

BEAM 8E (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+75.43	47.33' Rt.	648.42	648.42
A	676+85.31	47.33' Rt.	648.42	648.45
B	676+95.19	47.33' Rt.	648.41	648.46
C	677+05.07	47.33' Rt.	648.40	648.45
D	677+14.94	47.33' Rt.	648.38	648.43
E	677+24.82	47.33' Rt.	648.37	648.40
☉ Pier 7	677+37.22	47.33' Rt.	648.35	648.35
F	677+47.10	47.33' Rt.	648.34	648.33
G	677+56.98	47.33' Rt.	648.32	648.32
H	677+66.85	47.33' Rt.	648.30	648.31
I	677+76.73	47.33' Rt.	648.28	648.29
J	677+86.61	47.33' Rt.	648.26	648.26
☉ Pier 8	677+99.63	47.33' Rt.	648.23	648.23
K	678+09.51	47.33' Rt.	648.20	648.22
L	678+19.39	47.33' Rt.	648.18	648.22
M	678+29.26	47.33' Rt.	648.15	648.21
N	678+39.14	47.33' Rt.	648.12	648.18
O	678+49.02	47.33' Rt.	648.09	648.13
☉ Brg. N. Abut.	678+61.65	47.33' Rt.	648.05	648.05
Bk. N. Abut.	678+63.53	47.33' Rt.	648.04	648.04

BEAM 9E (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+77.48	53.67' Rt.	648.66	648.66
A	676+87.34	53.67' Rt.	648.65	648.68
B	676+97.20	53.67' Rt.	648.64	648.69
C	677+07.06	53.67' Rt.	648.63	648.69
D	677+16.92	53.67' Rt.	648.62	648.66
E	677+26.79	53.67' Rt.	648.60	648.63
☉ Pier 7	677+39.15	53.67' Rt.	648.58	648.58
F	677+49.02	53.67' Rt.	648.57	648.57
G	677+58.88	53.67' Rt.	648.55	648.55
H	677+68.74	53.67' Rt.	648.53	648.54
I	677+78.60	53.67' Rt.	648.51	648.52
J	677+88.46	53.67' Rt.	648.49	648.49
☉ Pier 8	678+01.45	53.67' Rt.	648.46	648.46
K	678+11.31	53.67' Rt.	648.43	648.45
L	678+21.18	53.67' Rt.	648.41	648.45
M	678+31.04	53.67' Rt.	648.38	648.44
N	678+40.90	53.67' Rt.	648.35	648.41
O	678+50.76	53.67' Rt.	648.32	648.36
☉ Brg. N. Abut.	678+63.36	53.67' Rt.	648.28	648.28
Bk. N. Abut.	678+65.24	53.67' Rt.	648.27	648.27

BEAM 10E (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+79.52	60' Rt.	648.89	648.89
A	676+89.36	60' Rt.	648.88	648.91
B	676+99.21	60' Rt.	648.87	648.92
C	677+09.05	60' Rt.	648.86	648.92
D	677+18.90	60' Rt.	648.85	648.89
E	677+28.74	60' Rt.	648.83	648.86
☉ Pier 7	677+41.08	60' Rt.	648.81	648.81
F	677+50.93	60' Rt.	648.80	648.80
G	677+60.77	60' Rt.	648.78	648.78
H	677+70.62	60' Rt.	648.76	648.77
I	677+80.46	60' Rt.	648.74	648.75
J	677+90.31	60' Rt.	648.72	648.72
☉ Pier 8	678+03.27	60' Rt.	648.69	648.69
K	678+13.11	60' Rt.	648.66	648.68
L	678+22.96	60' Rt.	648.64	648.68
M	678+32.80	60' Rt.	648.61	648.67
N	678+42.65	60' Rt.	648.58	648.64
O	678+52.49	60' Rt.	648.55	648.59
☉ Brg. N. Abut.	678+65.07	60' Rt.	648.51	648.51
Bk. N. Abut.	678+66.94	60' Rt.	648.50	648.50

BEAM 11E (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+81.55	66.33' Rt.	649.12	649.12
A	676+91.38	66.33' Rt.	649.11	649.14
B	677+01.20	66.33' Rt.	649.10	649.16
C	677+11.03	66.33' Rt.	649.09	649.15
D	677+20.86	66.33' Rt.	649.08	649.13
E	677+30.69	66.33' Rt.	649.07	649.09
☉ Pier 7	677+43.0	66.33' Rt.	649.05	649.05
F	677+52.83	66.33' Rt.	649.03	649.03
G	677+62.66	66.33' Rt.	649.01	649.01
H	677+72.49	66.33' Rt.	648.99	649.00
I	677+82.32	66.33' Rt.	648.97	648.98
J	677+92.15	66.33' Rt.	648.95	648.95
☉ Pier 8	678+05.08	66.33' Rt.	648.92	648.92
K	678+14.91	66.33' Rt.	648.89	648.91
L	678+24.74	66.33' Rt.	648.87	648.91
M	678+34.57	66.33' Rt.	648.84	648.89
N	678+44.39	66.33' Rt.	648.81	648.86
O	678+54.22	66.33' Rt.	648.78	648.82
☉ Brg. N. Abut.	678+66.77	66.33' Rt.	648.74	648.74
Bk. N. Abut.	678+68.64	66.33' Rt.	648.73	648.73

BEAM 12E (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+83.57	72.67' Rt.	649.35	649.35
A	676+93.38	72.67' Rt.	649.35	649.38
B	677+03.20	72.67' Rt.	649.34	649.39
C	677+13.01	72.67' Rt.	649.32	649.38
D	677+22.82	72.67' Rt.	649.31	649.36
E	677+32.64	72.67' Rt.	649.30	649.32
☉ Pier 7	677+44.91	72.67' Rt.	649.28	649.28
F	677+54.73	72.67' Rt.	649.26	649.26
G	677+64.54	72.67' Rt.	649.24	649.25
H	677+74.35	72.67' Rt.	649.22	649.23
I	677+84.17	72.67' Rt.	649.20	649.21
J	677+93.98	72.67' Rt.	649.18	649.18
☉ Pier 8	678+06.88	72.67' Rt.	649.15	649.15
K	678+16.69	72.67' Rt.	649.12	649.14
L	678+26.51	72.67' Rt.	649.09	649.14
M	678+36.32	72.67' Rt.	649.07	649.12
N	678+46.13	72.67' Rt.	649.04	649.09
O	678+55.95	72.67' Rt.	649.01	649.05
☉ Brg. N. Abut.	678+68.47	72.67' Rt.	648.97	648.97
Bk. N. Abut.	678+70.33	72.67' Rt.	648.96	648.96

NOTES

1. Work this sheet with Sheet No. S-24.
2. Offsets are taken from ☉ I-80.

N:\PROJECTS\0003384\004_US_30\Design\Structural\CAD\3384_26 EB Unit 3 - Top of Slab Elev. 3.dgn



USER NAME = kaisneros
 DESIGNED - AMK
 CHECKED - DL
 PLOT SCALE = 0:2,0000 '1' / in.
 DRAWN - RD
 PLOT DATE = 5/9/2018

DESIGNED - AMK
 CHECKED - DL
 REVISIONS
 REVISIONS
 REVISIONS

REVISIONS
 REVISIONS
 REVISIONS

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**EB UNIT 3 - TOP OF SLAB ELEVATIONS 3
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-26 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	501

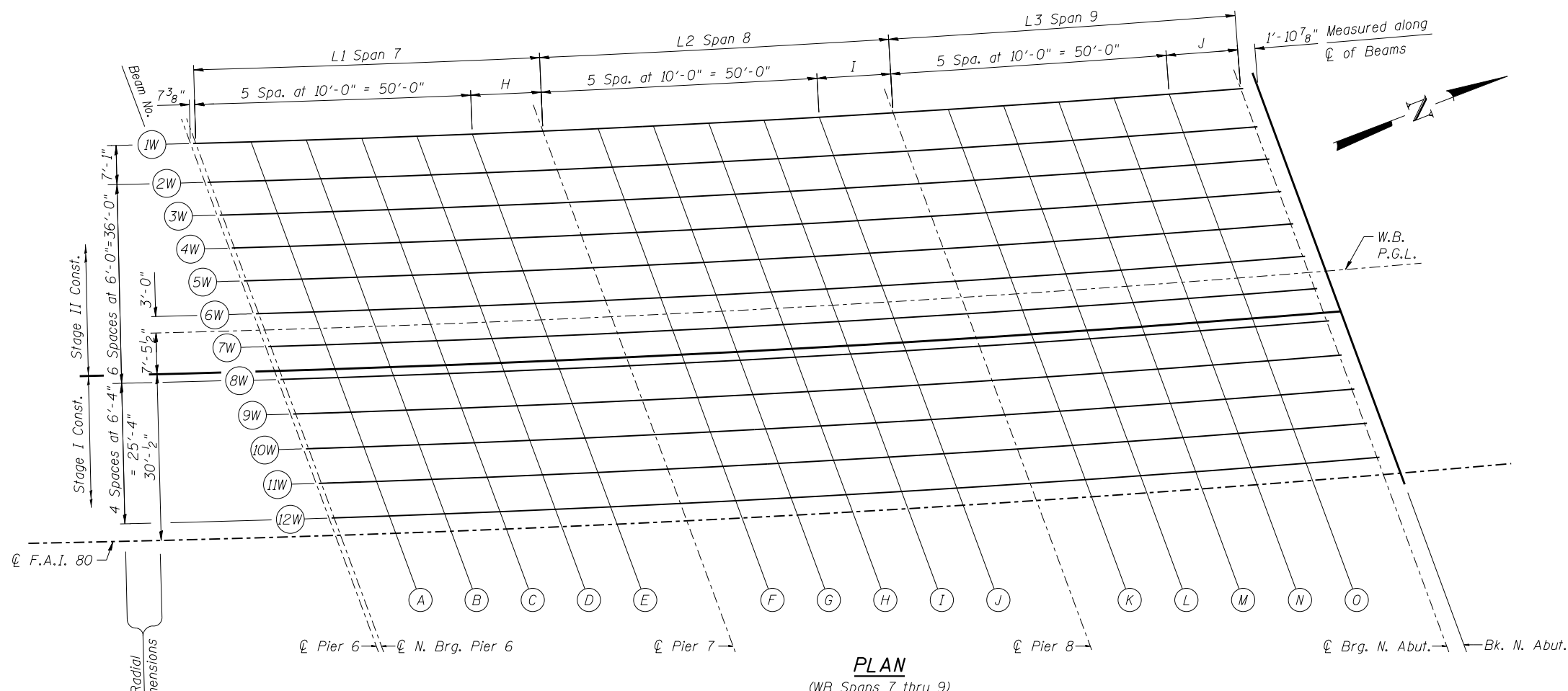
CONTRACT NO. 60N87
 ILLINOIS FED. AID PROJECT

BEAM 1W

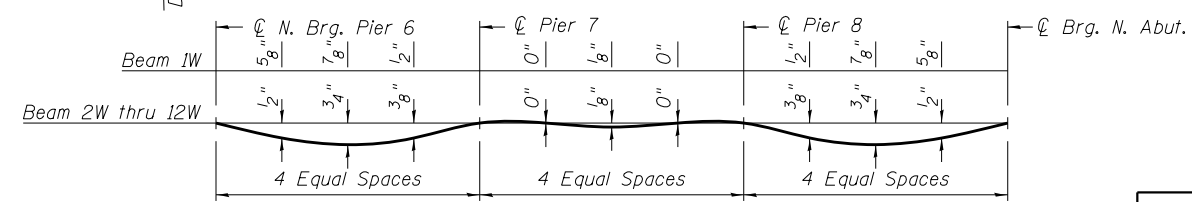
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+35.70	71.58' Lt.	646.31	646.31
A	676+45.89	71.58' Lt.	646.30	646.34
B	676+56.08	71.58' Lt.	646.30	646.36
C	676+66.27	71.58' Lt.	646.29	646.36
D	676+76.46	71.58' Lt.	646.28	646.34
E	676+86.65	71.58' Lt.	646.27	646.30
☉ Pier 7	676+99.65	71.58' Lt.	646.26	646.26
F	677+09.84	71.58' Lt.	646.24	646.24
G	677+20.04	71.58' Lt.	646.23	646.23
H	677+30.23	71.58' Lt.	646.21	646.22
I	677+40.42	71.58' Lt.	646.20	646.20
J	677+50.61	71.58' Lt.	646.18	646.18
☉ Pier 8	677+64.23	71.58' Lt.	646.15	646.15
K	677+74.42	71.58' Lt.	646.13	646.15
L	677+84.61	71.58' Lt.	646.11	646.16
M	677+94.80	71.58' Lt.	646.08	646.15
N	678+04.99	71.58' Lt.	646.06	646.13
O	678+15.19	71.58' Lt.	646.03	646.08
☉ Brg. N. Abut.	678+28.39	71.58' Lt.	645.99	645.99
Bk. N. Abut.	678+30.33	71.58' Lt.	645.99	645.99

BEAM 2W (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+38.14	64.5' Lt.	646.57	646.57
A	676+48.31	64.5' Lt.	646.56	646.59
B	676+58.48	64.5' Lt.	646.56	646.61
C	676+68.65	64.5' Lt.	646.55	646.61
D	676+78.82	64.5' Lt.	646.54	646.59
E	676+89.00	64.5' Lt.	646.53	646.56
☉ Pier 7	677+01.96	64.5' Lt.	646.51	646.51
F	677+12.13	64.5' Lt.	646.50	646.50
G	677+22.30	64.5' Lt.	646.49	646.49
H	677+32.48	64.5' Lt.	646.47	646.48
I	677+42.65	64.5' Lt.	646.45	646.46
J	677+52.82	64.5' Lt.	646.44	646.44
☉ Pier 8	677+66.41	64.5' Lt.	646.41	646.41
K	677+76.58	64.5' Lt.	646.39	646.41
L	677+86.75	64.5' Lt.	646.36	646.41
M	677+96.92	64.5' Lt.	646.34	646.40
N	678+07.09	64.5' Lt.	646.31	646.37
O	678+17.26	64.5' Lt.	646.29	646.33
☉ Brg. N. Abut.	678+30.43	64.5' Lt.	646.25	646.25
Bk. N. Abut.	678+32.37	64.5' Lt.	646.25	646.25



PLAN
(WB Spans 7 thru 9)

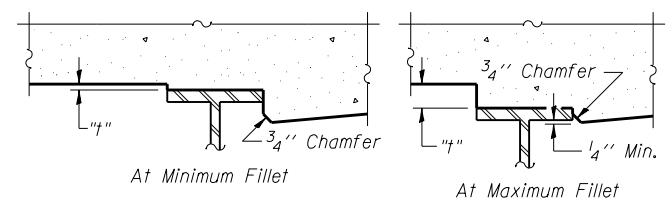


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)
 Note:
 The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets S-27 thru S-29.

TABLE OF DIMENSIONS

Beam Line	L1	L2	L3	H	I	J
1W	62'-9"	63'-4 ³ / ₈ "	62'-11 ¹ / ₂ "	12'-9"	13'-4 ³ / ₈ "	12'-11 ¹ / ₂ "
2W	62'-8 ⁷ / ₈ "	63'-4 ¹ / ₄ "	62'-11 ³ / ₈ "	12'-8 ⁷ / ₈ "	13'-4 ¹ / ₄ "	12'-11 ³ / ₈ "
3W	62'-8 ³ / ₄ "	63'-4 ¹ / ₈ "	62'-11 ¹ / ₄ "	12'-8 ³ / ₄ "	13'-4 ¹ / ₈ "	12'-11 ¹ / ₄ "
4W	62'-8 ⁵ / ₈ "	63'-4"	62'-11 ¹ / ₈ "	12'-8 ⁵ / ₈ "	13'-4"	12'-11 ¹ / ₈ "
5W	62'-8 ¹ / ₂ "	63'-3 ⁷ / ₈ "	62'-11"	12'-8 ¹ / ₂ "	13'-3 ⁷ / ₈ "	12'-11"
6W	62'-8 ³ / ₈ "	63'-3 ³ / ₄ "	62'-11"	12'-8 ³ / ₈ "	13'-3 ³ / ₄ "	12'-11"
W.B. P.G.L.	62'-8 ³ / ₈ "	63'-3 ³ / ₄ "	62'-10 ⁷ / ₈ "	12'-8 ³ / ₈ "	13'-3 ³ / ₄ "	12'-10 ⁷ / ₈ "
7W	62'-8 ¹ / ₄ "	63'-3 ⁵ / ₈ "	62'-10 ⁷ / ₈ "	12'-8 ¹ / ₄ "	13'-3 ⁵ / ₈ "	12'-10 ⁷ / ₈ "
Stage Construction Line	62'-8 ¹ / ₈ "	63'-3 ⁵ / ₈ "	62'-10 ³ / ₄ "	12'-8 ¹ / ₈ "	13'-3 ⁵ / ₈ "	12'-10 ³ / ₄ "
8W	62'-8 ¹ / ₈ "	63'-3 ¹ / ₂ "	62'-10 ³ / ₄ "	12'-8 ¹ / ₈ "	13'-3 ¹ / ₂ "	12'-10 ³ / ₄ "
9W	62'-8"	63'-3 ³ / ₈ "	62'-10 ⁵ / ₈ "	12'-8"	13'-3 ³ / ₈ "	12'-10 ⁵ / ₈ "
10W	62'-7 ⁷ / ₈ "	63'-3 ³ / ₈ "	62'-10 ¹ / ₂ "	12'-7 ⁷ / ₈ "	13'-3 ³ / ₈ "	12'-10 ¹ / ₂ "
11W	62'-7 ³ / ₄ "	63'-3 ¹ / ₄ "	62'-10 ³ / ₈ "	12'-7 ³ / ₄ "	13'-3 ¹ / ₄ "	12'-10 ³ / ₈ "
12W	62'-7 ⁵ / ₈ "	63'-3 ¹ / ₈ "	62'-10 ³ / ₈ "	12'-7 ⁵ / ₈ "	13'-3 ¹ / ₈ "	12'-10 ³ / ₈ "



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown. These elevations subtracted from the "Theoretical Grade Elevations Adjusted For Dead Load Deflection" shown on Sheets S-27 thru S-29, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

N:\PROJECTS\00033384\0004.US\30\Design\Structural\CAD\33384_27 WB Unit 3 - Top of Slab Elev. 1.dgn
 Clorba Group, Inc.
 CONSULTING ENGINEERS
 6507 North Cumberland Avenue
 Suite 402 Chicago, Illinois 60656
 Tel: 773.724.4000
 Fax: 773.724.4014
 Email: clorba@clorba.com

USER NAME = kaisneros	DESIGNED - AMK	REVISED -
PLOT SCALE = 25x0 1/2" / 1"	CHECKED - DL	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - DL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WB UNIT 3 - TOP OF SLAB ELEVATIONS 1
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 502
CONTRACT NO. 60N87				ILLINOIS FED. AID PROJECT

BEAM 3W (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+40.20	58.5' Lt.	646.79	646.79
B	676+50.35	58.5' Lt.	646.78	646.82
C	676+60.51	58.5' Lt.	646.78	646.83
D	676+70.66	58.5' Lt.	646.77	646.83
E	676+80.82	58.5' Lt.	646.76	646.81
	676+90.98	58.5' Lt.	646.75	646.77
☉ Pier 7	677+03.91	58.5' Lt.	646.73	646.73
F	677+14.06	58.5' Lt.	646.72	646.72
G	677+24.22	58.5' Lt.	646.71	646.71
H	677+34.38	58.5' Lt.	646.69	646.70
I	677+44.53	58.5' Lt.	646.67	646.68
J	677+54.69	58.5' Lt.	646.65	646.65
☉ Pier 8	677+68.24	58.5' Lt.	646.63	646.63
K	677+78.40	58.5' Lt.	646.61	646.62
L	677+88.55	58.5' Lt.	646.58	646.62
M	677+98.71	58.5' Lt.	646.56	646.61
N	678+08.86	58.5' Lt.	646.53	646.59
O	678+19.02	58.5' Lt.	646.50	646.55
☉ Brg. N. Abut.	678+32.15	58.5' Lt.	646.47	646.47
Bk. N. Abut.	678+34.09	58.5' Lt.	646.46	646.46

BEAM 4W (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+42.25	52.5' Lt.	647.01	647.01
B	676+52.39	52.5' Lt.	647.00	647.04
C	676+62.53	52.5' Lt.	647.00	647.05
D	676+72.67	52.5' Lt.	646.99	647.05
E	676+82.81	52.5' Lt.	646.98	647.03
	676+92.95	52.5' Lt.	646.97	646.99
☉ Pier 7	677+05.85	52.5' Lt.	646.95	646.95
F	677+15.99	52.5' Lt.	646.94	646.94
G	677+26.13	52.5' Lt.	646.93	646.93
H	677+36.27	52.5' Lt.	646.91	646.92
I	677+46.41	52.5' Lt.	646.89	646.90
J	677+56.55	52.5' Lt.	646.87	646.87
☉ Pier 8	677+70.07	52.5' Lt.	646.85	646.85
K	677+80.21	52.5' Lt.	646.82	646.84
L	677+90.35	52.5' Lt.	646.80	646.84
M	678+00.49	52.5' Lt.	646.78	646.83
N	678+10.63	52.5' Lt.	646.75	646.81
O	678+20.77	52.5' Lt.	646.72	646.76
☉ Brg. N. Abut.	678+33.87	52.5' Lt.	646.69	646.69
Bk. N. Abut.	678+35.80	52.5' Lt.	646.68	646.68

BEAM 5W (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+44.30	46.5' Lt.	647.23	647.23
A	676+54.42	46.5' Lt.	647.23	647.26
B	676+64.55	46.5' Lt.	647.22	647.27
C	676+74.67	46.5' Lt.	647.21	647.27
D	676+84.79	46.5' Lt.	647.20	647.25
E	676+94.91	46.5' Lt.	647.19	647.21
☉ Pier 7	677+07.78	46.5' Lt.	647.17	647.17
F	677+17.91	46.5' Lt.	647.16	647.16
G	677+28.03	46.5' Lt.	647.14	647.15
H	677+38.15	46.5' Lt.	647.13	647.14
I	677+48.28	46.5' Lt.	647.11	647.12
J	677+58.40	46.5' Lt.	647.09	647.09
☉ Pier 8	677+71.89	46.5' Lt.	647.06	647.06
K	677+82.02	46.5' Lt.	647.04	647.06
L	677+92.14	46.5' Lt.	647.02	647.06
M	678+02.26	46.5' Lt.	646.99	647.05
N	678+12.38	46.5' Lt.	646.97	647.02
O	678+22.51	46.5' Lt.	646.94	646.98
☉ Brg. N. Abut.	678+35.58	46.5' Lt.	646.90	646.90
Bk. N. Abut.	678+37.51	46.5' Lt.	646.90	646.90

BEAM 6W (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+46.34	40.5' Lt.	647.45	647.45
A	676+56.45	40.5' Lt.	647.45	647.48
B	676+66.55	40.5' Lt.	647.44	647.49
C	676+76.66	40.5' Lt.	647.43	647.49
D	676+86.77	40.5' Lt.	647.42	647.47
E	676+96.87	40.5' Lt.	647.41	647.43
☉ Pier 7	677+09.71	40.5' Lt.	647.39	647.39
F	677+19.82	40.5' Lt.	647.38	647.38
G	677+29.93	40.5' Lt.	647.36	647.37
H	677+40.03	40.5' Lt.	647.35	647.35
I	677+50.14	40.5' Lt.	647.33	647.33
J	677+60.25	40.5' Lt.	647.31	647.31
☉ Pier 8	677+73.71	40.5' Lt.	647.28	647.28
K	677+83.82	40.5' Lt.	647.26	647.28
L	677+93.92	40.5' Lt.	647.24	647.28
M	678+04.03	40.5' Lt.	647.21	647.27
N	678+14.14	40.5' Lt.	647.18	647.24
O	678+24.24	40.5' Lt.	647.16	647.20
☉ Brg. N. Abut.	678+37.29	40.5' Lt.	647.12	647.12
Bk. N. Abut.	678+39.22	40.5' Lt.	647.11	647.11

WB P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+47.36	37.5' Lt.	647.56	647.56
A	676+57.45	37.5' Lt.	647.56	647.59
B	676+67.55	37.5' Lt.	647.55	647.60
C	676+77.65	37.5' Lt.	647.54	647.60
D	676+87.75	37.5' Lt.	647.53	647.58
E	676+97.85	37.5' Lt.	647.52	647.54
☉ Pier 7	677+10.67	37.5' Lt.	647.50	647.50
F	677+20.77	37.5' Lt.	647.49	647.49
G	677+30.87	37.5' Lt.	647.47	647.48
H	677+40.97	37.5' Lt.	647.46	647.46
I	677+51.07	37.5' Lt.	647.44	647.44
J	677+61.17	37.5' Lt.	647.42	647.42
☉ Pier 8	677+74.61	37.5' Lt.	647.39	647.39
K	677+84.71	37.5' Lt.	647.37	647.39
L	677+94.81	37.5' Lt.	647.34	647.39
M	678+04.91	37.5' Lt.	647.32	647.38
N	678+15.01	37.5' Lt.	647.29	647.35
O	678+25.11	37.5' Lt.	647.27	647.31
☉ Brg. N. Abut.	678+38.14	37.5' Lt.	647.23	647.23
Bk. N. Abut.	678+40.07	37.5' Lt.	647.22	647.22

BEAM 7W (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+48.37	34.5' Lt.	647.67	647.67
A	676+58.46	34.5' Lt.	647.67	647.70
B	676+68.55	34.5' Lt.	647.66	647.71
C	676+78.64	34.5' Lt.	647.65	647.71
D	676+88.74	34.5' Lt.	647.64	647.69
E	676+98.83	34.5' Lt.	647.63	647.65
☉ Pier 7	677+11.63	34.5' Lt.	647.61	647.61
F	677+21.73	34.5' Lt.	647.60	647.60
G	677+31.82	34.5' Lt.	647.58	647.59
H	677+41.91	34.5' Lt.	647.57	647.57
I	677+52.00	34.5' Lt.	647.55	647.55
J	677+62.09	34.5' Lt.	647.53	647.53
☉ Pier 8	677+75.52	34.5' Lt.	647.50	647.50
K	677+85.61	34.5' Lt.	647.48	647.50
L	677+95.70	34.5' Lt.	647.45	647.50
M	678+05.79	34.5' Lt.	647.43	647.49
N	678+15.88	34.5' Lt.	647.40	647.46
O	678+25.98	34.5' Lt.	647.37	647.41
☉ Brg. N. Abut.	678+38.99	34.5' Lt.	647.34	647.34
Bk. N. Abut.	678+40.91	34.5' Lt.	647.33	647.33

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+49.88	30.04' Lt.	647.84	647.84
A	676+59.96	30.04' Lt.	647.83	647.86
B	676+70.04	30.04' Lt.	647.82	647.88
C	676+80.12	30.04' Lt.	647.81	647.87
D	676+90.19	30.04' Lt.	647.80	647.85
E	677+00.27	30.04' Lt.	647.79	647.82
☉ Pier 7	677+13.06	30.04' Lt.	647.78	647.78
F	677+23.14	30.04' Lt.	647.76	647.76
G	677+33.22	30.04' Lt.	647.74	647.75
H	677+43.30	30.04' Lt.	647.73	647.74
I	677+53.38	30.04' Lt.	647.71	647.71
J	677+63.45	30.04' Lt.	647.69	647.69
☉ Pier 8	677+76.86	30.04' Lt.	647.66	647.66
K	677+86.94	30.04' Lt.	647.64	647.66
L	677+97.02	30.04' Lt.	647.61	647.66
M	678+07.10	30.04' Lt.	647.59	647.65
N	678+17.18	30.04' Lt.	647.56	647.62
O	678+27.26	30.04' Lt.	647.53	647.57
☉ Brg. N. Abut.	678+40.25	30.04' Lt.	647.50	647.50
Bk. N. Abut.	678+42.17	30.04' Lt.	647.49	647.49

NOTES

1. Work this sheet with Sheet No. S-27.
2. Offsets are taken from ☉ I-80.

N:\PROJECTS\0003384\004_US_30\Design\Structural\CAD\3384_28_WB_Unit_3 - Top of Slab Elev. 2.dgn



USER NAME = kaisneros	DESIGNED - AMK	REVISED -
	CHECKED - DL	REVISED -
PLOT SCALE = 0:2.0000' = 1" / 1"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WB UNIT 3 – TOP OF SLAB ELEVATIONS 2
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-28 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	503
CONTRACT NO. 60N87				
ILLINOIS FED. AID PROJECT				

BEAM 8W (EXISTING)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+50.40	28.5' Lt.	647.89	647.89
A	676+60.47	28.5' Lt.	647.89	647.92
B	676+70.55	28.5' Lt.	647.88	647.93
C	676+80.62	28.5' Lt.	647.87	647.93
D	676+90.70	28.5' Lt.	647.86	647.91
E	677+00.77	28.5' Lt.	647.85	647.87
☉ Pier 7	677+13.55	28.5' Lt.	647.83	647.83
F	677+23.63	28.5' Lt.	647.82	647.82
G	677+33.70	28.5' Lt.	647.80	647.80
H	677+43.78	28.5' Lt.	647.78	647.79
I	677+53.85	28.5' Lt.	647.77	647.77
J	677+63.93	28.5' Lt.	647.75	647.75
☉ Pier 8	677+77.32	28.5' Lt.	647.72	647.72
K	677+87.40	28.5' Lt.	647.69	647.71
L	677+97.47	28.5' Lt.	647.67	647.71
M	678+07.55	28.5' Lt.	647.65	647.70
N	678+17.62	28.5' Lt.	647.62	647.68
O	678+27.70	28.5' Lt.	647.59	647.63
☉ Brg. N. Abut.	678+40.69	28.5' Lt.	647.55	647.55
Bk. N. Abut.	678+42.61	28.5' Lt.	647.55	647.55

BEAM 9W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+52.53	22.17' Lt.	648.13	648.13
A	676+62.59	22.17' Lt.	648.12	648.15
B	676+72.65	22.17' Lt.	648.11	648.16
C	676+82.70	22.17' Lt.	648.10	648.16
D	676+92.76	22.17' Lt.	648.09	648.14
E	677+02.82	22.17' Lt.	648.08	648.11
☉ Pier 7	677+15.57	22.17' Lt.	648.06	648.06
F	677+25.62	22.17' Lt.	648.05	648.05
G	677+35.68	22.17' Lt.	648.03	648.04
H	677+45.74	22.17' Lt.	648.01	648.02
I	677+55.80	22.17' Lt.	648.00	648.00
J	677+65.86	22.17' Lt.	647.98	647.98
☉ Pier 8	677+79.22	22.17' Lt.	647.95	647.95
K	677+89.28	22.17' Lt.	647.92	647.94
L	677+99.34	22.17' Lt.	647.90	647.94
M	678+09.40	22.17' Lt.	647.87	647.93
N	678+19.46	22.17' Lt.	647.85	647.90
O	678+29.51	22.17' Lt.	647.82	647.86
☉ Brg. N. Abut.	678+42.47	22.17' Lt.	647.78	647.78
Bk. N. Abut.	678+44.39	22.17' Lt.	647.78	647.78

BEAM 10W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+54.65	15.83' Lt.	648.36	648.36
A	676+64.69	15.83' Lt.	648.35	648.38
B	676+74.74	15.83' Lt.	648.34	648.40
C	676+84.78	15.83' Lt.	648.33	648.39
D	676+94.82	15.83' Lt.	648.32	648.37
E	677+04.86	15.83' Lt.	648.31	648.34
☉ Pier 7	677+17.57	15.83' Lt.	648.29	648.29
F	677+27.61	15.83' Lt.	648.28	648.28
G	677+37.66	15.83' Lt.	648.26	648.27
H	677+47.70	15.83' Lt.	648.25	648.25
I	677+57.74	15.83' Lt.	648.23	648.23
J	677+67.78	15.83' Lt.	648.21	648.21
☉ Pier 8	677+81.11	15.83' Lt.	648.18	648.18
K	677+91.16	15.83' Lt.	648.15	648.17
L	678+01.20	15.83' Lt.	648.13	648.17
M	678+11.24	15.83' Lt.	648.10	648.16
N	678+21.28	15.83' Lt.	648.08	648.13
O	678+31.32	15.83' Lt.	648.05	648.09
☉ Brg. N. Abut.	678+44.25	15.83' Lt.	648.01	648.01
Bk. N. Abut.	678+46.16	15.83' Lt.	648.00	648.00

BEAM 11W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+56.77	9.5' Lt.	648.59	648.59
A	676+66.79	9.5' Lt.	648.59	648.62
B	676+76.82	9.5' Lt.	648.58	648.63
C	676+86.84	9.5' Lt.	648.57	648.62
D	676+96.87	9.5' Lt.	648.56	648.60
E	677+06.89	9.5' Lt.	648.54	648.57
☉ Pier 7	677+19.57	9.5' Lt.	648.53	648.53
F	677+29.60	9.5' Lt.	648.51	648.51
G	677+39.62	9.5' Lt.	648.49	648.50
H	677+49.65	9.5' Lt.	648.48	648.48
I	677+59.67	9.5' Lt.	648.46	648.46
J	677+69.70	9.5' Lt.	648.44	648.44
☉ Pier 8	677+83.0	9.5' Lt.	648.41	648.41
K	677+93.03	9.5' Lt.	648.38	648.40
L	678+03.05	9.5' Lt.	648.36	648.40
M	678+13.07	9.5' Lt.	648.33	648.39
N	678+23.10	9.5' Lt.	648.31	648.36
O	678+33.12	9.5' Lt.	648.28	648.32
☉ Brg. N. Abut.	678+46.02	9.5' Lt.	648.24	648.24
Bk. N. Abut.	678+47.93	9.5' Lt.	648.23	648.23

BEAM 12W

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
☉ N. Brg. Pier 6	676+58.88	3.17' Lt.	648.83	648.83
A	676+68.89	3.17' Lt.	648.82	648.85
B	676+78.89	3.17' Lt.	648.81	648.86
C	676+88.90	3.17' Lt.	648.80	648.86
D	676+98.91	3.17' Lt.	648.79	648.83
E	677+08.92	3.17' Lt.	648.78	648.80
☉ Pier 7	677+21.57	3.17' Lt.	648.76	648.76
F	677+31.58	3.17' Lt.	648.74	648.74
G	677+41.58	3.17' Lt.	648.73	648.73
H	677+51.59	3.17' Lt.	648.71	648.71
I	677+61.60	3.17' Lt.	648.69	648.69
J	677+71.61	3.17' Lt.	648.67	648.67
☉ Pier 8	677+84.88	3.17' Lt.	648.64	648.64
K	677+94.89	3.17' Lt.	648.61	648.63
L	678+04.90	3.17' Lt.	648.59	648.63
M	678+14.90	3.17' Lt.	648.56	648.62
N	678+24.91	3.17' Lt.	648.54	648.59
O	678+34.92	3.17' Lt.	648.51	648.55
☉ Brg. N. Abut.	678+47.79	3.17' Lt.	648.47	648.47
Bk. N. Abut.	678+49.69	3.17' Lt.	648.46	648.46

NOTES

- 1. Work this sheet with Sheet No. S-27.
- 2. Offsets are taken from ☉ I-80.

N:\PROJECTS\003384\004_US_30\Design\Structural\CAD\3384_29_WB_Unit_3 - Top of Slab Elev. 3.dgn



USER NAME = kaisneros	DESIGNED - AMK	REVISED -
	CHECKED - DL	REVISED -
PLOT SCALE = 0:2.0000' = 1" = 1'	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WB UNIT 3 - TOP OF SLAB ELEVATIONS 3
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-29 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	504
			CONTRACT NO. 60N87	
ILLINOIS FED. AID PROJECT				

WEST CURB LINE

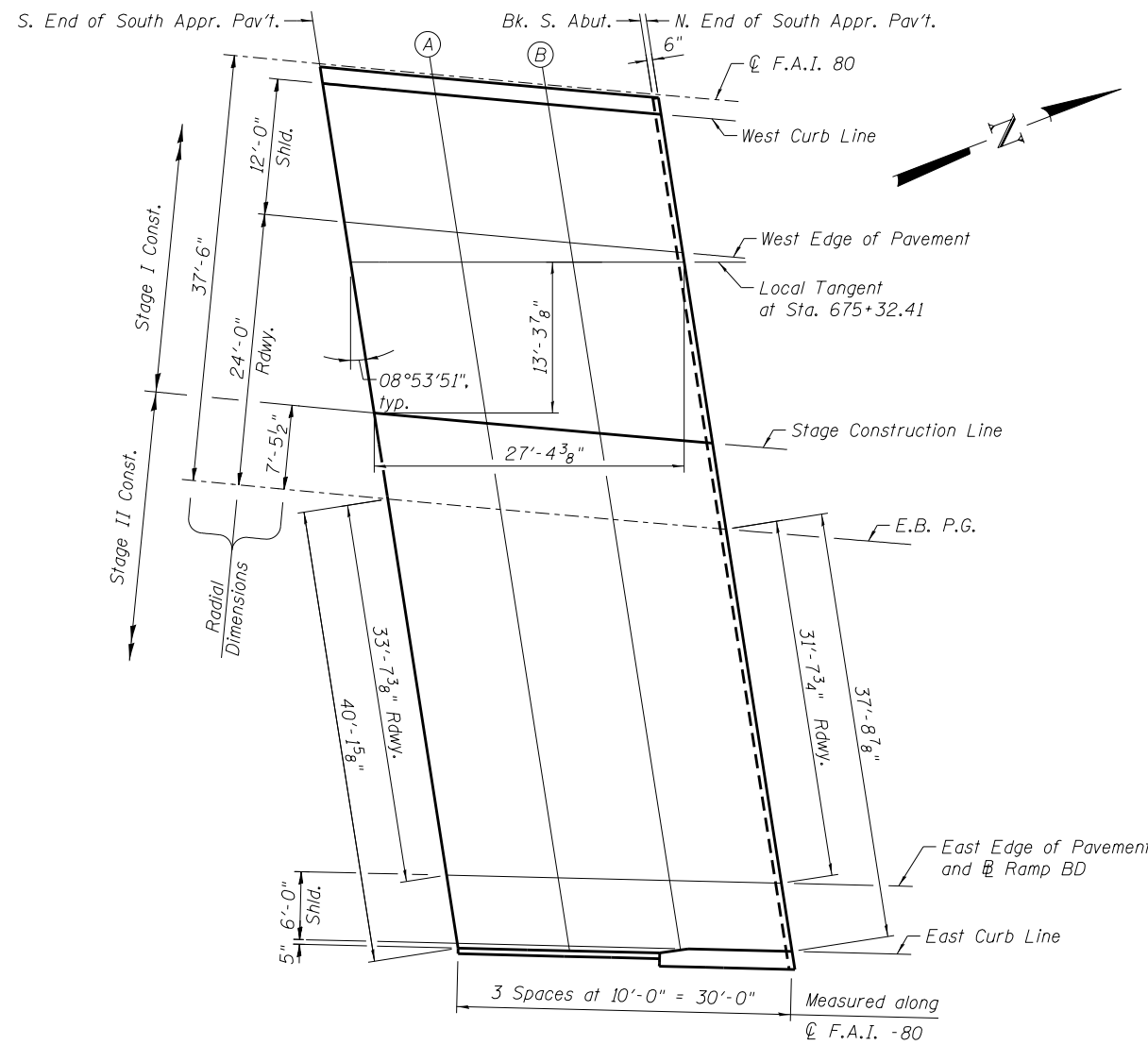
Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+69.08	1.5' Rt.	645.32
A	671+79.08	1.5' Rt.	645.38
B	671+89.07	1.5' Rt.	645.44
N. End of S. Appr. Pav't.	671+99.07	1.5' Rt.	645.50

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+72.14	13.5' Rt.	645.78
A	671+82.10	13.5' Rt.	645.84
B	671+92.07	13.5' Rt.	645.90
N. End of S. Appr. Pav't.	672+02.03	13.5' Rt.	645.96

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+76.32	30.04' Rt.	646.42
A	671+86.24	30.04' Rt.	646.48
B	671+96.16	30.04' Rt.	646.54
N. End of S. Appr. Pav't.	672+06.08	30.04' Rt.	646.60



PLAN

E.B. P.G.

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+78.19	37.5' Rt.	646.71
A	671+88.09	37.5' Rt.	646.77
B	671+97.99	37.5' Rt.	646.83
N. End of S. Appr. Pav't.	672+07.89	37.5' Rt.	646.88

EAST EDGE OF PAVEMENT AND RAMP BD

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+86.30	70.1' Rt.	647.96
A	671+95.95	69.46' Rt.	648.00
B	672+05.62	68.84' Rt.	648.03
N. End of S. Appr. Pav't.	672+15.29	68.25' Rt.	648.06

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+87.86	76.42' Rt.	648.21
A	671+97.50	75.79' Rt.	648.24
B	672+07.07	74.87' Rt.	648.26
N. End of S. Appr. Pav't.	672+16.70	74.17' Rt.	648.29

Note:
All offsets are taken from the $\text{\textcircled{C}}$ of F.A.I.-80.

N:\PROJ\10003384\004\US_30\Design\Structural\CAD\3384_30_Top of South Approach Slab Elevations - 1.dgn



USER NAME = kaisneros	DESIGNED - AMK	REVISED -
CHECKED - DL	REVISOR -	REVISOR -
PLOT SCALE = 1/8" = 1' / in.	DRAWN - RD	REVISOR -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISOR -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SOUTH APPROACH SLAB ELEVATIONS (E.B.)
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-30 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	505
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

WEST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+49.10	75.02' Lt.	644.86
A	671+59.41	74.68' Lt.	644.93
B	671+69.81	73.96' Lt.	645.02
N. End of S. Appr. Pav't.	671+80.10	73.63' Lt.	645.09

WEST EDGE OF PAVEMENT AND RAMP DA

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+50.85	68.47' Lt.	645.11
A	671+61.23	67.76' Lt.	645.20
B	671+71.61	67.05' Lt.	645.28
N. End of S. Appr. Pav't.	671+81.98	66.34' Lt.	645.37

W.B P.G.

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+59.0	37.5' Lt.	646.31
A	671+69.11	37.5' Lt.	646.36
B	671+79.22	37.5' Lt.	646.42
N. End of S. Appr. Pav't.	671+89.32	37.5' Lt.	646.47

STAGE CONSTRUCTION LINE

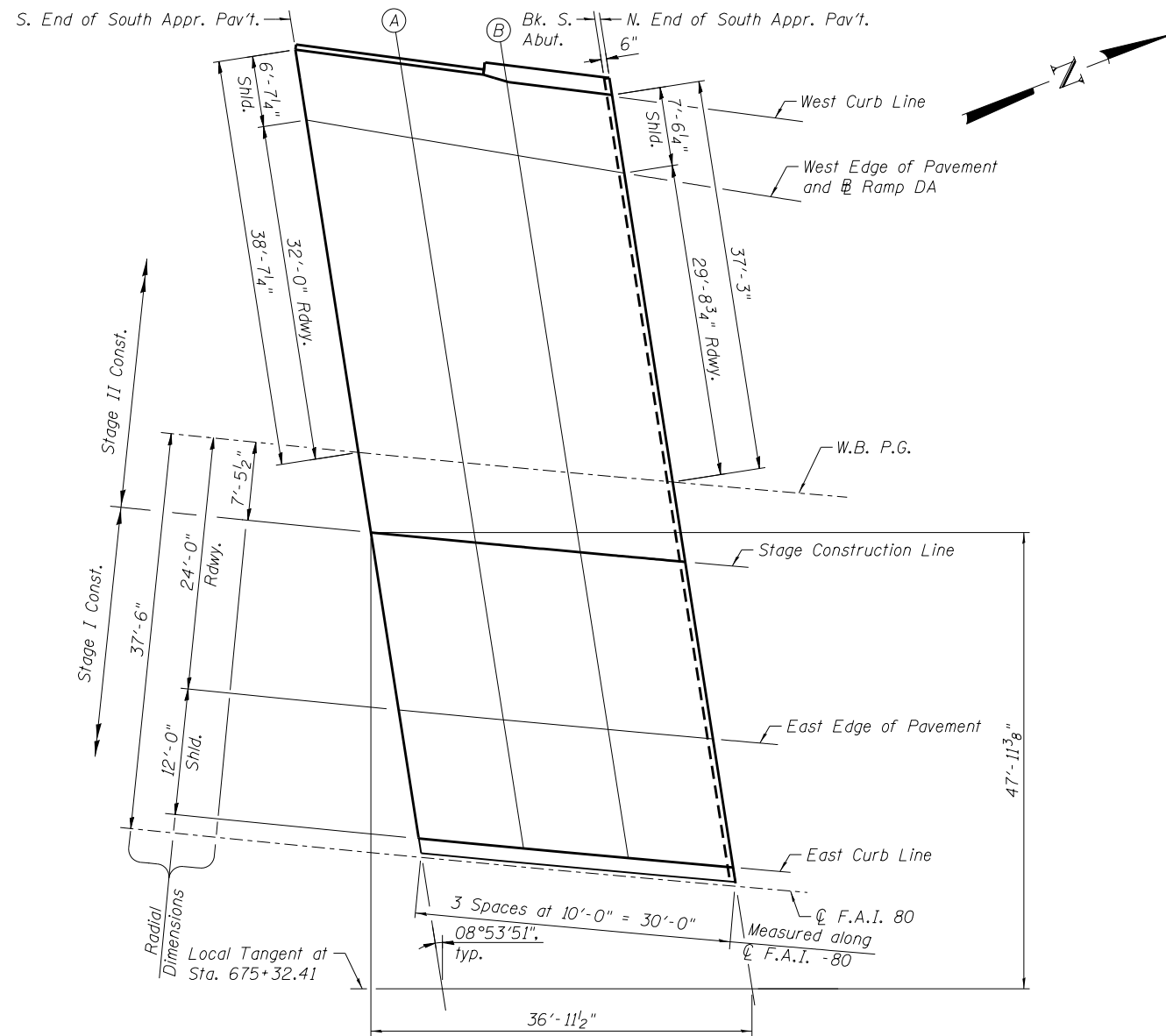
Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+60.95	30.04' Lt.	646.59
A	671+71.03	30.04' Lt.	646.65
B	671+81.12	30.04' Lt.	646.70
N. End of S. Appr. Pav't.	671+91.20	30.04' Lt.	646.76

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+65.24	13.5' Lt.	647.23
A	671+75.27	13.5' Lt.	647.28
B	671+85.31	13.5' Lt.	647.34
N. End of S. Appr. Pav't.	671+95.34	13.5' Lt.	647.39

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of S. Appr. Pav't.	671+68.31	1.5' Lt.	647.69
A	671+78.32	1.5' Lt.	647.74
B	671+88.32	1.5' Lt.	647.80
N. End of S. Appr. Pav't.	671+98.33	1.5' Lt.	647.85



Note:
All offsets are taken from the C of F.A.I.-80.

PLAN

N:\PROJECTS\0003384\004\US_30\Design\Structural\CAD\3384_31_Top of South Approach Slab Elevations - 2.dgn



USER NAME = kaisneros	DESIGNED - AMK	REVISED -
	CHECKED - DL	REVISED -
PLOT SCALE = 1/8" = 1' / in.	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SOUTH APPROACH SLAB ELEVATIONS (W.B.)
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-31 OF S-118 SHEETS

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 506
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

WEST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+50.99	1.5' Rt.	646.39
C	678+60.98	1.5' Rt.	646.36
D	678+70.98	1.5' Rt.	646.32
N. End of N. Appr. Pav't.	678+80.97	1.5' Rt.	646.29

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+54.30	13.5' Rt.	646.82
C	678+64.26	13.5' Rt.	646.79
D	678+74.22	13.5' Rt.	646.76
N. End of N. Appr. Pav't.	678+84.19	13.5' Rt.	646.72

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+58.83	30.04' Rt.	647.42
C	678+68.75	30.04' Rt.	647.39
D	678+78.67	30.04' Rt.	647.35
N. End of N. Appr. Pav't.	678+88.58	30.04' Rt.	647.32

E.B. P.G.

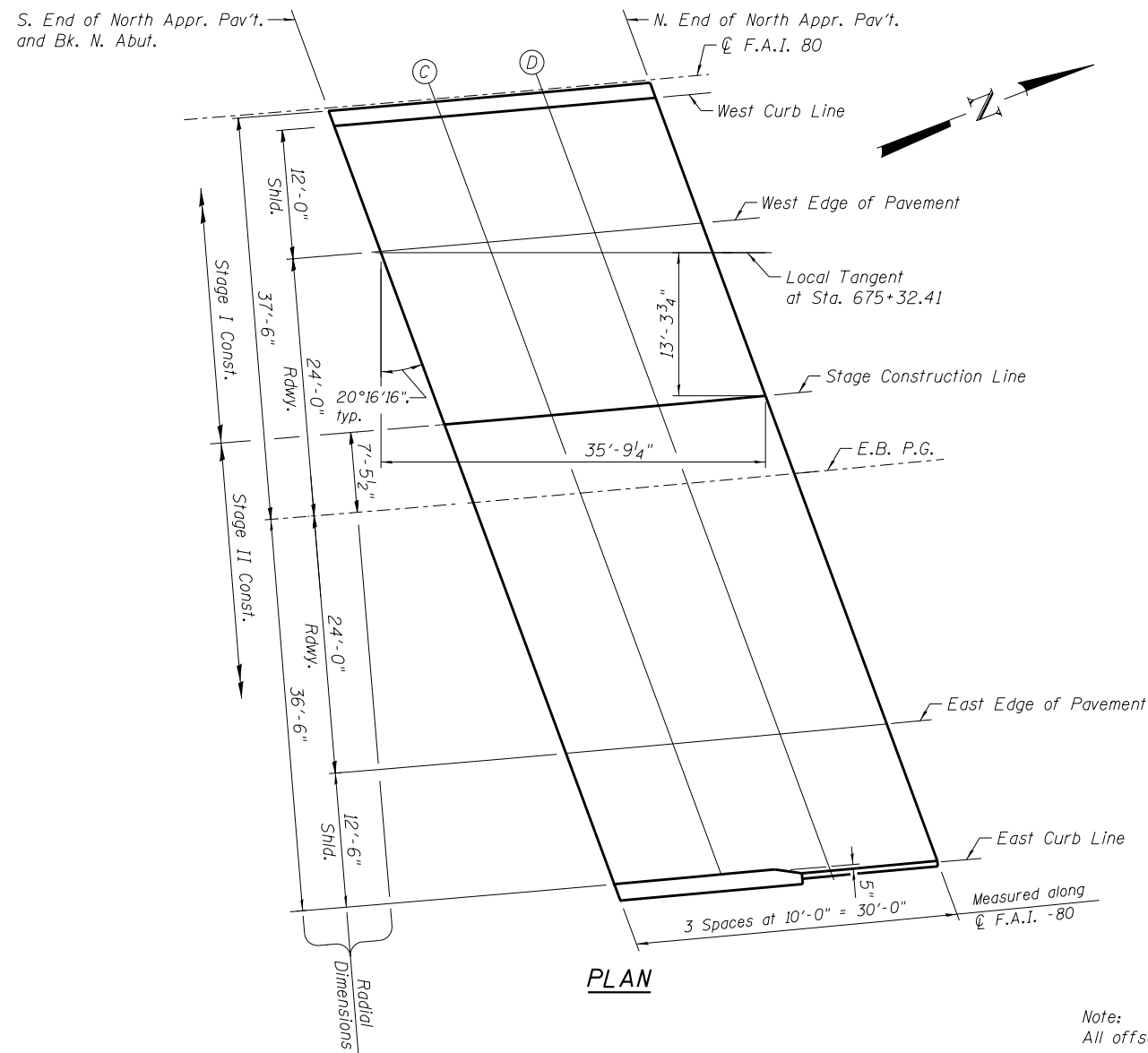
Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+60.86	37.5' Rt.	647.69
C	678+70.76	37.5' Rt.	647.66
D	678+80.66	37.5' Rt.	647.62
N. End of N. Appr. Pav't.	678+90.55	37.5' Rt.	647.59

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+67.34	61.5' Rt.	648.56
C	678+77.17	61.5' Rt.	648.52
D	678+87.0	61.5' Rt.	648.49
N. End of N. Appr. Pav't.	678+96.83	61.5' Rt.	648.45

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+70.69	74.01' Rt.	649.01
C	678+80.51	74.09' Rt.	648.98
D	678+90.44	74.61' Rt.	648.96
N. End of N. Appr. Pav't.	679+00.27	74.75' Rt.	648.93



N:\PROJ\0003384\004_US_30\Design\Structural\CAD\3384_32_Top of North Approach Slab Elevations - 1.dgn



USER NAME = kaisneros	DESIGNED - AMK	REVISED -
	CHECKED - DL	REVISED -
PLOT SCALE = 16x0 '1" / in.	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF NORTH APPROACH SLAB ELEVATIONS (E.B.)
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-32 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	507
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

WEST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+29.77	73.5' Lt.	645.92
C	678+39.97	73.57' Lt.	645.89
D	678+50.07	73.94' Lt.	645.84
N. End of N. Appr. Pav't.	678+60.29	73.93' Lt.	645.81

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+33.23	61.5' Lt.	646.35
C	678+43.40	61.5' Lt.	646.32
D	678+53.58	61.5' Lt.	646.29
N. End of N. Appr. Pav't.	678+63.76	61.5' Lt.	646.26

W.B P.G.

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+40.07	37.5' Lt.	647.22
C	678+50.17	37.5' Lt.	647.19
D	678+60.28	37.5' Lt.	647.16
N. End of N. Appr. Pav't.	678+70.39	37.5' Lt.	647.13

STAGE CONSTRUCTION LINE

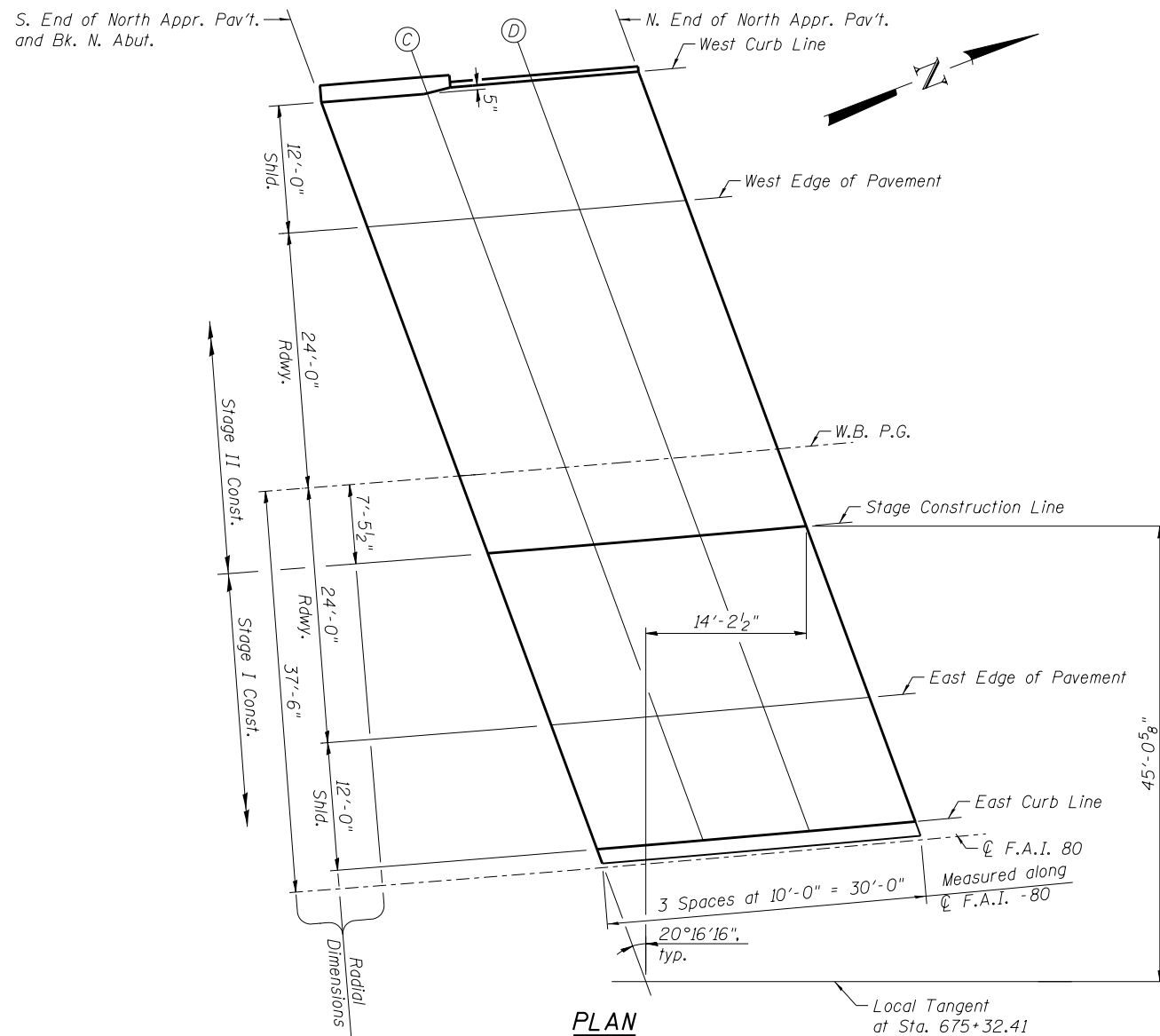
Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+42.17	30.04' Lt.	647.49
C	678+52.26	30.04' Lt.	647.46
D	678+62.34	30.04' Lt.	647.43
N. End of N. Appr. Pav't.	678+72.43	30.04' Lt.	647.39

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+46.81	13.5' Lt.	648.09
C	678+56.85	13.5' Lt.	648.06
D	678+66.89	13.5' Lt.	648.02
N. End of N. Appr. Pav't.	678+76.93	13.5' Lt.	647.99

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
S. End of N. Appr. Pav't.	678+50.15	1.5' Lt.	648.52
C	678+60.16	1.5' Lt.	648.49
D	678+70.16	1.5' Lt.	648.46
N. End of N. Appr. Pav't.	678+80.17	1.5' Lt.	648.42



Note:
All offsets are taken from the C of F.A.I.-80.

N:\PROJ\0003384\004\US_30\Design\Structural\CAD\3384_33 Top of North Approach Slab Elevations - 2.dgn



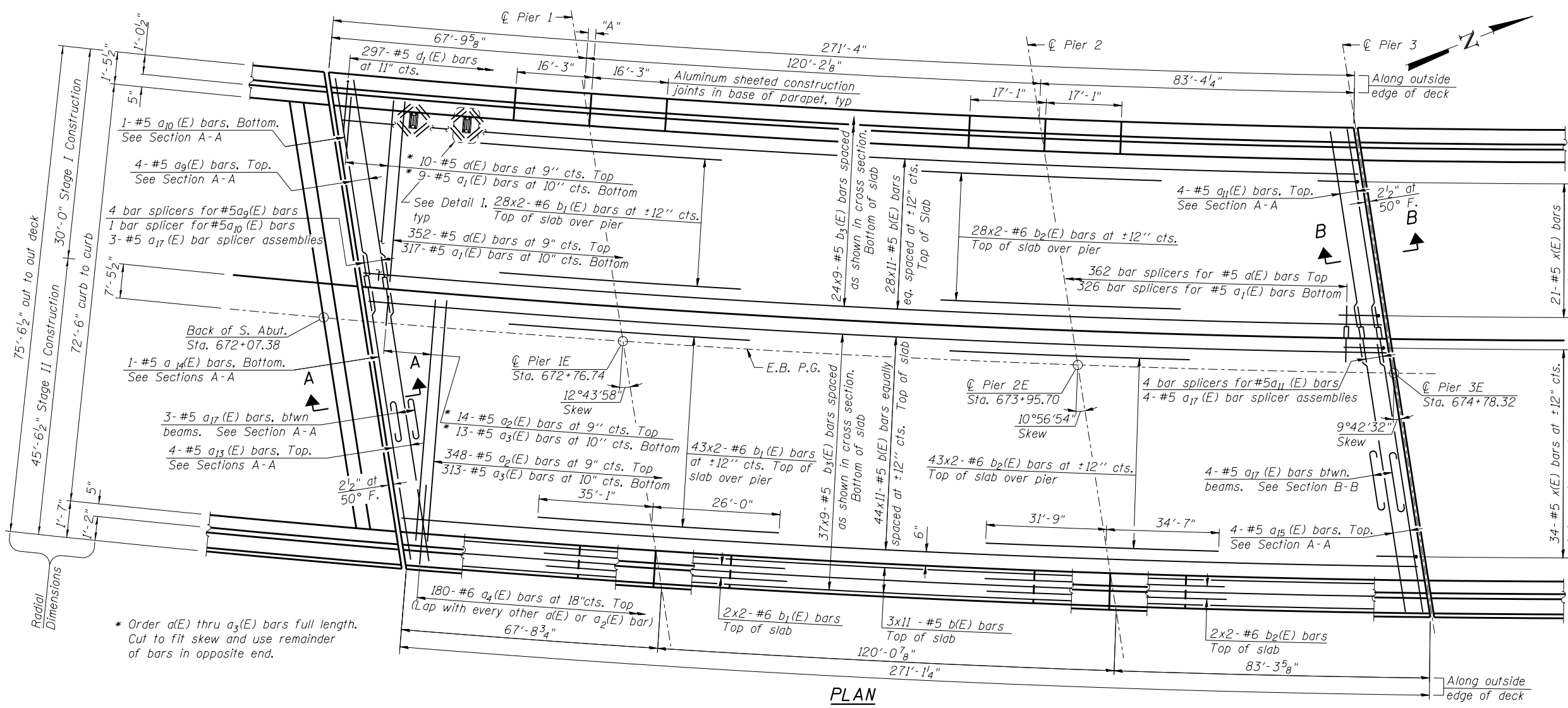
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	CHECKED - DL	REVISED -
PLOT SCALE = 1/8" = 1' / in.	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF NORTH APPROACH SLAB ELEVATIONS (W.B.)
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-33 OF S-118 SHEETS

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 508
			CONTRACT NO. 60N87	
ILLINOIS FED. AID PROJECT				

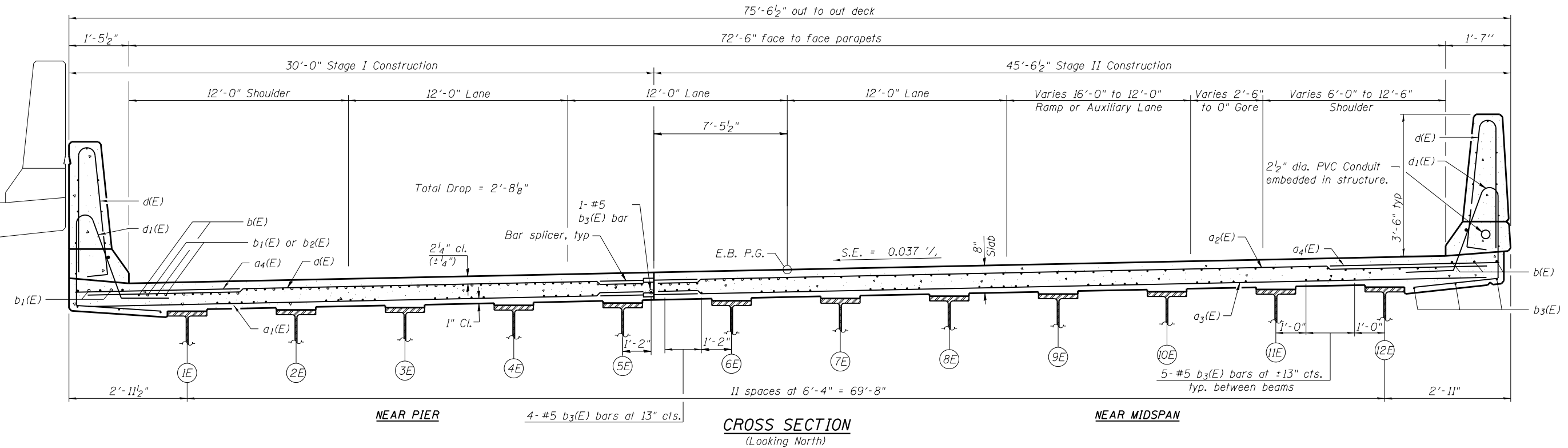


- NOTES**
- See Sheet S-36 for Sections A-A and B-B, bar bending diagrams, Detail 1 and Bill of Material.
 - Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
 - See Sheet S-35 for parapet reinforcement.
 - See Sheet S-109 for Bar Splicer details.
 - Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S-56.

MINIMUM BAR LAP
(Deck)
#5 bar = 3'-3"
#6 bar = 3'-10"

DIMENSION "A"

	W. Par.	E. Par.
Pier 1	4"	4 1/4"
Pier 2	3 3/8"	3 5/8"



N:\PROJECTS\00033384\004\US_30\Design\Structural\CAD\33384_34_EB_Unit 1 - Deck Plan and Cross-Section.dgn



USER NAME = kaisneros	DESIGNED - BWS	REVISED -
PLOT SCALE = 32x0.0000 '1" = 1"	CHECKED - AMK	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - MHT	REVISED -

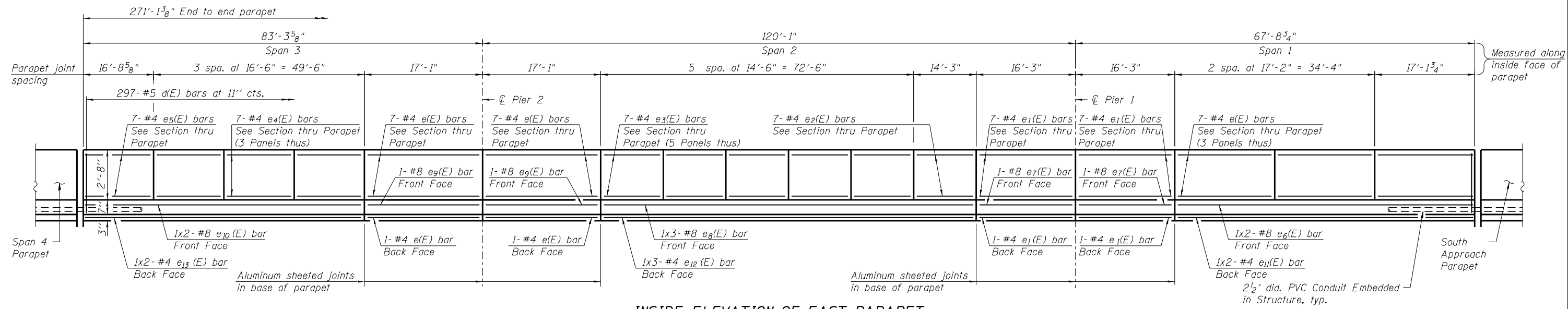
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EB UNIT 1 - DECK PLAN & CROSS SECTION
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

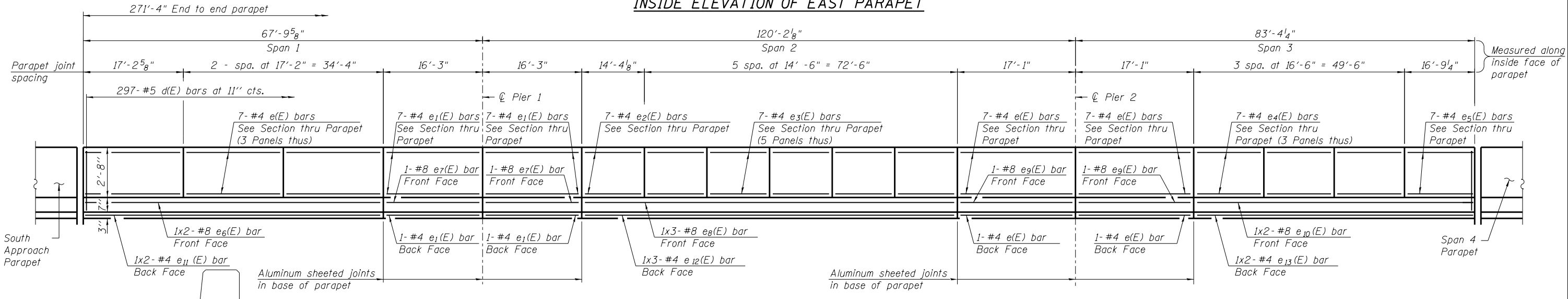
SHEET NO. S-34 OF S-118 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	509

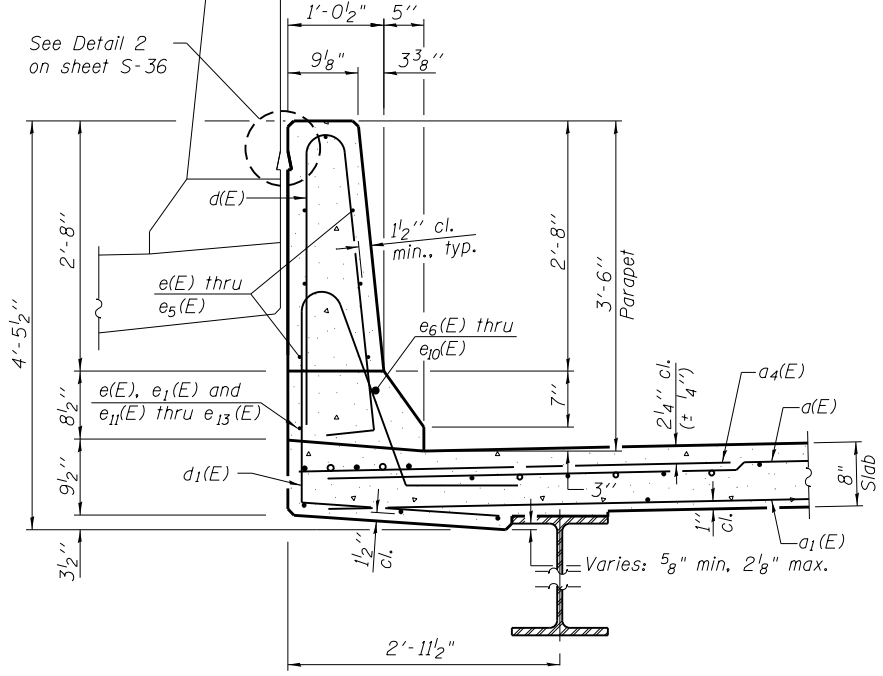
CONTRACT NO. 60N87
ILLINOIS FED. AID PROJECT



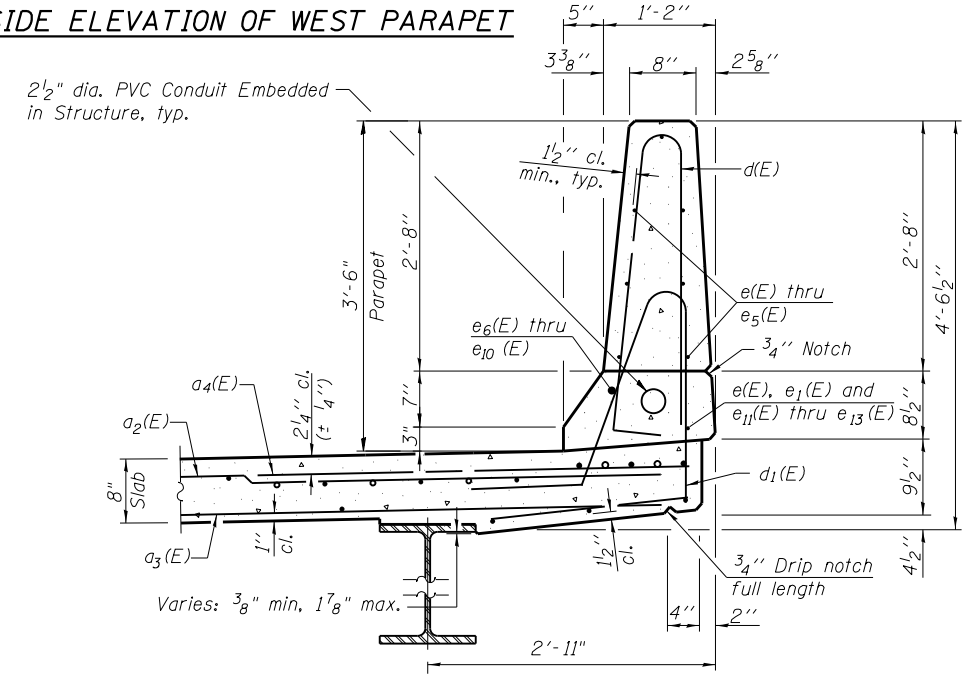
INSIDE ELEVATION OF EAST PARAPET



INSIDE ELEVATION OF WEST PARAPET



SECTION THRU WEST PARAPET



SECTION THRU EAST PARAPET

MINIMUM BAR LAP

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

NOTES

1. Work this Sheet with Sheet Nos. S-34 and S-36
2. Bars indicated thus 1x3 - #8 etc. indicates 1 line of bars with 3 lengths per line
3. See sheet S-36 for Parapet Joint Details, Bar bending diagrams and Bill of Material

N:\PROJ\10003384\004_US_30\Design\Structural\CAD\3384_35_EB_Unit_1 - Parapet Elevations and Details.dgn
 Clorba Group, Inc.
 CONSULTING ENGINEERS
 6507 North Cass Street
 Suite 402 Chicago, Illinois 60656
 Tel: 773.724.4000
 Fax: 773.775.4014
 Email: clorba@clorba.com

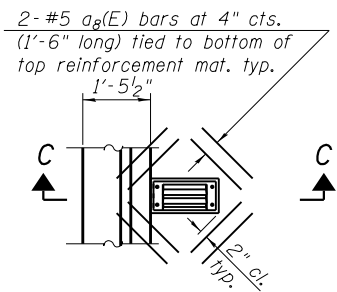
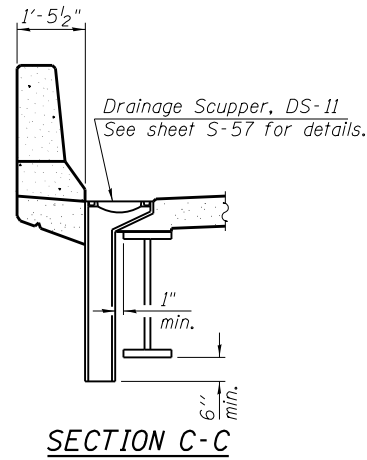
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	CHECKED - AMK	REVISED -
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PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

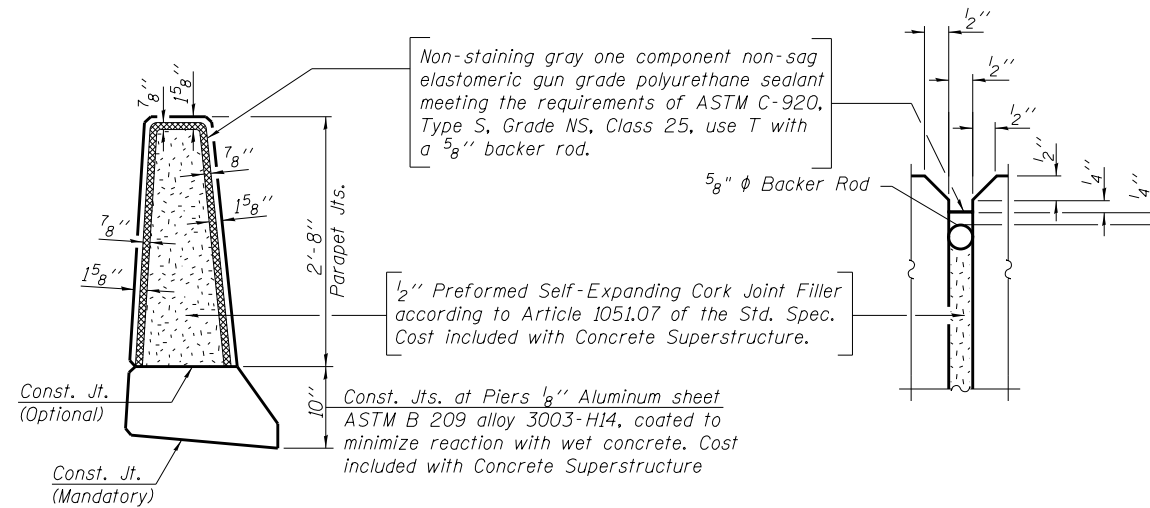
EB UNIT 1 - PARAPET ELEVATIONS AND DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-35 OF S-118 SHEETS

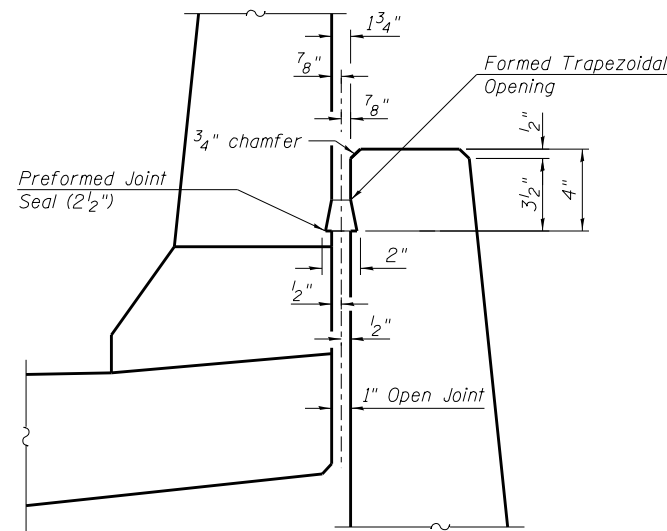
F.A.I. R.T.E. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 510
			CONTRACT NO. 60N87	
ILLINOIS FED. AID PROJECT				



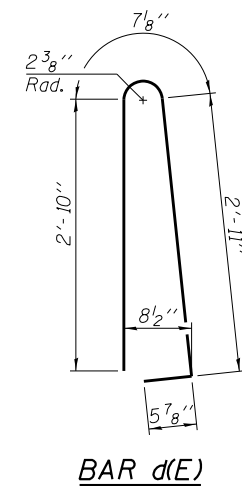
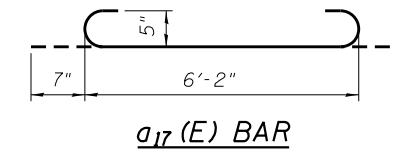
Note:
Cut longitudinal reinforcement to clear drainage scuppers.



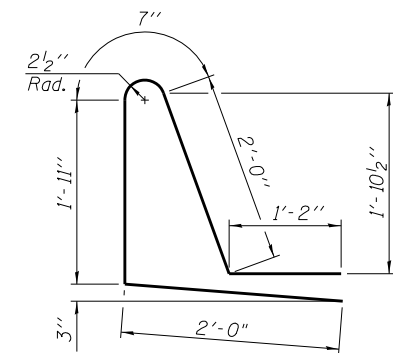
PARAPET JOINT DETAILS



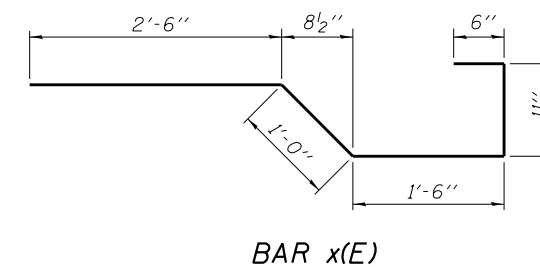
DETAIL 2



BAR d(E)



BAR d1(E)

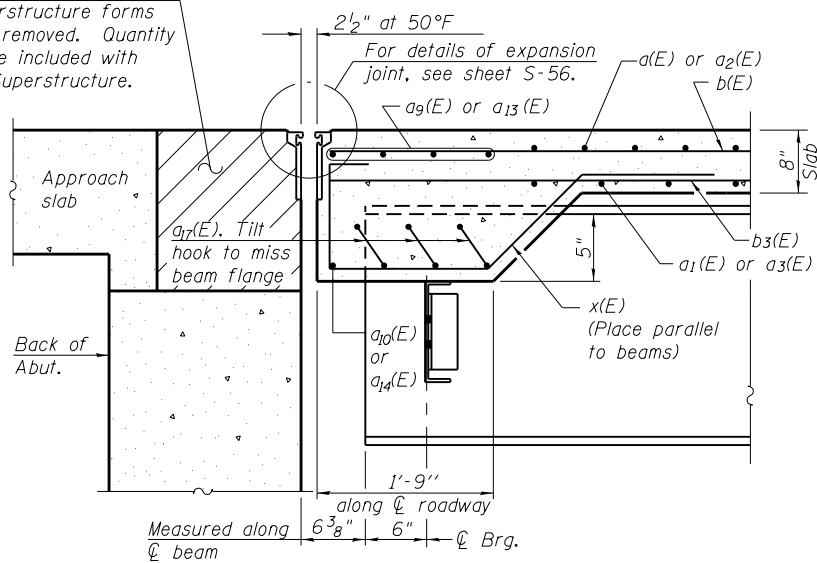


BAR x(E)

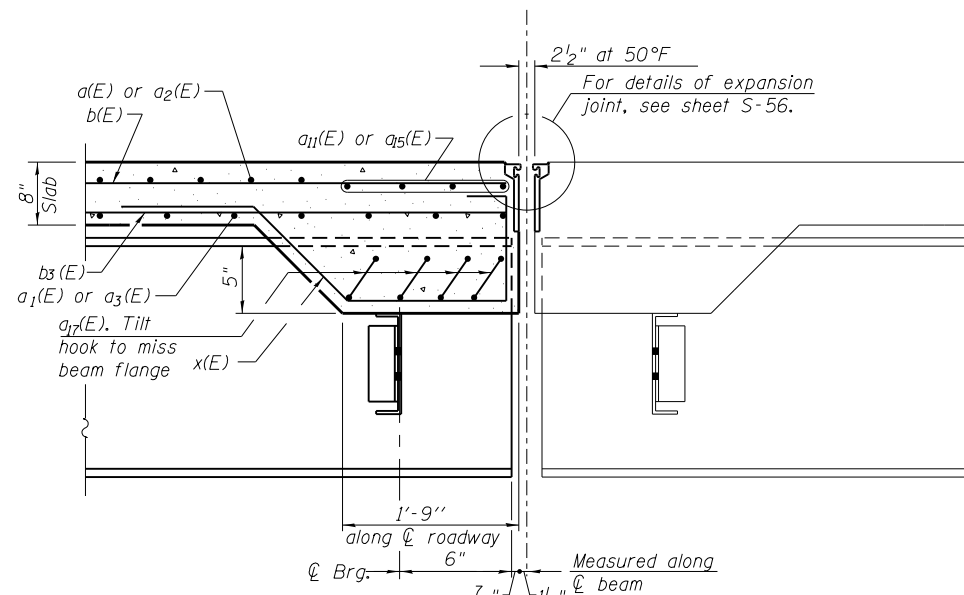
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	362	# 5	29'-9"	—
a1(E)	326	# 5	29'-0"	—
a2(E)	362	# 5	45'-1"	—
a3(E)	326	# 5	44'-7"	—
a4(E)	360	# 6	6'-6"	—
a8(E)	16	# 5	1'-6"	—
a9(E)	4	# 5	30'-7"	—
a10(E)	1	# 5	27'-6"	—
a11(E)	4	# 5	30'-2"	—
a13(E)	4	# 5	46'-7"	—
a14(E)	1	# 5	43'-6"	—
a15(E)	4	# 5	45'-11"	—
a17(E)	70	# 5	7'-4"	—
b(E)	858	# 5	27'-8"	—
b1(E)	150	# 6	32'-6"	—
b2(E)	150	# 6	35'-1"	—
b3(E)	549	# 5	33'-0"	—
d(E)	594	# 5	5'-7"	—
d1(E)	594	# 5	7'-8"	—
e(E)	74	# 4	16'-10"	—
e1(E)	32	# 4	15'-11"	—
e2(E)	14	# 4	14'-0"	—
e3(E)	70	# 4	14'-2"	—
e4(E)	42	# 4	16'-2"	—
e5(E)	14	# 4	16'-5"	—
e6(E)	4	# 8	28'-3"	—
e7(E)	4	# 8	15'-11"	—
e8(E)	6	# 8	32'-4"	—
e9(E)	4	# 8	16'-10"	—
e10(E)	4	# 8	35'-7"	—
e11(E)	4	# 4	26'-8"	—
e12(E)	6	# 4	30'-3"	—
e13(E)	4	# 4	34'-0"	—
x(E)	110	# 5	6'-5"	—
Reinforcement Bars, Epoxy Coated			Pound	130,240
Concrete Superstructure			Cu. Yds.	613.0
Preformed Joint Seal 2 1/2"			Foot	271

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



SECTION A-A



SECTION B-B

N:\PROJECTS\0003384\004_US_30A\Design\Structural\CAD\3384_36_EB_Unit_1 - Superstructure Details.dgn



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PLOT SCALE = 0:2.0000 1' = 1/4"	CHECKED - AMK	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
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STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

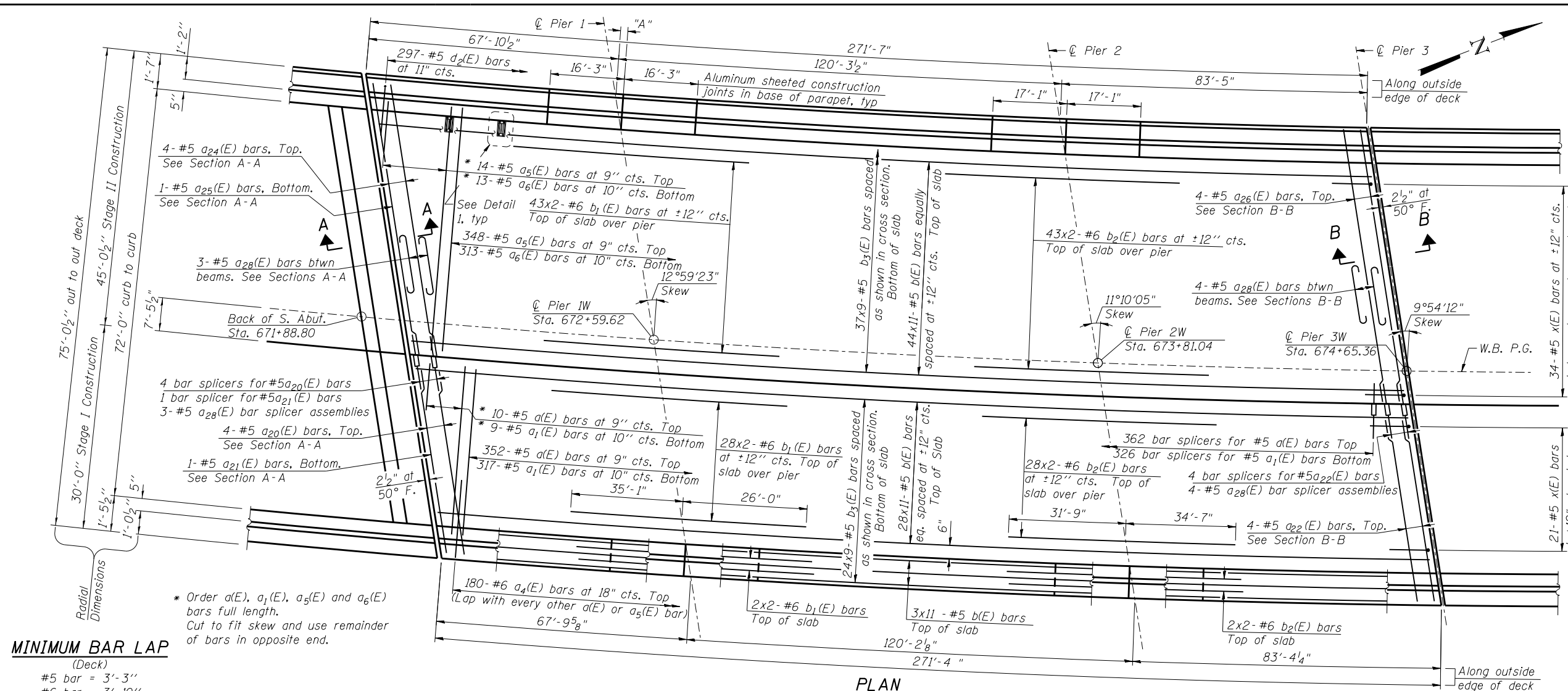
**EB UNIT 1 - SUPERSTRUCTURE DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-36 OF S-118 SHEETS

F.A.I. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	511
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

NOTES

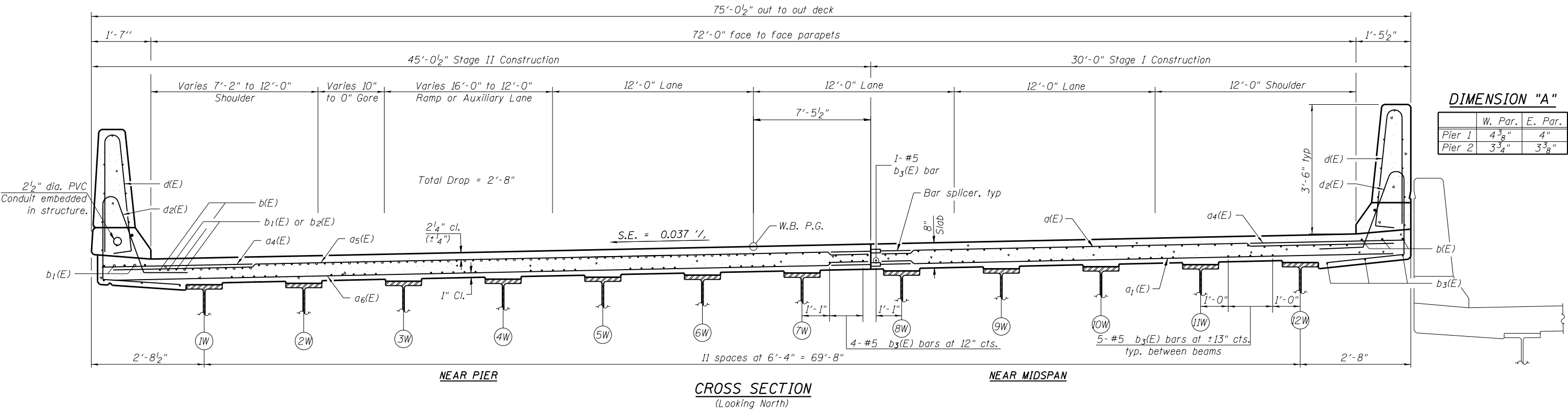
1. See Sheet S-39 for superstructure details and Bill of Material.
2. Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
3. See Sheet S-38 for parapet reinforcement.
4. See Sheet S-109 for Bar Splicer details.
5. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S-56.



MINIMUM BAR LAP
(Deck)
 #5 bar = 3'-3"
 #6 bar = 3'-10"

DIMENSION "A"

	W. Par.	E. Par.
Pier 1	4 3/8"	4"
Pier 2	3 3/4"	3 3/8"



N:\PROJECTS\0003384\004\US_30\Design\Structural\CAD\3384_37 WB Unit 1 - Deck Plan and Cross-Section.dgn
 5/9/2018 10:00:00 AM
 3384_37 WB Unit 1 - Deck Plan and Cross-Section.dgn
 5/9/2018 10:00:00 AM
 3384_37 WB Unit 1 - Deck Plan and Cross-Section.dgn
 5/9/2018 10:00:00 AM

Clorba Group, Inc.
 CONSULTING ENGINEERS
 6507 North Casselwood Avenue
 Suite 402, Chicago, Illinois 60656
 Tel: 773.724.4000
 Fax: 773.724.4014
 Email: clorba@clorba.com

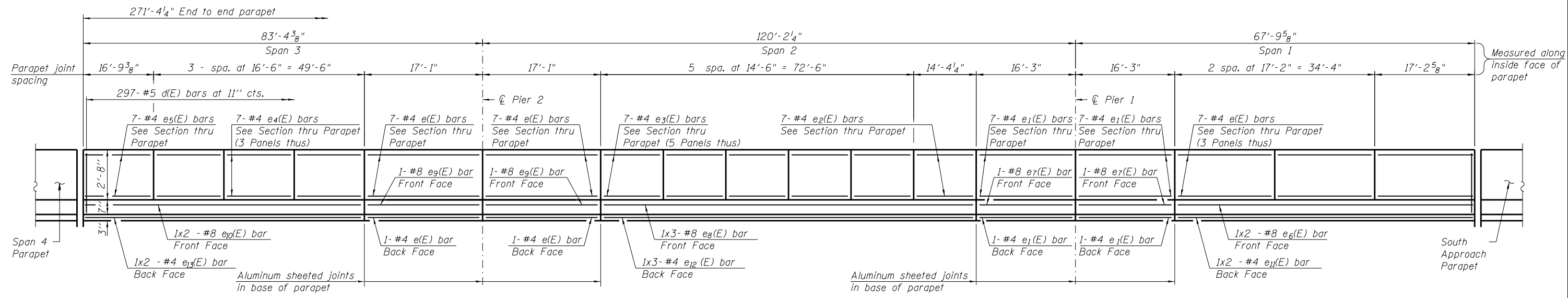
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CHECKED - AMK	REVISIONS -	
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PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

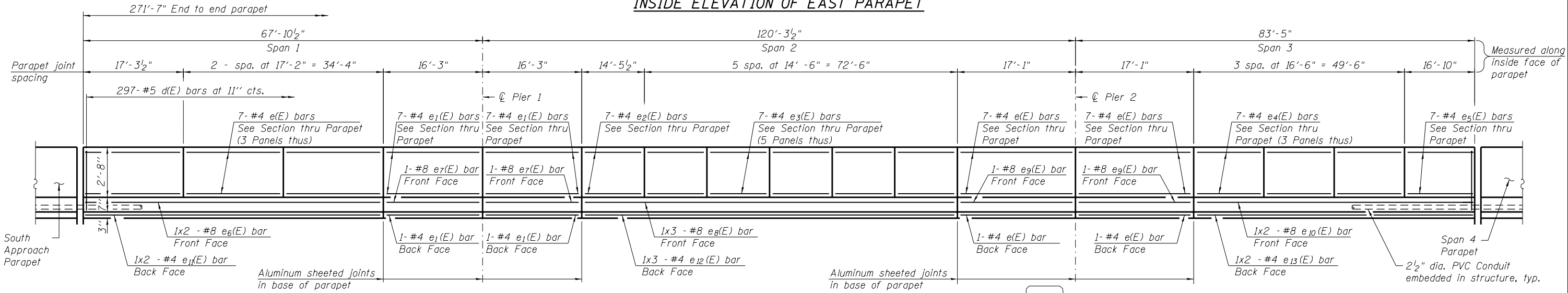
WB UNIT 1 - DECK PLAN & CROSS SECTION
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	512
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

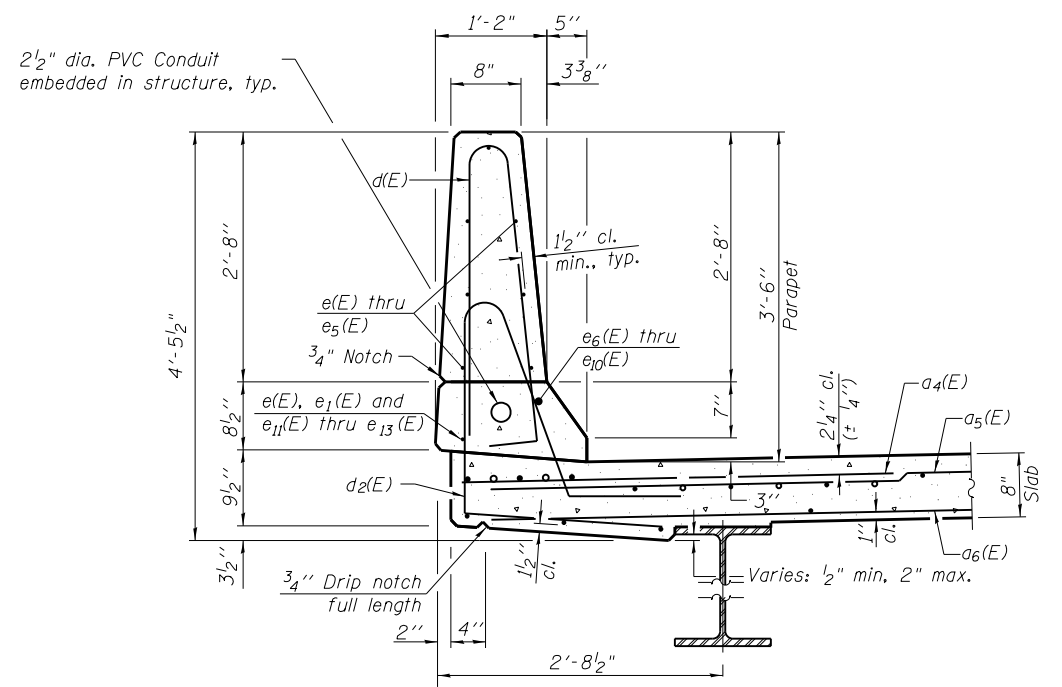
SHEET NO. S-37 OF S-118 SHEETS



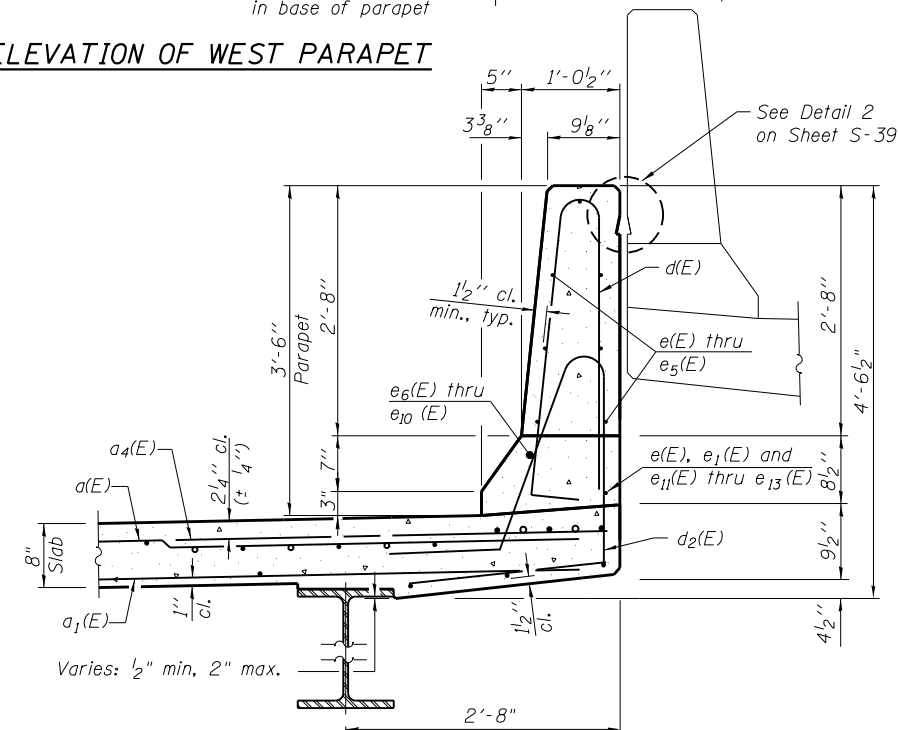
INSIDE ELEVATION OF EAST PARAPET



INSIDE ELEVATION OF WEST PARAPET



SECTION THRU WEST PARAPET



SECTION THRU EAST PARAPET

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

- NOTES**
1. Work this Sheet with Sheet Nos. S-37 and S-39
 2. Bars indicated thus 1x3 - #8 etc. indicates 1 line of bars with 3 lengths per line
 3. See sheet S-39 for Parapet Joint Details, Bar bending diagrams and Bill of Material

N:\PROJECTS\0003384\004_4_US_30A\Design\Structural\CAD\3384_38_WB_Unit_1_Parapet_Elevations_and_Details.dgn



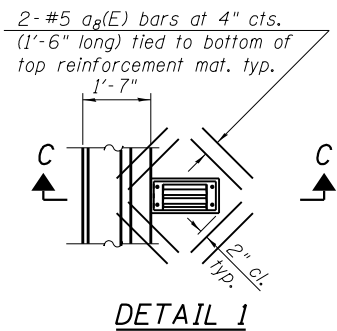
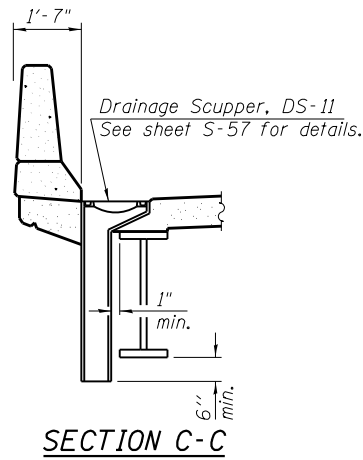
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	CHECKED - AMK	REVISED -
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PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

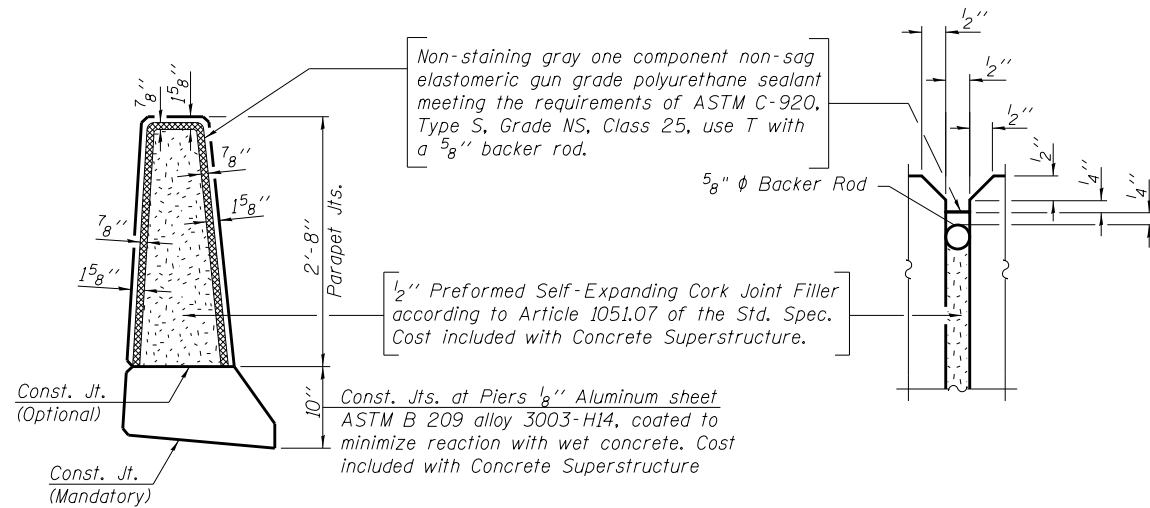
WB UNIT 1 - PARAPET ELEVATIONS AND DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-38 OF S-118 SHEETS

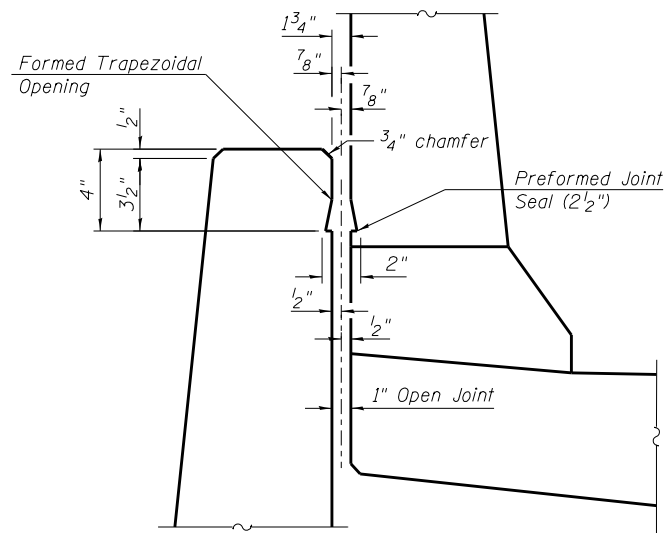
F.A.I. RT.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	513
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



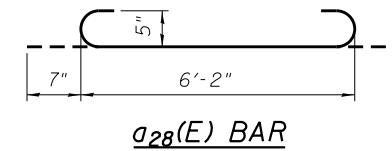
Note:
Cut longitudinal reinforcement to clear drainage scuppers.



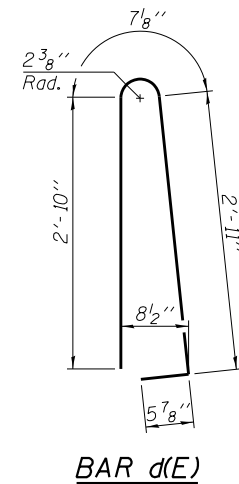
PARAPET JOINT DETAILS



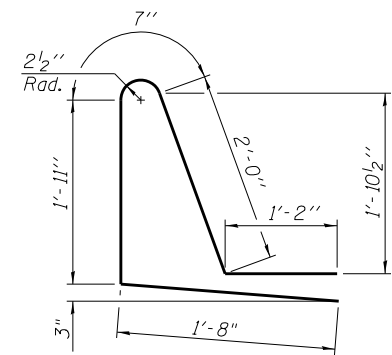
DETAIL 2



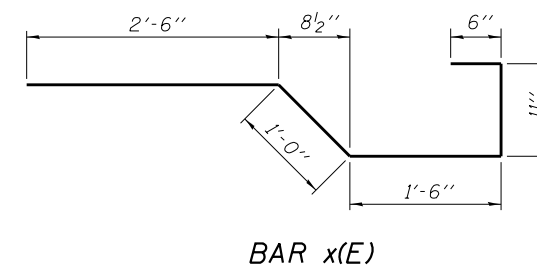
a28(E) BAR



BAR d(E)



BAR d2(E)

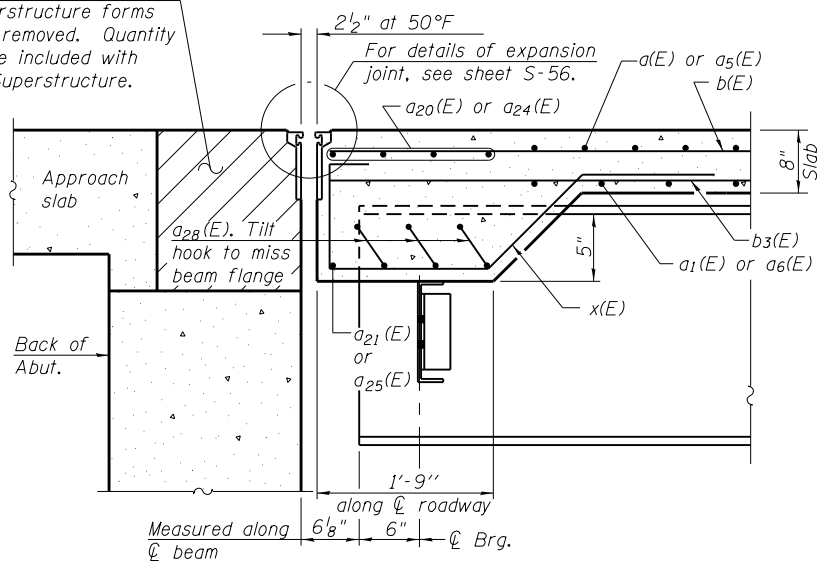


BAR x(E)

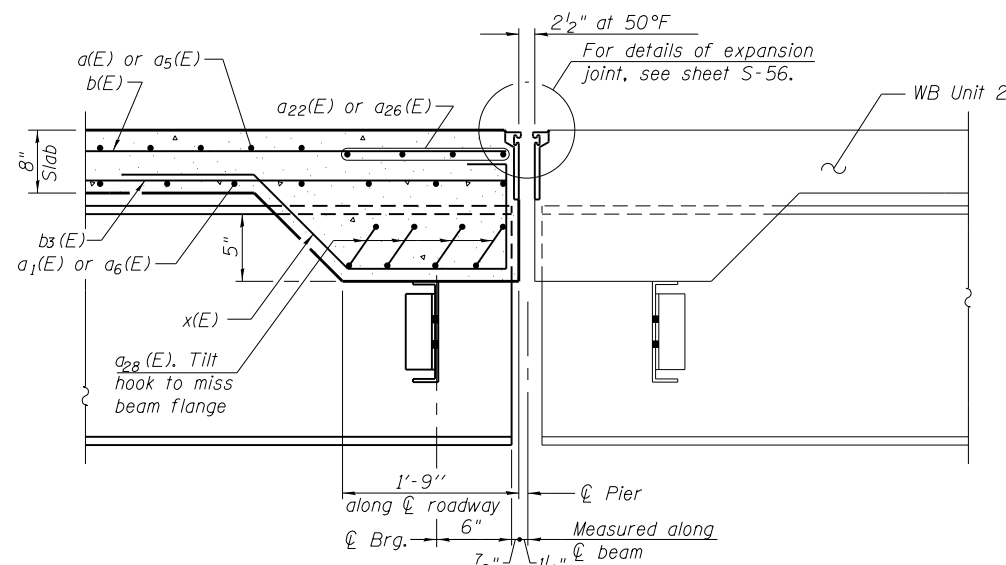
**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	362	# 5	29'-9"	—
a1(E)	326	# 5	29'-0"	—
a4(E)	360	# 6	6'-6"	—
a5(E)	362	# 5	44'-7"	—
a6(E)	326	# 5	43'-10"	—
a8(E)	16	# 5	1'-6"	—
a20(E)	4	# 5	30'-8"	—
a21(E)	1	# 5	27'-10"	—
a22(E)	4	# 5	30'-2"	—
a24(E)	4	# 5	46'-2"	—
a25(E)	1	# 5	43'-4"	—
a26(E)	4	# 5	45'-5"	—
a28(E)	70	# 5	7'-4"	U
b(E)	858	# 5	27'-8"	—
b1(E)	150	# 6	32'-6"	—
b2(E)	150	# 6	35'-1"	—
b3(E)	549	# 5	33'-0"	—
d(E)	594	# 5	5'-7"	L
d2(E)	594	# 5	7'-4"	L
e(E)	74	# 4	16'-10"	—
e1(E)	32	# 4	15'-11"	—
e2(E)	14	# 4	14'-0"	—
e3(E)	70	# 4	14'-2"	—
e4(E)	42	# 4	16'-2"	—
e5(E)	14	# 4	16'-5"	—
e6(E)	4	# 8	28'-3"	—
e7(E)	4	# 8	15'-11"	—
e8(E)	6	# 8	32'-4"	—
e9(E)	4	# 8	16'-10"	—
e10(E)	4	# 8	35'-7"	—
e11(E)	4	# 4	26'-8"	—
e12(E)	6	# 4	30'-3"	—
e13(E)	4	# 4	34'-0"	—
x(E)	110	# 5	6'-5"	L
Reinforcement Bars, Epoxy Coated			Pound	129,590
Concrete Superstructure			Cu. Yds.	610.1

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



SECTION A-A



SECTION B-B

N:\PROJECTS\00033384\004_US_30A\Design\Structural\CAD\33384_39_WB Unit 1 - Superstructure Details.dgn



USER NAME = kaisneros
DESIGNED - BWS
CHECKED - AMK
DRAWN - RD
PLOT SCALE = 0:2.0000' 1" = 1/4"
PLOT DATE = 5/9/2018

DESIGNED - BWS
CHECKED - MHT
REVISOR -
REVISOR -
REVISOR -
REVISOR -

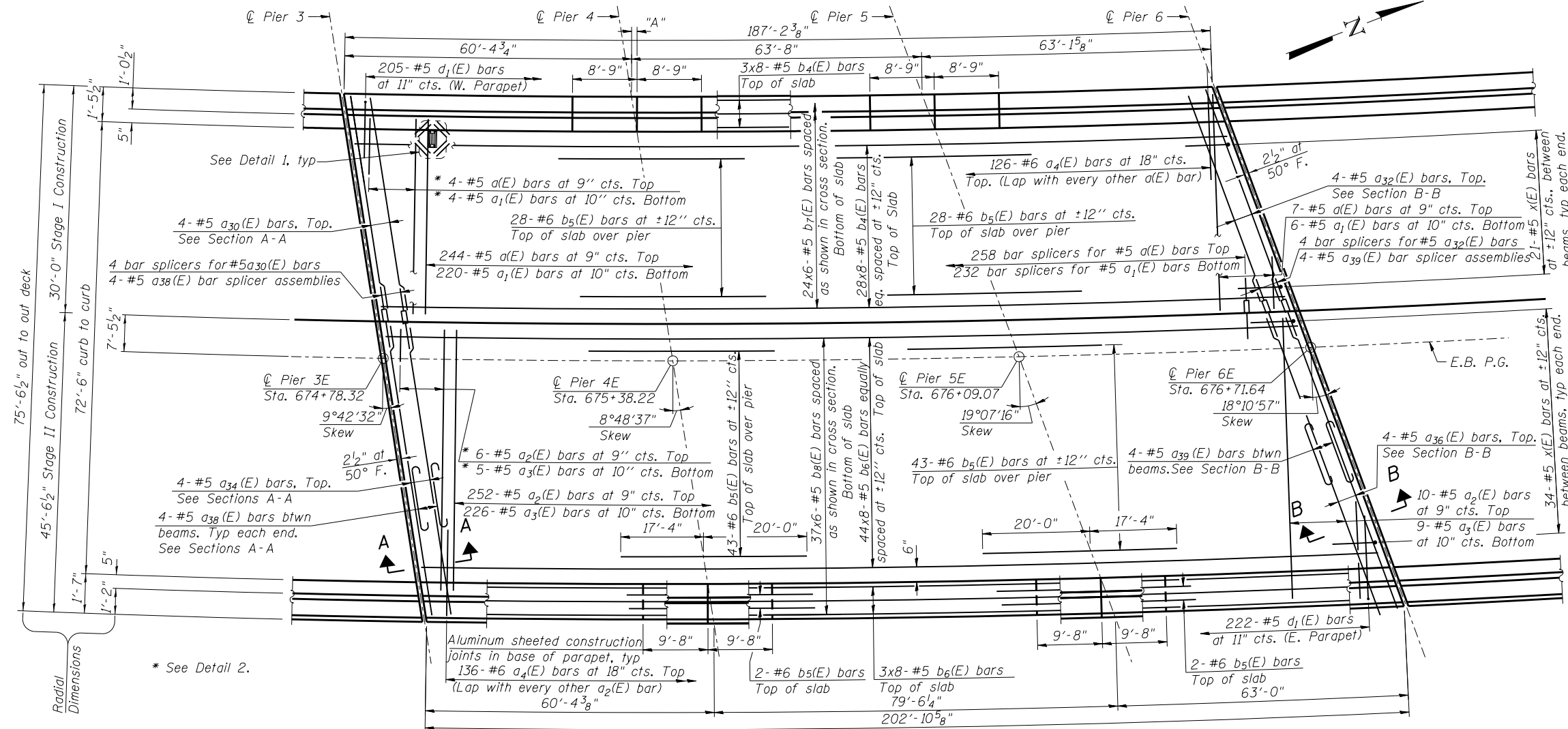
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WB UNIT 1 - SUPERSTRUCTURE DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-39 OF S-118 SHEETS

F.A.I. RT.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	514
CONTRACT NO. 60N87				

ILLINOIS FED. AID PROJECT



NOTES

1. See Sheet S-42 for superstructure details and Bill of Material.
2. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
3. See Sheet S-41 for parapet reinforcement.
4. See Sheet S-109 for Bar splicer details.
5. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S-56.

