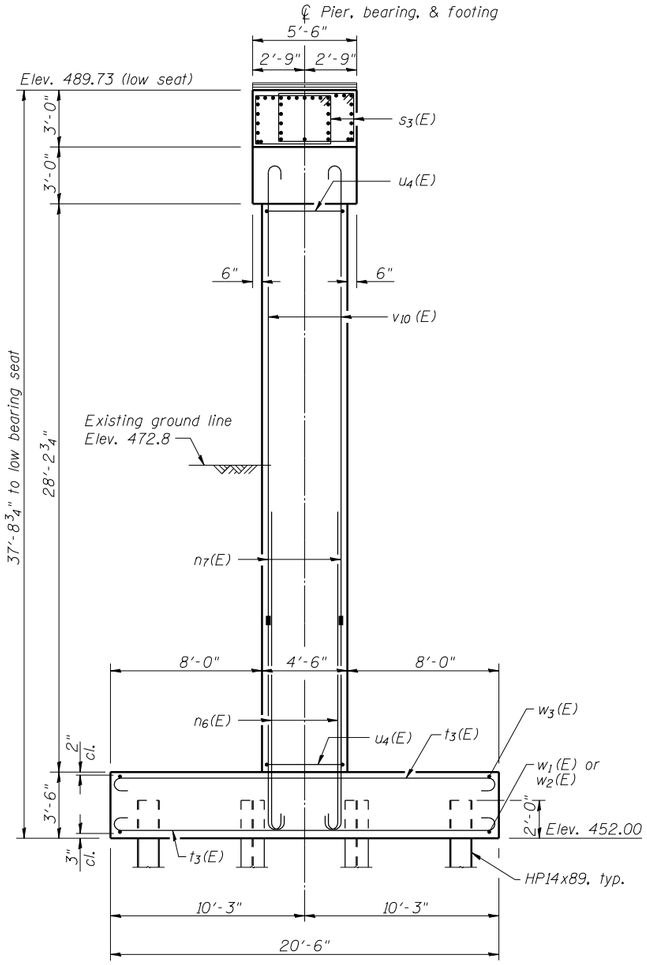
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	170
		CONTRACT NO. 74175		
		ILLINOIS	FED. AID PROJECT	



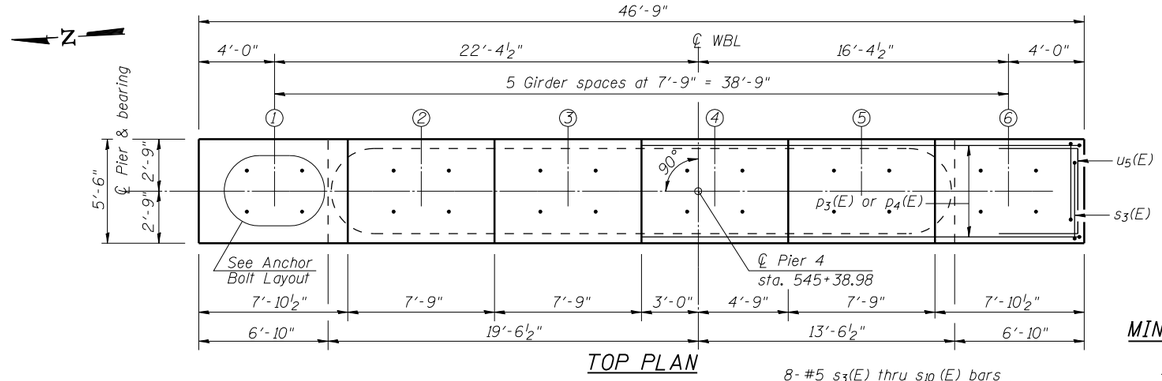
SECTION A-A



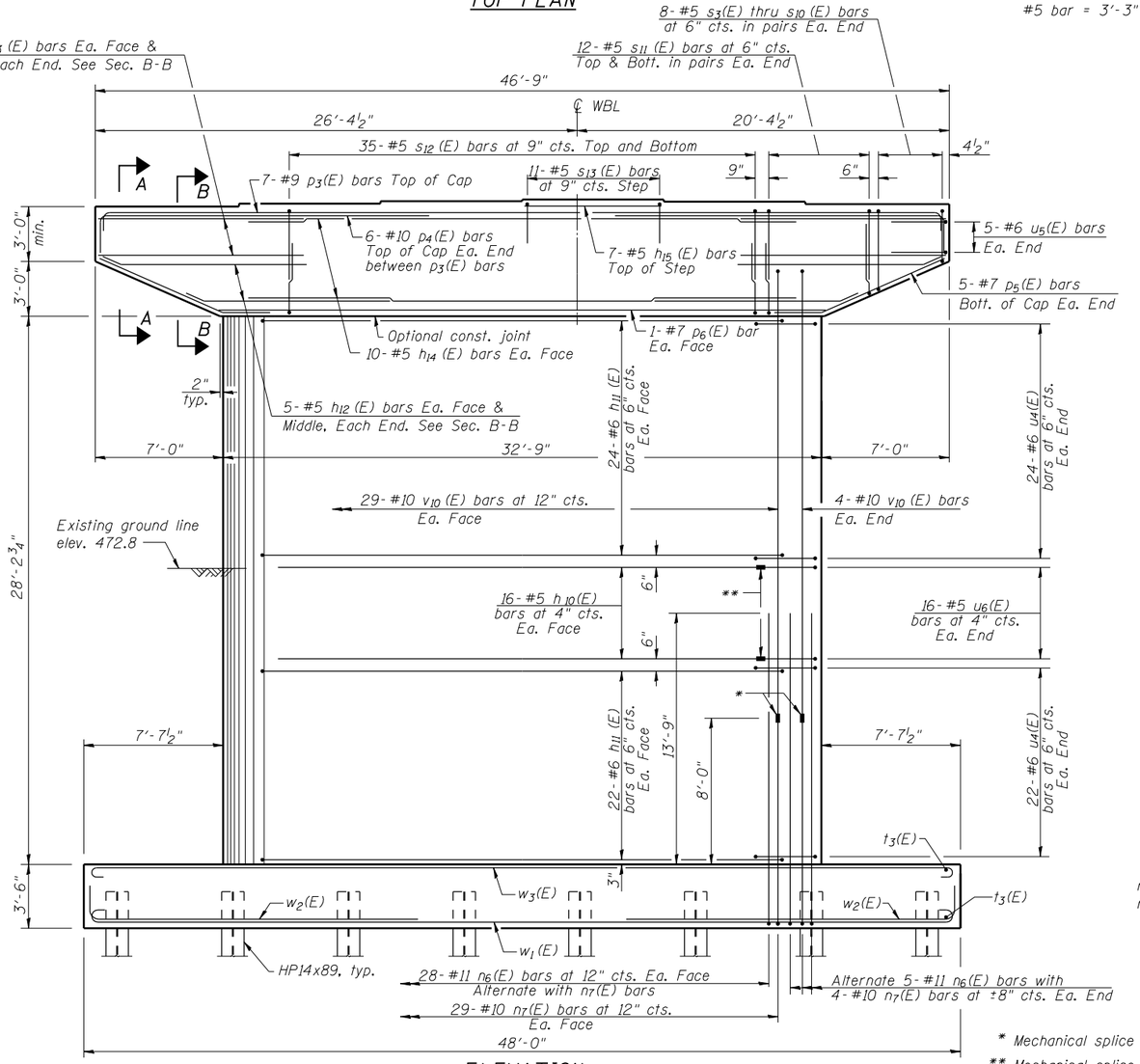
SECTION B-B



END VIEW



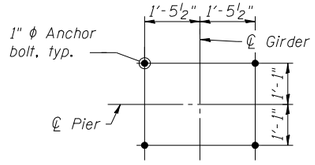
TOP PLAN



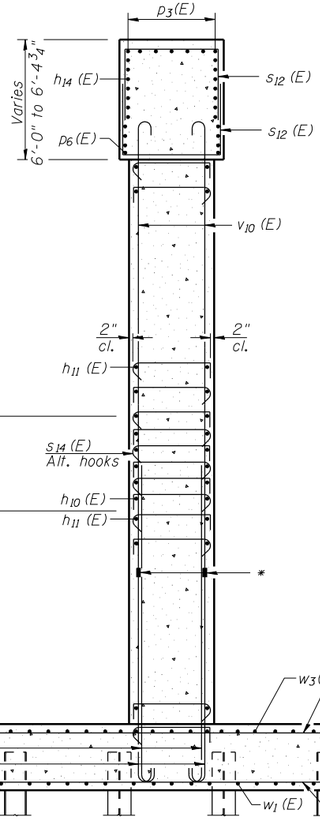
ELEVATION
(Looking East)

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.

MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"



ANCHOR BOLT LAYOUT



SECTION THRU PIER

* Mechanical splice on vertical bars.

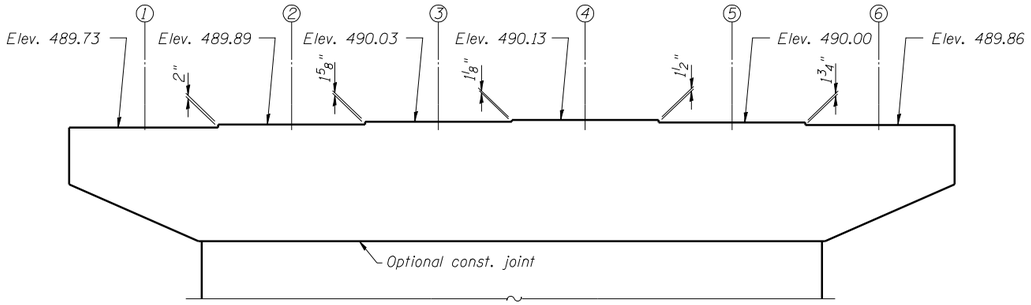
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 2:22:04 PM	CHECKED - ELH	01/14	REVISED -	

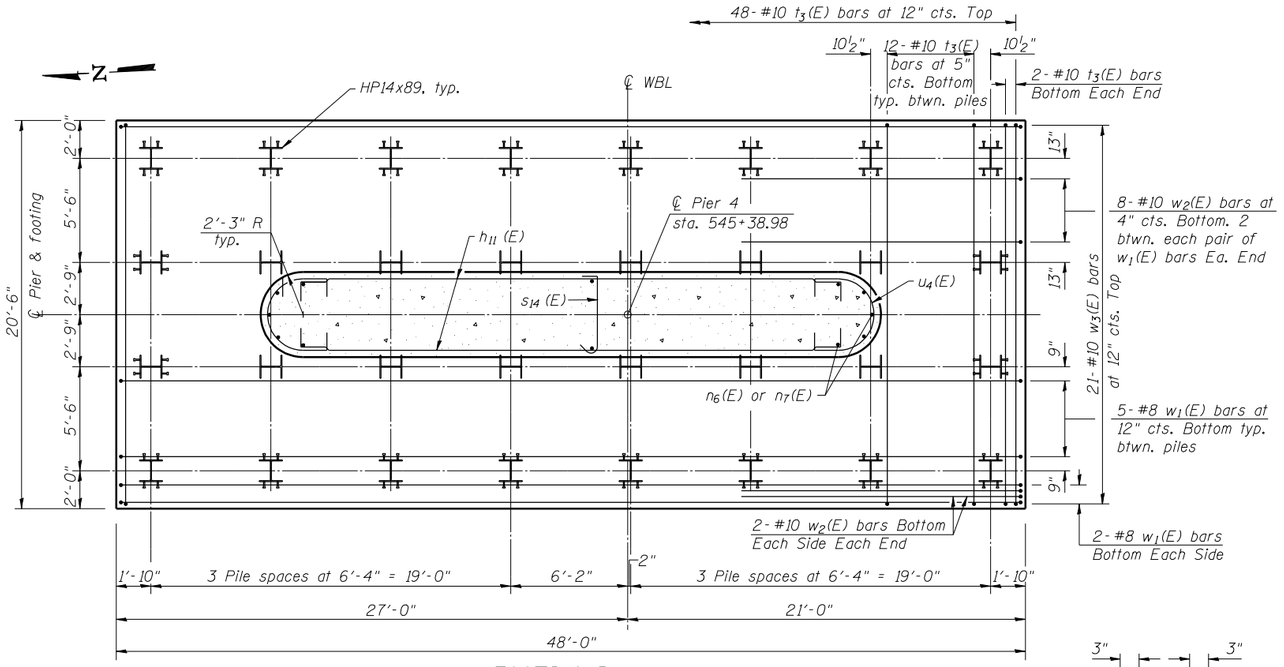
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 – WB
STRUCTURE NO. 026-0106
SHEET NO. 91 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	171
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			

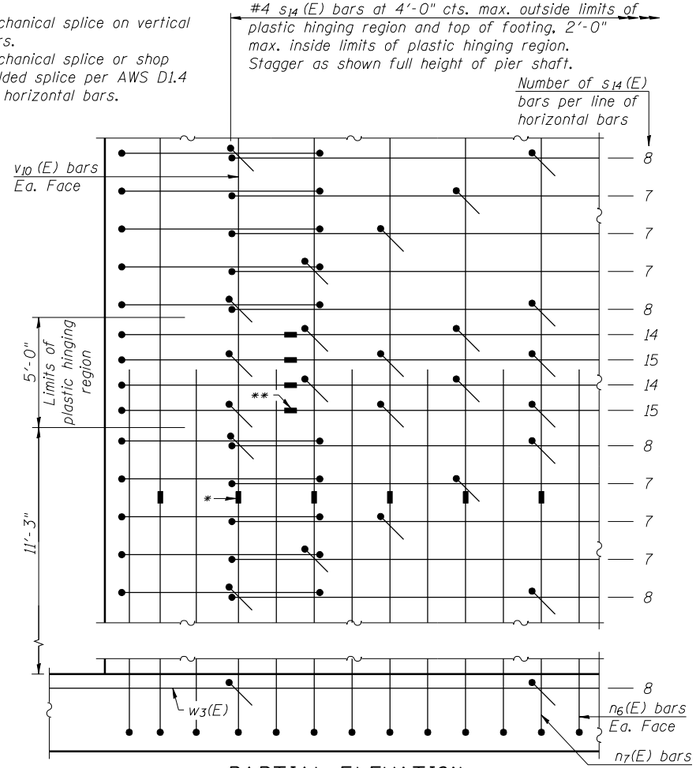


TOP OF PIER



FOOTING PLAN

* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.



PARTIAL ELEVATION

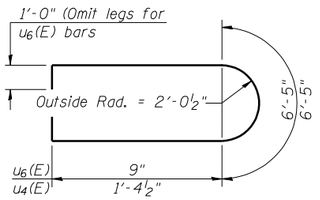
(Showing s_{14} (E) bar pattern)

Note:
Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

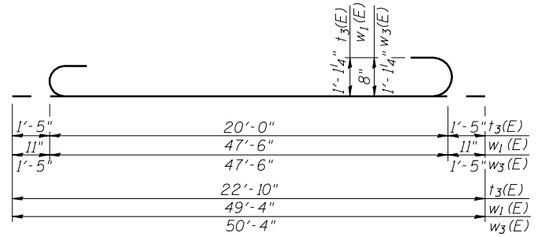
PIER 4
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10} (E)	32	#5	26'-9"	
h_{11} (E)	92	#6	30'-6"	
h_{12} (E)	40	#5	11'-3"	
h_{13} (E)	40	#5	11'-2"	
h_{14} (E)	20	#5	30'-0"	
h_{15} (E)	7	#5	7'-5"	
n_6(E)	66	#11	18'-6"	
n_7(E)	66	#10	12'-7"	
p_3(E)	7	#9	49'-5"	
p_4(E)	12	#10	20'-6"	
p_5(E)	10	#7	9'-9"	
p_6(E)	2	#7	33'-2"	
s_3(E)	4	#5	14'-7"	
s_4(E)	4	#5	15'-0"	
s_5(E)	4	#5	15'-5"	
s_6(E)	4	#5	15'-10"	
s_7(E)	4	#5	16'-3"	
s_8(E)	4	#5	16'-9"	
s_9(E)	4	#5	17'-2"	
s_{10} (E)	4	#5	17'-7"	
s_{11} (E)	96	#5	13'-0"	
s_{12} (E)	70	#5	14'-2"	
s_{13} (E)	11	#5	7'-6"	
s_{14} (E)	574	#4	5'-3"	
t_3(E)	136	#10	22'-10"	
u_4(E)	92	#6	11'-2"	
u_5(E)	10	#6	11'-10"	
u_6(E)	32	#5	7'-11"	
v_{10} (E)	66	#10	24'-1"	
w_1(E)	19	#8	49'-4"	
w_2(E)	56	#10	19'-10"	
w_3(E)	21	#10	50'-4"	
Cofferdam Excavation		Cu. Yd.	1180	
Cofferdam (Type 2) (Location-2)		Each	1	
Seal Coat Concrete		Cu. Yd.	141.6	
Concrete Structures		Cu. Yd.	332.2	
Reinforcement Bars, Epoxy Coated		Pound	58350	
Furnishing Steel Piles HP14x89		Foot	2112	
Driving Piles		Foot	2112	

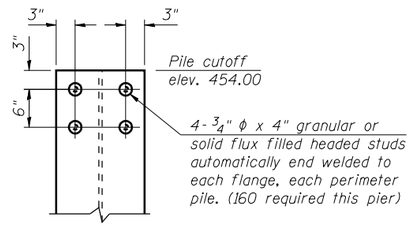
For cofferdam details, see sheet 105 of 113.



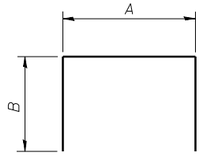
BARS u_4(E) & u_6(E)



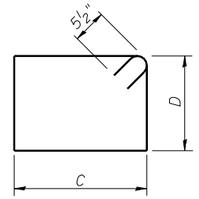
BARS t_3(E), w_1(E) & w_3(E)



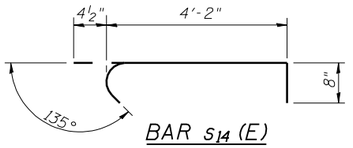
TOP OF PERIMETER PILE DETAIL



BARS



BARS s_3(E) thru s_{10} (E)



BAR s_{14} (E)

A & B DIMENSIONS

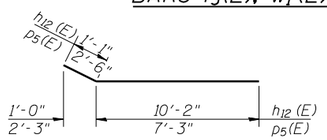
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"

C & D DIMENSIONS

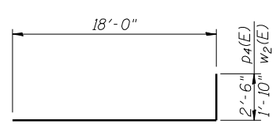
Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0 1/2"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5 1/2"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1 1/2"
s_{10} (E)	4'-0"	4'-4"

PILE DATA

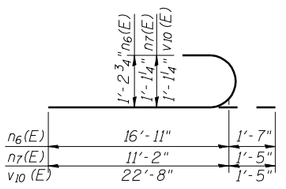
Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 66 feet
No. Production Piles: 32
No. Test Piles: 0



BARS h_{12} (E) & p_5(E)



BARS p_4(E) & w_2(E)



BARS n_6(E), n_7(E) & v_{10} (E)

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

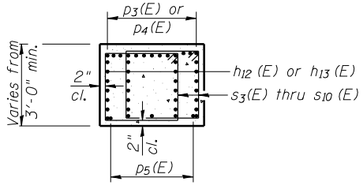
USER NAME = has	DESIGNED - RDP	08/13	REVISED -
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -
	DRAWN - DWH	08/13	REVISED -
PLOT DATE = 1/28/2014 2:23:45 PM	CHECKED - ELH	01/14	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

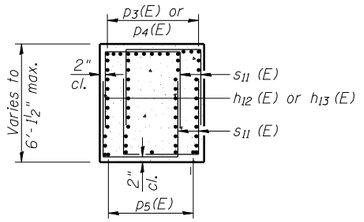
PIER 4 – WB
STRUCTURE NO. 026-0106
SHEET NO. 92 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	172
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			

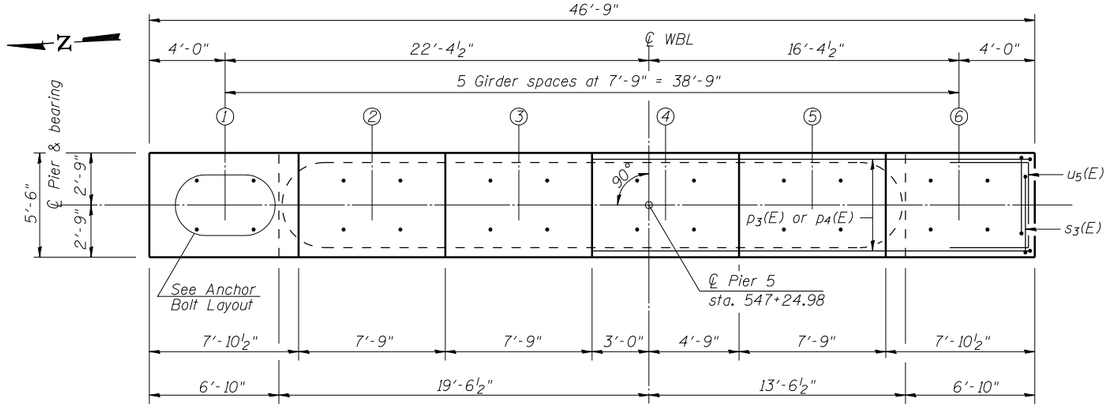
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.



SECTION A-A

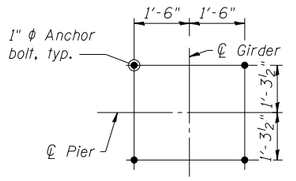


SECTION B-B

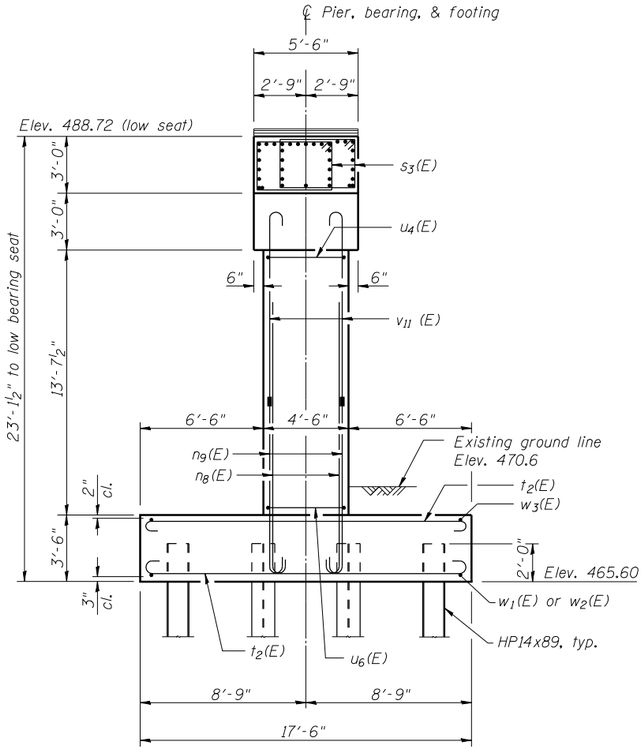


TOP PLAN

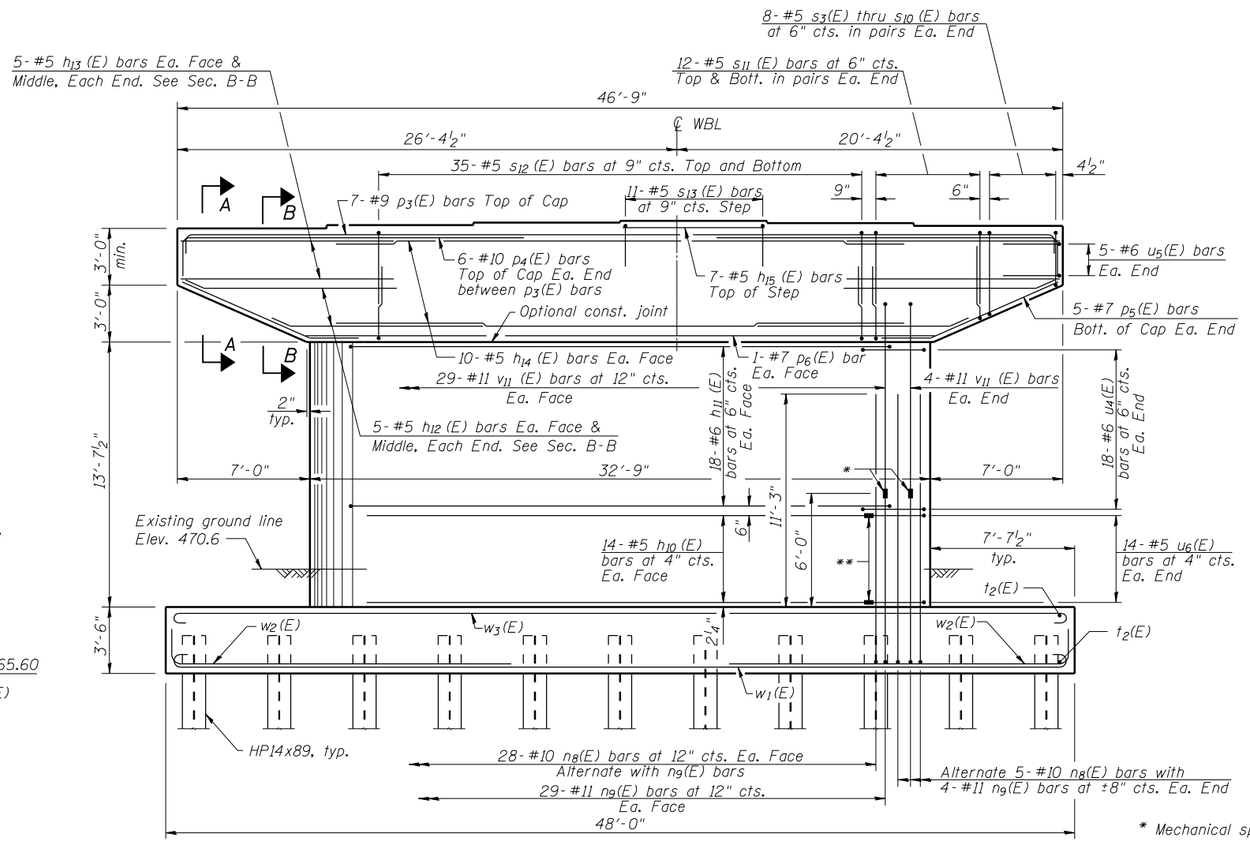
MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"



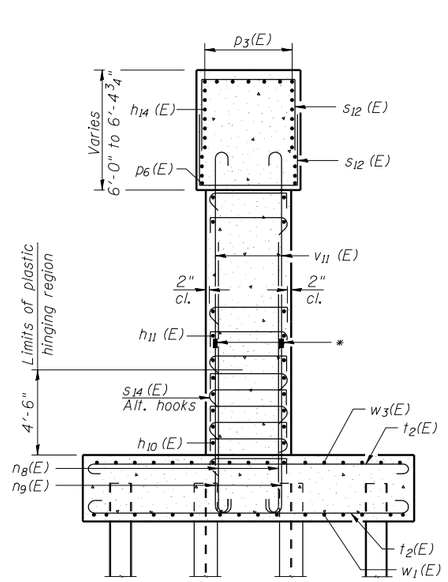
ANCHOR BOLT LAYOUT



END VIEW



ELEVATION
(Looking East)



SECTION THRU PIER

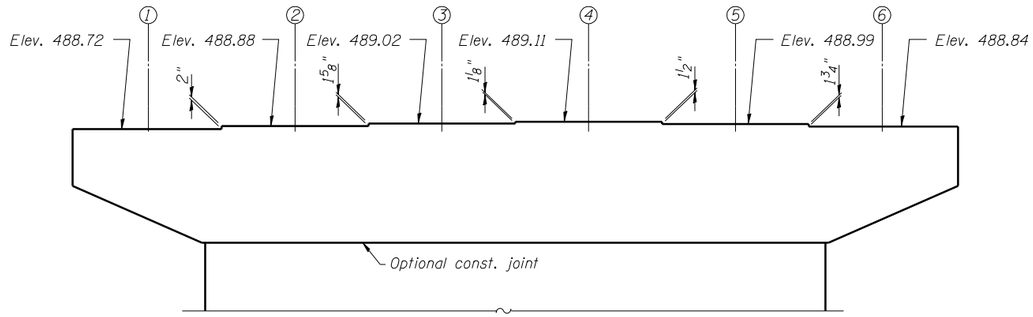
* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 2:56:59 PM	CHECKED - ELH	01/14	REVISED -	

