Erection Plan General Notes

Qualified personnel on site during erection:

Cranes:
Terex HC80 (80 Ton)(120' Boom)
Kabelco CK850 (85 Ton)(140' Boom).
(Capacity charts for both cranes are attached)

Outriggers are to be fully extended.

No crane will be operated in a manner that will exceed its rated capacity at any radius as specified by the crane manufacturer.

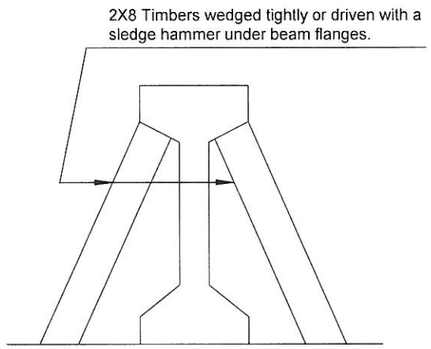
Maximum Weight of Pick:
Lift # 1= 34.2 Tons (2Crane Lift = 17.1 T/Crane)
Lift # 2= 34.2 Tons (2Crane Lift = 17.1 T/Crane)
Lift # 3= 34.2 Tons (2Crane Lift = 17.1 T/Crane)
Lift # 4= 34.2 Tons (2Crane Lift = 17.1 T/Crane)
Lift # 5= 26.5 Tons (2Crane Lift = 13.25 T/Crane)
Lift # 6= 26.5 Tons (2Crane Lift = 13.25 T/Crane)
Lift # 7= 26.5 Tons (2Crane Lift = 13.25 T/Crane)
Lift # 8= 26.5 Tons (2Crane Lift = 13.25 T/Crane)

No lift shall be made with winds over 30 mph.

No single beam will be left in place overnight or for an extended period of time. At a minimum, 2 beams in the lift sequence will be connected with temporary diaphragms. If this cannot be accomplished, the single beam will be taken back down.

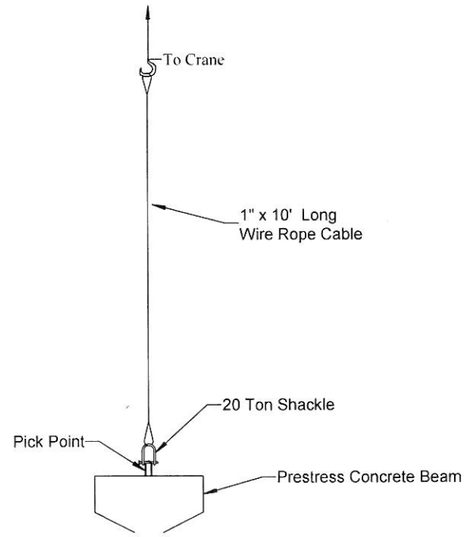
The River is located between Pier #5 and Pier #6 and the beams will be erected in this span in Lift #1.

The overhead utilities are located to the south of the existing bridge and will not be in the area of the beam erections.



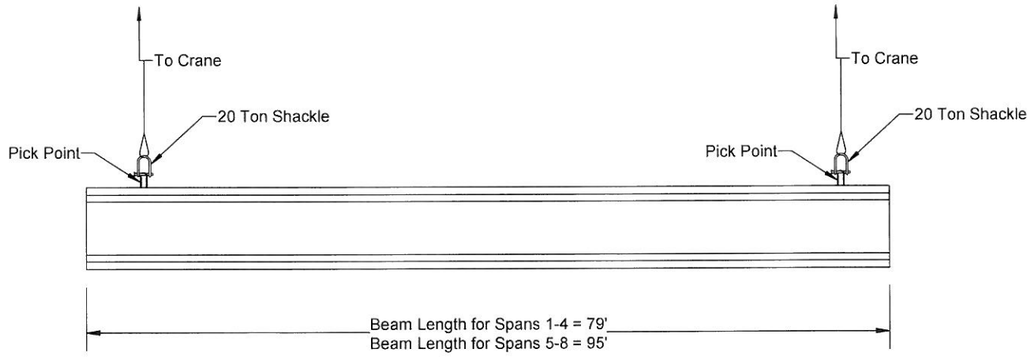
Bridge Beam Blocking

Note:
The first two beams will be set and braced like this and then the temporary steel diaphragms will be placed. After the temporary steel diaphragms are installed, move on to the next pair of beams and repeat the above process.



