GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	214+69.59	-23.88	607.58	607.58
℄ Brg. W. Abut.	214+74.79	-23.88	607.54	607.54
A	214+85.32	-23.88	607.47	607.51
B	214+95.86	-23.88	607.40	607.47
C	215+06.41	-23.88	607.34	607.42
D	215+16.97	-23.88	607.27	607.36
E	215+27.55	-23.88	607.20	607.29
F	215+38.15	-23.88	607.13	607.21
G	215+48.76	-23.88	607.06	607.12
H	215+59.38	-23.88	606.99	607.03
I	215+70.02	-23.88	606.92	606.94
J	215+80.68	-23.88	606.85	606.85
℄ Pier	215+94.45	-23.88	606.76	606.76
K	216+05.15	-23.88	606.69	606.72
L	216+15.88	-23.88	606.62	606.67
M	216+26.63	-23.88	606.55	606.64
N	216+37.40	-23.88	606.48	606.61
O	216+48.19	-23.88	606.41	606.57
P	216+59.01	-23.88	606.34	606.52
Q	216+69.86	-23.88	606.27	606.46
R	216+80.74	-23.88	606.21	606.38
S	216+91.65	-23.88	606.13	606.30
T	217+02.59	-23.88	606.06	606.20
U	217+13.57	-23.88	605.99	606.09
V	217+24.59	-23.88	605.92	605.97
℄ Brg. E. Abut.	217+36.46	-23.88	605.84	605.84
Bk. E. Abut.	217+44.11	-23.88	605.79	605.79

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	214+63.53	-18.13	607.94	607.94
℄ Brg. W. Abut.	214+68.66	-18.13	607.91	607.91
A	214+79.05	-18.13	607.84	607.87
B	214+89.45	-18.13	607.77	607.83
C	214+99.87	-18.13	607.70	607.78
D	215+10.29	-18.13	607.63	607.72
E	215+20.72	-18.13	607.57	607.65
F	215+31.16	-18.13	607.50	607.58
G	215+41.62	-18.13	607.43	607.49
H	215+52.08	-18.13	607.36	607.40
I	215+62.56	-18.13	607.29	607.31
J	215+73.05	-18.13	607.23	607.23
℄ Pier	215+86.59	-18.13	607.14	607.14
K	215+97.12	-18.13	607.07	607.09
L	216+07.65	-18.13	607.00	607.04
M	216+18.21	-18.13	606.93	607.01
N	216+28.78	-18.13	606.86	606.97
O	216+39.36	-18.13	606.79	606.93
P	216+49.97	-18.13	606.73	606.89
Q	216+60.60	-18.13	606.66	606.83
R	216+71.25	-18.13	606.59	606.76
S	216+81.92	-18.13	606.52	606.67
T	216+92.61	-18.13	606.45	606.58
U	217+03.33	-18.13	606.38	606.48
V	217+14.07	-18.13	606.31	606.36
℄ Brg. E. Abut.	217+25.65	-18.13	606.23	606.23
Bk. E. Abut.	217+33.09	-18.13	606.18	606.18

GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	214+57.57	-12.38	608.30	608.30
℄ Brg. W. Abut.	214+62.64	-12.38	608.27	608.27
A	214+72.90	-12.38	608.20	608.23
B	214+83.17	-12.38	608.13	608.20
C	214+93.45	-12.38	608.06	608.15
D	215+03.73	-12.38	608.00	608.09
E	215+14.02	-12.38	607.93	608.03
F	215+24.32	-12.38	607.86	607.95
G	215+34.63	-12.38	607.80	607.86
H	215+44.94	-12.38	607.73	607.77
I	215+55.26	-12.38	607.66	607.68
J	215+65.58	-12.38	607.60	607.60
℄ Pier	215+78.91	-12.38	607.51	607.51
K	215+89.26	-12.38	607.44	607.46
L	215+99.62	-12.38	607.37	607.41
M	216+09.99	-12.38	607.31	607.38
N	216+20.37	-12.38	607.24	607.34
O	216+30.76	-12.38	607.17	607.31
P	216+41.16	-12.38	607.10	607.27
Q	216+51.58	-12.38	607.04	607.21
R	216+62.01	-12.38	606.97	607.15
S	216+72.45	-12.38	606.90	607.06
T	216+82.91	-12.38	606.83	606.97
U	216+93.39	-12.38	606.76	606.87
V	217+03.88	-12.38	606.70	606.75
℄ Brg. E. Abut.	217+15.17	-12.38	606.62	606.62
Bk. E. Abut.	217+22.43	-12.38	606.58	606.58

STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	214+54.12	-9.00	608.51	608.51
℄ Brg. W. Abut.	214+59.16	-9.00	608.48	608.48
A	214+69.35	-9.00	608.42	608.44
B	214+79.54	-9.00	608.34	608.39
C	214+89.74	-9.00	608.28	608.34
D	214+99.95	-9.00	608.21	608.28
E	215+10.16	-9.00	608.14	608.22
F	215+20.37	-9.00	608.08	608.14
G	215+30.59	-9.00	608.01	608.06
H	215+40.81	-9.00	607.95	607.98
I	215+51.04	-9.00	607.88	607.89
J	215+61.28	-9.00	607.81	607.81
℄ Pier	215+74.48	-9.00	607.73	607.73
K	215+84.73	-9.00	607.66	607.68
L	215+94.99	-9.00	607.59	607.63
M	216+05.25	-9.00	607.53	607.59
N	216+15.53	-9.00	607.46	607.55
O	216+25.81	-9.00	607.39	607.51
P	216+36.10	-9.00	607.33	607.46
Q	216+46.40	-9.00	607.26	607.40
R	216+56.70	-9.00	607.19	607.33
S	216+67.02	-9.00	607.13	607.25
T	216+77.35	-9.00	607.06	607.17
U	216+87.69	-9.00	606.99	607.07
V	216+98.04	-9.00	606.92	606.96
℄ Brg. E. Abut.	217+09.17	-9.00	606.85	606.85
Bk. E. Abut.	217+16.32	-9.00	606.80	606.80

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	214+51.72	-6.63	608.65	608.65
℄ Brg. W. Abut.	214+56.73	-6.63	608.62	608.62
A	214+66.87	-6.63	608.56	608.59
B	214+77.01	-6.63	608.49	608.54
C	214+87.16	-6.63	608.43	608.49
D	214+97.31	-6.63	608.36	608.43
E	215+07.46	-6.63	608.30	608.37
F	215+17.61	-6.63	608.23	608.29
G	215+27.77	-6.63	608.16	608.21
H	215+37.94	-6.63	608.10	608.13
I	215+48.11	-6.63	608.03	608.04
J	215+58.28	-6.63	607.97	607.97
℄ Pier	215+71.40	-6.63	607.88	607.88
K	215+81.58	-6.63	607.81	607.83
L	215+91.77	-6.63	607.75	607.78
M	216+01.96	-6.63	607.68	607.75
N	216+12.16	-6.63	607.61	607.71
O	216+22.36	-6.63	607.55	607.67
P	216+32.58	-6.63	607.48	607.62
Q	216+42.79	-6.63	607.42	607.56
R	216+53.02	-6.63	607.35	607.49
S	216+63.25	-6.63	607.28	607.41
T	216+73.49	-6.63	607.22	607.32
U	216+83.74	-6.63	607.15	607.23
V	216+93.99	-6.63	607.08	607.12
℄ Brg. E. Abut.	217+05.02	-6.63	607.01	607.01
Bk. E. Abut.	217+12.09	-6.63	606.97	606.97

GIRDER 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	214+45.98	-0.88	609.00	609.00
℄ Brg. W. Abut.	214+50.92	-0.88	608.98	608.98
A	214+60.94	-0.88	608.92	608.96
B	214+70.96	-0.88	608.85	608.92
C	214+80.98	-0.88	608.79	608.87
D	214+91.00	-0.88	608.72	608.82
E	215+01.02	-0.88	608.66	608.75
F	215+11.04	-0.88	608.59	608.68
G	215+21.06	-0.88	608.53	608.59
H	215+31.08	-0.88	608.46	608.50
I	215+41.10	-0.88	608.40	608.42
J	215+51.13	-0.88	608.33	608.34
℄ Pier	215+64.05	-0.88	608.25	608.25
K	215+74.07	-0.88	608.18	608.20
L	215+84.09	-0.88	608.12	608.16
M	215+94.12	-0.88	608.05	608.13
N	216+04.14	-0.88	607.99	608.10
O	216+14.17	-0.88	607.92	608.06
P	216+24.20	-0.88	607.86	608.01
Q	216+34.23	-0.88	607.79	607.96
R	216+44.25	-0.88	607.73	607.89
S	216+54.28	-0.88	607.66	607.81
T	216+64.31	-0.88	607.60	607.73
U	216+74.35	-0.88	607.53	607.62
V	216+84.38	-0.88	607.47	607.51
℄ Brg. E. Abut.	216+95.16	-0.88	607.40	607.40
Bk. E. Abut.	217+02.07	-0.88	607.35	607.35

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DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS I
STRUCTURE NO. 016-2471
SHEET NO. S-8 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	501
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

℄ & P.G.L. EASTBOUND STONY ISLAND CONNECTOR

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	214+45.11	0.00	609.06	609.06
℄ Brg. W. Abut.	214+50.05	0.00	609.03	609.03
A	214+60.05	0.00	608.98	609.01
B	214+70.05	0.00	608.91	608.97
C	214+80.05	0.00	608.84	608.93
D	214+90.05	0.00	608.78	608.87
E	215+00.05	0.00	608.71	608.81
F	215+10.05	0.00	608.65	608.73
G	215+20.05	0.00	608.58	608.65
H	215+30.05	0.00	608.52	608.56
I	215+40.05	0.00	608.45	608.47
J	215+50.05	0.00	608.39	608.39
℄ Pier	215+62.94	0.00	608.31	608.31
K	215+72.94	0.00	608.24	608.26
L	215+82.94	0.00	608.18	608.22
M	215+92.94	0.00	608.11	608.18
N	216+02.94	0.00	608.05	608.15
O	216+12.94	0.00	607.98	608.11
P	216+22.94	0.00	607.92	608.07
Q	216+32.94	0.00	607.85	608.01
R	216+42.94	0.00	607.79	607.95
S	216+52.94	0.00	607.72	607.87
T	216+62.94	0.00	607.66	607.78
U	216+72.94	0.00	607.59	607.68
V	216+82.94	0.00	607.53	607.57
℄ Brg. E. Abut.	216+93.68	0.00	607.46	607.46
Bk. E. Abut.	217+00.57	0.00	607.41	607.41

GIRDER 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	214+40.33	4.88	609.35	609.35
℄ Brg. W. Abut.	214+45.22	4.88	609.33	609.33
A	214+55.12	4.88	609.28	609.32
B	214+65.02	4.88	609.22	609.30
C	214+74.92	4.88	609.15	609.26
D	214+84.81	4.88	609.09	609.21
E	214+94.70	4.88	609.02	609.14
F	215+04.59	4.88	608.96	609.07
G	215+14.48	4.88	608.89	608.98
H	215+24.36	4.88	608.83	608.89
I	215+34.24	4.88	608.77	608.79
J	215+44.12	4.88	608.70	608.71
℄ Pier	215+56.85	4.88	608.62	608.62
K	215+66.72	4.88	608.55	608.57
L	215+76.59	4.88	608.49	608.53
M	215+86.45	4.88	608.43	608.51
N	215+96.31	4.88	608.36	608.48
O	216+06.17	4.88	608.30	608.45
P	216+16.02	4.88	608.23	608.41
Q	216+25.87	4.88	608.17	608.37
R	216+35.71	4.88	608.11	608.30
S	216+45.55	4.88	608.04	608.22
T	216+55.38	4.88	607.98	608.13
U	216+65.21	4.88	607.91	608.03
V	216+75.03	4.88	607.85	607.91
℄ Brg. E. Abut.	216+85.57	4.88	607.78	607.78
Bk. E. Abut.	216+92.33	4.88	607.74	607.74

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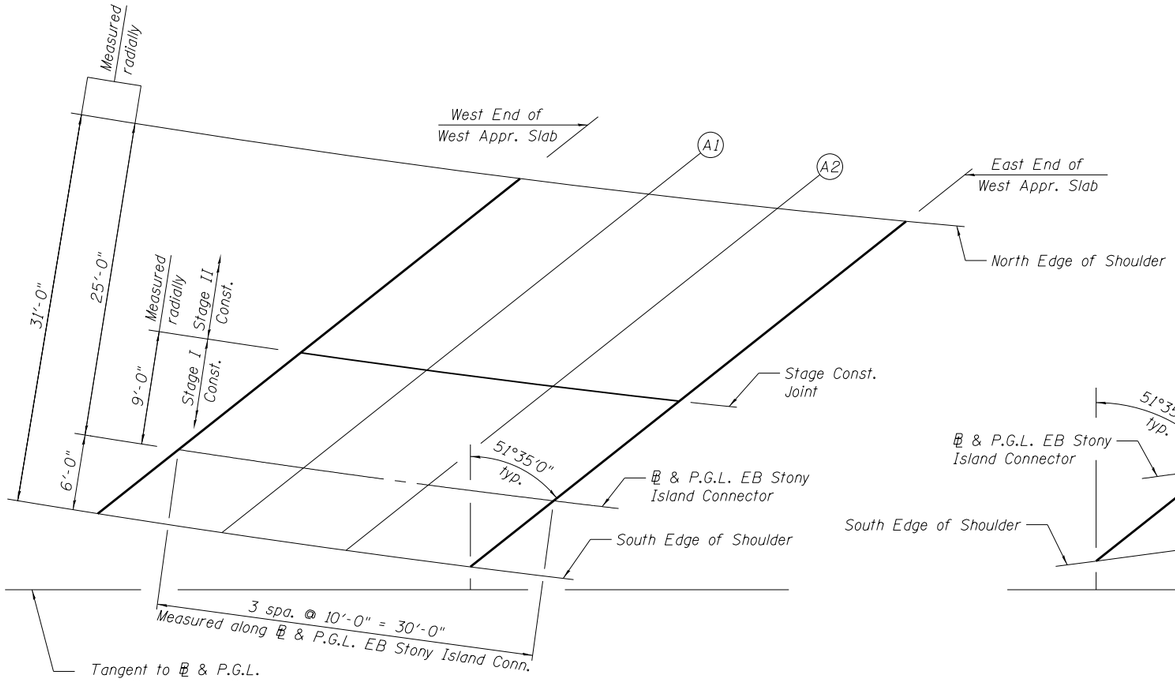
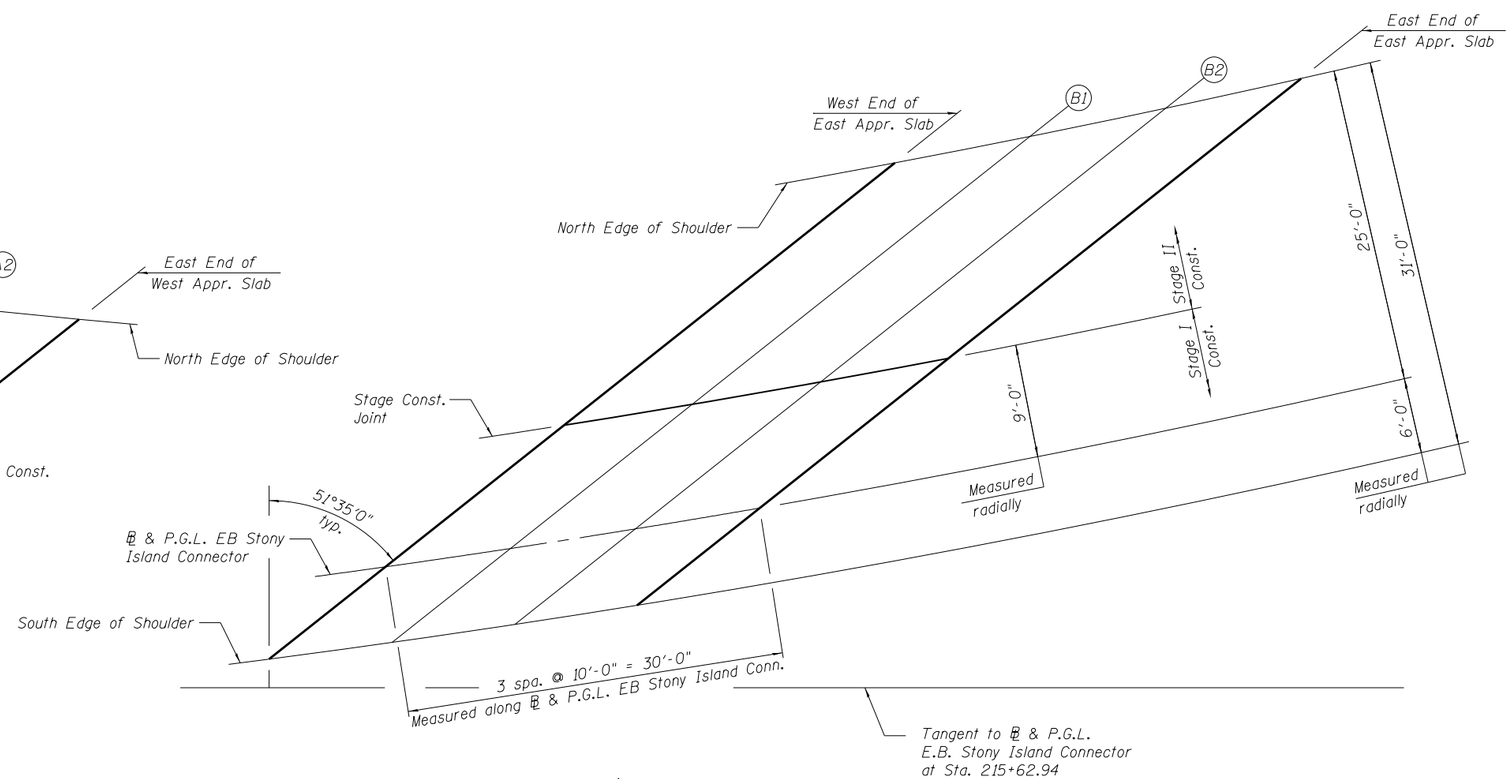
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS II
STRUCTURE NO. 016-2471
SHEET NO. S-9 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	502
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



PLAN
West Approach Slab



PLAN
East Approach Slab

NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. end of West Appr. Slab	214+39.96	-25.00	607.68
A1	214+50.48	-25.00	607.63
A2	214+61.00	-25.00	607.57
E. end of West Appr. Slab	214+71.54	-25.00	607.50
W. end of East Appr. Slab	217+45.20	-25.00	605.72
B1	217+56.39	-25.00	605.65
B2	217+67.64	-25.00	605.58
E. end of East Appr. Slab	217+78.94	-25.00	605.51

STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
W. end of West Appr. Slab	214+24.30	-9.00	608.64
A1	214+34.48	-9.00	608.60
A2	214+44.66	-9.00	608.55
E. end of West Appr. Slab	214+54.85	-9.00	608.50
W. end of East Appr. Slab	217+15.30	-9.00	606.81
B1	217+25.68	-9.00	606.75
B2	217+36.09	-9.00	606.68
E. end of East Appr. Slab	217+46.51	-9.00	606.61

℄ & P.G.L. EASTBOUND STONY ISLAND CONNECTOR

Location	Station	Offset	Theoretical Grade Elevations
W. end of West Appr. Slab	214+15.82	0.00	609.18
A1	214+25.82	0.00	609.14
A2	214+35.82	0.00	609.10
E. end of West Appr. Slab	214+45.82	0.00	609.05
W. end of East Appr. Slab	216+99.58	0.00	607.42
B1	217+09.58	0.00	607.36
B2	217+19.58	0.00	607.29
E. end of East Appr. Slab	217+29.58	0.00	607.23

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. end of West Appr. Slab	214+10.29	6.00	609.53
A1	214+20.17	6.00	609.50
A2	214+30.06	6.00	609.46
E. end of West Appr. Slab	214+39.94	6.00	609.42
W. end of East Appr. Slab	216+89.49	6.00	607.82
B1	216+99.26	6.00	607.76
B2	217+09.01	6.00	607.70
E. end of East Appr. Slab	217+18.76	6.00	607.63

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DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS
STRUCTURE NO. 016-2471
SHEET NO. S-10 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	503
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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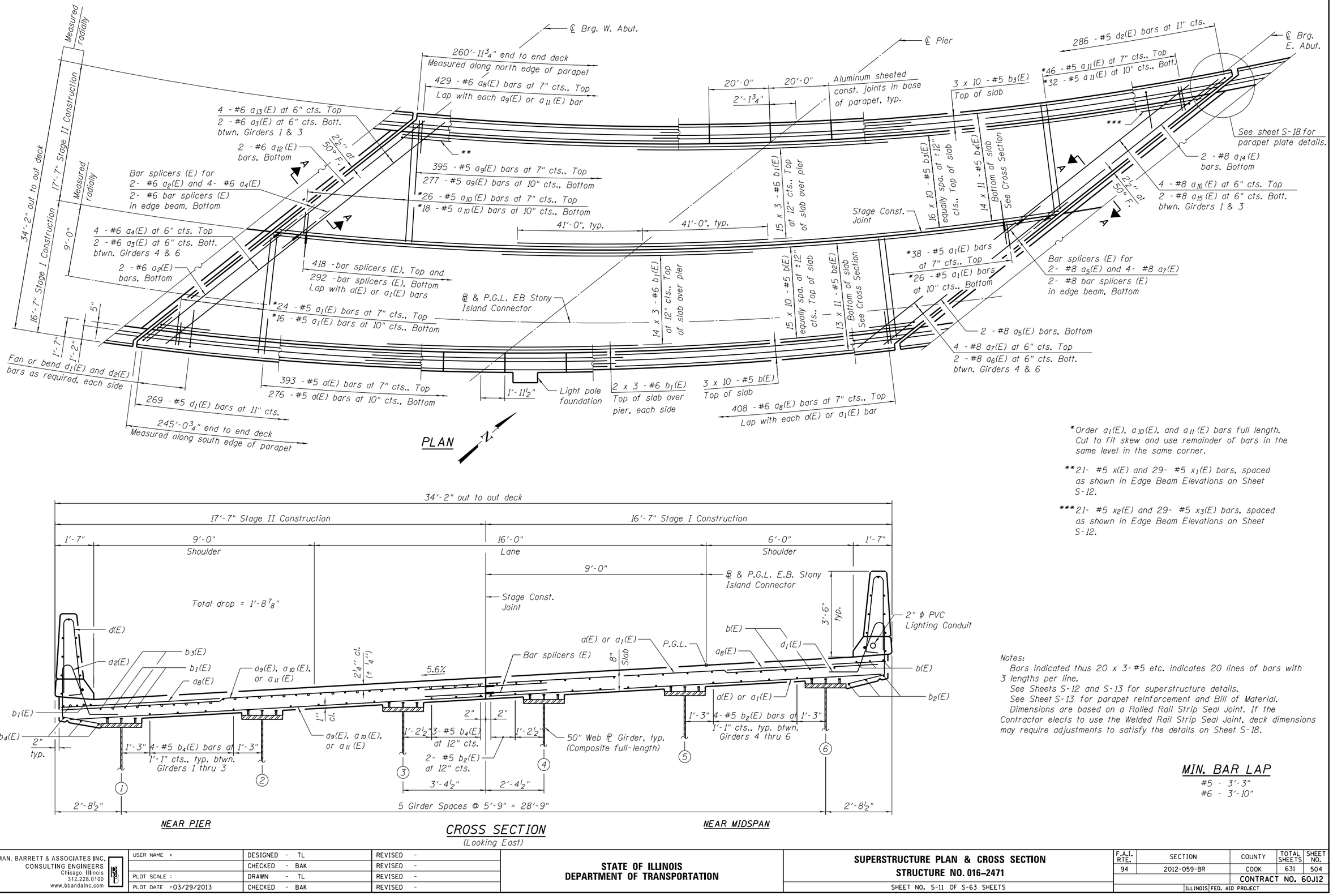

*Order a1(E), a10(E), and a11(E) bars full length. Cut to fit skew and use remainder of bars in the same level in the same corner.

**21- #5 x(E) and 29- #5 x1(E) bars, spaced as shown in Edge Beam Elevations on Sheet S-12.

***21- #5 x2(E) and 29- #5 x3(E) bars, spaced as shown in Edge Beam Elevations on Sheet S-12.

NEAR PIER

CROSS SECTION
(Looking East)

NEAR MIDSPAN

Notes:

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

See Sheets S-12 and S-13 for superstructure details.

See Sheet S-13 for parapet reinforcement and Bill of Material.

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-18.

MIN. BAR LAP

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

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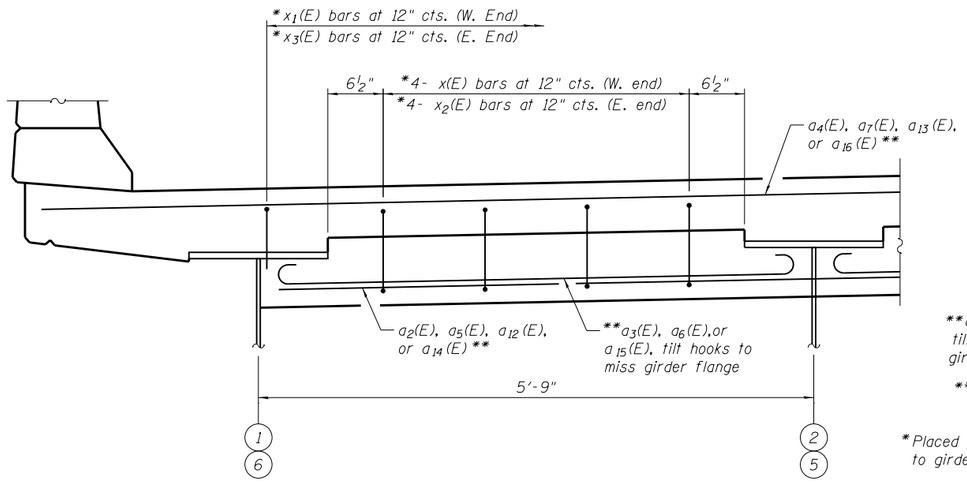
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE PLAN & CROSS SECTION
STRUCTURE NO. 016-2471
SHEET NO. S-11 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	504
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

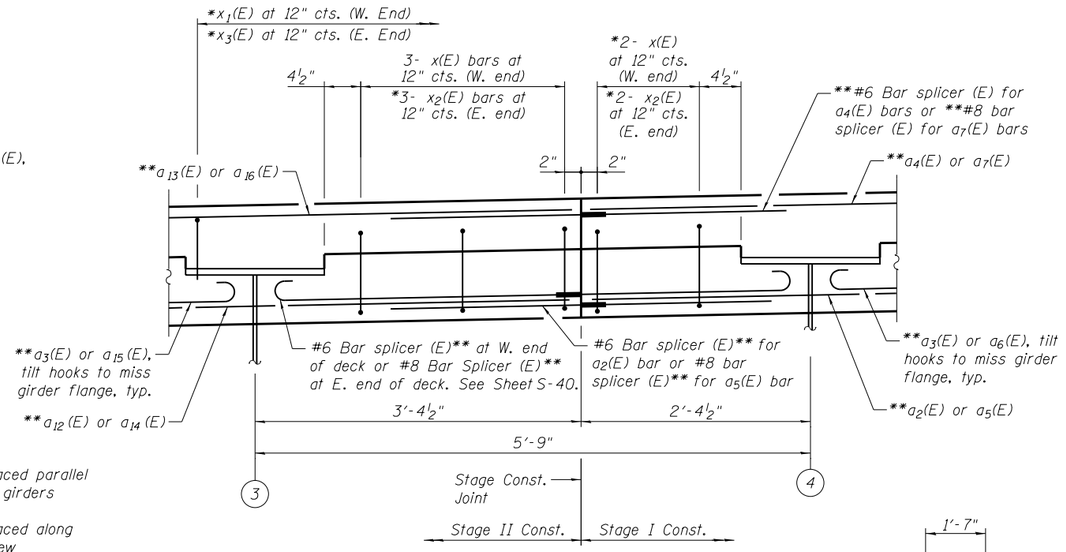


EDGE BEAM ELEVATION

(Typical between beams U.O.N.)

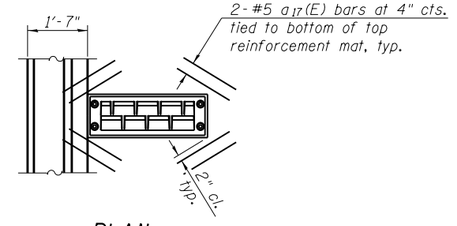
*Placed parallel to girders

**Placed along skew



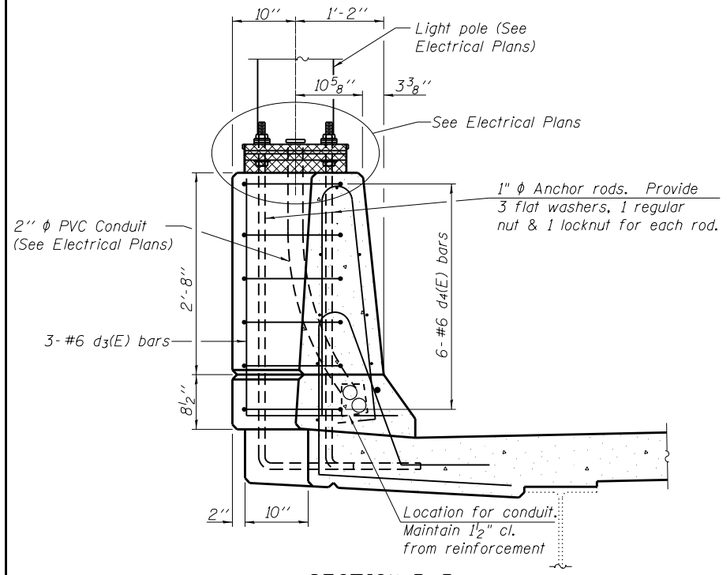
EDGE BEAM ELEVATION

(At Bonded Stage Construction Joint)

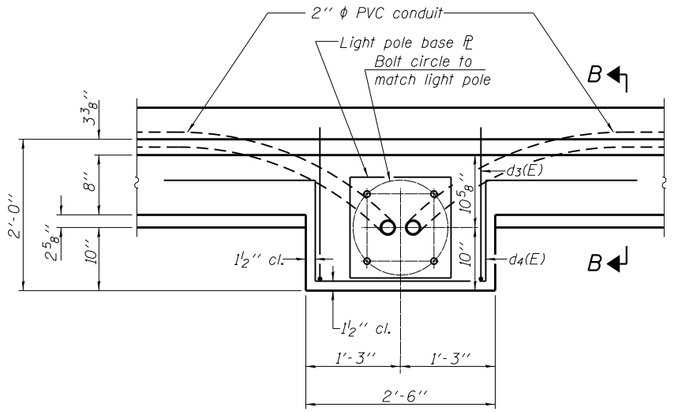


PLAN

Note: Cut longitudinal reinforcement to clear drainage scuppers.

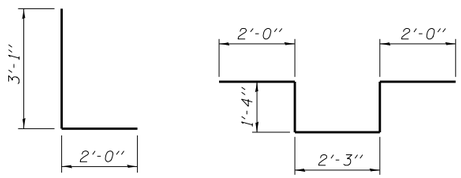


SECTION B-B



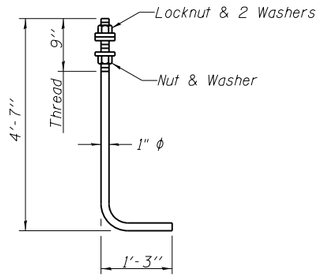
LIGHT POLE FOUNDATION PLAN

Note:
Cost of anchor rods is included with Concrete Superstructure.



BAR d3(E)

BAR d4(E)



ANCHOR ROD

(ASTM F 1554 Grade 105, full length hot dipped galvanized)

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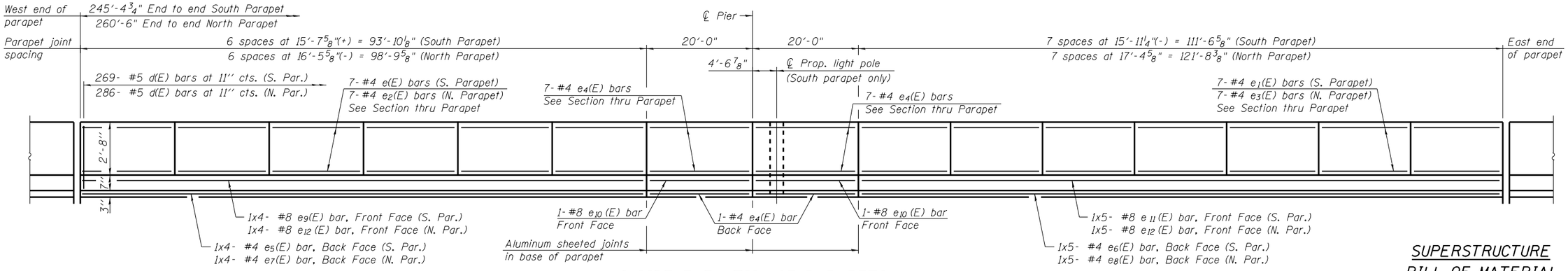
SUPERSTRUCTURE DETAILS I
STRUCTURE NO. 016-2471
SHEET NO. S-12 OF S-63 SHEETS

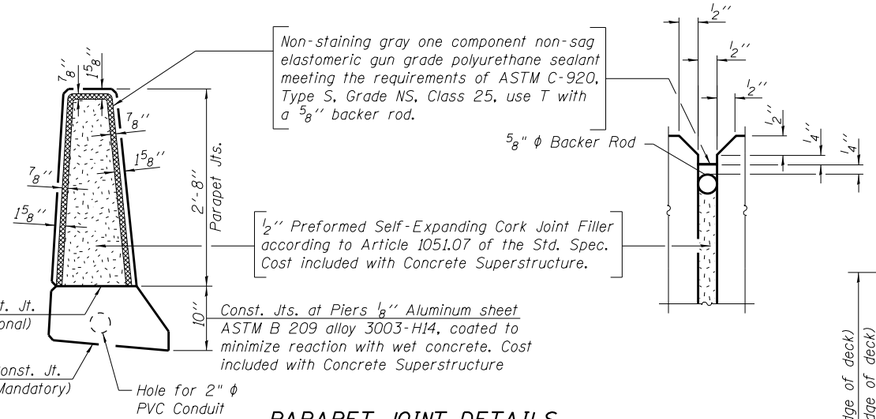
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	505
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



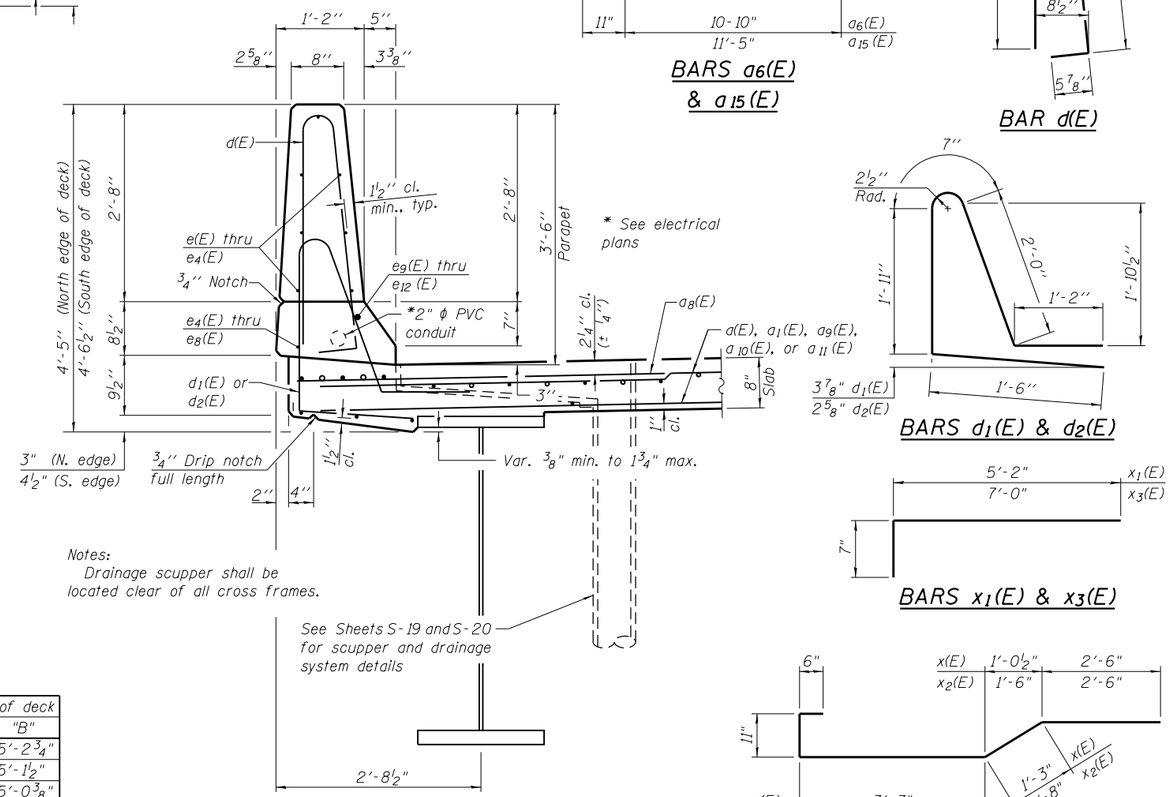
INSIDE ELEVATION OF PARAPETS

MINIMUM BAR LAP

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



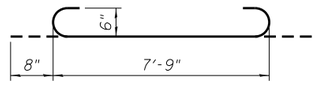
PARAPET JOINT DETAILS



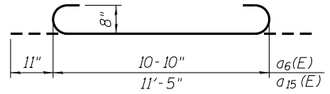
SECTION THRU PARAPET

SECTION A-A

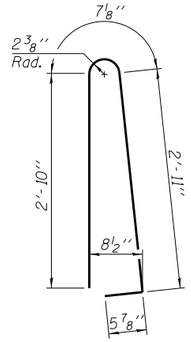
	West end of deck		East end of deck	
	"A"	"B"	"A"	"B"
Girder 1	1'-6 1/8"	3'-5"	2'-6 1/4"	5'-2 3/4"
Girder 2	1'-5 7/8"	3'-4 3/4"	2'-5 3/8"	5'-1 1/2"
Girder 3	1'-5 3/4"	3'-4 1/2"	2'-4 3/4"	5'-0 3/8"
Girder 4	1'-5 5/8"	3'-4 1/4"	2'-4"	4'-11 1/4"
Girder 5	1'-5 3/8"	3'-4"	2'-3 3/8"	4'-10 1/4"
Girder 6	1'-5 1/4"	3'-3 3/4"	2'-2 7/8"	4'-9 1/4"



BAR a3(E)



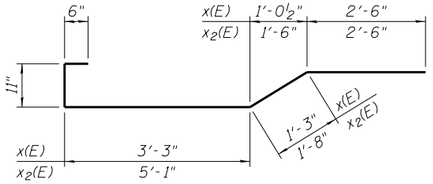
BARS a6(E) & a15(E)



BAR d(E)

BARS d1(E) & d2(E)

BARS x1(E) & x3(E)



BARS x(E) & x2(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	669	#5	16'-1"	
a1 (E)	52	#5	17'-5"	
a2(E)	2	#6	19'-1"	
a3(E)	8	#6	9-1"	
a4(E)	4	#6	22'-9"	
a5(E)	2	#8	26'-10"	
a6(E)	4	#8	12'-8"	
a7(E)	4	#8	31'-10"	
a8(E)	837	#6	6'-6"	
a9(E)	672	#5	17'-1"	
a10(E)	22	#5	18'-1"	
a11 (E)	39	#5	18'-8"	
a12 (E)	2	#6	20'-10"	
a13 (E)	4	#6	24'-7"	
a14 (E)	2	#8	30'-2"	
a15 (E)	4	#8	13'-3"	
a16 (E)	4	#8	35'-8"	
a17 (E)	8	#5	2'-0"	
b(E)	180	#5	28'-2"	
b1 (E)	99	#6	30'-0"	
b2(E)	143	#5	25'-11"	
b3(E)	190	#5	29'-1"	
b4(E)	154	#5	26'-8"	
d(E)	555	#5	6'-10"	
d1(E)	269	#5	7'-2"	
d2(E)	286	#5	7'-2"	
d3(E)	3	#6	5'-1"	
d4(E)	6	#6	8'-11"	
e(E)	42	#4	15'-3"	
e1(E)	49	#4	15'-7"	
e2(E)	42	#4	16'-1"	
e3(E)	49	#4	17'-0"	
e4(E)	32	#4	19'-8"	
e5(E)	4	#4	24'-11"	
e6(E)	5	#4	23'-11"	
e7(E)	4	#4	26'-2"	
e8(E)	5	#4	25'-11"	
e9(E)	4	#8	27'-3"	
e10 (E)	4	#8	19'-8"	
e11 (E)	5	#8	26'-5"	
e12 (E)	9	#8	28'-6"	
x(E)	21	#5	8'-5"	
x1 (E)	29	#5	5'-9"	
x2(E)	21	#5	10'-8"	
x3(E)	29	#5	7'-7"	
Reinforcement Bars, Epoxy Coated			Pound	72,220
Concrete Superstructure			Cu. Yds.	323.2
Bridge Deck Grooving			Sq. Yds.	814
Protective Coat			Sq. Yds.	1113

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SUPERSTRUCTURE DETAILS II
STRUCTURE NO. 016-2471
SHEET NO. S-13 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	506
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

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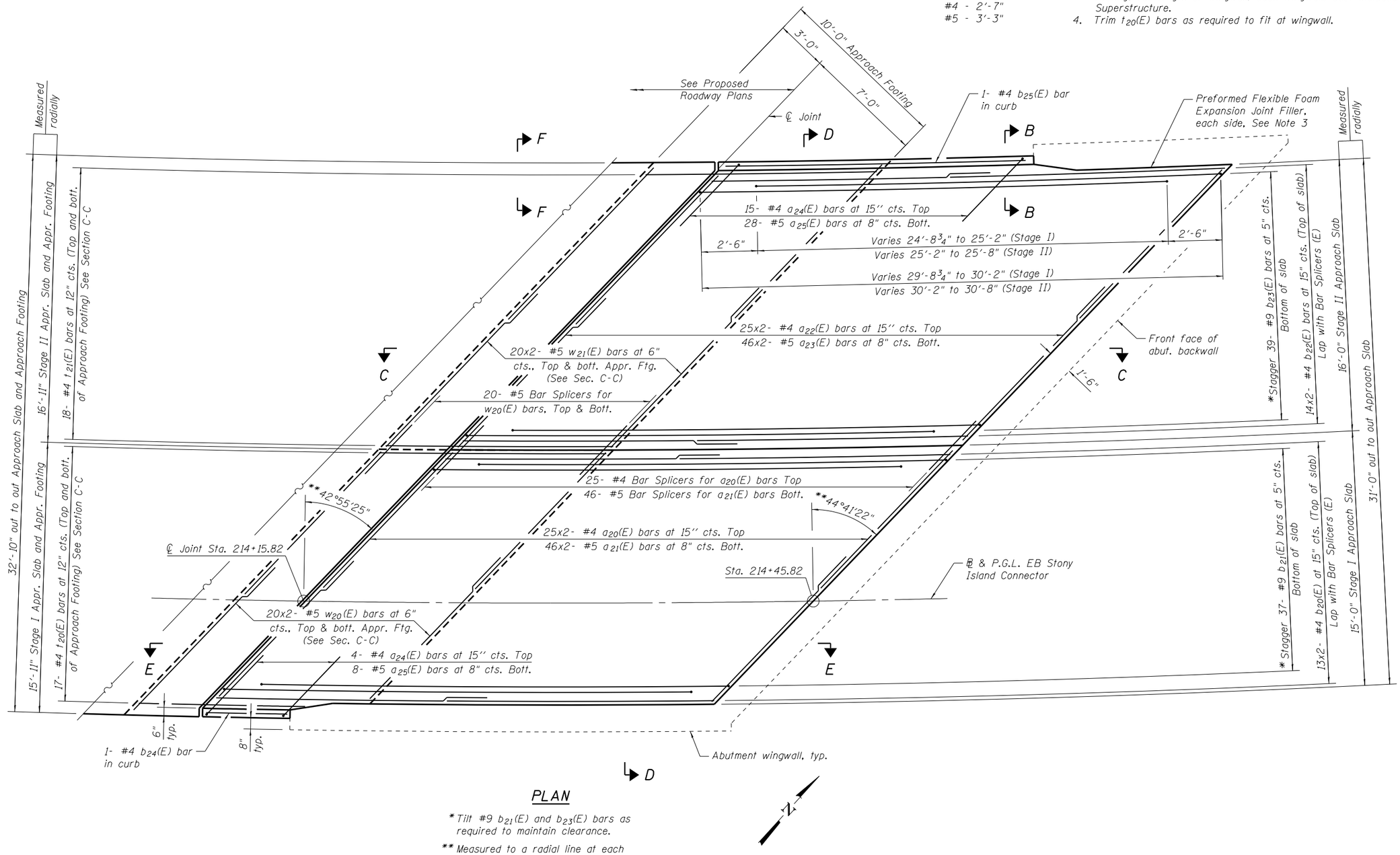
Notes:
1. See sheet S-15 for sections and details.
2. a_{20}(E) thru a_{25}(E) bar spacings measured along ℄ E.B. Stony Island Connector.
3. Preformed Flexible Foam Expansion Joint Filler in accordance with Article 1051.09 of the Standard Specifications. Full depth of slab and approach footing, full length of wingwall, each wingwall. Cost included with Concrete Superstructure.
4. Trim t_{20}(E) bars as required to fit at wingwall.

MIN. BAR LAP

#4 - 2'-7"
#5 - 3'-3"



PLAN

*Tilt #9 b_{21}(E) and b_{23}(E) bars as required to maintain clearance.

**Measured to a radial line at each station noted.

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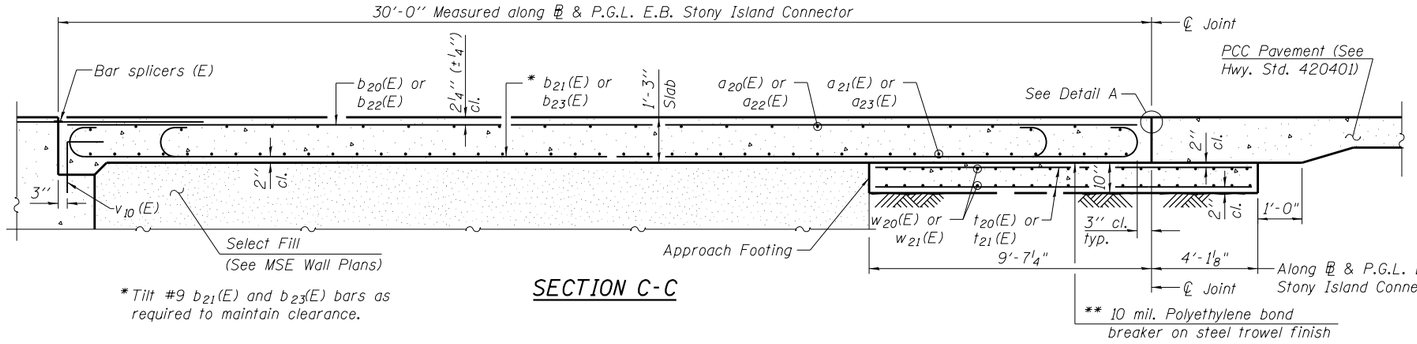
DEPARTMENT OF TRANSPORTATION

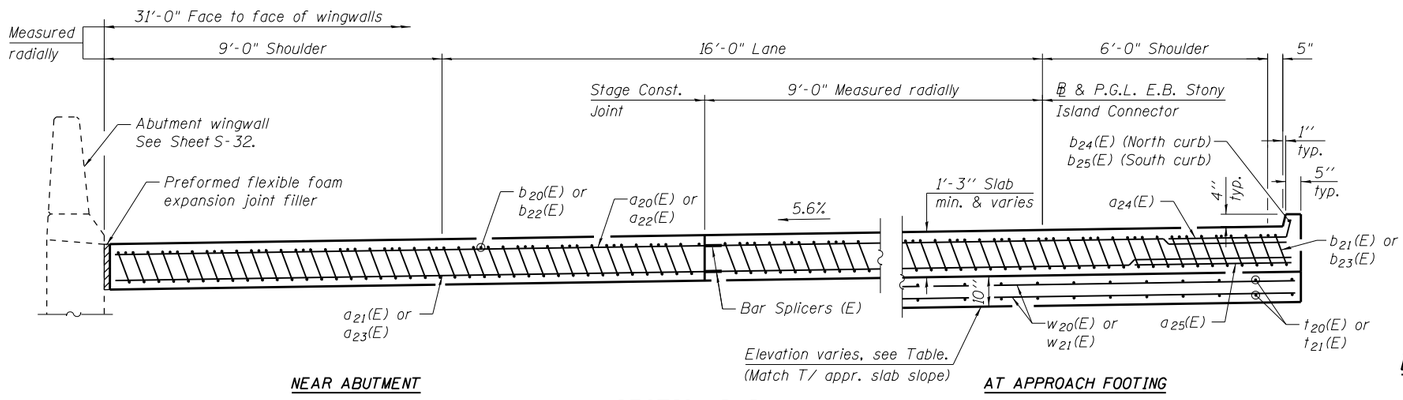
WEST BRIDGE APPROACH SLAB DETAILS I
STRUCTURE NO. 016-2471
SHEET NO. S-14 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	507
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



*Tilt #9 $b_{21}(E)$ and $b_{23}(E)$ bars as required to maintain clearance.

SECTION C-C



NEAR ABUTMENT

AT APPROACH FOOTING

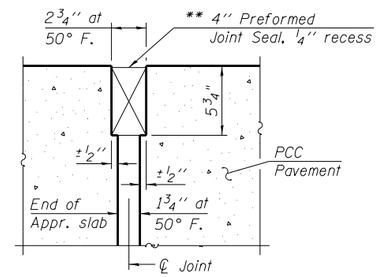
SECTION D-D

(See Plan for dimensions not shown)

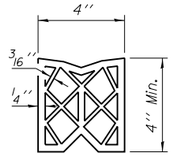
Notes:

Approach slab concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For $v_{10}(E)$ bar details, see Sheet S-33.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see Sheet S-40.
Cost of excavation for approach footing included with Concrete Structures.
Quantity of Protective Coat in Bill of Material includes the quantity that shall be applied to the top and inside faces of the abutment wingwalls.

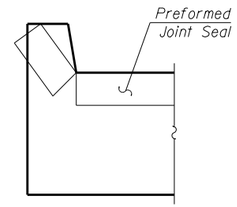
** Cost included with Concrete Superstructure.



DETAIL A



PREFORMED JOINT SEAL

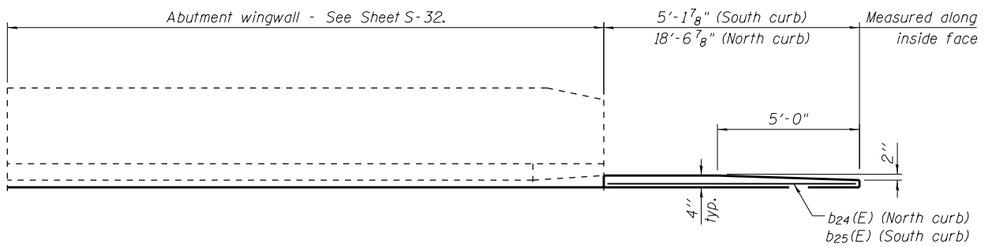


VIEW F-F

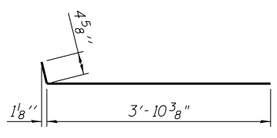
Angle Preformed Joint Seal at 45° at curbs.

BOTTOM OF APPROACH FOOTING ELEVATIONS

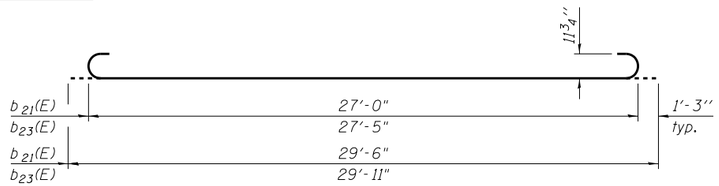
	West End of Footing	East End of Footing
North Edge of Footing	605.56	605.49
Stage Construction Joint	606.58	606.52
South Edge of Footing	607.51	607.42



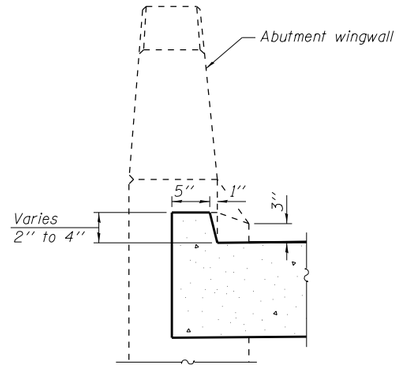
VIEW E-E



BAR $a_{24}(E)$



BARS $b_{21}(E)$ AND $b_{23}(E)$



VIEW B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_{20}(E)$	50	#4	11'-9"	
$a_{21}(E)$	92	#5	12'-1"	
$a_{22}(E)$	50	#4	12'-7"	
$a_{23}(E)$	92	#5	12'-11"	
$a_{24}(E)$	19	#4	4'-3"	
$a_{25}(E)$	36	#5	4'-10"	
$b_{20}(E)$	26	#4	16-3"	
$b_{21}(E)$	37	#9	29'-6"	
$b_{22}(E)$	28	#4	16-6"	
$b_{23}(E)$	39	#9	29'-11"	
$b_{24}(E)$	1	#4	4'-10"	
$b_{25}(E)$	1	#4	18'-2"	
$t_{20}(E)$	34	#4	13'-5"	
$t_{21}(E)$	36	#4	13'-8"	
$w_{20}(E)$	80	#5	12'-6"	
$w_{21}(E)$	80	#5	13'-4"	
Bridge Deck Grooving		Sq. Yd.	99	
Protective Coat		Sq. Yd.	127	
Concrete Superstructure		Cu. Yd.	44.7	
Concrete Structures		Cu. Yd.	14.0	
Reinforcement Bars, Epoxy Coated		Pound	14,530	

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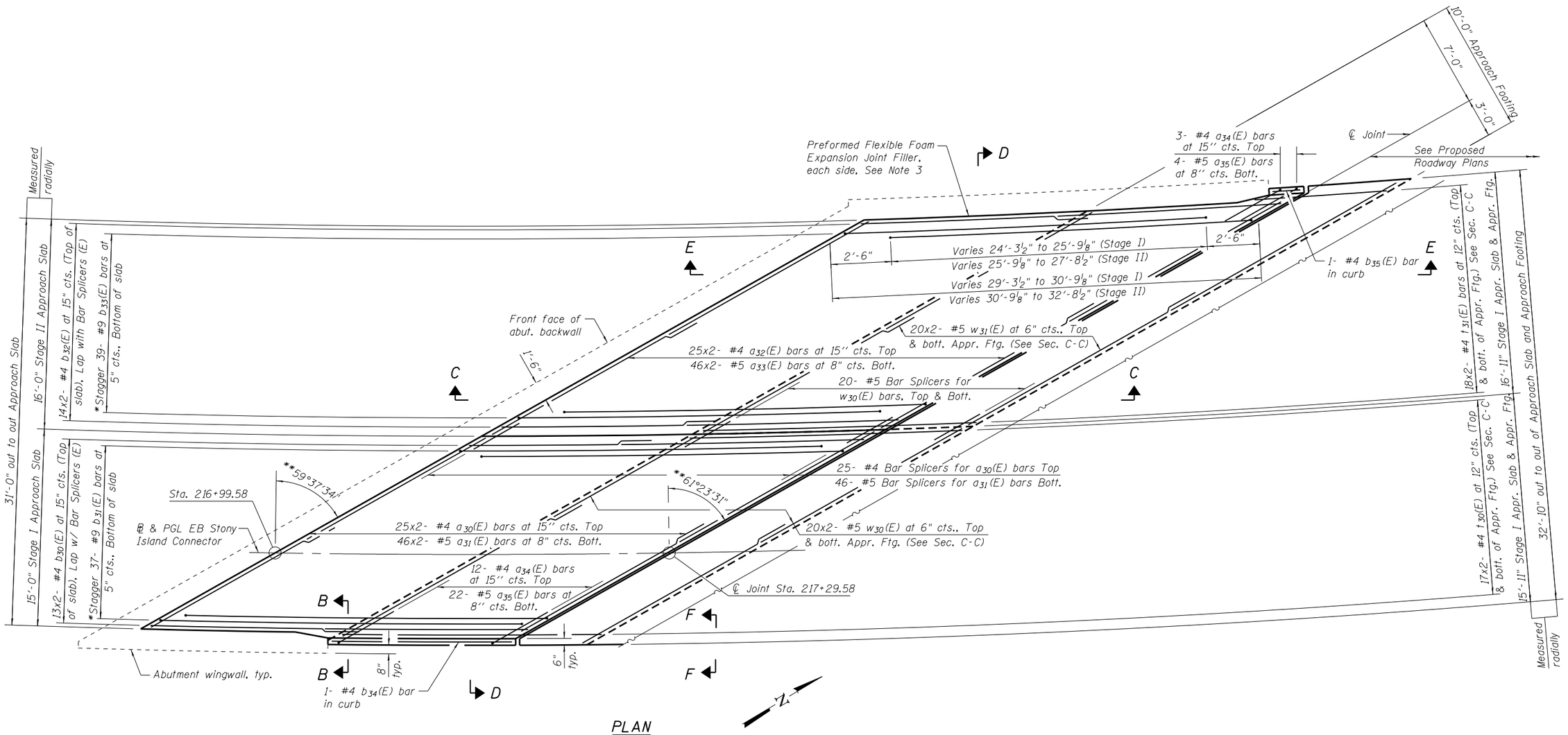
WEST BRIDGE APPROACH SLAB DETAILS II
STRUCTURE NO. 016-2471
SHEET NO. S-15 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	508
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

Notes:
1. See sheet S-17 for sections and details.
2. a_{30}(E) thru a_{35}(E) bar spacings measured along ℄ E.B. Stony Island Connector.
3. Preformed Flexible Foam Expansion Joint Filler in accordance with Article 1051.09 of the Standard Specifications. Full depth of slab and approach footing, full length of wingwall, each wingwall. Cost included with Concrete Superstructure.
4. Trim t_{31}(E) bars as required to fit at wingwalls.

MIN. BAR LAP

#4 - 2'-7"
#5 - 3'-3"



PLAN

*Tilt #9 b_{31}(E) and b_{33}(E) bars as required to maintain clearance.

**Measured to a radial line at each station noted.

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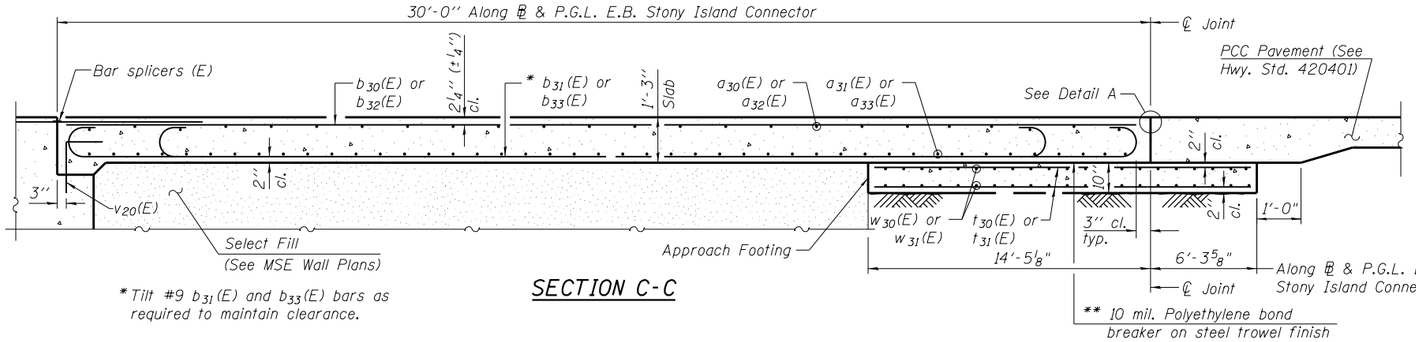
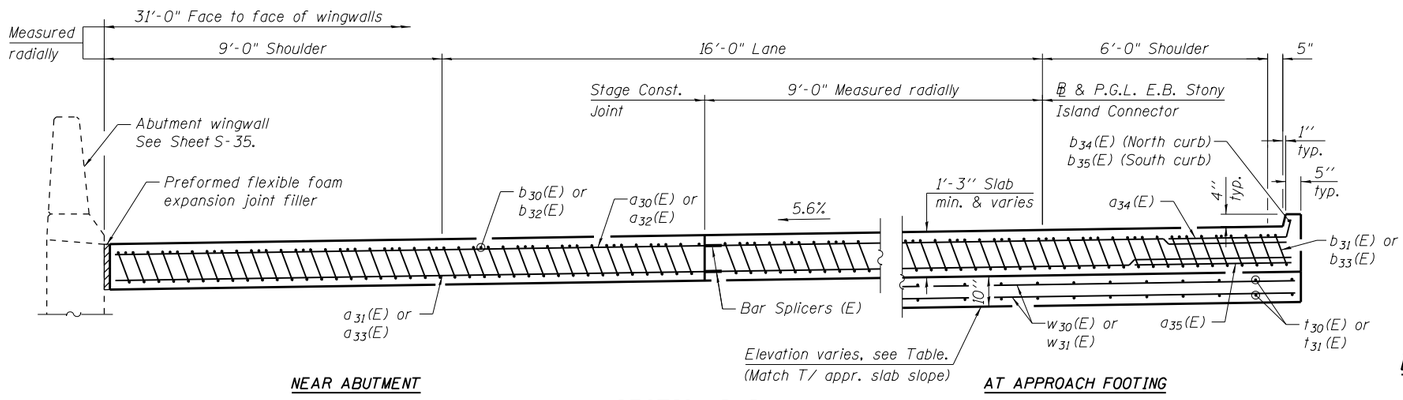
EAST BRIDGE APPROACH SLAB DETAILS I
STRUCTURE NO. 016-2471
SHEET NO. S-16 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	509
		CONTRACT NO. 60J12		
ILLINOIS	FED. AID PROJECT			



* Tilt #9 b_{31}(E) and b_{33}(E) bars as required to maintain clearance.

SECTION C-C



NEAR ABUTMENT

AT APPROACH FOOTING

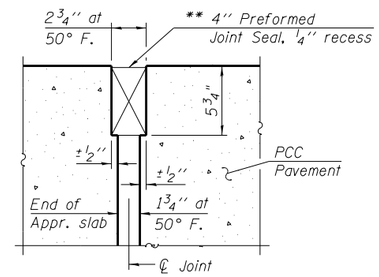
SECTION D-D

(See Plan for dimensions not shown)

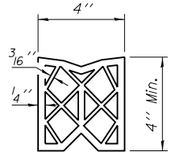
Notes:

Approach slab concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v_{20}(E) bar details, see Sheet S-36.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see Sheet S-40.
Cost of excavation for approach footing included with Concrete Structures.
Quantity of Protective Coat in Bill of Material includes the quantity that shall be applied to the top and inside faces of the abutment wingwalls.

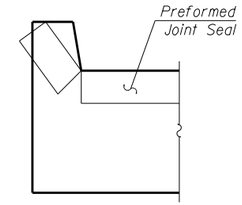
** Cost included with Concrete Superstructure.



DETAIL A



PREFORMED JOINT SEAL

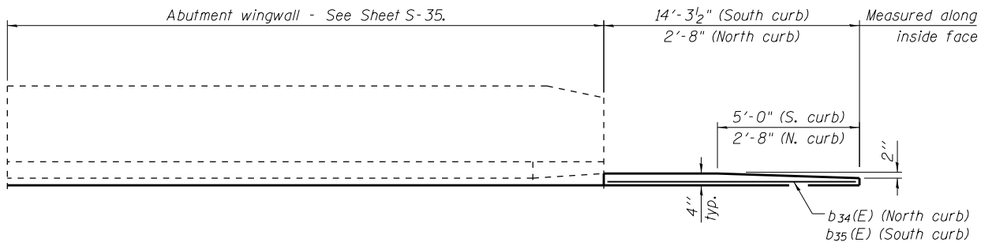


VIEW F-F

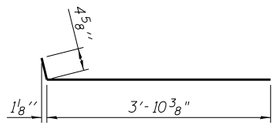
Angle Preformed Joint Seal at 45° at curbs.

BOTTOM OF APPROACH FOOTING ELEVATIONS

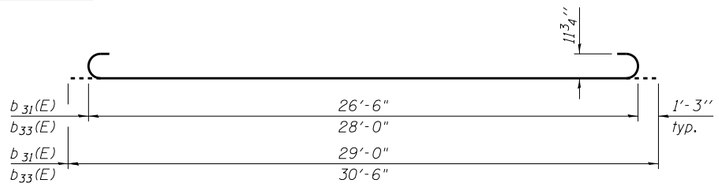
	West End of Footing	East End of Footing
North Edge of Footing	603.53	603.31
Stage Construction Joint	604.63	604.49
South Edge of Footing	605.68	605.57



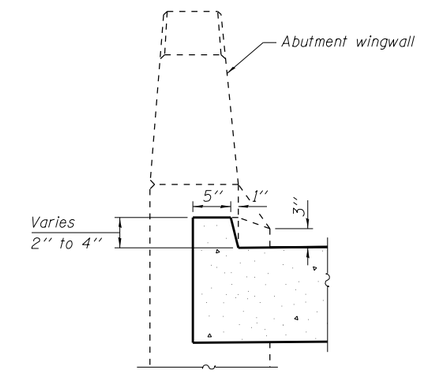
VIEW E-E



BAR a_{34}(E)



BARS b_{31}(E) AND b_{33}(E)



VIEW B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a_{30}(E)	50	#4	16'-11"	
a_{31}(E)	92	#5	17'-3"	
a_{32}(E)	50	#4	19'-0"	
a_{33}(E)	92	#5	19'-4"	
a_{34}(E)	15	#4	4'-3"	
a_{35}(E)	26	#5	4'-10"	
b_{30}(E)	26	#4	16'-6"	
b_{31}(E)	37	#9	29'-0"	
b_{32}(E)	28	#4	17-6"	
b_{33}(E)	39	#9	30'-6"	
b_{34}(E)	1	#4	13'-11"	
b_{35}(E)	1	#4	2'-4"	
t_{30}(E)	68	#4	11'-11"	
t_{31}(E)	72	#4	12'-7"	
w_{30}(E)	80	#5	18'-5"	
w_{31}(E)	80	#5	20'-8"	
Bridge Deck Grooving		Sq. Yd.	101	
Protective Coat		Sq. Yd.	134	
Concrete Superstructure		Cu. Yd.	45.6	
Concrete Structures		Cu. Yd.	21.5	
Reinforcement Bars, Epoxy Coated		Pound	17,580	

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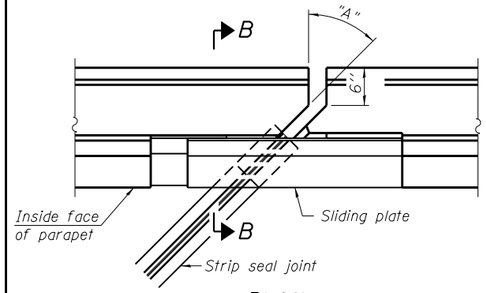
DEPARTMENT OF TRANSPORTATION

EAST BRIDGE APPROACH SLAB DETAILS II
STRUCTURE NO. 016-2471
SHEET NO. S-17 OF S-63 SHEETS

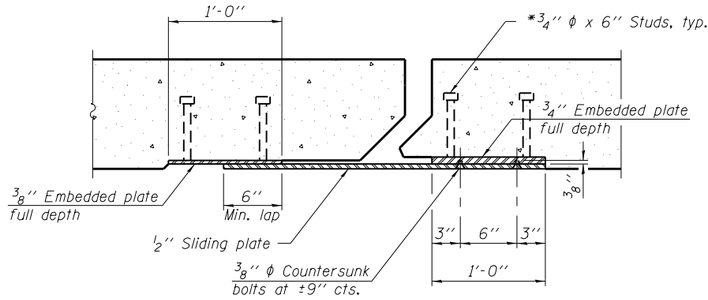
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	510
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



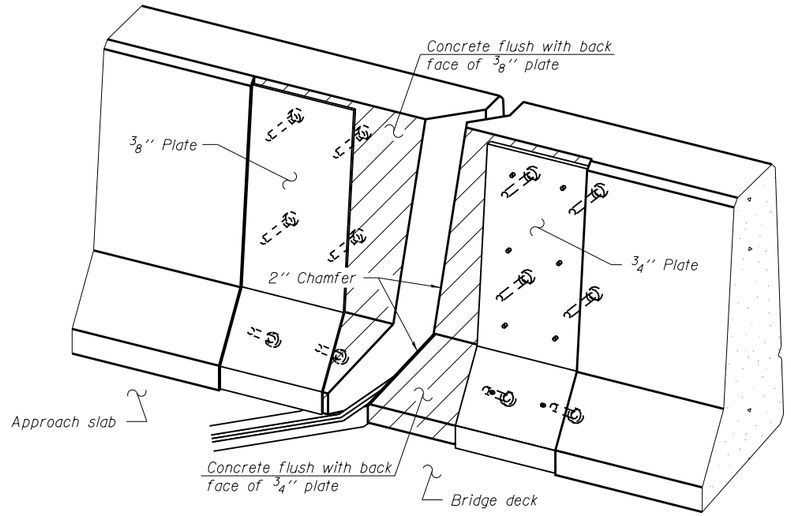
	Angle "A"
West end of deck	
North edge	46°24'12"
South edge	44°25'16"
East end of deck	
North edge	62°12'51"
South edge	58°45'28"

PLAN

Showing sliding plates at NW and SE bridge corners. NE and SW bridge corners similar.

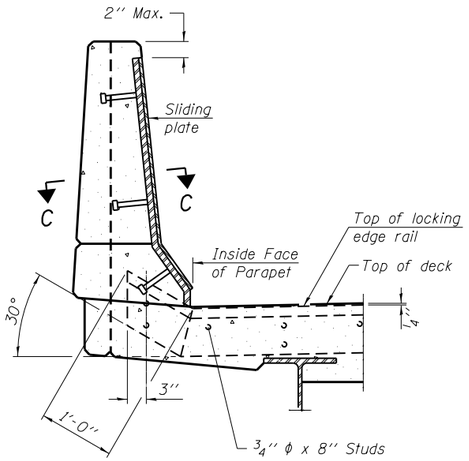


SECTION C-C

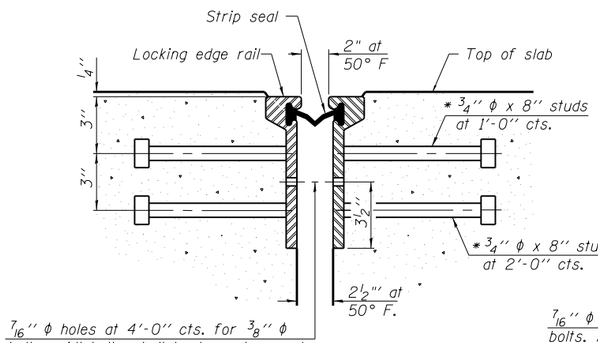


TRIMETRIC VIEW

Showing back plates only at NW and SE bridge corners. NE and SW bridge corners similar.

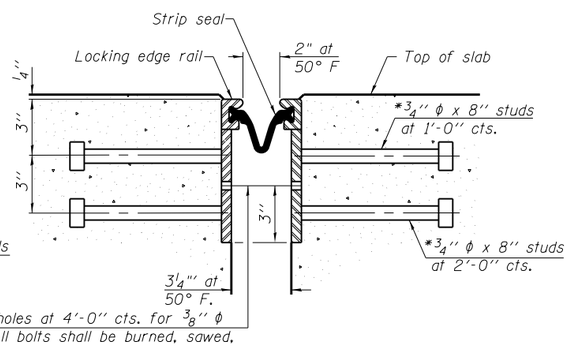


SECTION B-B



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

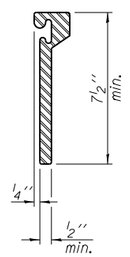
SECTION THRU ROLLED RAIL JOINT



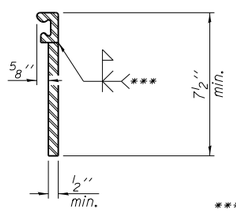
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

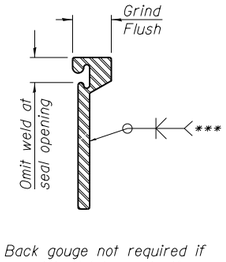
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



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

LOCKING EDGE RAIL SPLICE

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

Rolled rail shown. welded rail similar.

LOCKING EDGE RAILS

Notes:

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

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

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

Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

Parapet plates and anchorage studs included in the cost of Preformed Joint Strip Seal.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	112

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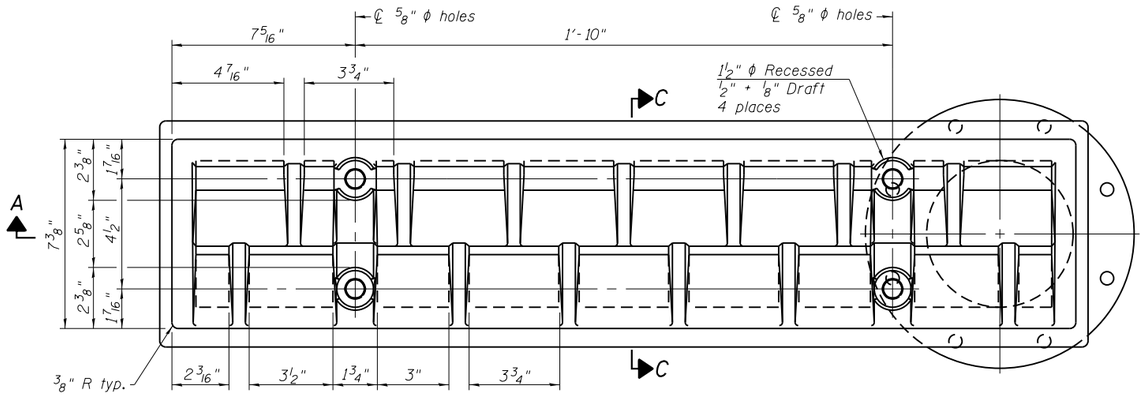
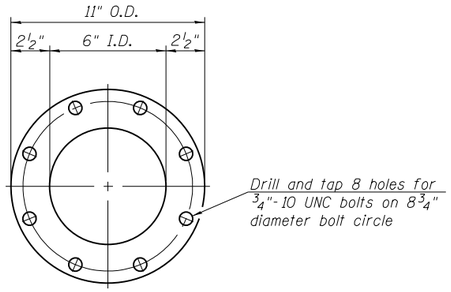
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 016-2471
SHEET NO. S-18 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	511
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



PLAN



VIEW B-B

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.

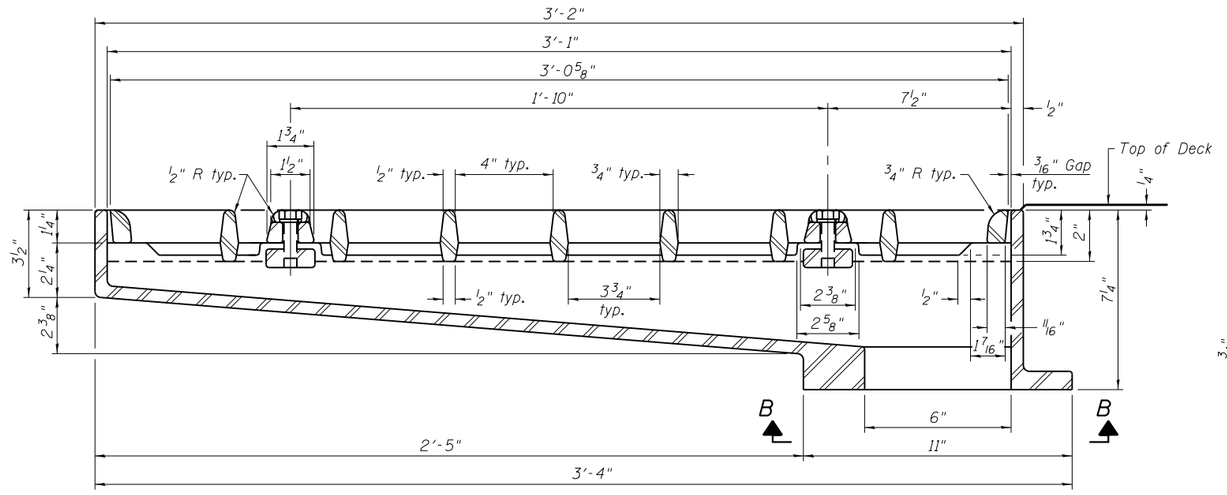
As an alternate, bolts, anchor studs, washers and nuts may be stainless steel according to Article 1006.29(d) of the Standard Specifications.

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.

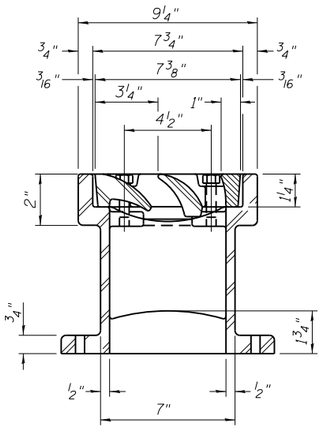
Cost of the Grate, Frame, Downspout, Anchor Studs, Bolts, Washers and Nuts including complete installation of the scupper shall be paid for at the contract unit price each for Drainage Scupper, DS-33.

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

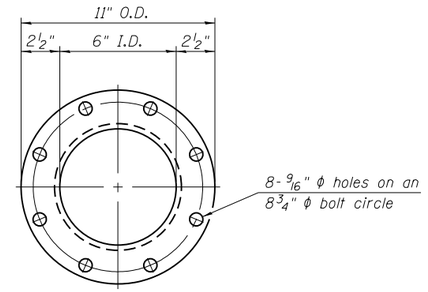


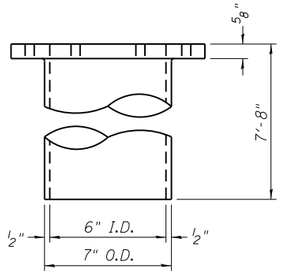
SECTION A-A

See sheet S-13 for scupper location relative to parapet.

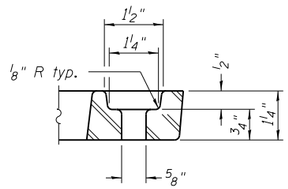


SECTION C-C

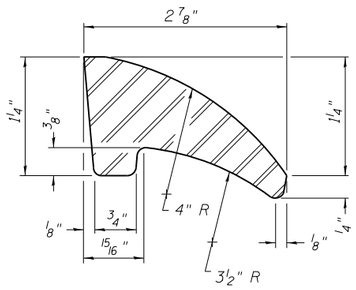




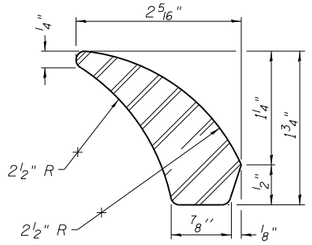
DOWNSPOUT



BOLT HOLE DETAIL



FIRST VANE DETAIL



SECOND VANE DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-33	Each	1

DS-33

7-1-10

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DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER, DS-33
STRUCTURE NO. 016-2471
SHEET NO. S-19 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	512
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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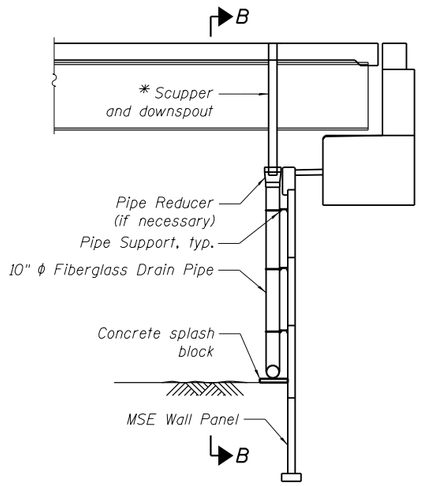
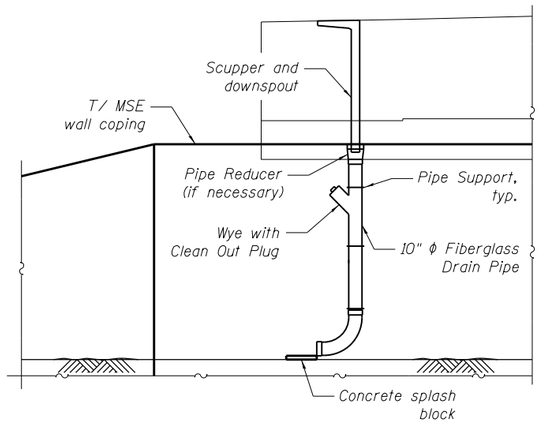
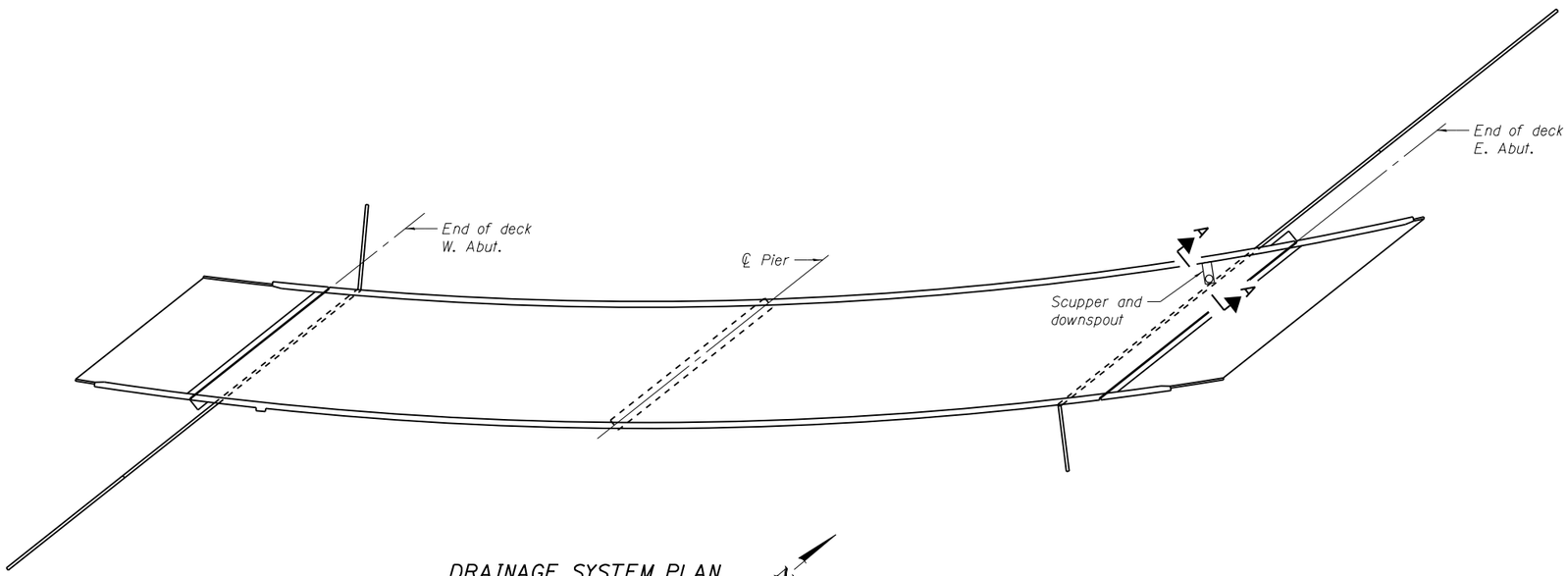


SECTION A-A

* Scupper and downspout are included in the cost of Drainage Scupper, DS-33, see Sheet S-19. See Sheet S-1 for drainage scupper location.