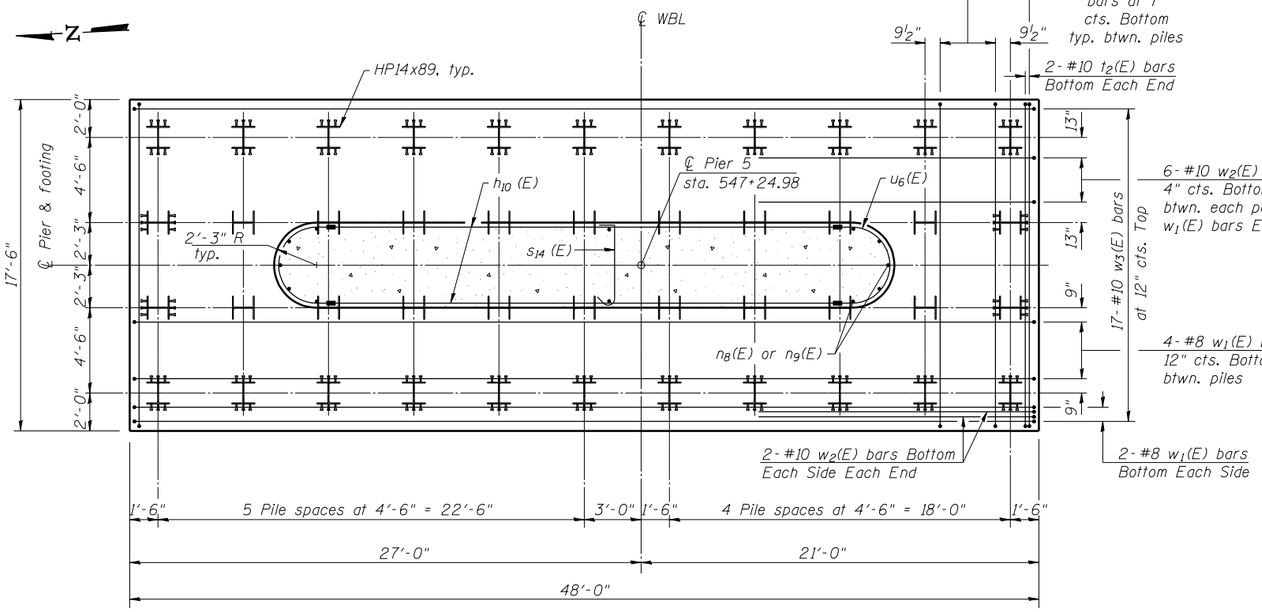
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 5 – WB
STRUCTURE NO. 026-0106
SHEET NO. 93 OF 113 SHEETS

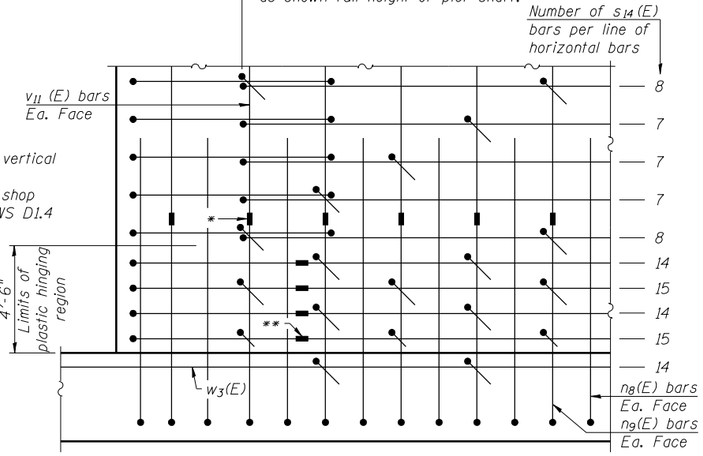
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	173
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



TOP OF PIER



FOOTING PLAN



* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

PARTIAL ELEVATION

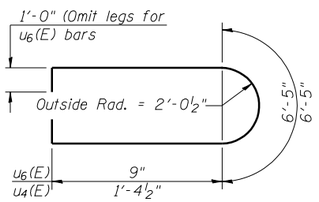
(Showing s_{14} (E) bar pattern)

Note:
Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

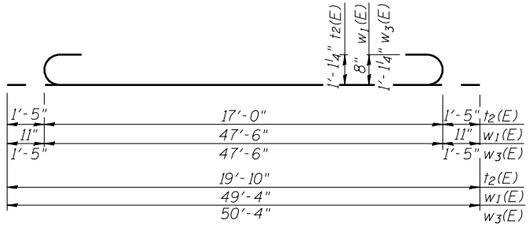
PIER 5
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10} (E)	28	#5	26'-9"	
h_{11} (E)	36	#6	30'-6"	
h_{12} (E)	40	#5	11'-3"	
h_{13} (E)	40	#5	11'-2"	
h_{14} (E)	20	#5	30'-0"	
h_{15} (E)	7	#5	7'-5"	
n_8(E)	66	#10	16'-8"	
n_9(E)	66	#11	10'-9"	
p_3(E)	7	#9	49'-5"	
p_4(E)	12	#10	20'-6"	
p_5(E)	10	#7	9'-9"	
p_6(E)	2	#7	33'-2"	
s_3(E)	4	#5	14'-7"	
s_4(E)	4	#5	15'-0"	
s_5(E)	4	#5	15'-5"	
s_6(E)	4	#5	15'-10"	
s_7(E)	4	#5	16'-3"	
s_8(E)	4	#5	16'-9"	
s_9(E)	4	#5	17'-2"	
s_{10} (E)	4	#5	17'-7"	
s_{11} (E)	96	#5	13'-0"	
s_{12} (E)	70	#5	14'-2"	
s_{13} (E)	11	#5	7'-6"	
s_{14} (E)	348	#4	5'-3"	
t_2(E)	112	#10	19'-10"	
u_4(E)	36	#6	11'-2"	
u_5(E)	10	#6	11'-10"	
u_6(E)	28	#5	7'-11"	
v_{11} (E)	66	#11	11'-5"	
w_1(E)	16	#8	49'-4"	
w_2(E)	44	#10	19'-10"	
w_3(E)	17	#10	50'-4"	

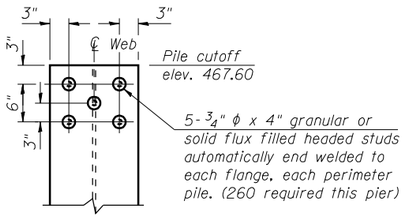
Structure Excavation	Cu. Yd.	210
Concrete Structures	Cu. Yd.	236.1
Reinforcement Bars, Epoxy Coated	Pound	43420
Furnishing Steel Piles HP14x89	Foot	3432
Driving Piles	Foot	3432



BARS u_4(E) & u_6(E)



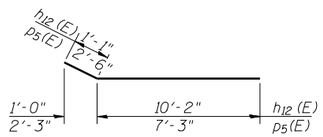
BARS t_2(E), w_1(E) & w_3(E)



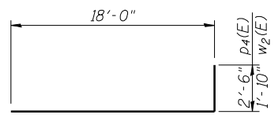
TOP OF PERIMETER PILE DETAIL

PILE DATA

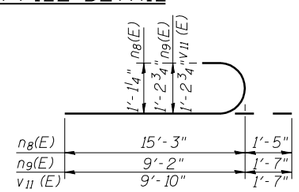
Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 78 feet
No. Production Piles: 44
No. Test Piles: 0



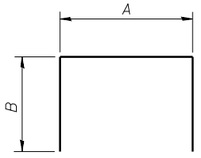
BARS h_{12} (E) & p_5(E)



BARS p_4(E) & w_2(E)



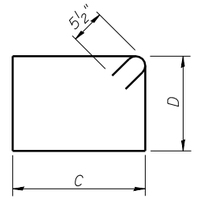
BARS n_8(E), n_9(E) & v_{11} (E)



BARS

A & B DIMENSIONS

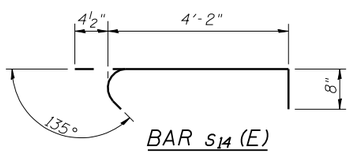
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"



BARS s_3(E) thru s_{10} (E)

C & D DIMENSIONS

Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0 1/2"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5 1/2"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1 1/2"
s_{10} (E)	4'-0"	4'-4"



BAR s_{14} (E)

ESCA CONSULTANTS, INC.

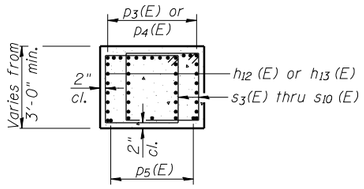
USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 2:58:14 PM	CHECKED - ELH	01/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

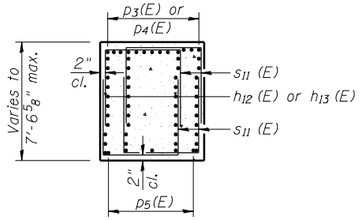
PIER 5 – WB
STRUCTURE NO. 026-0106
SHEET NO. 94 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	174
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

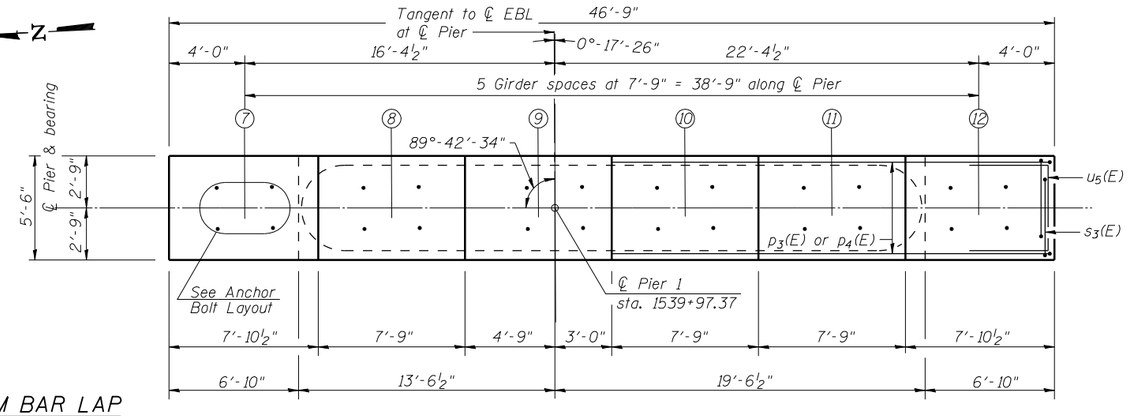
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.



SECTION A-A

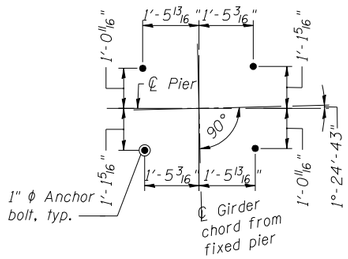


SECTION B-B

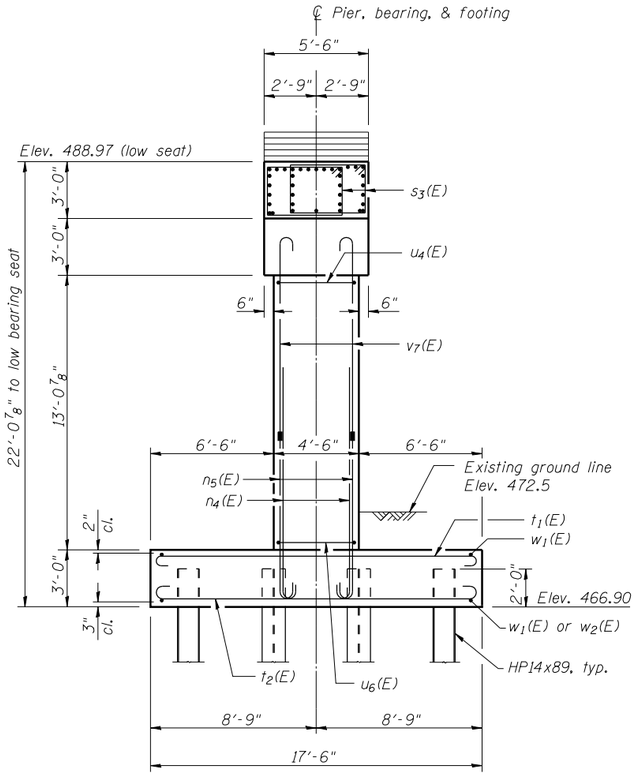


TOP PLAN

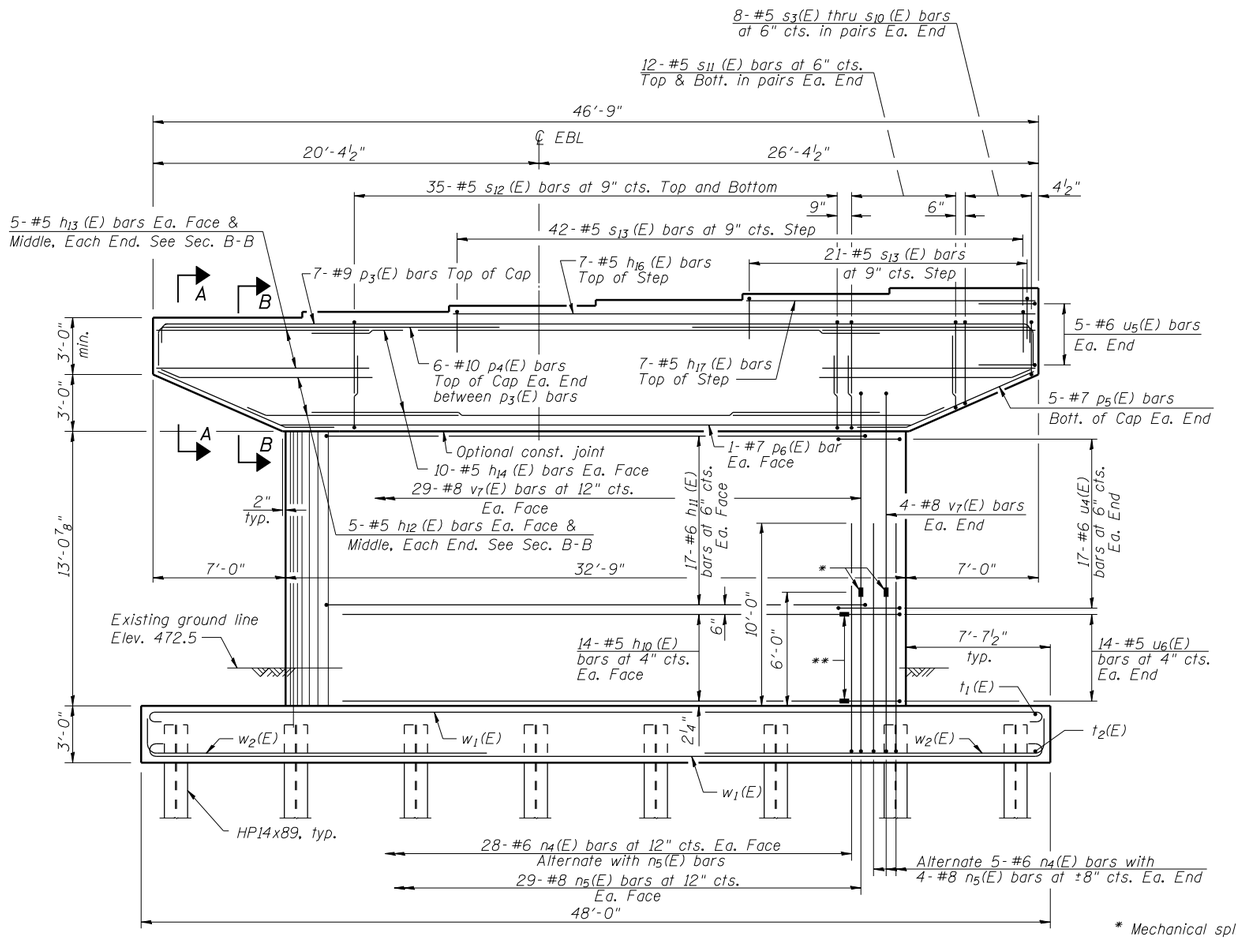
MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"



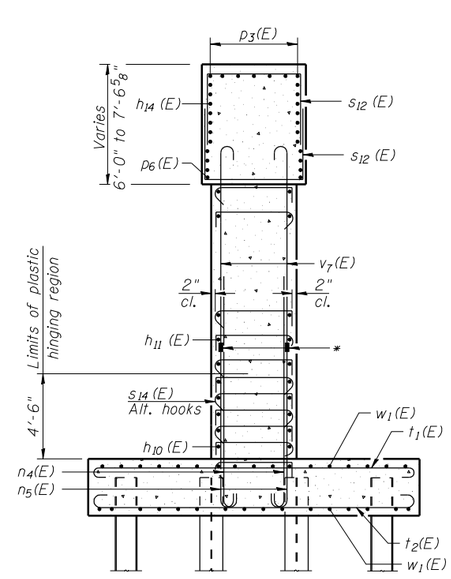
ANCHOR BOLT LAYOUT



END VIEW



ELEVATION
(Looking East)



SECTION THRU PIER

* Mechanical splice on vertical bars.

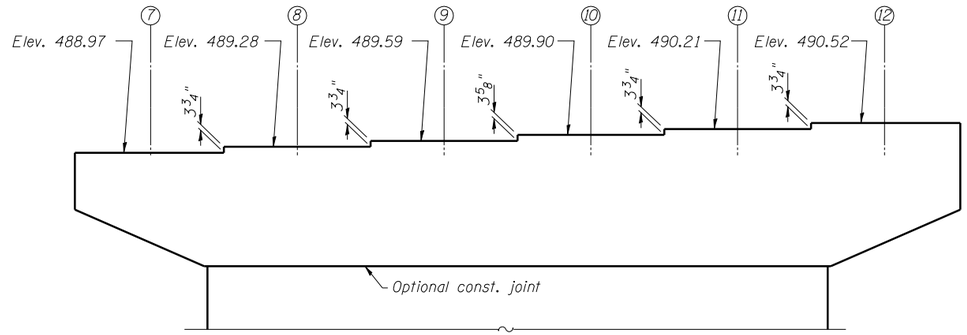
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 2:58:49 PM	CHECKED - ELH	01/14	REVISED -	

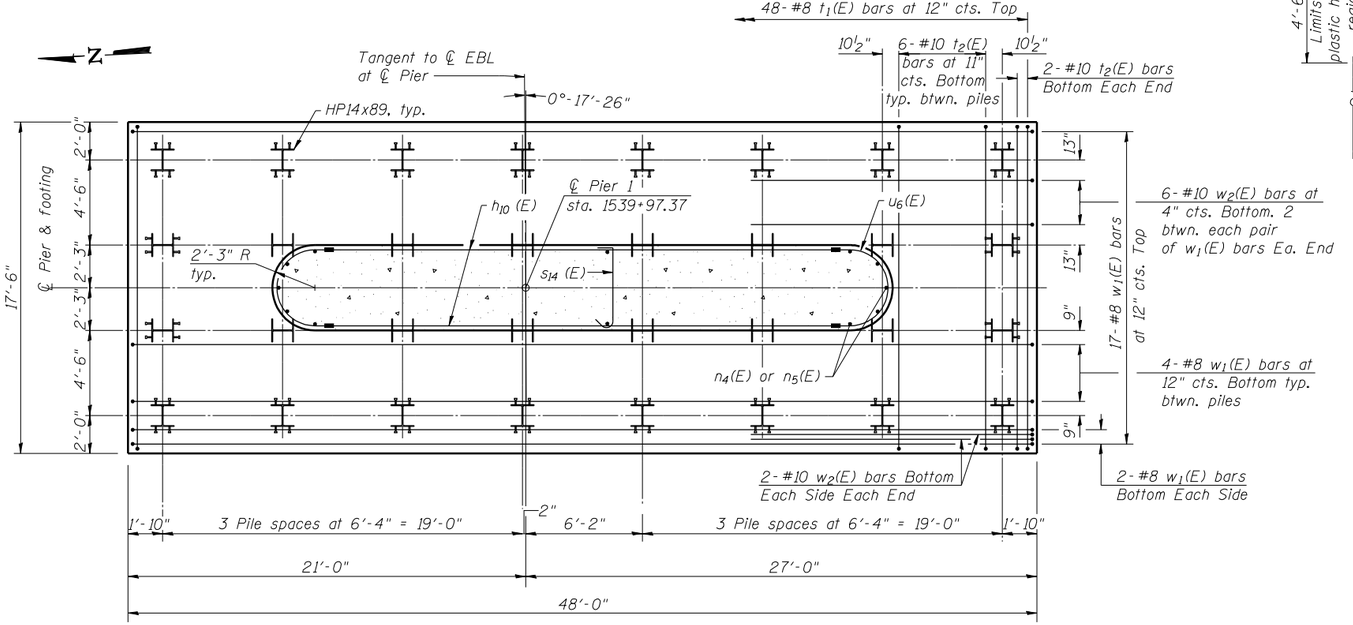
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 1 – EB
STRUCTURE NO. 026-0107
SHEET NO. 95 OF 113 SHEETS

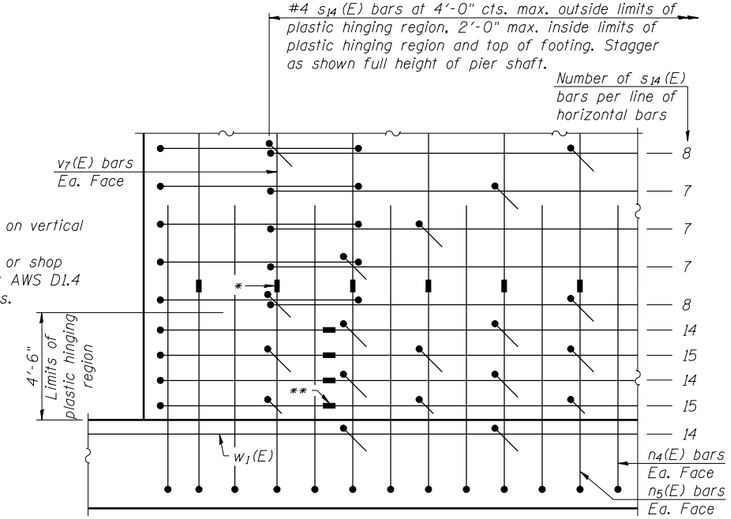
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	175
		CONTRACT NO. 74175		
		ILLINOIS FED. AID PROJECT		



TOP OF PIER



FOOTING PLAN



PARTIAL ELEVATION

(Showing s_{14} (E) bar pattern)

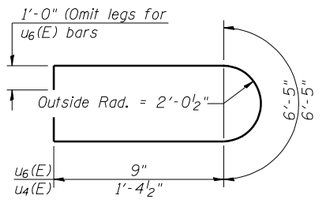
Note:

Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

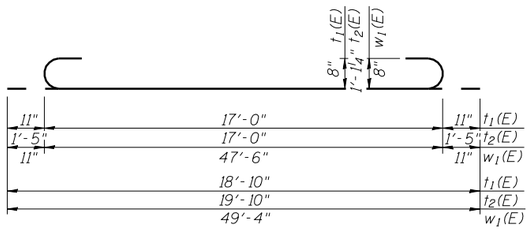
PIER 1
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10} (E)	28	#5	26'-9"	
h_{11} (E)	34	#6	30'-6"	
h_{12} (E)	40	#5	11'-3"	
h_{13} (E)	40	#5	11'-2"	
h_{14} (E)	20	#5	30'-0"	
h_{16} (E)	7	#5	30'-9"	
h_{17} (E)	7	#5	15'-3"	
n_4(E)	66	#6	13'-4"	
n_5(E)	66	#8	9'-7"	
p_3(E)	7	#9	49'-5"	
p_4(E)	12	#10	20'-6"	
p_5(E)	10	#7	9'-9"	
p_6(E)	2	#7	33'-2"	
s_3(E)	4	#5	14'-7"	
s_4(E)	4	#5	15'-0"	
s_5(E)	4	#5	15'-5"	
s_6(E)	4	#5	15'-10"	
s_7(E)	4	#5	16'-3"	
s_8(E)	4	#5	16'-9"	
s_9(E)	4	#5	17'-2"	
s_{10} (E)	4	#5	17'-7"	
s_{11} (E)	96	#5	13'-0"	
s_{12} (E)	70	#5	14'-2"	
s_{13} (E)	63	#5	7'-6"	
s_{14} (E)	341	#4	5'-3"	
t_1(E)	48	#8	18'-10"	
t_2(E)	46	#10	19'-10"	
u_4(E)	34	#6	11'-2"	
u_5(E)	10	#6	11'-10"	
u_6(E)	28	#5	7'-11"	
v_7(E)	66	#8	9'-6"	
w_1(E)	33	#8	49'-4"	
w_2(E)	44	#10	19'-10"	

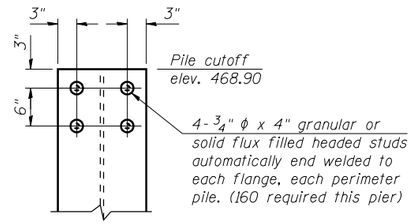
Structure Excavation	Cu. Yd.	240
Concrete Structures	Cu. Yd.	223.0
Reinforcement Bars, Epoxy Coated	Pound	31480
Furnishing Steel Piles HP14x89	Foot	2528
Driving Piles	Foot	2528



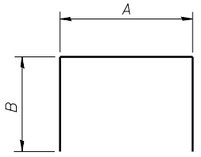
BARS u_4(E) & u_6(E)



BARS t_1(E), t_2(E) & w_1(E)



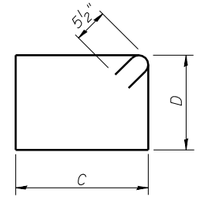
TOP OF PERIMETER PILE DETAIL



BARS

A & B DIMENSIONS

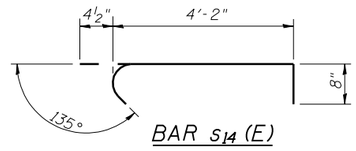
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"



BARS s_3(E) thru s_{10} (E)

C & D DIMENSIONS

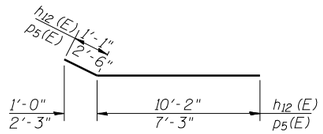
Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0½"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5½"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1½"
s_{10} (E)	4'-0"	4'-4"



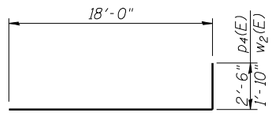
BAR s_{14} (E)

PILE DATA

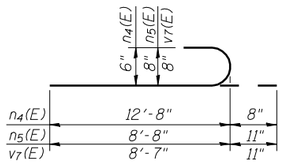
Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 79 feet
No. Production Piles: 32
No. Test Piles: 0



BARS h_{12} (E) & p_5(E)



BARS p_4(E) & w_2(E)



BARS n_4(E), n_5(E) & v_7(E)

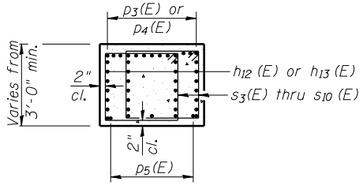
ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	08/13	REVISED -
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -
		DRAWN - DWH	08/13	REVISED -
	PLOT DATE = 1/28/2014 3:00:07 PM	CHECKED - ELH	01/14	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

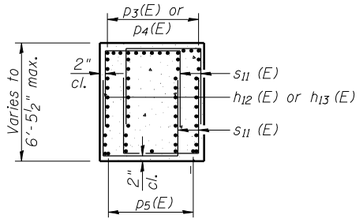
PIER 1 – EB
STRUCTURE NO. 026-0107
SHEET NO. 96 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	176
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

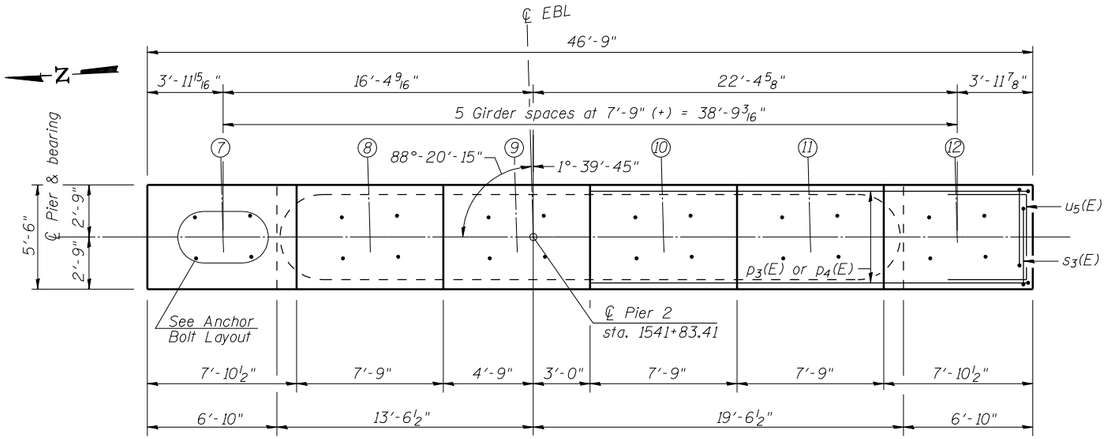
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.