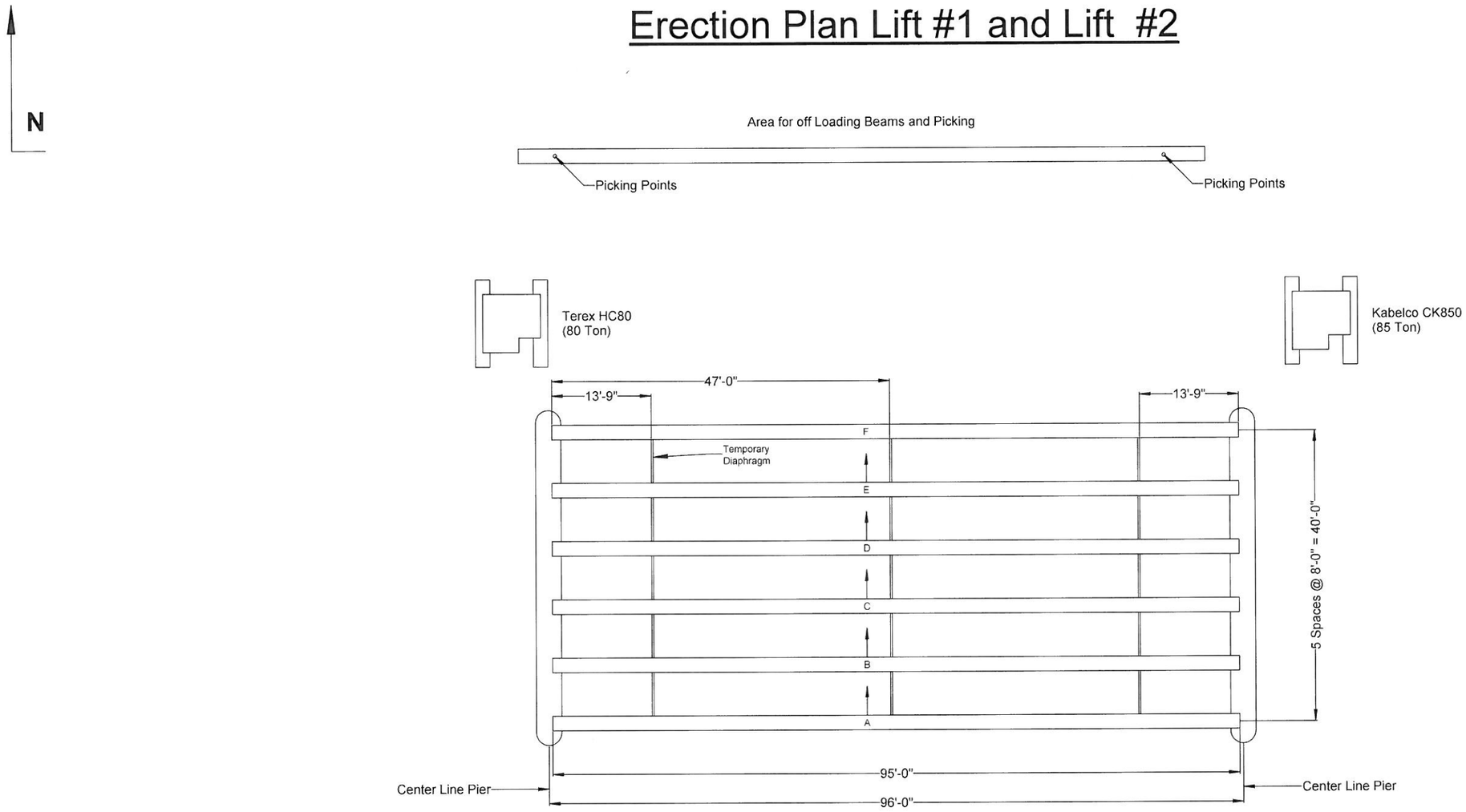
Rigging Detail

(2 Crane Lift - One Each Crane)



Two Crane Lift Rigging

Erection Plan Lift #1 and Lift #2



Lift # 1
Between Pier 5 & Pier 6

Max Lift = 34.2 Tons
2-Crane Lift with Kabelco 85 Ton Crane & Terex 80 Ton Crane.

The beams will be lifted from the temporary river crossing located on the north side of the new bridge.

Kabelco 85 Ton will be located just to the Northeast of Pier 6,
Terex 80 Ton will be located West of Pier 5.
Beam 1A will be placed and blocked at the two piers.
Beam 1B will be placed and blocked at the two piers.
Install a minimum of two temporary diaphragms between Beams 1A & 1B.
Beam 1C will be placed and blocked at the two piers.
Install a minimum of two temporary diaphragms between Beams 1B & 1C.
Continue with this sequence for beams 1D, 1E, & 1F.