VIEW B-B



DRAINAGE SYSTEM PLAN

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage System	L. Sum	0.50

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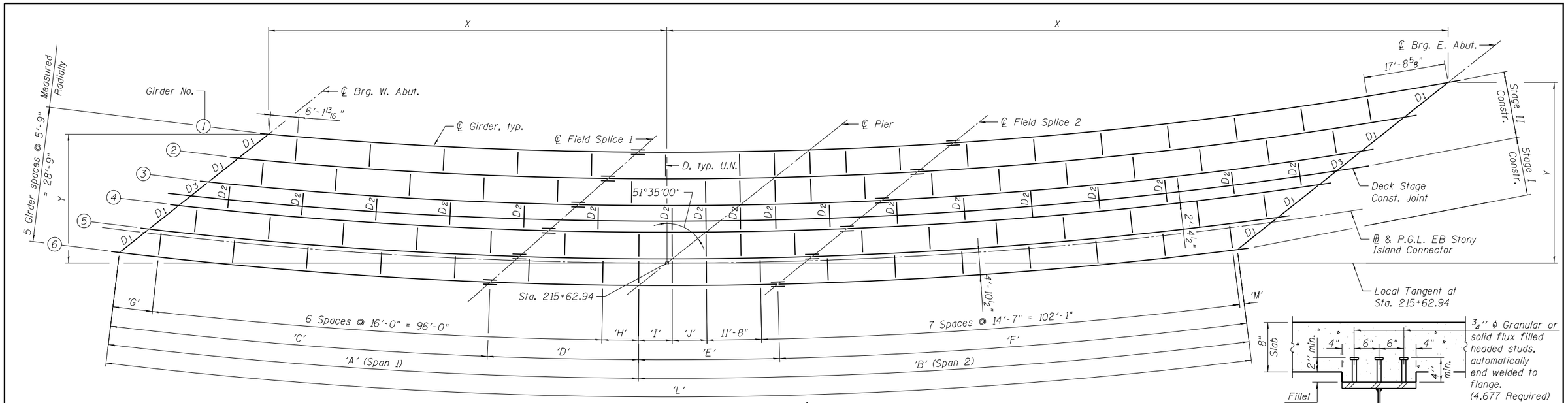
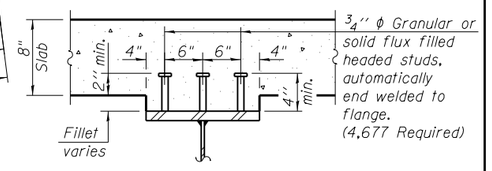
DEPARTMENT OF TRANSPORTATION

DRAINAGE SYSTEM DETAILS
STRUCTURE NO. 016-2471
SHEET NO. S-20 OF S-63 SHEETS

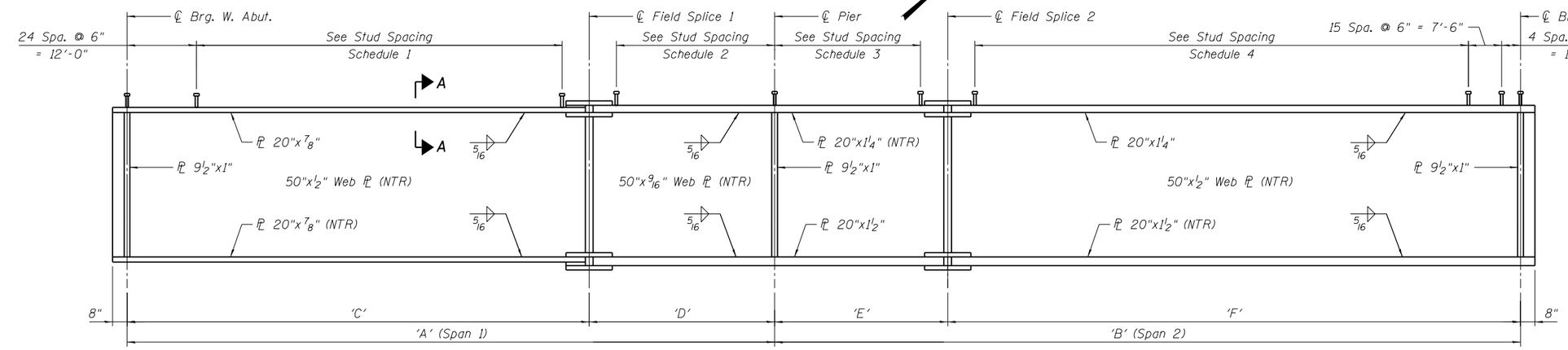
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	513
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



FRAMING PLAN



SECTION A-A



GIRDER ELEVATION

SECTION AT PIER & ABUTMENTS

SHEAR STUD SPACING

Girder No.	Schedule 1	Schedule 2	Schedule 3	Schedule 4
1	53 Spaces @ 15"	47 Spaces @ 9"	39 Spaces @ 9"	83 Spaces @ 14"
2	53 Spaces @ 15"	45 Spaces @ 9"	39 Spaces @ 9"	81 Spaces @ 14"
3	53 Spaces @ 15"	44 Spaces @ 9"	38 Spaces @ 9"	80 Spaces @ 14"
4	53 Spaces @ 15"	43 Spaces @ 9"	38 Spaces @ 9"	78 Spaces @ 14"
5	53 Spaces @ 15"	41 Spaces @ 9"	38 Spaces @ 9"	77 Spaces @ 14"
6	53 Spaces @ 15"	40 Spaces @ 9"	38 Spaces @ 9"	76 Spaces @ 14"

GIRDER DIMENSIONS

Girder No.	Radius	'A'	'B'	'C'	'D'	'E'	'F'	'L'
1	949.54'	116'-8 3/4"	138'-6 5/16"	79'-8 3/4"	37'-0"	31'-0"	107'-6 5/16"	255'-3 1/8"
2	955.29'	115'-8 15/16"	136'-5 9/16"	79'-9 11/16"	35'-11 1/4"	30'-9 5/16"	105'-8 1/4"	252'-2 1/2"
3	961.04'	114'-9 9/16"	134'-6 5/16"	79'-10 11/16"	34'-10 7/8"	30'-6 3/4"	103'-11 9/16"	249'-3 15/16"
4	966.79'	113'-10 11/16"	132'-8 1/2"	79'-11 13/16"	33'-10 15/16"	30'-4 3/8"	102'-4 1/8"	246'-7 3/16"
5	972.54'	113'-0 5/16"	130'-11 7/8"	80'-1"	32'-11 5/16"	30'-2 1/8"	100'-9 3/4"	244'-0 3/16"
6	978.29'	112'-2 5/16"	129'-4 7/16"	80'-2 5/16"	32'-0"	30'-0"	99'-4 7/16"	241'-6 11/16"

LAYOUT DIMENSIONS

Girder No.	W. Abut.		Splice 1		Pier		Splice 2		E. Abut.	
	X	Y	X	Y	X	Y	X	Y	X	Y
1	85'-10 1/2"	27'-9 1/4"	6'-3 1/8"	23'-10 3/4"	30'-8 3/4"	24'-4 1/2"	61'-8 3/8"	25'-10 5/8"	168'-4 3/8"	38'-11"
2	92'-4 5/8"	22'-7 1/4"	12'-8 5/8"	18'-2 1/2"	23'-2 1/2"	18'-4 7/8"	53'-11 1/2"	19'-7 3/4"	158'-11 1/4"	31'-5 1/4"
3	98'-10 1/4"	17'-5 5/8"	19'-1 5/8"	12'-6 3/4"	15'-9 1/4"	12'-6"	46'-3 3/4"	13'-5 7/8"	149'-8 1/4"	24'-1 1/4"
4	105'-3 3/8"	12'-4 1/2"	25'-6 1/8"	6'-11 1/2"	8'-4 3/4"	6'-8"	38'-9"	7'-4 7/8"	140'-7 1/4"	16'-10 7/8"
5	111'-8 1/8"	7'-3 3/4"	31'-10"	1'-4 3/4"	1'-1 1/4"	10 1/2"	31'-3 1/4"	1'-4 1/2"	131'-8 1/4"	9'-10"
6	118'-0 1/4"	2'-3 1/4"	38'-1 3/8"	4'-1 5/8"	6'-1 1/2"	4'-10 1/4"	23'-10 1/2"	4'-7"	122'-11"	2'-10 1/2"

CROSS-FRAME SPACING

Girder No.	'G'	'H'	'I'	'J'	'M'
2	12'-2 1/2"	7'-6 7/16"	7'-8 9/16"	7'-9 7/16"	7'-2 9/16"
3	11'-4 9/16"	7'-5"	7'-7"	7'-9 1/16"	5'-5 1/4"
4	10'-7 1/16"	7'-3 5/8"	7'-5 9/16"	7'-7 9/16"	3'-10 3/8"
5	9'-10"	7'-2 5/16"	7'-4 1/8"	7'-6 1/16"	2'-4 11/16"
6	8'-5 5/16"	7'-9"	7'-2 13/16"	7'-4 11/16"	0'-11 15/16"

Notes:

1. All structural steel shall be AASHTO M 270 Grade 50 steel.
2. Plates designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

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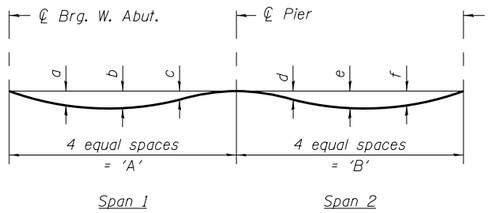
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 016-2471
SHEET NO. S-21 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	514
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



STEEL DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of steel only.)

Note:
The calculated deflections of the primary girders under steel self-weight shall be used to detail the cross frame D connections and to erect the structural steel such that the girders will be plumb within a tolerance of ±1/8" per vertical foot throughout when supporting their own weight. The combined calculated steel self-weight and concrete dead load deflections of the primary girders shall be used to detail the cross frame D2 connections. See sheet S-7 for calculated concrete dead load deflections.

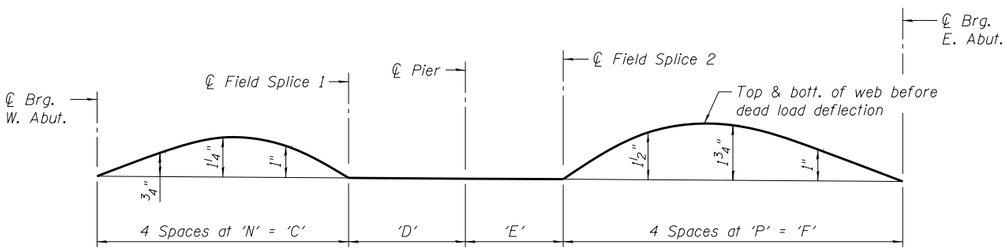
STEEL DEAD LOAD DEFLECTION TABLE

	Span 1				Span 2			
	a	b	c	'A'	d	e	f	'B'
Girder 1	3/16"	3/16"	0	116'-8 3/4"	7/16"	13/16"	5/8"	138'-6 5/16"
Girder 2	1/4"	1/4"	1/16"	115'-8 15/16"	1/2"	15/16"	3/4"	136'-5 9/16"
Girder 3	5/16"	5/16"	1/16"	114'-9 9/16"	9/16"	1 1/16"	7/8"	134'-6 5/16"
Girder 4	3/16"	3/16"	0	113'-10 11/16"	3/8"	11/16"	9/16"	132'-8 1/2"
Girder 5	1/4"	1/4"	1/16"	113'-0 5/16"	7/16"	13/16"	5/8"	130'-11 7/8"
Girder 6	1/4"	1/4"	1/16"	112'-2 5/16"	1/2"	15/16"	3/4"	129'-4 7/16"

TOP OF WEB ELEVATIONS

(For fabrication use only)

Girder No.	℄ Brg. W. Abut.	℄ Splice 1	℄ Pier	℄ Splice 2	℄ Brg. E. Abut.
1	606.69	606.10	605.88	605.70	604.96
2	607.06	606.46	606.26	606.08	605.35
3	607.42	606.83	606.63	606.45	605.74
4	607.78	607.19	607.00	606.83	606.13
5	608.13	607.56	607.37	607.20	606.52
6	608.48	607.92	607.74	607.57	606.90



CAMBER DIAGRAM

GIRDER 6 MOMENT TABLE				
		0.4 Sp. 1	Pier	0.6 Sp. 2
I_s	(in^4)	27,858	41,967	41,308
$I_c(n)$	(in^4)	55,772	-	77,376
$I_c(3n)$	(in^4)	41,635	-	57,956
$I_c(cr)$	(in^4)	-	47,540	-
S_s	(in^3)	1,076	1,507	1,662
$S_c(n)$	(in^3)	1,364	-	2,008
$S_c(3n)$	(in^3)	1,250	-	1,858
$S_c(cr)$	(in^3)	-	1,843	-
S_{xc}	(in^3)	1,286	-	1,905
DC1	(k/')	0.86	0.95	0.94
M_{DC1}	('k)	767	1,731	1,328
DC2	(k/')	0.17	0.17	0.17
M_{DC2}	('k)	295	688	401
DW	(k/')	0.26	0.26	0.26
M_{DW}	('k)	237	498	360
M_{L+IM}	('k)	1,493	1,760	1,818
f_l (Strength I)	(ksi)	5.5	0	3.7
$M_u + 1/3 f_l S_{xc}$	('k)	4,494	-	6,078
$\phi_f M_n$	('k)	5,286	-	7,797
f_s DC1	(ksi)	8.6	13.8	9.6
f_s DC2	(ksi)	2.8	4.5	2.6
f_s DW	(ksi)	2.3	3.2	2.3
f_s (L+IM)	(ksi)	13.1	11.5	10.9
f_l (Service II)	(ksi)	4.2	0	2.8
$f_s + f_l/2$ (Service II)	(ksi)	32.8	36.4	30.0
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5
$f_s + f_l/3$ (Total)(Strength I)	(ksi)	-	47.7	-
$\phi_f F_n$	(ksi)	-	50.0	-
V_f	(k)	24	32	34

REACTION TABLE				
		W. Abut. @ Girder 6	Pier @ Girder 5	E. Abut. @ Girder 6
R_{DC1}	(k)	38.9	204.8	55.7
R_{DC2}	(k)	16.4	25.0	24.5
R_{DW}	(k)	11.4	52.1	15.7
R_{L+IM}	(k)	66.8	178.4	96.3
R_{Total}	(k)	133.5	460.3	192.2

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

GIRDER CAMBER DIMENSIONS

Girder No.	'C'	'D'	'E'	'F'	'N'	'P'
1	79'-8 3/4"	37'-0"	31'-0"	107'-6 5/16"	19'-11 3/16"	26'-10 9/16"
2	79'-9 11/16"	35'-11 1/4"	30'-9 5/16"	105'-8 1/4"	19'-11 7/16"	26'-5 1/16"
3	79'-10 11/16"	34'-10 7/8"	30'-6 3/4"	103'-11 9/16"	19'-11 11/16"	25'-11 7/8"
4	79'-11 13/16"	33'-10 15/16"	30'-4 3/8"	102'-4 1/8"	19'-11 15/16"	25'-7 1/16"
5	80'-1"	32'-11 5/16"	30'-2 1/8"	100'-9 3/4"	20'-0 1/4"	25'-2 7/16"
6	80'-2 5/16"	32'-0"	30'-0"	99'-4 7/16"	20'-0 9/16"	24'-10 1/8"

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

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

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

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

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

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

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

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

$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

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

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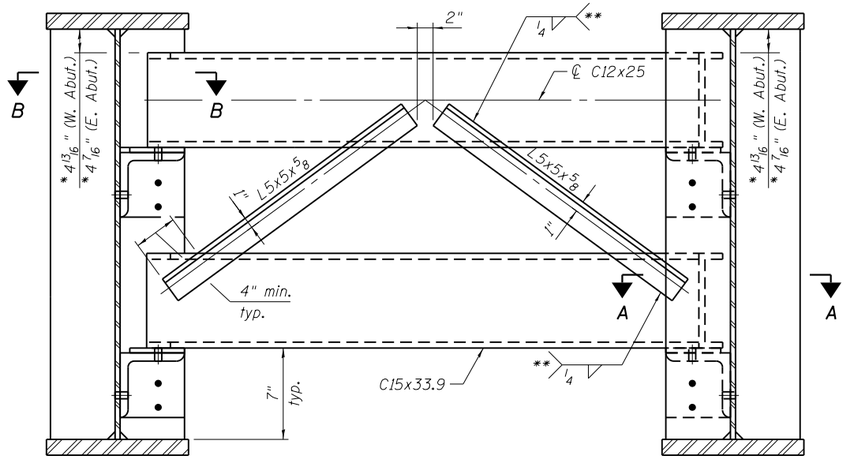
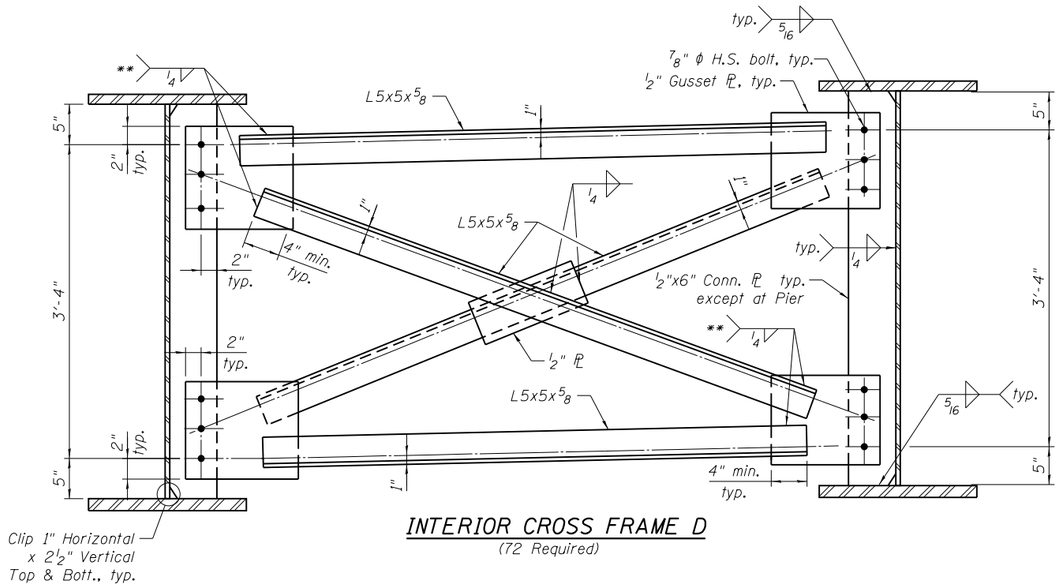
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS I
STRUCTURE NO. 016-2471
SHEET NO. S-22 OF S-63 SHEETS

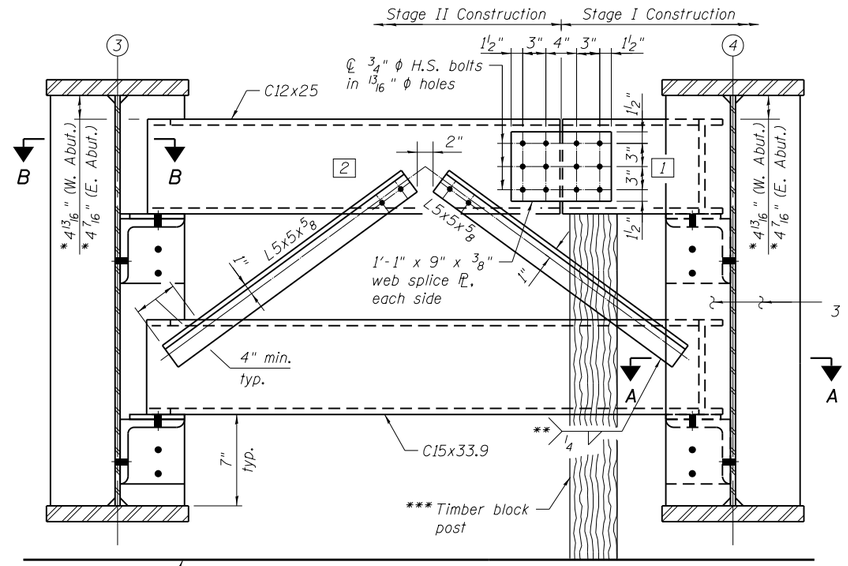
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	515
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



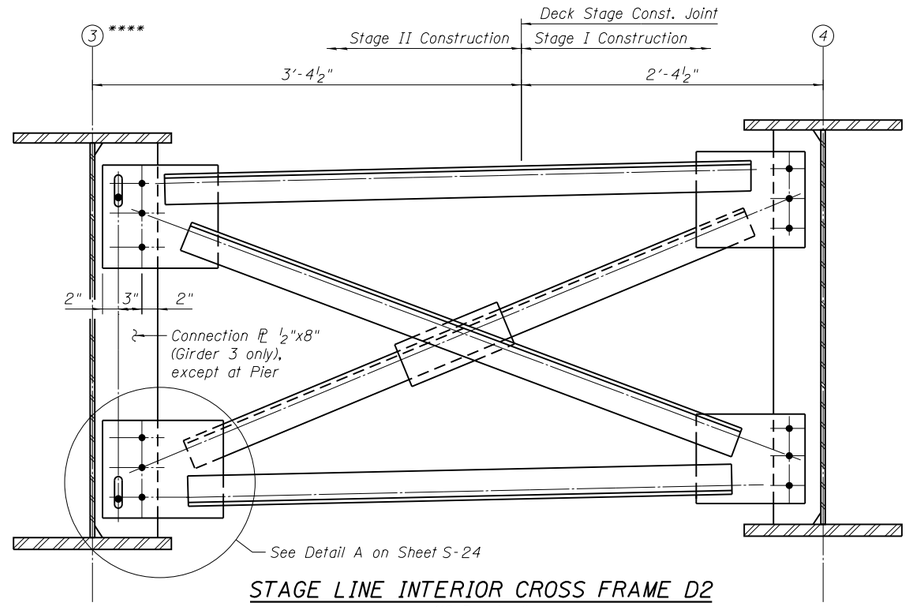
END CROSS FRAME D1
(8 Required)



INTERIOR CROSS FRAME D
(72 Required)



STAGE LINE END CROSS FRAME D3
(2 Required)



STAGE LINE INTERIOR CROSS FRAME D2
(18 Required)
(See Interior Cross Frame D for details and dimensions not shown)

END CROSS FRAME D3
SUGGESTED STAGE CONSTRUCTION SEQUENCE

1. Order C12 in two sections.
2. Attach section [1] of C12 to Girder 4.
3. Place timber block posts between section [1] of C12 and abutment bearing seat before Stage I deck pour.
4. Attach section [2] of C12 to both Girder 3 and section [1] of C12 with splice plates.
5. Complete end cross frame D3 installation as shown prior to Stage II Deck Pour.

* Measured at ℄ Web

** 3 sides, on one face of gusset PL or channel only, typ.

*** Cost included with Furnishing and Erecting Structural Steel.

**** Girder 3 shown in location corresponding to after the Stage II deck pour.

Notes:

1. All members of cross frames shall be AASHTO M 270 Grade 50 and shall conform to the Impact Testing Requirement, Zone 2.
2. See Sheet S-21 for cross frame locations.
3. All cross frames between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.
4. Each hole for all cross-frame connection bolts shall be 15/16" ϕ unless noted otherwise.
5. Two hardened washers are required for each set of holes.
6. For Sections A-A & B-B, see Sheet S-24.
7. The Contractor may submit an alternate stage construction sequence for End Cross Frame D3. Any alternate sequence must be approved by the Engineer prior to ordering any material.
8. The Contractor shall either:
   a. Ream cross frame connection holes during shop assembly, or
   b. Provide detailing and fabrication controls acceptable to the Engineer which ensures accuracy such that field reaming will not exceed the amount permitted in Article 505.08(I) of the Standard Specifications.

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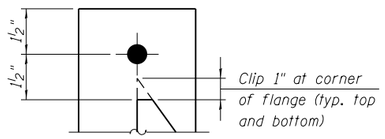
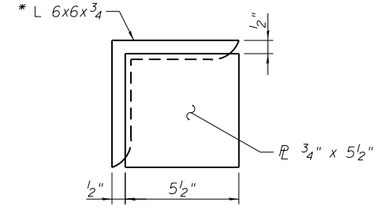
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS II
STRUCTURE NO. 016-2471
SHEET NO. S-23 OF S-63 SHEETS

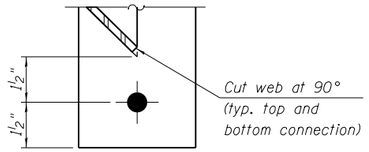
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	516
		CONTRACT NO. 60J12		
ILLINOIS	FED. AID PROJECT			



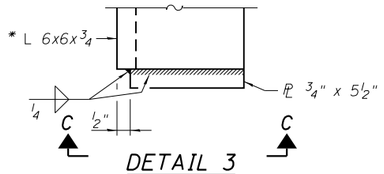
DETAIL 1



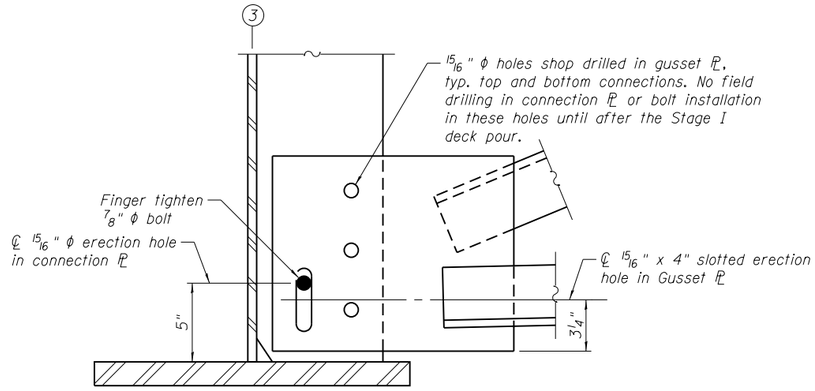
VIEW C-C



DETAIL 2

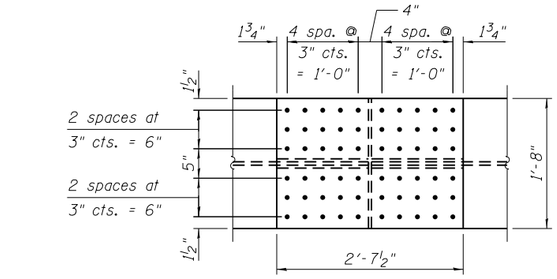


DETAIL 3

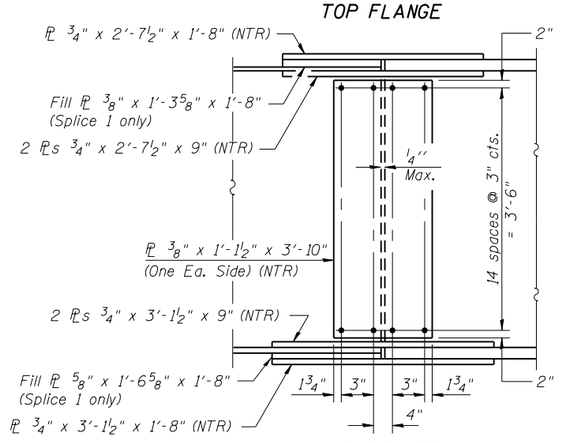


DETAIL A - BEFORE STAGE II DECK POUR

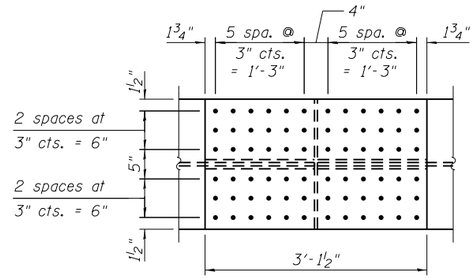
(Shown at point of maximum vertical deflection)



TOP FLANGE



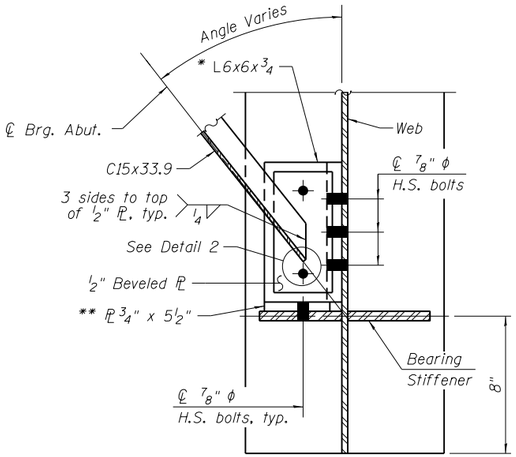
ELEVATION



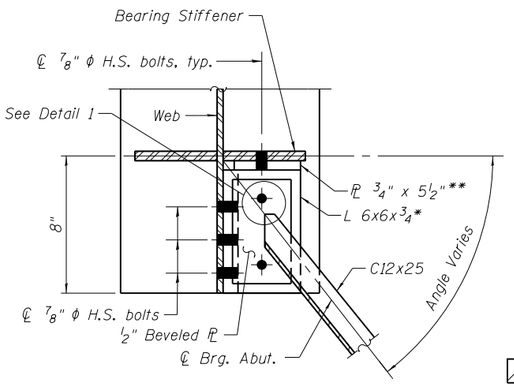
BOTTOM FLANGE

FIELD SPLICE DETAIL

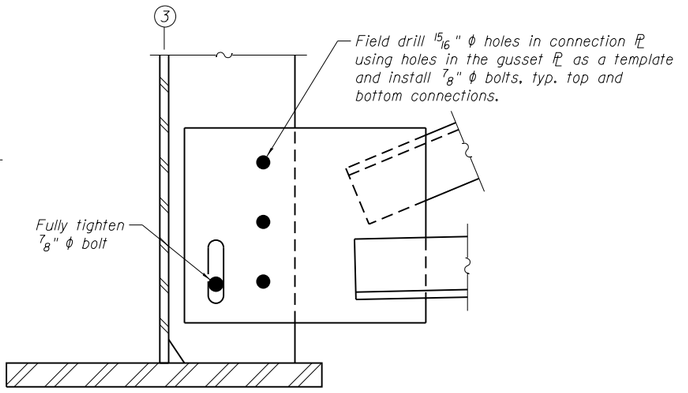
(12 Required)



SECTION A-A
BOTTOM CONNECTION DETAIL



SECTION B-B
TOP CONNECTION DETAIL



DETAIL A - AFTER STAGE II DECK POUR

* Two ¾" plates connected with ¼" fillet welds may be used in lieu of L6x6x¾.

** Weld ¾"x 5½" plate to seat as shown in Detail 3.

Notes:

1. All splice plates shall be AASHTO M 270 Grade 50.
2. Plates designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

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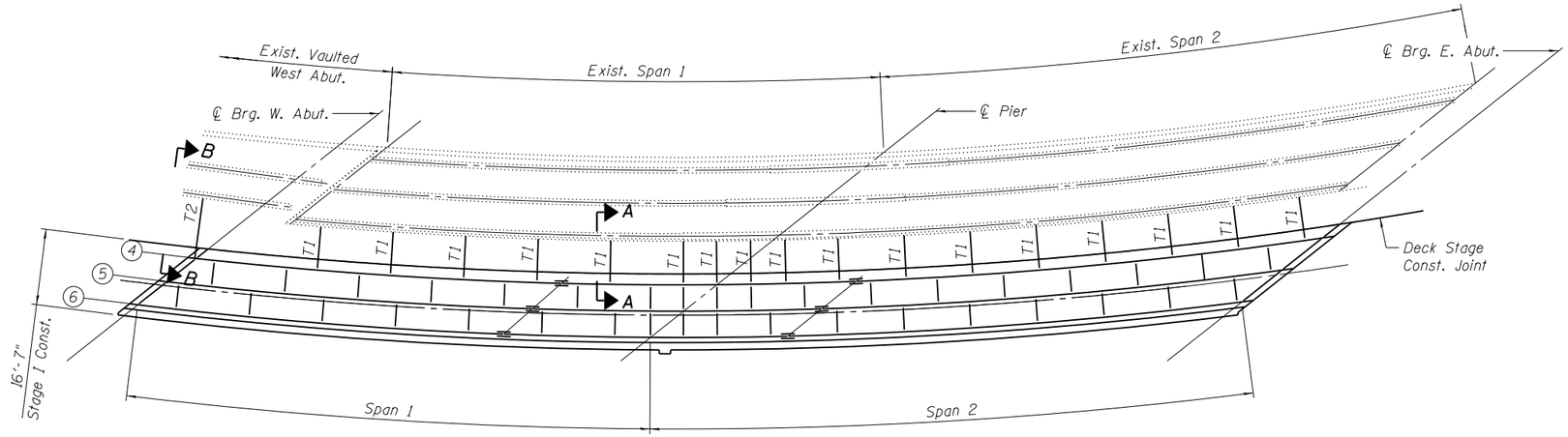
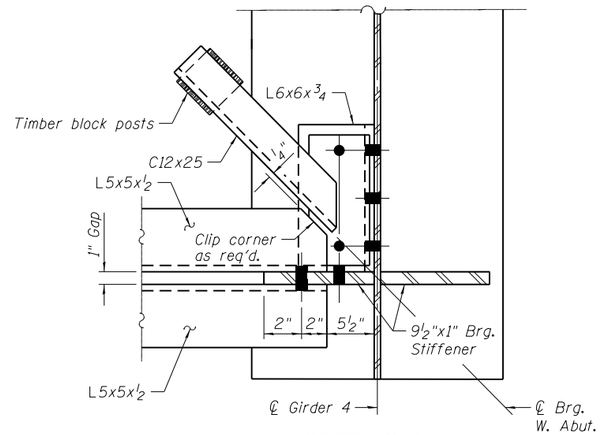
STRUCTURAL STEEL DETAILS III
STRUCTURE NO. 016-2471
SHEET NO. S-24 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	517
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

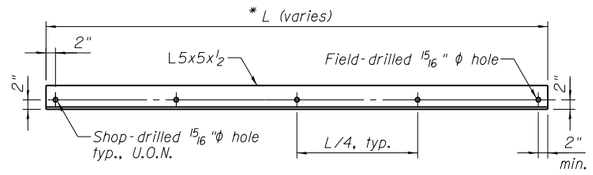


PLAN

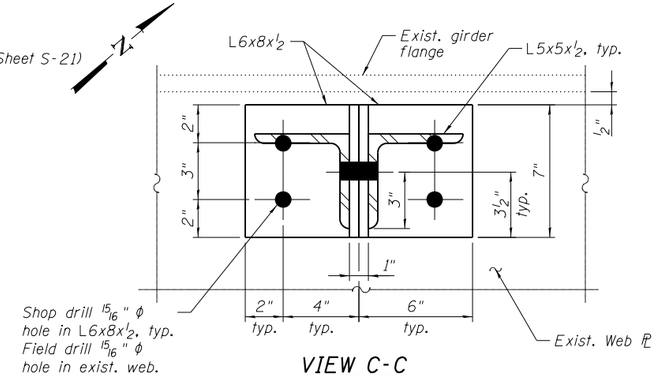
(For Girder dimensions, see Sheet S-21)



SECTION G-G

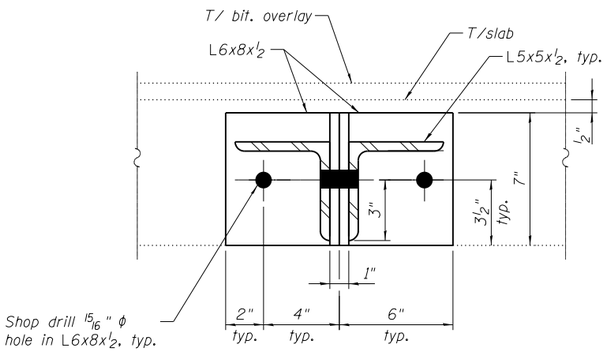


TYPICAL BRACING ANGLE



VIEW C-C

(View D-D vertically mirrored)



VIEW E-E

(View F-F vertically mirrored)

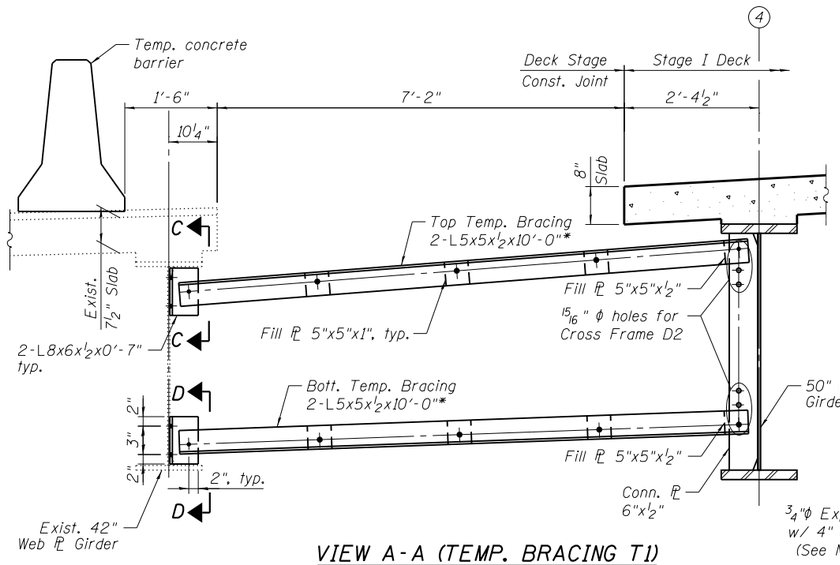
Notes:

1. Complete installation of all temporary bracing T1 and T2 prior to pouring Stage 1 deck.
2. The L6x6x3/4 seat angle carrying the bottom chord of cross frame D3 shall not be connected to the bearing stiffener in Stage I.
3. Contractor shall locate internal prestressed strands with nondestructive methods prior to installing expansion bolts (cost included with Furnishing & Erecting Structural Steel). Care shall be taken to avoid drilling through existing prestressing strands.
4. Temporary bracing T1 and T2 shall not be removed until Stage 1 construction is complete.
5. Cost of furnishing, erecting, removal and disposal of temporary bracing shall be included with Furnishing and Erecting Structural Steel. Estimated weight of 14,810 pounds for temporary bracing is included in the total structural steel weight shown on Sheet S-2.
6. For each stage, when cantilever forming brackets are used for deck forms, the work shall be done according to Article 503.06(b) of the Standard Specifications except as modified below.

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

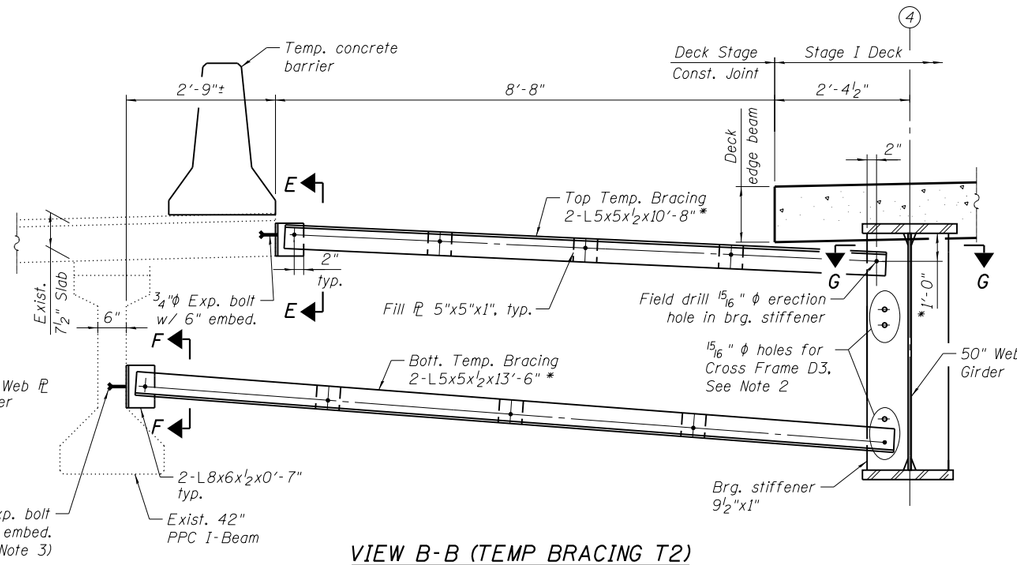
   The girders supporting cantilever forming brackets, shall be tied together at 4 foot intervals.

   The 4x4 in. hardwood beam blocks shall be installed between webs of beams in each bay prior to deck pours and shall not be removed until concrete reaches the required compressive strength.



VIEW A-A (TEMP. BRACING T1)

(17 Required)



VIEW B-B (TEMP BRACING T2)

(1 Required)

(Stage I portion of cross frame D3 not shown for clarity)

* Verify in field.

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STATE OF ILLINOIS
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STAGE I DECK POUR TEMPORARY BRACING DETAILS
STRUCTURE NO. 016-2471

SHEET NO. S-25 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	518
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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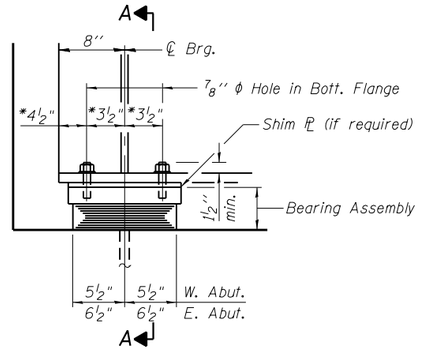
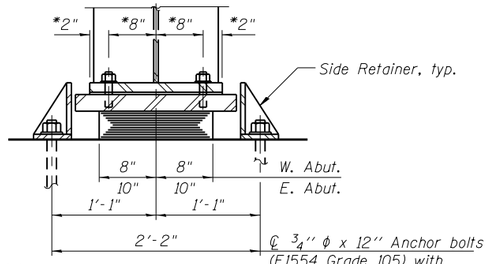


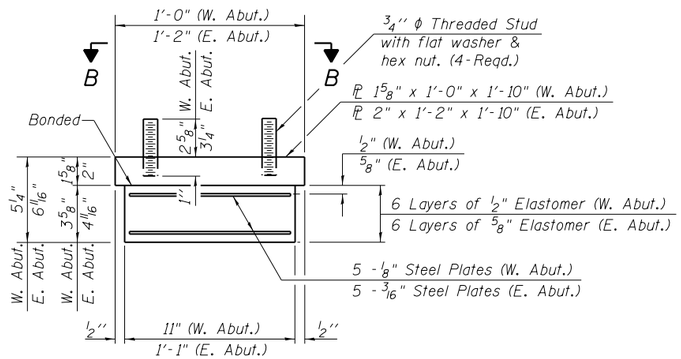
ELEVATION AT ABUT.

*Dimensions measured parallel to or at right angles to ℄ girders. See Bearing Orientation Plan.



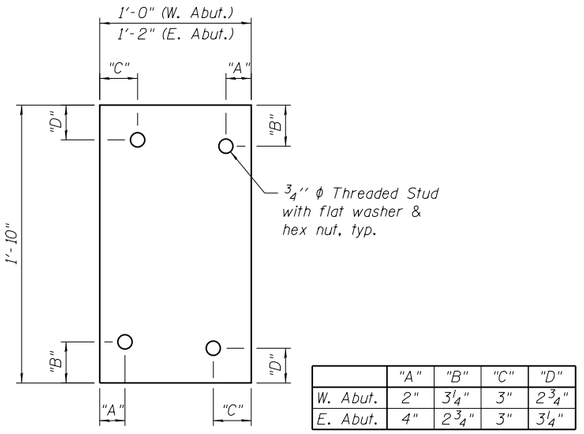
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



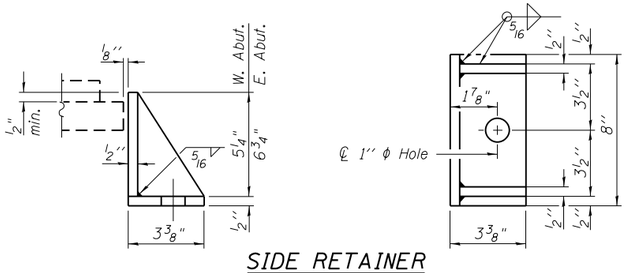
BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.



	"A"	"B"	"C"	"D"
W. Abut.	2"	3 1/4"	3"	2 3/4"
E. Abut.	4"	2 3/4"	3"	3 1/4"

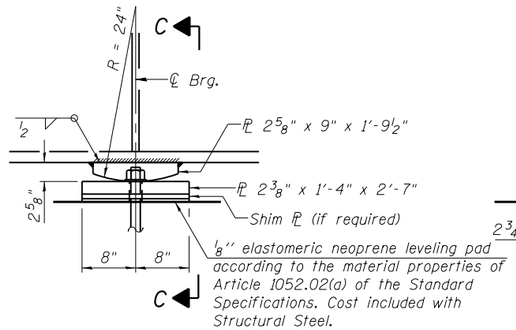
VIEW B-B



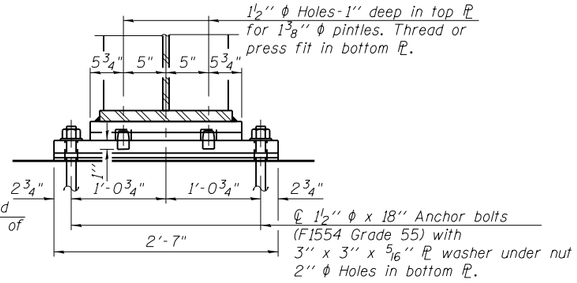
SIDE RETAINER

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

Notes:
The structural steel plates of the bearing assemblies shall conform to the requirements of AASHTO M 270 Grade 50.
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 side retainers may be cast in place or installed in holes drilled before or after members are in place.
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 I.
Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
The structural steel plates and pintles of the fixed bearings shall conform to the requirements of AASHTO M 270 Grade 50.

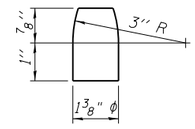


ELEVATION AT PIER



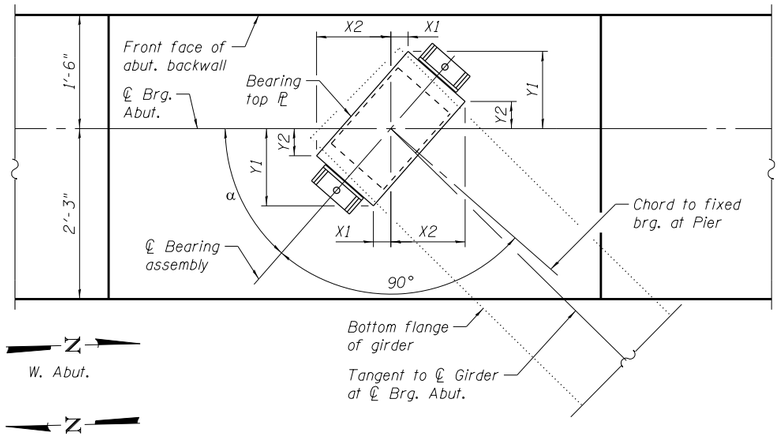
SECTION C-C

FIXED BEARING



PINTLE

	West Abutment					East Abutment				
	α	X1	Y1	X2	Y2	α	X1	Y1	X2	Y2
Girder 1	49°54'59"	2 1/2"	1'-0 1/4"	11 5/8"	4 1/2"	57°37'03"	0	1'-1"	11 3/4"	5 1/2"
Girder 2	49°30'17"	2 5/8"	1'-0 1/4"	11 3/4"	4 1/2"	57°04'05"	1/8"	1'-1"	11 7/8"	5 3/8"
Girder 3	49°06'05"	2 5/8"	1'-0 1/4"	11 3/4"	4 3/8"	57°32'01"	1/4"	1'-1"	11 7/8"	5 3/8"
Girder 4	48°42'23"	2 3/4"	1'-0 1/4"	11 3/4"	4 1/4"	56°00'49"	3/8"	1'-1"	1'-0"	5 1/4"
Girder 5	48°19'09"	2 7/8"	1'-0 1/4"	11 3/4"	4 1/4"	55°30'25"	1/2"	1'-1"	1'-0"	5 1/8"
Girder 6	47°56'22"	2 7/8"	1'-0 1/8"	11 7/8"	4 1/8"	55°00'48"	5/8"	1'-1"	1'-0"	5"



ABUTMENT BEARING ORIENTATION PLAN

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12
Anchor Bolts, 3/4"	Each	24
Anchor Bolts, 1 1/2"	Each	12

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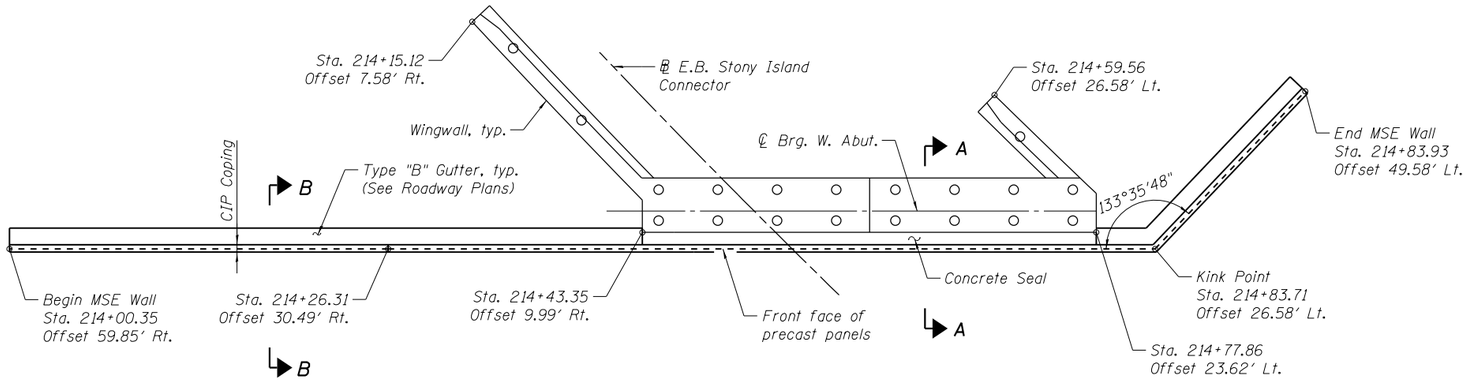
BEARING DETAILS
STRUCTURE NO. 016-2471
SHEET NO. S-26 OF S-63 SHEETS

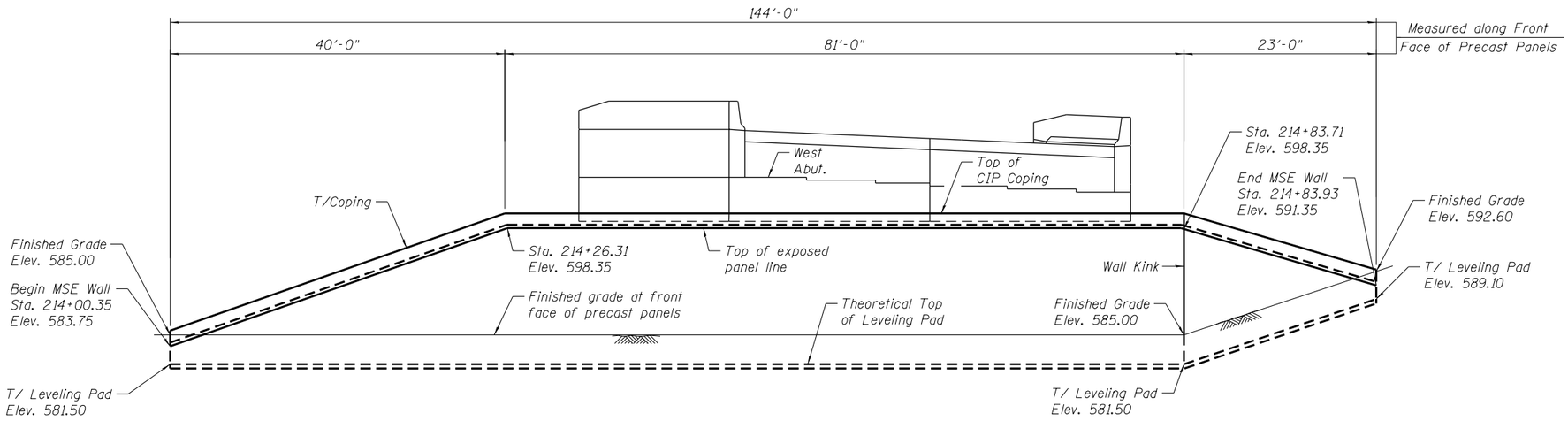
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	519
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



MSE WALL PLAN - WEST ABUTMENT

Notes:

1. Stations and offsets are given to front face of precast panels relative to ℄ E.B. Stony Island Connector.
2. See Sheet S-29 for Sections A-A and B-B.



MSE WALL ELEVATION - WEST ABUTMENT

(Looking West)

BILL OF MATERIAL

Item	Unit	Quantity
Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	1,967
Structure Excavation	Cu. Yd.	1,016
Removal and Disposal of Unsuitable Material for Structures	Cu. Yd.	228

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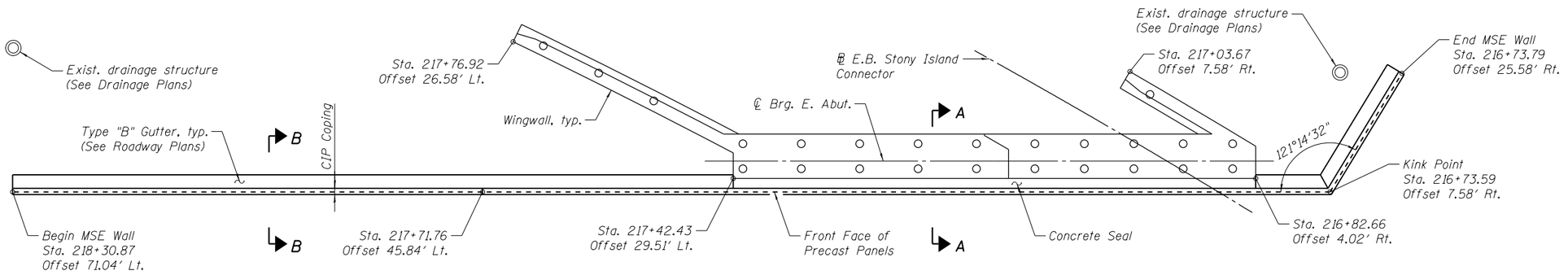
WEST ABUTMENT MSE RETAINING WALL
STRUCTURE NO. 016-2471
SHEET NO. S-27 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	520
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

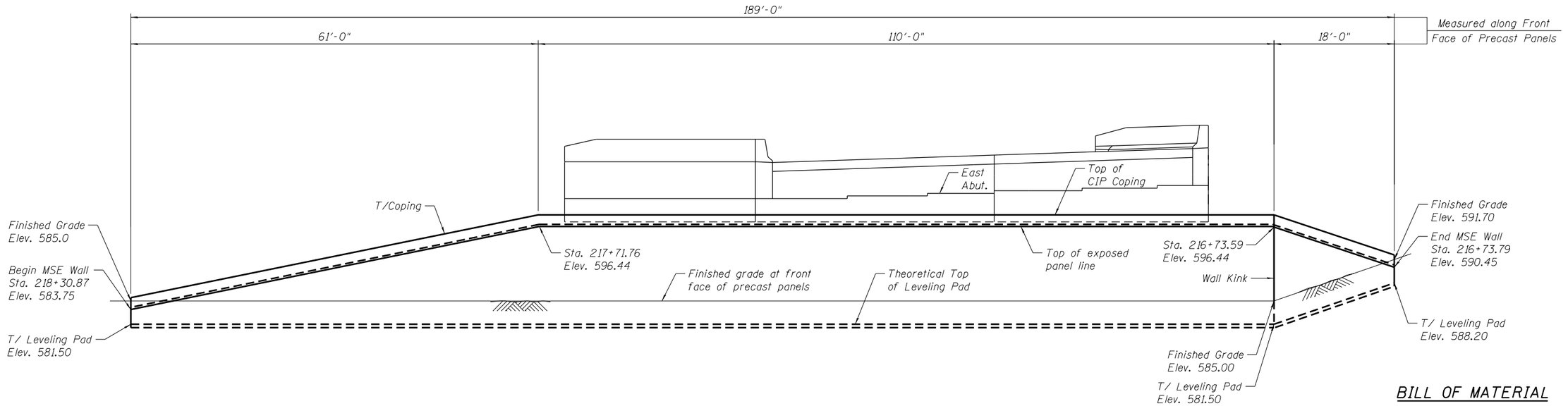


MSE WALL PLAN - EAST ABUTMENT

N

Notes:

1. Stations and offsets are given to front face of precast panels relative to ℄ E.B. Stony Island Connector.
2. See Sheet S-29 for Sections A-A and B-B.



MSE WALL ELEVATION - EAST ABUTMENT

(Looking East)

BILL OF MATERIAL

Item	Unit	Quantity
Mechanically Stabilized Earth Retaining Wall	Sq. Ft.	2,323
Structure Excavation	Cu. Yd.	1,218
Removal and Disposal of Unsuitable Material for Structures	Cu. Yd.	287

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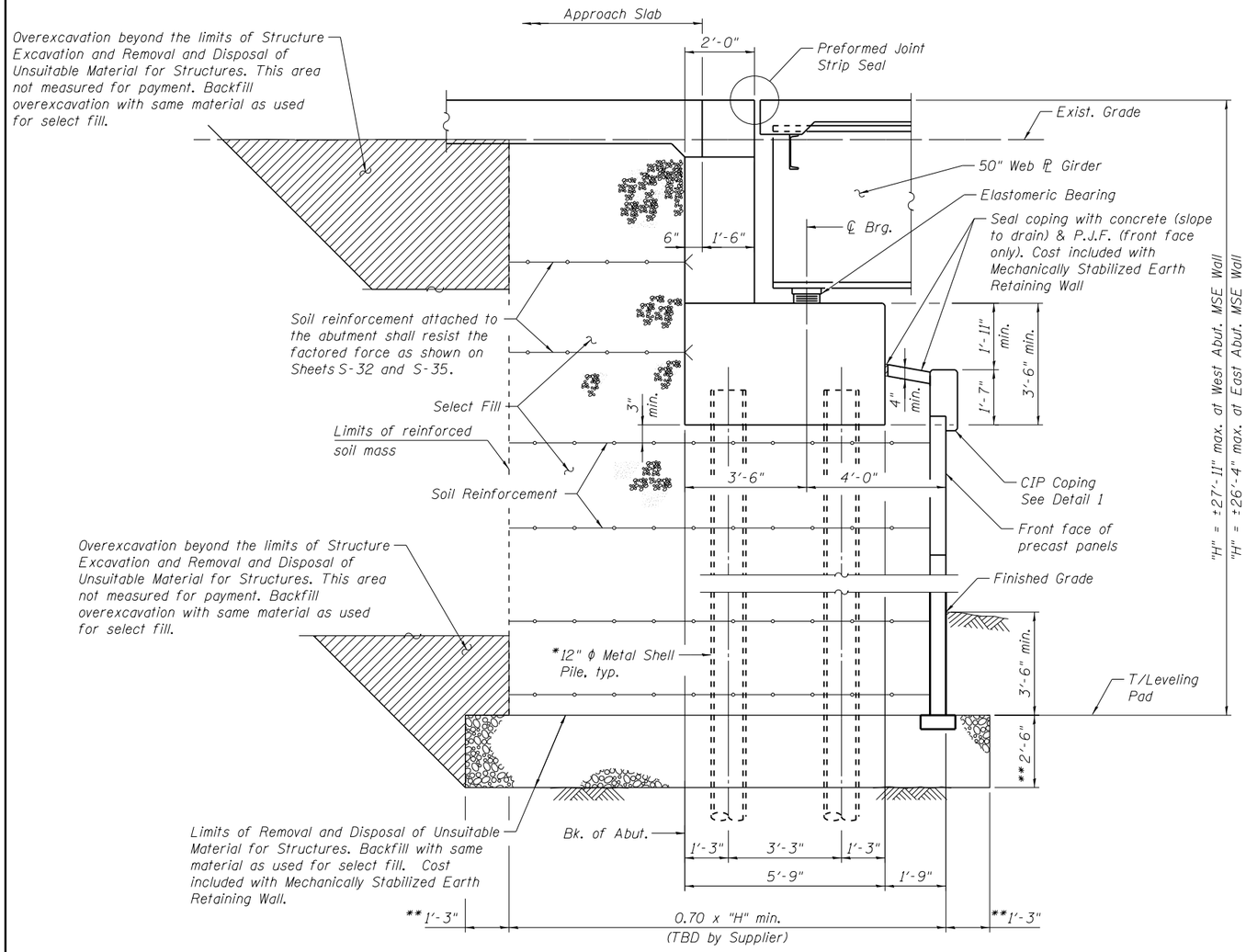
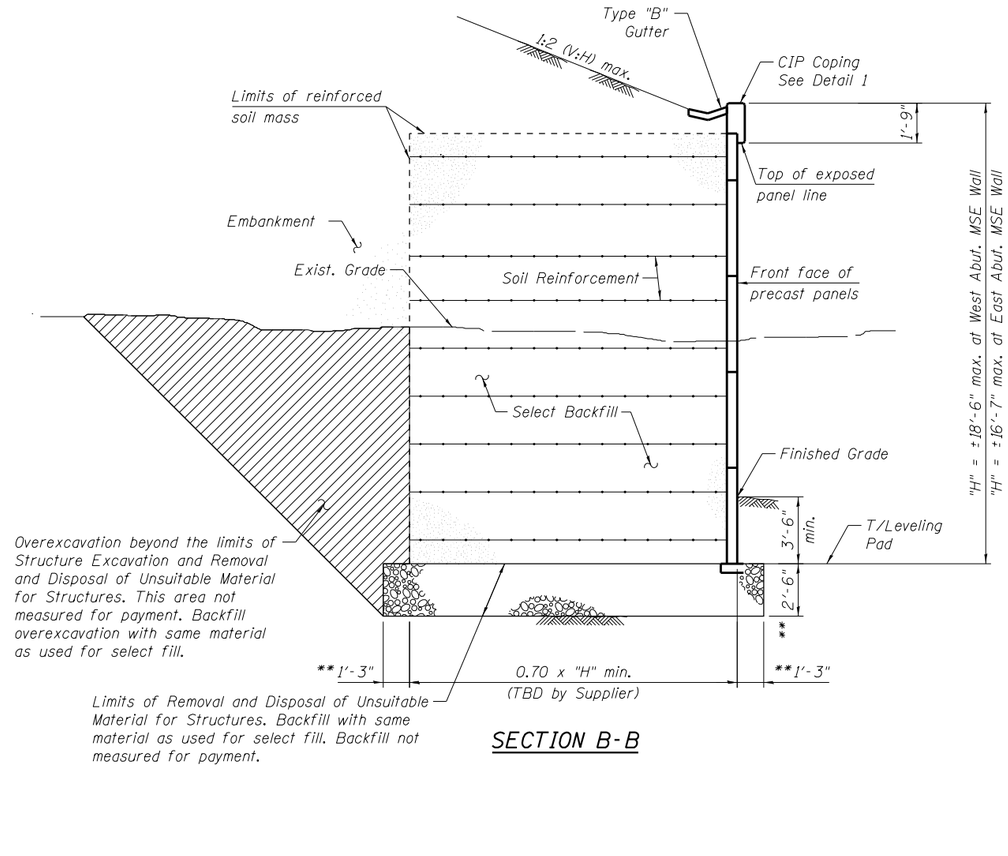
EAST ABUTMENT MSE RETAINING WALL
STRUCTURE NO. 016-2471
SHEET NO. S-28 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	521
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



SECTION A-A

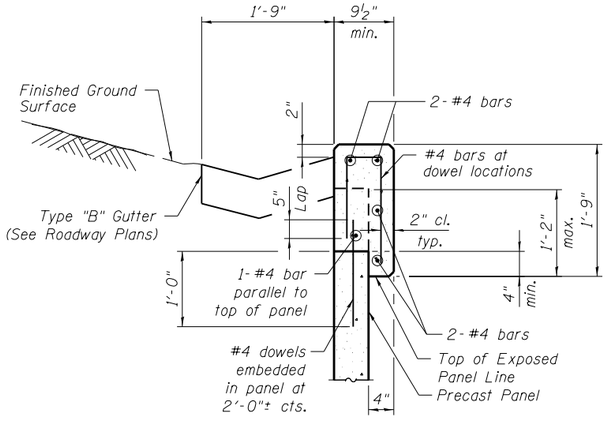
(Horizontal Dimensions @ Rt. L's)



SECTION B-B

*Piles shall be driven after limits of removal of unsuitable materials have been backfilled, but prior to placement of the reinforced select fill, and shall be coated with coal tar epoxy from the bottom of the select fill to 1" above the base of the abutment. The cost of the coal tar epoxy coating shall be included with the cost of Furnishing Metal Shell Piles 12" X 0.250".

**Estimated limits shown. Actual limits to be determined in field.



DETAIL 1

Notes:

The factored soil bearing resistance at the top of leveling pad elevation for the MSE wall = 6.0 ksf. The applied factored MSE wall bearing pressure must be less than the factored soil bearing resistance. See MSE wall shop drawings for equivalent uniform applied bearing pressure.

The Contractor shall design and construct the MSE wall accounting for the proposed piles and any other appurtenances within the limits of the reinforced soil mass.

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MSE RETAINING WALL DETAILS
STRUCTURE NO. 016-2471
SHEET NO. S-29 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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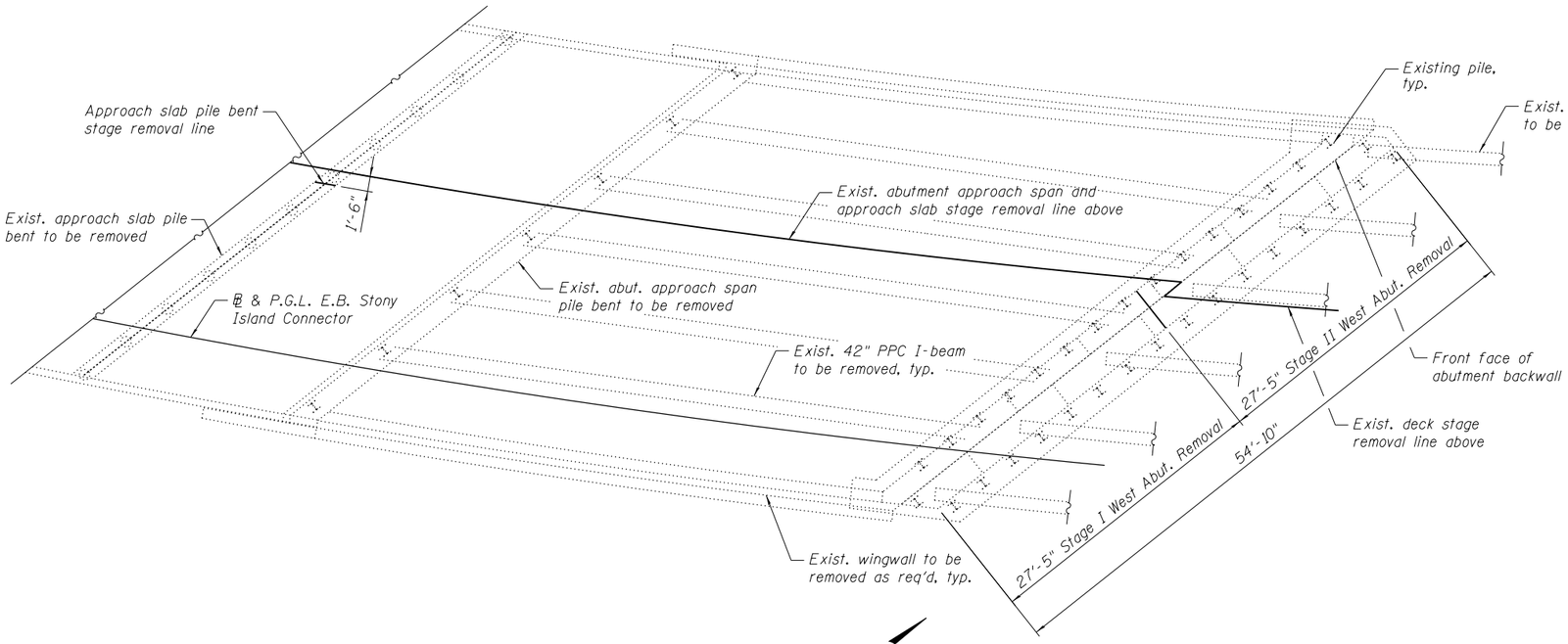
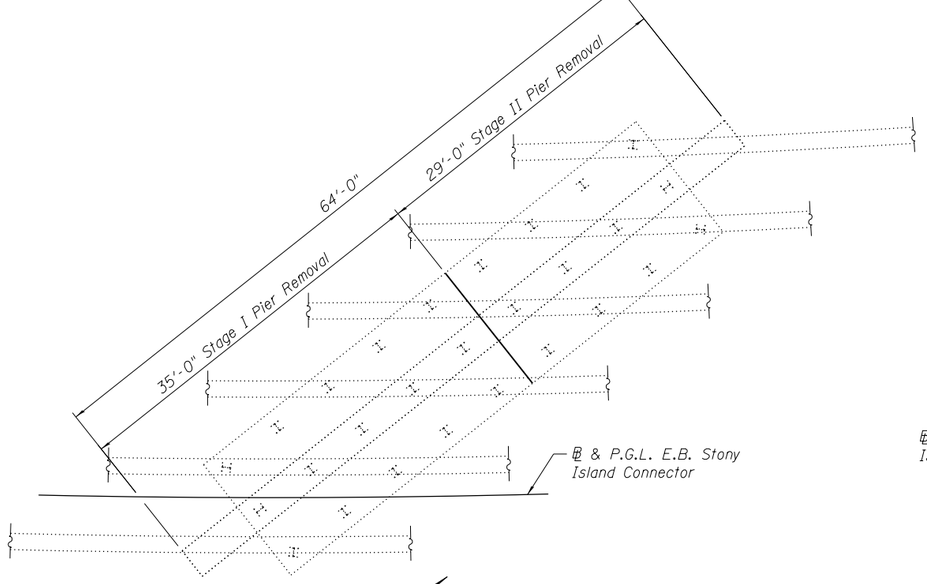
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



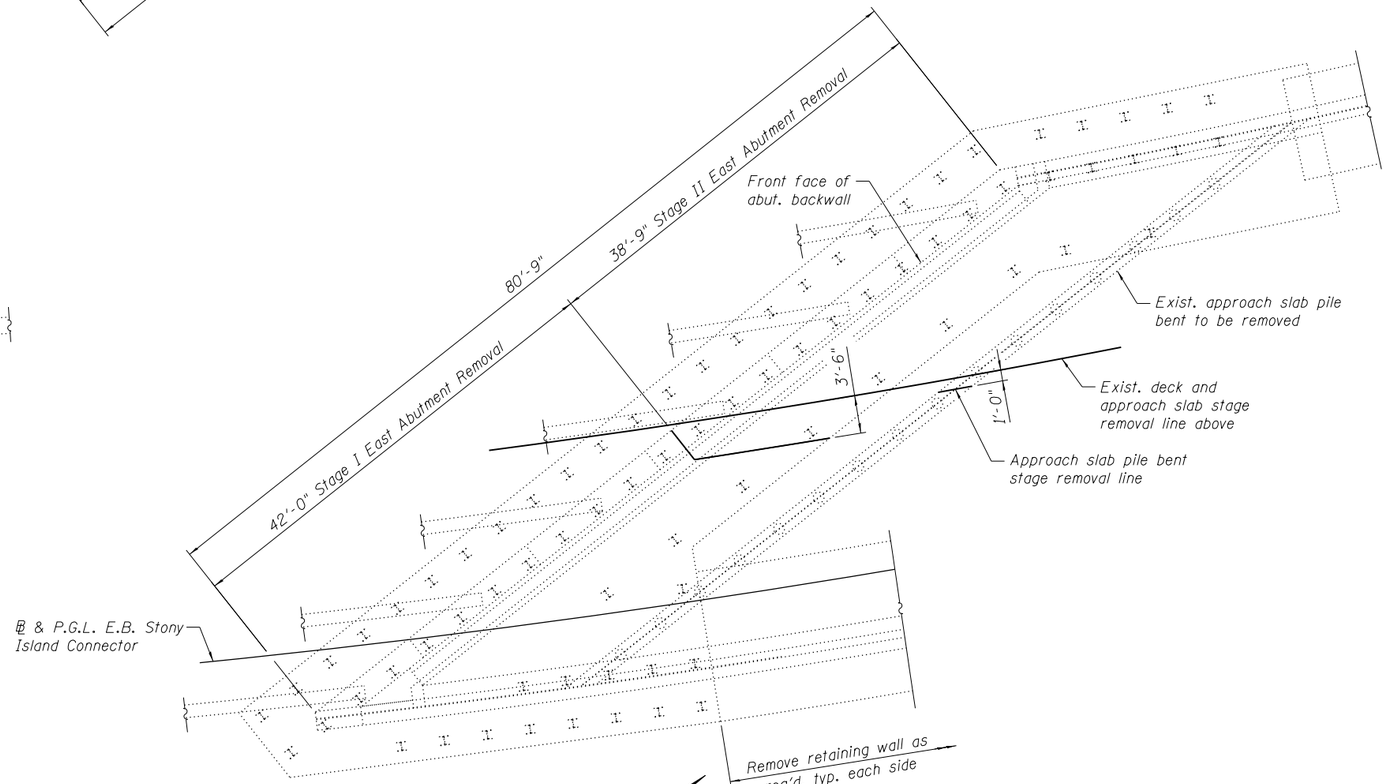
WEST ABUTMENT

Note:

The limits of abutment, wingwall, retaining wall, and approach span and approach slab pile bent removal, including piles, shall conform to Article 501.04 of the Standard Specifications. The pier shall be removed in its entirety, except for the piles. Cost of all removals included with Removal of Existing Structures No. 2.



PIER



EAST ABUTMENT

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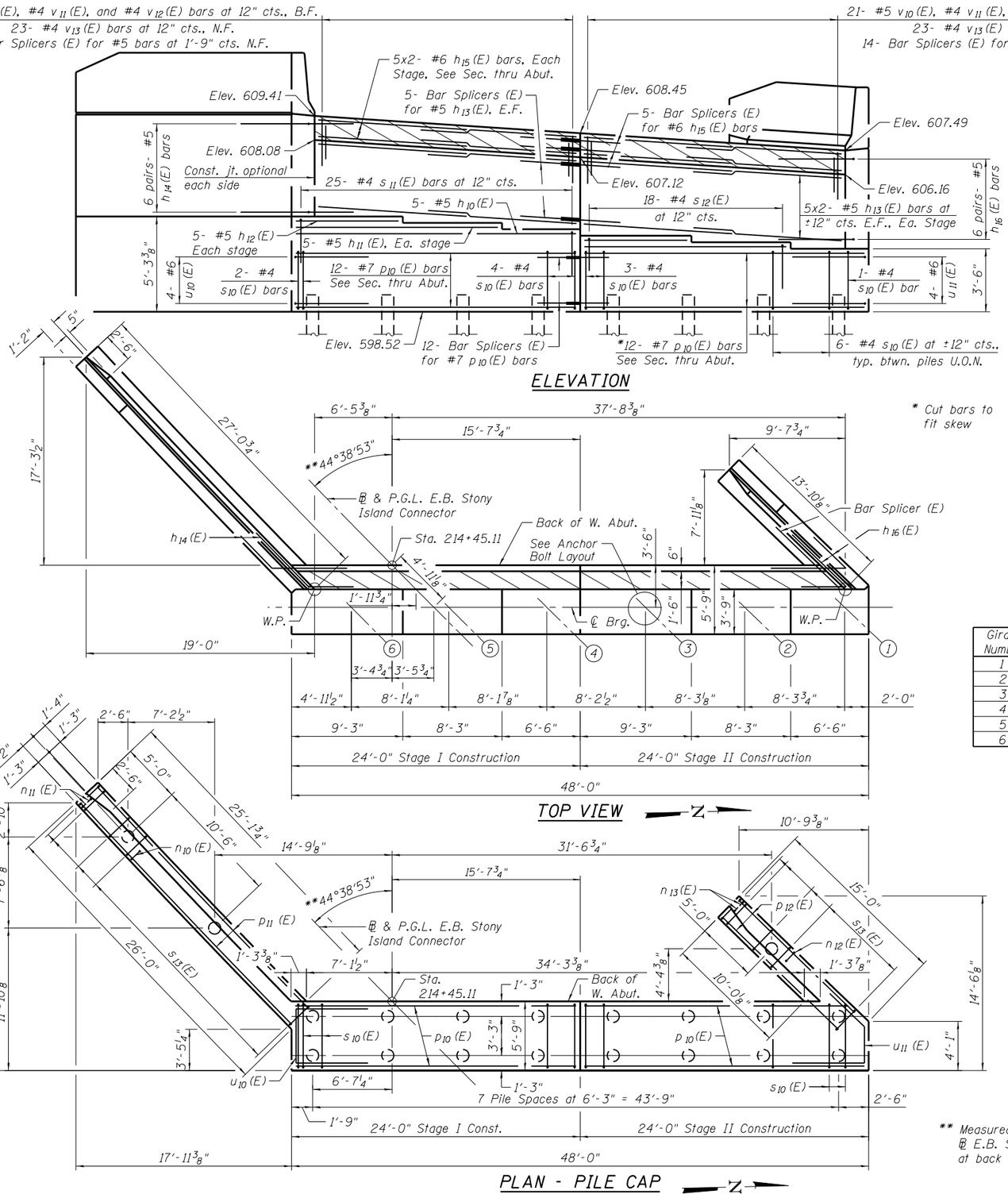
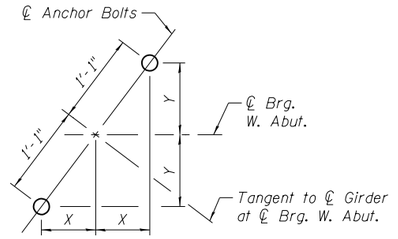
SUBSTRUCTURE REMOVAL DETAILS
STRUCTURE NO. 016-2471
SHEET NO. S-30 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	523
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			





ANCHOR BOLT LAYOUT

Girder Number	X	Y
1	8 3/8"	10"
2	8 1/2"	9 7/8"
3	8 1/2"	9 7/8"
4	8 5/8"	9 3/4"
5	8 5/8"	9 3/4"
6	8 3/4"	9 5/8"

Girder Number	Brg. Seat Elev.	Step
1	602.02	
2	602.38	4 3/8"
3	602.74	4 3/8"
4	603.10	4 1/4"
5	603.45	4 1/4"
6	603.80	4 1/4"

Notes:

N.F. - denotes Near Face
B.F. - denotes Back Face
E.F. - denotes Each Face
U.O.N. - denotes Unless Otherwise Noted

Bars indicated thus 12x2-#7 etc. indicates 12 lines of bars with 2 lengths per line.

For Bill of Material and Bar Bending Details, see Sheet S-33.

For details of Bar Splicers, see sheet S-40.

For details of metal shell piles, see sheet S-39.

Pile locations may be adjusted up to 6" (parallel to ℄ Brg.) from the locations shown herein in order to miss existing piles. All adjusted pile locations must be approved by the Engineer prior to driving.

PILE DATA

Type: Metal Shell - 12" ϕ with 0.250" walls
Nominal Required Bearing: 184 Kips
Factored Resistance Available: 101 Kips
Est. Length: 40 ft.
No. Production Piles: 18
No. Test Piles: 1

MIN. BAR LAP

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

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WEST ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 016-2471
SHEET NO. S-31 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	524
		CONTRACT NO. 60J12		
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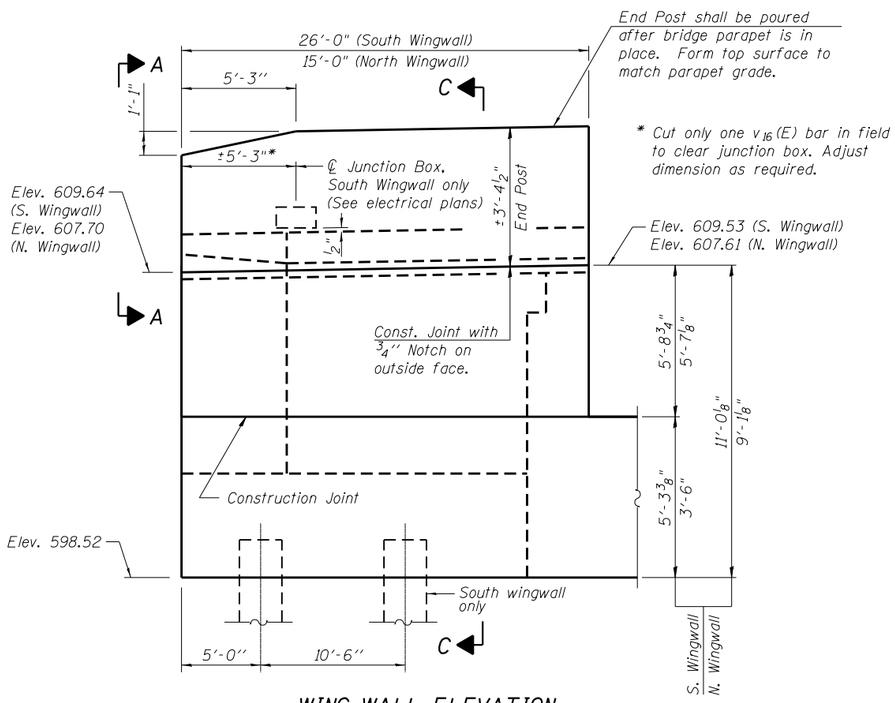
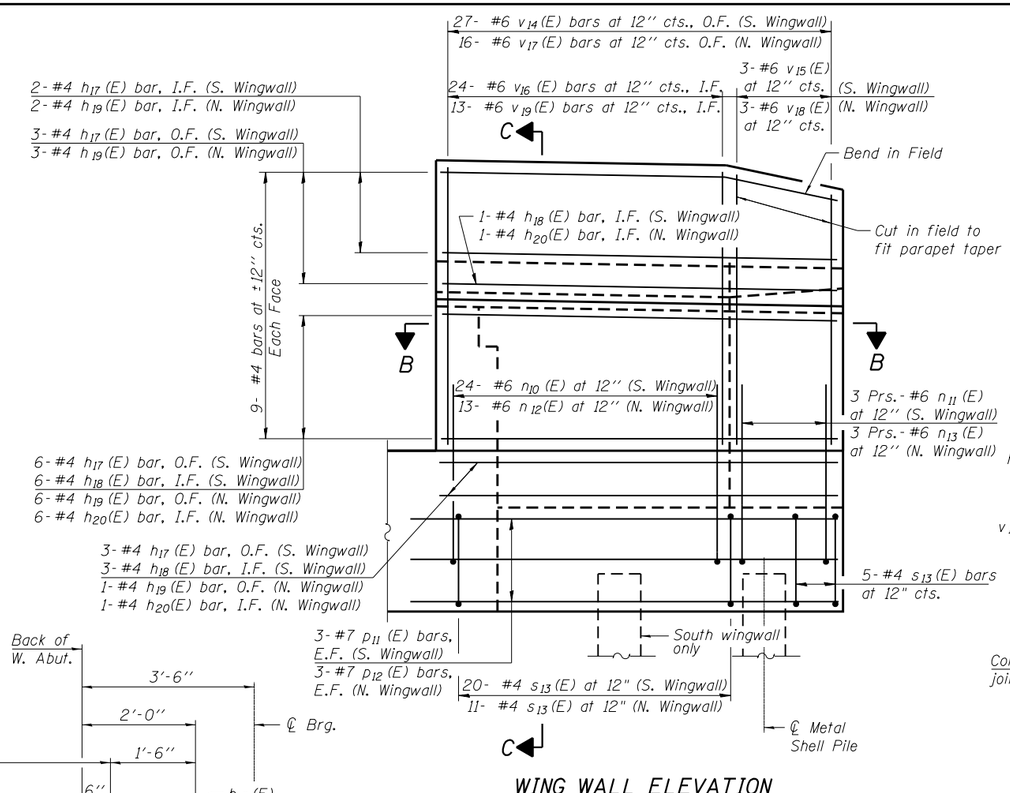
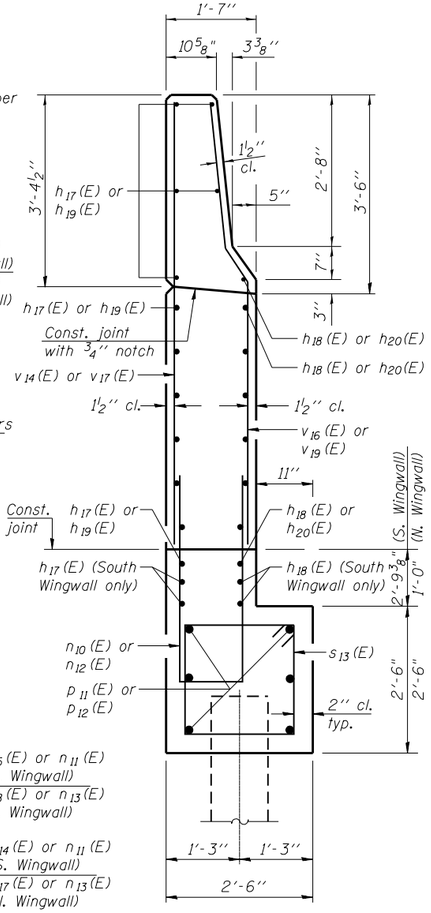


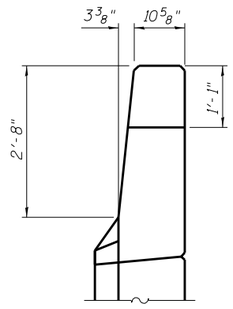
WING WALL ELEVATION
Showing Dimensions



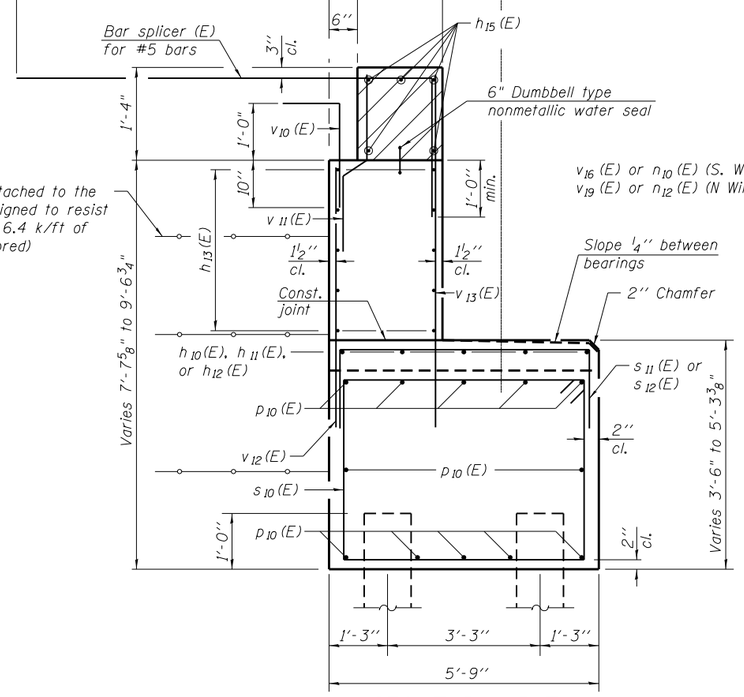
WING WALL ELEVATION
Showing Reinforcement



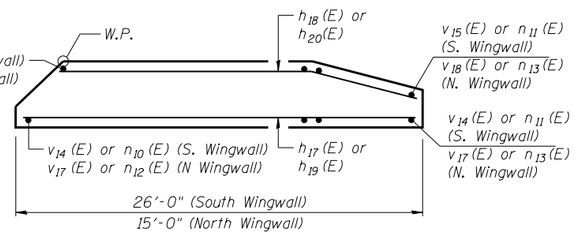
SECTION C-C



VIEW A-A



SEC. THRU ABUT.