SECTION A-A

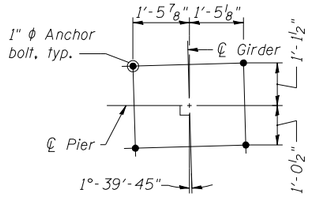


SECTION B-B

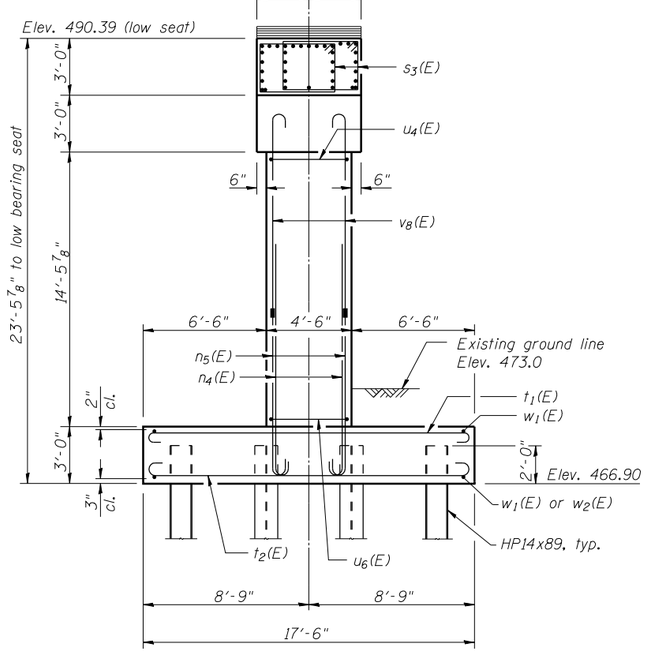


MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"

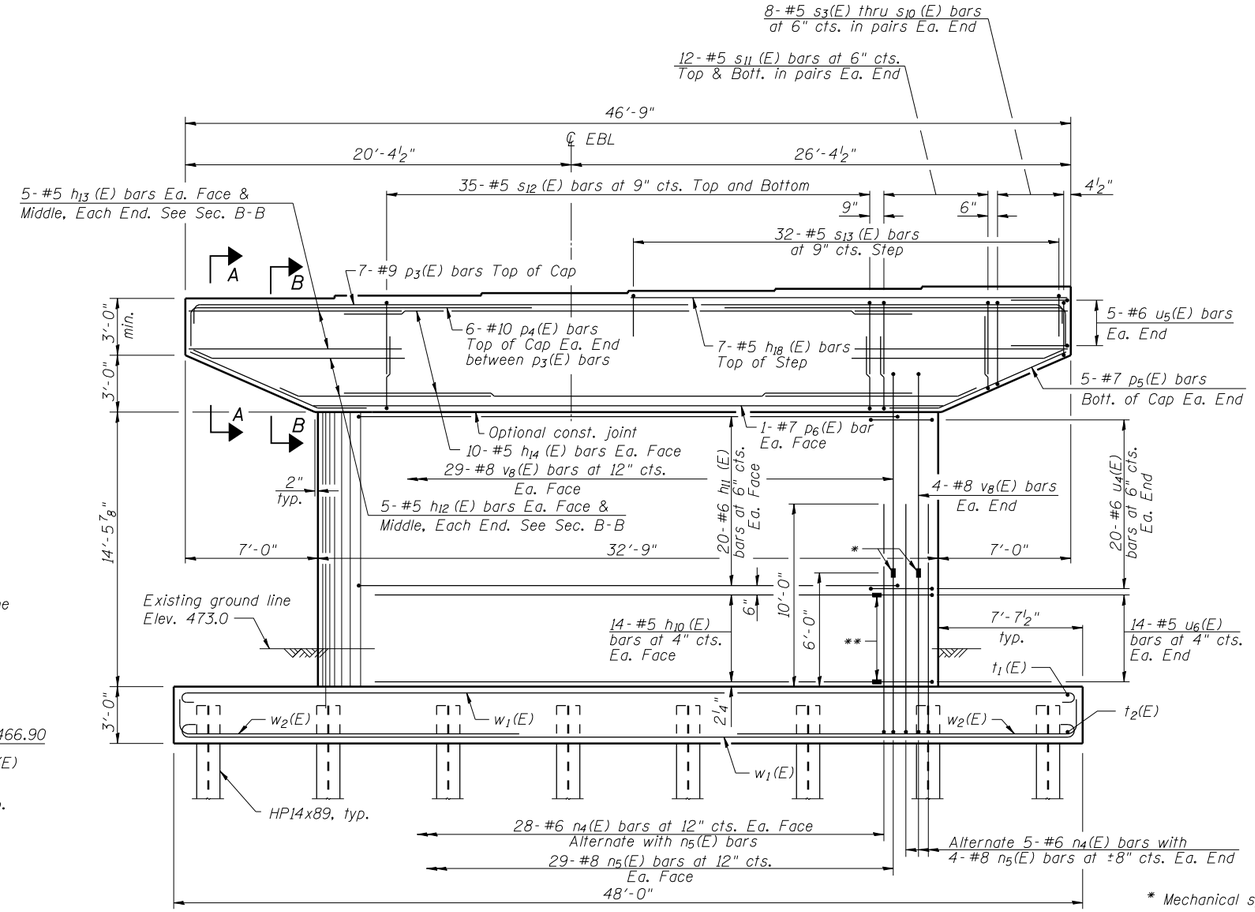
TOP PLAN



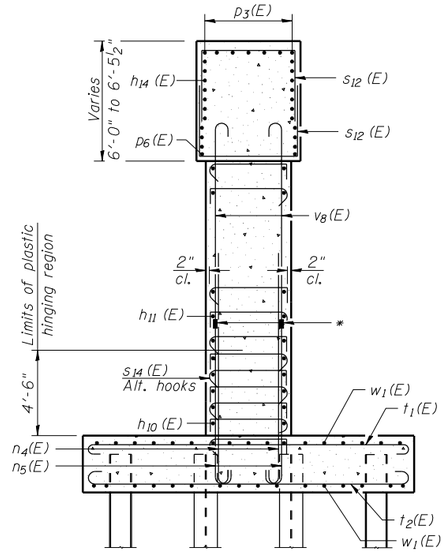
ANCHOR BOLT LAYOUT



END VIEW



ELEVATION
(Looking East)



SECTION THRU PIER

* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

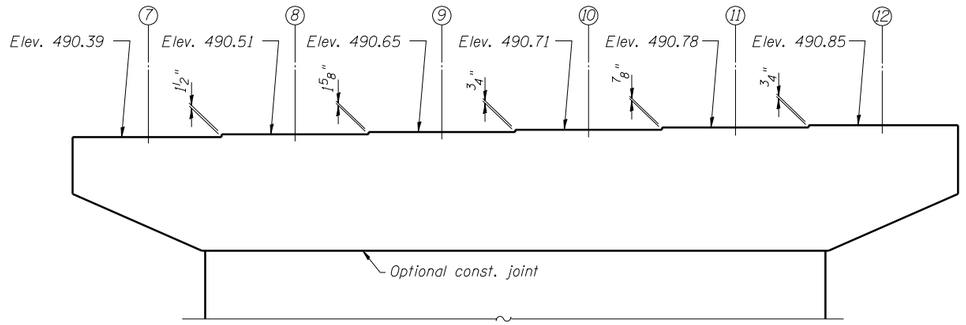
ESCA CONSULTANTS, INC.

USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 3:00:29 PM	CHECKED - ELH	01/14	REVISED -	

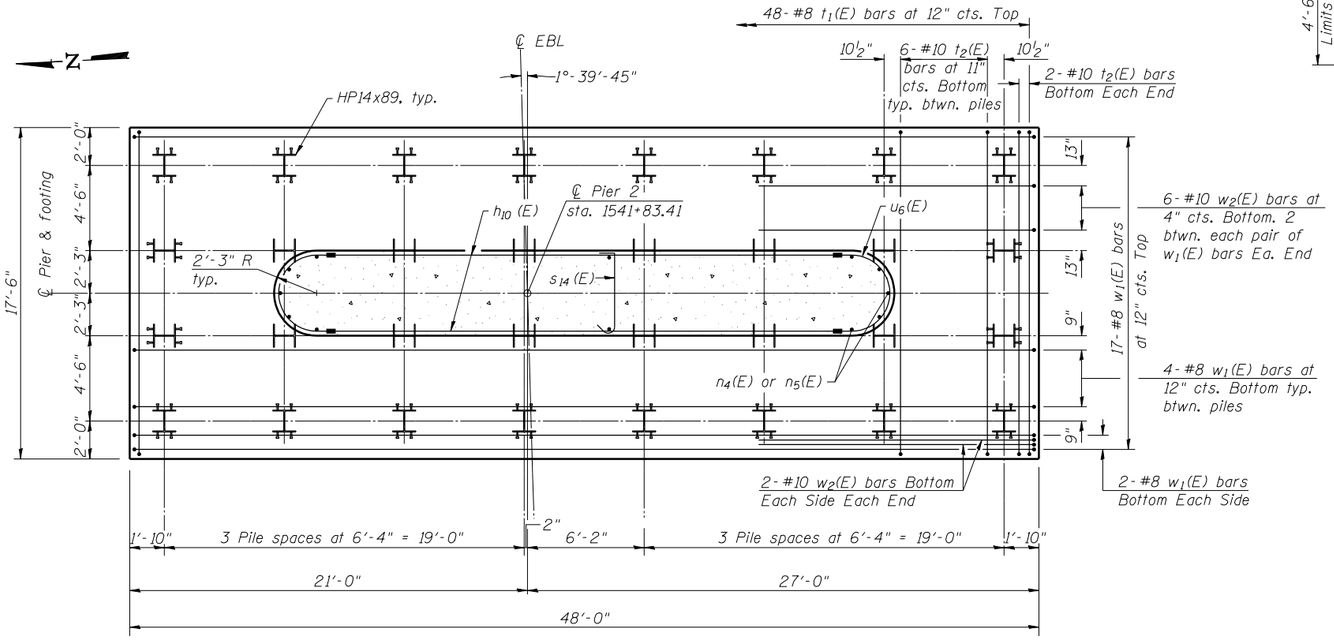
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 – EB
STRUCTURE NO. 026-0107
SHEET NO. 97 OF 113 SHEETS

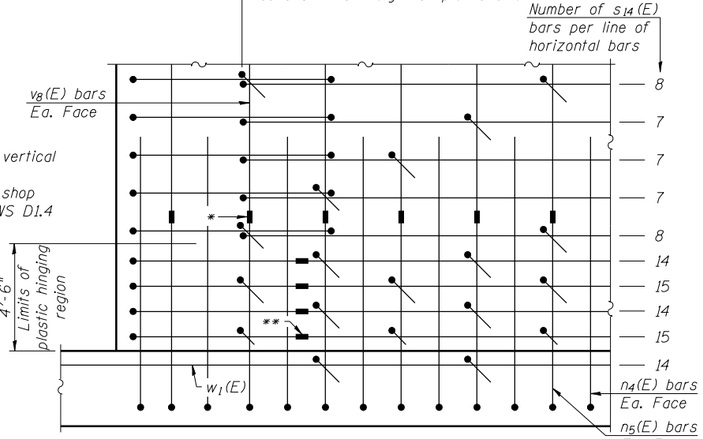
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	177
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



TOP OF PIER



FOOTING PLAN



* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

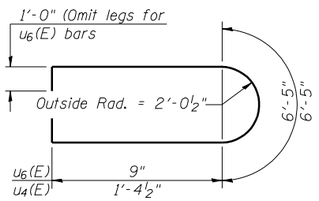
PARTIAL ELEVATION

(Showing s_{14} (E) bar pattern)

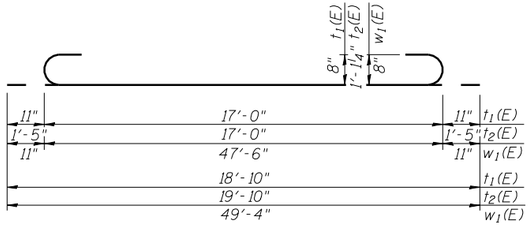
Note:
Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

PIER 2
BILL OF MATERIAL

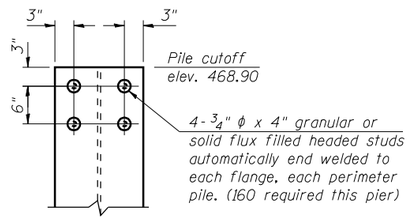
Bar	No.	Size	Length	Shape
h_{10} (E)	28	#5	26'-9"	——
h_{11} (E)	40	#6	30'-6"	L
h_{12} (E)	40	#5	11'-3"	—/
h_{13} (E)	40	#5	11'-2"	——
h_{14} (E)	20	#5	30'-0"	——
h_{18} (E)	7	#5	23'-0"	——
n_4(E)	66	#6	13'-4"	U
n_5(E)	66	#8	9'-7"	U
p_3(E)	7	#9	49'-5"	L
p_4(E)	12	#10	20'-6"	L
p_5(E)	10	#7	9'-9"	—/
p_6(E)	2	#7	33'-2"	——
s_3(E)	4	#5	14'-7"	◪
s_4(E)	4	#5	15'-0"	◪
s_5(E)	4	#5	15'-5"	◪
s_6(E)	4	#5	15'-10"	◪
s_7(E)	4	#5	16'-3"	◪
s_8(E)	4	#5	16'-9"	◪
s_9(E)	4	#5	17'-2"	◪
s_{10} (E)	4	#5	17'-7"	◪
s_{11} (E)	96	#5	13'-0"	□
s_{12} (E)	70	#5	14'-2"	□
s_{13} (E)	32	#5	7'-6"	□
s_{14} (E)	362	#4	5'-3"	□
t_1(E)	48	#8	18'-10"	C
t_2(E)	46	#10	19'-10"	C
u_4(E)	40	#6	11'-2"	U
u_5(E)	10	#6	11'-10"	U
u_6(E)	28	#5	7'-11"	U
v_8(E)	66	#8	10'-11"	U
w_1(E)	33	#8	49'-4"	C
w_2(E)	44	#10	19'-10"	L
Structure Excavation			Cu. Yd.	260
Concrete Structures			Cu. Yd.	225.6
Reinforcement Bars, Epoxy Coated			Pound	31760
Furnishing Steel Piles HP14x89			Foot	2624
Driving Piles			Foot	2624



BARS u_4(E) & u_6(E)



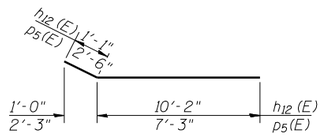
BARS t_1(E), t_2(E) & w_1(E)



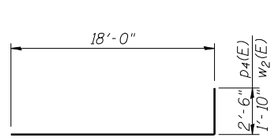
TOP OF PERIMETER PILE DETAIL

PILE DATA

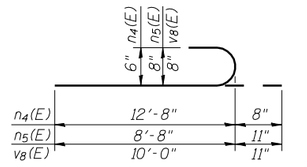
Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 82 feet
No. Production Piles: 32
No. Test Piles: 0



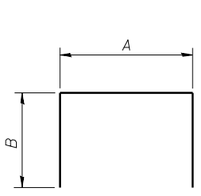
BARS h_{12} (E) & p_5(E)



BARS p_4(E) & w_2(E)



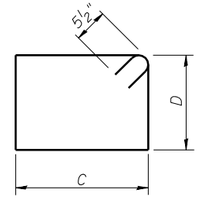
BARS n_4(E), n_5(E) & v_8(E)



BARS

A & B DIMENSIONS

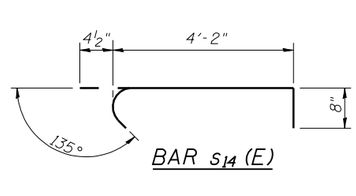
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"



BARS s_3(E) thru s_{10} (E)

C & D DIMENSIONS

Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0½"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5½"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1½"
s_{10} (E)	4'-0"	4'-4"



BAR s_{14} (E)

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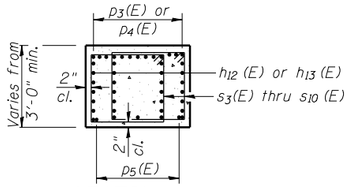
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 3:02:03 PM	CHECKED - ELH	01/14	REVISED -	

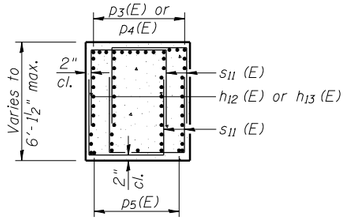
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 – EB
STRUCTURE NO. 026-0107
SHEET NO. 98 OF 113 SHEETS

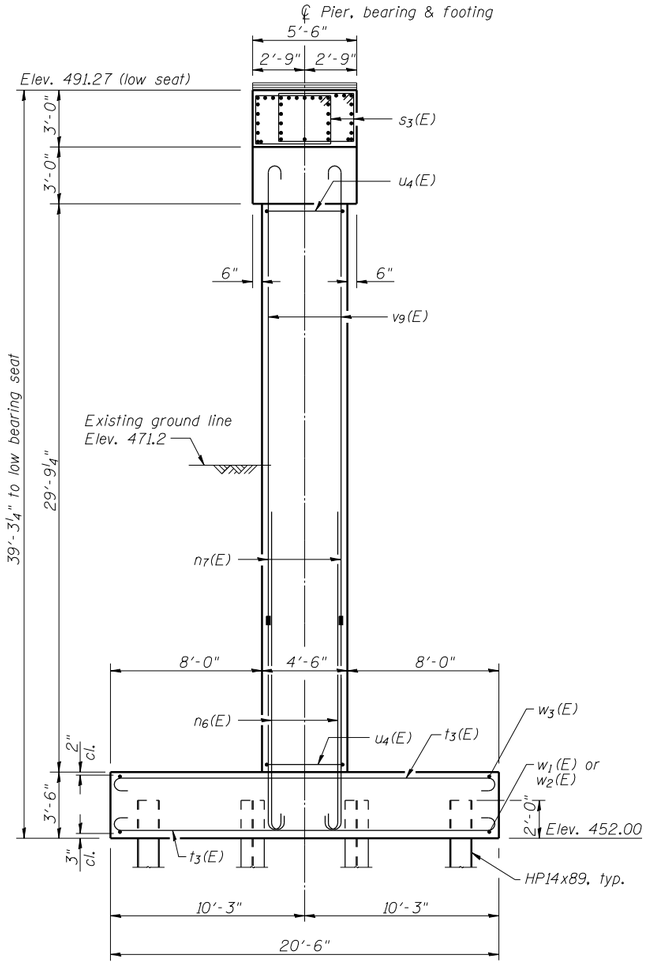
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	178
		CONTRACT NO. 74175		
		ILLINOIS FED. AID PROJECT		



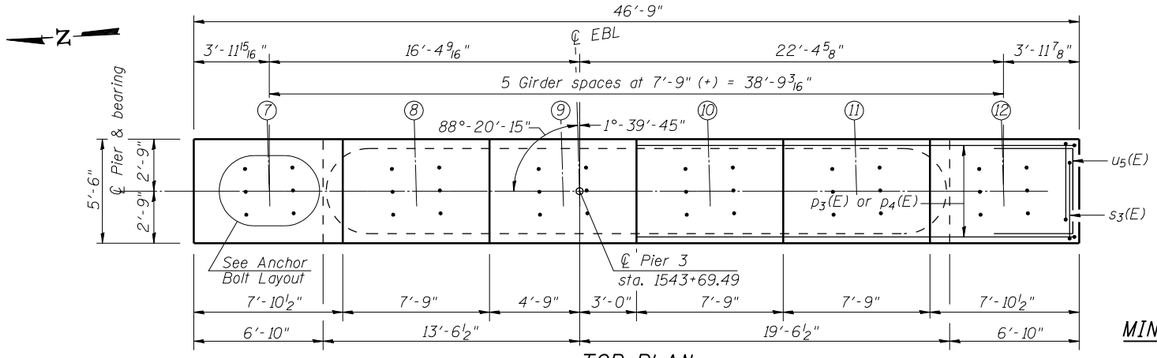
SECTION A-A



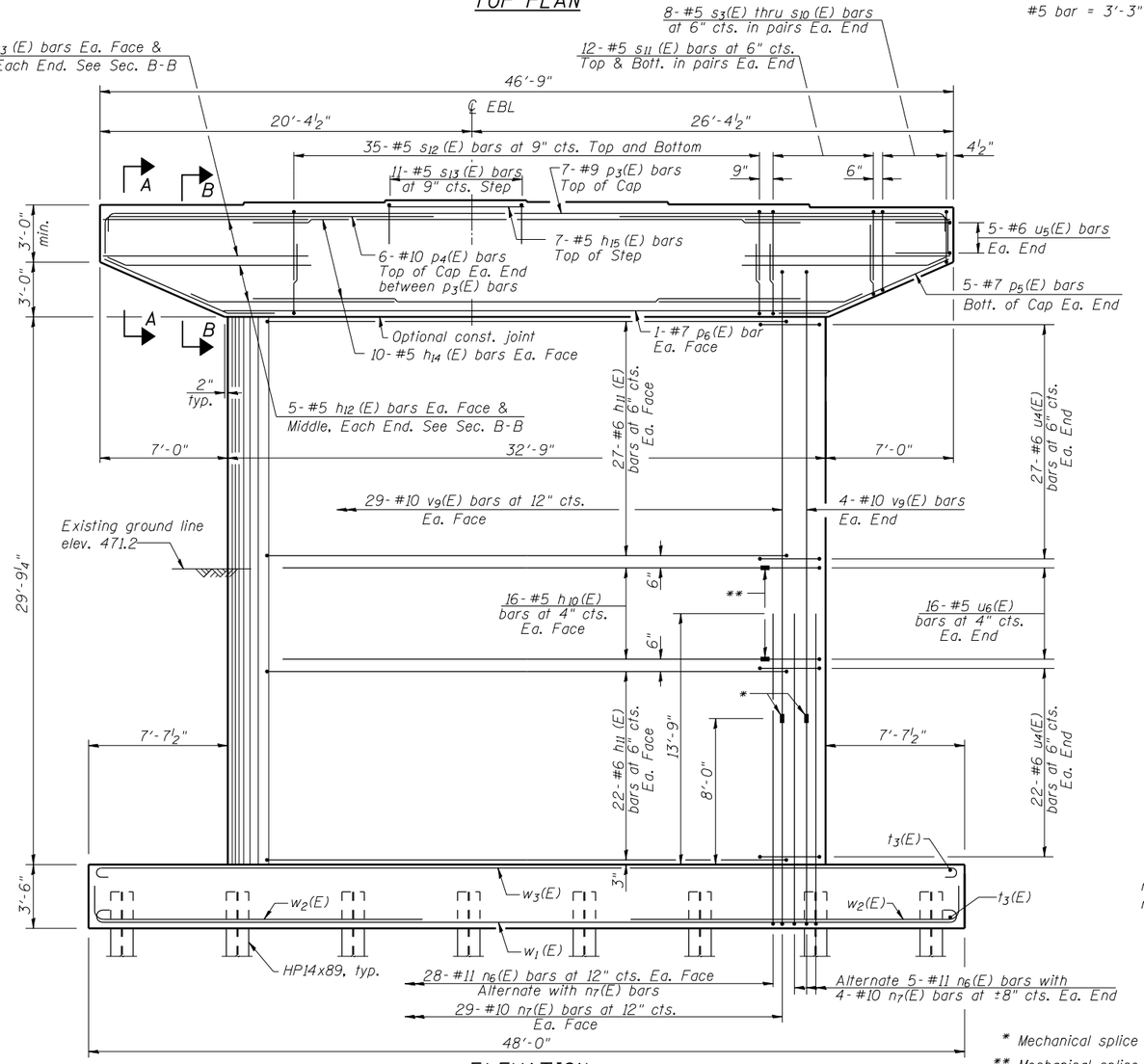
SECTION B-B



END VIEW

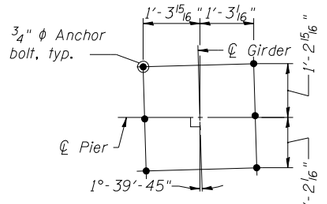


TOP PLAN

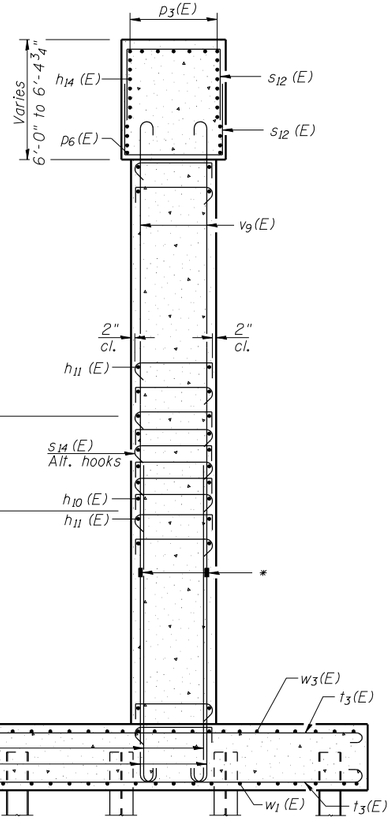


ELEVATION
(Looking East)

MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"



ANCHOR BOLT LAYOUT



SECTION THRU PIER

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.

* Mechanical splice on vertical bars.

** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

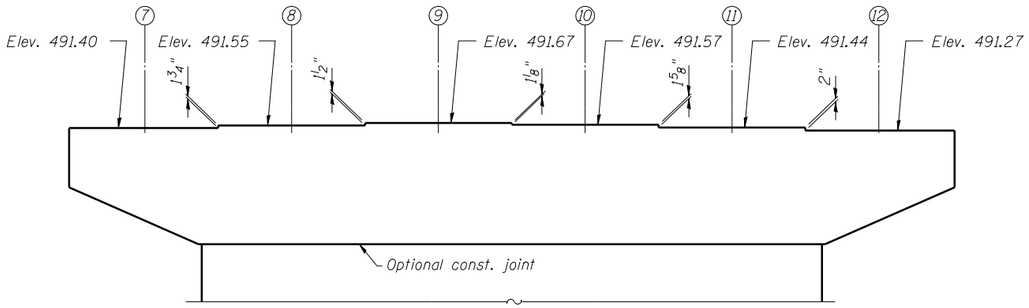
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 3:02:26 PM	CHECKED - ELH	01/14	REVISED -	

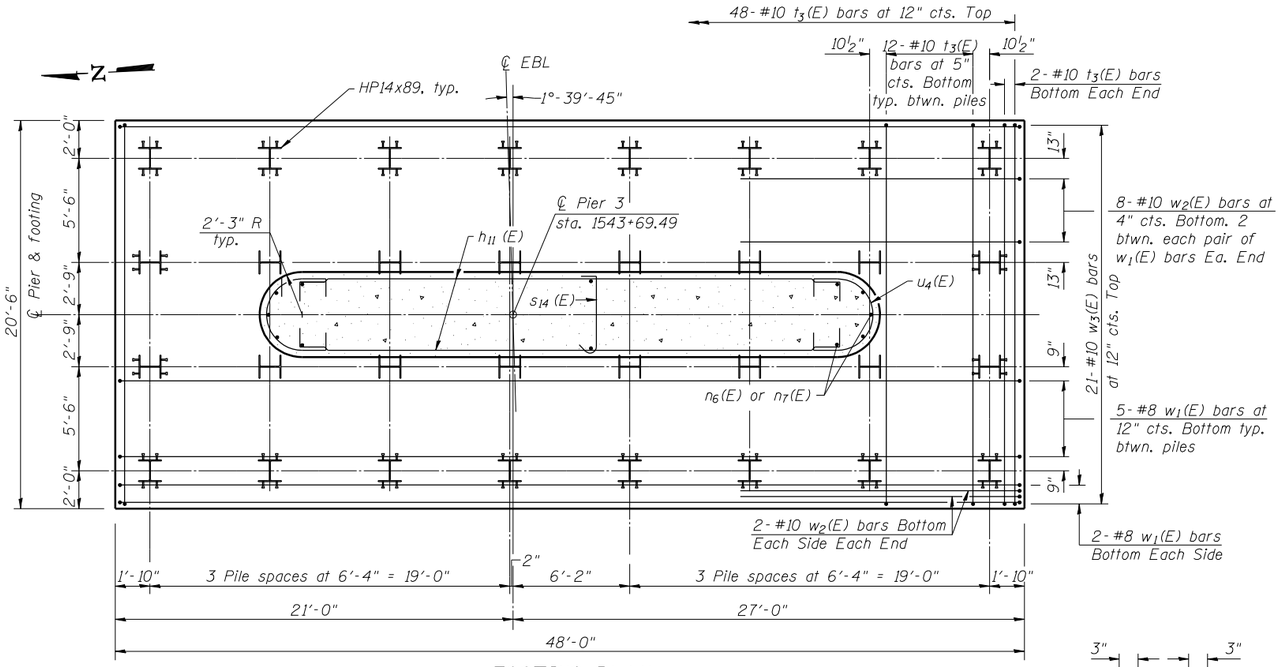
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 – EB
STRUCTURE NO. 026-0107
SHEET NO. 99 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	179
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

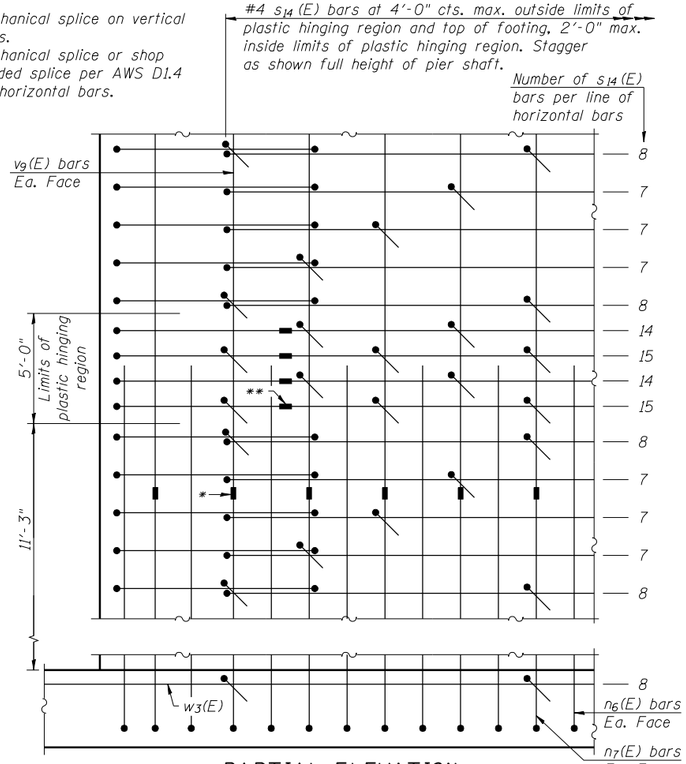


TOP OF PIER



FOOTING PLAN

* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.