Order a(E), a₁(E), a₂(E), and a₃(E) bars full length. Cut to fit as shown, and place remainder as shown.

Remaining a(E), a₁(E), a₂(E), and a₃(E) bars

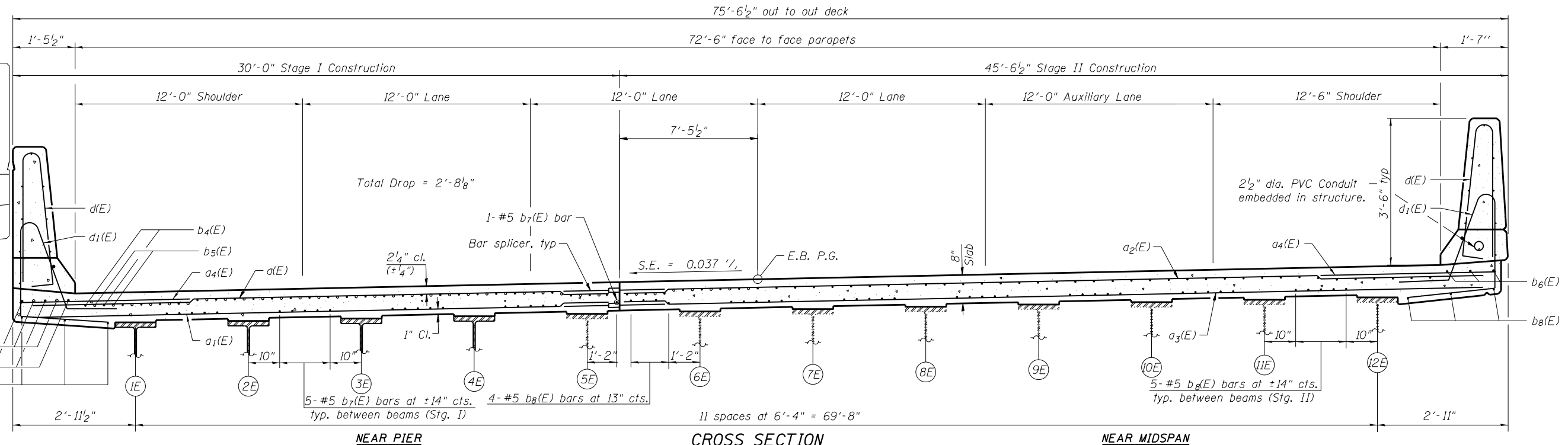
DETAIL 2

MINIMUM BAR LAP

(Deck)
 #5 bar = 3'-3"
 #6 bar = 3'-10"

DIMENSION "A"

	W. Par.	E. Par.
Pier 4	2 ³ / ₄ "	2 ⁷ / ₈ "
Pier 5	6 ¹ / ₈ "	6 ¹ / ₂ "



NEAR PIER

CROSS SECTION
(Looking North)

NEAR MIDSPAN

N:\PROJECTS\00033384\004\US_30\Design\Structural\CAD\3384_40_EB_Unit_2 - Deck Plan and Cross-Section.dgn



USER NAME = kaisneros	DESIGNED - BWS	REVISED -
	CHECKED - AMK	REVISED -
PLOT SCALE = 32x10.0000 "/> <td>DRAWN - RD</td> <td>REVISED -</td>	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

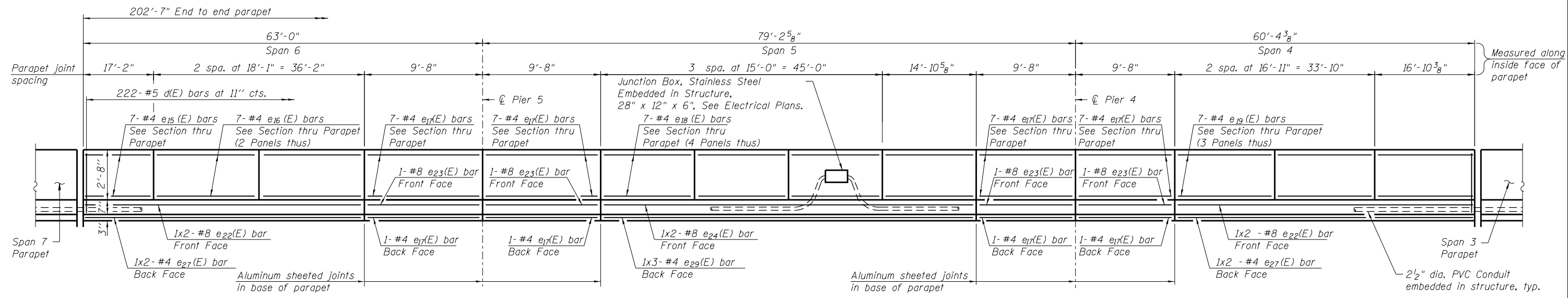
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EB UNIT 2 - DECK PLAN & CROSS SECTION
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

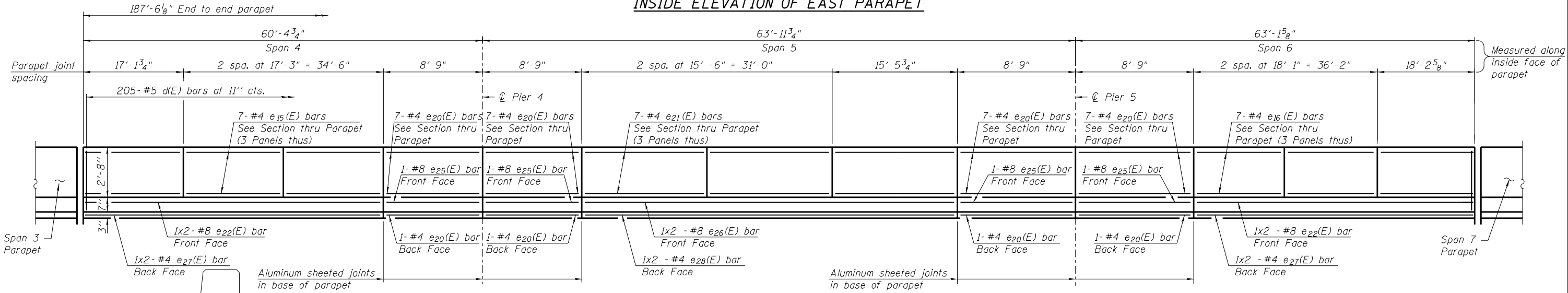
SHEET NO. S-40 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	515
				CONTRACT NO. 60N87

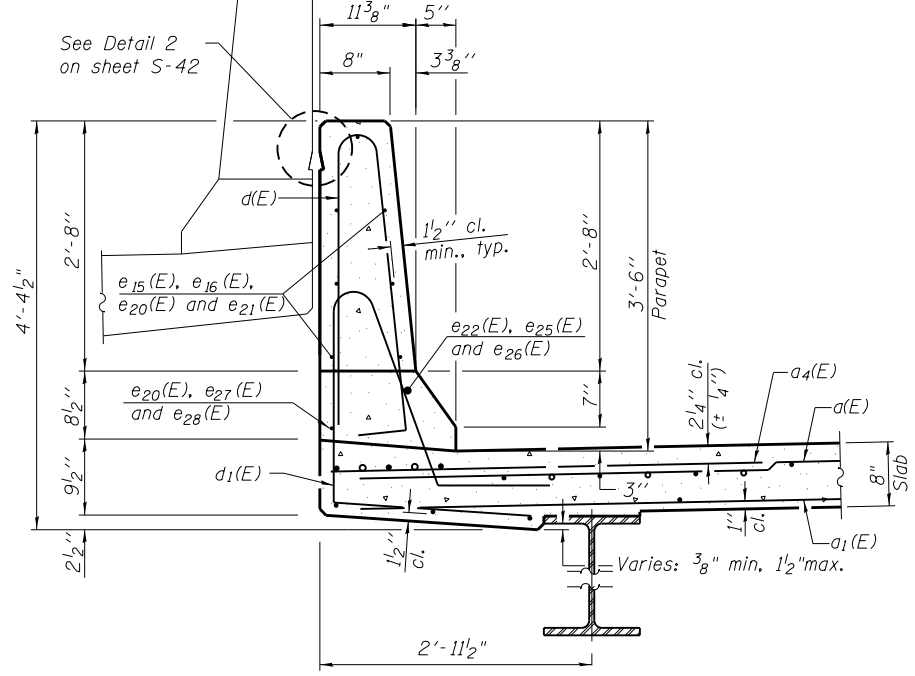
ILLINOIS FED. AID PROJECT



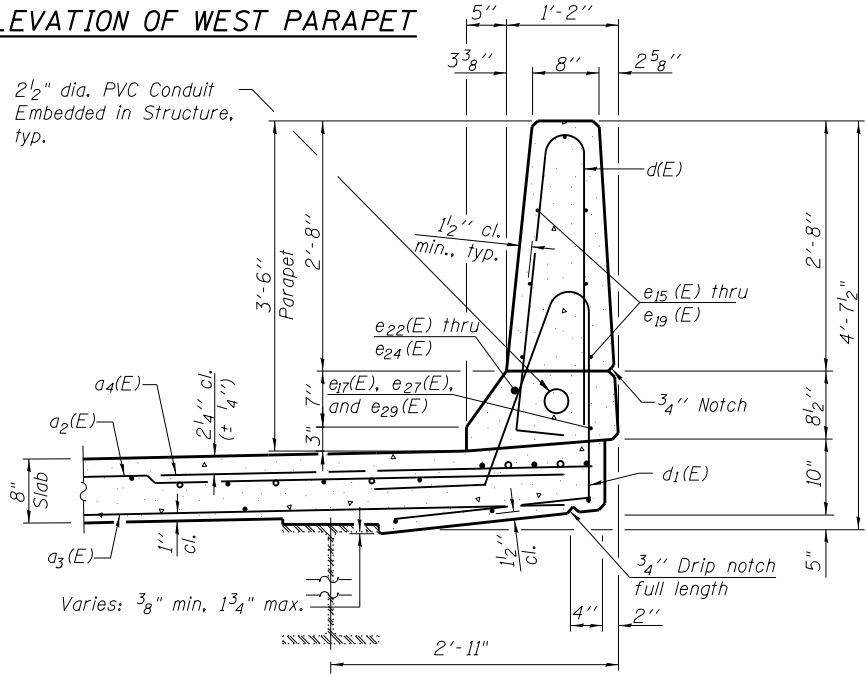
INSIDE ELEVATION OF EAST PARAPET



INSIDE ELEVATION OF WEST PARAPET



SECTION THRU WEST PARAPET



SECTION THRU EAST PARAPET

MINIMUM BAR LAP

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

NOTES

1. Work this Sheet with Sheet Nos. S-40 and S-42
2. Bars indicated thus 1x3-#8 etc. indicates 1 line of bars with 3 lengths per line
3. See sheet S-42 for Parapet Joint Details, Bar bending diagrams and Bill of Material

N:\PROJ\100033384\004_US_30\Design\Structural\CAD\33384_41_EB_Unit_2 - Parapet Elevations and Details.dgn
 Clorba Group, Inc.
 CONSULTING ENGINEERS
 6507 North Casselwood Avenue
 Suite 402, Chicago, Illinois 60656
 Tel: 773.752.4000
 Fax: 773.775.4014
 Email: clorba@clorba.com

USER NAME = kaisneros	DESIGNED - BWS	REVISED -
	CHECKED - AMK	REVISED -
PLOT SCALE = 0:2.0000' = 1" = 1/8"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

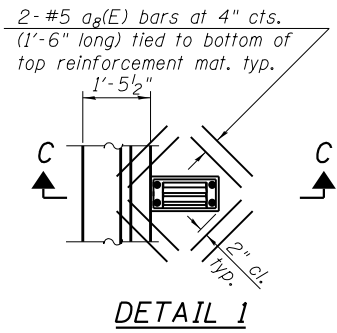
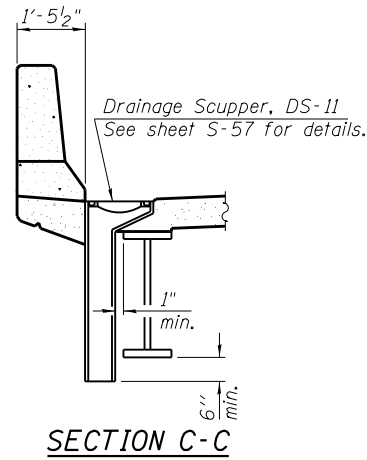
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

EB UNIT 2 - PARAPET ELEVATIONS AND DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

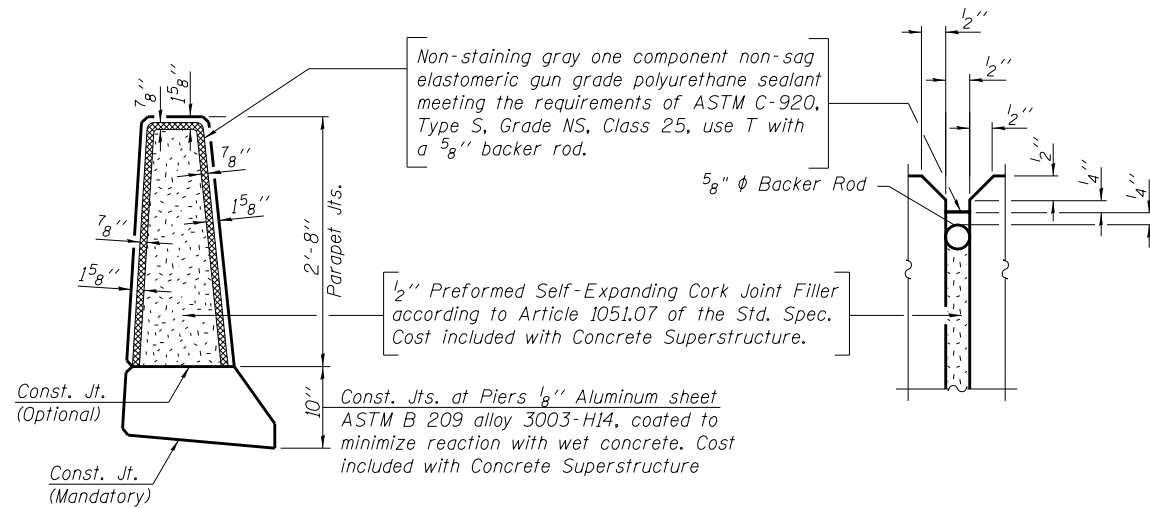
SHEET NO. S-41 OF S-118 SHEETS

F.A.I. RT.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	516
				CONTRACT NO. 60N87

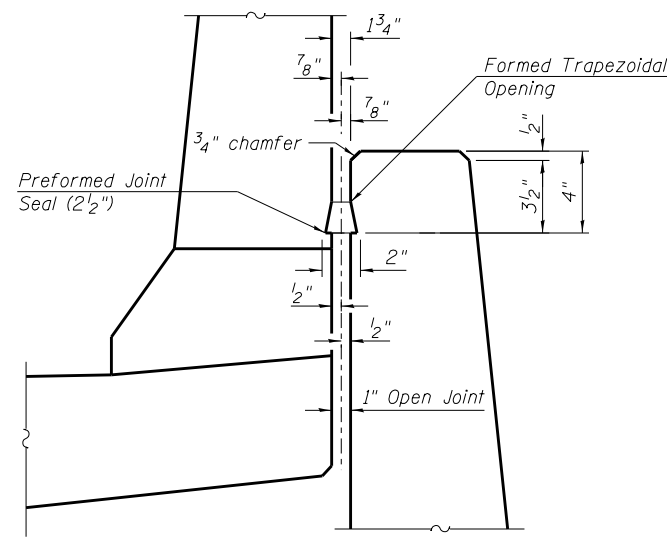
ILLINOIS FED. AID PROJECT



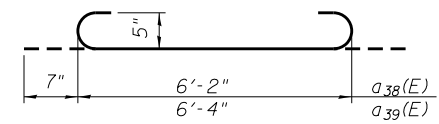
Note:
Cut longitudinal reinforcement to clear drainage scuppers.



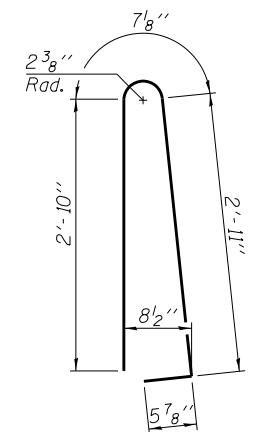
PARAPET JOINT DETAILS



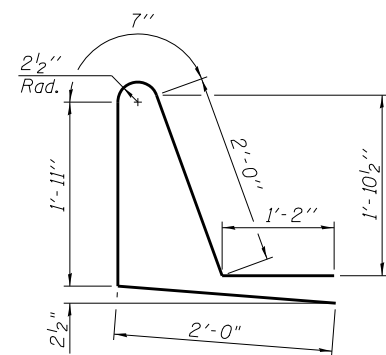
DETAIL 2



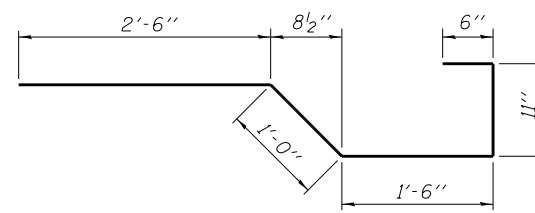
BARS a38(E) and a39(E)



BAR d(E)



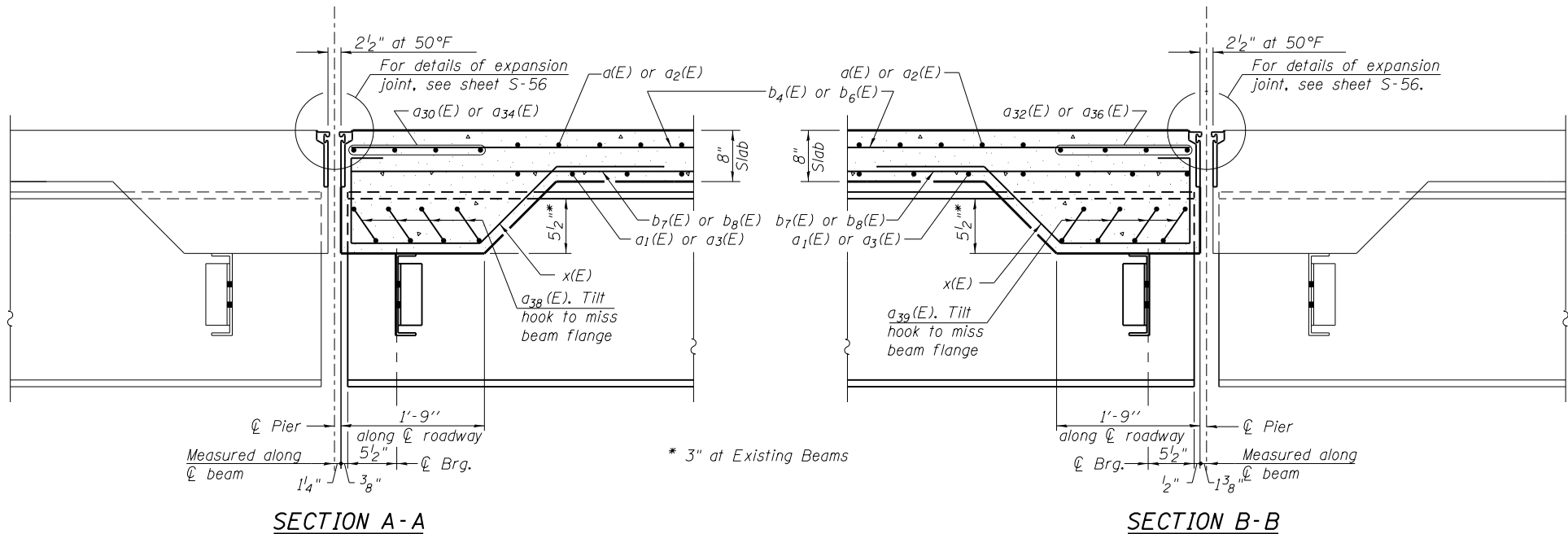
BAR d1(E)



BAR x(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	255	# 5	29'-9"	—
a1(E)	230	# 5	28'-10"	—
a2(E)	268	# 5	45'-1"	—
a3(E)	240	# 5	44'-7"	—
a4(E)	262	# 6	6'-6"	—
a8(E)	8	# 5	1'-6"	—
a30(E)	4	# 5	30'-1"	—
a32(E)	4	# 5	31'-3"	—
a34(E)	4	# 5	45'-8"	—
a36(E)	4	# 5	47'-5"	—
a38(E)	40	# 5	7'-4"	—
a39(E)	40	# 5	7'-6"	—
b4(E)	248	# 5	27'-4"	—
b5(E)	150	# 6	37'-4"	—
b6(E)	376	# 5	28'-3"	—
b7(E)	144	# 5	35'-4"	—
b8(E)	222	# 5	36'-6"	—
d(E)	427	# 5	5'-7"	—
d1(E)	427	# 5	7'-8"	—
e15(E)	28	# 4	16'-10"	—
e16(E)	35	# 4	17'-10"	—
e17(E)	32	# 4	9'-5"	—
e18(E)	28	# 4	14'-8"	—
e19(E)	21	# 4	16'-7"	—
e20(E)	32	# 4	8'-6"	—
e21(E)	21	# 4	15'-2"	—
e22(E)	8	# 8	29'-8"	—
e23(E)	4	# 8	9'-5"	—
e24(E)	2	# 8	32'-5"	—
e25(E)	4	# 8	8'-6"	—
e26(E)	2	# 8	25'-9"	—
e27(E)	8	# 4	27'-1"	—
e28(E)	2	# 4	24'-2"	—
e29(E)	3	# 4	21'-3"	—
x(E)	110	# 5	6'-5"	—
Reinforcement Bars, Epoxy Coated		Pound	92,580	
Concrete Superstructure		Cu. Yds.	442.0	
Preformed Joint Seal 2 1/2"		Foot	188	



SECTION A-A

SECTION B-B

N:\PROJ\100033384\004_US_30A\Design\Structural\CAD\33384_42_EB_Unit 2 - Superstructure_Details.dgn



USER NAME = kaisneros	DESIGNED - BWS	REVISED -
	CHECKED - AMK	REVISED -
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PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

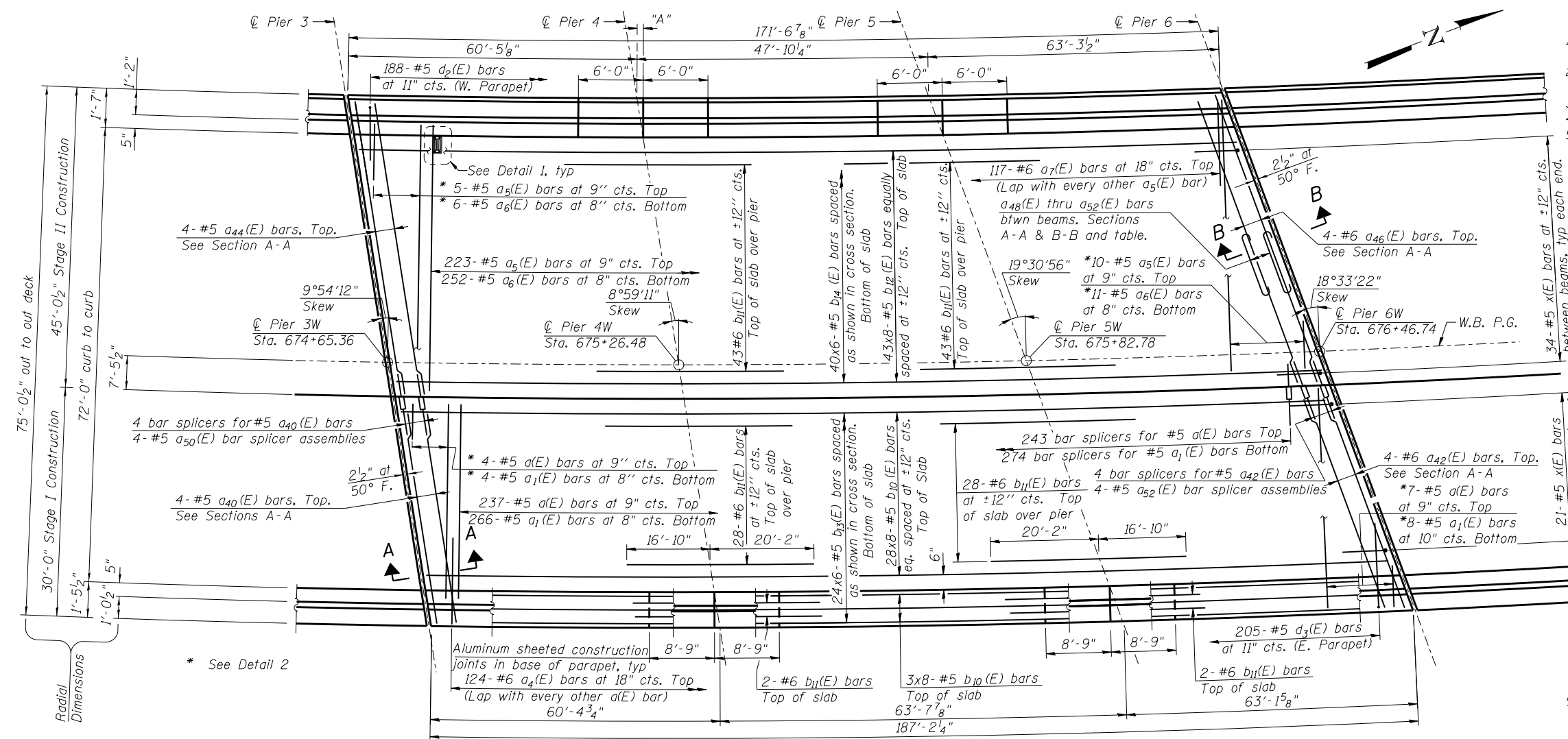
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EB UNIT 2 - SUPERSTRUCTURE DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-42 OF S-118 SHEETS

F.A.I. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	517
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

N:\PROJECTS\0003384\004\4_US_30A\Design\Structural\CAD\3384_43 WB Unit 2 - Deck Plan and Cross-Section.dgn



PLAN

75'-0 1/2" out to out deck

- NOTES**
- See Sheet S-45 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 S-45 for parapet reinforcement.
 - See Sheet S-109 for Bar Splicer details.
 - Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S-56.

EDGE BEAM REINFORCEMENT

Between Beams	At Pier 3	At Pier 6
1W & 2W	4-#5 a48(E)	4-#6 a51(E)
2W & 3W	4-#5 a49(E)	4-#5 a50(E)
3W & 4W	4-#5 a49(E)	4-#5 a50(E)
4W & 5W	4-#5 a49(E)	4-#5 a50(E)
5W & 6W	4-#5 a49(E)	4-#5 a50(E)
6W & 7W	4-#5 a49(E)	4-#5 a50(E)
7W & 8W	Splicer Assm.	Splicer Assm.
8W & 9W	4-#5 a50(E)	4-#5 a52(E)
9W & 10W	4-#5 a50(E)	4-#5 a52(E)
10W & 11W	4-#5 a50(E)	4-#5 a52(E)
11W & 12W	4-#5 a50(E)	4-#5 a52(E)

Order a(E), a1(E), a5(E), and a6(E) bars full length. Cut to fit as shown, and place remainder as shown.

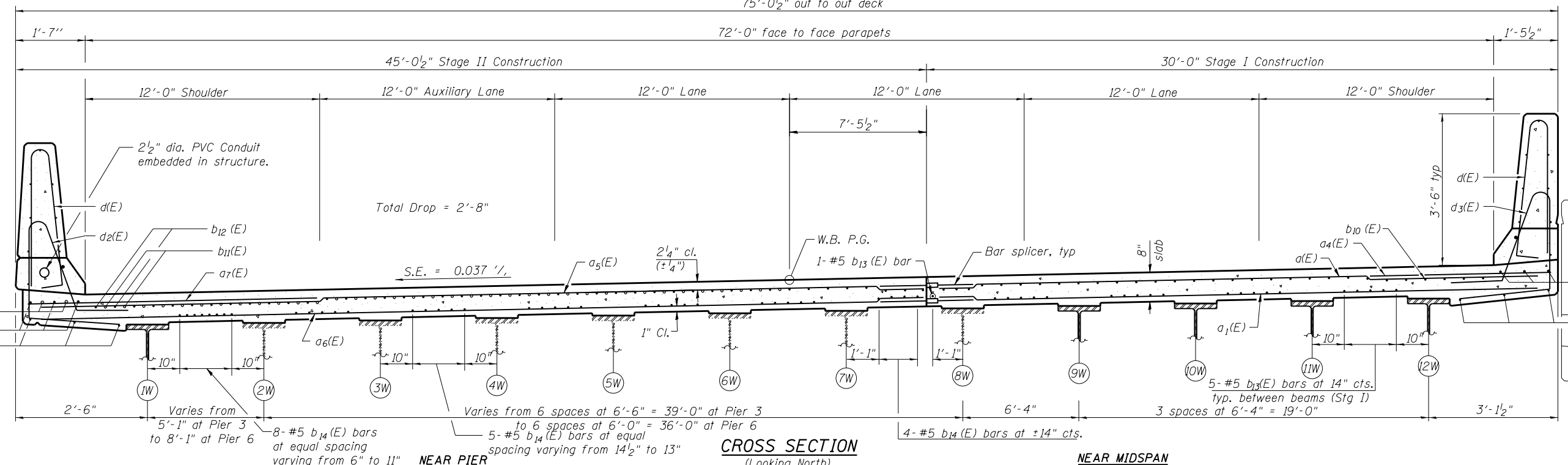
DETAIL 2

DIMENSION "A"

	W. Par.	E. Par.
Pier 4	3"	2 3/4"
Pier 5	6 3/4"	6 1/8"

MINIMUM BAR LAP

(Deck)
 #5 bar = 3'-3"
 #6 bar = 3'-10"



CROSS SECTION
(Looking North)

NEAR MIDSPAN



USER NAME = kaisneros
 DESIGNED - BWS
 CHECKED - AMK
 DRAWN - RD
 CHECKED - MHT
 PLOT SCALE = 32x0.0000 '1' / 1"
 PLOT DATE = 5/9/2018

DESIGNED - BWS
 CHECKED - AMK
 DRAWN - RD
 CHECKED - MHT
 REVISED -
 REVISED -
 REVISED -
 REVISED -

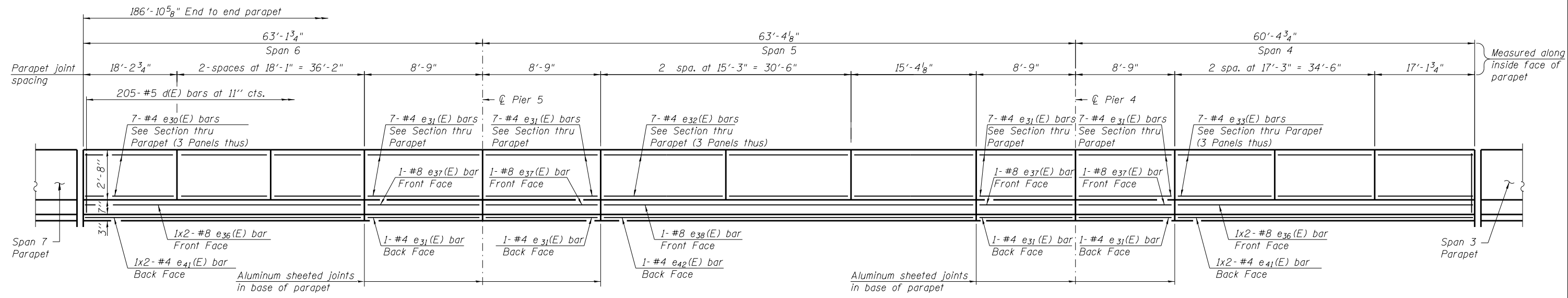
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WB UNIT 2 - DECK PLAN & CROSS SECTION
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

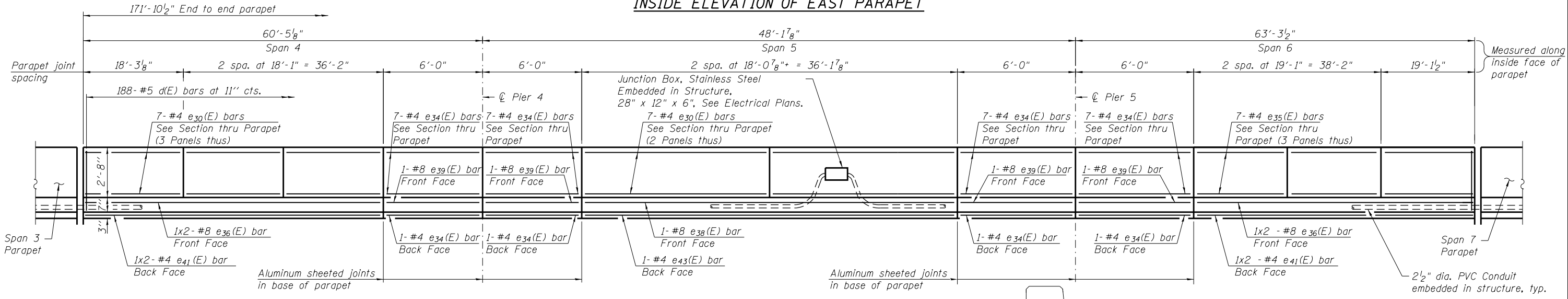
SHEET NO. S-43 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	518

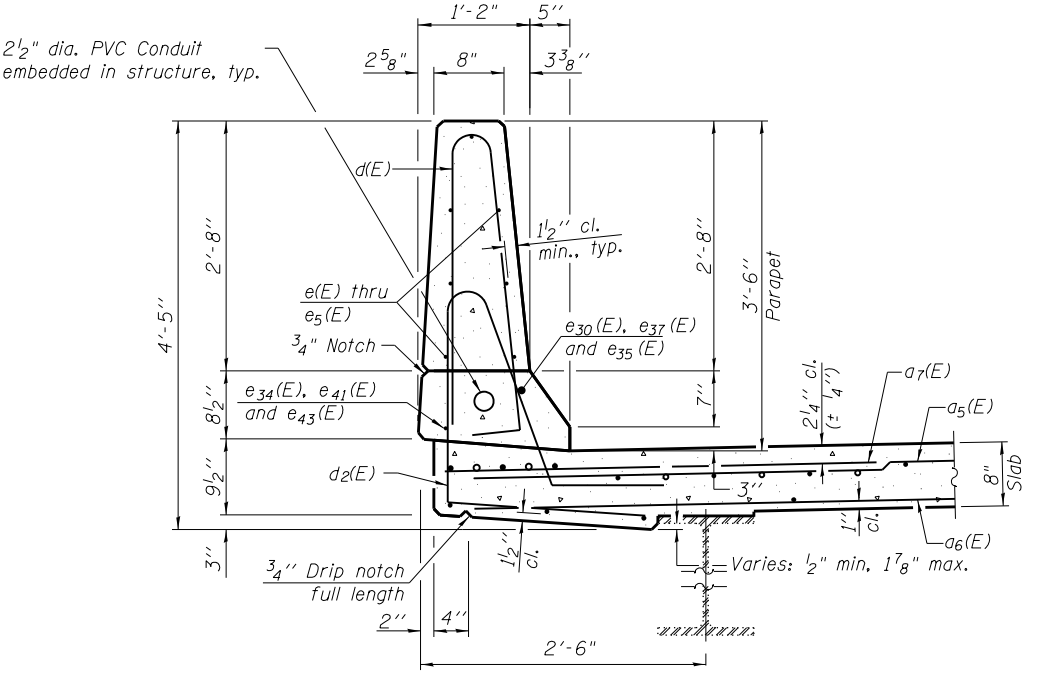
CONTRACT NO. 60N87
 ILLINOIS FED. AID PROJECT



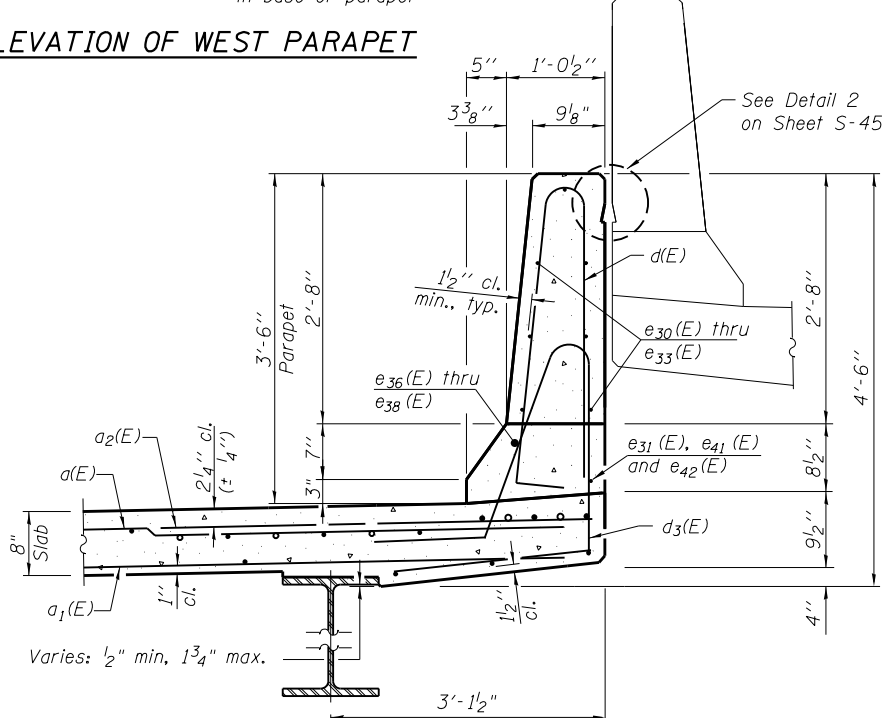
INSIDE ELEVATION OF EAST PARAPET



INSIDE ELEVATION OF WEST PARAPET



SECTION THRU WEST PARAPET



SECTION THRU EAST PARAPET

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

- NOTES**
1. Work this Sheet with Sheet Nos. S-43 and S-45
 2. Bars indicated thus 1x3-#8 etc. indicates 1 line of bars with 3 lengths per line
 3. See sheet S-45 for Parapet Joint Details, Bar bending diagrams and Bill of Material

N:\PROJECTS\00033384\0004_US_30A\Design\Structural\CAD\33384_44_WB_Unit_2 - Parapet Elevations and Details.dgn



USER NAME = kaisneros	DESIGNED - BWS	REVISED -
	CHECKED - AMK	REVISED -
PLOT SCALE = 0:2.0000 1' = 1/4"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

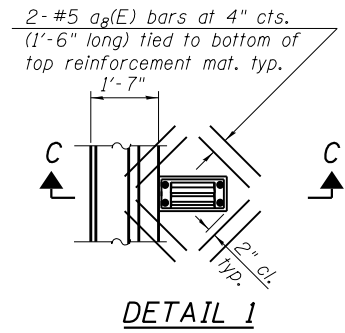
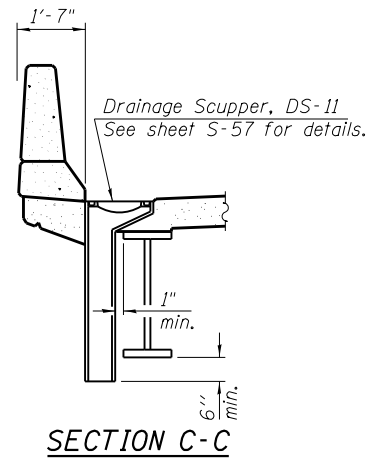
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WB UNIT 2 - PARAPET ELEVATIONS AND DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

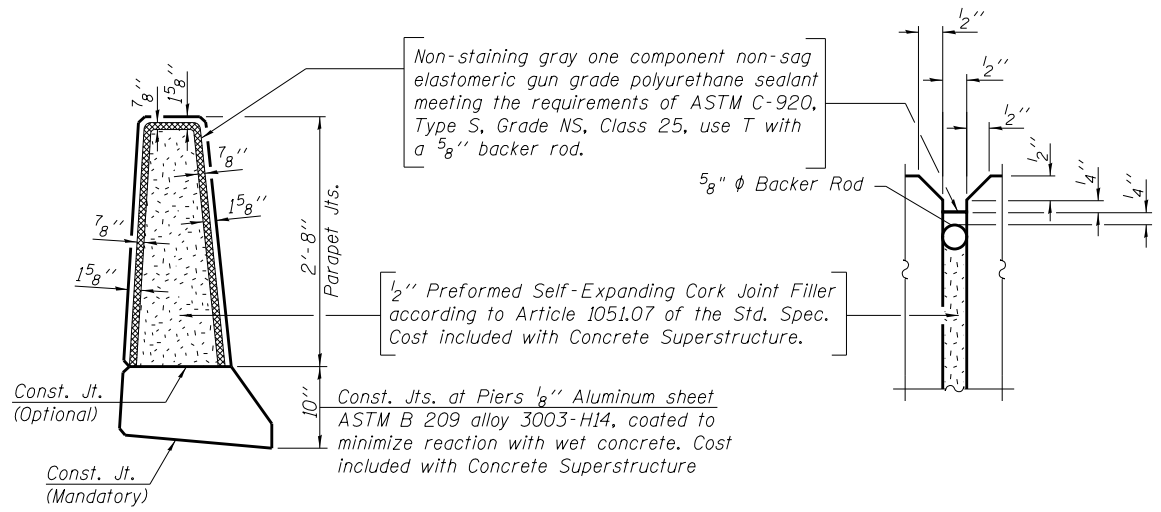
F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	519
CONTRACT NO. 60N87				

SHEET NO. S-44 OF S-118 SHEETS

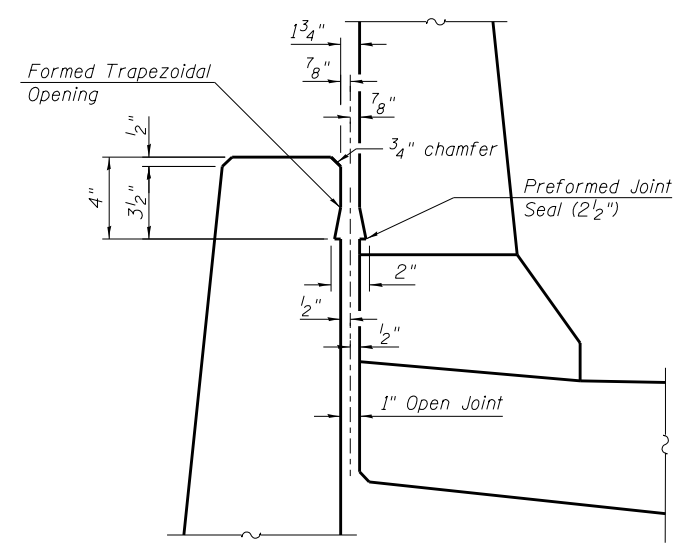
ILLINOIS FED. AID PROJECT



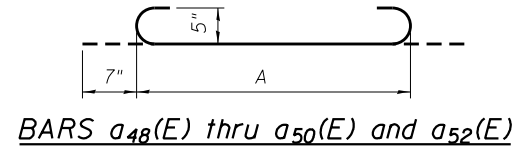
Note:
Cut longitudinal reinforcement to clear drainage scuppers.



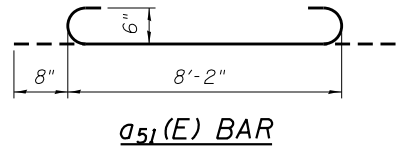
PARAPET JOINT DETAILS



DETAIL 2

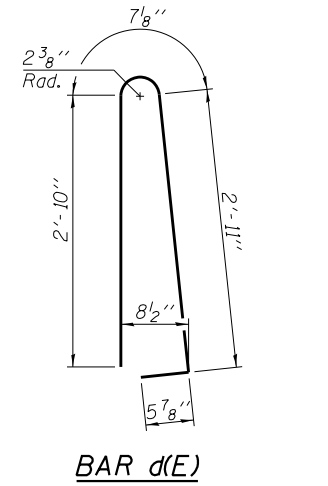


Bar	A
a48(E)	4'-10"
a49(E)	6'-3"
a50(E)	6'-0"
a52(E)	6'-4"

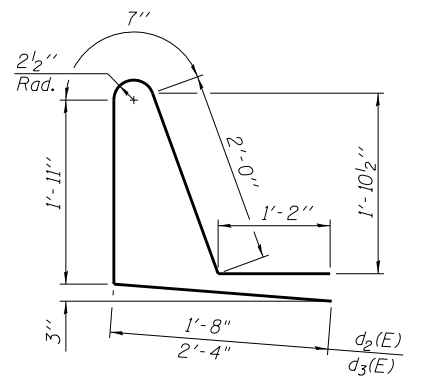


SUPERSTRUCTURE BILL OF MATERIAL

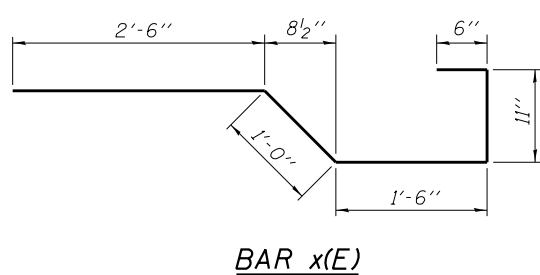
Bar	No.	Size	Length	Shape
a(E)	248	# 5	29'-9"	—
a1(E)	278	# 5	28'-10"	—
a4(E)	125	# 6	6'-6"	—
a5(E)	238	# 5	44'-7"	—
a6(E)	269	# 5	43'-10"	—
a7(E)	117	# 6	14'-5"	—
a8(E)	8	# 5	1'-6"	—
a40(E)	4	# 5	30'-1"	—
a42(E)	4	# 6	31'-3"	—
a44(E)	4	# 5	45'-5"	—
a46(E)	4	# 6	47'-1"	—
a48(E)	4	# 5	6'-0"	—
a49(E)	20	# 5	7'-5"	—
a50(E)	36	# 5	7'-2"	—
a51(E)	4	# 6	9'-4"	—
a52(E)	16	# 5	7'-6"	—
b10(E)	248	# 5	26'-3"	—
b11(E)	150	# 6	37'-0"	—
b12(E)	368	# 5	25'-5"	—
b13(E)	144	# 5	33'-11"	—
b14(E)	240	# 5	32'-11"	—
d(E)	427	# 5	5'-7"	—
d2(E)	188	# 5	7'-4"	—
d3(E)	205	# 5	8'-0"	—
e30(E)	56	# 4	17'-10"	—
e31(E)	32	# 4	8'-6"	—
e32(E)	21	# 4	15'-0"	—
e33(E)	21	# 4	16'-10"	—
e34(E)	32	# 4	5'-9"	—
e35(E)	21	# 4	18'-10"	—
e36(E)	8	# 8	31'-1"	—
e37(E)	4	# 8	8'-6"	—
e38(E)	1	# 8	45'-7"	—
e39(E)	4	# 8	5'-9"	—
e40(E)	1	# 8	35'-10"	—
e41(E)	8	# 4	29'-7"	—
e42(E)	1	# 4	45'-7"	—
e43(E)	1	# 4	35'-10"	—
x(E)	110	# 5	6'-5"	—
Reinforcement Bars, Epoxy Coated		Pound	92,120	
Concrete Superstructure		Cu. Yds.	403.1	



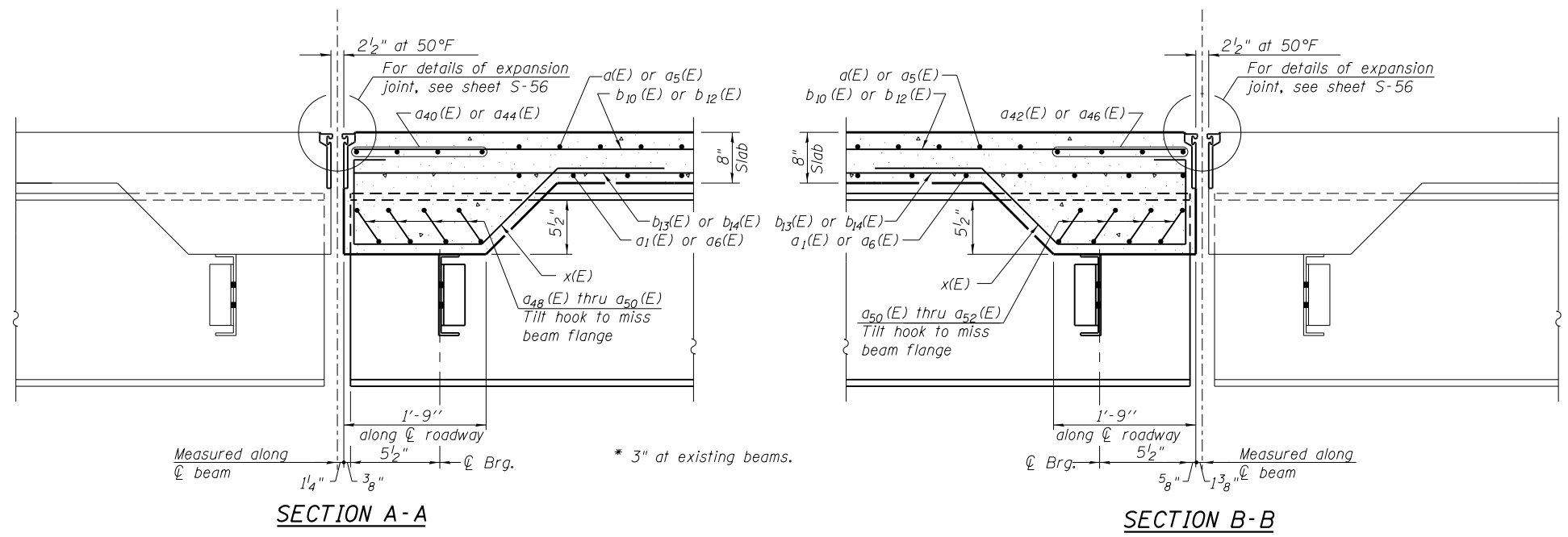
BAR d(E)



BARS d2(E) and d3(E)



BAR x(E)



SECTION A-A

SECTION B-B

N:\PROJ\0003384\004_US_30\Design\Structural\CAD\3384_45_WB Unit 2 - Superstructure_Details.dgn



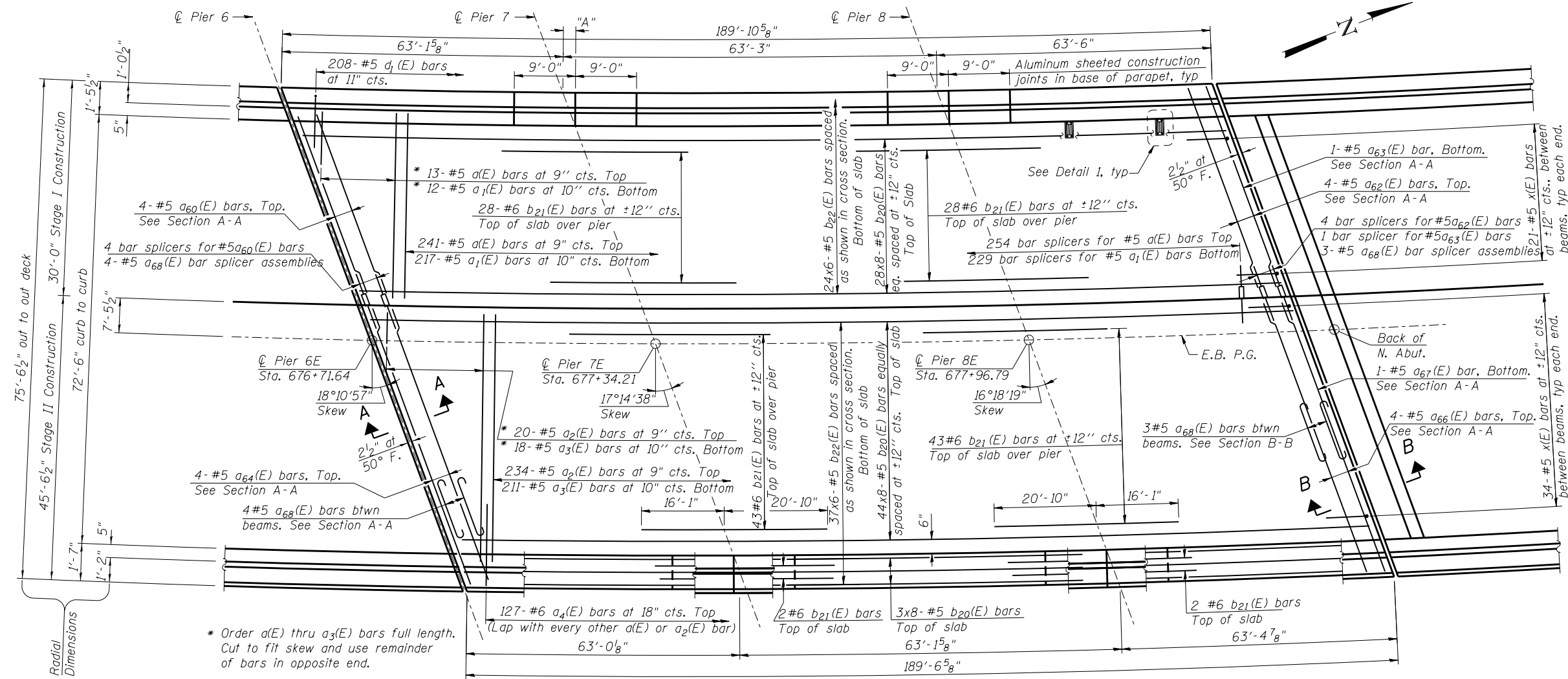
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	CHECKED - AMK	REVISED -
PLOT SCALE = 0:2.0000 1' = 1/4"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WB UNIT 2 - SUPERSTRUCTURE DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-45 OF S-118 SHEETS

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 520
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



PLAN

NOTES

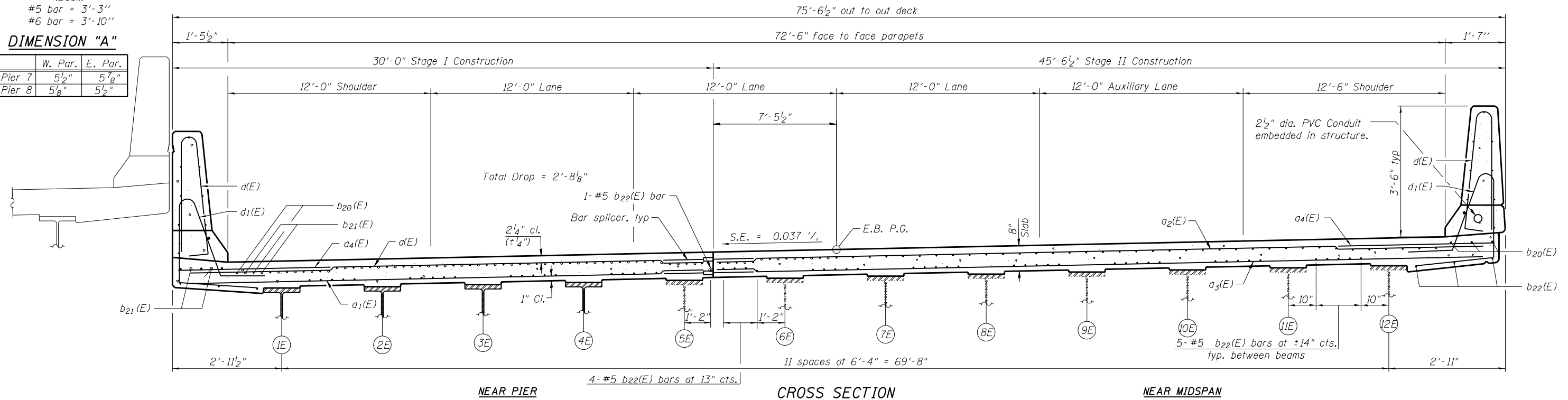
1. See Sheet S-48 for superstructure details and Bill of Material.
2. Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
3. See Sheet S-47 for parapet reinforcement.
4. See Sheet S-109 for Bar Splicer details.
5. Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S-56.

MINIMUM BAR LAP

(Deck)
 #5 bar = 3'-3"
 #6 bar = 3'-10"

DIMENSION "A"

	W. Par.	E. Par.
Pier 7	5' ¹ / ₂ "	5' ¹ / ₈ "
Pier 8	5' ¹ / ₈ "	5' ¹ / ₂ "



NEAR PIER

CROSS SECTION

(Looking North)

NEAR MIDSPAN

N:\PROJECTS\0003384\004\US_30\Design\Structural\CAD\3384_46 EB Unit 3 - Deck Plan and Cross-Section.dgn



USER NAME = kaisneros	DESIGNED - BWS	REVISED -
PLOT SCALE = 32x0.0000 '1' / 1"	CHECKED - AMK	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - MHT	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

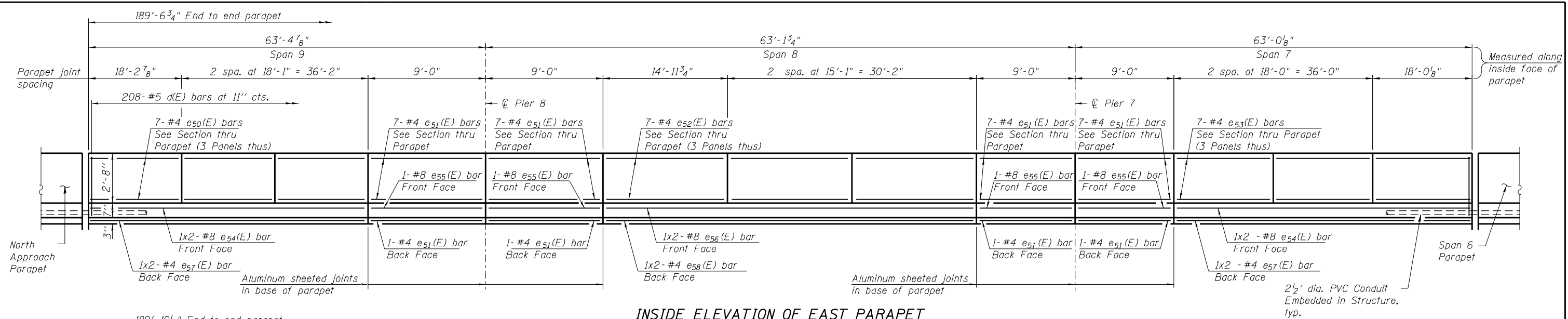
EB UNIT 3 - DECK PLAN & CROSS SECTION
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-46 OF S-118 SHEETS

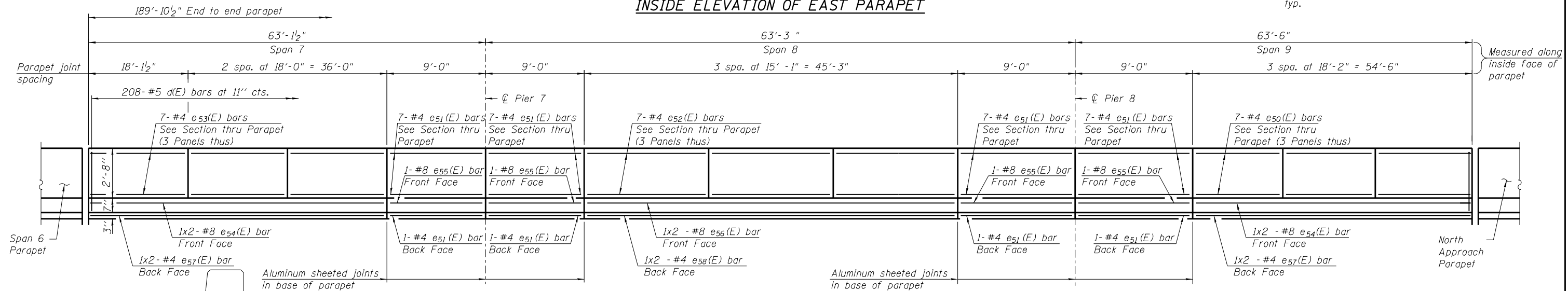
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	521

CONTRACT NO. 60N87

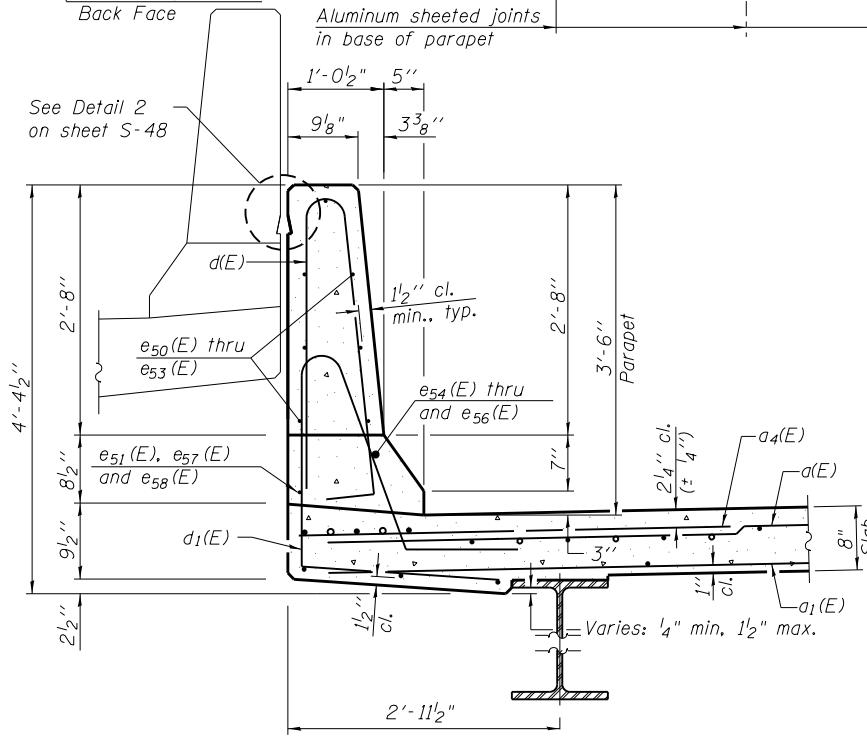
ILLINOIS FED. AID PROJECT



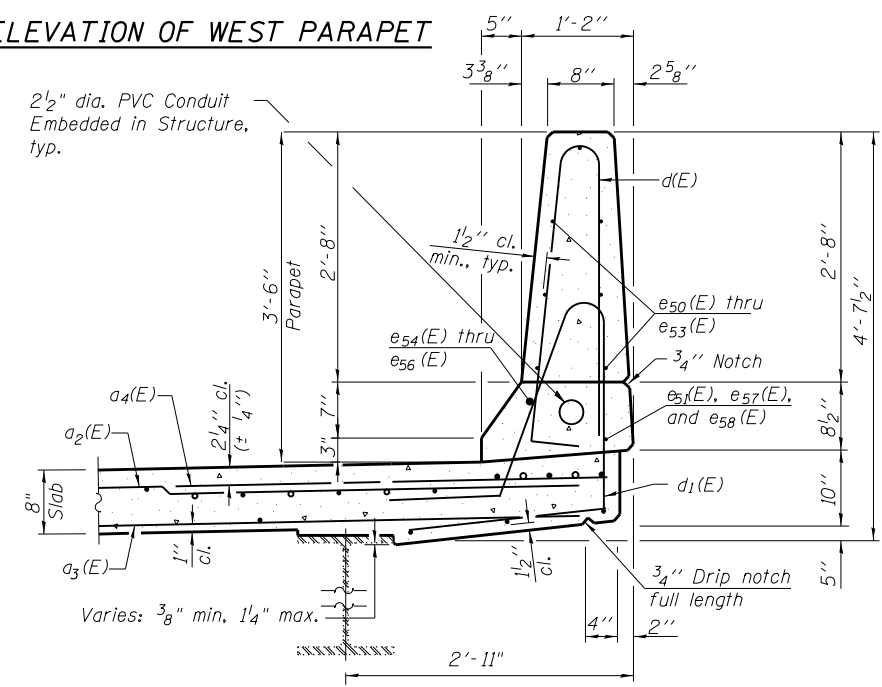
INSIDE ELEVATION OF EAST PARAPET



INSIDE ELEVATION OF WEST PARAPET



SECTION THRU WEST PARAPET



SECTION THRU EAST PARAPET

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

- NOTES**
1. Work this Sheet with Sheet Nos. S-46 and S-48
 2. Bars indicated thus 1x3-#8 etc. indicates 1 line of bars with 3 lengths per line
 3. See sheet S-48 for Parapet Joint Details, Bar bending diagrams and Bill of Material

N:\PROJ\10003384\004_US_30\Design\Structural\CAD\3384_47_EB_Unit_3 - Parapet Elevations and Details.dgn



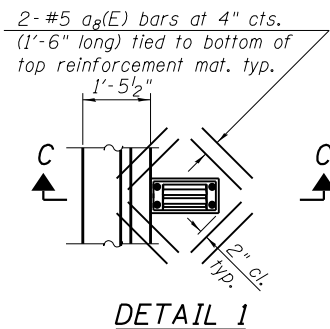
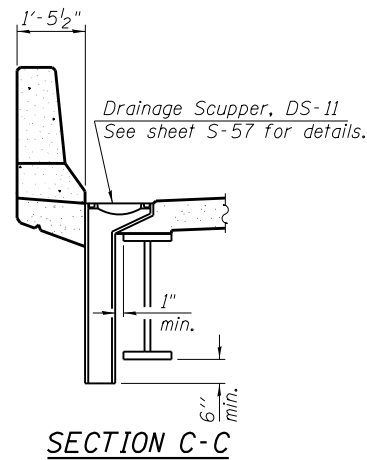
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PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

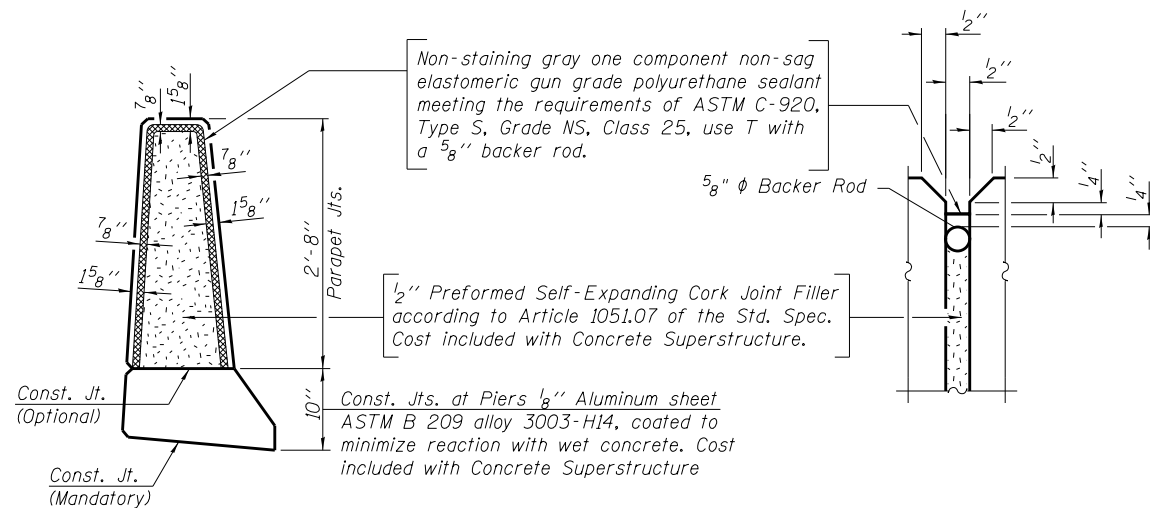
EB UNIT 3 - PARAPET ELEVATIONS AND DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-47 OF S-118 SHEETS

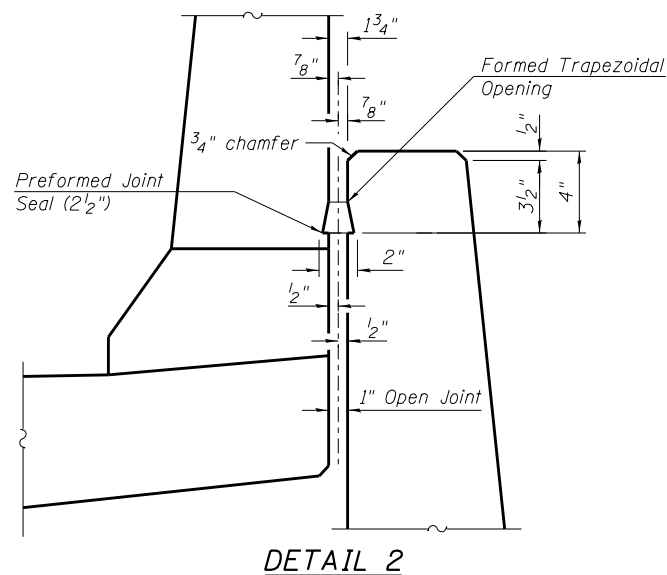
F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	522
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



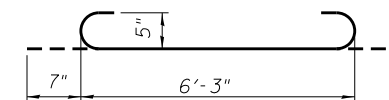
Note:
Cut longitudinal reinforcement to clear drainage scuppers.



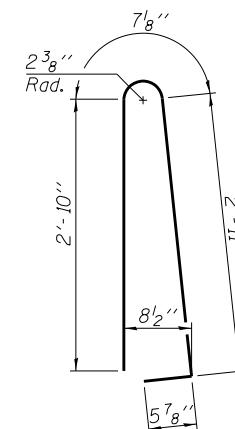
PARAPET JOINT DETAILS



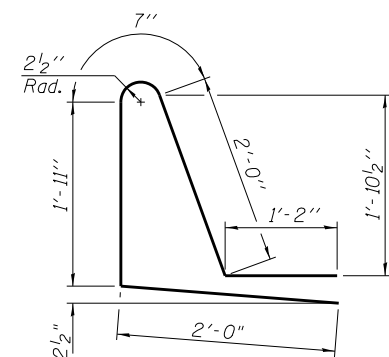
DETAIL 2



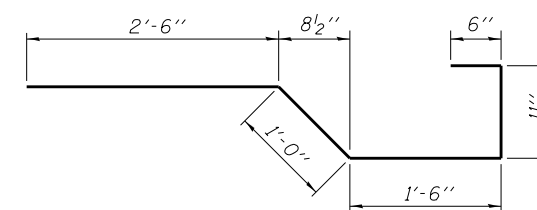
a68(E) BAR



BAR d(E)



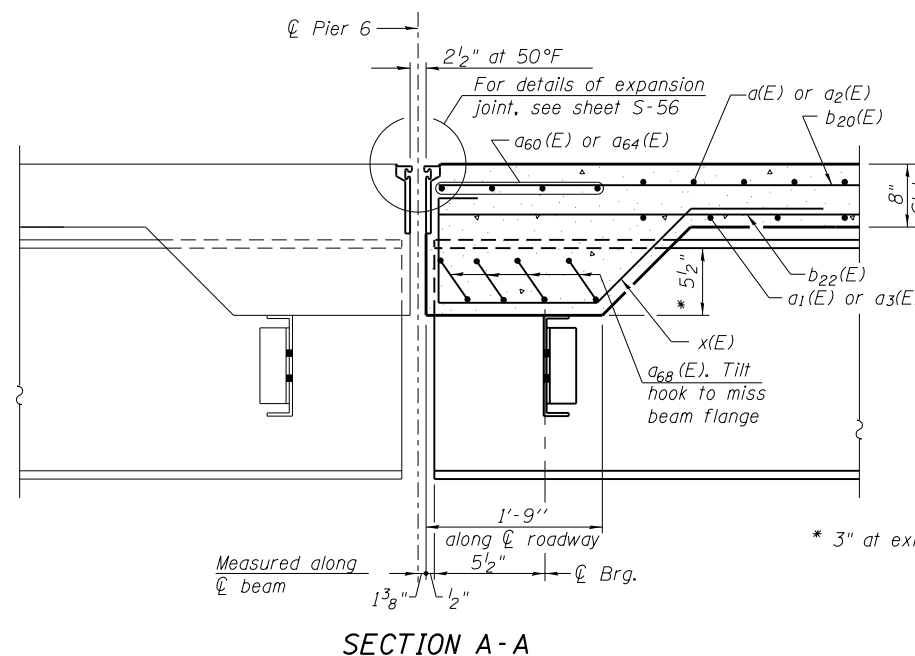
BAR d1(E)



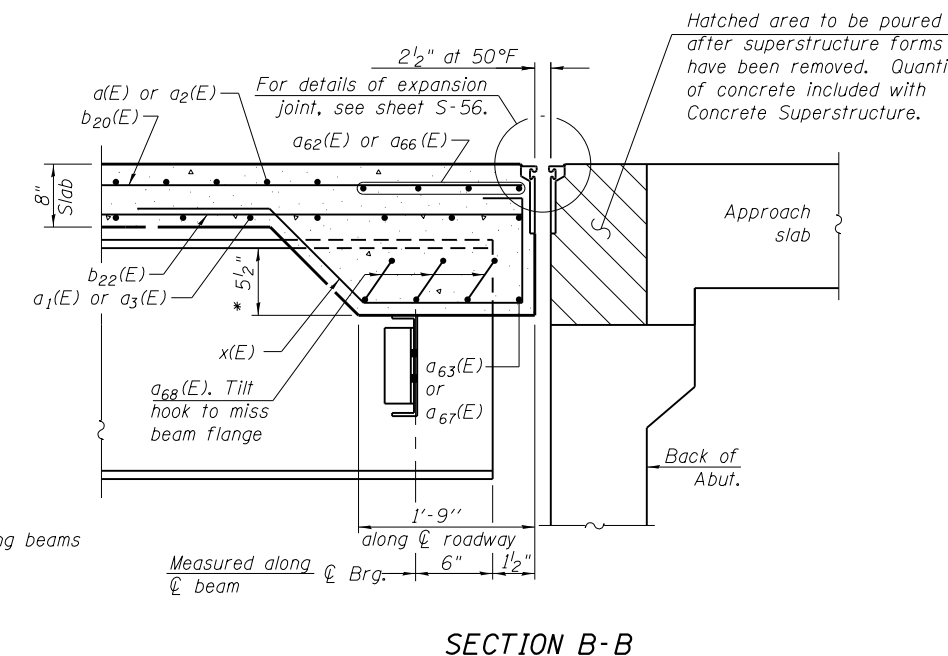
BAR x(E)

**SUPERSTRUCTURE
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a(E)	254	# 5	29'-9"	—
a1(E)	229	# 5	28'-10"	—
a2(E)	254	# 5	45'-1"	—
a3(E)	229	# 5	44'-7"	—
a4(E)	254	# 6	6'-6"	—
a8(E)	16	# 5	1'-6"	—
a60(E)	4	# 5	31'-3"	—
a62(E)	4	# 5	30'-10"	—
a63(E)	1	# 5	27'-9"	—
a64(E)	4	# 5	47'-8"	—
a66(E)	4	# 5	46'-11"	—
a67(E)	1	# 5	43'-10"	—
a68(E)	70	# 5	7'-5"	U
b20(E)	624	# 5	26'-8"	—
b21(E)	150	# 6	36'-11"	—
b22(E)	366	# 5	34'-5"	—
d(E)	416	# 5	5'-7"	—
d1(E)	416	# 5	7'-8"	—
e50(E)	42	# 4	17'-10"	—
e51(E)	64	# 4	8'-9"	—
e52(E)	42	# 4	14'-9"	—
e53(E)	42	# 4	17'-9"	—
e54(E)	8	# 8	29'-10"	—
e55(E)	8	# 8	8'-9"	—
e56(E)	4	# 8	25'-2"	—
e57(E)	8	# 4	28'-2"	—
e58(E)	4	# 4	23'-7"	—
x(E)	110	# 5	6'-5"	—
Reinforcement Bars, Epoxy Coated			Pound	89,530
Concrete Superstructure			Cu. Yds.	430.6



SECTION A-A



SECTION B-B

N:\PROJ\10003384\004_US_30A_Design\Structural\CAD\3384_48_EB_Unit_3 - Superstructure Details.dgn



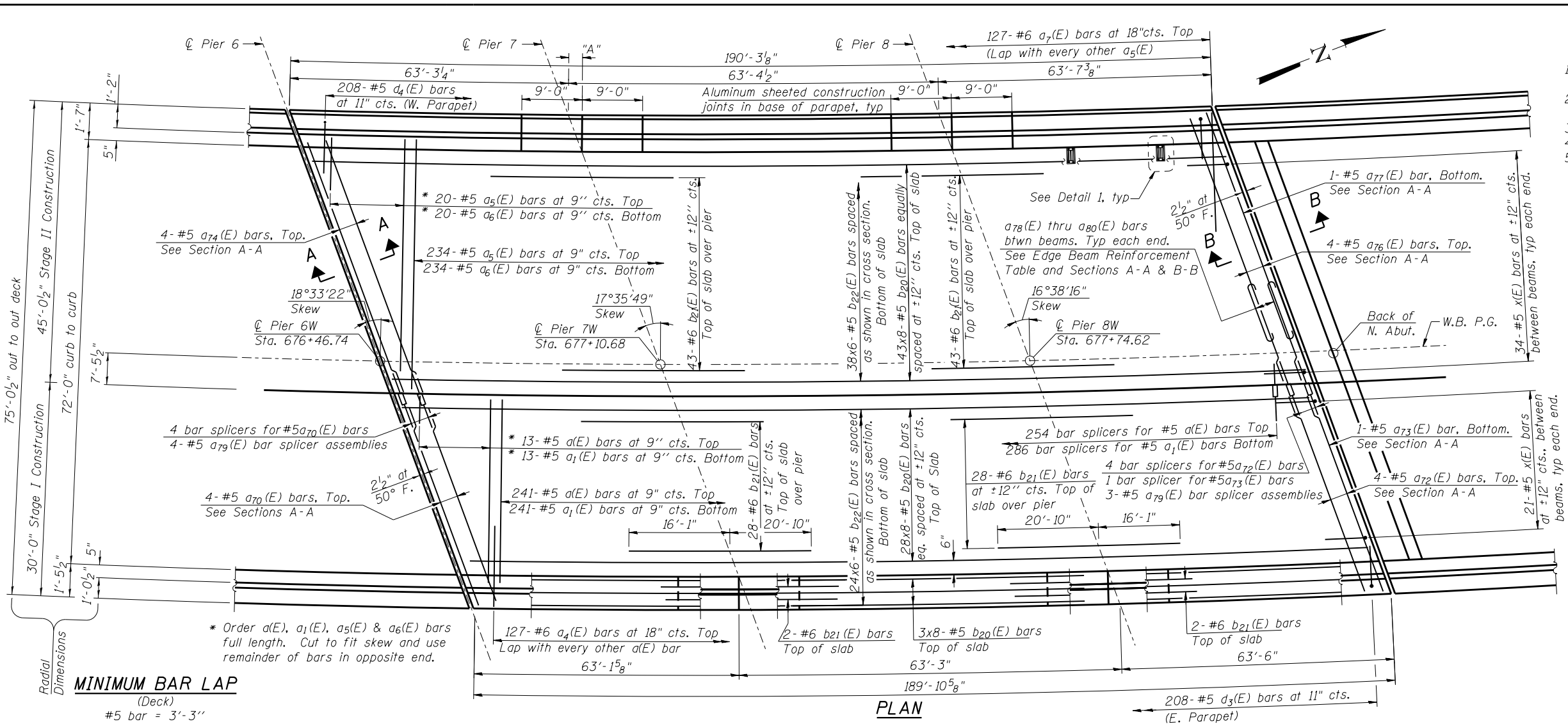
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PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - MHT	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EB UNIT 3 - SUPERSTRUCTURE DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-48 OF S-118 SHEETS

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 523
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



- NOTES**
- See Sheet S-51 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 S-50 for parapet reinforcement.
 - See Sheet 109 for Bar Splicer details.
 - Dimensions are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on Sheet S-56.

EDGE BEAM REINFORCEMENT

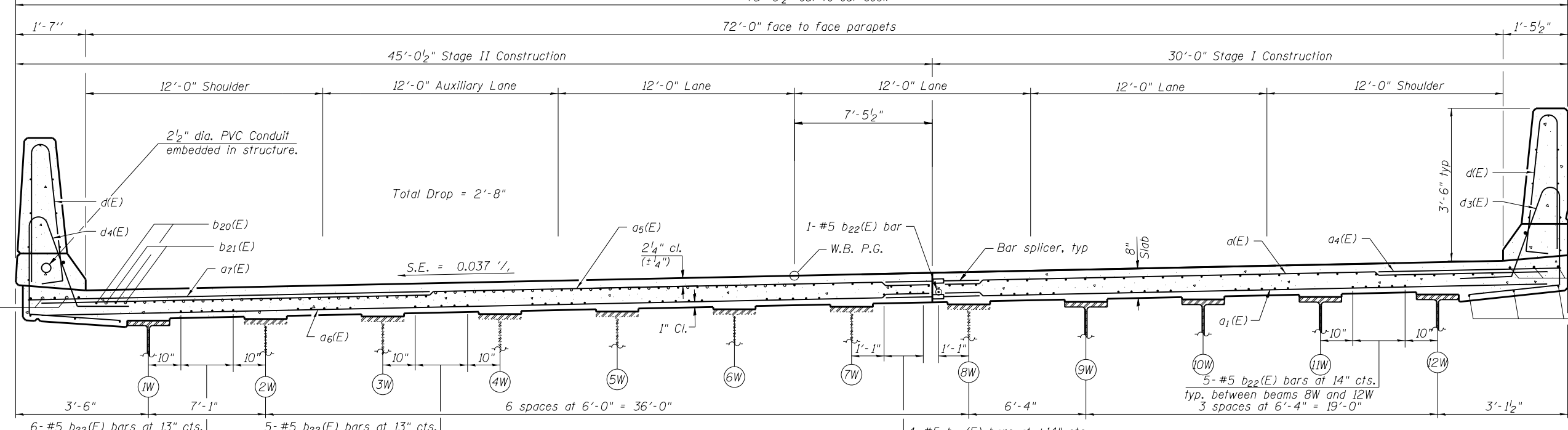
Between Beams	Reinf.
1W & 2W	7- #5 a ₇₈ (E)
2W & 3W	7- #5 a ₇₉ (E)
3W & 4W	7- #5 a ₇₉ (E)
4W & 5W	7- #5 a ₇₉ (E)
5W & 6W	7- #5 a ₇₉ (E)
6W & 7W	7- #5 a ₇₉ (E)
7W & 8W	Splicer Assm.
8W & 9W	7- #5 a ₈₀ (E)
9W & 10W	7- #5 a ₈₀ (E)
10W & 11W	7- #5 a ₈₀ (E)
11W & 12W	7- #5 a ₈₀ (E)

MINIMUM BAR LAP

(Deck)
 #5 bar = 3'-3"
 #6 bar = 3'-10"

PLAN

75'-0 1/2" out to out deck



CROSS SECTION

(Looking North)

NEAR MIDSPAN

DIMENSION "A"

	W. Par.	E. Par.
Pier 7	6"	5 1/2"
Pier 8	5 5/8"	5 1/4"

N:\PROJECTS\00033384\004\US_30A\Design\Structural\CAD_33384_49_WB_Unit_3 - Deck Plan and Cross-Section.dgn



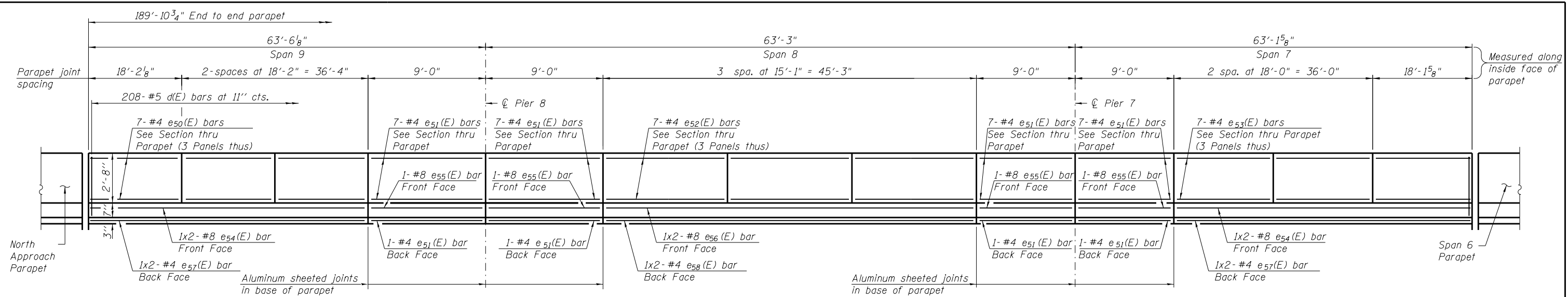
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

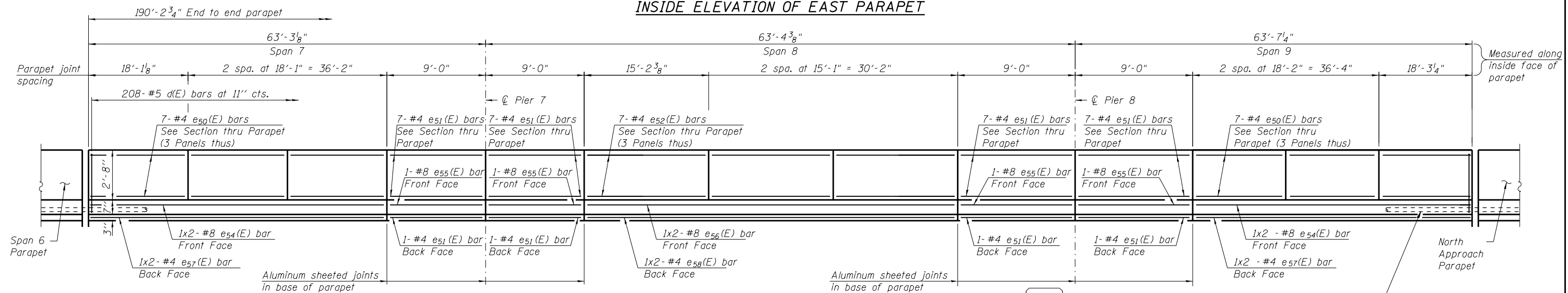
WB UNIT 3 - DECK PLAN & CROSS SECTION
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-49 OF S-118 SHEETS

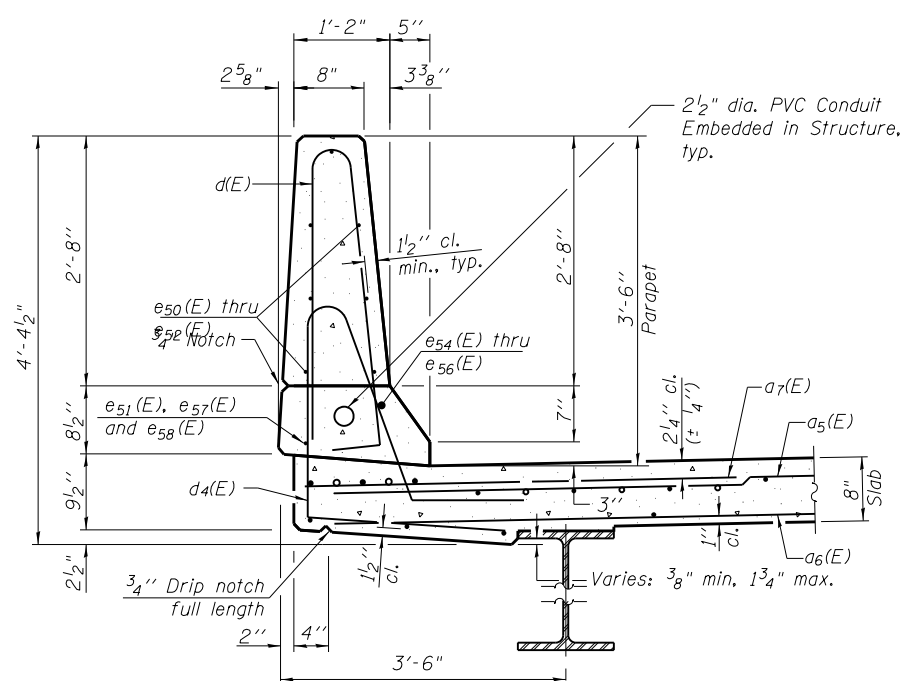
F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 524
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



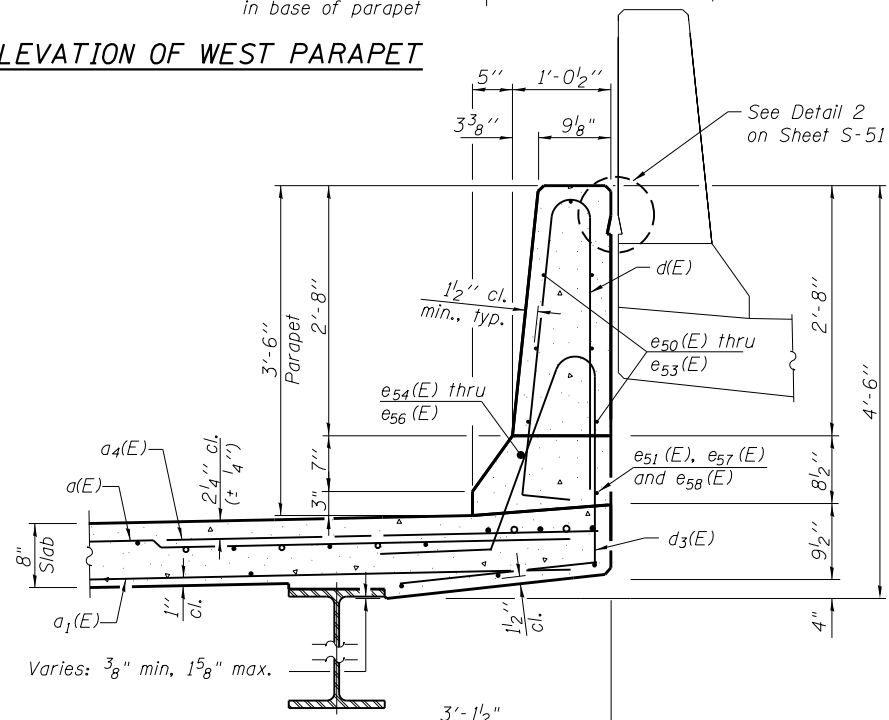
INSIDE ELEVATION OF EAST PARAPET



INSIDE ELEVATION OF WEST PARAPET



SECTION THRU WEST PARAPET



SECTION THRU EAST PARAPET

2 1/2" dia. PVC Conduit
Embedded in Structure,
typ.

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

- NOTES**
1. Work this Sheet with Sheet Nos. S-49 and S-51
 2. Bars indicated thus 1x3-#8 etc. indicates 1 line of bars with 3 lengths per line
 3. See sheet S-51 for Parapet Joint Details, Bar bending diagrams and Bill of Material

N:\PROJECTS\0003384\004_US_30A\Design\Structural\CAD\3384_50_WB_Unit_3 - Parapet Elevations and Details.dgn



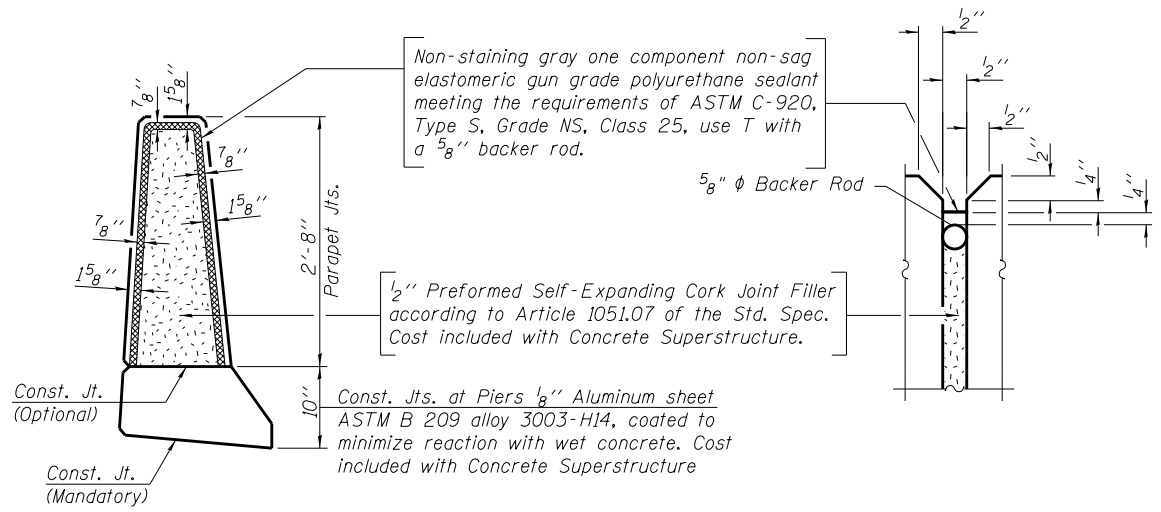
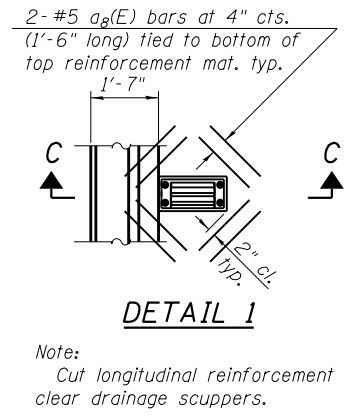
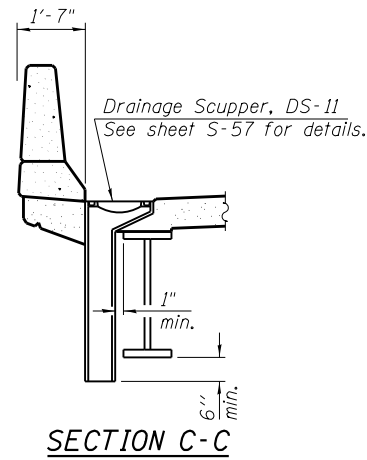
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PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

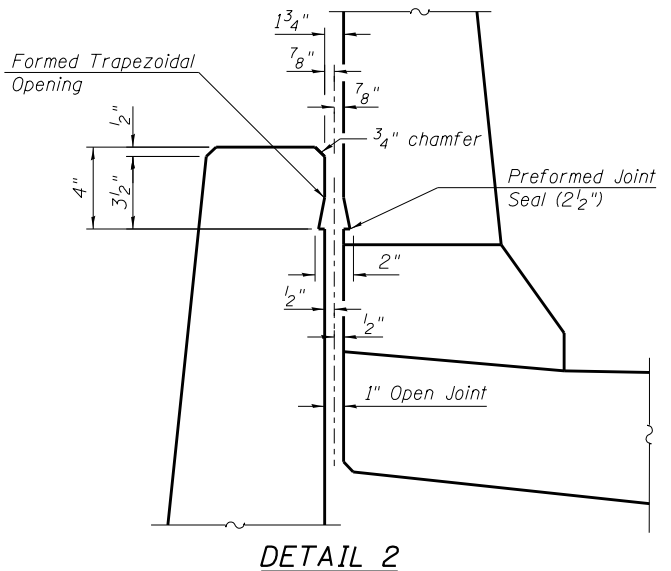
WB UNIT 3 - PARAPET ELEVATIONS AND DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-50 OF S-118 SHEETS

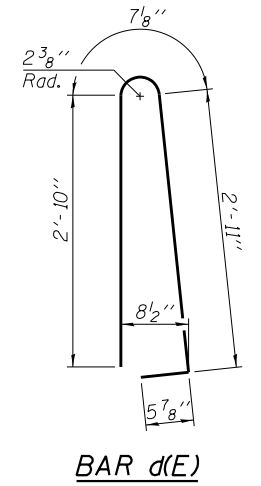
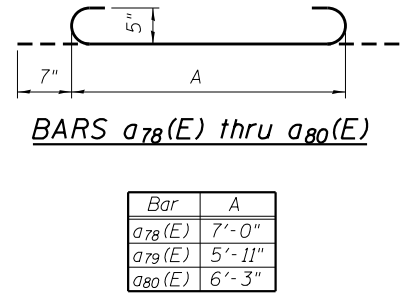
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				CONTRACT NO. 60N87
ILLINOIS FED. AID PROJECT				



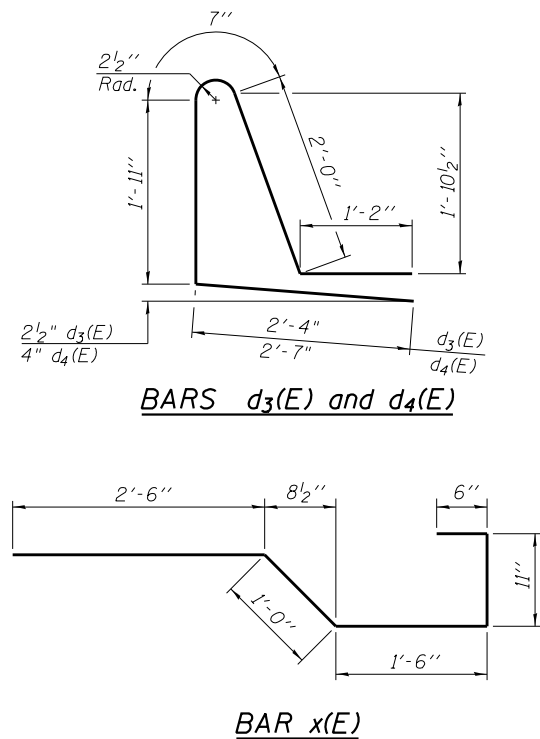
PARAPET JOINT DETAILS



DETAIL 2



BAR d(E)

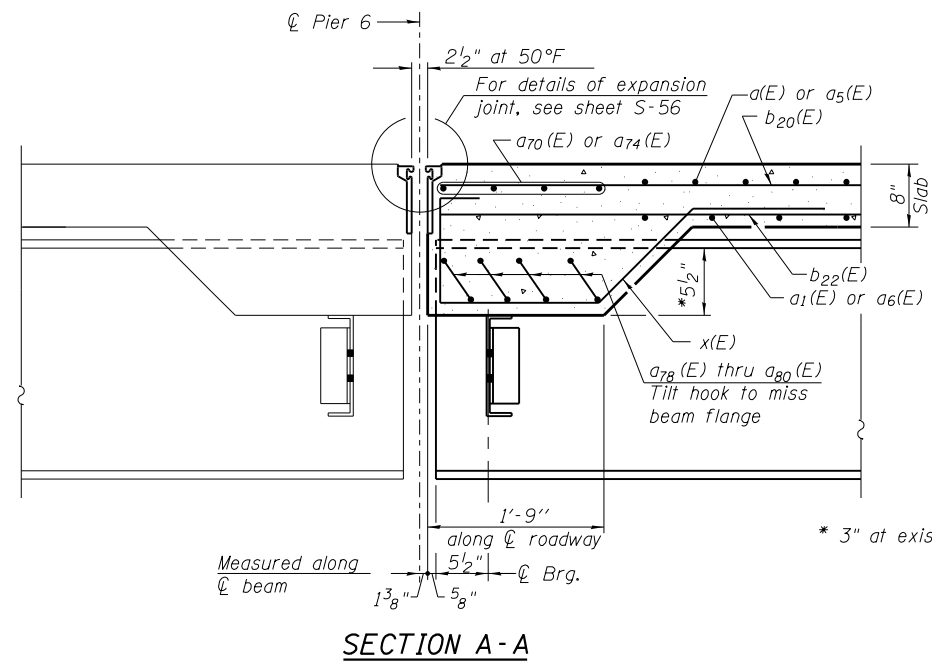


BARS d3(E) and d4(E)

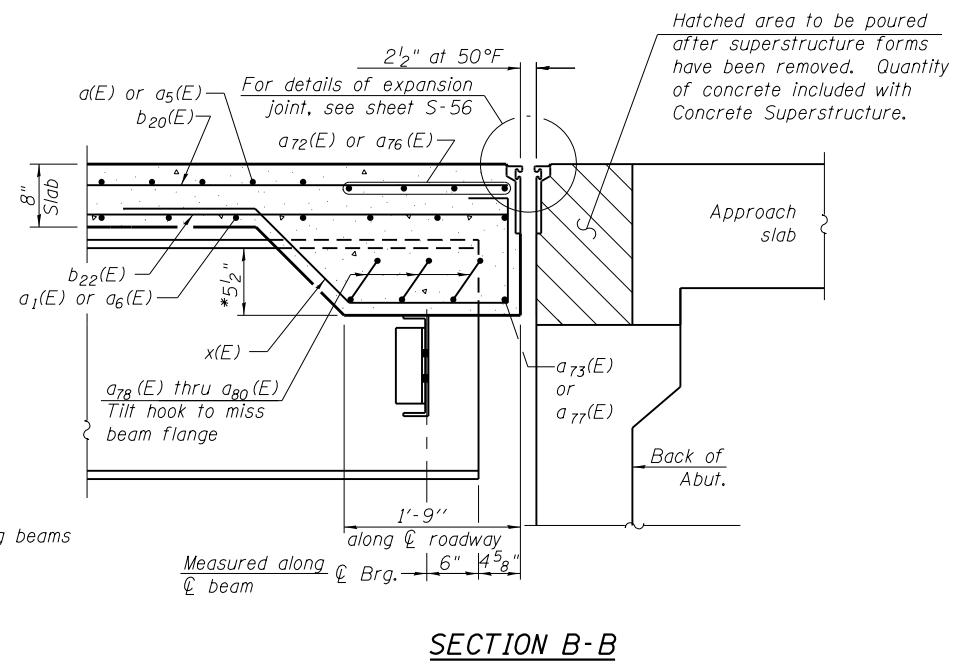
BAR x(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	254	# 5	29'-9"	—
a1(E)	254	# 5	28'-10"	—
a4(E)	127	# 6	6'-6"	—
a5(E)	254	# 5	44'-7"	—
a6(E)	254	# 5	43'-10"	—
a7(E)	127	# 6	14'-5"	—
a8(E)	16	# 5	1'-6"	—
a70(E)	4	# 5	31'-3"	—
a72(E)	4	# 5	30'-10"	—
a73(E)	1	# 5	27'-7"	—
a74(E)	4	# 5	47'-2"	—
a76(E)	4	# 5	46'-6"	—
a77(E)	1	# 5	42'-10"	—
a78(E)	7	# 5	8'-2"	—
a79(E)	35	# 5	7'-1"	—
a80(E)	28	# 5	7'-5"	—
b20(E)	616	# 5	26'-8"	—
b21(E)	150	# 6	36'-11"	—
b22(E)	372	# 5	34'-5"	—
d(E)	416	# 5	5'-7"	—
d3(E)	208	# 5	8'-0"	—
d4(E)	208	# 5	8'-3"	—
e50(E)	63	# 4	17'-10"	—
e51(E)	64	# 4	8'-9"	—
e52(E)	42	# 4	14'-9"	—
e53(E)	21	# 4	17'-9"	—
e54(E)	8	# 8	29'-10"	—
e55(E)	8	# 8	8'-9"	—
e56(E)	4	# 8	25'-2"	—
e57(E)	8	# 4	28'-2"	—
e58(E)	4	# 4	23'-7"	—
x(E)	110	# 5	6'-5"	—
Reinforcement Bars, Epoxy Coated	Pound		92,800	
Concrete Superstructure	Cu. Yds.		426.8	
Preformed Joint Seal 2 1/2"	Foot		191	



SECTION A-A



SECTION B-B

N:\PROJ\0003384\004_US_30\Design\Structural\CAD\3384_51_WB_Unit_3 - Superstructure Details.dgn



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PLOT DATE = 6/4/2018	DRAWN - RD	REVISED -
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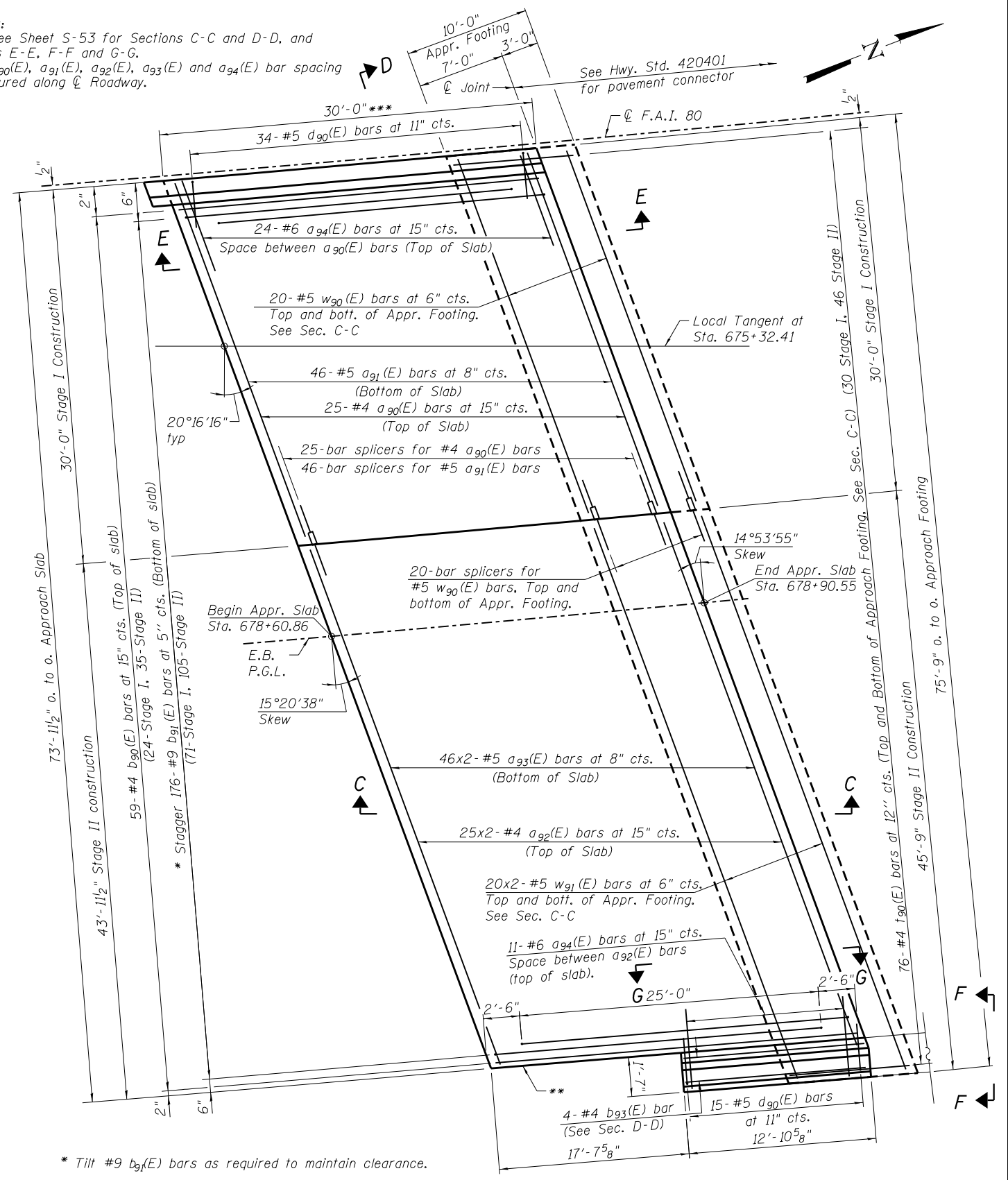
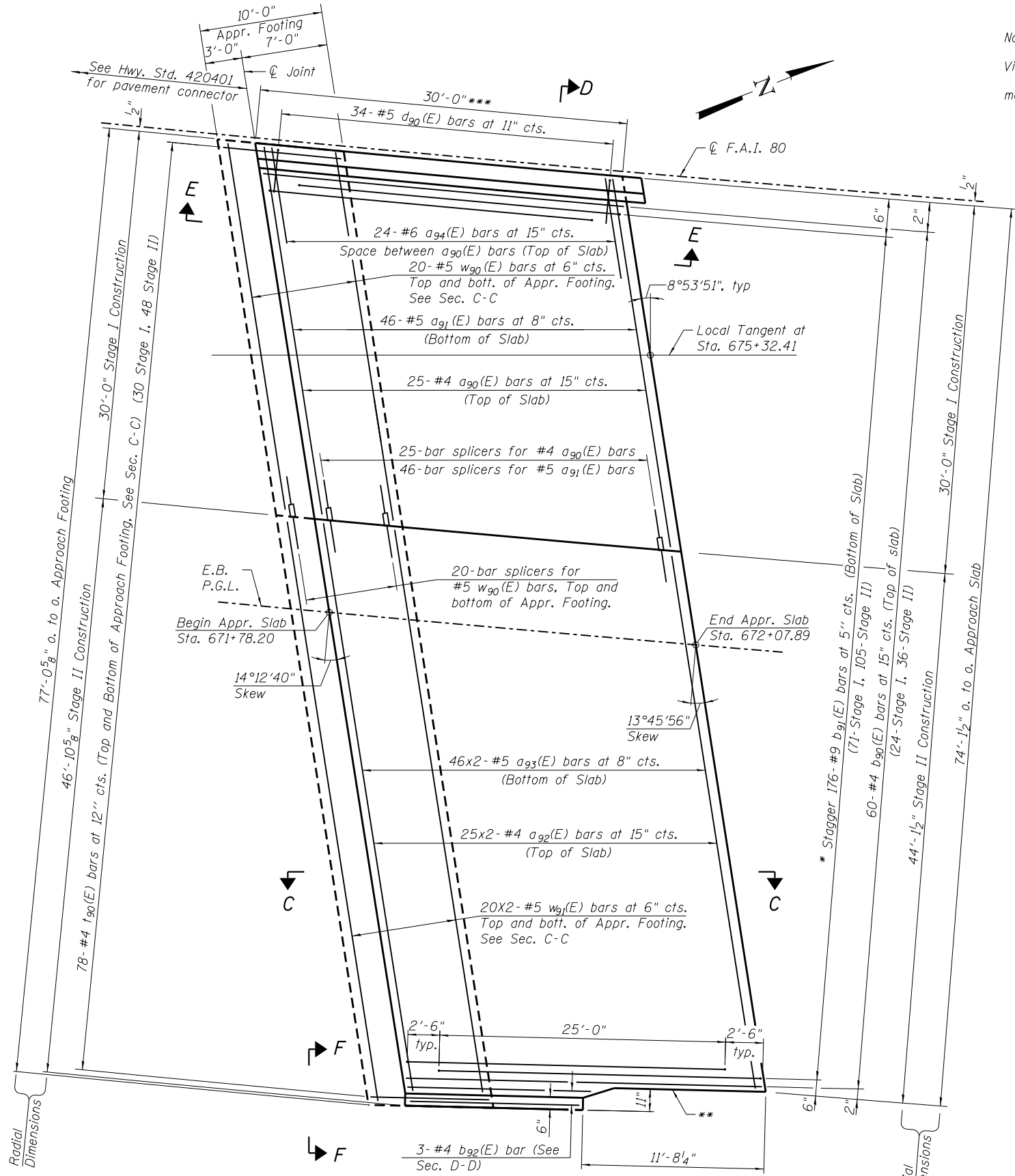
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WB UNIT 3 - SUPERSTRUCTURE DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-51 OF S-118 SHEETS

F.A.I. RT.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	841	526
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

Notes:
 See Sheet S-53 for Sections C-C and D-D, and Views E-E, F-F and G-G.
 $a_{90}(E)$, $a_{91}(E)$, $a_{92}(E)$, $a_{93}(E)$ and $a_{94}(E)$ bar spacing measured along \varnothing Roadway.