Lift # 2
Between Pier 6 & Pier 7

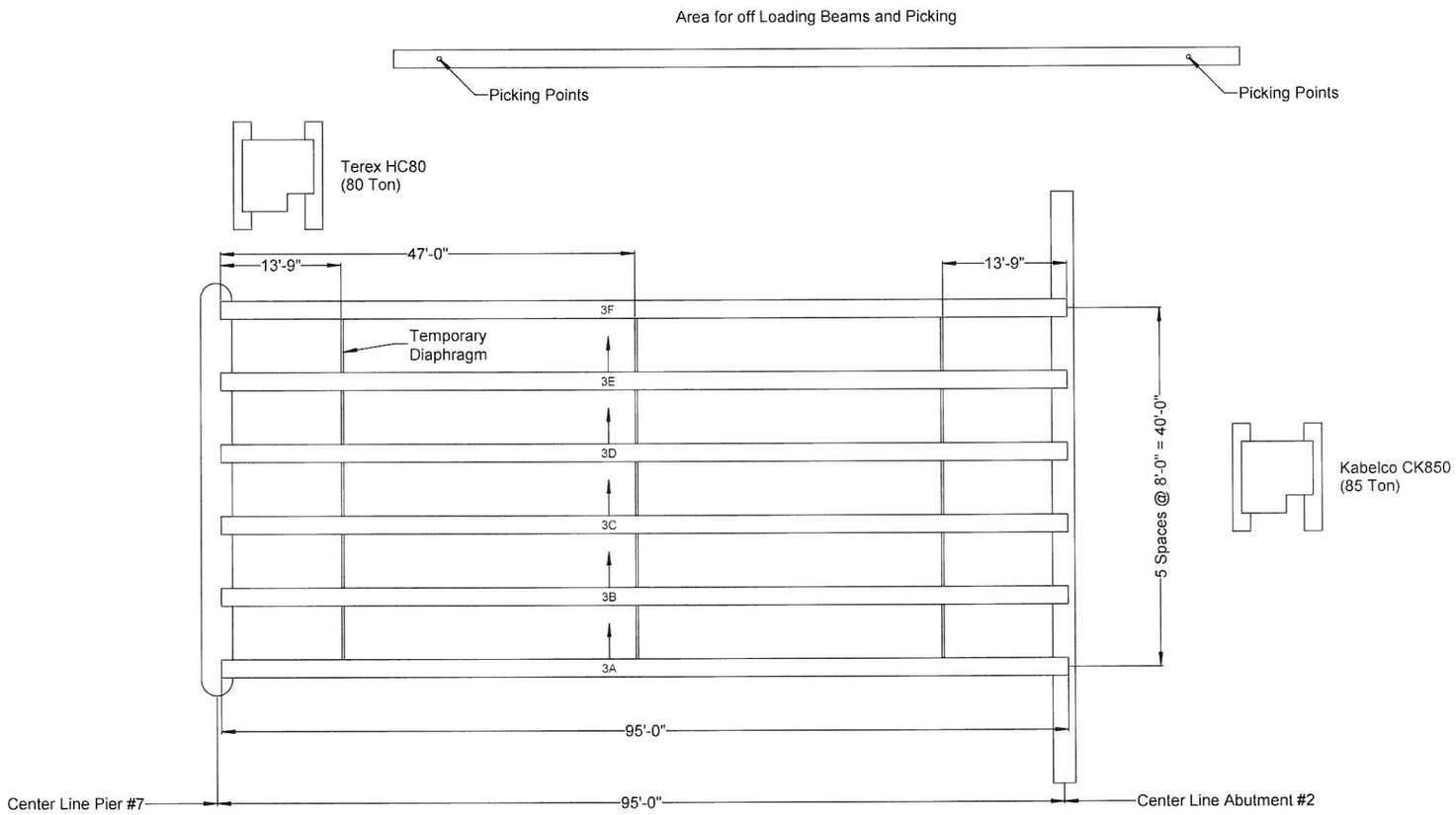
Max Lift = 34.2 Tons
2-Crane Lift with Kabelco 85 Ton Crane & Terex 80 Ton Crane.

The beams will be lifted from the temporary access road, located on the north side of the new bridge.

Kabelco 85 Ton will be located just to the Northeast of Pier 7,
Terex 80 Ton will be located East of Pier 6.
Beam 2A will be placed and blocked at the two piers.
Beam 2B will be placed and blocked at the two piers.
Install a minimum of two temporary diaphragms between Beams 2A & 2B.
Beam 2C will be placed and blocked at the two piers.
Install a minimum of two temporary diaphragms between Beams 2B & 2C.
Continue with this sequence for beams 2D, 2E, & 2F.