PARTIAL ELEVATION

(Showing s_{14} (E) bar pattern)

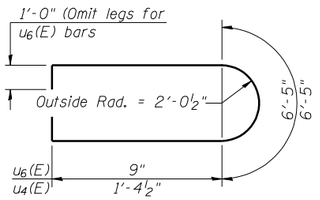
Note:
Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

PIER 3
BILL OF MATERIAL

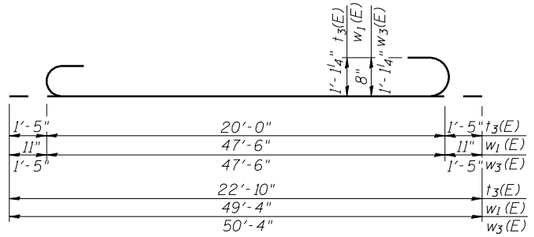
Bar	No.	Size	Length	Shape
h_{10} (E)	32	#5	26'-9"	
h_{11} (E)	98	#6	30'-6"	
h_{12} (E)	40	#5	11'-3"	
h_{13} (E)	40	#5	11'-2"	
h_{14} (E)	20	#5	30'-0"	
h_{15} (E)	7	#5	7'-5"	
n_6(E)	66	#11	18'-6"	
n_7(E)	66	#10	12'-7"	
p_3(E)	7	#9	49'-5"	
p_4(E)	12	#10	20'-6"	
p_5(E)	10	#7	9'-9"	
p_6(E)	2	#7	33'-2"	
s_3(E)	4	#5	14'-7"	
s_4(E)	4	#5	15'-0"	
s_5(E)	4	#5	15'-5"	
s_6(E)	4	#5	15'-10"	
s_7(E)	4	#5	16'-3"	
s_8(E)	4	#5	16'-9"	
s_9(E)	4	#5	17'-2"	
s_{10} (E)	4	#5	17'-7"	
s_{11} (E)	96	#5	13'-0"	
s_{12} (E)	70	#5	14'-2"	
s_{13} (E)	11	#5	7'-6"	
s_{14} (E)	596	#4	5'-3"	
t_3(E)	136	#10	22'-10"	
u_4(E)	98	#6	11'-2"	
u_5(E)	10	#6	11'-10"	
u_6(E)	32	#5	7'-11"	
v_9(E)	66	#10	25'-1"	
w_1(E)	19	#8	49'-4"	
w_2(E)	56	#10	19'-10"	
w_3(E)	21	#10	50'-4"	

Cofferdam Excavation	Cu. Yd.	1470
Cofferdam (Type 2) (Location-3)	Each	1
Seal Coat Concrete	Cu. Yd.	183.0
Concrete Structures	Cu. Yd.	340.3
Reinforcement Bars, Epoxy Coated	Pound	59080
Furnishing Steel Piles HP14x89	Foot	2176
Driving Piles	Foot	2176

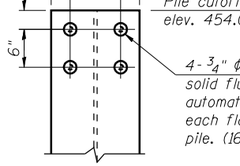
For cofferdam details, see sheet 105 of 113.



BARS u_4(E) & u_6(E)



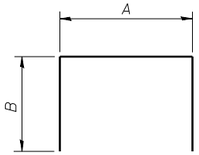
BARS t_3(E), w_1(E) & w_3(E)



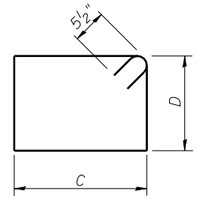
Pile cutoff elev. 454.00

4-¾" ϕ x 4" granular or solid flux filled headed studs automatically end welded to each flange, each perimeter pile. (160 required this pier)

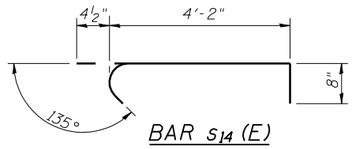
TOP OF PERIMETER PILE DETAIL



BARS



BARS s_3(E) thru s_{10} (E)



BAR s_{14} (E)

A & B DIMENSIONS

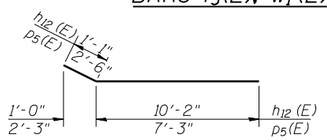
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"

C & D DIMENSIONS

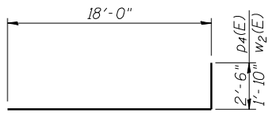
Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0½"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5½"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1½"
s_{10} (E)	4'-0"	4'-4"

PILE DATA

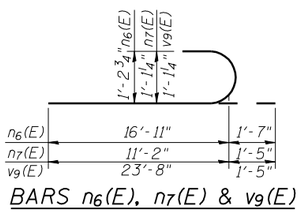
Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 68 feet
No. Production Piles: 32
No. Test Piles: 0



BARS h_{12} (E) & p_5(E)



BARS p_4(E) & w_2(E)



BARS n_6(E), n_7(E) & v_9(E)

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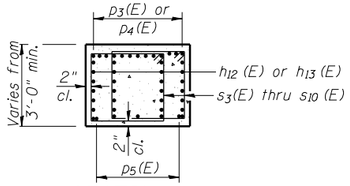
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 3:04:19 PM	CHECKED - ELH	01/14	REVISED -	

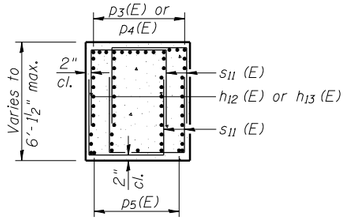
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 3 – EB
STRUCTURE NO. 026-0107
SHEET NO. 100 OF 113 SHEETS

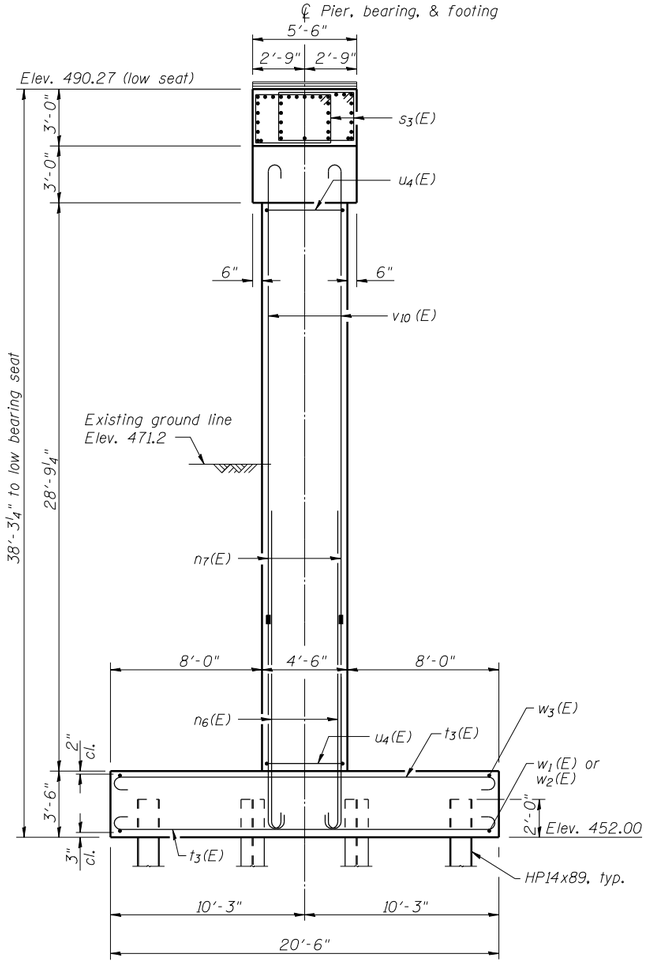
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	180
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



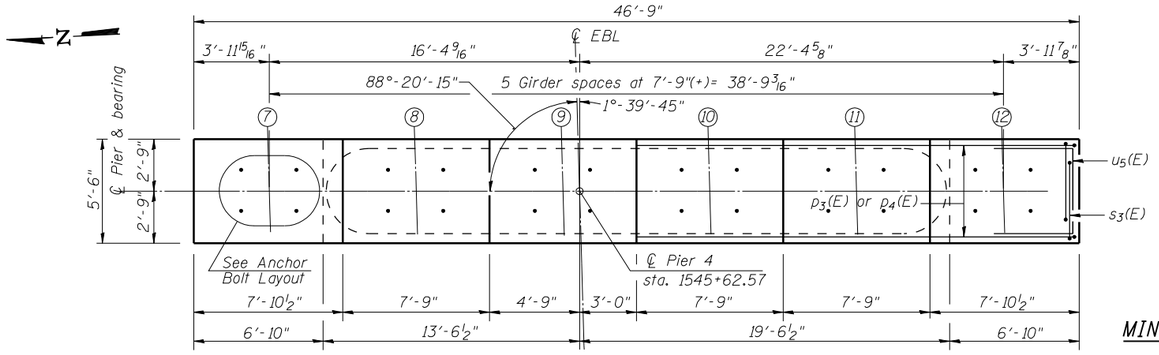
SECTION A-A



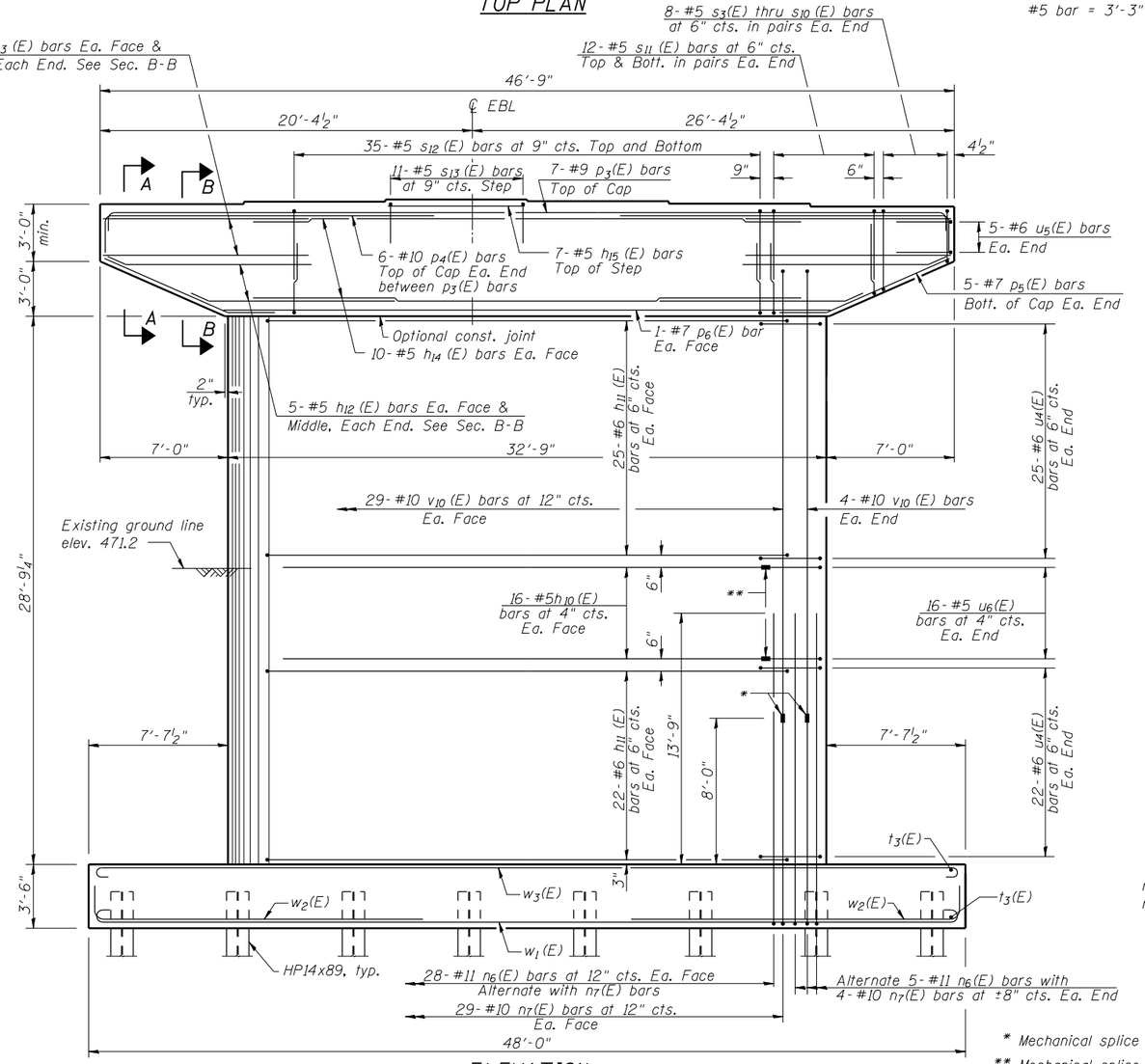
SECTION B-B



END VIEW



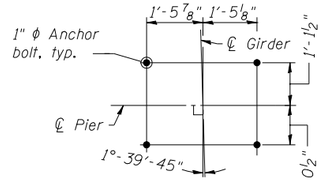
TOP PLAN



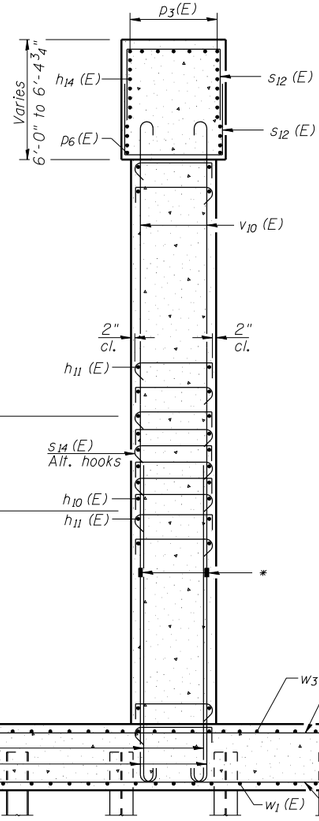
ELEVATION
(Looking East)

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.

MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"



ANCHOR BOLT LAYOUT



SECTION THRU PIER

* Mechanical splice on vertical bars.

** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

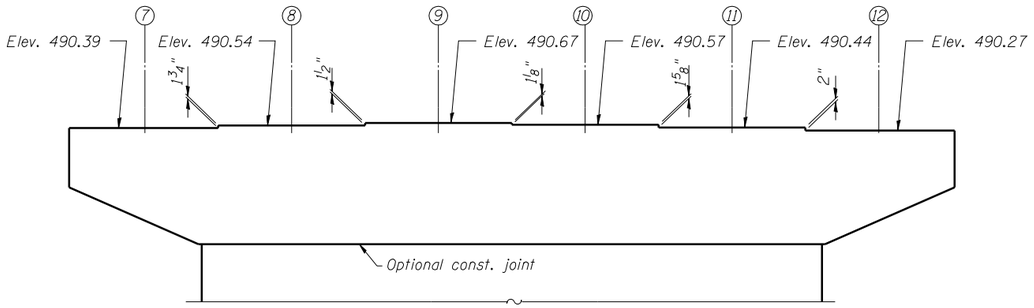
ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
	DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014 3:23:23 PM	CHECKED - ELH	01/14	REVISED -	

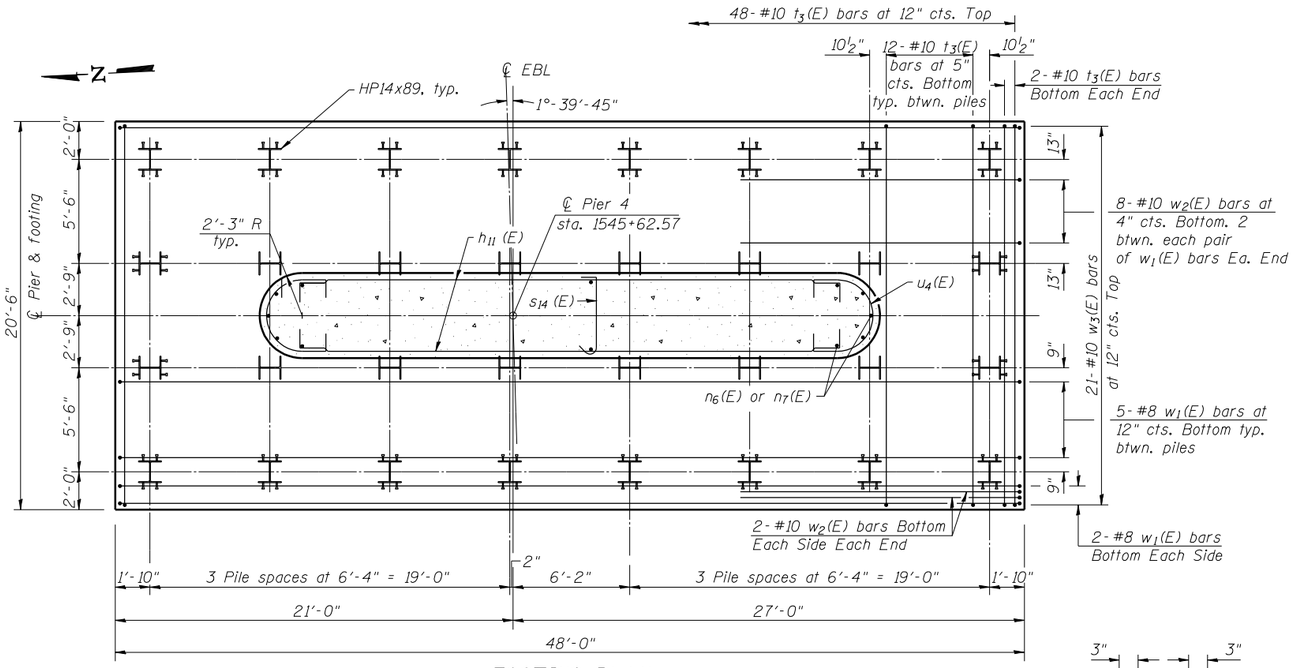
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 4 – EB
STRUCTURE NO. 026-0107
SHEET NO. 101 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	181
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT AID			

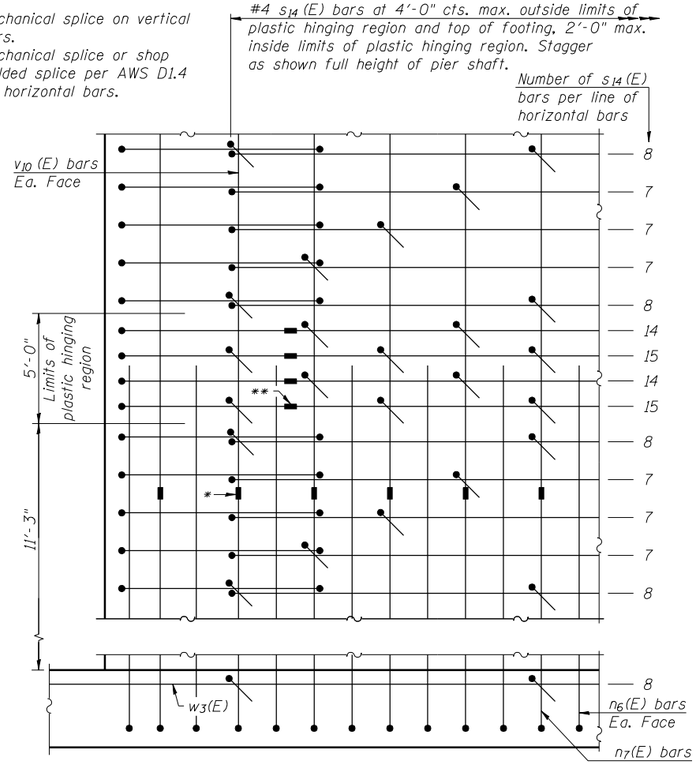


TOP OF PIER



FOOTING PLAN

* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.



PARTIAL ELEVATION

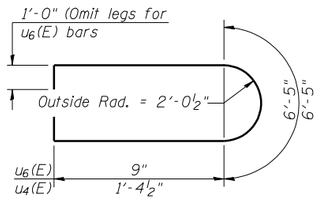
(Showing s_{14} (E) bar pattern)

Note:
Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

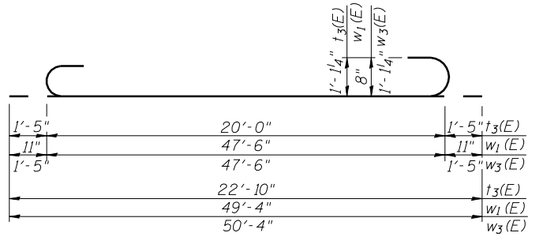
PIER 4
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10} (E)	32	#5	26'-9"	
h_{11} (E)	94	#6	30'-6"	
h_{12} (E)	40	#5	11'-3"	
h_{13} (E)	40	#5	11'-2"	
h_{14} (E)	20	#5	30'-0"	
h_{15} (E)	7	#5	7'-5"	
n_6(E)	66	#11	18'-6"	
n_7(E)	66	#10	12'-7"	
p_3(E)	7	#9	49'-5"	
p_4(E)	12	#10	20'-6"	
p_5(E)	10	#7	9'-9"	
p_6(E)	2	#7	33'-2"	
s_3(E)	4	#5	14'-7"	
s_4(E)	4	#5	15'-0"	
s_5(E)	4	#5	15'-5"	
s_6(E)	4	#5	15'-10"	
s_7(E)	4	#5	16'-3"	
s_8(E)	4	#5	16'-9"	
s_9(E)	4	#5	17'-2"	
s_{10} (E)	4	#5	17'-7"	
s_{11} (E)	96	#5	13'-0"	
s_{12} (E)	70	#5	14'-2"	
s_{13} (E)	11	#5	7'-6"	
s_{14} (E)	582	#4	5'-3"	
t_3(E)	136	#10	22'-10"	
u_4(E)	94	#6	11'-2"	
u_5(E)	10	#6	11'-10"	
u_6(E)	32	#5	7'-11"	
v_{10} (E)	66	#10	24'-1"	
w_1(E)	19	#8	49'-4"	
w_2(E)	56	#10	19'-10"	
w_3(E)	21	#10	50'-4"	
Cofferdam Excavation		Cu. Yd.	1090	
Cofferdam (Type 2) (Location-4)		Each	1	
Seal Coat Concrete		Cu. Yd.	141.6	
Concrete Structures		Cu. Yd.	335.0	
Reinforcement Bars, Epoxy Coated		Pound	58500	
Furnishing Steel Piles HP14x89		Foot	2016	
Driving Piles		Foot	2016	

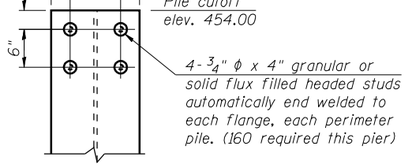
For cofferdam details, see sheet 105 of 113.



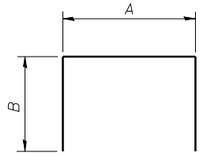
BARS u_4(E) & u_6(E)



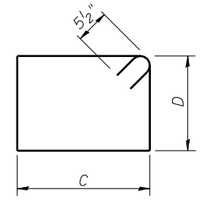
BARS t_3(E), w_1(E) & w_3(E)



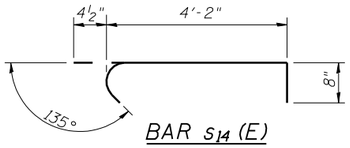
TOP OF PERIMETER PILE DETAIL



BARS



BARS s_3(E) thru s_{10} (E)



BAR s_{14} (E)

A & B DIMENSIONS

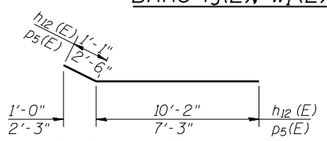
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"

C & D DIMENSIONS

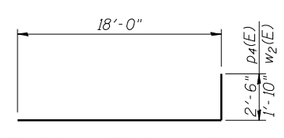
Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0½"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5½"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1½"
s_{10} (E)	4'-0"	4'-4"

PILE DATA

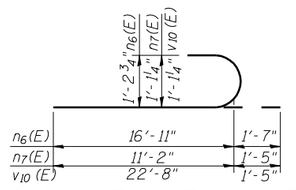
Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 63 feet
No. Production Piles: 32
No. Test Piles: 0



BARS h_{12} (E) & p_5(E)



BARS p_4(E) & w_2(E)



BARS n_6(E), n_7(E) & v_{10} (E)

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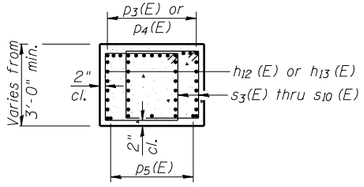
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

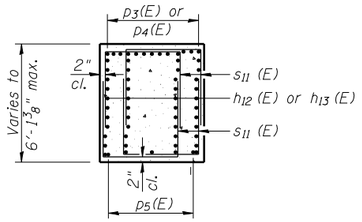
PIER 4 – EB
STRUCTURE NO. 026-0107
SHEET NO. 102 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	182
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

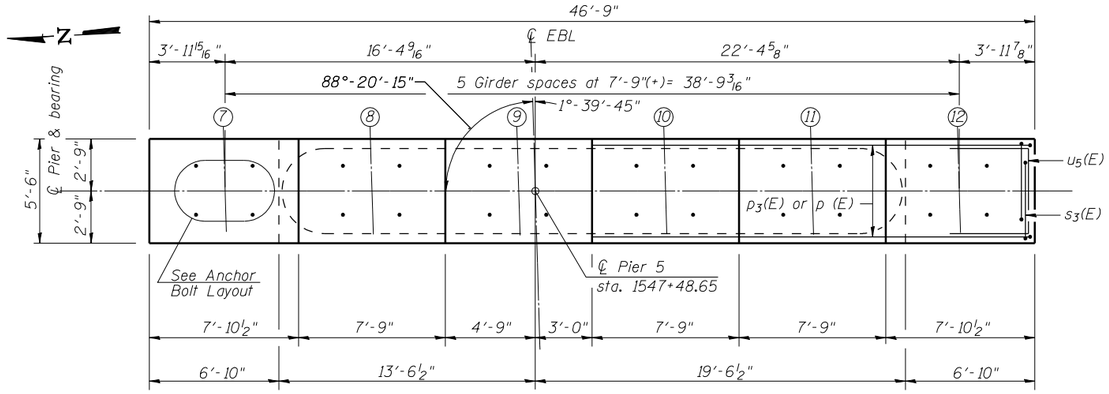
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 106 of 113.



SECTION A-A

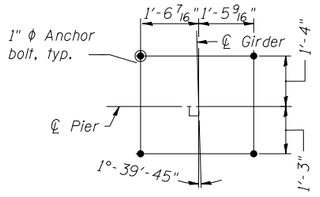


SECTION B-B



TOP PLAN

MINIMUM BAR LAP
(Pier)
#5 bar = 3'-3"



ANCHOR BOLT LAYOUT

END VIEW

ELEVATION
(Looking East)

SECTION THRU PIER

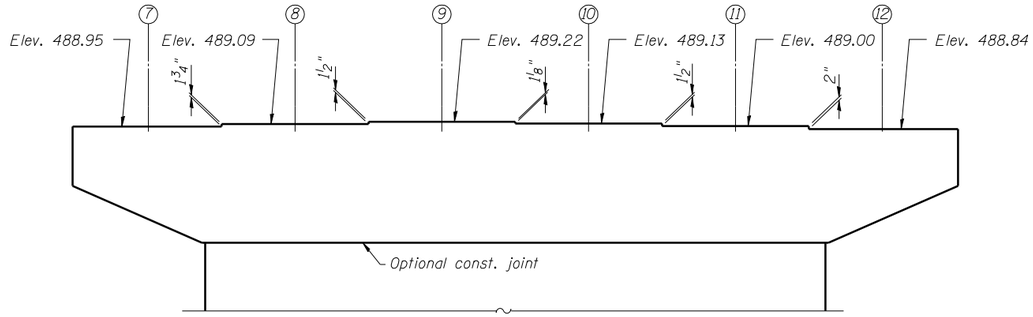
* Mechanical splice on vertical bars.
** Mechanical splice or shop welded splice per AWS D1.4 on horizontal bars.