MINIMUM BAR LAP
 #4 BAR = 2'-11"
 #5 BAR = 3'-3"

* Tilt #9 $b_{91}(E)$ 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 parapet.
 *** Measured along \varnothing F.A.I. 80

N:\PROJ\100033384\004\US_30\Design\Structural\CAD\33384_52 Eastbound Bridge Approach Slab Details - 1.dgn
 5/9/2018 10:00:00 AM
 User: kaisneros
 Plot Scale: 1/8" = 1'-0"
 Plot Date: 5/9/2018



USER NAME = kaisneros	DESIGNED - AMK	REVISED -
	CHECKED - MHT	REVISED -
PLOT SCALE = 1/8" = 1'-0"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

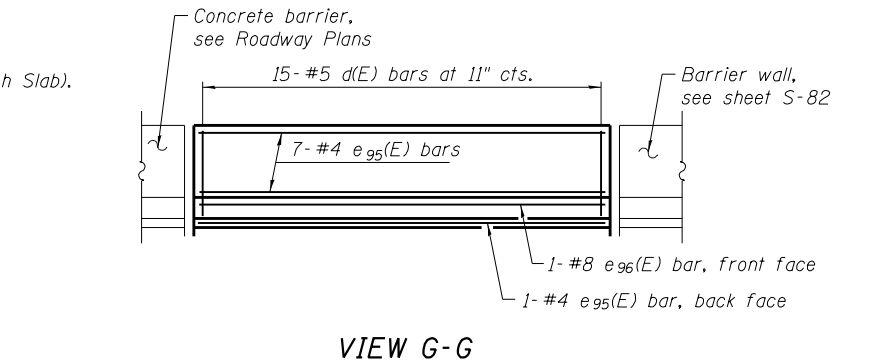
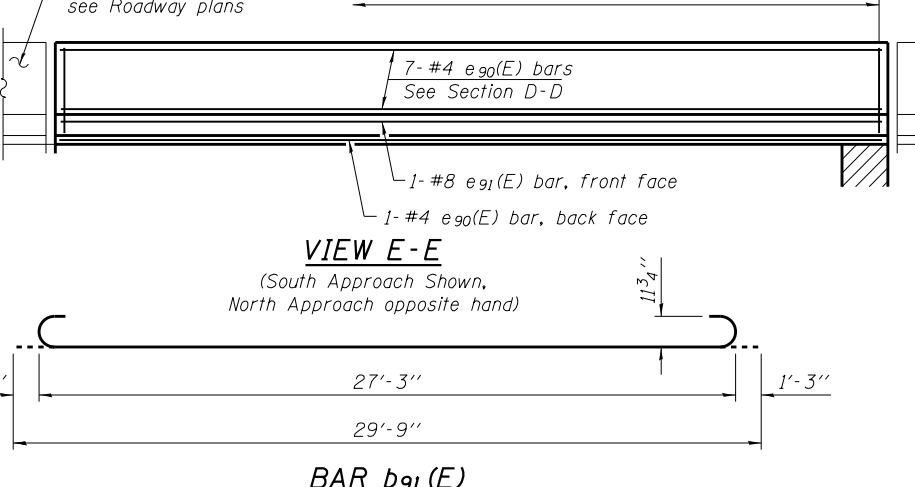
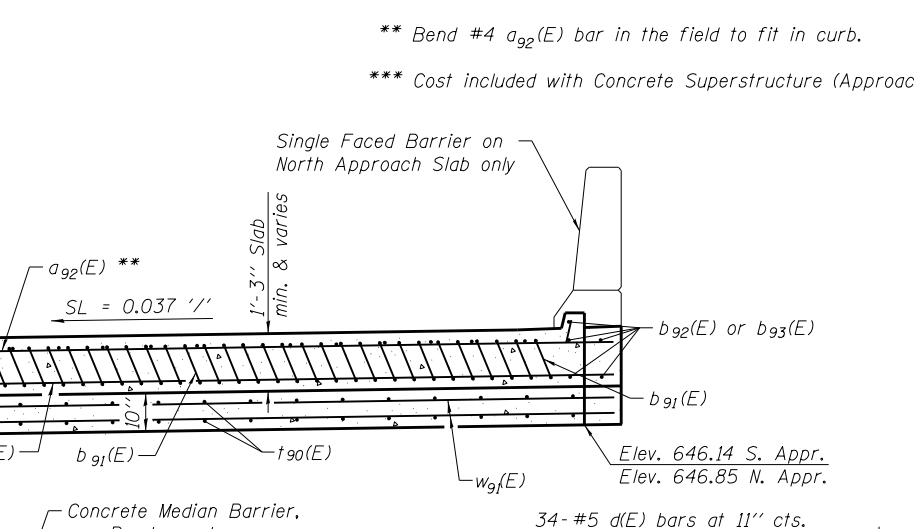
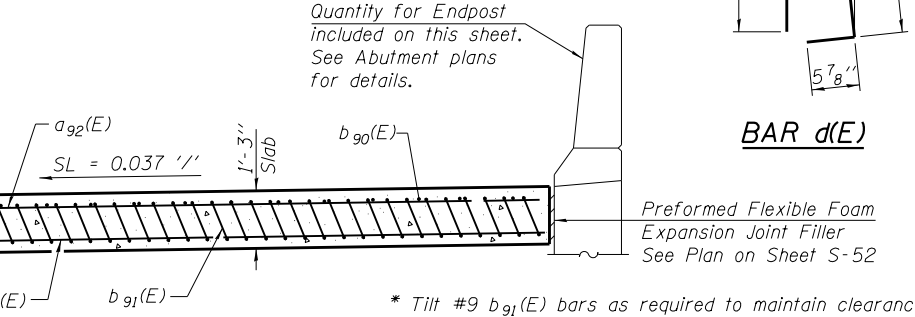
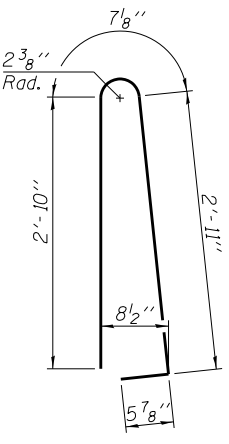
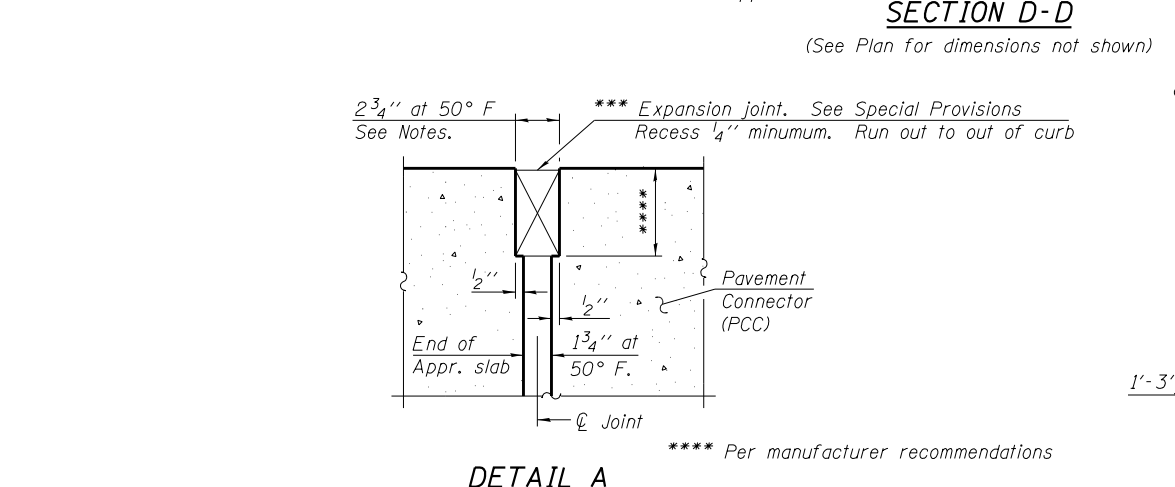
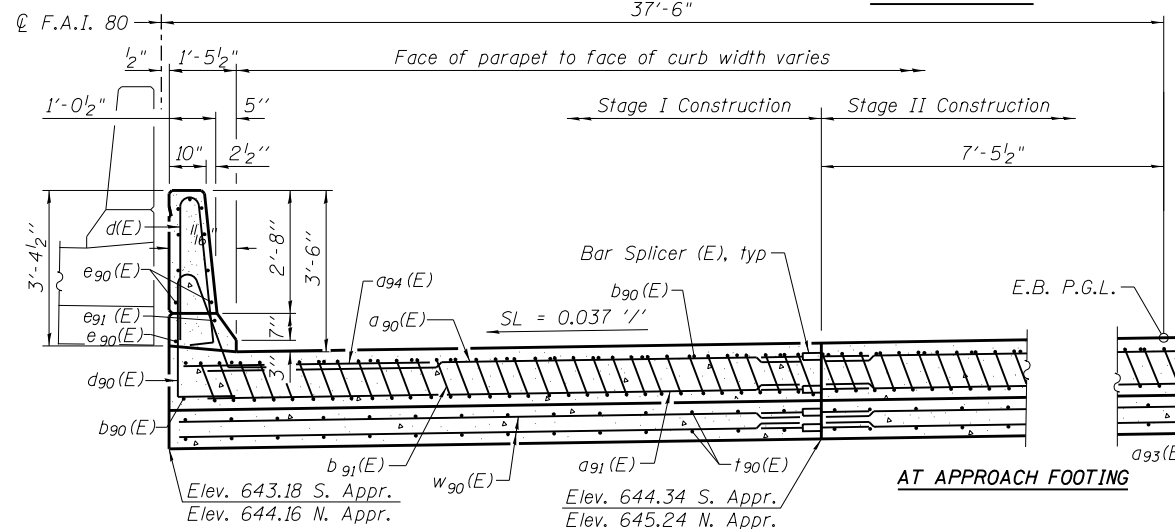
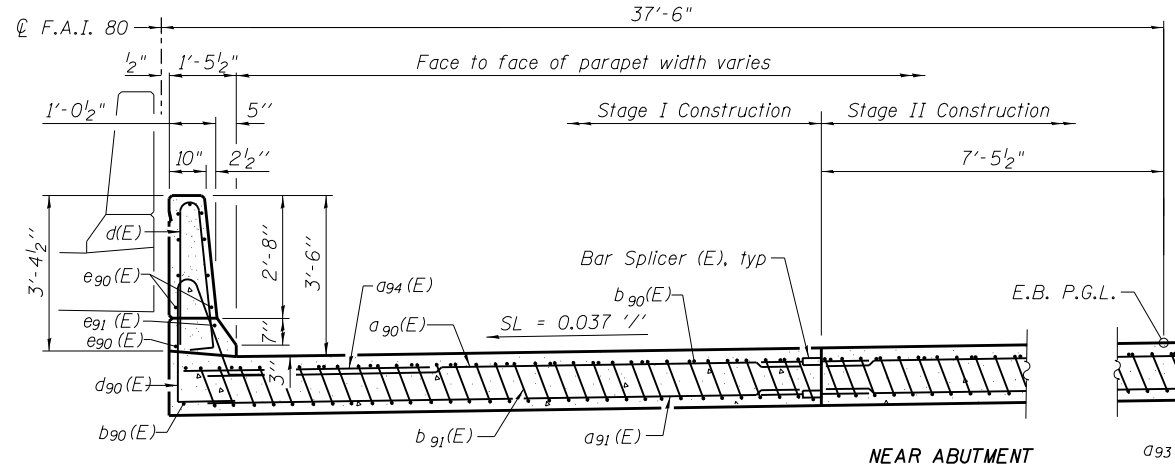
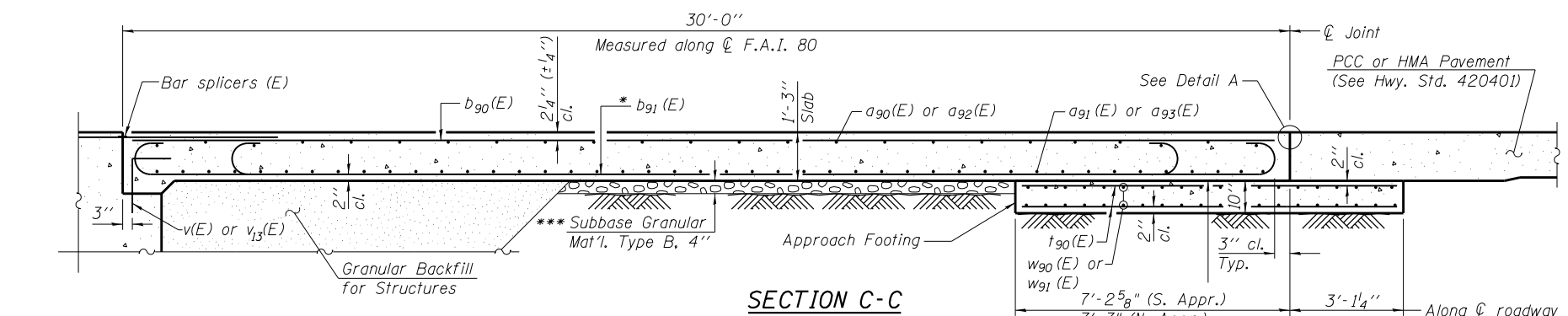
**EASTBOUND BRIDGE APPROACH DETAILS - 1
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-52 OF S-118 SHEETS

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 527
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

TWO EB APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a90(E)	50	# 4	30'-7"	
a91(E)	92	# 5	30'-7"	
a92(E)	100	# 4	25'-5"	
a93(E)	184	# 5	25'-7"	
a94(E)	59	# 6	6'-6"	
b90(E)	119	# 4	29'-8"	
b91(E)	352	# 9	29'-9"	
b92(E)	3	# 4	17'-5"	
b93(E)	4	# 4	12'-6"	
d(E)	83	# 5	5'-7"	
d90(E)	83	# 5	7'-11"	
e90(E)	16	# 4	30'-2"	
e91(E)	2	# 8	30'-2"	
e95(E)	8	# 4	12'-0"	
e96(E)	1	# 8	12'-0"	
w90(E)	80	# 5	30'-7"	
w91(E)	160	# 5	25'-7"	
t90(E)	308	# 4	10'-0"	
Concrete Superstructure (Approach Slab)				Cu. Yd. 211.1
Concrete Superstructure				Cu. Yd. 13.6
Concrete Structures				Cu. Yd. 48.8
Reinforcement Bars, Epoxy Coated				Pound 59,500



Notes:
 Parapet concrete shall be paid for as Concrete Superstructure.
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v(E) and v3(E) bar details, see sheets S-78 and S-81 respectively.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet S-110.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheets S-79 and S-81.
 For additional parapet details, see sheet S-35.
 The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.

N:\PROJ\10003384\004\US_30\Design\Structural\CAD\3384_53 Eastbound Bridge Approach Slab Details - 2.dgn
 Clorba Group, Inc.
 CONSULTING ENGINEERS
 650 North Cass Street
 Suite 402, Chicago, Illinois 60654
 Tel: 312.724.4000
 Fax: 312.724.4014
 Email: clorba@clorba.com

USER NAME = kaisneros	DESIGNED - AMK	REVISED -
PLOT SCALE = 0:2.0000' = 1"	CHECKED - MHT	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - MHT	REVISED -

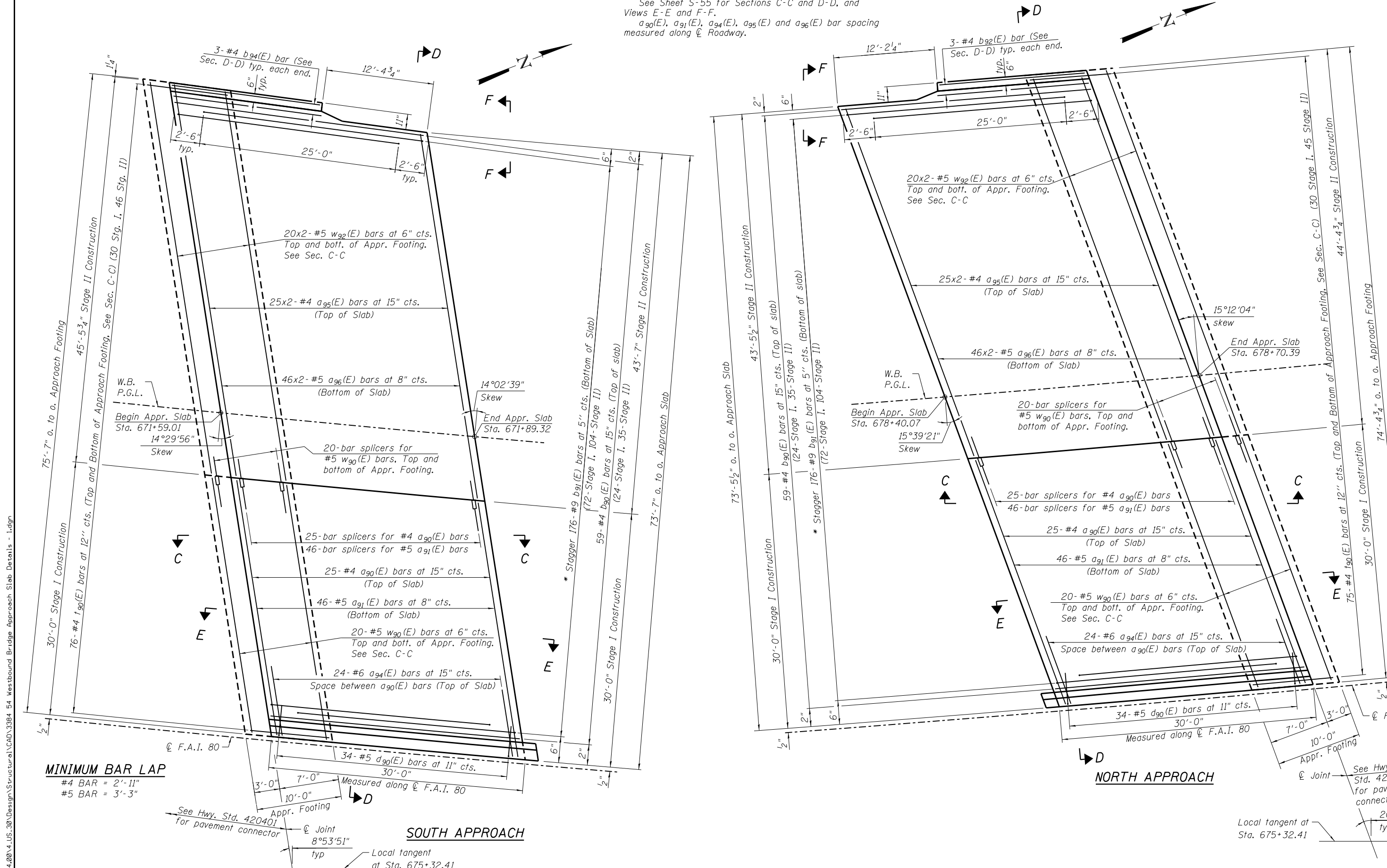
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EASTBOUND BRIDGE APPROACH SLAB DETAILS - 2
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 528
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

SHEET NO. S-53 OF S-118 SHEETS

Notes:
 See Sheet S-55 for Sections C-C and D-D, and Views E-E and F-F.
 $a_{90}(E)$, $a_{91}(E)$, $a_{94}(E)$, $a_{95}(E)$ and $a_{96}(E)$ bar spacing measured along ϕ Roadway.



MINIMUM BAR LAP
 #4 BAR = 2'-11"
 #5 BAR = 3'-3"

See Hwy. Std. 420401
 for pavement connector

Local tangent
 at Sta. 675+32.41

Local tangent at
 Sta. 675+32.41

See Hwy.
 Std. 420401
 for pavement
 connector

N:\PROJECTS\00033384\004\US_30\Design\Structural\CAD\33384_54 Westbound Bridge Approach Slab Details - 1.dgn



USER NAME = kaisneros
 DESIGNED - AMK
 CHECKED - MHT
 PLOT SCALE = 1/8" = 1'-0"
 DRAWN - RD
 PLOT DATE = 5/9/2018
 CHECKED - MHT

DESIGNED - AMK
 CHECKED - MHT
 DRAWN - RD
 CHECKED - MHT

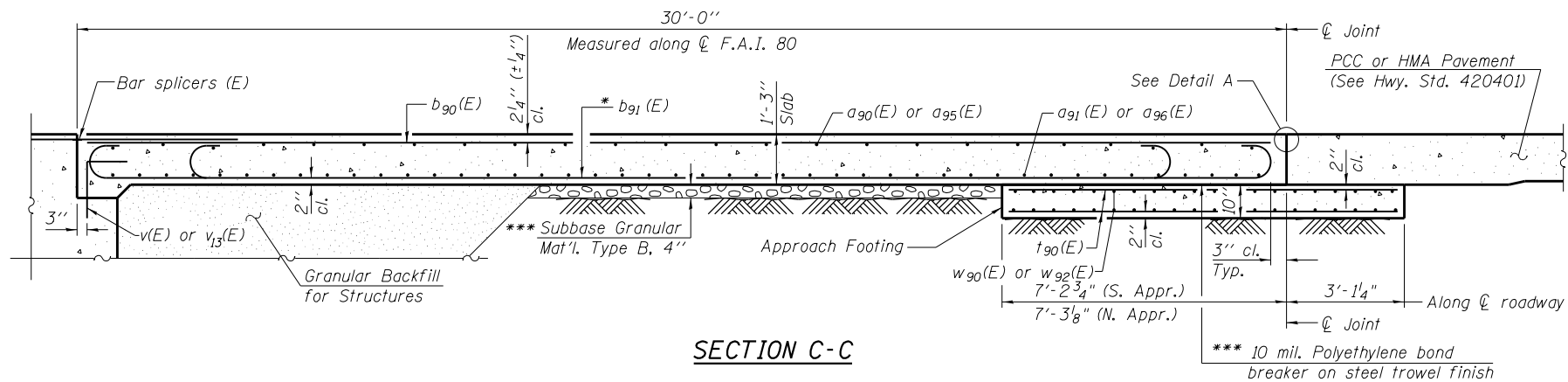
REVISED -
 REVISED -
 REVISED -
 REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

WESTBOUND BRIDGE APPROACH DETAILS - 1
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

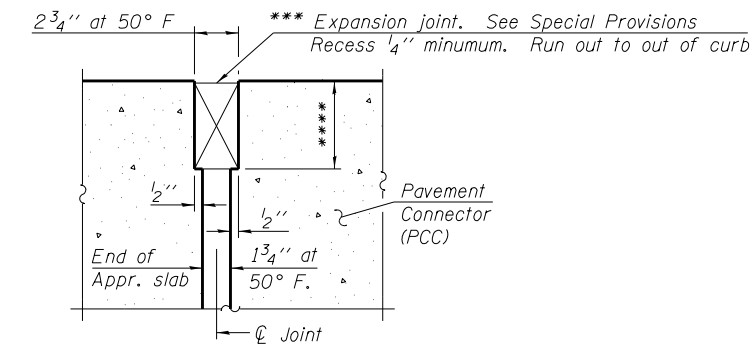
SHEET NO. S-54 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	529
CONTRACT NO. 60N87				
ILLINOIS FED. AID PROJECT				



SECTION C-C

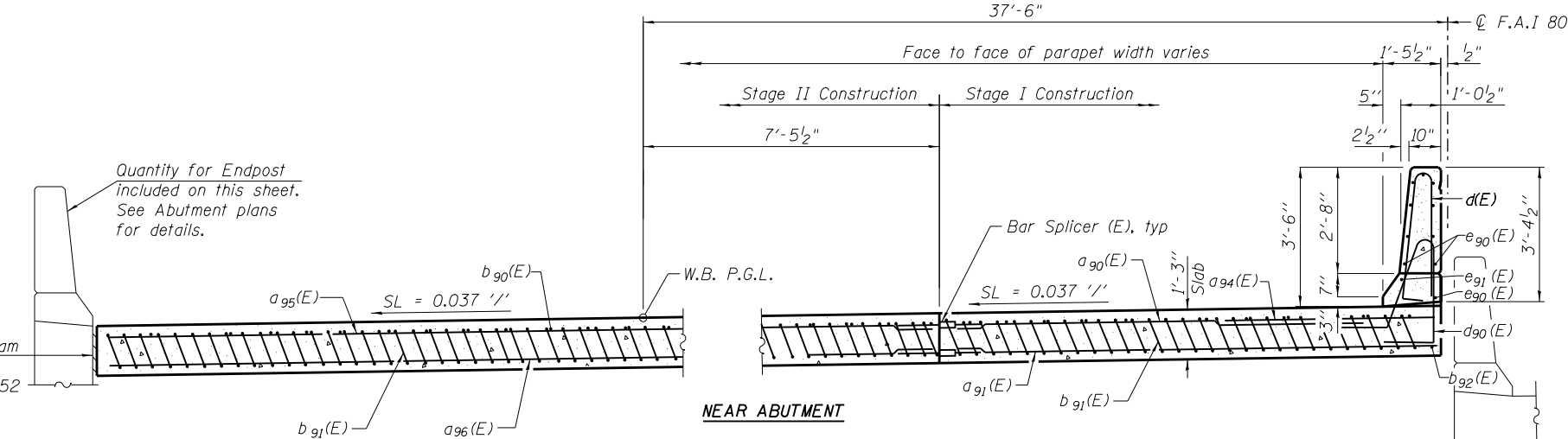
Notes:
 Parapet concrete shall be paid for as Concrete Superstructure.
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v(E) and v13(E) bar details, see sheets S-78 and S-81 respectively.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet S-110.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheets S-79 and S-81.
 For details of bars d(E), d90(E) and b91(E), see Sheet S-53.
 For additional parapet details, see sheet S-35.
 The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach pavement.



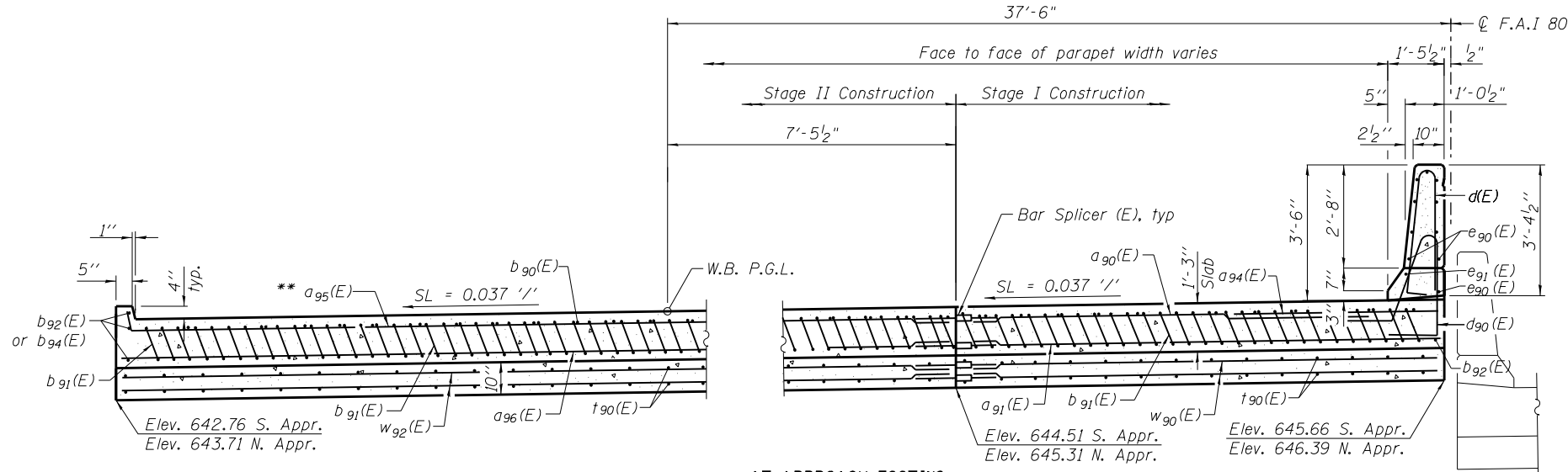
DETAIL A

**** Per manufacturer recommendations

Quantity for Endpost included on this sheet. See Abutment plans for details.
 Preformed Flexible Foam Expansion Joint Filler See Plan on Sheet S-52



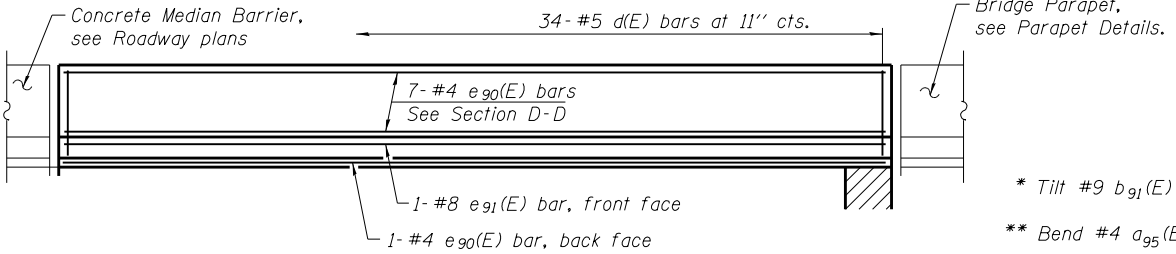
NEAR ABUTMENT



AT APPROACH FOOTING

SECTION D-D

(See Plan for dimensions not shown)



VIEW E-E

(North Approach shown, South Approach opposite hand)

**TWO WB APPROACHES
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a90(E)	50	# 4	30'-7"	—
a91(E)	92	# 5	30'-7"	—
a94(E)	48	# 6	6'-6"	—
a95(E)	100	# 4	24'-9"	—
a96(E)	184	# 5	24'-11"	—
b90(E)	118	# 4	29'-8"	—
b91(E)	352	# 9	29'-9"	—
b92(E)	3	# 4	17'-5"	—
b94(E)	3	# 4	17'-8"	—
d(E)	68	# 5	5'-7"	—
d90(E)	68	# 5	7'-11"	—
e90(E)	16	# 4	30'-2"	—
e91(E)	2	# 8	30'-2"	—
w90(E)	80	# 5	30'-7"	—
w92(E)	160	# 5	24'-11"	—
t90(E)	302	# 4	10'-0"	—
Concrete Superstructure (Approach Slab)		Cu. Yd.	206.7	
Concrete Superstructure		Cu. Yd.	11.9	
Concrete Structures		Cu. Yd.	47.9	
Reinforcement Bars, Epoxy Coated		Pound	59,050	

* Tilt #9 b91(E) bars as required to maintain clearance.
 ** Bend #4 a95(E) bar in the field to fit in curb.
 *** Cost included with Concrete Superstructure (Approach Slab).

N:\PROJECTS\0003384\004_4_US_30\Design\Structural\CAD\3384_55 Westbound Bridge Approach Slab Details - 2.dgn



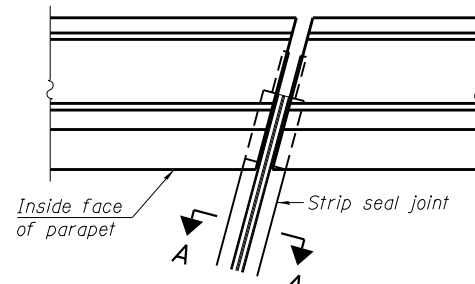
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	CHECKED - MHT	REVISED -
PLOT SCALE = 0:2.0000' / 1"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**WESTBOUND BRIDGE APPROACH SLAB DETAILS - 2
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

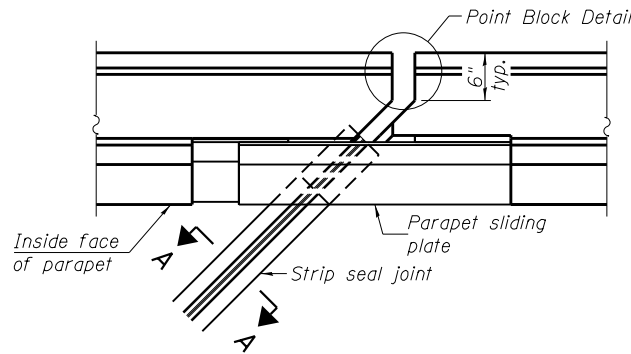
SHEET NO. S-55 OF S-118 SHEETS

F.A.I. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	530
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

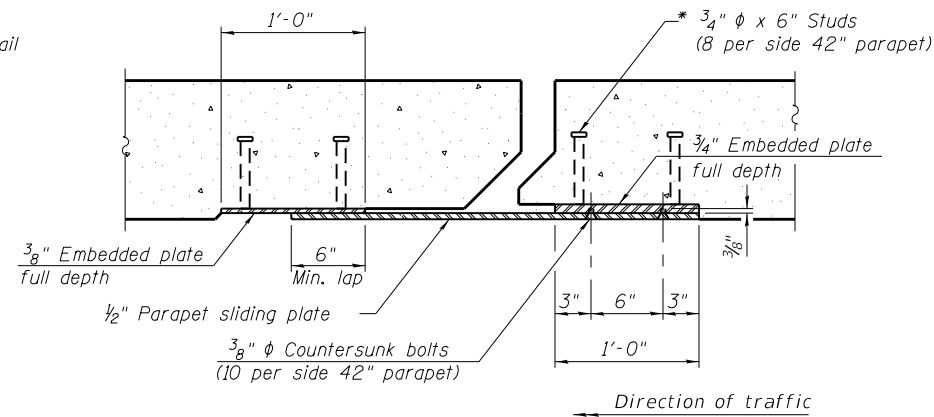


FOR SKEWS $\leq 30^\circ$

PLAN AT PARAPET



FOR SKEWS $> 30^\circ$



SECTION B-B

Notes:

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

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4 1/2" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

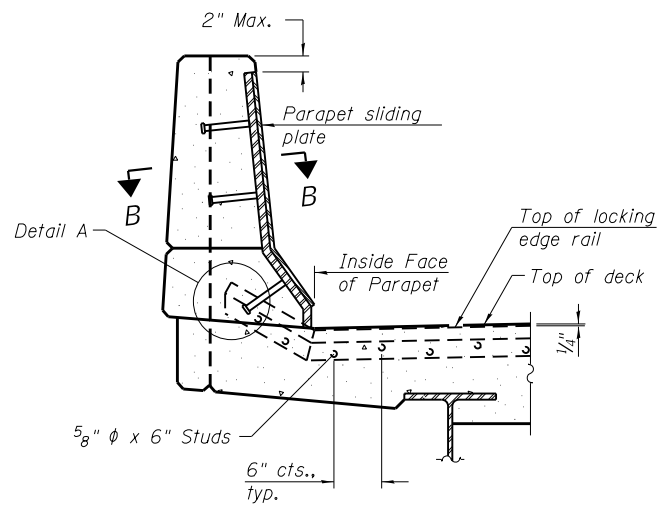
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 1/8" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.

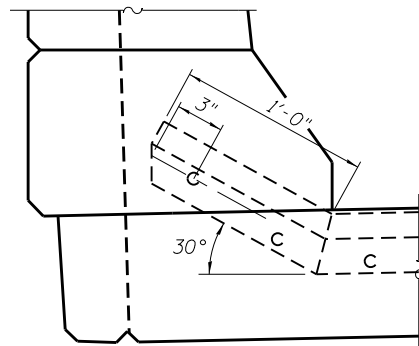
3/4" F-shape barrier shown, 42" F-shape similar as noted.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

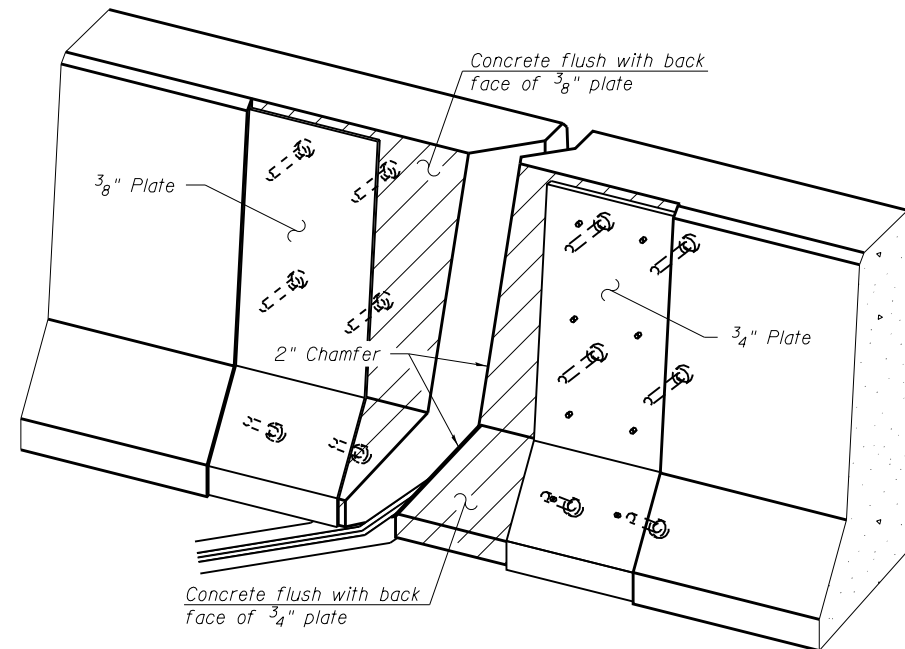


ELEVATION AT PARAPET

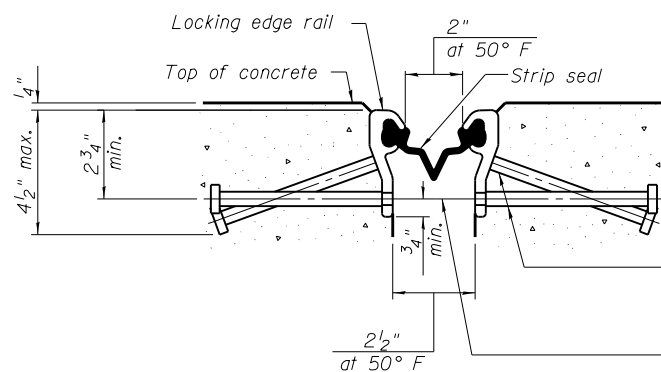
(Skews $> 30^\circ$ shown. Skews $\leq 30^\circ$ similar except as shown in plan view.)



DETAIL A



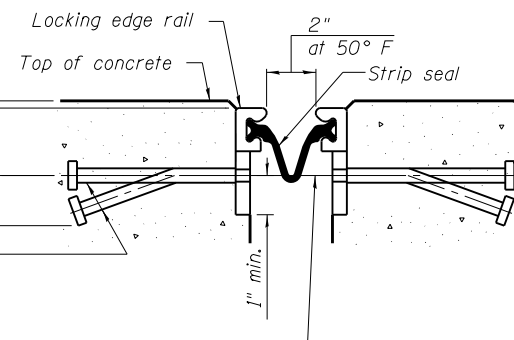
TRIMETRIC VIEW
(Showing embedded plates only)



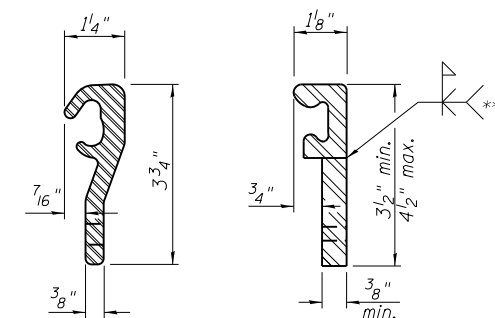
SHOWING ROLLED RAIL JOINT

* 5/8" phi x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

3/8" phi threaded rods in 7/16" phi holes at +/- 4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.



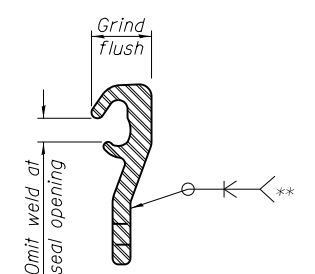
SHOWING WELDED RAIL JOINT



LOCKING EDGE RAILS

LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	614

N:\PROJECTS\0003384\004\4_US_30\Design\Structural\CAD\3384_56_Prefomed Joint Strip Seal.dgn

EJ-SS

8-11-17



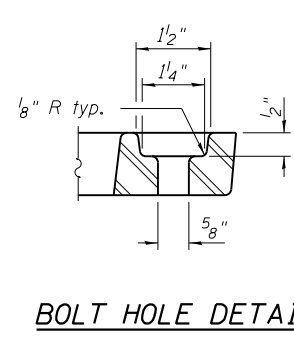
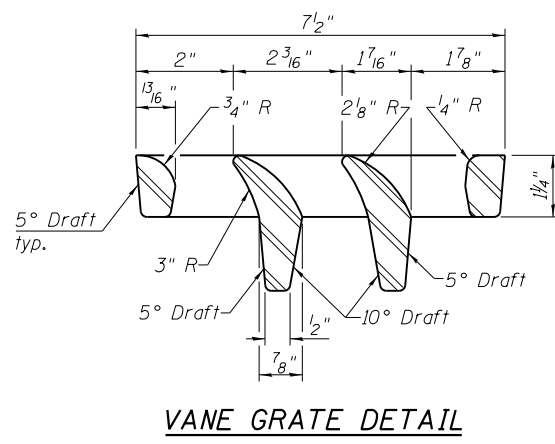
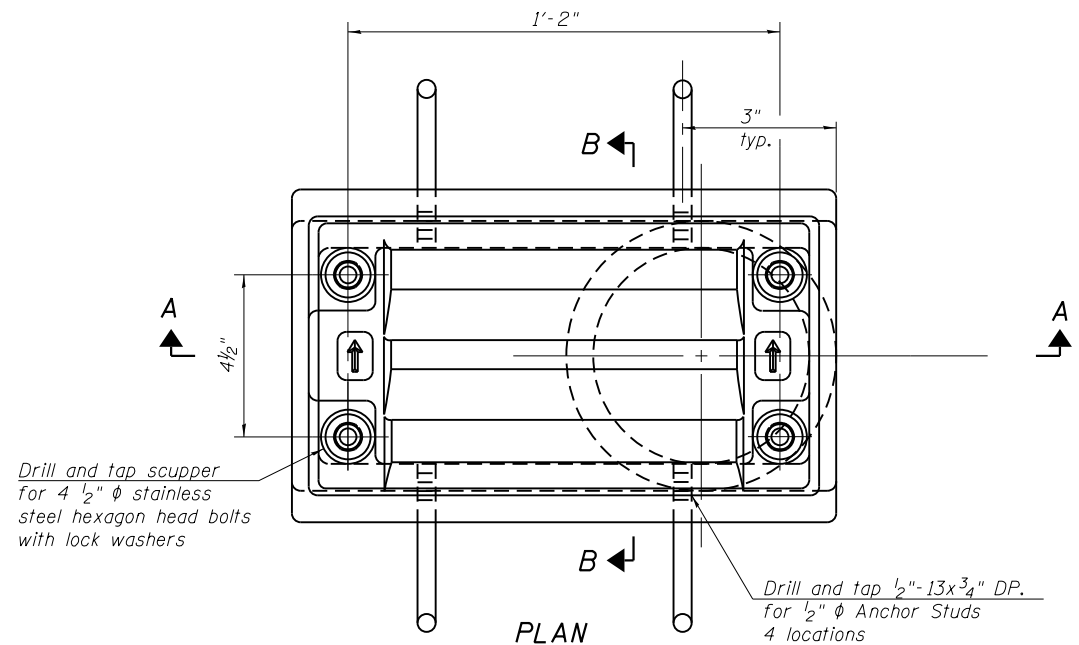
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	CHECKED - DL	REVISED -
PLOT SCALE = 0:2.0000' = 1" = 1'	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

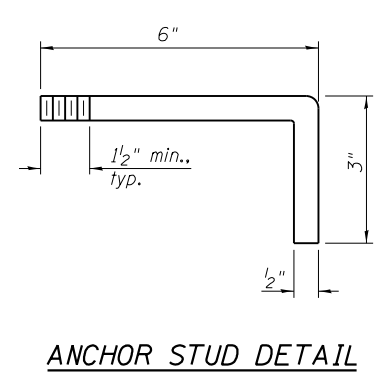
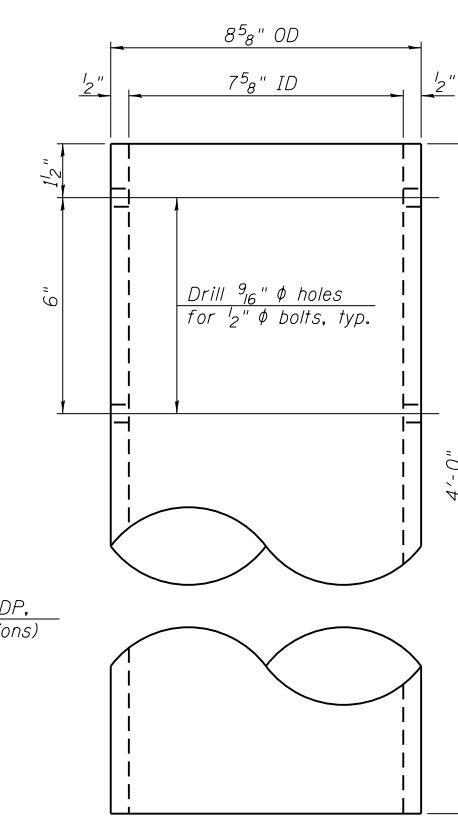
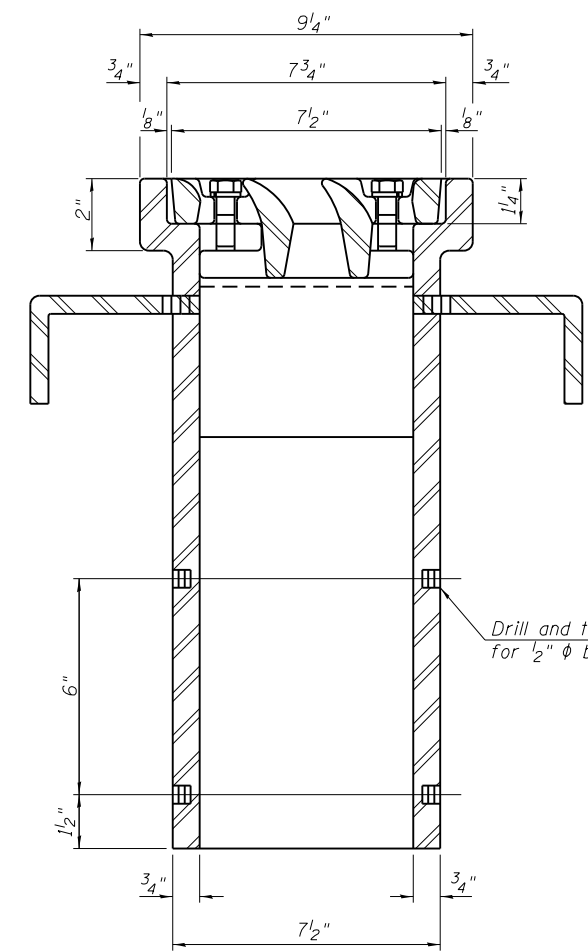
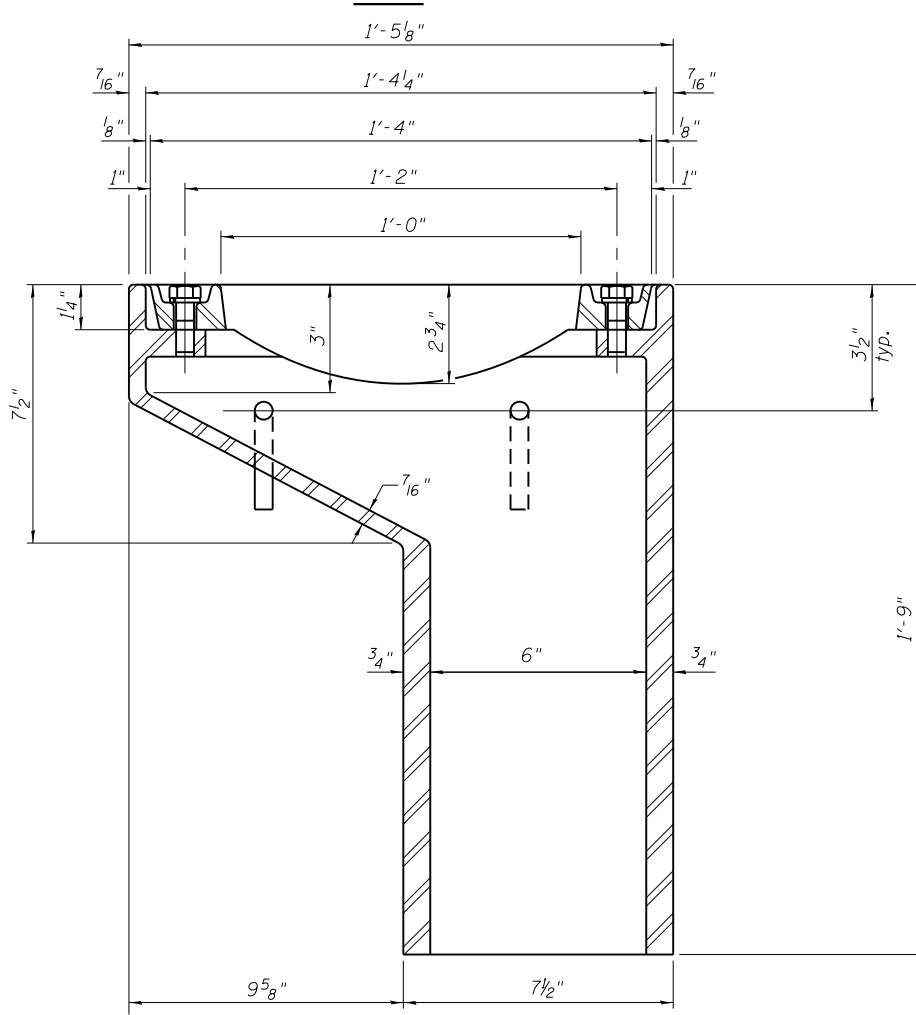
PREFORMED JOINT STRIP SEAL
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-56 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	531
CONTRACT NO.			60N87	
ILLINOIS FED. AID PROJECT				



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.



See sheets S-36, 39, 42, 45, 48, 51 of S-118 for scupper location relative to parapet.

DOWNSPOUT
 For freefall scuppers in Unit 1 only.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	10

N:\PROJ\10003384\004\US_30\Design\Structural\CAD\3384_57 Drainage_Scupper_DS-11.dgn

DS-11

2-17-2017



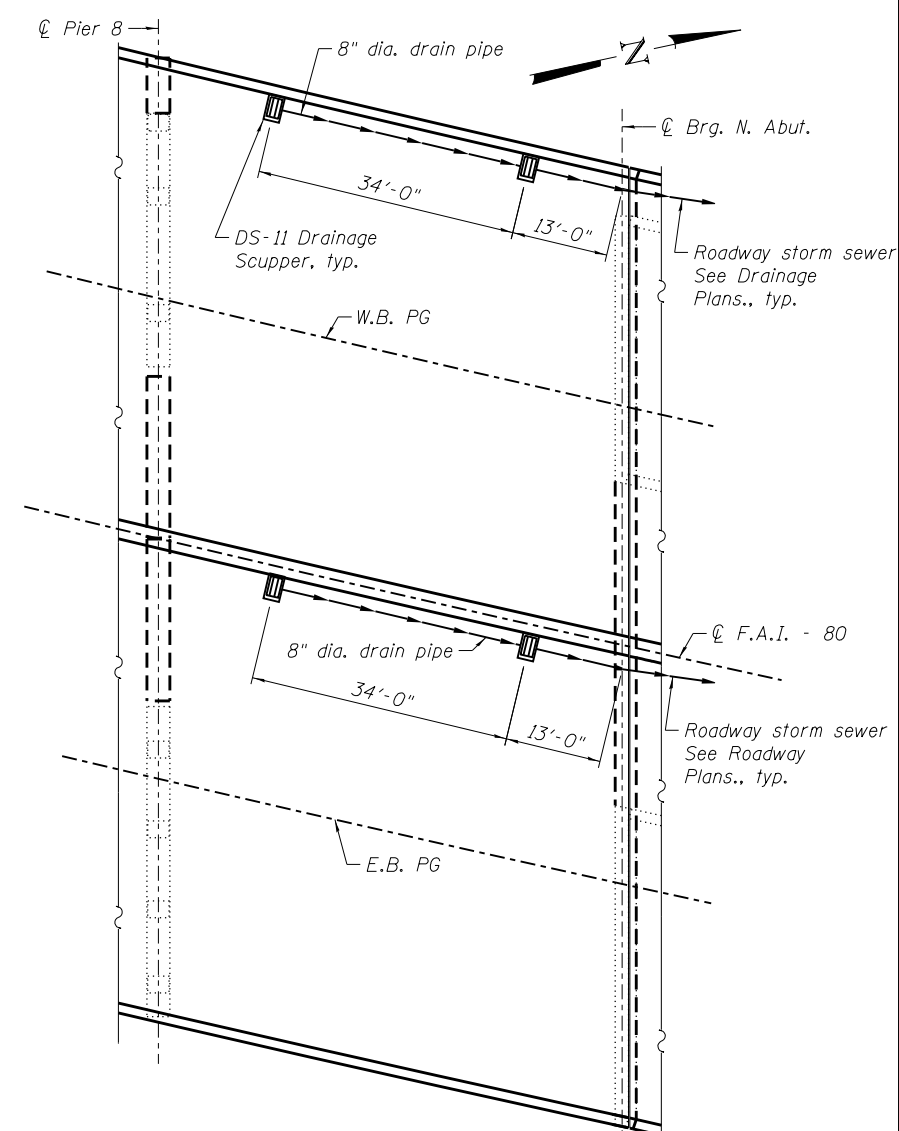
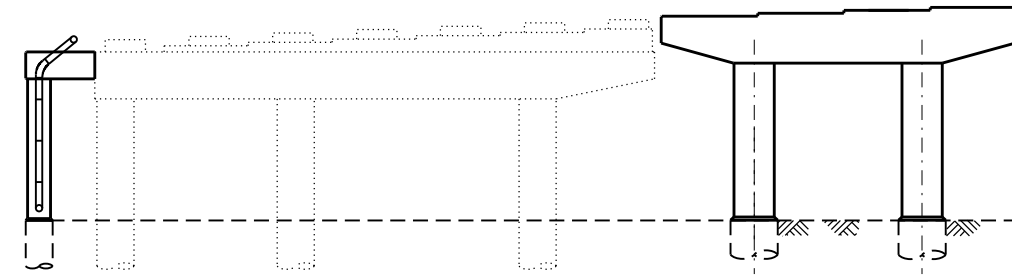
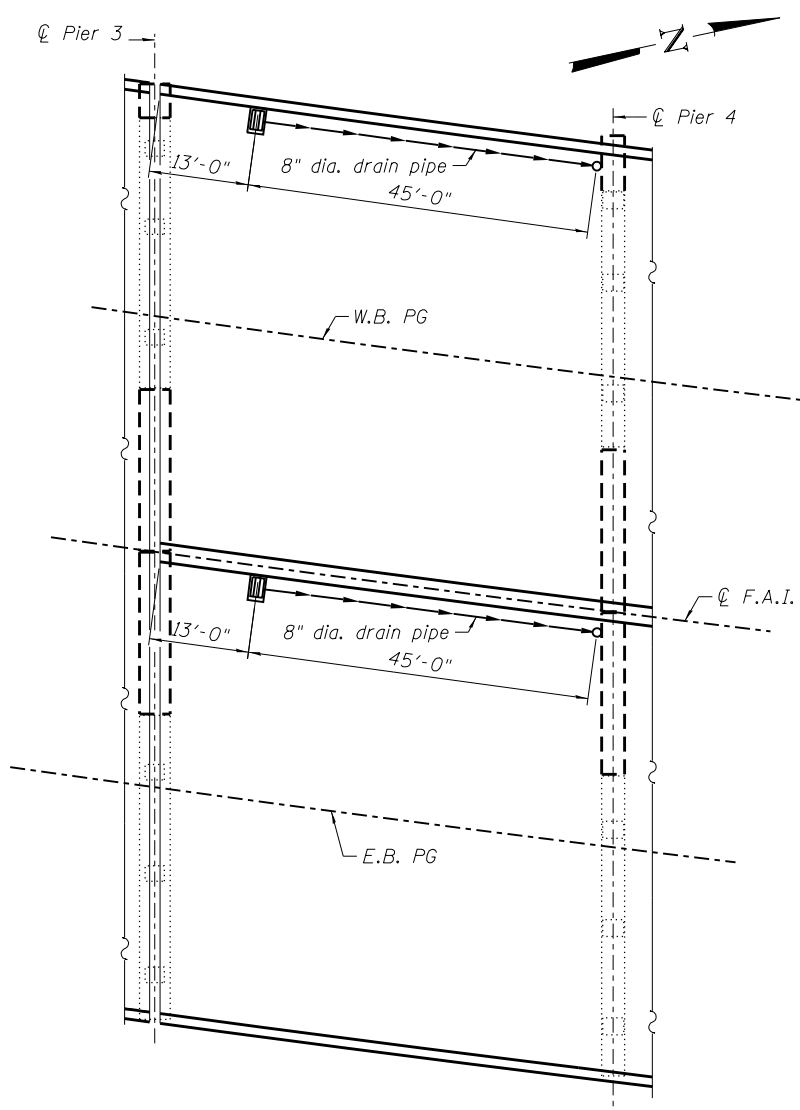
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PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**DRAINAGE SCUPPER, DS-11
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-57 OF S-118 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	532
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

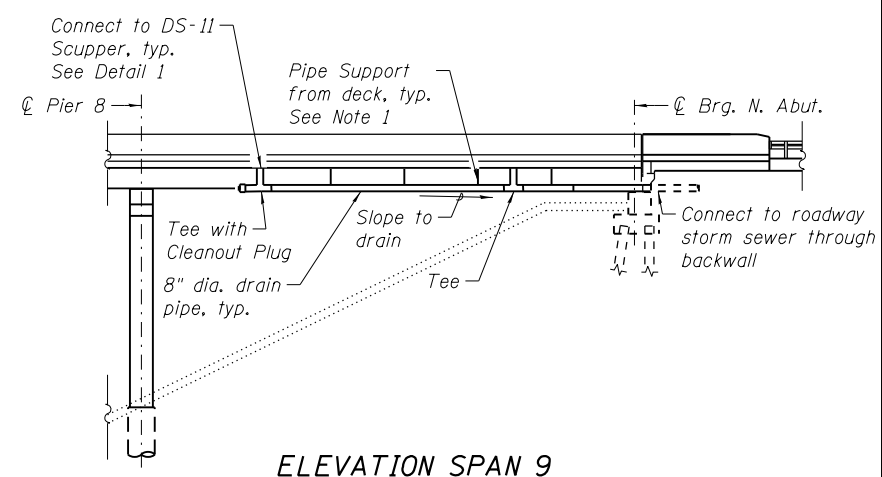
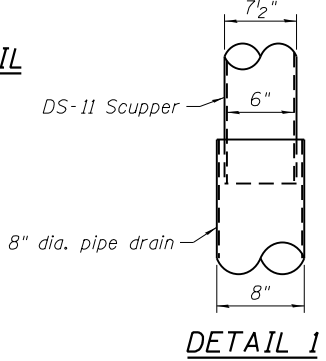
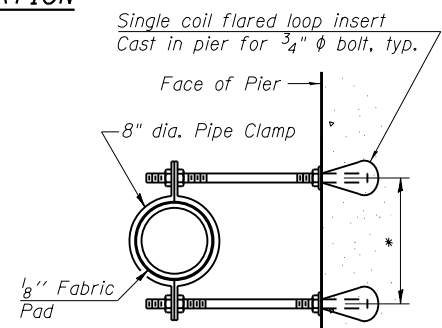
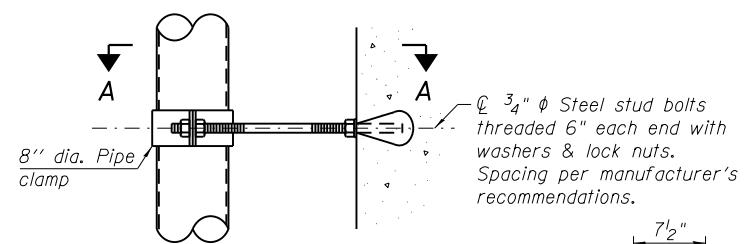
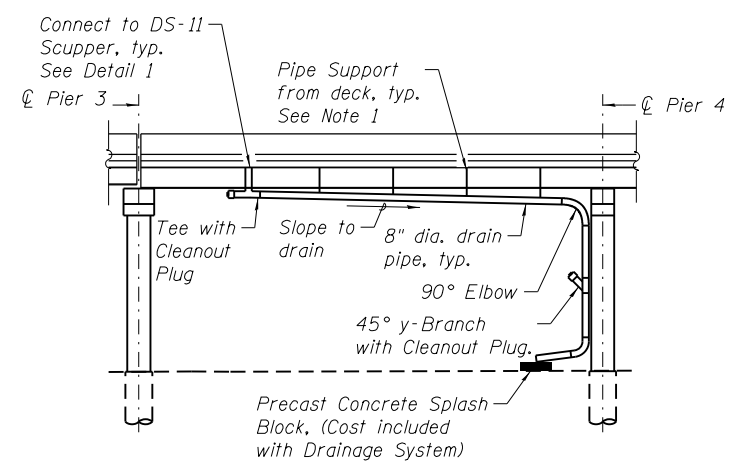


PLAN SPAN 4

PIER 4W FRONT ELEVATION
(Looking North)

PIER 4E FRONT ELEVATION
(Looking North)

PLAN SPAN 9



ELEVATION SPAN 4

PIPE BRACKET DETAIL

SECTION A-A

DETAIL 1

ELEVATION SPAN 9

LEGEND

→ Indicates Direction of Flow

NOTES:

1. Provide structural support from proposed deck slab for drain pipe per manufacturer's recommendation, not to exceed 6' cts. Cost included with "Drainage System."
2. All pipes, pipe fittings and brackets needed shall be included with cost of "Drainage System."

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Drainage System	L. Sum	1.0

N:\PROJECTS\0033384\004\US_30\Design\Structural\CAD\33384_58_Closed_Drainage_Details_1.dgn



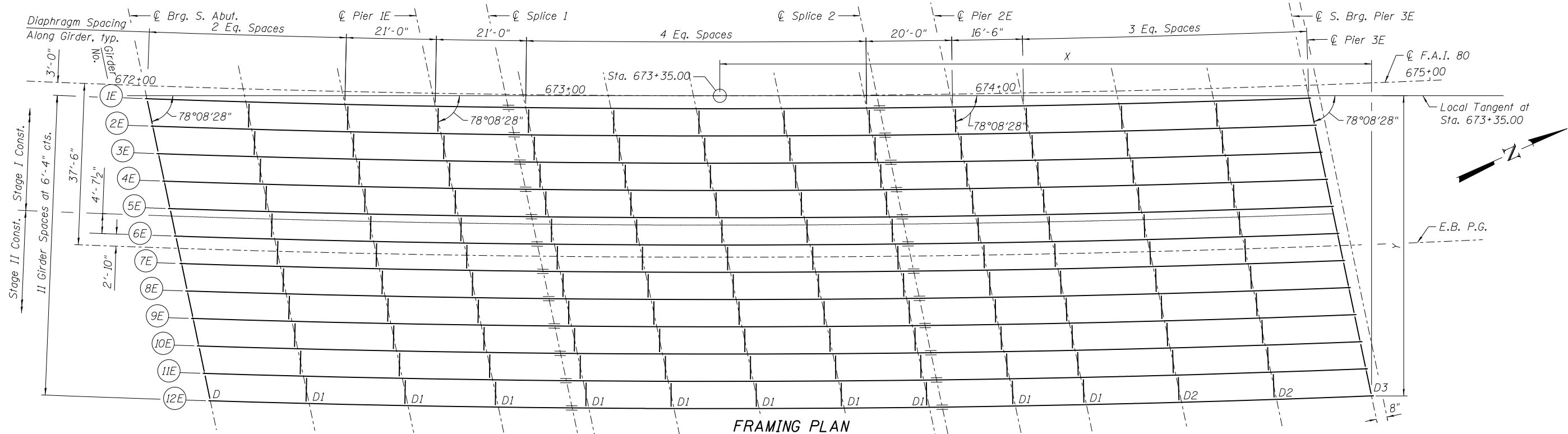
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

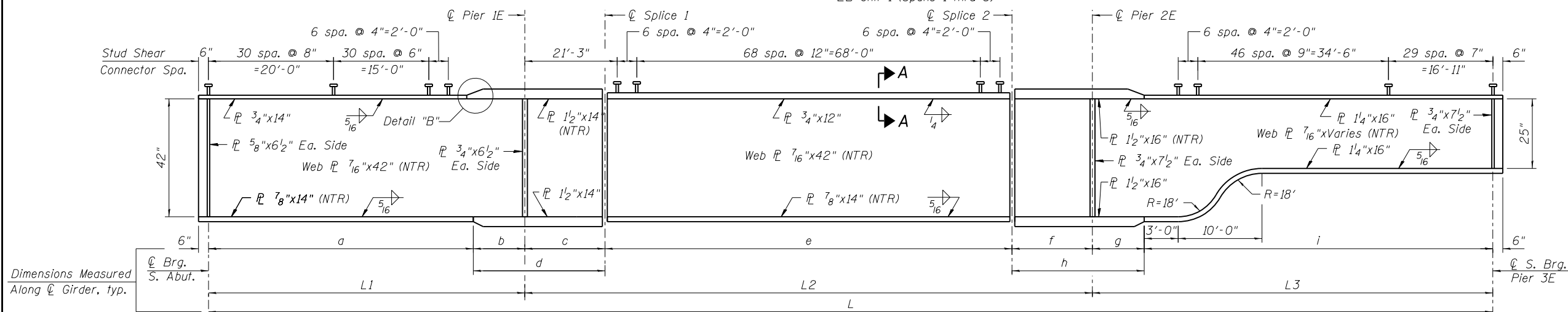
CLOSED DRAINAGE DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-58 OF S-118 SHEETS

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 533
ILLINOIS FED. AID PROJECT			CONTRACT NO. 60N87	



FRAMING PLAN
EB Unit 1 (Spans 1 thru 3)



GIRDER ELEVATION

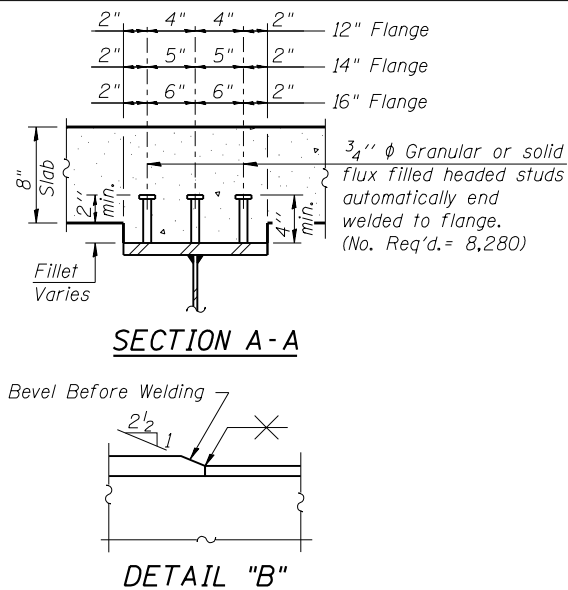
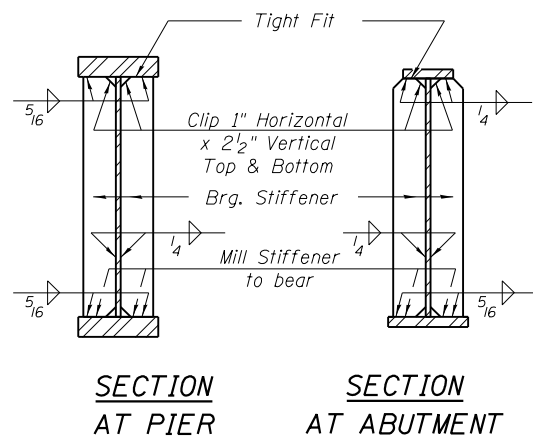
"NTR" denotes plates to which notch toughness requirements are applicable.

NOTES:

- All plates of the girders, including splice plates and fill plates, shall be AASHTO M 270, Grade 50.
- All diaphragms, Bearing Stiffeners, Angles and Connecting Plates, may be AASHTO M270, Grade 36.
- Work this sheet with sheets S-60 and S-61.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
- All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- All interior cross frames shall be oriented radial to the girders except at the end diaphragms.

BEAM DIMENSIONS (in feet)

GIRDER	RADIUS	L	L1	L2	L3	a	b	c	d	e	f	g	h	i
1E	3822.5300	269'-11 5/16"	66'-11 3/4"	120'-2 1/8"	82'-9 7/16"	50'-11 3/4"	16'-0"	17'-0"	33'-0"	86'-2 1/8"	17'-0"	17'-0"	34'-0"	65'-9 7/16"
2E	3828.8633	269'-11 1/16"	66'-11 1/16"	120'-2"	82'-9 3/8"	50'-11 1/16"	16'-0"	17'-0"	33'-0"	86'-2"	17'-0"	17'-0"	34'-0"	65'-9 3/8"
3E	3835.1967	269'-10 5/8"	66'-11 5/16"	120'-1 15/16"	82'-9 5/16"	50'-11 5/8"	16'-0"	17'-0"	33'-0"	86'-1 15/16"	17'-0"	17'-0"	34'-0"	65'-9 5/16"
4E	3841.5300	269'-10 5/8"	66'-11 9/16"	120'-1 13/16"	82'-9 1/4"	50'-11 9/16"	16'-0"	17'-0"	33'-0"	86'-1 13/16"	17'-0"	17'-0"	34'-0"	65'-9 1/4"
5E	3847.8633	269'-10 3/8"	66'-11 1/2"	120'-1 1/16"	82'-9 3/16"	50'-11 1/2"	16'-0"	17'-0"	33'-0"	86'-1 1/16"	17'-0"	17'-0"	34'-0"	65'-9 3/16"
6E	3854.1967	269'-10 3/8"	66'-11 3/8"	120'-1 9/16"	82'-9 9/16"	50'-11 3/8"	16'-0"	17'-0"	33'-0"	86'-1 9/16"	17'-0"	17'-0"	34'-0"	65'-9 9/16"
7E	3860.5300	269'-9 15/16"	66'-11 5/16"	120'-1 1/2"	82'-9 1/8"	50'-11 5/16"	16'-0"	17'-0"	33'-0"	86'-1 1/2"	17'-0"	17'-0"	34'-0"	65'-9 1/8"
8E	3866.8633	269'-9 1/16"	66'-11 1/4"	120'-1 3/8"	82'-9 1/16"	50'-11 1/4"	16'-0"	17'-0"	33'-0"	86'-1 3/8"	17'-0"	17'-0"	34'-0"	65'-9 1/16"
9E	3873.1967	269'-9 1/16"	66'-11 3/16"	120'-1 3/16"	82'-9"	50'-11 3/16"	16'-0"	17'-0"	33'-0"	86'-1 3/16"	17'-0"	17'-0"	34'-0"	65'-9"
10E	3879.5300	269'-9 1/4"	66'-11 1/8"	120'-1 3/16"	82'-8 15/16"	50'-11 1/8"	16'-0"	17'-0"	33'-0"	86'-1 3/16"	17'-0"	17'-0"	34'-0"	65'-8 15/16"
11E	3885.8633	269'-9"	66'-11 1/16"	120'-1 1/16"	82'-8 7/8"	50'-11 1/16"	16'-0"	17'-0"	33'-0"	86'-1 1/16"	17'-0"	17'-0"	34'-0"	65'-8 7/8"
12E	3892.1967	269'-8 3/4"	66'-11"	120'-1"	82'-8 13/16"	50'-11"	16'-0"	17'-0"	33'-0"	86'-1"	17'-0"	17'-0"	34'-0"	65'-8 13/16"



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USER NAME = kaisneros	DESIGNED - DL	REVISED -
PLOT SCALE = 25.000000' / in.	CHECKED - AMK	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - AMK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EB UNIT 1 - FRAMING PLAN
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-59 OF S-118 SHEETS

F.A.I. RT. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 534
			CONTRACT NO. 60N87	
ILLINOIS FED. AID PROJECT				

TABLE OF LAYOUT DIMENSIONS

BEAM	C Brg. S. Abut.		C Pier 1E		C Splice 1		C Splice 2		C Pier 2E		C S. Brg. Pier 3E	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1E	133'-0 3/4"	0'-8 3/8"	66'-1 1/4"	2'-5 1/8"	49'-1 1/4"	2'-8 3/8"	37'-0 13/16"	2'-9 13/16"	54'-0 13/16"	2'-7 7/16"	136'-9 15/16"	0'-6 5/8"
2E	131'-8 1/16"	7'-0 13/16"	64'-9 1/4"	8'-9 1/16"	47'-9 1/4"	9'-0 7/16"	38'-4 3/4"	9'-1 1/16"	55'-4 11/16"	8'-11 3/16"	138'-1 3/4"	6'-10 1/16"
3E	130'-4 9/16"	13'-5 3/8"	63'-5 1/4"	15'-1 11/16"	46'-5 1/4"	15'-4 5/8"	39'-8 5/8"	15'-5 9/16"	56'-8 5/8"	15'-2 15/16"	139'-5 5/8"	13'-1 9/16"
4E	129'-0 1/2"	19'-10"	62'-1 3/8"	21'-6"	45'-1 1/4"	21'-8 13/16"	41'-0 9/16"	21'-9 3/8"	58'-0 9/16"	21'-6 3/4"	140'-9 3/16"	19'-5 1/16"
5E	127'-8 1/16"	26'-2 9/16"	60'-9 3/16"	27'-10 1/4"	43'-9 3/16"	28'-1"	42'-4 7/16"	28'-1 3/16"	59'-4 7/16"	27'-10 1/2"	142'-1 5/16"	25'-8 1/2"
6E	126'-4 5/16"	32'-7 1/8"	59'-5 3/16"	34'-2 1/2"	42'-5 3/16"	34'-5 3/16"	43'-8 3/8"	34'-5"	60'-8 3/8"	34'-2 1/4"	143'-5 1/8"	31'-11 15/16"
7E	125'-0 1/4"	38'-11 1/16"	58'-1 3/8"	40'-6 3/4"	41'-1 3/16"	40'-9 3/8"	45'-0 5/16"	40'-8 7/8"	62'-0 1/4"	40'-6"	144'-9"	38'-3 7/16"
8E	123'-8 3/16"	45'-4 1/4"	56'-9 1/8"	46'-11"	39'-9 3/16"	47'-1 9/16"	46'-4 3/16"	47'-0 11/16"	63'-4 3/16"	46'-9 3/4"	146'-0 13/16"	44'-6 7/8"
9E	122'-4 1/8"	51'-8 13/16"	55'-5 1/8"	53'-3 1/4"	38'-5 3/16"	53'-5 11/16"	47'-8 1/8"	53'-4 1/2"	64'-8 1/16"	53'-1 1/2"	147'-4 1/16"	50'-10 3/16"
10E	121'-0 1/16"	58'-1 3/8"	54'-1 1/8"	59'-7 1/2"	37'-1 1/8"	59'-9 7/8"	49'-0"	59'-8 5/16"	66'-0"	59'-5 1/4"	148'-8 1/16"	57'-1 13/16"
11E	119'-7 15/16"	64'-5 1/8"	52'-9 1/8"	65'-11 1/16"	35'-9 1/8"	66'-2"	50'-3 15/16"	66'-0 1/16"	67'-3 7/8"	65'-9"	150'-0 3/8"	63'-5 1/4"
12E	118'-3 7/8"	70'-10 1/16"	51'-5 1/8"	72'-3 15/16"	34'-5 1/8"	72'-6 3/16"	51'-7 13/16"	72'-3 7/8"	68'-7 13/16"	72'-0 3/4"	151'-4 3/16"	69'-8 11/16"

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3
I_s	(in ⁴)	13094	22578	12320	25417	7465
$I_c(n)$	(in ⁴)	31648		31598		16975
$I_c(3n)$	(in ⁴)	23570		23316		12505
S_s	(in ³)	625	1003	613	1130	543
$S_c(n)$	(in ³)	843		844		711
$S_c(3n)$	(in ³)	776		775		652
S_l	(in ³)	28.58	49.00	28.58	64.00	53.33
Q	(k/')	0.82	0.89	0.81	0.91	0.84
M_Q	(k)	91	882	480	1,115	262
s_Q	(k/')	0.33	0.33	0.33	0.33	0.33
M_sQ	(k)	44	333	225	407	108
M_L	(k)	460	574	678	639	550
M_I	(k)	120	131	138	141	137
$^5_3[M_L + M_I]$	(k)	967	1,175	1,361	1,300	1,146
M_a	(k)	1,432	3,107	2,686	3,669	1,970
M_{bt}	(k)	5.83	10.09	7.91	10.81	12.34
f_sQ (non-comp)	(ksi)	1.74	10.55	9.40	11.85	5.78
f_sQ (comp)	(ksi)	0.69	3.98	3.48	4.33	1.99
f_s $^5_3[M_L + M_I]$	(ksi)	13.76	14.05	19.36	13.81	19.33
f_s	(ksi)	2.45	2.47	3.32	2.03	2.78
f_s (Overload)	(ksi)	16.18	28.58	23.9	29.98	27.11
f_s (Total)	(ksi)	21.04	37.15	31.01	38.98	35.24
F_{cr} (Overload)	(ksi)	47.50	39.84	47.50	42.72	47.50
VR	(k)	59.1		44.9		56.0
F_{cr}	(ksi)	49.18	41.51	48.89	44.10	49.08

INTERIOR GIRDER REACTION TABLE

	C Brg. S. Abut.	C Pier 1E	C Pier 2E	C S. Brg. Pier 3E	
R_Q	(k)	21.2	125.0	141.4	31.6
R_L	(k)	39.1	57.3	59.1	39.8
R_I	(k)	11.7	14.3	14.8	11.9
R_{Total}	(k)	72.0	196.6	215.2	83.3

*** TOP OF WEB ELEVATIONS**

BEAM	C Brg. S. Abut.	C Pier 1E	C Splice 1	C Splice 2	C Pier 2E	C S. Brg. Pier 3E
1E	644.74	645.00	645.07	645.47	645.52	645.77
2E	644.98	645.25	645.31	645.71	645.76	646.00
3E	645.23	645.49	645.55	645.95	646.00	646.24
4E	645.47	645.73	645.79	646.18	646.23	646.48
5E	645.71	645.97	646.03	646.42	646.47	646.71
6E	645.96	646.21	646.27	646.66	646.71	646.95
7E	646.20	646.45	646.52	646.90	646.95	647.19
8E	646.44	646.69	646.76	647.14	647.19	647.42
9E	646.69	646.93	647.00	647.38	647.43	647.66
10E	646.93	647.17	647.24	647.62	647.66	647.89
11E	647.17	647.42	647.48	647.85	647.90	648.13
12E	647.41	647.66	647.72	648.09	648.14	648.37

* For fabrication use only

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: 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 and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).

S_l : Section modulus of one flange plate for lateral flange bending (in³).

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

M_Q : Un-factored moment due to non-composite dead load (kip-ft.).

s_Q : Un-factored long-term composite (superimposed) dead load (kips/ft.).

M_sQ : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_L : Un-factored live load moment (kip-ft.).

M_I : Un-factored moment due to impact (kip-ft.).

M_a : Factored design moment (kip-ft.).

$1.3 [M_Q + M_sQ + \frac{5}{3} (M_L + M_I)]$

M_{bt} : Factored lateral bending moment for flange plate (kip-ft.).

f_s : Factored calculated normal stress at the edge of flange due to lateral bending (ksi).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M_Q + M_sQ + \frac{5}{3} (M_L + M_I)$

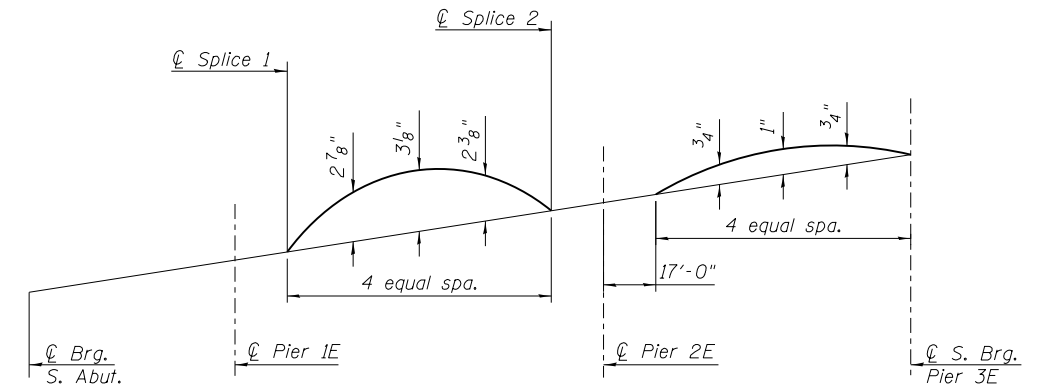
f_s (Total): Sum of stresses as computed from the moments below (ksi).
 $1.3 [M_Q + M_sQ + \frac{5}{3} (M_L + M_I)]$

F_{cr} (Overload): Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5 (ksi).

F_{cr} : Critical average flange stress (smaller of F_{cr1} or F_{cr2} for partially braced flanges and F_y for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4) (ksi).

VR: Maximum impact shear range within span for stud shear connector design (kips).

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



CAMBER DIAGRAM

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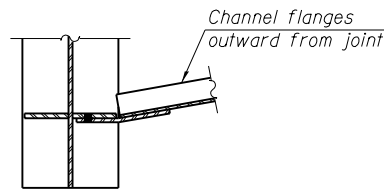
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	CHECKED - AMK	REVISED -
PLOT SCALE = 25.00000' / in.	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - AMK	REVISED -

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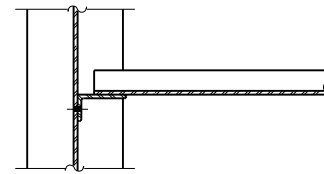
**EB UNIT 1 - STEEL DETAILS 1
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-60 OF S-118 SHEETS

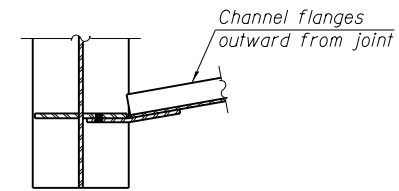
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80	99-4-1VB-1-R	WILL	840	535
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



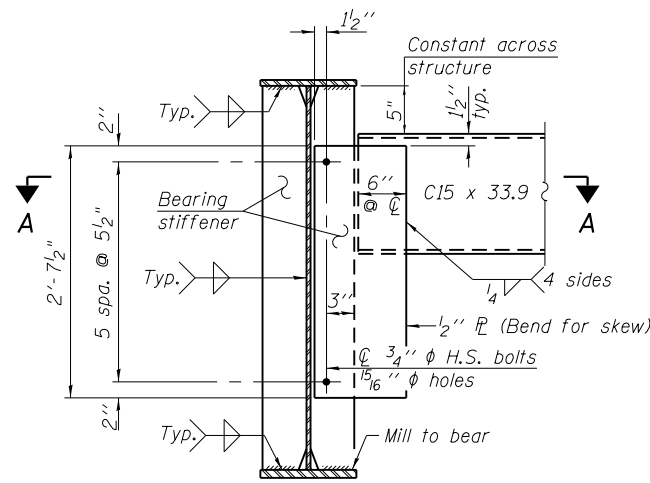
SECTION A-A



SECTION B-B



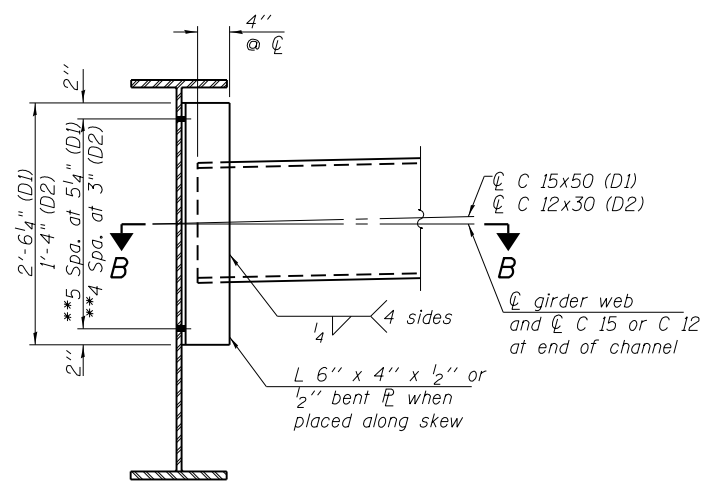
SECTION C-C



END DIAPHRAGM D

(11 Required)

Note: Two hardened washers required for each set of oversized holes.

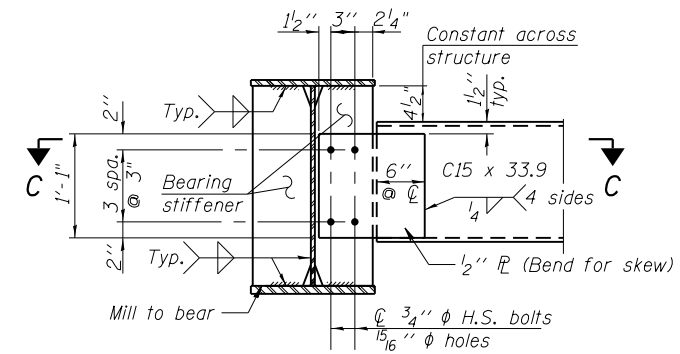


INTERIOR DIAPHRAGM D1 & D2

(110 Required-D1)

(22 Required-D2)

Note: Two hardened washers required for each set of oversized holes.
 ***3/4" φ HS bolts, 5/16" φ holes

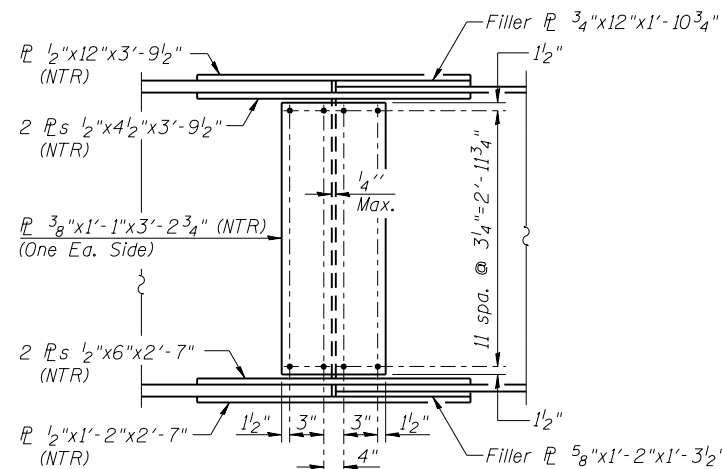
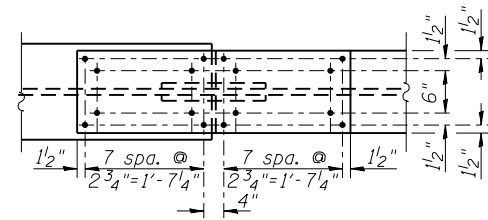


END DIAPHRAGM D3

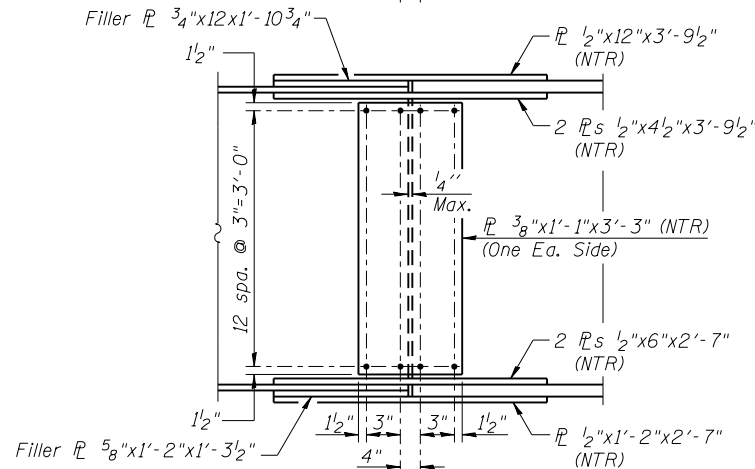
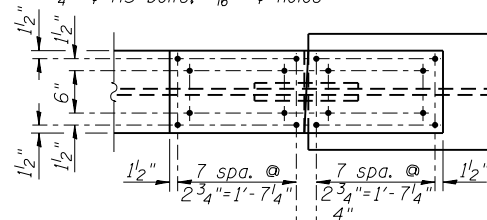
(11 Required)

Note: Two hardened washers required for each set of oversized holes.

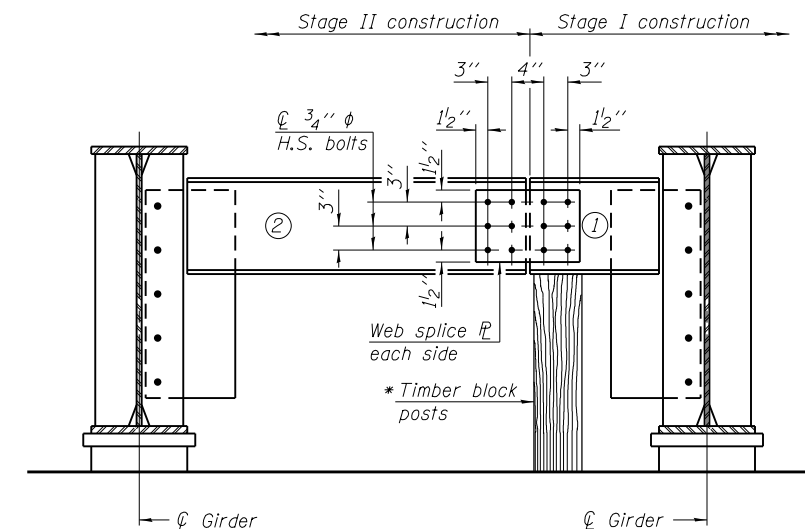
* Cost of Timber Block Posts is included with Structural Steel.



FIELD SPLICE 1 DETAIL



FIELD SPLICE 2 DETAIL



END DIAPHRAGM D OR D3

END DIAPHRAGM STAGE CONSTRUCTION SEQUENCE

- 1.) Order diaphragm in two sections.
- 2.) Attach section ① of diaphragm to girder.
- 3.) Place timber block posts between section ① of diaphragm and abutment bearing section.
- 4.) Attach section ② of diaphragm to both girder and section ① of diaphragm during stage II construction with splice plates.
- 5.) Remove timber block posts.

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USER NAME = kaisneros
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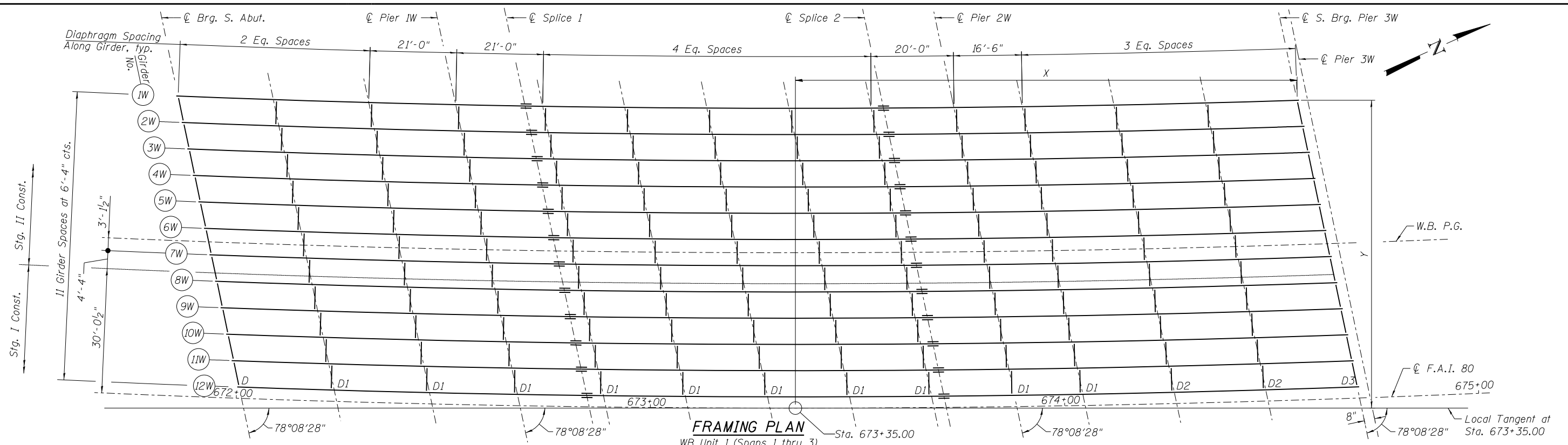
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 DEPARTMENT OF TRANSPORTATION

EB UNIT 1 - STEEL DETAILS 2
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

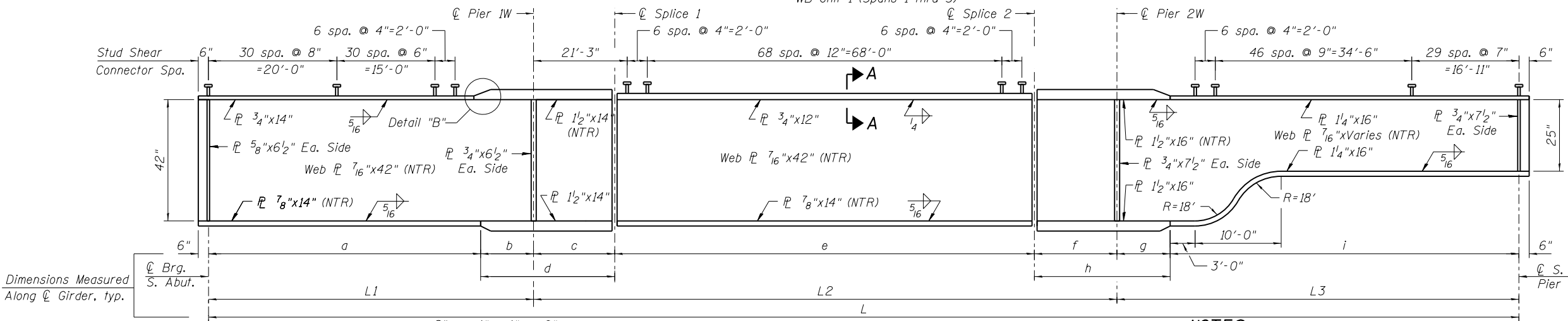
SHEET NO. S-61 OF S-118 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	536
CONTRACT NO. 60N87				

ILLINOIS FED. AID PROJECT



FRAMING PLAN
WB Unit 1 (Spans 1 thru 3)



GIRDER ELEVATION

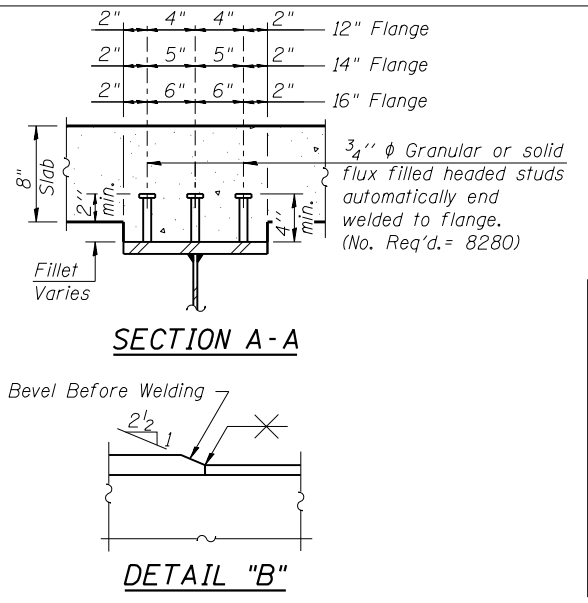
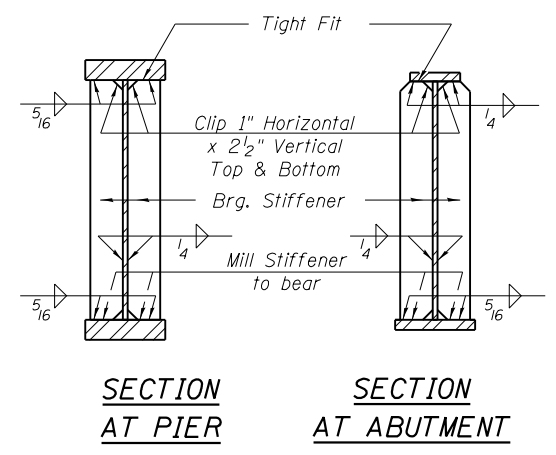
"NTR" denotes plates to which notch toughness requirements are applicable.

NOTES:

- All plates of the girders, including splice plates and fill plates, shall be AASHTO M 270, Grade 50.
- All diaphragms, Bearing Stiffeners, Angles and Connecting Plates, may be AASHTO M270, Grade 36.
- Work this sheet with sheets S-63 and S-64.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
- All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- All interior cross frames shall be oriented radial to the girders except at the end diaphragms.