SECTION B-B

Notes:

Hatched area to be poured after superstructure forms have 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-13.

I.F. - denotes Inside Face

O.F. - denotes Outside Face

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	PLOT SCALE =	DRAWN - TL	REVISED -		SHEET NO. S-32 OF S-63 SHEETS
	PLOT DATE = 03/29/2013	CHECKED - BAK	REVISED -		

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		CONTRACT NO. 60J12		
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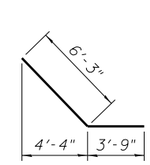
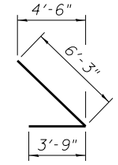
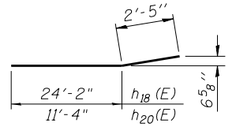


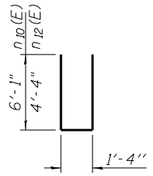
BAR h_{14}(E)



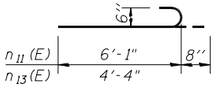
BAR h_{15}(E)



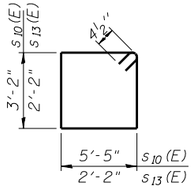
BARS h_{18}(E) & h_{20}(E)



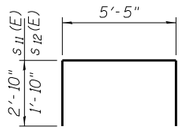
BARS n_{10}(E) & n_{12}(E)



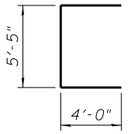
BARS n_{11}(E) & n_{13}(E)



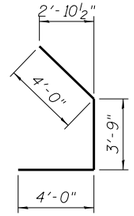
BARS s_{10}(E) & s_{13}(E)



BARS s_{11}(E) & s_{12}(E)



BAR u_{10}(E)



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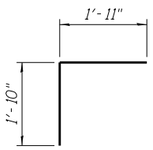
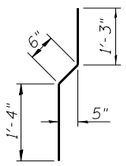
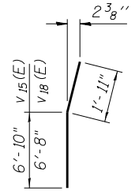


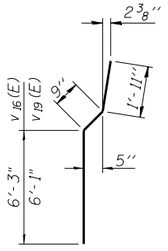
BAR v_{10}(E)



BAR v_{11}(E)



BARS v_{15}(E) & v_{18}(E)



BARS v_{16}(E) & v_{19}(E)

WEST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10}(E)	10	#5	23'-8"	
h_{11}(E)	10	#5	17'-2"	
h_{12}(E)	10	#5	8'-11"	
h_{13}(E)	40	#5	13'-7"	
h_{14}(E)	12	#5	10'-0"	
h_{15}(E)	20	#6	13'-7"	
h_{16}(E)	12	#5	10'-0"	
h_{17}(E)	14	#4	25'-8"	
h_{18}(E)	10	#4	26'-7"	
h_{19}(E)	12	#4	14'-8"	
h_{20}(E)	8	#4	13'-9"	
n_{10}(E)	24	#6	13'-6"	
n_{11}(E)	6	#6	6'-9"	
n_{12}(E)	13	#6	10'-0"	
n_{13}(E)	6	#6	5'-0"	
p_{10}(E)	24	#7	23'-8"	
p_{11}(E)	6	#7	27'-0"	
p_{12}(E)	6	#7	14'-4"	
s_{10}(E)	46	#4	17'-11"	
s_{11}(E)	25	#4	11'-1"	
s_{12}(E)	18	#4	9'-1"	
s_{13}(E)	41	#4	9'-5"	
u_{10}(E)	4	#6	13'-5"	
u_{11}(E)	4	#6	11'-9"	
v_{10}(E)	45	#5	3'-9"	
v_{11}(E)	45	#4	3'-1"	
v_{12}(E)	45	#4	5'-3"	
v_{13}(E)	46	#4	6'-6"	
v_{14}(E)	27	#6	8'-9"	
v_{15}(E)	3	#6	8'-9"	
v_{16}(E)	24	#6	8'-11"	
v_{17}(E)	16	#6	8'-7"	
v_{18}(E)	3	#6	8'-7"	
v_{19}(E)	13	#6	8'-9"	
Concrete Structures			Cu. Yd.	87.2
Reinforcement Bars, Epoxy Coated			Pound	7,830
Furnishing Metal Shell Piles 12" X 0.250"			Foot	720
Driving Piles			Foot	720
Test Pile Metal Shells			Each	1
Concrete Sealer			Sq. Ft.	494

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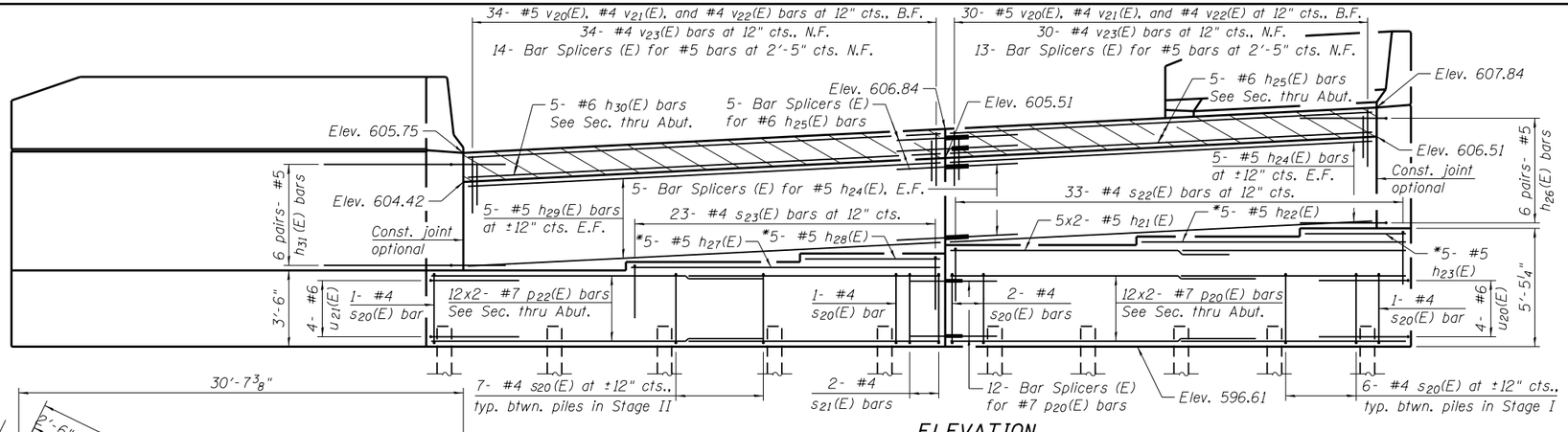
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

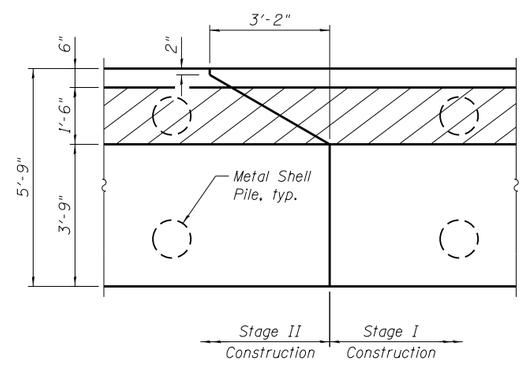
WEST ABUTMENT BILL OF MATERIALS
STRUCTURE NO. 016-2471
SHEET NO. S-33 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	526
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



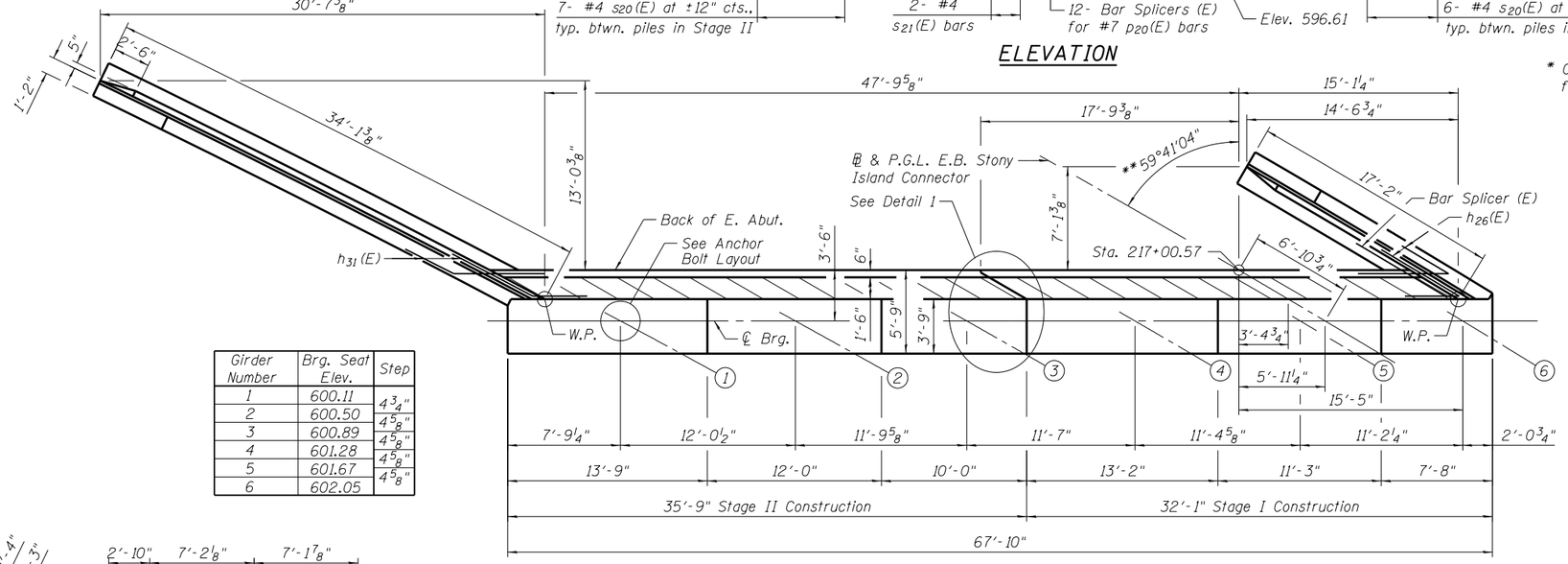
ELEVATION

* Cut bars to fit skew



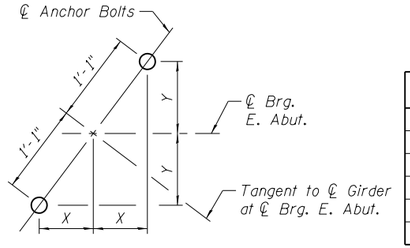
DETAIL 1

(Reinf. omitted for clarity)



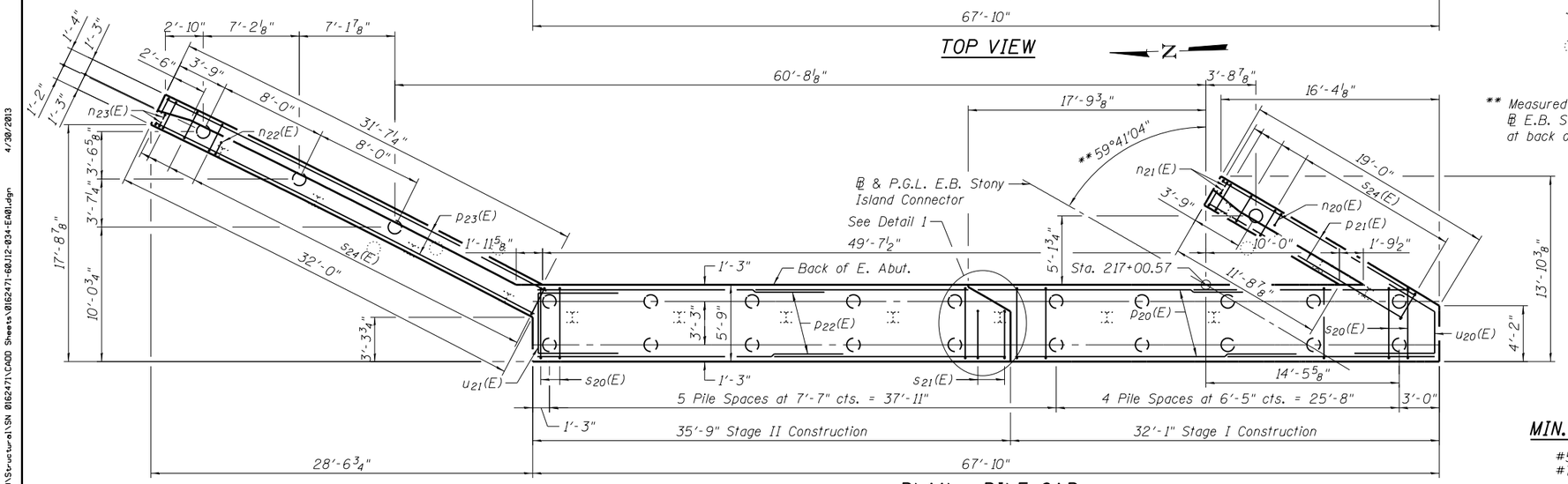
TOP VIEW

Girder Number	Brg. Seat Elev.	Step
1	600.11	4 3/4"
2	600.50	4 5/8"
3	600.89	4 5/8"
4	601.28	4 5/8"
5	601.67	4 5/8"
6	602.05	



ANCHOR BOLT LAYOUT

Girder Number	X	Y
1	7"	11"
2	7 1/8"	10 7/8"
3	7 1/8"	10 7/8"
4	7 1/4"	10 3/4"
5	7 3/8"	10 3/4"
6	7 1/2"	10 5/8"



PLAN - PILE CAP

** Measured to tangent to ℄ E.B. Stony Island Connector at back of abutment.

LEGEND

- ( ) - Vertical Pile
- [ ] - Existing H-Pile
- ( ) - Existing Timber Pile

MIN. BAR LAP

#5 - 3'-3"
#7 - 5'-2"

Notes:

N.F. - denotes Near Face
B.F. - denotes Back Face
E.F. - denotes Each Face
U.O.N. - denotes Unless Otherwise Noted

Bars indicated thus 12x2-#7 etc. indicates 12 lines of bars with 2 lengths per line.

For Bill of Material and Bar Bending Details, see Sheet S-36.

For details of Bar Splicers, see sheet S-40.

For details of metal shell piles, see sheet S-39.

Pile locations may be adjusted up to 6" (parallel to ℄ Brg.) from the locations shown herein in order to miss existing piles. All adjusted pile locations must be approved by the Engineer prior to driving.

PILE DATA

Type: Metal Shell - 12" ϕ with 0.250" walls
Nominal Required Bearing: 206 Kips
Factored Resistance Available: 113 Kips
Est. Length: 36 ft.
No. Production Piles: 23
No. Test Piles: 1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT PLAN AND ELEVATION
STRUCTURE NO. 016-2471
SHEET NO. S-34 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	527
		CONTRACT NO. 60J12		
ILLINOIS FED. AID PROJECT				

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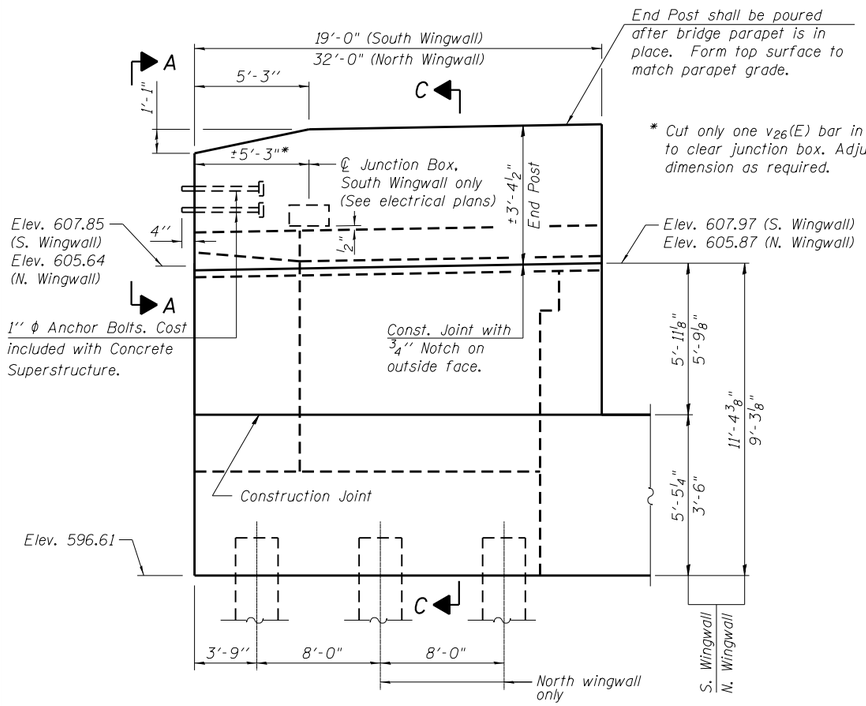
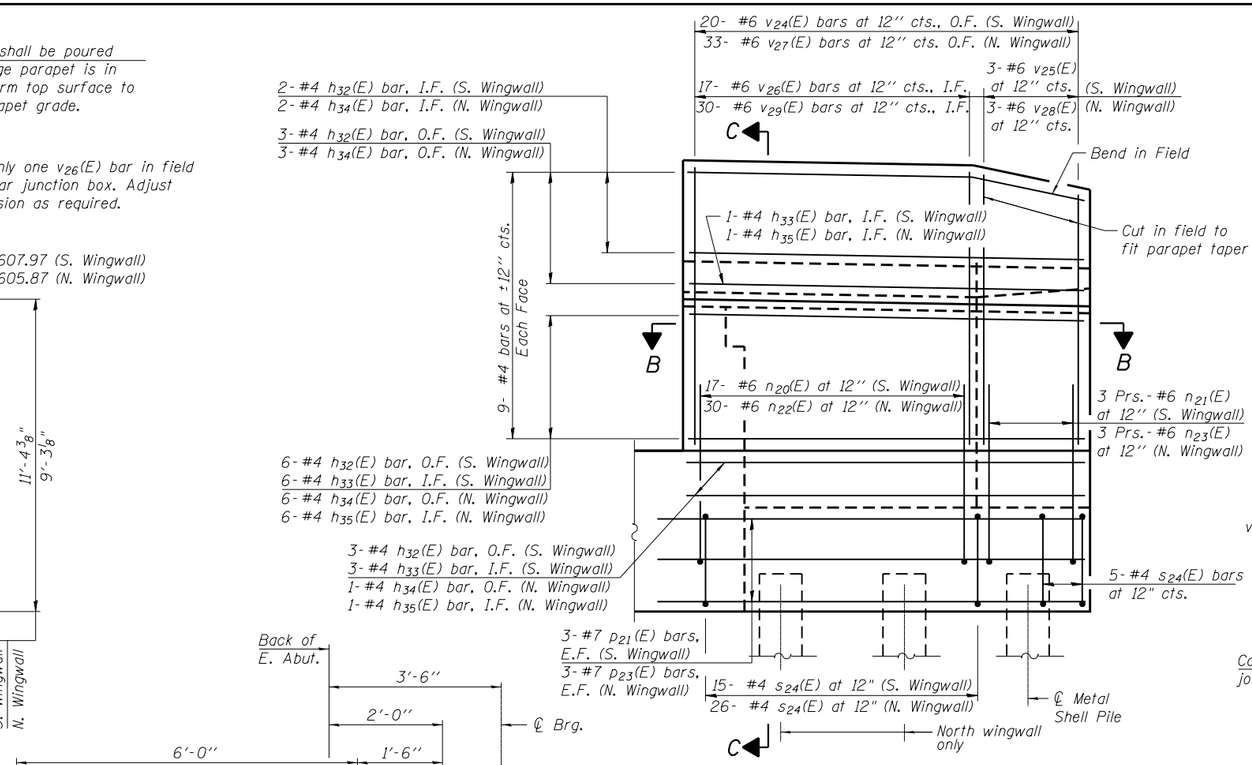
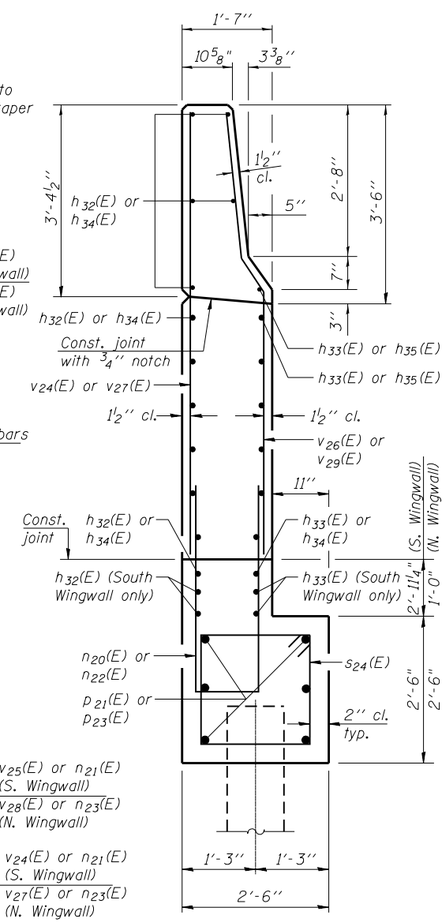


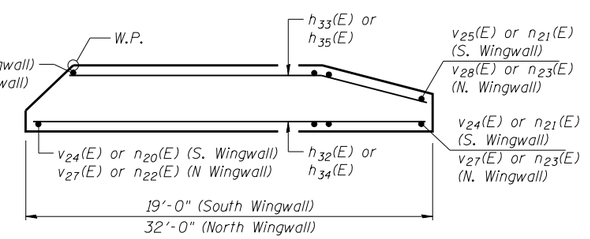
WING WALL ELEVATION
Showing Dimensions



WING WALL ELEVATION
Showing Reinforcement

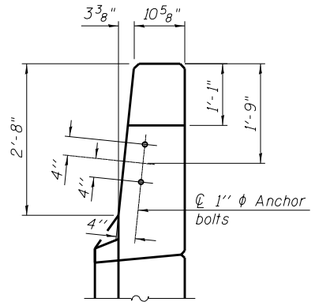


SECTION C-C

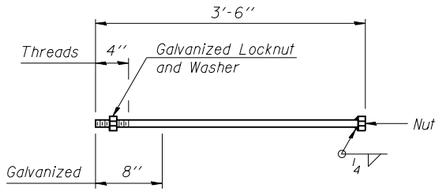


SECTION B-B

SEC. THRU ABUT.



VIEW A-A



1" ϕ ANCHOR BOLT

Notes:
Hatched area to be poured after superstructure forms have 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-13.
I.F. - denotes Inside Face
O.F. - denotes Outside Face

3:33:36 PM
S:\1072\05_CADD\Structural\SN 016247\CADD Sheets\016247I-60J12-035-EA02.dgn 4/30/2013

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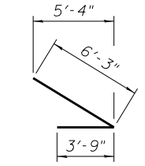
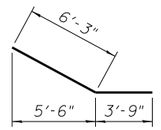
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT SECTIONS AND DETAILS
STRUCTURE NO. 016-2471
SHEET NO. S-35 OF S-63 SHEETS

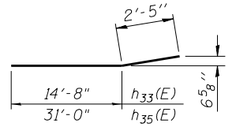
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	528
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



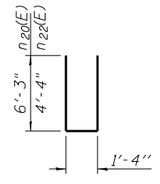
BAR $h_{26}(E)$



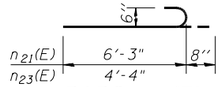
BAR $h_{31}(E)$



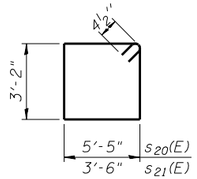
BARS $h_{33}(E)$ & $h_{35}(E)$



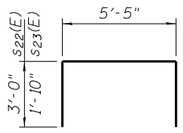
BARS $n_{20}(E)$ & $n_{22}(E)$



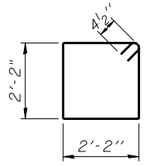
BARS $n_{21}(E)$ & $n_{23}(E)$



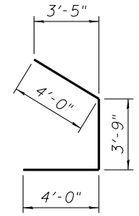
BARS $s_{20}(E)$ & $s_{21}(E)$



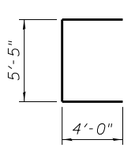
BARS $s_{22}(E)$ & $s_{23}(E)$



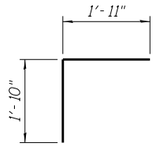
BAR $s_{24}(E)$



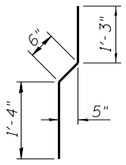
BAR $u_{20}(E)$



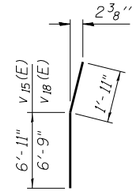
BAR $u_{21}(E)$



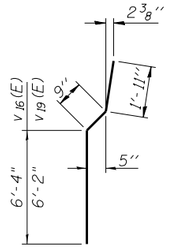
BAR $v_{20}(E)$



BAR $v_{21}(E)$



BARS $v_{25}(E)$ & $v_{28}(E)$



BARS $v_{26}(E)$ & $v_{29}(E)$

EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h_{21}(E)$	10	#5	19'-1"	
$h_{22}(E)$	5	#5	18'-7"	
$h_{23}(E)$	5	#5	7'-4"	
$h_{24}(E)$	10	#5	29'-4"	
$h_{25}(E)$	5	#6	29'-4"	
$h_{26}(E)$	12	#5	10'-0"	
$h_{27}(E)$	5	#5	21'-6"	
$h_{28}(E)$	5	#5	10'-6"	
$h_{29}(E)$	10	#5	32'-10"	
$h_{30}(E)$	5	#6	32'-10"	
$h_{31}(E)$	12	#5	10'-0"	
$h_{32}(E)$	14	#4	18'-8"	
$h_{33}(E)$	10	#4	17'-1"	
$h_{34}(E)$	12	#4	31'-8"	
$h_{35}(E)$	8	#4	33'-5"	
$n_{20}(E)$	30	#6	13'-10"	
$n_{21}(E)$	6	#6	6'-11"	
$n_{22}(E)$	17	#6	10'-0"	
$n_{23}(E)$	6	#6	5'-0"	
$p_{20}(E)$	24	#7	20'-1"	
$p_{21}(E)$	6	#7	32'-6"	
$p_{22}(E)$	24	#7	20'-4"	
$p_{23}(E)$	6	#7	18'-4"	
$s_{20}(E)$	57	#4	17'-11"	
$s_{21}(E)$	2	#4	14'-1"	
$s_{22}(E)$	33	#4	11'-5"	
$s_{23}(E)$	23	#4	9'-1"	
$s_{24}(E)$	51	#4	9'-5"	
$u_{20}(E)$	4	#6	11'-9"	
$u_{21}(E)$	4	#6	13'-5"	
$v_{20}(E)$	64	#5	3'-9"	
$v_{21}(E)$	64	#4	3'-1"	
$v_{22}(E)$	64	#4	5'-4"	
$v_{23}(E)$	64	#4	6'-7"	
$v_{24}(E)$	20	#6	8'-10"	
$v_{25}(E)$	3	#6	8'-10"	
$v_{26}(E)$	17	#6	9'-0"	
$v_{27}(E)$	33	#6	8'-8"	
$v_{28}(E)$	3	#6	8'-8"	
$v_{29}(E)$	30	#6	8'-10"	
Concrete Structures			Cu. Yd.	117.9
Reinforcement Bars, Epoxy Coated			Pound	10,040
Furnishing Metal Shell Piles 12" X 0.250"			Foot	828
Driving Piles			Foot	828
Test Pile Metal Shells			Each	1
Concrete Sealer			Sq. Ft.	711

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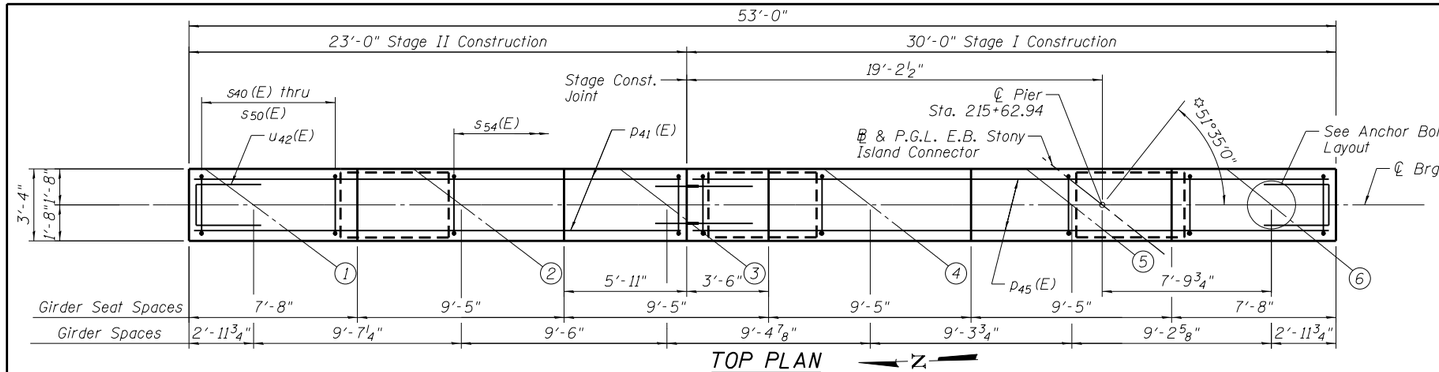
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

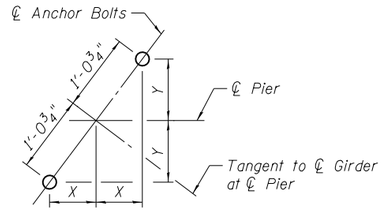
EAST ABUTMENT BILL OF MATERIALS
STRUCTURE NO. 016-2471
SHEET NO. S-36 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	529
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



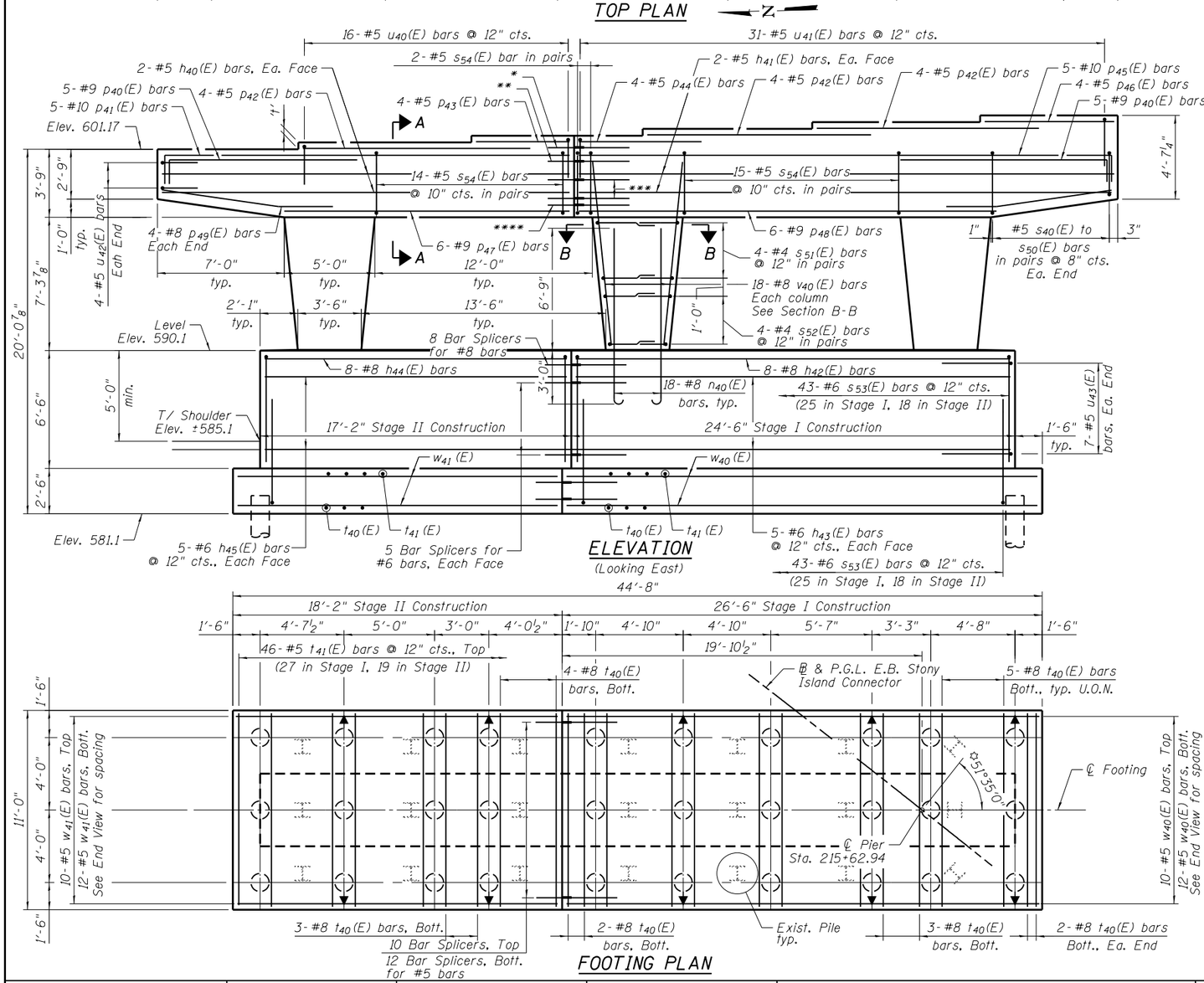
TOP PLAN

☼ Measured to a line radial to ℄ E.B. Stony Island Connector at ℄ Pier.



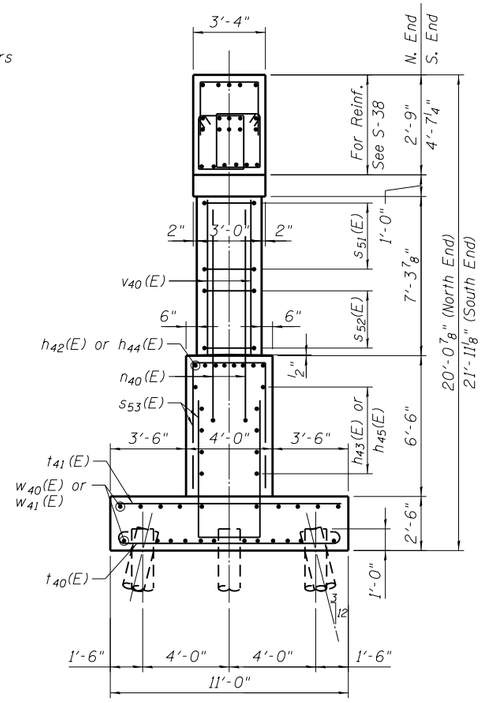
ANCHOR BOLT LAYOUT

Girder Number	X	Y
1	7⅝"	10¼"
2	7⅝"	10⅛"
3	7¾"	10⅛"
4	7⅞"	10"
5	7⅞"	10"
6	8"	10"



ELEVATION
(Looking East)

FOOTING PLAN



END VIEW

* 4 Bar Splicers for #5 bars
** 5 Bar Splicers for #10 bars
*** 2 Bar Splicers for #5 bars, Each Face
**** 6 Bar Splicers for #9 bars

MIN. BAR LAP

#4 - 2'-7"
#5 - 3'-3"
#8 - 6'-9"
#9 - 8'-7"
#10 - 10'-10"

BEARING SEAT ELEVATIONS

Girder	Brg. Seat Elevation	't'
1	601.17	4½"
2	601.54	4½"
3	601.91	4½"
4	602.28	4⅜"
5	602.65	4⅜"
6	603.02	4⅜"

LEGEND

- Battered Pile
- Vertical Pile
- Existing H-Pile

PILE DATA

Type: Metal Shell - 12" ϕ with 0.250" walls
Nominal Required Bearing: 302 kips
Factored Resistance Available: 166 kips
Est. Length: 30 ft.
No. Production Piles: 29
No. Test Piles: 1

Notes:

1. Space reinforcement in cap to miss anchor bolts.
2. Pour steps monolithically with cap.
3. See Sheet S-38 for Sections A-A and B-B, bar bending diagrams, and Bill of Material.
4. For details of piles, see Sheet S-39.
5. Pile locations may be adjusted up to 6" (parallel to ℄ Pier) from the locations shown herein in order to miss existing piles. All adjusted pile locations must be approved by the Engineer prior to driving.

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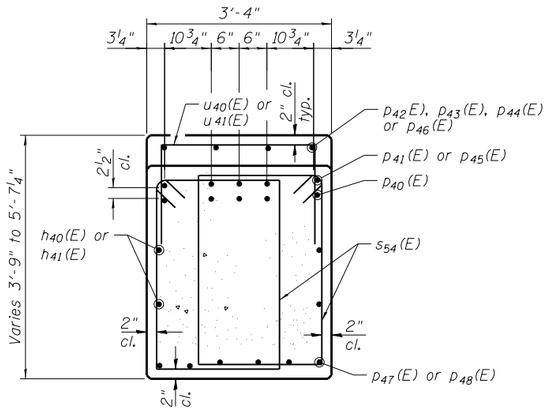
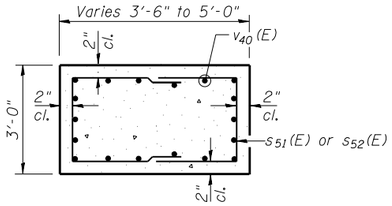
DEPARTMENT OF TRANSPORTATION

PIER DETAILS I
STRUCTURE NO. 016-2471
SHEET NO. S-37 OF S-63 SHEETS

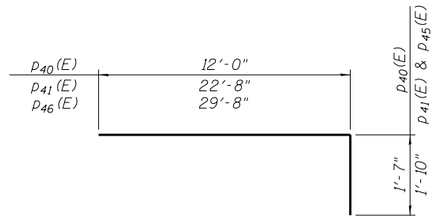
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	530
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



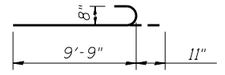
SECTION A-A



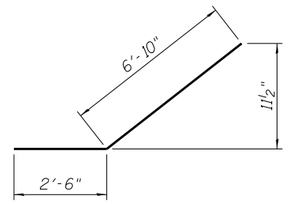
SECTION B-B



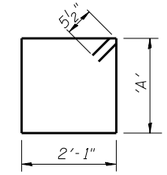
BARS p40(E), p41(E) & p45(E)



BAR n40(E)



BAR p49(E)



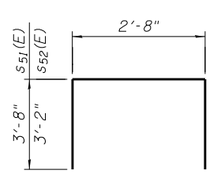
BARS s40(E) thru s50(E) & s54(E)

'A' DIMENSION

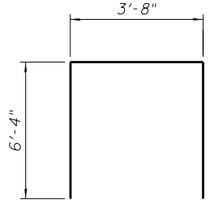
Bar	'A'
s40(E)	3'-4"
s41(E)	3'-3"
s42(E)	3'-1½"
s43(E)	3'-0½"
s44(E)	2'-11½"
s45(E)	2'-10"
s46(E)	2'-9"
s47(E)	2'-8"
s48(E)	2'-6½"
s49(E)	2'-5½"
s50(E)	2'-4½"
s54(E)	3'-5"

BILL OF MATERIAL

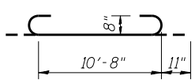
Bar	No.	Size	Length	Shape
h40(E)	4	#5	22'-8"	
h41(E)	4	#5	29'-8"	
h42(E)	8	#8	24'-2"	
h43(E)	10	#6	24'-2"	
h44(E)	8	#8	16'-10"	
h45(E)	10	#6	16'-10"	
n40(E)	54	#8	10'-8"	
p40(E)	10	#9	13'-7"	
p41(E)	5	#10	24'-6"	
p42(E)	12	#5	12'-6"	
p43(E)	4	#5	5'-7"	
p44(E)	4	#5	6'-8"	
p45(E)	5	#10	31'-6"	
p46(E)	4	#5	7'-4"	
p47(E)	6	#9	15'-9"	
p48(E)	6	#9	22'-9"	
p49(E)	8	#8	9'-4"	
s40(E)	4	#5	11'-9"	
s41(E)	4	#5	11'-7"	
s42(E)	4	#5	11'-4"	
s43(E)	4	#5	11'-2"	
s44(E)	4	#5	11'-0"	
s45(E)	4	#5	10'-9"	
s46(E)	4	#5	10'-7"	
s47(E)	4	#5	10'-5"	
s48(E)	4	#5	10'-2"	
s49(E)	4	#5	10'-0"	
s50(E)	4	#5	9'-10"	
s51(E)	24	#4	10'-0"	
s52(E)	24	#4	9'-0"	
s53(E)	86	#6	16'-4"	
s54(E)	62	#5	11'-11"	
t40(E)	46	#8	12'-6"	
t41(E)	46	#5	10'-8"	
u40(E)	16	#5	7'-0"	
u41(E)	31	#5	9'-0"	
u42(E)	8	#5	5'-10"	
u43(E)	14	#5	6'-6"	
v40(E)	54	#8	10'-6"	
w40(E)	22	#5	26'-2"	
w41(E)	22	#5	17'-10"	
Structure Excavation		Cu. Yd.	108	
Concrete Structures		Cu. Yd.	126.7	
Reinforcement Bars, Epoxy Coated		Pound	14,940	
Furnishing Metal Shell Piles 12" X 0.250"		Foot	870	
Driving Piles		Foot	870	
Test Pile Metal Shells		Each	1	
Concrete Sealer		Sq. Ft.	1,730	



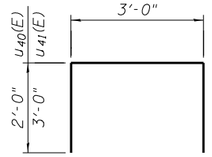
BARS s51(E) & s52(E)



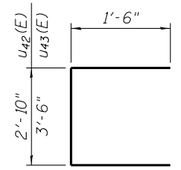
BAR s53(E)



BAR t40(E)



BARS u40(E) & u41(E)



BARS u42(E) & u43(E)

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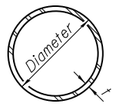
DEPARTMENT OF TRANSPORTATION

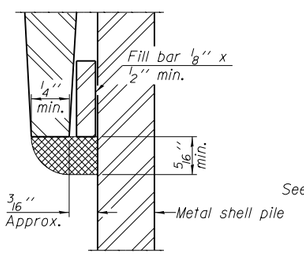
PIER DETAILS II
STRUCTURE NO. 016-2471
SHEET NO. S-38 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	531
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

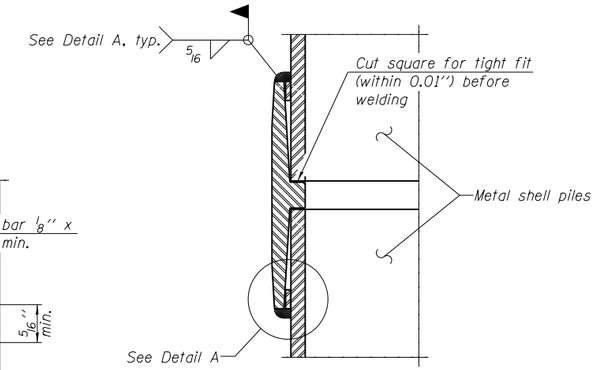


METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd.³ /ft.)
PP12	0.179″	22.60	0.0274
PP12	0.250″	31.37	0.0267
PP14	0.250″	36.71	0.0368
PP14	0.312″	45.61	0.0361

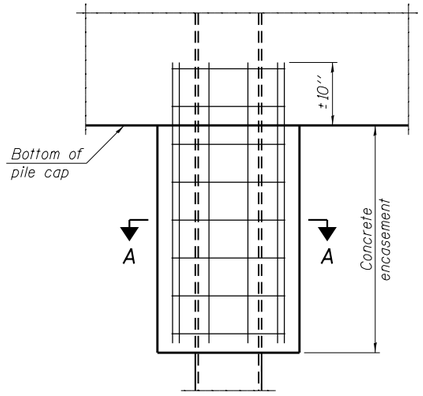


DETAIL A

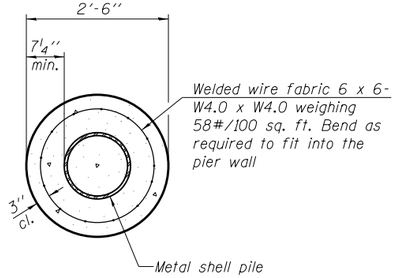


Notes:
The 1/8″ x 1/2″ min. fill bar may be constructed of 2 bars with a 1/8″ max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE



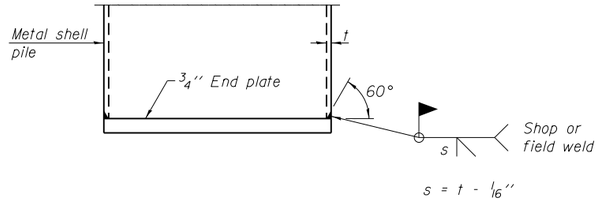
ELEVATION



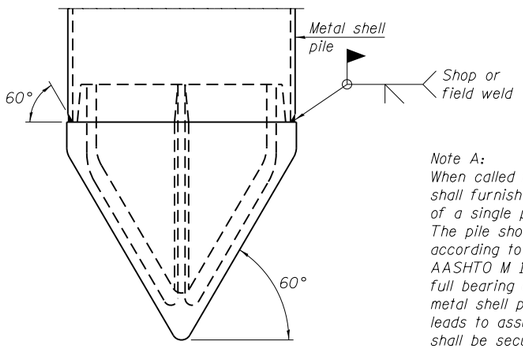
SECTION A-A

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

CONCRETE ENCASEMENT AT PIERS



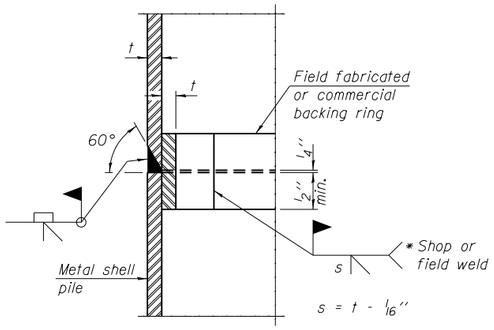
END PLATE ATTACHMENT



Note A:
When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.

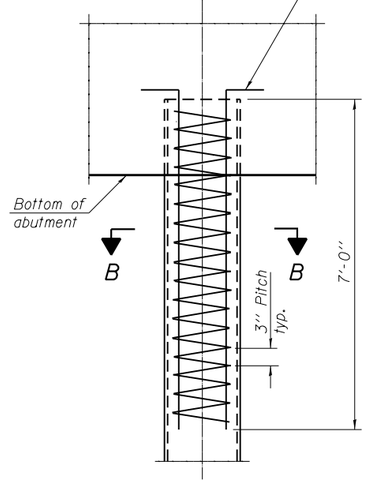
METAL SHELL PILE SHOE ATTACHMENT

(See Note A)

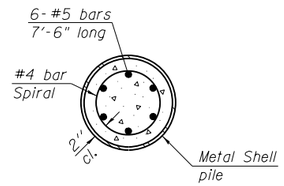


COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION



SECTION B-B

METAL SHELL REINFORCEMENT AT ABUTMENTS

Note:
The metal shell piles shall be according to ASTM A 252 Grade 3.

F-MS 1-27-12

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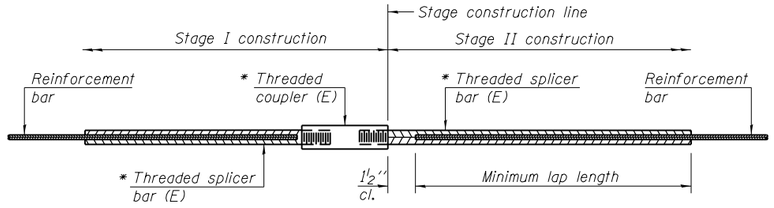
DEPARTMENT OF TRANSPORTATION

METAL SHELL PILE DETAILS
STRUCTURE NO. 016-2471
SHEET NO. S-39 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	532
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY

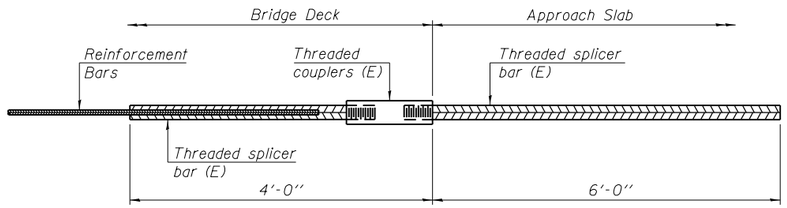
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"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

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

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

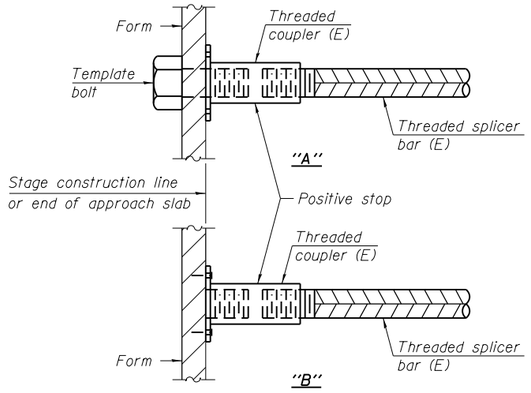
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Bridge Deck	#5	710	Table 5
Bridge Deck	#6	6	Table 5
Bridge Deck	#8	6	Table 5
Approach Slabs	#4	50	Table 6
Approach Slabs	#5	172	Table 5
Abutments	#5	20	Table 6
Abutments	#6	10	Table 6
Abutments	#7	24	Table 6
Pier	#5	30	Table 6
Pier	#6	10	Table 6
Pier	#8	8	Table 6
Pier	#9	6	Table 5
Pier	#10	5	Table 6



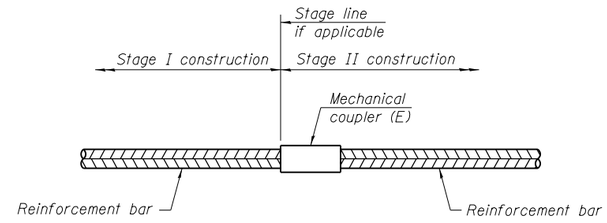
BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



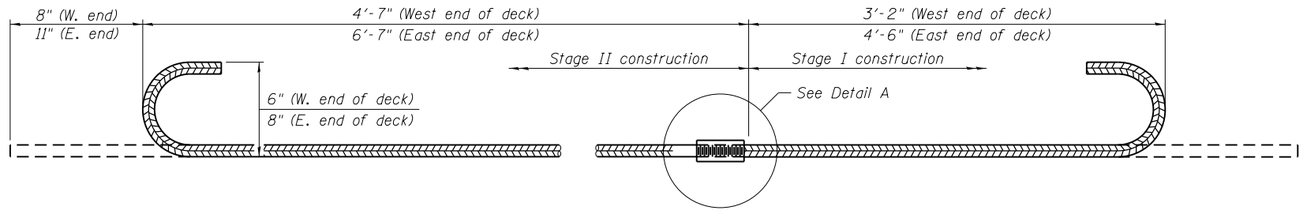
INSTALLATION AND SETTING METHODS

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



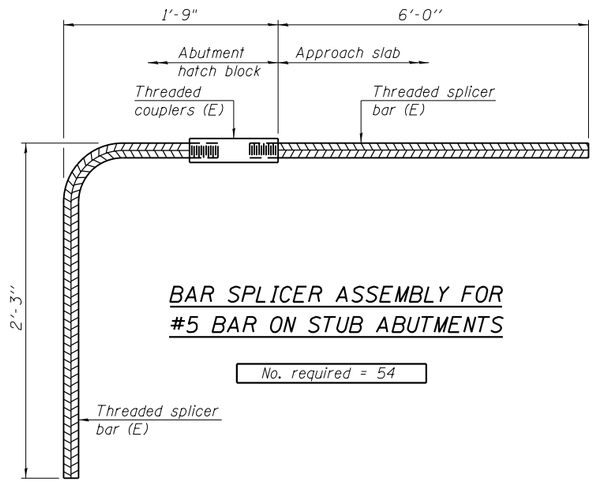
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR EDGE BEAMS AT STAGE CONSTRUCTION JOINT

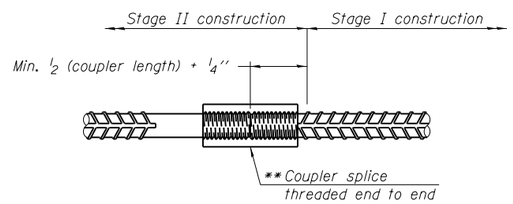
Location	Bar size	No. assemblies required
West end of deck	#6	2
East end of deck	#8	2



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required = 54

** 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.



DETAIL A

NOTES

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

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

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

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

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 016-2471
SHEET NO. S-40 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	533
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

Geo Services, Inc.
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805 Amherst Court, Suite 204
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SOIL BORING LOG

PAGE 1 of 3
DATE 12/30/2010
LOGGED BY DR
GSI JOB No. 10023

ROUTE FAI 94 @ FAP 341
DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
SECTION 1212B-1
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. SN 016-2438
Station
BORING NO. **S38-A**
Station: 214+67
Offset: 12.5' Right
Ground Surface Elev. 586.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 583.0
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
584.5 10.0" ASPHALT, 8.0" CRUSHED STONE							
	10				5		*112*
	4				6		
Clayey SAND, GRAVEL & STONE- medium dense (Fill)	8	NP	14		9	3.1B	19
583.0 ▼				563.0 CLAY-gray-very stiff (A-6)			
	1		*92*		10		*119*
TOPSOIL-black	1				12		
-5	2	0.4B	31	-25	12	2.7B	15
580.5							
	1		*113*		9		*113*
	4				10		
	7	5.4B	18		14	3.0B	18
CLAY-brown & gray-hard (A-6)				CLAY LOAM-gray- very stiff to hard (A-6)			
	5		*113*		5		*124*
	7				7		
-10	8	5.4B	18	-30	9	6.1B	13
575.5							
	3		*113*				
	5						
	7	2.2B	18				
CLAY-gray-very stiff (A-6)							
	3		*114*		5		*124*
	5				9		
-15	8	3.0B	18	-35	9	5.8B	13
	4		*110*				
	6						
	10	3.7B	20				
	4		*109*		6		*121*
	7				8		
-20	12	3.7B	20	-40	10	2.8B	15

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SOIL BORING LOG

PAGE 2 of 3
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ROUTE FAI 94 @ FAP 341
DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
SECTION 1212B-1
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. SN 016-2438
Station
BORING NO. **S38-A**
Station: 214+67
Offset: 12.5' Right
Ground Surface Elev. 586.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 583.0
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
				524.0 SILTY LOAM-gray-dense (A-4)			
	5		*122*		14		*128*
CLAY LOAM-gray- very stiff to hard (A-6)	8				20		
-45	10	4.1B	14	-65	26	7.6B	11
				CLAY LOAM-gray- very stiff to hard (A-6)			
	8		*125*		13		*122*
	11				24		
-50	13	5.4B	13	-70	32	8.0B	12
	8		*114*		12		*120*
	13				19		
-55	17	5.2B	18	-75	25	5.4B	15
529.0							
SILTY LOAM-gray-dense (A-4)							
	17				27		*120*
	24				50/3"		
-60	29	NP	22	-80		3.4B	15

The Unconfinec Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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SOIL BORING LOG

PAGE 3 of 3
DATE 12/30/2010
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ROUTE FAI 94 @ FAP 341
DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
SECTION 1212B-1
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic
STRUCT. NO. SN 016-2438
Station
BORING NO. **S38-A**
Station: 214+67
Offset: 12.5' Right
Ground Surface Elev. 586.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter 583.0
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM-gray- very stiff to hard (A-6)				End Of Boring @ -98.5, Hollow Stem Augers To -10.0' Rotary Drilling To Completion CME Automatic Hammer 10.0' Of 4.0"ø Casing Used			
504.0							
Clayey SAND, GRAVEL & FRACTURED ROCK-grcy-very dense (A-2)	50						
-85	50/4"	NP	12	-105			
499.5							
Drillers Observation: Apparent Bedrock							
497.5	50/3"	NP	10				
RUN 1 (-88.5' to -98.5') Silurian System Niagaran Series Dolomite							
Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ -88.7', -88.9' & -89.8'.							
Recovery=96.0% R.Q.D.=92.0%							
-95 RUN 1				-115			
487.5							
-100				-120			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS I
STRUCTURE NO. 016-2471
SHEET NO. S-41 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	534
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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SOIL BORING LOG

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DATE 12/27/2010
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ROUTE FAI 94 @ FAP 341
DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
SECTION 1212B-1
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic

STRUCT. NO. SN 016-2438
Station
BORING NO. **S38-B**
Station: 215+56
Offset: 12.5' Right
Ground Surface Elev. 586.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a ▼
Upon Completion n/a ▽
After ____ Hrs. ____ ▽

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
9.5" ASPHALT, 9.5" CRUSHED STONE	584.4		30		
			50/4"	NP	24
SANDY TOPSOIL—black			15		
			11		
	581.0	−5	3	–	41
CLAY—brown & gray—stiff to very stiff (A−6)			2		*108*
			3		
			4	1.1B	20
			3		*104*
			5		
		−10	8	2.8B	20
	575.5				
CLAY—gray—stiff to very stiff (A−6)			4		*112*
			6		
			8	1.5P	19
			3		*112*
			6		
		−15	9	3.4B	19
			4		*109*
			6		
			9	2.7B	20
			4		*109*
			4		
		−20	8	2.6B	19

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY—gray—stiff to very stiff (A−6)	565.5				
CLAY LOAM—gray—very stiff to hard (A−6)			5		*119*
			11		
			16	5.9B	15
			10		*120*
			12		
		−25	13	6.6B	14
			9		*121*
			11		
			13	6.4B	14
			4		*123*
			6		
		−30	9	4.7B	13
			4		*120*
			8		
		−35	10	3.9B	14
			4		*122*
			6		
		−40	7	2.8B	14

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 2 of 3
DATE 12/27/2010
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ROUTE FAI 94 @ FAP 341
DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
SECTION 1212B-1
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic

STRUCT. NO. SN 016-2438
Station
BORING NO. **S38-B**
Station: 215+56
Offset: 12.5' Right
Ground Surface Elev. 586.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a ▼
Upon Completion n/a ▽
After ____ Hrs. ____ ▽

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM—gray—very stiff to hard (A−6)			5		*122*
			8		
		−45	11	4.2B	14
			13		
			33		
		−50	35	–	18
			9		*109*
			14		
		−55	19	5.7B	20
			16		*124*
			21	8.3S@	
		−60	22	14.1%	11

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM—gray—very stiff to hard (A−6)			12		*127*
			13	5.6S@	
		−65	16	14.1%	11
			22		*131*
			40	10.7S@	
		−70	48	14.1%	10
			12		*126*
			19		
		−75	24	5.1B	13
			10		*123*
			50/2"		
		−80		3.1B	14

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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SOIL BORING LOG

PAGE 3 of 3
DATE 12/27/2010
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ROUTE FAI 94 @ FAP 341
DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
SECTION 1212B-1
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
COUNTY Cook
DRILLING METHOD Hollow Stem Auger/Rotary
HAMMER TYPE CME Automatic

STRUCT. NO. SN 016-2438
Station
BORING NO. **S38-B**
Station: 215+56
Offset: 12.5' Right
Ground Surface Elev. 586.0

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a ▼
Upon Completion n/a ▽
After ____ Hrs. ____ ▽

		DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY LOAM—gray—very stiff to hard (A−6)	505.0				
SILTY SAND & FRACTURED ROCK—gray—very dense (A−2)			25		
			37		
		−85	50/3"	NP	9
	498.5				
Drillers Observation: Apparent Bedrock	498.0				
RUN 1 (−88.0' to −98.0') Silurian System Niagaran Series Dolomite Light gray to gray & fine grained with horizontal bedding. Recovery=97.0% R.Q.D.=96.5%		−90	RUN 1		
		−95			
	488.0				
		−100			

End Of Boring @ −98.0'
Hollow Stem Augers To −10.0'
Rotary Drilling To Completion
CME Automatic Hammer
10.0' Of 4.0"ø Casing Used

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
−105			
−110			
−115			
−120			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B–Bulge, S–Shear, P–Penetrometer) ST–Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR–No Recovery

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS II
STRUCTURE NO. 016-2471
SHEET NO. S-42 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	535
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

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SOIL BORING LOG

PAGE 1 of 3
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ROUTE FAI 94 @ FAP 341
SECTION 1212B-1
COUNTY Cook
STRUCT. NO. SN 016-2438
Station
BORING NO. **S38-C**
Station: 217+18
Offset: 39.0' Left
Ground Surface Elev. 585.1

DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
DRILLING METHOD Hollow Stem Auger/Rotary HAMMER TYPE CME Automatic

Surface Water Elev. n/a
Stream Bed Elev. n/a
Groundwater Elevation:
First Encounter n/a
Upon Completion n/a
After ____ Hrs. ____

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
583.1	12		
	3		
	6	NP	21
	4		*99*
	5		
−5	6	1.3B	22
579.6			
	3		*102*
	54		
	4	2.6B	21
	2		*104*
	2		
−10	3	2.1B	20
574.6			
	2		*108*
	3		
	4	2.7B	21
	4		*108*
	7		
−15	9	3.4B	21
	4		*110*
	8		
	10	4.2B	20
	4		*110*
	8		
−20	11	4.6B	20

CLAY-gray-stiff to very stiff (A-6) 564.6

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	7		*111*
	9		
	11	5.0B	15
	6		*121*
	9		
−25	11	6.6B	14
	4		*123*
	6		
	18	5.8B	14
	4		*124*
	6		
−30	7	5.8B	13

CLAY LOAM-gray-
very stiff to hard (A-6)

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	5		*119*
	9		
−45	16	5.6B	13
	7		*125*
	10		
−50	14	5.6B	13
	19		*117*
	26		
−55	28	3.1B	16
	12		*120*
	21		
−60	23	6.2B	12

CLAY LOAM-gray-
very stiff to hard (A-6)

Silt seams from −63.5' to −65.0'.

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
	14		*120*
	21		
−65	25	7.5B	13
	13		*121*
	22		
−70	27	2.0B	14
	9		*124*
	14		
−75	17	5.25B	13
	13		*118*
	14		
−80	16	4.0B	15

CLAY LOAM-gray-
very stiff to hard (A-6)
503.1

50/4"

SILT-gray-very dense (A-4)
−85 NP 20
497.6

Drillers Observation: Apparent Bedrock 497.1

RUN 1 (−88.0' to −98.0')
Silurian System Niagaran Series Dolomite

Gray & fine grained with horizontal bedding, becoming lighter gray with horizontal to wavy bedding @ −92.6'.
Horizontal fractures @ −92.6' & −95.4'.

Recovery=91.0%
R.Q.D.=88.5%

RUN 1

487.1

End Of Boring @ −98.0'
Hollow Stem Augers To −10.0'
Rotary Drilling To Completion
CME Automatic Hammer
10.0' Of 4.0"ø Casing Used

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
−90			
−95			
−100			
−105			
−110			
−115			
−120			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

The Unconfinec Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

The Unconfinad Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) ST-Shelby Tube Sample VS=Vane Shear Test
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206) The Unit Dry Weight (pcf) is noted in italics above moist (%)
NR-No Recovery

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS III
STRUCTURE NO. 016-2471
SHEET NO. S-43 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	536
		CONTRACT NO. 60J12		
	ILLINOIS	FED. AID PROJECT		

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ROCK CORE LOG

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ROUTE FAI 94 @ FAP 341
DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
SECTION 1212B-1
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. SN 016-2438
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station
Core Diameter 2.0 in
BORING NO. **S38-A**
Top of Rock Elev. 499.5
Northing 214+67
Begin Core Elev. 497.5
Easting 12.5' Right
Ground Surface Elev. 586.0

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
497.5	1	96.0	92.0	n/a	1218 @ -89.4

RUN 1 (-88.5' to -98.5')
Silurian System Niagaran Series Dolomite

Light gray to gray & fine grained with horizontal bedding. Horizontal fractures @ -88.7', -88.9' & -89.8'.

Color pictures of the cores YES. Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

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ROCK CORE LOG

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DATE 12/27/2010
LOGGED BY DR
GSI JOB No. 10023

ROUTE FAI 94 @ FAP 341
DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
SECTION 1212B-1
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. SN 016-2438
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station
Core Diameter 2.0 in
BORING NO. **S38-B**
Top of Rock Elev. 498.5
Northing 215+56
Begin Core Elev. 498.0
Easting 12.5' Right
Ground Surface Elev. 586.0

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
498.0	1	97.0	96.5	n/a	1172 @ -88.0

RUN 1 (-88.0' to -98.0')
Silurian System' Niagaran Series Dolomite

Light gray to gray & fine grained with horizontal bedding.

Color pictures of the cores YES. Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

Geo Services, Inc.
Geotechnical, Environmental & Civil Engineering
805 Amherst Court, Suite 204
Naperville, Illinois 60565
(630) 355-2838

ROCK CORE LOG

PAGE 1 of 1
DATE 12/20/2010
LOGGED BY DR
GSI JOB No. 10023

ROUTE FAI 94 @ FAP 341
DESCRIPTION I-94/Stony Island Feeder Interchange Improvements #P-91-184-10
SECTION 1212B-1
LOCATION SEC. 11, 12, 13, & 14, TWP. 37 N., RNG. 14 E., 3rd P.M.
COUNTY Cook
CORING METHOD Rotary Wash
STRUCT. NO. SN 016-2438
CORING BARREL TYPE & SIZE NX Double Swivel-10 ft
Station
Core Diameter 2.0 in
BORING NO. **S38-C**
Top of Rock Elev. 497.6
Northing 217+18
Begin Core Elev. 497.1
Easting 39.0' Left
Ground Surface Elev. 585.1

DEPTH (ft)	CORE RUN (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
497.1	1	91.0	88.5	n/a	1123 @ -88.0

RUN 1 (-88.0' to -98.0')
Silurian System Niagaran Series Dolomite

Gray & fine grained with horizontal bedding, becoming lighter gray with horizontal to wavy bedding @ -92.6'. Horizontal fractures @ -92.6' & -95.4'.

Color pictures of the cores YES. Cores will be stored for examination for XX
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

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CONSULTING ENGINEERS
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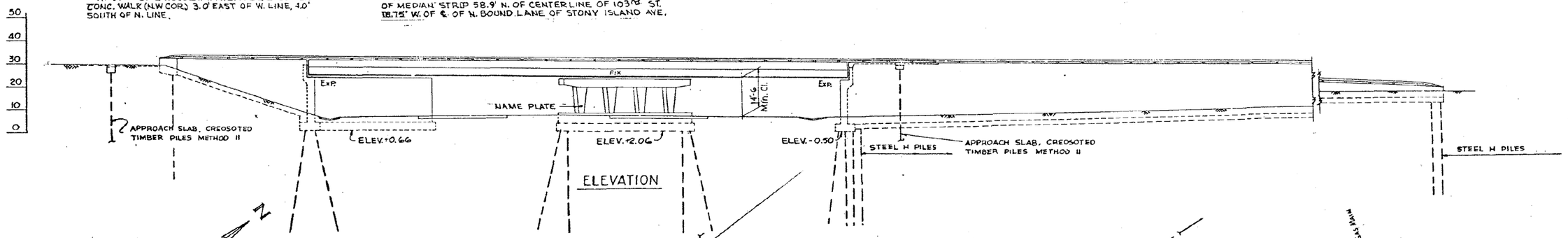
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING LOGS IV
STRUCTURE NO. 016-2471
SHEET NO. S-44 OF S-63 SHEETS

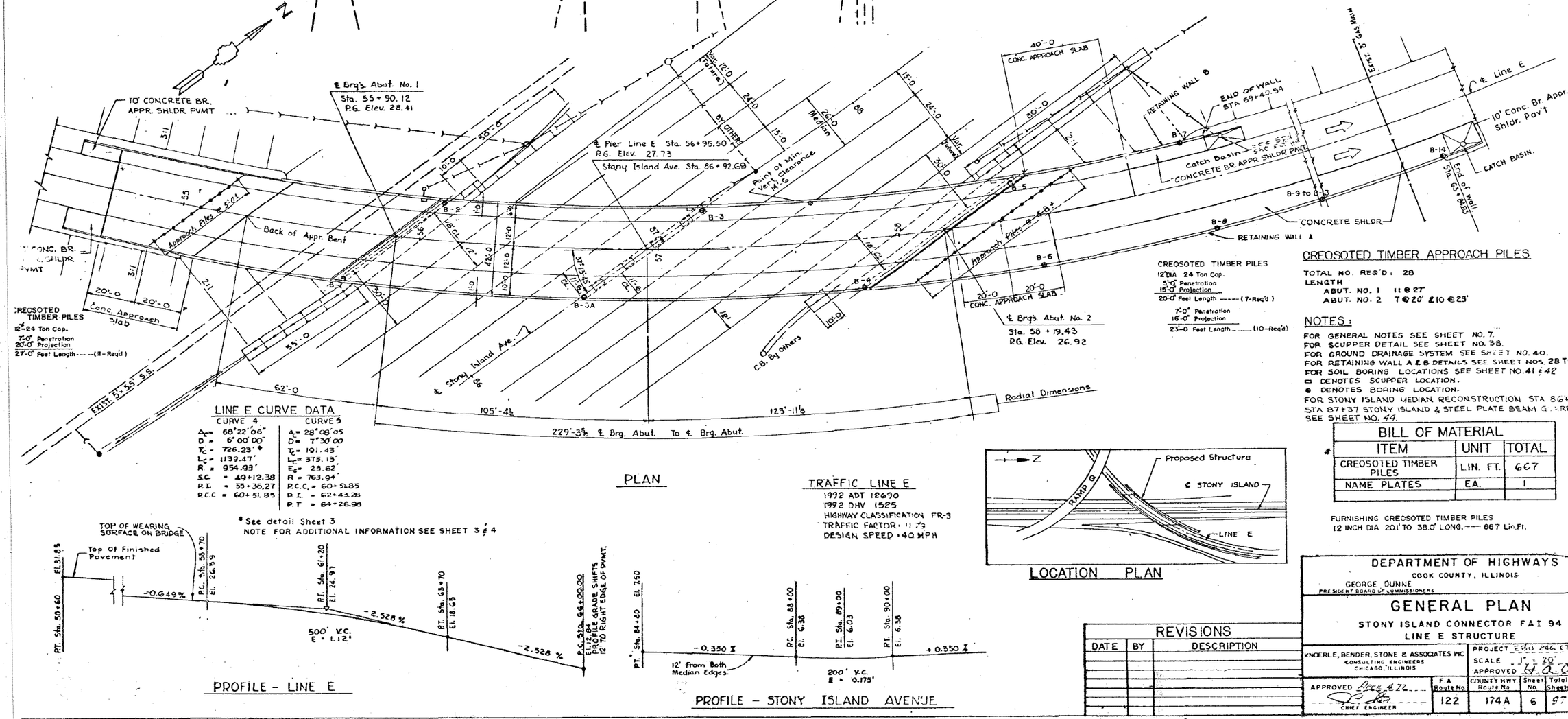
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	537
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

B.M. TSR-#2 EL. 17.292 (CITY DATUM)
AT 99th ST & WOODLAWN AVE. A SQ. CUT ON CONC. WALK (NW COR.) 3.0' EAST OF W. LINE, 4.0' SOUTH OF N. LINE.

B.M. TSR-#4 C.C.H.D. EL. 6.319 (CITY DATUM)
AT 103rd ST & STONY ISLAND AVE. A SQ CUT ON E. CURB OF MEDIAN STRIP 58.9' N. OF CENTERLINE OF 103rd ST. 18.75' W. OF ℄ OF N. BOUND LANE OF STONY ISLAND AVE.



ELEVATION



PLAN

CREOSOTED TIMBER PILES
12"DIA 24 Ton Cap.
5'-0" Penetration
15'-0" Projection
20'-0 Feet Length ----- (7-Req'd)

7'-0" Penetration
16'-0" Projection
23'-0 Feet Length ----- (10-Req'd)

CREOSOTED TIMBER APPROACH PILES

TOTAL NO. REQ'D: 28
LENGTH
ABUT. NO. 1 11 @ 27'
ABUT. NO. 2 7 @ 20' & 10 @ 23'

NOTES:

FOR GENERAL NOTES SEE SHEET NO. 7.
FOR SCUPPER DETAIL SEE SHEET NO. 38.
FOR GROUND DRAINAGE SYSTEM SEE SHEET NO. 40.
FOR RETAINING WALL A & B DETAILS SEE SHEET NOS. 28 THRU 36.
FOR SOIL BORING LOCATIONS SEE SHEET NO. 41 & 42
▭ DENOTES SCUPPER LOCATION.
● DENOTES BORING LOCATION.
FOR STONY ISLAND MEDIAN RECONSTRUCTION STA 86+37 TO STA 87+37 STONY ISLAND & STEEL PLATE BEAM GUARD RAIL SEE SHEET NO. 44.

LINE E CURVE DATA

CURVE 4	CURVE 5
Δ_c = 68°22'06"	Δ_c = 28°08'05
D = 6°00'00"	D = 7°30'00
T_c = 726.23' *	T_c = 191.43'
L_c = 1139.47'	L_c = 375.13'
R = 954.93'	E_c = 23.62'
S.C. = 49+12.38	R = 763.94'
P.I. = 55+36.27	P.C.C. = 60+51.85
P.C.C. = 60+51.85	P.I. = 62+43.28
	P.T. = 64+26.98

* See detail Sheet 3
NOTE FOR ADDITIONAL INFORMATION SEE SHEET 3 & 4

TRAFFIC LINE E
1992 ADT 12690
1992 DHV 1525
HIGHWAY CLASSIFICATION FR-3
TRAFFIC FACTOR: 11.79
DESIGN SPEED 40 MPH

LOCATION PLAN

PROFILE - LINE E

PROFILE - STONY ISLAND AVENUE

BILL OF MATERIAL		
ITEM	UNIT	TOTAL
CREOSOTED TIMBER PILES	LIN. FT.	667
NAME PLATES	EA.	1

FURNISHING CREOSOTED TIMBER PILES
12 INCH DIA 20.1' TO 38.0' LONG. ---- 667 Lin.Ft.

REVISIONS		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE DUNNE
PRESIDENT BOARD OF COMMISSIONERS

GENERAL PLAN

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT E.B.O. 246 (76)
SCALE 1" = 20'
APPROVED

APPROVED
CHIEF ENGINEER

F.A. Route No.	COUNTY HWY Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	6	97	

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PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-45 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	538
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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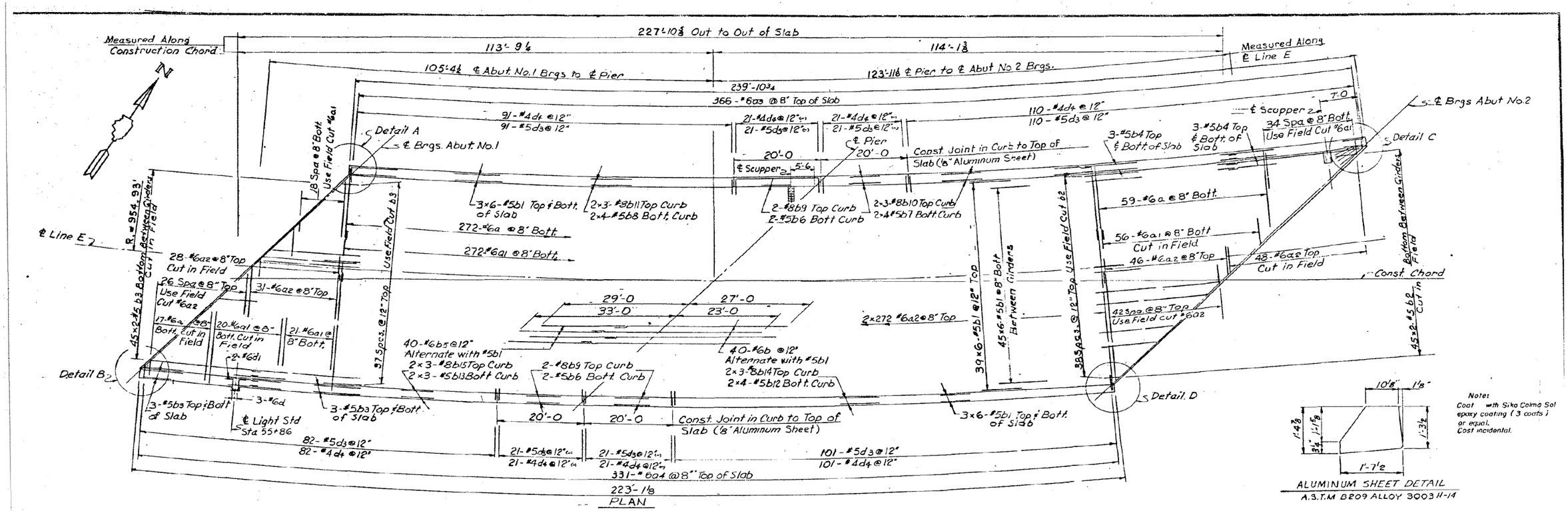

NOTES:

For Details A, B, C and D see sheet No. 13.
For Parapet Plan and Details and Hand rail Details see sheet No's. 15 & 16.
Cost of Aluminum Sheets shall be incidental to Class X Concrete.
Bars marked thus 3x6-#5 etc. indicate 3 lines of bars with 6 lengths per line.
For Bill of Material, Reinforcement Details & Expansion Device Details see sheet No. 14.
For Scupper Details see Sheet No. 38.
Field cut bars shall be used on the same end of the slab from which they are cut.
Transverse slab bars shall have a minimum lap of 30 diameters. Minimum bar lap for all others bars is 24 diameter.
For detail at Light Std. See Sheet No. 13.

All edges shall have ¾" chamfer.
For additional details at Curb Joints see sheet No. 13.

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE
PRESIDENT BOARD OF COMMISSIONERS

SLAB PLAN SPANS 1 & 2

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KOERLE, BENDER, STONE & ASSOCIATES INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246 (76)
SCALE
APPROVED

APPROVED April 4, 72
CHIEF ENGINEER

F.A. Route No.	County Hwy. Route No.	Sheet No.	Total Sheets	Drawing No.
122	174 A	12	97	

REVISIONS

DATE	BY	DESCRIPTION

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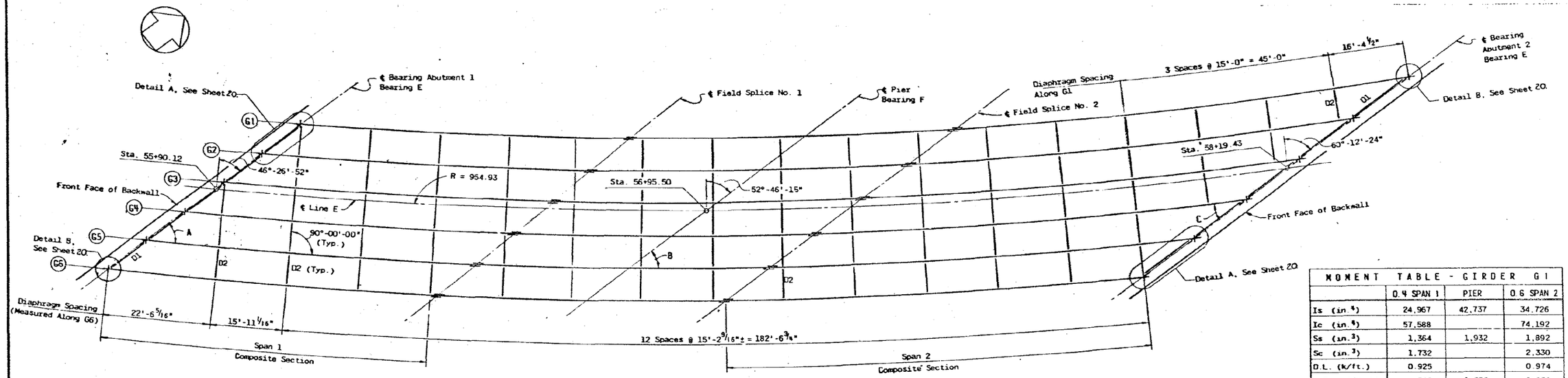
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

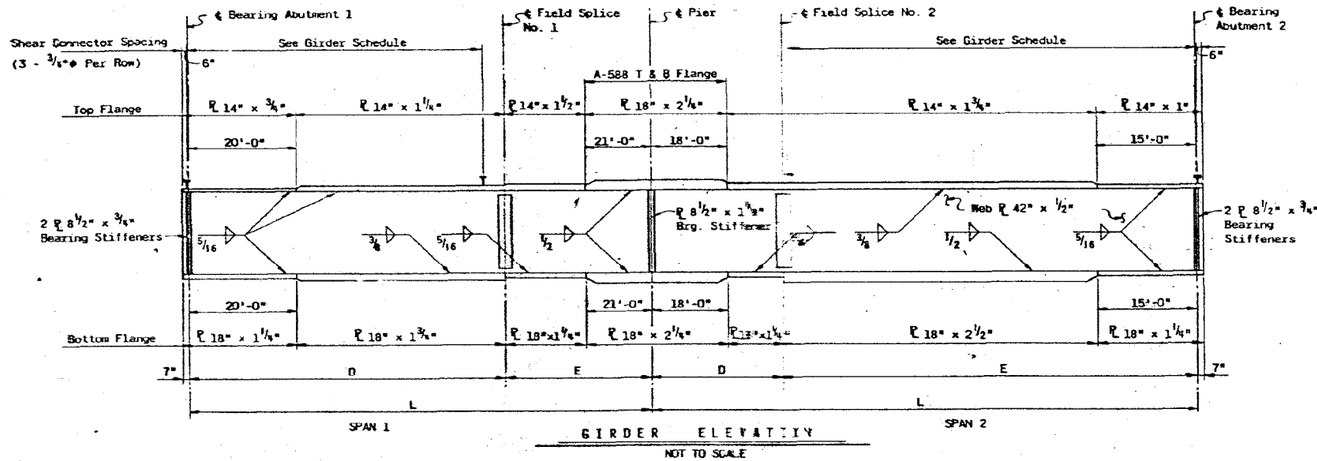
EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-46 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	539
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



FRAMING PLAN

SCALE: 1" = 10'-0"



GIRDER ELEVATION

NOT TO SCALE

GIRDER NO.	SPAN 1 L**	SPAN 2 L**	RADIUS	ANGLES* A	ANGLES* B	ANGLES* C	SPAN 1 D**	SPAN 1 E**	SPAN 2 D**	SPAN 2 E**	SHEAR STUD SPACING SPAN 1	SHEAR STUD SPACING SPAN 2
1	108'-0"	129'-2 5/16"	938.92'	42°-30'-55"	35°-55'-29"	28°-02'-28"	71'-0"	37'-0"	31'-0"	98'-2 5/16"	92 Spcs. @ 9"	128 Spcs. @ 9"
2	106'-9 5/16"	126'-8 1/2"	946.12'	42°-59'-19"	36°-31'-20"	28°-50'-57"	69'-5 5/16"	37'-0"	31'-0"	95'-8 1/2"	90 Spcs. @ 9"	125 Spcs. @ 9"
3	105'-7 1/2"	124'-5"	953.32'	43°-27'-23"	37°-06'-10"	29°-37'-30"	69'-7 7/32"	36'-0"	31'-0"	93'-5"	90 Spcs. @ 9"	122 Spcs. @ 9"
4	104'-6 7/16"	122'-3 3/16"	960.52'	43°-54'-09"	37°-40'-01"	30°-22'-19"	70'-6 1/16"	34'-0"	31'-0"	91'-3 3/16"	90 Spcs. @ 9"	119 Spcs. @ 9"
5	103'-5"	120'-3 15/16"	967.72'	44°-20'-37"	38°-12'-56"	31°-28'-30"	69'-5"	34'-0"	30'-0"	90'-3 15/16"	90 Spcs. @ 9"	117 Spcs. @ 9"
6	102'-6 9/16"	118'-5 7/8"	974.92'	44°-46'-29"	38°-45'-06"	31°-47'-10"	70'-5 7/16"	32'-0"	30'-0"	88'-5 7/8"	90 Spcs. @ 9"	115 Spcs. @ 9"

* ANGLES ARE GIVEN AT INTERSECTION OF ℄ BEARINGS AND INSTANTANEOUS TANGENT OF GIRDER. ** ALL DIMENSIONS ARE MEASURED ALONG ℄ GIRDER.