ESCA CONSULTANTS, INC.	USER NAME = has	DESIGNED - RDP	08/13	REVISED -	
	ESCA PROJECT NO. 1070.09	CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
	PLOT DATE = 1/28/2014 3:25:33 PM	CHECKED - ELH	01/14	REVISED -	

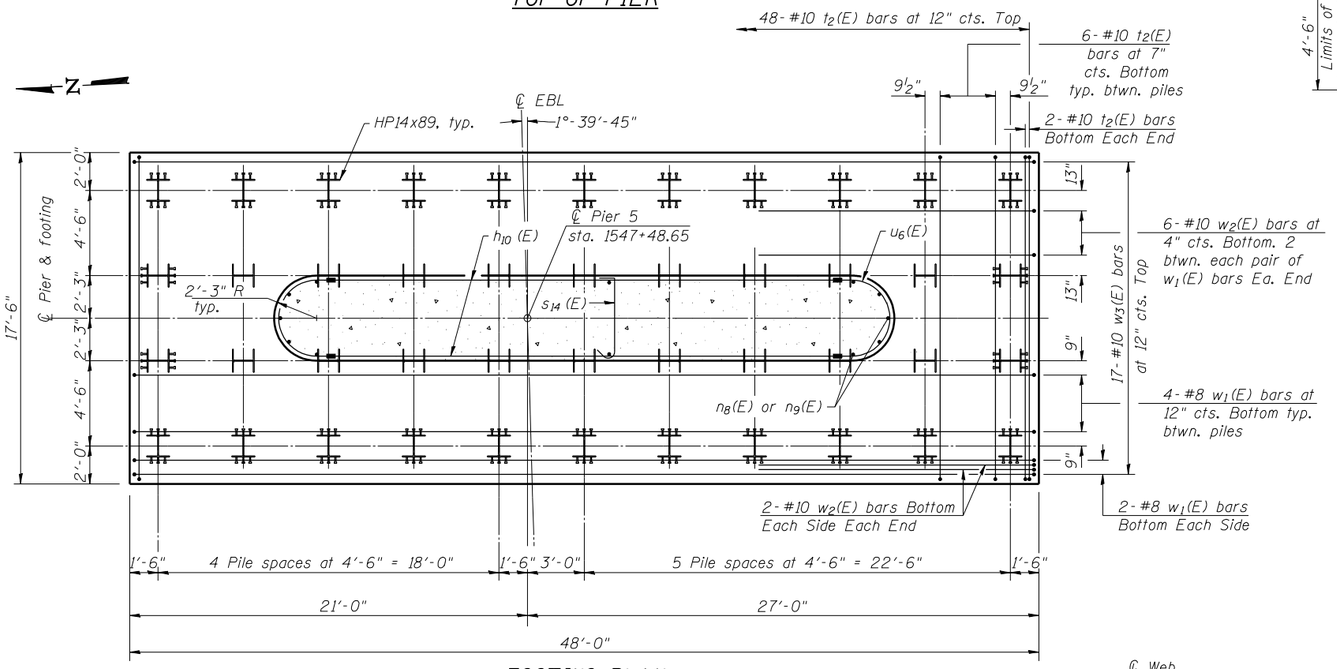
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 5 – EB
STRUCTURE NO. 026-0107
SHEET NO. 103 OF 113 SHEETS

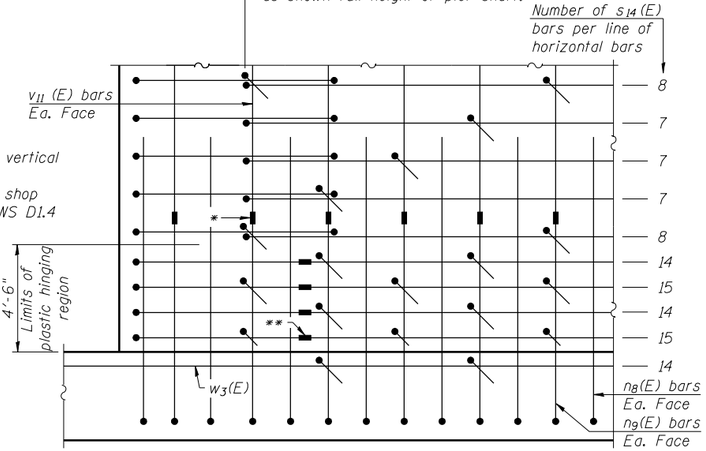
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	183
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



TOP OF PIER



FOOTING PLAN



PARTIAL ELEVATION

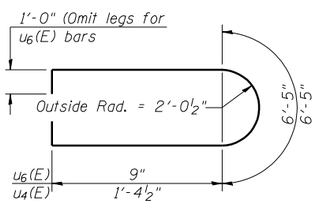
(Showing s_{14} (E) bar pattern)

Note:
Not all lines of horizontal reinforcement bars are shown. Total number of s_{14} (E) bars in Bill of Materials is based on applying the pattern shown to the actual pier dimensions and horizontal reinforcement spacing.

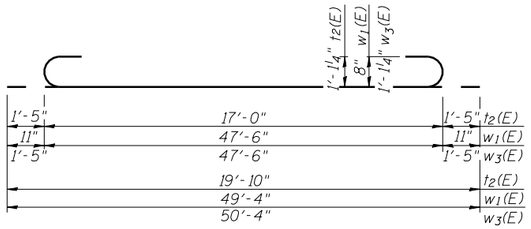
PIER 5
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10} (E)	28	#5	26'-9"	
h_{11} (E)	36	#6	30'-6"	
h_{12} (E)	40	#5	11'-3"	
h_{13} (E)	40	#5	11'-2"	
h_{14} (E)	20	#5	30'-0"	
h_{15} (E)	7	#5	7'-5"	
n_8(E)	66	#10	16'-8"	
n_9(E)	66	#11	10'-9"	
p_3(E)	7	#9	49'-5"	
p_4(E)	12	#10	20'-6"	
p_5(E)	10	#7	9'-9"	
p_6(E)	2	#7	33'-2"	
s_3(E)	4	#5	14'-7"	
s_4(E)	4	#5	15'-0"	
s_5(E)	4	#5	15'-5"	
s_6(E)	4	#5	15'-10"	
s_7(E)	4	#5	16'-3"	
s_8(E)	4	#5	16'-9"	
s_9(E)	4	#5	17'-2"	
s_{10} (E)	4	#5	17'-7"	
s_{11} (E)	96	#5	13'-0"	
s_{12} (E)	70	#5	14'-2"	
s_{13} (E)	11	#5	7'-6"	
s_{14} (E)	348	#4	5'-3"	
t_2(E)	112	#10	19'-10"	
u_4(E)	36	#6	11'-2"	
u_5(E)	10	#6	11'-10"	
u_6(E)	28	#5	7'-11"	
v_{11} (E)	66	#11	11'-5"	
w_1(E)	16	#8	49'-4"	
w_2(E)	44	#10	19'-10"	
w_3(E)	17	#10	50'-4"	

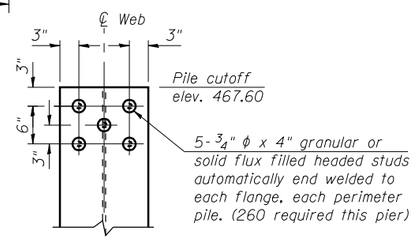
Structure Excavation	Cu. Yd.	230
Concrete Structures	Cu. Yd.	236.6
Reinforcement Bars, Epoxy Coated	Pound	43420
Furnishing Steel Piles HP14x89	Foot	3520
Driving Piles	Foot	3520



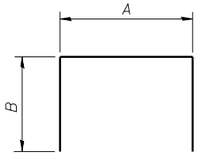
BARS u_4(E) & u_6(E)



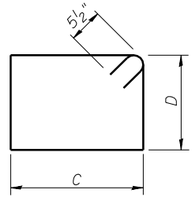
BARS t_2(E), w_1(E) & w_3(E)



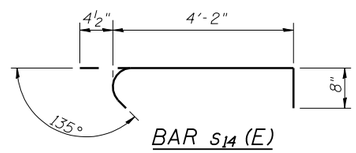
TOP OF PERIMETER PILE DETAIL



BARS



BARS s_3(E) thru s_{10} (E)



BAR s_{14} (E)

A & B DIMENSIONS

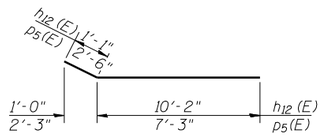
Bar	A	B
h_{11} (E)	28'-6"	1'-0"
p_3(E)	46'-3"	1'-7"
s_{11} (E)	4'-0"	4'-6"
s_{12} (E)	5'-2"	4'-6"
s_{13} (E)	5'-2"	1'-2"
u_5(E)	5'-0"	3'-5"

C & D DIMENSIONS

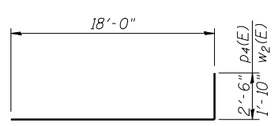
Bar	C	D
s_3(E)	4'-0"	2'-10"
s_4(E)	4'-0"	3'-0½"
s_5(E)	4'-0"	3'-3"
s_6(E)	4'-0"	3'-5½"
s_7(E)	4'-0"	3'-8"
s_8(E)	4'-0"	3'-11"
s_9(E)	4'-0"	4'-1½"
s_{10} (E)	4'-0"	4'-4"

PILE DATA

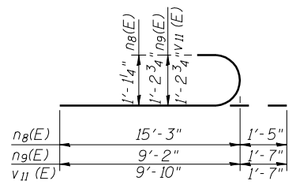
Type: HP14x89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 388 kips
Est. Length: 80 feet
No. Production Piles: 44
No. Test Piles: 0



BARS h_{12} (E) & p_5(E)



BARS p_4(E) & w_2(E)



BARS n_8(E), n_9(E) & v_{11} (E)

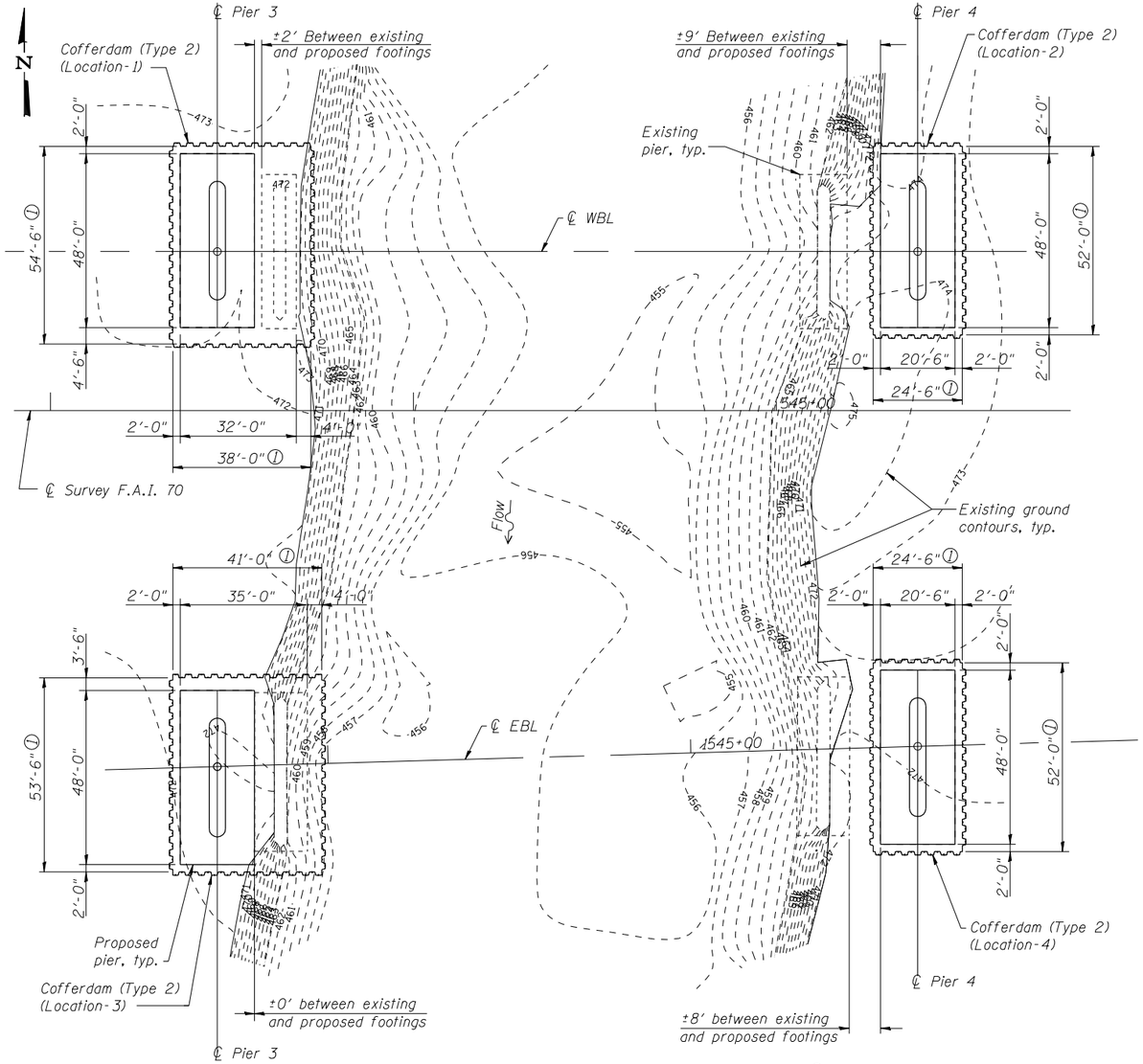
ESCA CONSULTANTS, INC. — CIVIL & STRUCTURAL ENGINEERING

USER NAME = has		DESIGNED - RDP	08/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - MTD	08/13	REVISED -	
		DRAWN - DWH	08/13	REVISED -	
PLOT DATE = 1/28/2014	3:26:29 PM	CHECKED - ELH	01/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

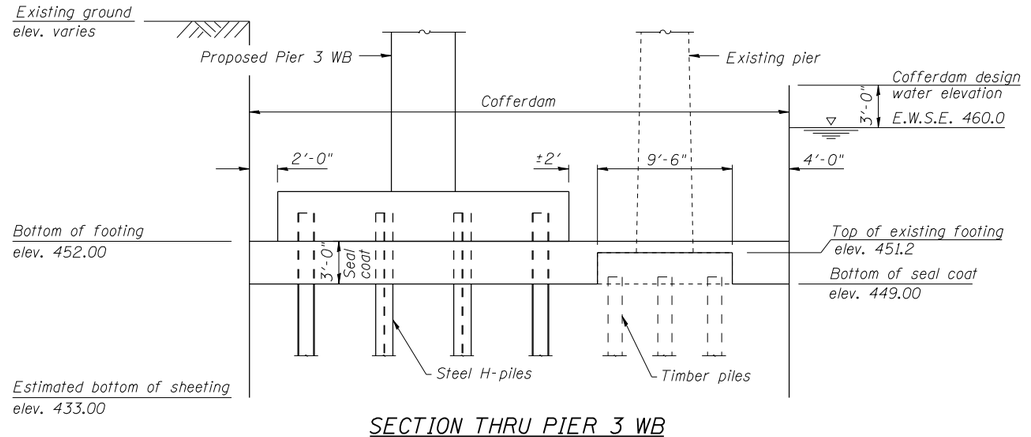
PIER 5 – EB
STRUCTURE NO. 026-0107
SHEET NO. 104 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	184
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			

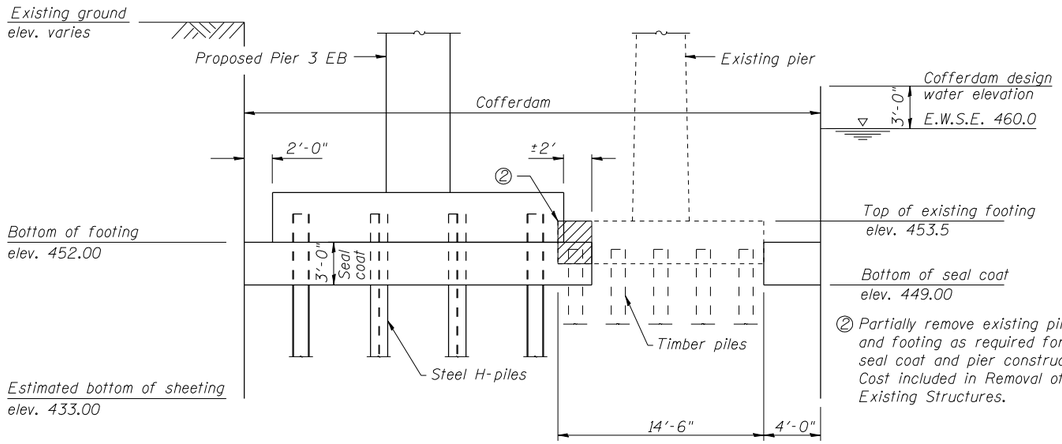


COFFERDAM PLAN

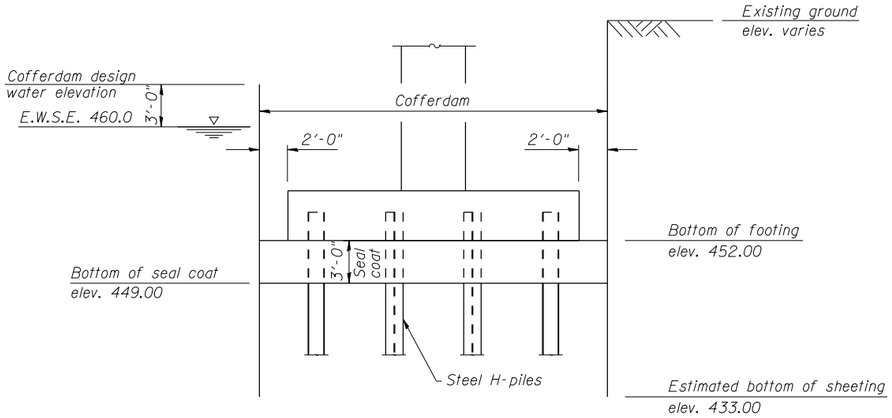
① Pay limits for Cofferdam Excavation and Seal Coat Concrete



SECTION THRU PIER 3 WB
SN 026-0106



SECTION THRU PIER 3 EB
SN 026-0107



TYPICAL SECTION THRU PIER 4
SN 026-0106 & 0107

Notes:

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting cofferdam construction and make necessary approved adjustments prior to construction of the cofferdams. Such variations shall not be cause for additional compensation for a change in scope of work but shall be considered included in the price per each for Cofferdam (Type 2) at the location affected.

The Cofferdam Design Water Elevation is below the existing ground elevation at most locations. The Contractor shall consider this in the design and construction of the cofferdams.

The seal coat thickness shown is only an estimate to establish quantities. The Contractor is responsible for the final seal coat and cofferdam design.

Grade slopes around proposed piers to match adjacent channel bank slopes. Cost included in Removal of Existing Structures.

ESCA CONSULTANTS, INC.

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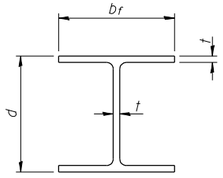
PLOT DATE = 1/28/2014 3:27:04 PM	CHECKED - ELH	01/14	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

COFFERDAM DETAILS
STRUCTURE NOS. 026-0106 & 026-0107

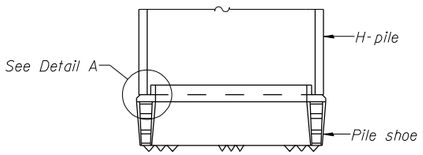
SHEET NO. 105 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	185
		CONTRACT NO. 74175		
		ILLINOIS FED. AID PROJECT		

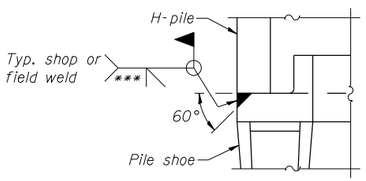


STEEL PILE TABLE

Designation	Depth d	Flange width b_f	Web and Flange thickness t	Encasement diameter A
HP 14x117	$14\frac{1}{4}''$	$14\frac{7}{8}''$	$\frac{13}{16}''$	30''
x102	14''	$14\frac{3}{4}''$	$\frac{11}{16}''$	30''
x89	$13\frac{7}{8}''$	$14\frac{3}{4}''$	$\frac{5}{8}''$	30''
x73	$13\frac{5}{8}''$	$14\frac{5}{8}''$	$\frac{1}{2}''$	30''
HP 12x84	$12\frac{1}{4}''$	$12\frac{1}{4}''$	$\frac{11}{16}''$	24''
x74	$12\frac{1}{8}''$	$12\frac{1}{4}''$	$\frac{5}{8}''$	24''
x63	12''	$12\frac{1}{8}''$	$\frac{1}{2}''$	24''
x53	$11\frac{3}{4}''$	12''	$\frac{7}{16}''$	24''
HP 10x57	10''	$10\frac{1}{4}''$	$\frac{9}{16}''$	24''
x42	$9\frac{3}{4}''$	$10\frac{1}{8}''$	$\frac{7}{16}''$	24''
HP 8x36	8''	$8\frac{1}{8}''$	$\frac{7}{16}''$	18''

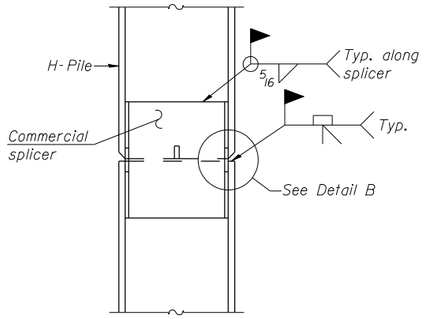


ELEVATION



DETAIL A

H-PILE SHOE ATTACHMENT



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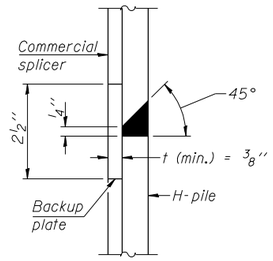
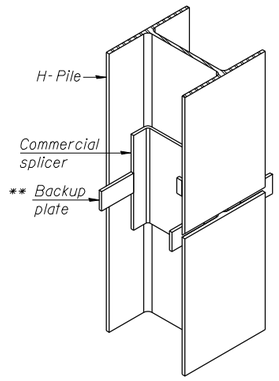
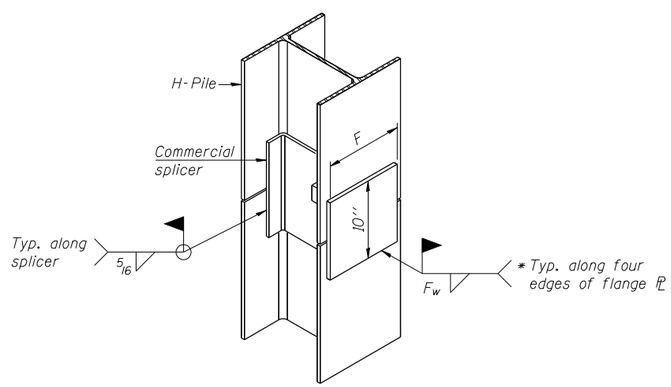


DETAIL "B"

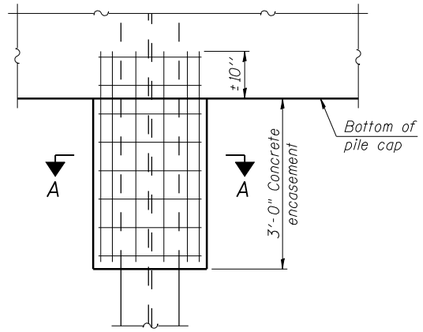


ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ISOMETRIC VIEW



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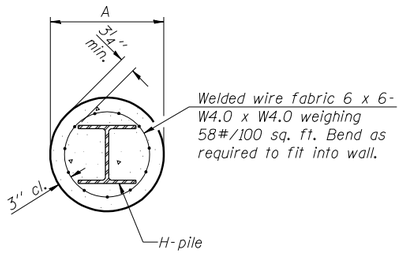
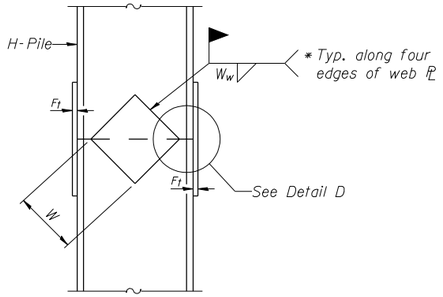


Note:
Forms for encasement may be omitted when soil conditions permit.

SECTION A-A

PILE ENCASEMENT



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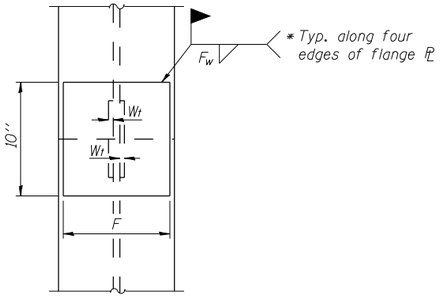
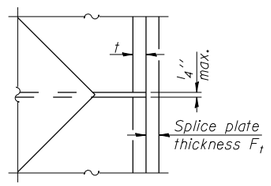


END VIEW



DETAIL D

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

WELDED PLATE FIELD SPLICE

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds $\frac{1}{4}''$ from end of web and/or each flange.

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

*** Weld size per pile shoe manufacturer ($\frac{5}{16}''$ min.).

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

F-HP 1-27-12

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

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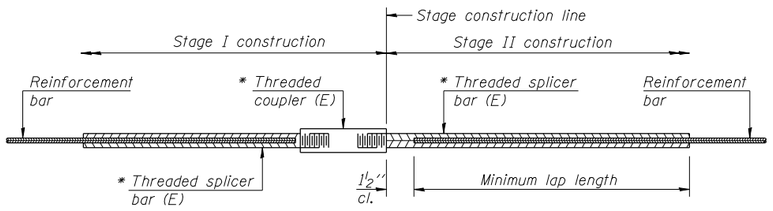
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NOS. 026-0106 & 026-0107
SHEET NO. 106 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	186
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

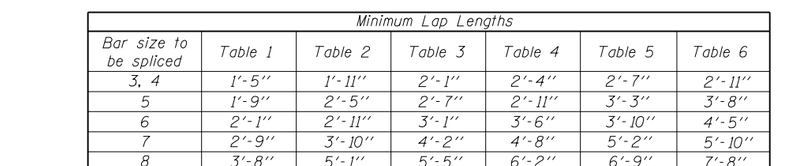
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

Table 1: Black bar, 0.8 Class C
Table 2: Black bar, Top bar lap, 0.8 Class C
Table 3: Epoxy bar, 0.8 Class C
Table 4: Epoxy bar, Top bar lap, 0.8 Class C
Table 5: Epoxy bar, Class C
Table 6: Epoxy bar, Top bar top, Class C

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

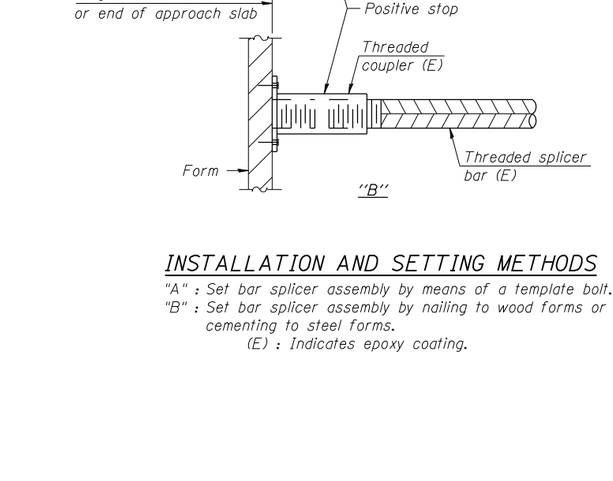
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



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

No. required = 0

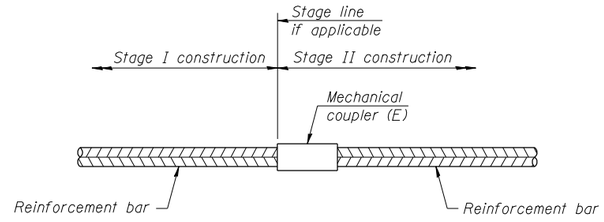


BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 168

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
Piers	#5	592
Piers	#8	264
Piers	#10	264
Piers	#11	132

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 1-27-12

ESCA CONSULTANTS, INC.