BEAM DIMENSIONS (in feet)

GIRDER	RADIUS	L	L1	L2	L3	a	b	c	d	e	f	g	h	i
1W	3747.1550	270'-2 1/4"	67'-0 1/6"	120'-3 7/16"	82'-10 1/8"	51'-0 1/16"	16'-0"	17'-0"	33'-0"	86'-3 7/16"	17'-0"	17'-0"	34'-0"	65'-10 1/8"
2W	3753.4883	270'-2"	67'-0 5/8"	120'-3 5/16"	82'-10 1/16"	51'-0 5/8"	16'-0"	17'-0"	33'-0"	86'-3 5/16"	17'-0"	17'-0"	34'-0"	65'-10 1/16"
3W	3759.8217	270'-1 3/4"	67'-0 9/16"	120'-3 3/16"	82'-10"	51'-0 9/16"	16'-0"	17'-0"	33'-0"	86'-3 3/16"	17'-0"	17'-0"	34'-0"	65'-10"
4W	3766.1550	270'-1 1/2"	67'-0 7/16"	120'-3 1/8"	82'-9 15/16"	51'-0 7/16"	16'-0"	17'-0"	33'-0"	86'-3 1/8"	17'-0"	17'-0"	34'-0"	65'-9 15/16"
5W	3772.4883	270'-1 1/4"	67'-0 3/8"	120'-3"	82'-9 7/8"	51'-0 3/8"	16'-0"	17'-0"	33'-0"	86'-3"	17'-0"	17'-0"	34'-0"	65'-9 7/8"
6W	3778.8217	270'-1"	67'-0 1/8"	120'-2 7/8"	82'-9 1/2"	51'-0 1/8"	16'-0"	17'-0"	33'-0"	86'-2 7/8"	17'-0"	17'-0"	34'-0"	65'-9 1/2"
7W	3785.1550	270'-0 3/4"	67'-0 1/4"	120'-2 3/4"	82'-9 3/4"	51'-0 1/4"	16'-0"	17'-0"	33'-0"	86'-2 3/4"	17'-0"	17'-0"	34'-0"	65'-9 3/4"
8W	3791.4883	270'-0 1/2"	67'-0 1/8"	120'-2 5/8"	82'-9 1/4"	51'-0 1/8"	16'-0"	17'-0"	33'-0"	86'-2 5/8"	17'-0"	17'-0"	34'-0"	65'-9 1/8"
9W	3797.8217	270'-0 1/4"	67'-0 1/16"	120'-2 9/16"	82'-9 1/8"	51'-0 1/16"	16'-0"	17'-0"	33'-0"	86'-2 9/16"	17'-0"	17'-0"	34'-0"	65'-9 1/16"
10W	3804.1550	270'-0"	67'-0"	120'-2 1/4"	82'-9 1/4"	51'-0"	16'-0"	17'-0"	33'-0"	86'-2 1/4"	17'-0"	17'-0"	34'-0"	65'-9 1/4"
11W	3810.4883	269'-11 3/4"	66'-11 15/16"	120'-2 5/16"	82'-9 9/16"	50'-11 15/16"	16'-0"	17'-0"	33'-0"	86'-2 5/16"	17'-0"	17'-0"	34'-0"	65'-9 15/16"
12W	3816.8217	269'-11 9/16"	66'-11 13/16"	120'-2 1/4"	82'-9 1/2"	50'-11 13/16"	16'-0"	17'-0"	33'-0"	86'-2 1/4"	17'-0"	17'-0"	34'-0"	65'-9 1/2"



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 Clorba Group, Inc.
 CONSULTING ENGINEERS
 6507 North Cumberland Avenue
 Suite 402, Chicago, Illinois 60656
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USER NAME = kaisneros	DESIGNED - DL	REVISED -
PLOT SCALE = 25.00000' / 1"	CHECKED - AMK	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - AMK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WB UNIT 1 - FRAMING PLAN
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)
 SHEET NO. S-62 OF S-118 SHEETS

F.A.I. RT. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 537
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

TABLE OF LAYOUT DIMENSIONS

BEAM	C Brg. S. Abut.		C Pier 1E		C Splice 1		C Splice 2		C Pier 2E		C S. Brg. Pier 3E	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1W	149'-0 5/16"	75'-4 1/16"	82'-0"	73'-3 1/4"	65'-0 1/16"	72'-11 1/4"	21'-3 3/8"	72'-5 1/4"	38'-3 3/8"	72'-6 7/8"	121'-1 3/16"	74'-4"
2W	147'-8 5/16"	68'-11 3/8"	80'-7 15/16"	66'-10 7/8"	63'-8"	66'-7"	22'-7 1/4"	66'-1 5/16"	39'-7 1/4"	66'-3"	122'-5 1/16"	68'-0 7/16"
3W	146'-4 1/8"	62'-6 1/16"	79'-3 15/16"	60'-6 9/16"	62'-4"	60'-2 1/16"	23'-11 3/16"	59'-9 1/16"	40'-11 3/16"	59'-11 3/16"	123'-8 15/16"	61'-8 15/16"
4W	145'-0"	56'-2"	77'-11 3/8"	54'-2 3/16"	60'-11 15/16"	53'-10 1/16"	25'-3 1/8"	53'-5 1/2"	42'-3 1/8"	53'-7 3/8"	125'-0 1/16"	55'-5 1/16"
5W	143'-7 1/8"	49'-9 5/16"	76'-7 3/8"	47'-9 1/8"	59'-7 1/8"	47'-6 3/16"	26'-7 1/16"	47'-1 5/8"	43'-7 1/16"	47'-3 1/2"	126'-4 5/8"	49'-1 15/16"
6W	142'-3 13/16"	43'-4 1/16"	75'-3 13/16"	41'-5 1/2"	58'-3 3/8"	41'-1 3/8"	27'-11"	40'-9 3/4"	44'-10 15/16"	40'-11 1/16"	127'-8 1/2"	42'-10 3/8"
7W	140'-11 11/16"	37'-0"	73'-11 13/16"	35'-1 3/16"	56'-11 7/8"	34'-9 5/8"	29'-2 7/8"	34'-5 7/8"	46'-2 7/8"	34'-7 3/8"	129'-0 3/8"	36'-6 7/8"
8W	139'-7 5/8"	30'-7 3/8"	72'-7 13/16"	28'-8 3/8"	55'-7 13/16"	28'-5 3/8"	30'-6 13/16"	28'-2"	47'-6 13/16"	28'-4 1/16"	130'-4 3/16"	30'-3 3/8"
9W	138'-3 1/2"	24'-2 3/4"	71'-3 3/4"	22'-4 9/16"	54'-3 13/16"	22'-1 3/16"	31'-10 3/4"	21'-10 1/8"	48'-10 1/16"	22'-0 1/4"	131'-8 1/16"	23'-11 3/8"
10W	136'-11 1/16"	17'-10 1/16"	69'-11 3/4"	16'-0 1/4"	52'-11 3/4"	15'-8 15/16"	33'-2 5/8"	15'-6 1/4"	50'-2 5/8"	15'-8 1/2"	132'-11 15/16"	17'-8 3/8"
11W	135'-7 5/16"	11'-5 1/16"	68'-7 1/16"	9'-7 15/16"	51'-7 3/4"	9'-4 1/16"	34'-6 9/16"	9'-2 3/8"	51'-6 9/16"	9'-4 1/16"	134'-3 3/4"	11'-4 15/16"
12W	134'-3 1/4"	5'-0 7/8"	67'-3 1/16"	3'-3 5/8"	50'-3 1/16"	3'-0 1/2"	35'-10 1/2"	2'-10 1/2"	52'-10 1/16"	3'-0 7/8"	135'-7 5/8"	5'-1 7/16"

INTERIOR GIRDER MOMENT TABLE

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3	
I_s	(in ⁴)	13094	22578	12320	25417	7465
$I_c(n)$	(in ⁴)	31648		31598		16975
$I_c(3n)$	(in ⁴)	23570		23316		12505
S_s	(in ³)	625	1003	613	1130	543
$S_c(n)$	(in ³)	843		844		711
$S_c(3n)$	(in ³)	776		775		652
S_l	(in ³)	28.58	49.00	28.58	64.00	53.33
ϕ	(k/')	0.82	0.89	0.81	0.91	0.85
$M\phi$	(k)	93	881	483	1,120	263
$s\phi$	(k/')	0.33	0.33	0.33	0.33	0.33
$M_s\phi$	(k)	45	331	226	410	108
M_l	(k)	461	574	681	641	551
M_I	(k)	120	131	139	141	138
$^5_3[M_l + M_I]$	(k)	969	1,175	1,366	1,304	1,148
M_a	(k)	1,439	3,103	2,697	3,684	1,975
M_{bt}	(k)	6.05	10.42	8.21	11.22	12.79
$f_s\phi$ (non-comp)	(ksi)	1.78	10.53	9.45	11.89	5.81
$f_s\phi$ (comp)	(ksi)	0.70	3.96	3.50	4.36	1.99
$f_s ^5_3 [M_l + M_I]$	(ksi)	13.78	14.06	19.43	13.85	19.37
f_l	(ksi)	2.54	2.55	3.45	2.10	2.88
f_s (Overload)	(ksi)	16.26	28.55	32.38	30.10	27.17
f_s (Total)	(ksi)	21.14	37.11	42.09	39.13	35.33
F_{cr} (Overload)	(ksi)	47.50	39.79	47.50	42.67	47.50
VR	(k)	61.3	49.5	49.5	58.4	58.4
F_{cr}	(ksi)	49.15	41.51	48.85	44.10	49.05

INTERIOR GIRDER REACTION TABLE

	C Brg. S. Abut.	C Pier 1W	C Pier 2W	C S. Brg. Pier 3W	
$R\phi$	(k)	21.3	125.0	141.7	31.6
R_l	(k)	39.1	57.3	59.2	39.8
R_I	(k)	11.7	14.3	14.8	11.9
R_{Total}	(k)	72.1	196.7	215.7	83.4

* TOP OF WEB ELEVATIONS

BEAM	C Brg. S. Abut.	C Pier 1W	C Splice 1	C Splice 2	C Pier 2W	C S. Brg. Pier 3W
1W	644.31	644.56	644.62	644.99	645.04	645.27
2W	644.56	644.80	644.86	645.23	645.28	645.51
3W	644.80	645.04	645.10	645.47	645.52	645.74
4W	645.04	645.28	645.34	645.71	645.76	645.98
5W	645.28	645.52	645.58	645.95	645.99	646.22
6W	645.53	645.76	645.82	646.19	646.23	646.45
7W	645.77	646.00	646.06	646.42	646.47	646.69
8W	646.01	646.24	646.30	646.66	646.71	646.92
9W	646.26	646.48	646.54	646.90	646.95	647.16
10W	646.50	646.72	646.78	647.14	647.18	647.40
11W	646.74	646.96	647.02	647.38	647.42	647.63
12W	646.98	647.21	647.26	647.62	647.66	647.87

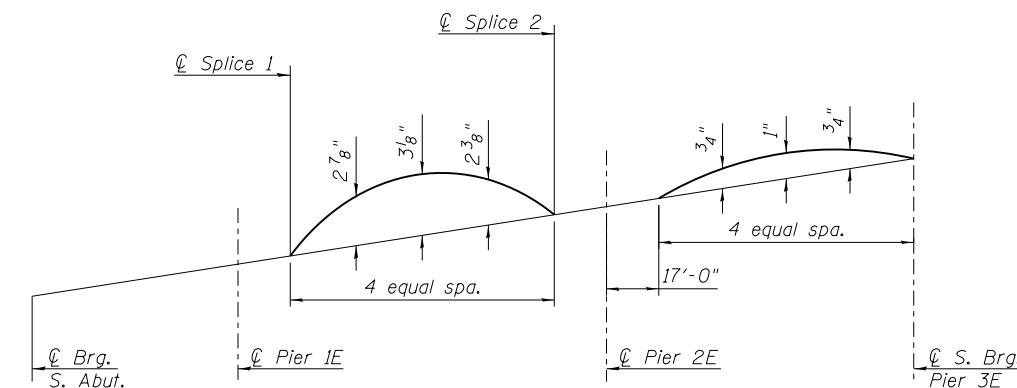
* For fabrication only

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
 $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
 $I_c(3n), S_c(3n)$: 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 and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).

S_l : Section modulus of one flange plate for lateral flange bending (in³).
 ϕ : Un-factored non-composite dead load (kips/ft.).
 $M\phi$: Un-factored moment due to non-composite dead load (kip-ft).
 $s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 M_l : Un-factored live load moment (kip-ft.).
 M_I : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M\phi + M_s\phi + \frac{5}{3} (M_l + M_I)]$
 M_{bt} : Factored lateral bending moment for flange plate (kip-ft.).
 f_l : Factored calculated normal stress at the edge of flange due to lateral bending (ksi).

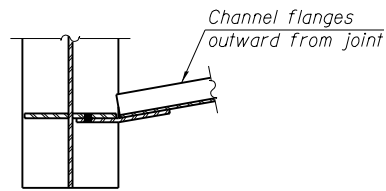
f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\phi + M_s\phi + \frac{5}{3} (M_l + M_I)$
 f_s (Total): Sum of stresses as computed from the moments below (ksi).
 $1.3 [M\phi + M_s\phi + \frac{5}{3} (M_l + M_I)]$
 F_{cr} (Overload): Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5 (ksi).
 F_{cr} : Critical average flange stress (smaller of F_{cr1} or F_{cr2} for partially braced flanges and F_y for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4) (ksi).
 VR: Maximum $\phi +$ impact shear range within span for stud shear connector design (kips).

Note:
 M_l and R_l include the effects of centrifugal force and superelevation.

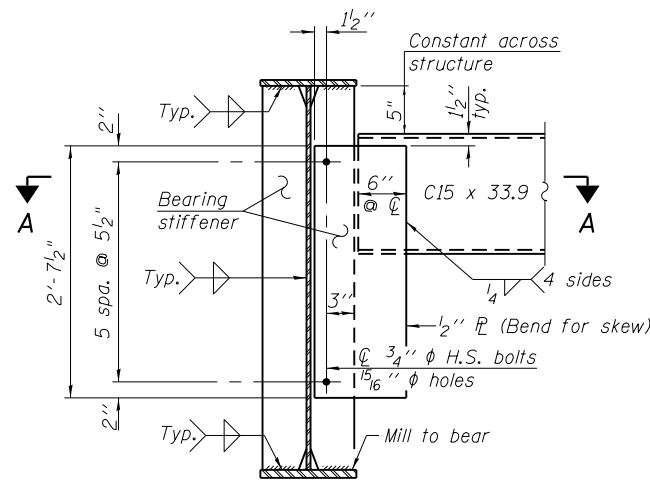


CAMBER DIAGRAM

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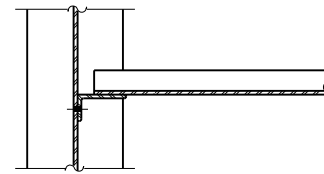
SECTION A-A



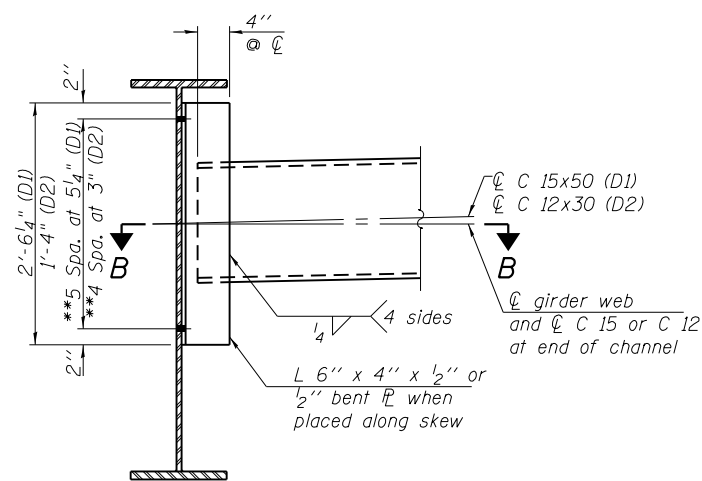
END DIAPHRAGM D

(11 Required)

Note: Two hardened washers required for each set of oversized holes.



SECTION B-B

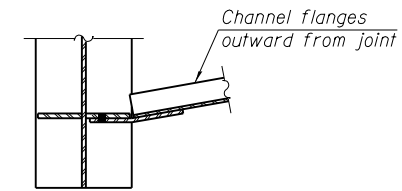


INTERIOR DIAPHRAGM D1 & D2

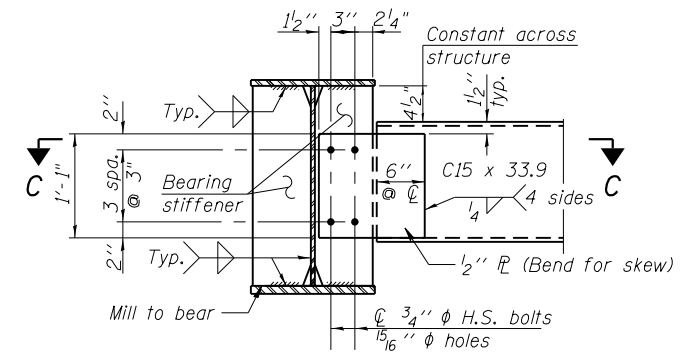
(110 Required-D1)

(22 Required-D2)

Note: Two hardened washers required for each set of oversized holes.
 *** $3/4$ " ϕ HS bolts, $5/16$ " ϕ holes



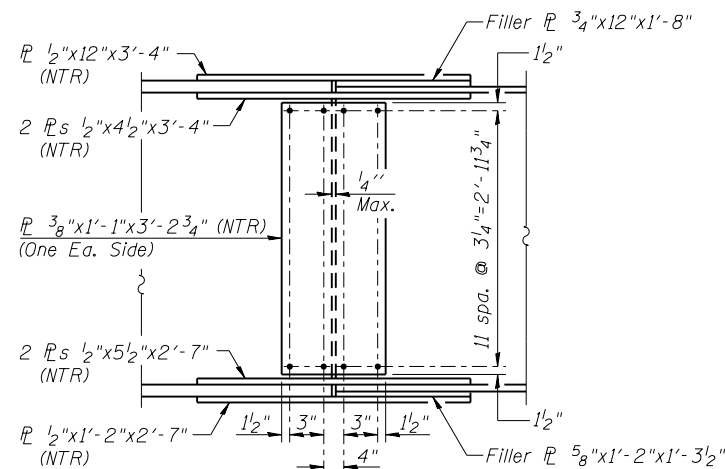
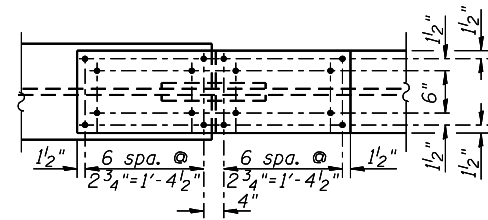
SECTION C-C



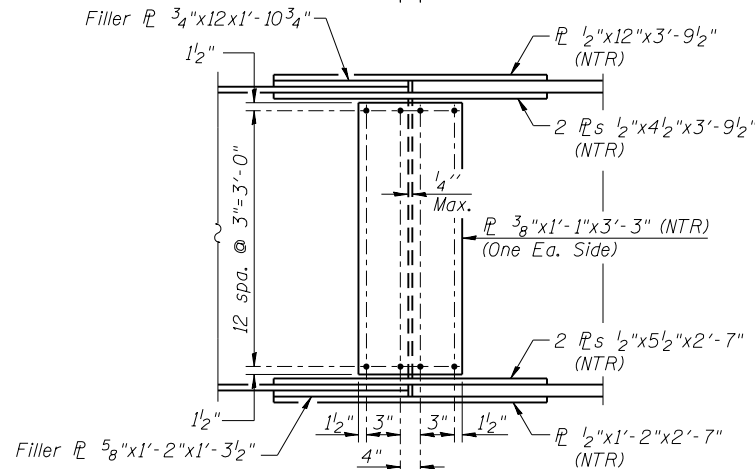
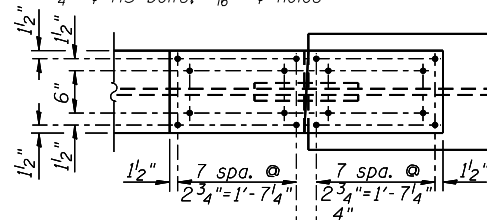
END DIAPHRAGM D3

(11 Required)

Note: Two hardened washers required for each set of oversized holes.

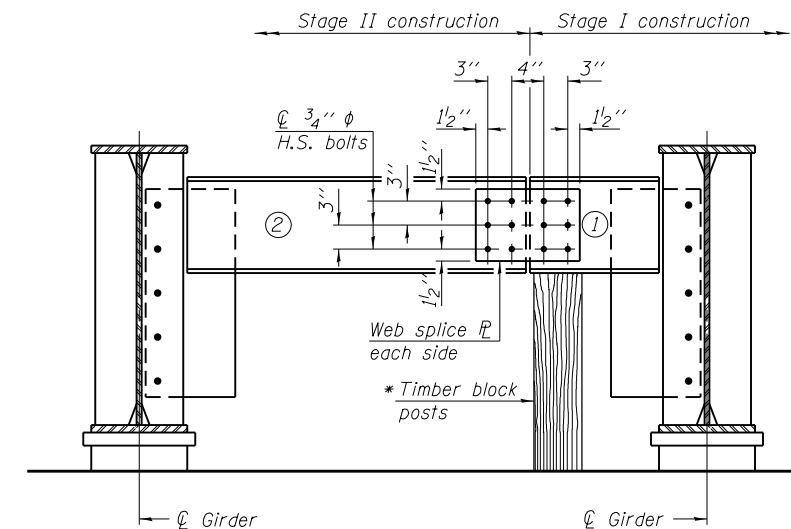


FIELD SPLICE 1 DETAIL



FIELD SPLICE 2 DETAIL

* Cost of Timber Block Posts is included with Structural Steel.



END DIAPHRAGM D OR D3

END DIAPHRAGM STAGE CONSTRUCTION SEQUENCE

- 1.) Order diaphragm in two sections.
- 2.) Attach section ① of diaphragm to girder.
- 3.) Place timber block posts between section ① of diaphragm and abutment bearing section.
- 4.) Attach section ② of diaphragm to both girder and section ① of diaphragm during stage II construction with splice plates.
- 5.) Remove timber block posts.

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USER NAME = kaisneros
 PLOT SCALE = 25.00000' / in.
 PLOT DATE = 5/9/2018

DESIGNED - DL
 CHECKED - AMK
 DRAWN - RD
 CHECKED - AMK

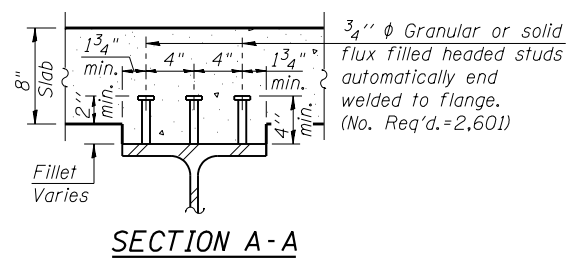
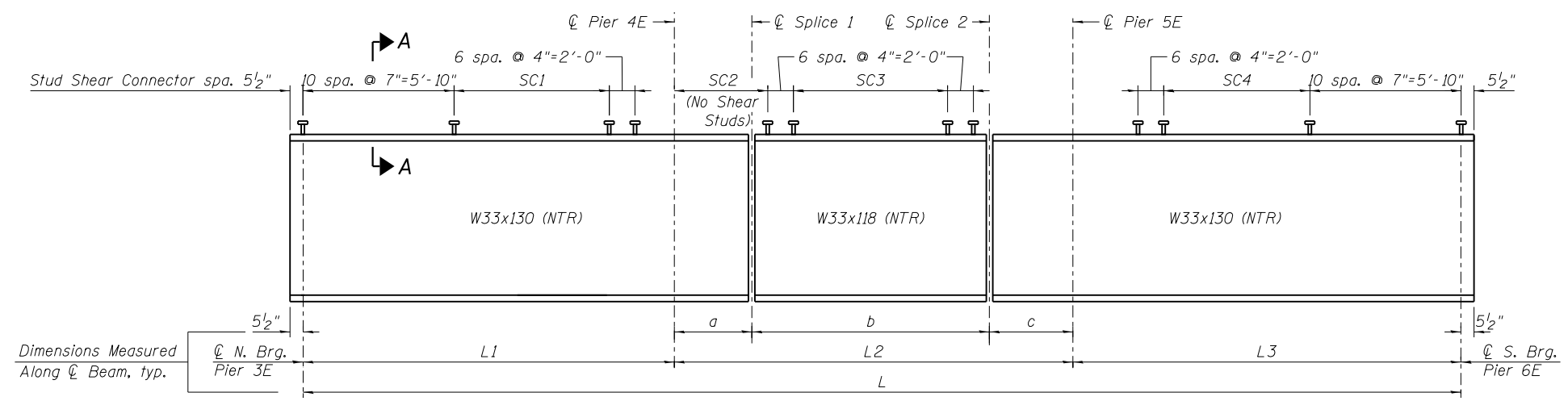
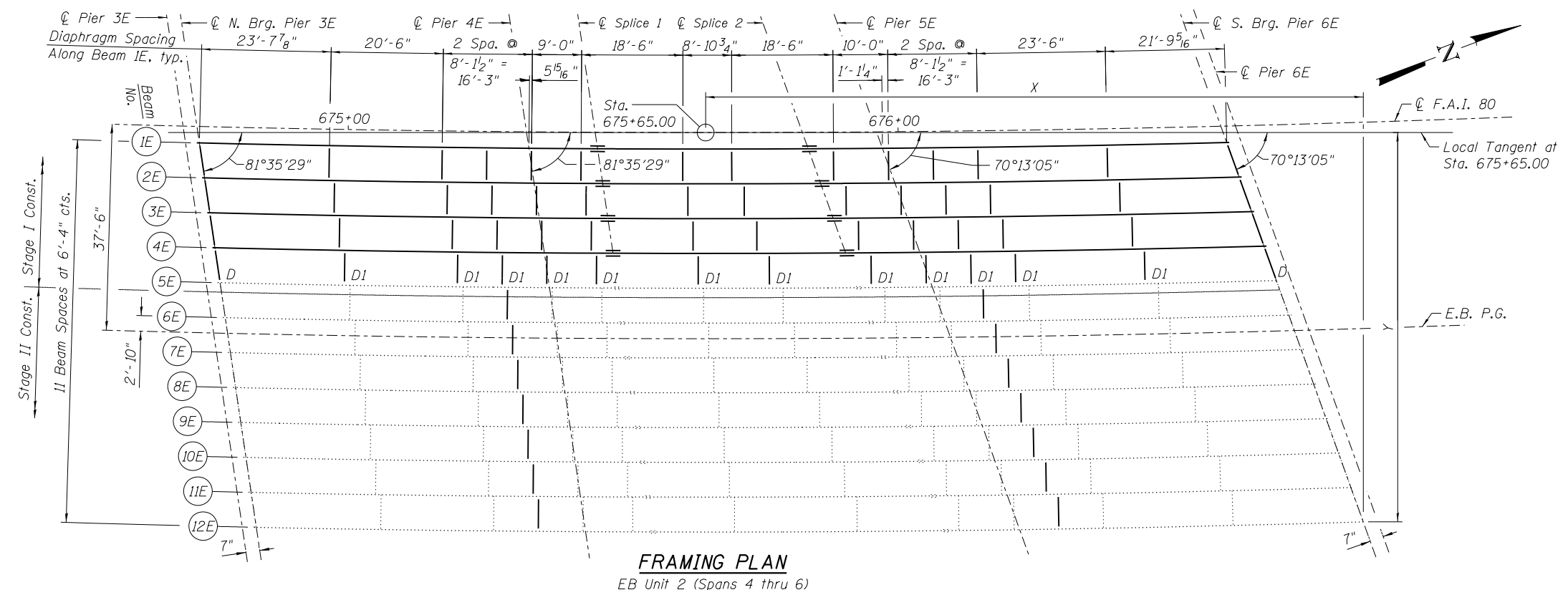
REVISED -
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

WB UNIT 1 - STEEL DETAILS 2
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-64 OF S-118 SHEETS

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	539
CONTRACT NO. 60N87				
ILLINOIS FED. AID PROJECT				



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

STUD SHEAR CONNECTOR SPACING

BEAM	SC1	SC2	SC3	SC4
1E	55 spa. @ 9"=41'-3"	14'-4"	58 spa. @ 6"=29'-0"	58 spa. @ 9"=43'-6"
2E	55 spa. @ 9"=41'-3"	14'-3"	61 spa. @ 6"=30'-6"	58 spa. @ 9"=43'-6"
3E	54 spa. @ 9"=40'-6"	14'-2"	55 spa. @ 7"=32'-1"	57 spa. @ 9"=42'-9"
4E	54 spa. @ 9"=40'-6"	14'-1"	57 spa. @ 7"=33'-3"	57 spa. @ 9"=42'-9"

BEAM DIMENSIONS (in feet)

BEAM	Radius	L	L1	L2	L3	a	b	c
1E	3822.5300	186'-10"	59'-10 ¹⁵ / ₁₆ "	64'-3 ¹ / ₂ "	62'-7 ⁹ / ₁₆ "	12'-6"	38'-6 ¹ / ₂ "	13'-3"
2E	3828.8633	188'-1 ¹³ / ₁₆ "	59'-10 ⁷ / ₈ "	65'-7 ¹ / ₂ "	62'-7 ¹ / ₁₆ "	12'-6"	39'-10 ¹ / ₂ "	13'-3"
3E	3835.1967	189'-5 ¹ / ₁₆ "	59'-10 ¹ / ₈ "	66'-11 ¹ / ₂ "	62'-7 ¹ / ₄ "	12'-6"	41'-2 ¹ / ₂ "	13'-3"
4E	3841.5300	190'-9 ¹ / ₂ "	59'-10 ¹³ / ₁₆ "	68'-3 ¹ / ₂ "	62'-7 ¹ / ₈ "	12'-6"	42'-6 ¹ / ₂ "	13'-3"

- NOTES:**
- All beams, splice plates and fill plates shall be AASHTO M 270, Grade 50.
 - All diaphragms, Angles and Connecting Plates, may be AASHTO M270, Grade 36.
 - Work this sheet with sheets S-66 and S-67.
 - Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
 - All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 - All interior diaphragms shall be oriented radial to the girders except at the end diaphragms.
 - Contractor to verify existing dimensions in the field and make necessary approved adjustments prior to ordering materials.

N:\PROJECTS\0003384\004\US_30\Design\Structural\CAD\3384_65 EB Unit 2 - Framing Plan.dgn



USER NAME = kaisneros	DESIGNED - DL	REVISED -
PLOT SCALE = 25x0 1/4" = 1'-0"	CHECKED - AMK	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - AMK	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**EB UNIT 2 - FRAMING PLAN
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-65 OF S-118 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	540
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

TABLE OF LAYOUT DIMENSIONS

BEAM	C N. Brg. Pier 3E		C Pier 4E		C Splice 1		C Splice 2		C Pier 5E		C S. Brg. Pier 6E	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1E	92'-0 9/16"	1'-10 1/16"	32'-1 3/4"	2'-10 3/8"	19'-7 3/4"	2'-11 3/8"	18'-10 3/4"	2'-11 1/16"	32'-1 3/4"	2'-10 3/8"	94'-9 3/16"	1'-9 7/8"
2E	91'-1 5/16"	8'-3"	31'-2 1/2"	9'-2 1/2"	18'-8 1/2"	9'-3 1/16"	21'-2"	9'-3 9/16"	34'-5"	9'-2 1/8"	97'-0 5/16"	8'-1 1/4"
3E	90'-2"	14'-7 1/4"	30'-3 1/4"	15'-6 9/16"	17'-9 1/4"	15'-7 1/2"	23'-5 1/4"	15'-7 1/8"	36'-8 1/4"	15'-5 1/8"	99'-3 3/8"	14'-4 9/16"
4E	89'-2 3/4"	20'-11 9/16"	29'-4"	21'-10 5/8"	16'-10"	21'-11 9/16"	25'-8 1/2"	21'-10 15/16"	38'-11 1/2"	21'-9 5/8"	101'-6 1/2"	20'-7 8/8"

		0.4 Sp. 4	Pier 4	0.5 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in ⁴)	6710	6710	5900	6710	6710
$I_c(n)$	(in ⁴)	17387		15829		17387
$I_c(3n)$	(in ⁴)	12816		11720		12816
S_s	(in ³)	406	406	359	406	406
$S_c(n)$	(in ³)	586		529		586
$S_c(3n)$	(in ³)	531		479		531
S_f	(in ³)	18.85	18.85	16.31	18.85	18.85
ϕ	(k/')	0.80	0.80	0.78	0.80	0.80
$M\phi$	(k)	218	312	116	335	241
$s\phi$	(k/')	0.32	0.32	0.32	0.32	0.32
$M_s\phi$	(k)	88	114	56	122	97
M_L	(k)	390	240	362	248	412
M_I	(k)	106	64	94	65	110
$^{5/3}[M_L + M_I]$	(k)	826	506	761	521	870
M_a	(k)	1,472	1,211	1,213	1,271	1,571
M_{bt}	(k)	8.21	3.19	1.74	3.35	8.65
$f_s\phi$ (non-comp)	(ksi)	6.44	9.24	3.88	9.90	7.12
$f_s\phi$ (comp)	(ksi)	1.99	3.36	1.40	3.61	2.19
f_s $^{5/3}[M_L + M_I]$	(ksi)	16.92	14.94	17.26	15.40	17.81
f_t	(ksi)	5.23	2.03	1.28	2.13	5.50
f_s (Overload)	(ksi)	25.35	27.54	22.54	28.91	27.12
f_s (Total)	(ksi)	32.95	35.81	29.30	37.58	35.26
F_{cr} (Overload)	(ksi)	47.50	41.41	47.50	41.41	47.50
VR	(k)	54.4		41.7		54.3
F_{cr}	(ksi)	48.26	42.47	49.57	42.47	48.17

		C N. Brg. Pier 3E	C Pier 4E	C Pier 5E	C S. Brg. Pier 6E
$R\phi$	(k)	26.8	76.5	79.1	28.1
R_L	(k)	38.2	43.7	43.8	38.5
R_I	(k)	11.5	13.1	13.1	11.6
R_{Total}	(k)	76.5	133.4	136.1	78.2

*** TOP OF BEAM ELEVATIONS**

BEAM	C N. Brg. Pier 3E	C Pier 4E	C Splice 1	C Splice 2	C Pier 5E	C S. Brg. Pier 6E
1E	645.91	645.97	646.00	646.01	646.06	
2E	646.15	646.19	646.20	646.23	646.29	
3E	646.39	646.43	646.44	646.47	646.48	
4E	646.62	646.66	646.67	646.70	646.71	

* For fabrication only

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).

$I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).

$I_c(3n), S_c(3n)$: 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 and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).

S_f : Section modulus of one flange plate for lateral flange bending (in³).

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

$M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_L : Un-factored live load moment (kip-ft.).

M_I : Un-factored moment due to impact (kip-ft.).

M_a : Factored design moment (kip-ft.).

$1.3 [M\phi + M_s\phi + \frac{5}{3} (M_L + M_I)]$

M_{bt} : Factored lateral bending moment for flange plate (kip-ft.).

f_t : Factored calculated normal stress at the edge of flange due to lateral bending (ksi).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\phi + M_s\phi + \frac{5}{3} (M_L + M_I)$

f_s (Total): Sum of stresses as computed from the moments below (ksi).
 $1.3 [M\phi + M_s\phi + \frac{5}{3} (M_L + M_I)]$

F_{cr} (Overload): Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5 (ksi).

F_{cr} : Critical average flange stress (smaller of F_{cr1} or F_{cr2} for partially braced flanges and F_y for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4) (ksi).

VR: Maximum ϕ + impact shear range within span for stud shear connector design (kips).

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

		0.4 Sp. 4	Pier 4	0.5 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in ⁴)	9290	9290	7450	9290	9290
$I_c(n)$	(in ⁴)	22141		18789		22141
$I_c(3n)$	(in ⁴)	16177		13800		16177
S_s	(in ³)	549	549	448	549	549
$S_c(n)$	(in ³)	764		638		764
$S_c(3n)$	(in ³)	690		577		690
S_f	(in ³)	26.89	26.89	21.16	26.89	26.89
ϕ	(k/')	0.86	0.86	0.83	0.86	0.86
$M\phi$	(k)	201	400	201	420	225
$s\phi$	(k/')	0.33	0.33	0.33	0.33	0.33
$M_s\phi$	(k)	82	150	94	158	92
M_L	(k)	396	284	421	287	417
M_I	(k)	119	68	126	72	125
$^{5/3}[M_L + M_I]$	(k)	857	586	913	597	904
M_a	(k)	1,482	1,477	1,570	1,528	1,587
M_{bt}	(k)	6.03	1.18	7.41	1.51	8.46
$f_s\phi$ (non-comp)	(ksi)	4.39	8.75	5.38	9.18	4.92
$f_s\phi$ (comp)	(ksi)	1.43	3.28	1.96	3.45	1.59
f_s $^{5/3}[M_L + M_I]$	(ksi)	13.46	12.80	17.16	13.06	14.19
f_t	(ksi)	2.01	0.27	3.14	0.34	2.78
f_s (Overload)	(ksi)	19.27	24.83	24.50	25.69	20.71
f_s (Total)	(ksi)	25.05	32.28	31.85	33.40	26.92
F_{cr} (Overload)	(ksi)	34.20	34.20	34.20	34.20	34.20
VR	(k)	54.5		42.2		54.2
F_{cr}	(ksi)	35.10	34.80	34.60	34.52	34.74

		C N. Brg. Pier 3E	C Pier 4E	C Pier 5E	C S. Brg. Pier 6E
$R\phi$	(k)	26.6	88.4	90.7	28.08
R_L	(k)	38.3	44.3	44.6	38.59
R_I	(k)	11.5	13.3	11.2	11.58
R_{Total}	(k)	76.4	145.9	146.5	78.2

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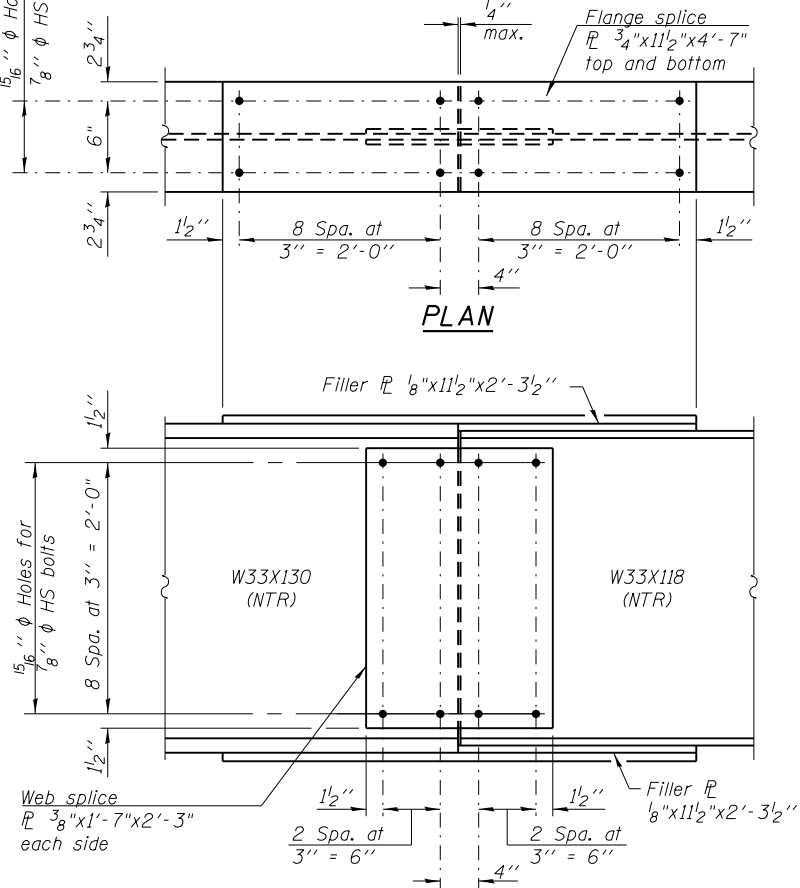
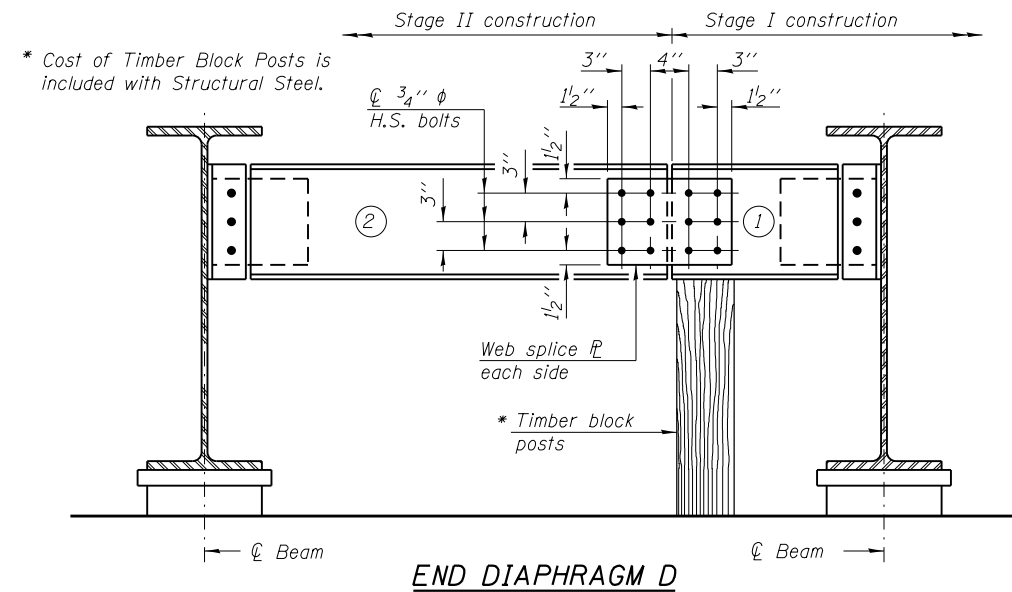
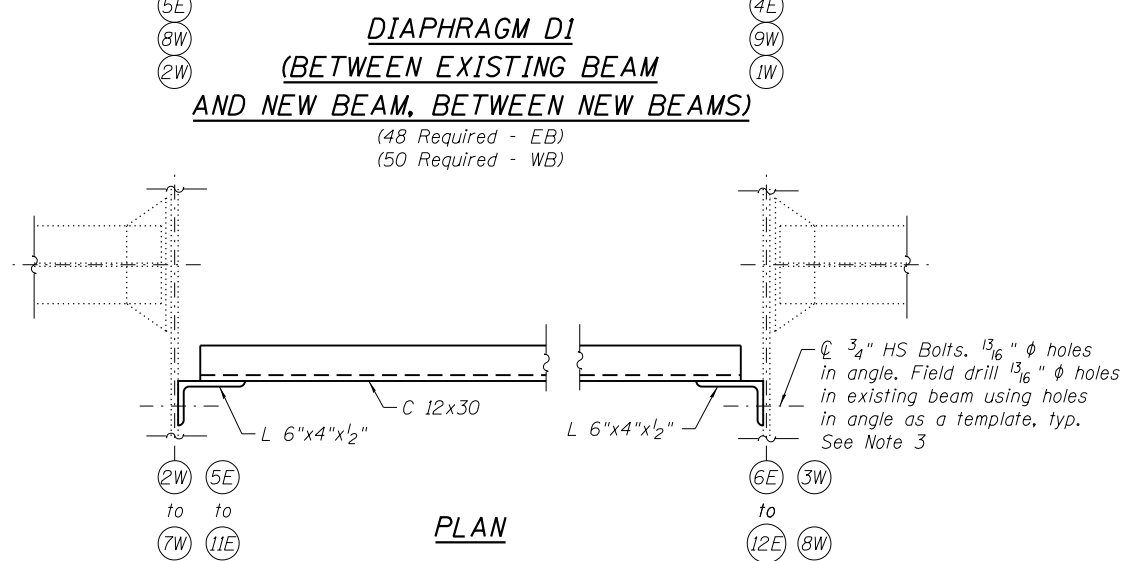
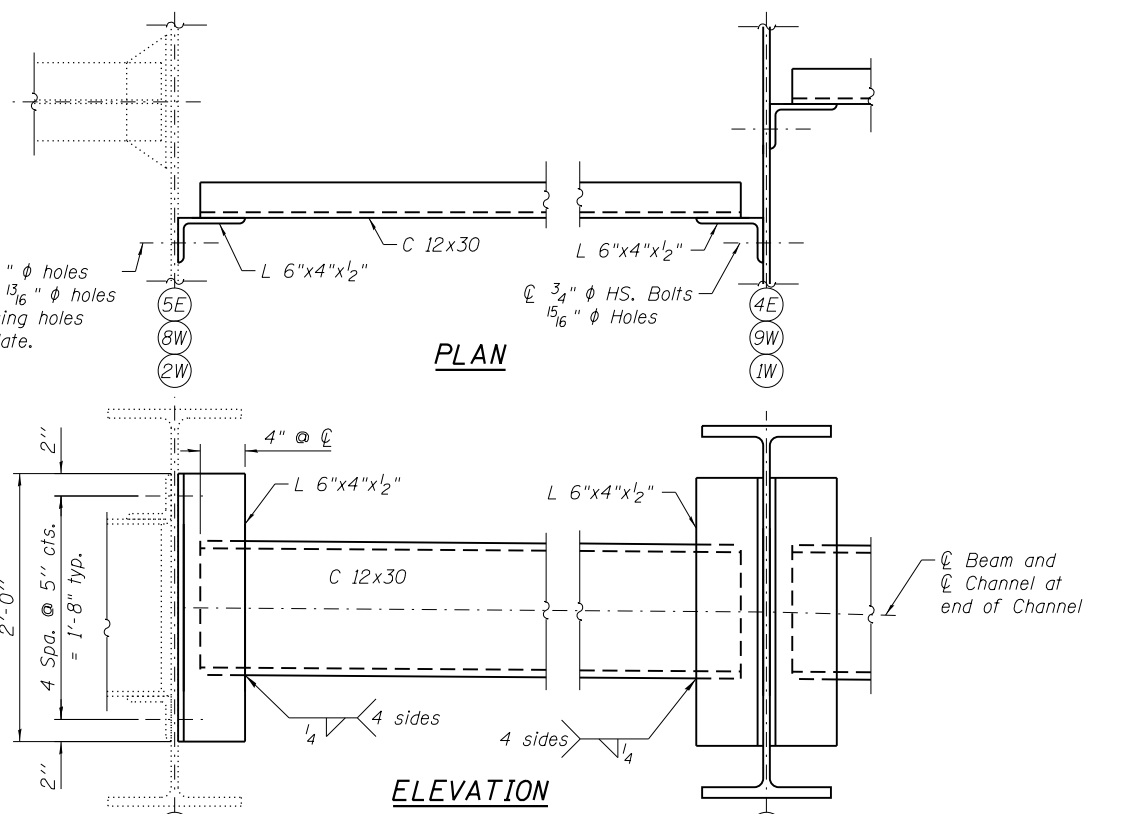
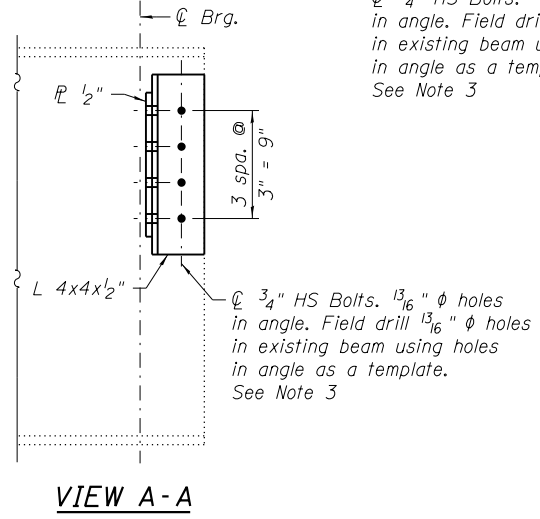
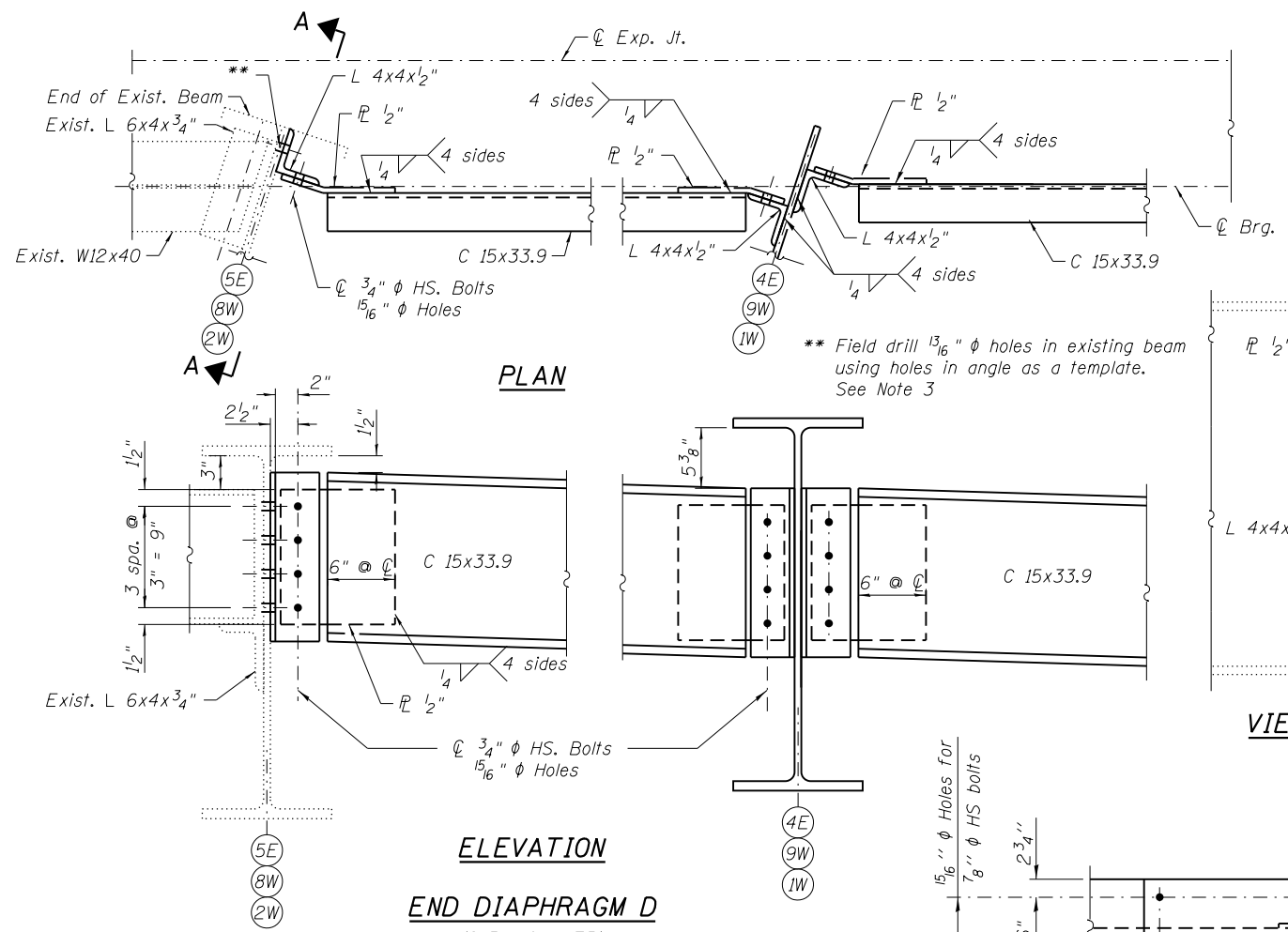
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PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - AMK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EB UNIT 2 - STEEL DETAILS 1
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-66 OF S-118 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	541
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



- NOTES:**
- Order diaphragm in two sections.
 - Attach section ① of diaphragm to beam.
 - Place timber block posts between section ① of diaphragm and abutment bearing section.
 - Attach section ② of diaphragm to both beam and section ① of diaphragm during stage II construction with splice plates.
 - Remove timber block posts.
- Two hardened washers required for each set of oversized holes.
 - Contractor to verify existing dimensions in the field and make necessary approved adjustments prior to ordering materials.
 - Cost of Field drilling is included in Furnishing & Erecting Structural Steel.

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Clorba Group, Inc.
CONSULTING ENGINEERS
6507 North Cumberland Avenue
Suite 402, Chicago, Illinois 60656
Tel: 773.724.6000
Fax: 773.775.4014
Email: clorba@clorba.com

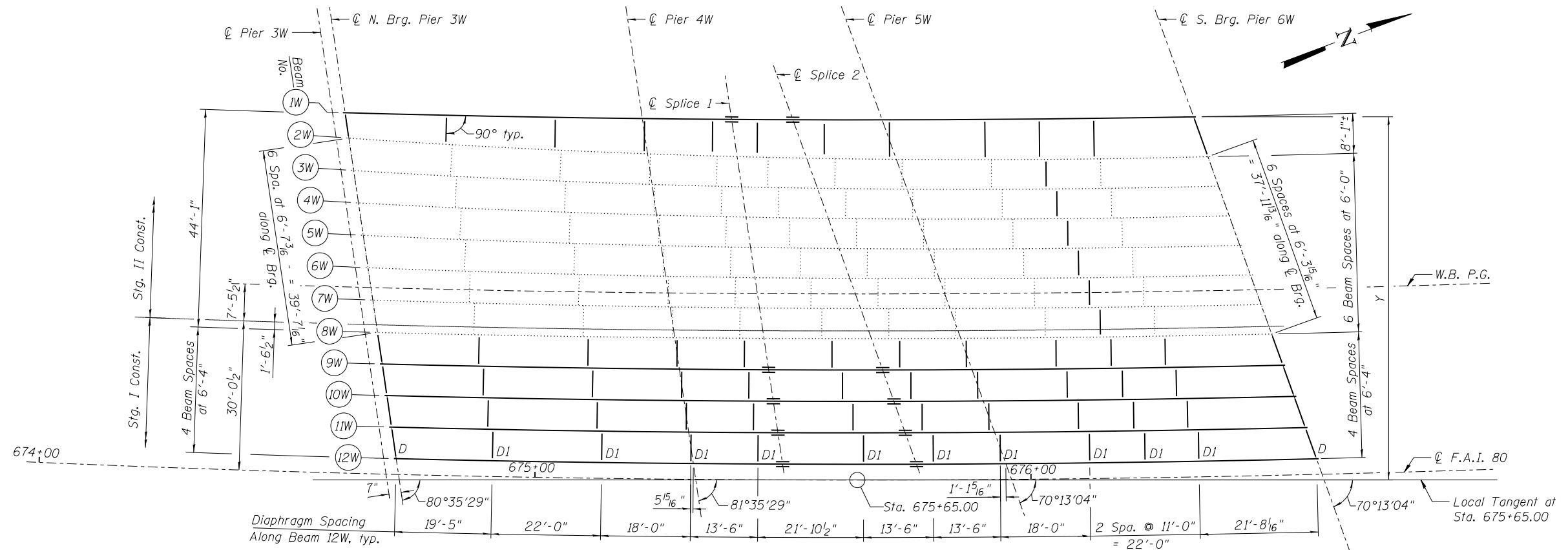
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

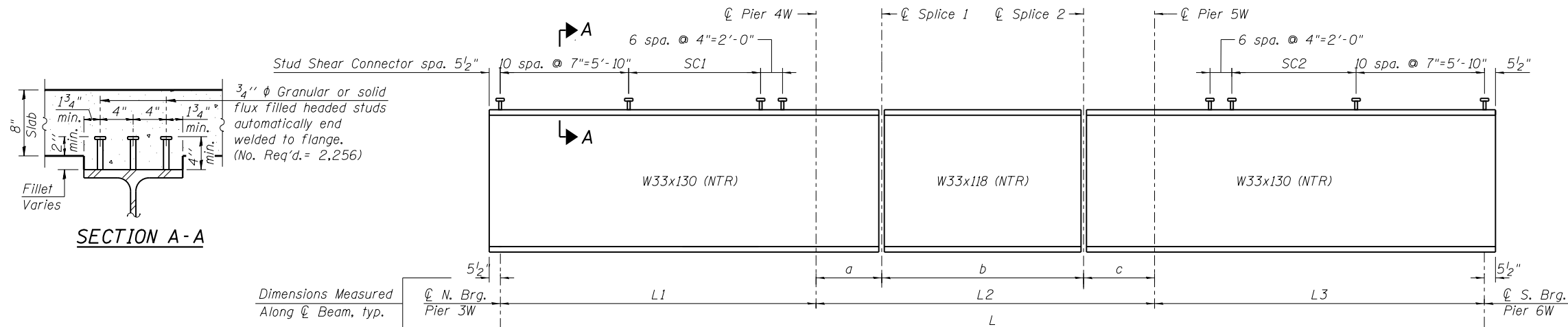
EB & WB UNIT 2 - STEEL DETAILS 2
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	542
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

SHEET NO. S-67 OF S-118 SHEETS



FRAMING PLAN
WB Unit 2 (Spans 4 thru 6)



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

NOTES:

- All beams, splice plates and fill plates, shall be AASHTO M 270, Grade 50.
- All diaphragms, Angles and Connecting Plates, may be AASHTO M270, Grade 36.
- Work this sheet with sheets S-67 and S-69.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
- All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- All interior diaphragms shall be oriented radial to the girders except at the end diaphragms.
- Contractor to verify existing dimensions in the field and make necessary approved adjustments prior to ordering materials.

STUD SHEAR CONNECTOR SPACING

BEAM	SC1	SC2
1W	59 spa. @ 9"=44'-3"	61 spa. @ 9"=45'-9"
9W	57 spa. @ 9"=42'-9"	60 spa. @ 9"=45'-0"
10W	56 spa. @ 9"=42'-0"	59 spa. @ 9"=44'-3"
11W	56 spa. @ 9"=42'-0"	59 spa. @ 9"=44'-3"
12W	56 spa. @ 9"=42'-0"	59 spa. @ 9"=44'-3"

BEAM DIMENSIONS (in feet)

BEAM	RADIUS	L	L1	L2	L3	a	b	c
1W	3746.9467	171'-0 ¹³ / ₁₆ "	59'-11 ⁵ / ₁₆ "	48'-4 ¹ / ₈ "	62'-9 ³ / ₈ "	18'-0"	12'-4 ¹ / ₈ "	18'-0"
9W	3797.3633	181'-7 ¹ / ₁₆ "	59'-11 ¹ / ₁₆ "	58'-11 ¹ / ₈ "	62'-8 ¹ / ₈ "	18'-0"	22'-11 ⁷ / ₈ "	18'-0"
10W	3803.6967	182'-10 ⁵ / ₁₆ "	59'-11 ¹ / ₁₆ "	60'-3 ⁷ / ₈ "	62'-8"	18'-0"	24'-3 ⁷ / ₈ "	18'-0"
11W	3810.0300	184'-2 ³ / ₄ "	59'-11"	61'-7 ¹⁵ / ₁₆ "	62'-7 ⁷ / ₈ "	18'-0"	25'-7 ¹⁵ / ₁₆ "	18'-0"
12W	3816.3633	185'-6 ⁵ / ₈ "	59'-10 ¹⁵ / ₁₆ "	62'-11 ¹⁵ / ₁₆ "	62'-7 ¹¹ / ₁₆ "	18'-0"	26'-11 ¹⁵ / ₁₆ "	18'-0"

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	CHECKED - AMK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WB UNIT 2 - FRAMING PLAN
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	543
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

TABLE OF LAYOUT DIMENSIONS

BEAM	C. N. Brg. Pier 3W		C. Pier 4E		C. Splice 1		C. Splice 2		C. Pier 5W		C. S. Brg. Pier 6W	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1W	103'-3 3/16"	74'-0 1/6"	43'-4"	72'-10"	25'-4 1/6"	72'-8"	12'-11 7/8"	72'-7 1/4"	5'-0 1/8"	72'-7 1/6"	67'-9 1/6"	73'-2 3/8"
9W	95'-9 3/8"	23'-4 1/2"	35'-10 1/6"	22'-4 1/6"	17'-10 1/6"	22'-2 1/2"	5'-1 1/6"	22'-2 1/6"	23'-1 1/6"	22'-2 8"	85'-9 1/2"	23'-1 5/8"
10W	94'-10 1/8"	17'-0 3/6"	34'-11 3/6"	15'-11 15/6"	16'-11 3/6"	15'-10 1/6"	7'-4 1/6"	15'-10 1/6"	25'-4 1/6"	15'-11"	88'-0 9/6"	16'-10 1/4"
11W	93'-10 13/16"	10'-7 8"	33'-11 15/6"	9'-7 13/6"	15'-11 15/6"	9'-6 3/8"	9'-7 15/6"	9'-6 1/8"	27'-7 15/6"	9'-7 3/6"	90'-3 1/6"	10'-6 7/8"
12W	92'-11 9/16"	4'-3 9/6"	33'-0 1/6"	3'-3 1/6"	15'-0 1/6"	3'-2 3/8"	11'-11 1/4"	3'-2 1/4"	29'-11 1/4"	3'-3 1/6"	92'-6 13/6"	4'-3 1/2"

BEAM MOMENT TABLE (NEW BEAM)						
		0.4 Sp. 14	Pier 4	0.5 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in ⁴)	6710	6710	5900	6710	6710
$I_c(n)$	(in ⁴)	17387				17387
$I_c(3n)$	(in ⁴)	12816				12816
S_s	(in ³)	406	406	359	406	406
$S_c(n)$	(in ³)	586				586
$S_c(3n)$	(in ³)	531				531
S_I	(in ³)	18.85	18.85	16.31	18.85	18.85
ρ	(k'/')	0.85	0.85	0.84	0.85	0.87
$M\phi$	(k)	242	313	92	338	293
$s\phi$	(k'/')	0.32	0.32	0.32	0.32	0.32
$M_s\phi$	(k)	91	106	43	115	111
$M\phi$	(k)	382	225	334	233	452
M_I	(k)	103	60	89	62	120
$^5_3[M\phi + M_I]$	(k)	809	475	704	492	953
M_a	(k)	1,484	1,162	1,091	1,228	1,766
M_{bl}	(k)	7.20	3.77	4.91	3.99	8.56
$f_s\phi$ (non-comp)	(ksi)	7.15	9.25	3.08	10.00	8.67
$f_s\phi$ (comp)	(ksi)	2.06	3.14	1.45	3.39	2.53
f_s $^5_3[M\phi + M_I]$	(ksi)	16.56	14.03	23.53	14.53	19.51
f_I	(ksi)	4.58	2.40	3.61	2.54	5.45
f_s (Overload)	(ksi)	25.77	26.42	28.05	27.92	30.71
f_s (Total)	(ksi)	33.49	34.35	36.47	36.30	39.93
F_{cr} (Overload)	(ksi)	47.50	39.47	47.50	39.47	47.50
VR	(k)	52.5		38.6		52.4
F_{cr}	(ksi)	48.47	40.76	37.18	40.76	48.25

Note: Beam 1 moments used for 0.6 Sp 6. Beam 12 moments used elsewhere.

BEAM REACTION TABLE (NEW BEAM)					
	C. N. Brg. Pier 3W	C. Pier 4W	C. Pier 5W	C. S. Brg. Pier 6W	
$R\phi$	(k)	27.4	73.1	75.9	28.7
$R\phi$	(k)	38.3	43.8	44.0	38.5
R_I	(k)	11.5	13.1	13.2	11.5
R_{Total}	(k)	77.2	130.0	133.0	78.7

*** TOP OF BEAM ELEVATIONS**

BEAM	C. N. Brg. Pier 3W	C. Brg. Pier 4W	C. Splice 1	C. Splice 2	C. Brg. Pier 5W	C. S. Brg. Pier 6W
1W	645.41	645.44	645.45	645.46	645.48	645.54
9W	647.29	647.32	647.33	647.34	647.35	647.40
10W	647.53	647.55	647.56	647.58	647.59	647.63
11W	647.76	647.79	647.80	647.81	647.82	647.86
12W	648.00	648.02	648.03	648.05	648.06	648.09

* For fabrication only

- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
- $I_c(3n), S_c(3n)$: 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 and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
- S_I : Section modulus of one flange plate for lateral flange bending (in³).
- ρ : Un-factored non-composite dead load (kips/ft.).
- $M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).
- $s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
- $M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
- $M\phi$: Un-factored live load moment (kip-ft.).
- M_I : Un-factored moment due to impact (kip-ft.).
- M_a : Factored design moment (kip-ft.).
- M_{bl} : Factored lateral bending moment for flange plate (kip-ft.).
- $f_s\phi$ (non-comp): Factored design moment (kip-ft.).
- $f_s\phi$ (comp): Factored design moment for flange plate (kip-ft.).
- f_I : Factored calculated normal stress at the edge of flange due to lateral bending (ksi).
- f_s (Overload): Sum of stresses as computed from the moments below (ksi).
- f_s (Total): Sum of stresses as computed from the moments below (ksi).
- F_{cr} (Overload): Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5 (ksi).
- F_{cr} : Critical average flange stress (smaller of F_{cr1} or F_{cr2} for partially braced flanges and F_y for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4) (ksi).
- VR: Maximum ϕ impact shear range within span for stud shear connector design (kips).

Note: $M\phi$ and $R\phi$ include the effects of centrifugal force and superelevation.

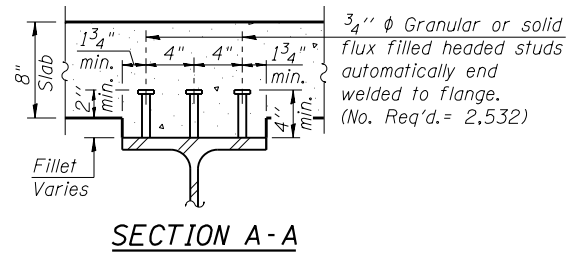
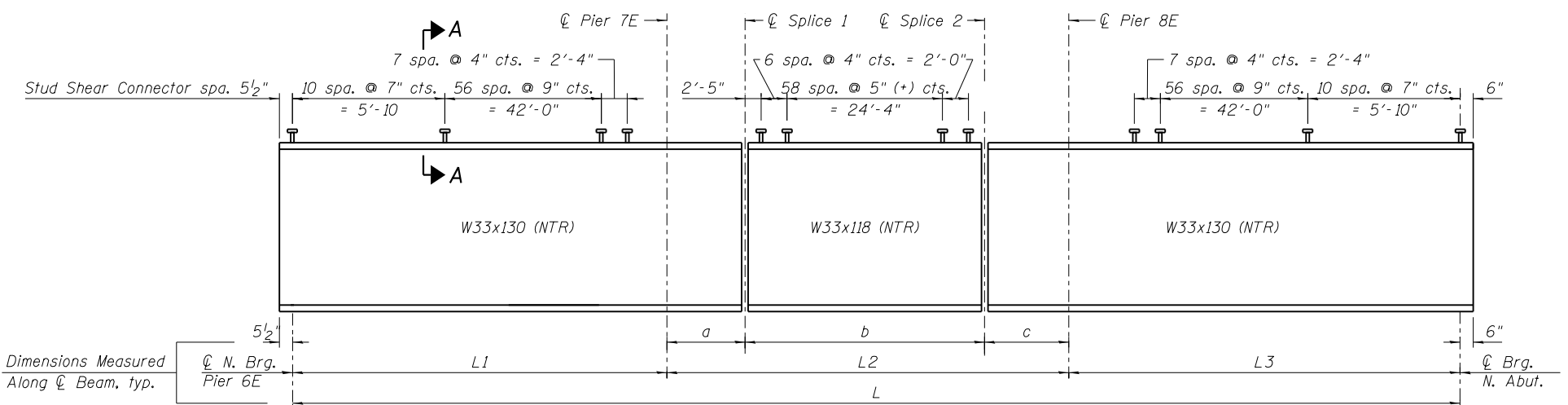
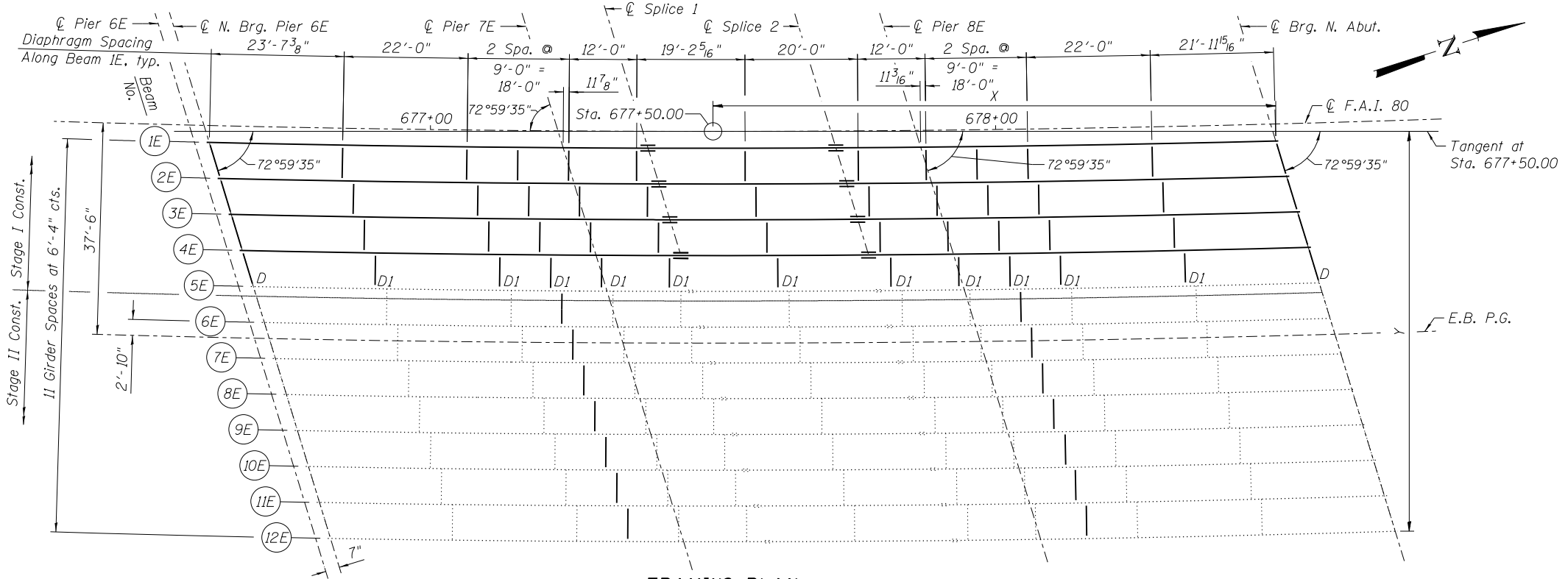
BEAM MOMENT TABLE (EXISTING BEAM)						
		0.4 Sp. 14	Pier 4	0.5 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in ⁴)	7450	7450	6710	7450	7450
$I_c(n)$	(in ⁴)	18259				19160
$I_c(3n)$	(in ⁴)	13360				14146
S_s	(in ³)	448	448	406	448	448
$S_c(n)$	(in ³)	627				642
$S_c(3n)$	(in ³)	565				582
S_I	(in ³)	21.16	21.16	18.85	21.16	21.16
ρ	(k'/')	0.79	0.80	0.80	0.83	0.84
$M\phi$	(k)	240	237	10	278	276
$s\phi$	(k'/')	0.32	0.32	0.32	0.32	0.32
$M_s\phi$	(k)	103	92	4	101	111
$M\phi$	(k)	358	189	250	212	410
M_I	(k)	107	49	75	53	123
$^5_3[M\phi + M_I]$	(k)	775	397	542	441	888
M_a	(k)	1,453	944	723	1,065	1,658
M_{bl}	(k)	14.50	6.48	2.63	7.31	4.13
$f_s\phi$ (non-comp)	(ksi)	6.43	6.34	0.29	7.44	7.40
$f_s\phi$ (comp)	(ksi)	2.18	2.48	0.12	2.69	2.29
f_s $^5_3[M\phi + M_I]$	(ksi)	14.84	10.63	16.02	11.81	16.59
f_I	(ksi)	5.66	2.03	1.69	2.25	1.62
f_s (Overload)	(ksi)	23.44	19.45	16.43	21.95	26.28
f_s (Total)	(ksi)	30.48	25.28	21.36	28.53	34.16
F_{cr} (Overload)	(ksi)	34.20	27.86	31.44	27.86	34.20
VR	(k)	42.9				52.9
F_{cr}	(ksi)	33.26	31.21	33.30	31.21	35.22

Note: Beam 1 moments used for 0.6 Sp 6. Beam 12 moments used elsewhere.

BEAM REACTION TABLE (EXISTING BEAM)					
	C. N. Brg. Pier 3W	C. Pier 4W	C. Pier 5W	C. S. Brg. Pier 6W	
$R\phi$	(k)	27.9	65.1	70.5	30.6
$R\phi$	(k)	31.5	37.7	44.2	39.7
R_I	(k)	9.4	11.3	13.3	11.9
R_{Total}	(k)	68.9	114.2	128.0	82.2

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CONSULTING ENGINEERS 550 North Chestnut Avenue Suite 402, Chicago, Illinois 60656 Tel 312.724.4000 Fax 312.724.4014 Email: clorba@clorba.com	USER NAME = kaisneros PLOT SCALE = 25.00000' / in. PLOT DATE = 5/9/2018	DESIGNED - DL CHECKED - AMK DRAWN - RD CHECKED - AMK	REVISED - REVISED - REVISED - REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WB UNIT 2 - STEEL DETAILS 1 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)	F.A.I. REE. = 80 SECTION = 99-4-1VB-1-R COUNTY = WILL TOTAL SHEETS = 840 SHEET NO. = 544	CONTRACT NO. 60N87 ILLINOIS FED. AID PROJECT
	SHEET NO. S-69 OF S-118 SHEETS						



BEAM DIMENSIONS (in feet)

BEAM	RADIUS	L	L1	L2	L3	a	b	c
1E	3822.5300	188'-8 11/16"	62'-7 1/2"	63'-2 15/16"	62'-10 1/4"	15'-0"	33'-2 15/16"	15'-0"
2E	3828.8633	188'-8 5/16"	62'-7 5/16"	63'-2 7/8"	62'-10 7/8"	15'-0"	33'-2 7/8"	15'-0"
3E	3835.1967	188'-7 15/16"	62'-7 3/16"	63'-2 3/4"	62'-10"	15'-0"	33'-2 3/4"	15'-0"
4E	3841.5300	188'-7 5/8"	62'-7 1/16"	63'-2 5/8"	62'-9 15/16"	15'-0"	33'-2 5/8"	15'-0"

NOTES:

- All beams, splice plates and fill plates, shall be AASHTO M 270, Grade 50.
- All diaphragms, Angles and Connecting Plates, may be AASHTO M270, Grade 36.
- Work this sheet with sheets S-71 and S-72.
- Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
- All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- All interior diaphragms shall be oriented radial to the girders except at the end diaphragms.
- Contractor to verify existing dimensions in the field and make necessary approved adjustments prior to ordering materials.

N:\PROJECTS\0003384\004\US_30\Design\Structural\CAD\3384_70_EB_Unit_3 - Framing Plan.dgn



USER NAME = kaisneros	DESIGNED - DL	REVISED -
PLOT SCALE = 25.00000' / in.	CHECKED - AMK	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - AMK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EB UNIT 3 - FRAMING PLAN
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-70 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	545
CONTRACT NO. 60N87				

ILLINOIS FED. AID PROJECT

TABLE OF LAYOUT DIMENSIONS

BEAM	C N. Brg. Pier 6E		C Pier 7E		C Splice 1		C Splice 2		C Pier 8E		C Brg. N. Abut.	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1E	89'-1 9/16"	1'-11 1/2"	26'-6 3/16"	2'-10 7/8"	11'-6 3/16"	2'-11 13/16"	21'-8 3/4"	2'-11 1/4"	36'-8 3/4"	2'-9 7/8"	99'-6 7/8"	1'-8 1/16"
2E	87'-2 3/16"	8'-4 1/16"	24'-6 7/8"	9'-3 1/16"	9'-6 15/16"	9'-3 7/8"	23'-7 15/16"	9'-3 1/2"	38'-7 15/16"	9'-1 1/16"	101'-5 15/16"	7'-11 7/8"
3E	85'-2 3/4"	14'-8 5/8"	22'-7 5/8"	15'-7 3/16"	7'-7 5/8"	15'-7 15/16"	25'-7 1/8"	15'-7"	40'-7 1/8"	15'-5 7/16"	103'-5"	14'-3 1/4"
4E	83'-3 5/16"	21'-1 3/16"	20'-8 5/16"	21'-11 5/16"	5'-8 5/16"	21'-11 15/16"	27'-6 5/16"	21'-10 13/16"	42'-6 1/4"	21'-9 3/16"	105'-4 1/16"	20'-6 1/16"

		0.4 Sp. 7	Pier 7	0.5 Sp. 8	Pier 8	0.6 Sp. 9
I _s	(in ⁴)	6710	6710	5900	6710	6710
I _c (n)	(in ⁴)	17387		15829		17387
I _c (3n)	(in ⁴)	12816		11720		12816
S _s	(in ³)	406	406	359	406	406
S _c (n)	(in ³)	586		529		586
S _c (3n)	(in ³)	531		479		531
S _l	(in ³)	18.85	18.85	16.31	18.85	18.85
Q	(k/')	0.81	0.81	0.79	0.81	0.81
M _Q	(k)	254	316	82	318	255
s _Q	(k/')	0.33	0.33	0.33	0.33	0.33
M _{sQ}	(k)	111	124	45	125	107
M _L	(k)	411	238	341	239	412
M _I	(k)	109	63	91	63	110
⁵ / ₃ [M _L + M _I]	(k)	867	502	720	503	870
M _a	(k)	1,600	1,224	1,101	1,231	1,608
M _{bt}	(k)	7.72	3.95	3.55	3.97	7.76
f _{sQ} (non-comp)	(ksi)	7.50	9.34	2.73	9.40	7.55
f _{sQ} (comp)	(ksi)	2.50	3.67	1.14	3.70	2.51
f _s ⁵ / ₃ [M _L + M _I]	(ksi)	17.74	14.83	16.33	14.87	17.81
f _L	(ksi)	4.92	2.52	2.61	2.53	4.94
f _s (Overload)	(ksi)	27.74	27.83	20.20	27.98	27.87
f _s (Total)	(ksi)	36.06	36.18	26.26	36.37	36.23
F _{cr} (Overload)	(ksi)	47.50	39.48	47.50	39.48	47.50
VR	(k)	54.2		40.5		53.9
F _{cr}	(ksi)	48.36	40.76	49.13	40.76	48.35

		C N. Brg. Pier 6E	C Pier 7E	C Pier 8E	C Brg. N. Abut.
R _Q	(k)	29.7	79.0	79.2	29.8
R _L	(k)	38.5	43.9	43.9	38.5
R _I	(k)	11.5	13.2	13.2	11.6
R _{Total}	(k)	79.7	136.0	136.3	79.8

*** TOP OF BEAM ELEVATIONS**

BEAM	C N. Brg. Pier 6E	C Pier 7E	C Splice 1	C Splice 2	C Pier 8E	C Brg. N. Abut.
1E	646.06	645.95	645.92	645.86	645.83	645.72
2E	646.29	646.18	646.15	646.09	646.06	645.95
3E	646.53	646.41	646.38	646.32	646.29	646.18
4E	646.76	646.64	646.61	646.55	646.52	646.41

* For fabrication only

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s(Total and Overload) due to non-composite dead loads (in⁴ and in³).

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 and Overload) due to short-term composite live loads (in⁴ and in³).

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 and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).

S_l: Section modulus of one flange plate for lateral flange bending (in³).

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

M_Q: Un-factored moment due to non-composite dead load (kip-ft.).

s_Q: Un-factored long-term composite (superimposed) dead load (kips/ft.).

M_{sQ}: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_L: Un-factored live load moment (kip-ft.).

M_I: Un-factored moment due to impact (kip-ft.).

M_a: Factored design moment (kip-ft.).

$1.3 [M_Q + M_{sQ} + \frac{5}{3} (M_L + M_{I})]}$

M_{bt}: Factored lateral bending moment for flange plate (kip-ft.).

f_L: Factored calculated normal stress at the edge of flange due to lateral bending (ksi).

f_s(Overload): Sum of stresses as computed from the moments below (ksi).

$M_Q + M_{sQ} + \frac{5}{3} (M_L + M_{I})}$

f_s(Total): Sum of stresses as computed from the moments below (ksi).

$1.3 [M_Q + M_{sQ} + \frac{5}{3} (M_L + M_{I})]}$

F_{cr} (Overload): Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5 (ksi).

F_{cr}: Critical average flange stress (smaller of F_{cr1} or F_{cr2} for partially braced flanges and F_y for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4) (ksi).

VR: Maximum impact shear range within span for stud shear connector design (kips).

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

		0.4 Sp. 7	Pier 7	0.5 Sp. 8	Pier 8	0.6 Sp. 9
I _s	(in ⁴)	7450	7450	5900	7450	7450
I _c (n)	(in ⁴)	18789		15829		18789
I _c (3n)	(in ⁴)	13800		11720		13800
S _s	(in ³)	448	448	359	448	448
S _c (n)	(in ³)	638		529		638
S _c (3n)	(in ³)	577		479		577
S _l	(in ³)	21	21	16	21	21
Q	(k/')	0.83	0.83	0.80	0.83	0.83
M _Q	(k)	254	316	77	318	256
s _Q	(k/')	0.33	0.33	0.33	0.33	0.33
M _{sQ}	(k)	107	121	43	122	107
M _L	(k)	411	240	336	241	412
M _I	(k)	123	60	101	60	124
⁵ / ₃ [M _L + M _I]	(k)	889	500	727	502	893
M _a	(k)	1,625	1,218	1,102	1,225	1,633
M _{bt}	(k)	7.67	3.95	3.47	3.97	7.71
f _{sQ} (non-comp)	(ksi)	6.80	8.46	2.59	8.52	6.85
f _{sQ} (comp)	(ksi)	2.22	3.24	1.08	3.28	2.23
f _s ⁵ / ₃ [M _L + M _I]	(ksi)	16.72	13.40	16.50	13.44	16.79
f _L	(ksi)	4.35	2.24	2.55	2.25	3.08
f _s (Overload)	(ksi)	25.73	25.10	20.17	25.24	25.87
f _s (Total)	(ksi)	33.45	32.63	26.22	32.81	33.63
F _{cr} (Overload)	(ksi)	34.20	30.20	28.98	30.19	34.20
VR	(k)	52.9		39.0		52.7
F _{cr}	(ksi)	34.5	31.2	35.1	31.2	34.5

		C N. Brg. Pier 6E	C Pier 7E	C Pier 8E	C Brg. N. Abut.
R _Q	(k)	29.4	78.2	78.4	29.5
R _L	(k)	38.5	43.9	43.9	38.5
R _I	(k)	11.5	13.2	13.2	11.6
R _{Total}	(k)	79.5	135.2	135.5	79.6

N:\PROJECTS\00033384\004_US_30\Design\Structural\CAD\33384_71_EB_Unit_3 - Steel_Details_1.dgn



USER NAME = kaisneros	DESIGNED - DL	REVISED -
	CHECKED - AMK	REVISED -
PLOT SCALE = 25.00000' / 1"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - AMK	REVISED -

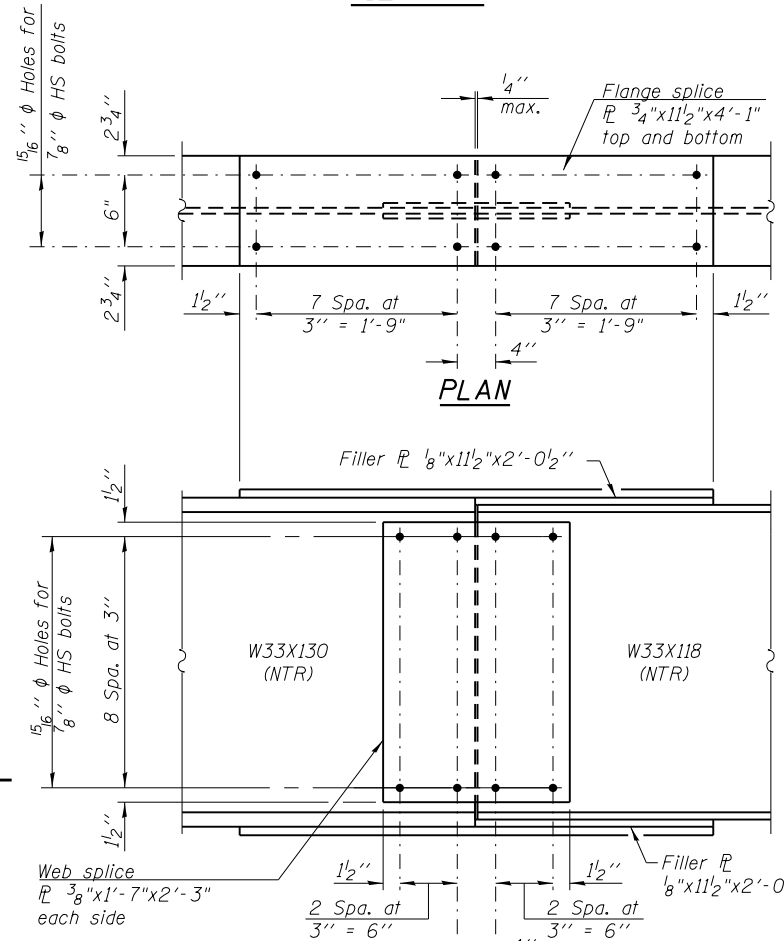
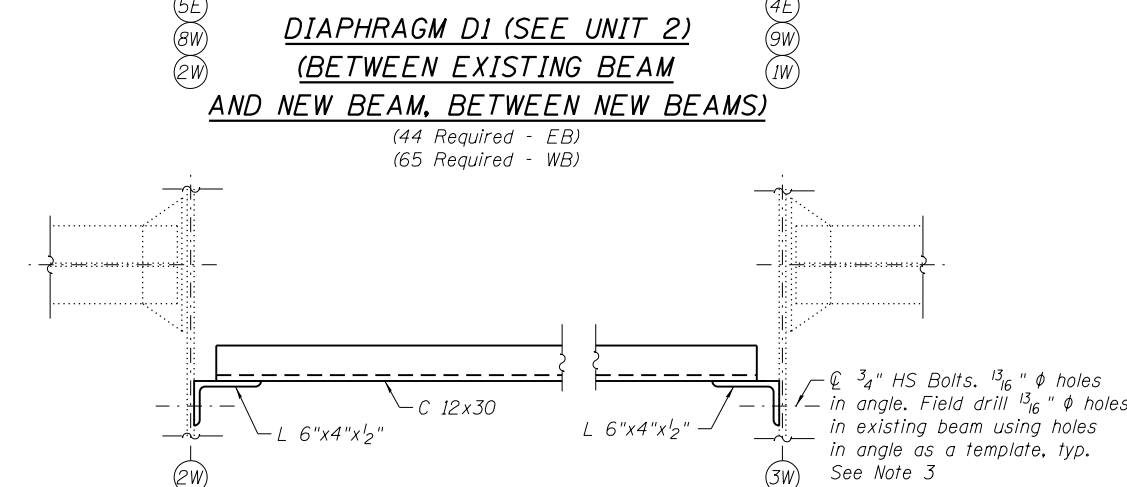
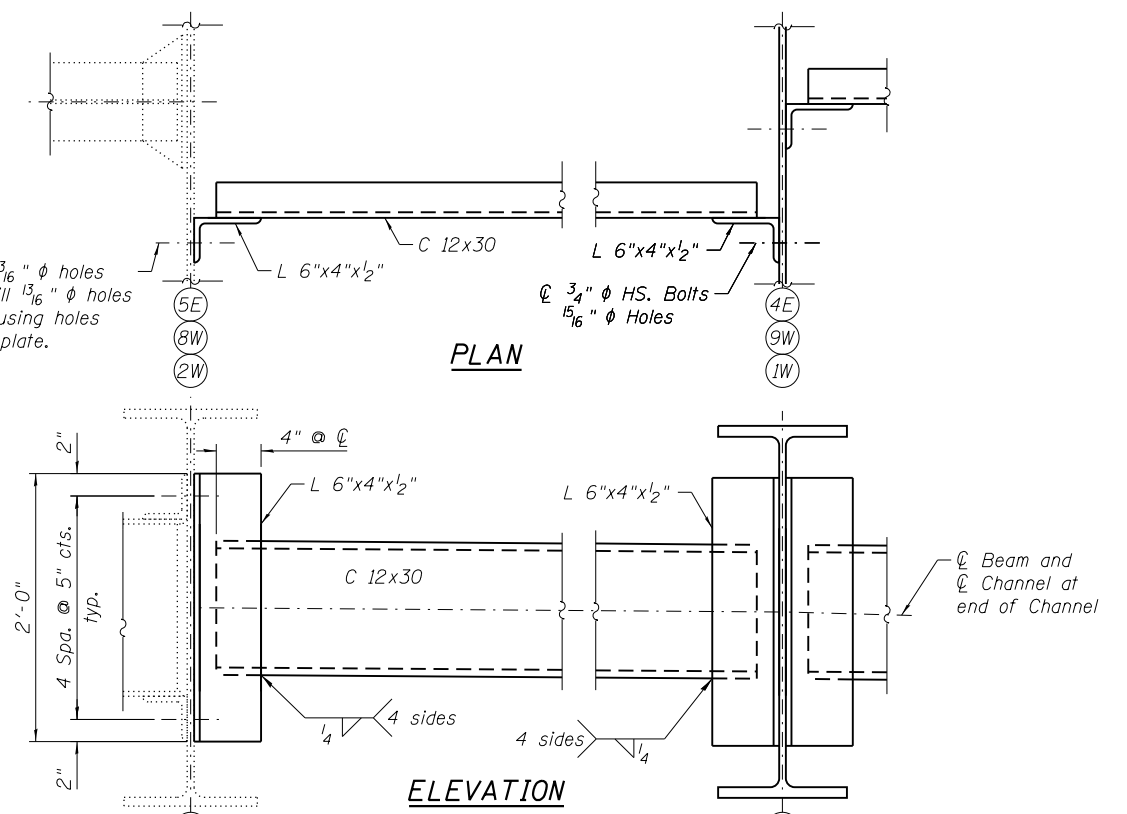
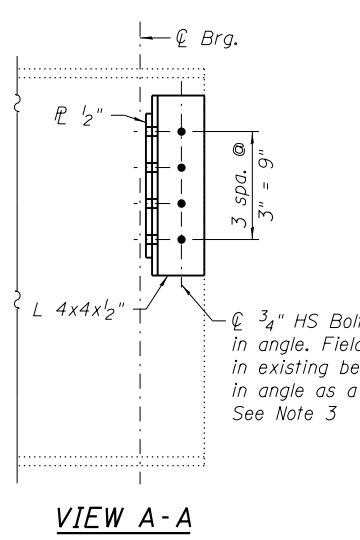
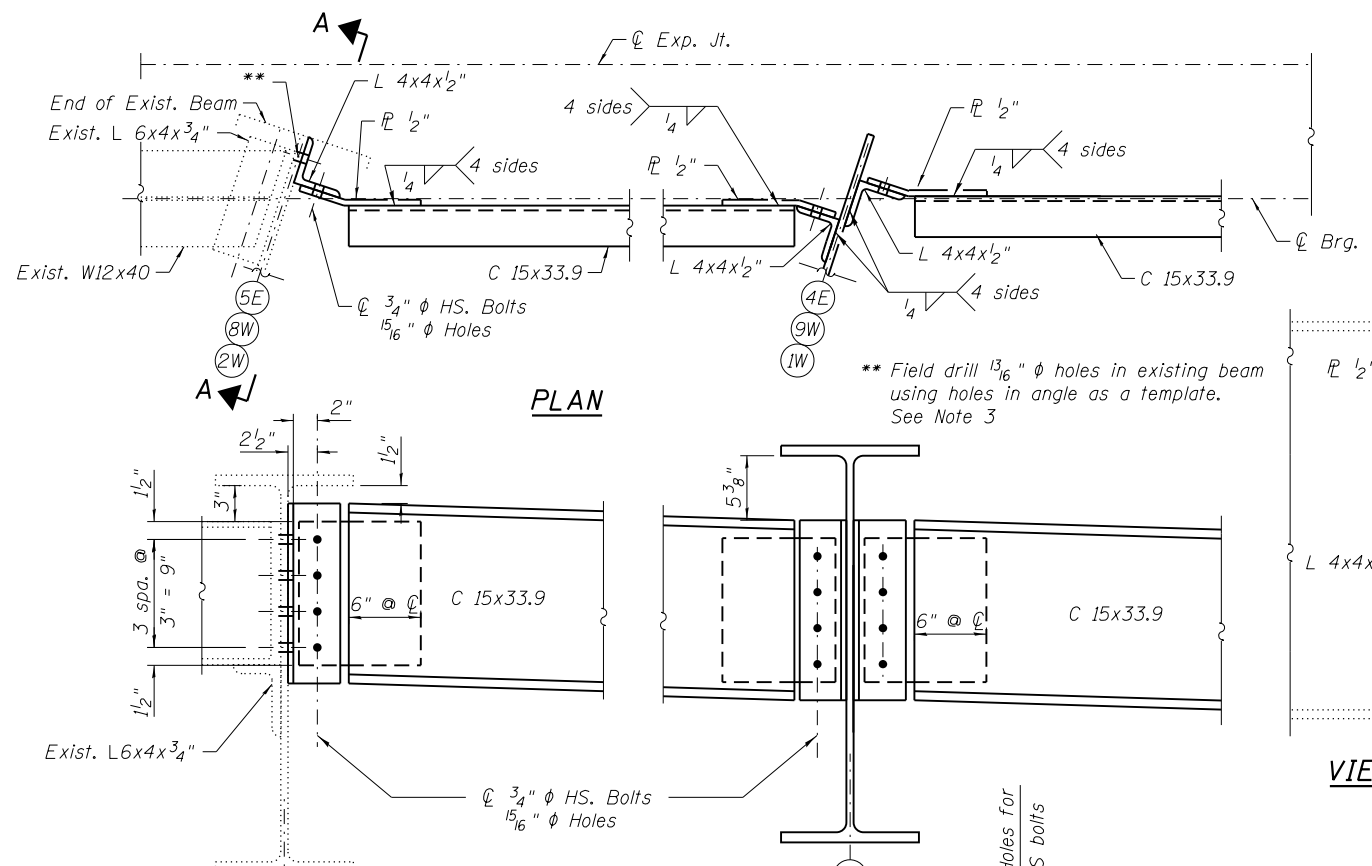
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**EB UNIT 3 - STEEL DETAILS 1
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

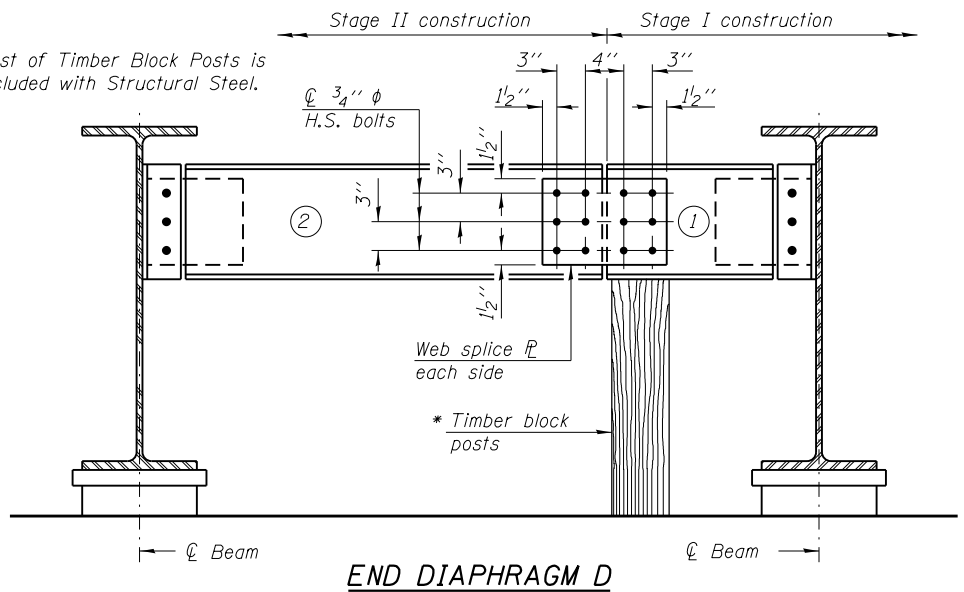
SHEET NO. S-71 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	546
CONTRACT NO. 60N87				
ILLINOIS FED. AID PROJECT				

N:\PROJECTS\0003384\004\US_30A\Design\Structural\CAD\3384_72 EB_and WB Unit_3 - Steel Details 2.dgn



* Cost of Timber Block Posts is included with Structural Steel.



- NOTES:**
- Two hardened washers required for each set of oversized holes.
 - Contractor to verify existing dimensions in the field and make necessary approved adjustments prior to ordering materials.
 - Cost of Field drilling is included in Furnishing & Erecting Structural Steel.

- Order diaphragm in two sections.
- Attach section ① of diaphragm to beam
- Place timber block posts between section ① of diaphragm and abutment bearing section.
- Attach section ② of diaphragm to both beam and section ① of diaphragm during stage II construction with splice plates.
- Remove timber block posts.



USER NAME = kaisneros	DESIGNED - DL	REVISD -
	CHECKED - AMK	REVISD -
PLOT SCALE = 1/4" = 1' / in.	DRAWN - RD	REVISD -
PLOT DATE = 5/9/2018	CHECKED - AMK	REVISD -

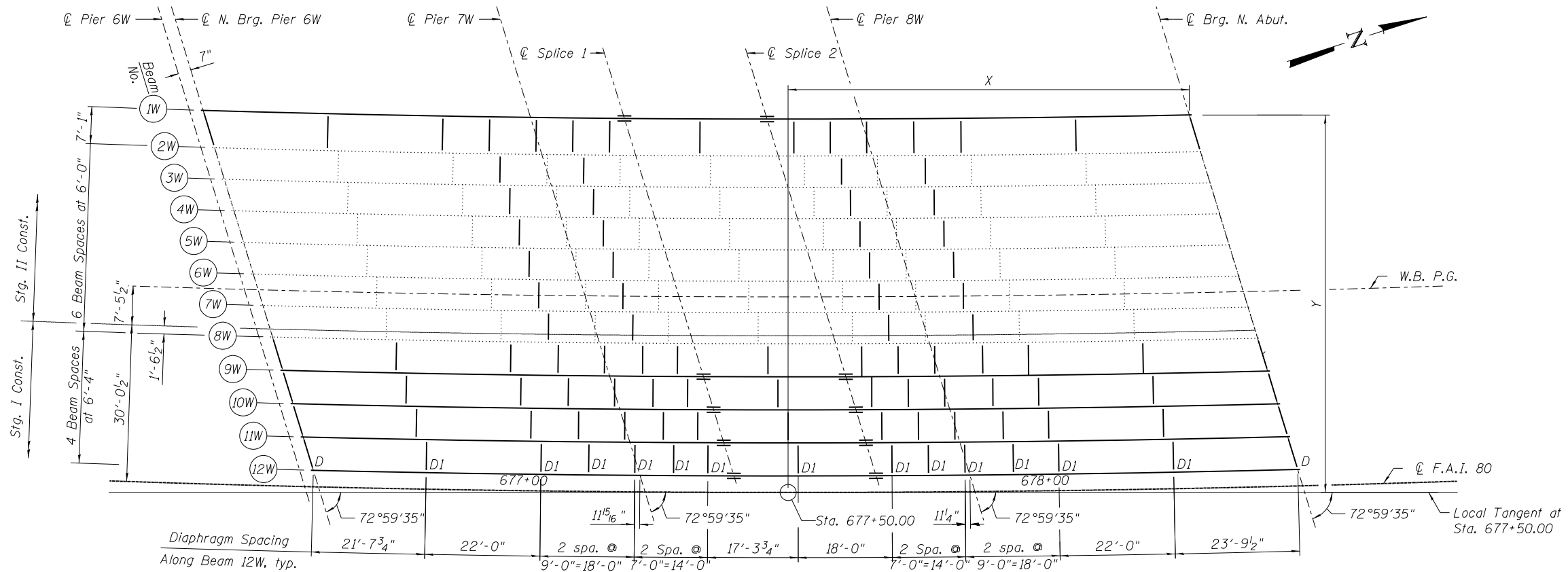
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EB & WB UNIT 3 - STEEL DETAILS 2
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

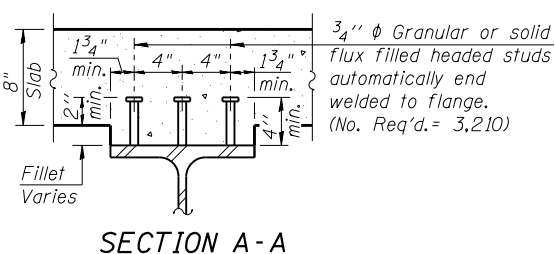
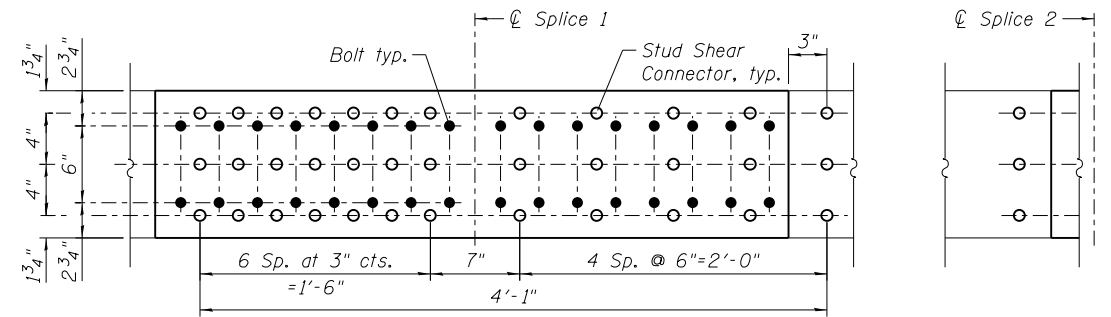
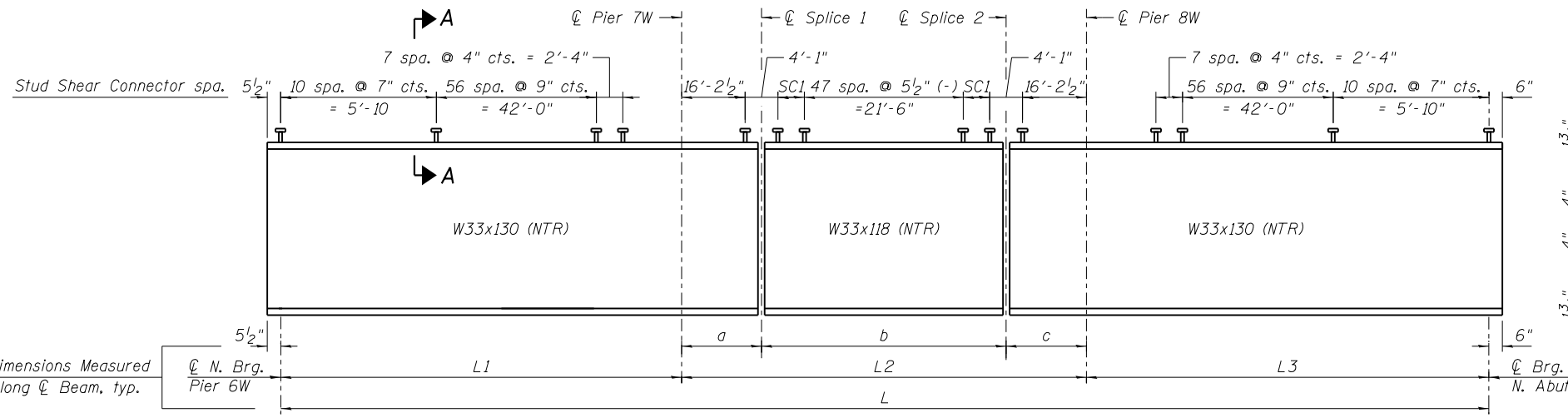
SHEET NO. S-72 OF S-118 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	547
CONTRACT NO. 60N87				

ILLINOIS FED. AID PROJECT



BEAM	SCI
1W	7 3/4"
9W	7 1/4"
10W	7 1/8"
11W	7 1/8"
12W	7"



BEAM DIMENSIONS (in feet)

BEAM	RADIUS	L	L1	L2	L3	a	b	c
1W	3747.9467	189'-0 7/8"	62'-9 1/6"	63'-4 3/8"	62'-11 1/2"	18'-0"	27'-4 3/8"	18'-0"
9W	3797.3633	188'-10 1/6"	62'-8"	63'-3 7/6"	62'-10 3/8"	18'-0"	27'-3 7/6"	18'-0"
10W	3803.6967	188'-9 1/6"	62'-7 7/8"	63'-3 5/6"	62'-10 1/2"	18'-0"	27'-3 5/6"	18'-0"
11W	3810.0300	188'-9 3/8"	62'-7 3/4"	63'-3 3/6"	62'-10 7/6"	18'-0"	27'-3 3/6"	18'-0"
12W	3816.3633	188'-9"	62'-7 5/8"	63'-3 1/6"	62'-10 5/6"	18'-0"	27'-3 1/6"	18'-0"

- NOTES:
- All beams, splice plates and fill plates, shall be AASHTO M 270, Grade 50.
 - All diaphragms, Angles and Connecting Plates, may be AASHTO M270, Grade 36.
 - Work this sheet with sheets S-72 and S-74
 - Load carrying components designated "NTR" shall conform to the Impact Testing Requirements, Zone 2.
 - All cross frames or diaphragms between beams or girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
 - All interior diaphragms shall be oriented radial to the girders except at the end diaphragms.
 - Contractor to verify existing dimensions in the field and make necessary approved adjustments prior to ordering materials.

N:\PROJECTS\0003384\004\US_30\Design\Structural\CAD\3384_73_WB Unit 3 - Framing Plan.dgn



USER NAME = kaisneros	DESIGNED - DL	REVISED -
PLOT SCALE = 25x8 1/2" / 1"	CHECKED - AMK	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - AMK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WB UNIT 3 - FRAMING PLAN
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	548
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

SHEET NO. S-73 OF S-118 SHEETS

TABLE OF LAYOUT DIMENSIONS

BEAM	C N. Brg. Pier 6W		C Pier 7W		C Splice 1		C Splice 2		C Pier 8W		C Brg. N. Abut.	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
1W	112'-1 1/16"	73'-3 1/8"	49'-4 1/16"	71'-10 15/16"	31'-4 1/16"	71'-8 9/16"	4'-0 7/16"	71'-7"	13'-11 9/16"	71'-7 5/16"	76'-10 15/16"	72'-4 1/2"
9W	96'-10 1/16"	23'-4 1/16"	34'-2 1/16"	22'-3 7/8"	16'-2 1/16"	22'-2 7/16"	11'-0 5/8"	22'-2 3/16"	29'-0 5/8"	22'-3 5/16"	91'-11 1/8"	23'-3 3/8"
10W	94'-11 1/4"	17'-0 1/4"	32'-3 1/2"	15'-11 5/8"	14'-3 1/2"	15'-10 5/16"	12'-11 13/16"	15'-10 1/4"	30'-11 13/16"	15'-11 1/2"	93'-10 1/4"	16'-11 7/8"
11W	92'-11 13/16"	10'-7 5/8"	30'-4 3/16"	9'-7 1/16"	12'-4 3/16"	9'-6 1/4"	14'-11"	9'-6 3/8"	32'-11"	9'-7 1/16"	95'-9 5/16"	10'-8 1/16"
12W	91'-0 3/8"	4'-3"	28'-4 1/8"	3'-3 1/4"	10'-4 1/8"	3'-2 3/16"	16'-10 3/16"	3'-2 7/16"	34'-10 3/16"	3'-3 15/16"	97'-8 3/8"	4'-5"

	0.4 Sp. 7	Pier 7	0.5 Sp. 8	Pier 8	0.6 Sp. 9
I_s	6710	6710	5900	6710	6710
$I_c(n)$	17387		15829		17387
$I_c(3n)$	12816		11720		12816
S_s	406	406	359	406	406
$S_c(n)$	586		529		586
$S_c(3n)$	531		479		531
S_f	18.85	18.85	16.31	18.85	18.85
Q	0.81	0.81	0.79	0.81	0.81
M_Q	254	316	82	318	255
s_Q	0.33	0.33	0.33	0.33	0.33
M_sQ	111	124	45	125	111
M_L	411	238	341	239	412
M_I	109	63	91	63	110
$^5_3[M_L + M_I]$	867	502	720	503	870
M_a	1,600	1,224	1,101	1,231	1,608
M_{b1}	7.77	3.98	3.58	4.00	7.81
f_sQ (non-comp)	7.50	9.34	2.73	9.40	7.55
f_sQ (comp)	2.50	3.67	1.14	3.70	2.51
$f_s^5_3[M_L + M_I]$	17.74	14.83	16.33	14.87	17.81
f_a	4.95	2.53	2.63	2.55	4.97
f_s (Overload)	27.74	27.83	20.20	27.98	27.87
f_s (Total)	36.06	36.18	26.26	36.37	36.23
F_{cr} (Overload)	47.50	39.47	47.50	39.47	47.50
VR	54.1		40.5		53.9
F_{cr}	48.35	40.76	49.12	40.76	48.34

	C N. Brg. Pier 6W	C Pier 7W	C Pier 8W	C Brg. N. Abut.
R_Q	29.2	77.6	77.8	29.2
R_L	38.5	43.9	43.9	38.5
R_I	11.5	13.2	13.2	11.6
R_{Total}	79.2	134.6	134.9	79.3

*** TOP OF BEAM ELEVATIONS**

BEAM	C N. Brg. Pier 6W	C Pier 7W	C Splice 1	C Splice 2	C Pier 8W	C Brg. N. Abut. Pier 3W
1W	645.58	645.47	645.44	645.39	645.36	645.26
9W	647.39	647.28	647.24	647.19	647.16	647.05
10W	647.63	647.51	647.47	647.42	647.39	647.28
11W	647.86	647.74	647.70	647.65	647.62	647.51
12W	648.09	647.97	647.94	647.88	647.85	647.74

* For fabrication only

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) 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 and Overload) 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 and Overload) due to long-term composite (superimposed) dead loads (in^4 and in^3).

S_f : Section modulus of one flange plate for lateral flange bending (in^3).

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

M_Q : Un-factored moment due to non-composite dead load (kip-ft.).

s_Q : Un-factored long-term composite (superimposed) dead load (kips/ft.).

M_sQ : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_L : Un-factored live load moment (kip-ft.).

M_I : Un-factored moment due to impact (kip-ft.).

M_a : Factored design moment (kip-ft.).

$1.3 [M_Q + M_sQ + \frac{5}{3} (M_L + M_I)]$

M_{b1} : Factored lateral bending moment for flange plate (kip-ft.).

f_a : Factored calculated normal stress at the edge of flange due to lateral bending (ksi).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).

$M_Q + M_sQ + \frac{5}{3} (M_L + M_I)$

f_s (Total): Sum of stresses as computed from the moments below (ksi).

$1.3 [M_Q + M_sQ + \frac{5}{3} (M_L + M_I)]$

F_{cr} (Overload): Critical average flange stress at overload computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges Section 9.5 (ksi).

F_{cr} : Critical average flange stress (smaller of F_{cr1} or F_{cr2} for partially braced flanges and F_y for continuously braced flanges) computed according to the 2003 AASHTO Guide Specifications for Horizontally Curved Steel Girder Highway Bridges (Sections 5.2, 5.3 and 5.4) (ksi).

VR: Maximum \pm impact shear range within span for stud shear connector design (kips).

Note:

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

	0.4 Sp. 7	Pier 7	0.5 Sp. 8	Pier 8	0.6 Sp. 9
I_s	7450	7450	5900	7450	7450
$I_c(n)$	18789		15829		18789
$I_c(3n)$	13800		11720		13800
S_s	448	448	359	448	448
$S_c(n)$	638		529		638
$S_c(3n)$	577		479		577
S_f	21.16	21.16	16.31	21.16	21.16
Q	0.85	0.85	0.82	0.85	0.85
M_Q	262	326	80	328	263
s_Q	0.33	0.33	0.33	0.33	0.33
M_sQ	118	118	42	119	105
M_L	425	248	349	249	427
M_I	128	62	105	62	128
$^5_3[M_L + M_I]$	921	517	757	519	924
M_a	1,673	1,250	1,142	1,255	1,680
M_{b1}	8.09	1.04	3.41	1.04	8.12
f_sQ (non-comp)	7.01	8.73	2.67	8.78	7.05
f_sQ (comp)	2.16	3.16	1.06	3.18	2.17
$f_s^5_3[M_L + M_I]$	17.31	13.86	17.16	13.90	17.37
f_a	3.26	0.32	2.15	0.32	3.27
f_s (Overload)	26.48	25.75	20.89	25.87	26.60
f_s (Total)	34.43	33.48	27.15	33.63	34.58
F_{cr} (Overload)	34.20	34.20	34.20	34.20	34.20
VR	55.0		40.2		54.7
F_{cr}	34.47	34.80	35.16	34.80	34.46

	C N. Brg. Pier 6W	C Pier 7W	C Pier 8W	C Brg. N. Abut.
R_Q	29.8	79.1	79.3	29.9
R_L	40.1	45.6	45.7	40.1
R_I	12.0	13.7	13.7	12.0
R_{Total}	81.9	138.5	138.7	82.0

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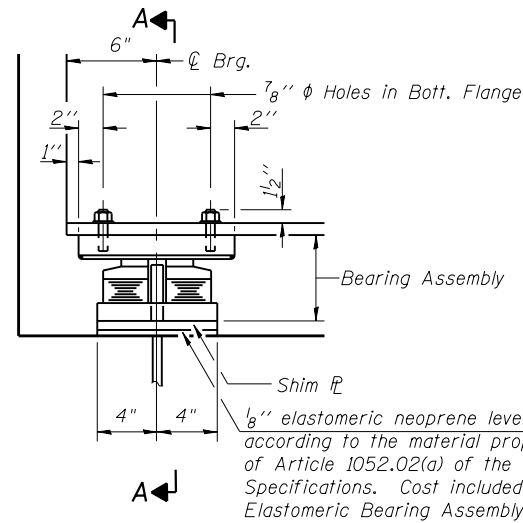
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	CHECKED - AMK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**WB UNIT 3 - STEEL DETAILS 1
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

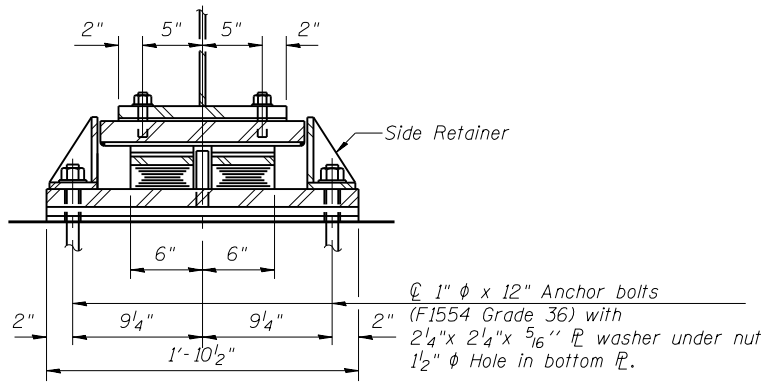
SHEET NO. S-74 OF S-118 SHEETS

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS FED. AID PROJECT			CONTRACT NO. 60N87	

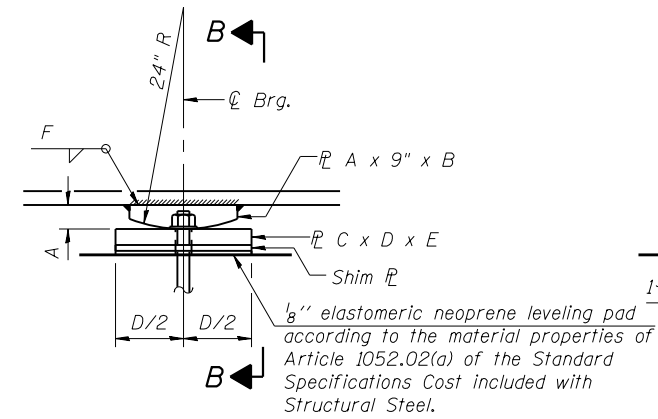


ELEVATION AT SOUTH ABUT.