Erection Plan Lift #3

N



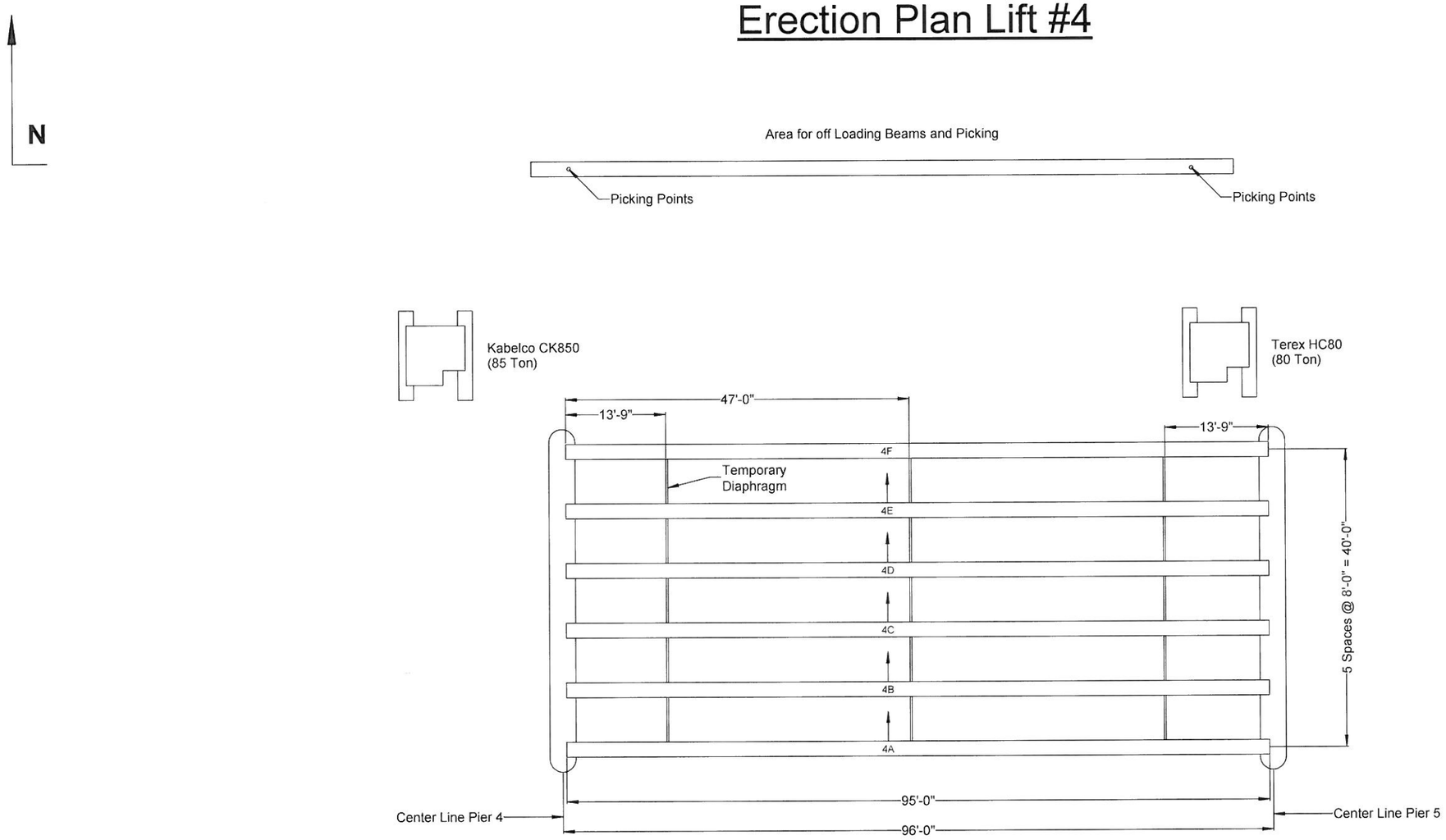
Lift # 3
Between Pier 7 & Abutment 2

Max Lift = 34.2 Tons
2-Crane Lift with Kabelco 85 Ton Crane & Terex 80 Ton Crane.

The beams will be lifted from the temporary access road, located on the north side of the new bridge.

Kabelco 85 Ton will be located East of Abutment 2,
Terex 80 Ton will be located East of Pier 7.
Beam 3A will be placed and blocked at the pier and the abutment.
Beam 3B will be placed and blocked at the pier and the abutment.
Install a minimum of two temporary diaphragms between Beams 3A & 3B.
Beam 3C will be placed and blocked at the two piers.
Install a minimum of two temporary diaphragms between Beams 3B & 3C.
Continue with this sequence for beams 3D, 3E, & 3F.

Erection Plan Lift #4



Lift # 4
Between Pier 4 & Pier 5

Max Lift = 34.2 Tons
2-Crane Lift with Kabelco 85 Ton Crane & Terex 80 Ton Crane.

The beams will be lifted from the temporary access road, located on the north side of the new bridge.

Kabelco 85 Ton will be located just to the Northwest of Pier 4,
Terex 80 Ton will be located West of Pier 5.
Beam 4A will be placed and blocked at the two piers.
Beam 4B will be placed and blocked at the two piers.
Install a minimum of two temporary diaphragms between Beams 4A & 4B.
Beam 4C will be placed and blocked at the two piers.
Install a minimum of two temporary diaphragms between Beams 4B & 4C.
Continue with this sequence for beams 4D, 4E, & 4F.