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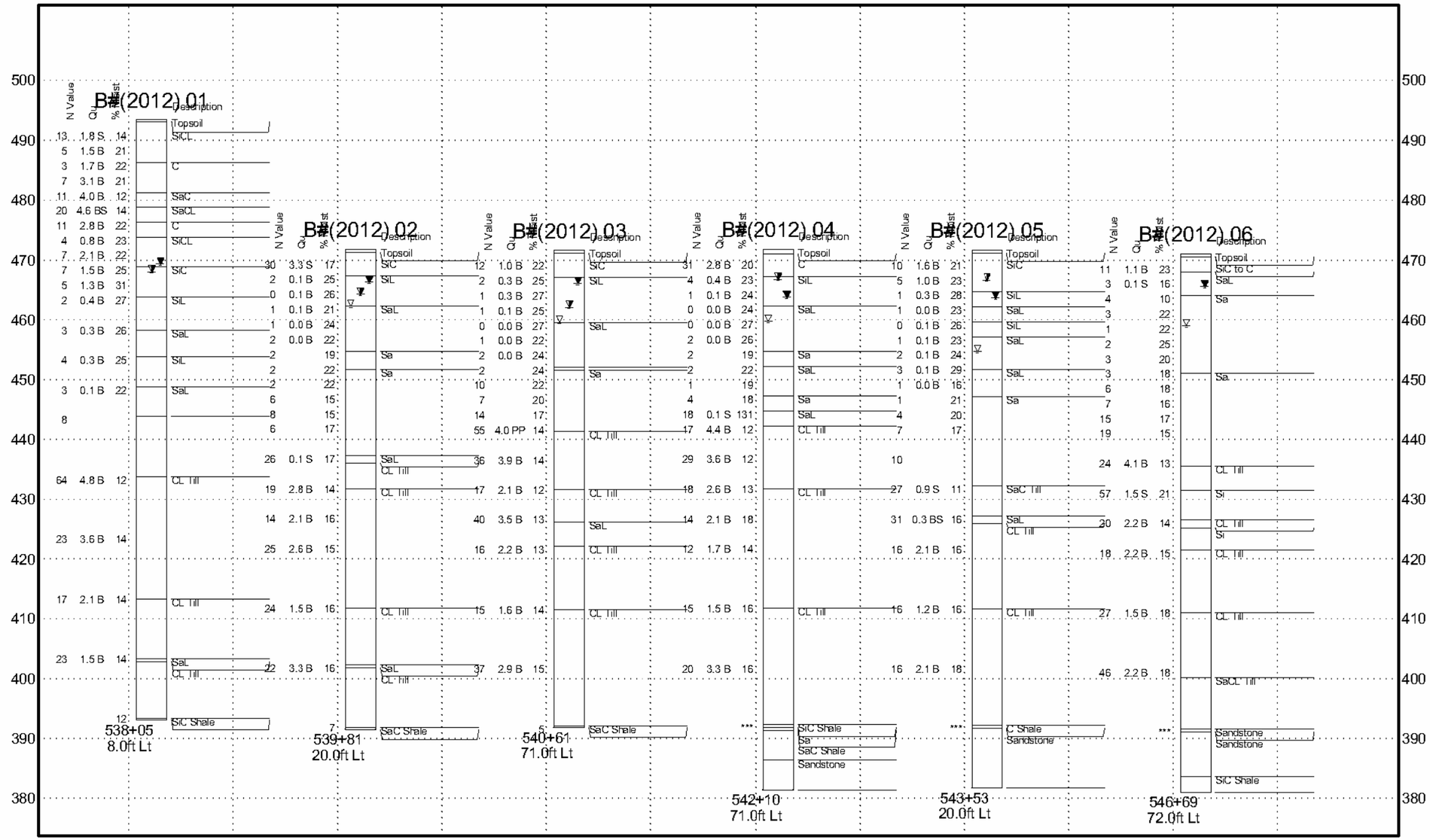
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NOS. 026-0106 & 026-0107
SHEET NO. 107 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	187
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



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Illinois Department of Transportation
Division of Highways
IDOT

VARIATIONS IN SUBSURFACE CONDITIONS MAY EXIST BETWEEN BORINGS

Groundwater
- First Encounter
- Completion
- after (refer to log) hours

Abbreviations
WOH - Sampler Advanced by Weight of Hammer, WOP - Weight of Pipe
B.S. - Before Seating

SUBSURFACE DATA PROFILE

Route: FAI 70 (I 70)

Section: (26-3B-1,3B-1(3))BR

County: Fayette

ESCA CONSULTANTS, INC.

USER NAME = has		DESIGNED - ELH	08/13	REVISED -	
ESCA PROJECT NO. 1070.09		CHECKED - RDP	08/13	REVISED -	
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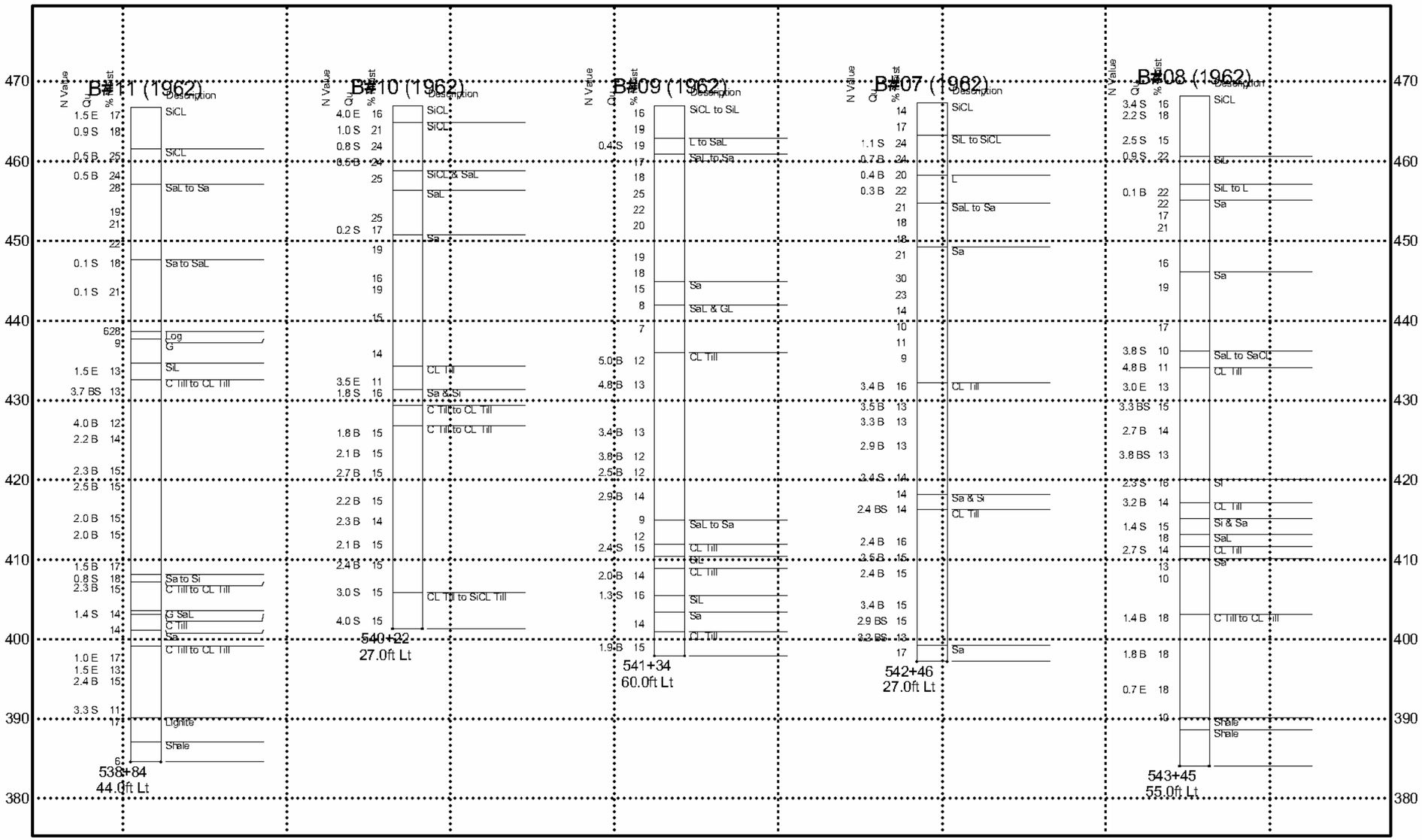
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILES – WB
STRUCTURE NO. 026-0106
SHEET NO. 108 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	188
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



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Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

VARIATIONS IN SUBSURFACE CONDITIONS MAY EXIST BETWEEN BORINGS

Groundwater
- First Encounter
- Completion
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Abbreviations
WOH - Sampler Advanced by Weight of Hammer, WOP - Weight of Pipe
B.S. - Before Seating

SUBSURFACE DATA PROFILE

Route: FAI 70 (I 70)

Section: (26-3B-1,3B-1(3))BR

County: Fayette

USER NAME = has	DESIGNED - ELH	08/13	REVISED -		
ESCA PROJECT NO. 1070.09	CHECKED - RDP	08/13	REVISED -		
	DRAWN - DWH	08/13	REVISED -		
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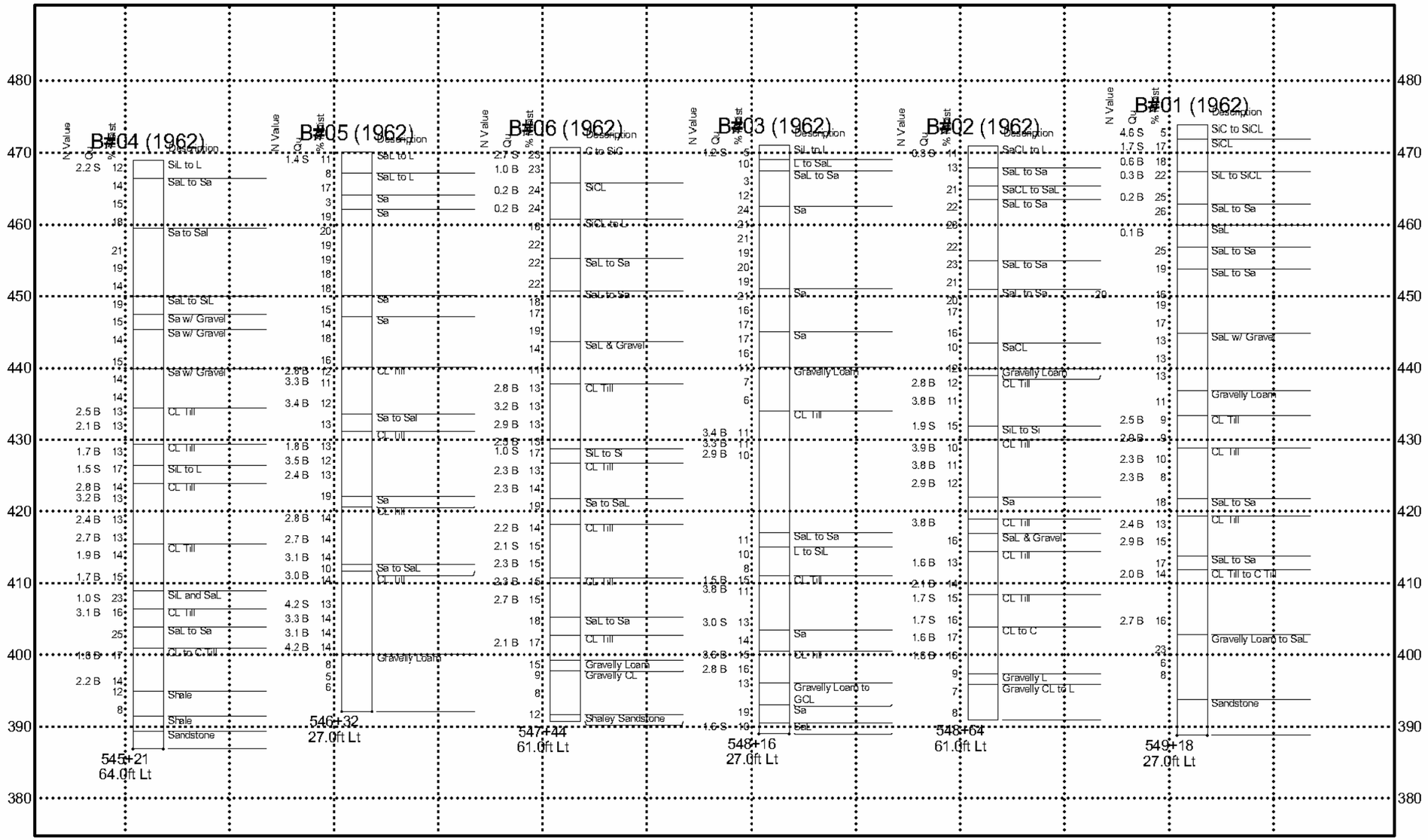
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILES – WB
STRUCTURE NO. 026-0106
SHEET NO. 109 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	189
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



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Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

VARIATIONS IN SUBSURFACE CONDITIONS MAY EXIST BETWEEN BORINGS

Groundwater
- First Encounter
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Abbreviations
WOH - Sampler Advanced by Weight of Hammer, WOP - Weight of Pipe
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SUBSURFACE DATA PROFILE

Route: FAI 70 (I 70)

Section: (26-3B-1,3B-1(3))BR

County: Fayette

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		DRAWN - DWH	08/13	REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILES – WB
STRUCTURE NO. 026-0106
SHEET NO. 110 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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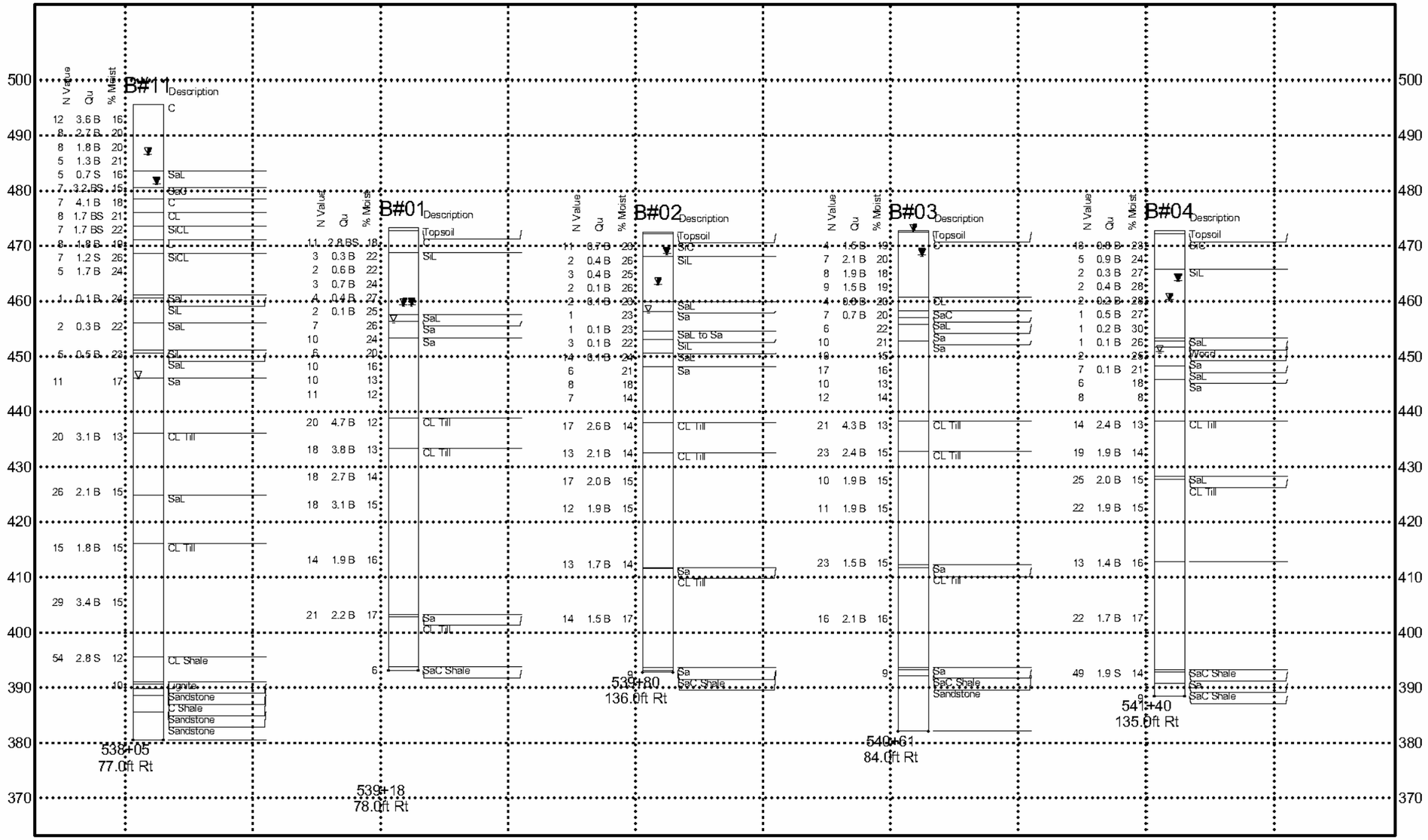
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



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Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

VARIATIONS IN SUBSURFACE CONDITIONS MAY EXIST BETWEEN BORINGS

Groundwater
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Abbreviations
WOH - Sampler Advanced by Weight of Hammer, WOP - Weight of Pipe
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SUBSURFACE DATA PROFILE

Route: FAI 70 (I 70)

Section: (26-3B-1,3B-1(3))BR

County: Fayette

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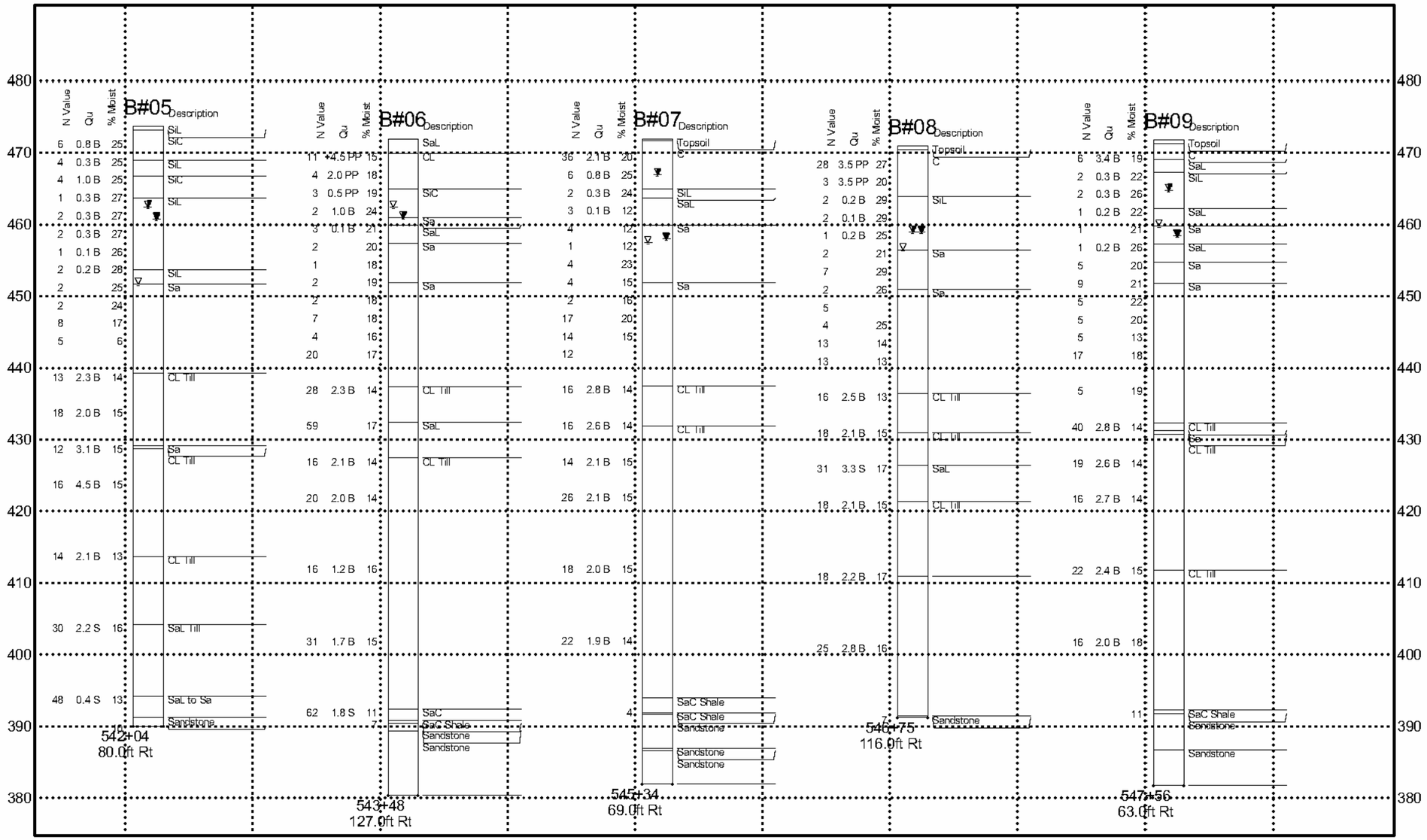
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILES – EB
STRUCTURE NO. 026-0107
SHEET NO. 111 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	191
		CONTRACT NO. 74175		
	ILLINOIS FED. AID PROJECT			



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Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

VARIATIONS IN SUBSURFACE CONDITIONS MAY EXIST BETWEEN BORINGS

Groundwater
- First Encounter
- Completion
- after (refer to log) hours

Abbreviations
WOH - Sampler Advanced by Weight of Hammer, WOP - Weight of Pipe
B.S. - Before Seating

SUBSURFACE DATA PROFILE

Route: FAI 70 (I 70)

Section: (26-3B-1,3B-1(3))BR

County: Fayette

ESCA CORPORATION, INC.	USER NAME = has	DESIGNED - ELH 08/13	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUBSURFACE DATA PROFILES – EB STRUCTURE NO. 026-0107
	ESCA PROJECT NO. 1070.09	CHECKED - RDP 08/13	REVISED -		SHEET NO. 112 OF 113 SHEETS
		DRAWN - DWH 08/13	REVISED -		
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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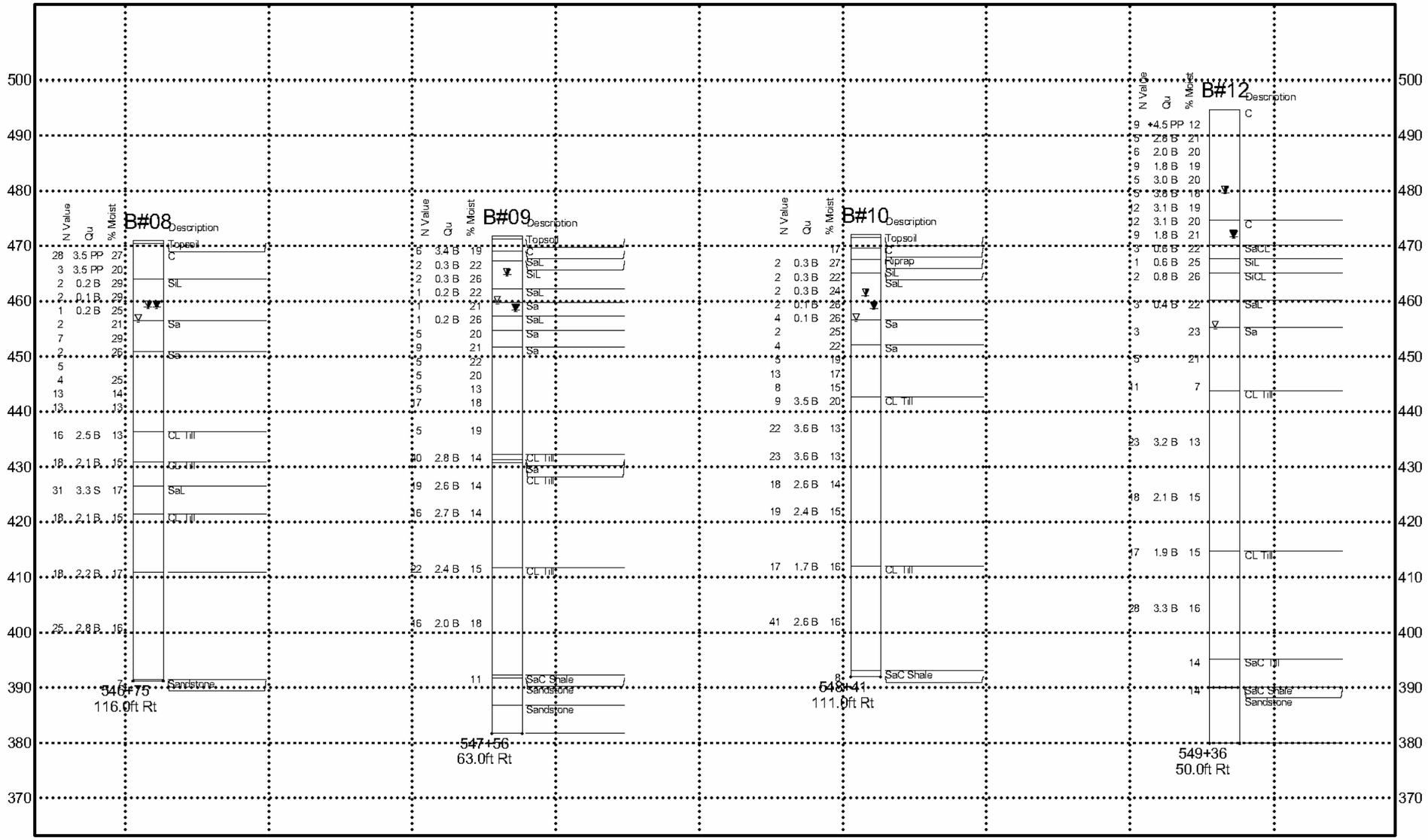
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		



NOT TO HORIZONTAL SCALE

Illinois Department of Transportation
Division of Highways
ILLINOIS DOT

VARIATIONS IN SUBSURFACE CONDITIONS MAY EXIST BETWEEN BORINGS

Groundwater
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SUBSURFACE DATA PROFILE

Route: FAI 70 (I 70)

Section: (26-3B-1,3B-1(3))BR

County: Fayette

ESCA CORPORATION, INC.	USER NAME = has	DESIGNED - ELH	08/13	REVISED -	
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSURFACE DATA PROFILES – EB
STRUCTURE NO. 026-0107
SHEET NO. 113 OF 113 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	193
		CONTRACT NO. 74175		
	ILLINOIS	FED. AID PROJECT		

B.M.: U.E. flangnail of East Abut. Existing Structure Sta. 543+15 Elev. 493.34

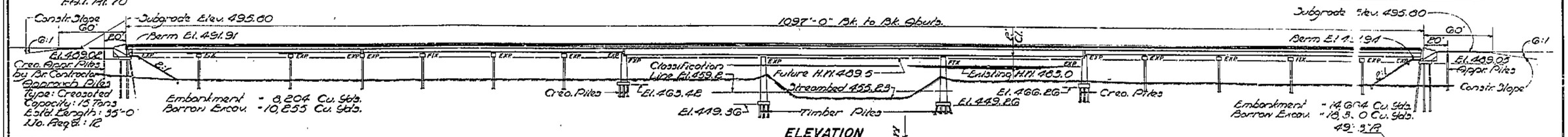
Existing Structure Truss & I-Beam Bms., 11 Spans 26' Roadway, Conc. Floor. To be used for East bound Lanes on F.A.I. Rt. 70

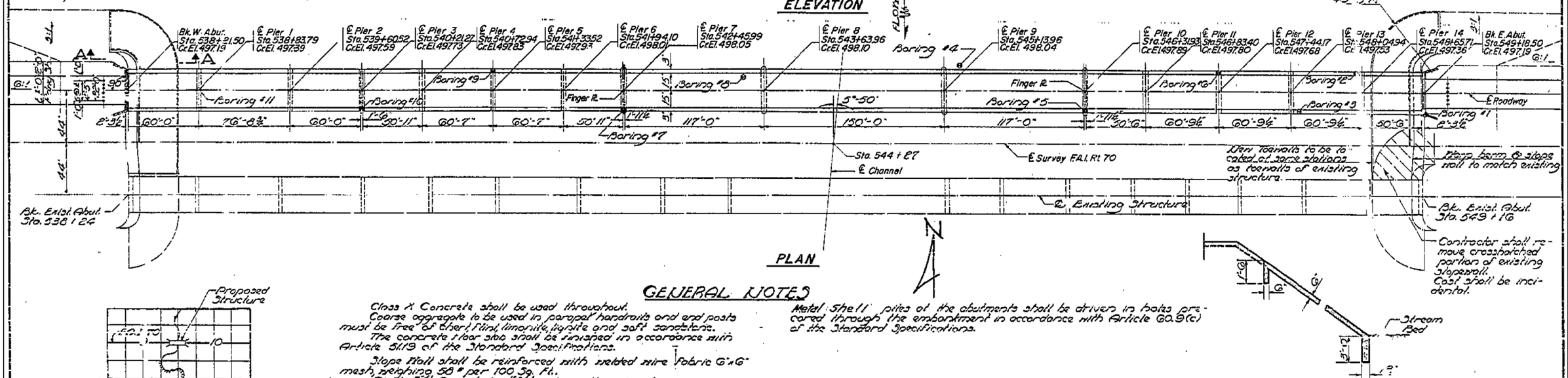
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

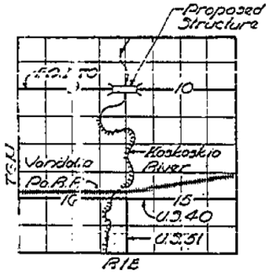
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	26-3B-1 (2)	FAYETTE	36	5

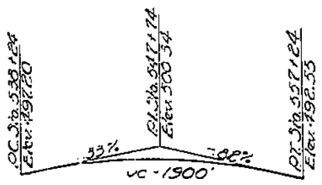
SHEET NO. 1
30 SHEETS

FED. ROAD PROJECT NO. 1 — ILLINOIS — FAI. RTE. PROJECT: I-70-2(61)63









GENERAL NOTES

Class X Concrete shall be used throughout.

Coarse aggregate to be used in parapet handrails and end posts must be free of chert, flint, limonite, lignite and soft substance.

The concrete floor slab shall be finished in accordance with Article 5.11.9 of the Standard Specifications.