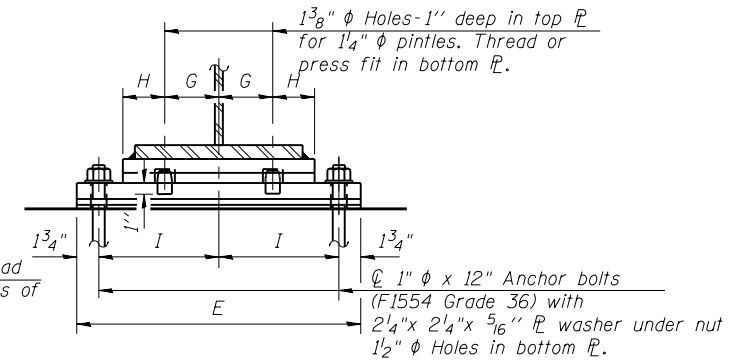
TYPE III ELASTOMERIC EXP. BRG.



SECTION A-A



ELEVATION

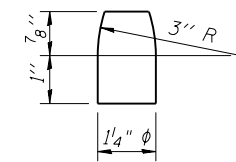


SECTION B-B

FIXED BEARING

FIXED BEARING DIMENSIONS

Location	A	B	C	D	E	F	G	H	I
Pier 2	1 9/16"	1'-5 1/2"	1 5/8"	9 3/8"	2'-1"	1/2"	4"	4 3/4"	10 3/4"
Pier 4	1 1/2"	1'-1"	1 1/2"	9"	1'-7 3/8"	1/16"	2 7/8"	3 5/8"	7 15/16"
Pier 5	1 1/2"	1'-1"	1 1/2"	9"	1'-7 3/8"	1/16"	2 7/8"	3 5/8"	7 15/16"
Pier 7	1 1/2"	1'-1"	1 1/2"	9"	1'-7 3/8"	1/16"	2 7/8"	3 5/8"	7 15/16"
Pier 8	1 1/2"	1'-1"	1 1/2"	9"	1'-7 3/8"	1/16"	2 7/8"	3 5/8"	7 15/16"



PINTLE

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

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.

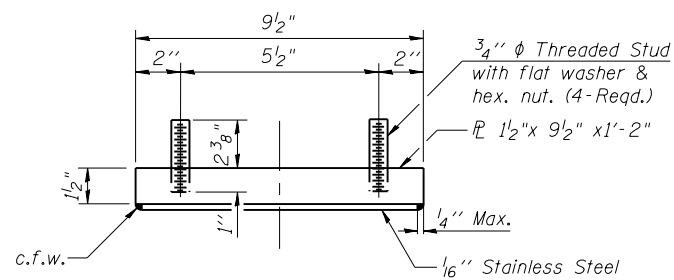
The 1/8" PTFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

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.

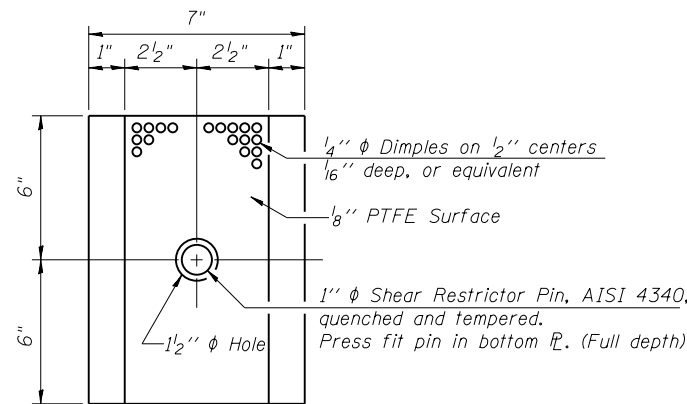
Two 1/8 in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

BILL OF MATERIAL

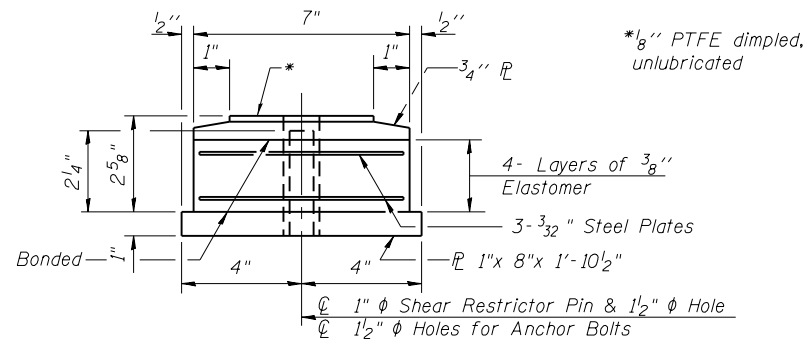
Item	Unit	Total
Elastomeric Bearing Assembly Type III	Each	24
Anchor Bolts, 1"	Each	168



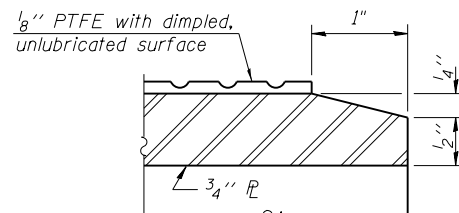
TOP BEARING ASSEMBLY



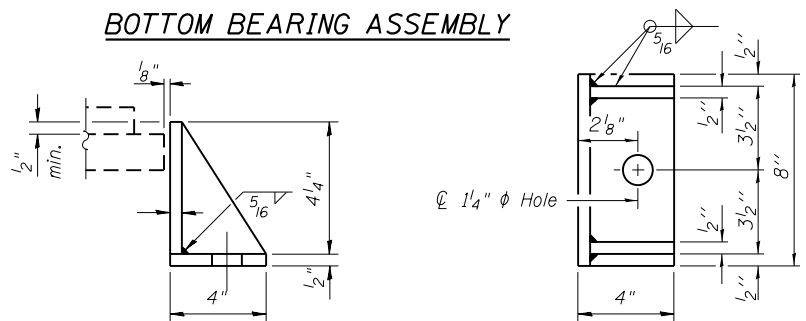
PLAN-PTFE ELASTOMERIC BRG.



BOTTOM BEARING ASSEMBLY

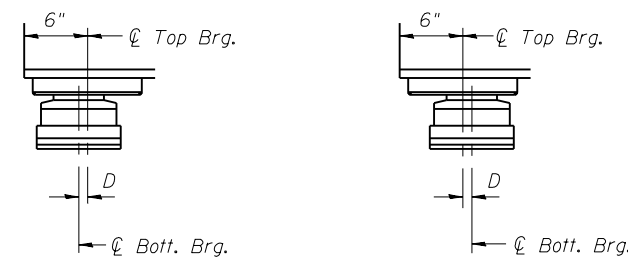


SECTION THRU PTFE



SIDE RETAINER

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



BELOW 50° F.

ABOVE 50° F.

(Move bottom brg. away from fixed brg.) (Move bottom brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

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

N:\PROJ\10003384\004_US_30\Design\Structural\CAD\3384_75 Bearing Details-1.dgn



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 DESIGNED - BWS
 CHECKED - MHT
 PLOT SCALE = 0:2.0000" 1" = 1"
 DRAWN - RD
 PLOT DATE = 5/9/2018
 DESIGNED - BWS
 CHECKED - MHT
 DRAWN - RD
 REVISIONS

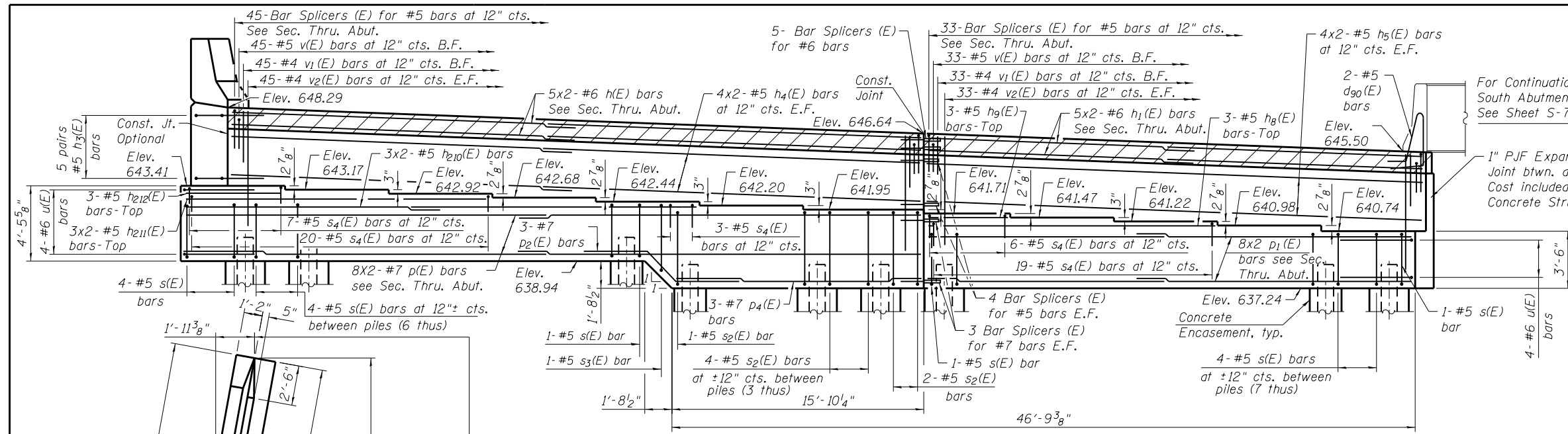
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BEARING DETAILS - 1
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

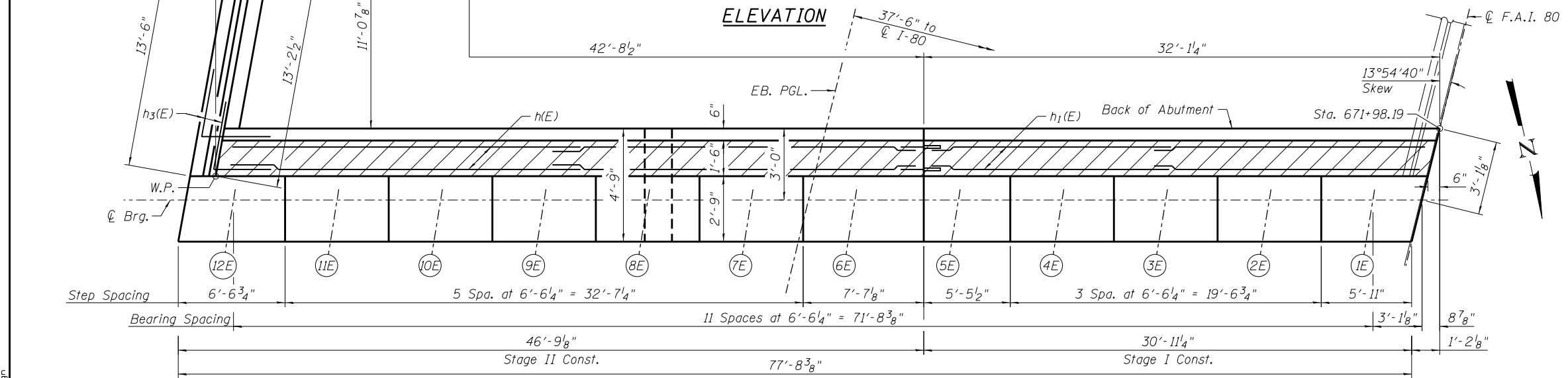
SHEET NO. S-75 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO.			60N87	
ILLINOIS FED. AID PROJECT				

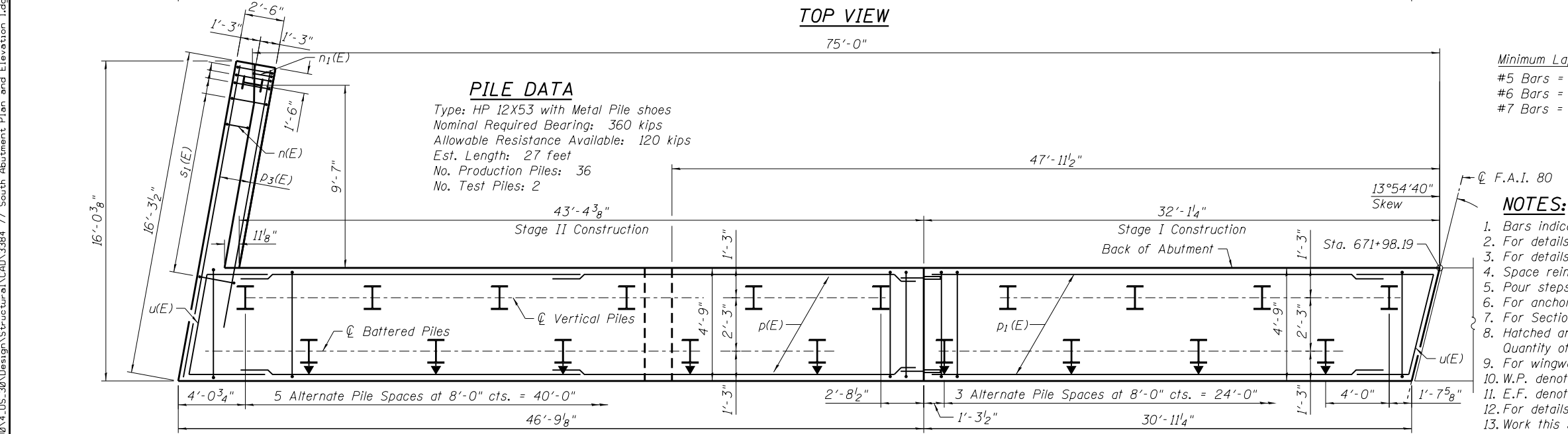
SOUTH ABUTMENT BILL OF MATERIAL



ELEVATION



TOP VIEW



PLAN-PILE CAP

PILE DATA

Type: HP 12X53 with Metal Pile shoes
 Nominal Required Bearing: 360 kips
 Allowable Resistance Available: 120 kips
 Est. Length: 27 feet
 No. Production Piles: 36
 No. Test Piles: 2

Minimum Lap
 #5 Bars = 2'-6"
 #6 Bars = 3'-0"
 #7 Bars = 3'-11"

NOTES:

1. Bars indicated 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
2. For details of Bar Splicers, see sheet S-109.
3. For details of Piles and Concrete Encasement, see sheet S-110.
4. Space reinforcement to miss anchor bolts and H-Piles.
5. Pour steps monolithically with cap.
6. For anchor bolt spacing details see sheet S-79
7. For Section Thru Abutment see sheet S-79.
8. Hatched area to be poured after superstructure forms have been removed. Quantity of concrete to be included with Concrete Superstructure.
9. For wingwall details see sheet S-79.
10. W.P. denotes Working Point.
11. E.F. denotes Each Face. B.F. denotes Back Face.
12. For details of d90(E) Bars see sheet S-53.
13. Work this sheet with sheets S-78 and S-79.
14. Concrete sealer to be applied to all exposed surfaces of backwall, bridge seats and front face of pile caps.

Bar	No.	Size	Length	Shape
d90(E)	4	# 5	7'-11"	
h(E)	20	# 6	23'-8"	
h1(E)	20	# 6	17'-7"	
h2(E)	10	# 5	7'-4"	
h3(E)	10	# 5	7'-4"	
h4(E)	16	# 5	23'-5"	
h5(E)	16	# 5	17'-4"	
h6(E)	26	# 4	13'-2"	
h7(E)	14	# 4	13'-3"	
h8(E)	3	# 5	18'-2"	
h9(E)	3	# 5	5'-1"	
h210(E)	12	# 5	17'-8"	
h211(E)	3	# 5	11'-0"	
h212(E)	3	# 5	5'-8"	
h213(E)	3	# 5	19'-9"	
h214(E)	3	# 5	6'-8"	
h215(E)	3	# 5	18'-6"	
h216(E)	3	# 5	4'-7"	
n(E)	24	# 6	13'-10"	
n1(E)	12	# 6	6'-11"	
p(E)	32	# 7	25'-10"	
p1(E)	32	# 7	18'-6"	
p2(E)	3	# 7	12'-8"	
p3(E)	12	# 7	14'-6"	
p4(E)	3	# 7	15'-6"	
p5(E)	3	# 7	9'-7"	
s(E)	129	# 5	16'-1"	
s1(E)	30	# 4	9'-5"	
s2(E)	15	# 5	18'-5"	
s3(E)	2	# 5	17'-9"	
s4(E)	139	# 5	6'-5"	
s5(E)	2	# 5	19'-5"	
u(E)	18	# 6	13'-4"	
v(E)	156	# 5	3'-9"	
v1(E)	156	# 4	3'-2"	
v2(E)	312	# 4	5'-7"	
v3(E)	6	# 6	7'-4"	
v4(E)	24	# 6	7'-7"	
v5(E)	30	# 6	7'-2"	
Structure Excavation		Cu. Yd.	569	
Concrete Structures		Cu. Yd.	168.1	
Reinforcement Bars, Epoxy Coated		Pound	13,810	
Furnishing Steel Piles, HP 12X53		Foot	972	
Driving Piles		Foot	972	
Test Pile, Steel HP 12x53		Each	2	
Concrete Encasement		Cu. Yd.	13.3	
Concrete Sealer		Sq. Ft.	972	
Pile Shoes		Each	38	
Pipe Underdrains for Structures 4"		Foot	199	
Granular Backfill for Structures		Cu. Yd.	289	
Geocomposite Wall Drain		Sq. Yd.	116	

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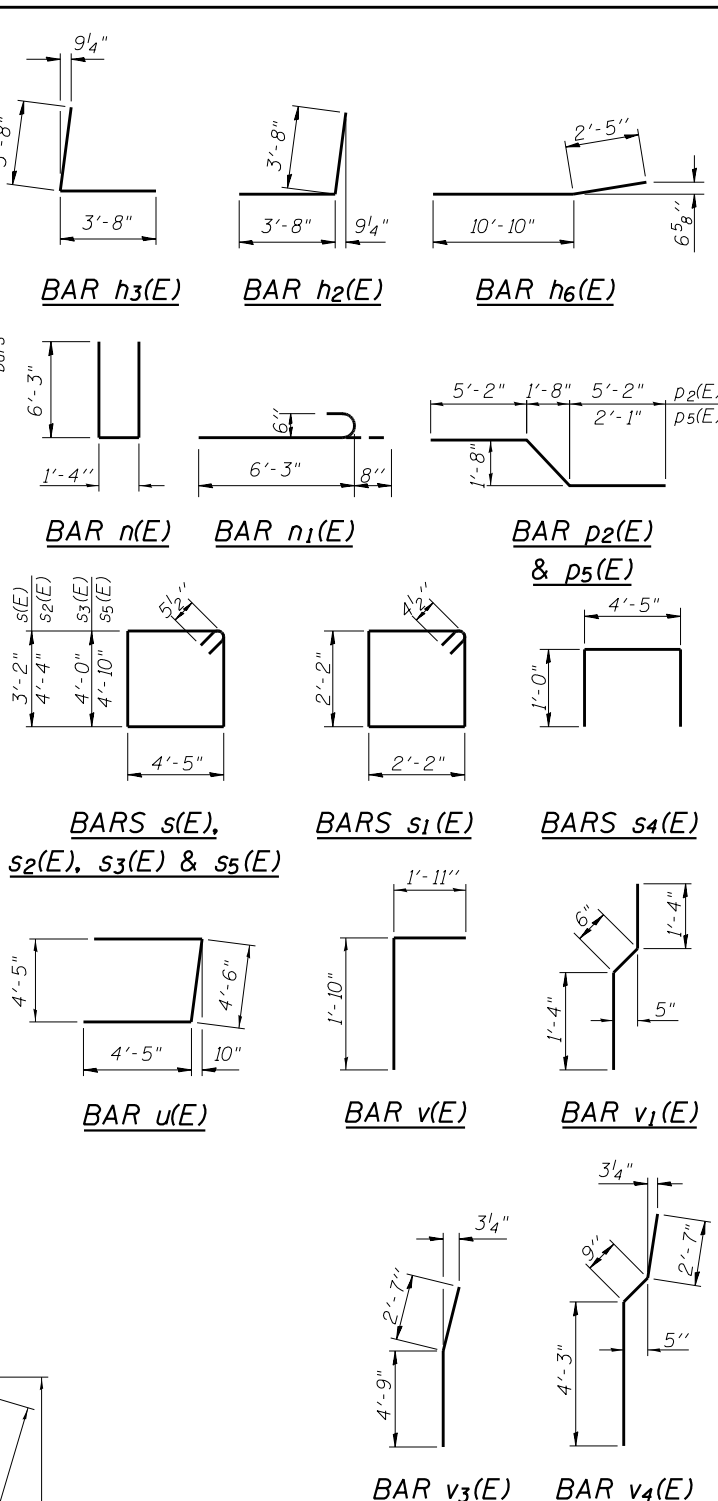
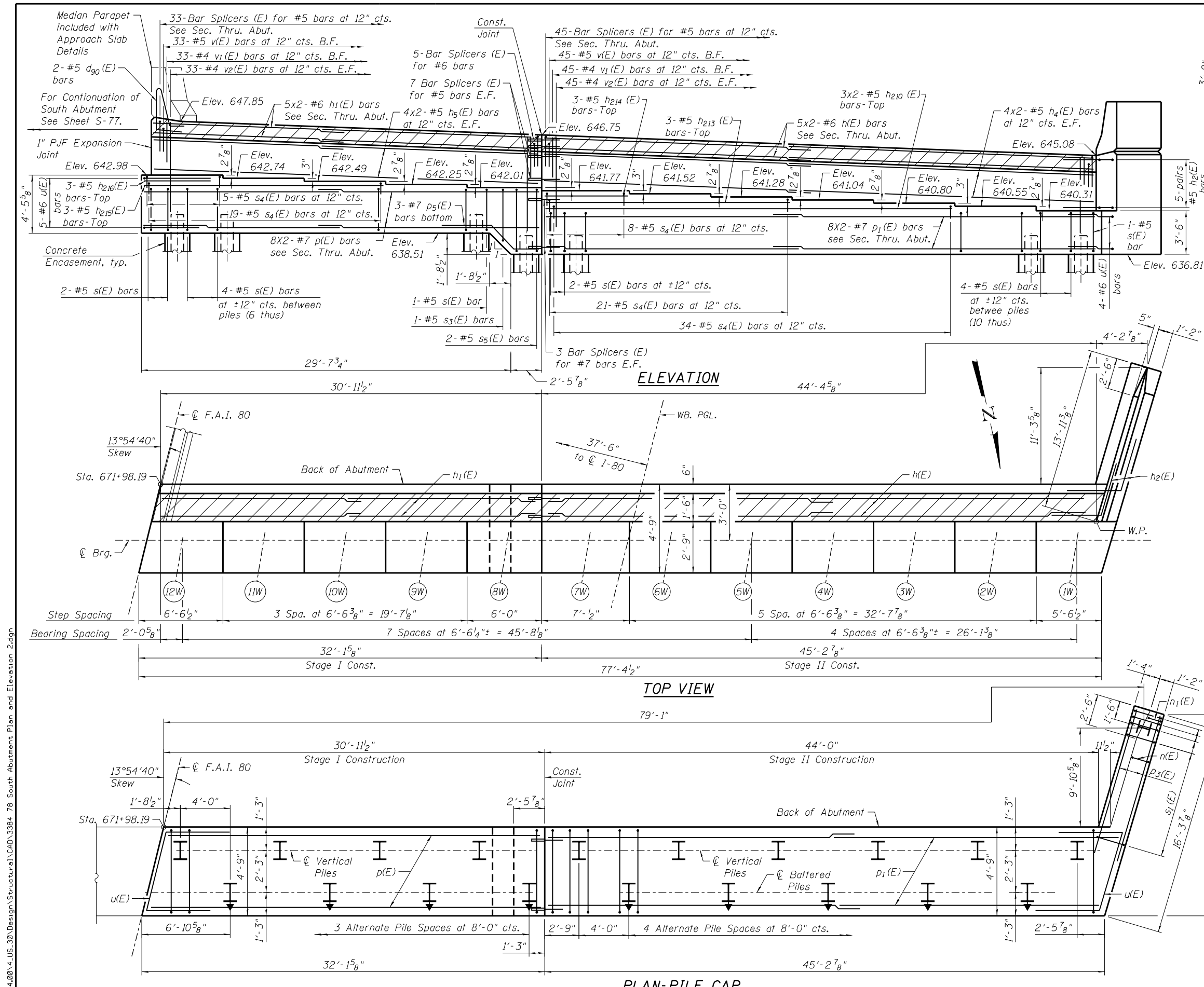


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PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT PLAN AND ELEVATION I
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)
 SHEET NO. S-77 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	552
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



- NOTES:**
1. Bars indicated 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
 2. For details of Bar Splicers, see sheet S-109.
 3. For details of Piles and Concrete Encasement, see sheet S-110.
 4. Space reinforcement to miss anchor bolts and H-Piles.
 5. Pour steps monolithically with cap.
 6. For anchor bolt spacing details see sheet S-79.
 7. For Section Thru Abutment see sheet S-79.
 8. Hatched area to be poured after superstructure forms have been removed. Quantity of concrete to be included with Concrete Superstructure.
 9. For wingwall details see sheet S-79.
 10. W.P. denotes Working Point.
 11. E.F. denotes Each Face. B.F. denotes Back Face.
 12. For details of d90(E) Bars see sheet S-53.
 13. Work this sheet with sheets S-77 and S-79.

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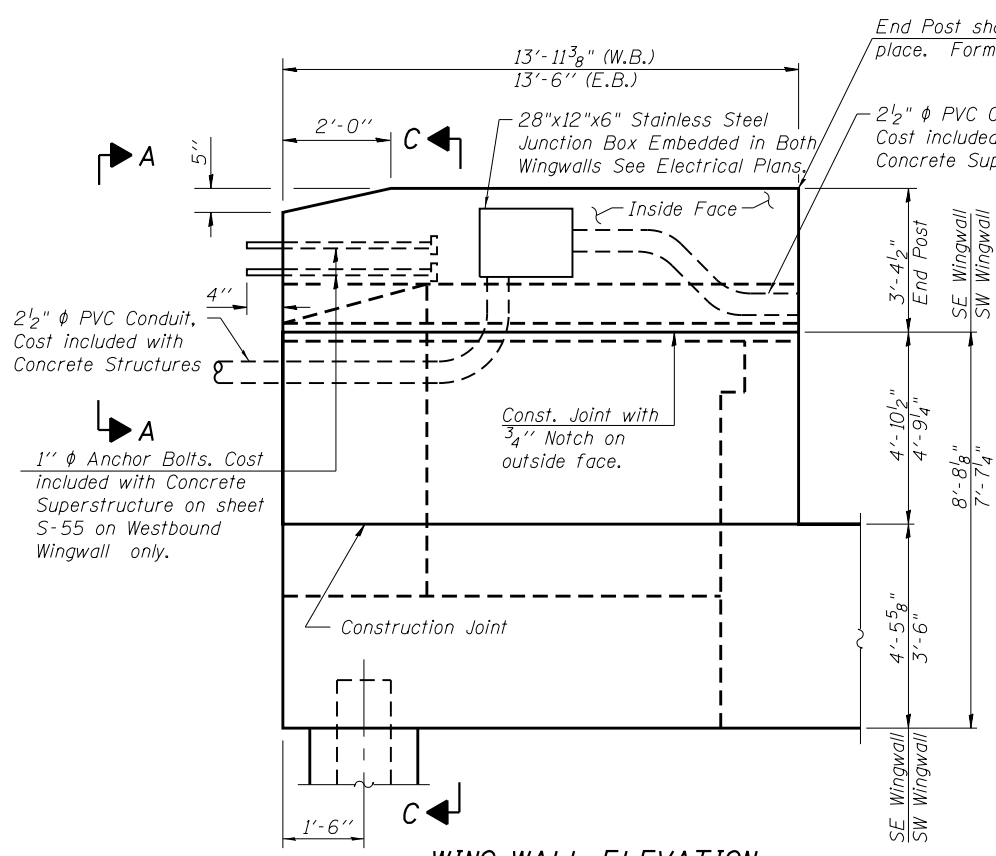
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT PLAN AND ELEVATION II
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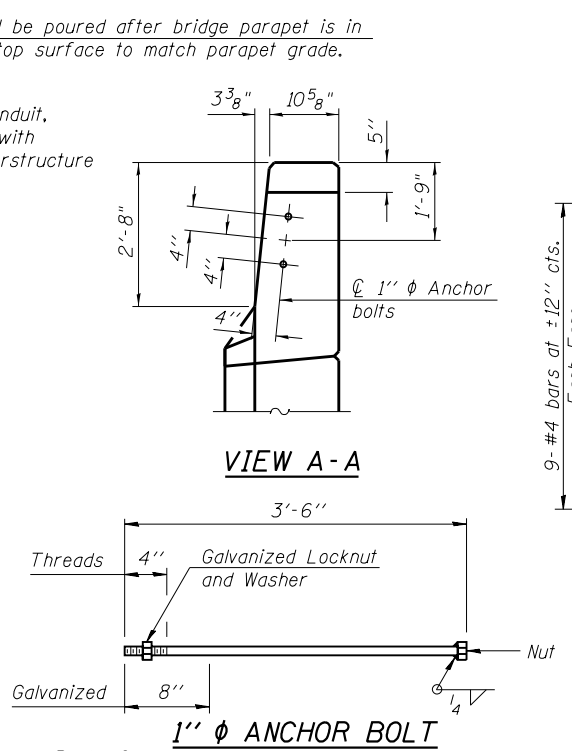
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CONTRACT NO. 60N87				ILLINOIS FED. AID PROJECT

SHEET NO. S-78 OF S-118 SHEETS

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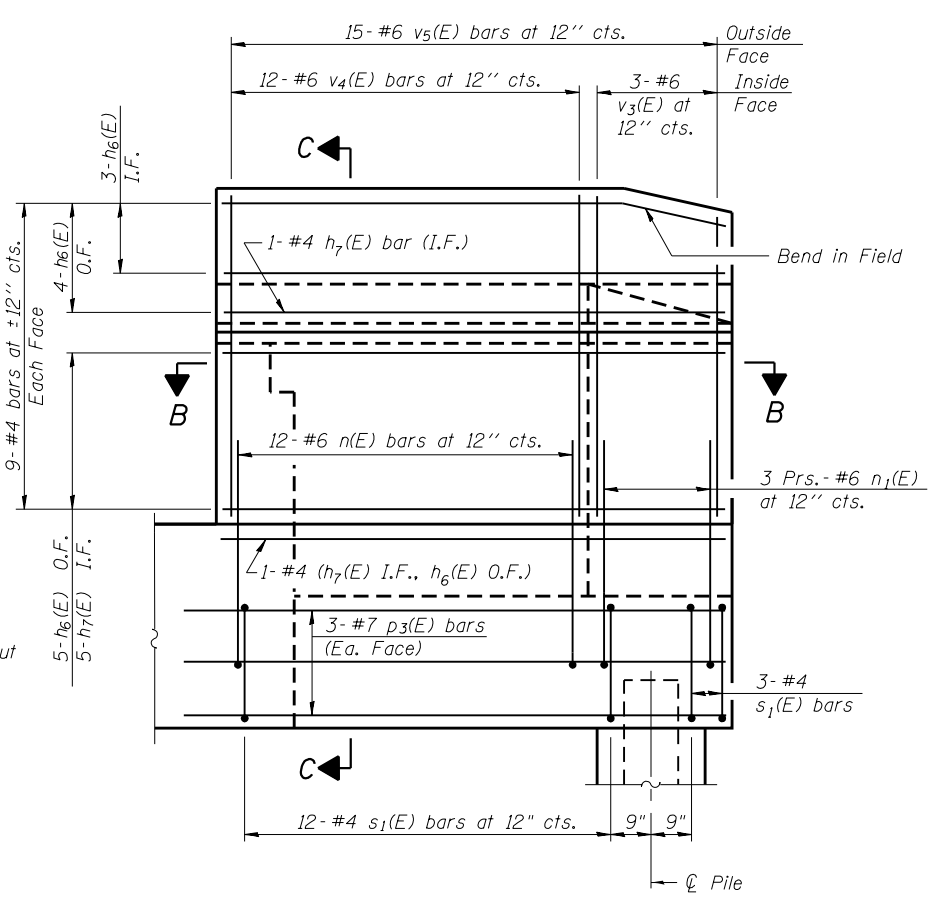


WING WALL ELEVATION
Showing Dimensions

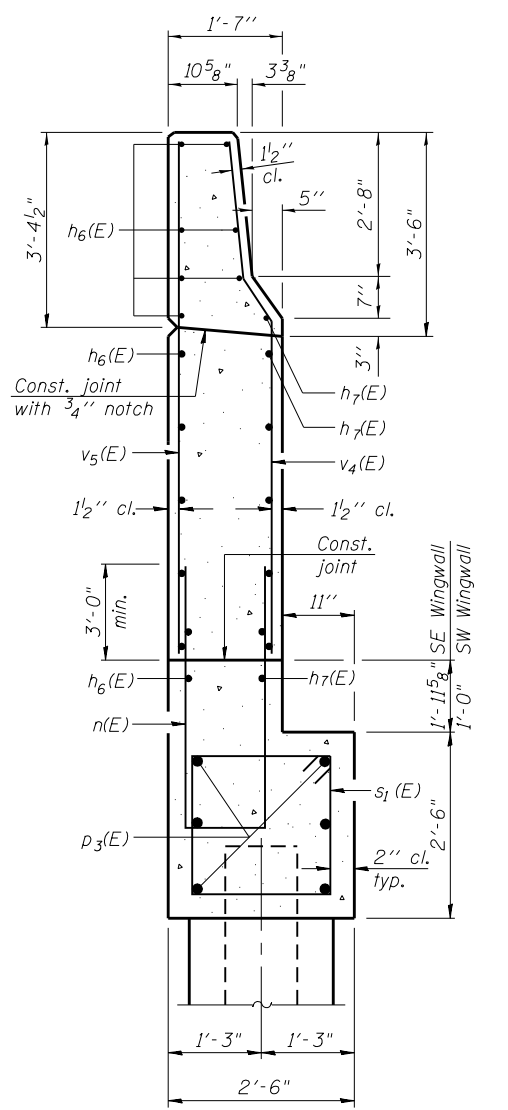


VIEW A-A

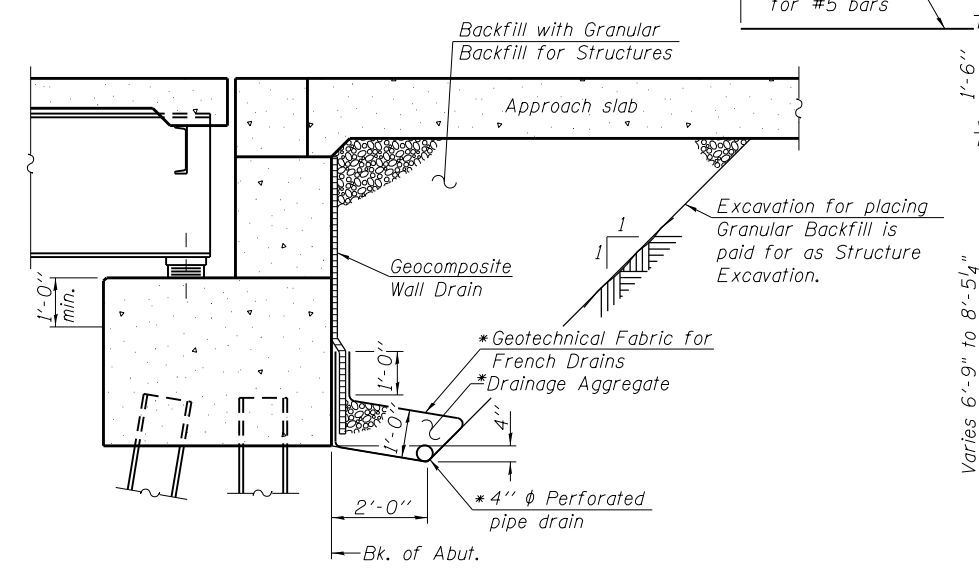
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WING WALL ELEVATION
Showing Reinforcement



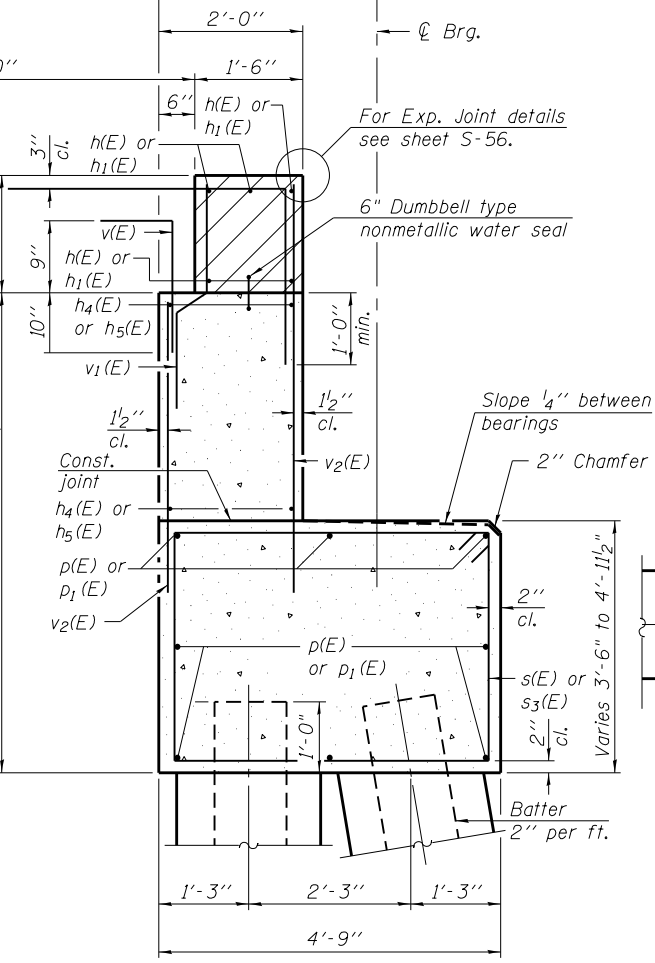
SECTION C-C



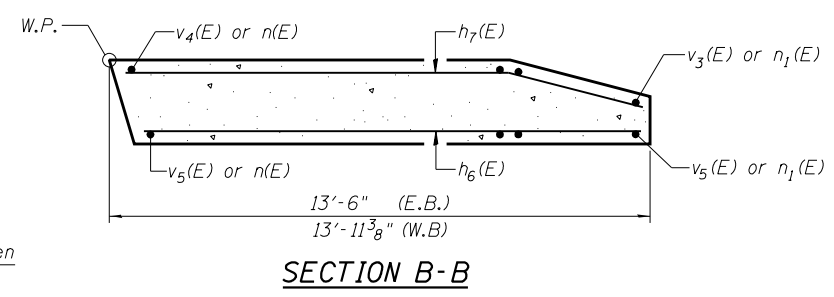
SECTION THRU PILE SUPPORTED STUB ABUTMENT
(Horiz. dim. @ Rt. L's)

*Included in the cost of Pipe Underdrains for Structures.

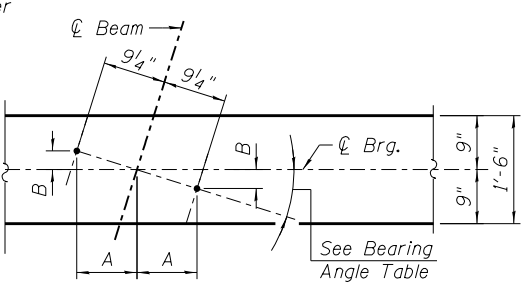
Note:
All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



SEC. THRU ABUT.



SECTION B-B



BEARING ANCHOR BOLTS LAYOUT

BEARING ANGLE AND DIMENSION LAYOUT TABLES

Beam No.	Bearing Angle	A	B
1W	14°08'17"	8 15/16"	2 1/4"
2W	14°06'50"	8 15/16"	2 1/4"
3W	14°05'22"	8 15/16"	2 1/4"
4W	14°03'55"	8 15/16"	2 1/4"
5W	14°02'29"	8 15/16"	2 1/4"
6W	14°01'02"	8 15/16"	2 1/4"
7W	13°59'36"	8 15/16"	2 1/4"
8W	13°58'10"	8 15/16"	2 1/4"
9W	13°56'45"	8 15/16"	2 1/4"
10W	13°55'19"	8 15/16"	2 1/4"
11W	13°53'54"	8 15/16"	2 1/4"
12W	13°52'30"	8 15/16"	2 1/4"

Beam No.	Bearing Angle	A	B
1E	13°51'14"	9"	2 3/16"
2E	13°49'49"	9"	2 3/16"
3E	13°48'26"	9"	2 3/16"
4E	13°47'02"	9"	2 3/16"
5E	13°45'39"	9"	2 3/16"
6E	13°44'16"	9"	2 3/16"
7E	13°42'53"	9"	2 3/16"
8E	13°41'31"	9"	2 3/16"
9E	13°40'08"	9"	2 3/16"
10E	13°38'47"	9"	2 3/16"
11E	13°37'25"	9"	2 3/16"
12E	13°36'04"	9"	2 3/16"

NOTES:

- Hatched area to be poured after superstructure false work has been removed. 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 S-53 or S-55.
- For Concrete Encasement details, see sheet S-110.



USER NAME = kaisneros
 DESIGNED - BWS
 CHECKED - MHT
 DRAWN - RD
 PLOT SCALE = 2.666667' / 1"
 PLOT DATE = 5/9/2018

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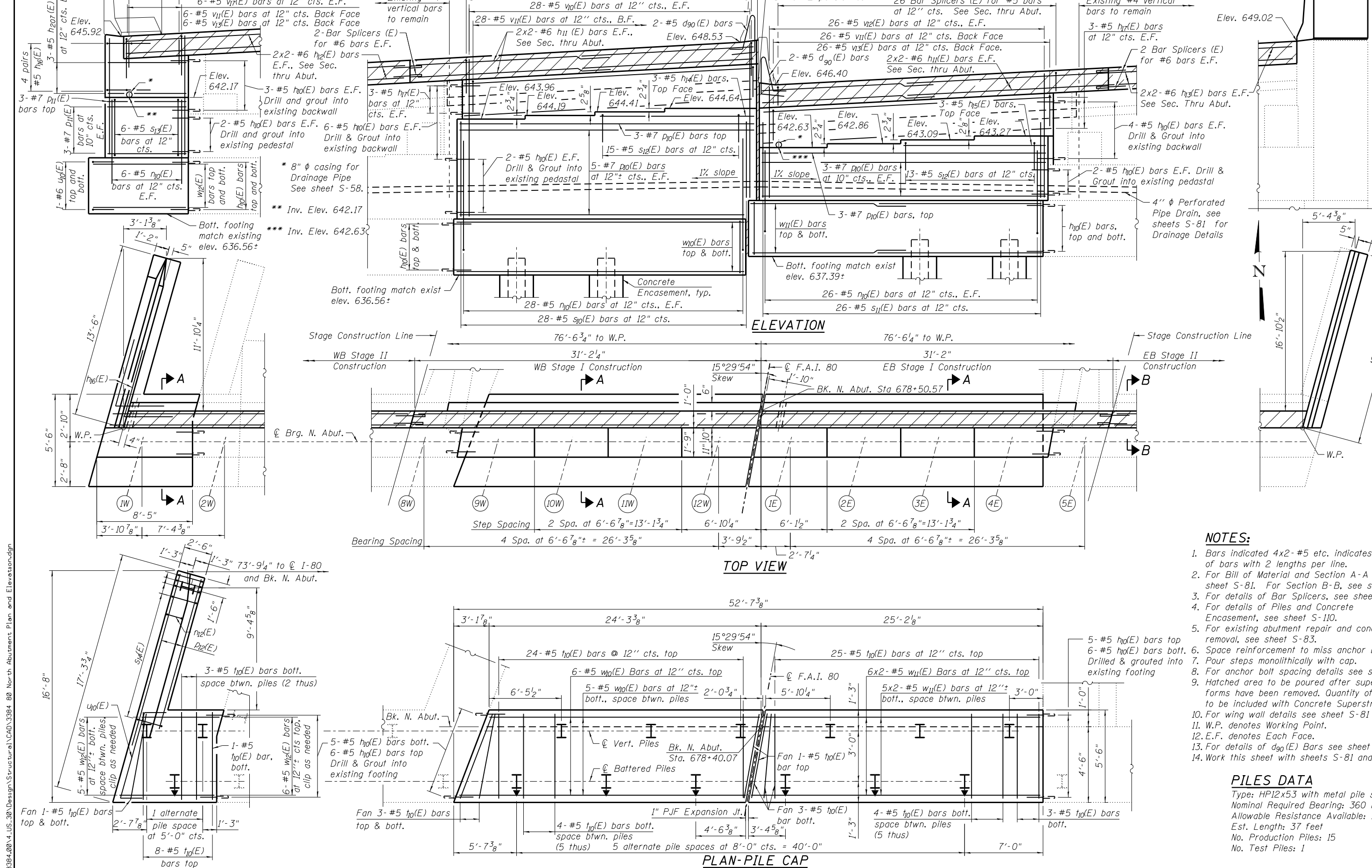
SOUTH ABUTMENT DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-79 OF S-118 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	554

CONTRACT NO. 60N87

ILLINOIS FED. AID PROJECT



- NOTES:**
1. Bars indicated 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.
 2. For Bill of Material and Section A-A see sheet S-81. For Section B-B, see sheet S-82.
 3. For details of Bar Splicers, see sheet S-109.
 4. For details of Piles and Concrete Encasement, see sheet S-110.
 5. For existing abutment repair and concrete removal, see sheet S-83.
 6. Space reinforcement to miss anchor bolts.
 7. Pour steps monolithically with cap.
 8. For anchor bolt spacing details see sheet S-82.
 9. Hatched area to be poured after superstructure forms have been removed. Quantity of concrete to be included with Concrete Superstructure.
 10. For wing wall details see sheet S-81 and S-82.
 11. W.P. denotes Working Point.
 12. E.F. denotes Each Face.
 13. For details of $d_{90}(E)$ Bars see sheet S-53.
 14. Work this sheet with sheets S-81 and S-82.

PILES DATA
 Type: HP12x53 with metal pile shoes
 Nominal Required Bearing: 360 Kips
 Allowable Resistance Available: 120 Kips
 Est. Length: 37 feet
 No. Production Piles: 15
 No. Test Piles: 1

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 User: kaisneros

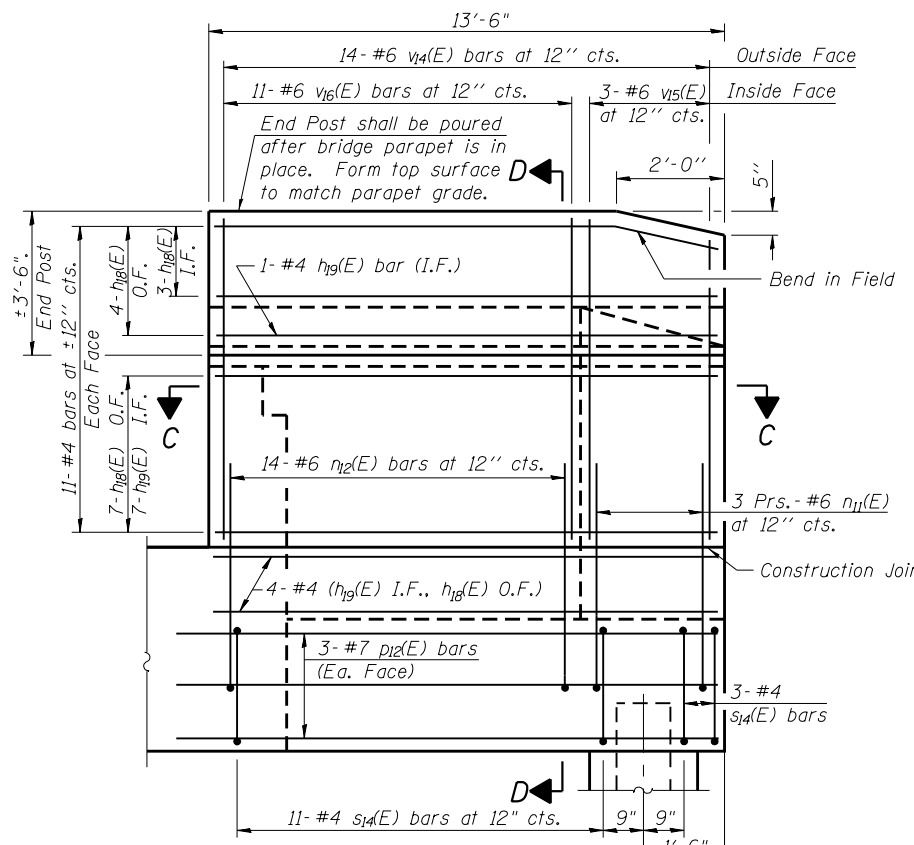
<p>Clorba Group, Inc. CONSULTING ENGINEERS 6507 North Central Expressway Suite 402, Chicago, Illinois 60656 Tel: 773.742.4000 Fax: 773.775.4014 Email: clorba@clorba.com</p>	USER NAME = kaisneros	DESIGNED - BWS	REVISED -
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	PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
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DESIGNED - BWS	REVISED -
CHECKED - MHT	REVISED -
DRAWN - RD	REVISED -
CHECKED - MHT	REVISED -

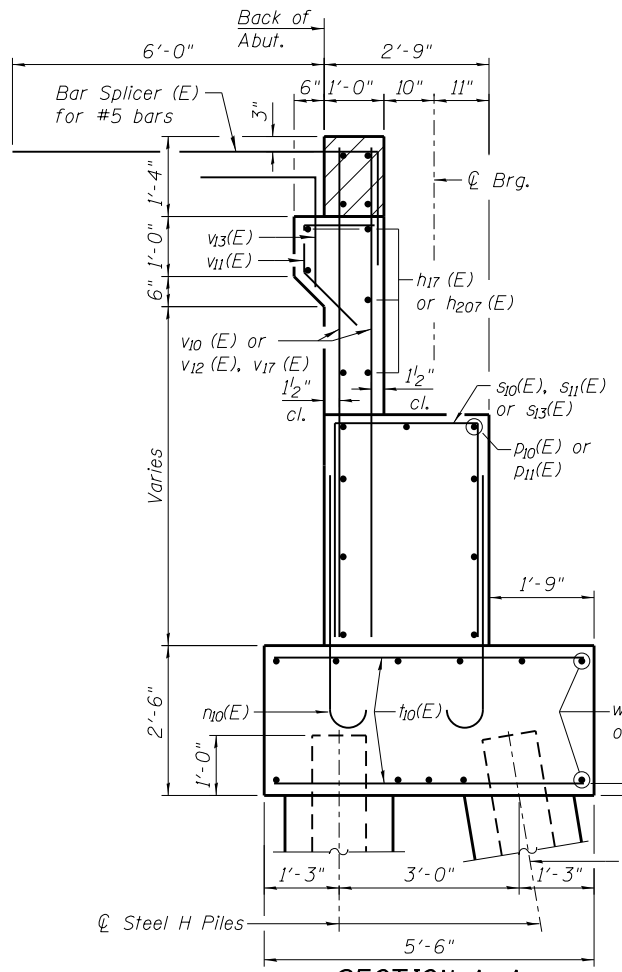
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT PLAN AND ELEVATION
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

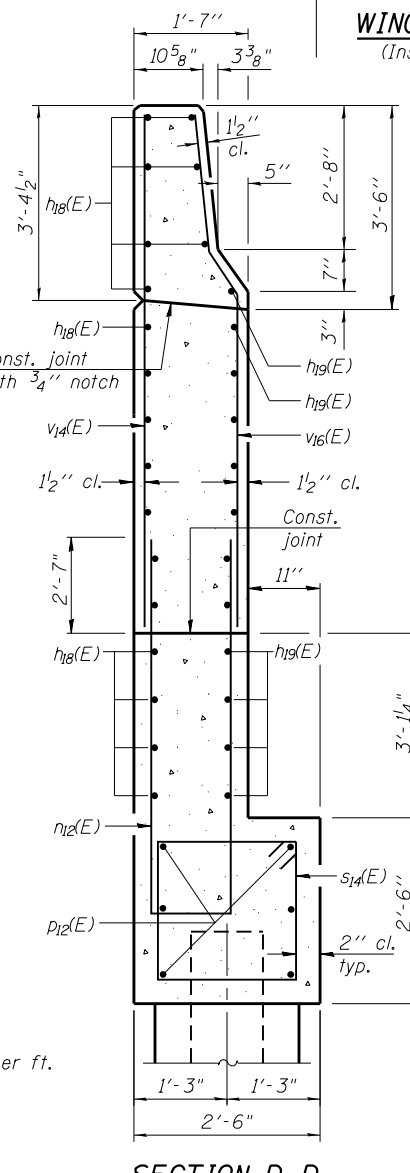
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CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



WB WING WALL ELEVATION

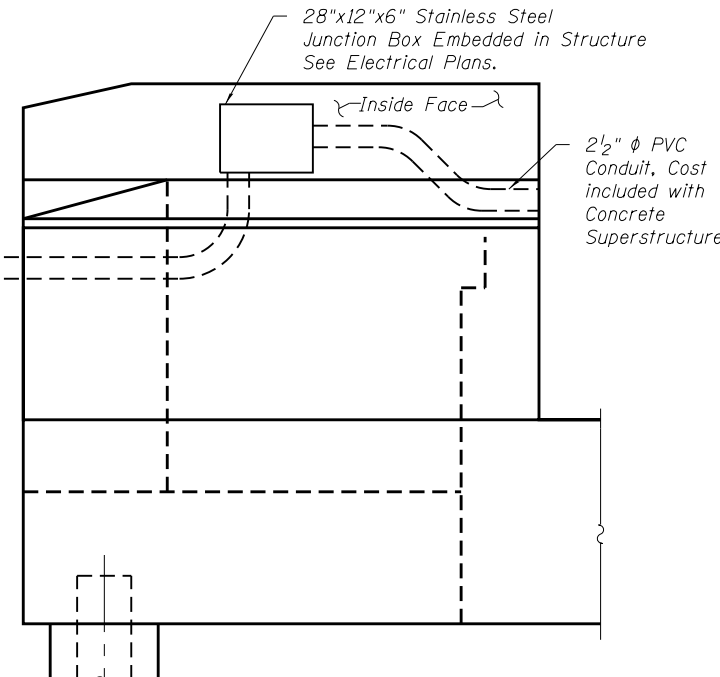


SECTION A-A

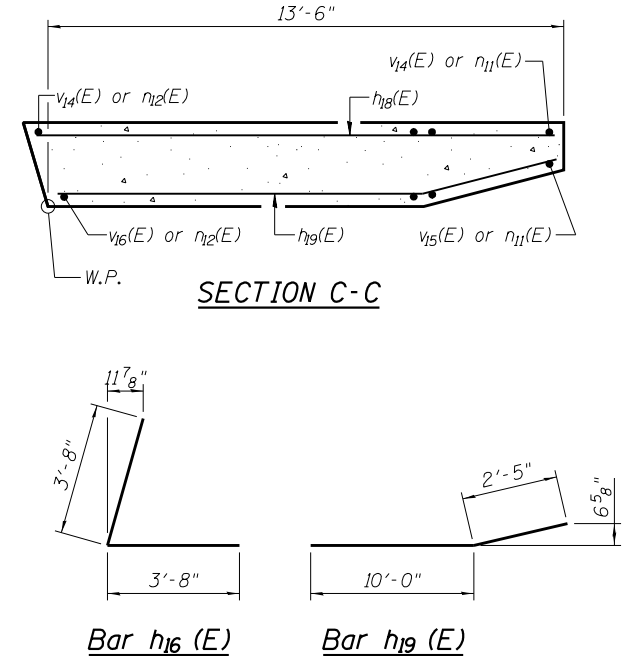


WING WALL ELEVATION
(Inside showing Junction Box)

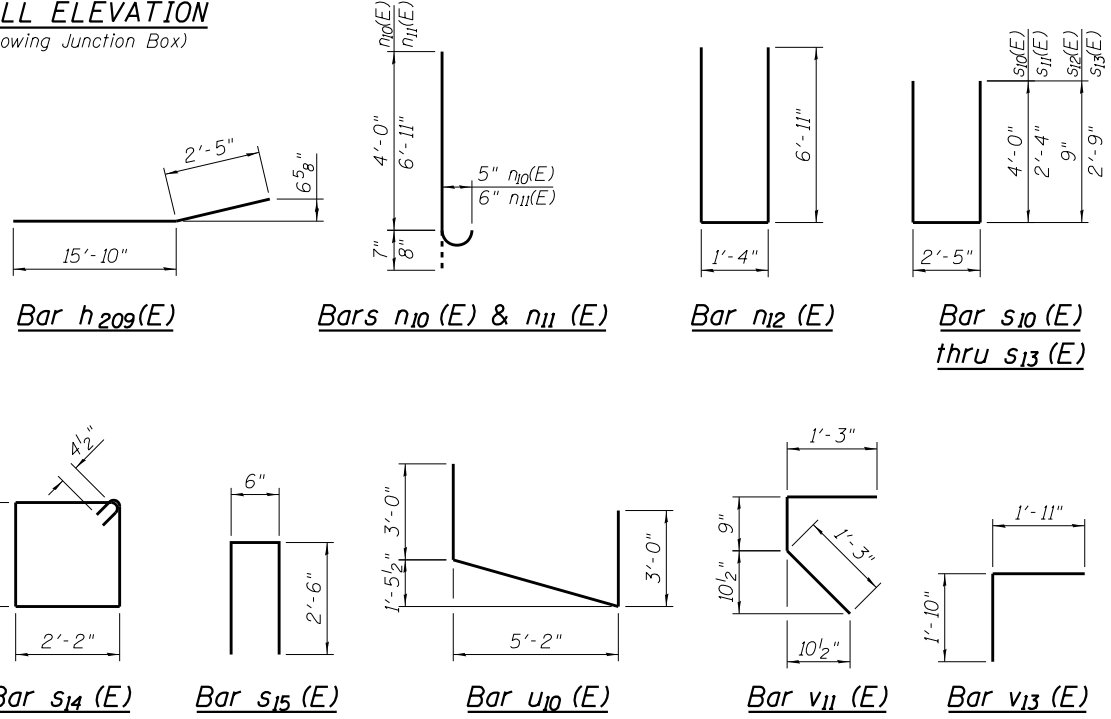
SECTION D-D



WING WALL ELEVATION
(Outside Face)



SECTION C-C



NOTES:

- Existing reinforcement to be blast cleaned straightened and incorporated into proposed construction. Cost included with Concrete Removal.
- Hatched area to be poured after superstructure false work has been removed. 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 S-55.
- For details of Piles and Concrete Encasement, see sheet S-110.
- For details of Bar Splicers, see sheet S-109.
- Pipe Underdrain for drainage shall be continuous through existing wingwalls. A minimum 6" diameter hole shall be cored through the existing wingwall to allow for the pipe through the wingwall. Cost included in the cost of Pipe Underdrains for Structures, 4".
- Work this sheet with sheets S-80 and S-82.
- Concrete sealer to be applied to all exposed surfaces of backwall, bridge seats and front face of pile caps.

**NORTH ABUTMENT
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
d90(E)	4	# 5	7'-11"	
h10(E)	71	# 5	2'-9"	
h11(E)	16	# 6	16'-11"	
h12(E)	8	# 6	24'-9"	
h13(E)	8	# 6	24'-11"	
h14(E)	3	# 5	13'-10"	
h15(E)	3	# 5	13'-1"	
h16(E)	8	# 5	7'-4"	
h17(E)	12	# 5	26'-0"	
h18(E)	18	# 4	13'-2"	
h19(E)	12	# 4	13'-3"	
h207(E)	6	# 5	7'-1"	
h208(E)	7	# 4	18'-2"	
h209(E)	1	# 4	18'-3"	
n10(E)	120	# 5	4'-7"	
n11(E)	6	# 6	7'-7"	
n12(E)	14	# 6	15'-2"	
p10(E)	22	# 7	26'-0"	
p11(E)	9	# 7	7'-1"	
p12(E)	6	# 7	14'-6"	
s10(E)	28	# 5	10'-5"	
s11(E)	26	# 5	7'-1"	
s12(E)	28	# 5	3'-11"	
s13(E)	6	# 5	7'-11"	
s14(E)	14	# 4	9'-5"	
s15(E)	19	# 4	5'-6"	
u10(E)	121	# 5	5'-2"	
v10(E)	2	# 6	11'-4"	
v11(E)	56	# 5	8'-3"	
v12(E)	60	# 5	3'-3"	
v13(E)	52	# 5	6'-2"	
v14(E)	60	# 5	3'-9"	
v15(E)	14	# 6	6'-11"	
v16(E)	3	# 6	6'-4"	
v17(E)	11	# 6	7'-4"	
v18(E)	12	# 5	6'-6"	
w10(E)	11	# 5	23'-11"	
w11(E)	22	# 5	14'-4"	
w12(E)	11	# 5	8'-11"	
Structure Excavation		Cu. Yd.	220	
Concrete Structures		Cu. Yd.	70.5	
Reinforcement Bars, Epoxy Coated		Pound	8,400	
Furnishing - Steel Piles, HP 12x53		Foot	555	
Driving Piles		Foot	555	
Test Pile, Steel HP 12x53		Each	1	
Concrete Encasement		Cu. Yd.	5.6	
Concrete Sealer		Sq. Ft.	555	
Geocomposite Wall Drain		Sq. Yd.	114	
Pipe Underdrains for Structures, 4"		Foot	175	
Granular Backfill for Structures		Cu. Yd.	249	
Pile Shoes		Each	16	

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PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
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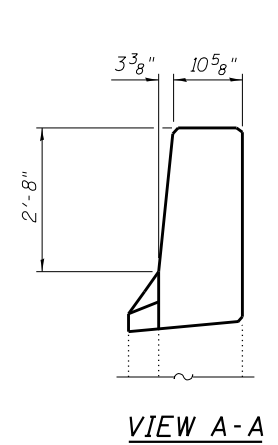
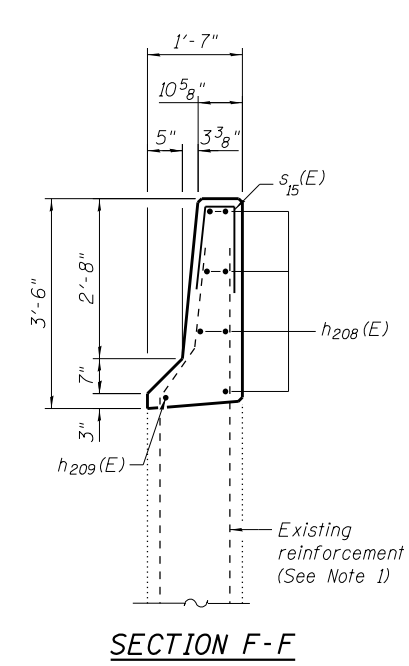
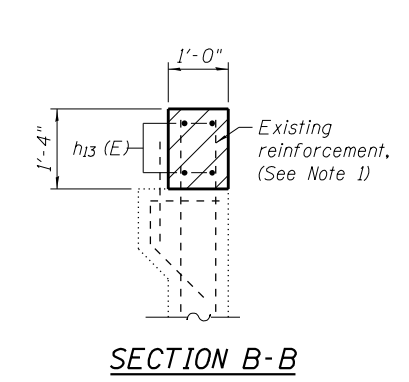
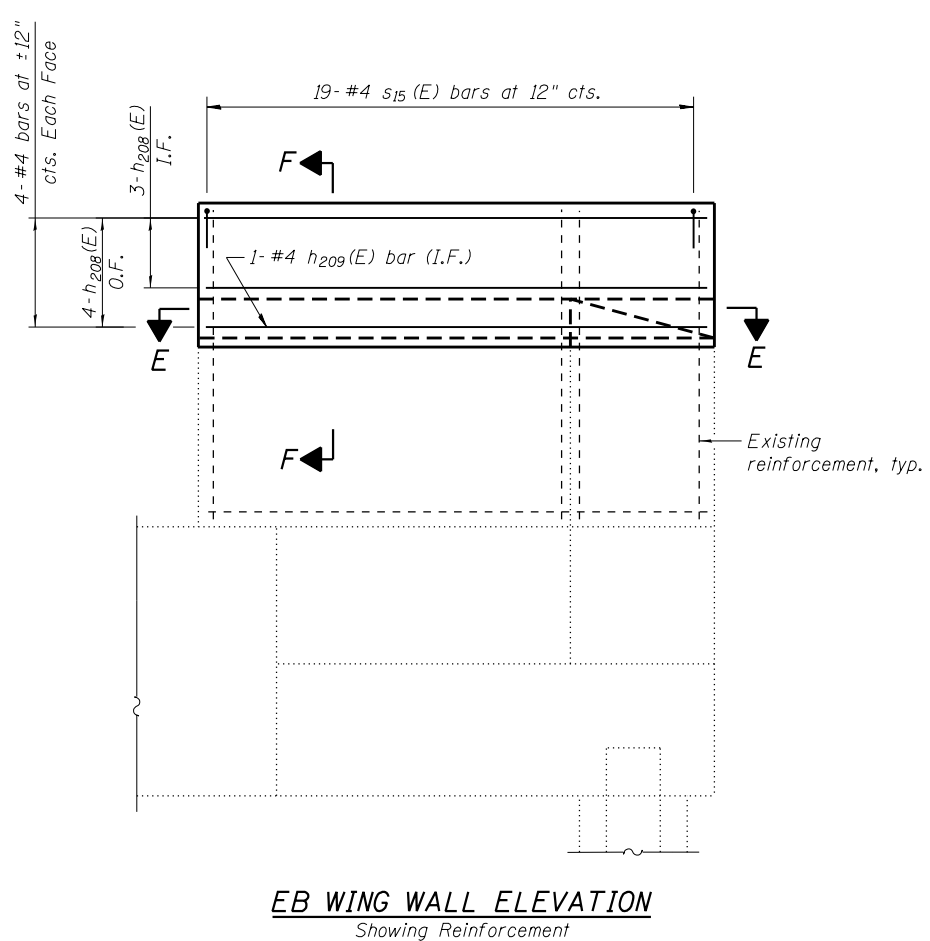
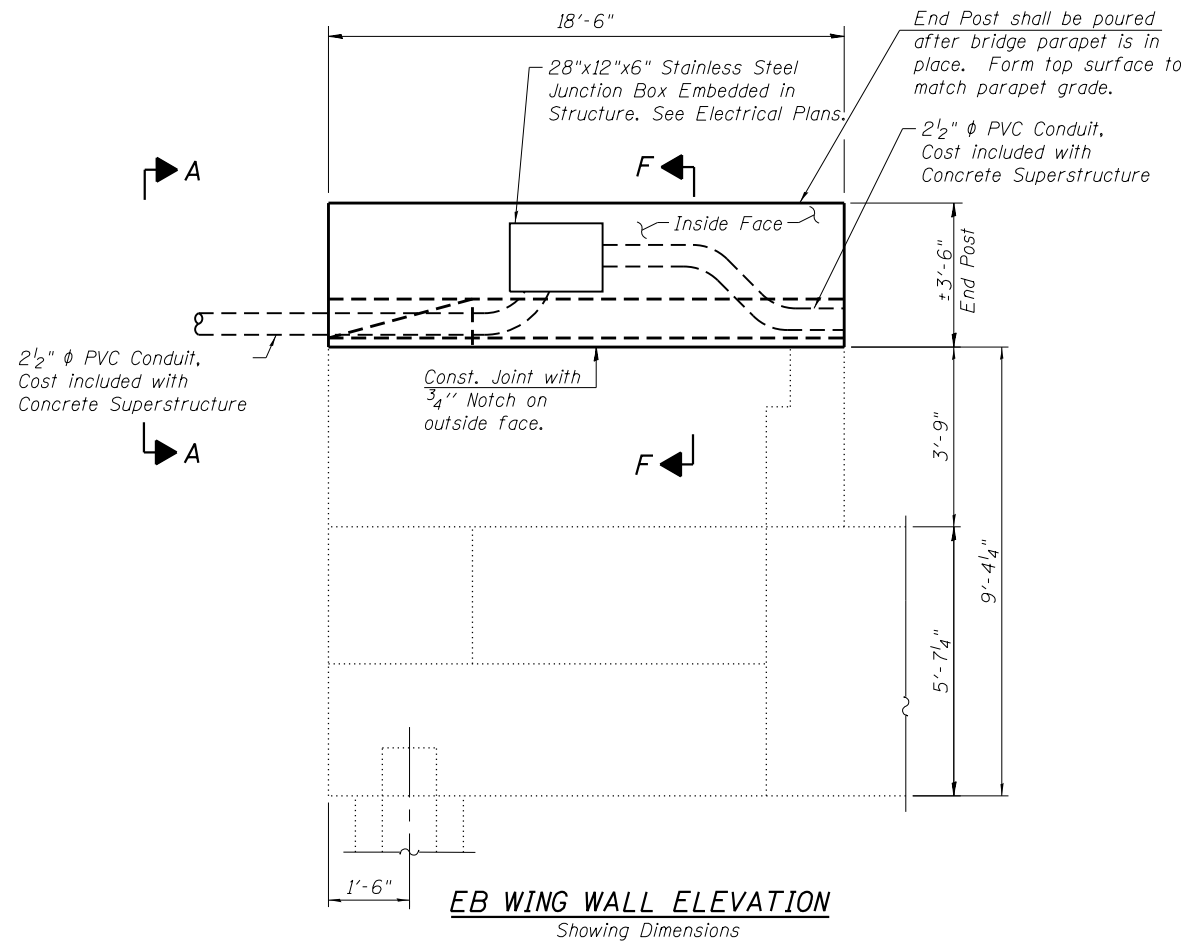
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**NORTH ABUTMENT DETAILS - 1
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-81 OF S-118 SHEETS

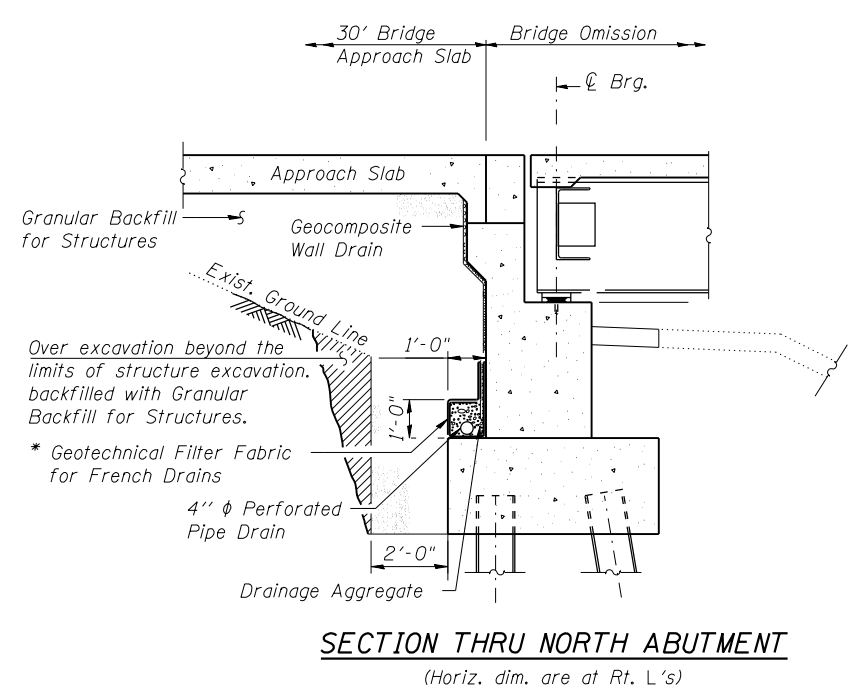
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CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

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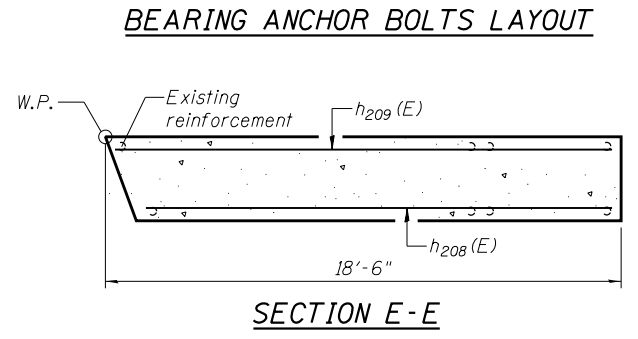
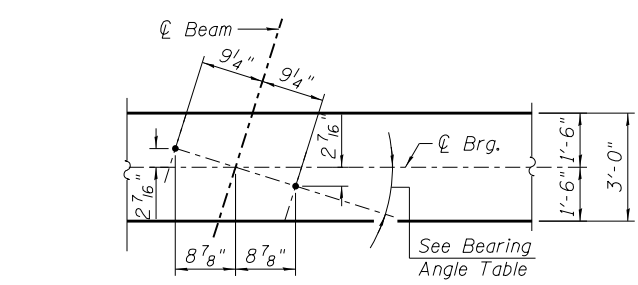
BEARING ANGLE TABLE

Beam No.	Bearing Angle
1W	15°49'52"
9W	15°37'11"
10W	15°35'36"
11W	15°34'01"
12W	15°32'25"
1E	15°30'53"
2E	15°29'18"
3E	15°27'44"
4E	15°26'10"



*Included in the cost of Pipe Underdrains for Structures.

Note:
 All drainage system components shall extend parallel to the abutment back wall until they intersect the wingwalls or 2'-0" from the end of the wingwalls when the wings are parallel to the abutment. The pipe shall extend under the wingwall, if necessary, until intersecting the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



NOTES:

- Existing reinforcement to be blast cleaned straightened and incorporated into proposed construction. Cost included with Concrete Removal.
- Hatched area to be poured after superstructure false work has been removed. Quantity of concrete included with Concrete Superstructure.
- Space reinforcement in cap to miss anchor bolts.
- Quantity of concrete in end post included with Concrete Superstructure on sheet S-55.
- Work this sheet with sheets S-80 and S-81.



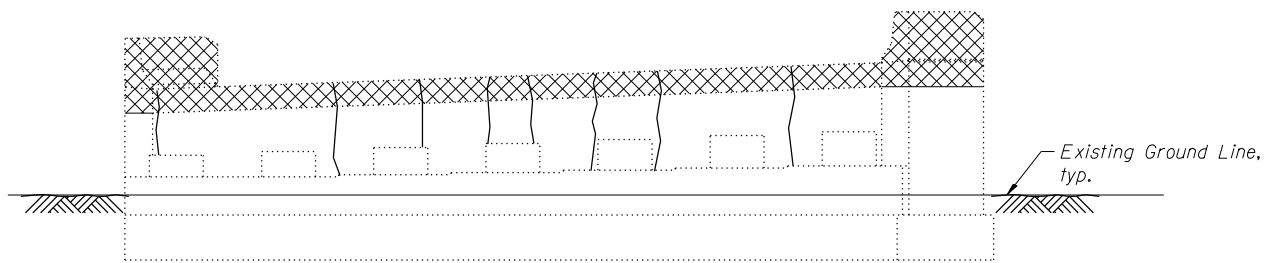
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PLOT DATE = 5/9/2018	CHECKED - MHT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

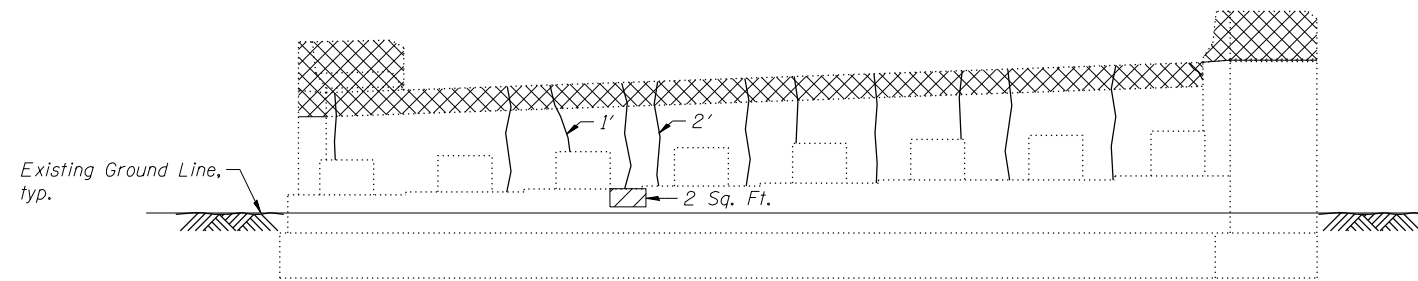
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S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-82 OF S-118 SHEETS

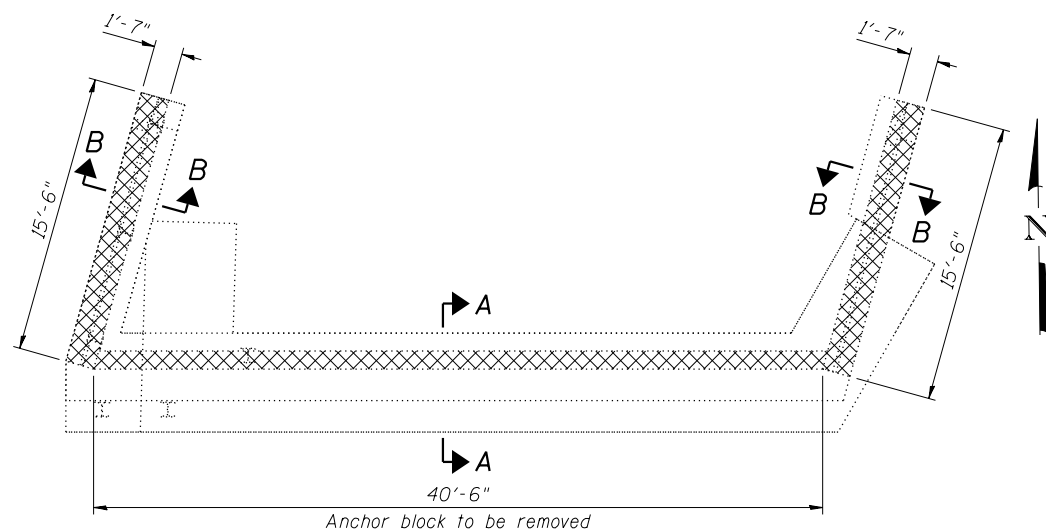
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				CONTRACT NO. 60N87
ILLINOIS FED. AID PROJECT				



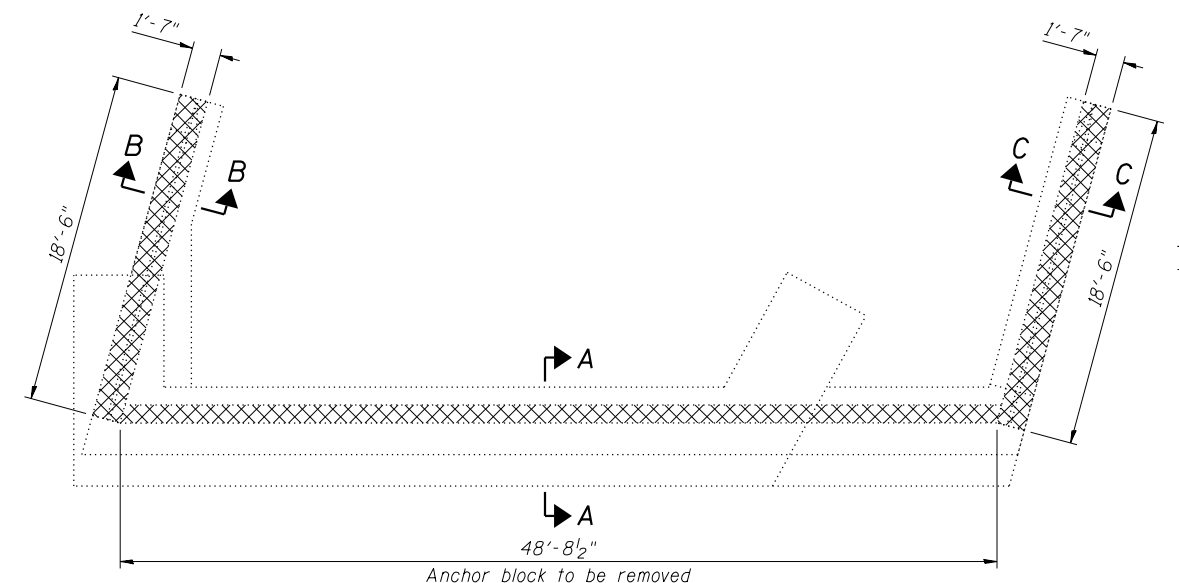
NORTHWEST ABUTMENT ELEVATION
(Looking North)



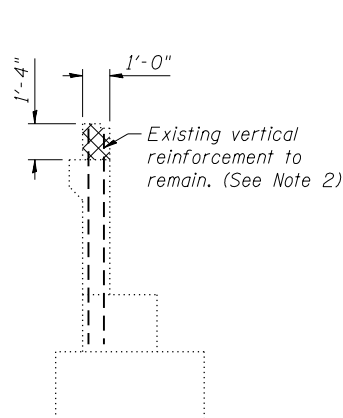
NORTHEAST ABUTMENT ELEVATION
(Looking North)



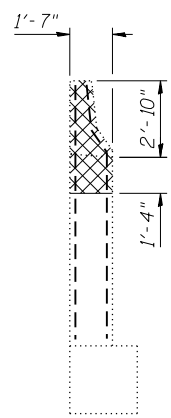
NORTHWEST ABUTMENT PLAN



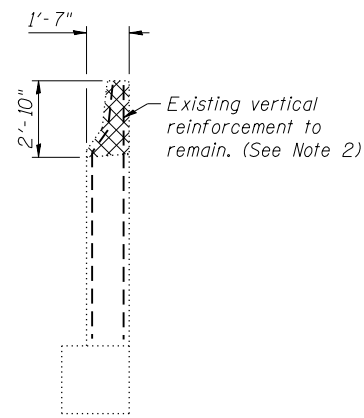
NORTHEAST ABUTMENT PLAN



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

- Repairs of the existing abutments shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.
- Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
- Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".

LEGEND

- Concrete Removal
- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Crack to be sealed
- Hairline Crack - Not to be sealed

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	2
Concrete Removal	Cu. Yd.	22.8
Epoxy Crack Injection	Foot	3

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Clorba Group, Inc.
CONSULTING ENGINEERS
1507 North Cambridge Avenue
Suite 402, Chicago, Illinois 60656
Tel: 773.724.4000
Fax: 773.775.4014
Email: clorba@clorba.com

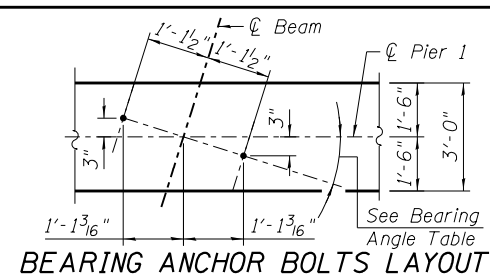
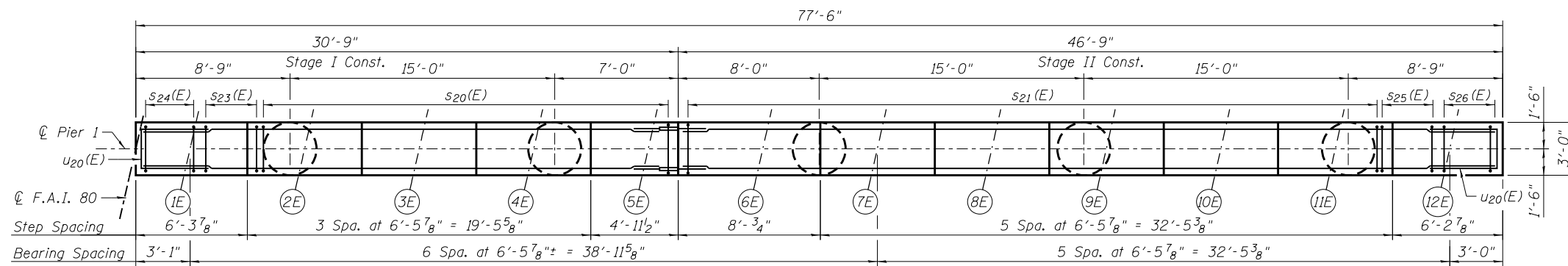
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH ABUTMENT REPAIRS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

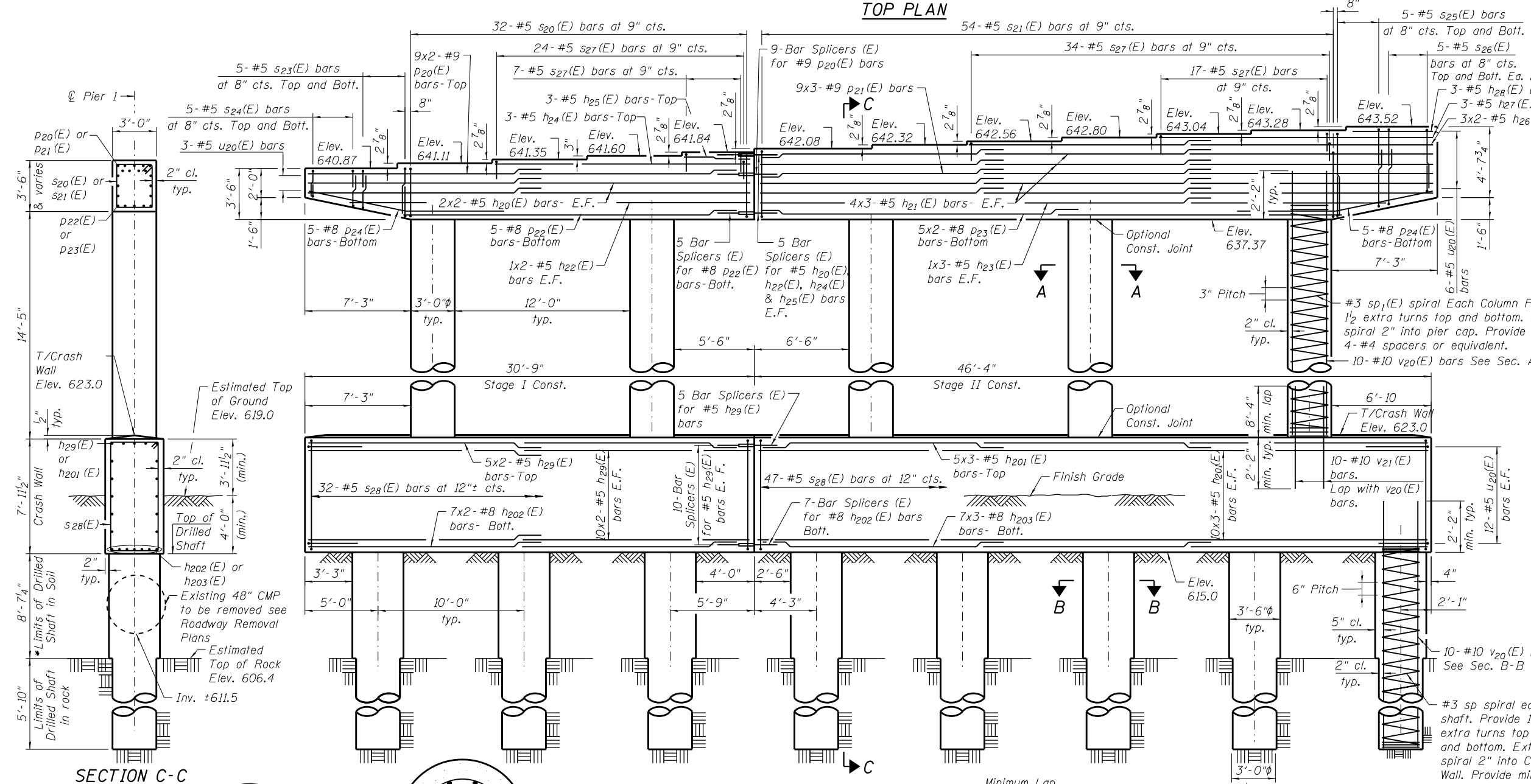
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CONTRACT NO.			60N87	
ILLINOIS FED. AID PROJECT				



BEARING ANCHOR BOLTS LAYOUT

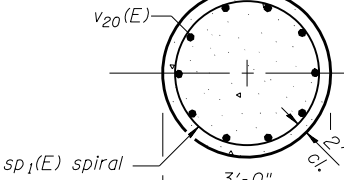
BEARING ANGLE TABLE			
Beam No.	Bearing Angle	Beam No.	Bearing Angle
1E	12°50'59"	7E	12°43'16"
2E	12°49'41"	8E	12°42'00"
3E	12°48'24"	9E	12°40'44"
4E	12°47'07"	10E	12°39'28"
5E	12°45'50"	11E	12°38'13"
6E	12°44'33"	12E	12°36'58"



BILL OF MATERIAL

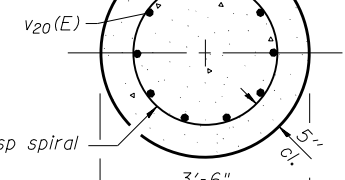
Bar	No.	Size	Length	Shape
h20(E)	24	# 5	16'-10"	—
h21(E)	36	# 5	17'-8"	—
h22(E)	8	# 5	15'-1"	—
h23(E)	12	# 5	16'-6"	—
h24(E)	3	# 5	17'-6"	—
h25(E)	3	# 5	4'-7"	—
h26(E)	12	# 5	17'-7"	—
h27(E)	6	# 5	18'-10"	—
h28(E)	6	# 5	5'-10"	—
h29(E)	100	# 5	16'-10"	—
h201(E)	150	# 5	17'-6"	—
h202(E)	28	# 8	18'-7"	—
h203(E)	42	# 8	19'-10"	—
h204(E)	6	# 5	18'-5"	—
h205(E)	3	# 5	20'-5"	—
h206(E)	3	# 5	7'-5"	—
P20(E)	36	# 9	19'-6"	—
P21(E)	54	# 9	21'-3"	—
P22(E)	10	# 8	23'-4"	—
P23(E)	20	# 8	23'-3"	—
P24(E)	20	# 8	14'-0"	—
S20(E)	85	# 5	12'-7"	□
S21(E)	54	# 5	14'-11"	□
S22(E)	32	# 5	15'-11"	□
S23(E)	20	# 5	7'-6"	□
S24(E)	20	# 5	6'-0"	□
S25(E)	20	# 5	12'-8"	□
S26(E)	20	# 5	11'-2"	□
S27(E)	185	# 5	4'-8"	□
S28(E)	158	# 5	23'-3"	□
sp	16	# 3	14'-7"	≡
SP1(E)	5	# 3	14'-7"	≡
SP2(E)	5	# 3	14'-2"	≡
U20(E)	66	# 5	9'-2"	□
V20(E)	210	# 10	16'-7"	—
V21(E)	100	# 10	10'-6"	—
V22(E)	50	# 10	16'-2"	—
Concrete Structures	Cu. Yd.		338.5	
Reinforcement Bars	Pound		1,540	
Reinforcement Bars, Epoxy Coated	Pound		37,410	
Drilled Shaft in Soil	Cu. Yd.		49.1	
Drilled Shaft in Rock	Cu. Yd.		24.5	

SECTION C-C



SECTION A-A

SECTION B-B



ELEVATION (Looking North)

Minimum Lap
 #5 Bars = 3'-3"
 #8 Bars = 6'-9"
 #9 Bars = 8'-7"

NOTES:

- Space reinforcement in cap to miss anchor bolts.
- Cast steps monolithically with cap.
- For bar bending details see sheet S-85.
- E.F. denotes Each Face.

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

** Length is height of spiral.

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 User: kaisneros

Clorba Group, Inc.
 CONSULTING ENGINEERS
 6507 North Cass Street
 Suite 402 Chicago, Illinois 60656
 Tel: 773.775.4000
 Fax: 773.775.4014
 Email: clorba@clorba.com

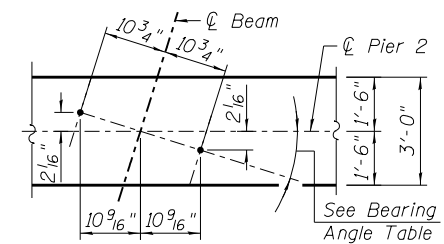
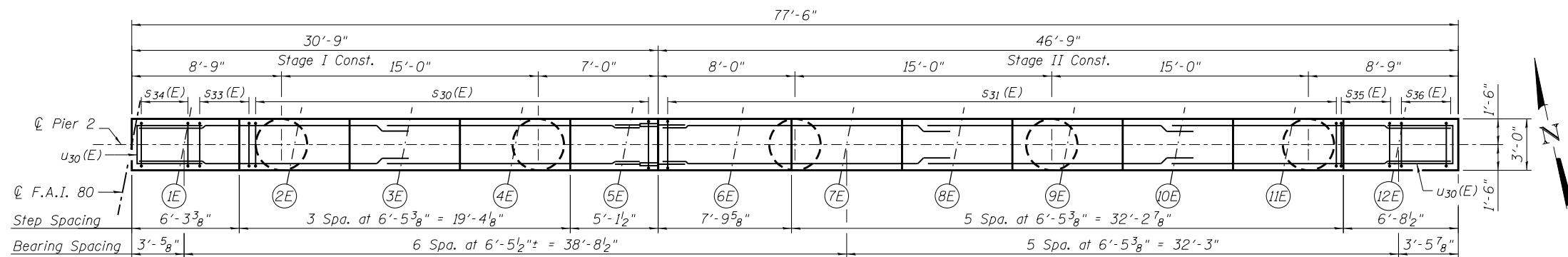
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CHECKED - MHT		

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PIERS 1E
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-84 OF S-118 SHEETS

F.A.I. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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				CONTRACT NO. 60N87
ILLINOIS FED. AID PROJECT				

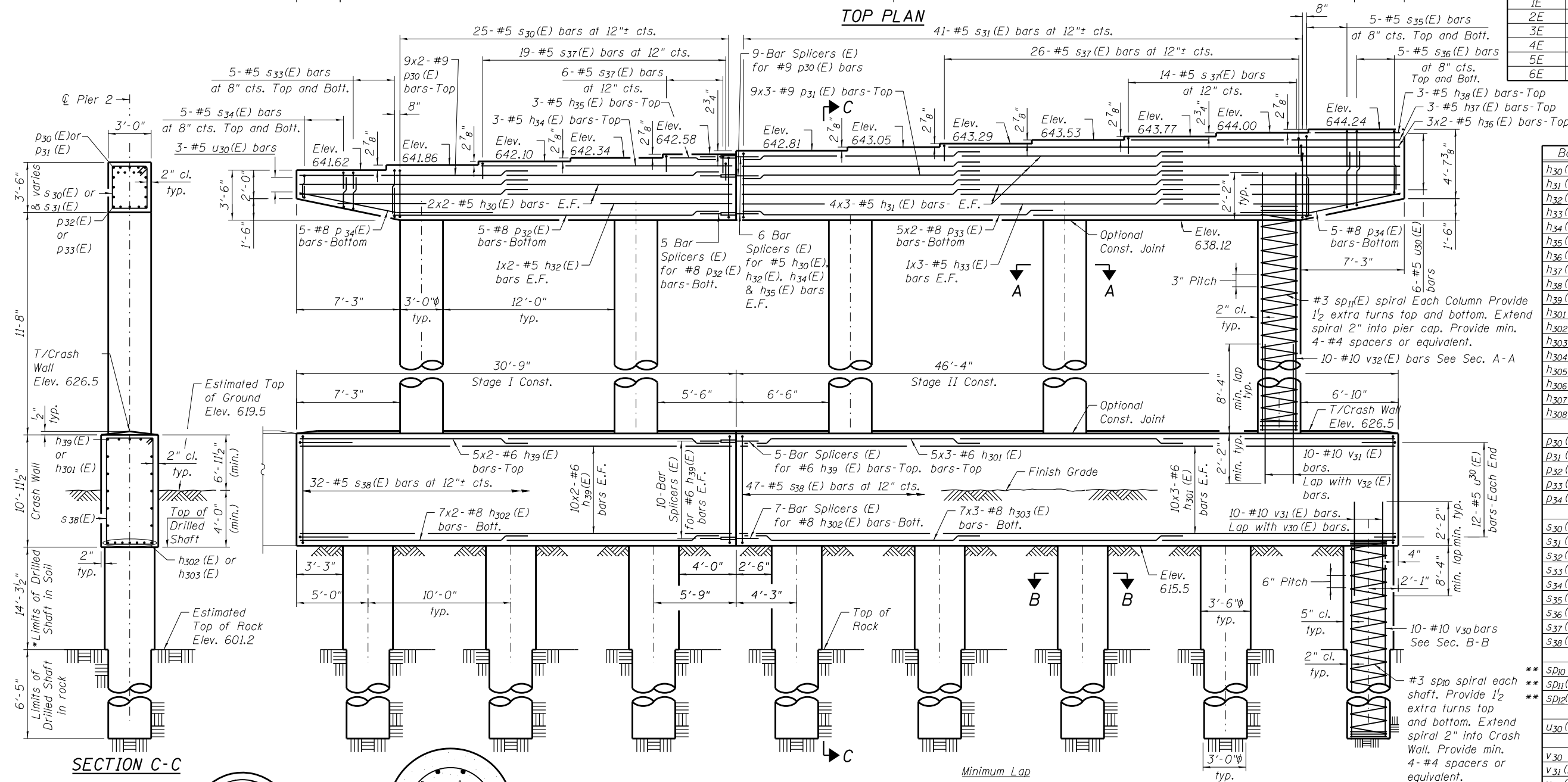


BEARING ANCHOR BOLTS LAYOUT

BEARING ANGLE TABLE

Beam No.	Bearing Angle	Beam No.	Bearing Angle
1E	11°02'55"	7E	10°56'18"
2E	11°01'48"	8E	10°55'13"
3E	11°00'42"	9E	10°54'08"
4E	10°59'35"	10E	10°53'03"
5E	10°58'29"	11E	10°51'58"
6E	10°57'24"	12E	10°50'54"

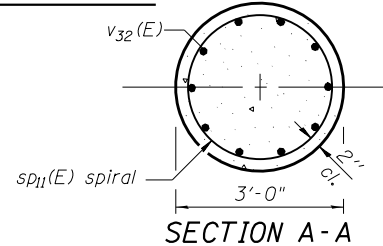
TOP PLAN



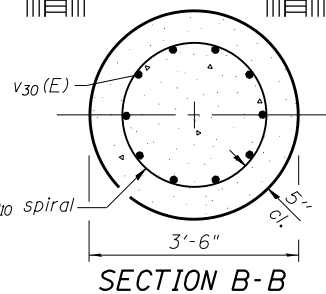
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h30(E)	30	# 5	16'-10"	—
h31(E)	36	# 5	17'-8"	—
h32(E)	8	# 5	15'-1"	—
h33(E)	12	# 5	16'-6"	—
h34(E)	3	# 5	17'-8"	—
h35(E)	3	# 5	4'-9"	—
h36(E)	6	# 5	17'-9"	—
h37(E)	3	# 5	19'-3"	—
h38(E)	3	# 5	6'-4"	—
h39(E)	100	# 6	17'-2"	—
h301(E)	150	# 6	17'-11"	—
h302(E)	28	# 8	18'-7"	—
h303(E)	42	# 8	19'-10"	—
h304(E)	6	# 5	18'-2"	—
h305(E)	3	# 5	20'-1"	—
h306(E)	3	# 5	7'-2"	—
h307(E)	3	# 5	18'-7"	—
h308(E)	3	# 5	5'-8"	—
p30(E)	36	# 9	19'-6"	—
p31(E)	54	# 9	21'-3"	—
p32(E)	10	# 8	23'-4"	—
p33(E)	20	# 8	23'-3"	—
p34(E)	20	# 8	14'-0"	—
s30(E)	66	# 5	12'-7"	□
s31(E)	41	# 5	14'-11"	□
s32(E)	25	# 5	15'-11"	□
s33(E)	20	# 5	7'-6"	U
s34(E)	20	# 5	6'-0"	U
s35(E)	20	# 5	12'-8"	U
s36(E)	20	# 5	11'-2"	U
s37(E)	142	# 5	4'-8"	U
s38(E)	158	# 5	29'-3"	□
sp10	16	# 3	20'-11"	~
sp11(E)	5	# 3	11'-10"	~
sp12(E)	5	# 3	11'-5"	~
u30(E)	66	# 5	9'-2"	U
v30	160	# 10	20'-6"	—
v31(E)	260	# 10	10'-6"	—
v32(E)	50	# 10	13'-10"	—
v33(E)	50	# 10	13'-5"	—
Concrete Structures		Cu. Yd.	396.1	
Reinforcement Bars		Pound	16,260	
Reinforcement Bars, Epoxy Coated		Pound	49,040	
Drilled Shaft in Soil		Cu. Yd.	81.5	
Drilled Shaft in Rock		Cu. Yd.	26.9	
Structure Excavation		Cu. Yd.	46	

SECTION C-C



SECTION A-A



SECTION B-B

ELEVATION (Looking North)

Minimum Lap
 #5 Bars = 3'-3"
 #6 Bars = 3'-10"
 #8 Bars = 6'-9"
 #9 Bars = 8'-7"

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. Cast steps monolithically with cap.
3. For bar bending details see sheet S-87.
4. E.F. denotes Each Face

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

** Length is height of spiral.

N:\PROJECTS\0003384\0004\15_30\Design\Structural\CAD\3384_86_Pier_2E.dgn



USER NAME	DESIGNED	REVISIONS
kaisneros	BWS	-
	MHT	-
	RD	-
	MHT	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

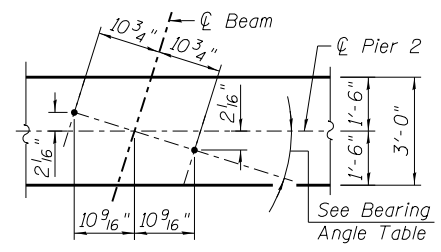
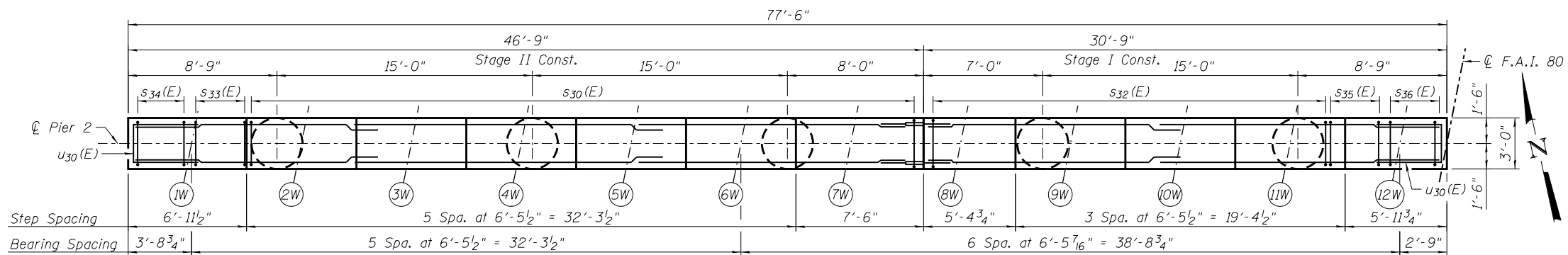
PIERS 2E
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-86 OF S-118 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	561

CONTRACT NO. 60N87

ILLINOIS FED. AID PROJECT

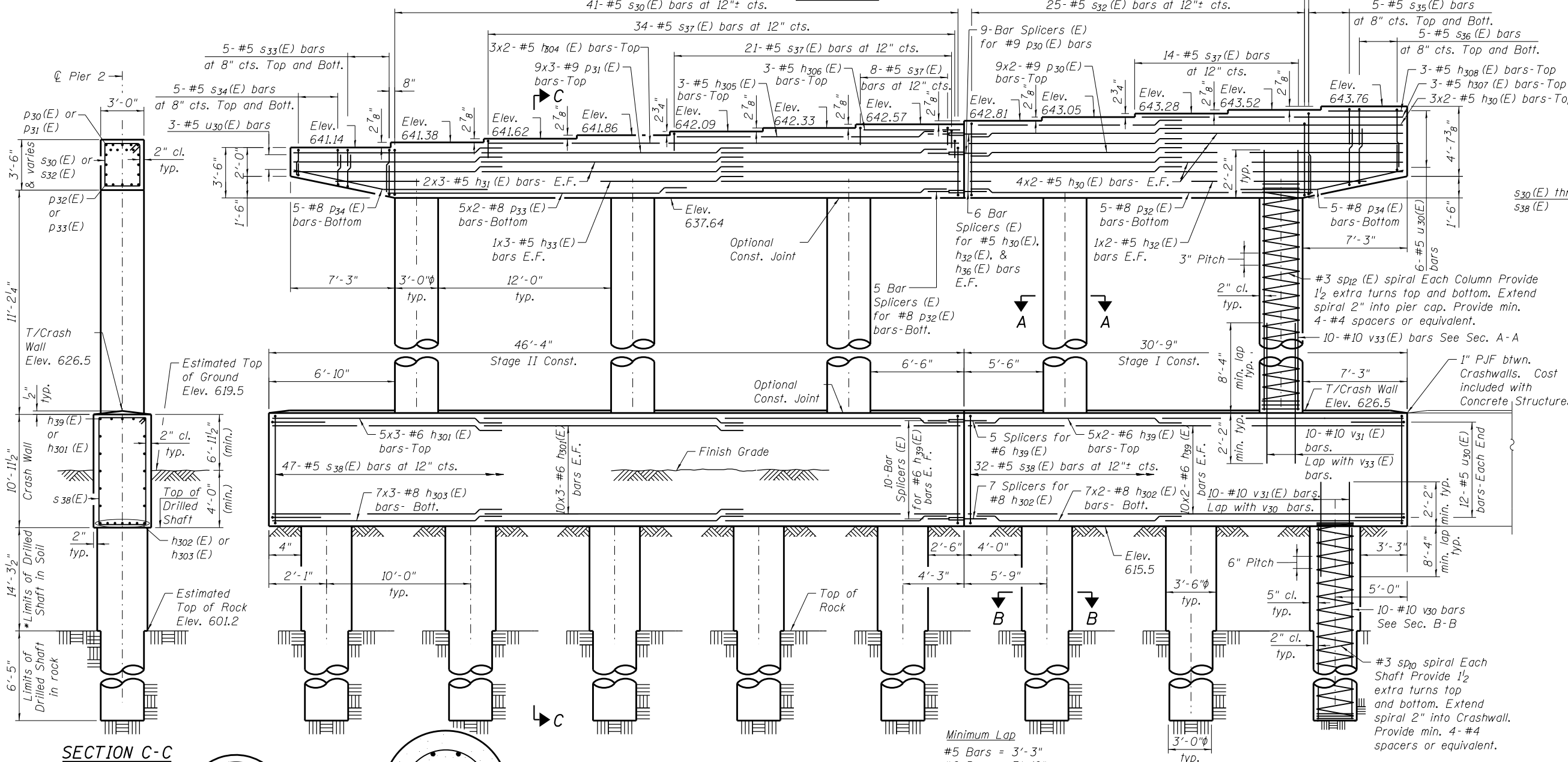


BEARING ANCHOR BOLTS LAYOUT

BEARING ANGLE TABLE

Beam No.	Bearing Angle
1W	11°16'25"
2W	11°15'16"
3W	11°14'06"
4W	11°12'58"
5W	11°11'49"
6W	11°10'40"
7W	11°09'32"
8W	11°08'24"
9W	11°07'17"
10W	11°06'09"
11W	11°05'02"
12W	11°03'55"

TOP PLAN



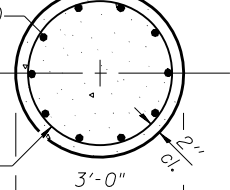
BAR s30(E) THRU s32(E), s38(E)

BARS s33(E) THRU s37(E), u30(E)

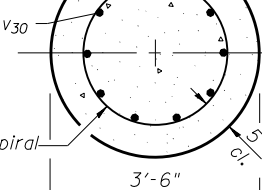
Bar	A	B
s33(E)	2'-8"	2'-5"
s34(E)	2'-8"	1'-8"
s35(E)	2'-8"	5'-0"
s36(E)	2'-8"	4'-3"
s37(E)	2'-8"	1'-0"
u30(E)	2'-8"	3'-3"

BAR p34(E)

SECTION C-C



SECTION A-A



SECTION B-B

ELEVATION (Looking North)

- Minimum Lap**
- #5 Bars = 3'-3"
 - #6 Bars = 3'-10"
 - #8 Bars = 6'-9"
 - #9 Bars = 8'-7"

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. Cast steps monolithically with cap.
3. For Bill of Materials see sheet S-86.
4. E.F. denotes Each Face.