Erection Plan Lift #5, Lift #6, and Lift #7

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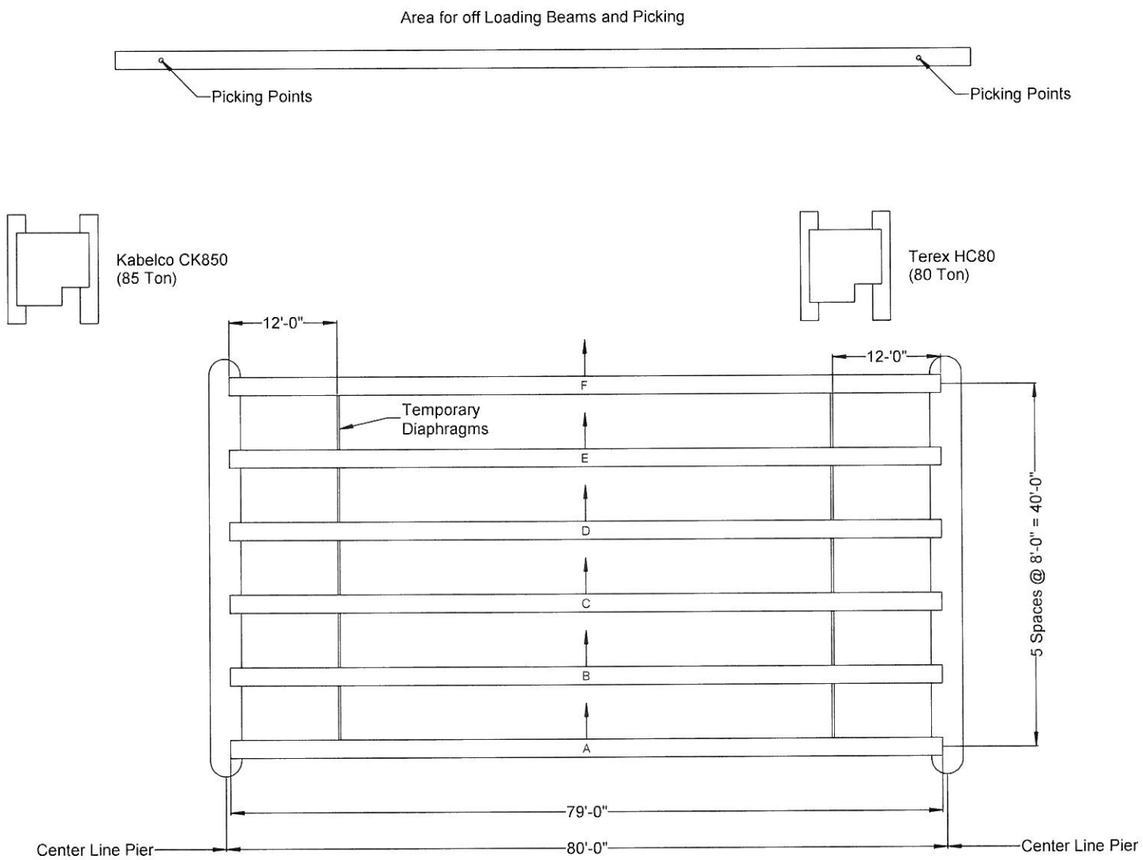


Lift # 5
Between Pier 3 & Pier 4

Max Lift = 26.5 Tons
2-Crane Lift with Kabelco 85 Ton Crane & Terex 80 Ton Crane.

The beams will be lifted from the temporary access road, located on the north side of the new bridge.

Kabelco 85 Ton will be located just to the Northwest of Pier 3,
Terex 80 Ton will be located West of Pier 4.
Beam 5A will be placed and blocked at the two piers.
Beam 5B will be placed and blocked at the two piers.
Install two temporary diaphragms between Beams 5A & 5B.
Beam 5C will be placed and blocked at the two piers.
Install twotemporary diaphragms between Beams 5B & 5C.
Continue with this sequence for beams 5D, 5E, & 5F.

Lift # 6
Between Pier 2 & Pier 3

Max Lift = 26.5 Tons
2-Crane Lift with Kabelco 85 Ton Crane & Terex 80 Ton Crane.

The beams will be lifted from the temporary access road, located on the north side of the new bridge.

Kabelco 85 Ton will be located just to the Northwest of Pier 2,
Terex 80 Ton will be located West of Pier 3.
Beam 6A will be placed and blocked at the two piers.
Beam 6B will be placed and blocked at the two piers.
Install two temporary diaphragms between Beams 6A &6B.
Beam 6C will be placed and blocked at the two piers.
Install two temporary diaphragms between Beams 6B & 6C.
Continue with this sequence for beams 6D, 6E, & 6F.