Slope Wall shall be reinforced with welded wire fabric 6"x6" mesh weighing 58 # per 100 Sq. Ft..

Rivets 7/8", Open holes 15/16", unless otherwise shown.

All Structural Steel shall comply with the Specifications for Structural Steel, A.S.T.M. Designation A-36.

Anchor bolts shall be set before riveting diaphragms over supports.

Roadway finger plates shall be assembled in the shop in proper position with the ends in place for shop inspection. The plates shall be flame cut as provided in Article 3.4.5(1) of the Standard Specifications. Finger plates are included in quantity of Structural Steel. Est'd. Wt. - 13,950 lbs..

The exposed surfaces of the finger plates and expansion guards shall be given two shop coats of red lead paint, the contact surfaces shall be given one coat of red lead paint. Anchor studs shall not be painted.

Expansion guards are included in quantity of Structural Steel. Est'd. Wt. - 2,480 lbs..

Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint. See Articles 5.6.1 to 5.6.5 inclusive of the Standard Specifications.

The Contractor shall drive two metal shell test piles in permanent location at each abutment; four (4) - metal shell test piles in permanent location at Piers 1, 3, 6 & 12; one timber test pile in permanent location of Pier 8 and one timber test pile in the vicinity of Pier 10, as directed by the Engineer before ordering the remainder of piles.

The Contractor shall construct Bridge Seat Sealant on the East and West Abuts., Piers 3, 7 and 10. See the Special Provisions.

Metal Shell piles of the abutments shall be driven in holes prepared through the embankment in accordance with Article 60.9(c) of the Standard Specifications.

STATION 544+27
BUILT 196 BY
STATE OF ILLINOIS
F.A.I. RT. 70 - SEC. 26-3B-1(2)
PROJ. I-70-2(61).
LOADING H20-S16 & ALT.

NAME PLATE
See Std. 2113

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Borrow Excavation	Cu. Yds.			8,385 ✓
Class "B" Excavation for Structures	Cu. Yds.			720
Class "A" Excavation for Structures	Cu. Yds.			380
Class X Concrete	Cu. Yds.	1,800.7 ✓	160.7 ✓	1961.4 ✓
Protective Coat	Sq. Yds.			4928
Structural Steel	Lbs.	1,242,580 ✓		1,242,580 ✓
Aluminum Handrail	Lin. Ft.	2,186 ✓		2,186 ✓
Reinforcement Bars	Lbs.	250,610 ✓	43,110 ✓	293,720 ✓
Untreated Piles	Lin. Ft.		3,886 ✓	3,886
Creosoted Piles	Lin. Ft.		2,520 ✓	2,520
Test Piles (Timber)	Each		2	2
Metal Shell Piles-12"	Lin. Ft.		4,999 ✓	4,999
Test Piles (Metal Shell)	Each		6 ✓	6
Metal Shell Piles-14"	Lin. Ft.		4,012 ✓	4,012
Name Plates	Each	1 ✓		1 ✓
Slope Wall 6"	Sq. Yds.			6,079
Class A Concrete	Cu. Yds.		736.4 ✓	736.4
Bridge Seat Sealant	L. Sum			Lump Sum
Class X Concrete Encasement	Cu. Yds.		85.1	85.1

* Includes excavation for slope wall.

DESIGNED R.K.T.
CHECKED P.H.V.
DRAWN K.K.T. M.I. Jacobs
CHECKED P.H.V.

EXAMINED June 6 1963
PASSED
APPROVED
DIRECTOR OF HIGHWAYS

WATERWAY INFORMATION

Drainage Area: (Total) (289.4 ☐ Acre
Character: Rolling, cultivated

	KASKASKIA	CAMP CREEK	TOTAL
Required Opening: (Below H.W. 483.0 (U.S. H.W.))	16,000 Sq. Ft.	1,900 Sq. Ft. (levee over top)	17,900 Sq. Ft.
Present Opening: (Below H.W. 483.0 (U.S. H.W.))	13,350 Sq. Ft.	6,200 Sq. Ft.	19,550 Sq. Ft.
Proposed Opening: (Below H.W. 483.0 (U.S. H.W.))	13,350 Sq. Ft.	6,200 Sq. Ft. (36" ☐)	19,550 Sq. Ft.
Future regd. opening with Shelbyville Dam & Levee reconstr. (By Corp Engineers)	20,700 Sq. Ft. below H.W. 489.5	Negligible (local drainage only)	
Future proposed opening with Shelbyville Dam & Levee reconstr. (By Corp. Engineers)	20,700 Sq. Ft. below H.W. 489.5	Negligible (local drainage only)	

DESIGN STRESSES

fc - 1400 p.s.i. Super & Sub.
fs - 20,000 p.s.i. Reinf.
fs - 20,000 p.s.i. Struct. (A-36)
vc - 75 p.s.i. Ftgs.
n - 10
LOADING H20-S16-44 & ALT.

PROJECT I-70-2(61)63
GENERAL PLAN & ELEVATION
KASKASKIA RIVER
F.A.I. RT. 70 - SEC. 26-3B-1(2)
FAYETTE COUNTY
STATION 544+27

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ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL DIVISION

USER NAME = has	DESIGNED - ELH	REVISED -
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PLOT SCALE = 0.1667 ' / IN.	CHECKED - RDP	REVISED -
PLOT DATE = 1/29/2014 2:06:56 PM	DATE - 08/13	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 026-0018 EXISTING BRIDGE PLANS
WB - FOR INFORMATION ONLY

SCALE: | SHEET NO. 1 OF 28 SHEETS | STA. | TO STA.

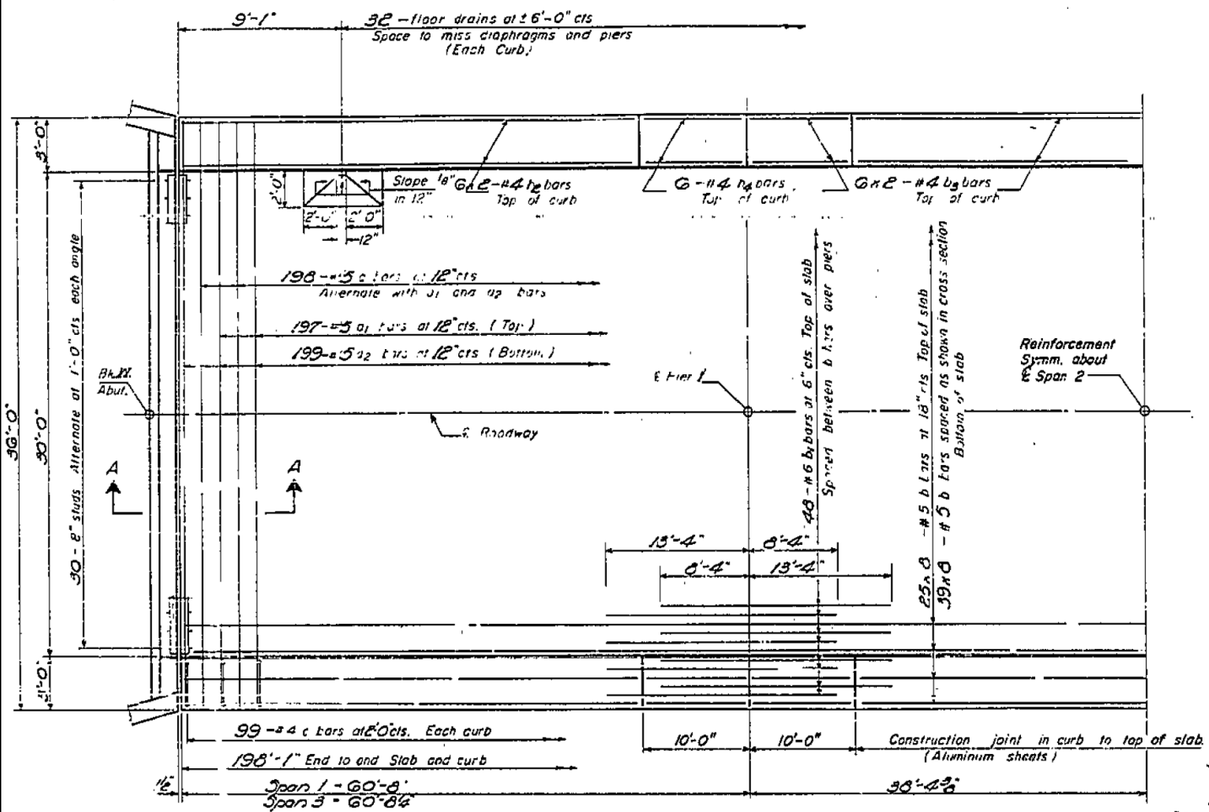
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	194
		CONTRACT NO. 74175		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

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

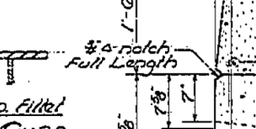
ROUTE NO.	SECTION		CITY	TOTAL SHEETS	SHEET NO.
F.A.S. 70	26-3B-1(2)		FAYETTE	35	6
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

SHEET NO 2
30 SHEETS

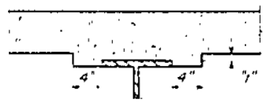
Note.
Bars indicated thus 20 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
Min bar lap = 20 dia.



HALF PLAN

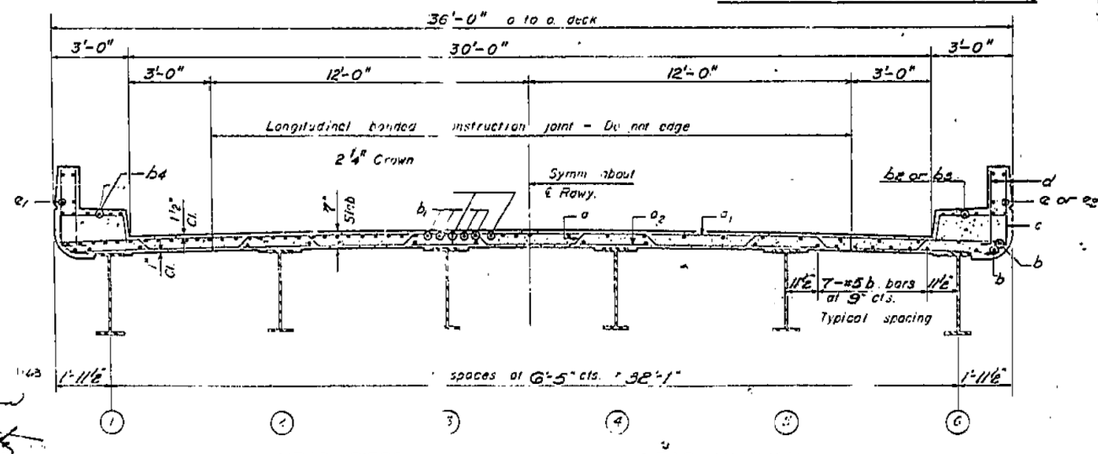


CHAMFER DETAIL AT CURB



STANDARD FILLET DETAIL

To determine "f" At the time structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet 21. These elevations subtracted from the "Grade Elevations Adjusted for Dead Load Deflections" shown on sheet 26, minus slab thickness, equals the fillet heights "f" above top of beams.



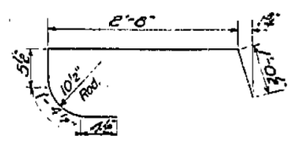
NEAR PIERS — NEAR MIDSPAN

CROSS SECTION

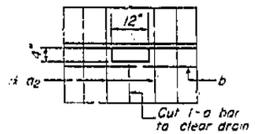
Note C:
7/16" holes at 12" cts. for ⅞" bolts set on 2'2" gage line. All bolts shall be burned, sawed or clipped all flush with back of angles after forms are removed.

Note A:
¾" ∅ x 8" CR. 1020 STL granular or solid flux filled headed studs, automatically end welded. (Alternate at 1'-0" cts.)

Note B:
7/16" vent holes at 12" cts. set on ½" gage line

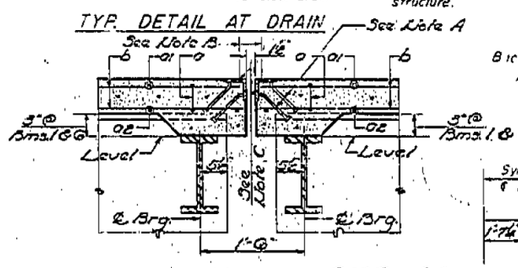


BAR c

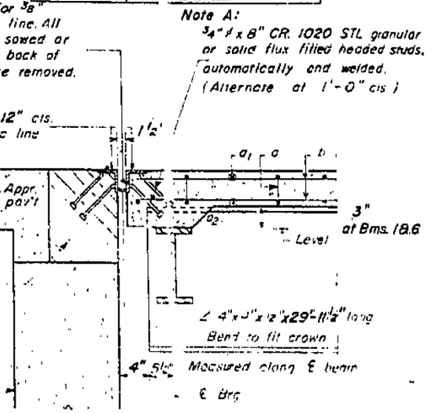


TYP. DETAIL AT DRAIN

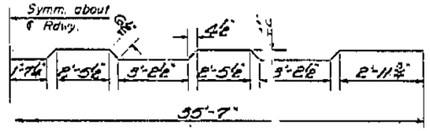
Hatched area to be poured after superstructure forms have been removed. Quantity of Class X Concrete included with superstructure.



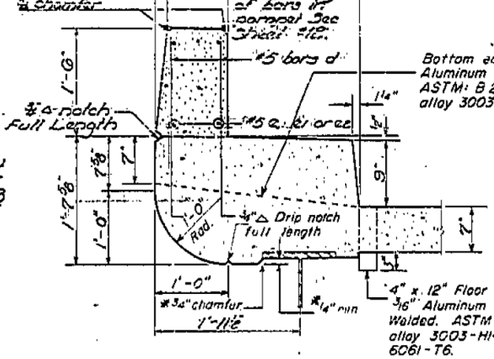
SECTION AT PIER 3



SECTION A-A

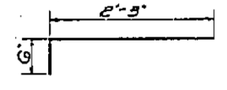


BAR a



CURB DETAIL

Cost of aluminum sheets shall be incidental to Class X Concrete.
*See Chamfer Detail



BAR d

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a	198	#5	37'-3"	
a1	197	#5	35'-6"	
a2	199	#5	35'-0"	
b	312	#5	26'-0"	
b1	96	#6	21'-6"	
b2	48	#4	25'-9"	
b3	24	#4	20'-9"	
b4	98	#4	3'-9"	
d	876	#5	2'-9"	
e	198	#4	5'-11"	
e2	48	#5	16'-7"	
e1	42	#5	9'-9"	
e2	34	#5	10'-7"	
Reinforcement Bars			Lbs.	45,780
* Structural Steel			Lbs.	20,970
Class X Concrete			Cu Yds.	219.6

Weight of bearing assemblies with lead plates and anchor bolts are included as structural steel.
Est. Weight = 6,354 #

SUPERSTRUCTURE
BEAM SPANS 1 2 & 3
F.A.I. RT. 70 ~ SEC. 26-3B-1(2)
FAYETTE COUNTY
STA. 544 + 27

DESIGNED R.X.T. — J.W.H. — R.X.T. — G.H.H.
DRAWN H.E.B.
CHECKED E.L.H.
QUANTITIES O.E.P.
JUNE 6 1963

I-5-0 7-2-62 Rev 11-9-62

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ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 026-0018 EXISTING BRIDGE PLANS
WB – FOR INFORMATION ONLY

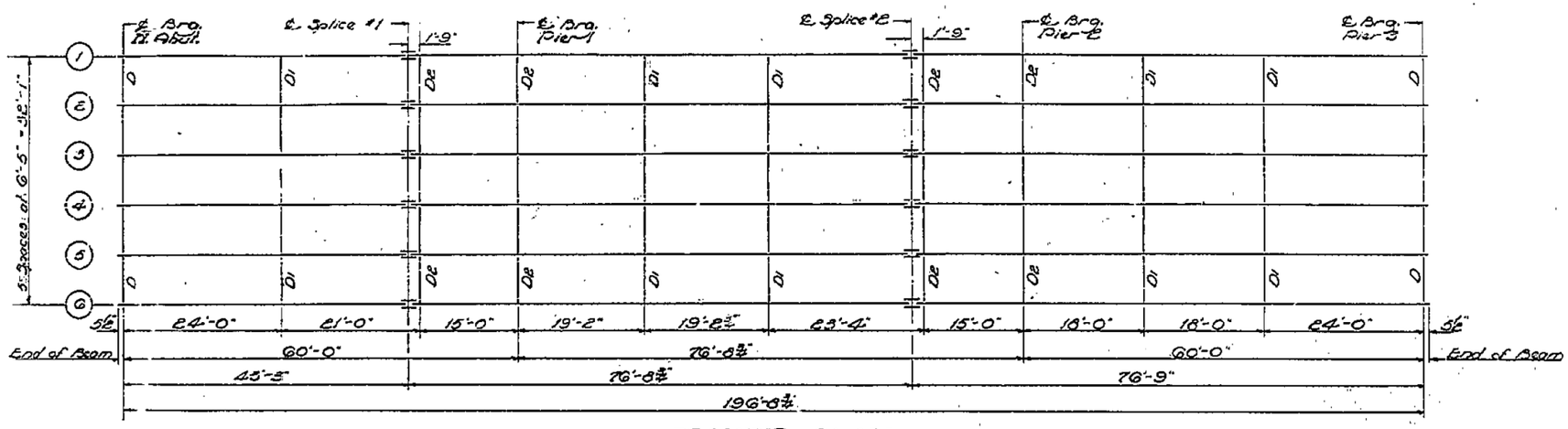
SCALE: | SHEET NO. 2 OF 28 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	195
		CONTRACT NO. 74175		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

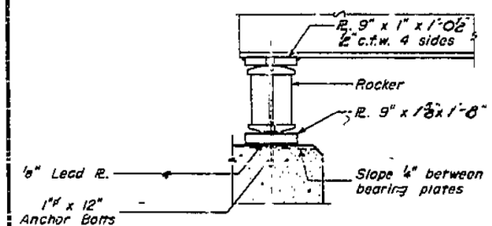
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	26-3B-1(2)	FAYETTE	36	7

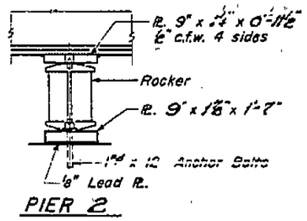
SHEET NO. 3
30 SHEETS



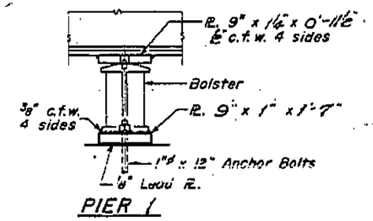
FRAMING PLAN
All Beams 33 lt 141



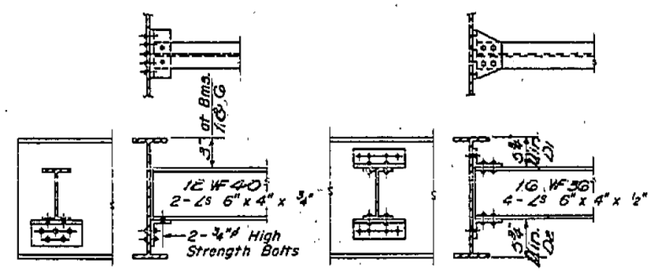
SECTION AT ABUTMENT & PIER 3



PIER 2

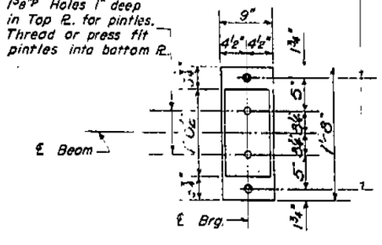


PIER 1



DIAPHRAGM D
10 Required

DIAPHRAGM D1 & D2
Required
25-D1
20-D2



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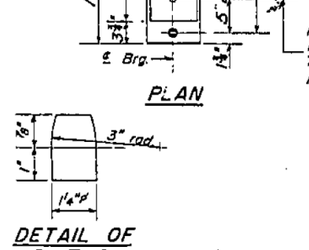

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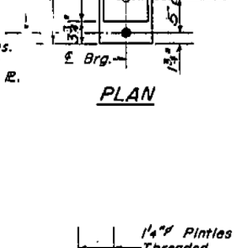

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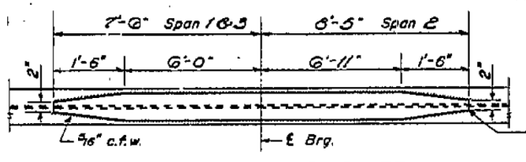
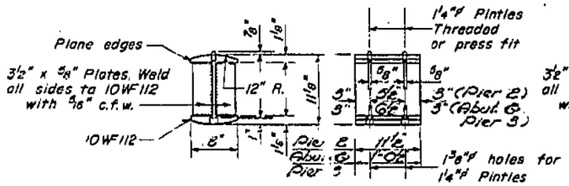


DETAIL OF COVER PLATE

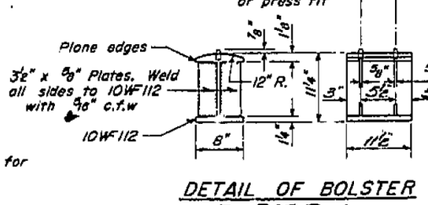
ELEVATION TOP OF WF

Location	Bm 1 & 3	Bm 2 & 3	Bm 3 & 4
℄ Brg. N. Abut.	496.43	496.51	496.63
℄ Splice #1	496.49	496.56	496.69
℄ Brg. Pier 1	496.34	496.47	496.74
℄ Splice #2	496.70	496.83	496.90
℄ Brg. Pier 2	496.76	496.89	496.96
℄ Brg. Bm. Pier 3	496.96	497.09	497.16

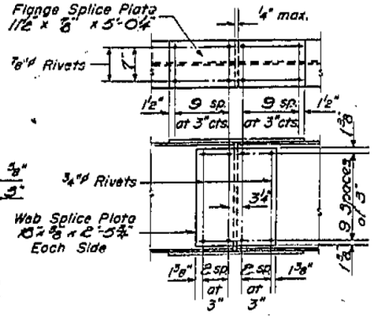
DETAIL OF PINTLE



DETAIL OF ROCKER AT N. ABUT. & PIERS 2 & 3



DETAIL OF BOLSTER AT PIER 1



DETAIL OF SPLICE

DESIGNED R.K. Taylor
CHECKED G.H. Hogeman
DRAWN R.K.S. M. Jacobs, W.A. Sausaman Jr.
CHECKED G.H.H.

JUNE 4 1963
EXAMINED H.C. Baumann
PASSED
APPROVED

I-2-C 7-2-62 Rev. 11-9-62

STRUCTURAL STEEL BEAM SPANS 1 & 3
F.A.I. RT. 70 - SEC. 26-3B-1(2)
FAYETTE COUNTY
STATION 544+27

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ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = has	DESIGNED - ELH	REVISED -	
ESCA PROJECT NO. 1000.05	DRAWN - HAS	REVISED -	
PLOT SCALE = 0.1667 ' / IN.	CHECKED - RDP	REVISED -	
PLOT DATE = 1/29/2014 2:07:11 PM	DATE - 08/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 026-0018 EXISTING BRIDGE PLANS
WB – FOR INFORMATION ONLY

SCALE: | SHEET NO. 3 OF 28 SHEETS | STA. | TO STA.

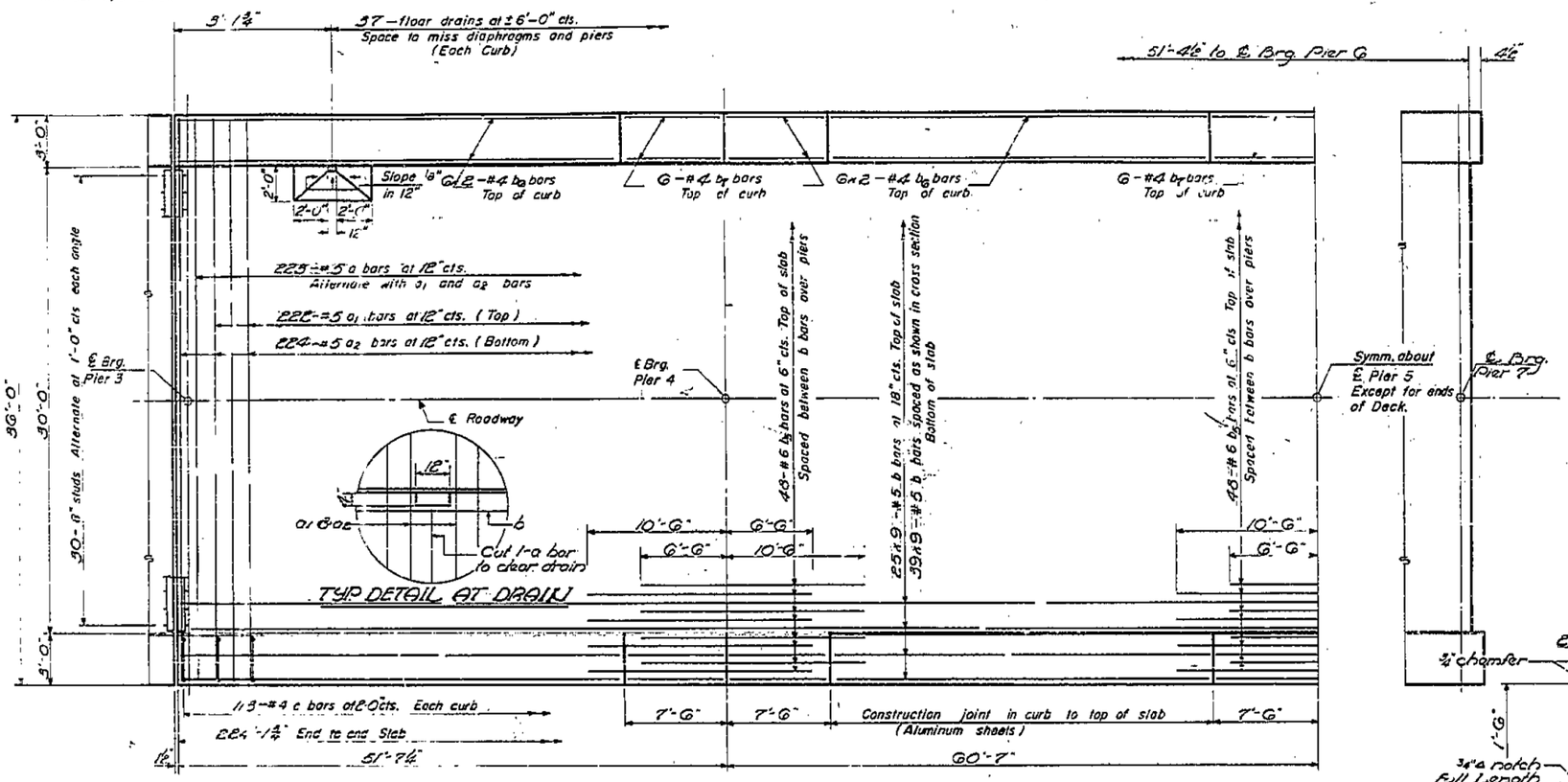
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	196
		CONTRACT NO. 74175		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Note:
Bars indicated thus 20 x 3 - r 5 etc. indicate 20 lines of bars with 3 lengths per line.
Min bar laps = 20 dia.

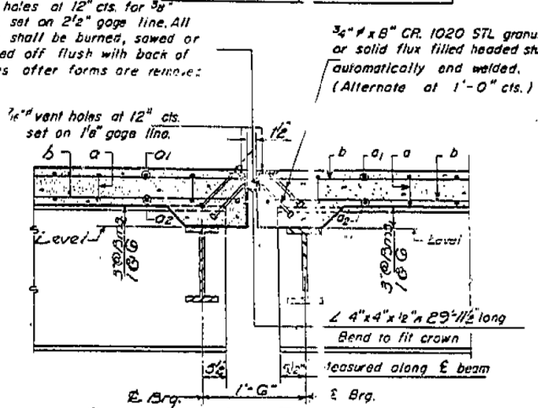
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI RTE. 70	26-3B-1(2)	FAYE	36	8
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

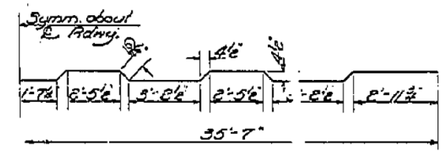
SHEET NO. 4
30 SHEETS



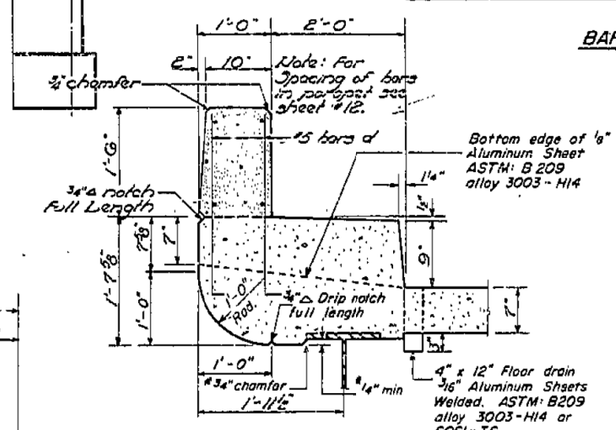
HALF PLAN



SECTION AT PIER 3



BAR a



CURB DETAIL

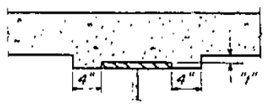
Cost of aluminum sheets and drains shall be incidental to Class X Concrete

* See Chamfer Detail Sheet #12.