* ELEVATION AT TOP OF WEB ℄				
GIRDERS	℄ BEARING ABUTMENT 1	℄ FIELD SPLICE NO. 1	℄ PIER	℄ FIELD SPLICE NO. 2	℄ BEARING ABUTMENT 2
1	26.25	25.83	25.54	25.52	24.69
2	26.74	26.32	26.04	25.98	25.21
3	27.22	26.81	26.53	26.46	25.72
4	27.70	27.28	27.03	26.94	26.24
5	28.18	27.78	27.52	27.43	26.75
6	28.66	28.27	28.01	27.92	27.25

* For fabrication only - Includes Total D.L.

GIRDER SPACING			
GIRDERS	℄ BEARING ABUTMENT 1	℄ BEARING PIER	℄ BEARING ABUTMENT 2
1 to 2	10'-7 1/4"	12'-2 3/16"	15'-1 3/8"
2 to 3	10'-6 3/16"	12'-0 9/16"	14'-8 7/8"
3 to 4	10'-5 1/8"	11'-10 5/16"	14'-4 13/16"
4 to 5	10'-4 1/8"	11'-8 1/2"	14'-1 1/16"
5 to 6	10'-3 1/8"	11'-6 13/16"	13'-9 5/8"

NOTES:

1. For details of Diaphragms, Cross-Frames and Field Splice, See Sheet 20.
2. For details of Bearing and Joint Types and additional notes, See Sheet 21.

NW Includes 381,608 Lbs A36 steel and 65,623 Lbs A588 steel. Bearings are included in the A36 steel.

MOMENT TABLE - GIRDER G1			
	0.4 SPAN 1	PIER	0.6 SPAN 2
Is (in.⁴)	24,967	42,737	34,726
Ic (in.⁴)	57,588		74,192
Ss (in.³)	1,364	1,932	1,892
Sc (in.³)	1,732		2,330
D.L. (k/ft.)	0.925		0.974
M.D.L. (ft.-k)	565	1,575	1,250
fs DL (ksi)	5.0	9.8	7.9
S.D.L. (k/ft.)	0.306		0.306
M.SDL (ft.-k)	216	516	392
M.LL (ft.-k)	988	1,115	1,167
M. Imp (ft.-k)	213	227	229
Total (ft.-k)	1,417	1,858	1,788
fsLL (ksi)	10.0	11.5	9.4
fs Total (ksi)	15.2 *	21.3 *	17.3 *
VR (k)	50.8		51.8

* Deflection governs. Final Stress includes correction for curvature.

REACTION TABLE - GIRDER G1			
	ABUTMENT 1	PIER	ABUTMENT 2
D.L. (k)	46.4	196.0	61.2
L.L. (k)	51.4	97.0	52.5
Imp. (k)	11.0	13.1	10.4
Total (k)	108.8	306.1	124.1

BILL OF MATERIAL		
ITEM	UNIT	TOTAL
** Structural Steel	Lbs.	447231
Stud Shear Connector	Each	3840

REVISIONS

DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W DUNNE, PRESIDENT BOARD OF COMMISSIONERS — SUPERINTENDENT OF HIGHWAYS

STRUCTURAL STEEL FRAMING PLAN & DETAILS

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC. CONSULTING ENGINEERS CHICAGO, ILLINOIS

PROJECT EBU 246(76)
SCALE
APPROVED

APPROVED — SUPERINTENDENT
CHIEF ENGINEER

F.A. Route No.	COUNTY HWY Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	19	47	

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PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-47 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	540
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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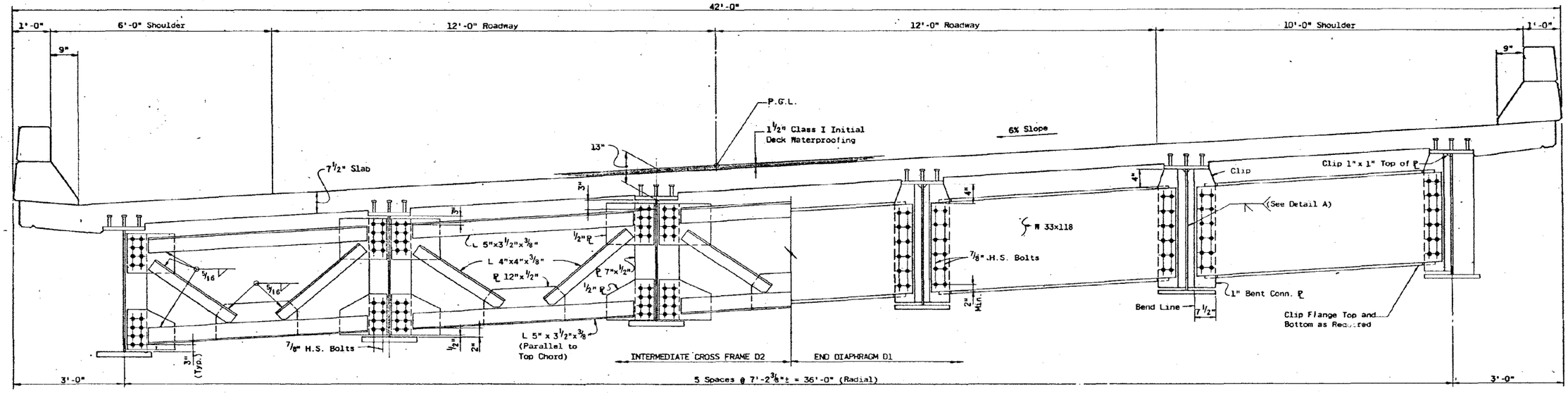
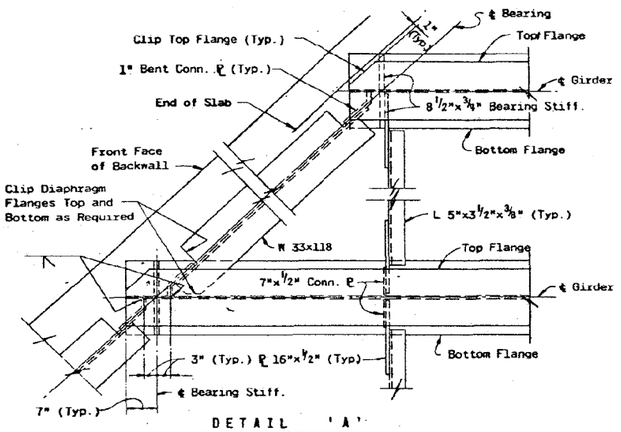


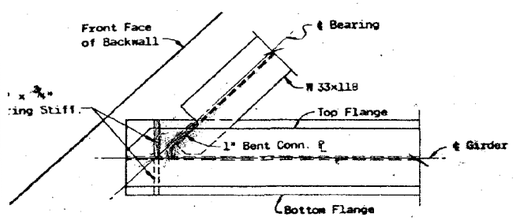
TYPICAL CROSS SECTION

SCALE: 3/4" = 1'-0"



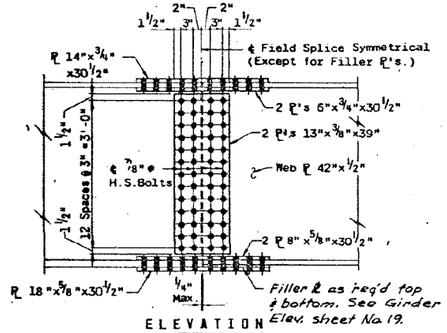
DETAIL 'A'

SCALE: 3/4" = 1'-0"



DETAIL 'B'

SCALE: 3/4" = 1'-0"



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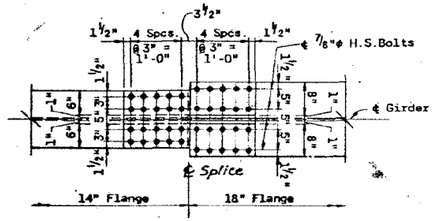
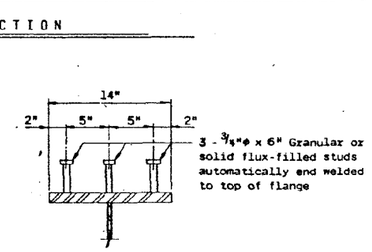


PLAN

*FIELD SPLICE DETAILS

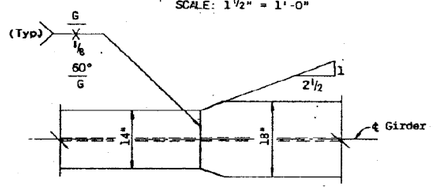
SCALE: 3/4" = 1'-0"

*For Information Only: See Framing Plan



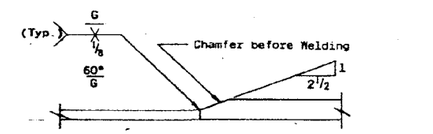
SHEAR CONNECTOR DETAILS

SCALE: 1 1/2" = 1'-0"



VARIABLE FLANGE WIDTH

SCALE: 3/4" = 1'-0"

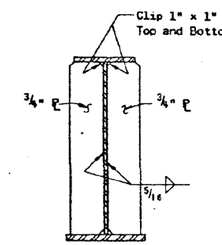


VARIABLE FLANGE THICKNESS

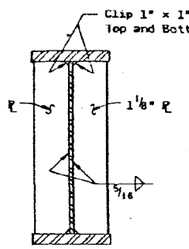
SCALE: 1 1/2" = 1'-0"

WELDED FLANGE SPLICE DETAILS

SCALE AS NOTED



AT ABUTMENTS



AT PIER

NOTE: Bearing Stiffeners shall be milled on the bearing end and have a tight fit at the other end.

BEARING STIFFENER DETAILS

SCALE: 3/4" = 1'-0"

NOTE:

1. For locations of Details A and B and Field Splices and additional notes, See Sheet 19.
2. For Slab Reinforcing, See Sheet 12.

REVISIONS		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE
PRESIDENT BOARD OF COMMISSIONERS
SUPERINTENDENT OF HIGHWAYS

STRUCTURAL STEEL DETAILS

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KHOERLE, BENDER, STONE & ASSOCIATES INC
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT (BU 246 (76))
SCALE
APPROVED H. A. Ellinger

APPROVED April 4, 72
CHIEF ENGINEER

F.A. Route No.	County Hwy. Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	20	57	

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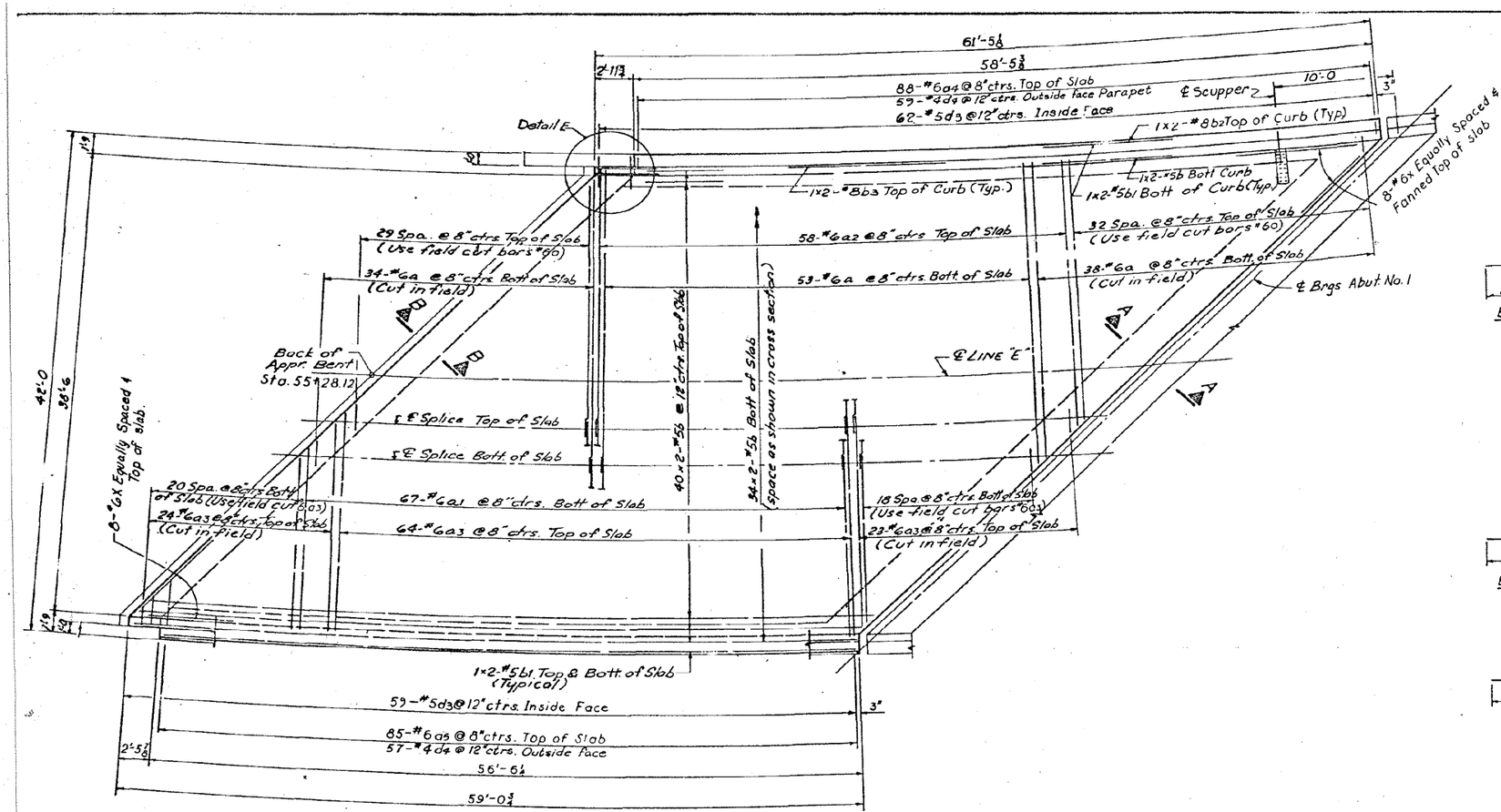
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

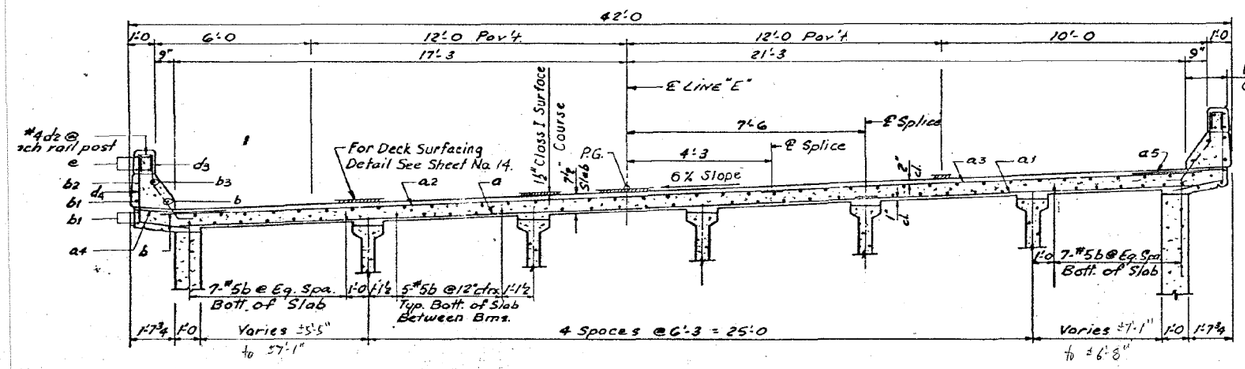
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-48 OF S-63 SHEETS

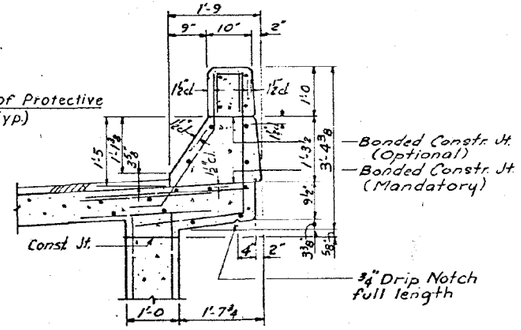
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	541
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



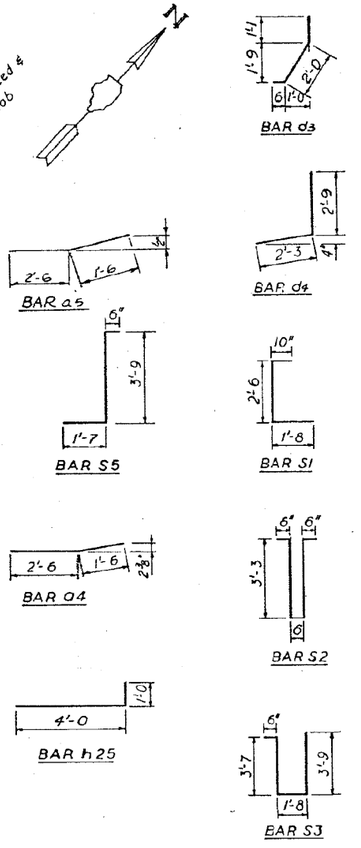
PLAN



CROSS SECTION



CURB SECTION



BILL OF MATERIAL

BAR	NO	SIZE	LENGTH	SHAPE
a	125	#6	26'-3	
a1	67	#6	15'-3	
a2	58	#6	23'-0	
a3	111	#6	18'-6	
a4	88	#6	4'-0	
a5	85	#6	4'-0	
b	152	#5	31'-5	
b1	12	#5	29'-10	
b2	4	#8	29'-10	
b3	4	#8	31'-8	
d3	121	#5	3'-7	
d4	116	#4	5'-0	
h25	12	#5	5'-0	
m	16	#4	7'-6	
m1	8	#5	6'-0	
m2	6	#5	27'-9	
m3	2	#4	7'-9	
m4	1	#5	6'-9	
m5	6	#4	8'-6	
m6	3	#5	7'-6	
m7	6	#5	27'-0	
m8	12	#4	5'-5	
m9	12	#4	4'-3	
S1	33	#4	5'-0	
S2	26	#4	8'-0	
S3	33	#4	9'-6	
S4	33	#4	3'-4	
S5	33	#4	5'-10	
** V71	76	#5	3'-0	
X	16	#6	5'-0	

ITEM	UNIT	TOTAL
* REINFORCEMENT BARS	LB.	21161
* CLASS X CONCRETE	CU. YD.	96.0
PROTECTIVE COAT	SQ. YD.	44.

*Parapet Reinforcement and Class X Concrete are billed on Sheet No. 15.

NOTES

For Continuation of slab see Sheet No. 12.
Minimum bar lap = 20 Dia.
Transverse slab bars shall have a minimum lap of 30 Dia.
For Parapet Plan & Details and Railing Details see Sheet No. 15.
For Elevations at bottom of Deck Slab see Sheet No. 9.
For Sections A-A & B-B see Sheet No. 11.
For Detail E see sheet No. 13.
Bars marked thus 2x2-#5 etc. indicates 2 lines of bars with 2 lengths per line.
For Scupper Details see sheet No. 38.
For additional reinforcement at scupper locations see Scupper Details.
KA For placement see sheet No. 11.

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W DUNNE
PRESIDENT BOARD OF COMMISSIONERS

SUPERINTENDENT OF HIGHWAYS

SLAB PLAN AT ABUTMENT NO. 1

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246 (76)
SCALE
APPROVED

APPROVED April 4, 76
CHIEF ENGINEER

F.A. Route No.	County Hwy. Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	10	97	

REVISIONS		
DATE	BY	DESCRIPTION

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CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com

USER NAME =	DESIGNED -	REVISED -
	CHECKED - BAK	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-49 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	542
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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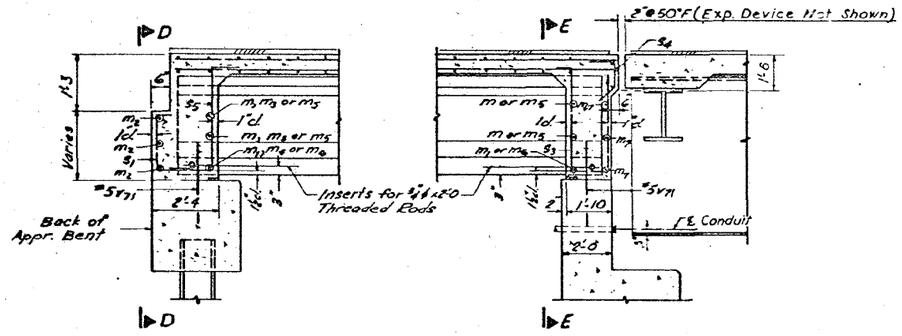
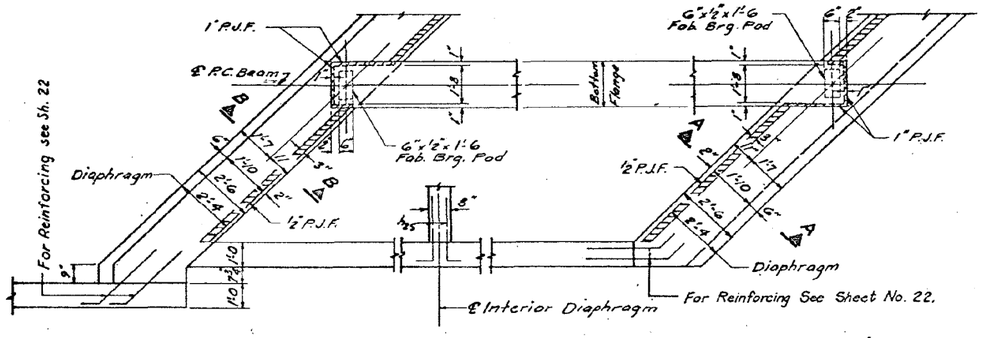
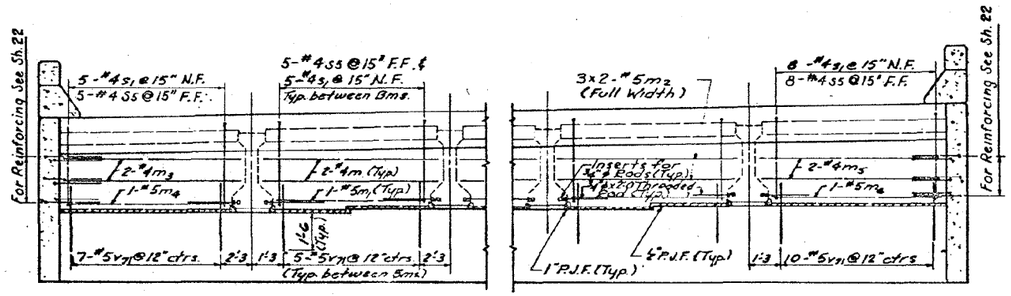


SECTION B-B

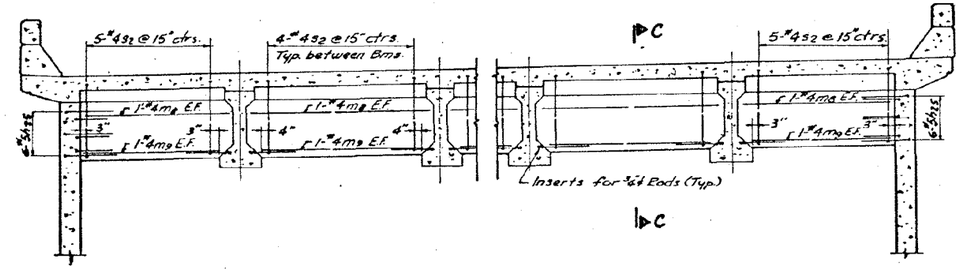
SEOTION A-A



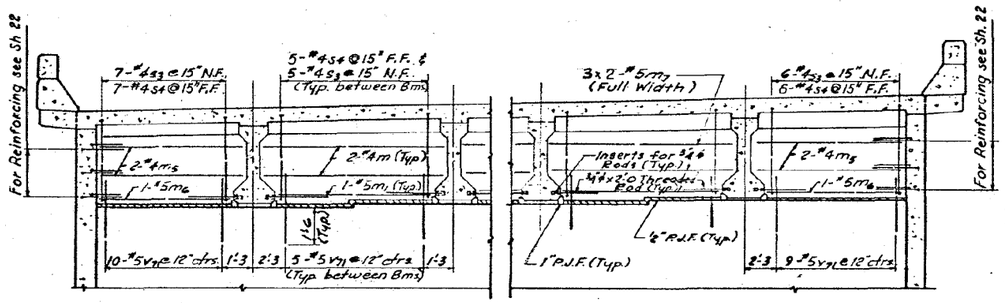
PARTIAL PLAN



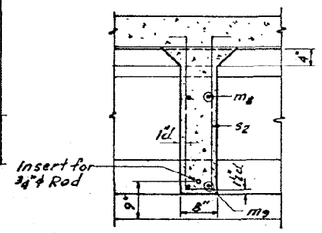
VIEW D-D
DIAPHRAGM AT APPROACH BENT



INTERIOR DIAPHRAGM



SECTION E-E
DIAPHRAGM AT ABUTMENT



SECTION C-C
INTERIOR DIAPHRAGM

NOTES

For Reinforcement Bar Schedule see Sheet No. 10.
For Location of Rigid Steel Conduit see Sheet No. 12 & 22.
For Detail of Neoprene Expansion Joint-2" see Sheet No. 14.
Preformed Joint Filler shall be incidental to Class X Concrete.
N.F. indicates Near Face.
F.F. indicates Far Face.
E.F. indicates Each Face.

REVISIONS		
DATE.	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE, PRESIDENT BOARD OF COMMISSIONERS — SUPERINTENDENT OF HIGHWAYS

DIAPHRAGM DETAILS

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246(76)
SCALE
APPROVED

APPROVED
CHIEF ENGINEER

F.A. Route No.	COUNTY HWY Route No.	Sheet No.	Total Sheets	Drawing No.
122	174 A	11	97	

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PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-50 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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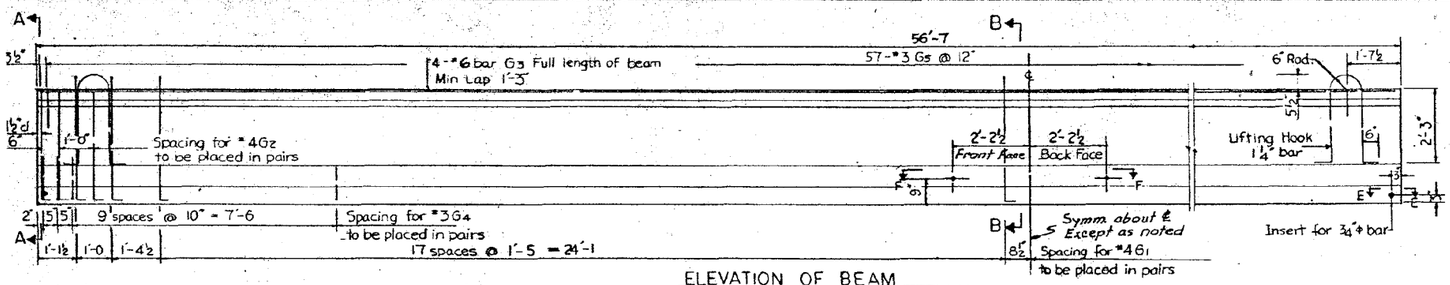
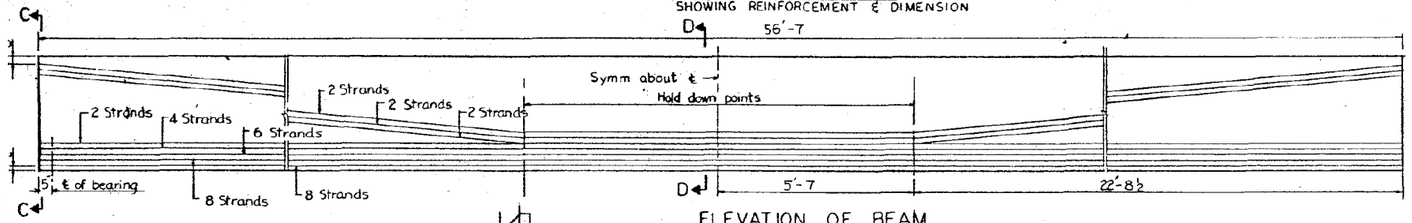
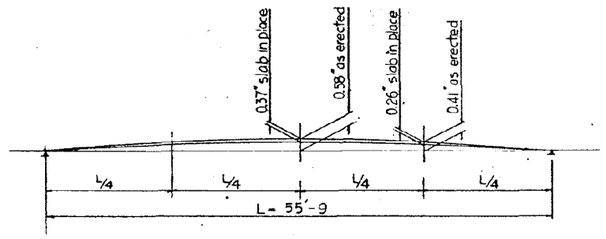
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



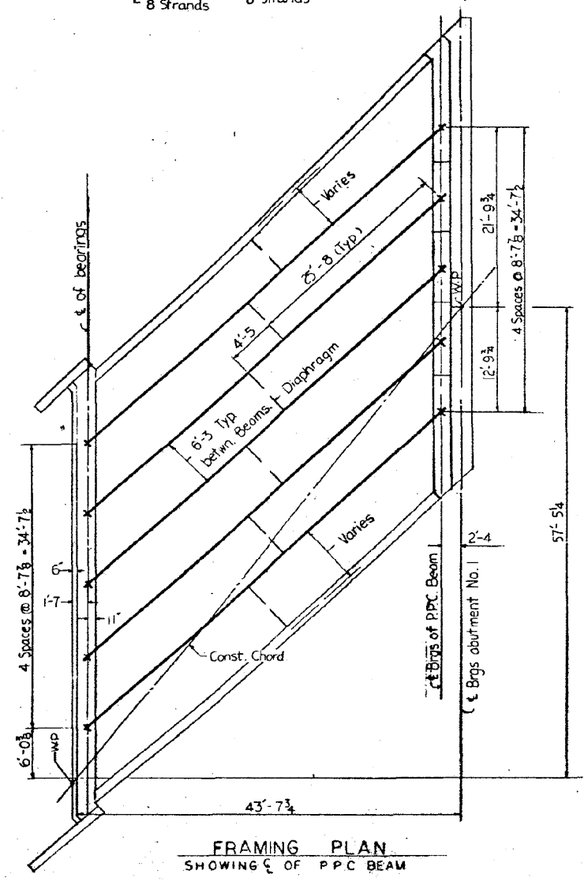
ELEVATION OF BEAM
SHOWING REINFORCEMENT & DIMENSION



ELEVATION OF BEAM
SHOWING PRESTRESSING STEEL



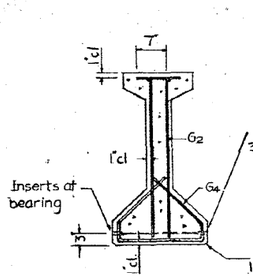
CAMBER DIAGRAM



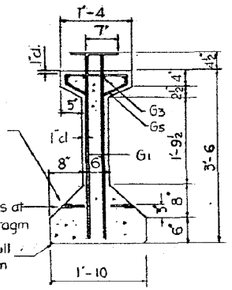
FRAMING PLAN
SHOWING ℄ OF PPC BEAM

NOTES

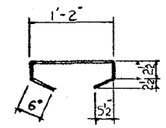
Prestressing tendons are 7 wire 7/16" ϕ (nominal diameter) stress relieved Strands.
f's = 248 ksi.
fsi = 173 ksi.
An alternate strand pattern using Extra High Strength Prestressing Strand (270 ksi) is Permitted.
All strands to have initial Prestressing force of 18.9 k/strand.
All inserts and threaded rods for inserts, reinforcement and Prestressing Steel, and other items which are cast into the Precast Concrete I-Beam shall be included in the contract unit price per lineal foot of Furnishing and Erecting Precast Prestressed Concrete I-Beam, 42" inch.
Insert for ¾"ϕ threaded rods are to be two strut coil type at bearings of I-Beams and single coil flared loop type at intermediate diaphragms.
Steel for lifting hooks shall be non-deformed bars of Structural or intermediate grade billet steel.
End of beams to be encased with cast in place concrete shall not be coated with asphalt paint.
For diaphragm details see sheet No. 11.



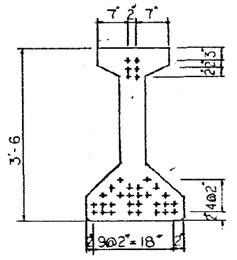
SECTION A-A



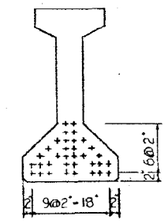
SECTION B-B



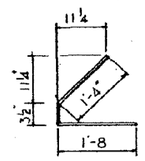
G5



SECTION C-C



SECTION D-D



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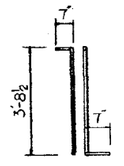
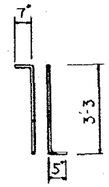


G1



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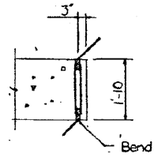
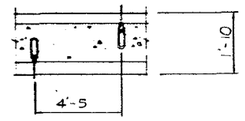


SECTION E-E



SECTION F-F

*BAR LIST

BAR	NO.	SIZE	LENGTH	SHAPE
G1	80	#4	4'-10½	
G2	12	#4	4'-3	
G3	8	#6	29'-0	—
G4	48	#3	3'-3½	
G5	57	#3	2'-7	

* FOR ONE BEAM

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing & Erecting Precast Prestressed Concrete I-Beam, 42"	Lin Ft.	283

REVISION		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE
PRESIDENT BOARD OF COMMISSIONERS — SUPERINTENDENT OF HIGHWAYS

PRECAST PRESTR. CONC. I-BEAM 42"

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246 (75)
SCALE
APPROVED

APPROVED April 4, 24
CHIEF ENGINEER

F.A. Route No.	County Highway Route No.	Sheet No.	Total Sheets	Drawing No.
122	194A	18	37	

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
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USER NAME =	DESIGNED -	REVISED -
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PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-51 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	544
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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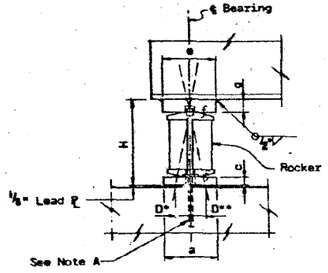
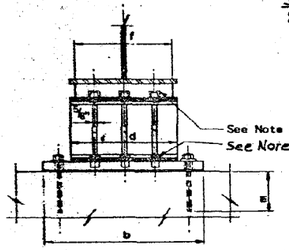
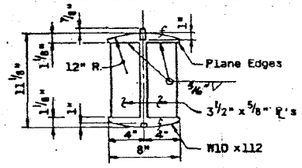
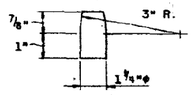


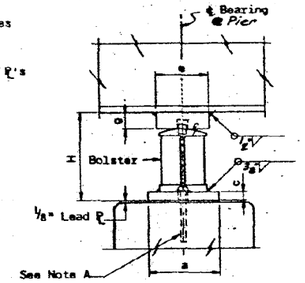


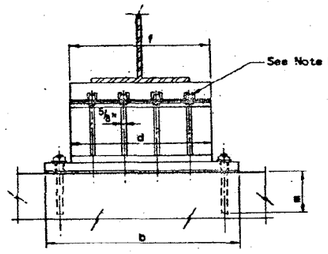


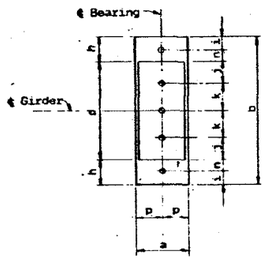
DETAIL OF ROCKER



DETAIL OF PINTLE







PLAN

NOTE:

D* 1/8"/100° of expansion for every 15° below the normal temp. of 50°F.

D** 1/8"/100° of expansion for every 15° above the normal temp. of 50°F.

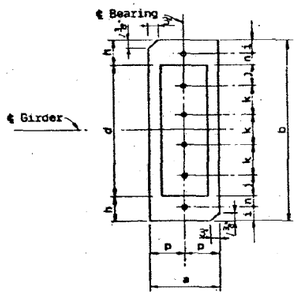
Note A 1 1/2"ϕ Anchor Bolts to be grouted into drilled holes after girders are in place. All fixed Anchor Bolts may be built into the masonry. Place 3" x 3" x 5/16" ℄ washer under nut.

Note B 1 3/8"ϕ holes 1" deep in top ℄ for Pintles.

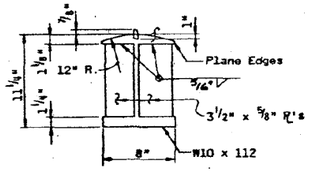
Note C 1 1/4"ϕ holes 1" deep in bottom ℄ for pintles. Thread or press fit Pintles into bottom ℄.

EXPANSION BEARING TYPE 'E'

NOT TO SCALE



PLAN



DETAIL OF BOLSTER

FIXED BEARING TYPE 'F'

NOT TO SCALE

BEARING SCHEDULE

TYPE	a	b	c	d	e	f	g	h	i	j	k	m	n	p	H
E	9"	27"	1 1/2"	18"	9"	16 1/2"	2 1/4"	4 1/2"	2 1/2"	4"	5"	15"	2"	4 1/2"	14 7/8"
F	12"	33"	1 1/2"	24"	9"	24"	2"	4 1/2"	2 1/2"	3 3/4"	5 1/2"	15"	2"	8"	14 3/8"

NOTES:

1. All structural steel shall conform to ASTM A-36, except as noted.
2. Fasteners shall be 7/8"ϕ, open holes 1"ϕ unless otherwise noted. These shall be high strength bolts conforming to ASTM A-325 (Friction Type).
3. End of Girders and all Beam Stiffeners shall be vertical under full dead loads.
4. The procedures in the fabrication of horizontally curved girders shall be approved by the Engineer-in-charge.
5. Calculated weight of structural steel this sheet 8242 lbs. (included in total weight of structural steel on sheet no. 19.) Calculated weight of Brgs. includes rockers, bolsters, brg. plates, lead plates, anchor bolts, nuts & washers.
6. Erection of bearings & anchorage in accordance to Art. 507.08 of the Standard Specifications.

NOTE:

For locations of Bearing Types, See Sheet 19.

REVISIONS

DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W. DUNNE
PRESIDENT BOARD OF COMMISSIONERS

SUPERINTENDENT OF HIGHWAYS

STRUCTURAL STEEL BEARING DETAILS

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KHOEALE, BENDER, STONE & ASSOCIATES INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246 (76)
SCALE
APPROVED H. A. Ohlrogge

APPROVED April 4, 72
CHIEF ENGINEER

F.A. Route No.	County Hwy. Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	21	97	

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com

USER NAME =	DESIGNED -	REVISED -
	CHECKED - BAK	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-52 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	545
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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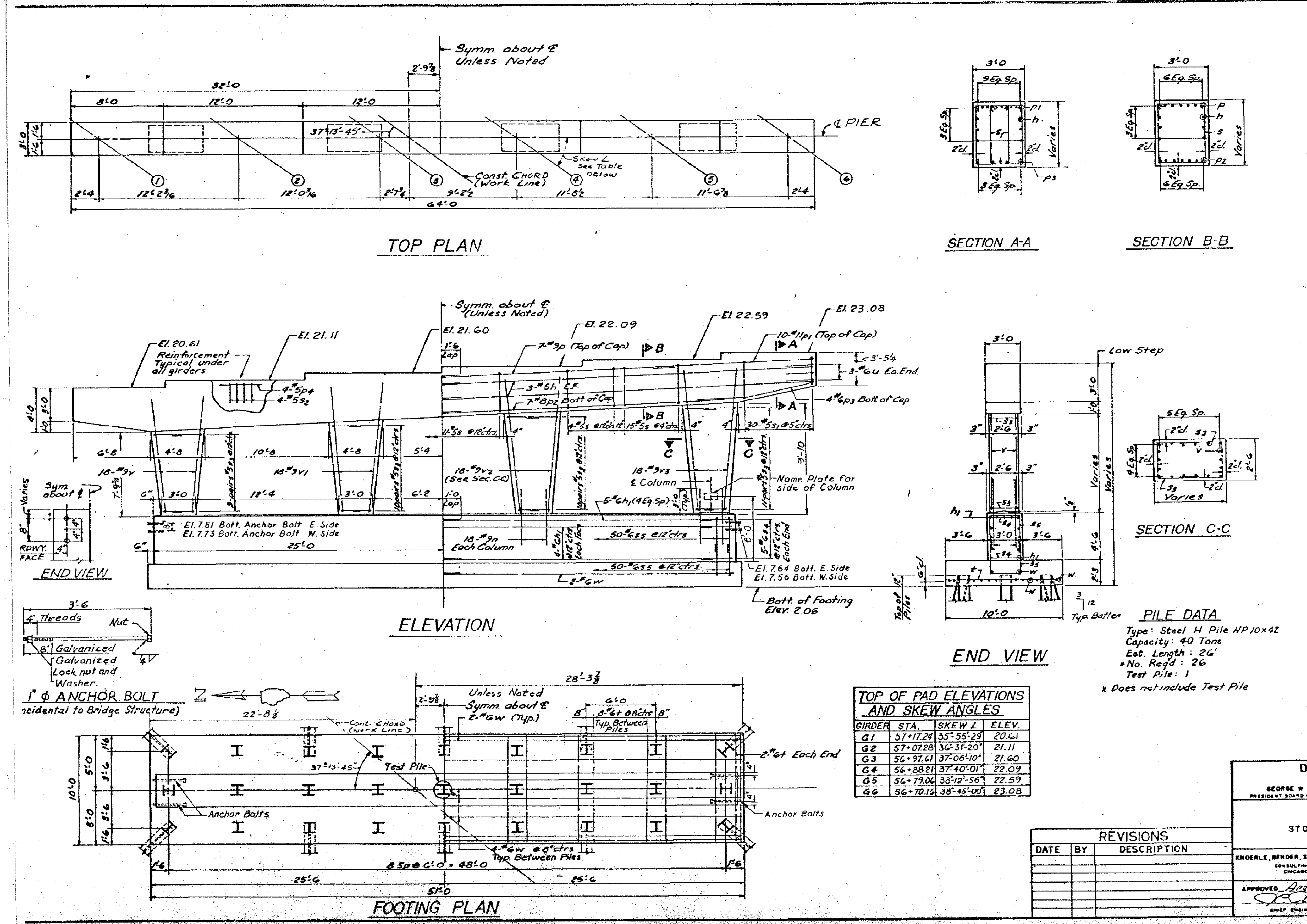


BILL OF MATERIAL

BAR	NO	SIZE	LENGTH	SHAPE
h	12	#5	33'-6	—
h1	26	#6	25'-7	—
n	72	#9	6'-0	—
p	14	#9	21'-6	—
p1	20	#11	13'-4	—
p2	14	#8	25'-6	—
p3	8	#6	10'-3	—
p4	24	#5	3'-0	—
s	49	#5	13'-7	□
** s1	60	#5	Varies	□
s2	24	#5	6'-8	□
s3	80	#5	7'-10	□
s4	10	#6	6'-2	□
s5	100	#6	9'-8	□
t	68	#6	9'-8	—
u	6	#6	5'-8	⊓
v	18	#9	11'-0	—
v1	18	#9	12'-0	—
v2	18	#9	12'-6	—
v3	18	#9	13'-0	—
w	28	#6	26'-0	—

** Varies 9'-11 to 11'-11

ITEM	UNIT	TOTAL
REINFORCEMENT BARS	LB.	15624
CLASS "X" CONCRETE	C.Y.	110.4
EXCAVATION	C.Y.	83.5
* STEEL PILES	LIN. FT.	676

TOP OF PAD ELEVATIONS AND SKEW ANGLES

GIRDER	STA.	SKEW ∠	ELEV.
G1	57+17.24	35°-55'-29"	20.61
G2	57+07.28	36°-31'-20"	21.11
G3	56+97.61	37°-06'-10"	21.60
G4	56+88.21	37°-40'-01"	22.09
G5	56+79.06	38°-12'-56"	22.59
G6	56+70.16	38°-45'-00"	23.08

PILE DATA

Type: Steel H Pile HP 10×42
Capacity: 40 Tons
Est. Length: 26'
*No. Reqd: 26
Test Pile: 1

* Does not include Test Pile

REVISIONS		
DATE	BY	DESCRIPTION

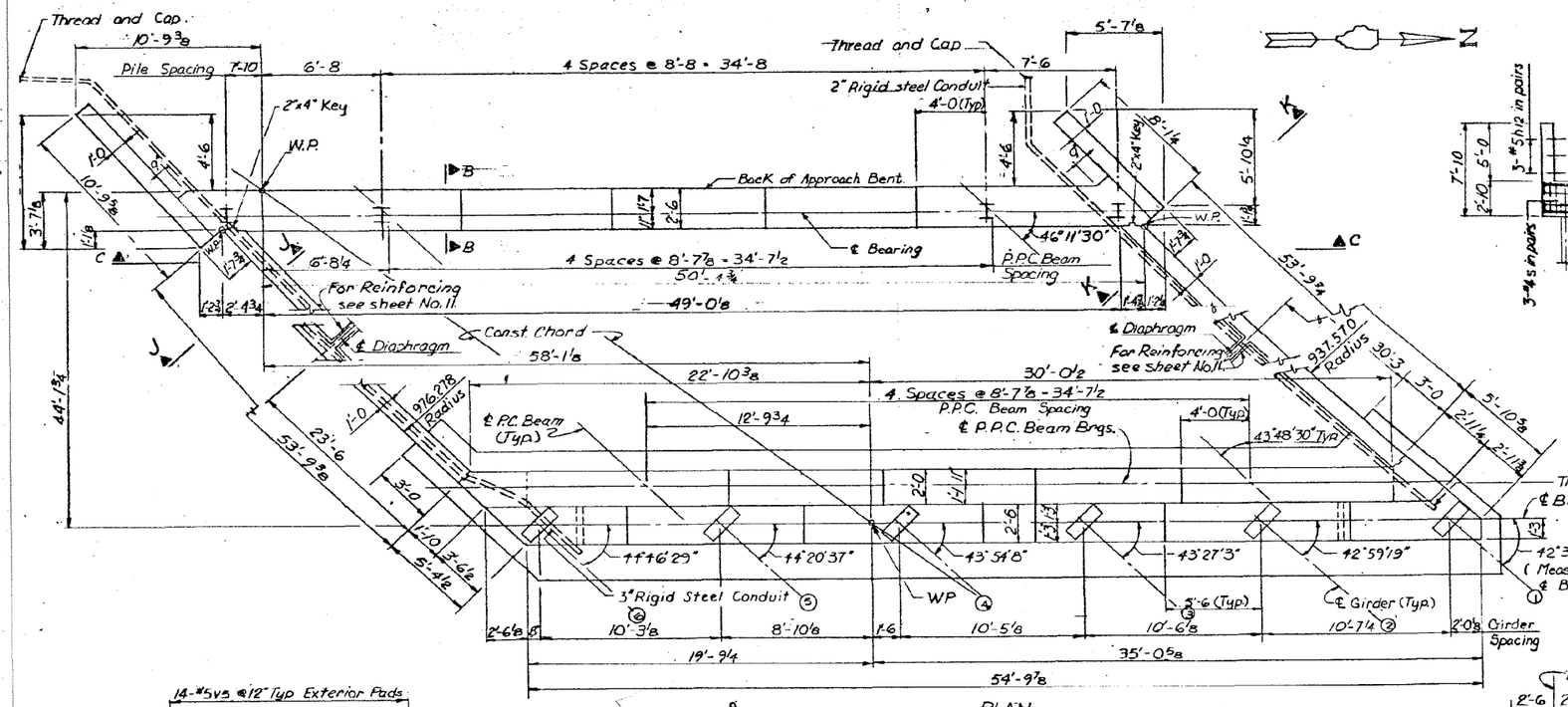
DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE, PRESIDENT BOARD OF COMMISSIONERS
SUPERINTENDENT OF HIGHWAYS

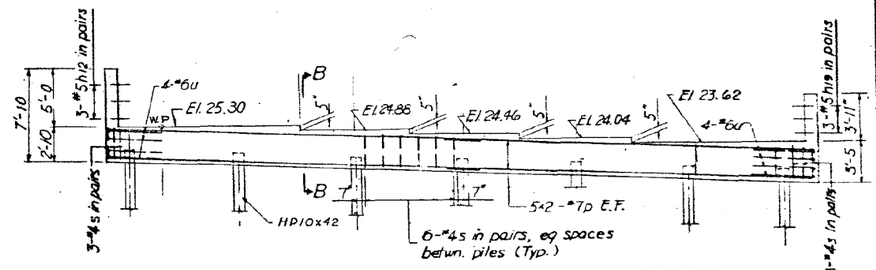
PIER DETAILS

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC, CONSULTING ENGINEERS, CHICAGO, ILLINOIS
PROJECT EBU 246 (76)
SCALE 1/4" = 1'-0
APPROVED
APPROVED April 4, 72
CHIEF ENGINEER

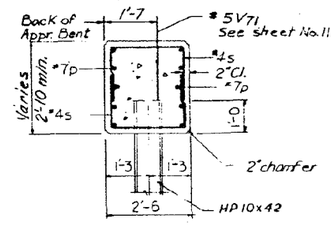
F.A. Route No.	COUNTY HWY Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	37	97	





ELEVATION C-C

PILE DATA
Type: Steel H Pile HP 10x42
Capacity: 46 Tons
No. Req'd: 7
Est. Length: 46'



SECTION B-B

TABLE OF ELEV.

Brg. Pad	Elev.
A	23.80
B	23.32
C	22.84
D	22.36
E	21.88
F	21.40
G	24.94
H	24.54
I	24.14
J	23.74
K	23.34

NOTES

For Footing Plan and Curtain Wall Detail see sheet No. 23.
For section G-G, H-H & F-F see sheet No. 24.
For reinforcement Detail and Bill of Material see sheet No. 24.
E.F. Indicates Each Face
N.F. Indicates Near Face
F.F. Indicates Far Face
Bars marked thus 2x5-#5 etc. indicate 2 lines of bars with 5 lengths per line.
For Pile Cap Encasement Detail see Sheet No. 39.
For Footing Layout plan see Sheet No. 8.

REVISIONS

DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE
PRESIDENT BOARD OF COMMISSIONERS
SUPERINTENDENT OF HIGHWAYS

ABUTMENT NO. 1 PLAN & ELEVATION

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246 (76)
SCALE
APPROVED W. A. Ehlinger

APPROVED Apr 4, 72
CHIEF ENGINEER

F.A. Route No	County Hwy. Route No	Sheet No	Total Sheets	Drawing No
122	174A	22	97	

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com

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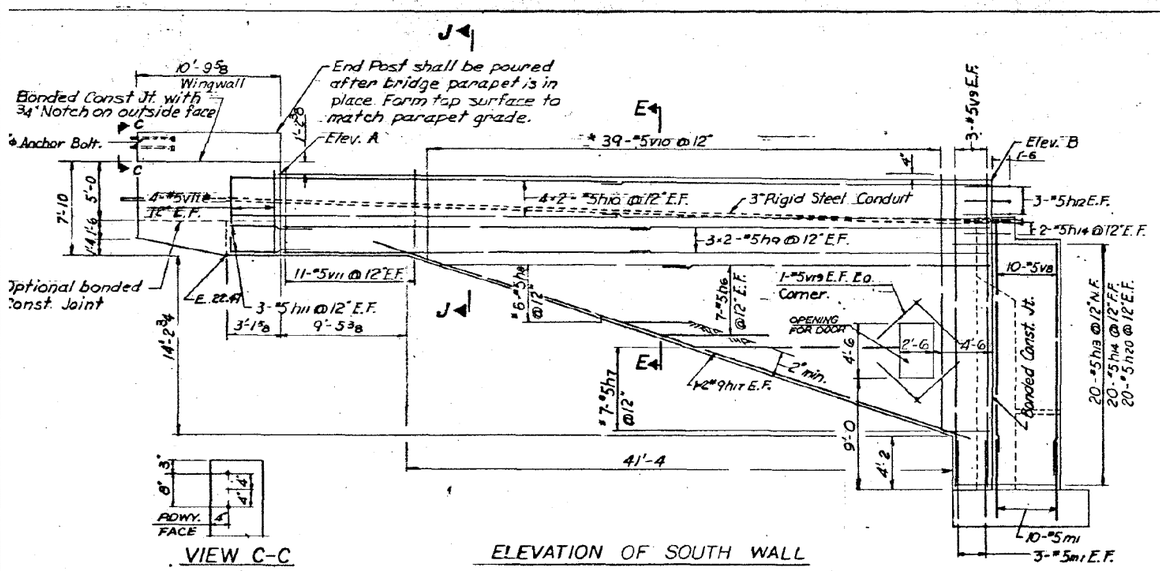
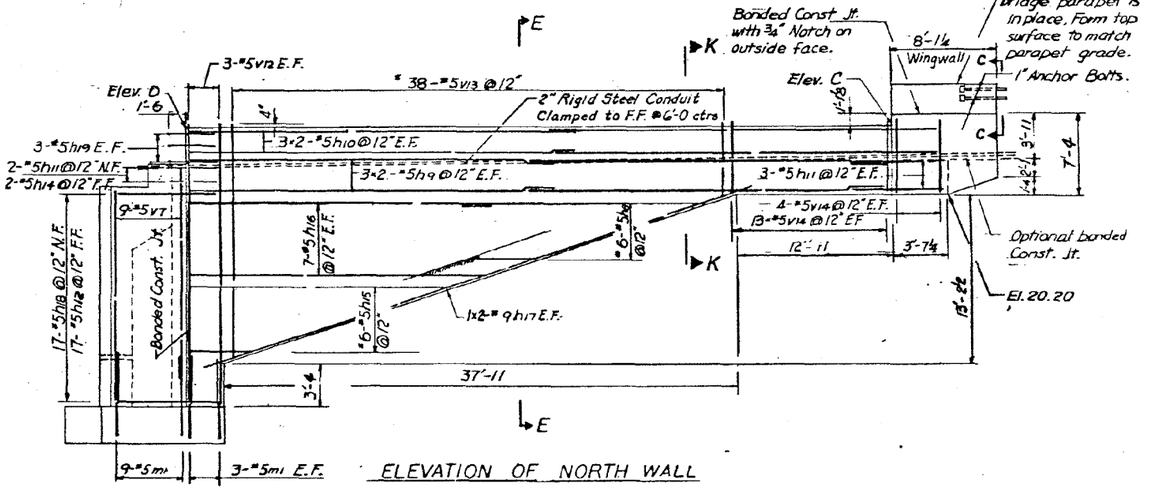
	CHECKED - BAK	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

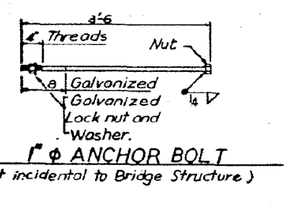
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-54 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	547
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



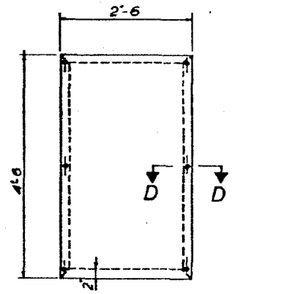




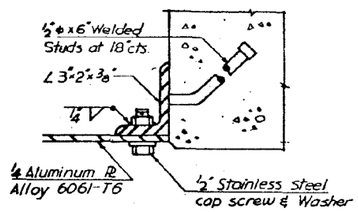
1" ϕ ANCHOR BOLT
(Cost incidental to Bridge Structure)

TOP OF CURTAIN WALL ELEVATION

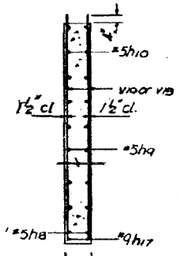
ELEV. A	ELEV. B	ELEV. C	ELEV. D
28.99	28.65	26.43	26.08



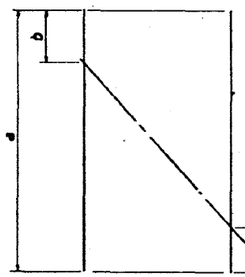
DOOR ELEVATION
COST OF DOOR AND FRAME ARE INCIDENTAL



SECTION D-D



SECTION E-E



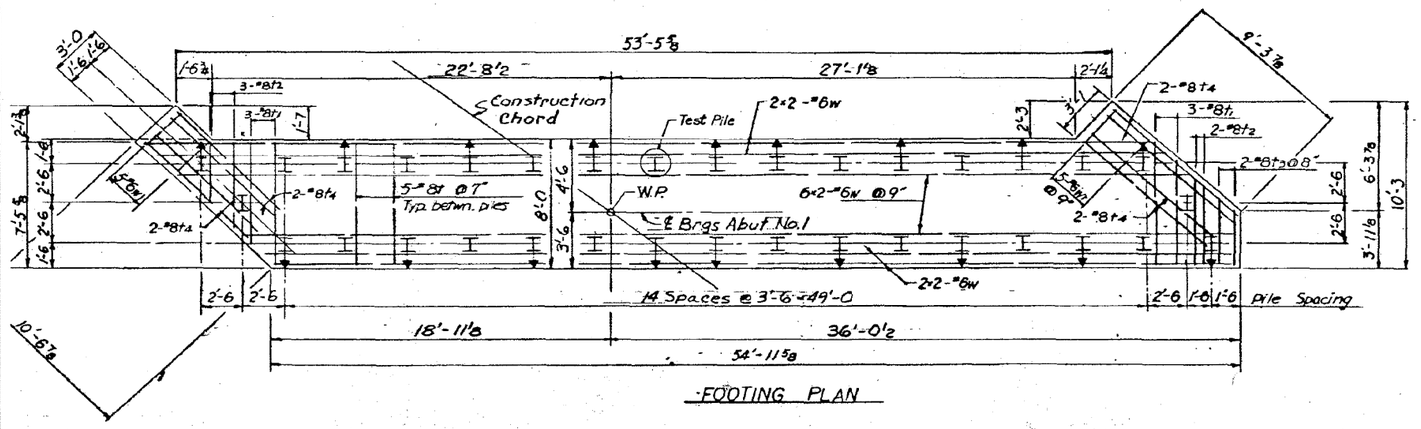
FIELD CUTTING DIAGRAM

BAR	a	b
h7	27'-0	5'-0
h8	22'-4	4'-1
h15	22'-2	4'-0
V10	27'-5	6'-4
V13	25'-4	5'-4

* Order h7, h8, h15, v10 & v13 bars full length Cut to fit as shown and use remainder of bars in other face.

NOTES

For Location of Walls see sheet No. 22.
For Sections J-J and K-K see sheet No. 24.
For Wingwall Details see sheet No. 24
Bar marked thus 1"=2-"9 etc. indicate 1 line of Bars with 2 bars per line.
For Footing Layout Plan see Sheet No 8.



FOOTING PLAN

PILE DATA
Type : Steel H Piles HP 10x42
Capacity : 40 Tons
Est. Length : 25'
* No. Req'd : 33
Test Pile : 1

* Does not include Test Pile.

REVISIONS		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE
PRESIDENT, BOARD OF COMMISSIONERS
SUPERINTENDENT OF HIGHWAYS

ABUTMENT NO. 1 DETAILS
STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246 (76)
SCALE -
APPROVED H. C. Ottesen

APPROVED April 4, 74
CHIEF ENGINEER

F.A. Route No.	County Hwy Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	23	97	

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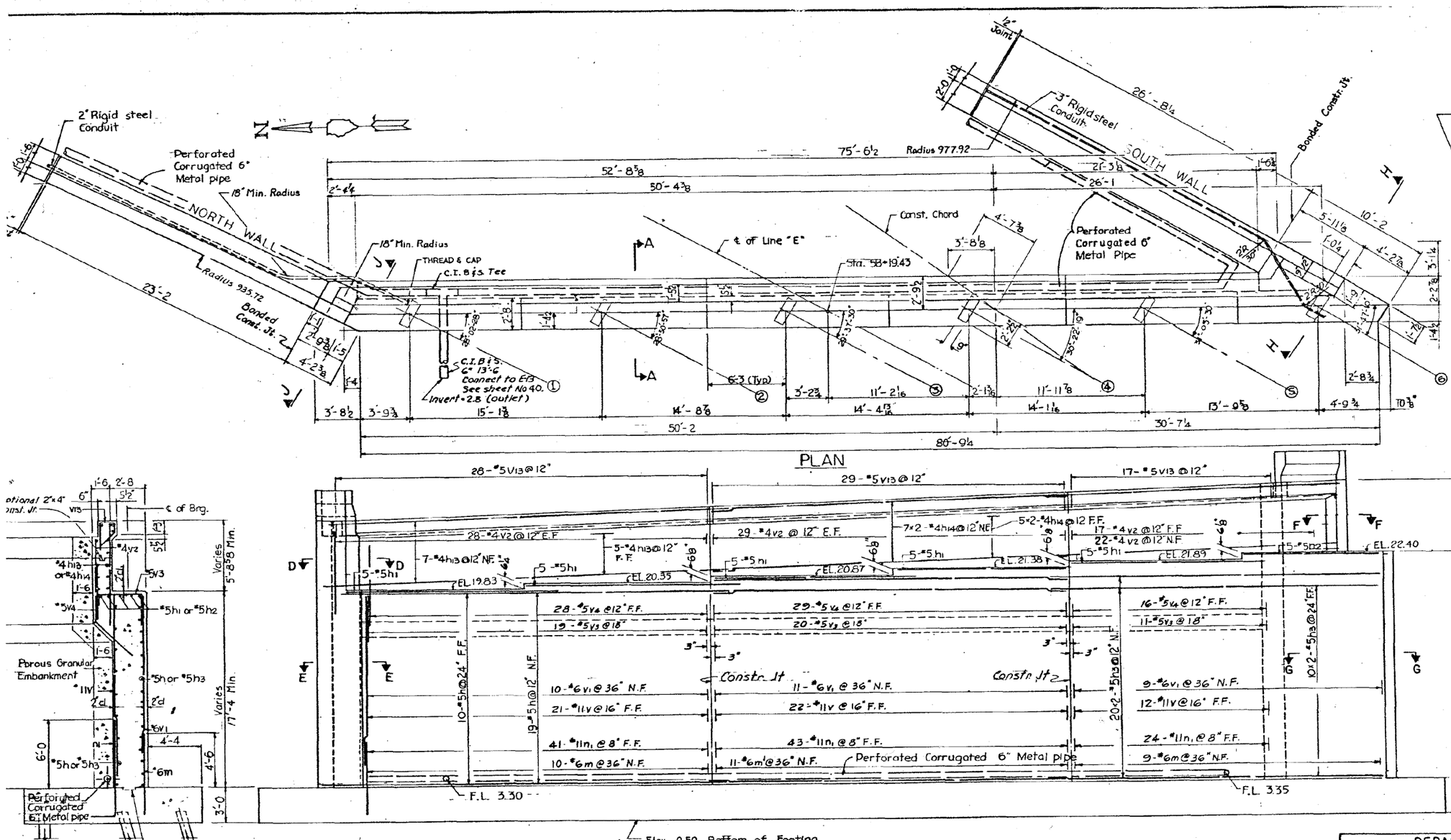
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-55 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	548
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



NOTES:
All Corrugated Metal Pipe elevations shown are invert elevations.
6"ϕ Perforated Corrugated metal pipe shall conform to Sec. 710.01(c) of the Standard Specifications.
All risers to be corrugated metal pipe 6" Diameter, not perforated.

Installation and all fittings elbows, perforated end caps, risers, etc., to be included for payment in the Contract Bid Price per lineal foot for Perforated Corrugated Metal Pipe, 6 INCH DIA.

NOTES

For Sections E-E, F-F, D-D & G-G see sheet No. 27
For Details of the North & South Wall see sheet No. 27
N.F. indicates Near Face
F.F. indicates Far Face
Bars marked thus 7 × 3-#4 etc. indicate 7 lines of bars with 3 lengths per line.

REVISIONS		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE, PRESIDENT BOARD OF COMMISSIONERS — S. PERINCHIEF, SUPERINTENDENT OF HIGHWAYS

ABUTMENT NO. 2 PLAN & ELEVATION

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246 (76)
SCALE
APPROVED E. A. Ohling

APPROVED April 4, 77
CHIEF ENGINEER

F.A. Route No	County Hwy Route No	Sheet No	Total Sheets	Drawing No
122	174A	25	27	

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PLOT DATE = 03/29/2013	CHECKED -	REVISED -

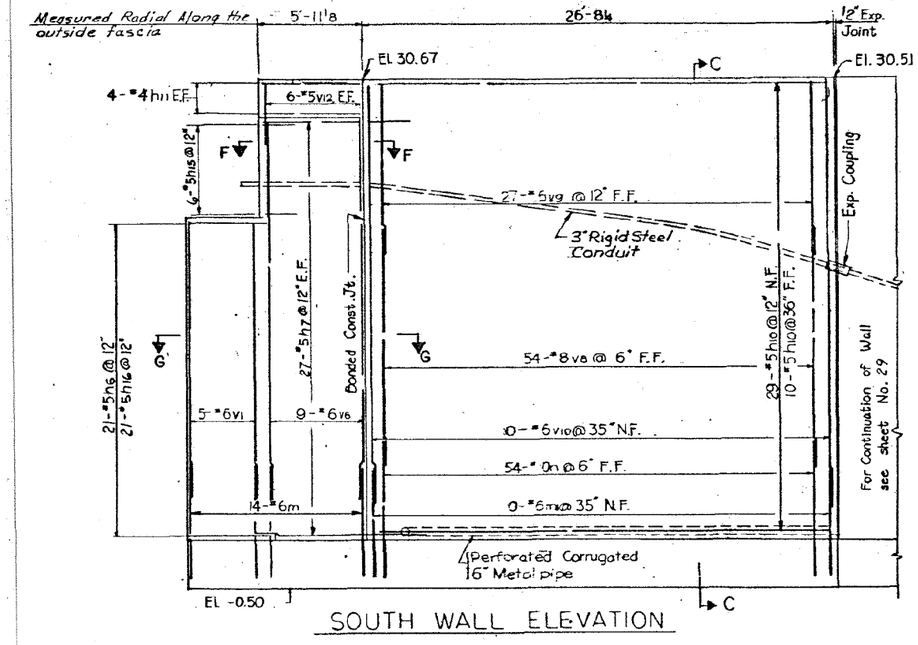
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-56 OF S-63 SHEETS

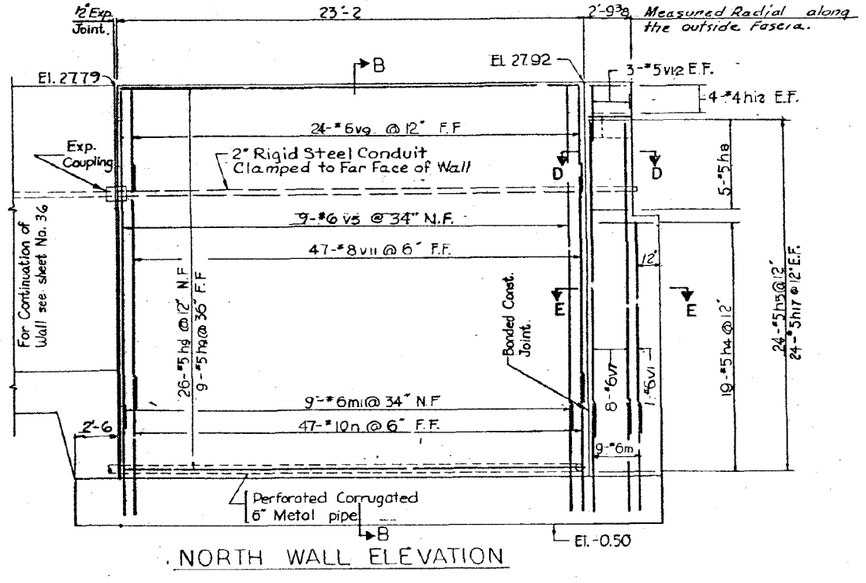
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	549
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

E-72

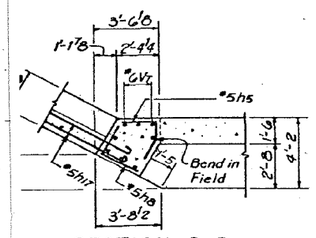
S:\1072\05_CADD\Structural\SN 016247\1CADD Sheets\016247I-60J12-056-FY12.dgn 3/29/2013 2:31:20 PM



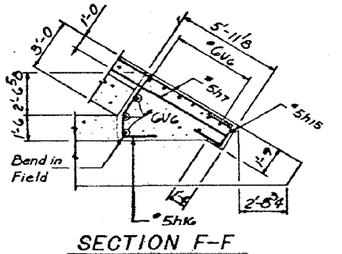
SOUTH WALL ELEVATION



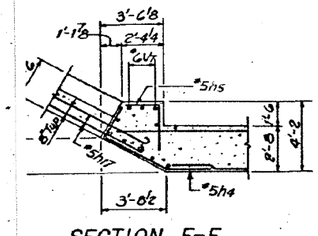
NORTH WALL ELEVATION



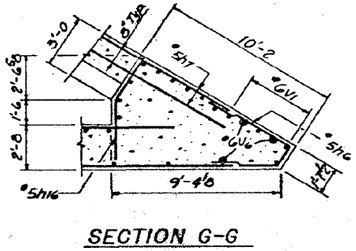
SECTION D-D



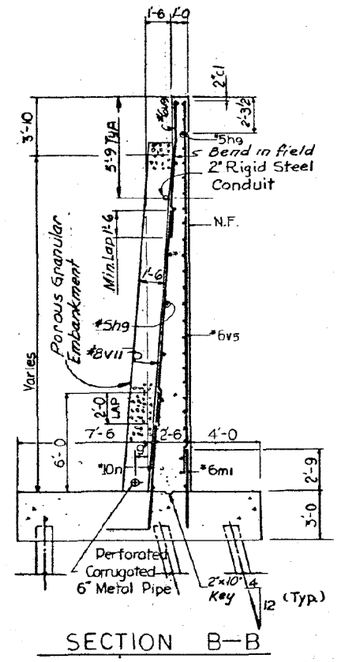
SECTION F-F



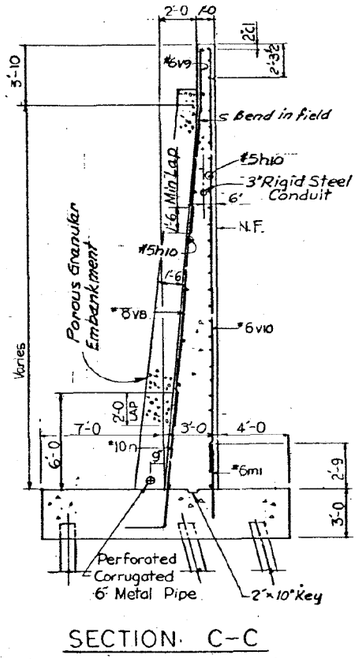
SECTION E-E



SECTION G-G



SECTION B-B



SECTION C-C

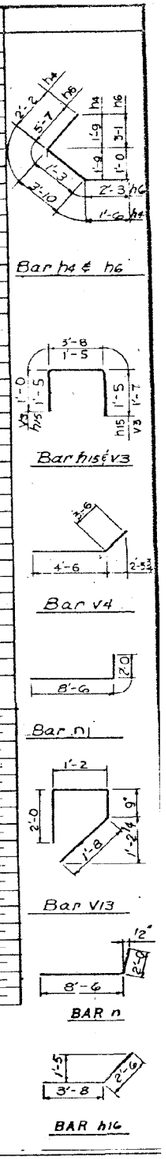
NOTES

N.F. Indicates Near Face.
F.F. Indicates For Face.
E.F. Indicates Each Face.
Bars marked thus 2-#3-#5 etc Indicate 2 lines of bars with 3 lengths per line.
For location of North and South Wall see sheet No. 25.
Clearance from face of concrete to face of steel shall be 2" unless otherwise shown.

ITEM	UNIT	TOTAL
REINFORCEMENT BARS	LB	53928
CLASS X CONCRETE	C. Y.	509.7
EXCAVATION	C. Y.	292
POROUS GRANULAR EMBANKMENT	C. Y.	156
PROTECTIVE COAT	S. Y	22
STEEL PILES	LIN. FT.	2150
TEST PILES	EA	1
CAST IRON PIPE	LIN. FT.	14

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
h	29	#5	31'-0	
h1	25	#5	15'-0	
h2	5	#5	10'-0	
h3	60	#5	27'-6	
h4	19	#5	7'-6	
h5	24	#5	5'-6	
h6	21	#5	9'-1	
h7	54	#5	8'-0	
h8	5	#5	4'-6	
h9	35	#5	22'-10	
h10	39	#5	26'-4	
h11	8	#4	5'-7	
h12	8	#4	2'-5	
h13	12	#4	31'-0	
h14	24	#4	24'-9	
h15	6	#5	4'-3	
h16	21	#5	6'-2	
h17	48	#5	3'-9	
m	53	#6	7'-0	
m1	19	#6	5'-3	
n	101	#10	10'-6	
n1	108	#11	10'-6	
v	55	#11	17'-0	
v1	36	#6	17'-0	
v2	153	#4	6'-0	
v3	50	#5	6'-3	
v4	73	#5	8'-0	
v5	9	#6	24'-0	
v6	9	#6	22'-9	
v7	8	#6	22'-0	
v8	54	#8	11'-3	
v9	51	#6	14'-6	
v10	10	#6	26'-9	
v11	47	#8	8'-6	
v12	18	#5	3'-9	
v13	74	#5	5'-7	
t	39	#8	7'-0	
t1	31	#8	11'-9	
t2	16	#8	17'-6	
t3	215	#8	13'-6	
t4	15	#8	Varies	
t5	6	#9	Varies	
t6	44	#9	7'-0	
t7	60	#9	13'-6	
w	9	#6	21'-9	
w1	4	#6	27'-0	
w2	8	#6	16'-6	
w3	4	#6	6'-9	
w4	6	#7	20'-6	
w5	5	#7	25'-0	
w6	8	#7	14'-6	
w7	3	#7	5'-0	
w8	36	#7	30'-0	
w9	6	#7	28'-6	
w10	51	#6	30'-0	
w11	16	#6	31'-0	
w12	17	#7	31'-0	



REVISIONS		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE
PRESIDENT BOARD OF COMMISSIONERS
SUPERINTENDENT OF HIGHWAYS

ABUTMENT NO. 2 DETAILS
STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 256(76)
SCALE
APPROVED H. A. Ohlinger

APPROVED April 4, 72
CHIEF ENGINEER

F.A. Route No	County Hwy Route No	Sheet No	Total Sheets	Drawing No
122	174A	27	33	

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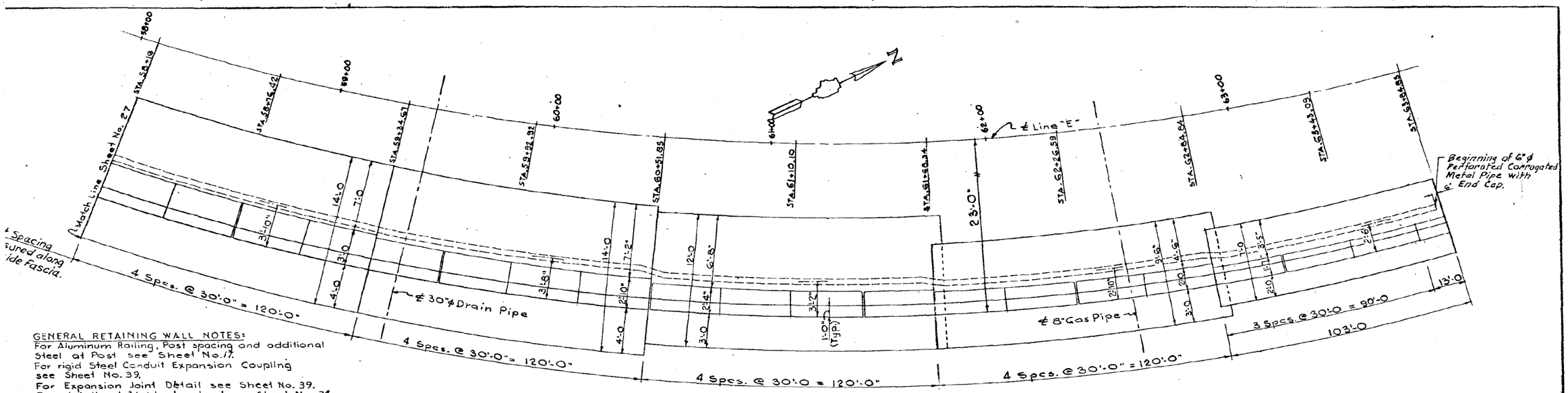
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-57 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	550
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



PLAN

GENERAL RETAINING WALL NOTES:
For Aluminum Railing, Post spacing and additional steel at Post see Sheet No. 17.
For rigid Steel Conduit Expansion Coupling see Sheet No. 39.
For Expansion Joint Detail see Sheet No. 39.
For detail at light standard see Sheet No. 34
N.F. indicates Near Face
F.F. indicates Far Face
For location of Retaining Wall see General Plan sheet No. 6.
For additional drainage data see sheet No. 40.
For details of the Retaining Wall see sheets 29 thru 34.
For Corrugated Perforated Metal Pipe Notes see Sheet No. 25

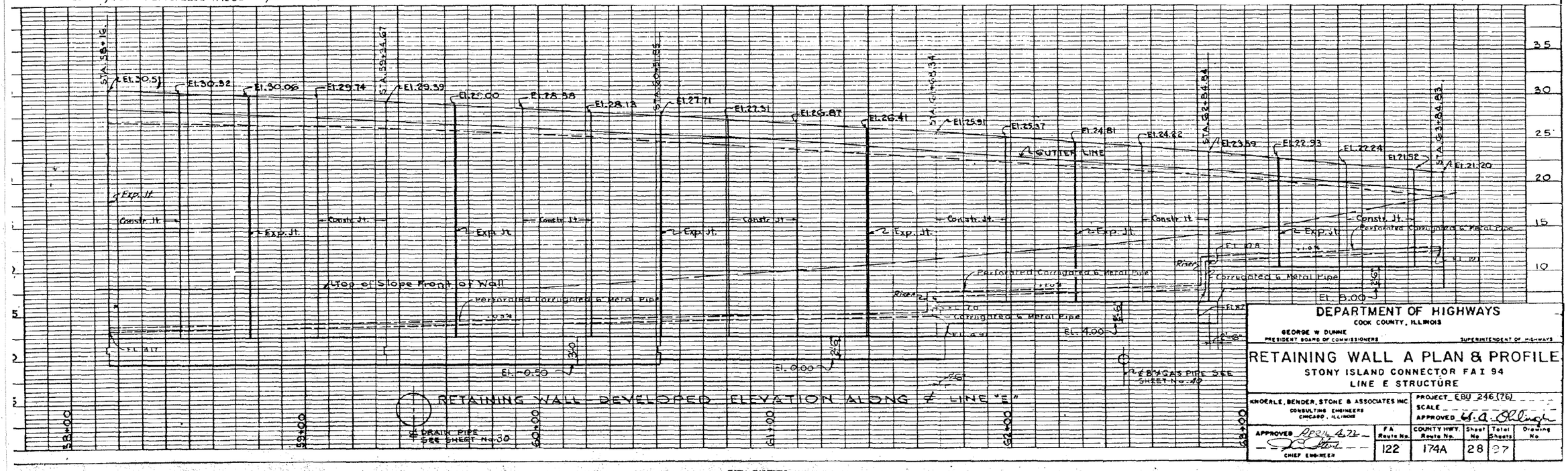


PLATE 1 — PLAN PROFILE B. P. R. STANDARD

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE
PRESIDENT BOARD OF COMMISSIONERS — SUPERINTENDENT OF HIGHWAYS

RETAINING WALL A PLAN & PROFILE
STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246(76)
SCALE
APPROVED

APPROVED — CHIEF ENGINEER

F.A. Route No.	COUNTY HWY. Route No.	Sheet No	Total Sheets	Drawing No
122	174A	28	27	

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CONSULTING ENGINEERS
Chicago, Illinois
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	CHECKED - BAK	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-58 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	551
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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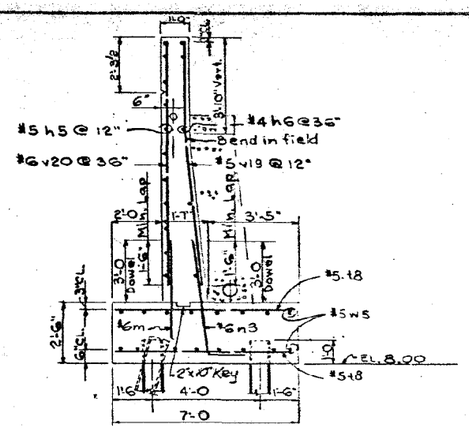
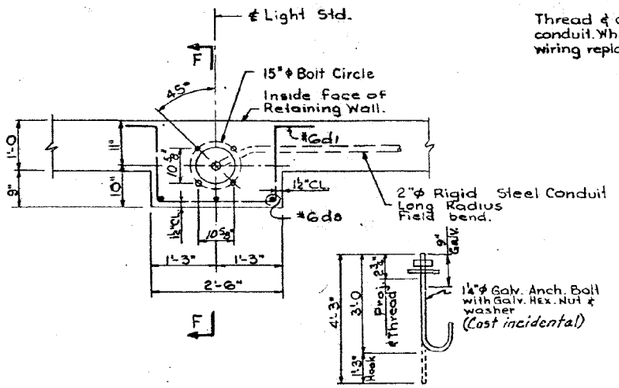
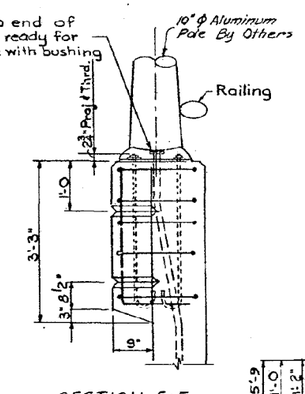


SECTION A-A

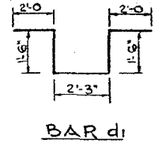


PLAN

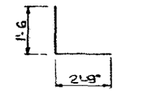
ANCHOR BOLT DETAIL



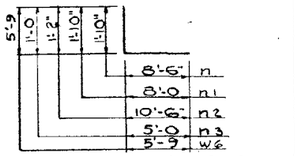
SECTION F-F



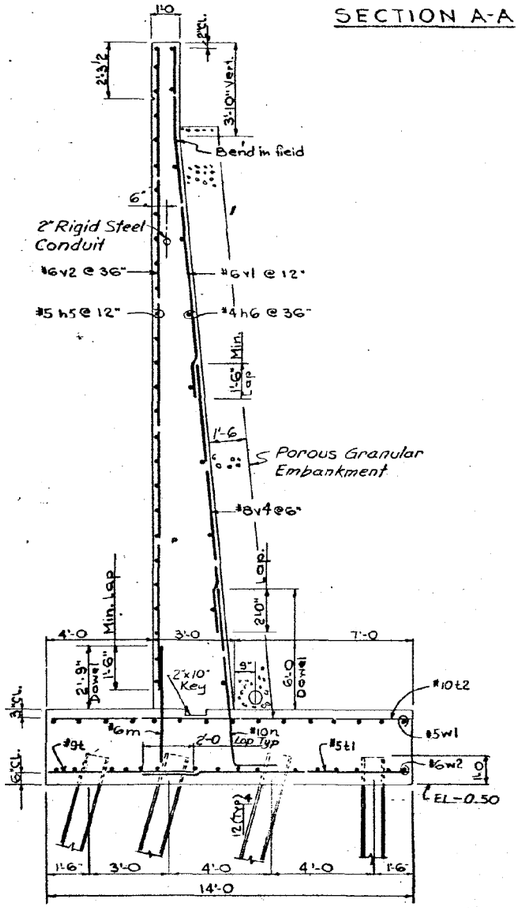
BAR d1



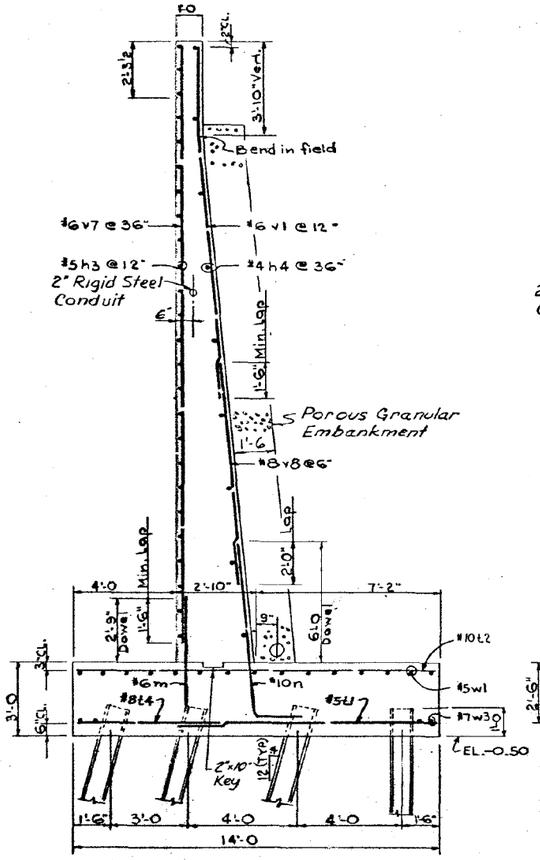
BAR d8



BARS n, n1, n2, n3 & W6



SECTION E-E



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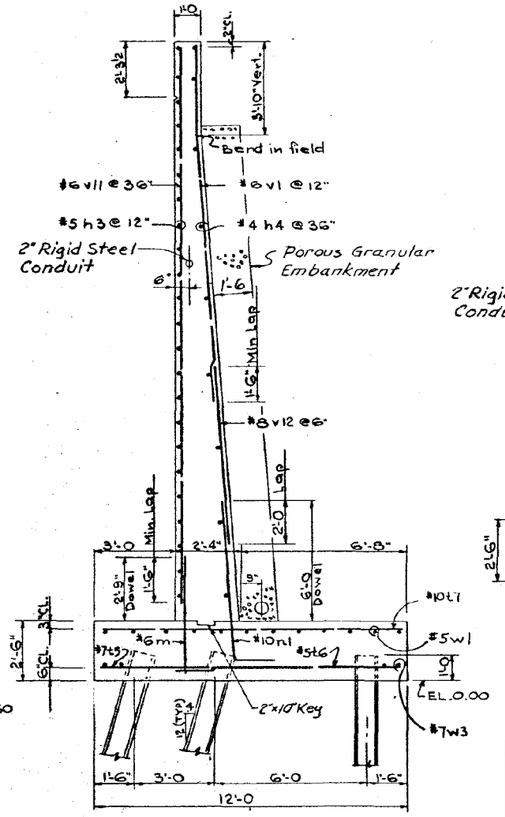
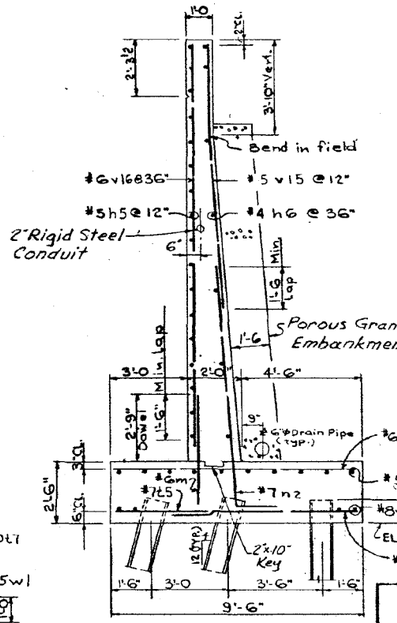


SECTION C-C



SECTION B-B

* Note: *Does not include Test Piles*

BILL OF MATERIAL

BAR	SIZE	No. Req'd	Length	Shape
d1	#6	15	9'-3	
d8	#6	9	4'-3	
h1	#5	28	31'-3	
h2	#4	10	31'-3	
h3	#5	270	29'-6	
h4	#4	101	29'-6	
h5	#5	126	33'-0	
h6	#4	48	33'-0	
h7	#5	11	12'-6	
h8	#4	4	12'-6	
m	#6	214	4'-9	
n	#10	480	10'-4	L
n1	#10	240	9'-10	L
n2	#7	240	11'-8	L
n3	#6	103	6'-0	L
t	#9	134	6'-0	
t1	#5	165	10'-0	
t2	#10	305	13'-6	
t3	#7	36	13'-6	
t4	#8	123	5'-6	
t5	#7	260	4'-3	
t6	#5	104	9'-0	
t7	#10	164	11'-6	
t8	#5	319	6'-6	
t9	#6	184	3'-0	
v1	#6	360	14'-6	
v2	#6	44	26'-6	
v3	#8	120	13'-6	
v4	#8	120	13'-0	
v5	#6	22	25'-6	
v6	#8	120	10'-9	
v7	#6	22	24'-9	
v8	#8	120	10'-0	
v9	#6	22	23'-10	
v10	#8	120	9'-1	
v11	#6	22	23'-0	
v12	#8	120	8'-3	
v13	#6	22	18'-0	
v14	#5	60	12'-6	
v15	#5	60	12'-0	
v16	#6	22	17'-0	
v17	#5	60	11'-6	
v18	#6	22	11'-6	
v19	#5	43	10'-0	
v20	#6	16	10'-0	
w	#6	151	8'-0	
w1	#5	212	31'-6	
w2	#6	72	32'-0	
w3	#7	132	32'-6	
w4	#8	48	32'-6	
w5	#5	48	35'-3	
w6	#6	34	11'-6	

ITEM	UNIT	QUANTITY
CLASS X CONCRETE	C.Y.	1455.7
REINFORCEMENT BARS	LB.	163623
POROUS GRANULAR EMBANK	C.Y.	602
EXCAVATION	C.Y.	3329
STEEL H PILES	LIN.FT.	7194
TEST PILES	EA.	5

REVISIONS

DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS — SUPERINTENDENT OF HIGHWAYS

RETAINING WALL A DETAILS

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246(76)
SCALE
APPROVED

APPROVED April 4, 74
CHIEF ENGINEER

F.A. Route No.	County Hwy. Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	34	37	

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CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com

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PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-59 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	552
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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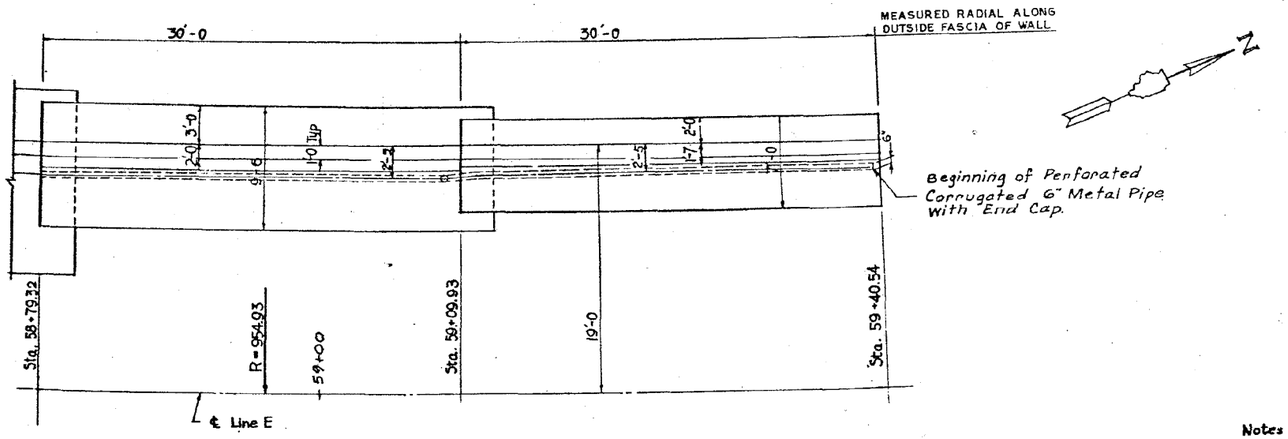
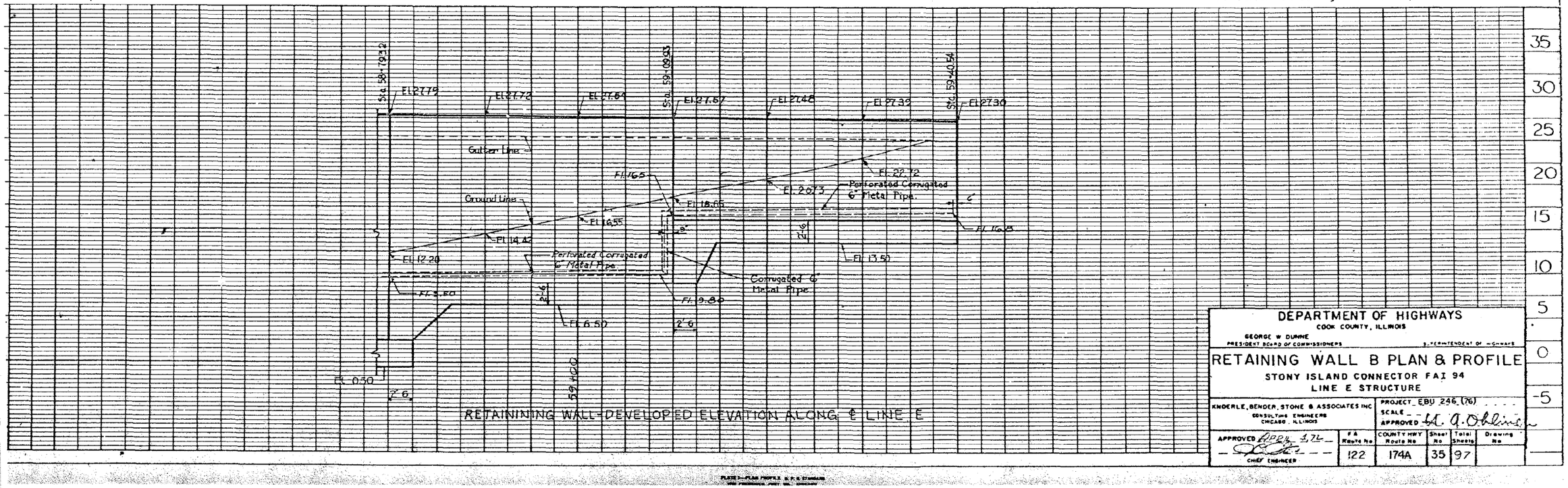


Notes

For location of Retaining Wall
See General Plan Sheet No. 6.
For additional Drainage Detail
See Drainage & Utilities Sheet No. 40.
For details of retaining wall
See Sheet No. 36.
For Aluminum Railing, Post spacing and additional steel at Post see sheet No. 17.
For Construction Joint Detail see sheet No. 39,
For Perforated Corrugated Metal Pipe Notes see Sheet No. 25.



DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W DUNNE
PRESIDENT BOARD OF COMMISSIONERS

SUPERINTENDENT OF HIGHWAYS

RETAINING WALL B PLAN & PROFILE

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 246 (76)
SCALE
APPROVED

APPROVED Apr 4, 72
CHIEF ENGINEER

F.A. Route No	County Hwy Route No	Sheet No	Total Sheets	Drawing No
122	174A	35	97	

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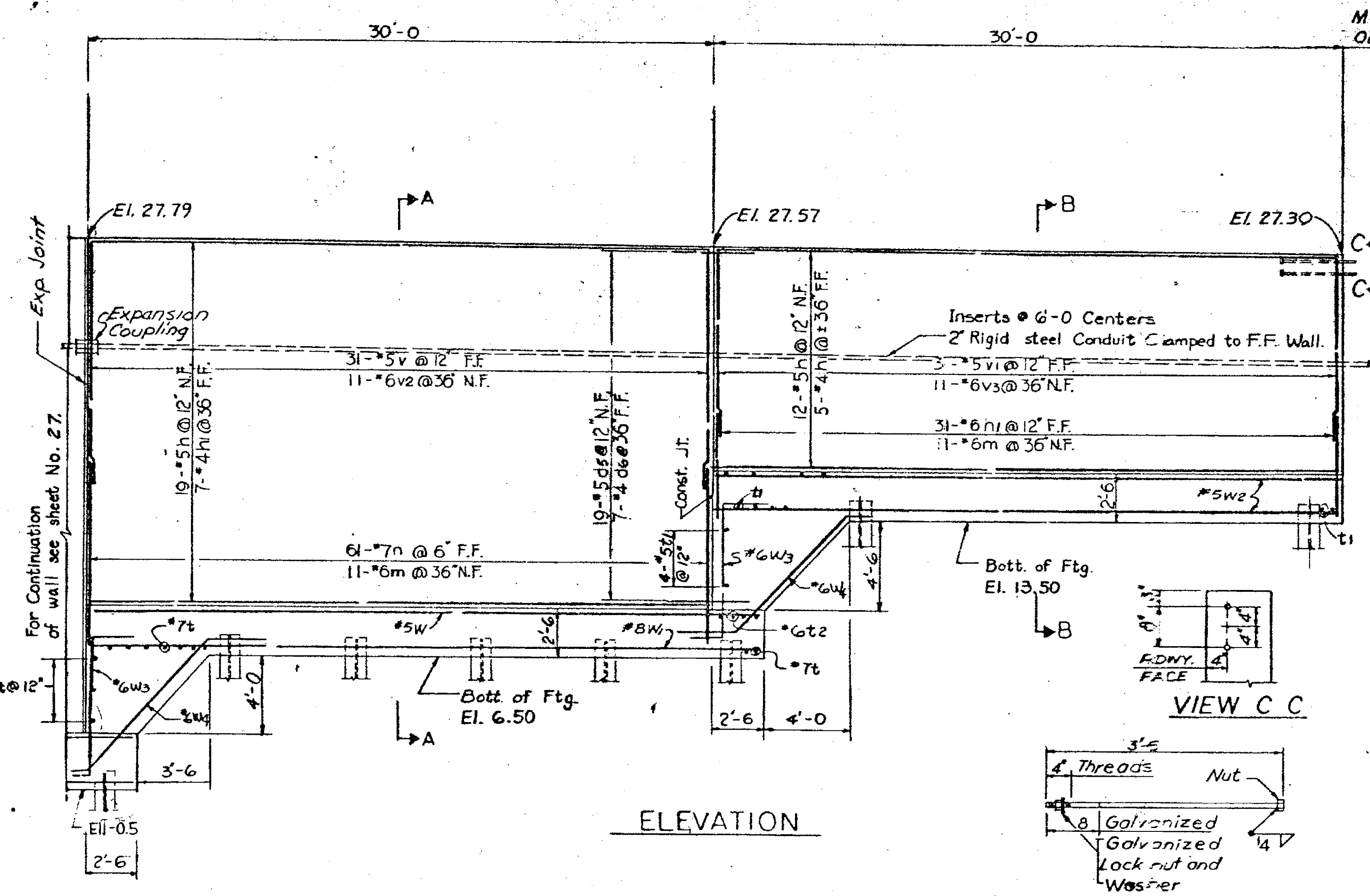
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-60 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	553
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

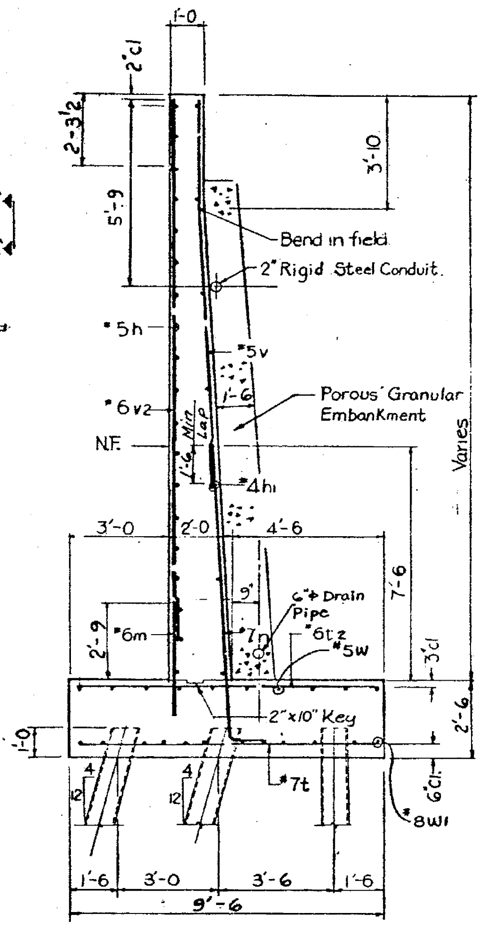


ELEVATION

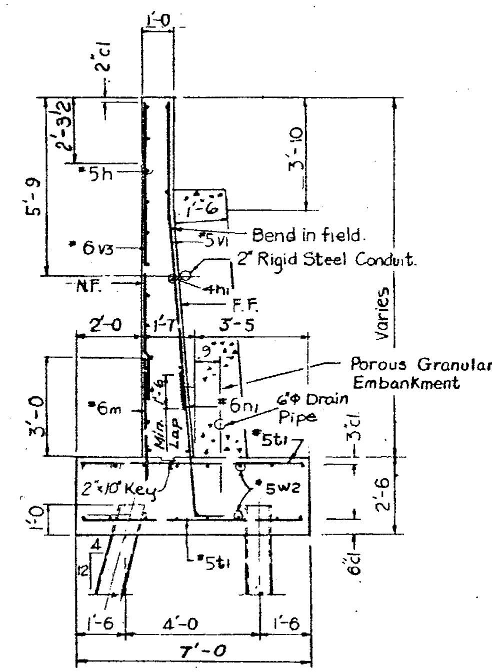
VIEW C C

1" ϕ ANCHOR BOLT

(Cost incidental to Bridge Structure)



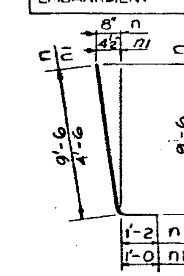
SECTION A-A



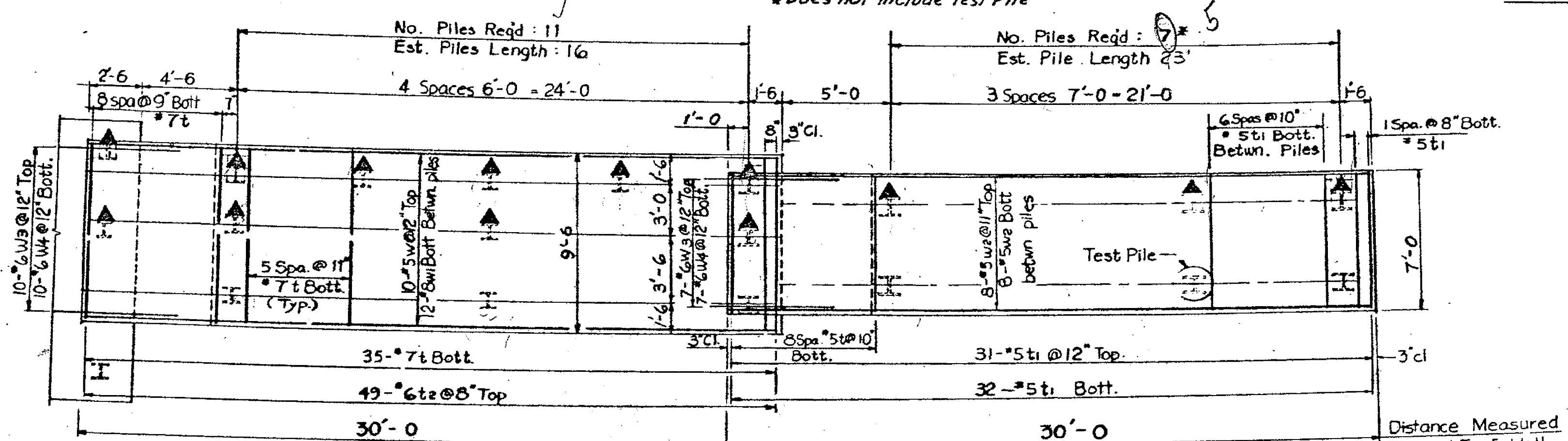
SECTION B-B

BILL OF MATERIAL				
BAR	NO.	SIZE	LENGTH	SHAPE
d5	19	#5	3'-6	——
d6	7	#4	2'-6	——
h	31	#5	29'-8	——
h1	12	#4	29'-8	——
m	22	#6	4'-6	——
n	61	#7	10'-8	——┘
n1	31	#6	5'-6	——┘
t	38	#7	9'-0	——
t1	67	#5	6'-6	——
t2	49	#6	9'-0	——
v	31	#5	12'-8	——
v1	31	#5	11'-0	——
v2	11	#6	17'-6	——
v3	11	#6	9'-9	——
w	10	#5	32'-0	——
w1	12	#8	32'-0	——
w2	16	#5	29'-6	——
w3	17	#6	10'-6	└——┐
w4	17	#6	13'-0	⌐——┘

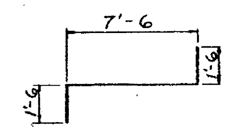
ITEM	UNIT	TOTAL
REINFORCEMENT BAR	LB.	8496
CLASS X CONCRETE	CU. YD.	101.0
PROTECTIVE COAT	SQ. YD.	16.7
TEST PILE	EA.	1
STEEL PILES	LIN. FT.	337
POROUS GRANULAR EMBANKMENT	CU. YD.	41



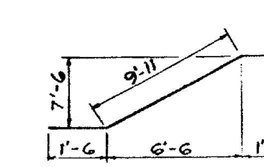
BAR n & n1



FOOTING PLAN



BAR W3



BAR W4

NOTES

For Aluminum Railing Post spacing and additional Steel @ Posts see sheet No. 17.

N.F. indicates Near Face

F.F. Indicates Far Face

▲ Indicates direction of battered Piles.

PILE DATA

Type : Steel H Pile HP 10 x 42

Capacity : 50 Tons

Est. Length : See Plan

REVISIONS		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS

COOK COUNTY, ILLINOIS

GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS — SUPERINTENDENT OF HIGHWAYS

RETAINING WALL B DETAILS

STONY ISLAND CONNECTOR FAI 94

LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC. CONSULTING ENGINEERS CHICAGO ILLINOIS

PROJECT EBU 246 (76)

SCALE

APPROVED

APPROVED April 4 72 — CHIEF ENGINEER

F.A. Route No.	County Hwy Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	36	97	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

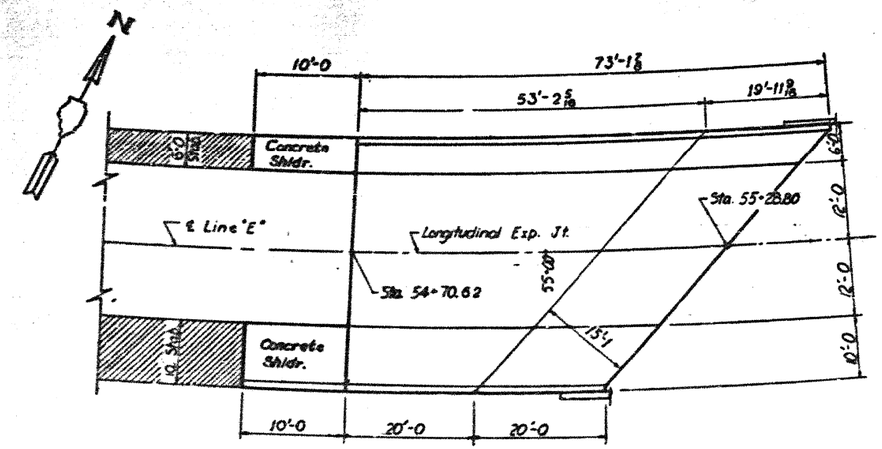
EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471

SHEET NO. S-61 OF S-63 SHEETS

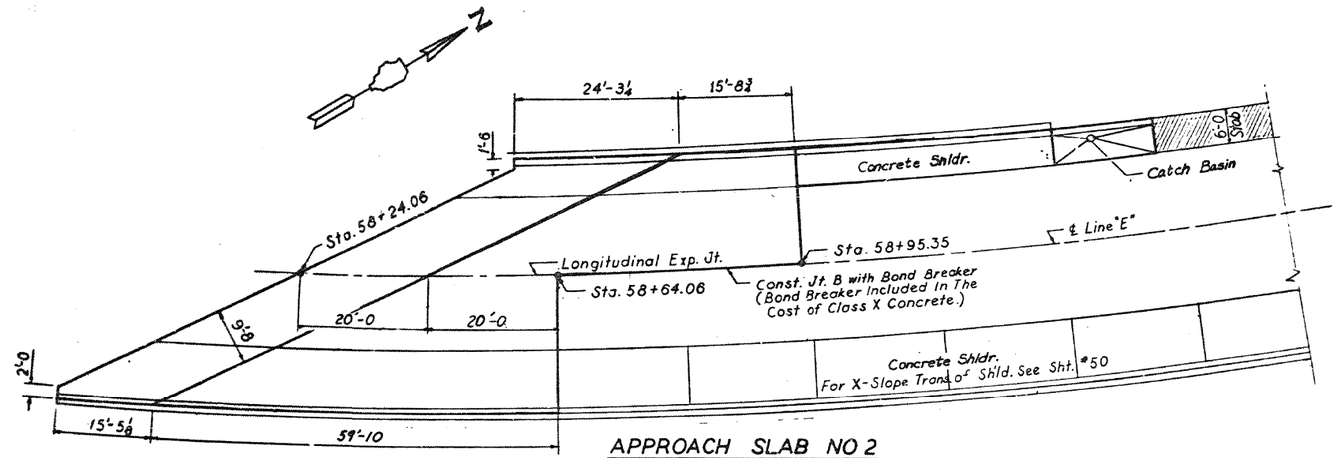
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	554

CONTRACT NO. 60J12

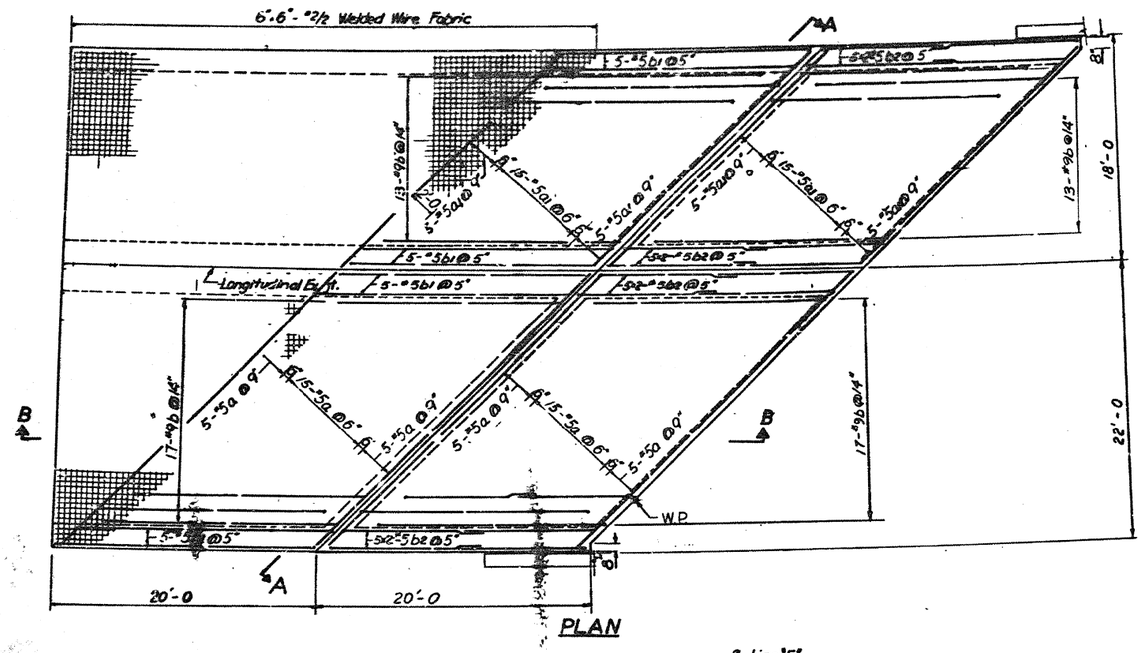
ILLINOIS FED. AID PROJECT



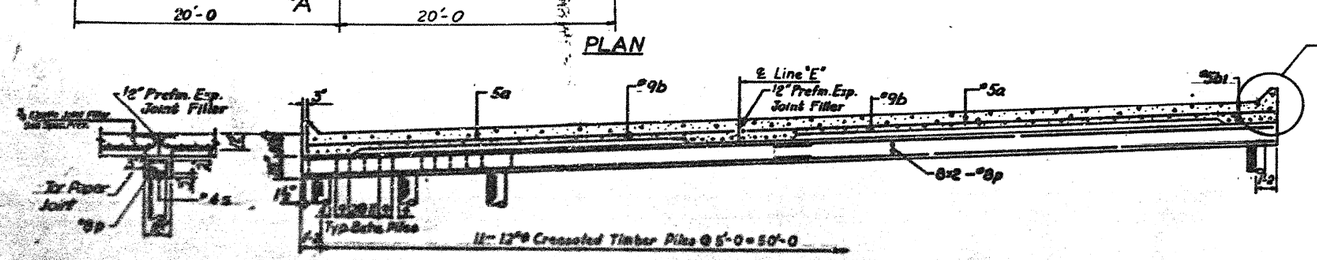
APPROACH SLAB NO 1



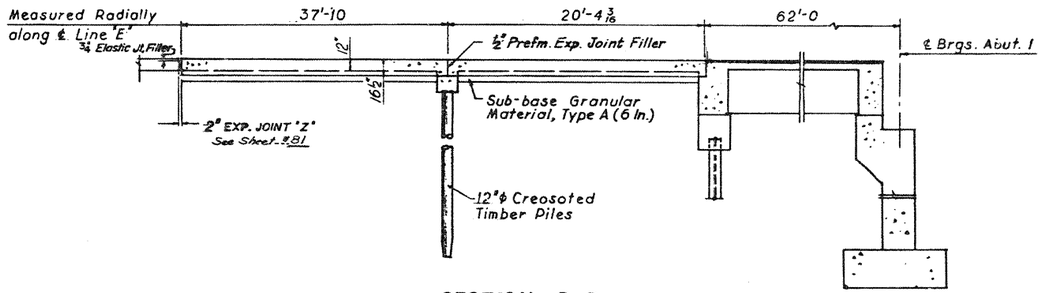
APPROACH SLAB NO 2



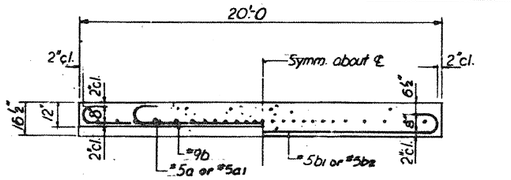
PLAN



SECTION A A

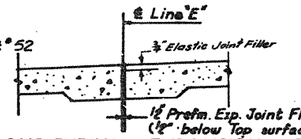


SECTION B-B



LONGITUDINAL SECTION THRU CENTER OF SLAB

LONGITUDINAL SECTION THRU THICKENED EDGE OF SLAB



LONGITUDINAL EXPANSION JOINT

NOTES

For Approach Slab No. 2 details see Sheet 52.
The Bituminus Preformed Joint Filler shall be included in the contract unit price for Portland Cement Concrete Pavement (16½"-12"-16½").

APPROACH SLAB NO. 1 QUANTITIES

ITEM	UNIT	TOTAL
PORTLAND CEMENT CONCRETE PAVEMENT 16½"-12"-16½"	S. Y.	251.5
CLASS X CONCRETE	C. Y.	3.6
REINFORCEMENT BARS	LB.	9163
SUB-BASE GRANULAR MATERIAL TYPE A (6 IN.)	S. Y.	252
PROTECTIVE COAT	S.Y.	260

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE
PRESIDENT BOARD OF COMMISSIONERS

APPROACH SLAB DETAILS

STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KINDERLE, BENDER, STONE & ASSOCIATES INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EDU 246 (76)
SCALE
APPROVED

APPROVED
CHIEF ENGINEER

F.A. Route No.	COUNTY HWY. Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	51	97	

REVISIONS

DATE	BY	DESCRIPTION

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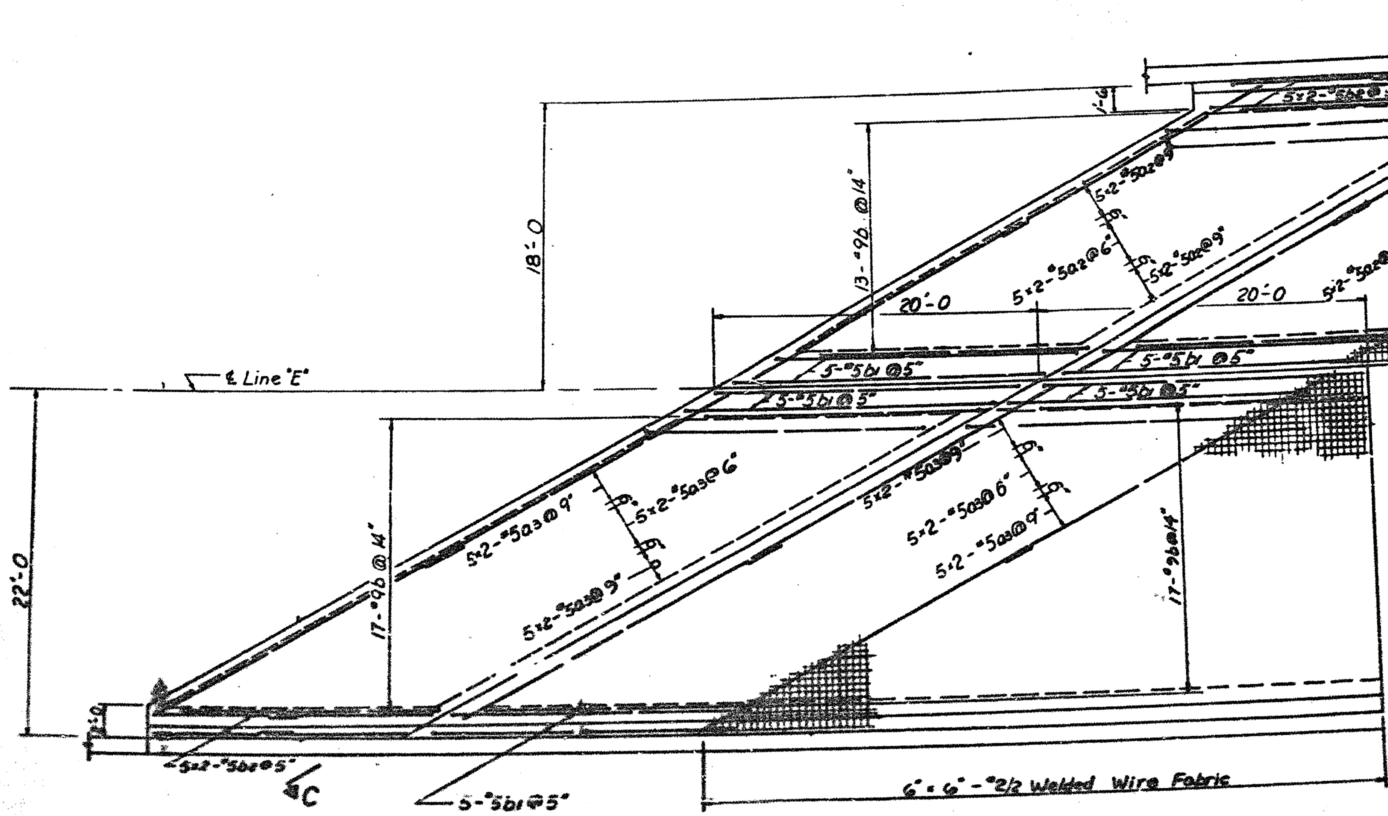
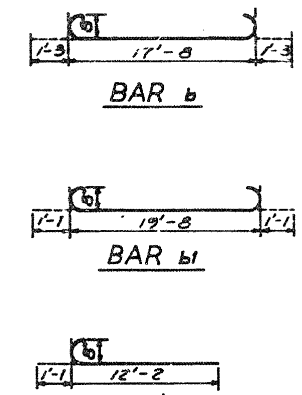
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

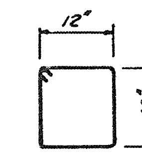
EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016-2471
SHEET NO. S-62 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	555
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



PLAN - APPROACH SLAB NO. 2





BAR S

*BILL OF MATERIAL				
BAR	NO.	SIZE	LENGTH	SHAPE
a	50	#5	28'-6	——
a1	50	#5	23'-2	——
a2	60	#5	20'-6	——
a3	60	#5	24'-6	——
b	120	#9	20'-2	
b1	45	#5	21'-10	
b2	70	#5	13'-3	
P	16	#8	27'-6	——
P1	24	#8	29'-6	——
S	136	#4	4'-5	

*Includes Approach Slab No.1 & No.2.

APPROACH SLAB NO. 2 QUANTITIES		
ITEM	UNIT	TOTAL
PORTLAND CEMENT CONCRETE PAVEMENT (16½"–12"–16½")	S. Y	252.8
CLASS X CONCRETE	C. Y.	5.8
REINFORCEMENT BARS	LB.	10052
SUB-BASE GRANULAR MATERIAL TYPE A (6 IN.)	S. Y	253
PROTECTIVE COAT	S. Y.	261

GENERAL APPROACH SLAB NOTES

The slab or slabs will be paid for at the contract unit price for PORTLAND CEMENT CONCRETE PAVEMENT (16½" - 12" - 16½")

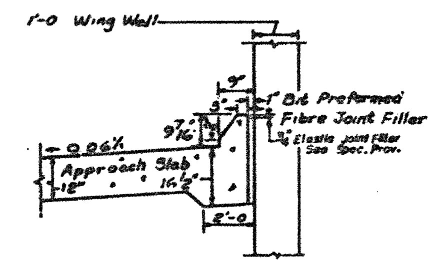
The concrete cap will be paid for at the contract unit price for CLASS X CONCRETE

All Reinforcement Bars will be paid for at the contract unit price for REINFORCEMENT BARS, except as noted.

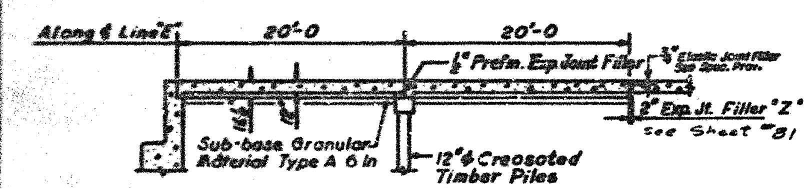
The Welded Wire Fabric and Preformed Expansion Joint Filler shall be included in the unit price bid for PORTLAND CEMENT CONCRETE PAVEMENT (16½" x 12" x 16½")

Preformed Expansion Joint Filler shall conform to Section 715 of the Standard Specification.

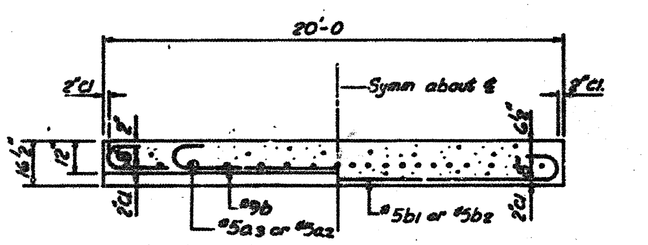
Width of Bridge Approach Slab pours shall be determined before the reinforcement bars are fabricated.



DETAIL A

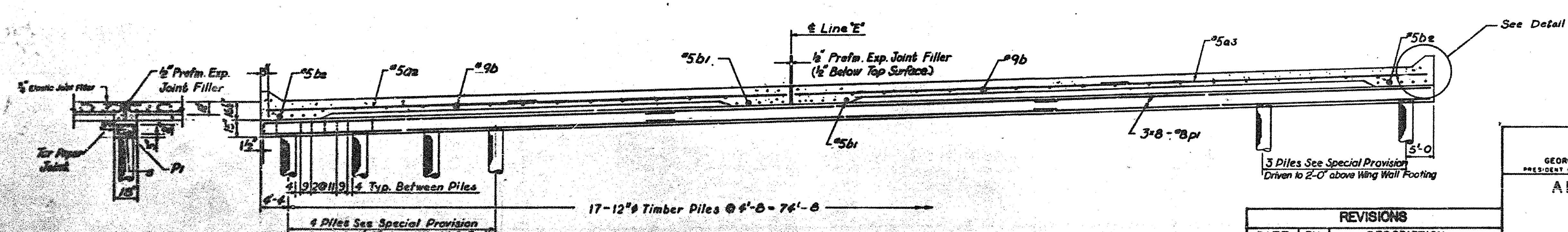


SECTIONAL VIEW



LONGITUDINAL SECTION THRU CENTER OF SLAB

LONGITUDINAL SECTION THRU THICKENED EDGE OF SLAB



SECTION C-C

REVISIONS		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W DUNNE
PRESIDENT BOARD OF COMMISSIONERS

APPROACH SLAB DETAILS
STONY ISLAND CONNECTOR FAI 94
LINE E STRUCTURE

KNOERLE, BENDER, STONE & ASSOCIATES INC.
CONSULTING ENGINEERS
CHICAGO, ILLINOIS

PROJECT EBU 245 (76)
SCALE
APPROVED [signature]

APPROVED April 4, 77 [signature] CHIEF ENGINEER

FA Route No.	County Hwy. Route No.	Sheet No.	Total Sheets	Drawing No.
122	174A	52	97	

S:\1072\05_CADD\Structural\SN 0162471\CADD Sheets\0162471-60J12-063-FY19.dgn 3/29/2013 2:31:48 PM

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CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

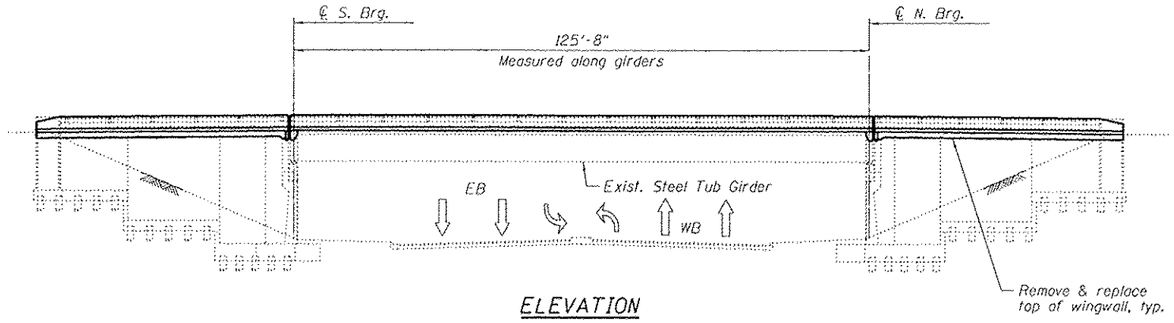
EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NO. 016–2471
SHEET NO. S-63 OF S-63 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	556

CONTRACT NO. 60J12
ILLINOIS FED. AID PROJECT

Bench Mark: CP41, cross-cut in median of 103rd street approximately 900' west of Stony Island Extension. Elevation 585.80.

Existing Structure: The existing bridges carrying northbound (SN 016-2441) and southbound (SN 016-2442) Stony Island Extension over 103rd Street are single-span structures with three steel plate tub girders each supporting a composite concrete deck with a 1⅝" bituminous overlay. The bridges have closed abutments founded on creosoted timber piles. The existing structures are each 125'-8" long from centerline to centerline of abutment bearings, measured along the girders, and each structure has an out-to-out width of 49'-0", measured radially. Each bridge will be separately closed to the traffic during construction.



ELEVATION
(Looking West)

SCOPE OF WORK

1. Remove HMA overlay and replace with latex concrete overlay.
2. Remove expansion joints and replace with strip seal joints.
3. Perform partial and full depth deck slab repairs.
4. Remove and replace parapets and approach slabs.
5. Perform concrete repairs and epoxy crack injections on abutments and wingwalls.
6. Remove and replace keeper angles (side retainers).
7. Clean and paint all exterior surfaces and portions of interior surfaces of steel tub girders.
8. Clean bearing seats.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition.

1995 FHWA Seismic Retrofitting Manual for Highway Bridges (FHWA-RD-94-052).

DESIGN STRESSES

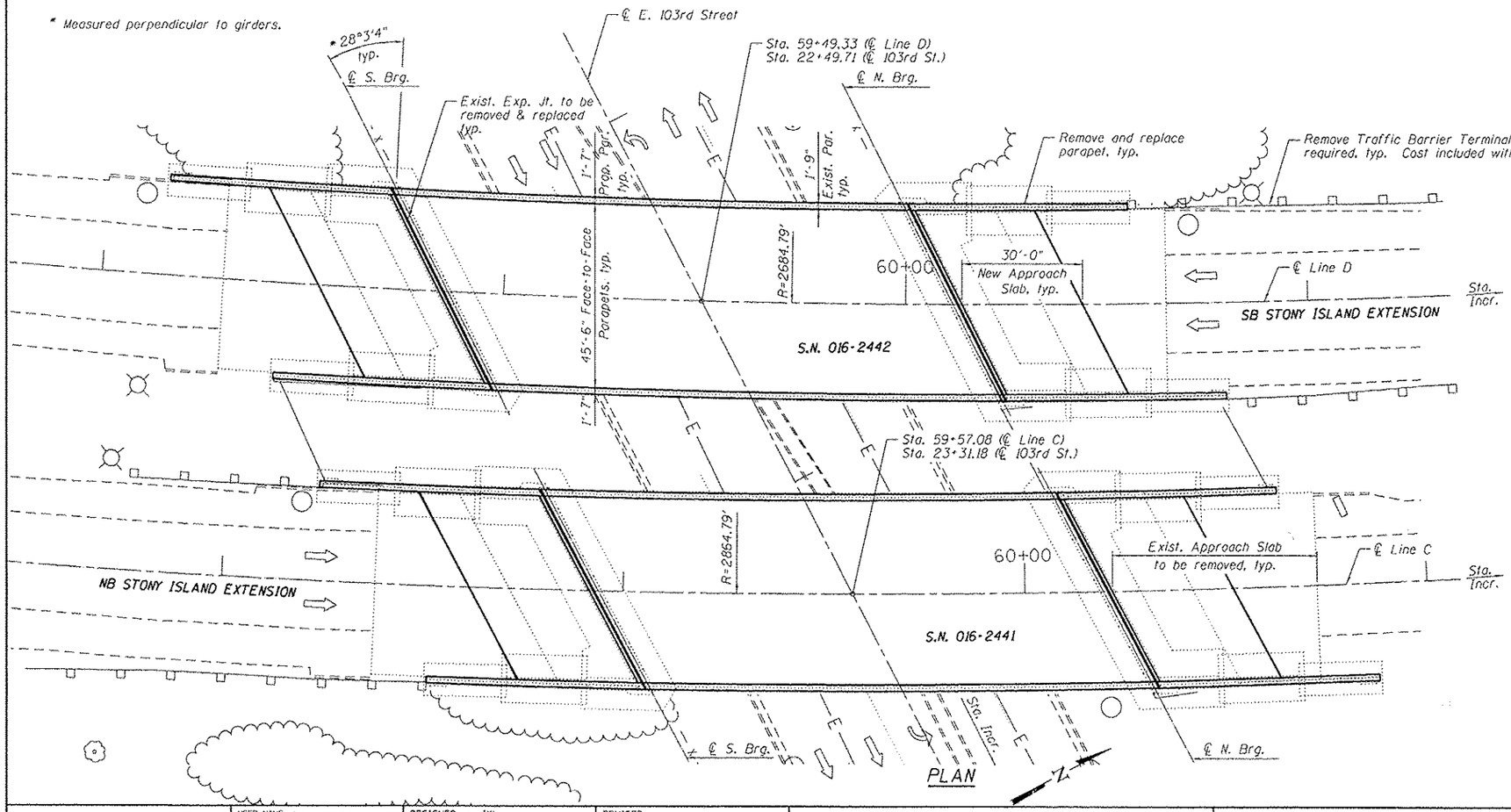
FIELD UNITS (New Construction)

f'c = 3,500 psi
fy = 36,000 psi (structural steel)
fy = 60,000 psi (reinforcement)

FIELD UNITS (Exist. Construction)

f'c = 3,000 psi
fy = 40,000 psi (reinforcement)
fy = 36,000 psi (structural steel)

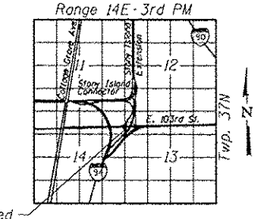
* Measured perpendicular to girders.



PLAN

STATE OF ILLINOIS
LICENSED STRUCTURAL ENGINEER
BRENT KUNZ
81-006200
CHICAGO, IL

SIGNED: Brent Kunz
DATE: March 29, 2013
EXPIRES: November 30, 2014



LOCATION SKETCH

GENERAL PLAN & ELEVATION
STONY ISLAND EXTENSION OVER 103rd STREET
F.A.I. RTE. 94 - SEC. 2012-059-BR
COOK COUNTY
STATION 59+57.08 (LINE C) & 59+49.33 (LINE D)
STRUCTURE NOS. 016-2441 & 016-2442

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. S-1 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	357
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

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GENERAL NOTES:

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

Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring new concrete, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from steel surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding $\frac{1}{4}$ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

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

Cleaning and painting of the existing structural steel shall be as specified in the Special Provision for "Cleaning and Painting Existing Steel Structures". All existing steel surfaces accessible from outside the tub girders, including the access doors, and select surfaces inside the tub girders shall be cleaned per Near White Blast Cleaning - SSPC-SP10. The select surfaces to be cleaned inside the tub girders are all surfaces within 15 ft. (measured along the girders) of the girder ends, including the access doors, and the full length of the underside of all top flanges.

The designated areas cleaned per Near White Blast Cleaning shall be painted according to the requirements of Paint System 1 - OZ/E/U. The color of the final finish coat for all surfaces accessible from outside the tubs shall be Reddish Brown, Munsell No. 2.5 YR 3/4. The color of the final finish coat for surfaces inside the tubs shall be Gray, Munsell No. 5B 7/1.

All new structural steel shall be shop painted with an inorganic zinc-rich primer per AASHTO M 300, Type 1.

The existing name plates shall be removed, cleaned and installed in the new parapet at the same location as existing. Cost included with Concrete Superstructure.

After painting is complete, all steel surfaces inside the tub girders shall be power washed and dried. Any standing water and construction items shall be removed from inside the tub girders after power washing. Cost included with Cleaning and Painting Steel Bridge No. 2 and No. 3.

The inside of each tub girder is considered a confined space and entry must comply with applicable OSHA regulations.

Bridge Deck Scarification will be performed concurrently with full temporary night time closures of 103rd Street.

The minimum thickness of the concrete overlay shall be $2\frac{1}{4}$" and shall vary as required to adjust for the existing profile grade and beam camber/deflection.

Joint opening shall be adjusted according to Article 520.04 of the Standard Specifications when the end of deck concrete is poured at an ambient temperature other than 50° F.

All existing hinges for all tub girder access doors shall be lubricated to the satisfaction of the Engineer. Cost included with Cleaning and Painting Steel Bridge No. 2 and No. 3.

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	S.N. 016-2441			S.N. 016-2442		
		SUPER	SUB	TOTAL	SUPER	SUB	TOTAL
Concrete Removal	Cu Yd	83	-	83	83	-	83
Concrete Structures	Cu Yd	-	68.1	68.1	-	68.1	68.1
Concrete Superstructure	Cu Yd	215.4	-	215.4	215.4	-	215.4
Bridge Deck Grooving	Sq Yd	925	-	925	925	-	925
Protective Coat	Sq Yd	1,196	-	1,196	1,196	-	1,196
Reinforcement Bars, Epoxy Coated	Pound	44,960	8,335	53,295	44,960	8,335	53,295
Preformed Joint Strip Seal	Foot	108	-	108	108	-	108
Anchor Bolts, $1\frac{1}{2}$"	Each	12	-	12	12	-	12
Epoxy Crack Injection	Foot	-	148	148	-	302	302
Structural Steel Repair	Pound	300	-	300	300	-	300
Hot-Mix Asphalt Surface Removal (Deck)	Sq Yd	650	-	650	650	-	650
Bridge Deck Latex Concrete Overlay, $2\frac{1}{4}$"	Sq Yd	640	-	640	640	-	640
Containment And Disposal Of Lead Paint Cleaning Residues No. 2	L Sum	1	-	1	-	-	-
Containment And Disposal Of Lead Paint Cleaning Residues No. 3	L Sum	-	-	-	1	-	1
Cleaning Bridge Seats	Sq Ft	-	50	50	-	50	50
Cleaning And Painting Steel Bridge No. 2	L Sum	1	-	1	-	-	-
Cleaning And Painting Steel Bridge No. 3	L Sum	-	-	-	1	-	1
Bridge Deck Scarification $\frac{3}{4}$"	Sq Yd	640	-	640	640	-	640
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq Ft	-	63	63	-	232	232
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq Ft	-	7	7	-	36	36
Deck Slab Repair (Full Depth, Type I)	Sq Yd	5.5	-	5.5	4.0	-	4.0
Deck Slab Repair (Full Depth, Type II)	Sq Yd	7.5	-	7.5	7.0	-	7.0

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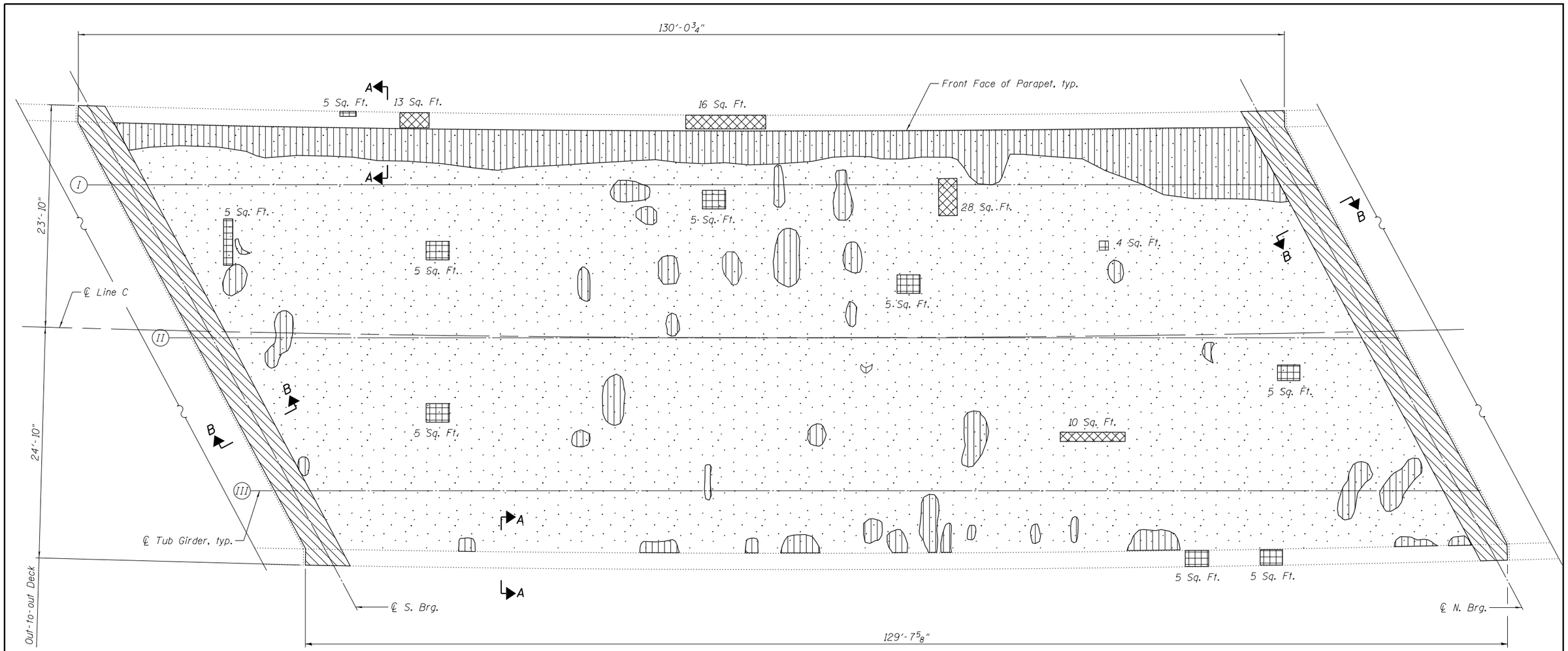
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

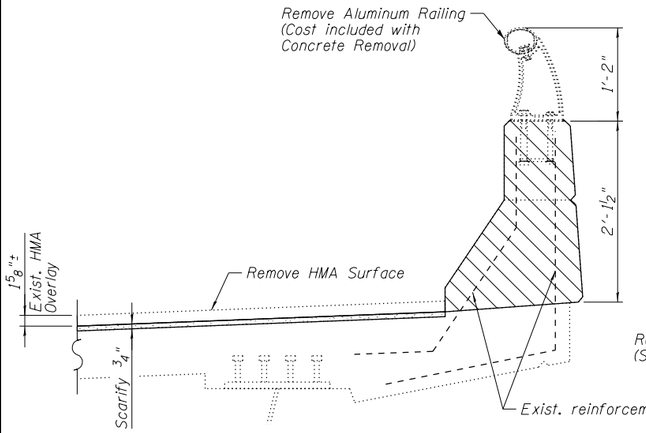
GENERAL DATA
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-2 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	558
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

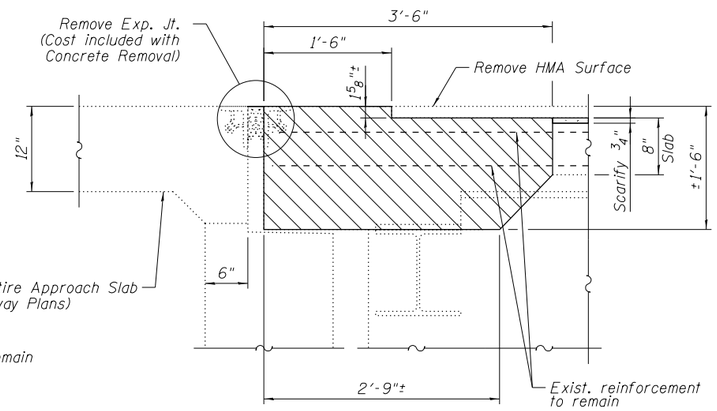


DECK PLAN

(Parapet and HMA surface removals not shown for clarity)



SECTION A-A



SECTION B-B

LEGEND

- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- Deck Slab Repair (Partial)
- Concrete Removal
- Bridge Deck Scarification 3/4"

Notes:

Deck Slab Repair (Partial) will not be paid for separately. The total estimated quantity of Deck Slab Repair (Partial) is 96 sq. yd. and the locations shown are estimated from a delamination survey performed on 11/13/2012. See Bridge Deck Latex Concrete Overlay special provision.

The Engineer will record the actual deck repair areas in the as-built plans.

Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system at no additional cost.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	48
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	650
Bridge Deck Scarification 3/4"	Sq. Yd.	640
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	5.5
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	7.5

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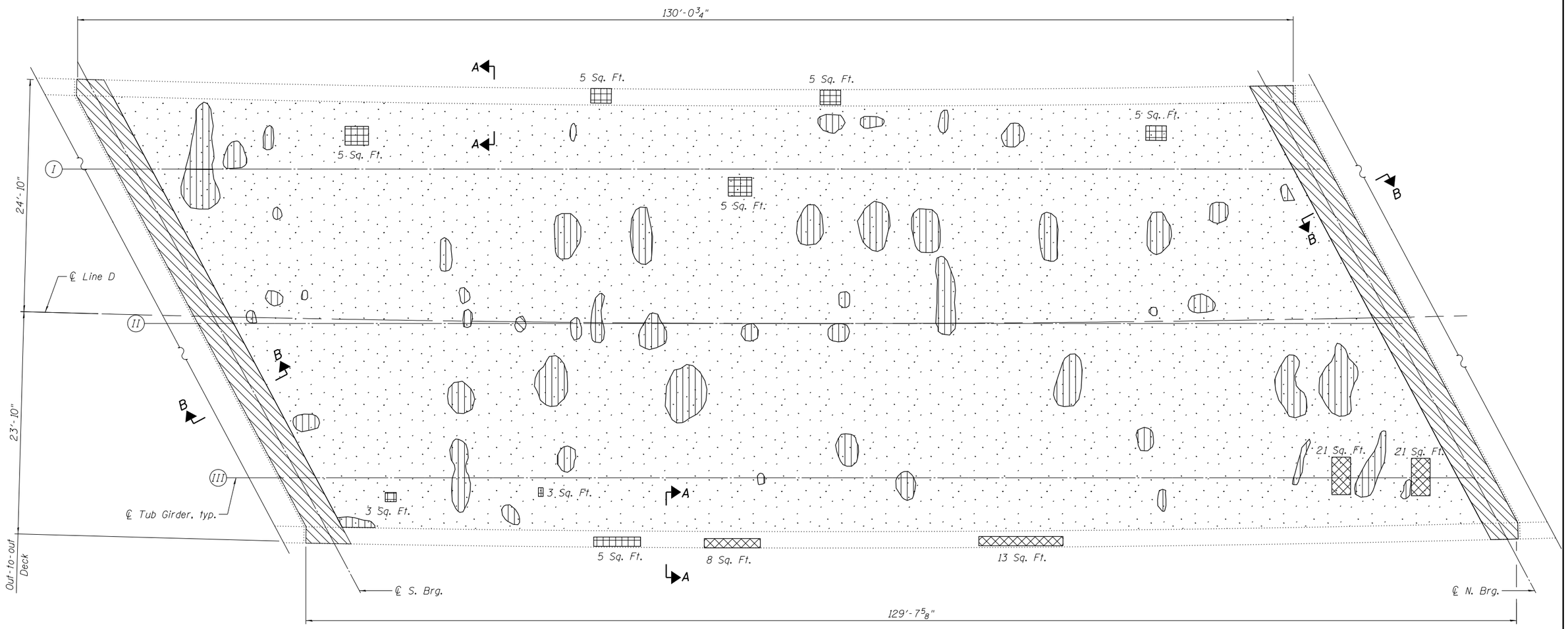
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE CONCRETE REMOVAL & DECK REPAIR – S.N. 016-2441
STRUCTURE NOS. 016-2441 & 016-2442

SHEET NO. S-3 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	559
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



DECK PLAN

(Parapet and HMA surface removals not shown for clarity)

N

Notes:

Deck Slab Repair (Partial) will not be paid for separately. The total estimated quantity of Deck Slab Repair (Partial) is 42 sq. yd. and the locations shown are estimated from a delamination survey performed on 11/13/2012. See Bridge Deck Latex Concrete Overlay special provision.

The Engineer will record the actual deck repair areas in the as-built plans.

Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system at no additional cost.

For Sections A-A & B-B, see Sheet S-3.

LEGEND

- Deck Slab Repair (Full Depth, Type I)
- Deck Slab Repair (Full Depth, Type II)
- Deck Slab Repair (Partial)
- Concrete Removal
- Bridge Deck Scarification 3/4"

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	48
Hot-Mix Asphalt Surface Removal (Deck)	Sq. Yd.	650
Bridge Deck Scarification 3/4"	Sq. Yd.	640
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	4.0
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	7.0

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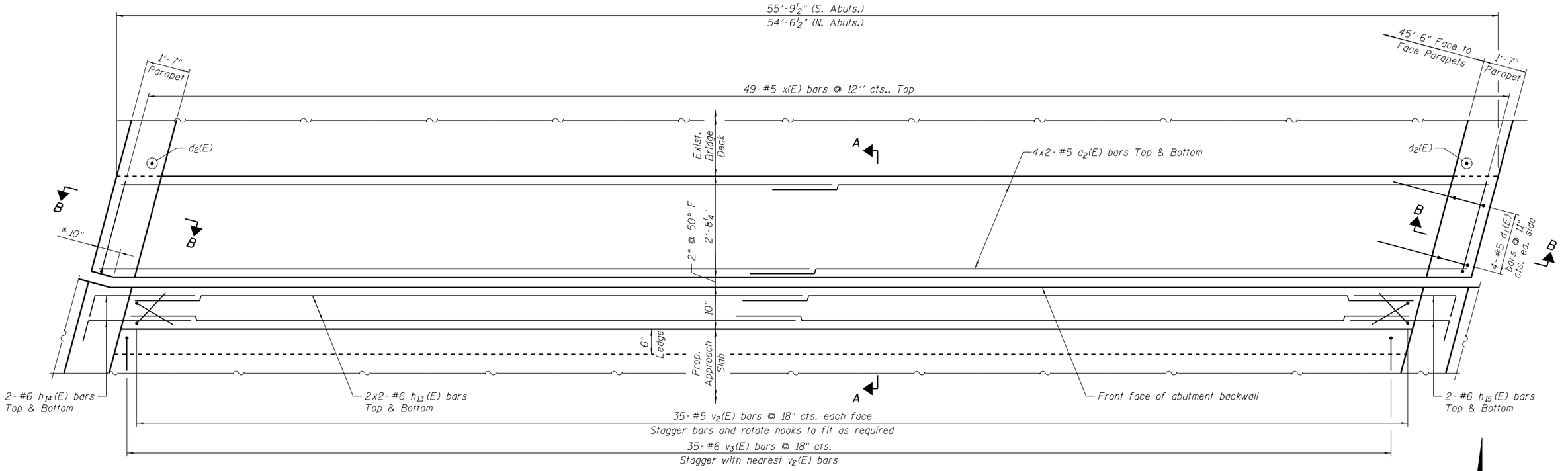
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE CONCRETE REMOVAL & DECK REPAIR – S.N. 016-2442
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-4 OF S-31 SHEETS

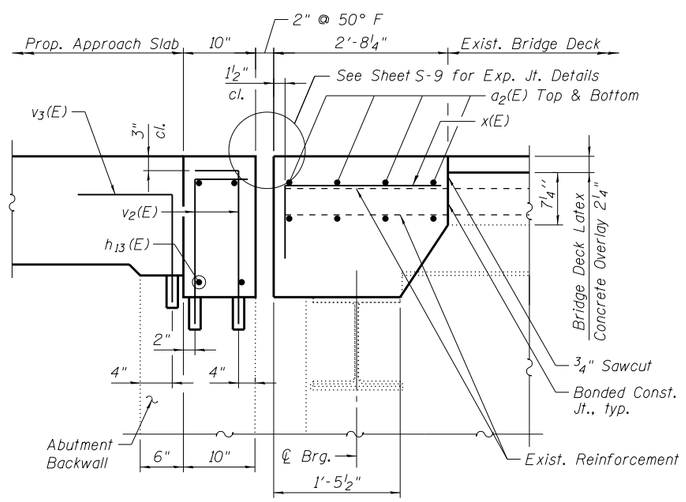
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	560
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



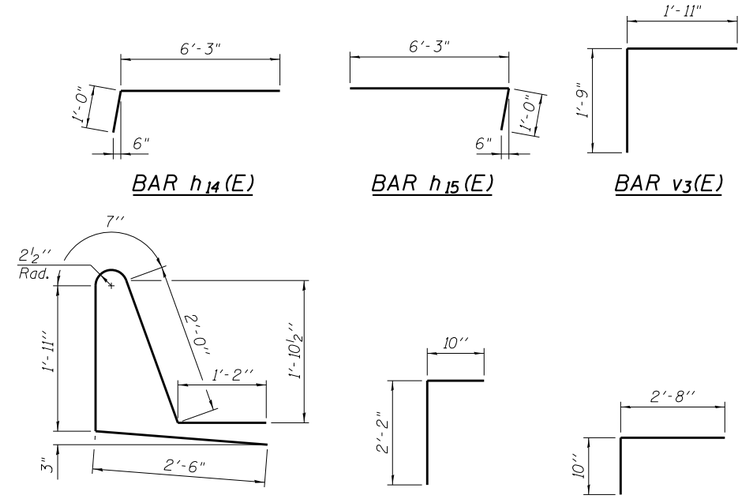
* Bend or cut reinforcement bars to fit.

DECK PLAN AT EXPANSION JOINTS

(S. Abuts. shown, N. Abuts. similar)



SECTION A-A



FOUR EXPANSION JOINTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_2(E)$	64	#5	29'-7"	
$d_1(E)$	32	#5	8'-2"	
$h_{13}(E)$	32	#6	28'-2"	
$h_{14}(E)$	16	#6	7'-3"	
$h_{15}(E)$	16	#6	7'-3"	
$v_2(E)$	280	#5	3'-0"	
$v_3(E)$	140	#6	3'-8"	
$x(E)$	196	#5	3'-6"	
Concrete Superstructure			Cu. Yd.	39.4
Reinforcement Bars, Epoxy Coated			Pound	6,320
Protective Coat			Sq. Yd.	80
Bridge Deck Grooving			Sq. Yd.	78

MIN. BAR LAP

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

Notes:

Existing reinforcement bars shall be cut to fit, cleaned and incorporated into new construction. Any bar damaged during removal operations shall be replaced with an epoxy-grouted bar. Cost included with Concrete Removal.

Bars indicated thus 4x2-#5 etc. indicates 4 lines of bars with 2 lengths per line.

Epoxy grout $v_2(E)$ and $v_3(E)$ bars in 9" min. drilled holes according to Section 584 of the Standard Specifications.

Order $v_2(E)$ and $v_3(E)$ bars after field verifying dimensions and determining depth of drilled holes.

For Section B-B, see Sheet S-6.

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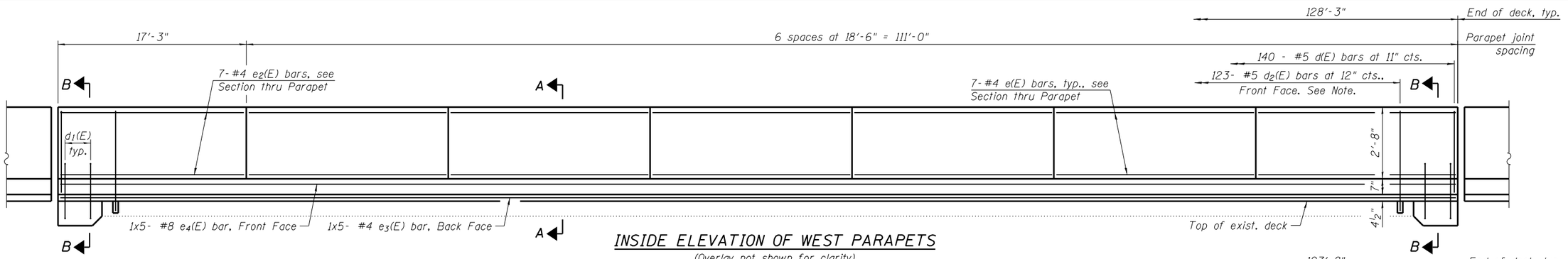
DEPARTMENT OF TRANSPORTATION

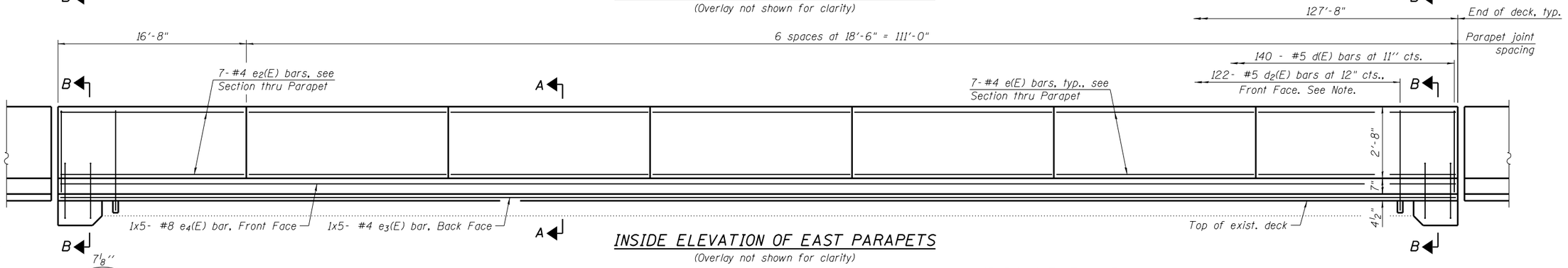
DECK DETAILS AT EXPANSION JOINTS
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-5 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	561
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



INSIDE ELEVATION OF WEST PARAPETS

(Overlay not shown for clarity)



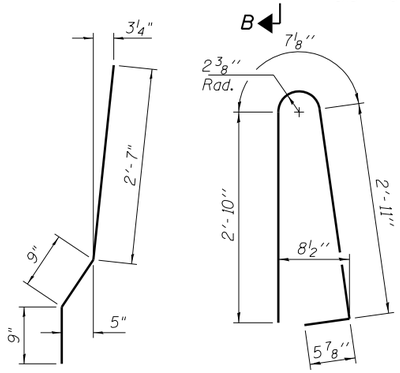
INSIDE ELEVATION OF EAST PARAPETS

(Overlay not shown for clarity)

MINIMUM BAR LAP

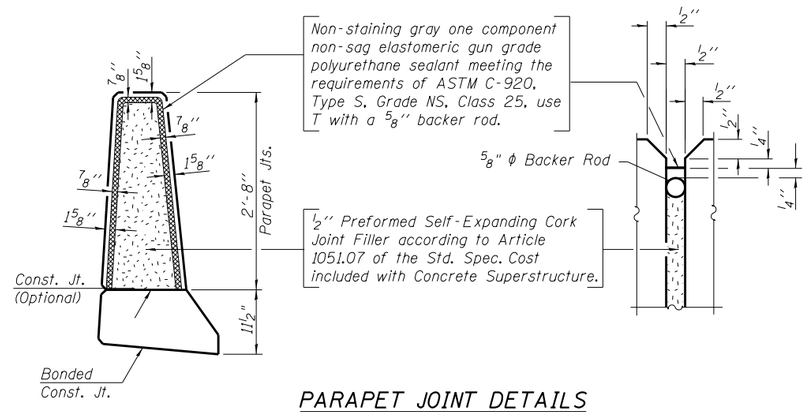
#4 bar = 2'-0"
#8 bar = 5'-2"

Note:
Drill and set #5 $d_2(E)$ bars in middle of spaces between existing #5 vertical bars in front face of parapet, according to Section 584 of the Standard Specifications. Drilled holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of hole shall not exceed 6". Contractor shall take all necessary precautions to prevent drilled hole interference with deck reinforcement bars.



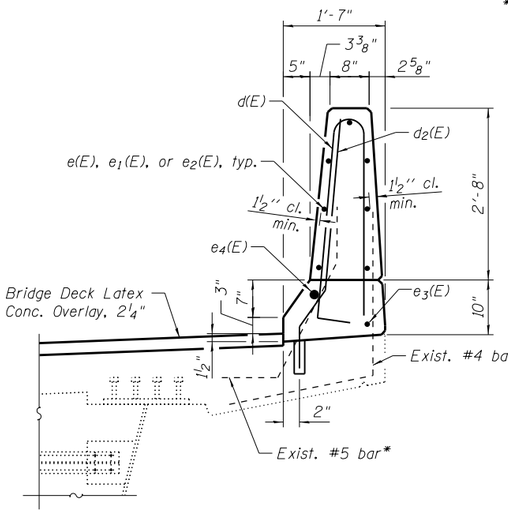
BAR $d_2(E)$

BAR d(E)

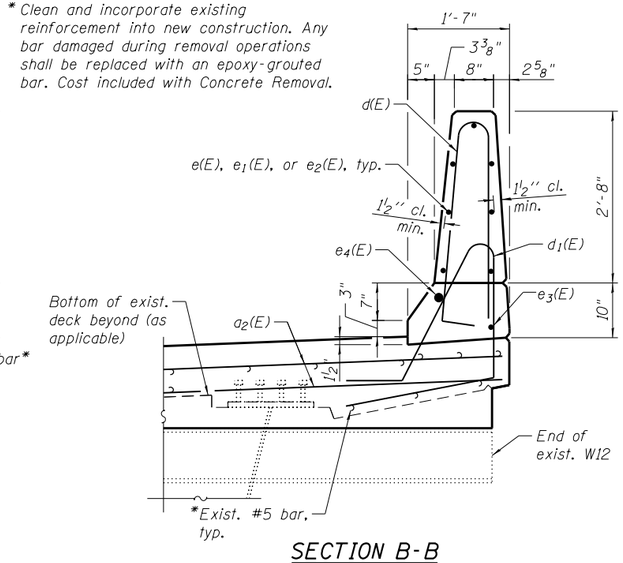


PARAPET JOINT DETAILS

* Clean and incorporate existing reinforcement into new construction. Any bar damaged during removal operations shall be replaced with an epoxy-grouted bar. Cost included with Concrete Removal.



SECTION A-A



SECTION B-B

FOUR DECK PARAPETS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	560	#5	6'-10"	
$d_2(E)$	490	#5	4'-1"	
e(E)	168	#4	18'-2"	
$e_1(E)$	14	#4	16'-4"	
$e_2(E)$	14	#4	16'-11"	
$e_3(E)$	20	#4	27'-2"	
$e_4(E)$	20	#8	29'-9"	
Reinforcement Bars, Epoxy Coated			Pound	10,380
Concrete Superstructure			Cu. Yd.	69.4
Protective Coat			Sq. Yd.	246

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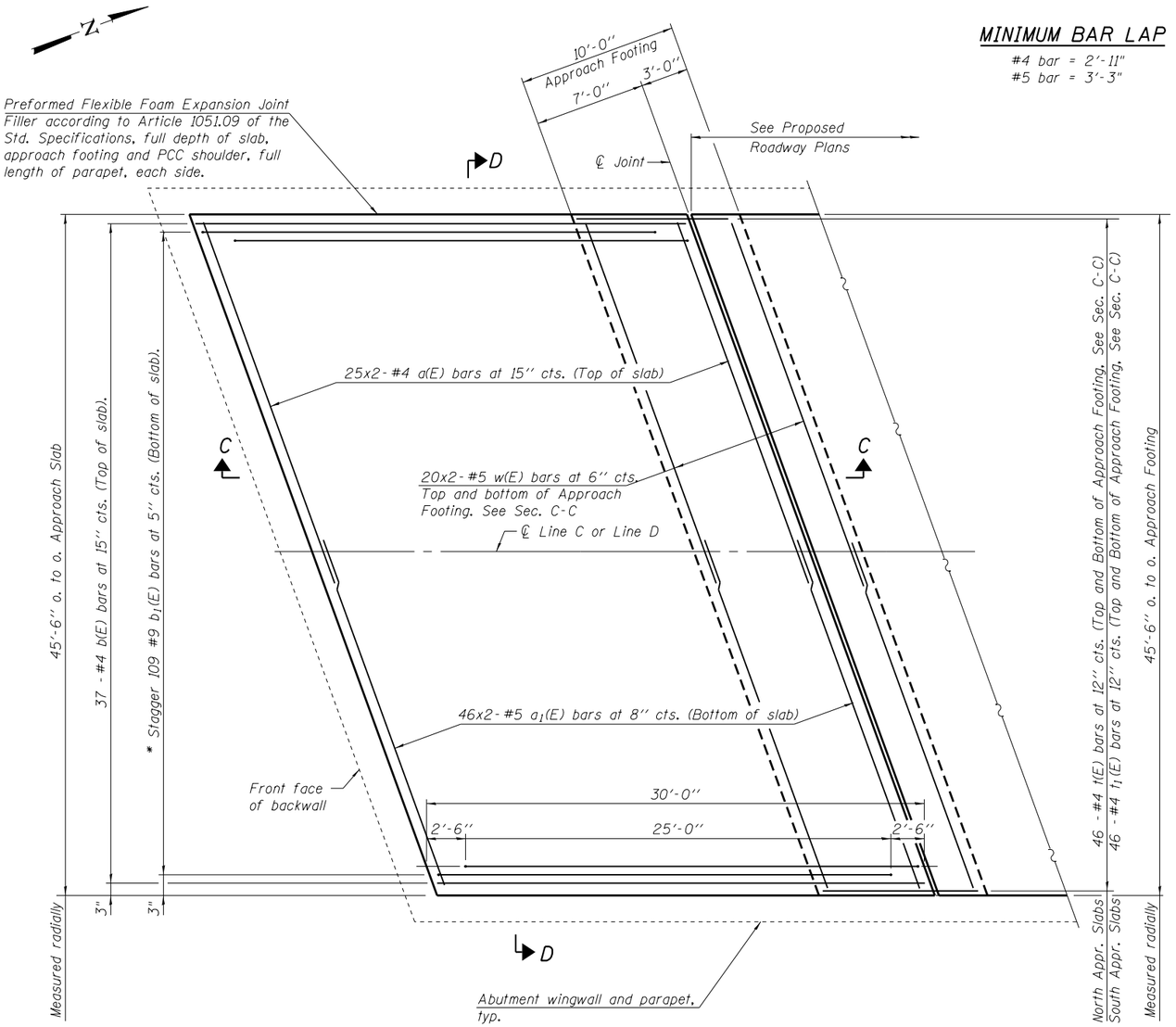
DEPARTMENT OF TRANSPORTATION

DECK PARAPET DETAILS
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-6 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	562
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

Notes:
See Sheet S-8 for Sections C-C & D-D.
a(E) and a_1(E) bar spacings measured along ℄ Line C or Line D.
The joint opening shall be determined per Article 520.04 of the Std. Specifications. The minimum dimension shall be 1½" for installation purposes.



MINIMUM BAR LAP

#4 bar = 2'-11"
#5 bar = 3'-3"

PLAN

(North Appr. Slabs shown, South Appr. Slabs similar)

* Tilt #9 b_1(E) bars as required to maintain clearance.

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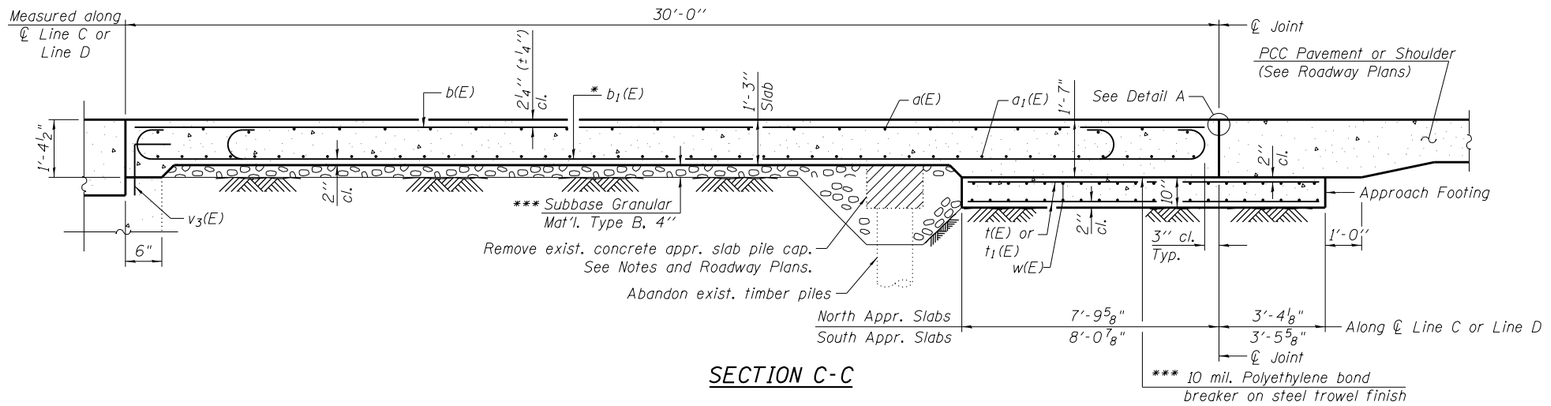
BRIDGE APPROACH SLAB DETAILS I
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-7 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	563
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



SECTION C-C

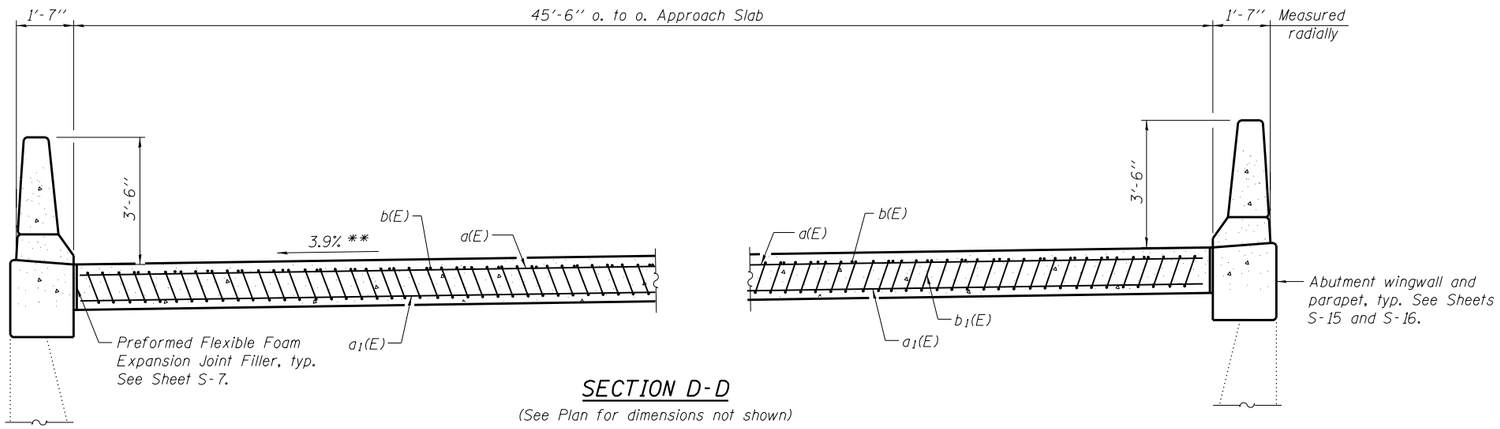
Notes:

Approach slab concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For $v_3(E)$ bar details, see Sheet S-5.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
Cost of excavation for approach footing included with Concrete Structures.
Cost of approach slab pile cap removal and associated excavation included with Approach Slab Removal.
Backfill excavation for approach slab pile cap removal with Subbase Granular Material Type B. Cost included with Concrete Superstructure.