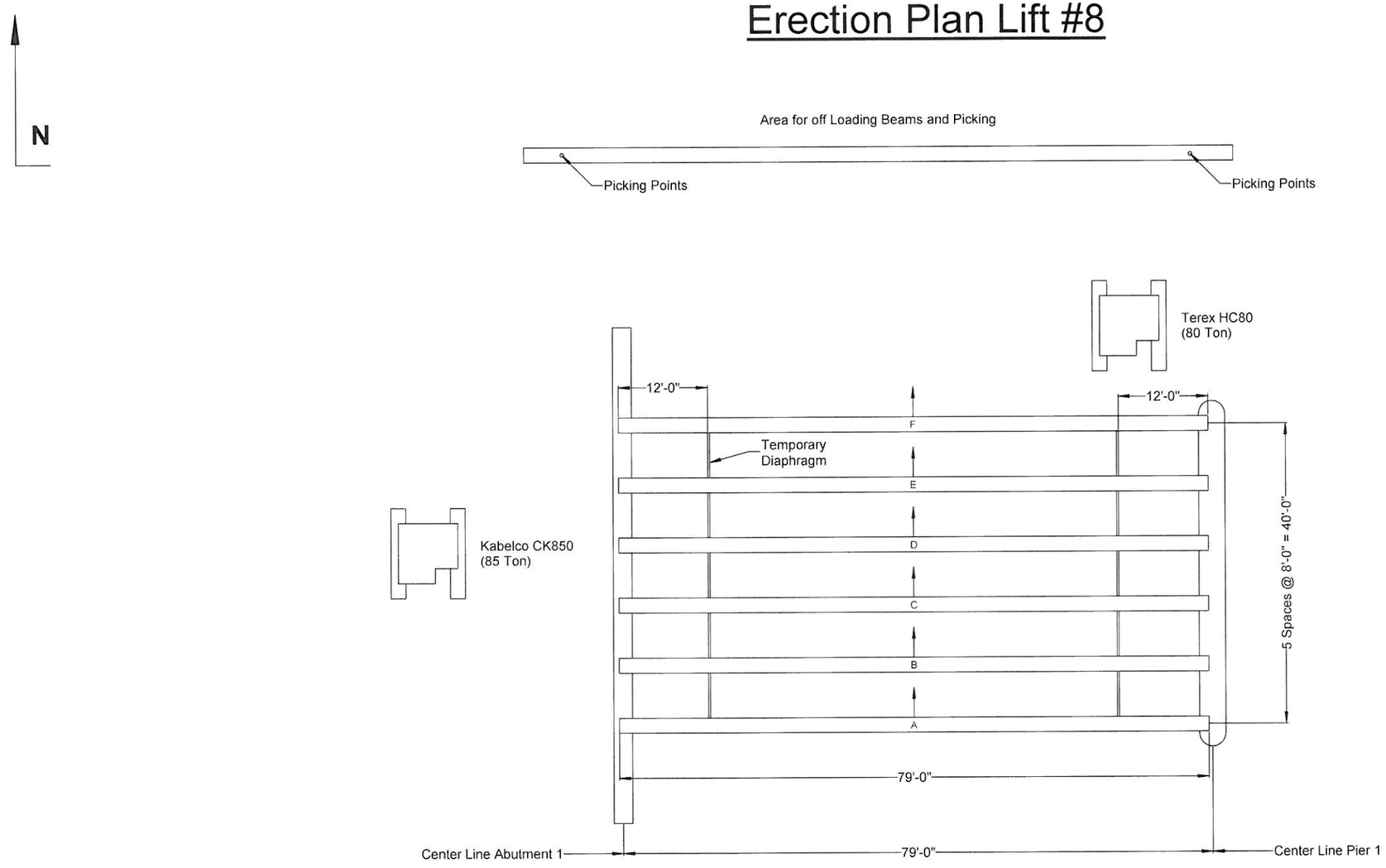
Lift # 7
Between Pier 1 & Pier 2

Max Lift = 26.5 Tons
2-Crane Lift with Kabelco 85 Ton Crane & Terex 80 Ton Crane.

The beams will be lifted from the temporary access road, located on the north side of the new bridge.

Kabelco 85 Ton will be located just to the Northwest of Pier 1,
Terex 80 Ton will be located West of Pier 2.
Beam 7A will be placed and blocked at the two piers.
Beam 7B will be placed and blocked at the two piers.
Install two temporary diaphragms between Beams 7A & 7B.
Beam 7C will be placed and blocked at the two piers.
Install two temporary diaphragms between Beams 7B & 7C.
Continue with this sequence for beams 7D, 7E, & 7F.

Erection Plan Lift #8



Lift # 8
Between Abutment 1 & Pier 1

Max Lift = 26.5 Tons
2-Crane Lift with Kabelco 85 Ton Crane & Terex 80 Ton Crane.

The beams will be lifted from the temporary access road, located on the north side of the new bridge.

Kabelco 85 Ton will be located just to the West of Abutment 1,
Terex 80 Ton will be located West of Pier 1.
Beam 8A will be placed and blocked at the two piers.
Beam 8B will be placed and blocked at the two piers.
Install two temporary diaphragms between Beams 8A & 8B.
Beam 8C will be placed and blocked at the two piers.
Install two temporary diaphragms between Beams 8B & 8C.
Continue with this sequence for beams 8D, 8E, & 8F.

CK850 Main Boom Loads in Pounds
2 Counterweights - 2 Low Weights
Crawlers fully extended

40' Boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
10	81.7	170000
11	80.3	170000
12	78.8	166600
13	77.4	154600
14	75.9	144200
15	74.4	135100
16	72.9	127100
17	71.4	119900
18	69.9	113400
19	68.3	105820
20	66.7	97500
22	63.6	84190
24	60.3	74000
26	56.9	65980
28	53.4	59480
30	49.7	54100
32	45.7	49580
34	41.5	45710
36	36.9	42460
38	31.6	39590
40	25.5	34830

50' Boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
12	81.1	166400
13	79.9	15400
14	78.8	144000
15	77.6	134900
16	76.4	126900
17	75.2	119700
18	74	113200
19	72.8	105660
20	71.6	97350
22	69.2	84010
24	66.7	73810
26	64.2	65760
28	61.6	59230
30	58.9	53850
32	56.5	49310
34	53.3	45480
36	50.4	43150
38	47.3	39280
40	44.1	36750
45	34.9	31590
50	22.7	26890

60' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
13	81.6	154200
14	80.7	143800
15	79.7	134700
16	78.7	126700
17	77.7	119500
18	76.8	113000
19	75.8	105460
20	74.8	97130
22	72.8	83790
24	70.8	73560
26	68.7	65490
28	66.6	58970
30	64.5	53570
32	62.4	49030
34	60.2	45170
36	58	41840
28	55.7	38950
40	53.3	36410
45	47	31230
50	40	27290
55	31.7	24200
60	20.6	21600

CK850 Main Boom Loads in Pounds
2 Counterweights - 2 Low Weights
Crawlers fully extended

70' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
14	82.3	143600
15	81.2	134500
16	80.3	126500
17	79.5	119300
18	78.7	112800
19	77.8	105400
20	77	97030
22	75.3	83700
24	73.6	73470
26	71.9	65380
28	70.1	58840
30	68.4	53430
32	66.6	48890
34	64.8	45030
36	63	44680
38	61.1	38800
40	59.2	36240
45	54.3	31040
50	49	27070
55	43.3	23960
60	36.9	21450
65	29.3	19420

80' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
16	81.6	126300
17	80.8	119100
18	80.1	112600
19	79.4	105290
20	78.6	96930
22	77.2	83550
24	75.7	73320
26	74.2	65230
28	72.7	58680
30	71.2	53260
32	69.7	48690
34	68.1	44840
36	66.6	41490
38	65	38580
40	63.4	36020
45	59..3	30820
50	55	26820
55	50.5	23670
60	45.6	21140
65	40.3	19060
70	34.4	17350
75	27.3	15890

90' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
17	81.9	118820
18	81.2	112400
19	80.6	105220
20	79.9	96870
22	78.6	83480
24	77.3	73230
26	76	65140
28	74.7	58570
30	73.4	53150
32	72	48580
34	70.7	44700
36	69.3	41380
38	68	38440
40	66.6	35890
45	63	30660
50	59.4	26670
55	55.6	23520
60	51.6	20960
65	47.4	18870
70	42.9	17100
75	37.9	15630
80	32.3	14370
85	25.7	13310

CK850 Main Boom Loads in Pounds
2 Counterweights - 2 Low Weights
Crawlers fully extended

100' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
19	81.5	101850
20	80.9	96800
22	79.8	83400
25	78.6	73120
26	77.4	65010
28	76.3	58440
30	75.1	53020
32	73.9	48450
34	72.7	44550
36	71.5	41200
38	70.3	38290
40	69	35730
45	65.9	30480
50	62.7	26470
55	59.5	23320
60	56.1	20740
65	52.5	18620
70	48.8	16860
75	44.8	15360
80	40.6	14080
85	35.9	12980
90	30.6	12010
95	24.3	11190

110' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
20	81.8	92590
22	8037	83260
24	79.7	73010
26	78.6	64900
28	77.5	58330
30	76.5	52880
32	75.4	48320
24	74.3	44440
26	73.2	41090
28	72.1	38160
40	71	35600
45	68.2	30350
50	65.4	26340
55	62.5	23170
60	59.5	20610
65	56.4	18490
70	53.2	16710
75	49.9	15210
80	46.4	13910
85	42.6	12800
90	38.6	11830
95	34.2	10970
100	29.2	10250
105	23.2	9610

120' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
22	81.5	80680
24	80.5	72950
26	79.6	64810
28	78.6	58240
30	77.6	52800
32	76.6	48230
34	75.6	44330
36	74.7	40980
38	73.7	38050
40	72.7	35470
45	70.1	30220
50	67.6	26210
55	65	23010
60	62.3	20450
65	59.5	18320
70	56.7	16530
75	53.8	15010
80	50.8	13710
85	47.6	12580
90	44.3	11590
95	40.7	10730
100	36.9	9960
105	32.7	9280
110	27.9	8680
115	22.2	8170

CK850 Main Boom Loads in Pounds
2 Counterweights - 2 Low Weights
Crawlers fully extended

130' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
24	81.3	71200
26	80.4	64610
28	79.5	58020
30	78.6	52570
32	77.7	48010
34	76.8	44110
36	75.9	40760
38	74.9	37830
40	74	35250
45	71.7	30000
50	69.4	25970
55	67	22790
60	64.6	20210
65	62.1	18070
70	59.6	16290
75	57	14770
80	54.3	13470
85	5135	12320
90	48.6	11330
85	45.6	10440
100	42.4	9670
105	39	8990
110	35.4	8390
115	31.3	7840
120	26.7	7360
125	21.2	6940

140' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
24	81.9	61720
26	81.1	60840
28	80.2	579801
30	79.4	52530
32	78.6	47950
34	77.7	44040
36	76.9	40670
28	76	37740
40	75.2	35160
45	73.1	29910
50	70.9	25880
55	68.7	22680
60	66.5	20100
65	64.3	17960
70	62	16150
75	59.6	14630
80	57.2	13310
85	54.7	12160
90	52.2	11170
95	49.5	10290
100	46.8	9500
105	43.9	8790
110	40.8	8170
115	37.5	7620
120	34	7120
125	30.1	6650
130	25.7	6260
135	20.5	5900

150' boom		
Load Radius (ft.)	Boom Angle (degrees)	360 deg Rated Load
26	81.7	52680
28	80.9	51800
30	80.1	51400
32	79.3	47810
34	78.6	43890
36	77.8	40540
38	77	37610
40	76.2	34030
45	74.2	297630
50	72.2	25720
55	70.2	22530
60	68.2	19950
65	66.1	17810
70	64	16000
75	61.8	14480
80	59.6	13160
85	57.4	12010
90	55.1	11000
95	52.7	10110
100	50.3	9320
105	47.7	8640
110	45.1	8000
115	42.3	7420
120	39.4	6920
125	36.2	6450
130	32.8	6040
135	29.1	5660
140	24.8	5330

American Terex HC80
Lift ratings in pounds
With 58,100 pound counterweight

Boom	Radius (feet)	Boom angle (degrees	Side frames extended (pounds)	From boom pt. to ground (feet)	Boom	Radius (feet)	Boom angle (degrees	Side frames extended (pounds)	From boom pt. to ground (feet)
40'	11	80.5	160000	45	**50'**	13	80.1	160000	55
	12	79	160000	45		15	77.8	141440	54
	15	74.6	141480	44		20	71.2	87750	53
	20	67	87810	42		25	65.5	63280	51
	25	58.8	63360	40		30	59.1	49250	48
	30	49.9	49350	36		35	52	40220	45
	35	39.5	40320	31		40	44.2	33860	40
	40	25.8	33970	23		50	22.9	25540	25

Boom	Radius (feet)	Boom angle (degrees	Side frames extended (pounds)	From boom pt. to ground (feet)	Boom	Radius (feet)	Boom angle (degrees	Side frames extended (pounds)	From boom pt. to ground (feet)
60'	14	18.8	145370	65	**70'**	16	80.5	125040	74
	15	79.8	141380	64		20	77.1	87590	74
	20	74.9	87660	63		25	72.9	63090	72
	25	69.9	63170	62		30	68.5	49040	71
	30	64.7	49120	60		35	64	40020	68
	35	59.2	40100	57		40	59.3	33640	66
	40	53.4	33730	54		50	49.2	25310	58
	50	40.2	25400	44		60	37	20150	48
	60	20.8	20230	27		70	19.2	16580	28

Boom	Radius (feet)	Boom angle (degrees	Side frames extended (pounds)	From boom pt. to ground (feet)	Boom	Radius (feet)	Boom angle (degrees	Side frames extended (pounds)	From boom pt. to ground (feet)
80'	17	80.9	109250	84	**90'**	19	80.7	94540	94
	20	78.8	87470	84		20	80	87330	94
	25	75.1	62960	83		25	76.8	62810	93
	30	71.3	48880	81		30	73.5	48720	92
	35	67.5	39870	79		35	70.1	39720	90
	40	63.5	33480	77		40	66.7	33320	88
	50	55.1	25140	71		50	59.5	24970	83
	60	45.8	20000	63		60	51.7	19840	73
	70	34.5	16430	51		70	43	16260	37
	80	17.9	13830	30		80	32.5	13660	54
						90	16.9	11690	31

American Terex HC80
Lift ratings in pounds
With 58,100 pound counterweight

Boom	Radius (feet)	Boom angle (degrees	Side frames extended (pounds)	From boom pt. to ground (feet)
100'	21	80.4	80910	104
	25	78.1	62690	103
	30	75.2	48580	102
	35	72.2	39590	101
	40	69.1	33190	99
	50	62.8	24840	94
	60	56.1	19720	88
	70	48.9	16130	81
	80	40.7	13540	71
	90	30.7	11450	56
	100	16	10010	33

Boom	Radius (feet)	Boom angle (degrees	Side frames extended (pounds)	From boom pt. to ground (feet)
110'	22	80.8	72040	114
	25	79.2	62530	113
	30	76.5	48420	112
	35	73.8	39430	111
	40	71.1	33020	109
	50	65.5	14650	105
	60	59.6	19560	100
	70	53.3	15970	94
	80	46.4	13360	85
	90	38.7	11380	74
	100	29.2	9810	59
	110	15.2	8590	34

Boom	Radius (feet)	Boom angle (degrees	Side frames extended (pounds)	From boom pt. to ground (feet)
120'	24	80.6	60160	124
	25	80.1	60160	125
	30	77.7	48260	123
	35	75.2	39260	121
	40	72.7	32850	120
	50	67.6	24470	116
	60	62.3	19390	112
	70	56.8	15800	106
	80	50.8	13190	98
	90	44.3	11210	89
	100	37	9660	78
	110	28	8410	62
	120	14.5	7390	36