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

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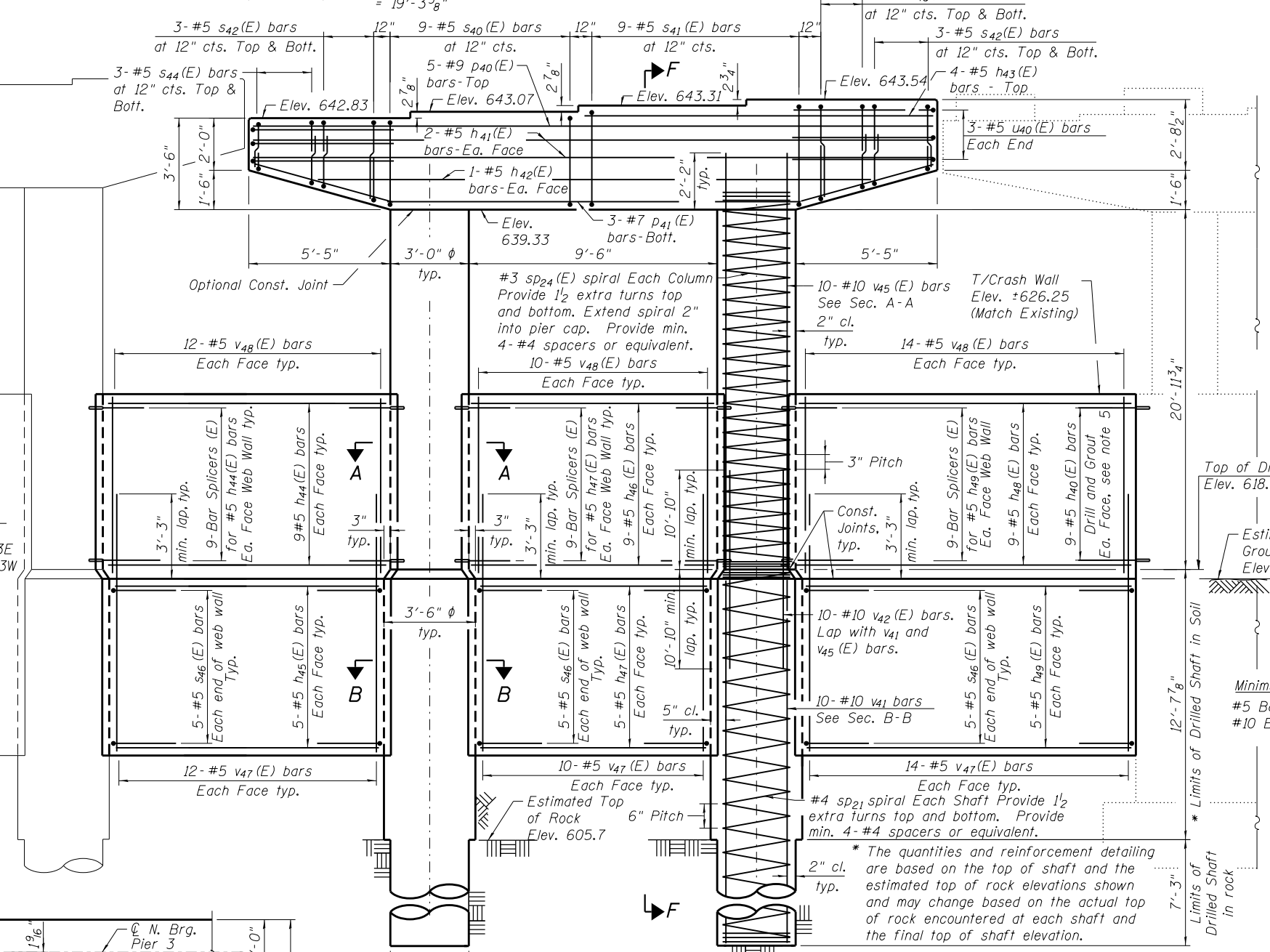
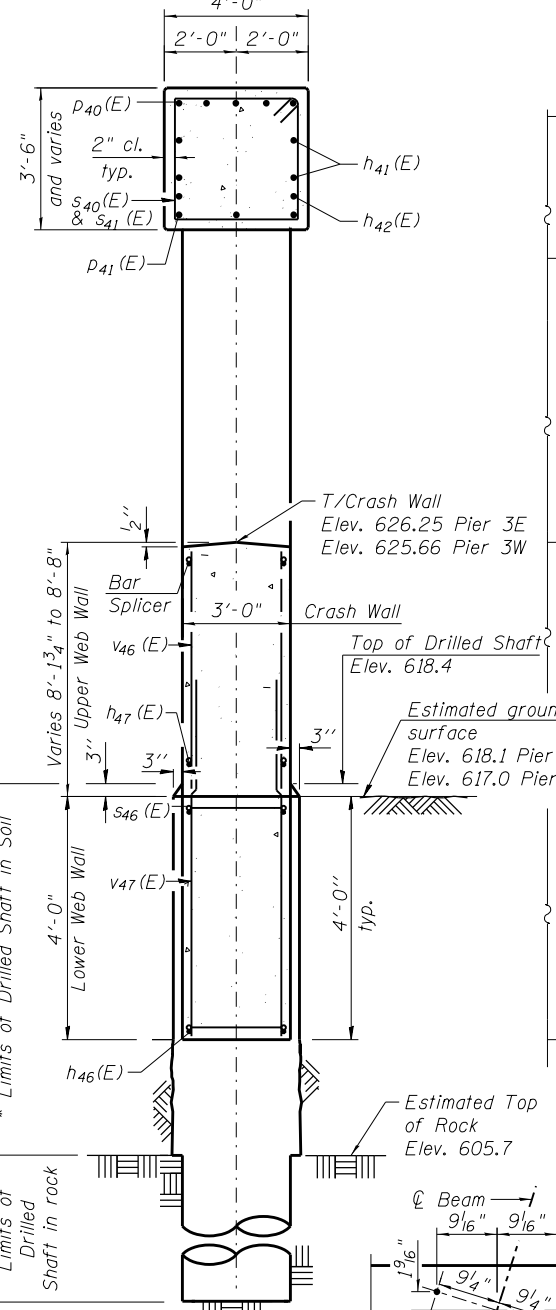
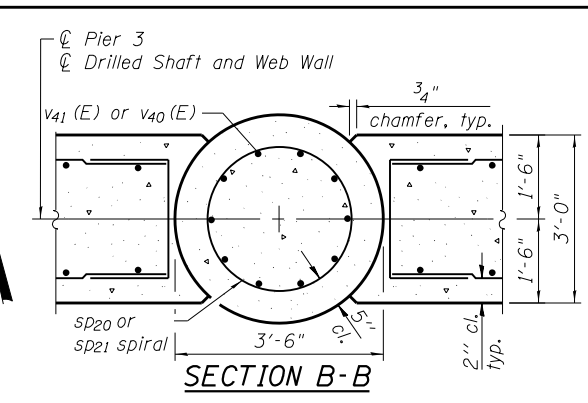
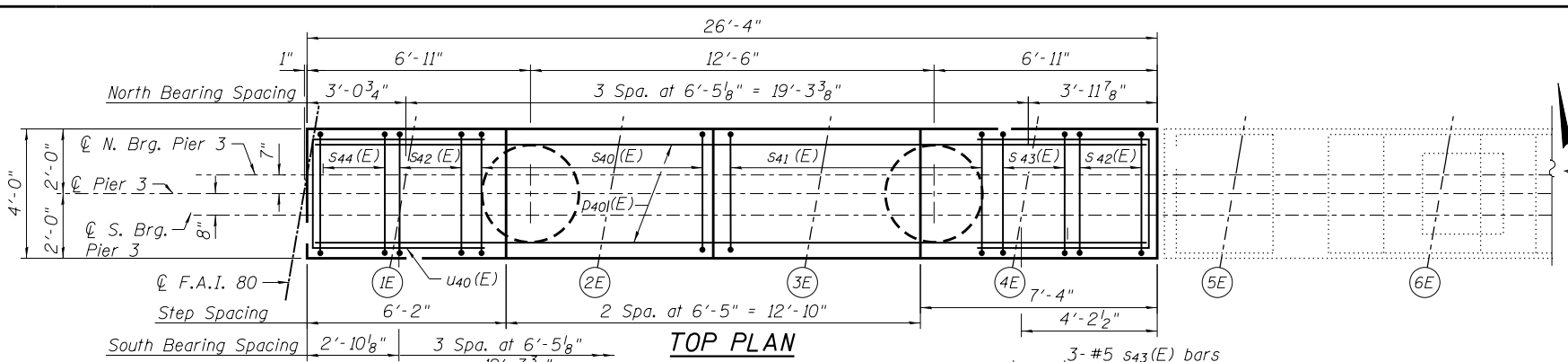
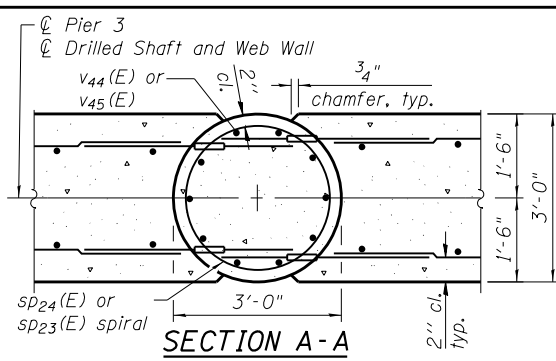
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CHECKED - MHT	PLOT DATE = 5/9/2018	

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIERS 2W
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

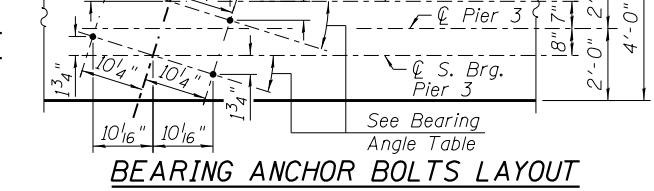
SHEET NO. S-87 OF S-118 SHEETS

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 562
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h40(E)	58	# 5	2'-9"	—
h41(E)	8	# 5	26'-0"	—
h42(E)	4	# 5	20'-9"	—
h43(E)	8	# 5	12'-3"	—
h44(E)	18	# 5	10'-8"	—
h45(E)	10	# 5	10'-2"	—
h46(E)	36	# 5	9'-2"	—
h47(E)	20	# 5	8'-8"	—
h48(E)	18	# 5	12'-9"	—
h49(E)	10	# 5	12'-6"	—
h401(E)	18	# 5	11'-10"	—
h402(E)	10	# 5	11'-7"	—
h403(E)	18	# 5	5'-2"	—
p40(E)	10	# 9	26'-0"	—
p41(E)	6	# 7	26'-4"	—
p42(E)	6	# 6	5'-2"	—
s40(E)	18	# 5	14'-7"	□
s41(E)	18	# 5	15'-6"	□
s42(E)	36	# 5	8'-4"	□
s43(E)	12	# 5	9'-10"	□
s44(E)	12	# 5	7'-0"	□
s45(E)	5	# 5	16'-7"	□
s46(E)	50	# 5	10'-0"	□
sp20	3	# 4	18'-9"	〰
sp21	2	# 4	19'-10"	〰
sp22(E)	1	# 3	21'-9"	〰
sp23(E)	2	# 3	23'-8"	〰
sp24(E)	2	# 3	21'-2"	〰
u40(E)	12	# 5	11'-0"	▭
u41(E)	4	# 5	14'-0"	▭
v40	30	# 10	18'-9"	—
v41	20	# 10	19'-10"	—
v42(E)	50	# 10	21'-8"	—
v43(E)	10	# 10	23'-9"	—
v44(E)	20	# 10	25'-8"	—
v45(E)	20	# 10	23'-2"	—
v46(E)	58	# 5	8'-4"	—
v47(E)	130	# 5	7'-1"	—
v48(E)	72	# 5	7'-9"	—
Concrete Structures	Cu. Yd.		150.9	
Reinforcement Bars	Pound		5,210	
Reinforcement Bars, Epoxy Coated	Pound		18,120	
Drilled Shaft in Soil	Cu. Yd.		21.5	
Drilled Shaft in Rock	Cu. Yd.		9.5	
Structure Excavation	Cu. Yd.		76	
Concrete Sealer	Sq. Ft.		2,967	



SOUTH BEARING ANGLE TABLE

Beam No.	Bearing Angle
1E	09°48'27"
2E	09°47'28"
3E	09°46'30"
4E	09°45'31"

NORTH BEARING ANGLE TABLE

Beam No.	Bearing Angle
1E	09°47'19"
2E	09°46'20"
3E	09°45'22"
4E	09°44'23"

NOTES:

- Space reinforcement in cap to miss anchor bolts.
- Cast steps monolithically with cap.
- For Bar Bending details see sheet S-89.
- Drill and grout h40(E) bars 9" min. in accordance with Article 584 of the standard specifications. Cost included with Reinforcement Bars, Epoxy Coated.
- Concrete Sealer to be applied to all exposed faces of new concrete.

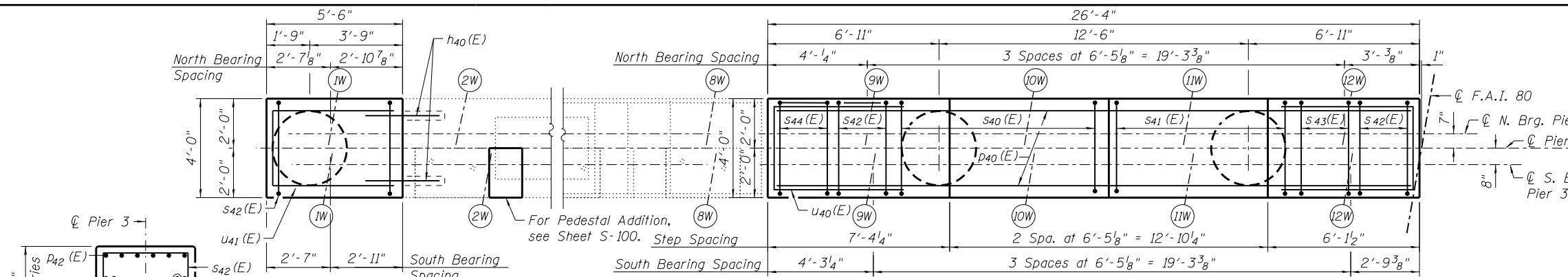
CG Clorba Group, Inc.
CONSULTING ENGINEERS
650 North Chestnut Street
Suite 402, Chicago, Illinois 60656
Tel: 312.724.4000
Fax: 312.724.4014
Email: clorba@clorba.com

USER NAME = kaisneros	DESIGNED - BWS	REVISED -
PLOT SCALE = 5/4" = 1'-0"	CHECKED - MHT	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
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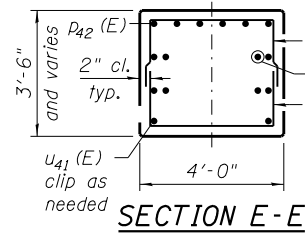
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 3E
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)
SHEET NO. S-88 OF S-118 SHEETS

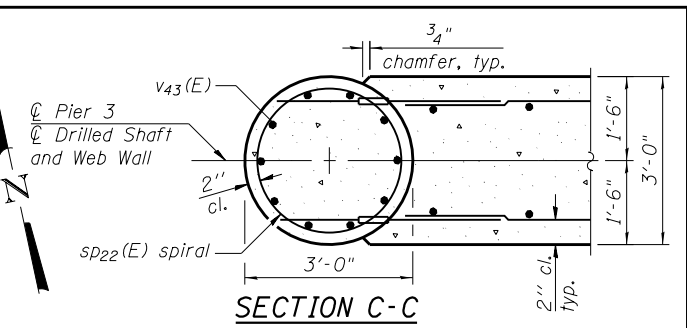
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CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



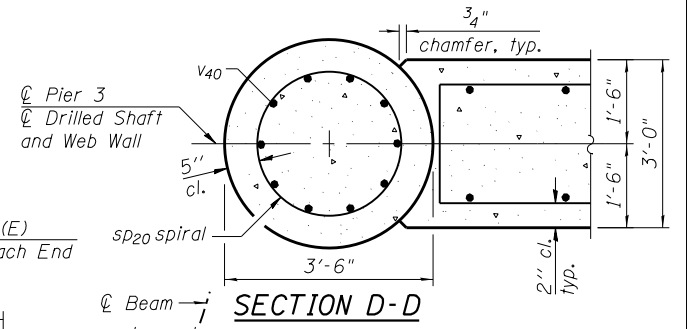
TOP PLAN



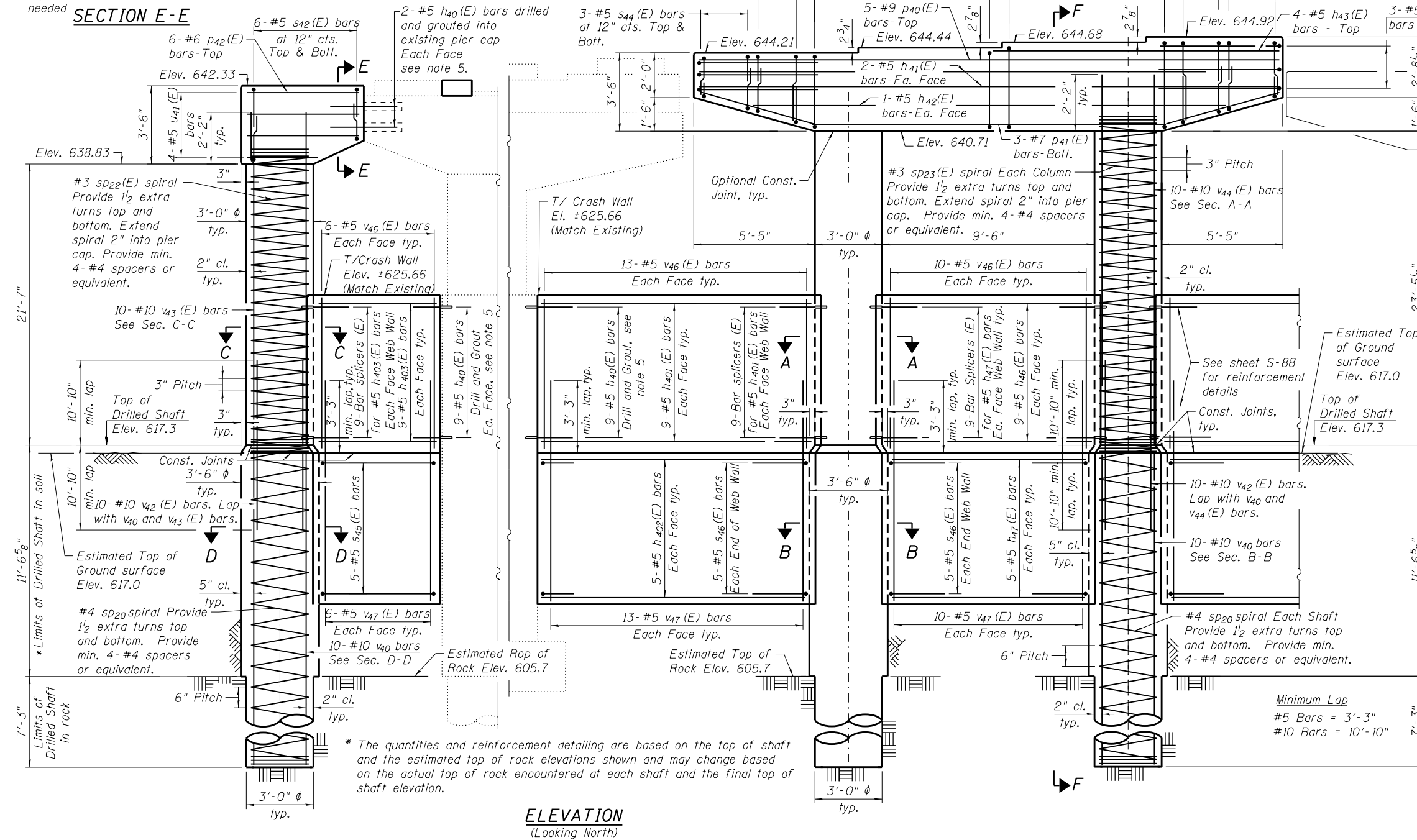
SECTION E-E



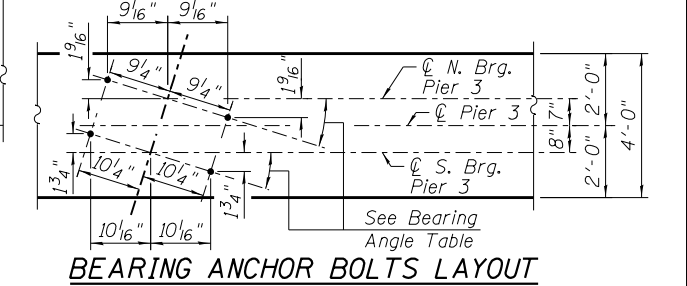
SECTION C-C



SECTION D-D

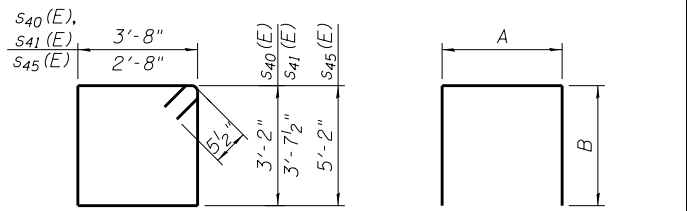


ELEVATION
(Looking North)

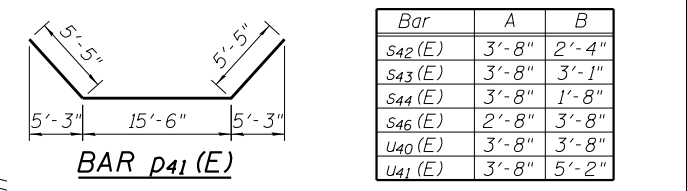


BEARING ANCHOR BOLTS LAYOUT

SOUTH BEARING ANGLE TABLE		NORTH BEARING ANGLE TABLE	
Beam No.	Bearing Angle	Beam No.	Bearing Angle
1W	10°00'25"	1W	09°59'17"
9W	09°52'19"	9W	09°51'15"
10W	09°51'20"	10W	09°50'15"
11W	09°50'20"	11W	09°49'16"
12W	09°49'21"	12W	09°48'16"



BAR s40(E), s41(E) & s45(E) **BARS s42(E) THRU s44(E), s46(E), u40(E), u41(E)**



BAR p41(E)

Bar	A	B
s42(E)	3'-8"	2'-4"
s43(E)	3'-8"	3'-1"
s44(E)	3'-8"	1'-8"
s46(E)	2'-8"	3'-8"
u40(E)	3'-8"	3'-8"
u41(E)	3'-8"	5'-2"

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. Cast steps monolithically with cap.
3. Concrete sealer to be applied to all exposed faces of new concrete.
4. For sections A-A, B-B & F-F see sheet S-88.
5. Drill and grout h40(E) bars 9" min. in accordance with Article 584 of the standard specifications. Cost included with Reinforcement Bars, Epoxy Coated.
6. For Bill of Material see sheet S-88.

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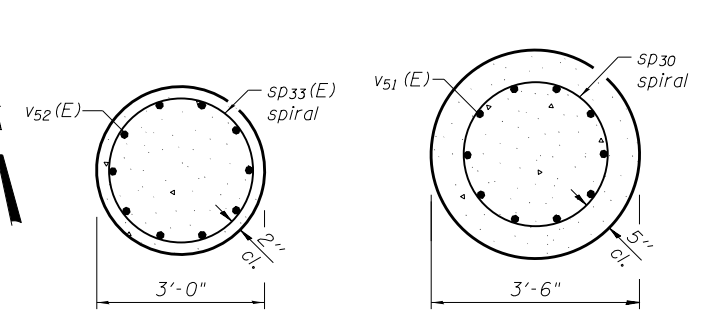
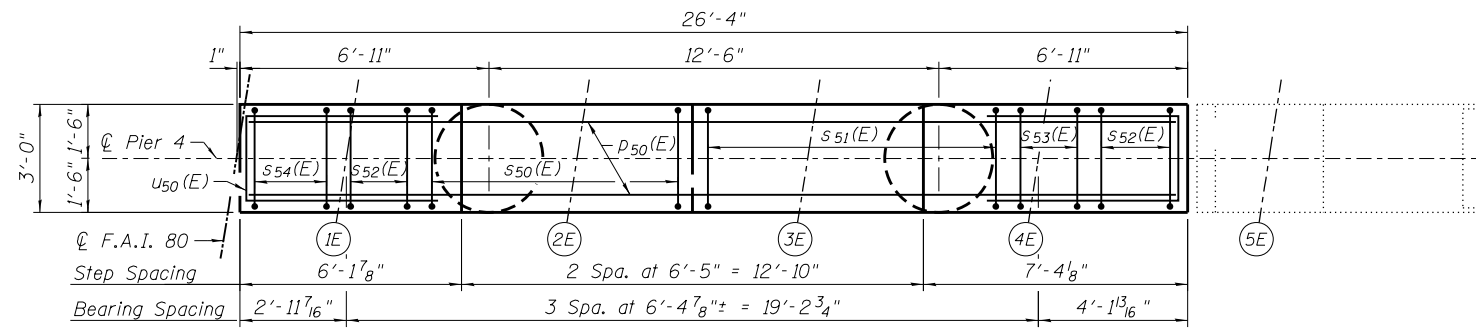
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	CHECKED - MHT	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 3W
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

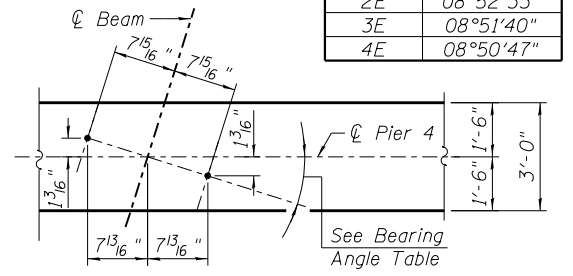
SHEET NO. S-89 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	564
				CONTRACT NO. 60N87
ILLINOIS FED. AID PROJECT				



BEARING ANGLE TABLE

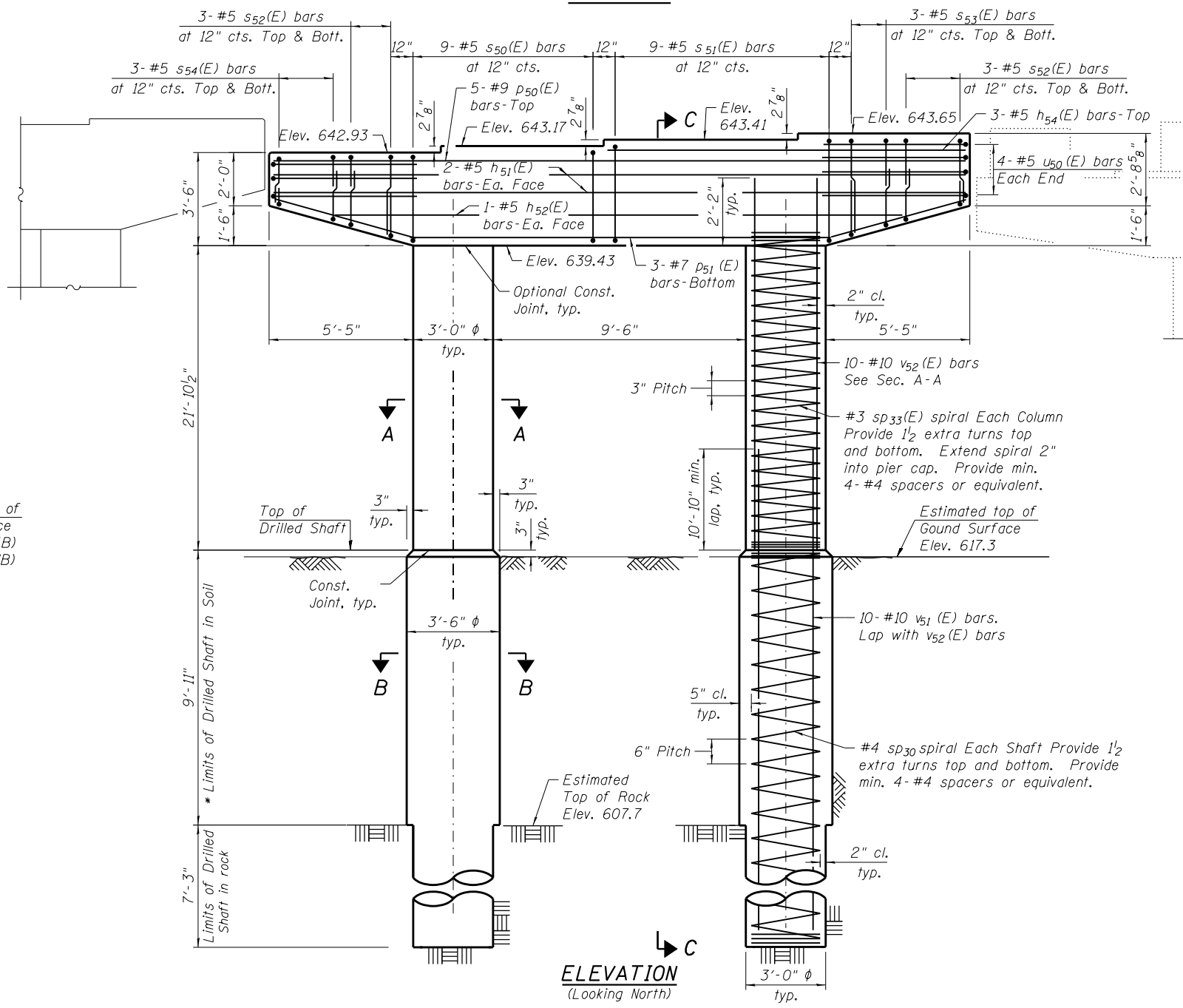
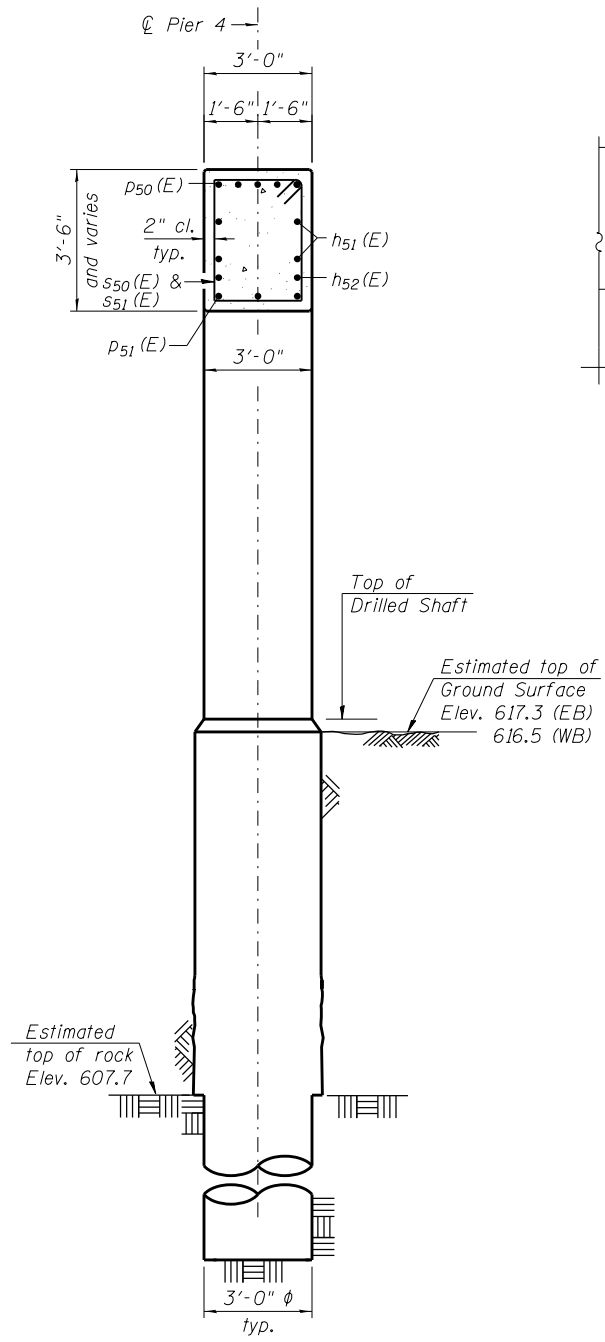
Beam No.	Bearing Angle
1E	08°53'27"
2E	08°52'33"
3E	08°51'40"
4E	08°50'47"



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h50(E)	8	# 5	2'-9"	—
h51(E)	8	# 5	26'-0"	—
h52(E)	4	# 5	20'-9"	—
h53(E)	7	# 5	8'-8"	—
h54(E)	6	# 5	12'-9"	—
p50(E)	10	# 9	26'-0"	—
p51(E)	6	# 7	26'-4"	—
p52(E)	6	# 6	8'-8"	—
s50(E)	18	# 5	12'-7"	□
s51(E)	18	# 5	13'-6"	□
s52(E)	24	# 5	7'-4"	□
s53(E)	12	# 5	8'-10"	□
s54(E)	12	# 5	6'-0"	□
s55(E)	7	# 5	12'-11"	□
SP30	2	# 4	17'-2"	⋈
SP31	3	# 4	16'-4"	⋈
SP32(E)	1	# 3	22'-2"	⋈
SP33(E)	2	# 3	22'-1"	⋈
SP34(E)	2	# 3	24'-2"	⋈
u50(E)	16	# 5	10'-0"	□
v50(E)	30	# 10	27'-2"	—
v51(E)	20	# 10	28'-0"	—
v52(E)	20	# 10	24'-1"	—
v53(E)	20	# 10	26'-3"	—
v54(E)	10	# 10	24'-2"	—
Concrete Structures		Cu. Yd.	58.5	
Reinforcement Bars		Pound	960	
Reinforcement Bars, Epoxy Coated		Pound	15,450	
Drilled Shaft in Soil		Cu. Yd.	16.9	
Drilled Shaft in Rock		Cu. Yd.	9.5	

** Length is height of spiral.



Minimum Lap
 #5 Bars = 3'-3"
 #10 Bars = 10'-10"

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. Cast steps monolithically with cap.
3. For bar bending details see sheets S-91.

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

N:\PROJECTS\00033384\0004\US_30\Design\Structural\CAD\3384_90_Pier_4E.dgn



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 DESIGNED - BWS
 CHECKED - MHT
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 PLOT DATE = 5/9/2018

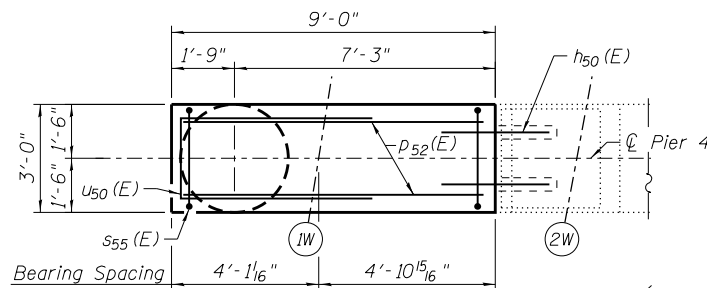
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

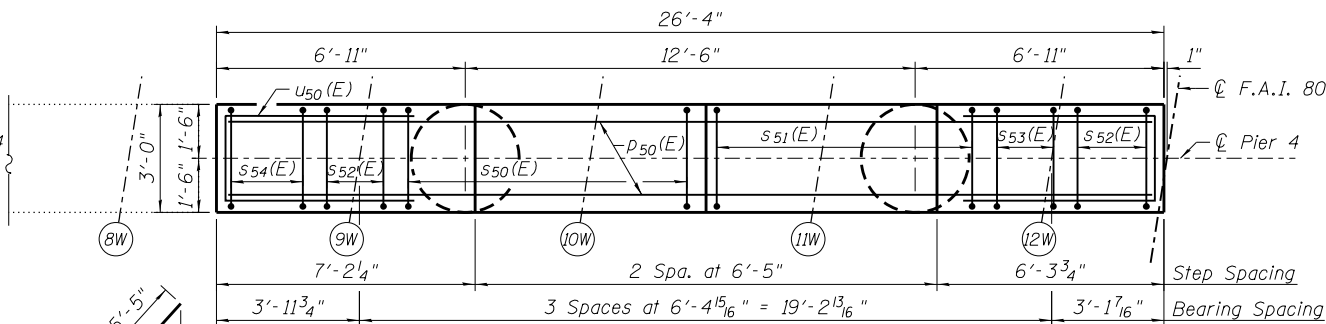
**PIERS 4E
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-90 OF S-118 SHEETS

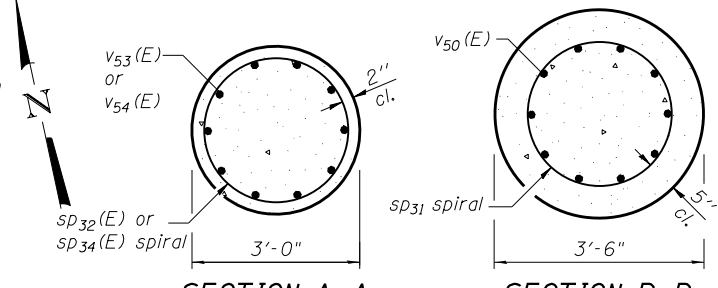
F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	565
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



TOP PLAN

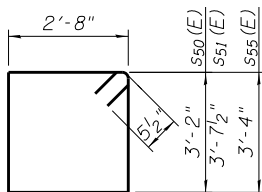


TOP PLAN



SECTION A-A

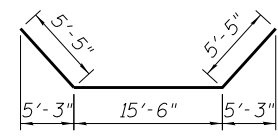
SECTION B-B



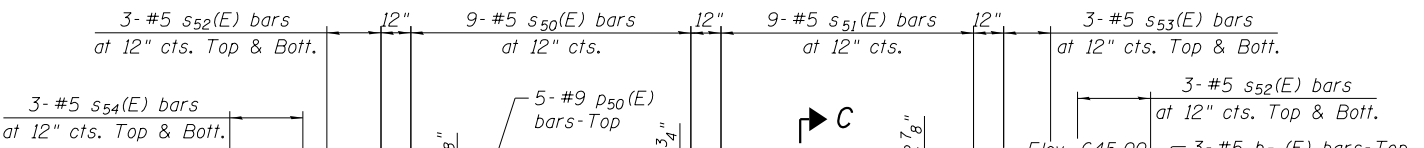
BAR s50(E), s51(E) & s55(E)

BARS s52(E), s53(E), s54(E) & u50(E)

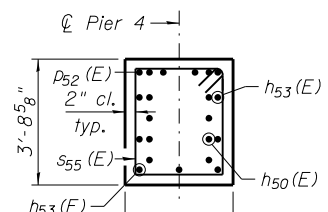
Bar	A	B
s52(E)	2'-8"	2'-4"
s53(E)	2'-8"	3'-1"
s54(E)	2'-8"	1'-8"
u50(E)	2'-8"	3'-8"



BAR p51(E)



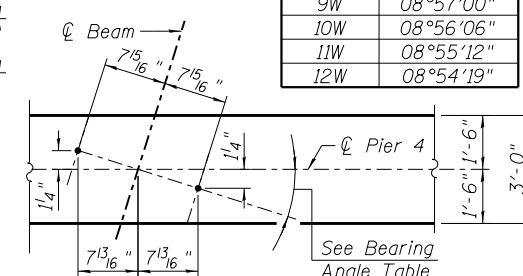
ELEVATION (Looking North)



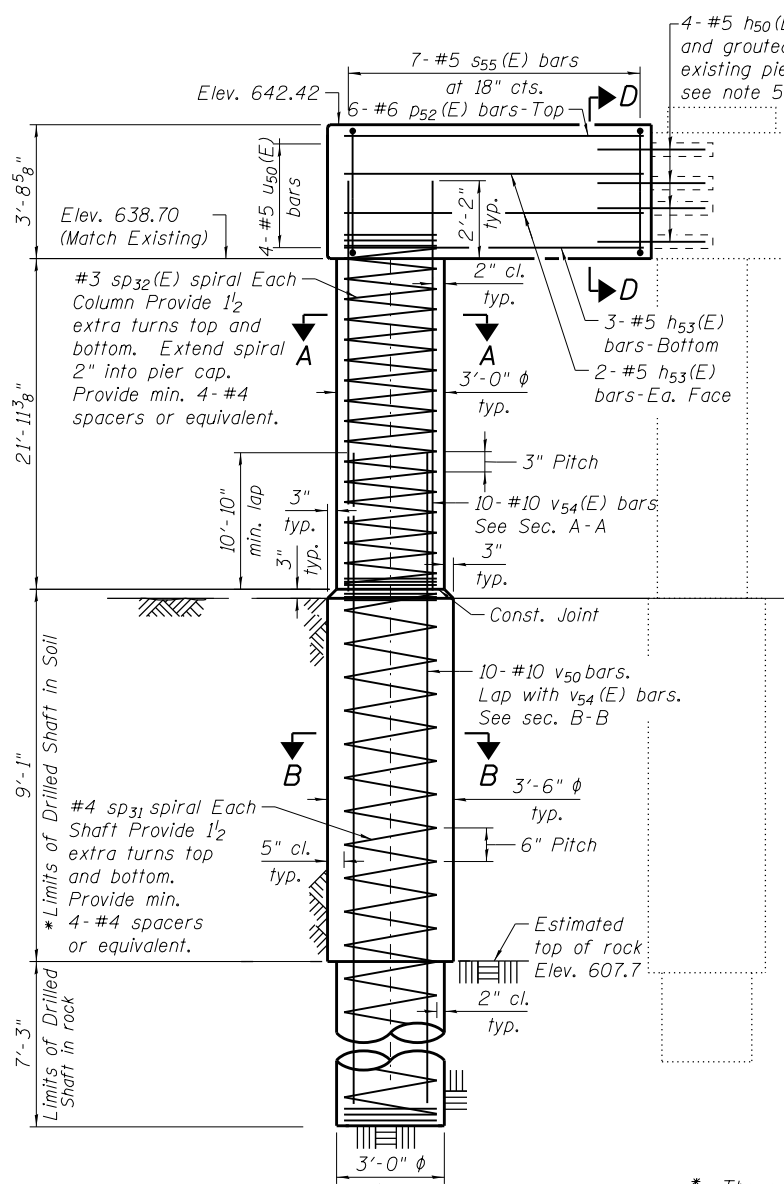
SECTION D-D

BEARING ANGLE TABLE

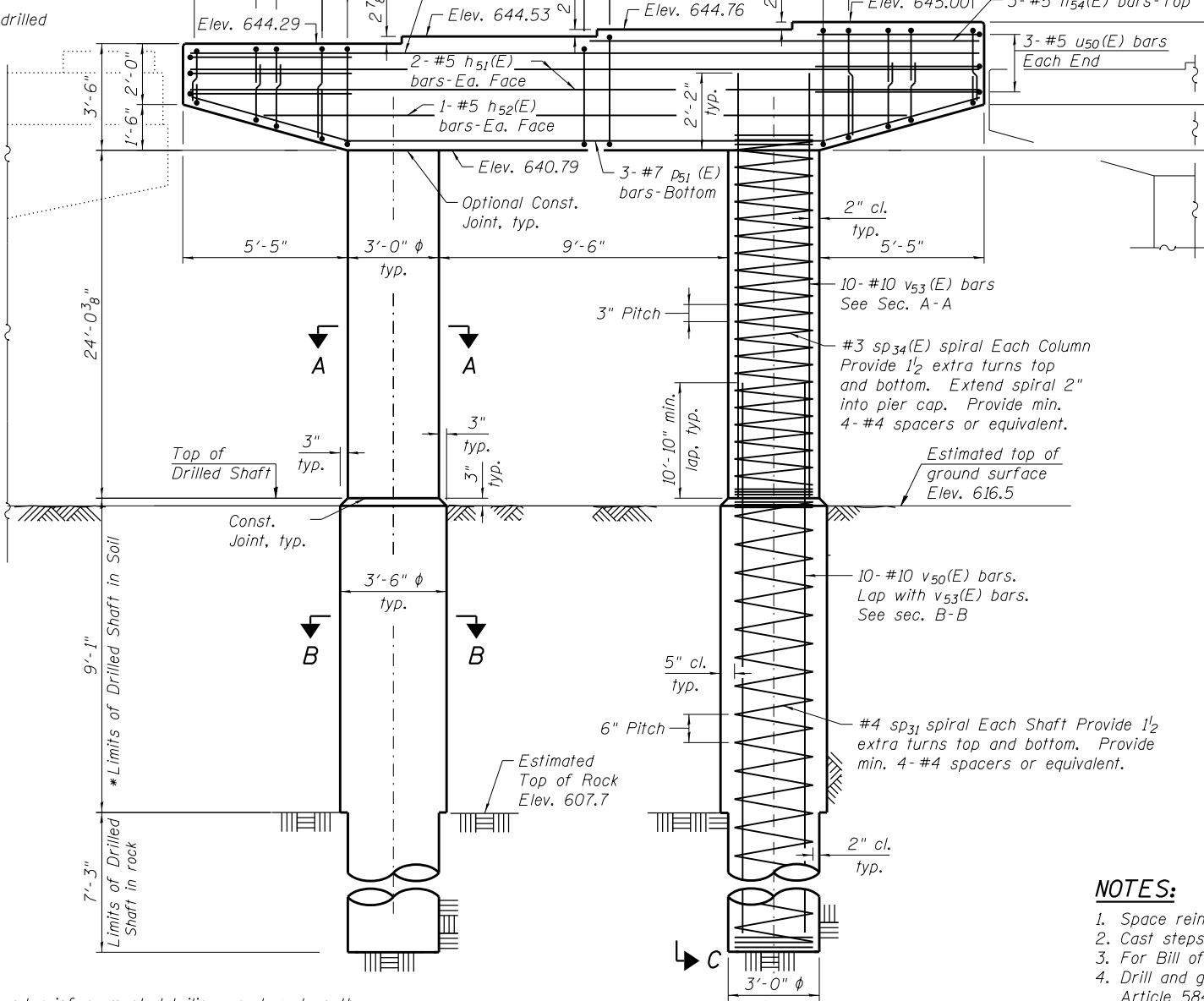
Beam No.	Bearing Angle
1W	09°04'17"
9W	08°57'00"
10W	08°56'06"
11W	08°55'12"
12W	08°54'19"



BEARING ANCHOR BOLTS LAYOUT



ELEVATION (Looking North)



ELEVATION (Looking North)

NOTES:

- Space reinforcement in cap to miss anchor bolts.
- Cast steps monolithically with cap.
- For Bill of Material and Section C-C, see sheet S-90.
- Drill and grout h50(E) bars 9" min. in accordance with Article 584 of the standard specifications. Cost included with Reinforcement Bars, Epoxy Coated.

Minimum Lap
 #5 Bars = 3'-3"
 #10 Bars = 10'-10"

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

N:\PROJECTS\00033384\004_US_30A\Design\Structural\CAD\3384_91_Pier_4W.dgn



USER NAME = kaisneros	DESIGNED - BWS	REVISED -
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PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
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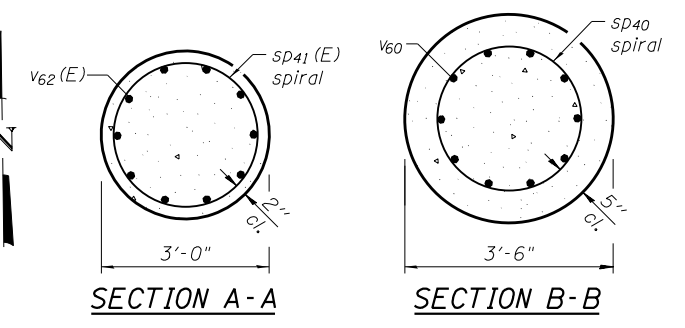
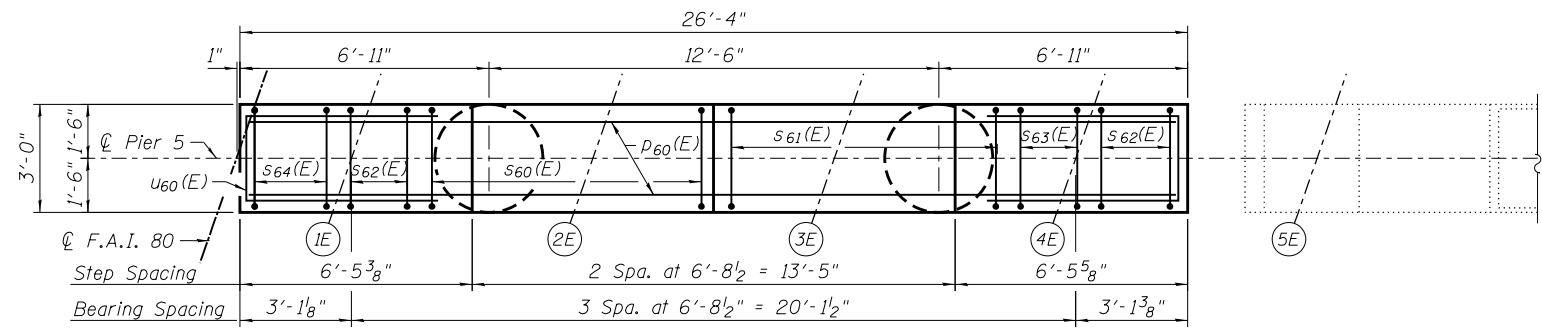
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

PIERS 4W
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-91 OF S-118 SHEETS

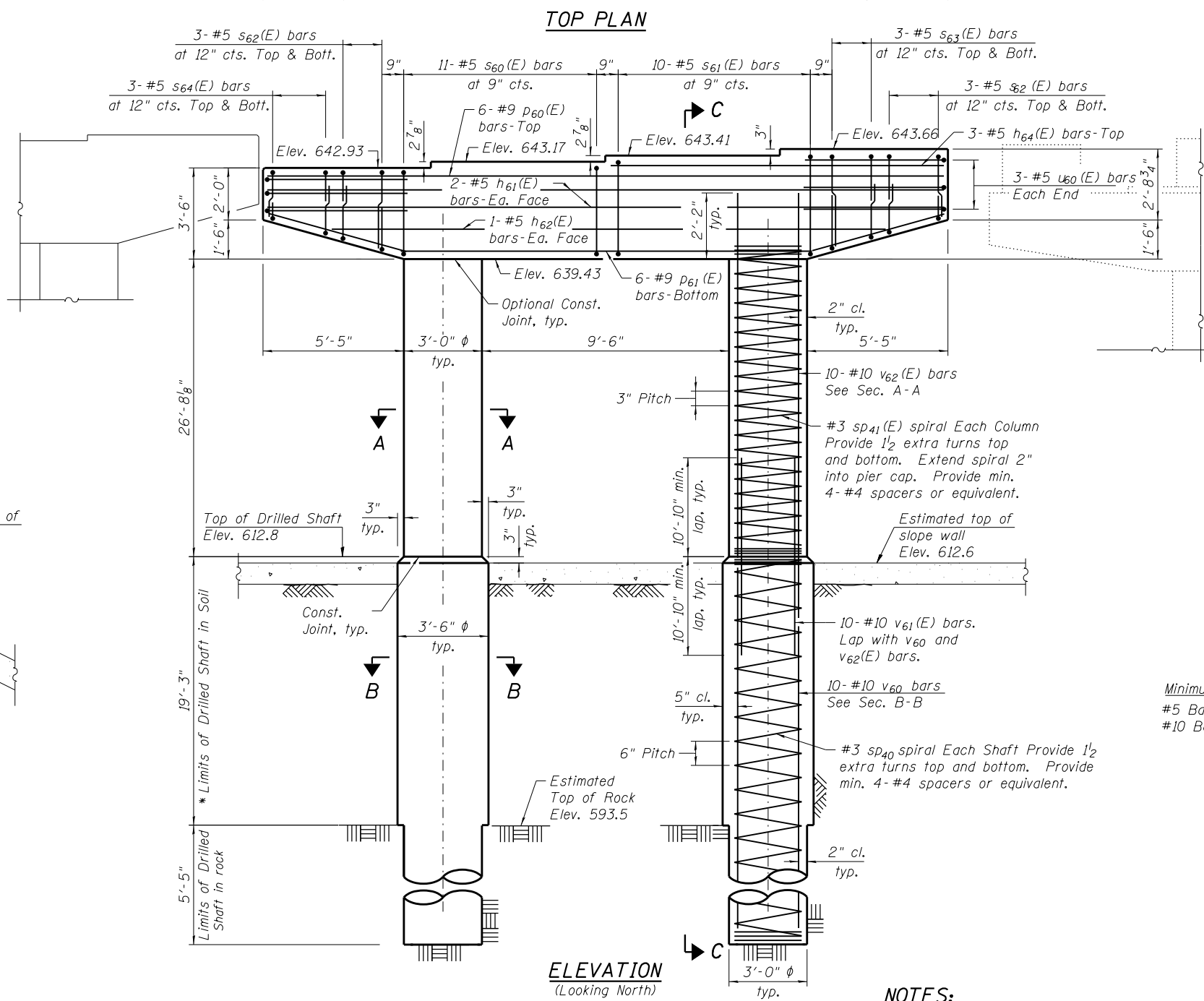
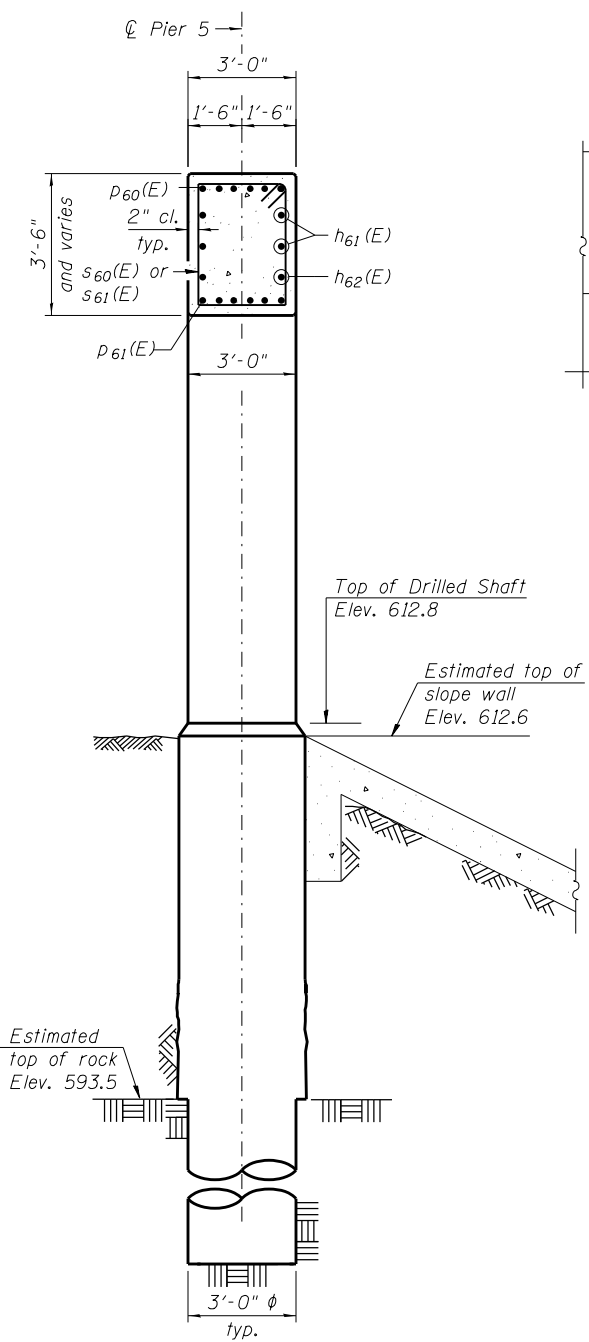
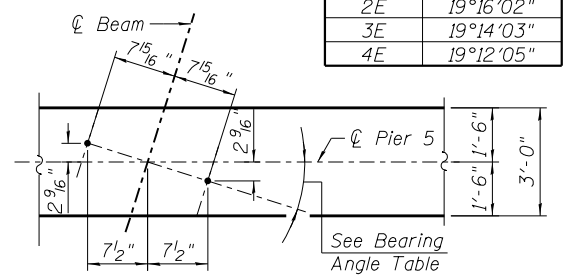
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	566

CONTRACT NO. 60N87
 ILLINOIS FED. AID PROJECT



BEARING ANGLE TABLE

Beam No.	Bearing Angle
1E	19°18'02"
2E	19°16'02"
3E	19°14'03"
4E	19°12'05"



Minimum Lap
 #5 Bars = 3'-3"
 #10 Bars = 10'-10"

- NOTES:**
1. Space reinforcement in cap to miss anchor bolts.
 2. For Slope Wall Details see sheet S-108.
 3. Cast steps monolithically with cap.
 4. For bar bending details see sheet S-93.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h60(E)	8	# 5	2'-9"	—
h61(E)	8	# 5	26'-0"	—
h62(E)	4	# 5	20'-9"	—
h63(E)	9	# 5	8'-8"	—
h64(E)	6	# 5	12'-10"	—
p60(E)	12	# 9	26'-0"	—
p61(E)	12	# 9	26'-4"	—
p62(E)	6	# 8	8'-8"	—
s60(E)	22	# 5	12'-7"	□
s61(E)	20	# 5	13'-6"	□
s62(E)	24	# 5	7'-4"	U
s63(E)	12	# 5	8'-10"	U
s64(E)	12	# 5	6'-0"	U
s65(E)	10	# 5	13'-11"	□
sp40	5	# 3	24'-8"	~
sp41(E)	2	# 3	26'-11"	~
sp42(E)	2	# 3	28'-3"	~
sp43(E)	1	# 3	25'-8"	~
u60(E)	17	# 5	10'-0"	—
v60	50	# 10	24'-4"	—
v61(E)	50	# 10	21'-8"	—
v62(E)	20	# 10	28'-11"	—
v63(E)	20	# 10	30'-3"	—
v64(E)	10	# 10	27'-8"	—
Concrete Structures		Cu. Yd.	64.6	
Reinforcement Bars		Pound	6,020	
Reinforcement Bars, Epoxy Coated		Pound	16,490	
Drilled Shaft in Soil		Cu. Yd.	34.3	
Drilled Shaft in Rock		Cu. Yd.	7.1	

** Length is height of spiral.

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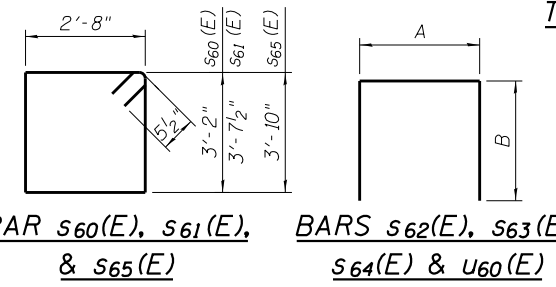
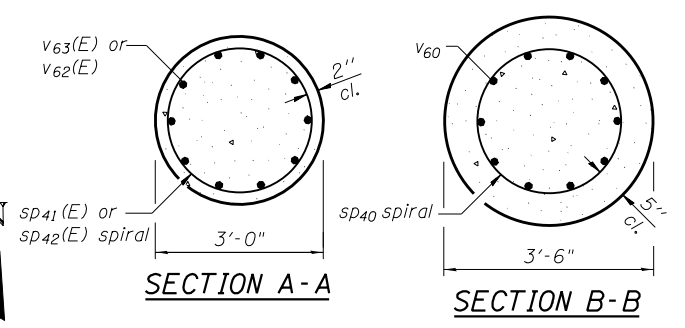
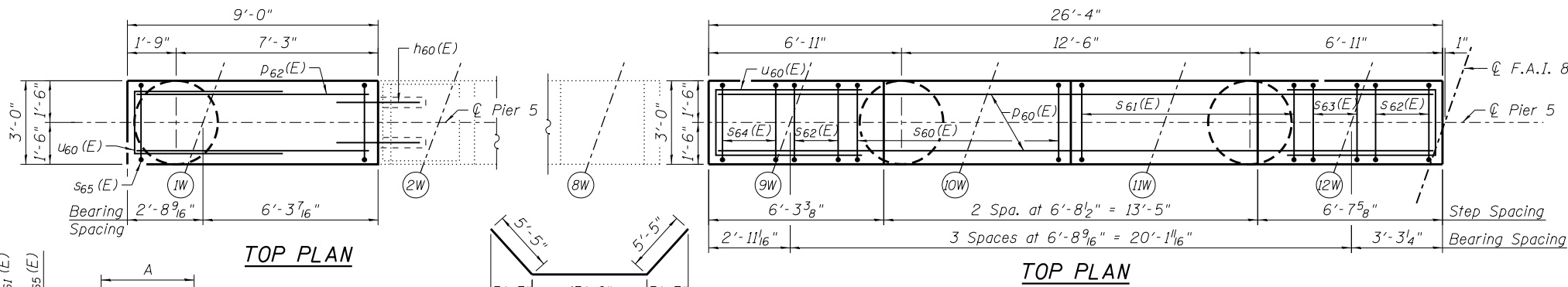
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

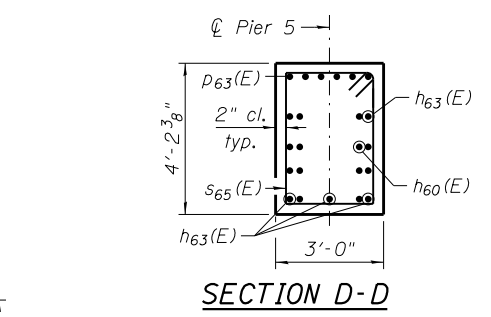
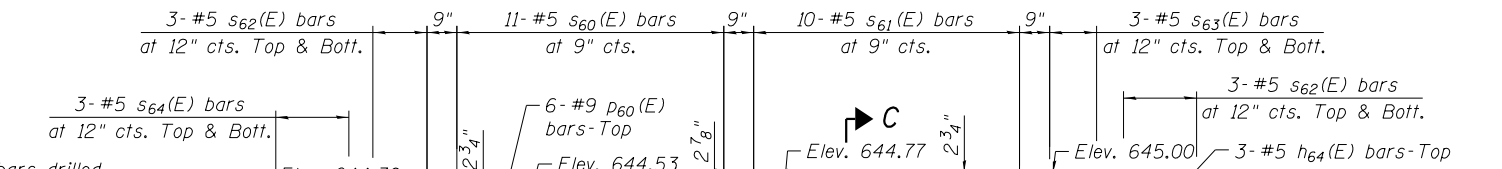
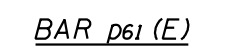
**PIERS 5E
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-92 OF S-118 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

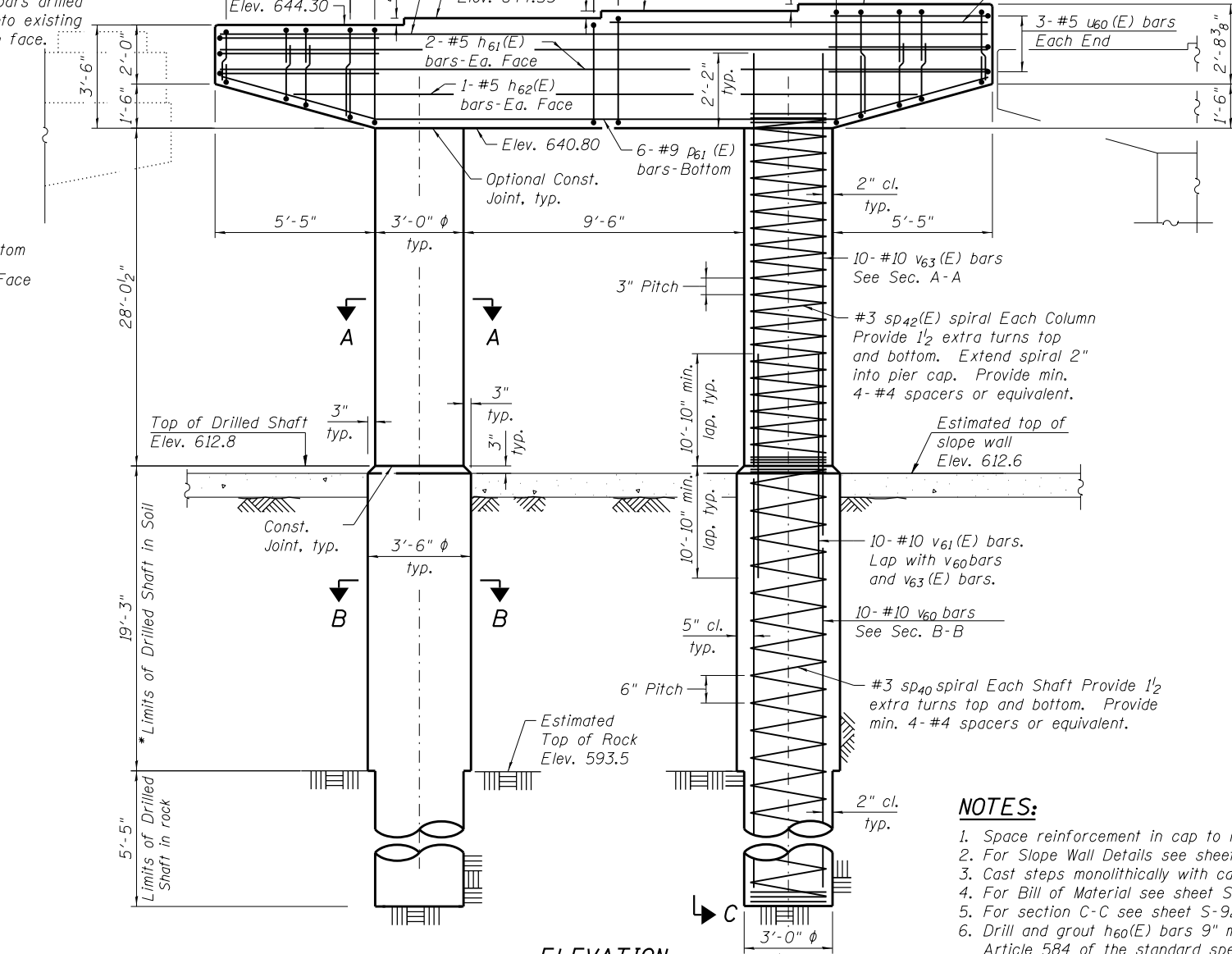
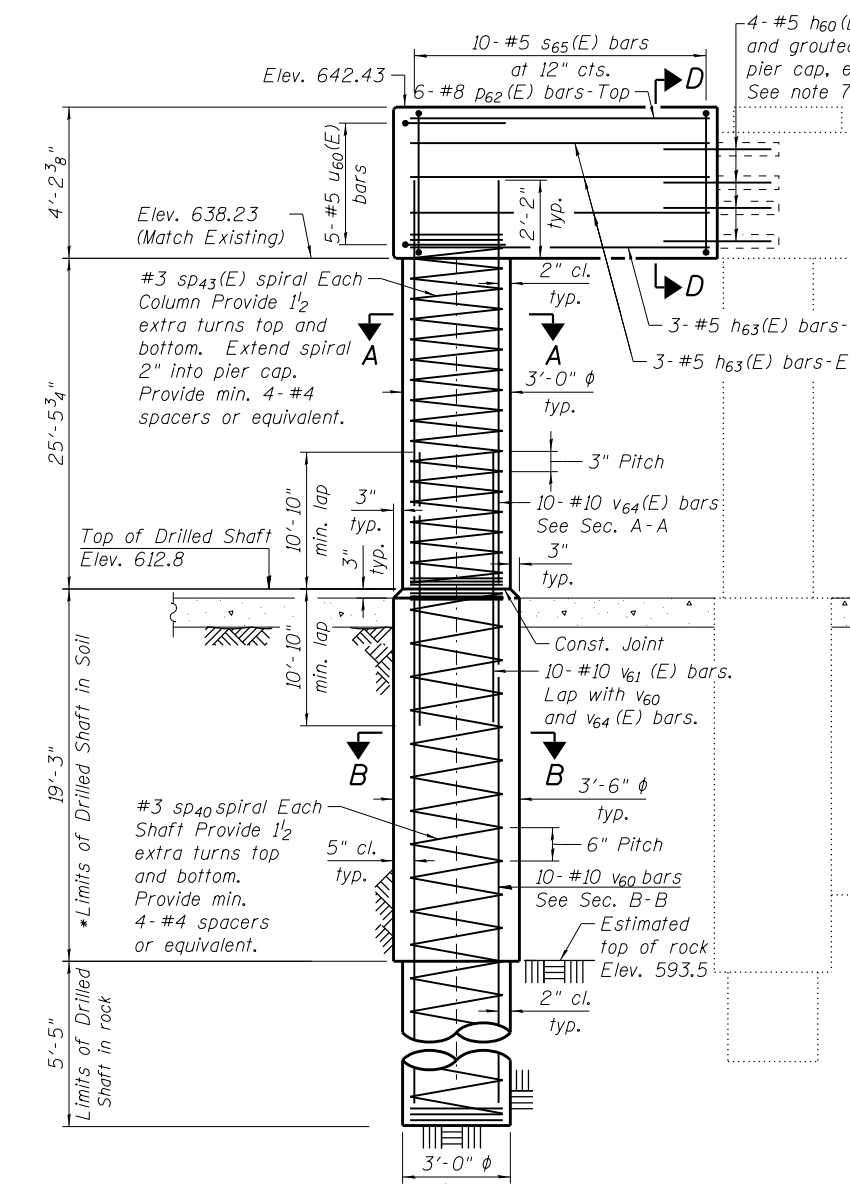
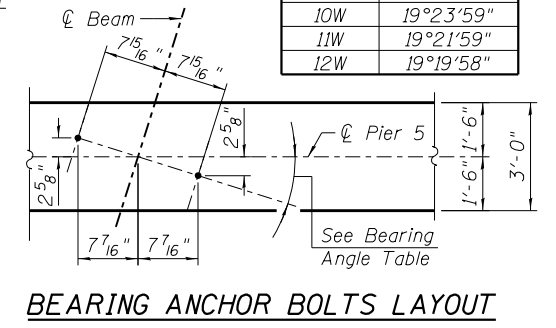


Bar	A	B
s62(E)	2'-8"	2'-4"
s63(E)	2'-8"	3'-1"
s64(E)	2'-8"	1'-8"
u60(E)	2'-8"	3'-8"



BEARING ANGLE TABLE

Beam No.	Bearing Angle
1W	19°42'20"
9W	19°26'00"
10W	19°23'59"
11W	19°21'59"
12W	19°19'58"



- NOTES:**
- Space reinforcement in cap to miss anchor bolts.
 - For Slope Wall Details see sheet S-108.
 - Cast steps monolithically with cap.
 - For Bill of Material see sheet S-92.
 - For section C-C see sheet S-92.
 - Drill and grout h60(E) bars 9" min. in accordance with Article 584 of the standard specifications. Cost included with Reinforcement Bars, Epoxy Coated.

Minimum Lap
 #5 Bars = 3'-3"
 #10 Bars = 10'-10"

ELEVATION (Looking North)
 * The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

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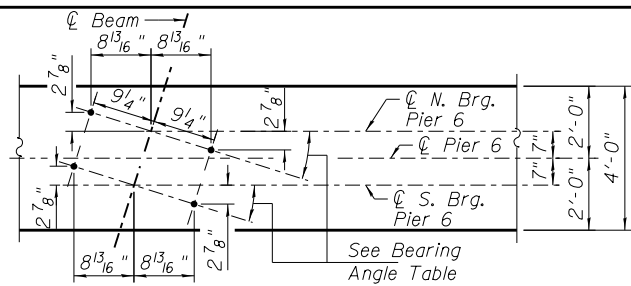
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIERS 5W
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 568
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

SHEET NO. S-93 OF S-118 SHEETS

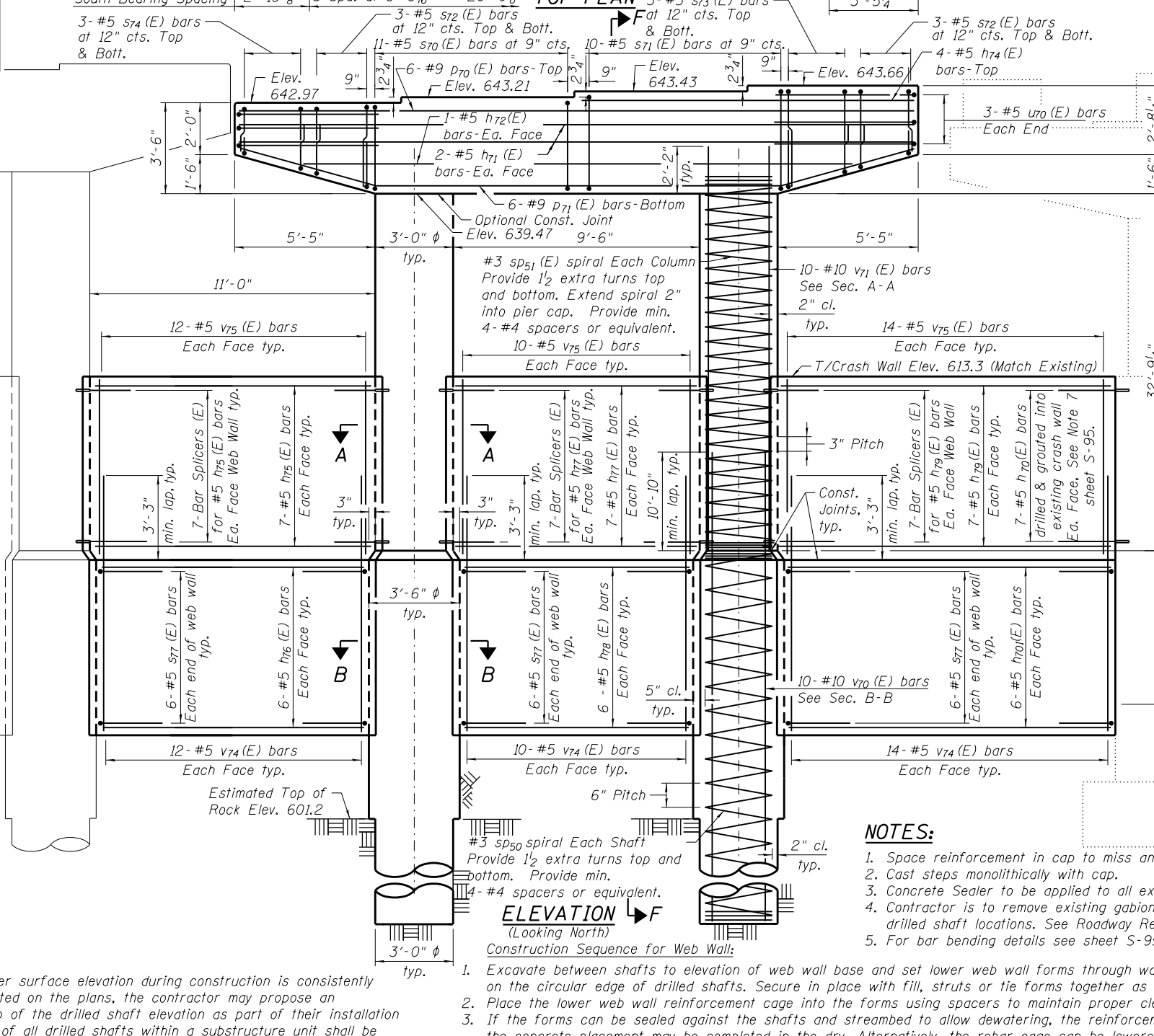
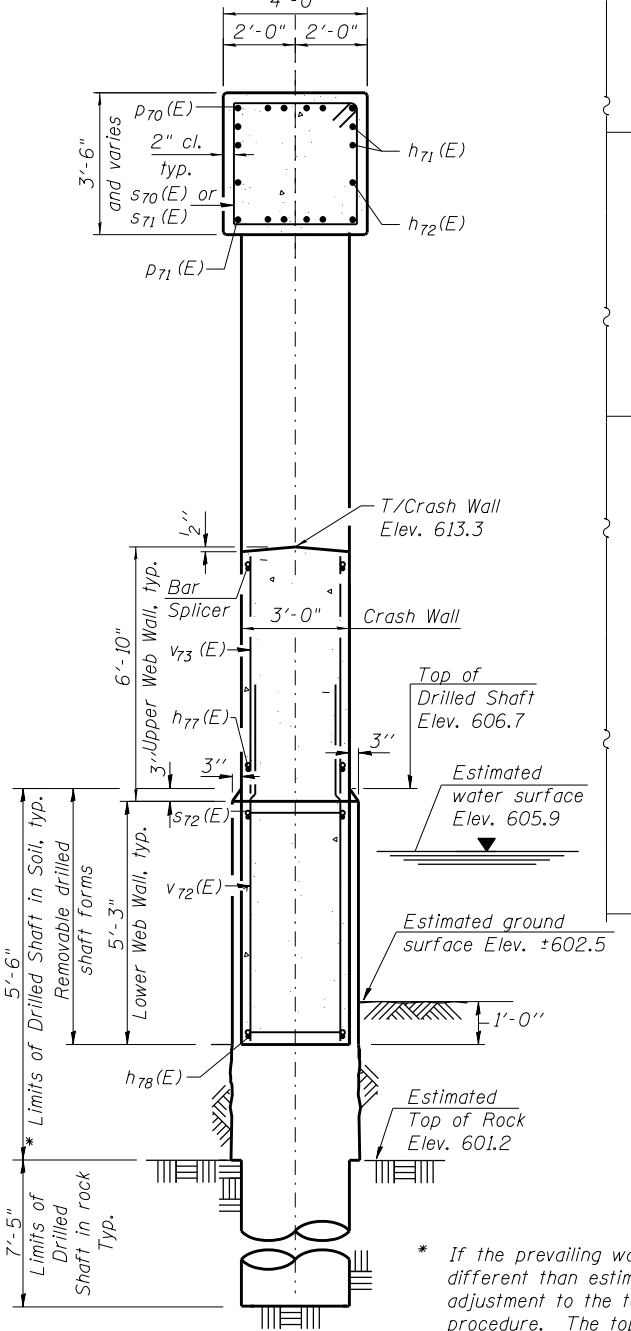
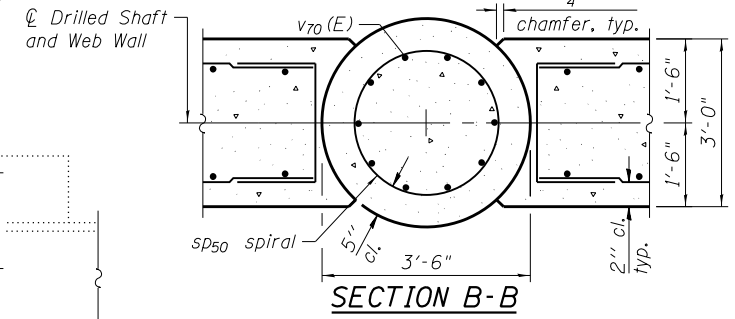
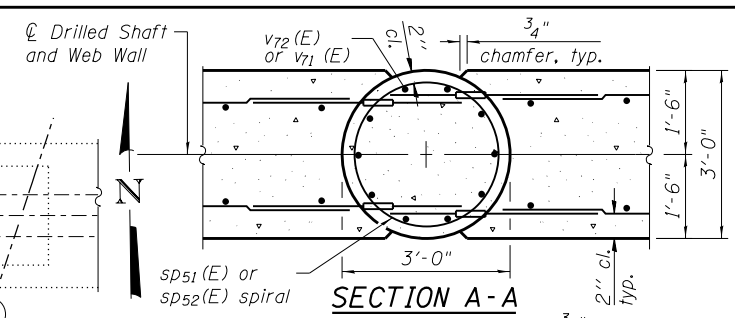
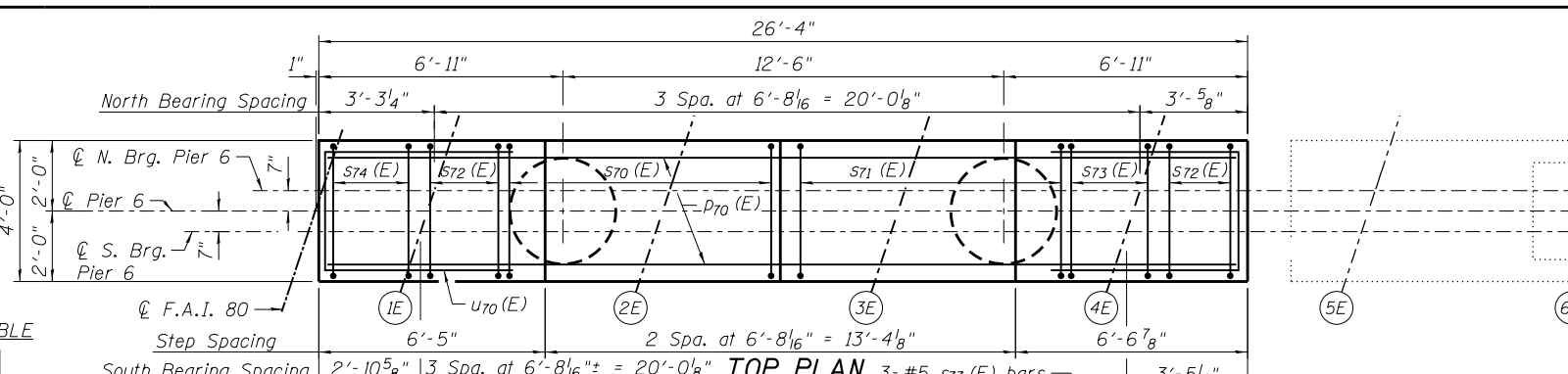


SOUTH BEARING ANGLE TABLE

Beam No.	Bearing Angle
1E	18°21'42"
2E	18°19'49"
3E	18°17'56"
4E	18°16'04"

NORTH BEARING ANGLE TABLE

Beam No.	Bearing Angle
1E	18°20'36"
2E	18°18'43"
3E	18°16'50"
4E	18°14'58"



BILL OF MATERIAL

Bar No.	Size	Length	Shape
h70(E)	50	# 5	2'-9"
h71(E)	8	# 5	26'-0"
h72(E)	4	# 5	20'-9"
h73(E)	10	# 5	8'-8"
h74(E)	8	# 5	12'-11"
h75(E)	14	# 5	10'-8"
h76(E)	12	# 5	10'-2"
h77(E)	28	# 5	9'-2"
h78(E)	24	# 5	8'-8"
h79(E)	14	# 5	12'-8"
h70(E)	12	# 5	12'-5"
h702(E)	14	# 5	13'-11"
h703(E)	12	# 5	13'-8"
h704(E)	14	# 5	5'-5"
p70(E)	12	# 9	26'-0"
p71(E)	12	# 9	26'-4"
p72(E)	6	# 8	8'-8"
s70(E)	22	# 5	14'-7"
s71(E)	20	# 5	15'-6"
s72(E)	24	# 5	8'-4"
s73(E)	12	# 5	9'-10"
s74(E)	12	# 5	7'-0"
s75(E)	6	# 5	16'-7"
s76(E)	10	# 5	15'-7"
s77(E)	60	# 5	7'-8"
sp50	5	# 3	12'-11"
sp51(E)	2	# 3	33'-0"
sp52(E)	2	# 3	34'-4"
sp53(E)	1	# 3	31'-11"
u70(E)	16	# 5	11'-0"
v70(E)	50	# 10	23'-9"
v71(E)	20	# 10	35'-0"
v72(E)	20	# 10	36'-4"
v73(E)	10	# 10	33'-11"
v74(E)	134	# 5	8'-4"
v75(E)	134	# 5	6'-5"

5'-6" Limits of Drilled Shaft in Soil, typ. Removable drilled shaft forms

5'-3" Lower Web Wall, typ.

6'-10" Bar Splicer

3'-0" Crash Wall

3'-3" Upper Web Wall, typ.

3'-3" Lower Web Wall, typ.

5'-6" Limits of Drilled Shaft in Rock, typ.

7'-5" Limits of Drilled Shaft in Rock, typ.

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

- NOTES:
- Space reinforcement in cap to miss anchor bolts.
 - Cast steps monolithically with cap.
 - Concrete Sealer to be applied to all exposed faces of new concrete.
 - Contractor is to remove existing gabion mattresses at proposed drilled shaft locations. See Roadway Removal Plans.
 - For bar bending details see sheet S-95.



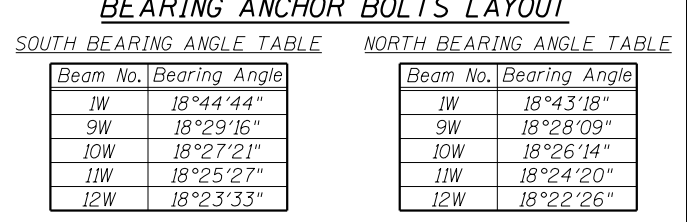
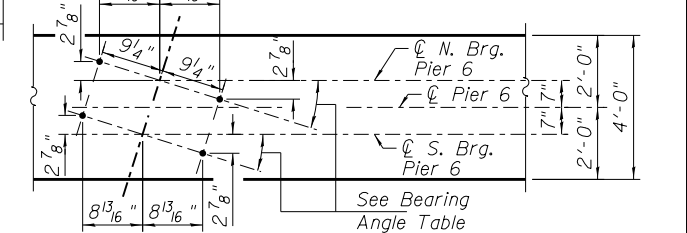
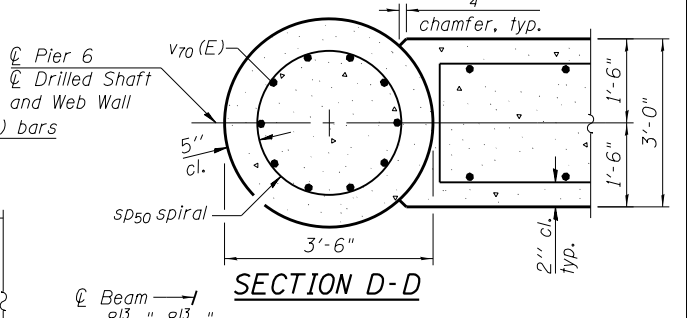
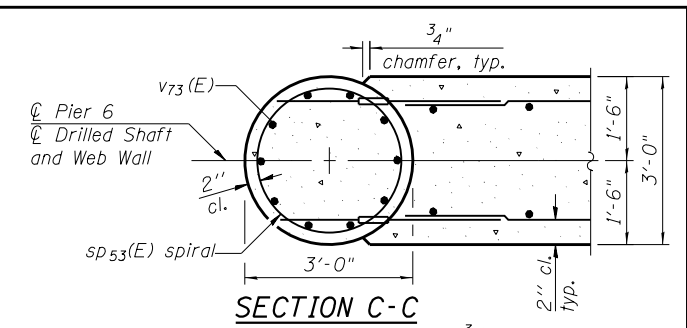
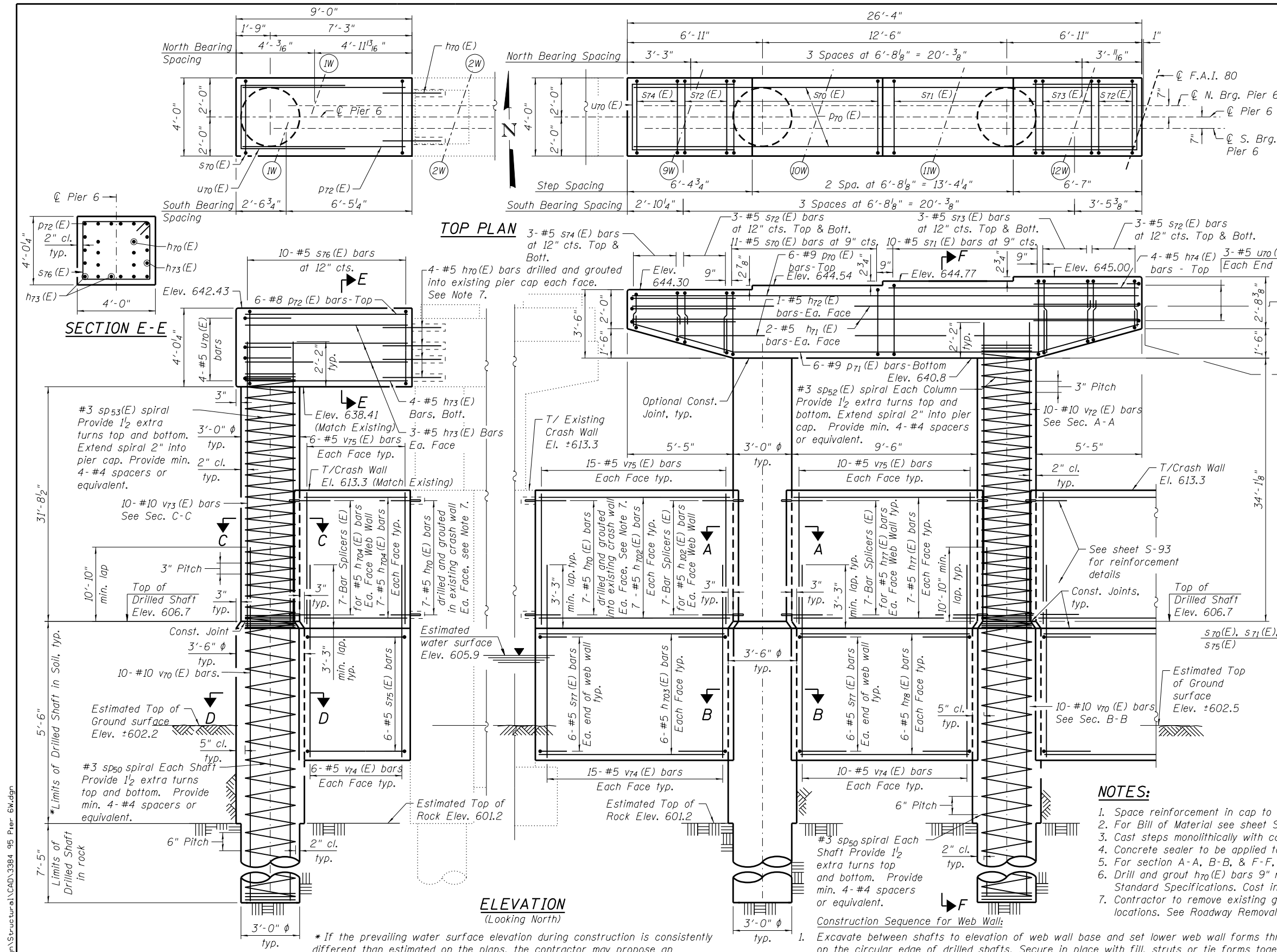
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	CHECKED - MHT	REVISIONS -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 6E
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)
SHEET NO. S-94 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	569

CONTRACT NO. 60N87
ILLINOIS FED. AID PROJECT

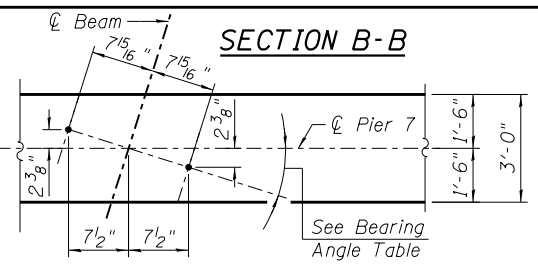


- NOTES:**
- Space reinforcement in cap to miss anchor bolts.
 - For Bill of Material see sheet S-94.
 - Cast steps monolithically with cap.
 - Concrete sealer to be applied to all exposed faces of new concrete.
 - For section A-A, B-B, & F-F, see sheet S-94.
 - Drill and grout h70(E) bars 9" min. in accordance with Article 584 of the Standard Specifications. Cost included with Reinforcement Bars, Epoxy Coated.
 - Contractor to remove existing gabion mattresses at proposed drilled shaft locations. See Roadway Removal Plans.
- Construction Sequence for Web Wall:**
- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
 - Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
 - If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
 - Construct Columns.
 - Construct upper web walls.

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

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 Clorba Group, Inc.
 CONSULTING ENGINEERS
 6507 North Cumberland Avenue
 Suite 402, Chicago, Illinois 60656
 Tel: 773.724.4000
 Fax: 773.724.4014
 Email: clorba@clorba.com

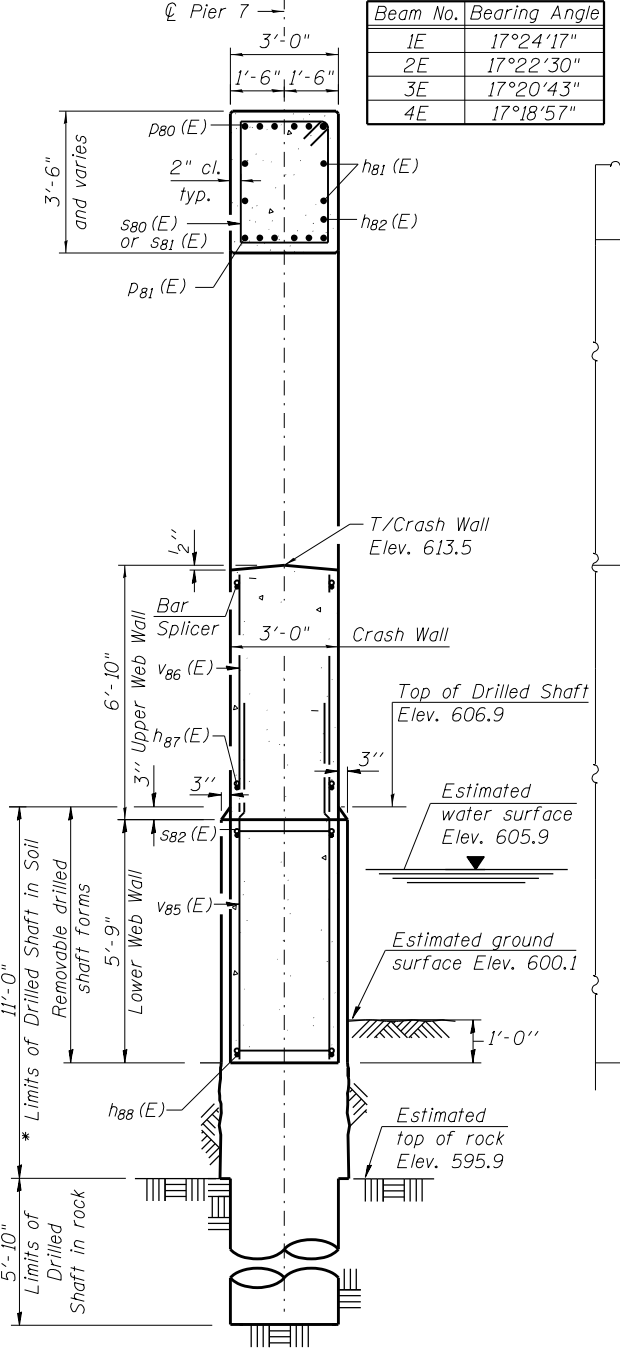
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PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -			SHEET NO. S-95 OF S-118 SHEETS					
	CHECKED - MHT	REVISED -			ILLINOIS FED. AID PROJECT					



BEARING ANCHOR BOLTS LAYOUT

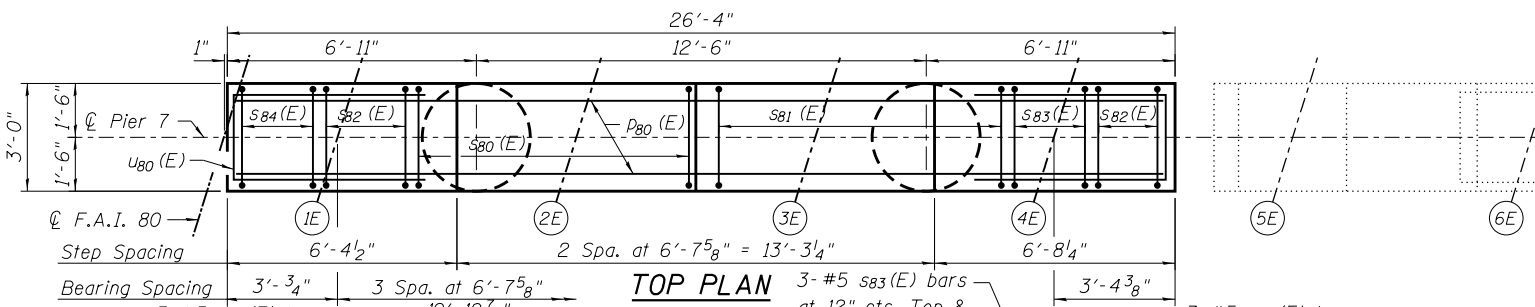
BEARING ANGLE TABLE

Beam No.	Bearing Angle
1E	17°24'17"
2E	17°22'30"
3E	17°20'43"
4E	17°18'57"

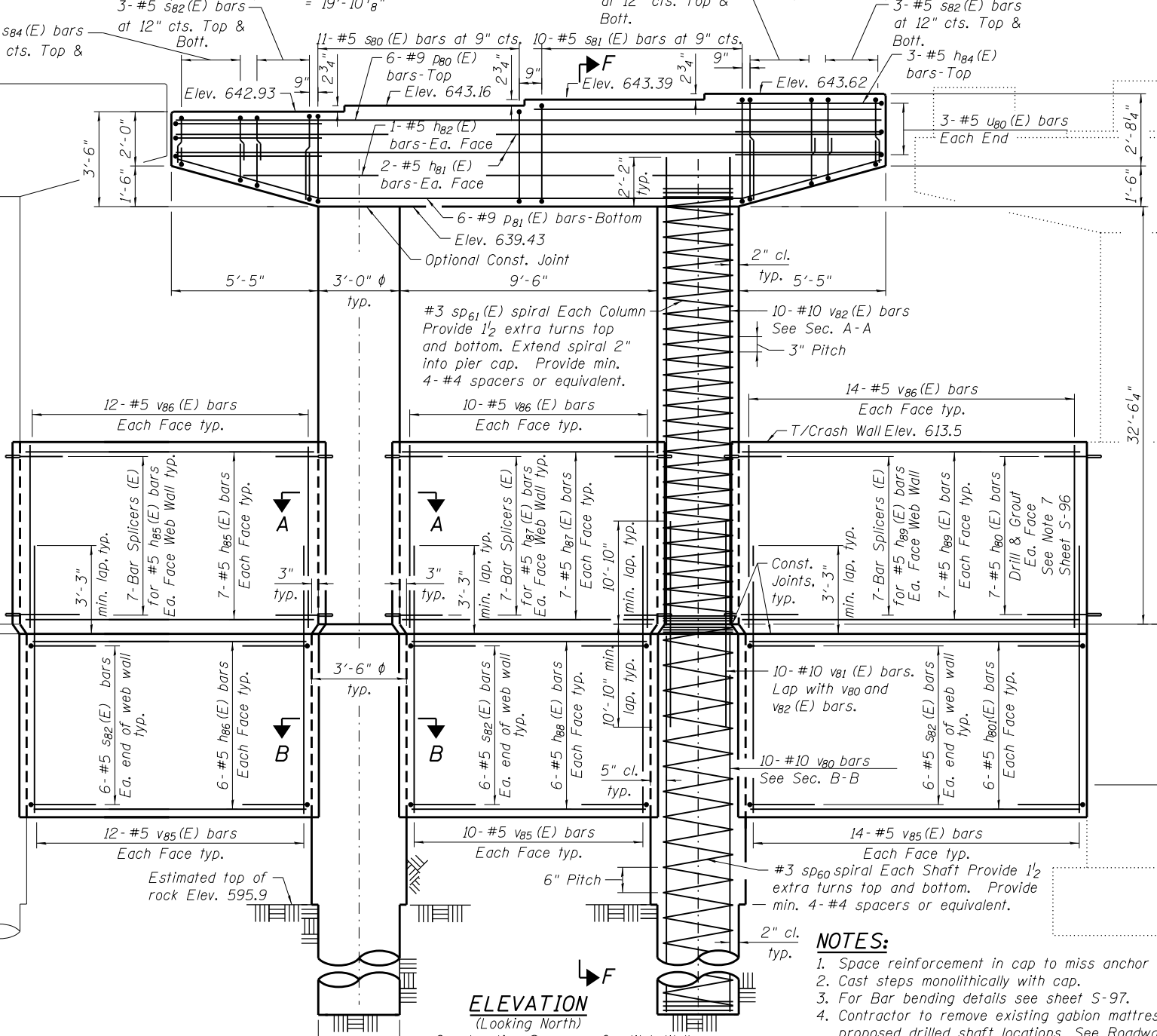


SECTION F-F

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.



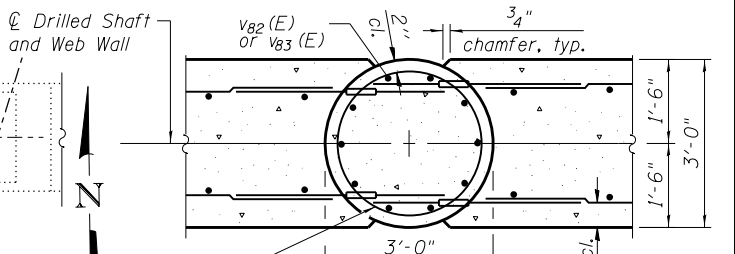
TOP PLAN



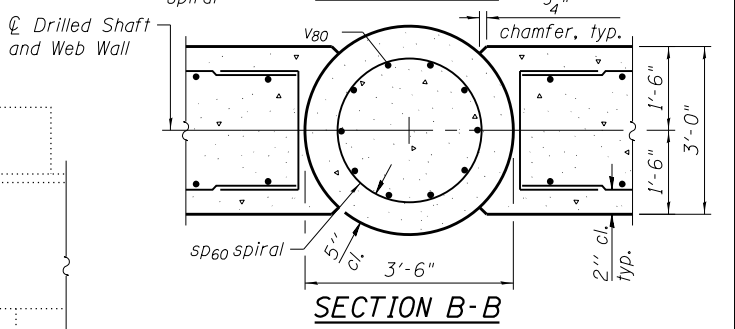
ELEVATION
(Looking North)

Construction Sequence for Web Wall:

- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
- Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
- If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete onto the top of the forms.
- Construct Columns.
- Construct upper web walls.



SECTION A-A



SECTION B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h80 (E)	50	# 5	2'-9"	—
h81 (E)	8	# 5	26'-0"	—
h82 (E)	4	# 5	20'-9"	—
h83 (E)	9	# 5	8'-8"	—
h84 (E)	6	# 5	12'-10"	—
h85 (E)	14	# 5	10'-8"	—
h86 (E)	12	# 5	10'-2"	—
h87 (E)	28	# 5	9'-2"	—
h88 (E)	24	# 5	8'-8"	—
h89 (E)	14	# 5	12'-6"	—
h801 (E)	12	# 5	12'-3"	—
h802 (E)	14	# 5	13'-0"	—
h803 (E)	12	# 5	12'-9"	—
h804 (E)	14	# 5	5'-5"	—
p80 (E)	12	# 9	26'-0"	—
p81 (E)	12	# 9	26'-4"	—
p82 (E)	6	# 8	8'-8"	—
s80 (E)	22	# 5	12'-7"	□
s81 (E)	20	# 5	13'-6"	□
s82 (E)	84	# 5	7'-8"	□
s83 (E)	12	# 5	8'-10"	□
s84 (E)	12	# 5	6'-0"	□
s85 (E)	6	# 5	16'-7"	□
s86 (E)	10	# 5	13'-9"	□
sp60	5	# 3	16'-10"	〰
sp61 (E)	2	# 3	32'-9"	〰
sp62 (E)	2	# 3	34'-1"	〰
sp63 (E)	1	# 3	31'-8"	〰
u80 (E)	17	# 5	10'-0"	□
v80	50	# 10	16'-8"	—
v81 (E)	50	# 10	21'-8"	—
v82 (E)	20	# 10	34'-9"	—
v83 (E)	20	# 10	36'-1"	—
v84 (E)	10	# 10	33'-8"	—
v85 (E)	132	# 5	8'-8"	—
v86 (E)	132	# 5	6'-6"	—
Concrete Structures	Cu. Yd.		156.4	
Reinforcement Bars	Pound		4,140	
Reinforcement Bars, Epoxy Coated	Pound		22,400	
Drilled Shaft in Soil	Cu. Yd.		19.6	
Drilled Shaft in Rock	Cu. Yd.		7.7	

** Length is height of spiral.

Minimum Lap
#5 Bars = 3'-3"
#10 Bars = 10'-10"

NOTES:

- Space reinforcement in cap to miss anchor bolts.
- Cast steps monolithically with cap.
- For Bar bending details see sheet S-97.
- Contractor to remove existing gabion mattresses at proposed drilled shaft locations. See Roadway Removal Plans.

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 Clorba Group, Inc.
 CONSULTING ENGINEERS
 650 North Chestnut Street
 Suite 402, Chicago, Illinois 60660
 Tel: 312.724.4000
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 Email: clorba@clorba.com

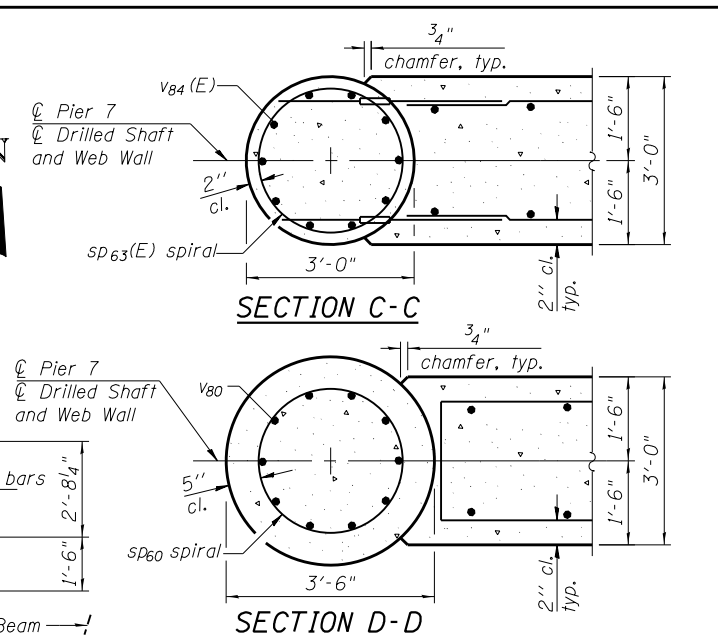
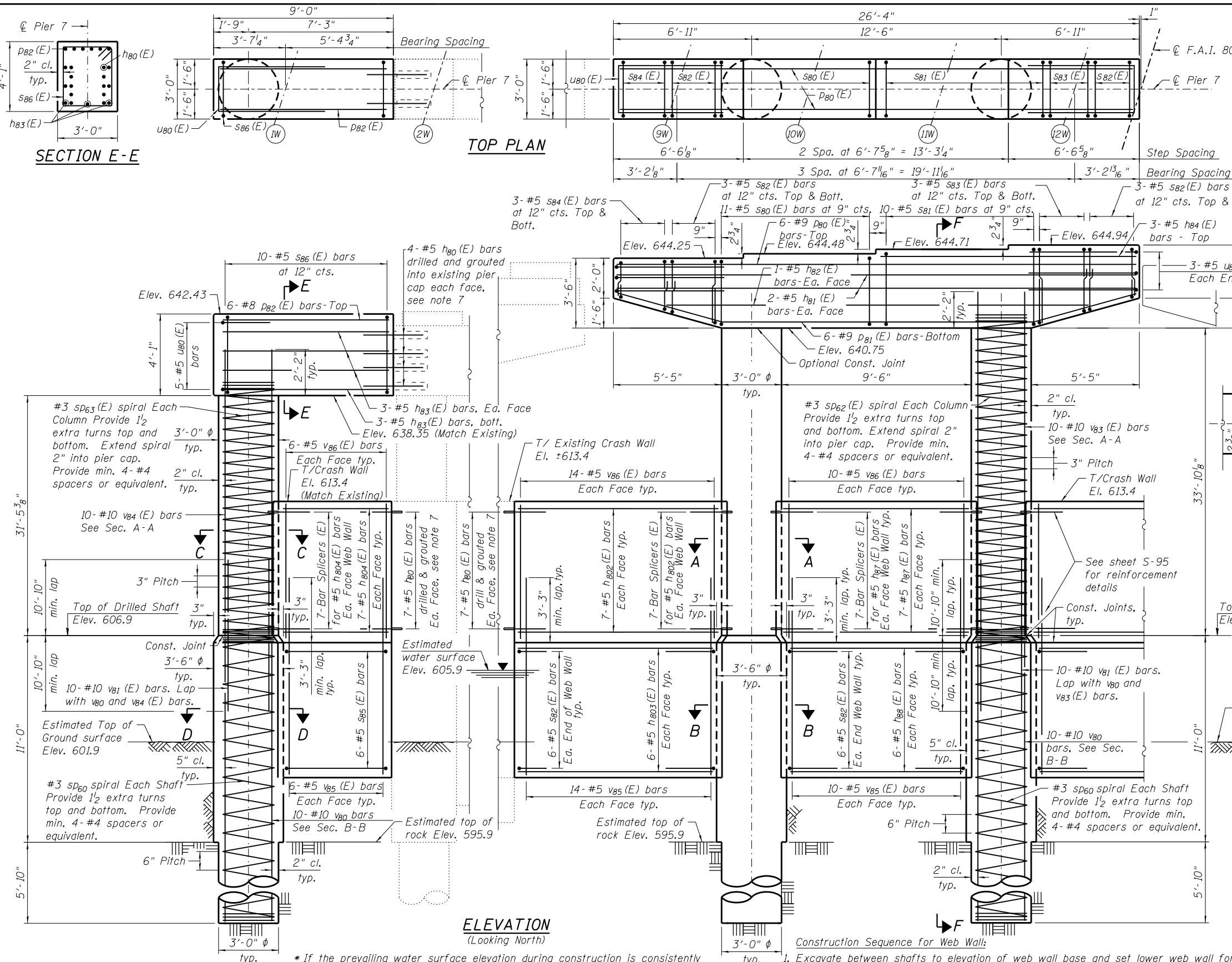
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 7E
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-96 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	571
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



BEARING ANGLE TABLE

Beam No.	Bearing Angle
1W	17°44'45"
9W	17°31'25"
10W	17°29'37"
11W	17°27'49"
12W	17°26'01"

BEARING ANCHOR BOLTS LAYOUT

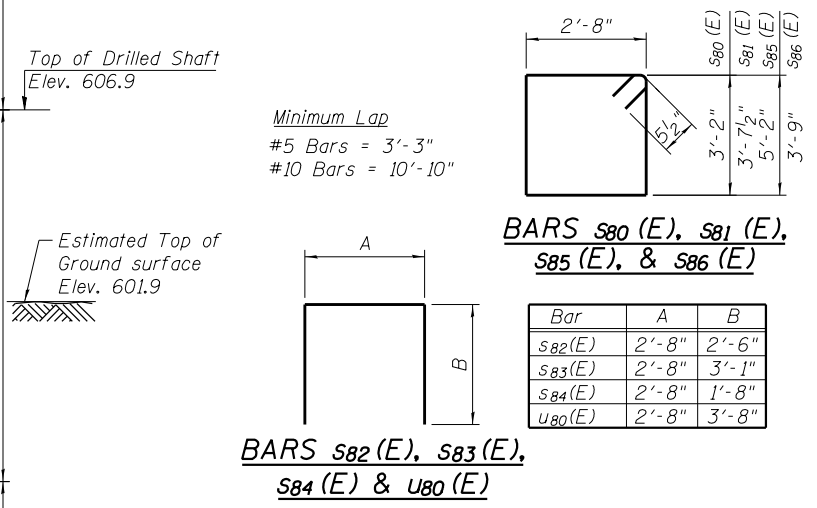
Diagram showing bolt layout with dimensions: 7 1/2", 7 1/2", 2 3/8", 7 1/2", 7 1/2".