* Tilt #9 $b_1(E)$ bars as required to maintain clearance

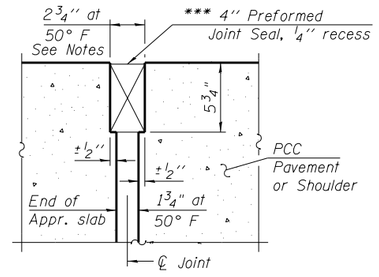
** Match existing.

*** Cost included with Concrete Superstructure

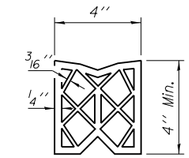


SECTION D-D

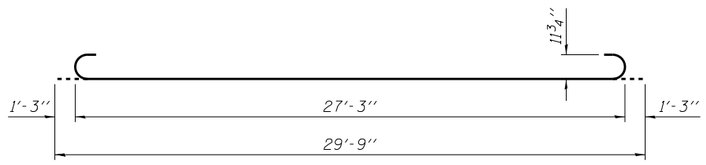
(See Plan for dimensions not shown)



DETAIL A



PREFORMED JOINT SEAL



BAR $b_1(E)$

FOUR APPROACH SLABS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	200	#4	27'-7"	
$a_1(E)$	368	#5	27'-9"	
b(E)	148	#4	29'-6"	
$b_1(E)$	436	#9	29'-9"	
t(E)	184	#4	10'-9"	
$t_1(E)$	184	#4	11'-2"	
w(E)	320	#5	27'-9"	
Concrete Superstructure			Cu. Yd.	262.4
Concrete Structures			Cu. Yd.	63.8
Reinforcement Bars, Epoxy Coated			Pound	73,220
Protective Coat			Sq. Yd.	608
Bridge Deck Grooving			Sq. Yd.	580

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DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS II
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-8 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	564
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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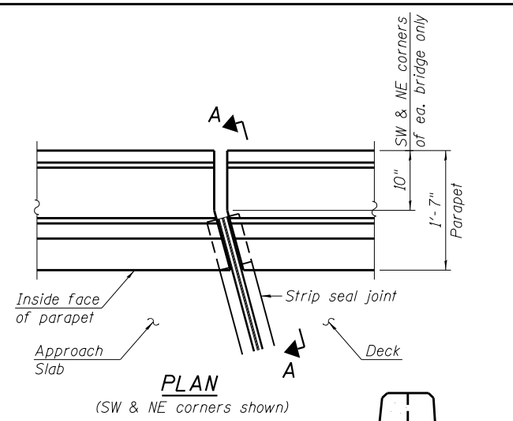
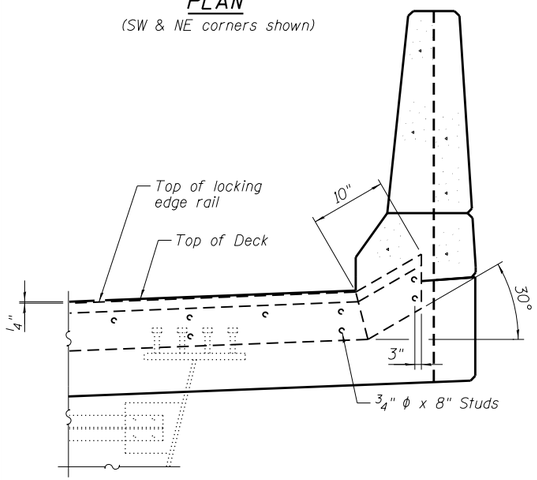
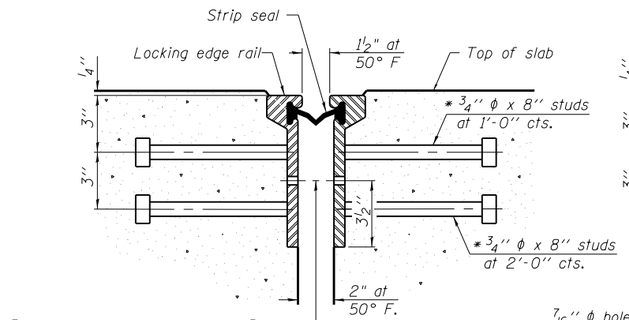


PLAN

(SW & NE corners shown)

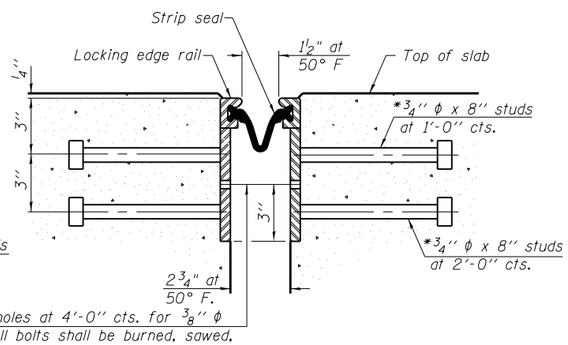


SECTION A-A



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

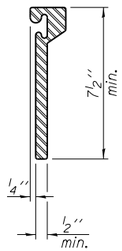
SECTION THRU ROLLED RAIL JOINT



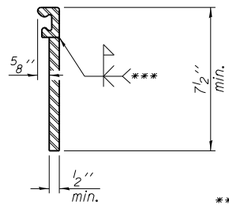
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU WELDED RAIL JOINT

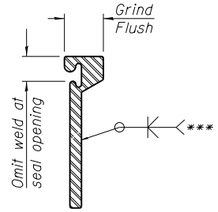
* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.



ROLLED EXTRUDED RAIL



WELDED RAIL



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

LOCKING EDGE RAIL SPLICE

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

Rolled rail shown, welded rail similar.

LOCKING EDGE RAILS

Notes:

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

The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.

The manufacturer's recommended installation methods shall be followed.

The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.

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

Maximum space between rail segments shall be 3/16", sealed with a suitable sealant. Joints in rails within 10 ft. of curbs shall be welded.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	216

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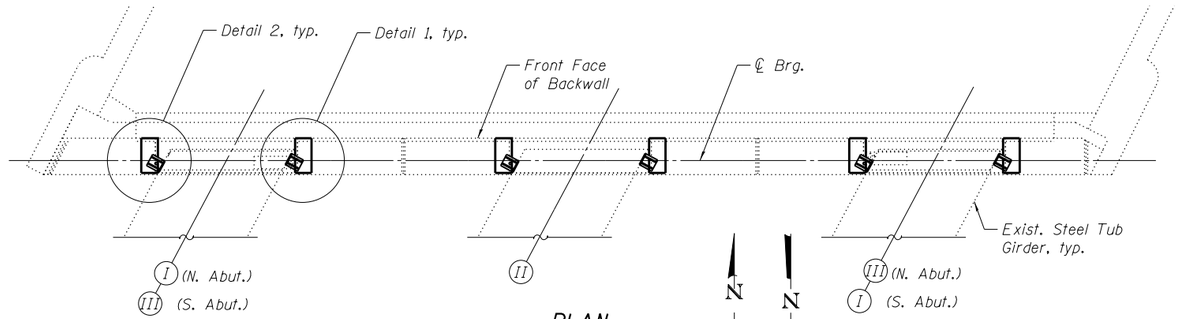
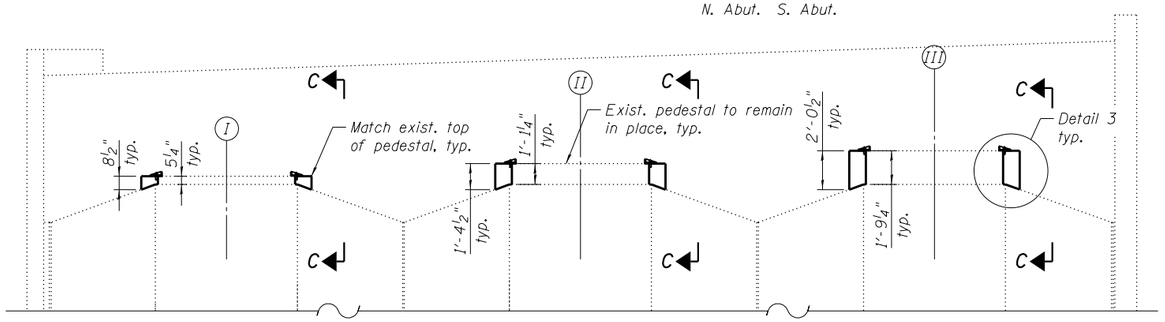
PREFORMED JOINT STRIP SEAL
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-9 OF S-31 SHEETS

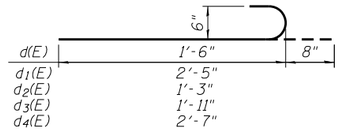
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	565
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



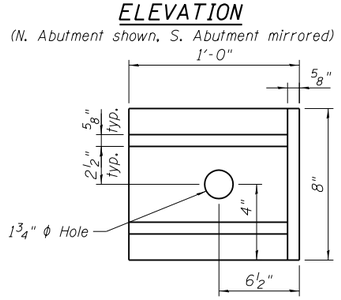
PLAN



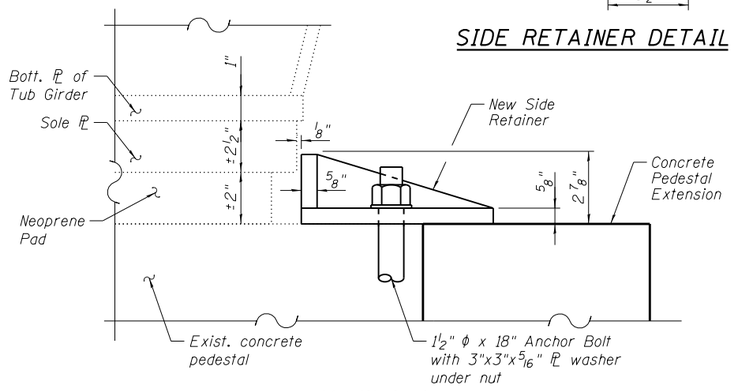
ELEVATION



BARS d(E), d1(E), d2(E) d3(E) & d4(E)

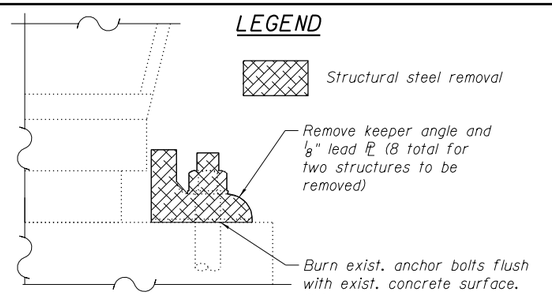


SIDE RETAINER DETAIL



VIEW A-A

VIEW B-B (mirrored)



LEGEND

REMOVAL DETAIL

Notes:

All structural steel shall conform to AASHTO M270 Grade 50.

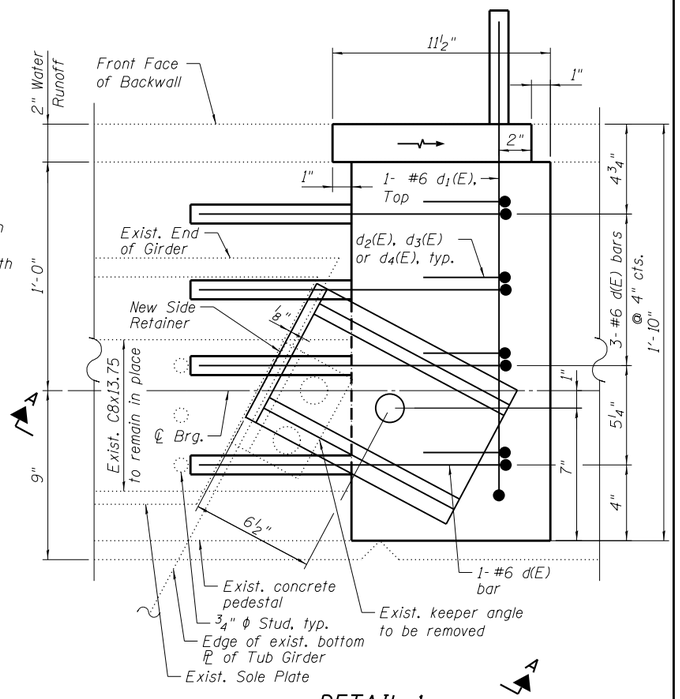
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) Grade 36 of the diameter specified. The corresponding Grade 36 AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts for side retainers may be cast in place or installed in holes drilled after pedestal extension is completed.

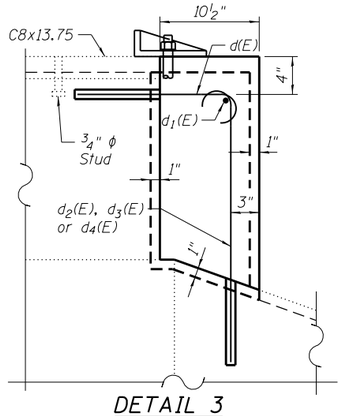
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Cost of removal and disposal of existing anchor bolts, nuts, keeper angles and ⅛" lead ℄'s and installation of new side retainers shall be included with Structural Steel Repair. Estimated new steel weight at each structure = 300 pounds.

Epoxy grout all reinforcement bars in 9" minimum drilled holes according to Section 584 of the Standard Specifications.

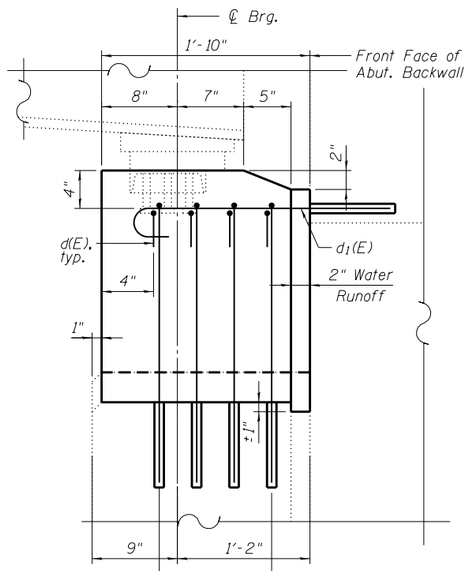


DETAIL 1



DETAIL 3

(East of Girder shown. West of Girder mirrored)

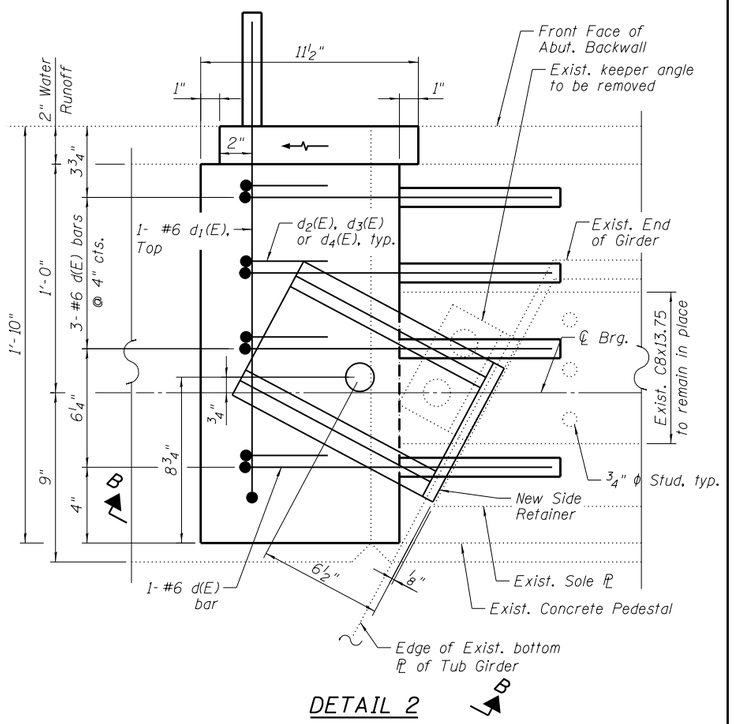


VIEW C-C

FOUR ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
d(E)	96	#6	2'-2"	
$d_1(E)$	24	#6	3'-1"	
$d_2(E)$	32	#6	1'-11"	
$d_3(E)$	32	#6	2'-7"	
$d_4(E)$	32	#6	3'-3"	
Reinforcement Bars, Epoxy Coated			Pound	800
Concrete Structures			Cu Yd	2.0
Structural Steel Repair			Pound	600
Anchor Bolts, 1½"			Each	24

Girder I — Same spacing as d(E) bars — 4- #6 $d_2(E)$ bars
Girder II — 4- #6 $d_3(E)$ bars
Girder III — 4- #6 $d_4(E)$ bars



DETAIL 2

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SIDE RETAINER REPLACEMENT & PEDESTAL EXTENSIONS
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-10 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	566
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

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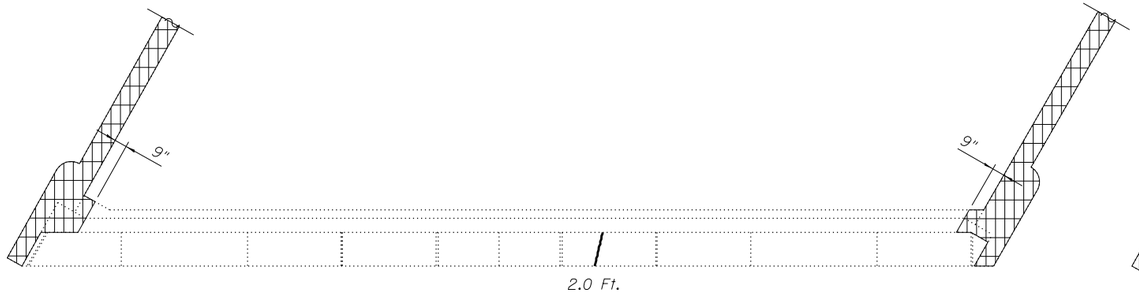
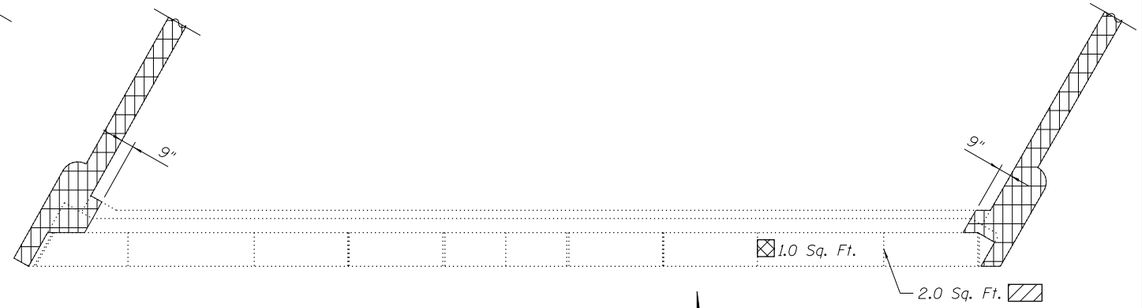
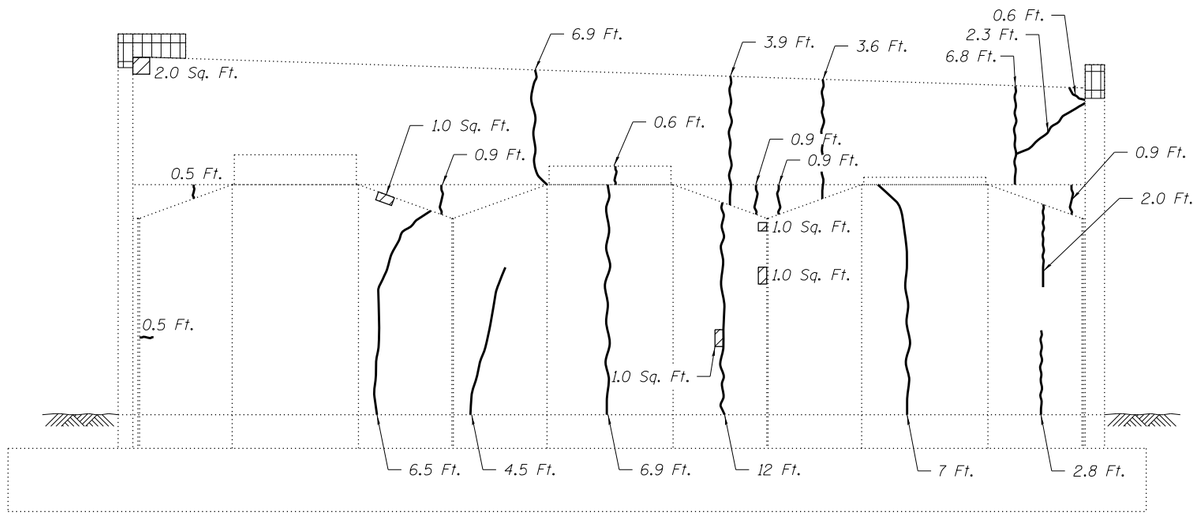


PLAN - SOUTH ABUTMENT

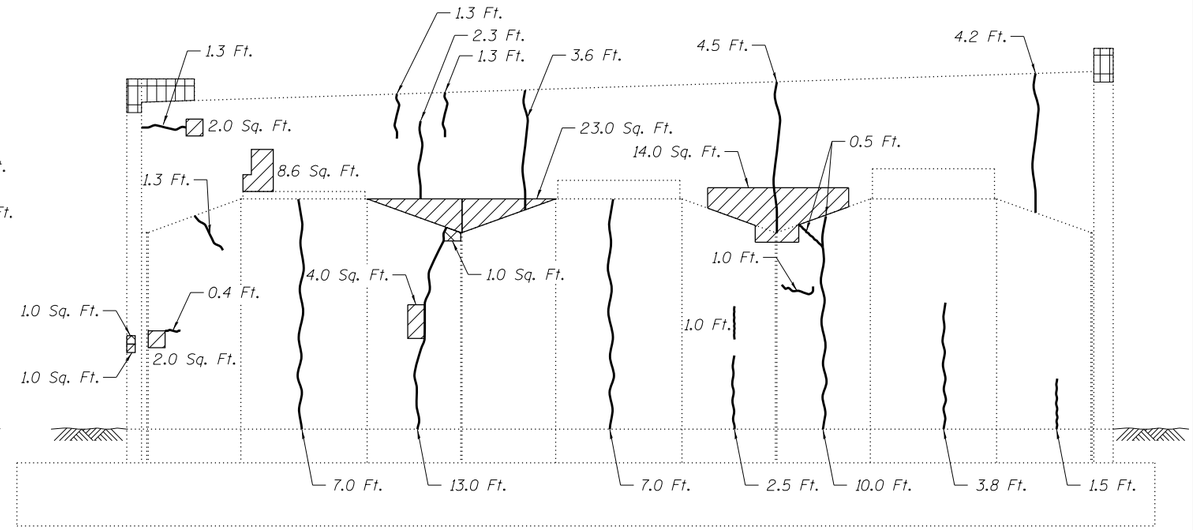


PLAN - NORTH ABUTMENT



ELEVATION - SOUTH ABUTMENT

(Looking South)



ELEVATION - NORTH ABUTMENT

(Looking North)

Notes:
Concrete Removal quantities shown on Sheet S-12.

LEGEND

- Concrete Removal
- Structural Repair of Concrete (Depth equal to or less than 5 inches)
- Structural Repair of Concrete (Depth greater than 5 inches)
- Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	63
Structural Repair of Concrete (Depth greater than 5 inches)	Sq. Ft.	3
Epoxy Crack Injection	Foot	141
Cleaning Bridge Seats	Sq. Ft.	50

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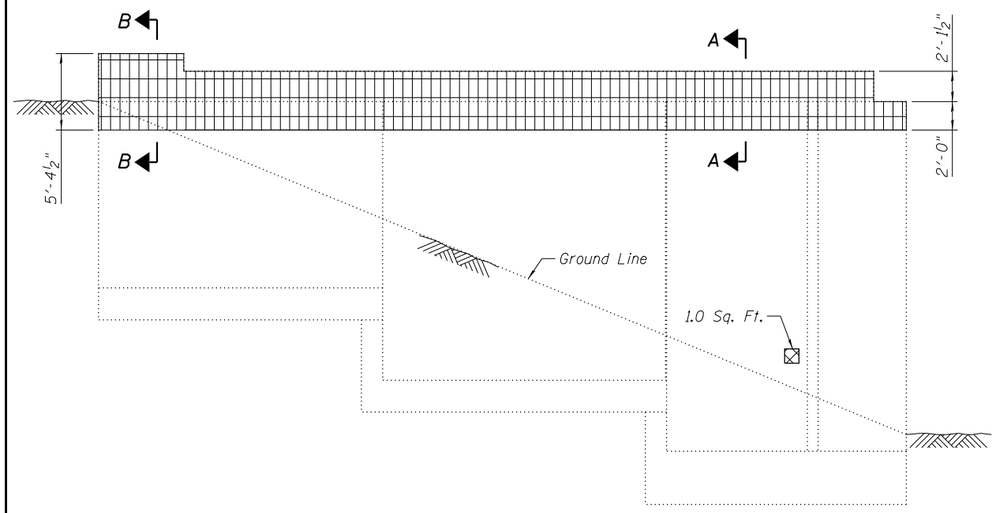
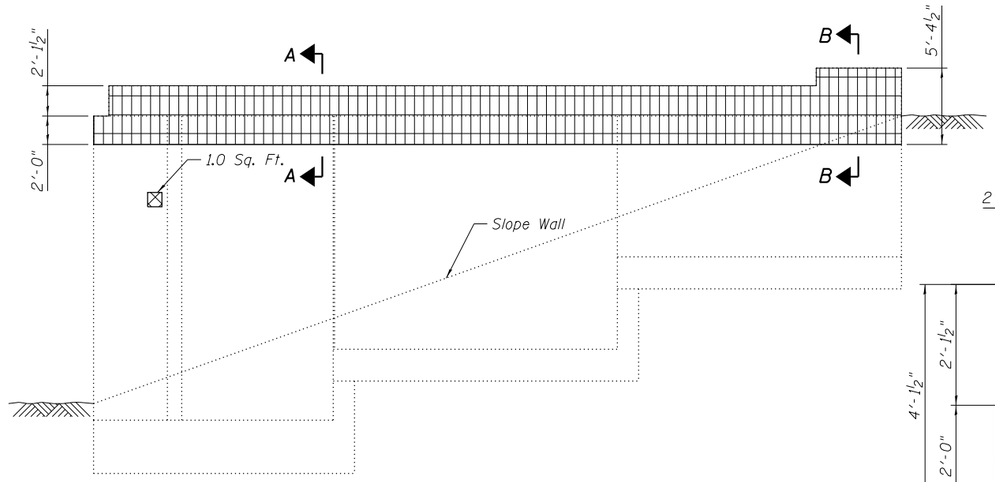
ABUTMENT REMOVAL & REPAIR – SN 016–2441
STRUCTURE NOS. 016–2441 & 016–2442
SHEET NO. S-11 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	567
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

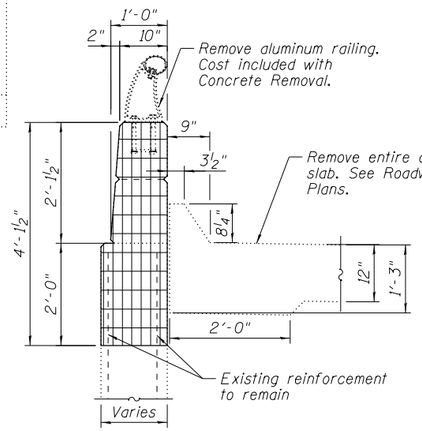


SOUTHEAST ELEVATION
(Looking West)

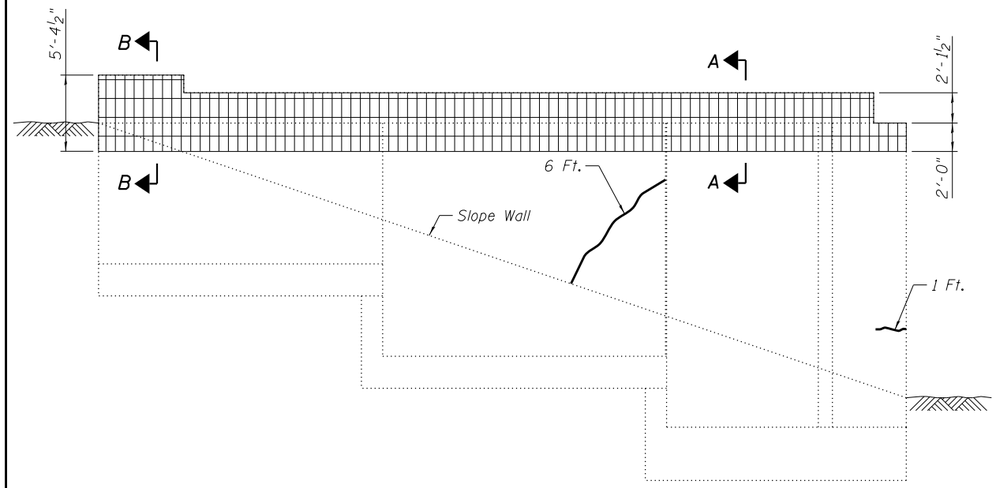


SOUTHWEST ELEVATION
(Looking East)

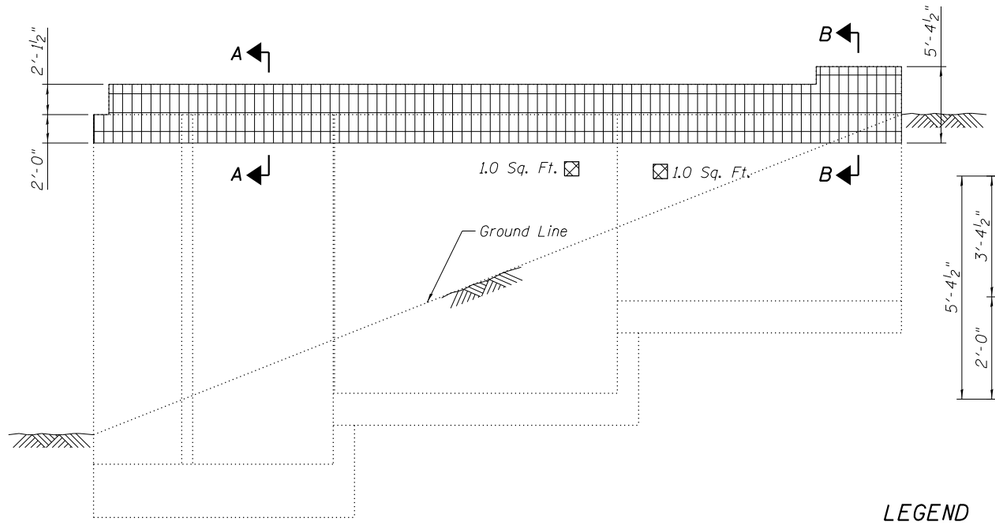
SOUTH ABUTMENT WINGWALLS



SECTION A-A

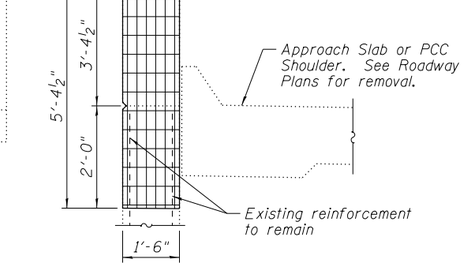


NORTHWEST ELEVATION
(Looking East)



NORTHEAST ELEVATION
(Looking West)

NORTH ABUTMENT WINGWALLS



SECTION B-B

LEGEND

Concrete Removal

Structural Repair of Concrete (Depth greater than 5 inches)

Epoxy Crack Injection

Notes:
Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system at no additional cost.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	35
Structural Repair of Concrete (Depth greater than 5 inches)	Sq. Ft.	4
Epoxy Crack Injection	Foot	7

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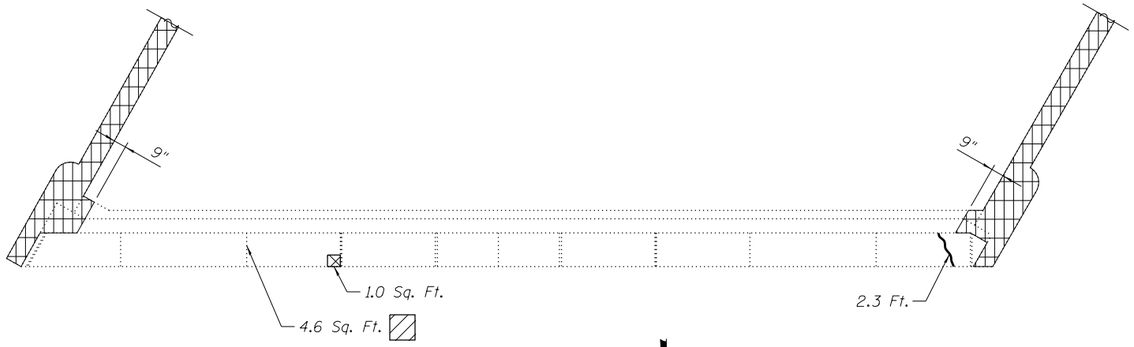
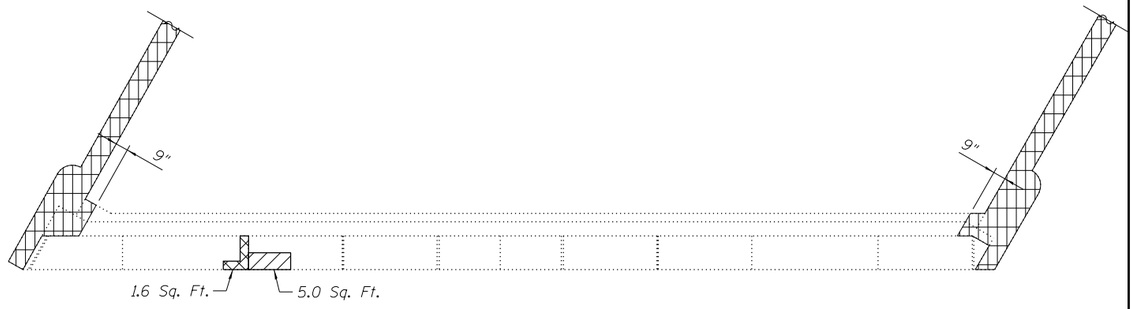
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WINGWALL REMOVAL & REPAIR – SN 016–2441
STRUCTURE NOS. 016–2441 & 016–2442
SHEET NO. S-12 OF S-31 SHEETS

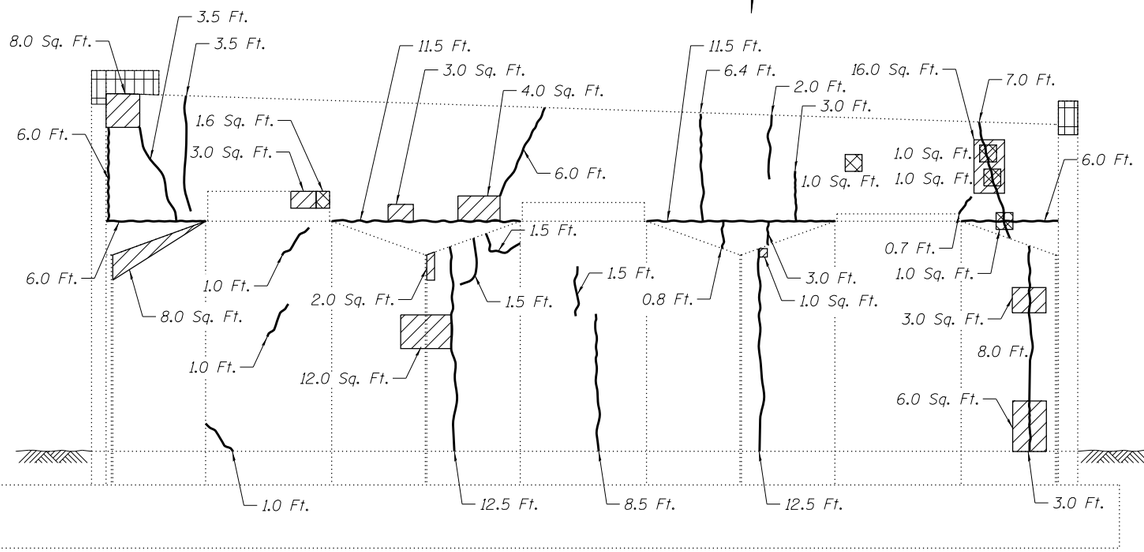
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	568
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			





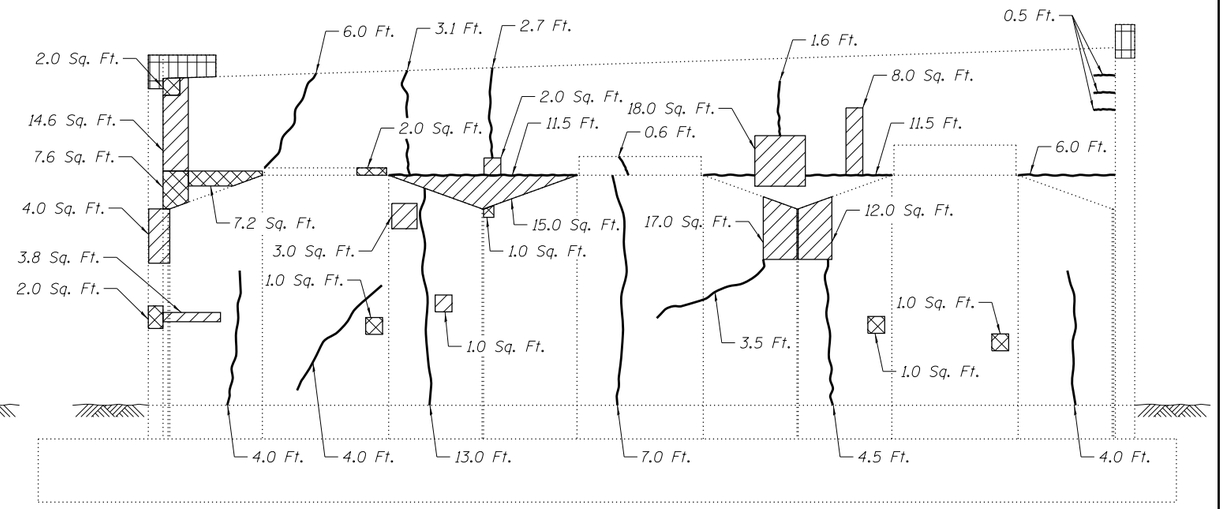
PLAN - SOUTH ABUTMENT

N



PLAN - NORTH ABUTMENT

N



ELEVATION - SOUTH ABUTMENT

(Looking South)

ELEVATION - NORTH ABUTMENT

(Looking North)

Notes:
Concrete Removal quantities shown on Sheet S-14.

LEGEND

- Concrete Removal
- Structural Repair of Concrete (Depth equal to or less than 5 inches)
- Structural Repair of Concrete (Depth greater than 5 inches)
- Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	174.0
Structural Repair of Concrete (Depth greater than 5 inches)	Sq. Ft.	33
Epoxy Crack Injection	Foot	300
Cleaning Bridge Seats	Sq. Ft.	50

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Chicago, Illinois
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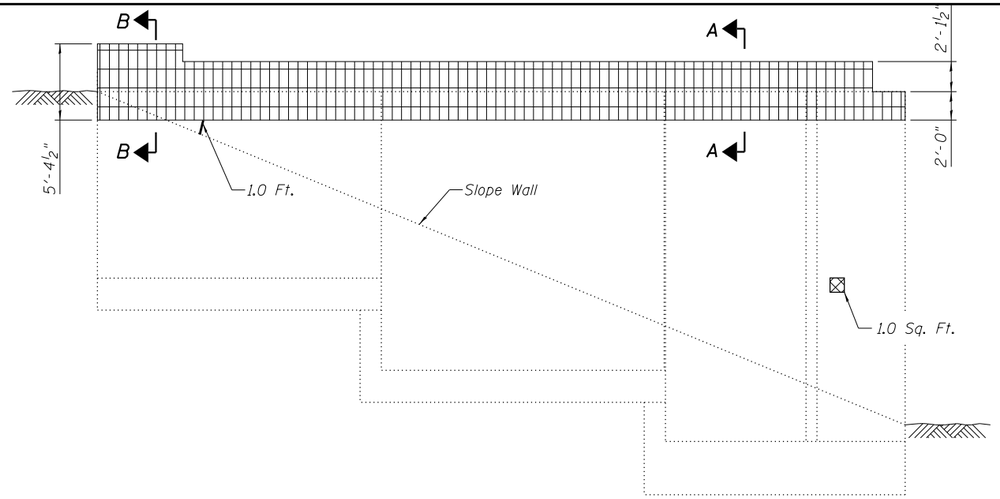
	CHECKED - BAK	REVISED -
PLOT SCALE =	DRAWN - MTR	REVISED -
PLOT DATE = 03/29/2013	CHECKED - IYL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

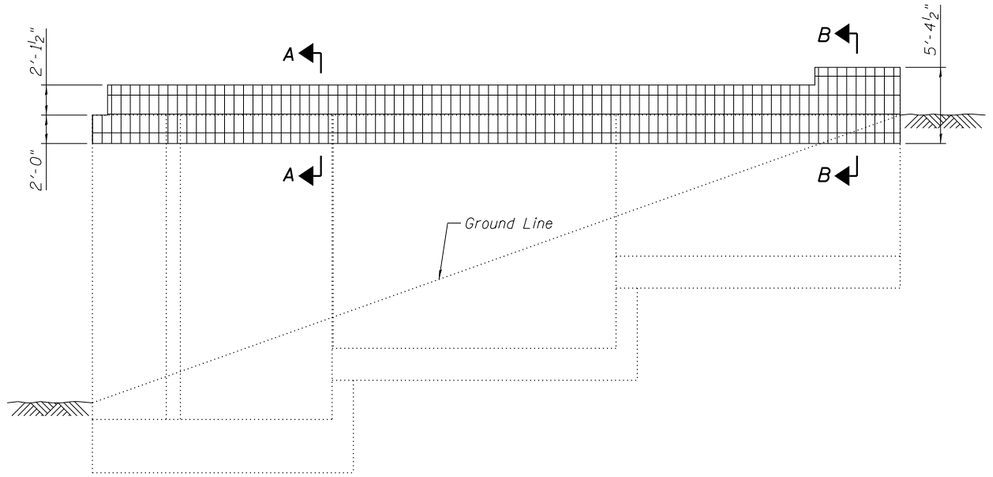
ABUTMENT REMOVAL AND REPAIR – SN 016-2442
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-13 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	569
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



SOUTHEAST ELEVATION

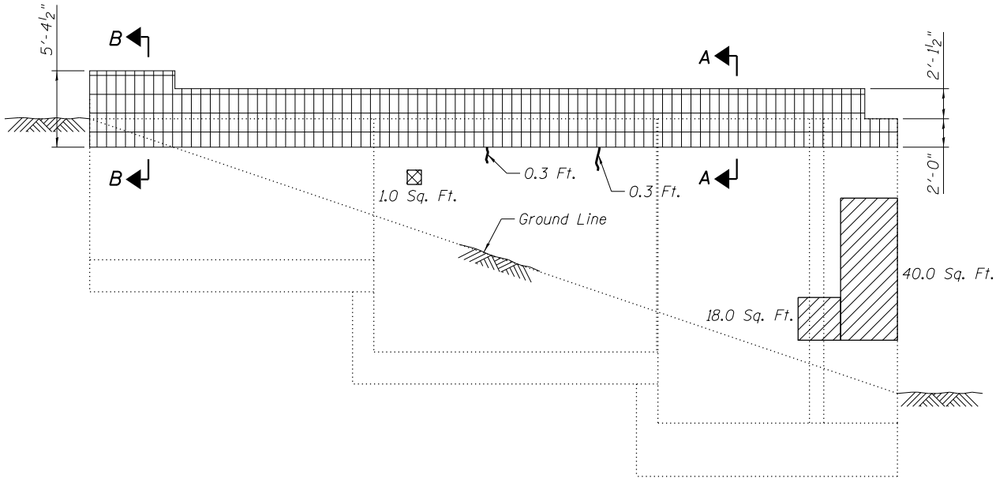
(Looking West)



SOUTHWEST ELEVATION

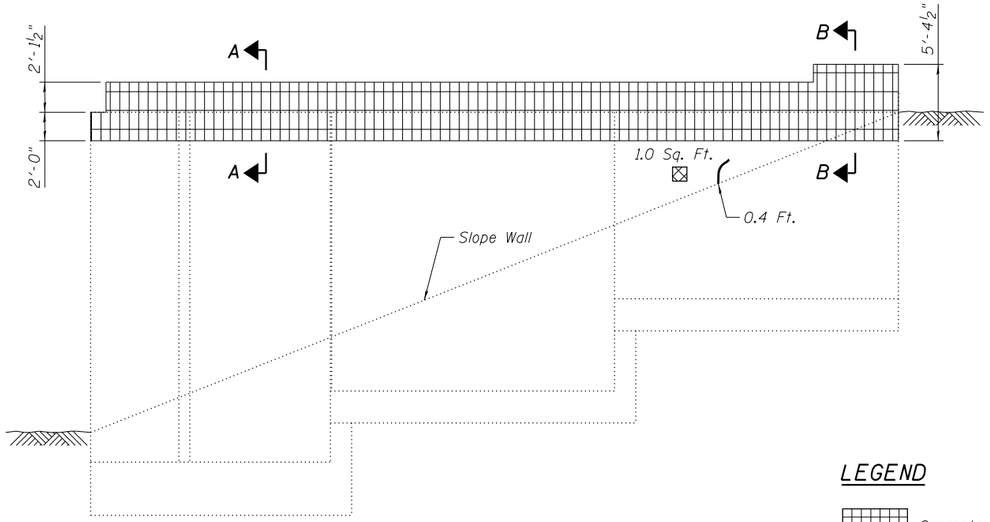
(Looking East)

SOUTH ABUTMENT WINGWALLS



NORTHWEST ELEVATION

(Looking East)



NORTHEAST ELEVATION

(Looking West)

NORTH ABUTMENT WINGWALLS

Notes:

For Sections A-A and B-B, see Sheet S-12.

Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system at no additional cost.

LEGEND

- Concrete Removal
- Structural Repair of Concrete (Depth equal to or less than 5 inches)
- Structural Repair of Concrete (Depth greater than 5 inches)
- Epoxy Crack Injection

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	58
Structural Repair of Concrete (Depth greater than 5 inches)	Sq. Ft.	3
Epoxy Crack Injection	Foot	3
Concrete Removal	Cu. Yd.	35

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PLOT SCALE =	DRAWN - MTR	REVISED -
PLOT DATE = 03/29/2013	CHECKED - IYL	REVISED -

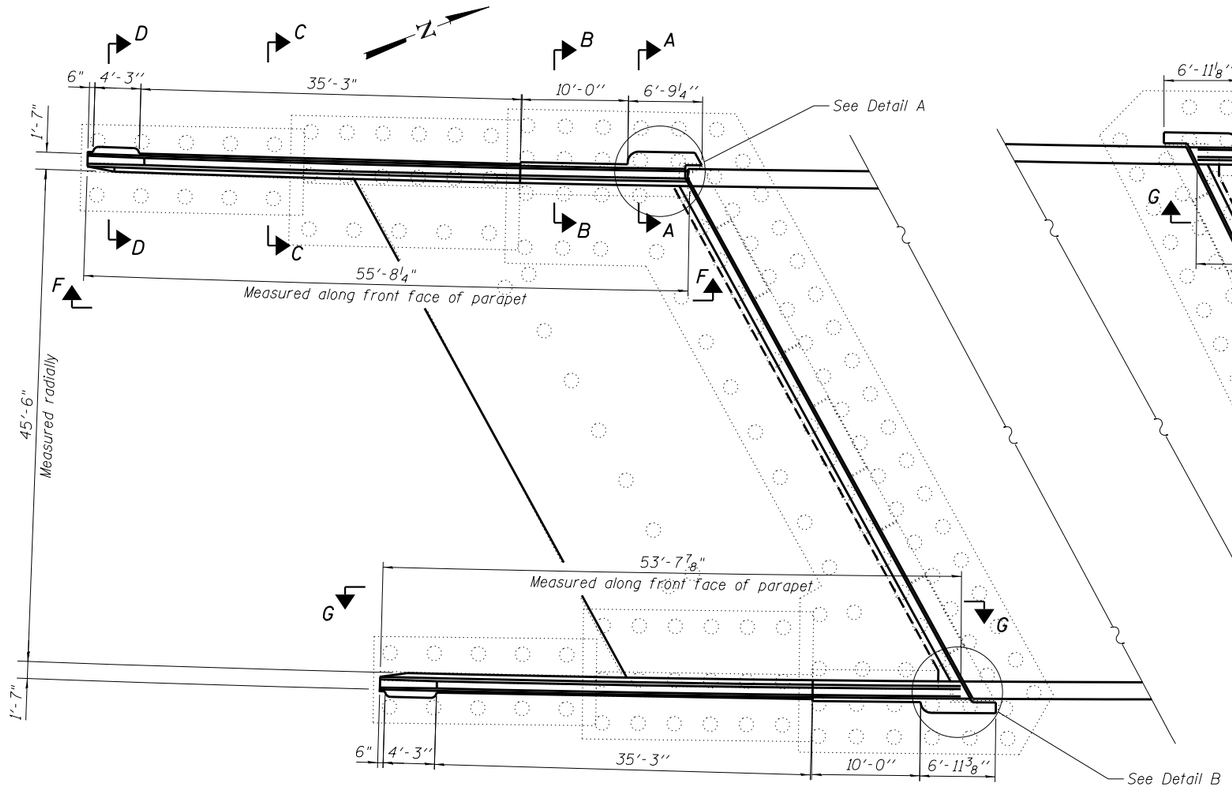
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WINGWALL REMOVAL & REPAIR – SN 016-2442
STRUCTURE NOS. 016-2441 & 016-2442

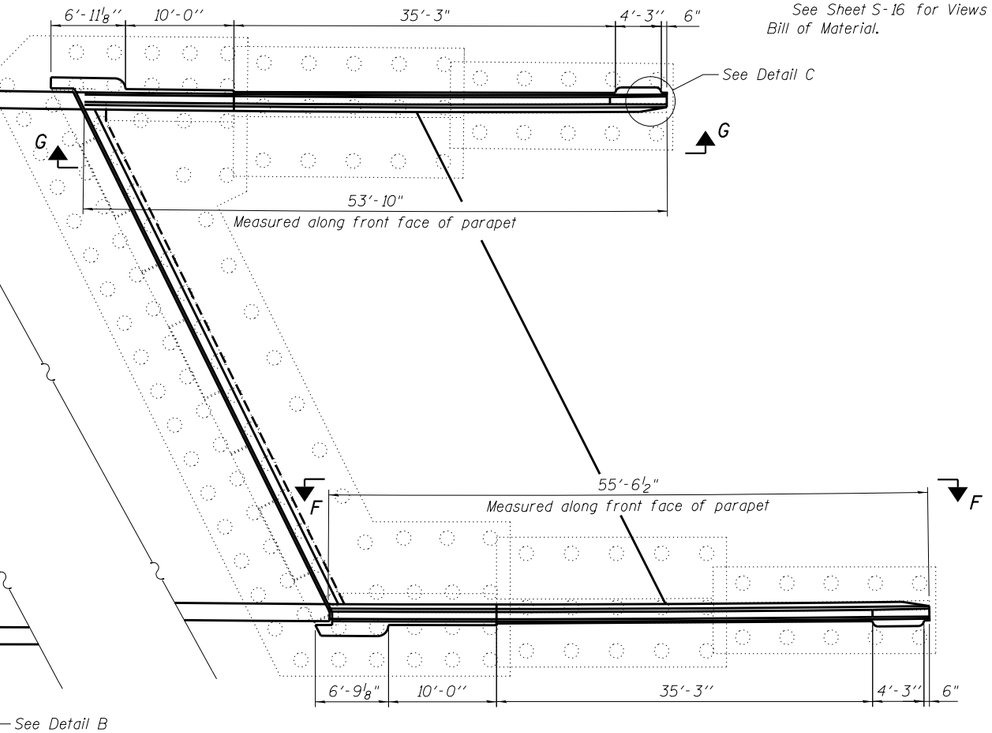
SHEET NO. S-14 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	570
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

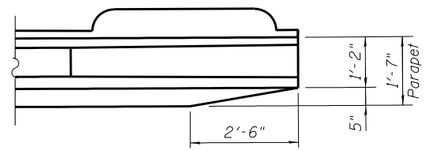
Notes:
All dimensions in sections typical unless noted otherwise.
All dimensions in plan views measured along outside face of wingwalls unless noted otherwise.
See Sheet S-16 for Views F-F and G-G, reinforcement and Bill of Material.



SOUTH ABUTMENT PLAN
(Both Bridges)

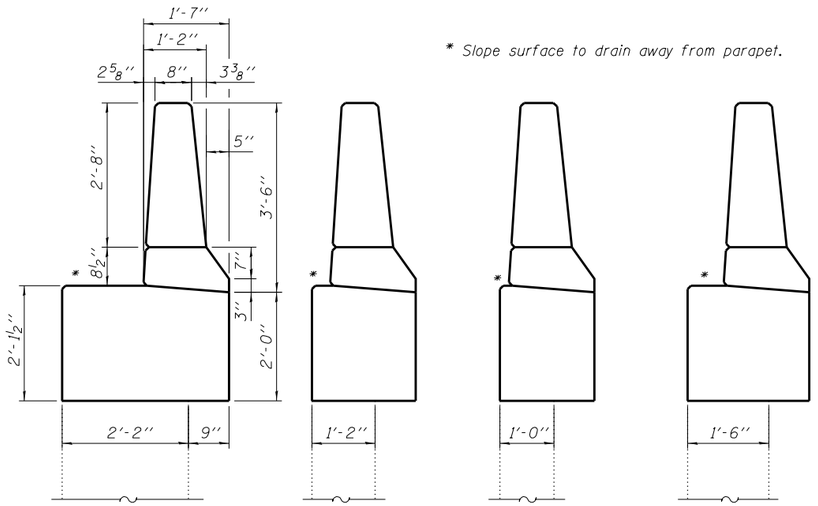


NORTH ABUTMENT PLAN
(Both Bridges)

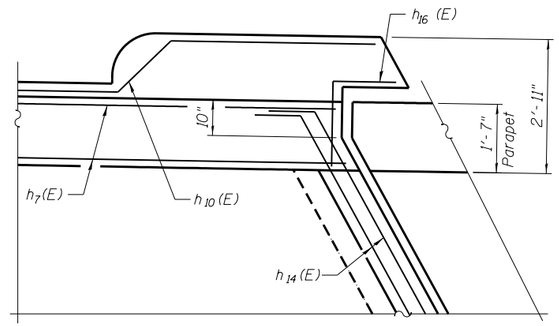


DETAIL C
(Typ. at all wingwalls)

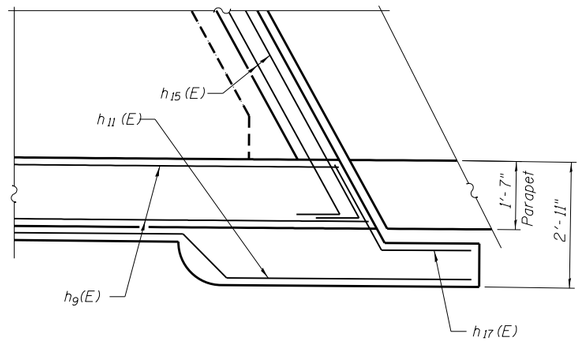
* Slope surface to drain away from parapet.



SECTION A-A | SECTION B-B | SECTION C-C | SECTION D-D



DETAIL A



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	PLOT SCALE =	DRAWN - JGC	REVISED -
	PLOT DATE = 03/29/2013	CHECKED - BAK	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT & WINGWALL DETAILS I
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-15 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	571
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

3/29/2013
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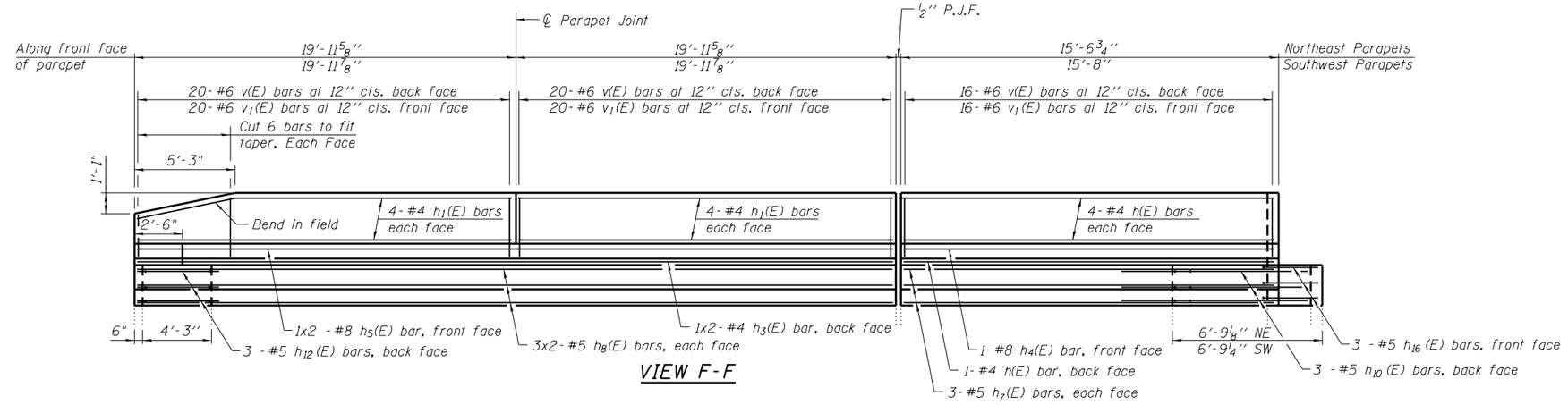
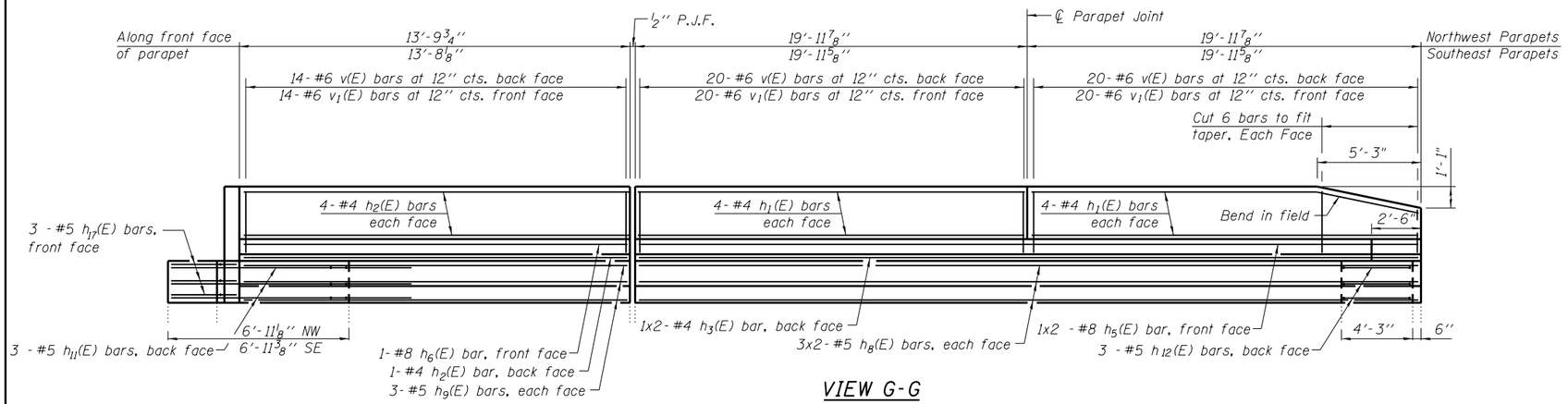


VIEW F-F

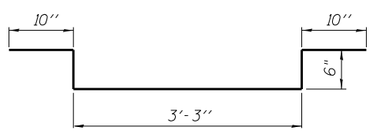
Notes:
For parapet joint details, see Sheet S-6.
Trim bars as required to fit at deck expansion joint.



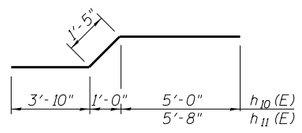
VIEW G-G

MIN. BAR LAP

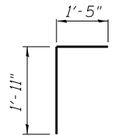
#4 bar = 2'-0"
#5 bar = 3'-8"
#8 bar = 5'-2"



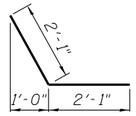
BAR h12(E)



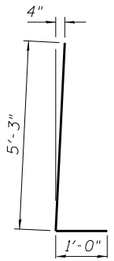
BARS h10(E) and h11(E)



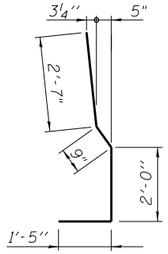
BAR h16(E)



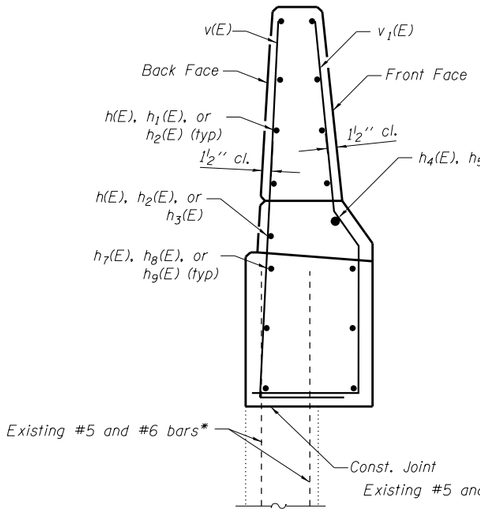
BAR h17(E)



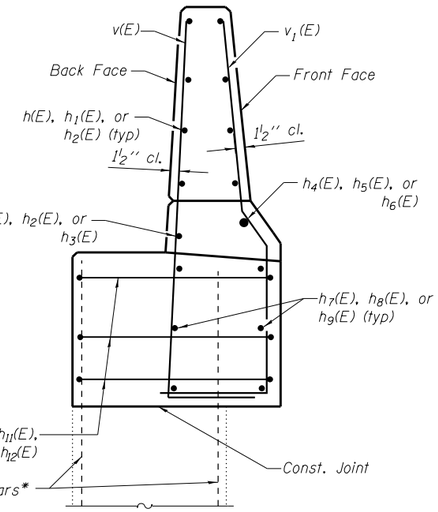
BAR v(E)



BAR v1(E)



TYPICAL PARAPET SECTION



PARAPET SECTION AT ENDS

* Clean and incorporate existing reinforcement into new construction. Cost included with Concrete Removal.

TWO STRUCTURES EIGHT WINGWALLS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	36	#4	15'-3"	
h1(E)	128	#4	19'-7"	
h2(E)	36	#4	14'-1"	
h3(E)	16	#4	20'-10"	
h4(E)	4	#8	15'-3"	
h5(E)	16	#8	22'-5"	
h6(E)	4	#8	13'-4"	
h7(E)	24	#5	15'-3"	
h8(E)	96	#5	21'-8"	
h9(E)	24	#5	14'-1"	
h10(E)	12	#5	10'-3"	
h11(E)	12	#5	10'-11"	
h12(E)	24	#5	5'-11"	
h16(E)	12	#5	3'-4"	
h17(E)	12	#5	4'-2"	
v(E)	440	#6	6'-3"	
v1(E)	440	#6	6'-9"	
Concrete Superstructure		Cu. Yd.	59.6	
Concrete Structures		Cu. Yd.	70.4	
Reinforcement Bars, Epoxy Coated		Pound	15,870	
Protective Coat		Sq. Yd.	212	

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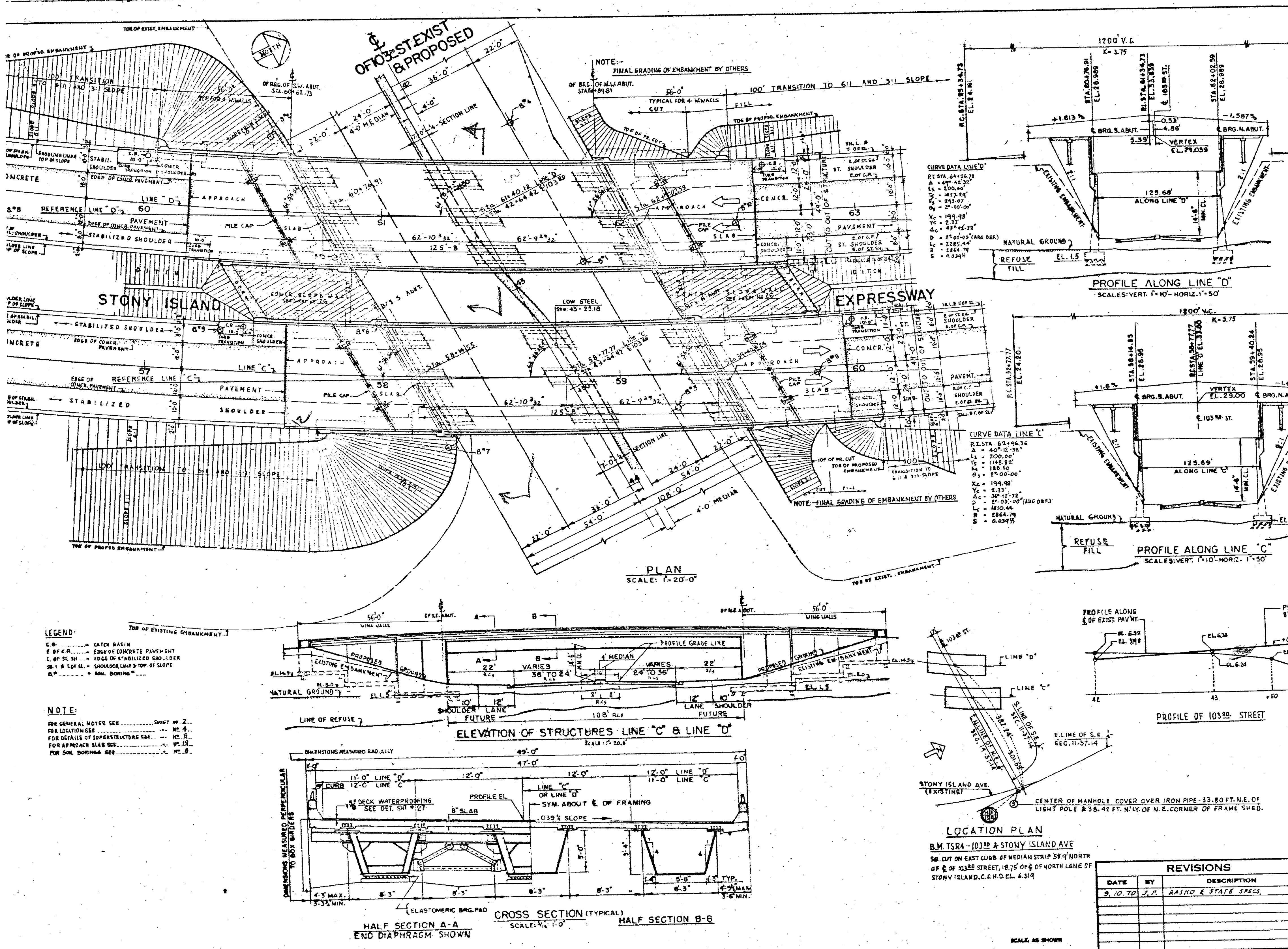
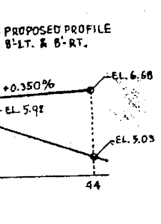
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT & WINGWALL DETAILS II
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-16 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	572
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			





COUNTY PROGRAM		SHEET
ITEM No.	YEAR	No.

DESIGN DATA:

DESIGN LOADS: A.A.S.H.O.-HS20-44 AND ALTERNATE EARTH PRESSURE (FLUID) ------ 40 P.C.F.

DESIGN STRESSES:
STRUCTURAL STEEL (A36) ---- 20,000 P.S.I.
REINFORCEMENT BARS ------ 20,000 P.S.I.
CONCRETE (WITHOUT EARTH PRESSURE) 1,200 P.S.I.
CONCRETE (WITH EARTH PRESSURE) 1,000 P.S.I.

SUPERSTRUCTURES: TWO SEPARATE 49'-0" WIDE, 8" THICK R.C. DECK SLABS ON STEEL BOX GIRDERS, PROTECTED BY DECK WATERPROOFING.
SLOPED CURBS 9" WIDE AND 1'-5" HIGH.
HANDRAILS OF ONE FOOT HIGH CONCRETE PARAPET WALLS AND ONE ELEMENT METAL RAILS.

BEARINGS: ELASTOMERIC NEOPRENE BEARING PADS 10"x2"x6'-3", 60 DUROMETER HARDNESS.

SUBSTRUCTURES: R.C. CANTILEVER ABUTMENTS AND RETAINING WALLS ON TIMBER PILES.

TRAFFIC: ROADWAY WIDTH: EACH ROADWAY SHALL BE 24 FEET WIDE WITH A 12 FOOT SHOULDER ON THE RIGHT AND AN 11 FOOT SHOULDER ON THE LEFT; THE SHOULDER WIDTHS TO BE CARRIED THROUGH THE STRUCTURES.

DESIGN DESIGNATION EXPRESSWAY
3800 (88). FR-3- - - (C.R.P.C.C.-20)
ADTT: SOUTH BOUND - - - 3800 - VEHICLES
NORTH BOUND - - - 3800 - VEHICLES
DESIGN SPEED ------------ 60 M.P.H.

DESIGN DESIGNATION 103RD STREET
2025 (88). TS-3-5.60 - - (P C C-20)
DESIGN SPEED --------- 40 M.P.H.

AASHO 1969 STANDARD SPECIFICATIONS

STATE OF ILLINOIS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED AUGUST 1, 1968 & AS AMENDED TO DATE.
AMERICAN WELDING SOCIETY SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES 1966, AS AMENDED TO DATE.

NOTE :-
SEE SPECIAL PROVISIONS FOR TRAFFIC ROUTING PROCEDURE DURING ERECTION OF GIRDERS

REVISIONS		
DATE	BY	DESCRIPTION
3.10.70	J.P.	AASHO & STATE SPECS.

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS
THOMAS. G. COTS, SUPERINTENDENT OF HIGHWAYS

GENERAL PLAN
STONY ISLAND EXPRESSWAY GRADE SEPARATION OVER 103RD STREET

COMPUTED J. PASINSKI
CHECKED
DRAWN KLETCHANEK T.A.
CHECKED
PROJECT EBL-246(44)
SUBMITTED 28 May 1970
STRUCTURAL DESIGN ENGINEER
EXAMINED
CHIEF ENGINEER OF DESIGN

Route	SECTION NUMBER	Sheet No.	Total Sheets	Drawing No.
122	174-1515E-C.K 176-1515E-C.K	3	34	SI-37-S

GENERAL NOTES

CONCRETE:

CLASS "X" CONCRETE SHALL BE USED THROUGHOUT.
THE CONCRETE DECK SLAB SHALL BE PLACED IN ONE CONTINUOUS OPERATION BETWEEN EXPANSION JOINTS.

FINISHING OF THE DECK SLAB SHALL BE AS SPECIFIED IN SPECIAL PROVISION FOR FINISHING CAST-IN-PLACE CONCRETE BRIDGE FLOORS.

THE EXPOSED SURFACE OF DECK SLAB NOT COVERED BY BRIDGE DECK WATER-PROOFING SUCH AS CONCRETE LIPS, THE CURBS AND THE TOPS AND THE IN-SIDE VERTICAL FACES OF HANDRAIL PARAPETS SHALL BE GIVEN A PROTECTIVE COAT IN ACCORDANCE WITH ARTICLE 503.13 OF THE STANDARD SPECIFICATIONS.

THE CONCRETE SHALL BE FINISHED IN ACCORDANCE WITH SPECIAL PROVISION FOR SURFACE FINISH.

- * The cost of surface finish waterproofing to all concrete surfaces in contact with embankment in accordance with Article 503.12, rubber waterseals and the bituminous premoulded [illegible] joint fillers shall be included in the contract unit price for "Class X Concrete"

PERMANENT FORMS WILL NOT BE PERMITTED IN FORMING CONCRETE DECK SLABS.
ALL CONCRETE SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE SHOWN OR NOTED ON PLANS.

THE BRIDGE SEATS SHALL BE CONSTRUCTED TO THE EXACT ELEVATIONS SHOWN. IF BUSH HAMMERING OR GRINDING IS NECESSARY, THIS WORK SHALL BE DONE AT NO ADDITIONAL COST TO THE COUNTY.

STRUCTURAL STEEL:

ALL STRUCTURAL STEEL SHALL BE CARBON STEEL A36 AND SHALL CONFORM TO ASTM-A36 SPECIFICATIONS.

THE SHOP CONNECTIONS FOR STRUCTURAL STEEL SHALL BE WELDED.

ALL WELDING SHALL CONFORM TO THE "SPECIFICATIONS FOR WELDED HIGHWAY AND RAILWAY BRIDGES" OF THE AMERICAN WELDING SOCIETY.

CROSS FRAMES BETWEEN STEEL BOX GIRDERS ARE TO BE FIELD CONNECTED WITH HIGH-STRENGTH STEEL BOLTS.

THE BASIC LEAD SILICO CHROMATE PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF STFUCTURAL STEEL.

ENCLOSED AREAS OF THE STEEL BOX GIRDERS SHALL BE TREATED IN ADDITION WITH TWO COATS OF HEAVY DUTY EPOXY SEALER MEETING FEDERAL DEPARTMENT OF AGRICULTURE REQUIREMENTS FOR EXTRACTION IN POTABLE WATER AND WINE VESSELS. SEE SPECIAL PROVISIONS.

ENDS OF BOX GIRDER NEAR THE DRAINAGE HOLE TO BE PROTECTED BY EPOXY RESIN AS SHOWN ON PLANS.

REINFORCEMENT BARS:

REINFORCEMENT BARS SHALL BE BILLET STEEL OF INTERMEDIATE GRADE.

* Revised to Addendum #1 10-16-70

SUMMARY OF QUANTITIES

QUANTITY	UNIT	ITEM
2 365.8	CU. YDS.	CLASS "X" CONCRETE
282 480	LBS.	REINFORCEMENT BARS
376	SQ. YDS.	PROTECTIVE COAT
	* LUMP SUM	FURNISHING AND ERECTING STRUCTURAL STEEL
4 656	EACH	WELDED STUD SHEAR CONNECTORS
4 480	LIN. FT.	FURNISHING CREOSOTED PILES, 16 INCH. DIA., UP TO 20 FT. LONG
1 012	LIN. FT.	FURNISHING CREOSOTED PILES, 16 INCH. DIA., 20.1 FT. TO 38 FT. LONG
3 373	LIN. FT.	FURNISHING CREOSOTED PILES, 12 INCH. DIA. UP TO 20 FT. LONG
391	LIN. FT.	FURNISHING CREOSOTED PILES, 12 INCH. DIA. 20.1 FT. TO 38 FT. LONG
9 256	LIN. FT.	DRIVING TIMBER PILES
5	EACH	TEST PILES
907	LIN. FT.	ALUMINUM RAILING
988	CU. YDS.	CLASS "A" EXCAVATION FOR STRUCTURES
2 534	CU. YDS.	CLASS "A" EXCAVATION FOR STRUCTURES (MODIFIED)
383	CU. YDS.	EARTH EXCAVATION
734	CU. YDS.	BORROW EXCAVATION
617	CU. YDS.	POROUS GRANULAR EMBANKMENT
5 137	CU. YDS.	SAND OR GRAVEL EMBANKMENT
740	LIN. FT.	PERFORATED CORRUGATED METAL PIPE, 6 INCH. DIA.
58	SQ. YD.	BRIDGE SEAT SEALANT
2	EACH	NAME PLATES
1 277	SQ. YDS.	COAL TAR INTERLAYER PROTECTIVE COAT
32	LIN. FT.	RIGID STEEL CONDUIT 1 INCH. DIA.
124	LIN. FT.	RIGID STEEL CONDUIT 1¼ INCH. DIA.
4	EACH	CAST IRON "J" BOX WEATHERPROOF 8"x8"x6" DEEP
330	SQ. YDS.	CONCRETE SLOPE WALLS 4 INCH.
1	EACH	ENGINEER'S FIELD OFFICE-TYPE A
107	TON	BITUMINOUS CONCRETE SURFACE COURSE, CLASS I, 1¼"
	LUMP SUM	CONSTRUCTION LAYOUT STAKES

* CALCULATED PLAN WEIGHT OF STRUCTURAL STEEL-606,550 LBS

SCALE: AS SHOWN

REVISIONS

DATE	BY	DESCRIPTION
9-10-1970	J P	Quantities

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS — THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

SUMMARY OF QUANTITIES-GENERAL NOTES
STONY ISLAND EXPRESSWAY GRADE SEPARATIO[N]
OVER
103RD STREET

COMPUTED F. Suk
CHECKED
DRAWN
CHECKED Lassota

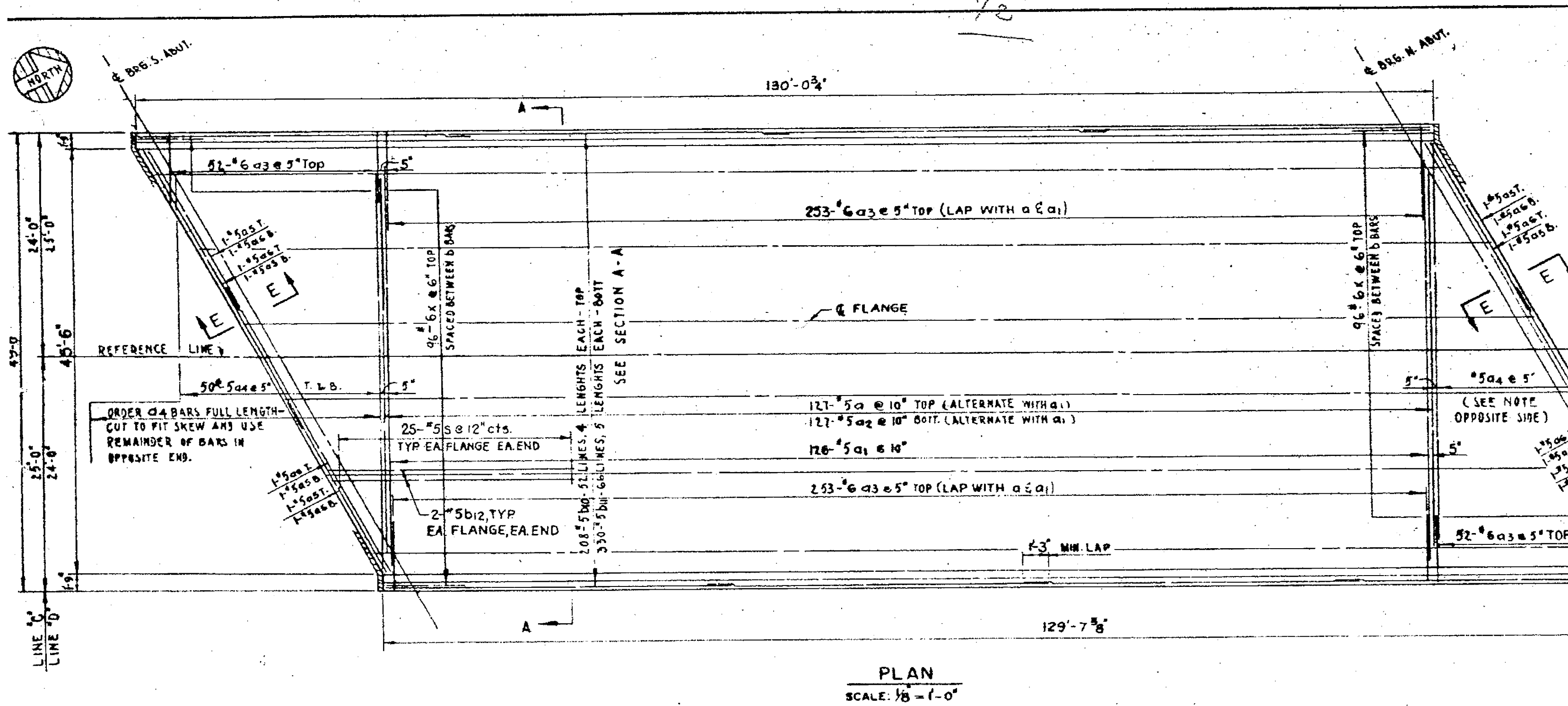
PROJECT EBU-246(44)
SUBMITTED
STRUCTURAL DESIGN ENGINEER

EXAMINED
CHIEF ENGINEER OF DESIGN

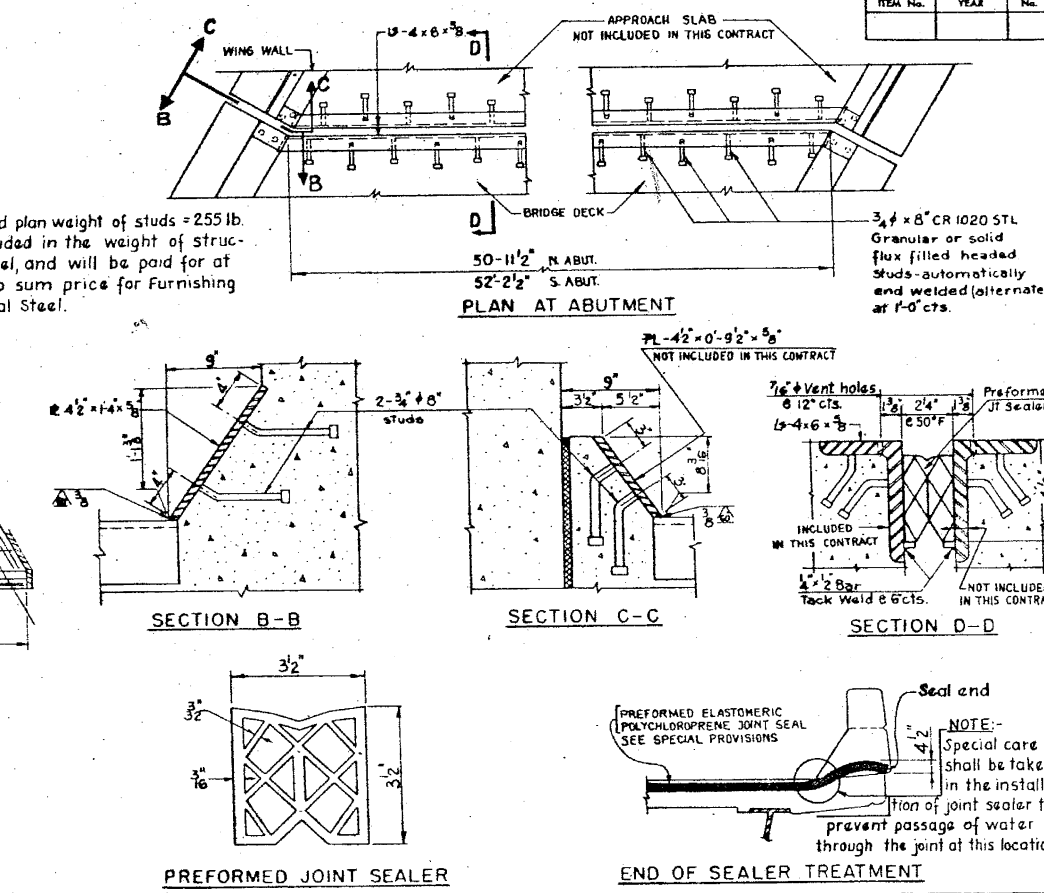
Route	SECTION NUMBER	Sheet No.	Total Sheets	
127	174-3152-CZ 176-1513.2-CZ	8	34	S.I.-3

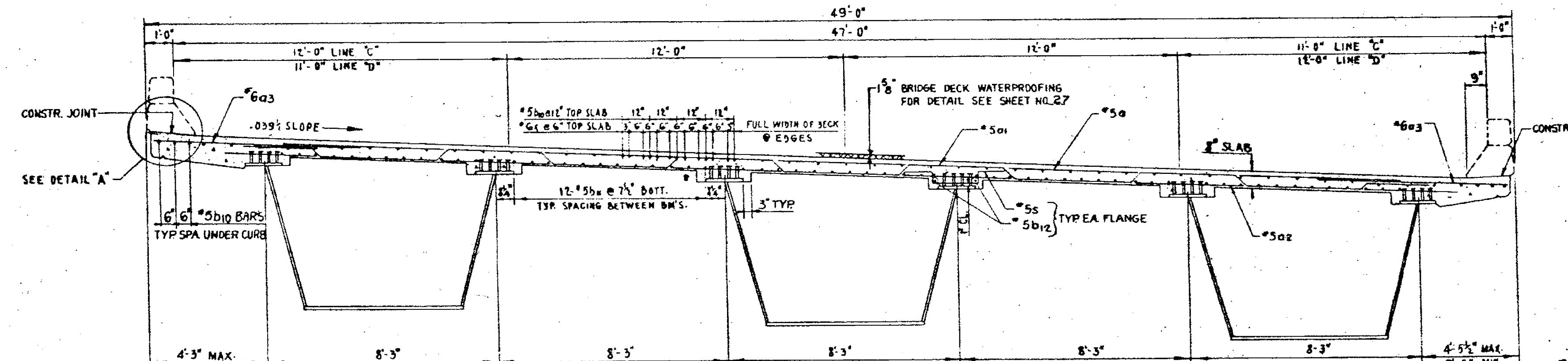
2:55:12 PM 3/29/2013 S:\1072\05_CADD\Structural\SN 016241,2442\CADD Sheets\016241-2442-60J12-018e-FY01a.dgn

BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS Chicago, Illinois 312.228.0100 www.bbandainc.com	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS (FOR INFORMATION ONLY) STRUCTURE NOS. 016-2441 & 016-2442	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - BAK	REVISED -			94	2012-059-BR	COOK	631	574
	PLOT SCALE =	DRAWN -	REVISED -					CONTRACT NO. 60J12		
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -		SHEET NO. S-18 OF S-31 SHEETS		ILLINOIS FED. AID PROJECT			

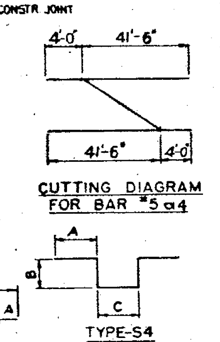


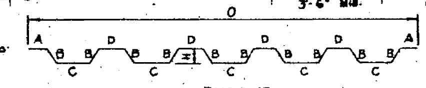
NOTE:- Calculated plan weight of studs = 255 lb. are included in the weight of structural steel, and will be paid for at the lump sum price for Furnishing Structural Steel.