BILL OF MATERIAL

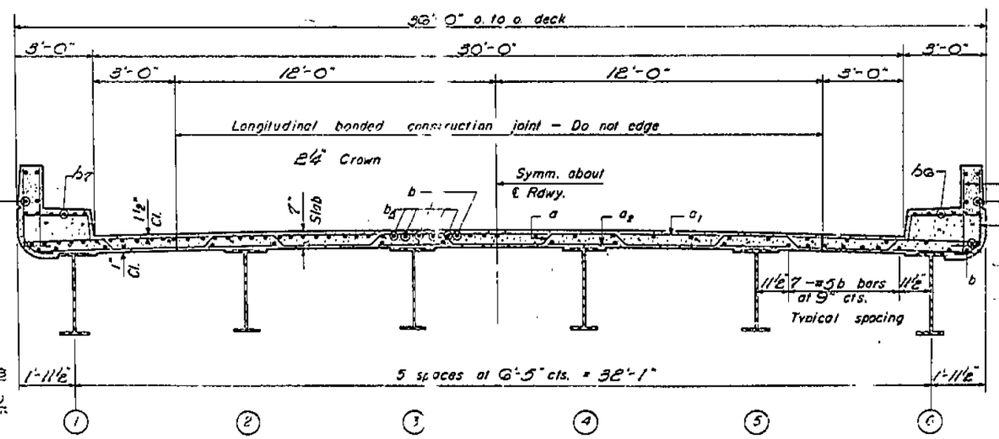
Bar	No.	Size	Length	Shape
a	223	#5	37'-3"	
a1	222	#5	35'-6"	
a2	224	#5	35'-0"	
b	176	#5	26'-0"	
b5	4	#6	17'-0"	
b6	2	#4	25'-3"	
b7	2	#4	7'-3"	
d	996	#5	2'-9"	
c	226	#4	3'-11"	
e3	9	#5	14'-5"	
e4	9	#5	7'-9"	
e5	9	#5	14'-11"	
Reinforcement Bars			Lbs.	8410
* Structural Steel			Lbs.	203980
Class X Concrete			Cu. Yds.	846.6

* Weight of bearing assemblies with lead plates and anchor bolts are included as structural steel. Est. Weight = 4296#

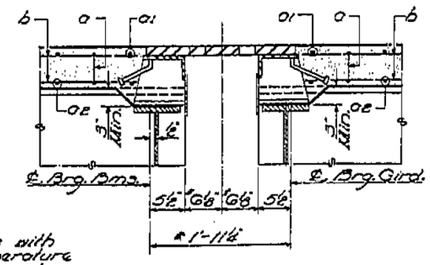


STANDARD FILLET DETAIL

To determine "I" After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet 27. These elevations subtracted from the "Grade Elevations Adjusted for Dead Load Deflections" shown on sheet 27, minus slab thickness, equals the fillet heights "I" above top of beams.



CROSS SECTION



* Varies with Temperature Dimensions shown are at 50°F.

SECTION AT PIER 7

SUPERSTRUCTURE
BEAM SPANS 4 5 6 & 7
F.A.I. RT. 70 - SEC. 26-3B-1(2)
FAYETTE COUNTY
STA. 544 + 27

DESIGNED	R. K. Taylor
CHECKED	G. H. Hayenga
DRAWN	R.K.T. M.L. Jacobs B.L. Beemer
CHECKED	G.H.H.

EXAMINED: M. E. Bauermeister — JUNE 6 1963
PASSED: E. E. Blank
APPROVED: V. C. Alvine

I-6-0 7-2-63 Rev. 11-9-62

USER NAME = has	DESIGNED - ELH	REVISED -	
ESCA PROJECT NO. 1000.05	DRAWN - HAS	REVISED -	
PLOT SCALE = 0.1667 ' / IN.	CHECKED - RDP	REVISED -	
PLOT DATE = 1/29/2014 2:07:20 PM	DATE - 08/13	REVISED -	

ESCA CONSULTANTS, INC.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 026-0018 EXISTING BRIDGE PLANS
WB – FOR INFORMATION ONLY

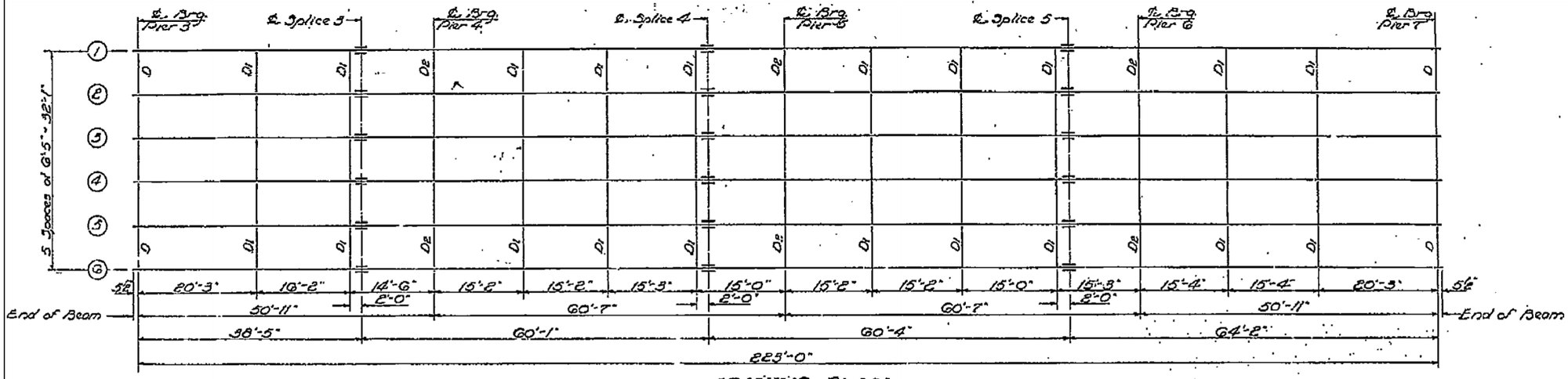
SCALE: | SHEET NO. 4 OF 28 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	197
		CONTRACT NO. 74175		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

PRINT DRIVER = LPD.E.B.Bolt
PEN TABLE = DOT_VERBOSE.TBL
PLOT SCALE = 0.1667 ' / IN.
FILE NAME = c:\374179-structure\04.dgn

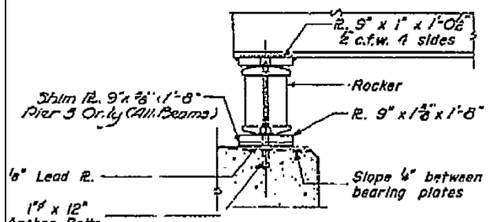
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

F.A.I. RTE. 70	26-3B-1 (3B-1(2))	FAYETTE	56	9	50 SHEETS
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT			

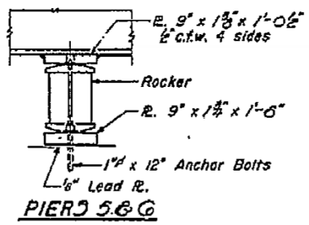


FRAMING PLAN

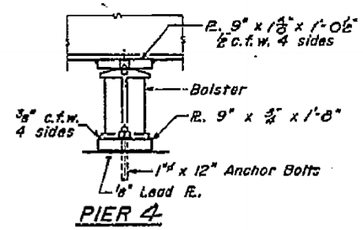
All Beams 33WF118



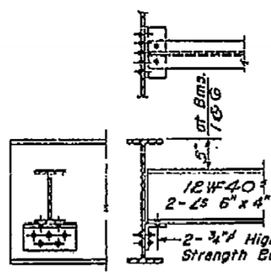
SECTION AT PIERS 3 & 7



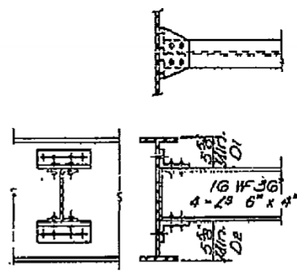
PIERS 5 & 6



PIER 4



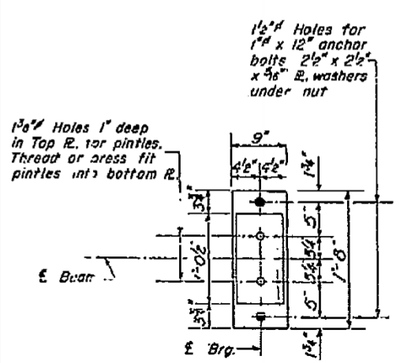
DIAPHRAGM D
10 Required



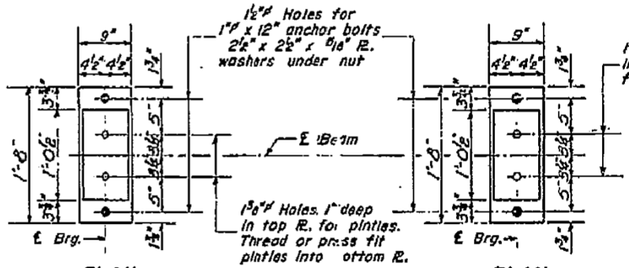
DIAPHRAGM D1 & D2
Required
50 - D1
15 - D2

ELEVATION TOP OF WF

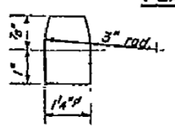
Location	Bms. 1 & 6	Bms. 2 & 5	Bms. 3 & 4
℄ Brg. Pier 3	496.83	497.09	497.16
℄ Splice 3	496.93	497.11	497.18
℄ Brg. Pier 4	497.00	497.15	497.20
℄ Splice 4	497.08	497.21	497.28
℄ Brg. Pier 5	497.10	497.23	497.30
℄ Splice 5	497.16	497.29	497.36
℄ Brg. Pier 6	497.16	497.31	497.38
℄ Brg. Pier 7	497.26	497.41	497.48



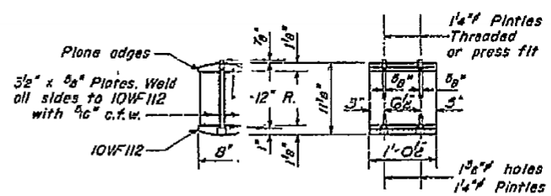
PLAN



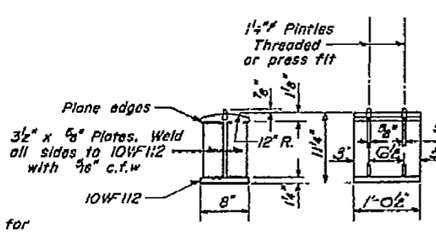
PLAN



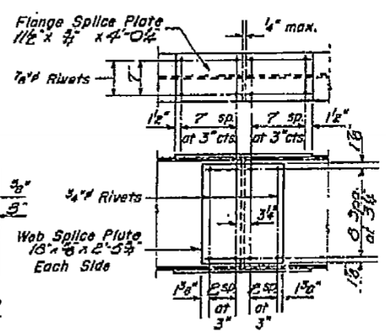
DETAIL OF PINTLE



DETAIL OF ROCKER AT PIERS 3, 5 & 6 & 7



DETAIL OF BOLSTER AT PIER 4



DETAIL OF SPLICE

DESIGNED	J.K. Tuyen	
CHECKED	C.N. Hagaman	
	R.K.H. W.L. Jacobs	
DRAWN	M.A. Salsaman Jr.	
CHECKED	C.N.H.	

JUNE 6 1962

EXAMINED M.C. Bauman
PASSED E.L. Peterson
APPROVED E.E. Wolf
DIRECTOR OF ENGINEERING

STRUCTURAL STEEL
BEAM SPANS 4, 5 & 6 & 7
FOR RT. 70 - SEC. 26-3B-1(2)
FAYETTE COUNTY
STA. 544 + 27

I-2 7-2-62 Rev. 11-9-62

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ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERING

USER NAME = has	DESIGNED - ELH	REVISED -	
ESCA PROJECT NO. 1000.05	DRAWN - HAS	REVISED -	
PLOT SCALE = 0.1667 ' / IN.	CHECKED - RDP	REVISED -	
PLOT DATE = 1/29/2014 2:07:27 PM	DATE - 08/13	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 026-0018 EXISTING BRIDGE PLANS
WB – FOR INFORMATION ONLY

SCALE: | SHEET NO. 5 OF 28 SHEETS | STA. | TO STA.

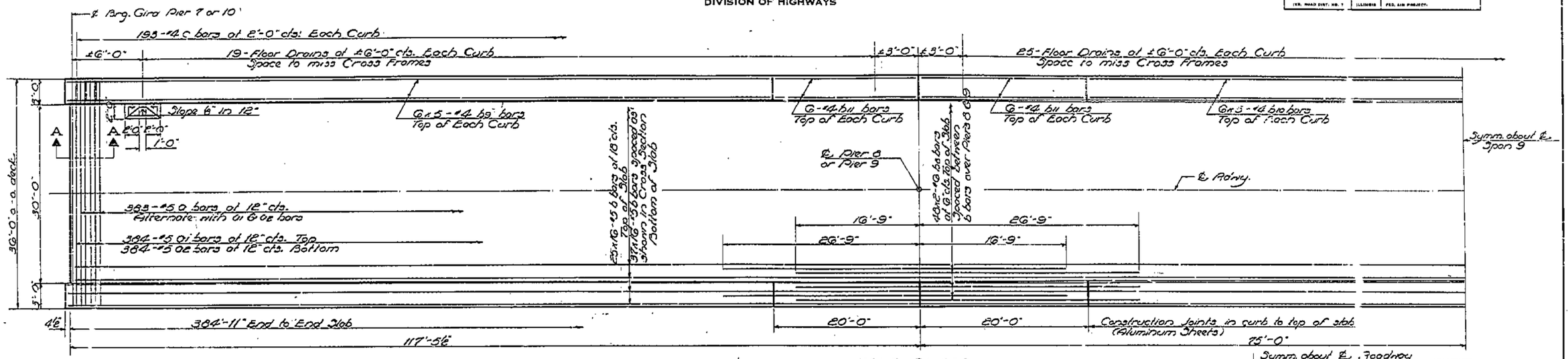
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	198
		CONTRACT NO. 74175		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Note: Bars indicated thus 20 x 5 = 15 a/c. indicates 20 lines of bars with 3 lengths per line. Min. bar thus = 20 a.

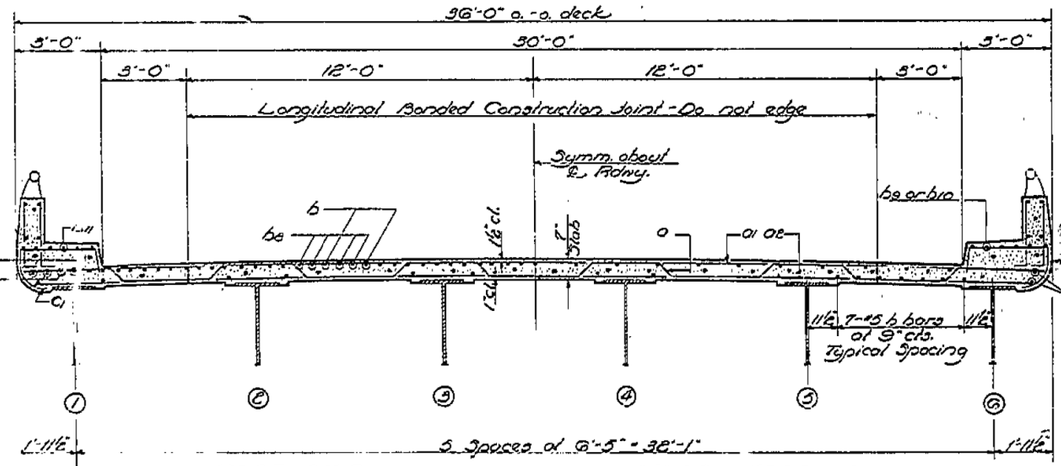
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI Rte. 70	26-3B-1, 3B-1(3)BR	FAYETTE	36	10
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 6
30 SHEETS



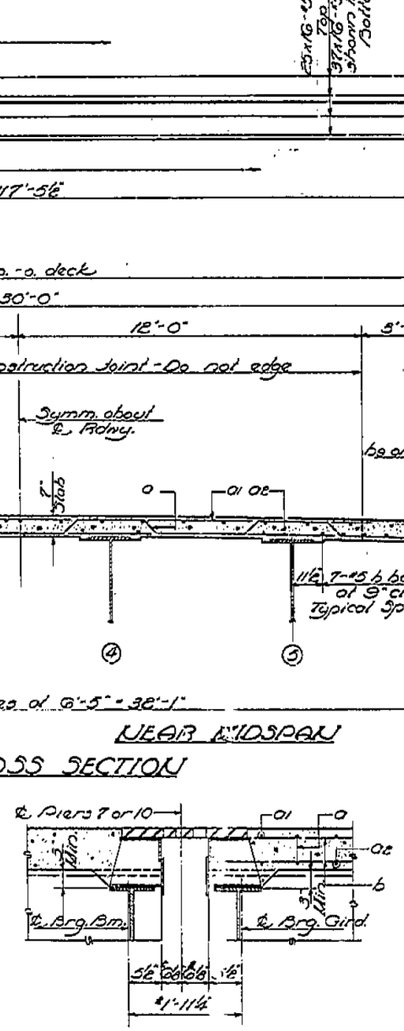
HALF PLAN



NEAR PIER NEAR MIDSPAN

CROSS SECTION

TYP. DETAIL AT DRAIN

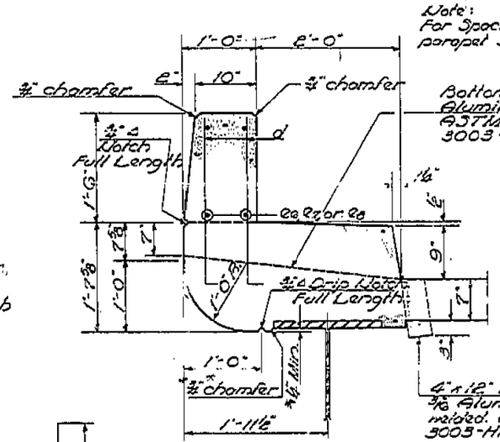


SECTION A-A

* Dimensions shown are @ 50°F. Varies with temperature.

DESIGNED	R. K. Taylor	JUNE 6 1962
CHECKED	M. E. Gaudin	EXAMINED H. G. Baumann, ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
DRAWN	R.K.T.	PASSED
CHECKED	M.E.G.	APPROVED U. E. Ruff, CHIEF ENGINEER

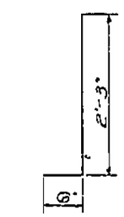
Note: For Spacing of bars in parapet See Sheet #12.



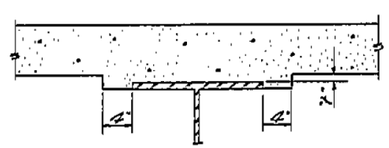
CURB DETAIL

Cost of aluminum sheets & drains shall be incidental to Class A Conc.

* See Chamfer Detail Sheet #8

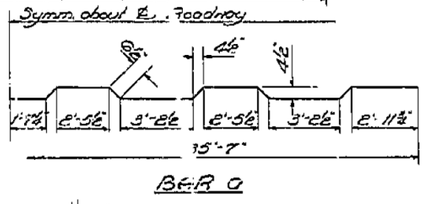


BAR d

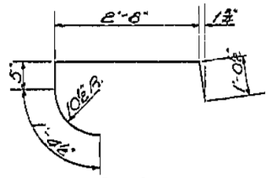


STANDARD FILLET DETAIL

To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on sheet #8. These elevations subtracted from the "Grade Elevations Adjusted for Dead Load Deflections" shown on sheet #8 minus slab thickness, equals the fillet heights "f" above top of beams.



BAR o



BAR o1

GIRDER SPANS
FULL OF MATERIAL

Bar	No.	Size	Length	Shape
o	383	#5	39'-3"	
o	384	#5	35'-6"	
o	384	#5	35'-0"	
b	992	#5	26'-0"	
ba	192	#6	22'-6"	
bz	120	#4	20'-3"	
bio	60	#4	22'-9"	
bii	48	#4	19'-6"	
c1	586	#4	5'-6"	
d	1104	#5	2'-9"	
eo	80	#5	19'-3"	
e1	32	#5	19'-9"	
e5	48	#5	18'-1"	
Class A Concrete Cu. Yds.				1803
Reinforcement Bars Lbs.				89,140
* Structural Steel			lbs.	597,540

* Weight of Bearing Assemblies are included as Structural Steel. Est. Wt. = 18,900 #

SUPERSTRUCTURE
GIRDER SPANS
F.A.I. RT. 70 - SEC. 26-3B-1(2)
FAYETTE COUNTY
STA. 544+27

USER NAME = has	DESIGNED - ELH	REVISED -	
ESCA PROJECT NO. 1000.05	DRAWN - HAS	REVISED -	
PLOT SCALE = 0.1667 ' / IN.	CHECKED - RDP	REVISED -	
PLOT DATE = 1/29/2014 2:07:35 PM	DATE - 08/13	REVISED -	

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 026-0018 EXISTING BRIDGE PLANS
WB - FOR INFORMATION ONLY

SCALE: | SHEET NO. 6 OF 28 SHEETS | STA. | TO STA.

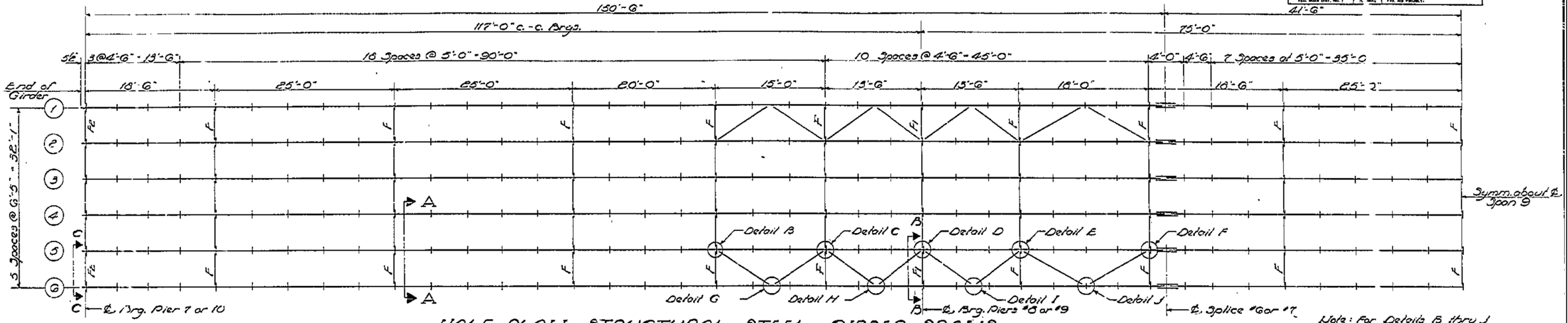
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	199
		CONTRACT NO. 74175		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

PRINT DRIVER = LJO_E_8.plt
PEN TABLE = DOT_VER82.TBL
PLOT SCALE = 0.1667 ' / IN.
FILE NAME = D:\74175-sht-ren86.dgn

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

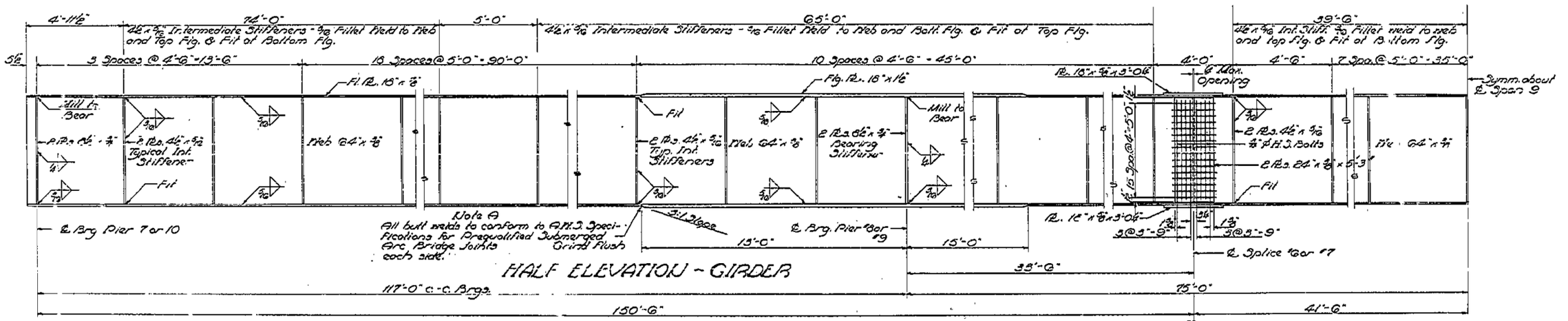
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 70	26-3B -1(2)	FAYETTE	36	11
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT		

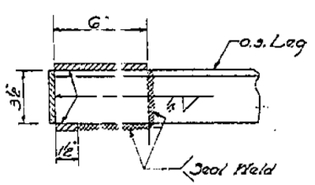
SHEET NO. 7
30 SHEETS



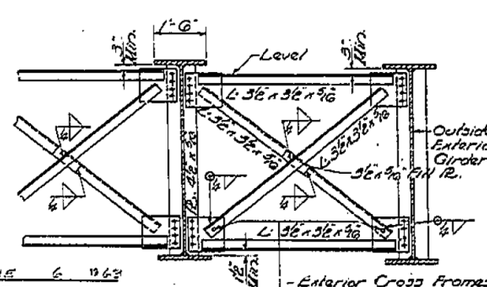
HALF PLAN - STRUCTURAL STEEL - GIRDER SPANS

Note: For Details B thru J See Sheet #8.

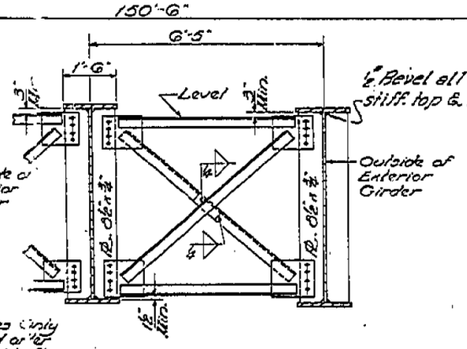




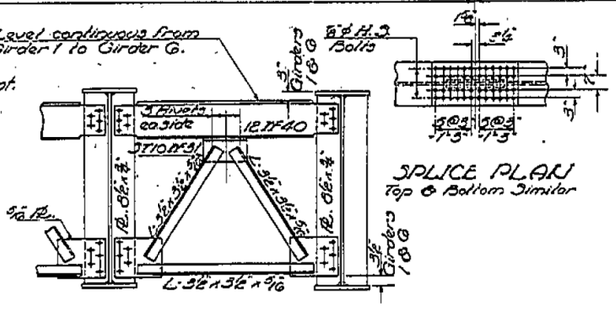
MINIMUM ANGLE TO GUSSET PLATE WELD



SECTION A-A
Shows Typical Intermediate Cross Frame F.



SECTION B-B
Shows Typical Cross Frame F1 at Piers 8 & 9.
For Size of members see Sec. A-A.



SECTION C-C
Shows Typical Cross Frames F2 at Piers 7 & 10

SPLICE PLAN
Top & Bottom Similar

ELEVATIONS	TOP OF GIRDER		
Location	Gird. 1 & 6	Gird. 2 & 5	Gird. 3 & 4
℄ Brg. Pier 7	497.28	497.41	497.40
℄ Brg. Pier 8	497.39	497.46	497.53
℄ Splice "6"	497.26	497.41	497.48
℄ Splice "7"	497.25	497.38	497.45
℄ Brg. Pier 9	497.27	497.40	497.47
℄ Brg. Pier 10	497.12	497.25	497.32

DESIGNED	R. K. Taylor	
CHECKED	M. C. Schneider	
DRAWN	R.K.T. M. Jacobs	
CHECKED	M.C.S.	

EXAMINED W. E. Baumann — June 6 1963
PASSED
APPROVED

STRUCTURAL STEEL
F.A.I. RT. 70 - SEC. 26-3B-1(2)
FAYETTE COUNTY
STA. 544 + 27

USER NAME = has	DESIGNED - ELH	REVISED -	
ESCA PROJECT NO. 1000.05	DRAWN - HAS	REVISED -	
PLOT SCALE = 0.1667 ' / IN.	CHECKED - RDP	REVISED -	
PLOT DATE = 1/29/2014 2:07:44 PM	DATE - 08/13	REVISED -	

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE NO. 026-0018 EXISTING BRIDGE PLANS
WB - FOR INFORMATION ONLY

SCALE: | SHEET NO. 7 OF 28 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(26-3B-1, 3B-1(3))BR	FAYETTE	277	200
		CONTRACT NO. 74175		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

PRINT DRIVER = LPD_E_8.dat
PEN TABLE = IDOT_VER8216L
WORK AREA = IDOT
FILE NAME = D:\74175-sht-rev187.dgn