BAR p81 (E)

Diagram showing bar lap with dimensions: 2'-8", 3'-2", 3'-7 1/2", 5'-2", 3'-9".

BARS s80 (E), s81 (E), s85 (E), & s86 (E)

Bar	A	B
s82(E)	2'-8"	2'-6"
s83(E)	2'-8"	3'-1"
s84(E)	2'-8"	1'-8"
u80(E)	2'-8"	3'-8"



* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

- Construction Sequence for Web Wall:**
- Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
 - Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
 - If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
 - Construct Columns.
 - Construct upper web walls.

- NOTES:**
- Space reinforcement in cap to miss anchor bolts.
 - Cast steps monolithically with cap.
 - For section A-A, B-B & F-F see sheet S-96.
 - For Bill of Material see sheet S-96.
 - Drill and grout h80(E) bars 9" min. in accordance with Article 584 of the Standard Specifications. Cost included with Reinforcement Bars, Epoxy Coated.
 - Contractor to remove existing gabion mattresses at proposed drilled shaft locations. See Roadway Removal Plans.

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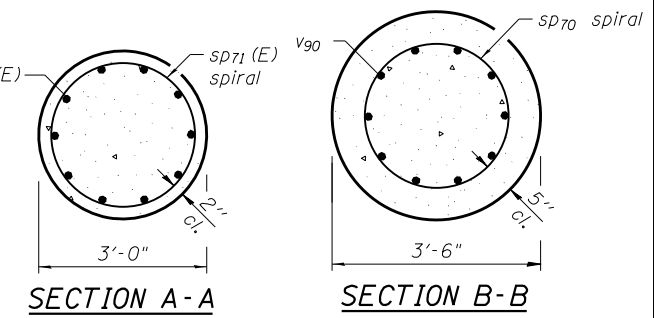
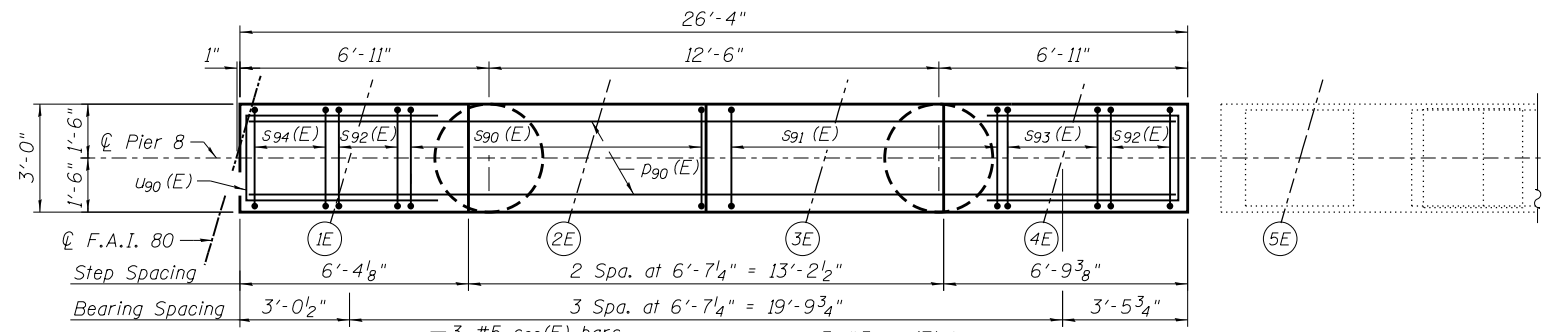
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PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - MHT	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PIERS 7W
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

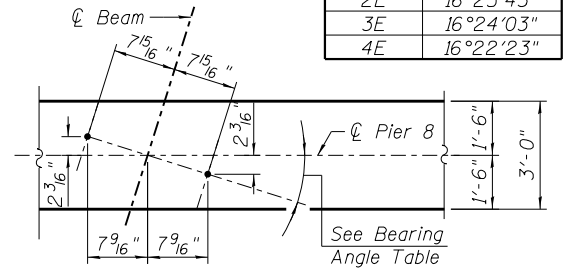
SHEET NO. S-97 OF S-118 SHEETS

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 572
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



BEARING ANGLE TABLE

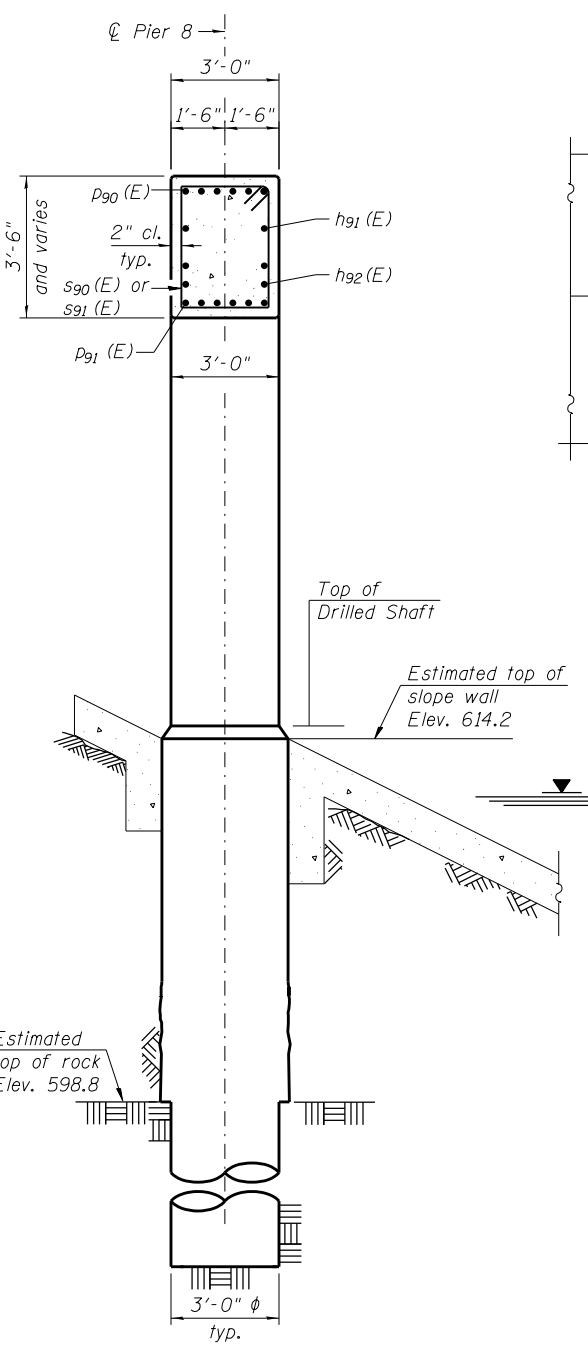
Beam No.	Bearing Angle
1E	16°27'24"
2E	16°25'43"
3E	16°24'03"
4E	16°22'23"



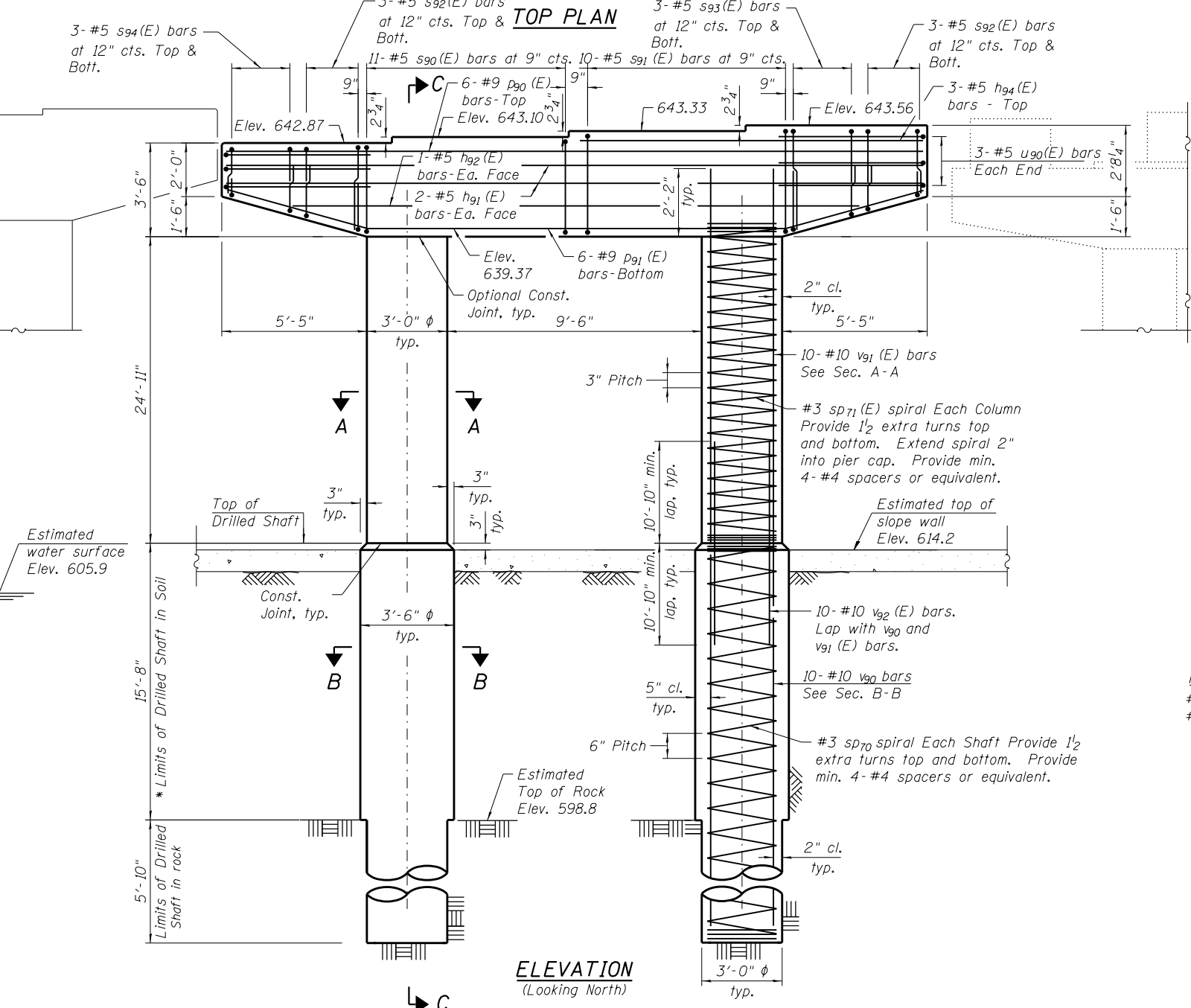
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h90(E)	8	# 5	2'-9"	—
h91(E)	8	# 5	26'-0"	—
h92(E)	4	# 5	20'-9"	—
h93(E)	9	# 5	8'-8"	—
h94(E)	6	# 5	12'-9"	—
p90(E)	12	# 9	26'-0"	—
p91(E)	12	# 9	26'-4"	—
p92(E)	6	# 8	8'-8"	—
s90(E)	22	# 5	12'-7"	□
s91(E)	20	# 5	13'-6"	□
s92(E)	24	# 5	7'-8"	□
s93(E)	12	# 5	8'-10"	□
s94(E)	12	# 5	6'-0"	□
s95(E)	10	# 5	13'-10"	□
sd70	5	# 3	21'-5"	∩
sd71(E)	2	# 3	25'-1"	∩
sd72(E)	2	# 3	26'-5"	∩
sd73(E)	1	# 3	24'-0"	∩
u90(E)	17	# 5	10'-0"	□
v90	50	# 10	21'-6"	—
v91(E)	20	# 10	27'-1"	—
v92(E)	50	# 10	21'-8"	—
v93(E)	20	# 10	28'-5"	—
v94(E)	10	# 10	26'-0"	—
Concrete Structures		Cu. Yd.	62.0	
Reinforcement Bars		Pound	5,320	
Reinforcement Bars, Epoxy Coated		Pound	16,010	
Drilled Shaft in Soil		Cu. Yd.	28.0	
Drilled Shaft in Rock		Cu. Yd.	7.7	

Minimum Lap
 #5 Bars = 3'-3"
 #10 Bars = 10'-10"



SECTION C-C



ELEVATION
(Looking North)

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. For Slope Wall Details see sheet S-108.
3. Cast steps monolithically with cap.
4. For bar bending details see sheet S-99.

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

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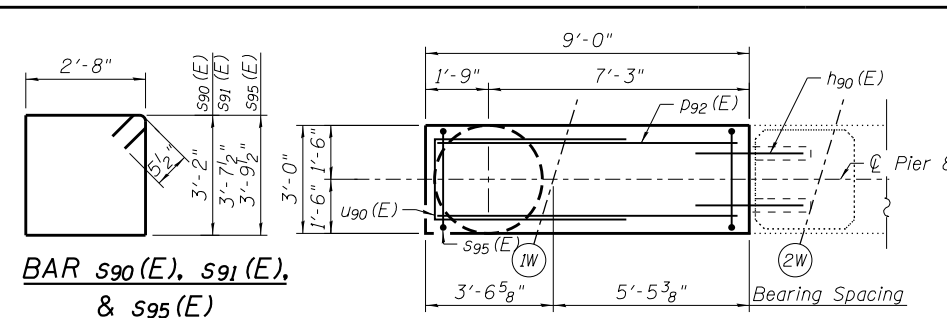
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

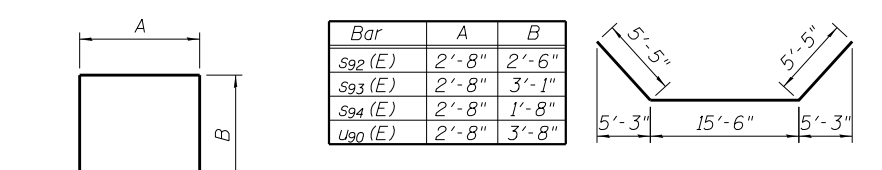
PIERS 8E
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-98 OF S-118 SHEETS

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 573
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

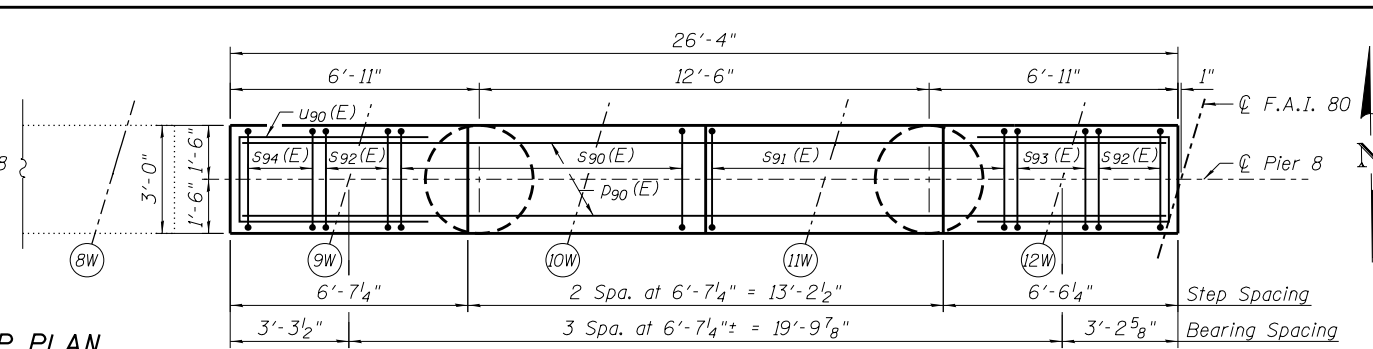


BAR s90(E), s91(E), & s95(E)

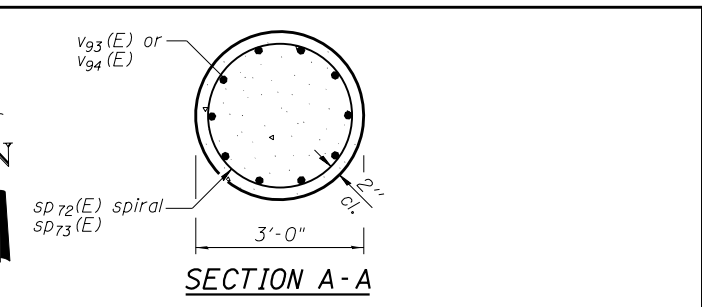


BARS s92(E), s93(E), s94(E), & u90(E)

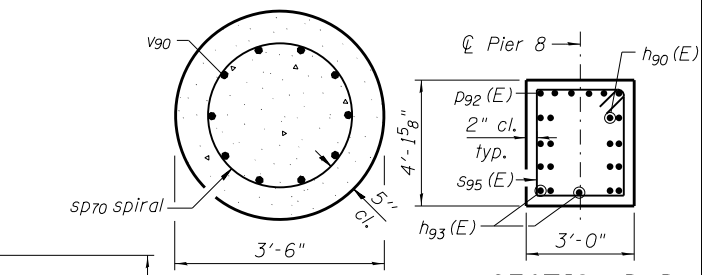
TOP PLAN



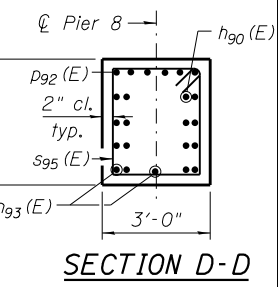
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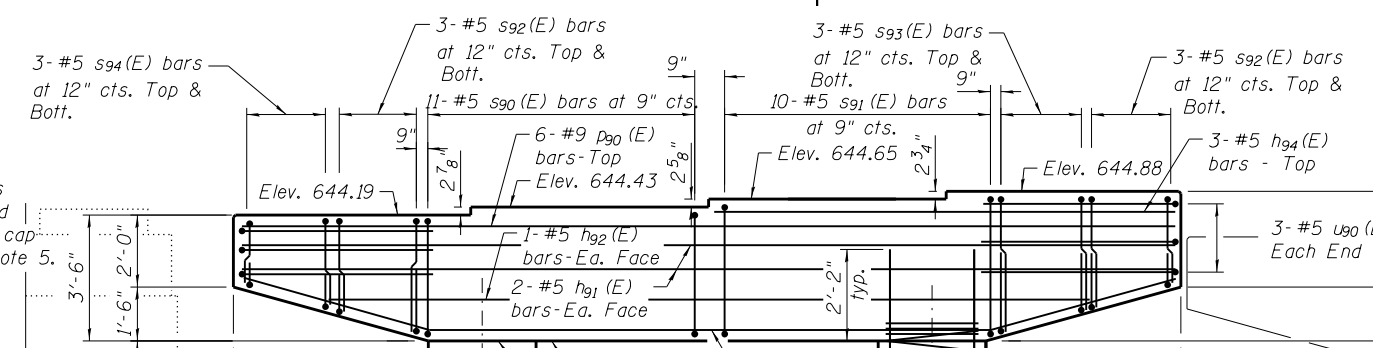
SECTION A-A



SECTION B-B



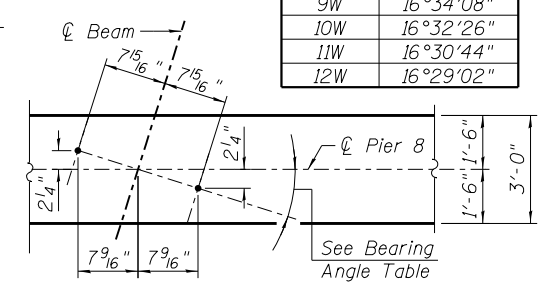
SECTION D-D



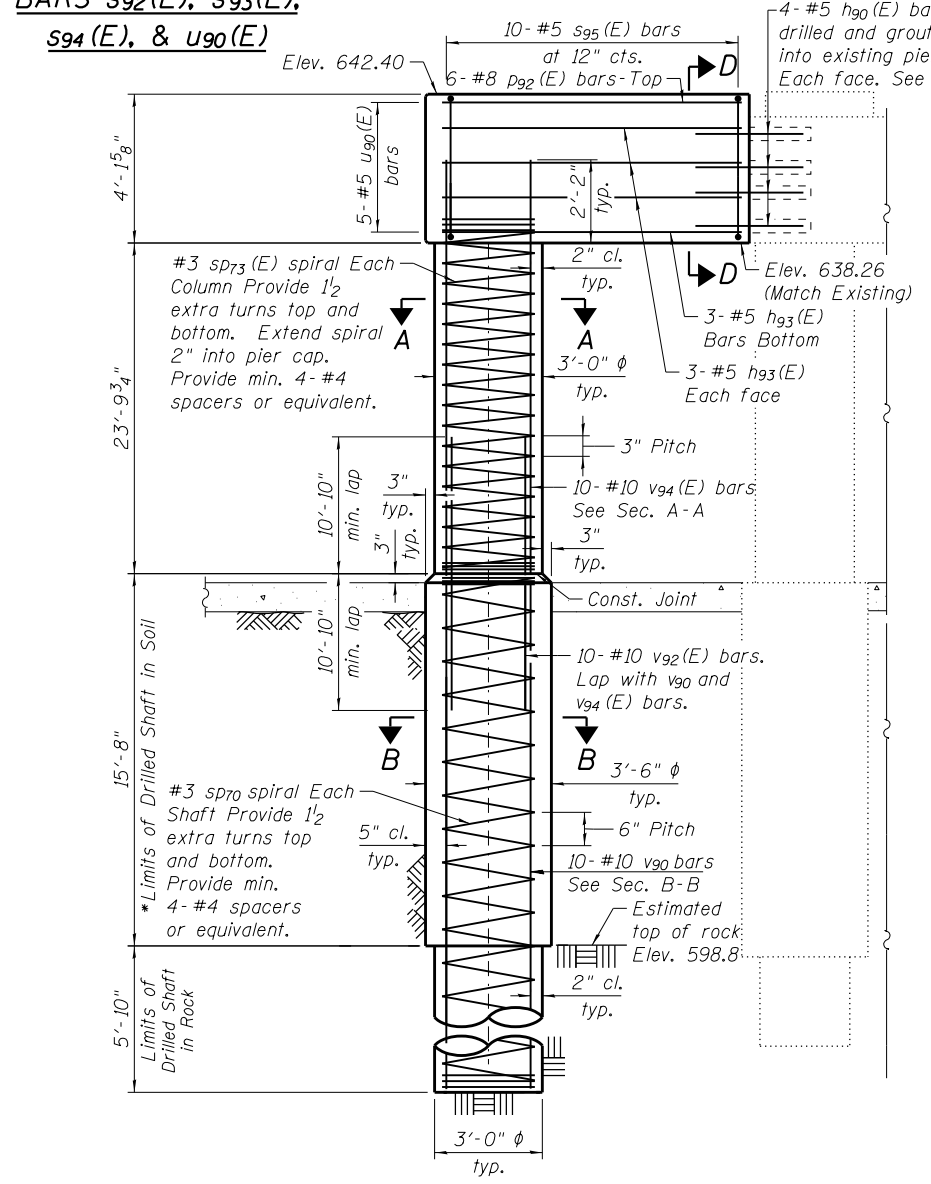
ELEVATION
(Looking North)

BEARING ANGLE TABLE

Beam No.	Bearing Angle
1W	16°47'36"
9W	16°34'08"
10W	16°32'26"
11W	16°30'44"
12W	16°29'02"



BEARING ANCHOR BOLTS LAYOUT



ELEVATION
(Looking North)

* The quantities and reinforcement detailing are based on the top of shaft and the estimated top of rock elevations shown and may change based on the actual top of rock encountered at each shaft and the final top of shaft elevation.

NOTES:

1. Space reinforcement in cap to miss anchor bolts.
2. For Slope Wall Details see sheet S-108.
3. Cast steps monolithically with cap.
4. Drill and grout h90(E) bars 9" min. in accordance with Article 584 of the Standard Specifications. Cost included with Reinforcement Bars, Epoxy Coated.
5. For Bill of Material and Section C-C, see sheet S-98.

Minimum Lap
#5 Bars = 3'-3"
#10 Bars = 10'-10"

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DESIGNED - BWS
CHECKED - MHT
DRAWN - RD
PLOT SCALE = 5/4" = 1'-0"
PLOT DATE = 5/9/2018

DESIGNED - BWS
CHECKED - MHT
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

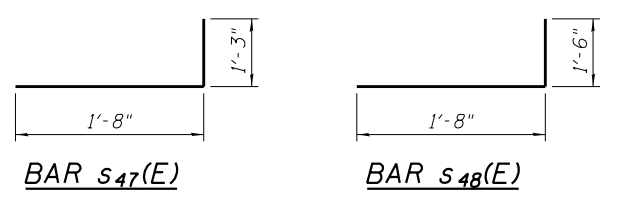
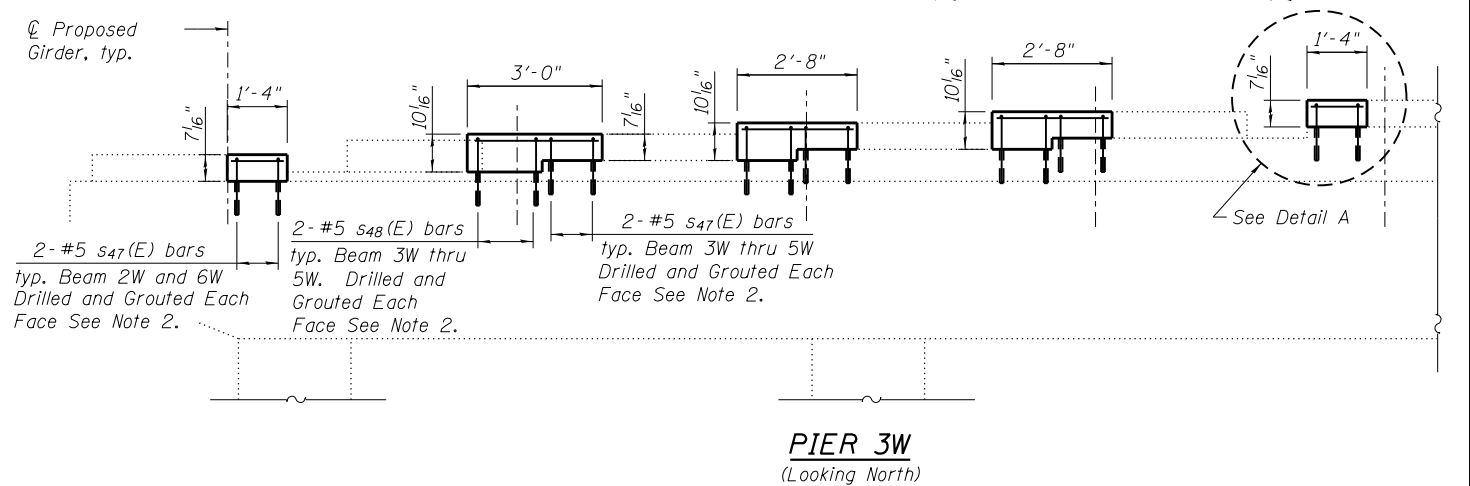
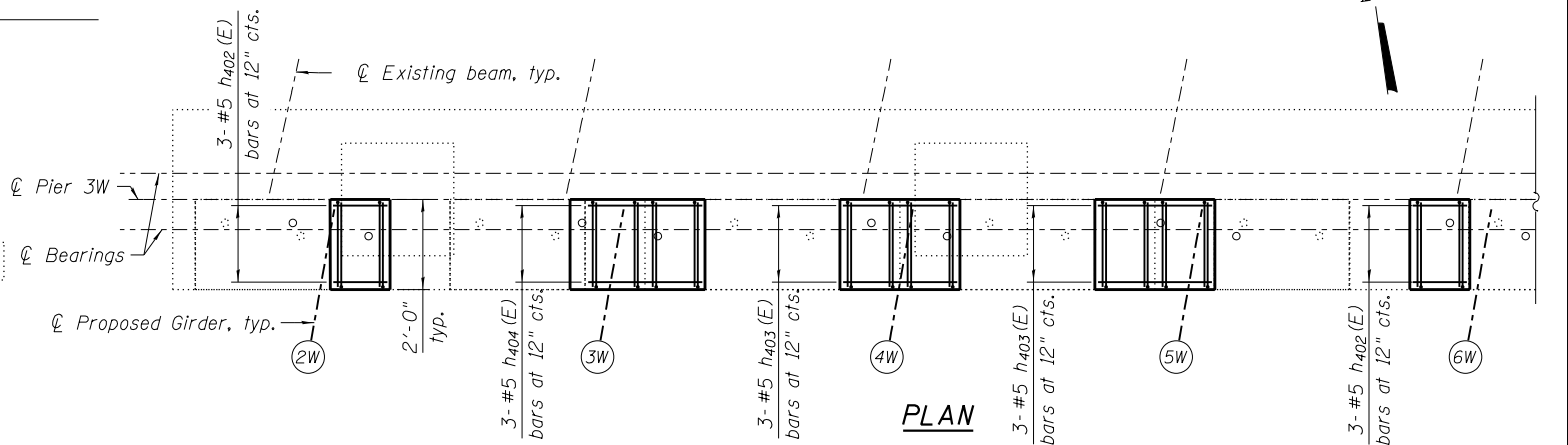
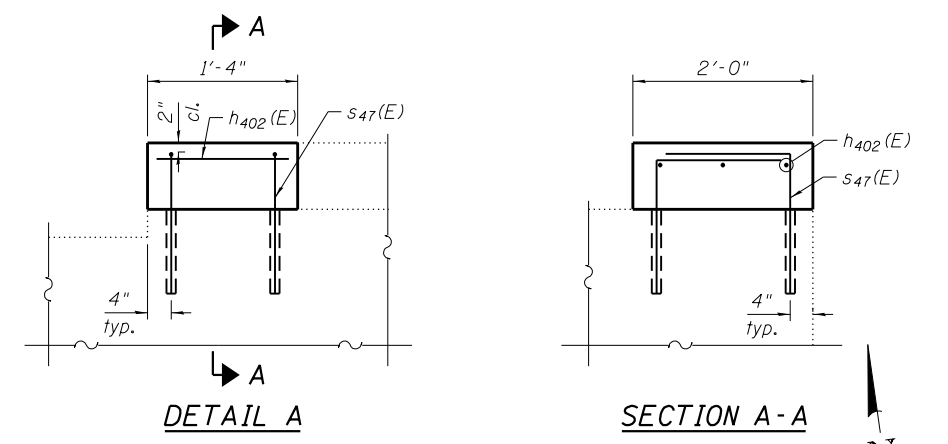
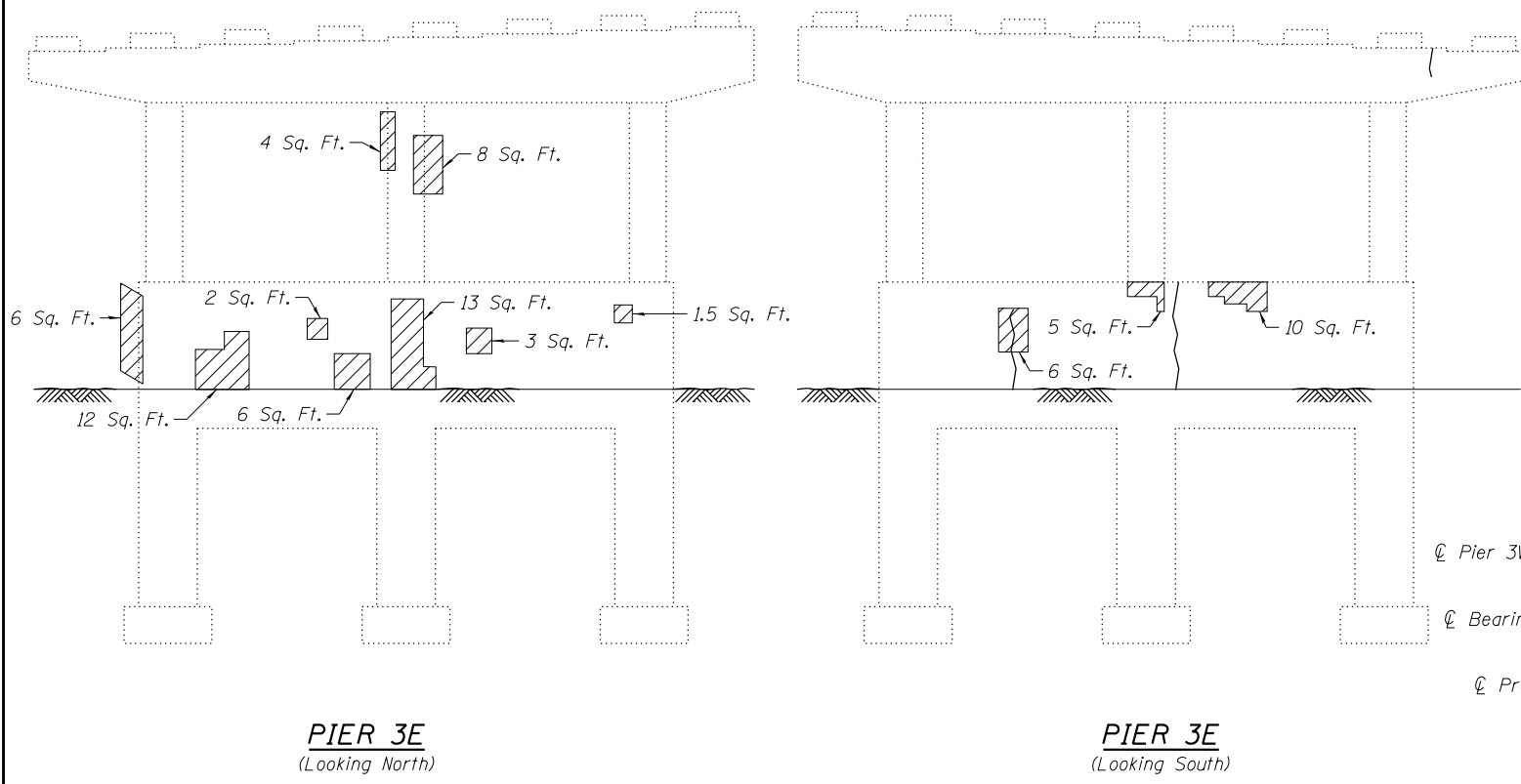
PIERS 8W
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-99 OF S-118 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	574

CONTRACT NO. 60N87
ILLINOIS FED. AID PROJECT

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BILL OF MATERIAL

Bar	No.	Size	Length	Shape	
h402(E)	6	#5	1'-0"	—	
h403(E)	9	#5	2'-4"	—	
h404(E)	9	#5	2'-8"	—	
s47(E)	20	#5	2'-11"	⌋	
s48(E)	12	#5	3'-2"	⌋	
Concrete Structures				Cu. Yd.	0.5
Reinforcement Bars, Epoxy Coated				Pound	130
Structural Repair of Concrete (Depth Equal to or Less than 5")				Sq. Ft.	134

- LEGEND**
- Concrete Removal
 - Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
 - Hairline Crack - Not to be sealed

- NOTES:**
- Repairs of the existing piers shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.
 - Drill and grout s47(E) and s48(E) bars 9" min. in accordance with Article 584 of the Standard Specifications. Cost included with Reinforcement Bars, Epoxy Coated.



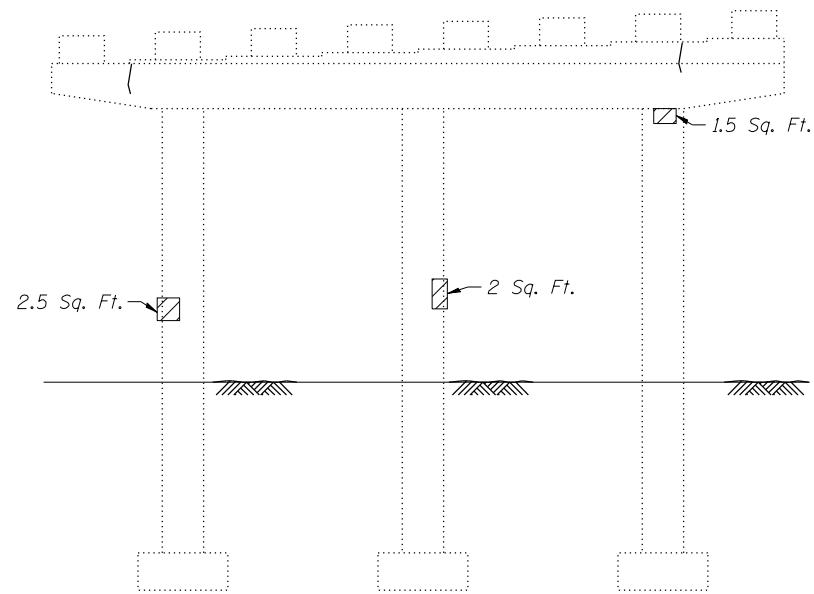
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

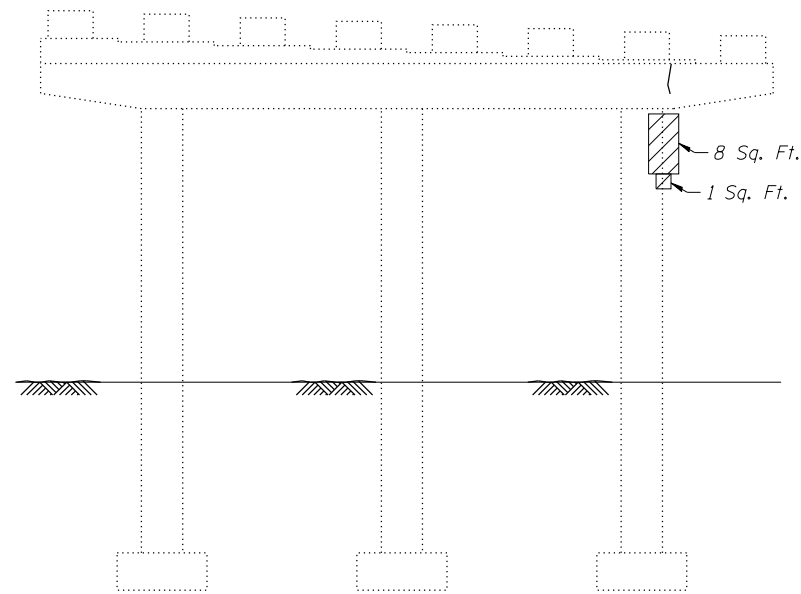
**PIERS 3E AND 3W REPAIRS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-100 OF S-118 SHEETS

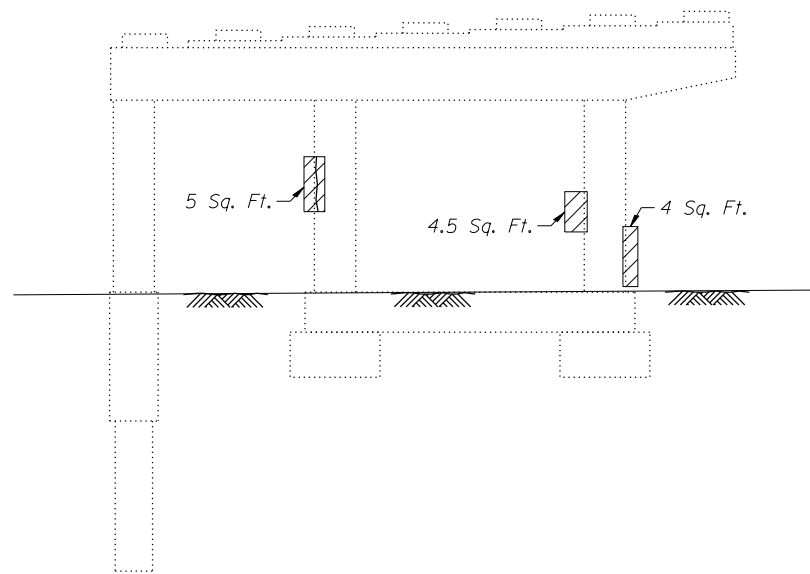
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CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



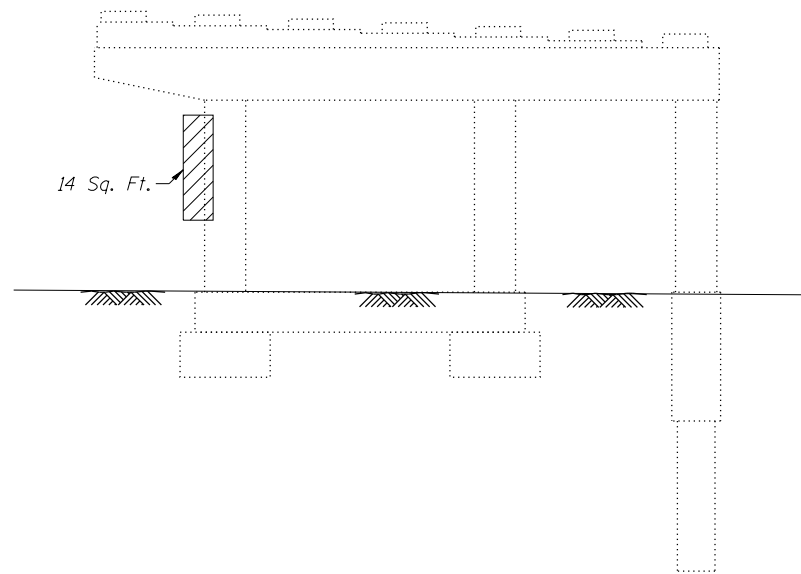
PIER 4E
(Looking North)



PIER 4E
(Looking South)



PIER 4W
(Looking North)



PIER 4W
(Looking South)

NOTES:

- Repairs of the existing piers shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Hairline Crack - Not to be sealed

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	42.5

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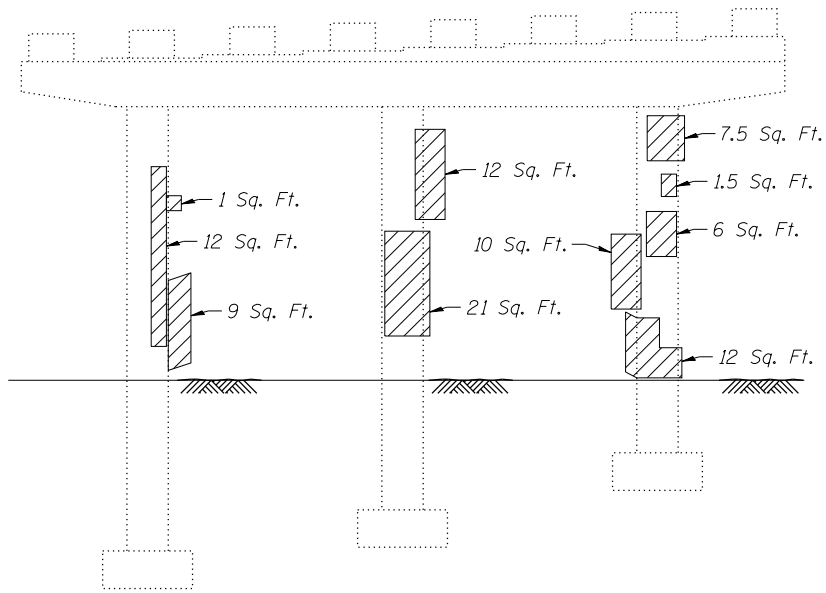
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 4E AND 4W REPAIRS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

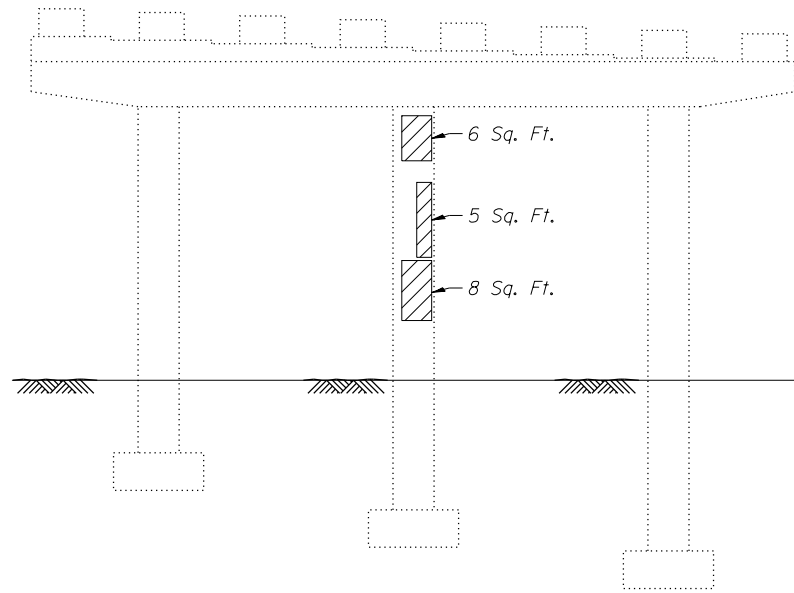
SHEET NO. S-101 OF S-118 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 60N87				

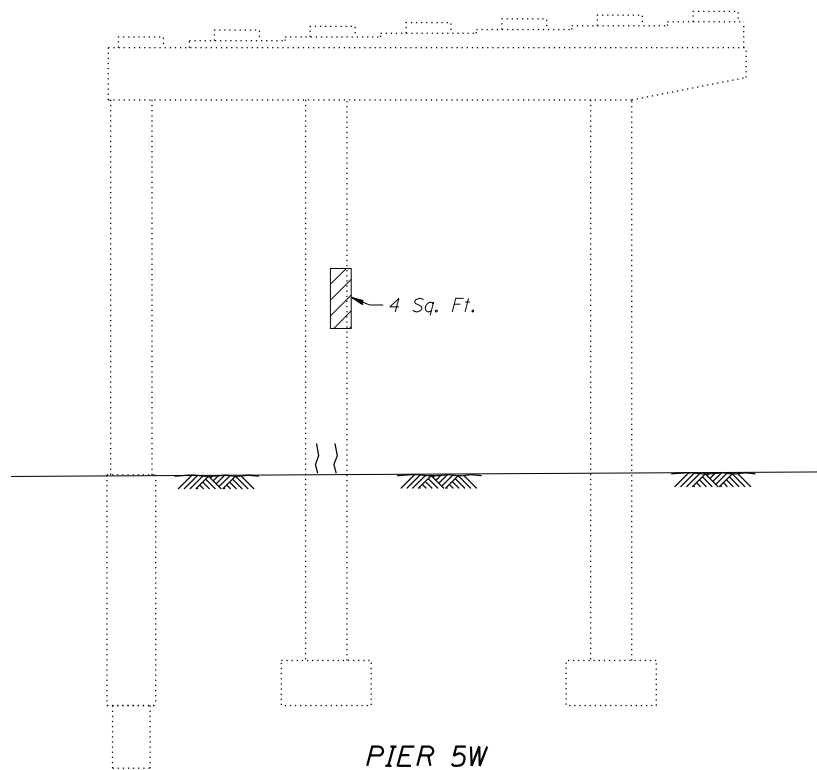
ILLINOIS FED. AID PROJECT



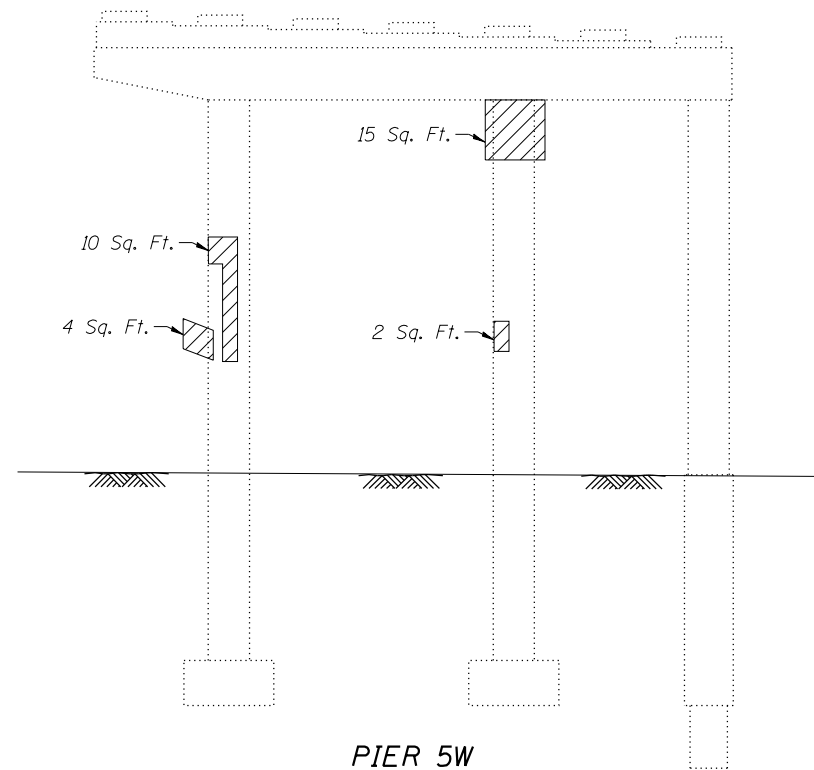
PIER 5E
(Looking North)



PIER 5E
(Looking South)



PIER 5W
(Looking North)



PIER 5W
(Looking South)

NOTES:

- Repairs of the existing piers shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

LEGEND

- Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
- Hairline Crack - Not to be sealed

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	146

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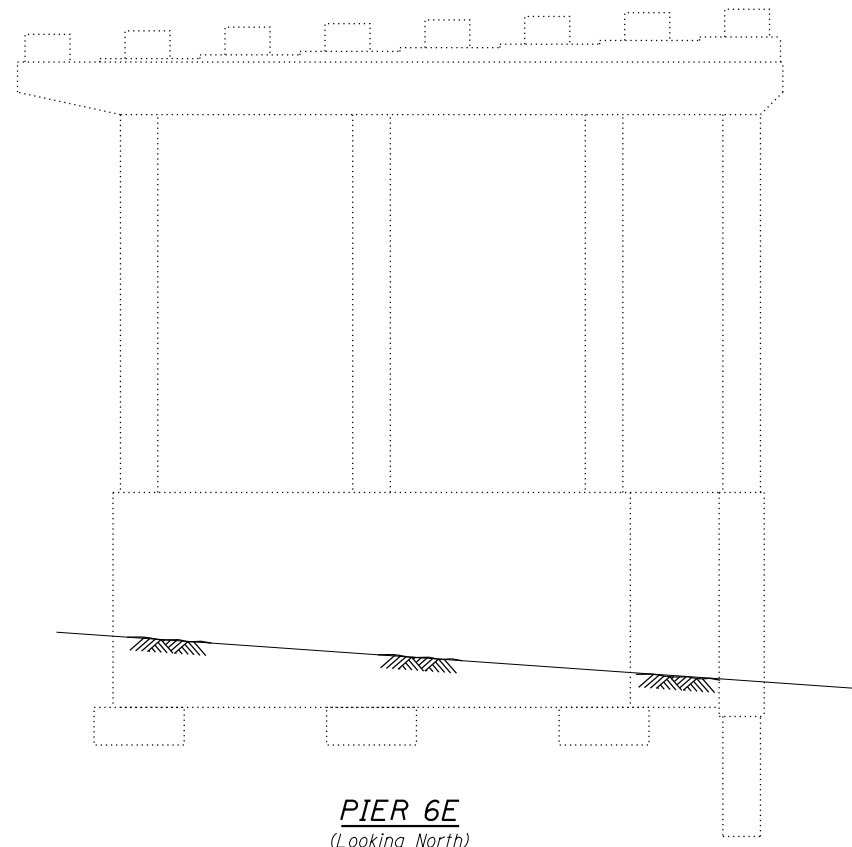


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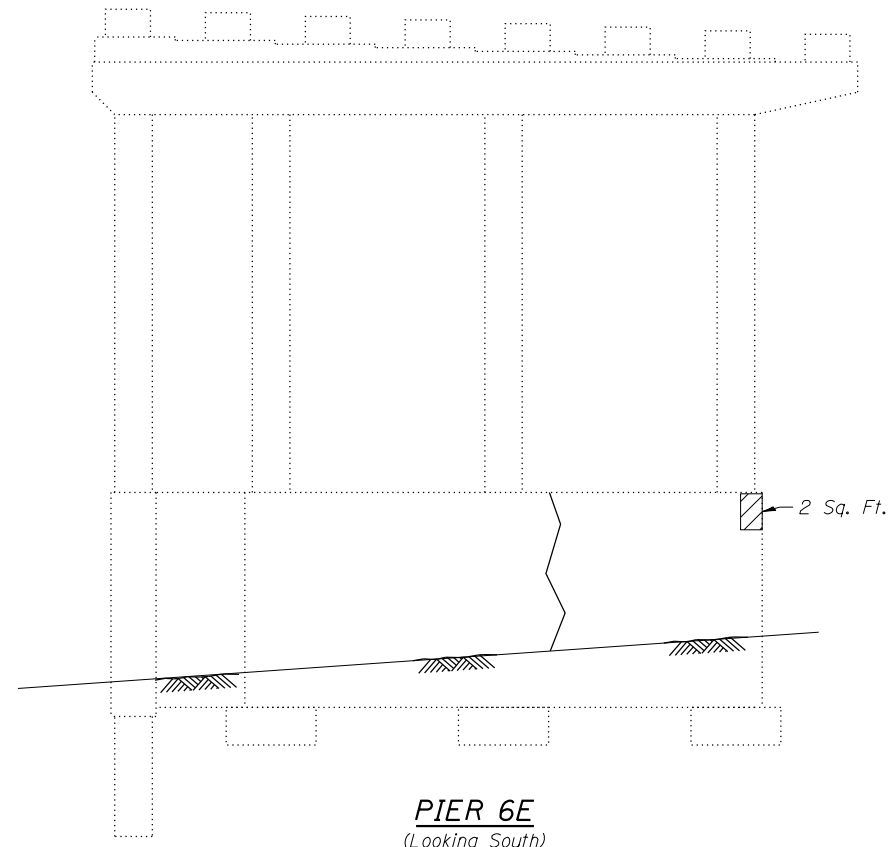
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS 5E AND 5W REPAIRS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

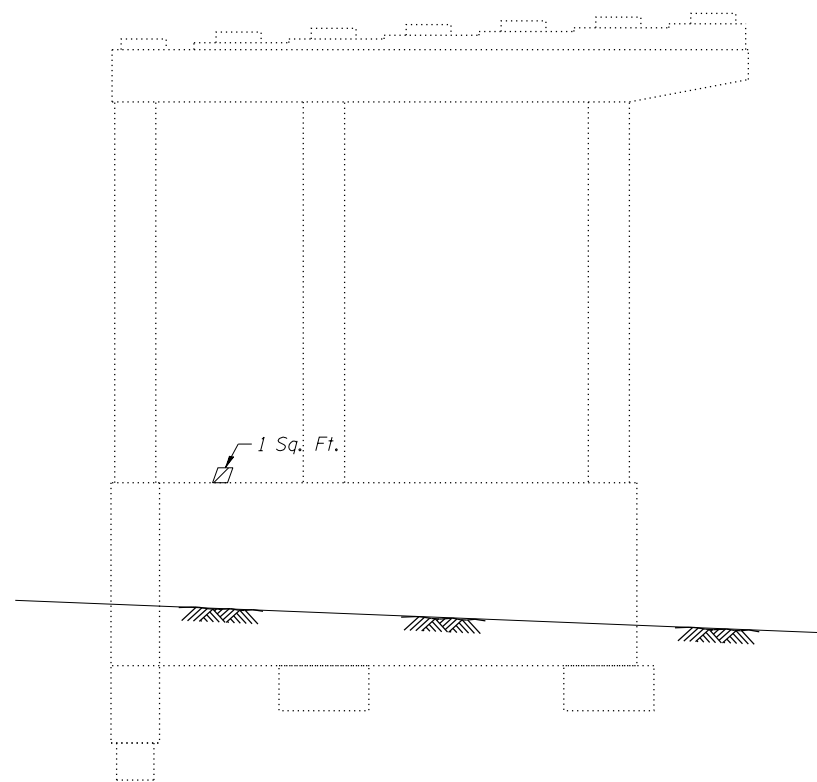
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CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



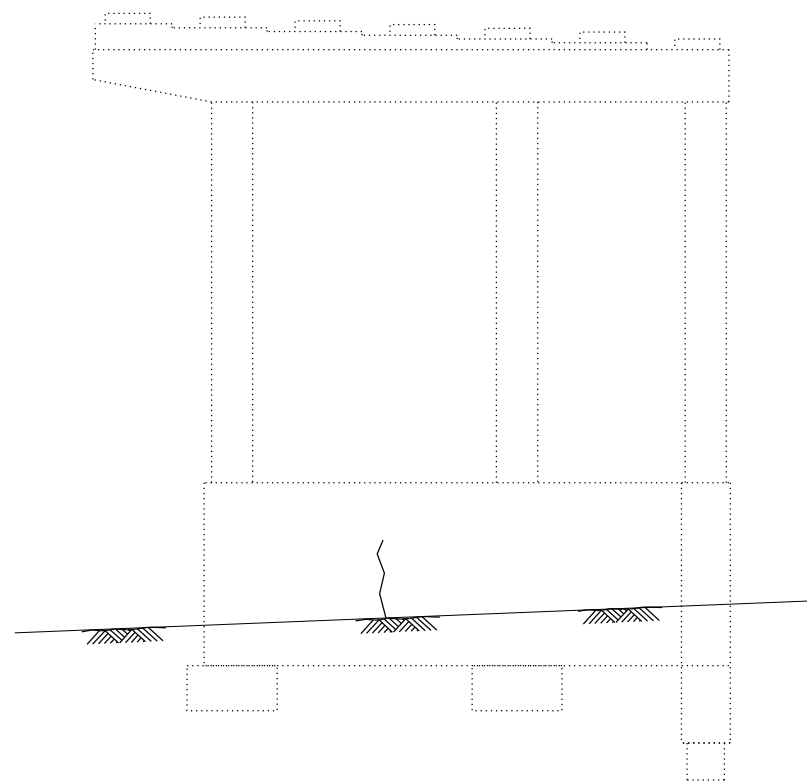
PIER 6E
(Looking North)



PIER 6E
(Looking South)



PIER 6W
(Looking North)



PIER 6W
(Looking South)

LEGEND
 Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
 Hairline Crack - Not to be sealed

NOTES:
 1. Repairs of the existing piers shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	3

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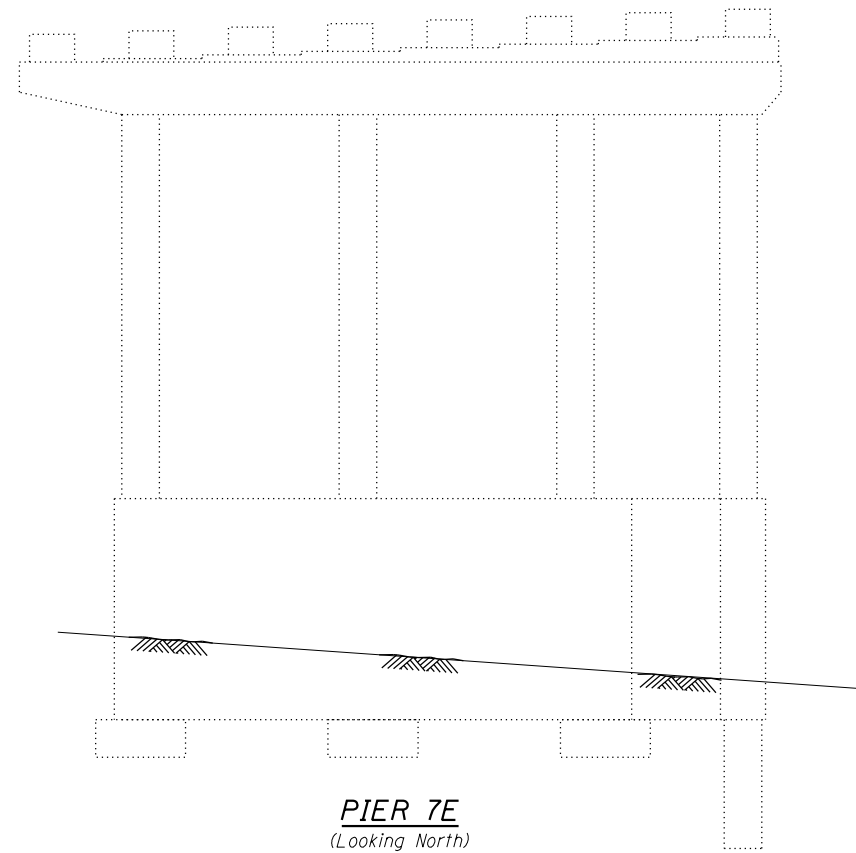
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

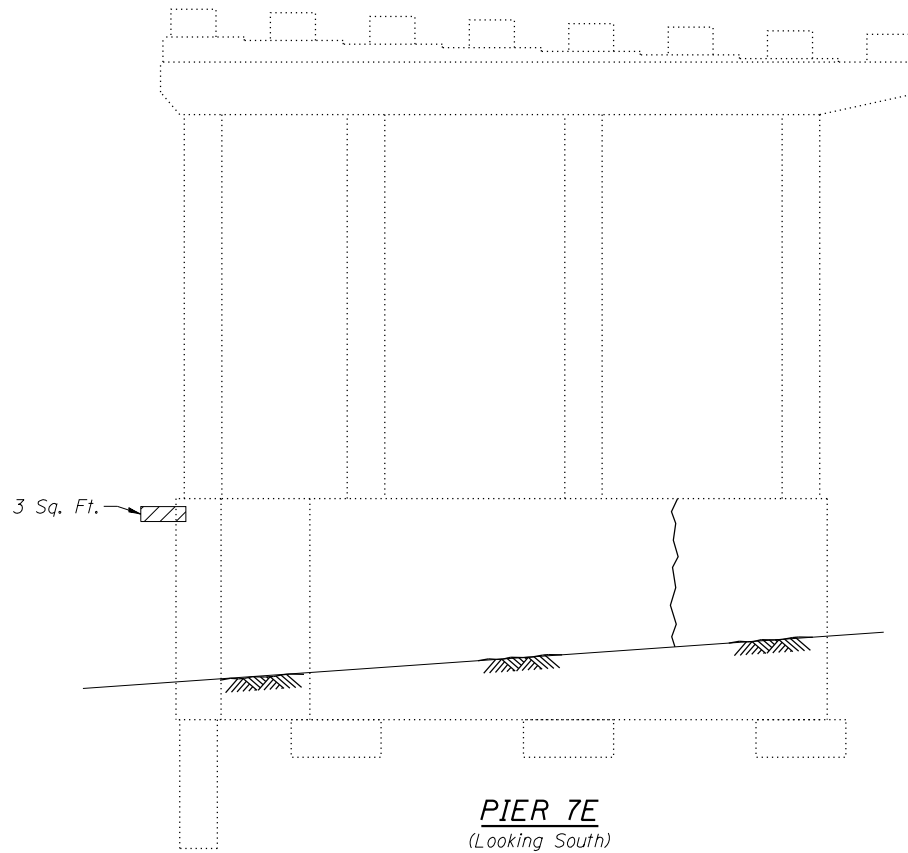
PIERS 6E AND 6W REPAIRS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-103 OF S-118 SHEETS

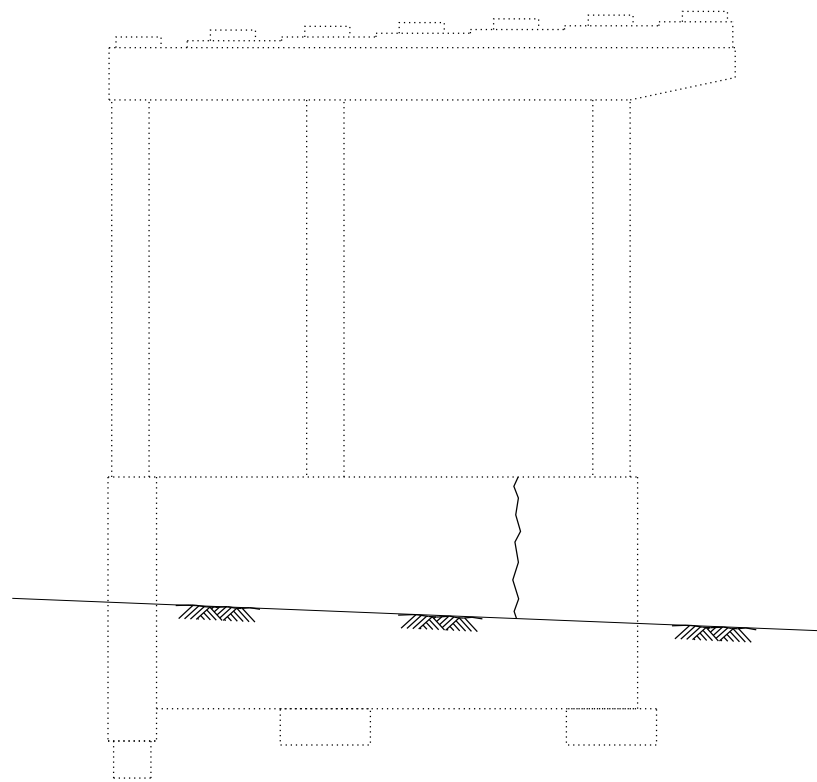
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80	99-4-1VB-1-R	WILL	840	578
				CONTRACT NO. 60N87
ILLINOIS FED. AID PROJECT				



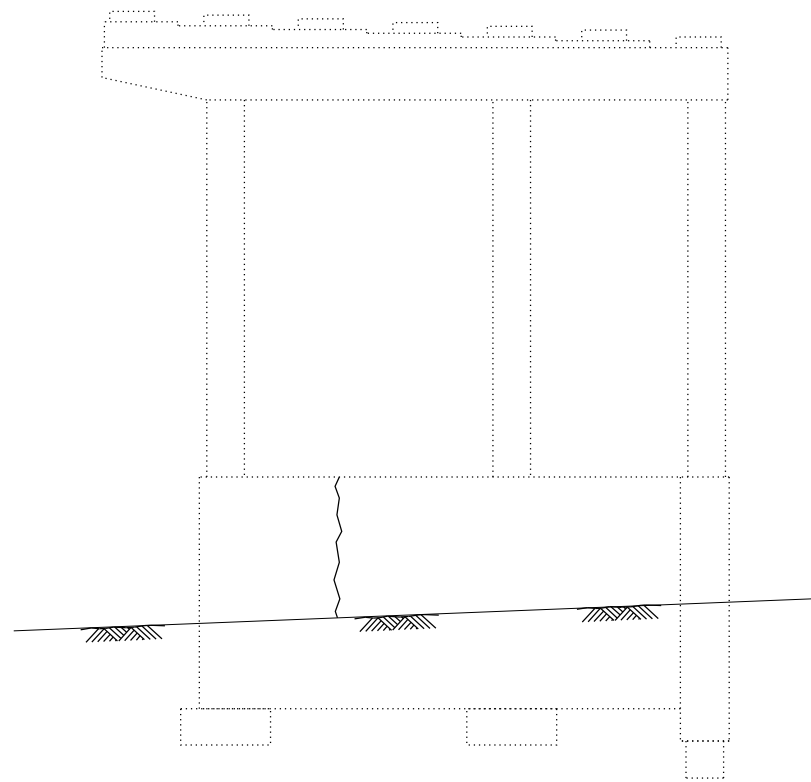
PIER 7E
(Looking North)



PIER 7E
(Looking South)



PIER 7W
(Looking North)



PIER 7W
(Looking South)

LEGEND

- Structural Repair of Concrete
(Depth Equal to or Less than 5 inches)
- Hairline Crack - Not to be sealed

NOTES:

1. Repairs of the existing piers shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	3

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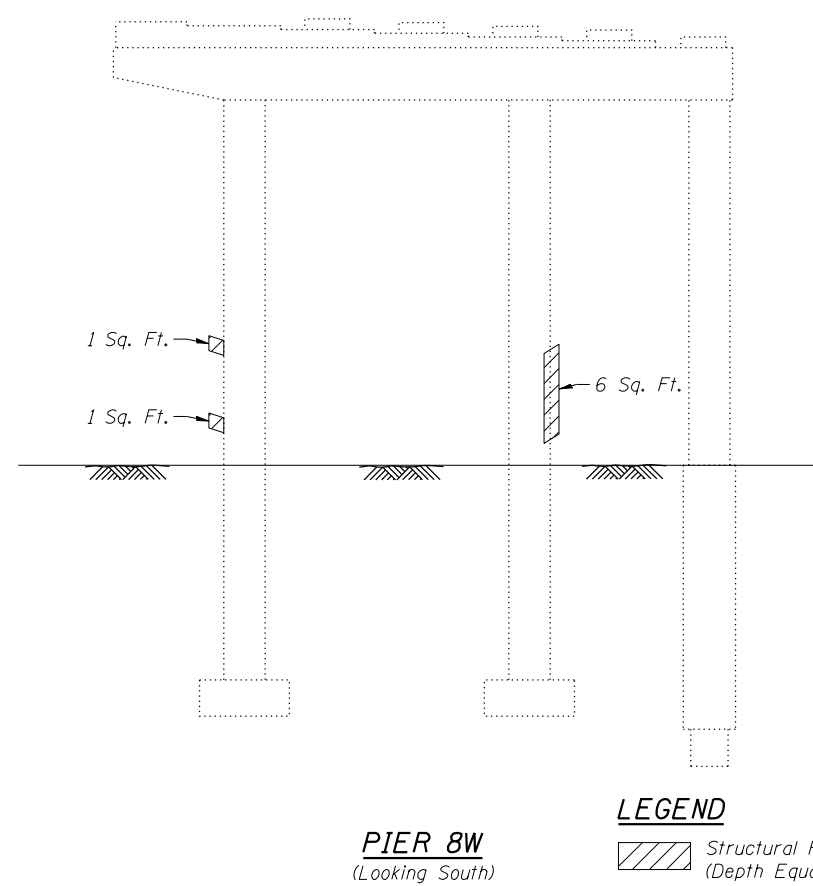
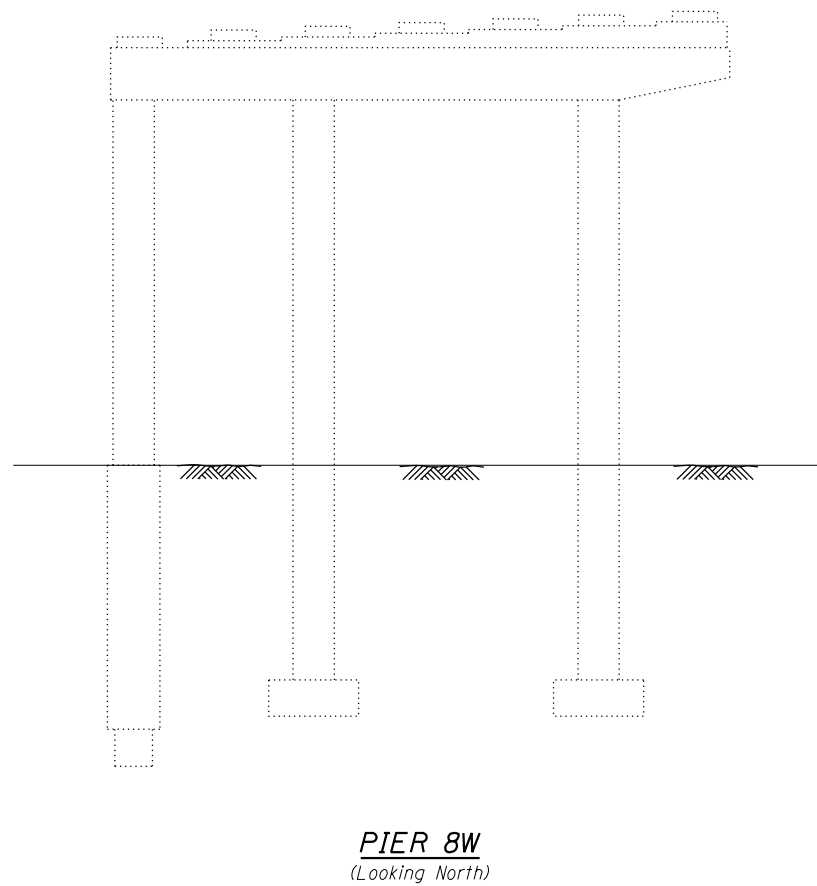
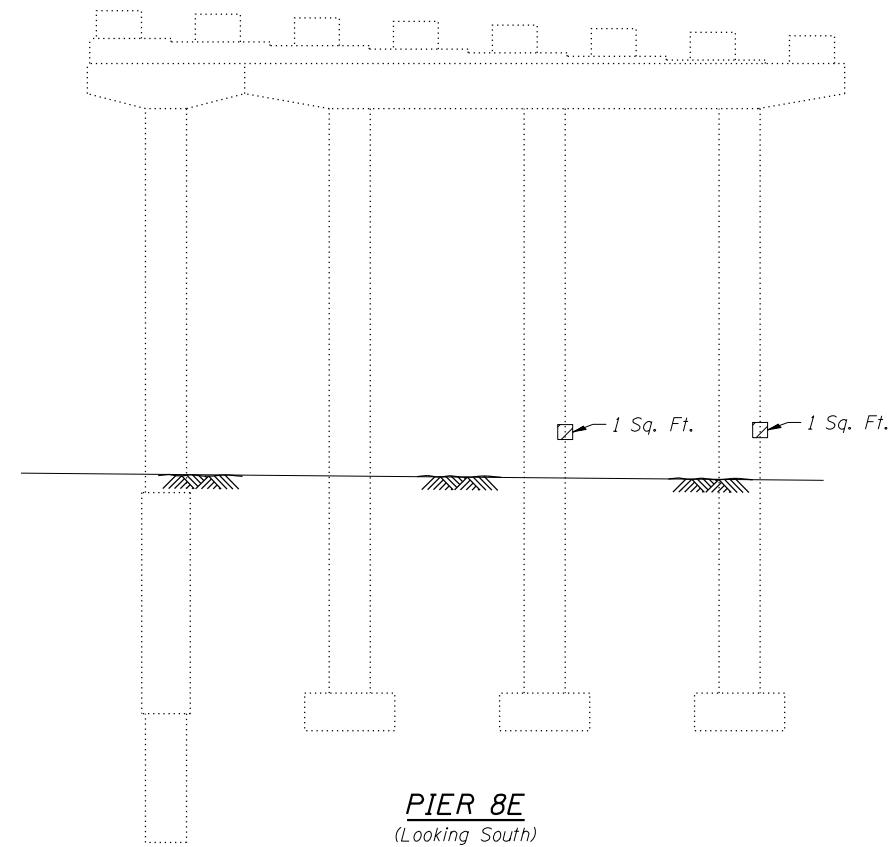
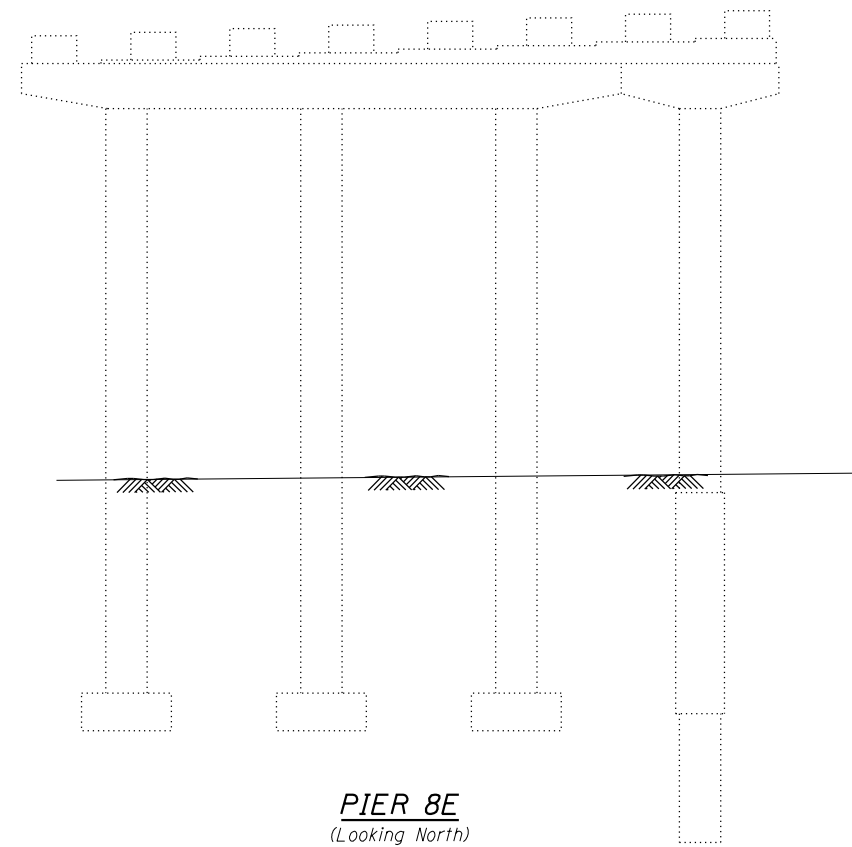
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PLOT DATE = 5/9/2018	CHECKED - AMK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PIERS 7E AND 7W REPAIRS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-104 OF S-118 SHEETS

F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	579
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



LEGEND
 Structural Repair of Concrete
 (Depth Equal to or Less than 5 inches)

NOTES:
 1. Repairs of the existing piers shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth Equal to or Less than 5 inches)	Sq. Ft.	10

N:\PROJ\0003384\004\US_30\Design\Structural\CAD\3384_105_Piers 8E and 8W_Repairs.dgn



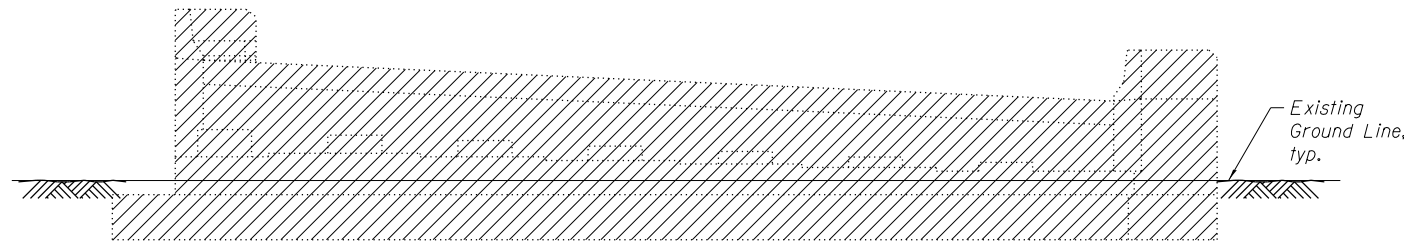
USER NAME = kaisneros	DESIGNED - BWS	REVISED -
	CHECKED - AMK	REVISED -
PLOT SCALE = 12/9 5/8 " = 1 in.	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - AMK	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

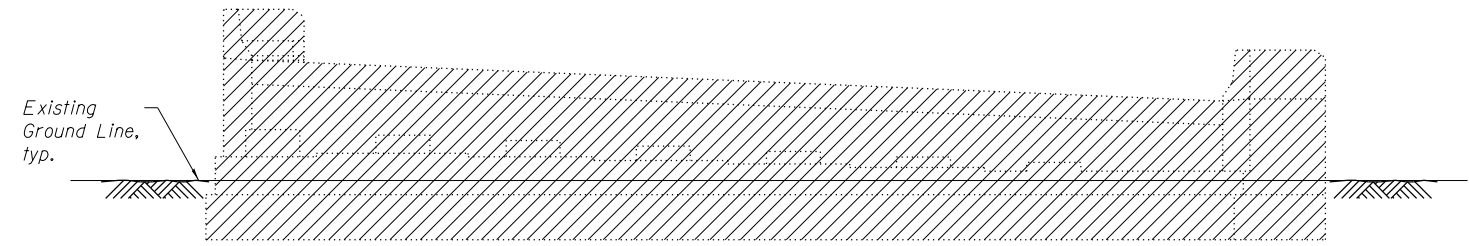
**PIERS 8E AND 8W REPAIRS
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-105 OF S-118 SHEETS

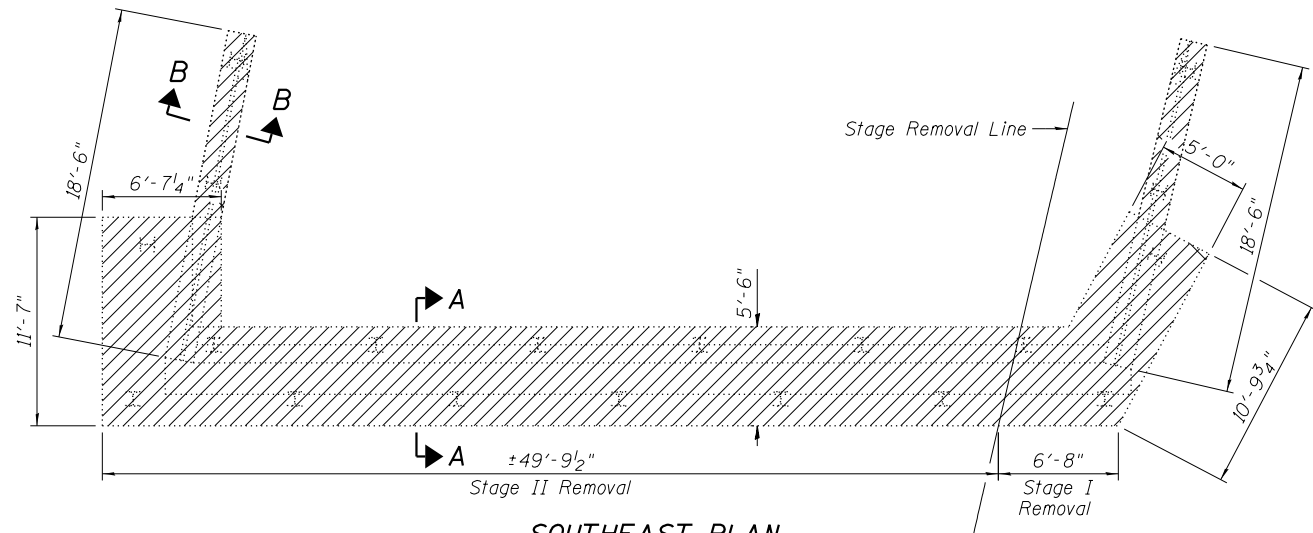
F.A.I. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	580
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



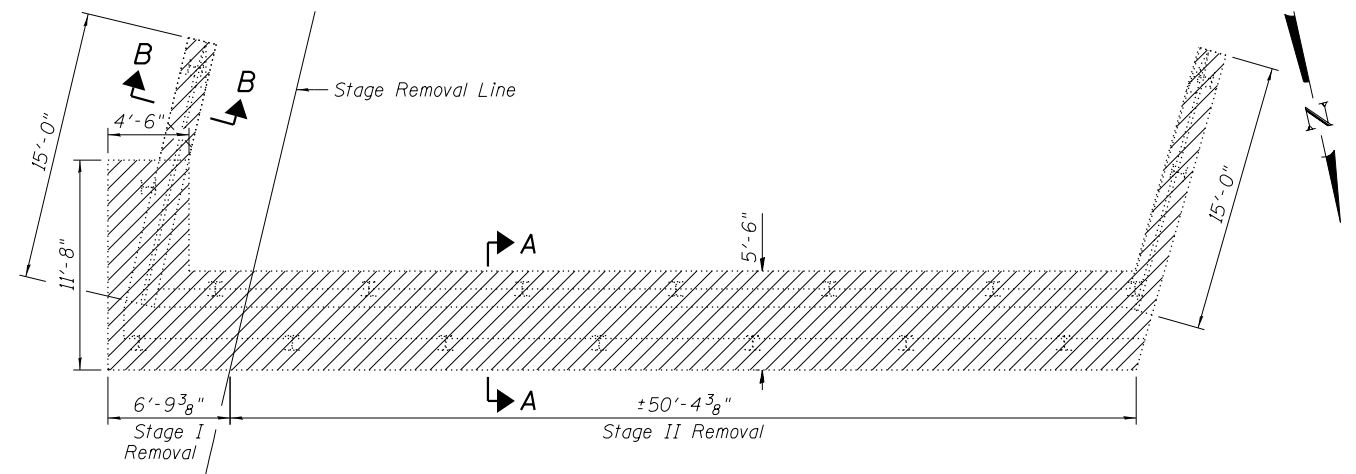
SOUTHEAST ELEVATION
(Looking South)



SOUTHWEST ELEVATION
(Looking South)

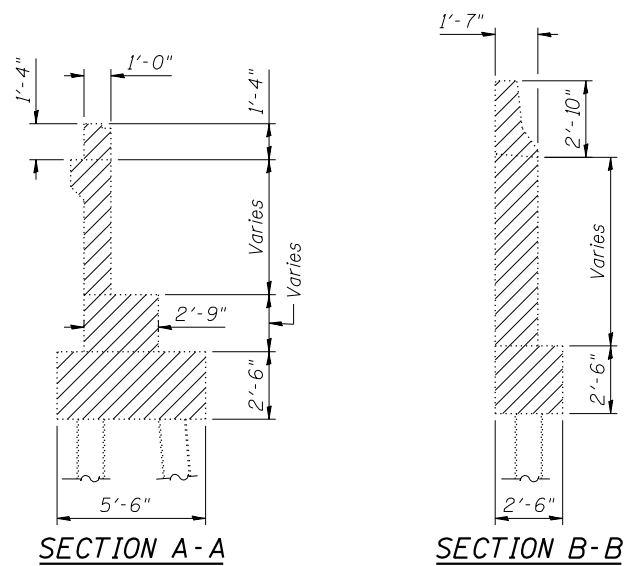


SOUTHEAST PLAN



SOUTHWEST PLAN

FOR INFORMATION ONLY



SECTION A-A

SECTION B-B

LEGEND

Indicates removal

NOTES:

1. Piles to be removed 1' below the proposed elevation of the subgrade for the sloped wall.

N:\PROJECTS\0003384\004_US_30\Design\Structural\CAD\3384_106 Removal Details - 1.dgn



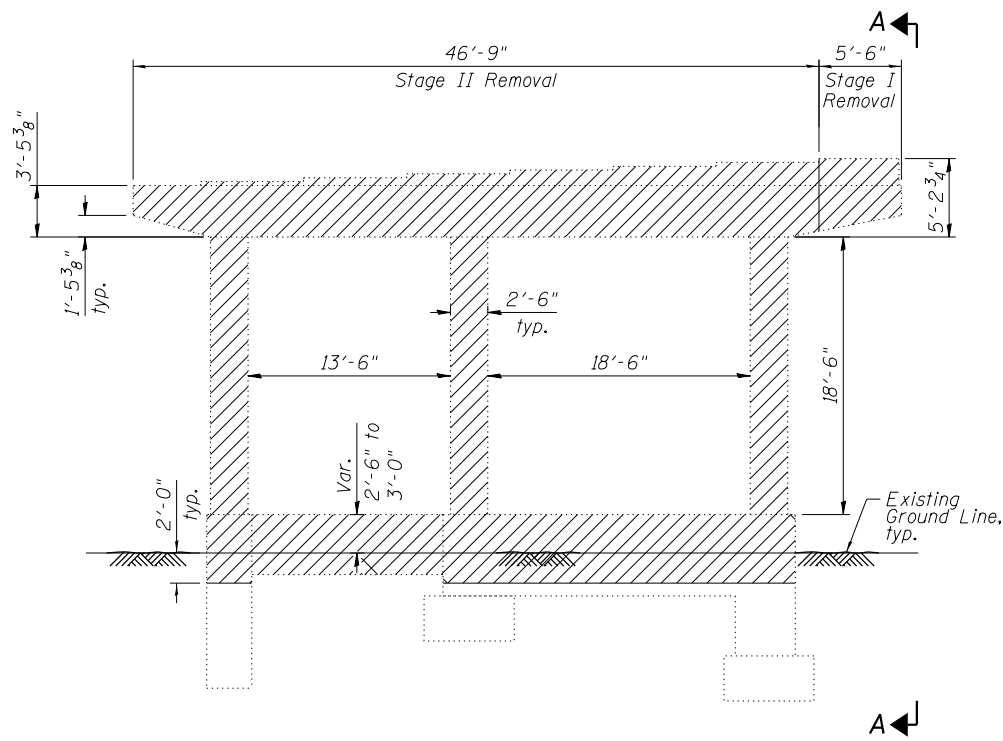
USER NAME = kaisneros	DESIGNED - BWS	REVISED -
	CHECKED - AMK	REVISED -
PLOT SCALE = 1/8" = 1' / in.	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - AMK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

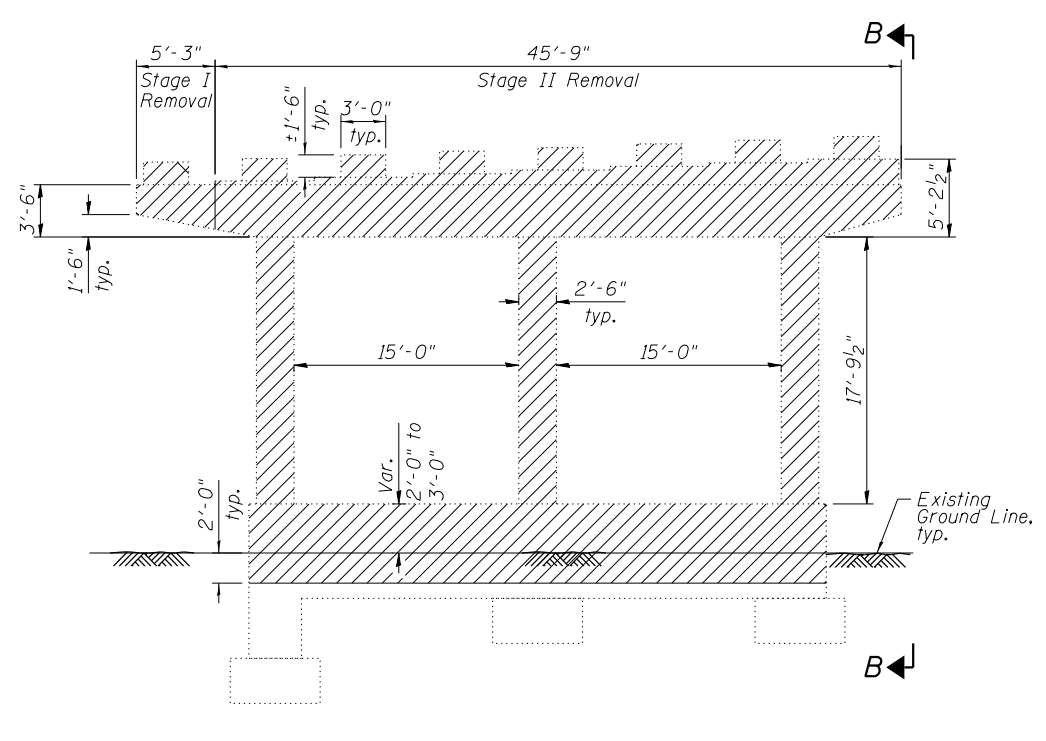
**REMOVAL DETAILS - 1
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

SHEET NO. S-106 OF S-118 SHEETS

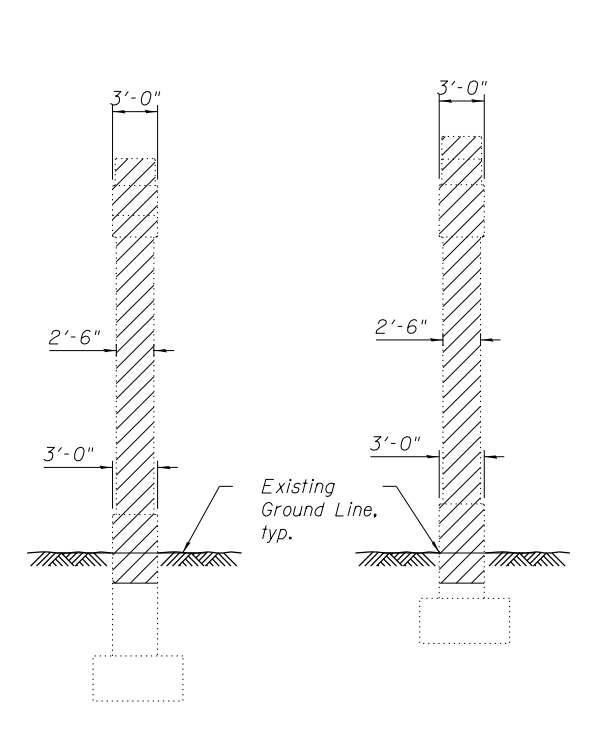
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	581
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	



PIER 1W
(Looking North)

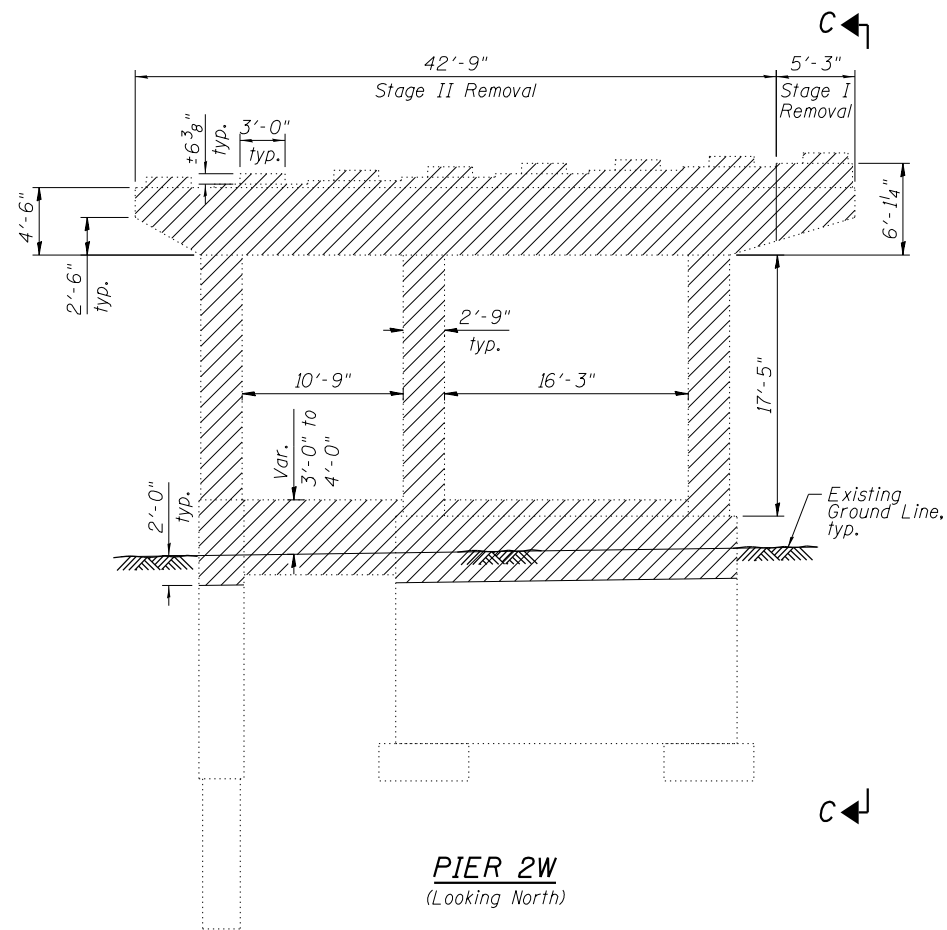


PIER 1E
(Looking North)

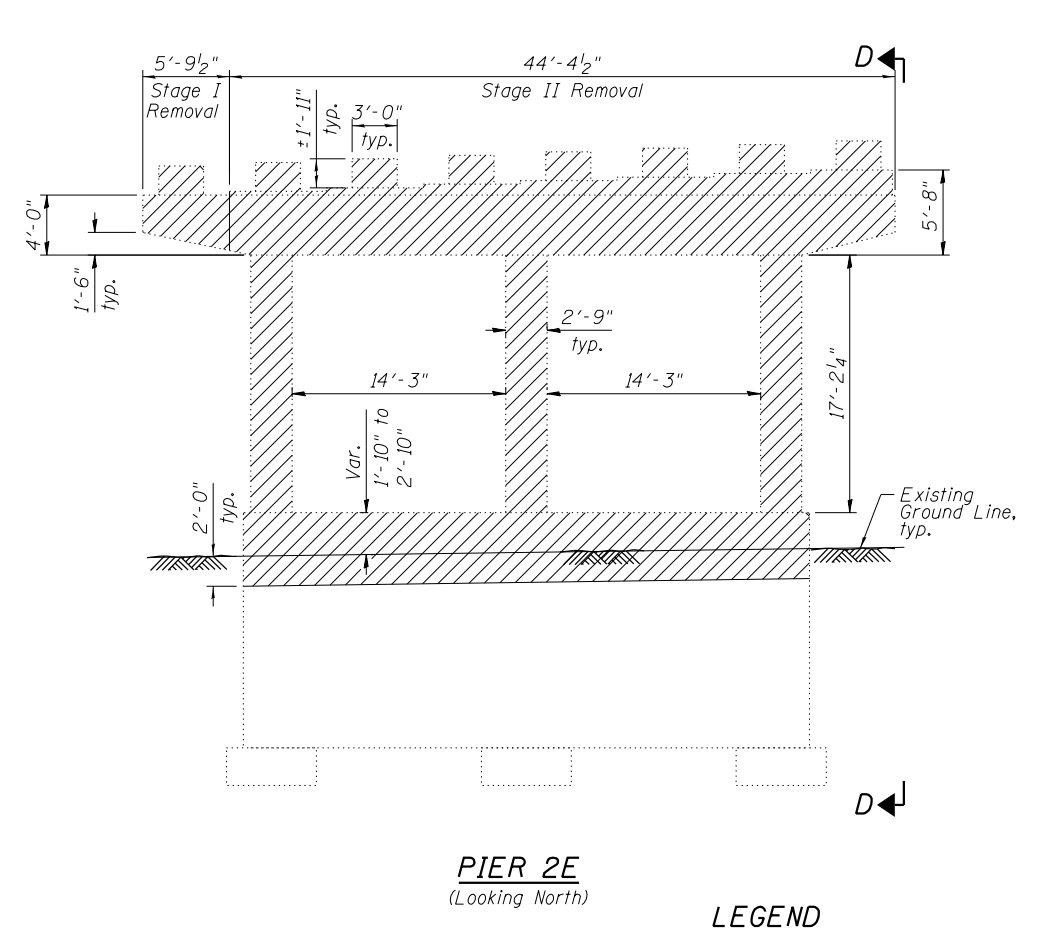


VIEW A-A

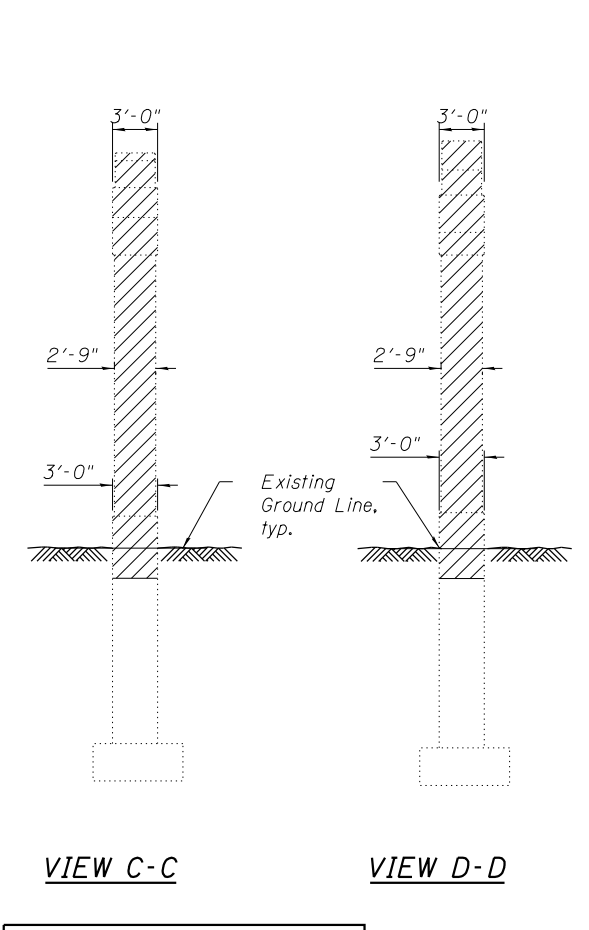
VIEW B-B



PIER 2W
(Looking North)



PIER 2E
(Looking North)



VIEW C-C

VIEW D-D

LEGEND
 Indicates removal

FOR INFORMATION ONLY

N:\PROJECTS\00033364\004_US_30\Design\Structural\CAD\33364_107 Removal Details - 2.dgn



USER NAME = kaisneros	DESIGNED - BWS	REVISED -
PLOT SCALE = 12:9.6000 '1' / in.	CHECKED - AMK	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - AMK	REVISED -

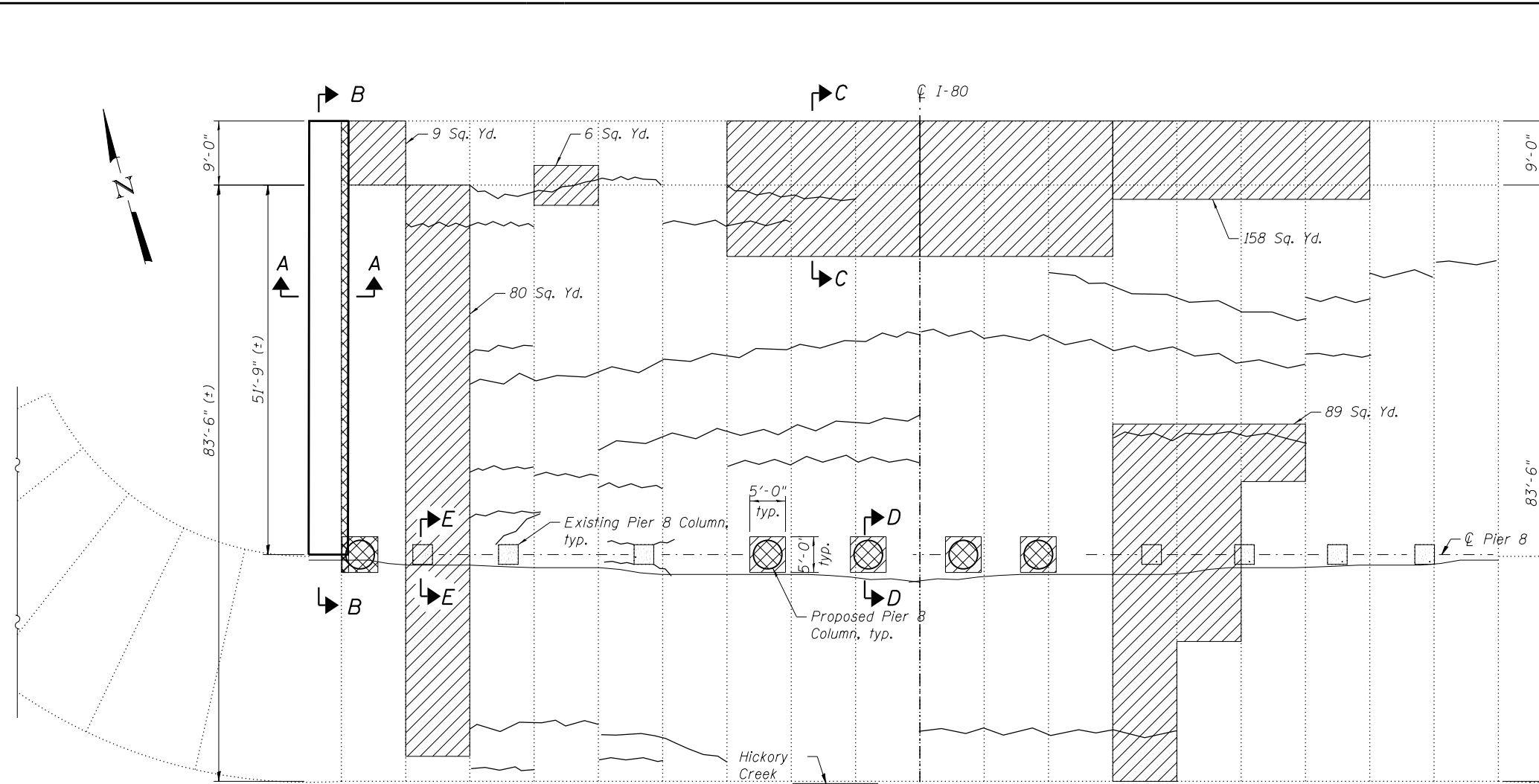
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REMOVAL DETAILS - 2
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

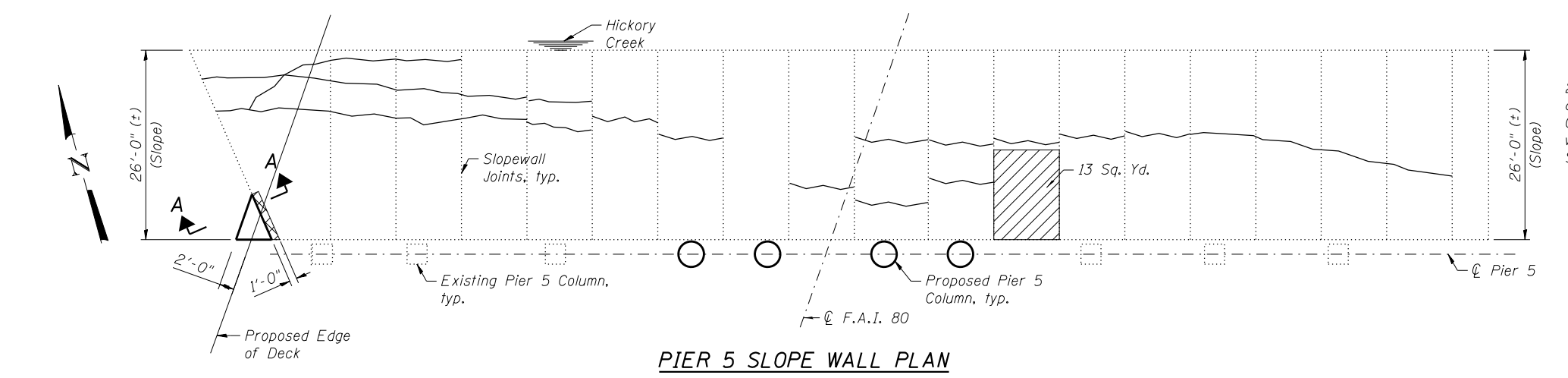
SHEET NO. S-107 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	582
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

N:\PROJECTS\00033384\004_4_US_30\Design\Structural\CAD\33384_108_SlopedWall_Details.dwg



NORTH SLOPE WALL PLAN



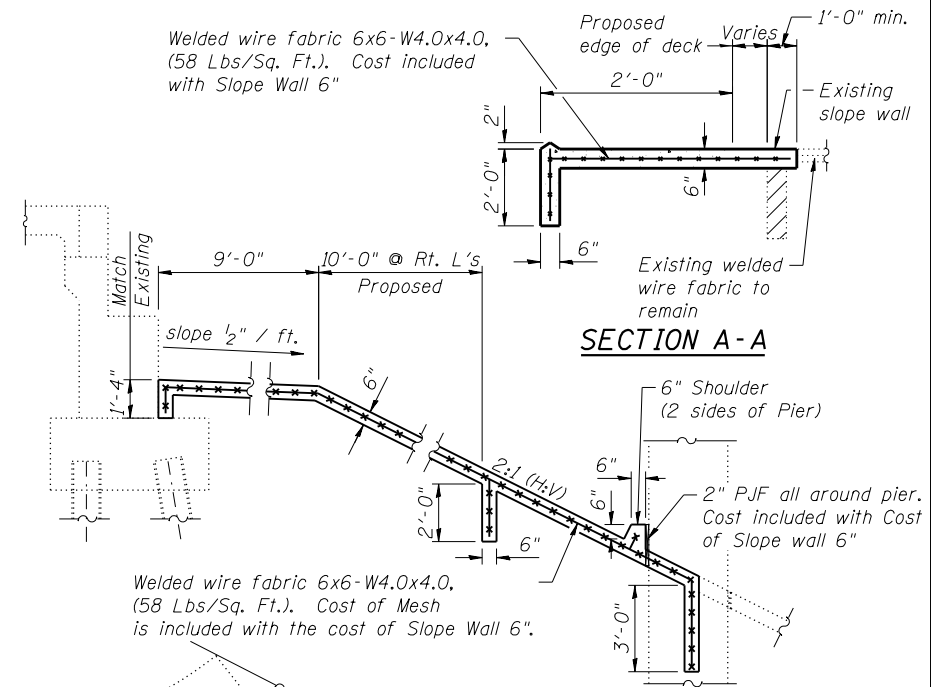
PIER 5 SLOPE WALL PLAN

NOTES:

- Repairs of the existing sloped wall shall include but may not be limited to the areas shown. The actual areas to be repaired will be determined by the Engineer at the time of construction.
- Any voids under sections of the existing slope wall that are removed shall be backfilled and compacted per Article 502.10 of the Standard Specifications. Cost included with Slope Wall, 6".