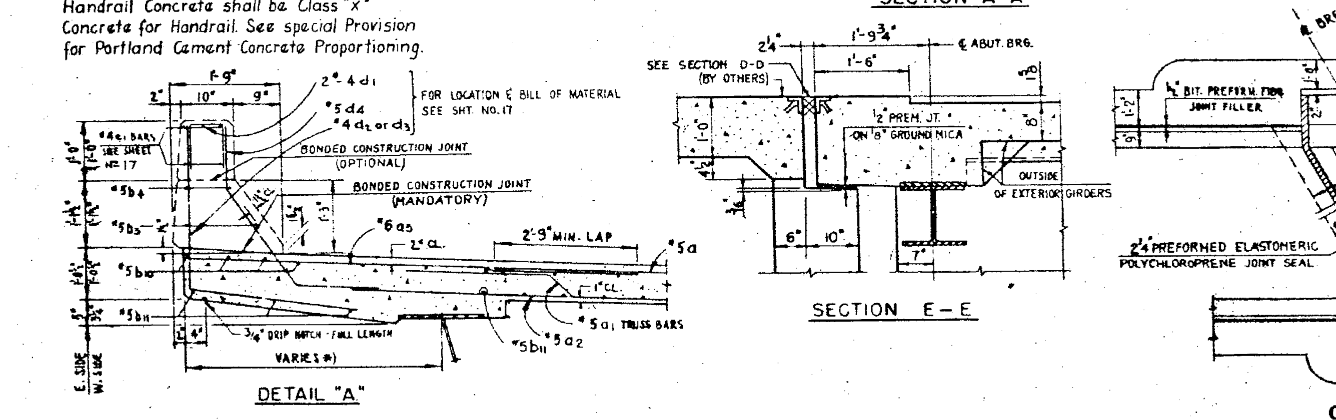




NOTE:- Handrail Concrete shall be Class "X" Concrete for Handrail. See special Provision for Portland Cement Concrete Proportioning.







SLAB BAR SCHEDULE

MARK	LINE 'C' NO.	LINE 'D' NO.	TOTAL NO.	LGTH	SIZE	SKETCH	TYPE	A	B	C	D	E	F	H	O	LOCATION
a	127	127	254	40'-0"	#5	—										
a1	126	126	252	44'-3"	#5		15	2'-3¾"	0'-7"	4'-1½"	3'-3½"			0'-5"	42'-7"	
a2	127	127	254	44'-2"	#5	—										
a3	610	610	1220	7'-1"	#6	—										
a4	100	100	200	45'-6"	#5	—										
a5	8	8	16	19'-0"	#5	—										
a6	8	8	16	35'-0"	#5	—										
b10	208	208	416	33'-4"	#5	—										
b11	330	330	660	26'-11"	#5	—										
b12	24	24	48	26'-0"	#5	—										
x	192	192	384	4'-3"	#6	—										
s	300	300	600	4'-10"	#5		S4	1'-0"	0'-8"	1'-6"						

BILL OF MATERIAL FOR BOTH DECKS	
CLASS "X" CONCRETE	390.8 CU.YDS.
REINFORCEMENT BARS	97 070 LBS.
STRUCTURAL STEEL (THIS SHEET)	4 580 LBS.
BITUMINOUS CONCRETE SURFACE COURSE, CLASS I, 1½"	107 TON
COAL TAR INTERLAYER PROTECTIVE COAT	1 277 SQ.YDS.
PROTECTIVE COAT	34.3 SQ.YDS.

REVISIONS

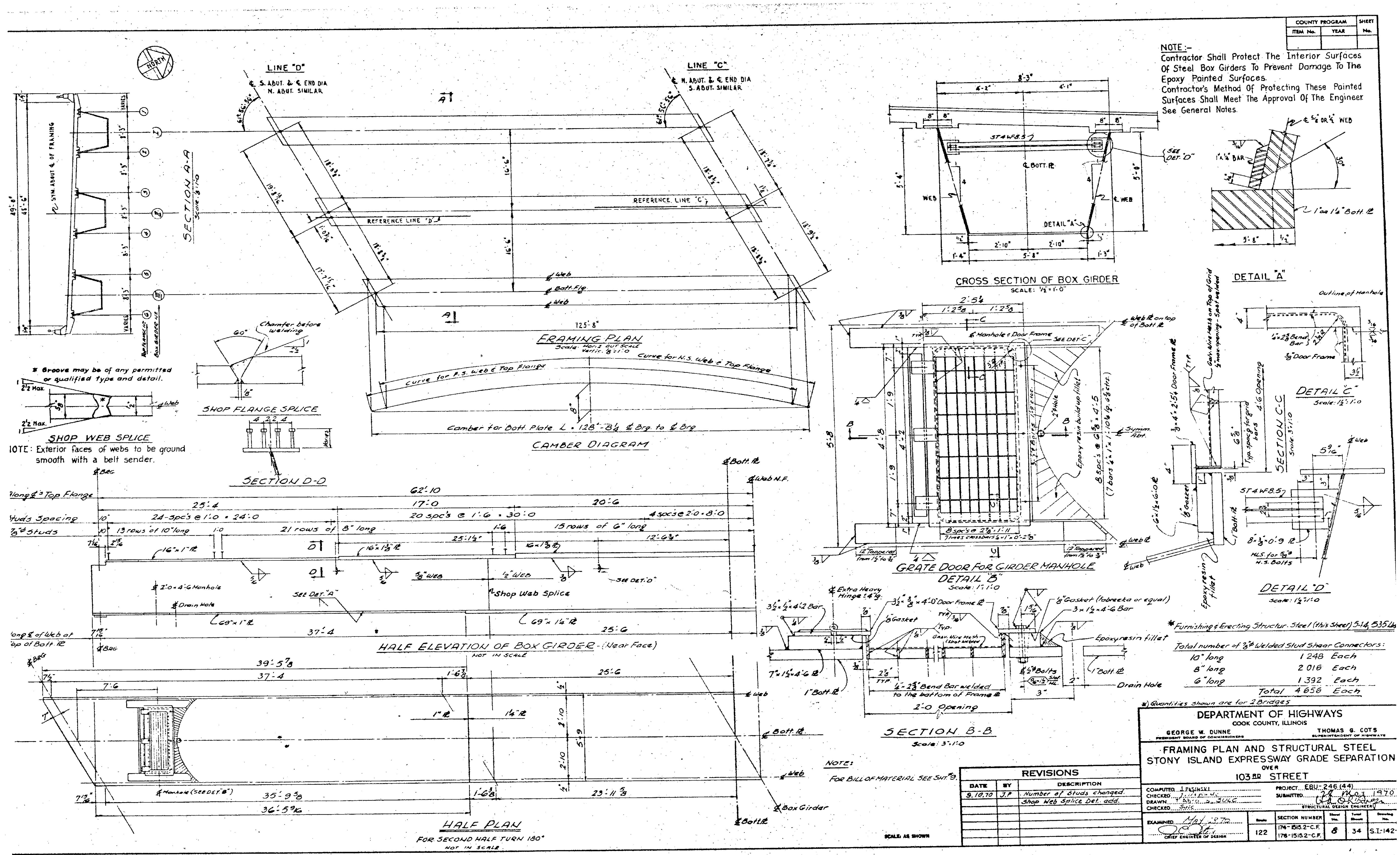
DATE	BY	DESCRIPTION
9.10.70	J.P.	Det. "A": Bonded Constr. Joints added. Bill of Mat. Studs deleted. Joint Sealer - Note added

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS
THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

DETAILS OF SUPERSTRUCTURE
STONY ISLAND EXPRESSWAY GRADE SEPARATION
OVER
103RD STREET

PROJECT EBU-246 (44)
SUBMITTED 28 May 1970
STRUCTURAL DESIGN ENGINEER
EXAMINED May 28 70
CHIEF ENGINEER OF DESIGN

Route	SECTION NUMBER	Sheet No.	Total Sheets	Drawing No.
122	174-1515.2-C.F. 176-1515.2-C.F.	6	34	S.I.-140


NOTE :-
Contractor Shall Protect The Interior Surfaces Of Steel Box Girders To Prevent Damage To The Epoxy Painted Surfaces.
Contractor's Method Of Protecting These Painted Surfaces Shall Meet The Approval Of The Engineer. See General Notes.
SECTION A-A
LINE "D"
LINE "C"
REFERENCE LINE "D"
REFERENCE LINE "C"
FRAMING PLAN
CAMBER DIAGRAM
Camber for Bott. Plate L = 128'-8¼ ℄ Brg to ℄ Brg
CROSS SECTION OF BOX GIRDER
DETAIL "A"
SHOP FLANGE SPLICE
SECTION D-D
SHOP WEB SPLICE
NOTE: Exterior faces of webs to be ground smooth with a belt sander.
GRATE DOOR FOR GIRDER MANHOLE
DETAIL "B"
DETAIL "C"
SECTION C-C
DETAIL "D"
HALF ELEVATION OF BOX GIRDER - (Near Face)
HALF PLAN
FOR SECOND HALF TURN 180°
SECTION B-B
NOTES:
FOR BILL OF MATERIAL SEE SHT. 9.
*Furnishing & Erecting Structur. Steel (this Sheet) 314,535 Lbs
Total number of ⅞"φ Welded Stud Shear Connectors:
10" long 1 248 Each
8" long 2 016 Each
6" long 1 392 Each
Total 4 656 Each
*) Quantities shown are for 2 Bridges
REVISIONS
DATE | BY | DESCRIPTION
9.10.70 | J.P. | Number of Studs changed. Shop Web Splice Det. add.
DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE
THOMAS G. COTS
FRAMING PLAN AND STRUCTURAL STEEL
STONY ISLAND EXPRESSWAY GRADE SEPARATION
OVER
103RD STREET
PROJECT EBU-246(44)
STRUCTURAL DESIGN ENGINEER
CHIEF ENGINEER OF DESIGN
SCALE: AS SHOWN
122
174-1515.2-C.F.
176-1515.2-C.F.
8
34
S.I.-142-

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		CHECKED - BAK	REVISED -		
	PLOT SCALE =	DRAWN	REVISED -		
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -		SHEET NO. S-20 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	576
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

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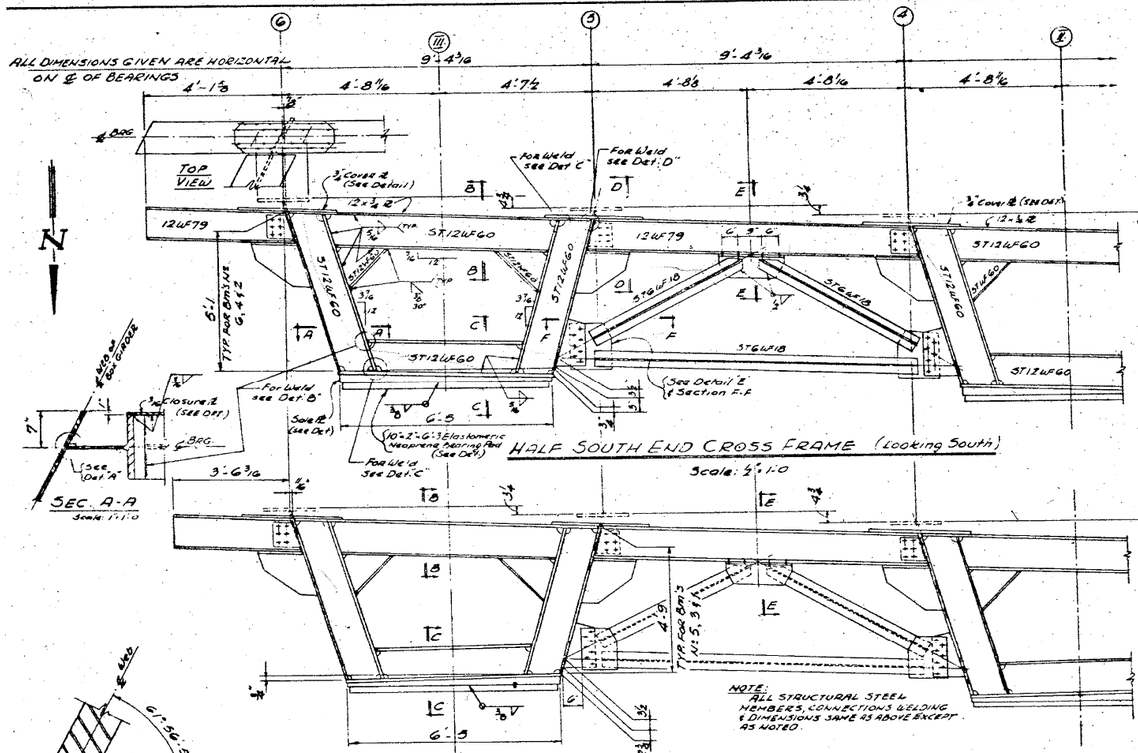
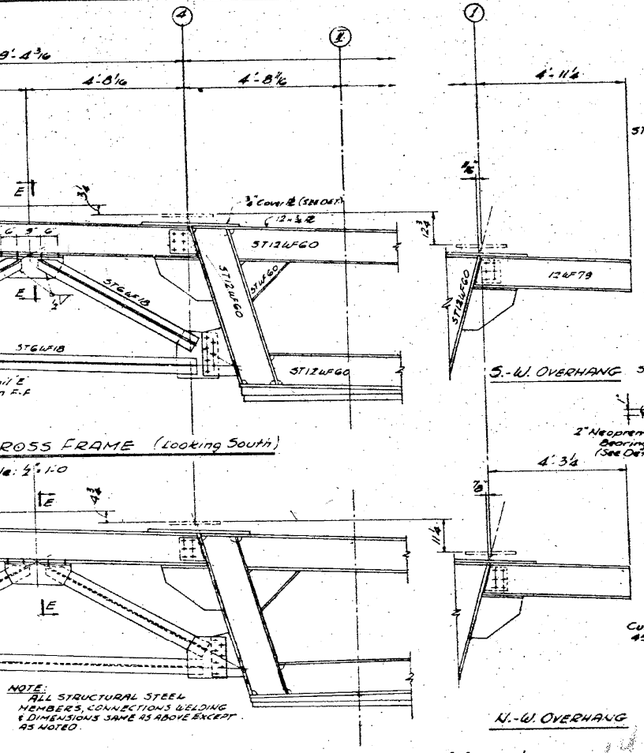
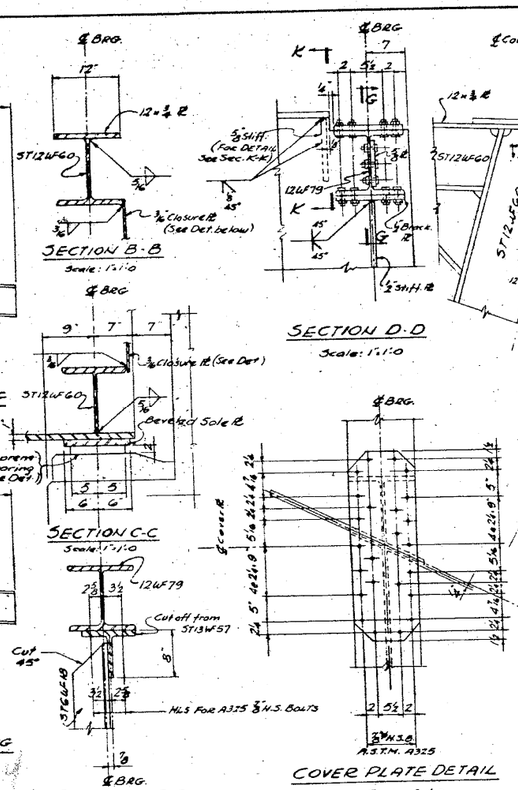
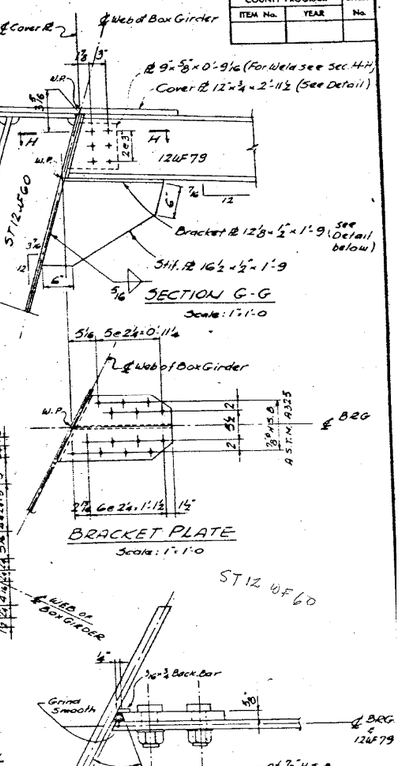
COUNTY PROGRAM ITEM No.	YEAR	SHEET No.

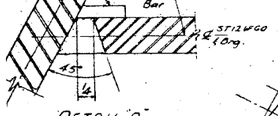
ALL DIMENSIONS GIVEN ARE HORIZONTAL ON ℄ OF BEARINGS

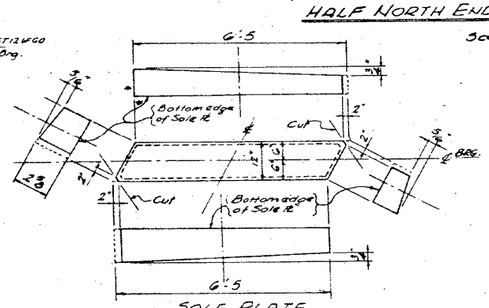


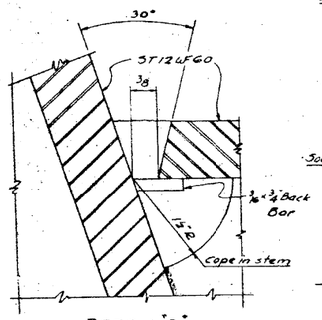


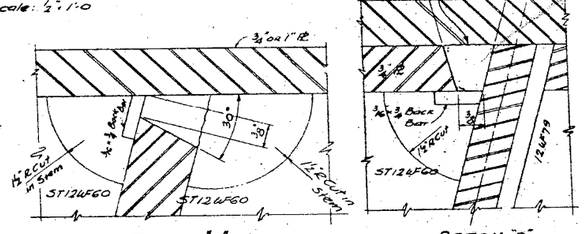


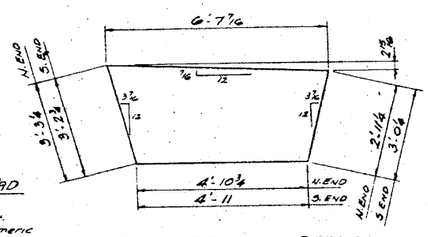












* BILL OF MATERIAL (Sht "A69)	
Furnishing and Erecting Structural Steel	601,100 Lbs.
Welded Stud Shear Connectors	4,656 Each

* Furnishing and Erecting Structural Steel (this sheet) 56,565 Lbs.

Note (*) Quantities shown are for 2 Bridges.

SCALE: AS SHOWN

REVISIONS		
DATE	BY	DESCRIPTION
9.10.70	J.P.	Bill of Mat. - Number of Studs changed.
		Neoprene Pad Det. - Cut off the corners.

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS — THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

STRUCTURAL STEEL DETAILS
STONY ISLAND EXPRESSWAY GRADE SEPARATION OVER 103 RD STREET

COMPUTED J.TASINSKI
CHECKED J.P.
DRAWN JUKG
CHECKED

PROJECT EBU-246(441)
SUBMITTED 26 May 19 71

STRUCTURAL DESIGN ENGINEER

EXAMINED
CHIEF ENGINEER OF DESIGN

Route	SECTION NUMBER	Sheet No.	Total Sheets	Drawing No.
122	174-1515.2-C.F.	9	34	S.I.-14
	176-1515.2-C.F.			

ST12WFGO

HS 10 5184

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CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com

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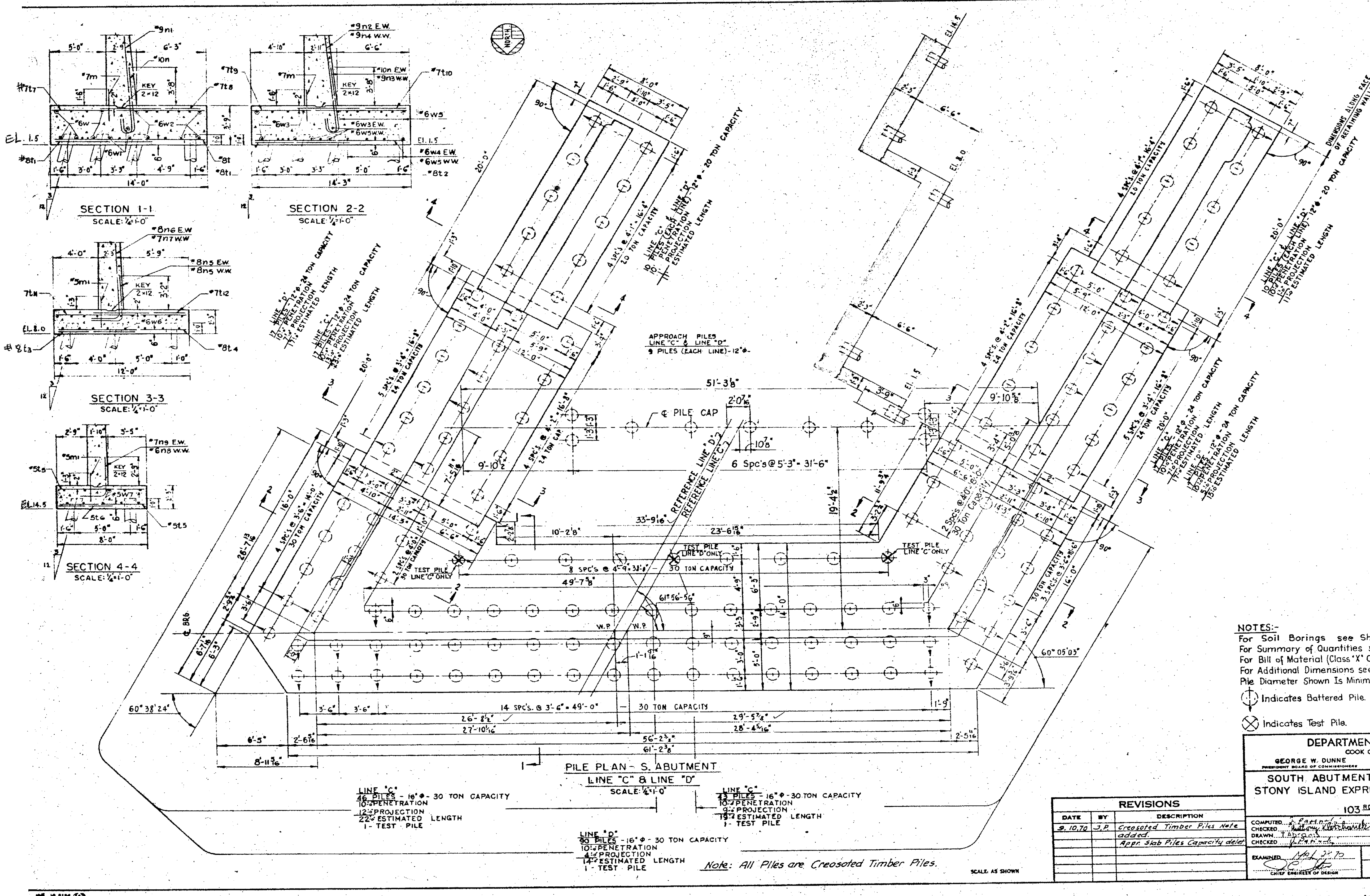
	CHECKED - BAK	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-21 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	577
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



NOTES:-
For Soil Borings see Sheet No. 5
For Summary of Quantities see Sht. No. 2
For Bill of Material (Class "X" Concrete & Re-Bars see Sht. #11)
For Additional Dimensions see Sht #12
Pile Diameter Shown Is Minimum.
(battered pile symbol) Indicates Battered Pile.
(test pile symbol) Indicates Test Pile.

REVISIONS		
DATE	BY	DESCRIPTION
9.10.70	J.P.	Creosoted Timber Piles Note added.
		Appr. Slab Piles Capacity delet

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS — THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

SOUTH ABUTMENTS - FOOTING AND PILES
STONY ISLAND EXPRESSWAY GRADE SEPARATION
OVER
103RD STREET

COMPUTED ______ CHECKED ______ DRAWN ______ CHECKED ______
PROJECT EBU-246 (44)
SUBMITTED 28 May 1970
STRUCTURAL DESIGN ENGINEER
EXAMINED ______ CHIEF ENGINEER OF DESIGN

Route	SECTION NUMBER	Sheet No.	Total Sheets	Drawing No.
122	174-1515.2-C.F. 176-1515.2-C.F.	10	34	S.1-14

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		CHECKED - BAK	REVISED -			CONTRACT NO. 60J12
	PLOT SCALE =	DRAWN -	REVISED -			
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -		SHEET NO. S-22 OF S-31 SHEETS	ILLINOIS FED. AID PROJECT

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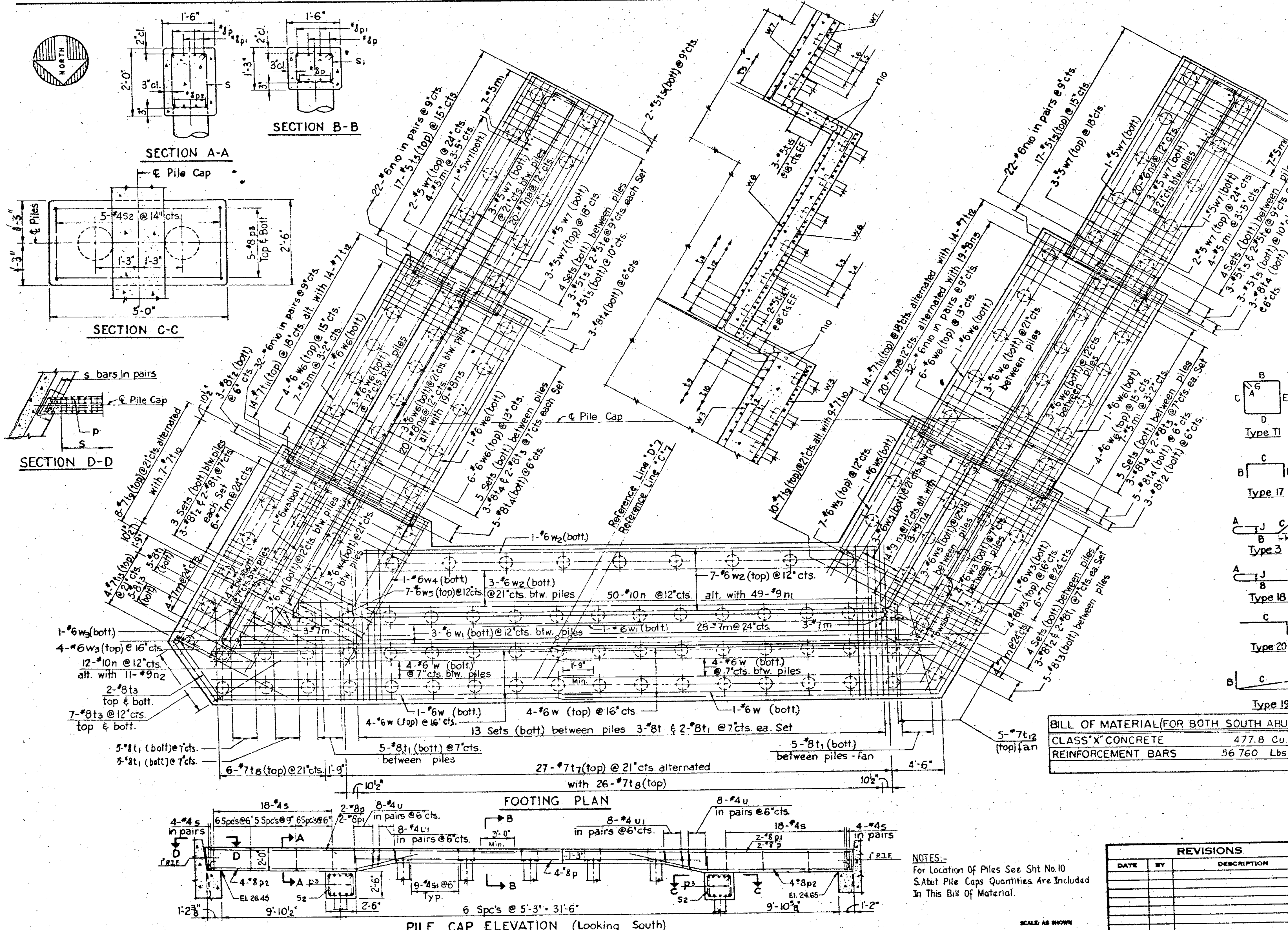

NOTES:-
For Location Of Piles See Sht No. 10
S.Abut Pile Caps Quantities Are Included In This Bill Of Material.

SCALE: AS SHOWN

BAR SCHEDULE (FOR ONE ABUT ONLY)														
MARK	NO	SIZE	LGTH	SKETCH	TYPE	A	B	C	D	E	J	G	H	K
t	39	#8	13'-6"	—										
t1	65	#8	8'-3"	—										
t2	27	#8	13'-9"	—										
t3	48	#8	6'-6"	—										
t4	46	#8	11'-6"	—										
t5	68	#5	7'-6"	—										
t6	16	#5	5'-0"	—										
t7	27	#7	13'-6"	—										
t8	32	#7	9'-3"	—										
t9	18	#7	13'-9"	—										
t10	16	#7	9'-6"	—										
t11	28	#7	11'-6"	—										
t12	33	#7	8'-3"	—										
t13	4	#7	10'-9"	—										
t14	8	#5	11'-8"	—										
t15	12	#5	7'-8"	—										
w	18	#6	32'-0"	—										
w1	4	#6	56'-0"	—										
w2	11	#6	43'-0"	—										
w3	22	#6	20'-0"	—										
w4	4	#6	10'-0"	—										
w5	22	#6	15'-6"	—										
w6	36	#6	20'-9"	—										
w7	20	#5	20'-0"	—										
m	54	#7	3'-6"	—										
m1	36	#5	3'-9"	—										
n	62	#10	7'-4"	⊃	18	1'-5"	5'-11"				1'-0½"			
n1	49	#9	12'-6"	⊃	18	1'-3"	11'-3"				0'-11¼"			
n2	11	#9	14'-2"	⊃	18	1'-3"	12'-11"				0'-11¼"			
n3	14	#9	7'-4"	⊃	18	1'-3"	6'-1"				0'-11¼"			
n4	13	#9	11'-8"	⊃	18	1'-3"	10'-5"				0'-11¼"			
n5	38	#8	6'-4"	⌉	19		2'-0"	4'-4"					0'-3"	
n6	20	#8	9'-11"	⌉	19		2'-0"	7'-11"					0'-6"	
n7	20	#7	8'-2"	⌉	19		2'-0"	6'-2"					0'-4½"	
n8	20	#7	4'-9"	⊃	18	0'-10"	3'-11"				0'-7"			
n9	20	#6	4'-7"	⊃	18	0'-8"	3'-11"				0'-6"			
n10	108	#6	10'-0"	⌉	20		2'-0"	8'-0"						
p	8	#8	25'-0"	—										
p1	4	#8	30'-0"	—										
p2	8	#8	19'-5"	⌣	3	0'-11"	12'-6"	6'-0"			0'-8"		1'-9"	5'-10"
p3	20	#8	4'-8"	—										
s	44	#4	5'-8"	◻	T1	0'-3"	1'-0"	1'-7"	1'-0"	1'-7"		0'-3"		
s1	36	#4	4'-2"	◻	T1	0'-3"	1'-0"	0'-10"	1'-0"	0'-10"		0'-3"		
s2	10	#4	8'-6"	◻	T1	0'-3"	2'-0"	2'-0"	2'-0"	2'-0"		0'-3"		
u	16	#4	3'-8"	⊓	17		1'-4"	1'-0"	1'-4"					
u1	16	#4	2'-10"	⊓	17		0'-11"	1'-0"	0'-11"					

BILL OF MATERIAL (FOR BOTH SOUTH ABUT'S)	
CLASS "X" CONCRETE	477.8 Cu. Yds.
REINFORCEMENT BARS	56 760 Lbs.

REVISIONS		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS
THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

SOUTH ABUTMENTS FOOTING REINFORCEMENT STONY ISLAND EXPRESSWAY GRADE SEPARATION OVER 103RD STREET

COMPUTED [signature]
CHECKED T. Lassota
DRAWN T.L./J.M.
CHECKED [signature]
PROJECT EBU-246(44)
SUBMITTED 28 May 1970
STRUCTURAL DESIGN ENGINEER
EXAMINED [signature]
CHIEF ENGINEER OF DESIGN

Route	SECTION NUMBER	Sheet No.	Total Sheets	Drawing No.
122	174-15152-C.F. 176-15152-C.F.	11	34	S.I.-145

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	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-23 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	579
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

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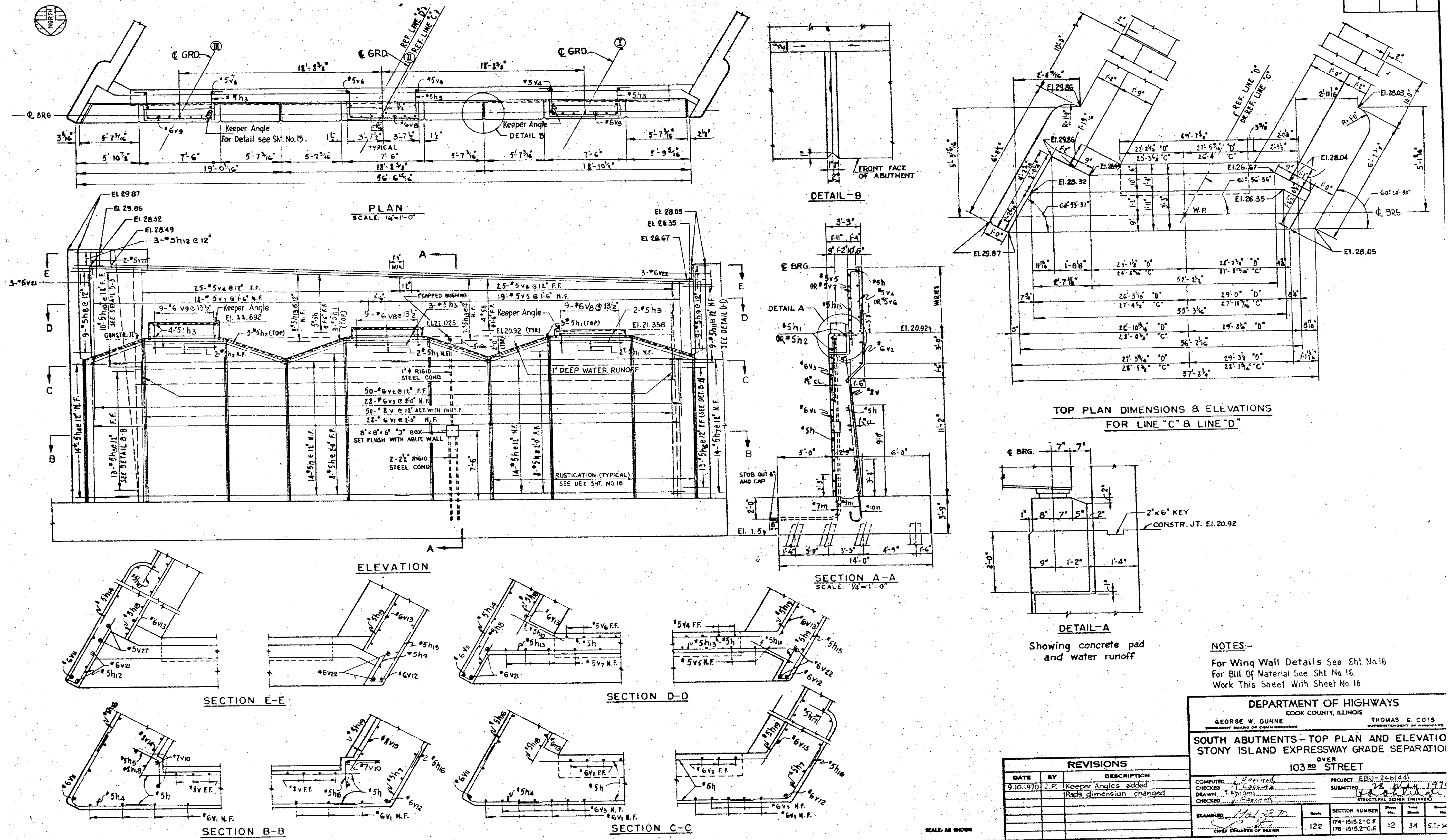

NOTES:-
For Wing Wall Details See Sht No.16
For Bill Of Material See Sht No. 16.
Work This Sheet With Sheet No. 16.

COUNTY PROGRAM		SHEET
ITEM No.	YEAR	No.

REVISIONS

DATE	BY	DESCRIPTION
9.10.1970	J.P.	Keeper Angles added
		Pads dimension changed

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE — PRESIDENT BOARD OF COMMISSIONERS
THOMAS G. COTS — SUPERINTENDENT OF HIGHWAYS

SOUTH ABUTMENTS – TOP PLAN AND ELEVATIO
STONY ISLAND EXPRESSWAY GRADE SEPARATIO
OVER
103RD STREET

PROJECT EBU-246(44)

Route	SECTION NUMBER	Sheet No.	Total Sheets	Drawing
122	174-1515.2-C.F. / 176-1515.2-C.F.	12	34	S.T.-14

SCALE: AS SHOWN

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		CHECKED - BAK	REVISED -		
	PLOT SCALE =	DRAWN -	REVISED -		
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -		SHEET NO. S-24 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	580
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

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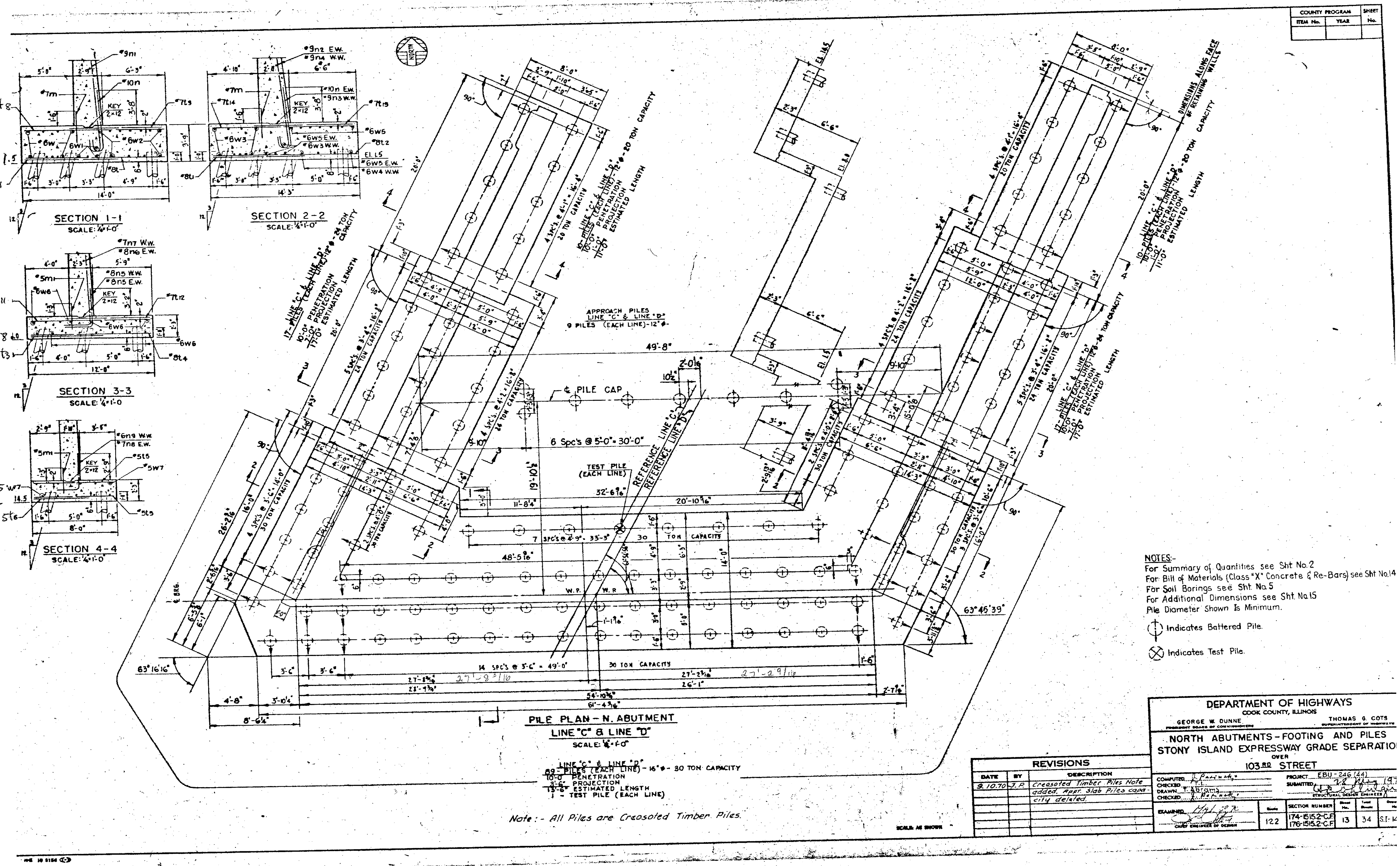
SECTION 1-1
SCALE: ¼"=1'-0"
SECTION 2-2
SCALE: ¼"=1'-0"
SECTION 3-3
SCALE: ¼"=1'-0"
SECTION 4-4
SCALE: ¼"=1'-0"
APPROACH PILES
LINE "C" & LINE "D"
9 PILES (EACH LINE)-12"φ-
℄ PILE CAP
6 Spc's @ 5'-0" = 30'-0"
TEST PILE (EACH LINE)
REFERENCE LINE "C"
REFERENCE LINE "D"
14 SPC'S @ 3'-6" = 49'-0"
30 TON CAPACITY
PILE PLAN - N. ABUTMENT
LINE "C" & LINE "D"
SCALE: ⅛"=1'-0"
LINE "C" & LINE "D"
69 - PILES (EACH LINE) - 16"φ - 30 TON CAPACITY
10'-0" PENETRATION
3'-6" PROJECTION
13'-6" ESTIMATED LENGTH
1 - TEST PILE (EACH LINE)
Note:- All Piles are Creosoted Timber Piles.
DIMENSIONS ALONG FACE OF RETAINING WALLS
NOTES:-
For Summary of Quantities see Sht No. 2
For Bill of Materials (Class "X" Concrete & Re-Bars) see Sht No. 14
For Soil Borings see Sht. No. 5
For Additional Dimensions see Sht. No. 15
Pile Diameter Shown Is Minimum.
Indicates Battered Pile.
Indicates Test Pile.
REVISIONS
DATE | BY | DESCRIPTION
9.10.70 | J.P. | Creosoted Timber Piles Note added. Appr. Slab Piles capacity deleted.
DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE
THOMAS G. COTS
NORTH ABUTMENTS - FOOTING AND PILES
STONY ISLAND EXPRESSWAY GRADE SEPARATION
OVER
103RD STREET
PROJECT EBU-246 (44)
SECTION NUMBER
174-1515.2-C.F.
176-1515.2-C.F.
122
13
34
COUNTY PROGRAM
ITEM No.
YEAR
SHEET No.

BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS Chicago, Illinois 312.228.0100 www.bbandainc.com	USER NAME =	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS (FOR INFORMATION ONLY) STRUCTURE NOS. 016-2441 & 016-2442	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - BAK	REVISED -			94	2012-059-BR	COOK	631	581
	PLOT SCALE =	DRAWN -	REVISED -			CONTRACT NO. 60J12				
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -		SHEET NO. S-25 OF S-31 SHEETS	ILLINOIS FED. AID PROJECT				

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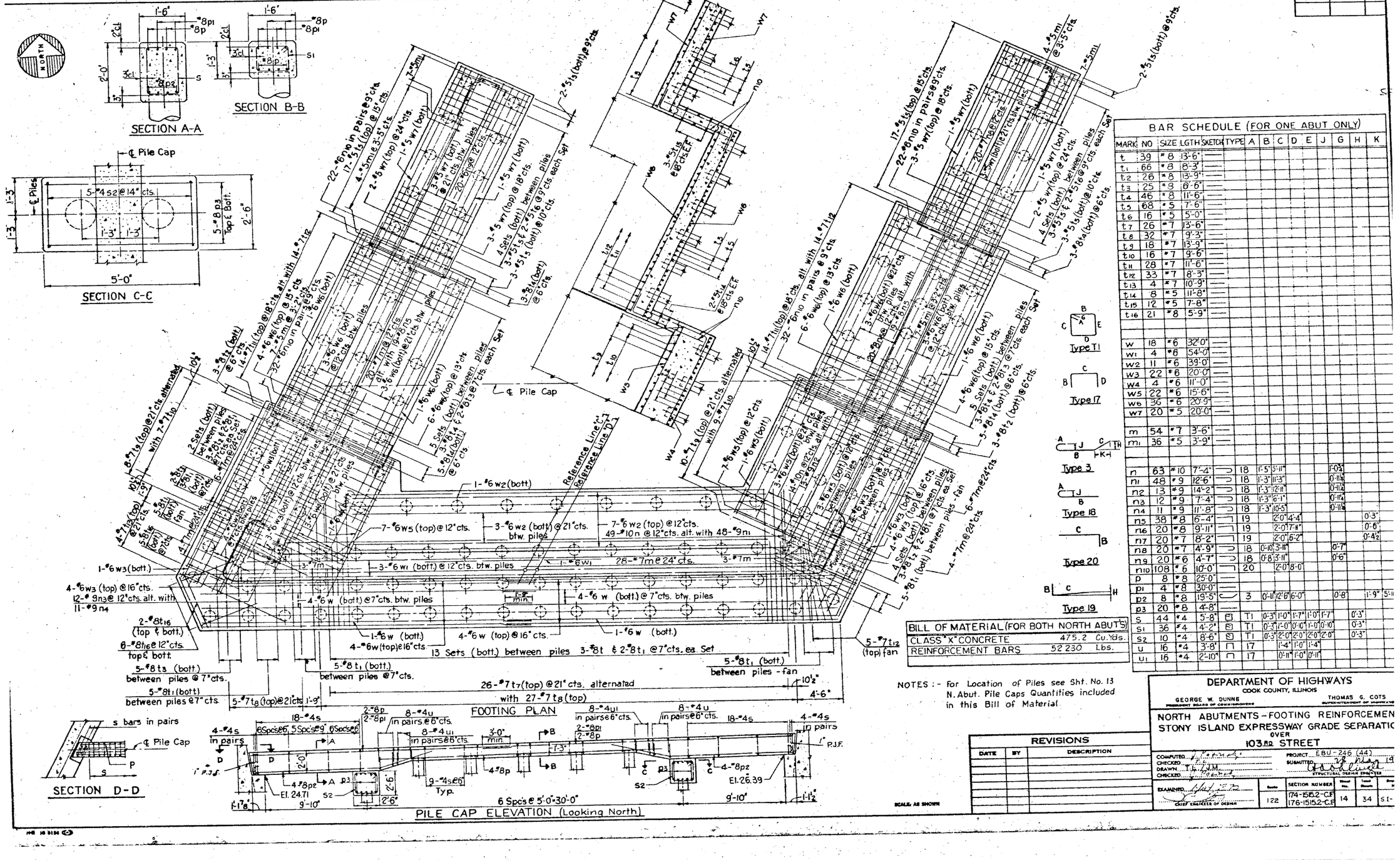


BILL OF MATERIAL (FOR BOTH NORTH ABUTS)

CLASS 'X' CONCRETE	475.2	Cu. Yds.
REINFORCEMENT BARS	52 230	Lbs.

NOTES :- for Location of Piles see Sht. No. 13
N. Abut. Pile Caps Quantities included in this Bill of Material.

BAR SCHEDULE (FOR ONE ABUT ONLY)

MARK	NO	SIZE	LGTH	SKETCH	TYPE	A	B	C	D	E	J	G	H	K
t	39	#8	13'-6"											
t1	66	#8	8'-3"											
t2	26	#8	13'-9"											
t3	25	#8	8'-6"											
t4	46	#8	11'-6"											
t5	68	#5	7'-6"											
t6	16	#5	5'-0"											
t7	26	#7	13'-6"											
t8	32	#7	9'-3"											
t9	18	#7	13'-9"											
t10	16	#7	9'-6"											
t11	28	#7	11'-6"											
t12	33	#7	8'-3"											
t13	4	#7	10'-9"											
t14	8	#5	11'-8"											
t15	12	#5	7'-8"											
t16	21	#8	5'-9"											
w	18	#6	32'-0"											
w1	4	#6	54'-0"											
w2	11	#6	39'-0"											
w3	22	#6	20'-0"											
w4	4	#6	11'-0"											
w5	22	#6	15'-6"											
w6	36	#6	20'-9"											
w7	20	#5	20'-0"											
m	54	#7	3'-6"											
m1	36	#5	3'-9"											
n	63	#10	7'-4"	⊃	18	1'-5"	5'-11"					1'-03"		
n1	48	#9	12'-6"	⊃	18	1'-3"	11'-3"					0'-11"		
n2	13	#9	14'-2"	⊃	18	1'-3"	12'-11"					0'-11"		
n3	12	#9	7'-4"	⊃	18	1'-3"	6'-1"					0'-11"		
n4	11	#9	11'-8"	⊃	18	1'-3"	10'-5"					0'-11"		
n5	38	#8	6'-4"	⌐	19		2'-0"	4'-4"						0'-3"
n6	20	#8	9'-11"	⌐	19		2'-0"	7'-11"						0'-6"
n7	20	#7	8'-2"	⌐	19		2'-0"	6'-2"						0'-4½"
n8	20	#7	4'-9"	⊃	18	0'-10"	3'-11"					0'-7"		
n9	20	#6	4'-7"	⊃	18	0'-8"	3'-11"					0'-6"		
n10	108	#6	10'-0"	⊃	20		2'-0"	8'-0"						
p	8	#8	25'-0"											
p1	4	#8	30'-0"											
p2	8	#8	19'-5"	⊃	3	0'-11"	12'-6"	6'-0"				0'-8"		1'-9" 5'-11"
p3	20	#8	4'-8"											
s	44	#4	5'-8"	⊠	T1	0'-3"	1'-0"	1'-7"	1'-0"	1'-7"			0'-3"	
s1	36	#4	4'-2"	⊠	T1	0'-3"	1'-0"	0'-10"	1'-0"	0'-10"			0'-3"	
s2	10	#4	8'-6"	⊠	T1	0'-3"	2'-0"	2'-0"	2'-0"	2'-0"			0'-3"	
u	16	#4	3'-8"	⊓	17		1'-4"	1'-0"	1'-4"					
u1	16	#4	2'-10"	⊓	17		10'-11"	1'-0"	0'-11"					

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS — THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

NORTH ABUTMENTS - FOOTING REINFORCEMEN
STONY ISLAND EXPRESSWAY GRADE SEPARATIC
OVER
103RD STREET

COMPUTED — CHECKED — DRAWN: T.H. J.M. — CHECKED
PROJECT: E.B.U.-246 (44)
SUBMITTED: 28 May 19
STRUCTURAL DESIGN ENGINEER
EXAMINED
CHIEF ENGINEER OF DESIGN

District	SECTION NUMBER	Sheet No.	Total Sheets	Sht. No.
122	174-1515.2-C.F.	14	34	S1-
	176-1515.2-C.S.			

REVISIONS

DATE	BY	DESCRIPTION

SCALE: AS SHOWN

COUNTY PROGRAM ITEM No.	YEAR	SHEET No.

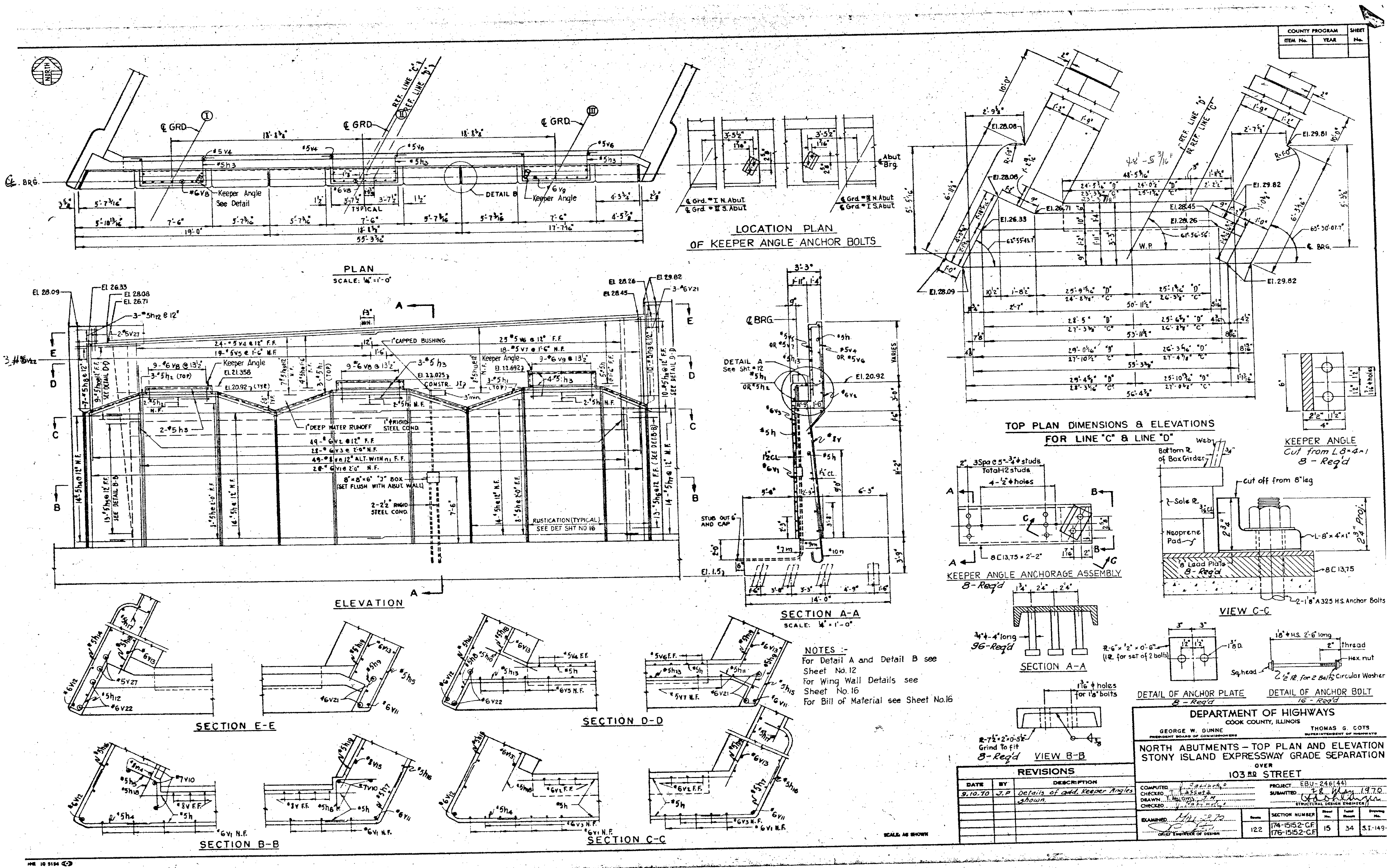
BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com

USER NAME =	DESIGNED -	REVISED -
	CHECKED - BAK	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-26 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	582
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			



NOTES :-
For Detail A and Detail B see Sheet No. 12
For Wing Wall Details see Sheet No. 16
For Bill of Material see Sheet No. 16

REVISIONS		
DATE	BY	DESCRIPTION
9.10.70	J.P.	Details of add. Keeper Angles shown.

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS
THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

NORTH ABUTMENTS – TOP PLAN AND ELEVATION
STONY ISLAND EXPRESSWAY GRADE SEPARATION
OVER
103RD STREET

PROJECT EBU-246(41)
SUBMITTED 28 May 1970
STRUCTURAL DESIGN ENGINEER

Route	Section Number	County	Sheet No.	Total Sheets	Drawing No.
122	174-15152-C.F. / 176-15152-C.F.		15	34	S.I.-149-

BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS Chicago, Illinois 312.228.0100 www.bbandainc.com	USER NAME =	DESIGNED -	REVISED -
		CHECKED - BAK	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-27 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	583
		CONTRACT NO. 60J12		

ILLINOIS FED. AID PROJECT

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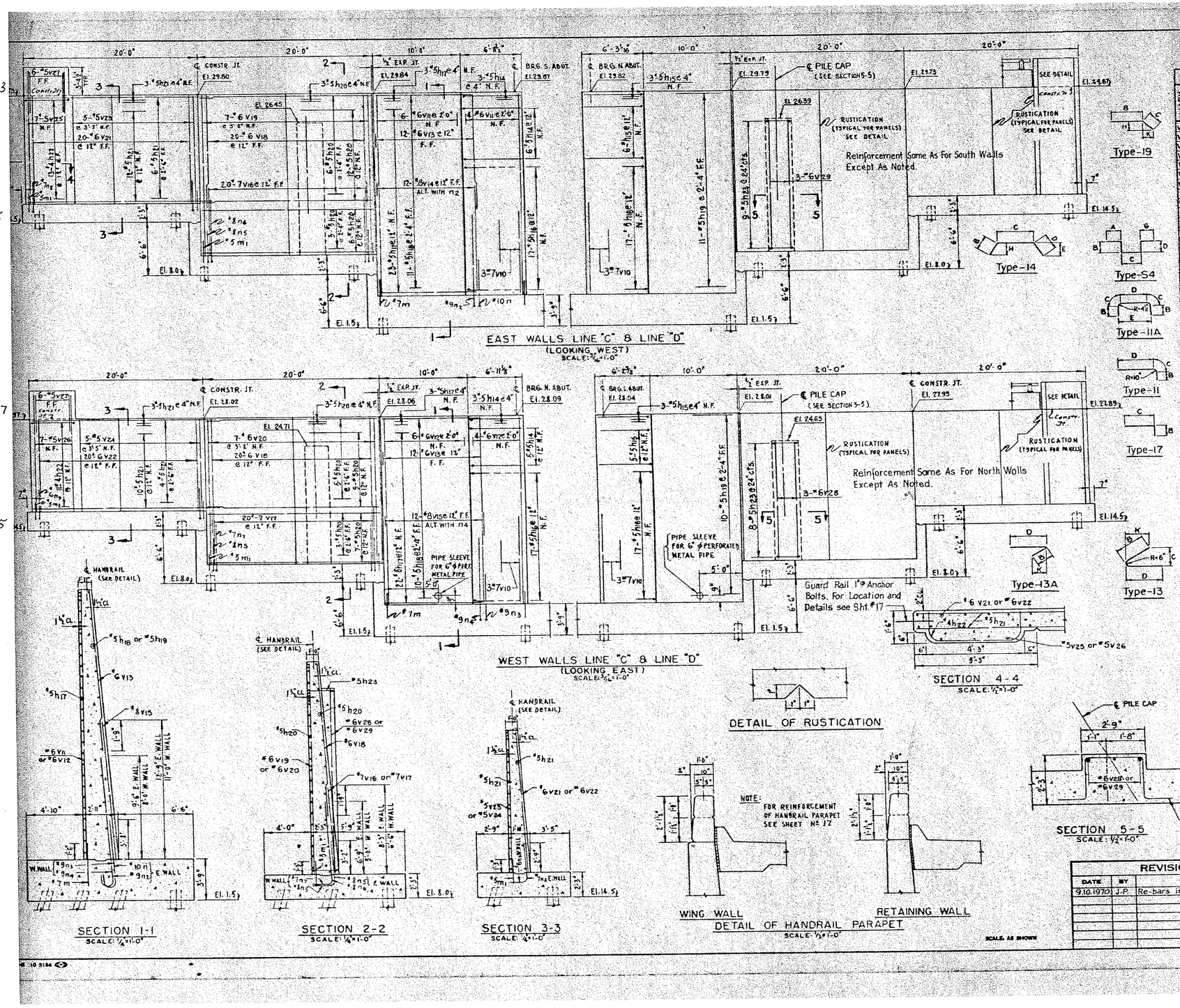

COUNTY PROGRAM ITEM No.	YEAR	SHEET No.

BAR SCHEDULE FOR ABUTMENTS WITH WALLS (EXCL. FOOTINGS)(*m)

MARK	S.ABUT. LINE "C" NO.	S.ABUT. LINE "D" NO.	N.ABUT. LINE "C" NO.	N.ABUT. LINE "D" NO.	TOTAL NO.	LGTH.	SIZE	SKETCH	TYPE	A	B	C	D	E	G	H	K	LOCATION
V	50	50	49	49	198	14'-0"	*8											
V1	28	28	28	28	112	14'-0"	*6											
V2	50	50	49	49	198	8'-6"	*6		19	6'-0"	2'-6"					1'-9"	1'-9"	
V3	28	28	28	28	112	8'-9"	*6		17	6'-6"	2'-3"							
V4	25	25	24	24	98	6'-0"	*5											
V5	19	19	19	19	76	8'-6"	*5		17	7'-6"	1'-0"							
V6	25	25	25	25	100	7'-0"	*5											
V7	18	18	18	18	72	10'-6"	*5		17	9'-6"	1'-0"							
V8	18	18	18	18	72	2'-0"	*6											
V9	9	9	9	9	36	3'-0"	*6											
V10	6	6	6	6	24	14'-0"	*7											
V11	10	10	10	10	40	24'-5"	*6											
V12	10	10	10	10	40	22'-8"	*6											
V13	24	24	24	24	96	13'-7"	*6											
V14	12	12	12	12	48	12'-9"	*8											
V15	12	12	12	12	48	11'-0"	*8											
V16	20	20	20	20	80	8'-3"	*7											
V17	20	20	20	20	80	6'-6"	*7											
V18	40	40	40	40	160	11'-8"	*6											
V19	7	7	7	7	28	19'-4"	*6											
V20	7	7	7	7	28	17'-7"	*6											
V21	23	23	23	23	92	12'-10"	*6											
V22	23	23	23	23	92	11'-0"	*6											
V23	5	5	5	5	20	12'-10"	*5											
V24	5	5	5	5	20	11'-0"	*5											
V25	7	7	7	7	28	16'-3"	*5											
V26	7	7	7	7	28	14'-5"	*5											
V27	14	14	14	14	56	4'-6"	*5											
V28	3	3	3	3	12	14'-2"	*6											
V29	3	3	3	3	12	16'-0"	*6											
h	53	53	53	53	212	26'-10"	*5											
h1	10	10	10	10	40	20'-6"	*5		14	6'-6"	7'-6"	6'-6"	2'-2"		2'-2"			
h2	5	5	5	5	20	19'-0"	*5		14	5'-0"	7'-6"	6'-6"	2'-2"		1'-10"			
h3	9	9	9	9	36	15'-8"	*5		S4	1'-6"	2'-10"	7'-0"	2'-10"	1'-6"				
h4	14	14	14	14	56	10'-0"	*5		13	5'-0"	4'-8"	5'-0"			2'-4"			
h5	13	13	13	13	52	4'-0"	*5		19	2'-0"	2'-0"				1'-0"			
h6	13	13	13	13	52	4'-6"	*5		17	2'-0"	2'-6"							
h7	14	14	14	14	56	7'-6"	*5		19	3'-9"	3'-9"				1'-10"			
h8	9	9	7	7	32	3'-3"	*5		17	0'-9"	2'-6"							
h9	9	9	10	10	38	3'-0"	*5		13A	0'-9"	2'-3"				0'-4"			
h10	10	10	9	9	38	3'-9"	*5											
h11	9	9	10	10	38	3'-0"	*5											
h12	3	3	3	3	12	5'-9"	*5		17	0'-9"	5'-0"							
h13	15	15	15	15	60	30'-6"	*5											
h14	9	9	8	8	34	8'-0"	*5		11	1'-0"	1'-2"	5'-10"						
h15	8	8	9	9	34	7'-2"	*5		11	1'-0"	1'-2"	5'-0"						
h16	34	34	34	34	136	5'-6"	*5		11	1'-0"	1'-2"	3'-4"						
h17	51	51	51	51	204	11'-2"	*5											
h18	11	11	10	10	42	12'-6"	*5											
h19	10	10	11	11	42	13'-10"	*5											
h20	57	57	57	57	228	19'-9"	*5											
h21	38	38	38	38	152	21'-3"	*5											
h22	24	24	24	24	96	6'-2"	*4		11A	0'-10	0'-7	3'-3"	4'-0"					
h23	17	17	17	17	68	8'-9"	*5		S4	1'-3"	1'-11"	2'-5"	1'-11"		1'-3"			

BILL OF MATERIAL
FOR ALL ABUTMENTS WITH WALLS (EXCL. FOOTINGS)

CLASS "X" CONCRETE	946	Cu.Yds.
REINFORCEMENT BARS	62890	Lbs.
RIGID STEEL CONDUIT 1" ø	32	Lin.Ft.
RIGID STEEL CONDUIT 2½" ø	124	Lin Ft.
CAST IRON "J" BOX WEATHERPROOF 8"x8"x6"	4	Each

(*m) FOR BAR SCHEDULE OF FOOTINGS SEE SHEETS NO. 11 & 14

REVISIONS

DATE	BY	DESCRIPTION
9.10.1970	J.P.	Re-bars in Brg. Pads changed

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS — THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

RETAINING WALLS
STONY ISLAND EXPRESSWAY GRADE SEPARATION
OVER
103RD STREET

COMPUTED — CHECKED — DRAWN — CHECKED
PROJECT: EBU-246(44)
SUBMITTED: 28 May 1970
STRUCTURAL DESIGN ENGINEER
EXAMINED: May 28 72
CHIEF ENGINEER OF DESIGN

Sheets	SECTION NUMBER	Master No.	Detail Sheets	Drawing No.
122	174-1515 2-C.F. 176-1515 2-C.F.	16	54	S.I.-150-

SCALE AS SHOWN

BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS, Chicago, Illinois, 312.228.0100, www.bbandainc.com	USER NAME =	DESIGNED -	REVISED -
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	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-28 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	584
		CONTRACT NO. 60J12		
		ILLINOIS FED. AID PROJECT		

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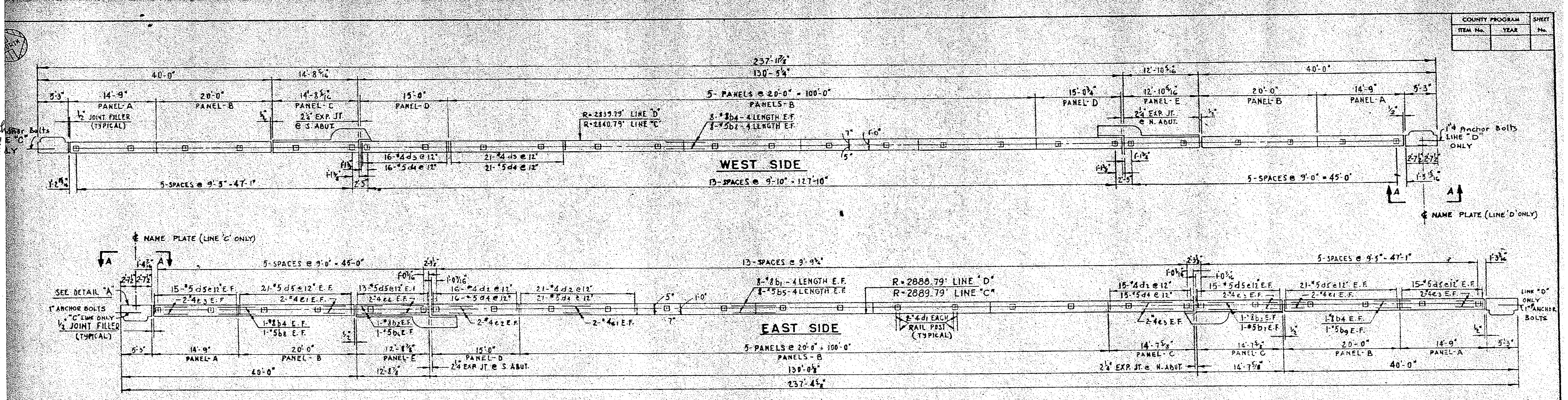

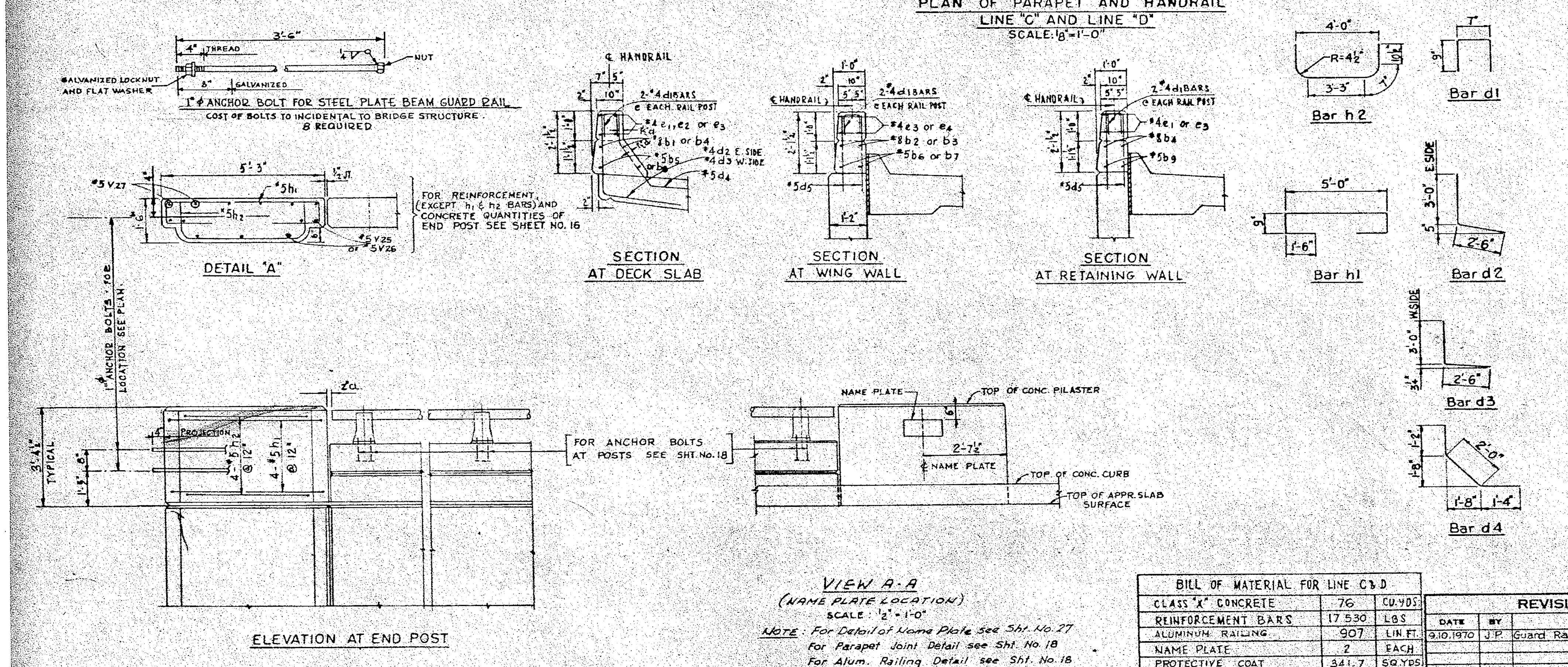

PARAPET BAR SCHEDULE FOR LINE 'C' & LINE 'D'

MARK	NUMBERS LINE C	LINE D	TOTAL	SIZE	LENGTH	SKETCH	LOCATION
b1	8	8	16	#8	33'-9"	——	Deck Panels B,D & C East Side
b2	4	4	8	#8	12'-6"	——	Wing Wall Panels E
b3	4	4	8	#8	14'-6"	——	Wing Wall Panels C
b4	16	16	32	#8	34'-0"	——	Deck Pan. B & D W.Side - Ret. Wall Pan. A & B
b5	8	8	16	#5	33'-4"	——	Deck Panels B,D & C East Side
b6	4	4	8	#5	12'-7"	——	Wing Wall Panels E
b7	4	4	8	#5	14'-6"	——	Wing Wall Panels C
b8	8	8	16	#5	33'-6"	——	Deck Pan. B & D W.Side
b9	8	8	16	#5	34'-5	——	Retaining Walls Panels A & B
e1	56	56	112	#4	19'-9"	——	Deck Panels B - Retaining Wall Panels B
e2	12	12	24	#4	14'-9"	——	Deck Panels D
e3	28	28	56	#4	14'-6"	——	Deck Pan. C - Wing Wall Pan. C & Ret. Wall Pan. A
e4	8	8	16	#4	12'-6"	——	Wing Wall Panels E
d1	104	104	208	#4	2'-1"	⊓	Each Rail Post
d2	136	136	272	#4	5'-6"	└	Deck Panels B,D & C - East Side
d3	137	137	274	#4	5'-6"	└	Deck Panels D & B - West Side
d4	273	273	546	#5	4'-6"	└	Deck Panels B,D & C
d5	400	400	800	#5	3'-6"	——	Wing & Retaining Wall Panels A.B.C & E
h1	16	16	32	#5	9'-6"	⊏⊐	End Post
h2	16	16	32	#5	6'-2"	└┘	End Post

BILL OF MATERIAL FOR LINE C & D

CLASS "X" CONCRETE	76	CU.YDS.
REINFORCEMENT BARS	17 530	LBS
ALUMINUM RAILING	907	LIN.FT.
NAME PLATE	2	EACH
PROTECTIVE COAT	341.7	SQ.YDS.
STRUCTURAL STEEL	75	LBS.

SCALE: AS SHOWN

REVISIONS

DATE	BY	DESCRIPTION
9.10.1970	J.P.	Guard Rail Anchor Bolts added

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS
GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS
THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

PLAN OF HANDRAIL
STONY ISLAND EXPRESSWAY GRADE SEPARATION
OVER
103RD STREET

COMPUTED PASINSKI
CHECKED
DRAWN
CHECKED
PROJECT EBU-246(44)
SUBMITTED 28 May 1970
STRUCTURAL DESIGN ENGINEER
EXAMINED May 28 70
CHIEF ENGINEER OF DESIGN

Route	SECTION NUMBER	Sheet No.	Total Sheets	Drawing No.
122	174-15152-CF 176-15152-CF	17	34	S.I-151-S

COUNTY PROGRAM ITEM No. | YEAR | SHEET No.

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com

USER NAME =	DESIGNED -	REVISED -
	CHECKED - BAK	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-29 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	585

CONTRACT NO. 60J12
ILLINOIS FED. AID PROJECT

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NOTES:

All Aluminum Alloy Extruded Rail shall be supplied in modular lengths of 30 feet, except at the end of bridge or over open joints in bridge deck where the rail shall be attached to a minimum of 2 posts. If the rail is on a horizontal curve of 2300 foot radius or less, the modular lengths may be reduced, but shall be attached to a minimum of 2 posts.

All joints in rail shall be spliced per detail.

Provide 1 - 1/8" and 2 - 1/16" Aluminum Shims for 25% of the Posts. Rail element shall be parallel to Grade - high spots shall be ground and low spots shimmed.

Seal perimeter of base of post to parapet with two component non-staining gray sealing compound with polysulfide liquid polymers, gun grade with primer. Fabric Bearing Pad shall have same dimensions as base of post.

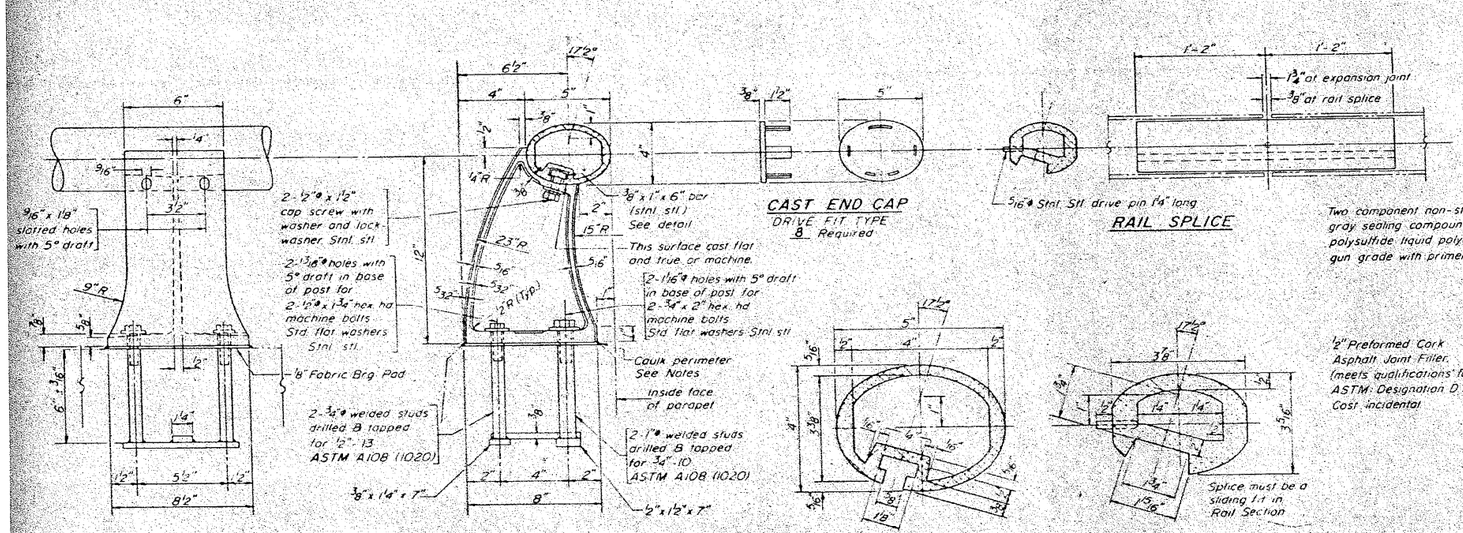
Aluminum alloy rail shall conform to ASTM B221 alloy 6061-T6 or 6351-T5 with min. yield 35 ksi, min. tensile 38 ksi, and elongation of 10% in 2 inches.

* METHOD OF MEASUREMENT: Aluminum handrail shall be measured in lineal feet. The length paid for shall be the overall length along the top longitudinal railing member thru all posts and gaps.

BASIS OF PAYMENT: Aluminum handrail shall be paid for at the contract unit price per lineal foot for ALUMINUM RAILING, measured as specified which price shall be payment in full for all materials, fabrication, transportation and erection.

Cost of rail splice, end caps and hardware to be incidental to item ALUMINUM RAILING.

Provide 1/8" and 2/16" Aluminum Shims for 25% of the Posts. Rail elements shall be parallel to Grade - high spots shall be ground and low spots shimmed.