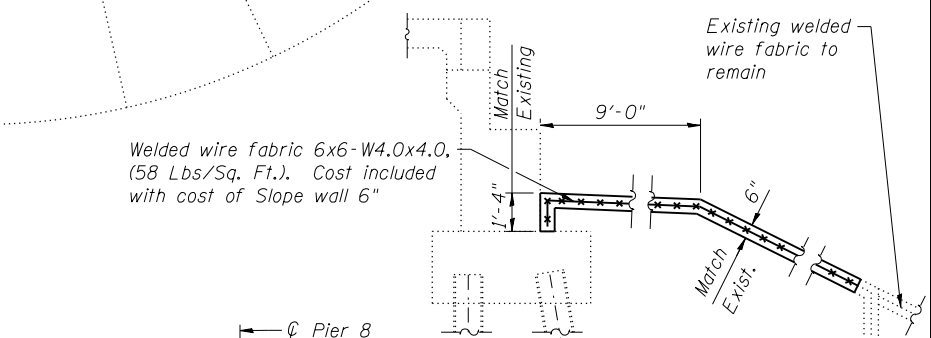
LEGEND

- Slope Wall Removal
- Slope Wall Removal and Slopewall 6"
- Hairline Crack - Not to be sealed

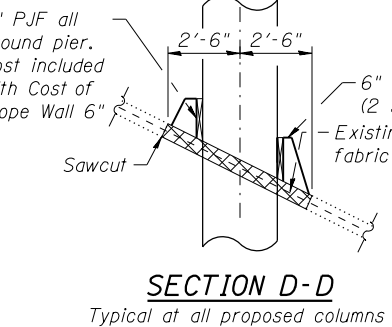


SECTION A-A

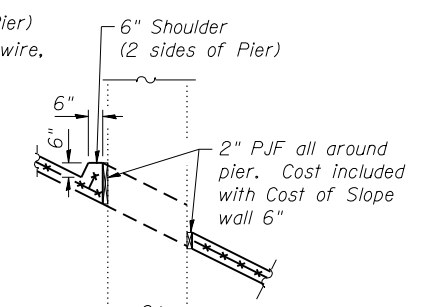
SECTION B-B



SECTION C-C



SECTION D-D
Typical at all proposed columns



SECTION E-E

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Slope Wall Removal	Sq. Yd.	377
Slope Wall 6"	Sq. Yd.	427

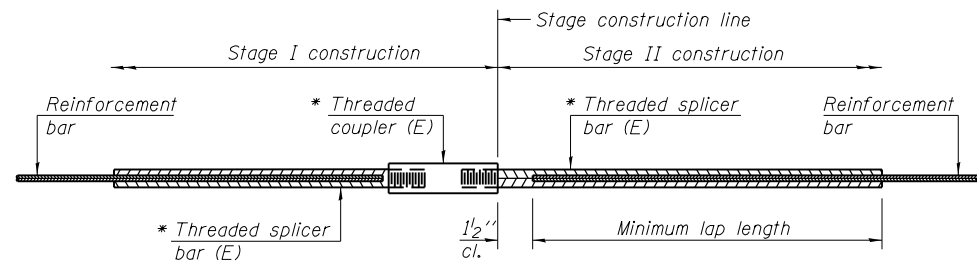


USER NAME = kaisneros	DESIGNED - BWS	REVISED -
	CHECKED - AMK	REVISED -
PLOT SCALE = 20:0.0000 1" = 10'	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - AMK	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SLOPE WALL REPAIR DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)**

F.A.I. RTE. 80	SECTION 99-4-1VB-1-R	COUNTY WILL	TOTAL SHEETS 840	SHEET NO. 583
CONTRACT NO. 60N87				ILLINOIS FED. AID PROJECT



STANDARD BAR SPLICER ASSEMBLY

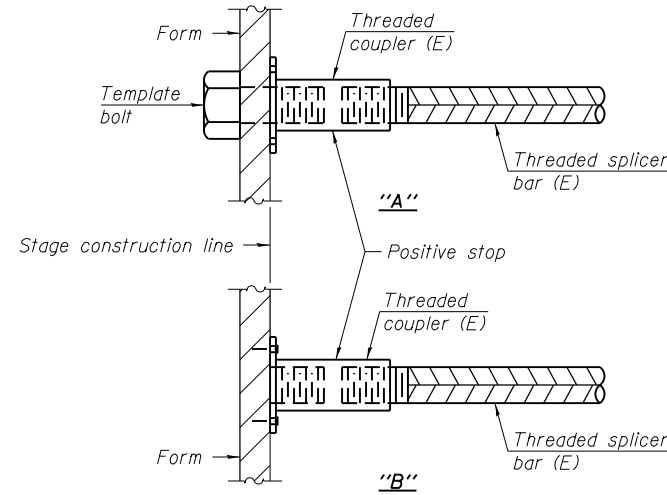
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

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

Threaded splicer bar length = min. lap length + 1/2" + thread length

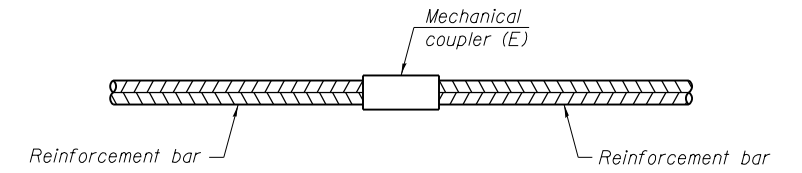
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Deck (Transverse)	#5	3,406	3
Edge Beam	#5	52	4
Appr. Slab, Top	#4	100	4
Appr. Slab, Bottom	#5	184	3
Appr. Footing	#5	160	3
Pier 7 - Web walls	#5	126	4
Pier 6 - Web walls	#5	126	4
Pier 3 - web walls	#5	162	4
Pier 2 - Crashwall	#6	50	4
Pier 2 - Crashwall	#8	14	4
Pier 2 - pier cap	#8	10	3
Pier 2 - pier cap	#9	18	4
Pier 2 - pier cap	#5	22	4
Pier 1 - crashwall	#5	50	4
Pier 1 - crashwall	#8	14	4
Pier 1 - pier cap	#8	10	3
Pier 1 - pier cap	#9	18	4
Pier 1 - pier cap	#5	22	4
N. Abut. - Anchor block	#6	8	3
S. Abut. - Anchor block	#6	10	3
S. Abut. - Cap	#7	12	4
S. Abut. - Backwall	#5	16	4



INSTALLATION AND SETTING METHODS

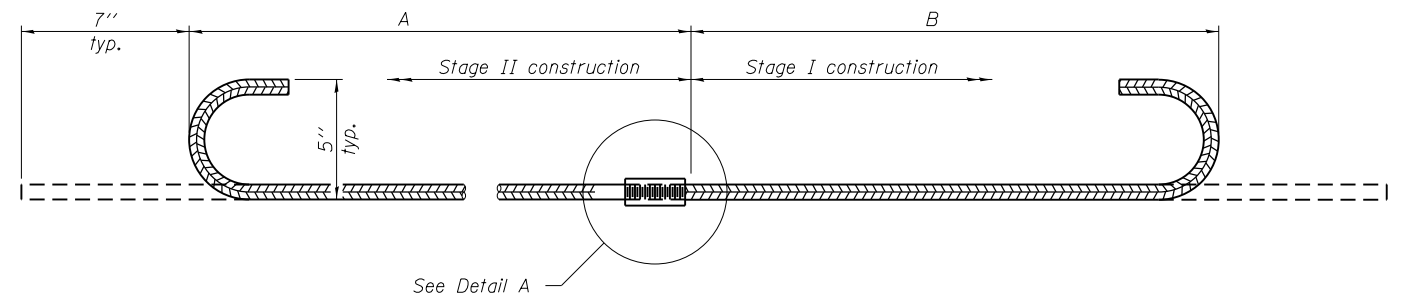
"A": Set bar splicer assembly by means of a template bolt.
 "B": Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E): Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

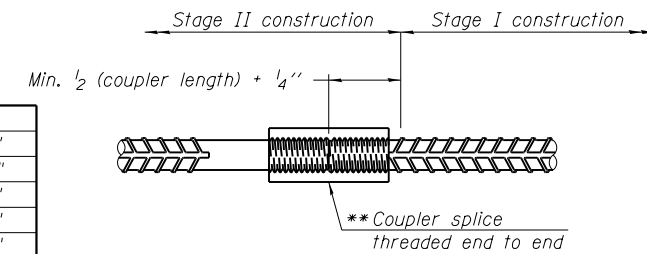
** The bar splicer assembly shall allow completion of the splice without turning of the hook bars. The stage II splice bar shall be threaded such that the entire coupler can be threaded onto the splice bar.



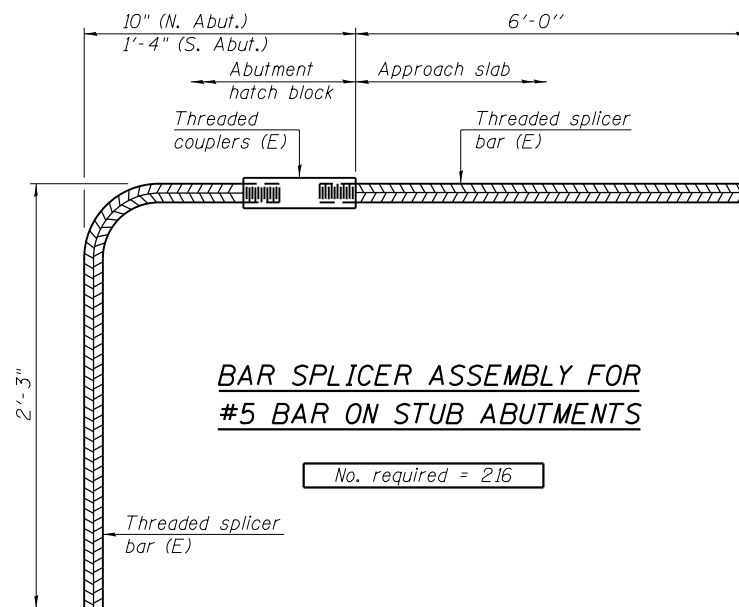
"C" BAR SPLICER ASSEMBLY FOR EDGE BEAMS AT STAGE CONSTRUCTION JOINT

No. required = 44

Location	"C"	A	B
EB Unit 1	7- #5a ₁₇ (E)	4'-7"	1'-7"
WB Unit 1	7- #5a ₂₈ (E)	4'-3"	1'-11"
EB Unit 2 (S. Edge)	4- #5a ₃₈ (E)	4'-6"	1'-7"
EB Unit 2 (N. Edge)	4- #5a ₃₉ (E)	4'-8"	1'-8"
WB Unit 2 (S. Edge)	4- #5a ₅₀ (E)	4'-8"	1'-4"
WB Unit 2 (N. Edge)	4- #5a ₅₂ (E)	4'-10"	1'-6"
EB Unit 3	7- #5a ₆₈ (E)	4'-8"	1'-7"
WB Unit 3	7- #5a ₇₉ (E)	4'-6"	1'-5"



DETAIL A



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 216

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.

N:\PROJECTS\0003384\004_4_US_30\Design\Structural\CAD\3384_109_Bar_Splicer_Details.dgn



USER NAME = kaisneros	DESIGNED - AMK	REVISED -
	CHECKED - DL	REVISED -
PLOT SCALE = 0:2.0000' / 1"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

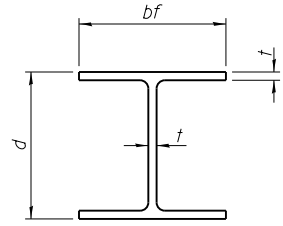
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-109 OF S-118 SHEETS

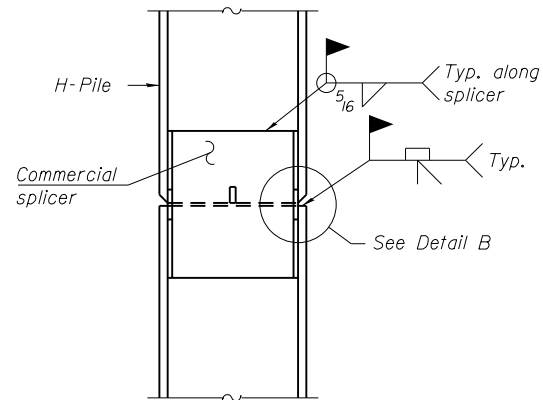
F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	584
CONTRACT NO.			60N87	

ILLINOIS FED. AID PROJECT

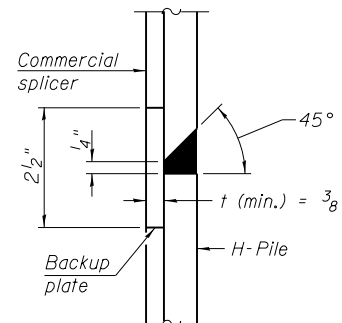


STEEL PILE TABLE

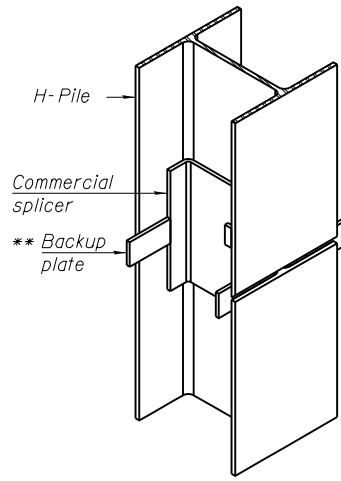
Designation	Depth <i>d</i>	Flange width <i>bf</i>	Web and Flange thickness <i>t</i>	Encasement diameter <i>A</i>
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	1/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	1/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63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



ELEVATION

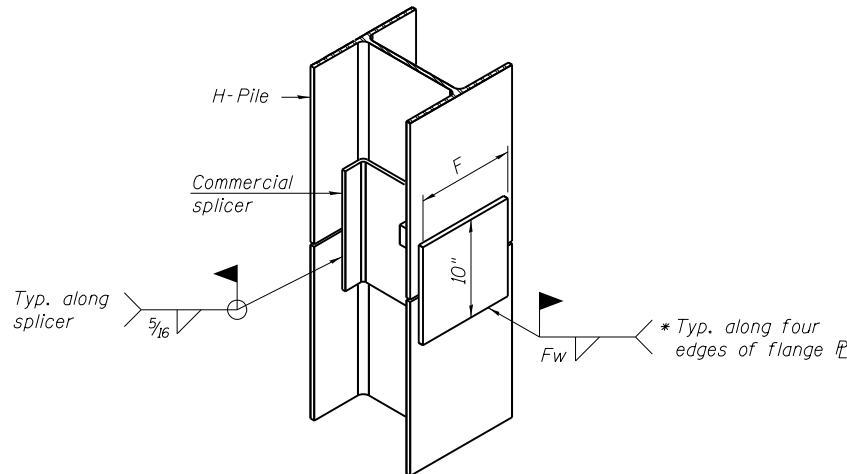


DETAIL "B"



ISOMETRIC VIEW

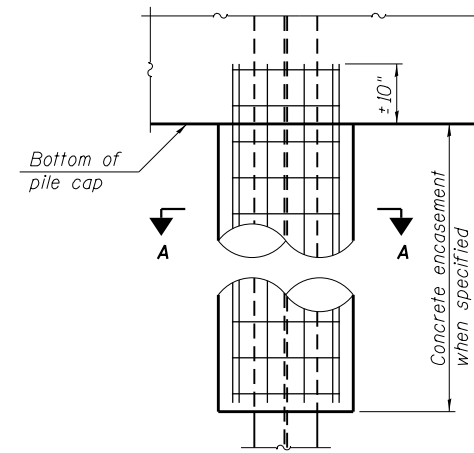
WELDED COMMERCIAL SPLICE



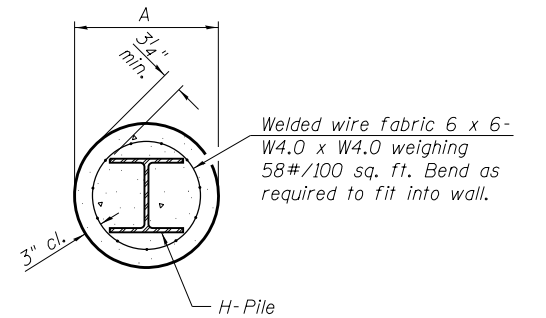
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

- * Interrupt welds 1/4" from end of web and/or each flange.
- ** Remove portions of backup plates that extend outside the flanges.
- *** Weld size per pile shoe manufacturer (5/16" min.).



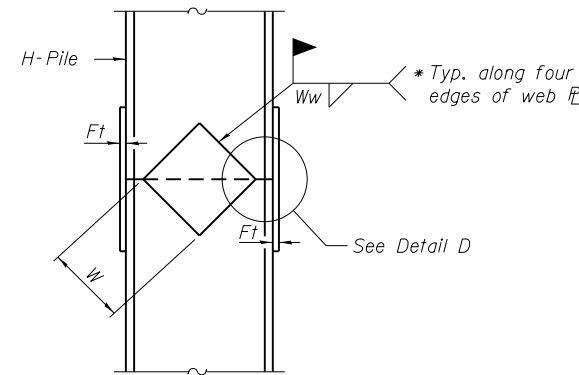
ELEVATION



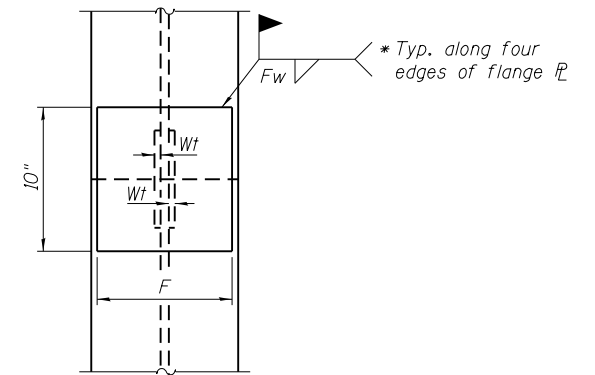
SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASUREMENT

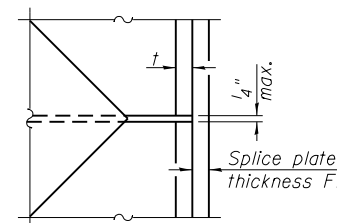
(Forms for encasement may be omitted when soil conditions permit).



ELEVATION



END VIEW



DETAIL D

WELDED PLATE FIELD SPLICE

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

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

F-HP

8-11-2017



USER NAME = kaisneros	DESIGNED - AMK	REVISED -
	CHECKED - DL	REVISED -
PLOT SCALE = 0:2.0000' 1" / 1"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-110 OF S-118 SHEETS

F.A.I. RE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	585
CONTRACT NO. 60N87				

ILLINOIS FED. AID PROJECT

N:\PROJECTS\0003384\004_4_US_30\Design\Structural\CAD\3384_110_HP_Pile_Details.dgn

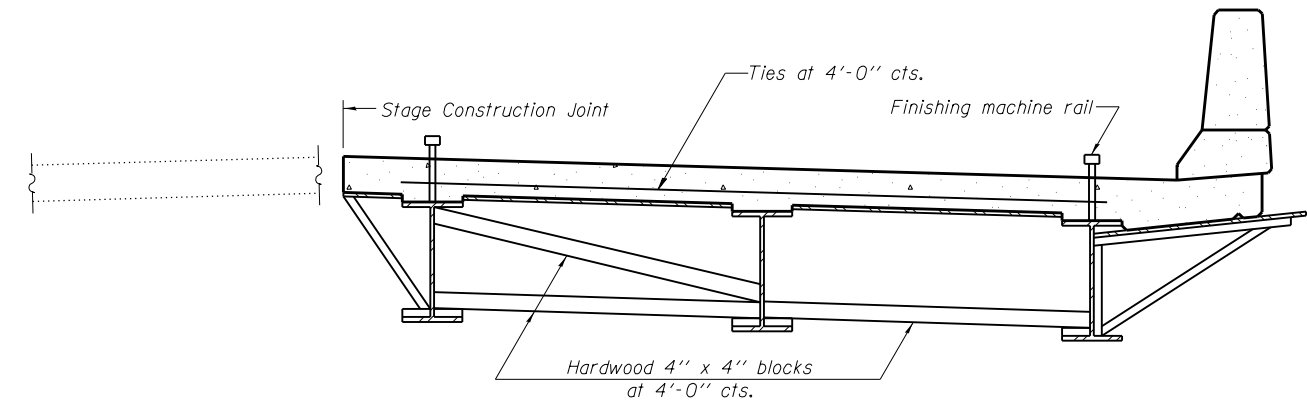
When cantilever forming brackets are used, the work shall be done according to Article 503.06(b) of the Standard Specifications, except as modified below and in the details shown on this sheet.

The finishing machine rails shall be placed on the top flange of the exterior beams.

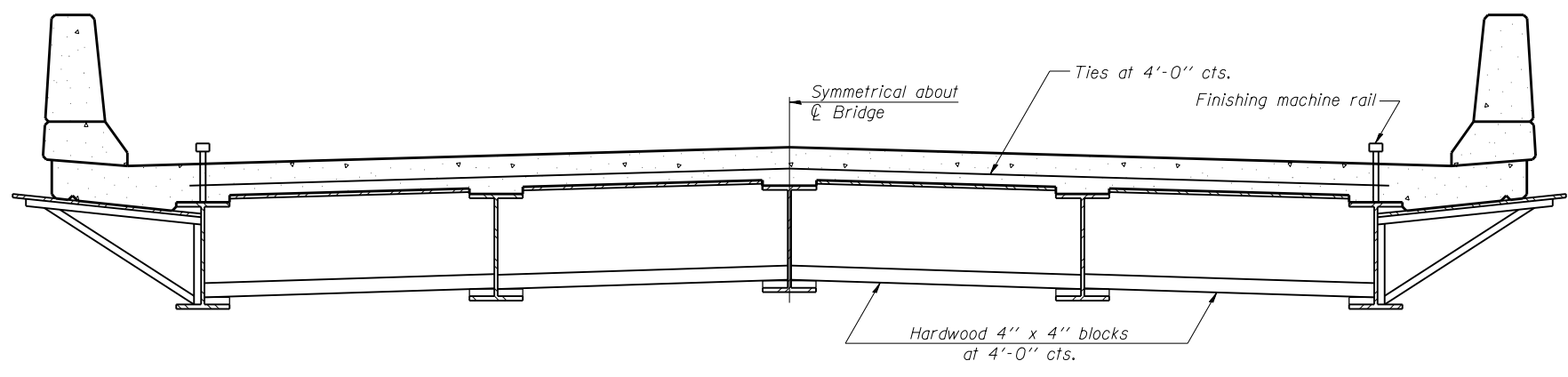
The beams or girders, supporting cantilever forming brackets, shall be tied together at 4 foot intervals.

For Standard construction, or Stage Construction the Hardwood bracing materials shall be placed as shown between webs of beams in each bay.

The Contractor shall use cantilever forming brackets for the 25" web I_p girders in Unit 1 and for the W.B. beams in Units 2 and 3.



**FORM BRACES FOR
STAGE CONSTRUCTION**



**FORM BRACES FOR
STANDARD CONSTRUCTION**

N:\PROJ\0003384\004\US_30\Design\Structural\CAD\3384_111 Cantilever Forming Brackets.dgn



USER NAME = kaisneros	DESIGNED - AMK	REVISED -
	CHECKED - DL	REVISED -
PLOT SCALE = 0:2.0000 '1' / 1"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

CANTILEVER FORMING BRACKETS
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-111 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	586
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

Wang Engineering
 wangeng@wangeng.com
 1145 N Main Street
 Lombard, IL 60148
 Telephone: 630 953-9928
 Fax: 630 953-9938

BORING LOG SB-201 Page 1 of 1
 WEI Job No.: 775-13-01
 Datum: NGVD
 Elevation: 622.55 ft
 North: 1768116.98 ft
 East: 1077932.44 ft
 Station: 675+49.88
 Offset: 15.93 L

Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Cu (tsf)	Moisture Content (%)
621.7	10-inch thick, ASPHALT --PAVEMENT--												
621.4	4-inch thick, CRUSHED STONE --AGGREGATE BASE--												
619.6	Very stiff, brown SANDY CLAY LOAM, trace gravel --FILL--		1	3 2 2	3.00	18	599.0	DOLOSTONE Run #1 18.5' to 23.5' Recovery=54/60=90% RQD=5/60=8%		1			
617.0	Stiff, brown SANDY CLAY LOAM, trace gravel		2	2 2 3	1.50	18		Good quality, strong, fresh, gray DOLOSTONE Run #2 23.5' to 28.5' Recovery=60/60=100% RQD=45/60=75%		2			
614.0	Loose, brown SILT with gravel --HARD DRILLING--		3	3 3 6	NP	20		Boring terminated at 28.50 ft					
614.0	Medium dense to very dense, light brown, weathered and fragmented DOLOSTONE --HARD DRILLING--		4	38 8 8	NP	8							
604.0	Very poor quality, medium strong, slightly weathered to fresh, light brown to gray		8	11 8 50/5	NP	17							
				50/2 C		12							

GENERAL NOTES
 Begin Drilling: 05-18-2010 Complete Drilling: 05-18-2010
 Drilling Contractor: WTS Drill Rig: B-57 TMR
 Driller: K&J Logger: B. Wilson Checked by: M. Snider
 Drilling Method: 3.25 IDA HSA. Boring backfilled upon completion.

WATER LEVEL DATA
 While Drilling: 13.50 ft
 At Completion of Drilling: Washed
 Time After Drilling: NA
 Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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BORING LOG SB-202 Page 1 of 1
 WEI Job No.: 775-13-01
 Datum: NGVD
 Elevation: 617.00 ft
 North: 1768138.92 ft
 East: 1077871.86 ft
 Station: 675+84.23
 Offset: 13.31 R

Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/in)	Cu (tsf)	Moisture Content (%)
616.82	82-inch thick, dark brown SILTY CLAY LOAM --TOPSOIL--												
615.6	Medium dense to stiff, brown LOAM to CLAY LOAM, little to some gravel --FILL--		1	4 5 6	1.00	16	593.5	Fair quality, strong, slightly weathered to fresh, light brown to gray DOLOSTONE Run #1 23.5' to 28.5' Recovery=60/60=100% RQD=35.25/60=59%		9	4	NP	14
611.5	Medium dense, brown SANDY LOAM, some gravel and rock fragments --HARD DRILLING--		2	7 9 8	NP	11							
606.5	Loose to very dense, light brown weather and fragmented DOLOSTONE --HARD DRILLING--		3	3 9 13	NP	7							
			4	5 8 10	NP	7							
			5	10 14 13	NP	6							
			6	4 5 8	NP	21							
			7	2 2 2	NP	5							
			8	2 3 5	NP	10							

GENERAL NOTES
 Begin Drilling: 05-18-2010 Complete Drilling: 05-18-2010
 Drilling Contractor: WTS Drill Rig: B-57 TMR
 Driller: K&J Logger: B. Wilson Checked by: M. Snider
 Drilling Method: 3.25 IDA HSA. Boring backfilled upon completion.

WATER LEVEL DATA
 While Drilling: 13.50 ft
 At Completion of Drilling: Washed
 Time After Drilling: NA
 Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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USER NAME = kaisneros	DESIGNED - AMK	REVISED -
PLOT SCALE = 0:2.0000 "1" = 1"	CHECKED - DL	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - DL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS 1
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	587
CONTRACT NO. 60N87				
ILLINOIS FED. AID PROJECT				

SHEET NO. S-112 OF S-118 SHEETS



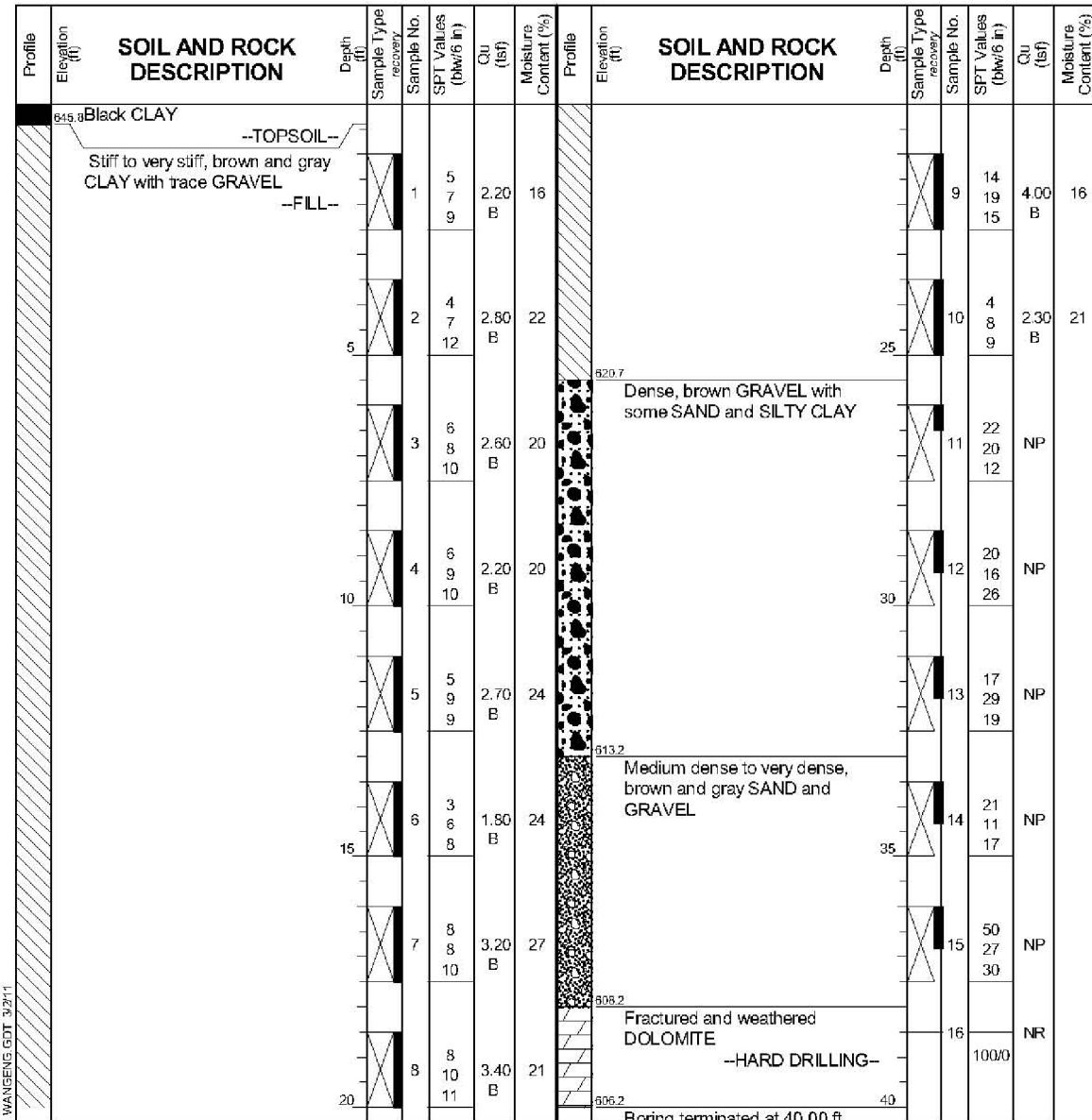
BORING LOG SB-101

Page 1 of 1

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WEI Job No.: 775-13-01
 Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Datum: NGVD
 Elevation: 646.20 ft
 North: 1767806.44 ft
 East: 1077716.54 ft
 Station: 672+18
 Offset: 0 RT/LT



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	12-15-1994	Complete Drilling	12-15-1994	While Drilling	DRY		
Drilling Contractor	TSC	Drill Rig		At Completion of Drilling	DRY		
Driller		Checked by	A. Bohac	Time After Drilling	NA		
Drilling Method	Boring log provided by Clorba Group and IDOT			Depth to Water	NA		
				The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			



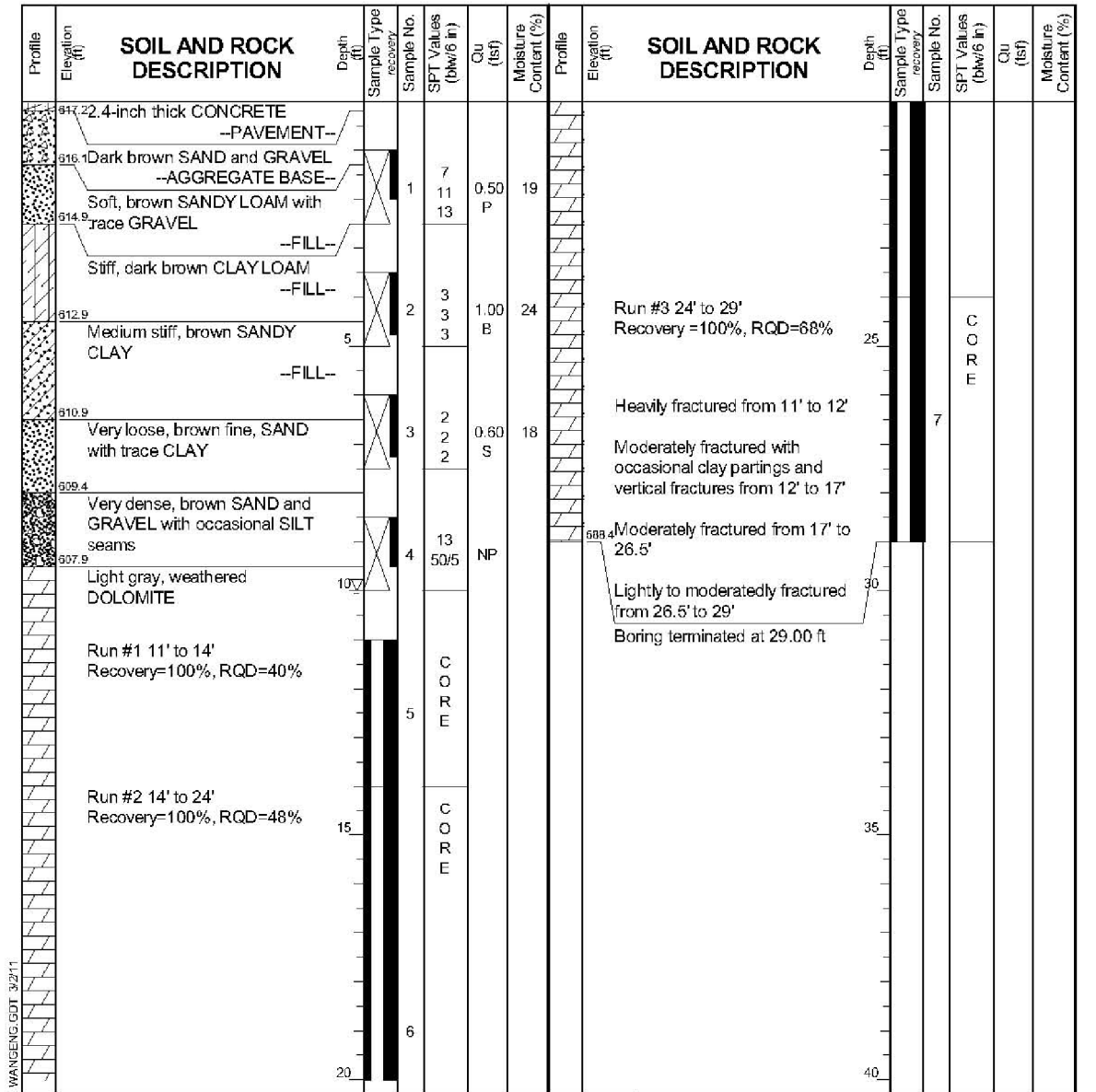
BORING LOG SB-102

Page 1 of 1

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WEI Job No.: 775-13-01
 Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Datum: NGVD
 Elevation: 617.40 ft
 North: 1767893.23 ft
 East: 1077673.59 ft
 Station: 672+84
 Offset: 76 L



GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	12-16-1994	Complete Drilling	12-16-1994	While Drilling	10.00 ft		
Drilling Contractor	TSC	Drill Rig		At Completion of Drilling	WASHED		
Driller		Checked by	A. Bohac	Time After Drilling	NA		
Drilling Method	Boring log provided by Clorba Group and IDOT			Depth to Water	NA		
				The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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USER NAME = kaisneros	DESIGNED - AMK	REVISED -
CHECKED - DL	REVISED -	
PLOT SCALE = 0:2.0000" = 1' = 1/8"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS 2
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

SHEET NO. S-113 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	588
CONTRACT NO.			60N87	
ILLINOIS FED. AID PROJECT				

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BORING LOG SB-103

Page 1 of 1

WEI Job No.: 775-13-01
 Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Datum: NGVD
 Elevation: 619.10 ft
 North: 1767928.26 ft
 East: 1077970.67 ft
 Station: 673+91
 Offset: 90 R

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
614.9	2.4-inch thick CONCRETE --PAVEMENT--												
618.2	10.8-inch thick SAND and GRAVEL --AGGREGATE BASE--	1	4	6	1.50	16		Run #2 21' to 31' Recovery=100%, RQD=51%					
	Stiff, brown CLAY LOAM to SANDY LOAM with trace GRAVEL --FILL--	2	7	7	2.20	20		Heavily fractured from 18' to 24.5'	25				
		3	3	5	0.80	17		Moderately fractured below 24.5'					
		4	3	2	0.90	15		Mottled dark gray from 31.2' to 31.9'					
609.6	Medium stiff, brown SANDY CLAY	5	3	5	0.30	23		Run #3 31' to 34.5' Recovery=100%, RQD=50%					
606.1	Very dense, brown SAND and GRAVEL with occasional SILT seams	6	65	5	NP			Boring terminated at 34.50 ft	35				
605.1	Light gray DOLOMITE, weathered to tan/buff at 17' --WEATHERED BEDROCK--	7	15	19	NP								
	Run #1 18' to 21' Recovery=100%, RQD=0%	8							40				

GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	12-14-1994	Complete Drilling	12-14-1994
Drilling Contractor	TSC	Drill Rig	
Driller		Checked by	A. Bohac
Drilling Method	Boring log provided by Clorba Group and IDOT		
While Drilling		At Completion of Drilling	13.00 ft
Time After Drilling		Depth to Water	WASHED
Depth to Water			NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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BORING LOG SB-104

Page 1 of 1

WEI Job No.: 775-13-01
 Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Datum: NGVD
 Elevation: 616.70 ft
 North: 1768067.53 ft
 East: 1077751.93 ft
 Station: 674+75
 Offset: 73 L

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
616.2	6-inch thick CRUSHED STONE Stiff, brown CLAY LOAM --FILL--	1	5	7	1.20	21		Moderate to heavily fractured from 10.5' to 22.9'		6			
		2	4	4	1.10	18		lightly to moderately fractured from 22.9' to 30'					
613.7	Stiff, brown SANDY LOAM	5						Fractures frequently contain some silt/clay from 10.5' to 23'					
		3	7	9	NP			Fragmented zones: 17' to 17.5' and 22.1' to 22.9'	25				
611.2	Dense, brown SAND with little GRAVEL	3						Run #3 24' to 30' Recovery=100%, RQD=67%					
		4	7	9	NP			3-inch thick SILT/CLAY layer at 28.1'					
606.2	Light gray, DOLOMITE, weathered to tan/buff color to 27.5' Run #1 11' to 17.5' Recovery=94%, RQD=17%	5						Boring terminated at 30.00 ft	30				
	Run #2 17.5' to 24' Recovery=100%, RQD=14%								40				

GENERAL NOTES		WATER LEVEL DATA	
Begin Drilling	01-17-1995	Complete Drilling	01-17-1995
Drilling Contractor	TSC	Drill Rig	
Driller		Checked by	A. Bohac
Drilling Method	Boring log provided by Clorba Group and IDOT		
While Drilling		At Completion of Drilling	10.50 ft
Time After Drilling		Depth to Water	WASHED
Depth to Water			NA
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			

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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

SOIL BORING LOGS 3
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. R.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	589
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

SHEET NO. S-114 OF S-118 SHEETS

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BORING LOG SB-105

WEI Job No.: 775-13-01
 Client: Clorba Group, Inc.
 Project: FAI-80 from US 30 to US 45
 Location: Will County

Datum: NGVD
 Elevation: 619.20 ft
 North: 1768086.46 ft
 East: 1077929.93 ft
 Station: 675+54
 Offset: 86 R

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Cu (tsf)	Moisture Content (%)
619.7	Stiff, dark brown CLAY with some GRAVEL and trace ORGANICS	1	12	12	7	1.00	19	619.2	Run #3 22' to 30' Recovery=100%, RQD=0%	22	8				
609.4	Medium dense to very dense, brown SAND and GRAVEL with some COBBLES and BOULDERS	5	7	11	14	NP									
		10	19	23	25	NP									
		15	12	32	50/3	NP									
	Run #1 11.3' to 14' Recovery=100%, RQD=0%	15	50/3			NP									
	Run #2 14' to 22' Recovery=100%, RQD=0%	15													
	Light gray DOLOMITE, mostly weathered to tan/buff color, heavily fractured, some fractures filled with SILT, occasional CLAY partings	20													

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	12-12-1994	Complete Drilling	12-12-1994	While Drilling	11.00 ft		
Drilling Contractor	TSC	Drill Rig		At Completion of Drilling	WASHED		
Driller		Logger		Time After Drilling	NA		
Checked by	A. Bohac	Depth to Water	NA	The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			
Drilling Method	Boring log provided by Clorba Group and IDOT						

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BORING LOG SB-106

WEI Job No.: 775-13-01
 Client: Clorba Group, Inc.
 Project: FAI-80 from US 30 to US 45
 Location: Will County

Datum: NGVD
 Elevation: 614.60 ft
 North: 1768163.65 ft
 East: 1077783.59 ft
 Station: 675+79
 Offset: 78 L

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/in)	Cu (tsf)	Moisture Content (%)
594.1	Loose to medium dense, brown SANDY LOAM with GRAVEL -FILL-	1	3	3	6	NP	12	594.1	Run #1 21' to 24' Recovery=72%, RQD=72%	21	g				
		5	6	5	7	NP	13								
		10	3	6	7	0.90	18								
	Medium stiff to very stiff, brown and gray CLAY LOAM with occasional SAND seam	10	4	2	5	0.70	15								
		15	1	1	2	1.00	22								
		20	4	3	3	NP									
	Loose to medium dense, brown SAND and GRAVEL with occasional SILT seams below 18'	15	2	2	3	NP									
		20	4	6	9	NP									
		30													
		35													
		40													
		40													

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	12-13-1994	Complete Drilling	12-13-1994	While Drilling	13.00 ft		
Drilling Contractor	TSC	Drill Rig		At Completion of Drilling	WASHED		
Driller		Logger		Time After Drilling	NA		
Checked by	A. Bohac	Depth to Water	NA	The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.			
Drilling Method	Boring log provided by Clorba Group and IDOT						

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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS 4
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	590
CONTRACT NO. 60N87				
ILLINOIS FED. AID PROJECT				

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BORING LOG SB-107

WEI Job No.: 775-13-01
 Datum: NGVD
 Elevation: 605.70 ft
 North: 1768217.17 ft
 East: 1077975.28 ft
 Station: 678+85
 Offset: 85 R

Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)
	Soft, dark brown and black SILTY CLAY with occasional SAND seams --TOPSOIL--	0		1	1	0.50	33	583.2	Boring terminated at 22.50 ft	0		6			
601.7	Brown GRAVEL, COBBLES and fractured DOLOMITE	5		2	2	0.50	33			25					
601.2	Run #1 4.5' to 6.5' Recovery=100%, RQD=0%	5		3	50/3										
	Run #2 6.5' to 8.5' Recovery=100%, RQD=0%			4											
	Run #3 8.5' to 17.5' Recovery=100%, RQD=67%			5											
	Light gray DOLOMITE, weathered to tan/buff color to 17', some fractures filled with silt between 4.5' and 7.5', occasional clay partings between 10' and 17'	10								30					
	Heavily fractured from 4.5' to 10'														
	Moderately fractured from 10' to 12'	15								35					
	Lightly fractured from 12' to 22.5'														
	Run #4 17.5' to 22.5' Recovery=100%, RQD=100%	20								40					

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	12-20-1994	Complete Drilling	12-20-1994	While Drilling	4.00 ft		
Drilling Contractor	TSC	Drill Rig		At Completion of Drilling	WASHED		
Driller		Checked by	A. Bohac	Time After Drilling	NA		
Drilling Method	Boring log provided by Clorba Group and IDOT			Depth to Water	NA		
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

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BORING LOG SB-108

WEI Job No.: 775-13-01
 Datum: NGVD
 Elevation: 604.40 ft
 North: 1768277.14 ft
 East: 1077830.08 ft
 Station: 677+04
 Offset: 72 L

Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)
	Loose, brown SILTY SAND and GRAVEL with some SILT layers	0		1	2	NP	14	679.9	Boring terminated at 24.50 ft	0		6			
	Run #1 2.5' to 5.5'	5		2	3	NP				25					
	Run #2 5.5' to 10.5'			3	5										
	Run #3 10.5' to 16.5'			4	50/5	2.50	20								
	Very stiff, gray CLAY	10													
	Light gray DOLOMITE, weathered to tan/buff color to 11'														
	Run #1 7.5' to 10.5' Recovery=100%, RQD=58%			4											
	Run #2 10.5' to 16.5' Recovery=100%, RQD=61%	10								30					
	Moderately fractured from 7.5' to 13'														
	Lightly fractured below 13'														
	Vertical fracture from 22.3' to 23.5'	15								35					
	Run #3 16.5' to 24.5' Recovery=100%, RQD=86%	20								40					

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	12-21-1994	Complete Drilling	12-21-1994	While Drilling	4.00 ft		
Drilling Contractor	TSC	Drill Rig		At Completion of Drilling	WASHED		
Driller		Checked by	A. Bohac	Time After Drilling	NA		
Drilling Method	Boring log provided by Clorba Group and IDOT			Depth to Water	NA		
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

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USER NAME = kaisneros	DESIGNED - AMK	REVISED -
PLOT SCALE = 0:2.0000' = 1" = 1'	CHECKED - DL	REVISED -
PLOT DATE = 5/9/2018	DRAWN - RD	REVISED -
	CHECKED - DL	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS 5
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)
 SHEET NO. S-116 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	591
CONTRACT NO. 60N87			ILLINOIS FED. AID PROJECT	

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BORING LOG SB-109

WEI Job No.: 775-13-01
 Client: Clorba Group, Inc.
 Project: FAI-80 from US 30 to US 45
 Location: Will County
 Datum: NGVD
 Elevation: 603.30 ft
 North: 1768245.18 ft
 East: 1077932.17 ft
 Station: 677+03
 Offset: 35 R

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
600.3	Dense, brown and gray SILTY SAND and GRAVEL with occasional COBBLES and SILT	0		1	8 10 25	NP		581.3	Boring terminated at 22.00 ft	22					
599.8	Siff, gray CLAY	1		2	4 5 50	1.80 E	21								
	Run #1 5' to 7' Recovery=100%, RQD=21%	5		3											
	Run #2 7' to 9' Recovery=100%, RQD=33%	10		4											
	Run #3 9' to 17' Recovery=100%, RQD=43%	15		5											
	Light gray DOLOMITE, weathered to tan/buff color to 8.5'														
	Heavily fractured from 5' to 12'														
	Moderate to lightly fractured below 12'														
	Run #4 17' to 22' Recovery=100%, RQD=100%	20		6											

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	12-21-1994	Complete Drilling	12-21-1994	While Drilling	0.90 ft		
Drilling Contractor	TSC	Drill Rig		At Completion of Drilling	WASHED		
Driller		Logger		Time After Drilling	NA		
Drilling Method	Boring log provided by Clorba Group and JDQT			Depth to Water	NA		
The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.							

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USER NAME = kaisneros	DESIGNED - AMK	REVISED -
	CHECKED - DL	REVISED -
PLOT SCALE = 0:2,0000' 1" / 1"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - DL	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

SOIL BORING LOGS 6
S.N. 099-0068 (W.B.) & 099-0069 (E.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	592
CONTRACT NO. 60N87				
ILLINOIS FED. AID PROJECT				

SHEET NO. S-117 OF S-118 SHEETS

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BORING LOG SB-110

WEI Job No.: 775-13-01
 Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Datum: NGVD
 Elevation: 646.20 ft
 North: 1768407.45 ft
 East: 1077945.74 ft
 Station: 678+62
 Offset: 0 RT/LT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)
646.4	Black CLAY --TOPSOIL-- Stiff to very stiff, brown CLAY with trace GRAVEL --FILL--	1	X	4	4	1.30	20	625.7	Stiff to very stiff, brown CLAY with trace GRAVEL --FILL--	9	X	7	11	2.40	20
		4	X	4	4					11	X	13	B		
		6	X	6	6					13	X	15	B		
		5	X	2	4	1.50	21			25	X	10	7	1.80	19
			X	6	6						X	9	9	B	
			X	9	9						X	15	15	B	
			X	3	7	2.30	20				X	11	7	2.00	19
			X	8	8						X	9	9	B	
			X	11	11						X	11	11	B	
639.2	Very stiff, gray CLAY with trace GRAVEL and ORGANICS --FILL--	4	X	7	8	2.10	20	618.2	Dense, brown SAND and GRAVEL with occasional COBBLES --FILL--	12	X	20	23	NP	
		10	X	8	8					25	X	23	25		
636.7	Very stiff, brown CLAY with trace GRAVEL --FILL--	5	X	6	9	2.50	21	615.7	Stiff, brown CLAY with trace GRAVEL --FILL--	13	X	16	18	1.90	19
			X	11	11					15	X	15	B		
			X	6	11	2.20	21	613.2	Very stiff, dark gray and black SILTY CLAY with trace ORGANICS and GRAVEL --FILL--	14	X	8	11	2.30	20
			X	12	12					35	X	11	14	B	
			X	13	13			610.7	Very stiff, brown and gray CLAY --FILL--	15	X	8	11	3.40	21
			X	7	11	2.00	20				X	12	12	B	
			X	23	23			608.2	Very stiff, brown CLAY	16	X	8	9	2.00	25
			X	7	7	1.20	18				X	13	B		
			X	6	6						X	7	7	B	
			X	7	7						X	13	B		

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	12-15-1994	Complete Drilling	12-15-1994	While Drilling	43.00 ft		
Drilling Contractor	TSC	Drill Rig		At Completion of Drilling	43.00 ft		
Driller		Logger		Time After Drilling	NA		
Checked by	A. Bohac	Drilling Method	Boring log provided by Clorba Group and IDOT	Depth to Water	NA		

Wang Engineering
 wangeng@wangeng.com
 1145 N Main Street
 Lombard, IL 60148
 Telephone: 630 953-9928
 Fax: 630 953-9938

BORING LOG SB-110

WEI Job No.: 775-13-01
 Client: **Clorba Group, Inc.**
 Project: **FAI-80 from US 30 to US 45**
 Location: **Will County**

Datum: NGVD
 Elevation: 646.20 ft
 North: 1768407.45 ft
 East: 1077945.74 ft
 Station: 678+62
 Offset: 0 RT/LT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blows/6 in)	Cu (tsf)	Moisture Content (%)
			X	17	11	2.10	22				X	17	11	2.10	22
			X	8	8						X	10	10	B	
			X	18	2	NP					X	3	3	NP	
			X	4	4						X	4	4	NP	
			X	19	11	NP					X	13	13	NP	
			X	15	15						X	15	15	NP	
			X	20	10	NP					X	3	3	NP	
			X	50	50						X	50	50		

GENERAL NOTES				WATER LEVEL DATA			
Begin Drilling	12-15-1994	Complete Drilling	12-15-1994	While Drilling	43.00 ft		
Drilling Contractor	TSC	Drill Rig		At Completion of Drilling	43.00 ft		
Driller		Logger		Time After Drilling	NA		
Checked by	A. Bohac	Drilling Method	Boring log provided by Clorba Group and IDOT	Depth to Water	NA		

N:\PROJECTS\0003384\004_US_30\Design\Structural\CAD\3384_118_Soil Boring Logs 7.dgn

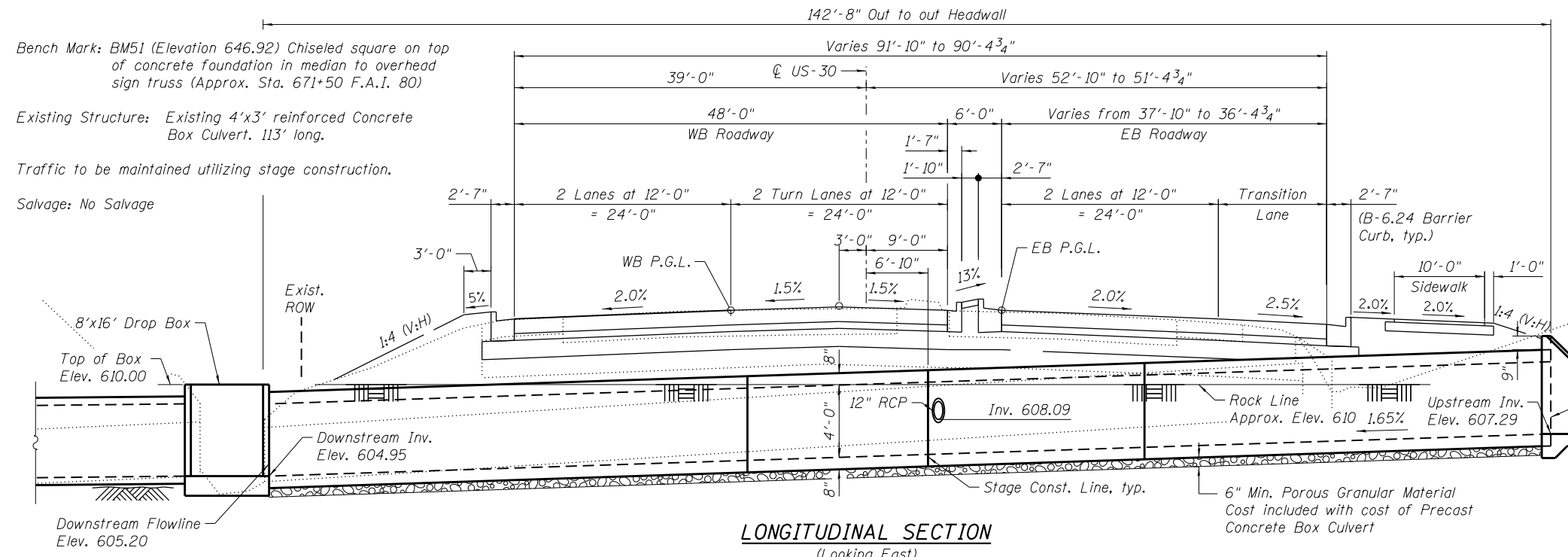


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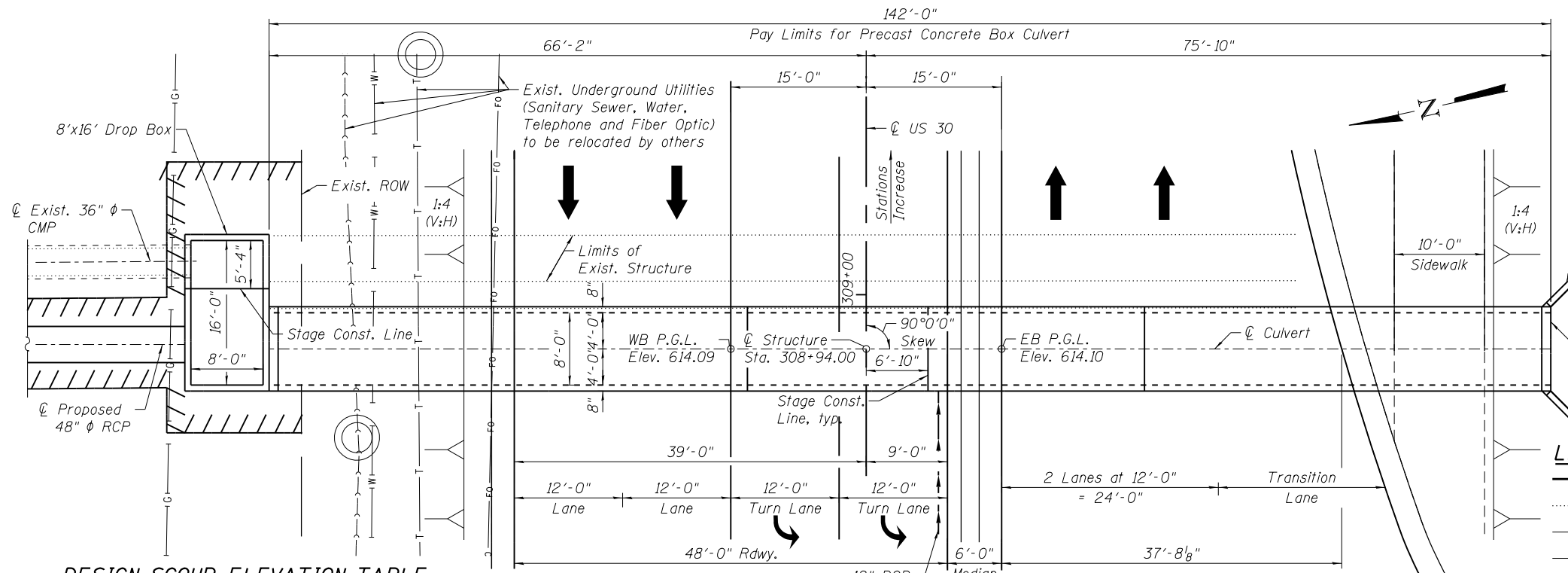
**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

SOIL BORING LOGS 7
 S.N. 099-0068 (W.B.) & 099-0069 (E.B.)
 SHEET NO. S-118 OF S-118 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	593
CONTRACT NO. 60N87				ILLINOIS FED. AID PROJECT



LONGITUDINAL SECTION
(Looking East)



PLAN

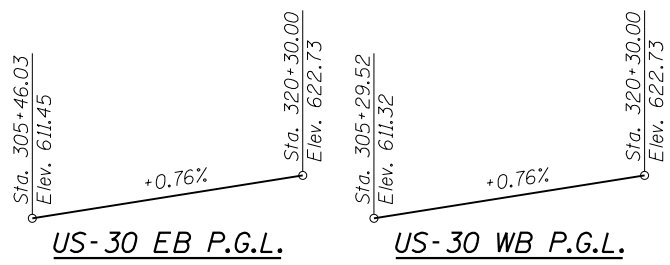
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	Upstream	Downstream
	604.29	601.95

WATERWAY INFORMATION

Drainage Area = 0.3 Sq. miles Existing Low Grade Elev. 612.93 @ Sta. 308+60 Proposed Low Grade Elev. 613.50 @ Sta. 309+00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	76			0.00	0.00	612.01	609.56	
Base	50	89			0.00	0.00	613.23	610.87	
Overtopping Exist.	100	99			0.00	0.00	613.39	611.44	
Overtopping Prop.		178			0.00	0.00	612.97	613.50	



TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Structure Excavation	Cu Yd	267
Rock Excavation For Structures	Cu Yd	308
Concrete Structures	Cu Yd	17.8
Reinforcement Bars, Epoxy Coated	Pound	2190
Precast Concrete Box Culverts 8'x4'	Foot	142
Mechanical Splicers	Each	25
Name Plates	Each	1
Expansion Bolts 3/4 inch	Each	6

GENERAL NOTES

- Precast Concrete Box Culvert sections shall conform to the requirements for Article 540.06 of the Standard Specifications and the applicable requirements of ASTM C1577.
- Lifting holes shall be filled with concrete plugs and mastic after box sections are in place.
- Reinforcement bars designated (E) shall be epoxy coated.
- For staging details, see Sheets SB-2 and SB-3.

LOADING HL - 93

Allow 50 PSF for future wearing surface. Design fill height < 2 ft.

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications with 2012 Interims

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

PRECAST UNITS

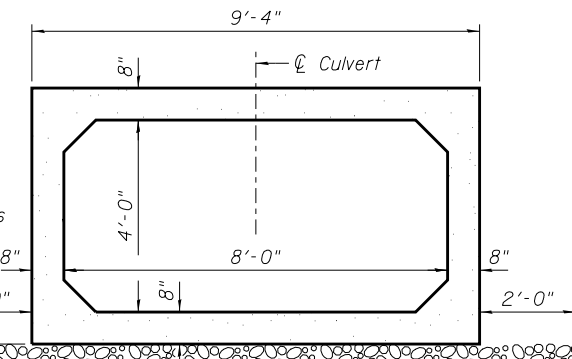
f'c = 5,000 psi
fy = 65,000 psi (Welded Wire Fabric)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = .067g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = .124g
Soil Site Class = C

INDEX OF SHEETS

- SB-1. General Plan & Elevation
- SB-2. Stage Construction I
- SB-3. Stage Construction II
- SB-4. Drop Box Details
- SB-5. Precast Box Section & Cast-In-Place Apron Details
- SB-6. Bar Splicer Assembly and Mechanical Splicer Details
- SB-7. Soil Boring Log



SECTION THRU BARREL

STATION 308+94.00
BUILT 2011 BY
STATE OF ILLINOIS
F.A.I. RT. 80 SEC. 99-4-1VB-1-R
LOADING HL-93
STRUCTURE NO. 099-C030

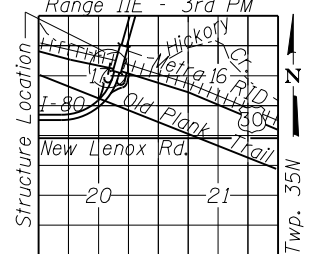
NAME PLATE

See Std. 515001



LEGEND:

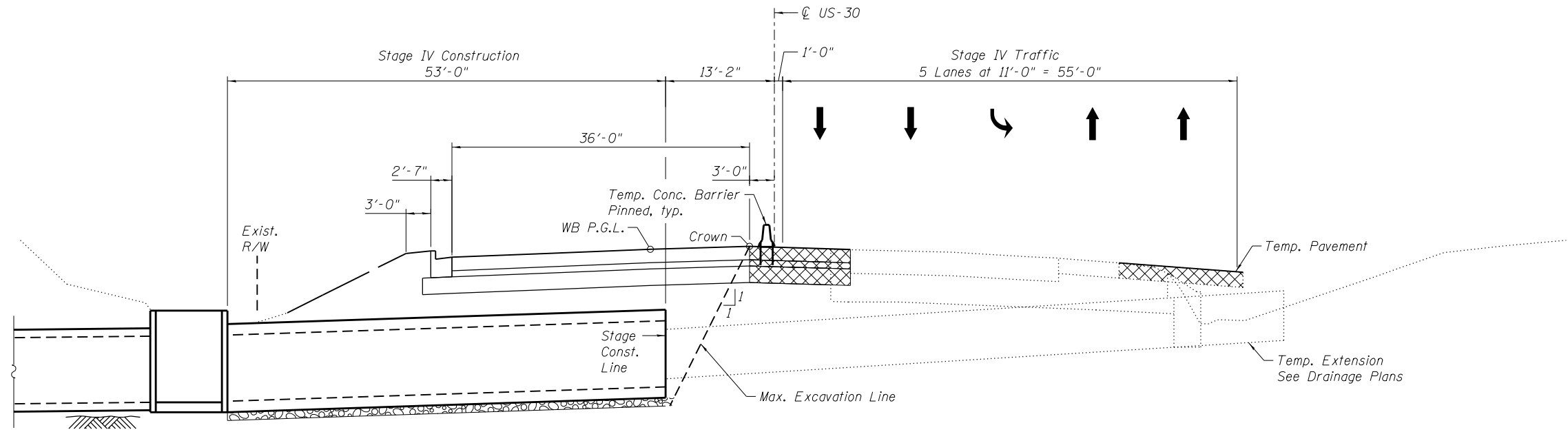
- Proposed Structure
- Existing Structure
- Existing Underground Telephone
- Proposed Underground Storm Sewer
- Existing Underground Fiber Optic
- Proposed Permanent Easement
- Existing Underground Gas
- Soil Boring
- Existing Underground Water
- Manhole
- Existing Underground Sanitary Sewer



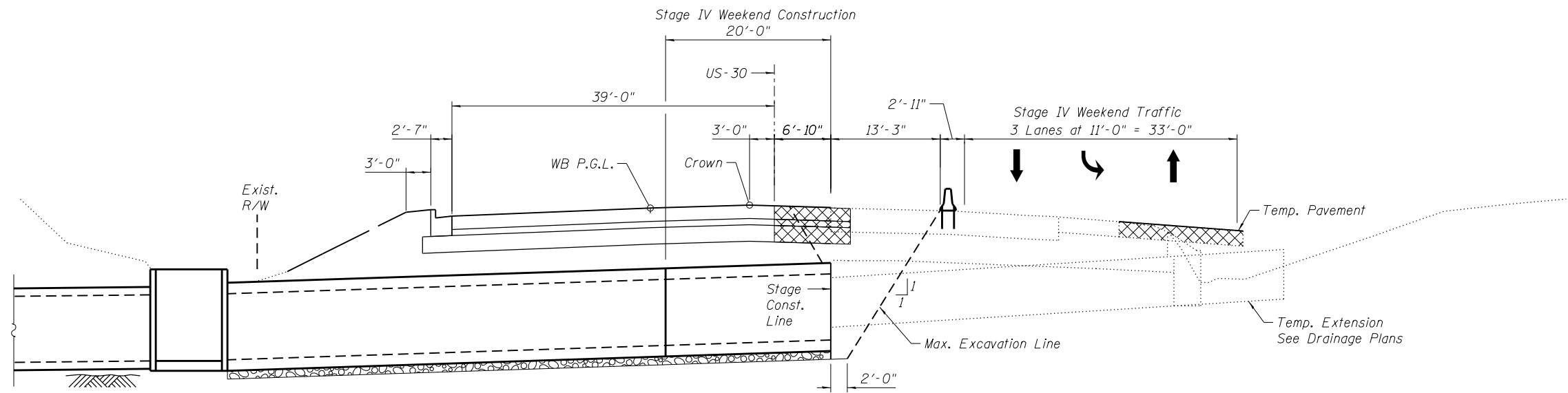
LOCATION SKETCH

GENERAL PLAN & ELEVATION

US-30 OVER DRAINAGE DITCH
SEC. 99-4-1VB-1-R
WILL COUNTY
STATION 308+94.00
STRUCTURE NO. 099-C030



**STAGE IV - TRAFFIC AND CONSTRUCTION
LONGITUDINAL SECTION**
(Looking East)



**STAGE IV WEEKEND - TRAFFIC AND CONSTRUCTION
LONGITUDINAL SECTION**
(Looking East)

LEGEND:

 Temporary Pavement

NOTE:

1. Existing culvert to be Filled with low strength concrete.
See Roadway Removal plans.

N:\PROJ\10003384\00\4_US_30\Design\Drainage\Culvert_Headwall_2_Stage_Construction.dgn



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	CHECKED - BWS	REVISED -
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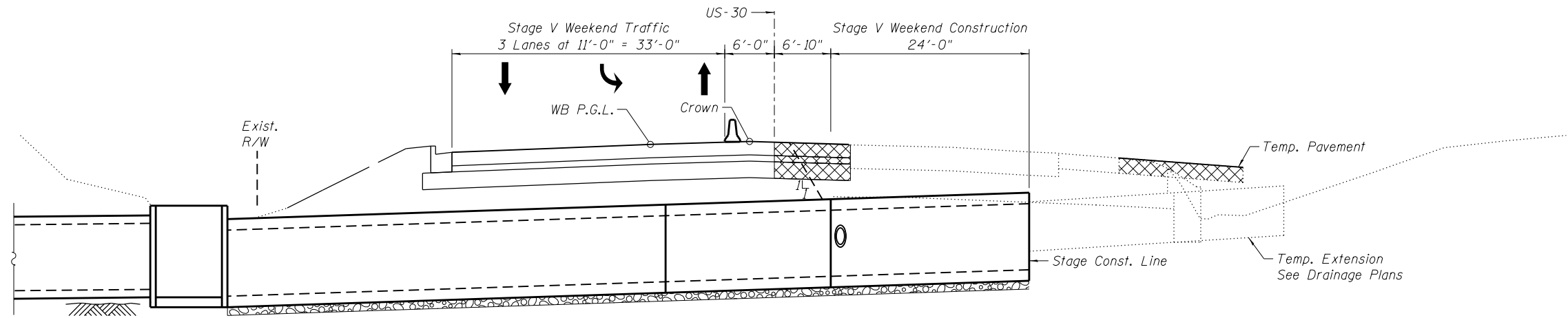
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STAGE CONSTRUCTION I
S.N. 099-C030**

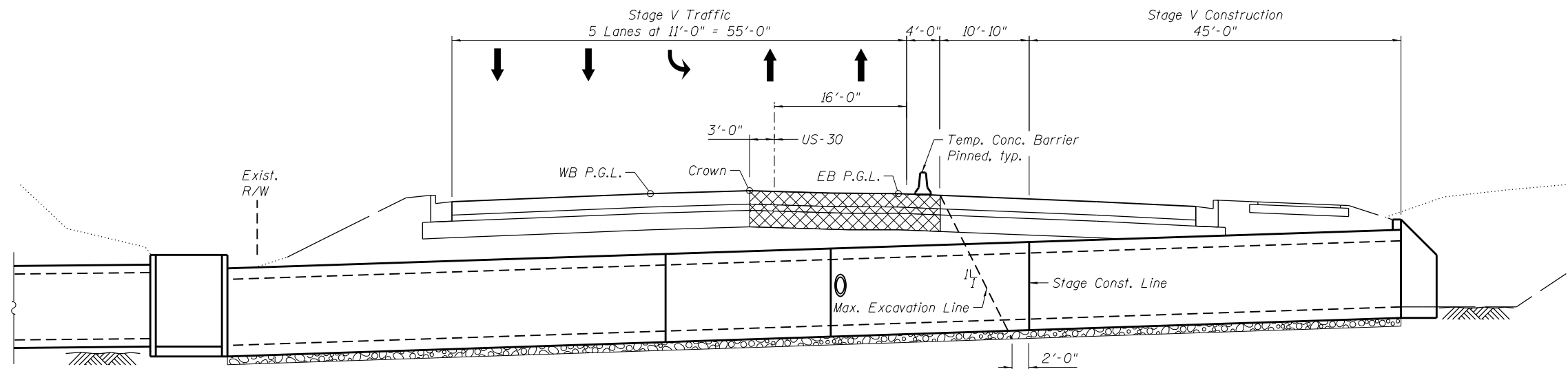
SHEET NO. SB-2 OF SB-7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	595
CONTRACT NO. 60N87				

ILLINOIS FED. AID PROJECT



STAGE V WEEKEND - TRAFFIC AND CONSTRUCTION
LONGITUDINAL SECTION
 (Looking East)



STAGE V - TRAFFIC AND CONSTRUCTION
LONGITUDINAL SECTION
 (Looking East)

LEGEND:

 Temporary Pavement

NOTE:

1. Existing culvert to be Filled with low strength concrete.
 See Roadway Removal plans.

N:\PROJ\10003384\00\4_US_30\Design\Drainage\Culvert_Headwall_3_Stage_Construction.dgn



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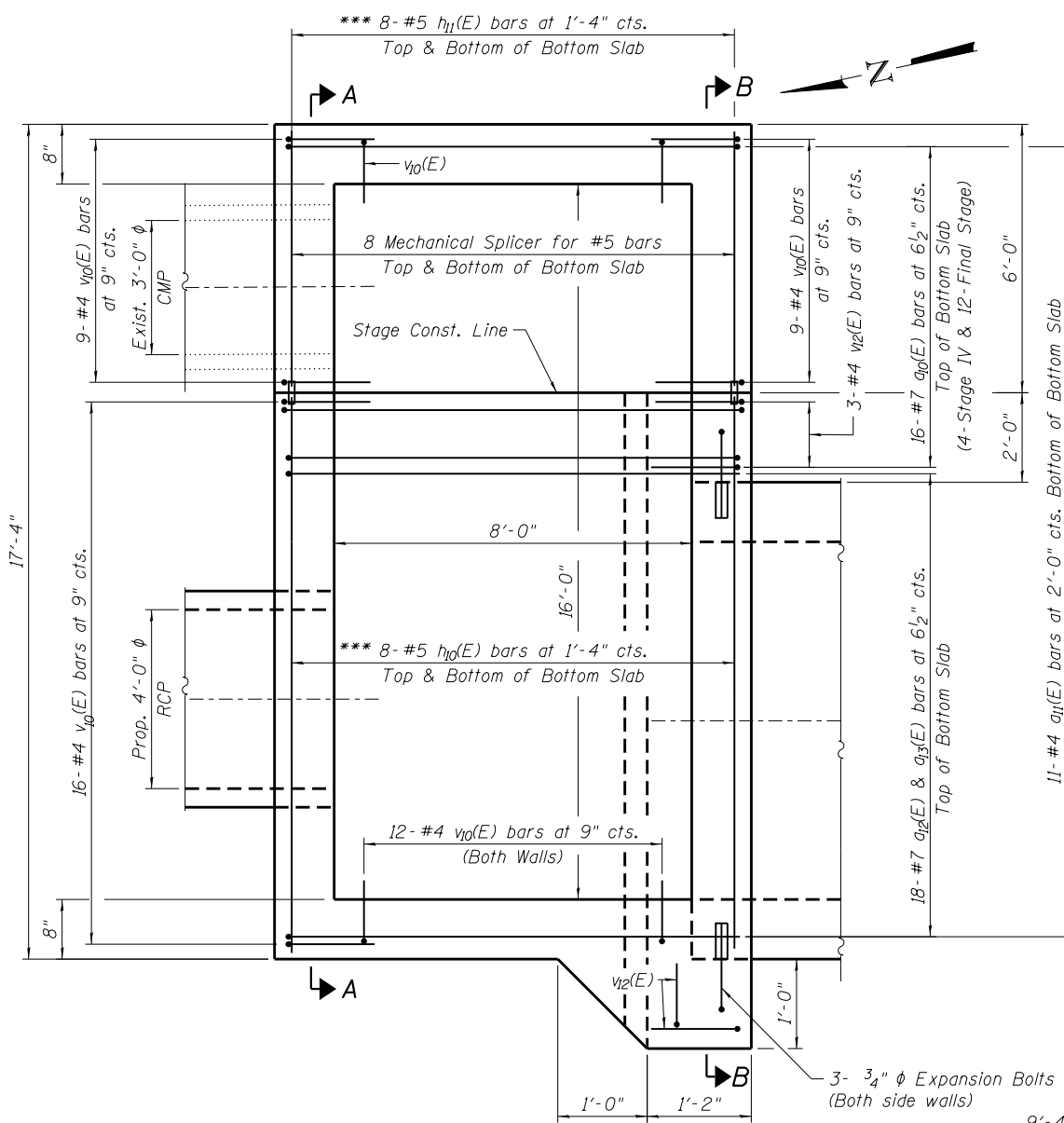
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION II
S.N. 099-C030

SHEET NO. SB-3 OF SB-7 SHEETS

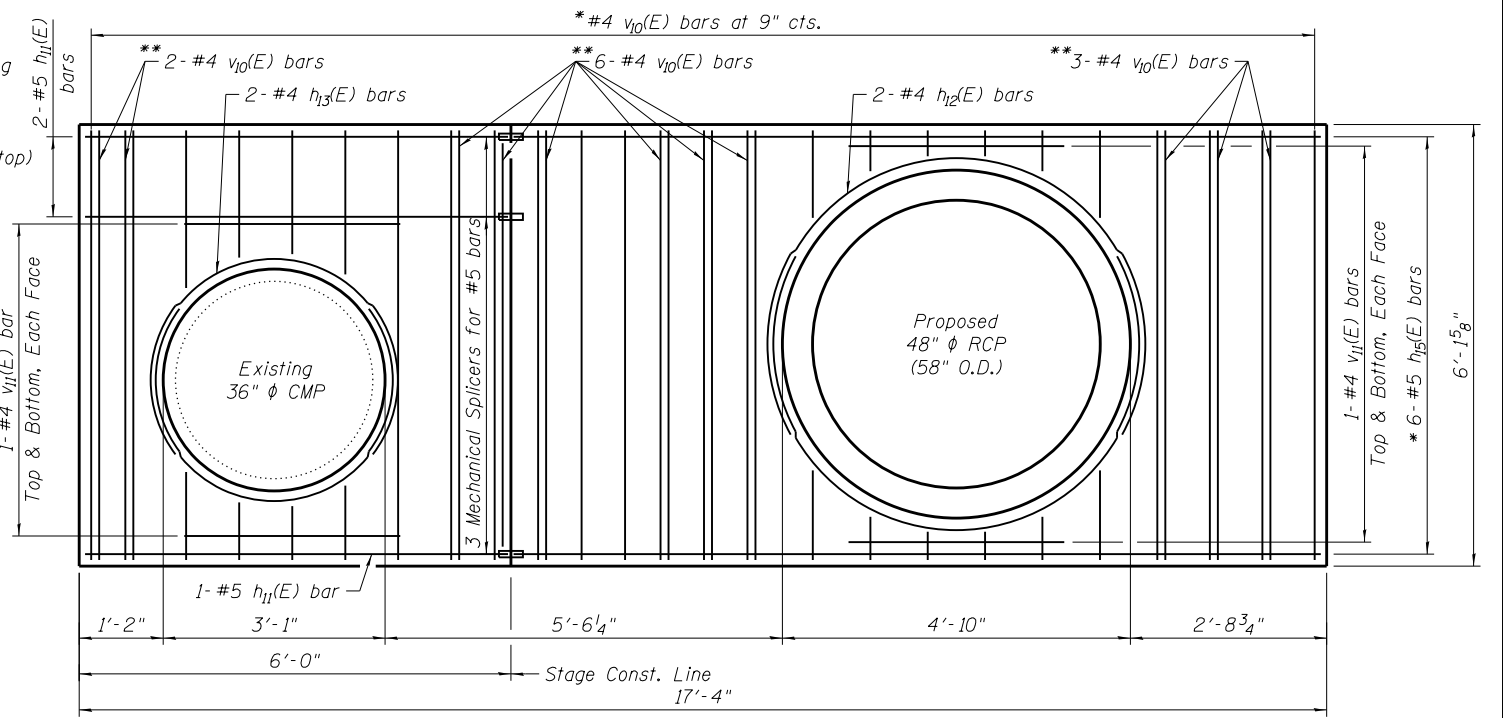
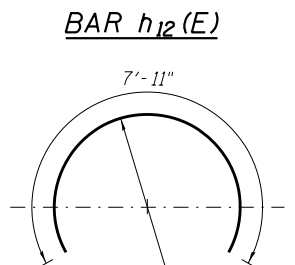
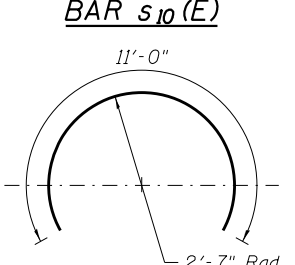
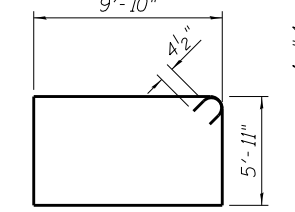
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	596
CONTRACT NO. 60N87				

ILLINOIS FED. AID PROJECT

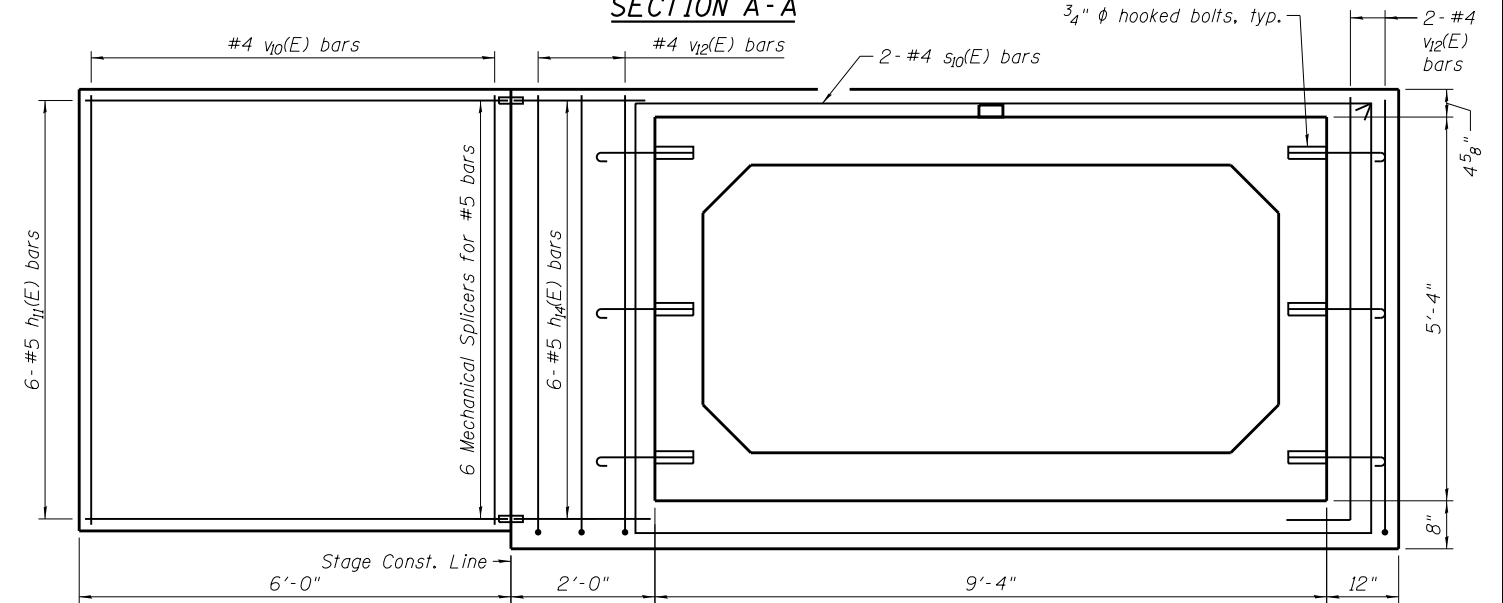


* Cut bars to fit around pipes
 ** Provide 50% of vertical reinforcing cut by blockout on each side of pipe at each face (typ.)
 *** Adjust one $h_{10}(E)$ & $h_{11}(E)$ bars (top) to avoid culvert.

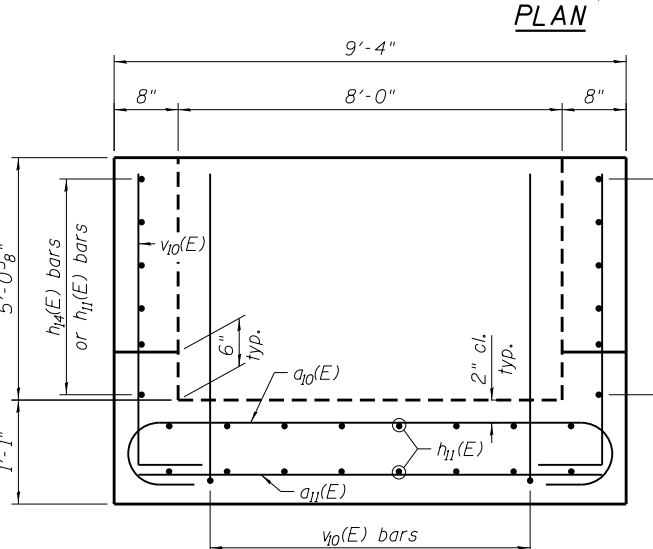
NOTE:
 Expansion bolts shall be $\frac{3}{4}$ " ϕ hooked bolts. Hooked bolts shall extend a min. of 9" into new concrete.



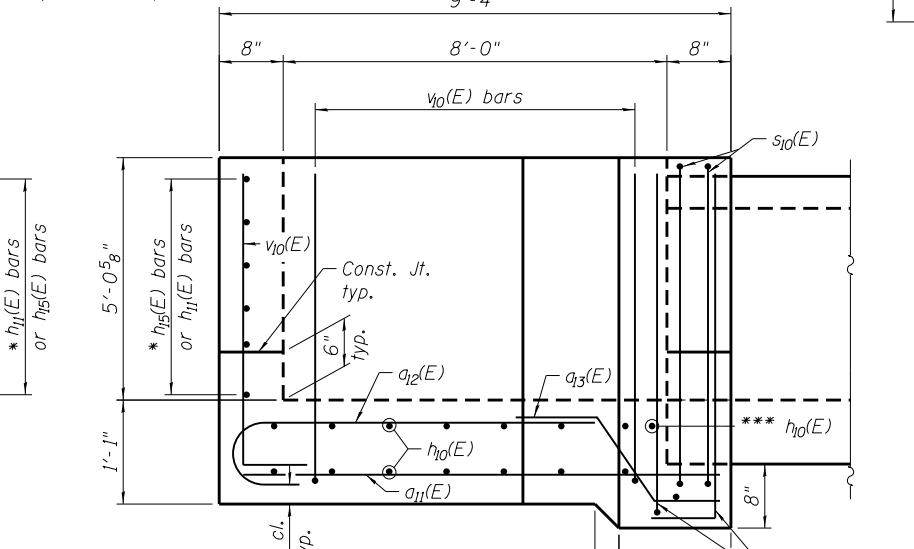
SECTION A-A



SECTION B-B

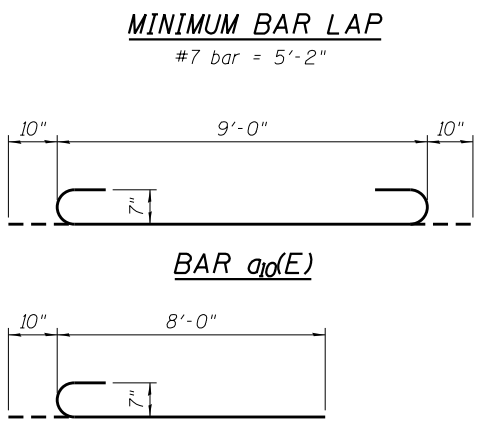
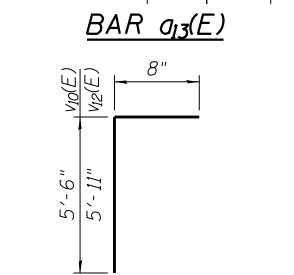
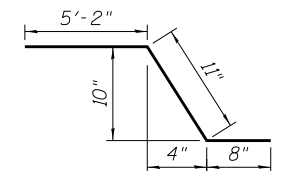


ELEVATION - EAST WALL
(Looking West)



ELEVATION - WEST WALL
(Looking East)

DROP BOX



MINIMUM BAR LAP
#7 bar = 5'-2"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_{10}(E)$	16	# 7	10'-8"	
$a_{11}(E)$	11	# 4	9'-0"	
$a_{12}(E)$	18	# 7	8'-10"	
$a_{13}(E)$	18	# 7	6'-9"	
$h_{10}(E)$	16	# 5	11'-0"	
$h_{11}(E)$	25	# 5	5'-10"	
$h_{12}(E)$	2	# 4	11'-0"	
$h_{13}(E)$	2	# 4	9'-0"	
$h_{14}(E)$	6	# 5	2'-0"	
$h_{15}(E)$	6	# 5	11'-0"	
$s_{10}(E)$	2	# 4	32'-3"	
$v_{10}(E)$	69	# 4	6'-2"	
$v_{11}(E)$	8	# 4	3'-0"	
$v_{12}(E)$	5	# 4	6'-7"	
Concrete Structures			Cu. Yd.	11.4
Reinforcement Bars, Epoxy Coated			Pound	1,800
Expansion Bolts 3/4 inch			Each	6

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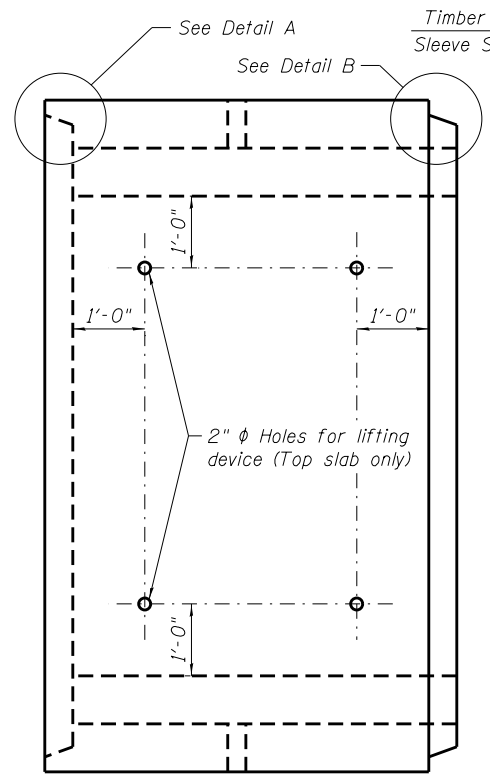
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DROP BOX DETAILS
S.N. 099-C030**

SHEET NO. SB-4 OF SB-7 SHEETS

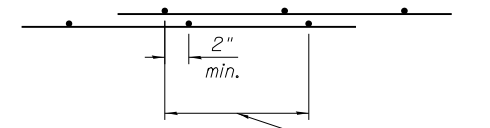
F.A.I. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	597
CONTRACT NO. 60N87				

ILLINOIS FED. AID PROJECT

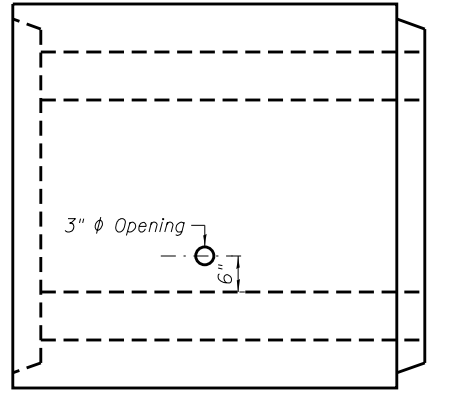


PLAN

Location of lifting holes may be varied as needed to clear reinf.



TYP. FABRIC LAP

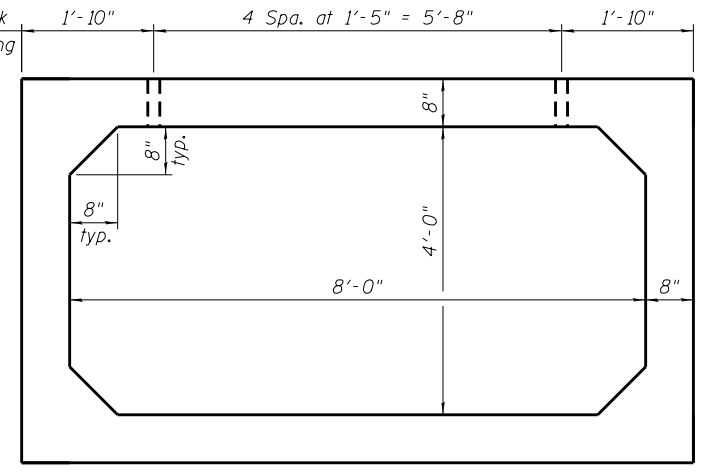


ELEVATION

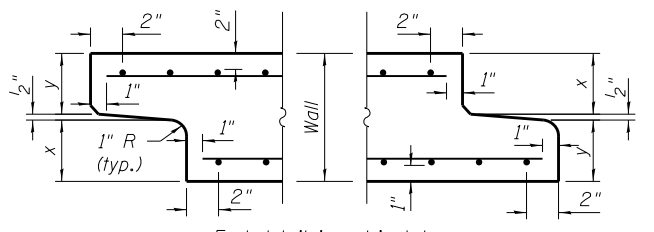
PRECAST BOX CULVERT SECTION

NOTES:

- All construction joints shall be bonded.
- Cover 3" ϕ weep holes with geotechnical fabric for box culvert end section and precast box culvert.



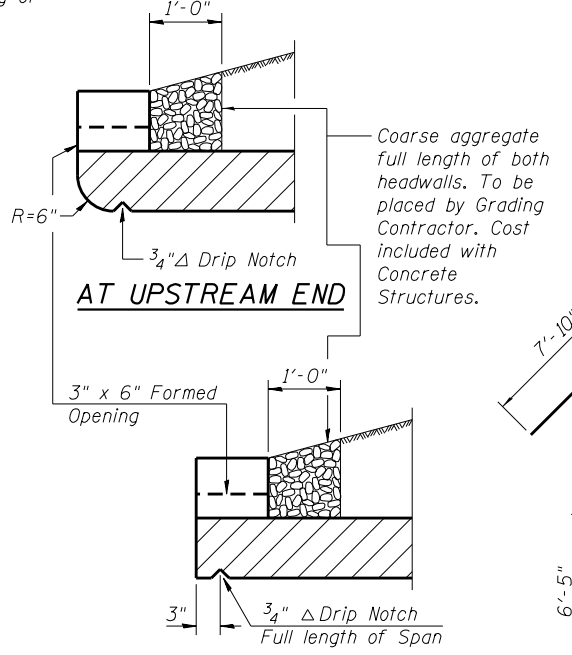
TYPICAL BOX SECTION



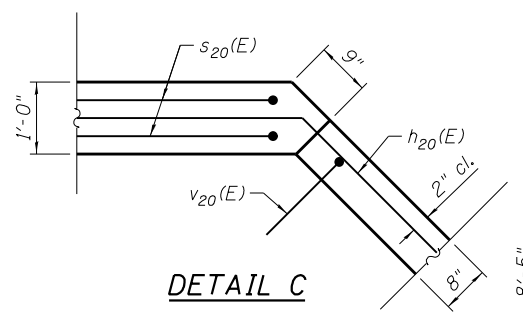
DETAIL A
(Typ. Inlet End)

DETAIL B
(Typ. Outlet End)

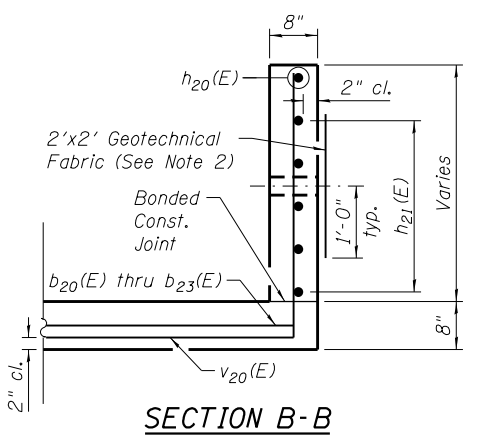
Note: Inlet and outlet ends shall be compatible.



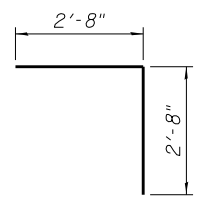
DRAIN DETAIL



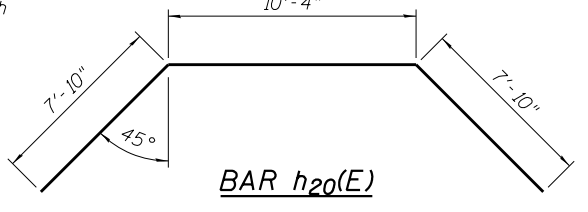
DETAIL C



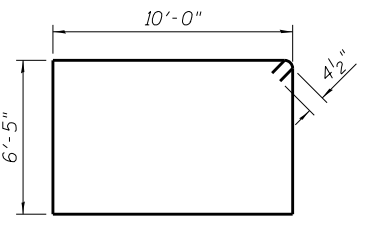
SECTION B-B



BAR d₂₀(E)

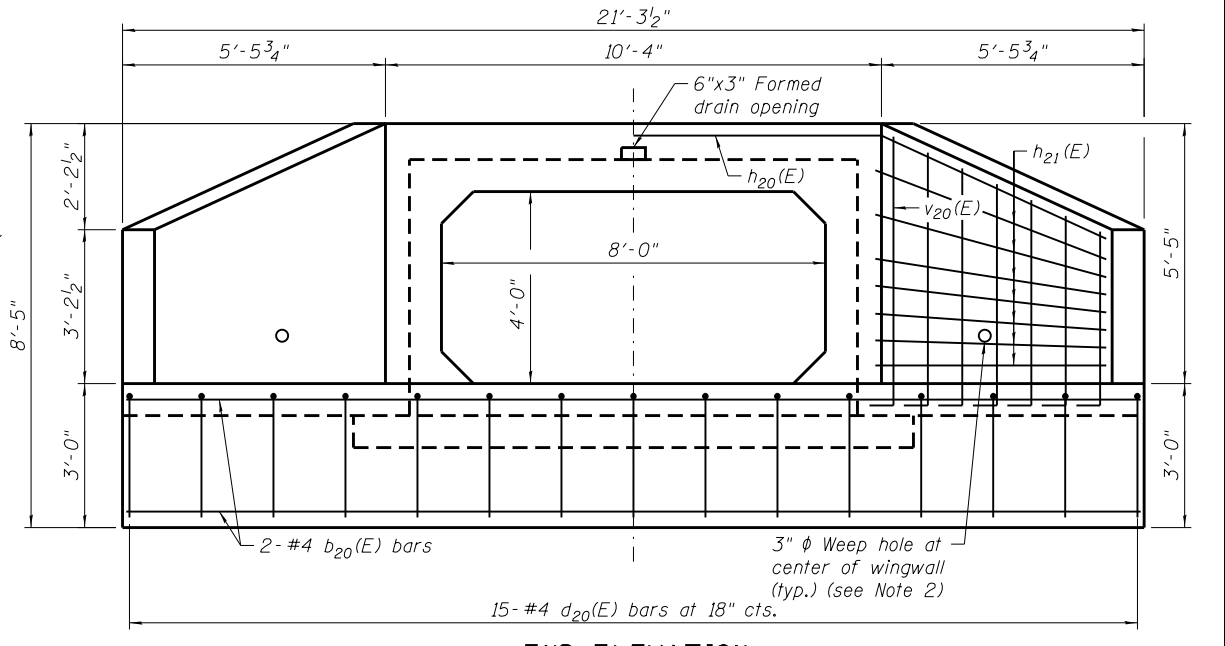


BAR h₂₀(E)

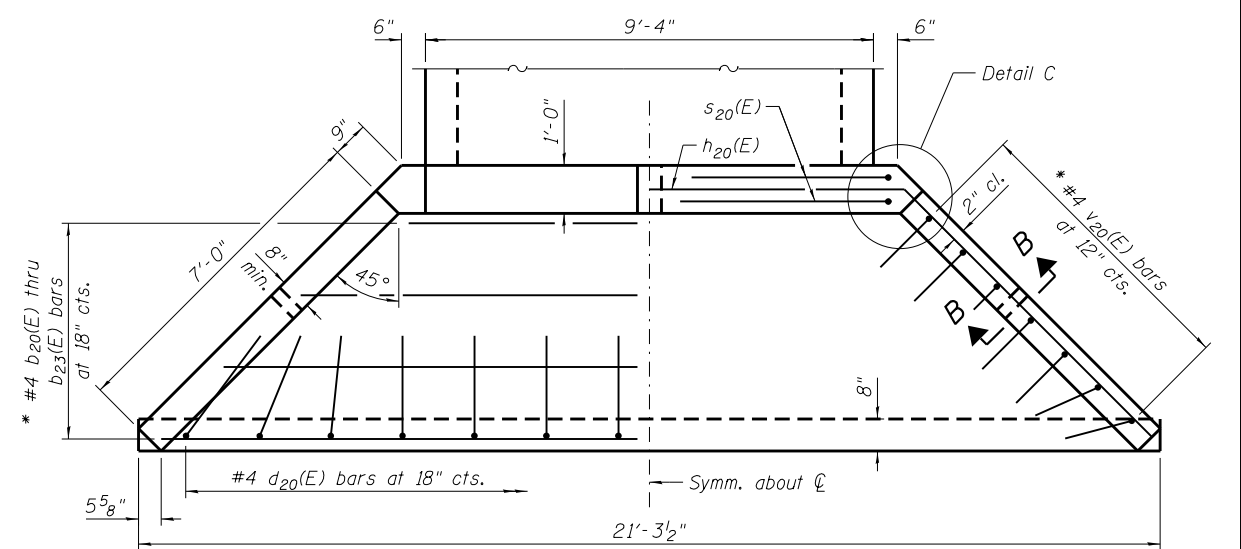


BAR s₂₀(E)

BAR v₂₀(E)

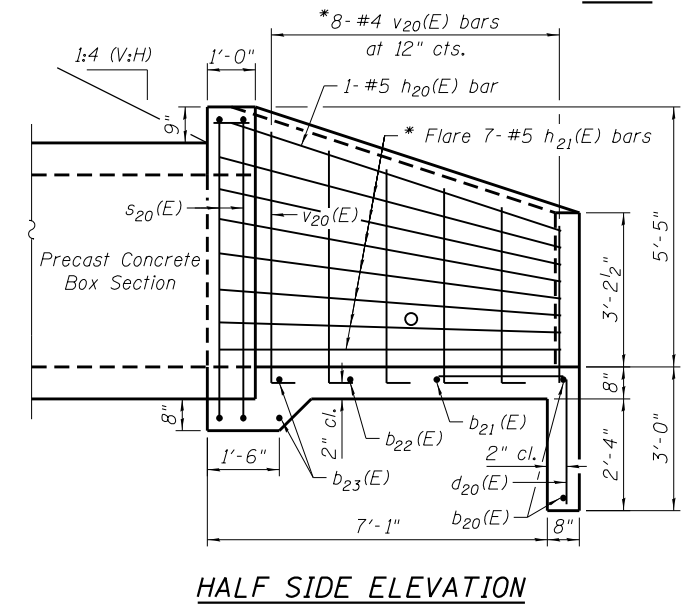


END ELEVATION



PLAN

* Cut or bend to fit



HALF SIDE ELEVATION

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
b ₂₀ (E)	2	# 4	20'-11"	—
b ₂₁ (E)	1	# 4	17'-11"	—
b ₂₂ (E)	1	# 4	14'-11"	—
b ₂₃ (E)	2	# 4	11'-11"	—
d ₂₀ (E)	15	# 4	5'-4"	└
h ₂₀ (E)	1	# 5	26'-0"	└
h ₂₁ (E)	14	# 5	7'-10"	—
s ₂₀ (E)	2	# 4	33'-7"	□
v ₂₀ (E)	16	# 4	7'-3"	└
Concrete Structures			Cu. Yd.	6.4
Reinforcement Bars, Epoxy Coated			Pound	390
Precast Concrete Box Culverts 8'x4'			Foot	142

N:\PROJECTS\0003384\004_4_US_30A\Design\Drawings\Culvert_Headwall\3384_Culvert_Headwall\5-5_Precast_Box_Section_Cast-In-Place_Apron_Details.dgn



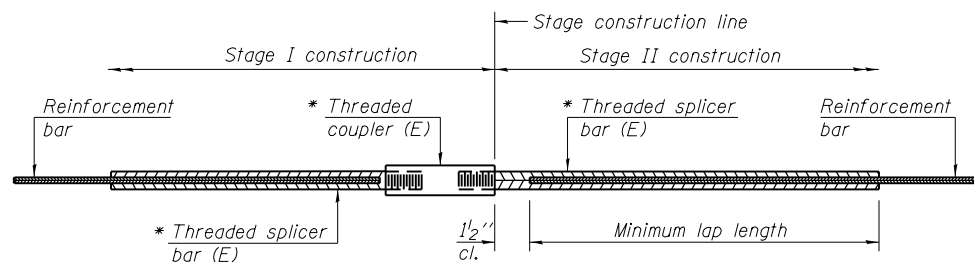
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	CHECKED - BWS	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**PRECAST BOX SECTION & CAST-IN-PLACE APRON DETAILS
S.N. 099-C030**

SHEET NO. SB-5 OF SB-7 SHEETS

F.A.I. RT.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	598
				CONTRACT NO. 60N87
ILLINOIS FED. AID PROJECT				



STANDARD BAR SPLICER ASSEMBLY

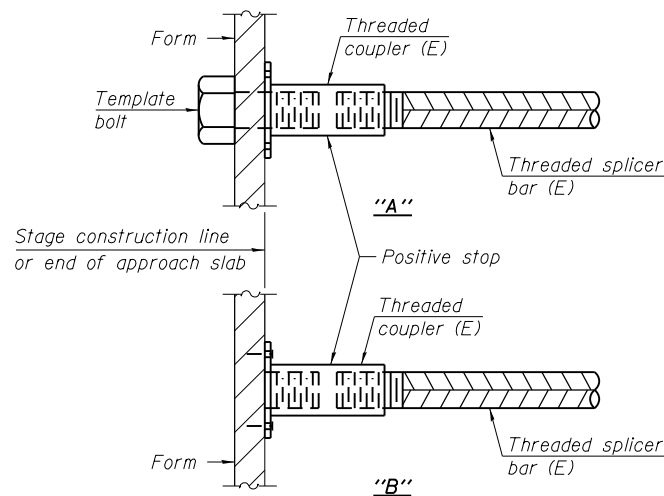
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

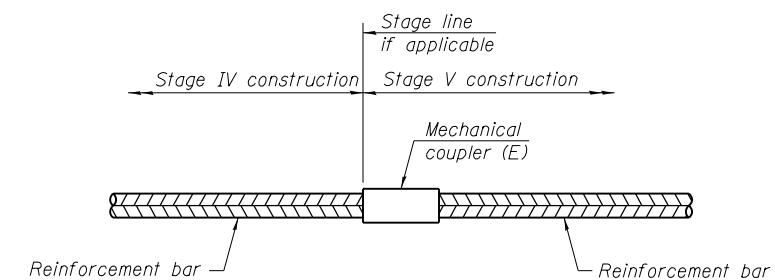
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

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



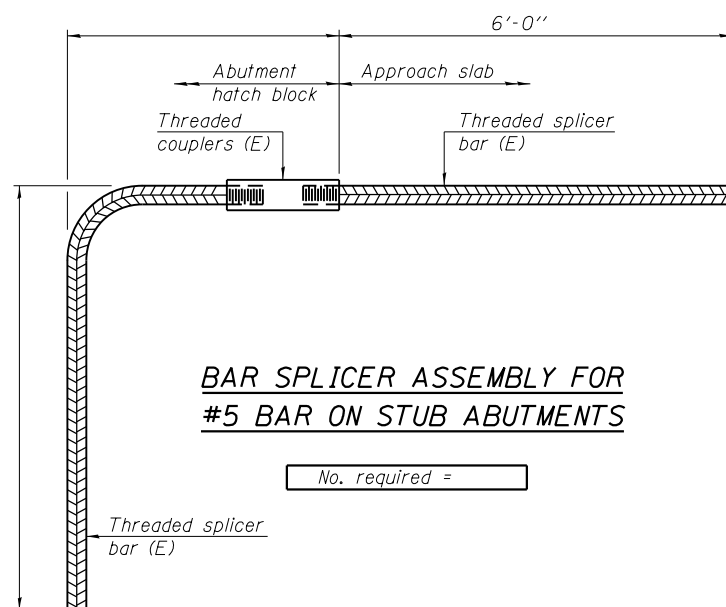
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Drop Box - S. Wall	#5	6
Drop Box - N. Wall	#5	3
Bottom Slab of Drop Box	#5	16



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1

8-31-12

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USER NAME = jattenasso	DESIGNED - MHT	REVISED -
	CHECKED - BWS	REVISED -
PLOT SCALE = 0:2.0000' = 1"	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
S.N. 099-C030

SHEET NO. SB-6 OF SB-7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	599
CONTRACT NO. 60N87				
ILLINOIS FED. AID PROJECT				



wangeng@wangeng.com
1145 N Main Street
Lombard, IL 60148
Telephone: 630 953-9928
Fax: 630 953-9938

BORING LOG IJ-02

WEI Job No.: 555-14-05

Client: IDOT District One / Region One
Project: HMLT I-80/US 30, D-91-243-11, WO 5
Location: T35N, R11 E, Section 17

Datum: NGVD
Elevation: 614.68 ft
North: 1767940.22 ft
East: 1077162.26 ft
Station: 308+94
Offset: 99.5 RT

Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
644.44	4-inch thick, black CLAY LOAM --TOPSOIL--														
613.4	Medium stiff, brown CLAY LOAM			1	50/5	0.50	47								
611.2	Weathered and fragmented DOLOSTONE --WEATHERED BEDROCK-- --AUGER REFUSAL--														
	Strong, very poor rock quality, brown and gray, moderately weathered, vuggy, intensely horizontally and vertically fractured DOLOSTONE	5													
	RECOVERY: 100% RQD: 0%														
	RECOVERY: 100% RQD: 0%	10													
601.2	Boring terminated at 13.50 ft	13.50													

WANGENG\INC 5551405.GPJ, WANGENG.GDT, 2/2/12

GENERAL NOTES

Begin Drilling: 12-27-2011 Complete Drilling: 12-27-2011
Drilling Contractor: WTS Drill Rig: D-50 ATV
Driller: K & K Logger: A. Kurnia Checked by: C. Marin
Drilling Method: 3.25 IDA HSA, Backfilled upon completion

WATER LEVEL DATA

While Drilling: DRY
At Completion of Drilling: Washed
Time After Drilling: NA
Depth to Water: NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

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USER NAME = jattenaseo	DESIGNED - MHT	REVISED -
	CHECKED - BWS	REVISED -
PLOT SCALE = 0:2,000 1" = 10'	DRAWN - RD	REVISED -
PLOT DATE = 5/9/2018	CHECKED - BWS	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOG
S.N. 099-C030

SHEET NO. SB-7 OF SB-7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
80	99-4-1VB-1-R	WILL	840	600
CONTRACT NO. 60N87				

ILLINOIS FED. AID PROJECT