ALUMINUM RAILING

For quantities see Sheet No. 17

REVISIONS		
DATE	BY	DESCRIPTION

DEPARTMENT OF HIGHWAYS
COOK COUNTY, ILLINOIS

GEORGE W. DUNNE, PRESIDENT BOARD OF COMMISSIONERS — THOMAS G. COTS, SUPERINTENDENT OF HIGHWAYS

ALUMINUM RAILING DETAILS
STONY ISLAND EXPRESSWAY GRADE SEPARATION OVER 103RD STREET

COMPUTED
CHECKED
DRAWN
CHECKED A. KLETCHANEK
PROJECT EBU-246(44)
SUBMITTED 28 May 1970
STRUCTURAL DESIGN ENGINEER

EXAMINED 5/29/70
CHIEF ENGINEER OF DESIGN

Federal Aid Route No.	Quantity Highway Section Number	Plates No.	Sheet No.	Drawing No.
122	174-1515.2-C.F. 176-1515.2-C.F.	18	34	S.1-152-S

R-17 4-72-FH 9-18-69

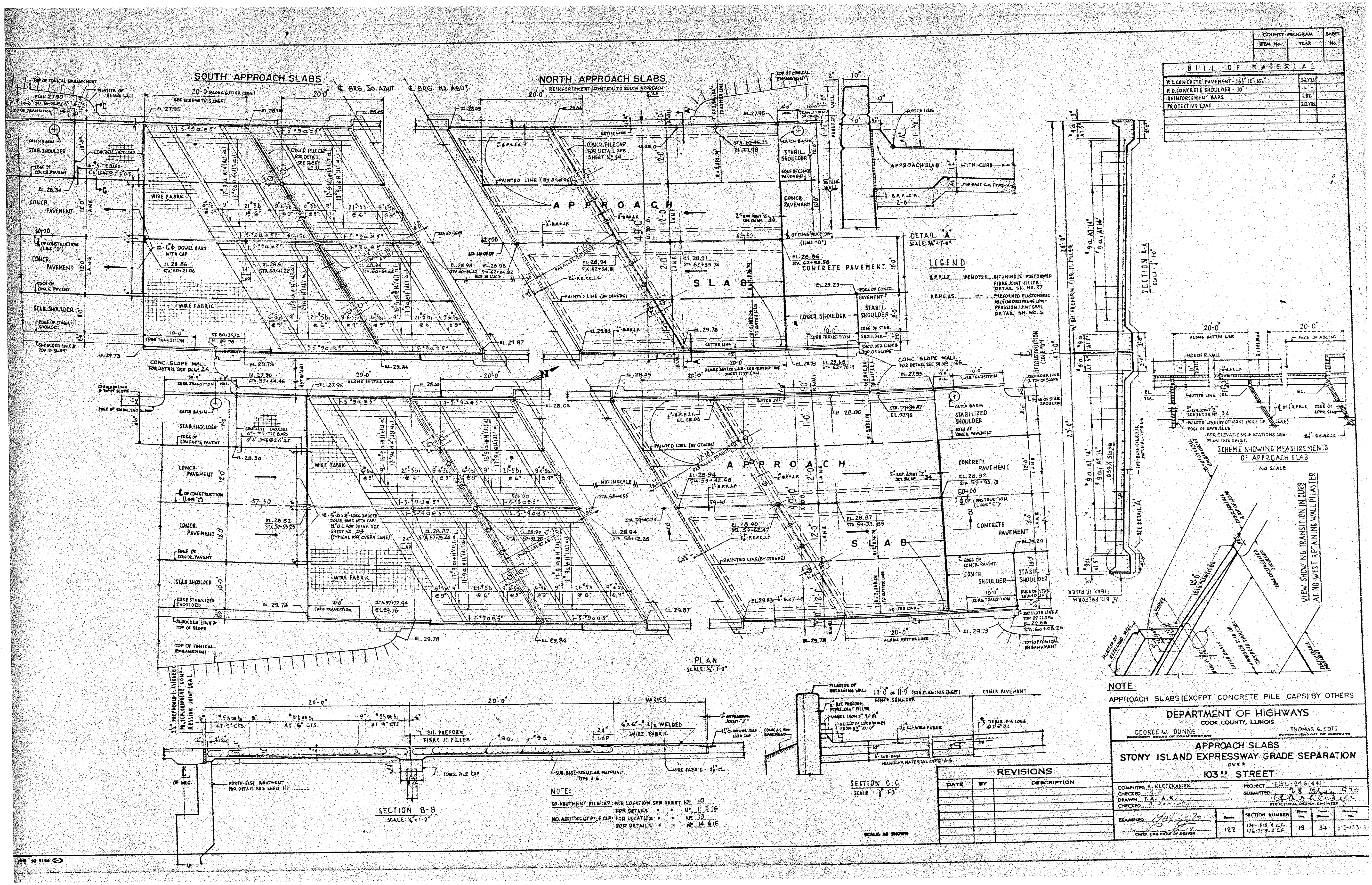
BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS Chicago, Illinois 312.228.0100 www.bbandainc.com	USER NAME =	DESIGNED -	REVISED -
		CHECKED - BAK	REVISED -
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NOS. 016-2441 & 016-2442
SHEET NO. S-30 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	586
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

S:\072\05_CADD\Structural\SN 016-2441_2442\CADD Sheets\016-2441-2442-60J12-031-FY14.dgn 3/29/2013 2:56:15 PM



BOWMAN, BARRETT & ASSOCIATES INC. CONSULTING ENGINEERS Chicago, Illinois 312.228.0100 www.bbandainc.com	USER NAME =	DESIGNED -	REVISED -
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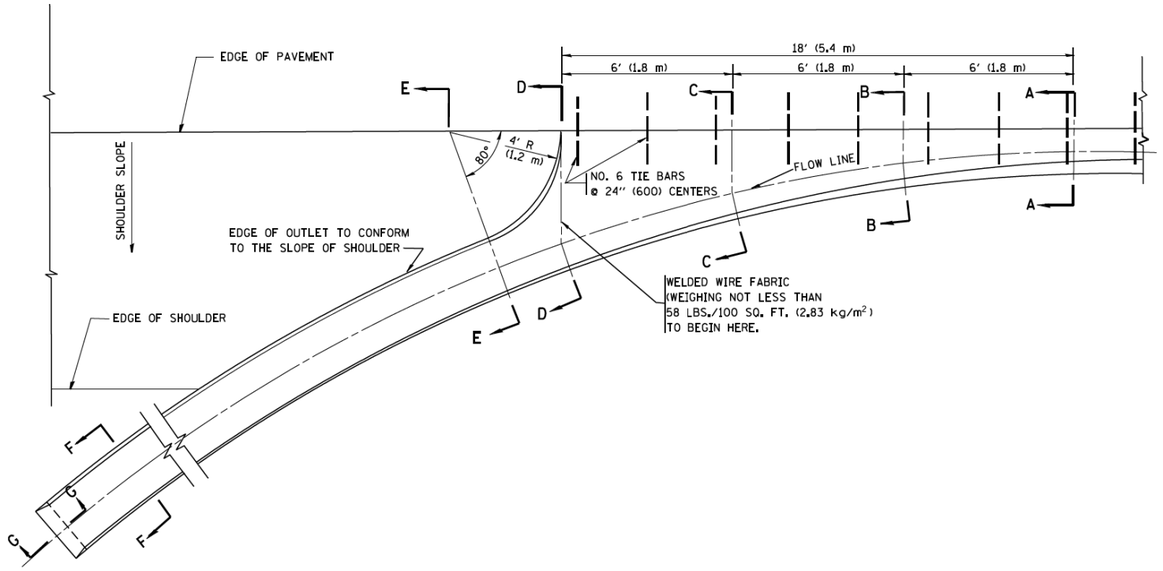
	PLOT SCALE =	DRAWN -	REVISED -
	PLOT DATE = 03/29/2013	CHECKED -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS (FOR INFORMATION ONLY)
STRUCTURE NOS. 016-2441 & 016-2442

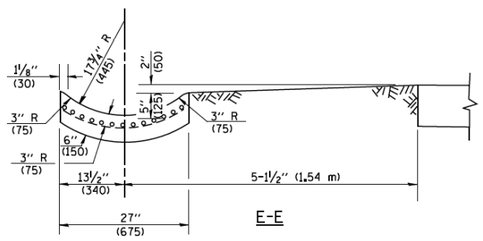
SHEET NO. S-31 OF S-31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	587
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			

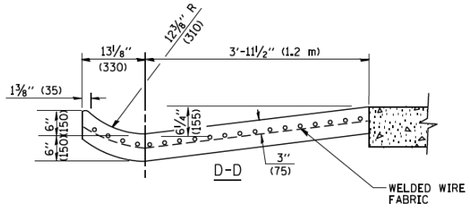


A-A *

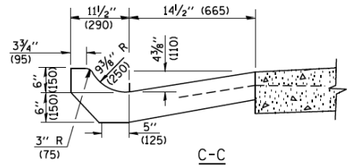
* DIMENSIONS OF THE CURB & GUTTER AT SECTION A-A ARE SHOWN ON STATE STANDARD 606001.
FOR DETAILS OF OUTLET FOR CONCRETE CURB & GUTTER, TYPE B-6.24 (B-15.60) SEE STATE STANDARD 606006.



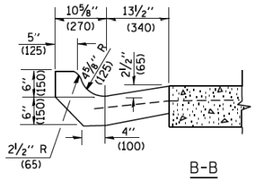
E-E



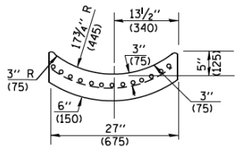
D-D



C-C



B-B



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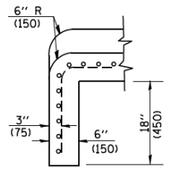


G-G

GENERAL NOTES

GUTTER OUTLET SHALL BE TIED TO THE PAVEMENT IN ACCORDANCE WITH DETAILS FOR LONGITUDINAL CONSTRUCTION JOINT SHOWN ON STANDARD 420001.

TIE BARS SHALL BE NO. 20 (NO.6) AT 24" (600) CENTERS UNLESS OTHERWISE SHOWN.

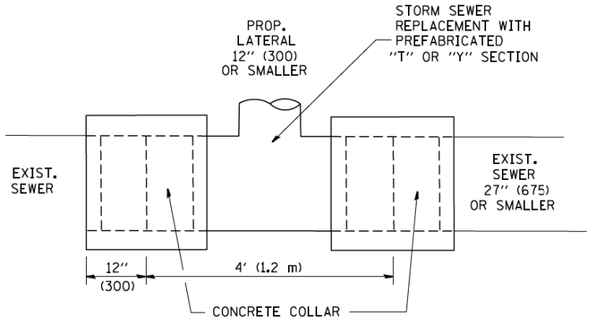
IF THE AVERAGE GRADE OF PAVEMENT FOR THE DISTANCE FROM SECTION A-A TO D-D EXCEEDS 2%, THIS DISTANCE SHALL BE INCREASED 6' (1.8 m) FOR EACH 1% INCREASE IN GRADE.

QUANTITIES

FOR SECTION A-A TO E-E AND CURTAIN WALL=
1.25 CU. YDS. (0.96 m^3) CLASS SI CONCRETE (OUTLET) FOR 9" (225) PAV'T.
1.27 CU. YDS. (0.96 m^3) CLASS SI CONCRETE (OUTLET) FOR 10" (250) PAV'T.
FOR SECTION F-F=
0.045 CU. YDS. (0.03 m^3) CLASS SI CONCRETE PER ft. (m).

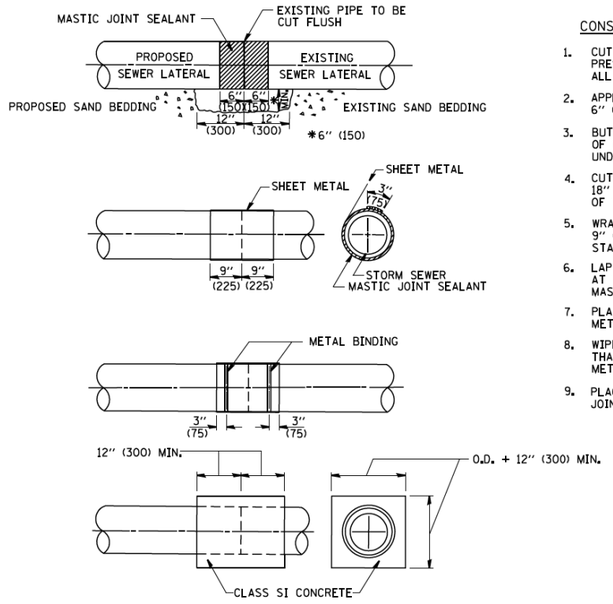
ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd03.dgn	USER NAME = gegliarobt	DESIGNED - M. DE YONG	REVISED - R. SHAH 09-09-94	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	OUTLET FOR CONCRETE CURB AND GUTER			F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DRAWN -	REVISED - R. SHAH 10-25-94						2012-059-BR	COOK	631	588
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - E. GOMEZ 12-21-00						BD600-01 (BD-03)	CONTRACT NO. 60J12		
	PLOT DATE = 1/4/2008	DATE - 08-04-86	REVISED -		SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	



DETAIL "A"

LATERAL CONNECTION TO EXISTING SEWER
OF 27" (675) OR SMALLER

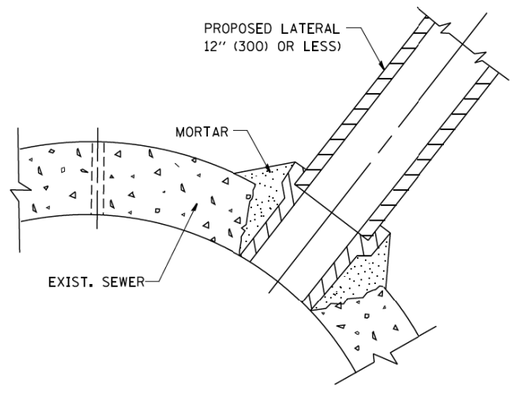


DETAIL "B"

CLASS SI CONCRETE COLLAR

CONSTRUCTION SEQUENCE

1. CUT THE EXISTING END OF THE PIPE SO AS TO PRESENT A FLUSH BUTT JOINT. BRUSH AND CLEAN ALL PIPES.
2. APPLY THE MASTIC JOINT SEALANT TO THE FIRST 6" (150) OF EACH PIPE.
3. BUTT THE PIPES TOGETHER LEAVING A MINIMUM OF 12' x 6' (300 x 150) DEEP EXCAVATION UNDER AND AROUND EACH PIPE END.
4. CUT A PIECE OF SHEET METAL GAGE NO. 19 1.1 (0.0418) 18" (450) WIDE BY THE OUTSIDE CIRCUMFERANCE OF THE PIPE PLUS 3" (75) LONG.
5. WRAP THE SHEET METAL AROUND THE PIPES, 9" (225) ON EACH SIDE OF THE JOINT, STARTING AT THE TOP OF THE PIPE.
6. LAP THE SHEET METAL AT LEAST 3" (75) AT THE TOP OF THE PIPE AND PLACE THE MASTIC JOINT SEALANT BETWEEN THE LAP.
7. PLACE TWO METAL BANDS AROUND THE SHEET METAL AND TIGHTEN.
8. WIPE OFF ANY EXCESS MASTIC JOINT SEALANT THAT OOZES OUT FROM BETWEEN THE SHEET METAL AND THE PIPES.
9. PLACE CLASS SI CONCRETE AROUND THE JOINT.



DETAIL "C"

PROPOSED LATERAL
CONNECTION TO EXISTING SEWER
OF 30" (750) OR LARGER

NOTES

MATERIAL

MATERIAL USED FOR THE TEE OR WYE SECTION SHALL BE COMPATIBLE WITH THE EXISTING STORM SEWER OR THE PROPOSED STORM SEWER.

CONSTRUCTION METHODS

I. THIS WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE PORTIONS OF SECTION 550 OF THE STANDARD SPECIFICATIONS.

II. CONNECTION TO AN EXISTING STORM SEWER SHALL BE BY EITHER OF THE FOLLOWING METHODS:

A) PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 27" (675) OR SMALLER SEE DETAIL "A" AND "B".

B) PROPOSED STORM SEWER CONNECTION TO EXISTING SEWER OF 30" (750) OR LARGER SEE DETAIL "C".

IF THE EXISTING SEWER PIPE IS CRACKED, BROKEN OR OTHERWISE DAMAGED BY THE CONTRACTOR IN MAKING THE CIRCULAR OPENING, THE CONTRACTOR SHALL REPLACE THAT SECTION OF PIPE WITH PIPE EQUAL AND SIMILAR IN ALL RESPECTS TO THE PIPE IN THE EXISTING SEWER, IN A CAREFUL WORKMANLIKE MANNER, WITHOUT EXTRA COMPENSATION.

GENERAL

CARE MUST BE TAKEN TO PREVENT DEBRIS FROM ENTERING THE SEWER. ALL DEBRIS WHICH ENTERS THE SEWER MUST BE REMOVED. THE SEWER MUST BE LEFT CLEAN AND UNOBSTRUCTED UPON COMPLETION OF THE CONTRACT.

CARE MUST BE TAKEN TO PREVENT ANY PART OF THE NEW PIPE CONNECTION FROM PROJECTING INTO THE EXISTING SEWER.

BASIS OF PAYMENT

TEE OR WYE CONNECTIONS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR STORM SEWER TEE OR WYE OF THE TYPE AND SIZE SPECIFIED IN THE PLANS, THIS PRICE SHALL INCLUDE ALL EXCAVATION OF THE TRENCH, REMOVAL OF THE EXISTING STORM SEWER, FURNISHING AND INSTALLING THE SPECIFIED TEE OR WYE SECTION, FURNISHING AND INSTALLING THE REQUIRED CONCRETE COLLAR, AND ALL OTHER MATERIAL NECESSARY TO COMPLETE THIS WORK AS SHOWN AND SPECIFIED.

REMOVAL AND REINSTALLATION OF EXISTING STORM SEWER ADJACENT TO THE PROPOSED TEE OR WYE SECTION, FOR THE PURPOSE OF FACILITATING THE INSTALLATION OF THE TEE OR WYE SECTION, WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE WORK.

TRENCH BACKFILL, EXCAVATION IN ROCK AND REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL BELOW PLAN BEDDING GRADE WILL BE PAID FOR SEPARATELY.

CONCRETE COLLAR FOR CONNECTING A PROPOSED STORM SEWER TO AN EXISTING STORM SEWER WILL NOT BE PAID PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE PROPOSED STORM SEWER.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

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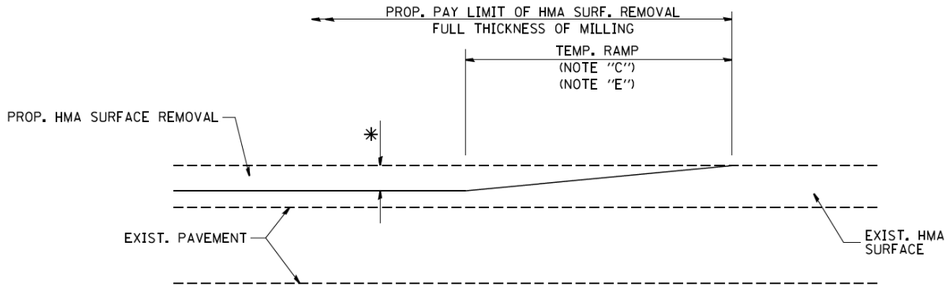
		DRAWN -	REVISED - R. SHAH 09-09-94		
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - R. SHAH 10-25-94		
	PLOT DATE = 1/4/2008	DATE - 07-25-90	REVISED - R. SHAH 06-12-96		SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

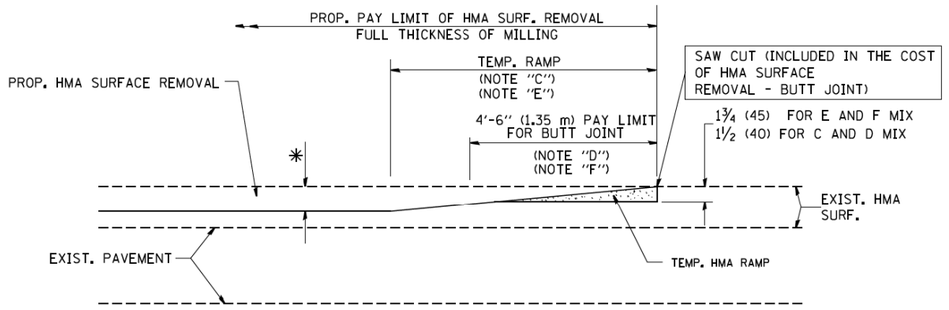
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	589
	BD500-01 (BD-7)	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



MILLED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

OPTION 1

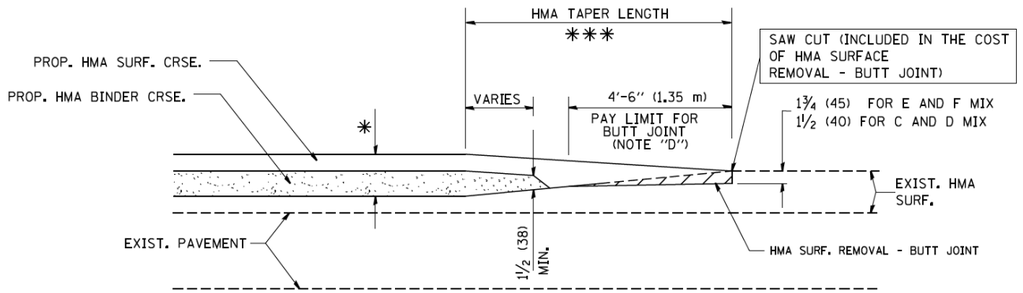


HMA CONSTRUCTED TEMPORARY RAMP

(FOR BUTT JOINT AND HMA TAPER SEE DETAIL BELOW)

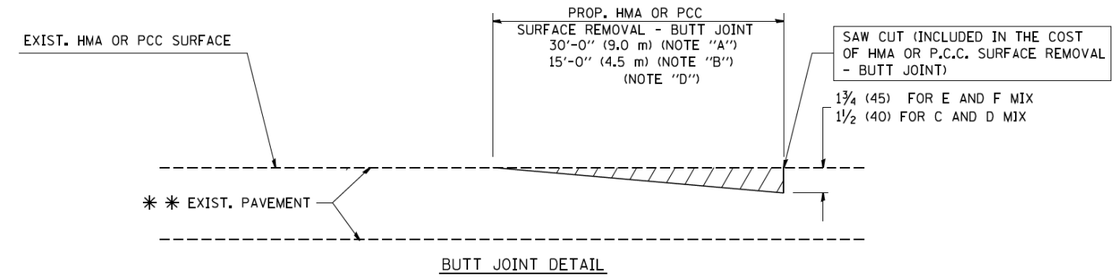
OPTION 2

TYPICAL TEMPORARY RAMP

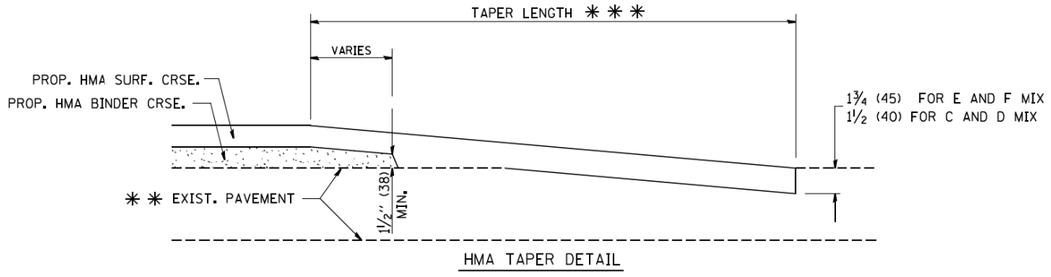


BUTT JOINT AND HMA TAPER

TYPICAL BUTT JOINT AND HMA TAPER FOR MILLING AND RESURFACING



BUTT JOINT DETAIL



HMA TAPER DETAIL

TYPICAL BUTT JOINT AND HMA TAPER FOR RESURFACING ONLY

** PC CONCRETE, HMA OR HMA RESURFACED PAVEMENT.

NOTES

A: MAINLINE ROADWAYS AND MAJOR SIDE ROADS.

B: MINOR SIDE ROADS.

C: THE TEMP. RAMP SHALL BE CONSTRUCTED IMMEDIATELY UPON REMOVAL OF THE EXISTING HMA SURFACE.

D: THE BUTT JOINT SHALL BE CONSTRUCTED IMMEDIATELY PRIOR TO PLACING THE PROPOSED HMA COURSES.

E: TAPER THE TEMP. RAMP AT A RATE OF 3'-0" (900 mm) PER 1 INCH (25 mm) OF MILLING THICKNESS.

F: INSTALLATION AND REMOVAL OF THE 4'-6" (1.35 m) TEMP. RAMP IS INCLUDED IN COST OF HMA SURFACE REMOVAL - BUTT JOINT

G: SEE ARTICLE 406.08 AND 406.14 OF THE STANDARD SPECIFICATIONS FOR "HMA AND/OR PCC SURFACE REMOVAL, BUTT JOINT".

* SEE TYPICAL SECTIONS FOR MILLING THICKNESS.

*** 20'-0" (6.1 m) PER 1 (25) RESURFACING (NOTE "A")
10'-0" (3.0 m) PER 1 (25) RESURFACING (NOTE "B")

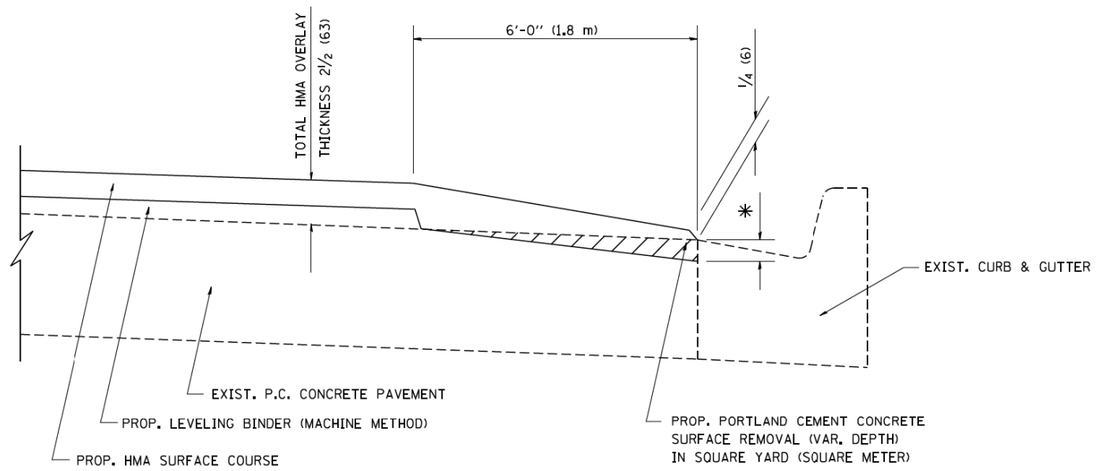
BASIS OF PAYMENT:

THE BUTT JOINT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD (SQUARE METER) FOR "HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT" OR FOR "PORTLAND CEMENT CONCRETE SURFACE REMOVAL- BUTT JOINT".

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd32.dgn	USER NAME = gaglianobt	DESIGNED - M. DE YONG	REVISED - R. SHAH 10-25-94	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BUTT JOINT AND HMA TAPER DETAILS
		DRAWN -	REVISED - A. ABBAS 03-21-97		
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - M. GOMEZ 04-06-01		
	PLOT DATE = 1/4/2008	DATE - 06-13-90	REVISED - R. BORO 01-01-07		SCALE: NONE SHEET NO. 1 OF 1 SHEETS STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	590
	BD400-05 BD32	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



HMA TAPER AT
EDGE OF P.C.C PAVEMENT

HMA SURFACE		LEVELING BINDER	
MIX	THICKNESS	THICKNESS	* MILLING AT GUTTER FLAG
C OR D	1½ (38)	1 (25)	1¼ (33)
F	1¾ (44)	¾ (19)	1½ (38)

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\bd33.dgn	USER NAME = gaglianobt	DESIGNED - R. SHAH	REVISED - R. SHAH 10-25-94
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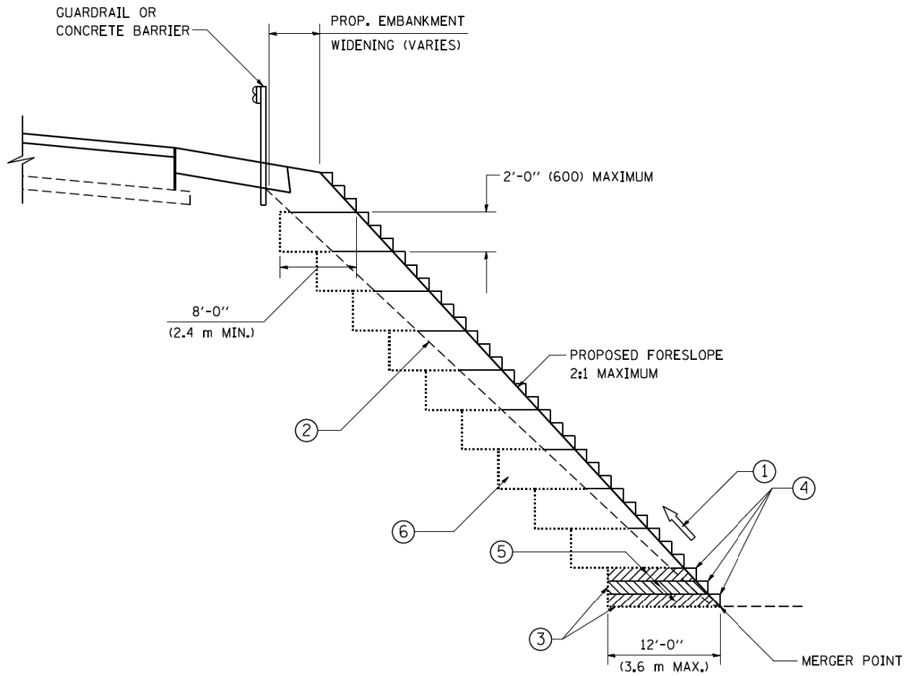
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - A. ABBAS	REVISED - E. GOMEZ 12-21-00
	PLOT DATE = 1/4/2008	DATE - 09-10-94	REVISED - R. BORO 01-01-07

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HMA TAPER AT
EDGE OF P.C.C. PAVEMENT

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	591
	BD400-06 (BD33)	**CONTRACT NO.** 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



TYPICAL BENCHING DETAIL FOR EMBANKMENT

NOTES:

1. CONSTRUCT SUCCEEDING BENCH CUTS AND EMBANKMENT PLACEMENT AND COMPACTION FROM BOTTOM TO TOP IN STAIRSTEP FASHION.
2. EXISTING FORESLOPE PREPARED IN ACCORDANCE WITH ARTICLE 205.03 OF THE STANDARD SPECIFICATIONS.
3. BENCH CUT EXISTING SLOPE TYPICAL FOR EACH STEP.
4. TRIM TO FINAL SLOPE.
5. EQUAL 8-INCH (200) LIFTS OF EMBANKMENT COMPACTED IN ACCORDANCE WITH ARTICLE 205.05 OF THE STANDARD SPECIFICATIONS.
6. EXCAVATION OF BENCH CUTS WITHIN EXISTING EMBANKMENT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER CUBIC METER OR CUBIC YARD FOR "EARTH EXCAVATION". THIS PRICE WILL INCLUDE ALL LABOR AND MATERIAL, NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
7. SLOPES SHALL BE BENCHED ACCORDING TO THIS DETAIL WHEN THE SLOPE IS STEEPER THAN 4:1 AND THE HEIGHT IS GREATER THAN 5' (1.5 m).

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

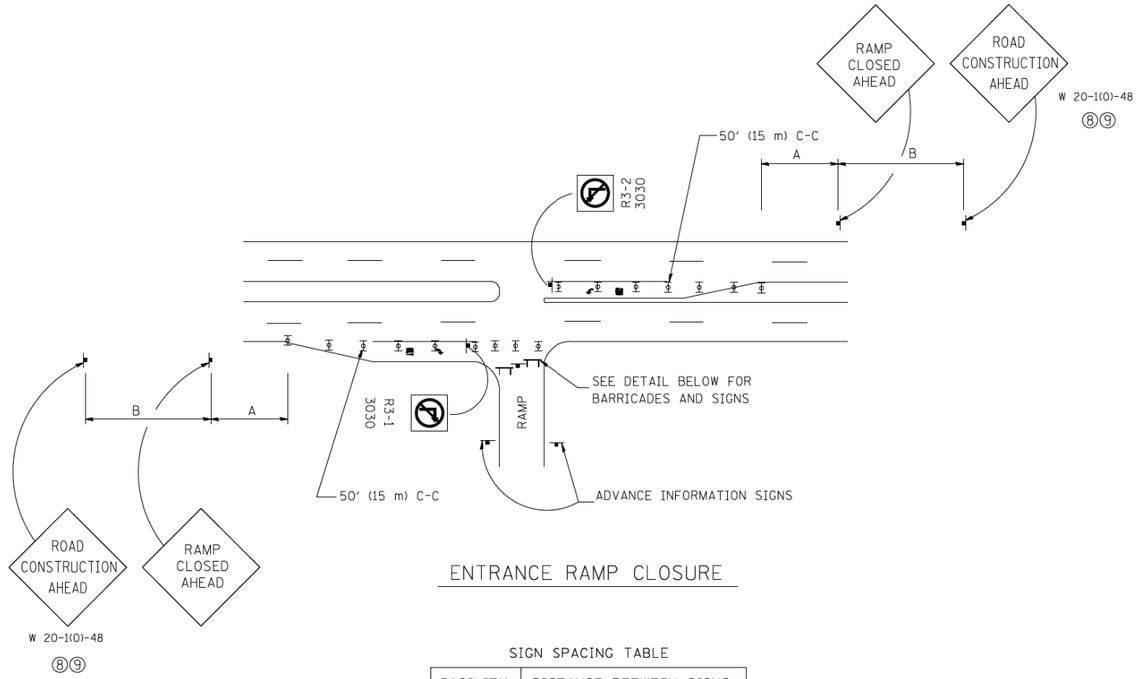
FILE NAME = W:\diststd\22x34\bd51.dgn	USER NAME = gaglianobt	DESIGNED -	REVISED -
		DRAWN - CADD	REVISED -
	PLOT SCALE = 50.0000 ' / IN.	CHECKED - S.E.B.	REVISED -
	PLOT DATE = 1/4/2008	DATE - 06-16-04	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BENCHING DETAIL
FOR EMBANKMENT WIDENING

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	592
	BD-51	**CONTRACT NO.** 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

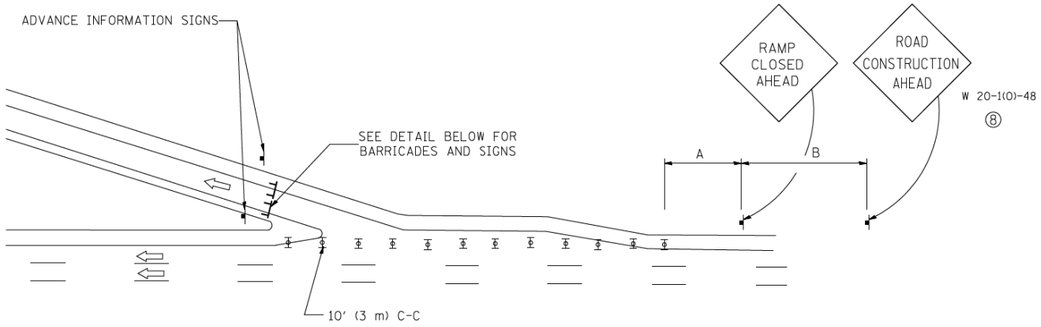


ENTRANCE RAMP CLOSURE

SIGN SPACING TABLE

FACILITY	DISTANCE BETWEEN SIGNS	
	A	B
EXPRESSWAY >24 HOURS	1000' (300 m)	1500' (450 m)
EXPRESSWAY ≤24 HOURS	500' (150 m)	500' (150 m)
ARTERIAL ≥45 MPH	350' (100 m)	350' (100 m)
ARTERIAL <45 MPH	150' (45 m)	150' (45 m)

DISTANCES MAY BE SHORTENED DEPENDING UPON THE PROXIMITY OF ADJACENT RAMPS OR INTERSECTIONS.

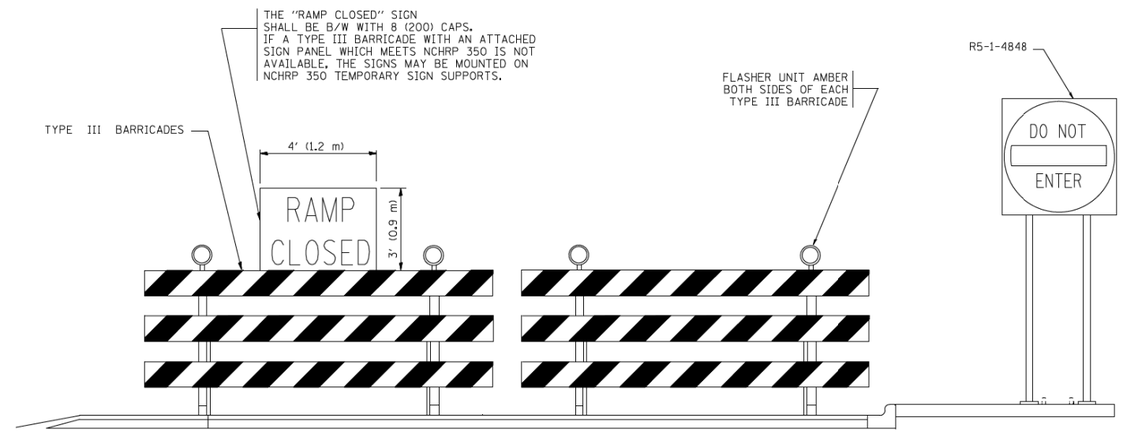


EXIT RAMP CLOSURE

SYMBOLS

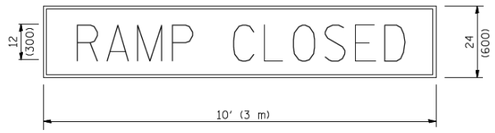
TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT

TYPE III BARRICADE WITH FLASHING LIGHT



DETAIL FOR REQUIRED BARRICADES & SIGNS

RAMP CLOSURE ADVANCE WARNING SIGN

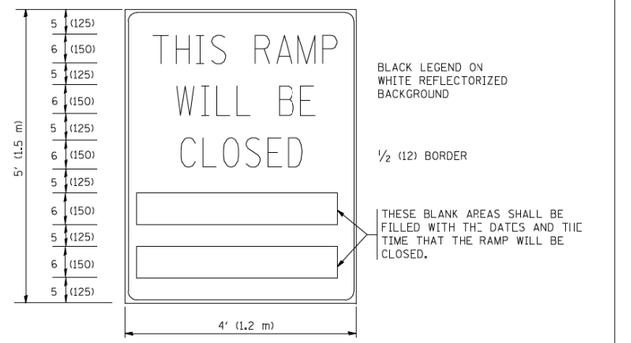


BLACK LEGEND ON ORANGE REFLECTORIZED BACKGROUND

1 (25) BORDER

THESE SIGNS ARE REQUIRED ON ALL THE EXIT GUIDE SIGNS FOR THE CLOSED EXIT RAMPS.

RAMP CLOSURE ADVANCE INFORMATION SIGN



THESE SIGNS ARE REQUIRED ON BOTH SIDES OF THE RAMP, MINIMUM OF 1 WEEK IN ADVANCE OF THE CLOSURE.

GENERAL NOTES:

1. CONES MAY BE SUBSTITUTED FOR DRUMS OR TYPE II BARRICADES DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 28 (700) HIGH.
2. STEADY BURN LIGHTS WILL NOT BE REQUIRED FOR DAY OPERATIONS.
3. A FLAGGER SHALL BE POSITIONED AT EACH CLOSED RAMP THAT IS OPEN TO CONSTRUCTION VEHICLES.
4. ALL ROUTE MARKERS AND TRAILBLAZER ASSEMBLIES WHICH DIRECT MOTORISTS TO A CLOSED ENTRANCE RAMP SHALL BE COVERED.
5. THE SIGNING AND BARRICADING WHICH IS REQUIRED BY THIS DETAIL SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION (EXPRESSWAYS).
6. AUTHORIZATION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL RAMP CLOSURES.
7. THE RAMP CLOSURE ADVANCE INFORMATION SIGNS SHALL BE ERECTED IF THE CLOSURE TIME EXCEEDS TWENTY- FOUR 24 HOURS. ADDITIONAL ADVANCE WARNING SIGNS ON EXIT GUIDE SIGNING WILL BE REQUIRED FOR EXIT RAMP CLOSURES THAT EXCEED TWENTY FOUR 24 HOURS IN LENGTH.
8. ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED WHEN THIS DETAIL IS USED IN CONJUNCTION WITH OTHER TRAFFIC CONTROL THAT A_READY INCLUDES A ROAD CONSTRUCTION AHEAD SIGN.
9. ARTERIAL ROAD CONSTRUCTION AHEAD SIGNS MAY BE OMITTED ON CLOSURES LESS THAN 24 HOURS IN DURATION.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

FILE NAME = W:\diststd\22x34\tc08.dgn	USER NAME = leysa	DESIGNED - DWS	REVISED - DWS/JAF 12-02
		DRAWN -	REVISED - JAF 02-06
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - SPB 01-07
	PLOT DATE = 11/3/2010	DATE - 02-83	REVISED - SPB 12-09

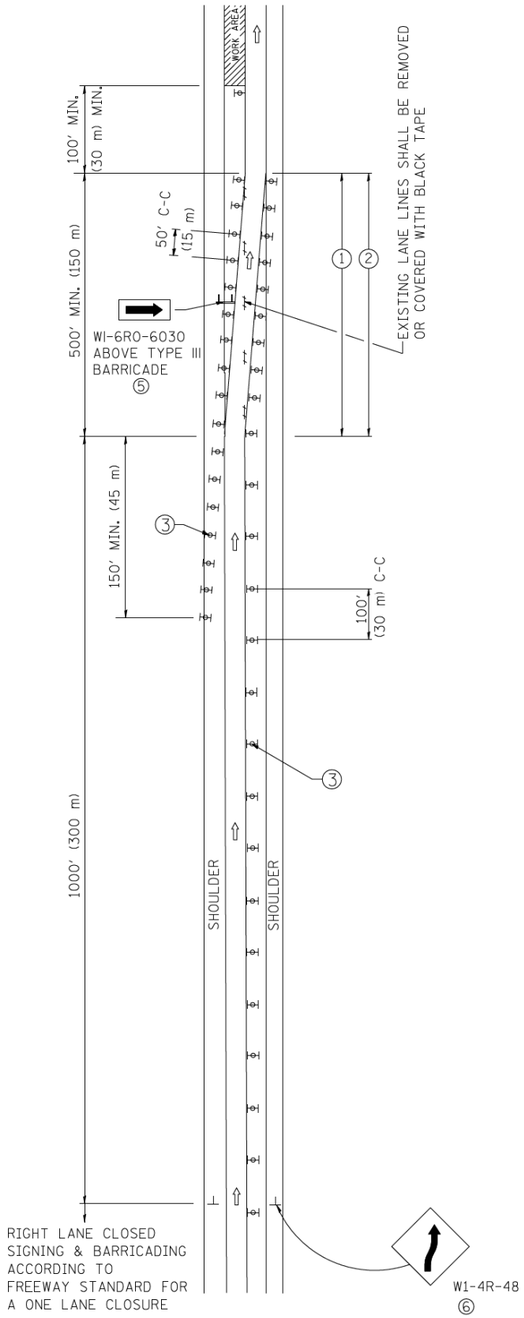
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FREEWAY ENTRANCE AND EXIT RAMP CLOSURE DETAILS

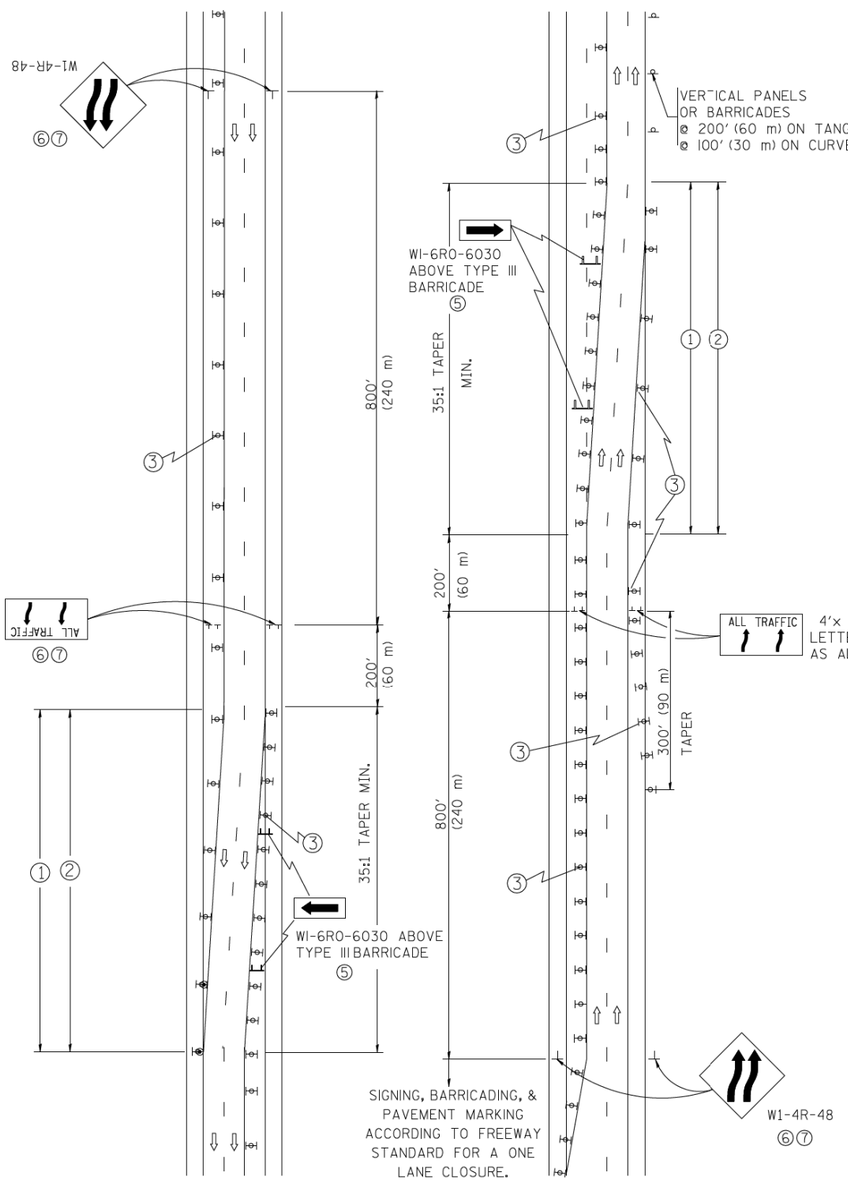
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	593
	TC-08	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SINGLE LANE WEAVE



MULTI-LANE WEAVE



ALL TRAFFIC 4'x 8' (1.2 m x 2.4 m); 1 (25) BORDER; 10 (250) CAPITAL LETTERS BACKGROUND SHEETING SHALL BE THE SAME AS ALL DIAMOND SHAPED CONSTRUCTION SIGNS.

GENERAL NOTES

① EXISTING CONFLICTING PAVEMENT MARKING LINES SHALL BE REMOVED. PAVEMENT MARKING REMOVAL SHALL NOT BE REQUIRED FOR SINGLE LANE WEAVES UNDER 24 HOURS IN DURATION.

② CONTINOUS REFLECTIVE TEMPORARY PAVEMENT MARKING TAPE SHALL BE PLACED THROUGHOUT THE TAPER AND FOR 300' (90 m) ALONG SIDE THE WORK AREA WHERE THE CLOSURE TIME IS GREATER THAN FOURTEEN DAYS. THE LEFT EDGE LINE SHALL BE YELLOW AND THE RIGHT EDGE LINE SHALL BE WHITE. FOR MULTI-LANE WEAVES LANE LINES SHALL BE 5 INCH, 10'-30' (3 m-9 m) SKIP DASH, WHITE.

③ PLASTIC DRUMS WITH STEADY BURN LIGHTS AT 50' (15 m) C-C SPACING IN TAPERS AND 100' (30 m) C-C SPACING IN TANGENTS.

④ ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.

⑤ IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 IS NOT AVAILABLE, THE SIGNS MAY BE MOUNTED ON NCHRP 350 TEMPORARY SIGN SUPPORTS. TYPE III BARRICADES MAY BE OMMITTED FOR SINGLE-LANE WEAVES UNDER 24-HOURS IN DURATION. W1-6 SIGNS WILL STILL BE REQUIRED. IF THE WIDTH OF OFFSET IS LESS THAN 6' THEN THE TYPE III BARRICADE WITH ATTACHED ARROW SIGN PANEL CAN BE ELIMINATED IN THE TAPER AREAS.

⑥ WHEN THE LENGTH OF THE SHIFTED SEGMENT (DISTANCE BETWEEN WEAVE POINTS) IS LESS THAN 1500', DOUBLE REVERSE CURVE SIGNS (W24-1) SHOULD BE USED INSTEAD OF THE REVERSE CURVE (W1-4) SIGNS. ARROWS ON THE 4'X8' "ALL TRAFFIC" SIGNS SHALL BE THE SAME SHAPE.

⑦ THE NUMBER OF ARROWS ON THESE SIGNS SHALL MATCH THE NUMBER OF LANES OPEN TO TRAFFIC.

SYMBOLS

DIRECTION OF TRAFFIC

WORK AREA

SIGN ON PORTABLE OR PERMANENT SUPPORT

TYPE II BARRICADE OR DRUM WITH MONO-DIRECTIONAL STEADY BURNING LIGHT

W24-1-48 ⑦

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

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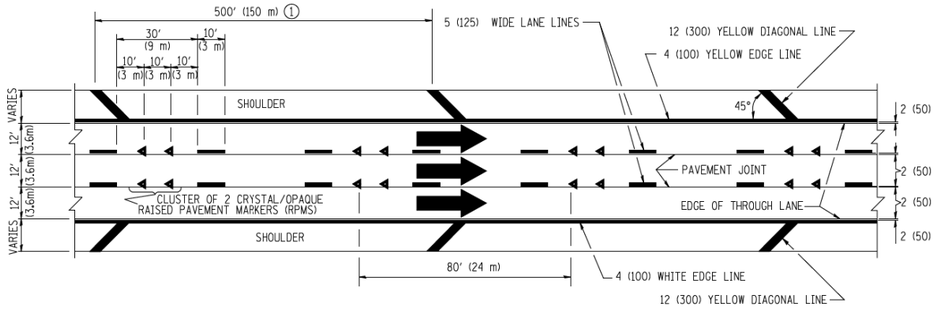
		DRAWN -	REVISED - JAF 02-06
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - SPB 01-07
	PLOT DATE = 1/26/2010	DATE - 02-87	REVISED - SPB 12-09

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS FOR FREEWAY SINGLE & MULTI-LANE WEAVE

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

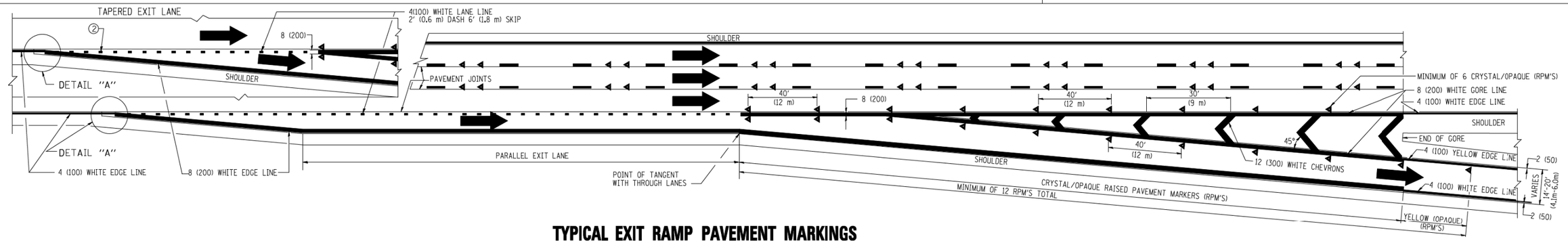
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	594
	TC-09	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



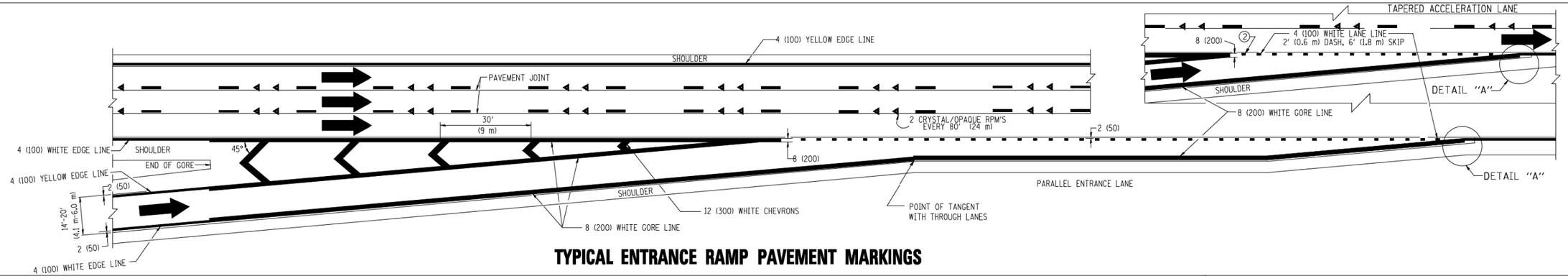
TYPICAL EDGE LINES & LANE LINES

PAVEMENT MARKING MATERIALS

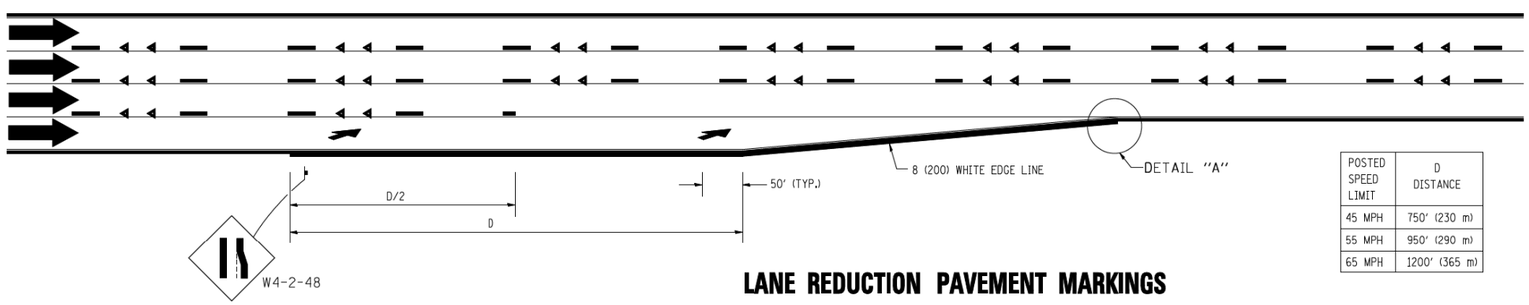
1. THERMO PLASTIC PAVEMENT MARKING LINE SHALL BE USED FOR THE EDGE LINES, GORE LINES, AND DIAGONAL LINES ON BITUMINOUS PAVEMENT ONLY.
2. PREFORMED PLASTIC TYPE B PAVEMENT MARKING LINE SHALL BE USED FOR ALL LANE LINES ON BITUMINOUS PAVEMENT.
3. POLYUREA PAVEMENT MARKING SHALL BE USED FOR ALL MARKINGS ON PCC.



TYPICAL EXIT RAMP PAVEMENT MARKINGS

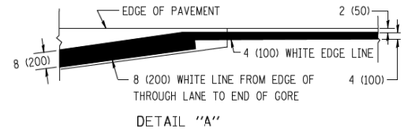


TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS



POSTED SPEED LIMIT	D DISTANCE
45 MPH	750' (230 m)
55 MPH	950' (290 m)
65 MPH	1200' (365 m)

LANE REDUCTION PAVEMENT MARKINGS



NOTES:

① THE DIAGONAL LINES SHALL BE SPACED AT 40' (12 m) C-C ACROSS ALL STRUCTURES WHICH ARE 500' (150 m) OR LESS IN LENGTH. THE DIAGONAL LINES ARE NOT REQUIRED ON SHOULDERS WHICH ARE 6' (1.8 m) OR LESS IN WIDTH.

② 4" (2' DASH, 6' SKIP) MARKING ON TAPERED ENTRANCE AND EXIT RAMP SHALL BE OMITTED ON TANGENT SECTIONS.

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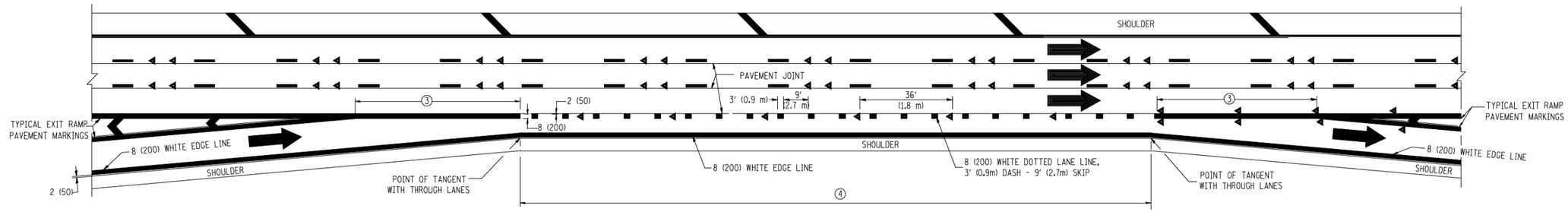
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - S.P.B. 01-07
	PLOT DATE = 1/22/2010	DATE - 01-90	REVISED - S.P.B. 01-10

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

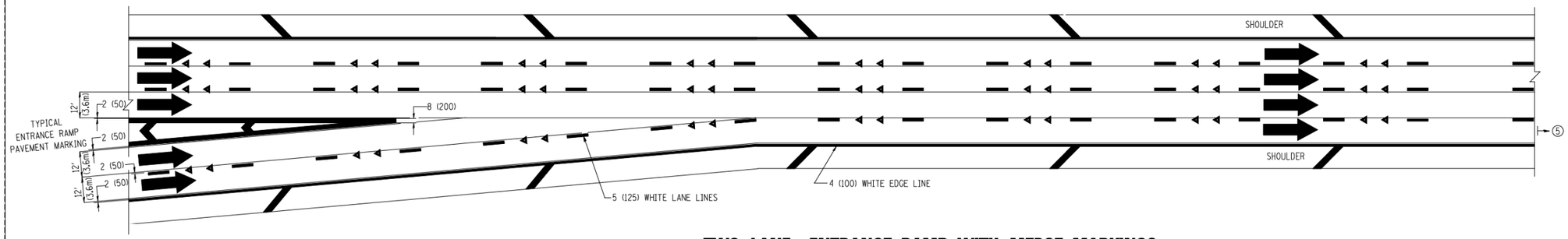
MULTI-LANE FREEWAY
PAVEMENT MARKING DETAILS

SCALE: NONE | SHEET NO. 1 OF 2 SHEETS | STA. | TO STA.

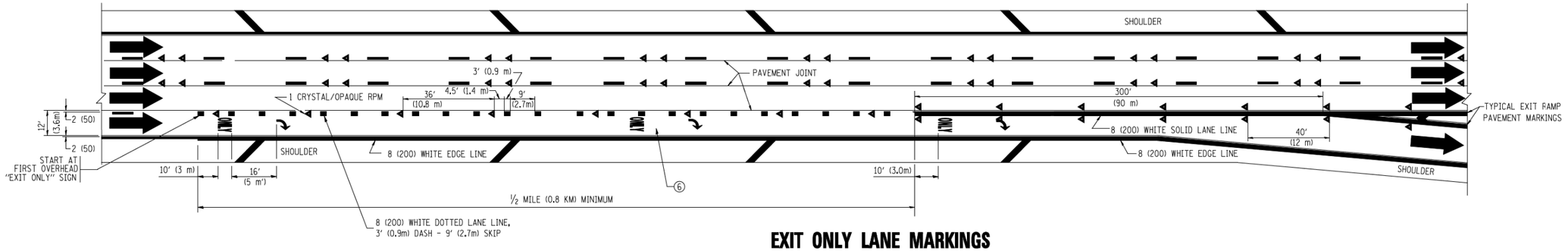
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	595
	TC-12	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



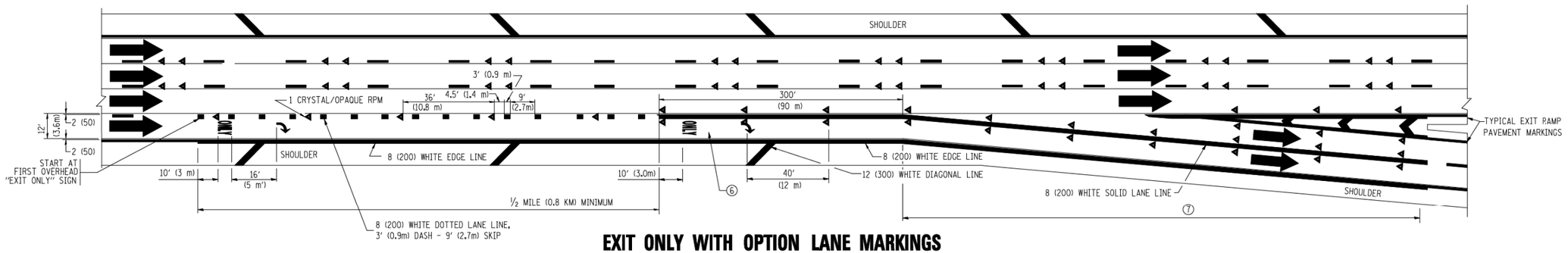
AUXILIARY LANE MARKINGS



TWO LANE ENTRANCE RAMP WITH MERGE MARKINGS



EXIT ONLY LANE MARKINGS



EXIT ONLY WITH OPTION LANE MARKINGS

NOTES

③ OMIT WHEN LENGTH OF AUXILIARY LANE IS LESS THAN 500' (150 m).

④ 8-INCH WIDE DOTTED LANE LINE MARKINGS SHALL BE USED WHEN THE LENGTH OF THE AUXILIARY LANE IS 2 MILES OR LESS.

⑤ FOR TWO-LANE ENTRANCE RAMP, IF RIGHT LANE ENDS, USE TYPICAL ENTRANCE RAMP PAVEMENT MARKINGS.

⑥ ONLY AND ARROWS EQUALLY SPACED, 500' (150 m) MAXIMUM SPACING. FULL SIZE LETTERS AND ARROW SHALL BE USED.

⑦ CONTINUE 8" SOLID LANE LINE THROUGH EXIT TO END OF PAVED GORE.

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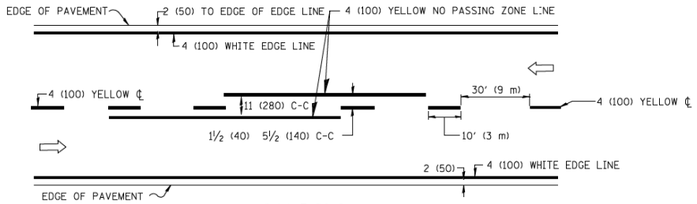
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - S.P.B. 01-07
	PLOT DATE = 1/22/2010	DATE - 01-90	REVISED - S.P.B. 01-10

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

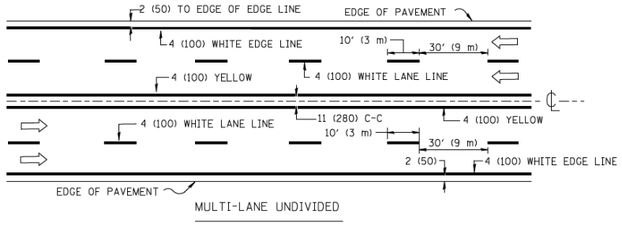
MULTI-LANE FREEWAY
PAVEMENT MARKING DETAILS

SCALE: NONE | SHEET NO. 2 OF 2 SHEETS | STA. | TO STA.

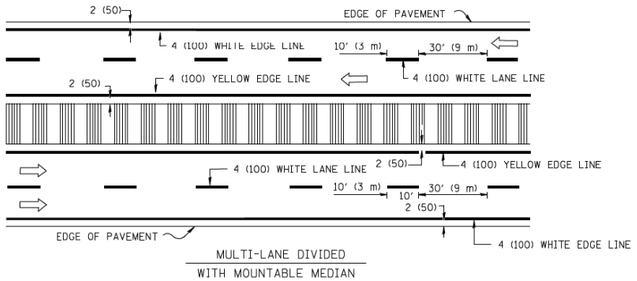
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	596
	TC-12	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		



2-LANE ROADWAY



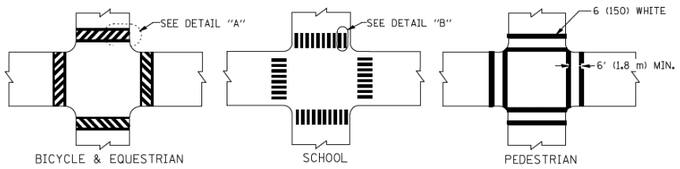
MULTI-LANE UNDIVIDED

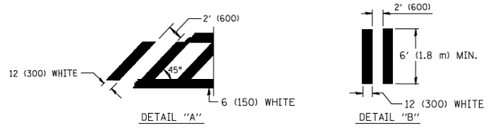


MULTI-LANE DIVIDED
WITH MOUNTABLE MEDIAN

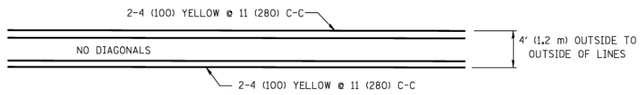
NOTE: MEDIANS WITH BARRIER CURB DO NOT REQUIRE AN EDGE LINE

TYPICAL LANE AND EDGE LINE MARKING

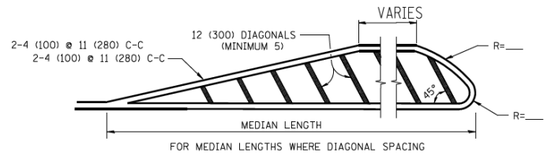




TYPICAL CROSSWALK MARKING



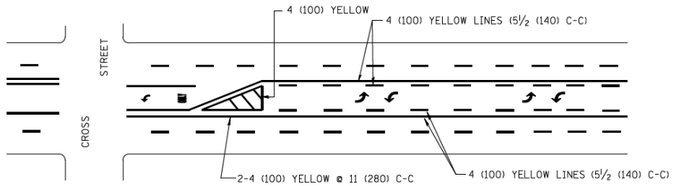
4' (1.2 m) WIDE MEDIANS ONLY



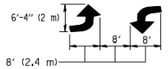
FOR MEDIAN LENGTHS WHERE DIAGONAL SPACING CANNOT BE ATTAINED, USE 5 (FIVE) EQUALLY SPACED DIAGONAL LINES.

DIAGONAL LINE SPACING: 50' (15 m) C-C (LESS THAN 30MPH (50 km/h))
75' (25 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h))
150' (45 m) C-C (MORE THAN 45MPH (70 km/h))

MEDIANS OVER 4' (1.2 m) WIDE

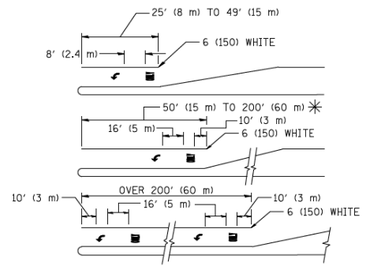


A MINIMUM OF TWO PAIRS OF TURN ARROWS SHALL BE USED, WHITE IN COLOR. ADDITIONAL PAIRS SHALL BE PLACED AT 200' (60 m) TO 300' (90 m) INTERVALS.



MEDIAN WITH TWO-WAY LEFT TURN LANE

TYPICAL PAINTED MEDIAN MARKING

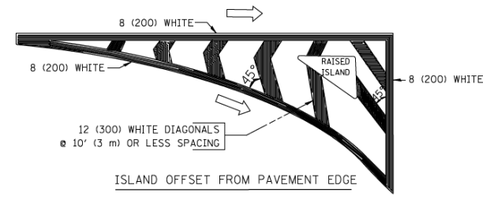


FULL SIZE LETTERS 8' (2.4 m) AND ARROWS SHALL BE USED.
↰ AREA = 15.6 SQ. FT. (1.5 m^2) **ONLY** AREA = 20.8 SQ. FT. (1.9 m^2)

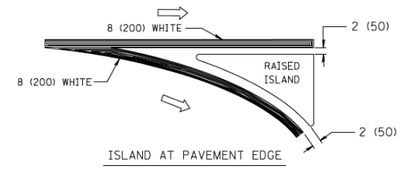
✳ TURN LANES IN EXCESS OF 400' (120 m) IN LENGTH MAY HAVE AN ADDITIONAL SET OF ARROW - "ONLY" INSTALLED MIDWAY BETWEEN THE OTHER TWO SETS OF ARROW - "ONLY".

TYPICAL LEFT (OR RIGHT) TURN LANE

TYPICAL TURN LANE MARKING



ISLAND OFFSET FROM PAVEMENT EDGE



ISLAND AT PAVEMENT EDGE

TYPICAL ISLAND MARKING

TYPE OF MARKING	WIDTH OF LINE	PATTERN	COLOR	SPACING / REMARKS
CENTERLINE ON 2 LANE PAVEMENT	4 (100)	SKIP-DASH	YELLOW	10' (3 m) LINE WITH 30' (9 m) SPACE
CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT	2 ⌀ 4 (100)	SOLID	YELLOW	11 (280) C-C
NO PASSING ZONE LINES: FOR ONE DIRECTION FOR BOTH DIRECTIONS	4 (100) 2 ⌀ 4 (100)	SOLID SOLID	YELLOW YELLOW	5½ (140) C-C FROM SKIP-DASH CENTERLINE 11 (280) C-C OMIT SKIP-DASH CENTERLINE BETWEEN
LANE LINES	4 (100) 5 (125) ON FREEWAYS	SKIP-DASH SKIP-DASH	WHITE WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE
DOTTED LINES (EXTENSIONS OF CENTER, LANE OR TURN LANE MARKINGS)	SAME AS LINE BEING EXTENDED	SKIP-DASH	SAME AS LINE BEING EXTENDED	2' (600) LINE WITH 6' (1.8 m) SPACE
EDGE LINES	4 (100)	SOLID	YELLOW-LEFT WHITE-RIGHT	OUTLINE MOUNTABLE MEDIANS IN YELLOW; EDGE LINES ARE NOT USED NEXT TO BARRIER CURB
TURN LANE MARKINGS	6 (150) LINE; FULL SIZE LETTERS & SYMBOLS (8' (2.4m))	SOLID	WHITE	SEE TYPICAL TURN LANE MARKING DETAIL
TWO WAY LEFT TURN MARKING	2 ⌀ 4 (100) EACH DIRECTION 8' (2.4m) LEFT ARROW	SKIP-DASH AND SOLID IN PAIRS	YELLOW WHITE	10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH; 5½ (140) C-C BETWEEN SOLID LINE AND SKIP-DASH LINE SEE TYPICAL TWO-WAY LEFT TURN MARKING DETAIL
CROSSWALK LINES (PEDESTRIAN) A. DIAGONALS (BIKE & EQUESTRIAN) B. LONGITUDINAL BARS (SCHOOL)	2 ⌀ 6 (150) 12 (300) ⌀ 45° 12 (300) ⌀ 90°	SOLID SOLID SOLID	WHITE WHITE WHITE	NOT LESS THAN 6' (1.8 m) APART 2' (600) APART 2' (600) APART SEE TYPICAL CROSSWALK MARKING DETAILS.
STOP LINES	24 (600)	SOLID	WHITE	PLACE 4' (1.2 m) IN ADVANCE OF AND PARALLEL TO CROSSWALK, IF PRESENT. OTHERWISE, PLACE AT DESIRED STOPPING POINT. PARALLEL TO CROSSROAD CENTERLINE, WHERE POSSIBLE
PAINTED MEDIANS	2 ⌀ 4 (100) WITH 12 (300) DIAGONALS ⌀ 45° NO DIAGONALS USED FOR 4' (1.2 m) WIDE MEDIANS	SOLID	YELLOW: TWO WAY TRAFFIC WHITE: ONE WAY TRAFFIC	11 (280) C-C FOR THE DOUBLE LINE SEE TYPICAL PAINTED MEDIAN MARKING.
GORE MARKING AND CHANNELIZING LINES	8 (200) WITH 12 (300) DIAGONALS ⌀ 45°	SOLID	WHITE	DIAGONALS: 15' (4.5 m) C-C (LESS THAN 30MPH (50 km/h)) 20' (6 m) C-C 30MPH (50 km/h) TO 45MPH (70 km/h)) 30' (9 m) C-C (OVER 45MPH (70 km/h))
RAILROAD CROSSING	24 (600) TRANSVERSE LINES; "RR" IS 6' (1.8 m) LETTERS; 16 (400) LINE FOR "X"	SOLID	WHITE	SEE STATE STANDARD 780001 AREA OF: "R"=3.6 SQ. FT. (0.33 m^2) EACH "X"=54.0 SQ. FT. (5.0 m^2)
SHOULDER DIAGONALS	12 (300) ⌀ 45°	SOLID	WHITE - RIGHT YELLOW - LEFT	50' (15 m) C-C (LESS THAN 30MPH (50 km/h)) 75' (25 m) C-C (30 MPH (50 km/h) TO 45MPH (70 km/h)) 150' (45 m) C-C (OVER 45MPH (70 km/h))

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND STATE STANDARD 780001.

All dimensions are in inches (millimeters) unless otherwise shown.

FILE NAME = c:\pw_work\pwidot\drivakosgn\d0108315\tc13.dgn	USER NAME = drivakosgn	DESIGNED - EVERS	REVISED -T. RAMMACHER 10-27-94
		DRAWN -	REVISED -C. JUCIUS 09-09-09
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 9/9/2009	DATE - 03-19-90	REVISED -

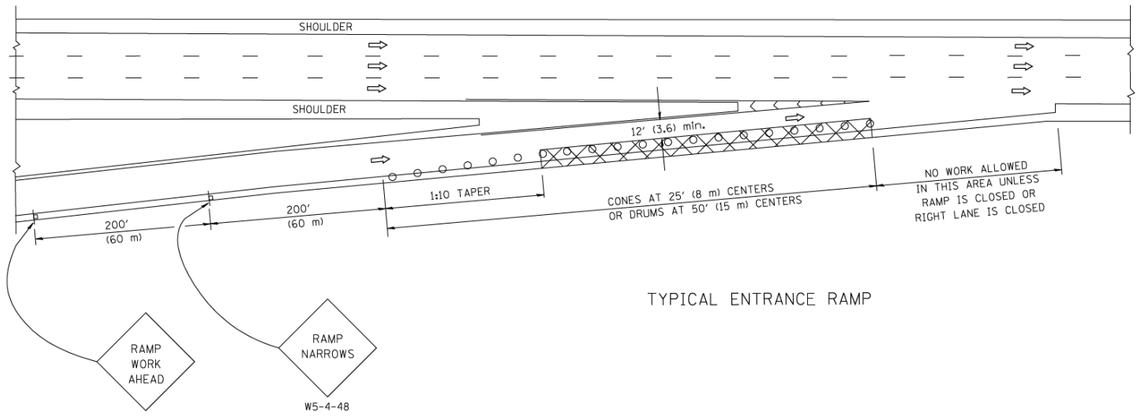
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DISTRICT ONE
TYPICAL PAVEMENT MARKINGS

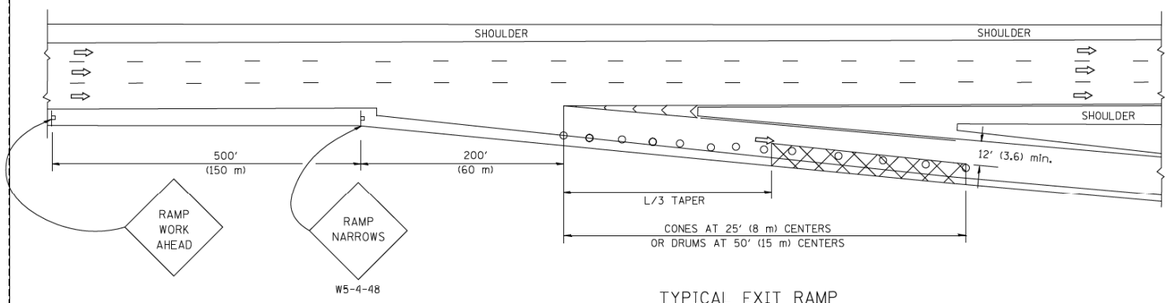
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	597
	TC-13	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

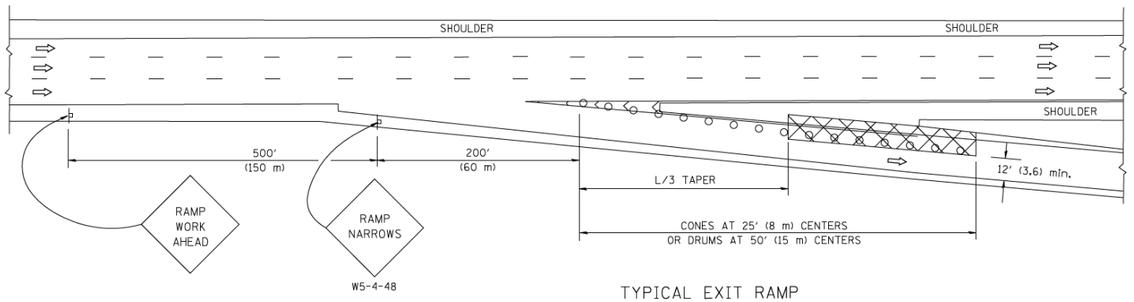
PARTIAL RAMP CLOSURE DETAILS



TYPICAL ENTRANCE RAMP



TYPICAL EXIT RAMP



TYPICAL EXIT RAMP

SYMBOLS

- ACTIVE WORK AREA
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- FLAGGER WITH CONTROL SIGN
- TYPE II BARRICADE, DRUM OR VERTICAL BARRICADE WITH STEADY BURN MONO-DIRECTIONAL LIGHT
- CONE, DRUM OR BARRICADE

GENERAL NOTES

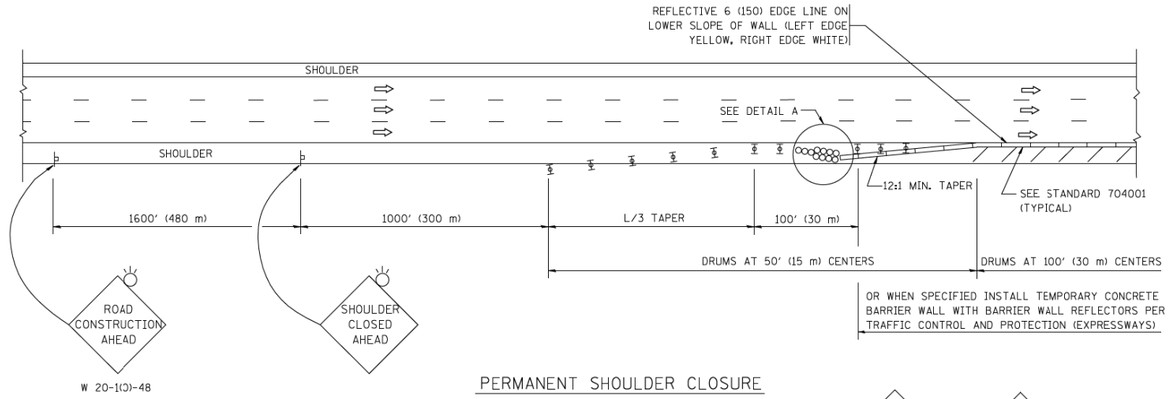
1. THE "L" DISTANCE EQUALS:

SPEED LIMIT	FORMULAS	
	METRIC	ENGLISH
45 mph (80 km/h) OR GREATER:	L=0.65(W)(S)	L=(W)(S)

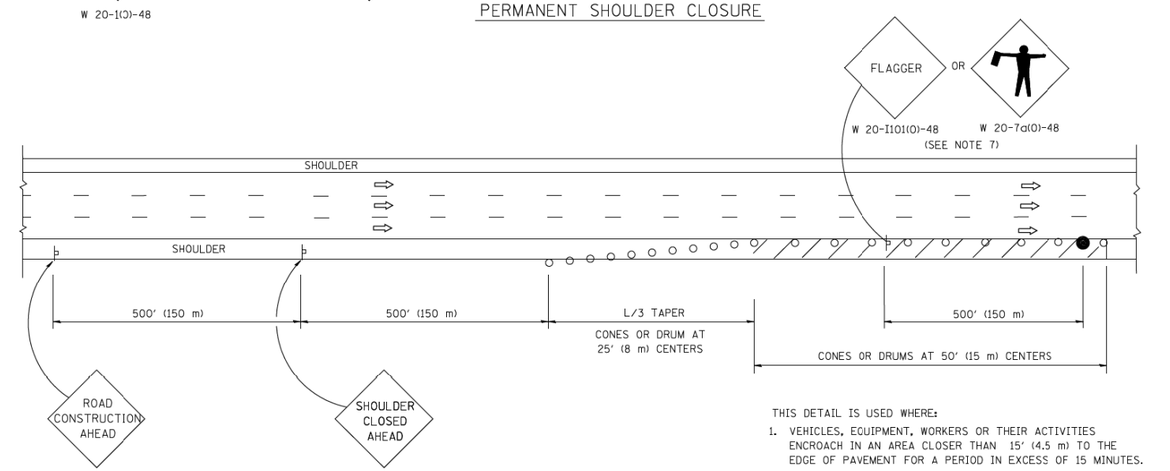
W = WIDTH OF OFFSET IN FEET (METERS)
S = NORMAL POSTED SPEED MPH (KM/H)

2. PLASTIC DRUMS WITH HIGH PERFORMANCE REFLECTIVE SHEETING AND STEADY BURNING LIGHTS ARE REQUIRED FOR ALL NIGHTIME CLOSURES.
3. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.
4. FLASHING LIGHTS SHALL BE USED DURING THE HOURS OF DARKNESS AND SHALL BE INSTALLED ABOVE THE FIRST TWO SETS OF SIGNS.

SHOULDER CLOSURE DETAILS



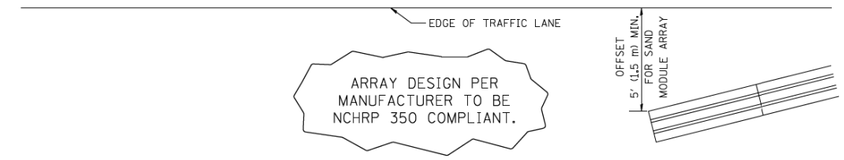
PERMANENT SHOULDER CLOSURE



THIS DETAIL IS USED WHERE:

1. VEHICLES, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH IN AN AREA CLOSER THAN 15' (4.5 m) TO THE EDGE OF PAVEMENT FOR A PERIOD IN EXCESS OF 15 MINUTES.

DAYTIME SHOULDER CLOSURE



DETAIL "A"
IMPACT ATTENTUATOR, TEMPORARY
(SEE NOTE 5)

5. THE IMPAC" ATTENTUATOR, TEMPORARY IS NOT REQUIRED WHEN THE TEMPORARY CONCRETE BARRIER WALL IS PROTECTED BY OR IS TIED INTO THE EXISTING GUARDRAIL. IF OFFSET IS LESS THAN 5 FEET USE NARROW USE TYPE DEVICE TO MEET NCHRP350.
6. AUTHORIZA"ION FROM THE DISTRICT'S BUREAU OF TRAFFIC IS REQUIRED FOR ALL FREEWAY CLOSURES.
7. THE FLAGGER AND FLAGGER SIGN ARE REQUIRED AT THE ABOVE WORK SITES WHEN:
   a. FOUR OR MORE WORK VEHICLES ENTER THE TRAFFIC LANES IN A ONE HOUR PERIOD.
   b. THE WORK AVTIVITY REQUIRES FREQUENT ENCROACHMENT INTO THE LANE OPEN TO TRAFFIC.

   THE FLAGGER SHALL BE STATIONED APPROXIMATELY 100' (30 m) TO 200' (60 m) IN ADVANCE OF THE WORKERS.

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

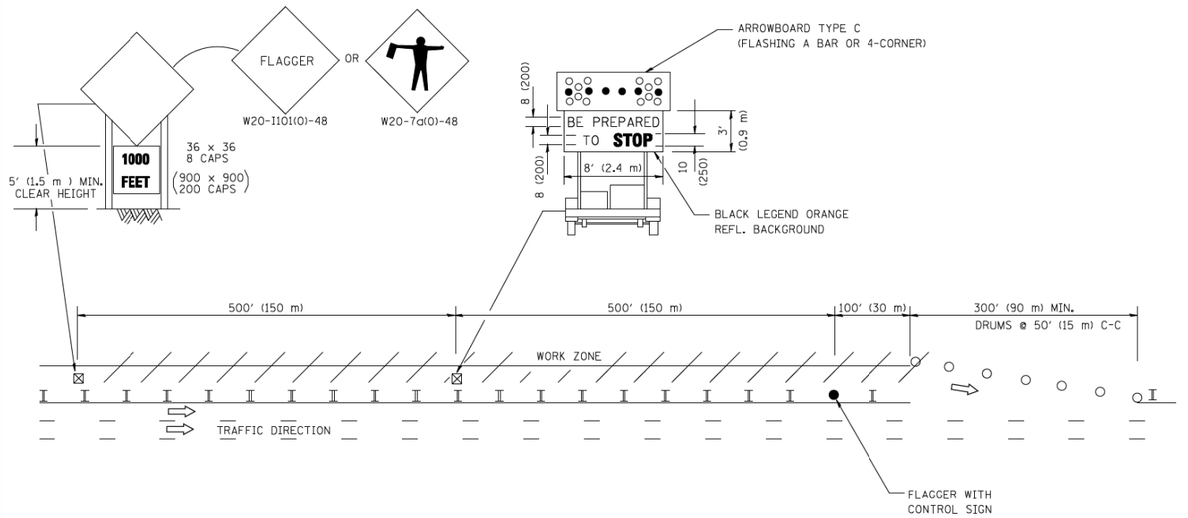
FILE NAME = W:\diststd\22x34\tc17.dgn	USER NAME = leysa	DESIGNED -	REVISED - 04-03	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**TRAFFIC CONTROL DETAILS FOR FREEWAY SHOULDER CLOSURES AND PARTIAL RAMP CLOSURES**
		DRAWN - D.W.S.	REVISED - J.A.F. 12-06		
	PLOT SCALE = 50.0000 ' / IN.	CHECKED -	REVISED - S.P.B. 01-07		
	PLOT DATE = 1/26/2010	DATE - 11-96	REVISED - S.P.B. 12-09		

SCALE: NONE	SHEET NO. 1 OF 1 SHEETS	STA.	TO STA.

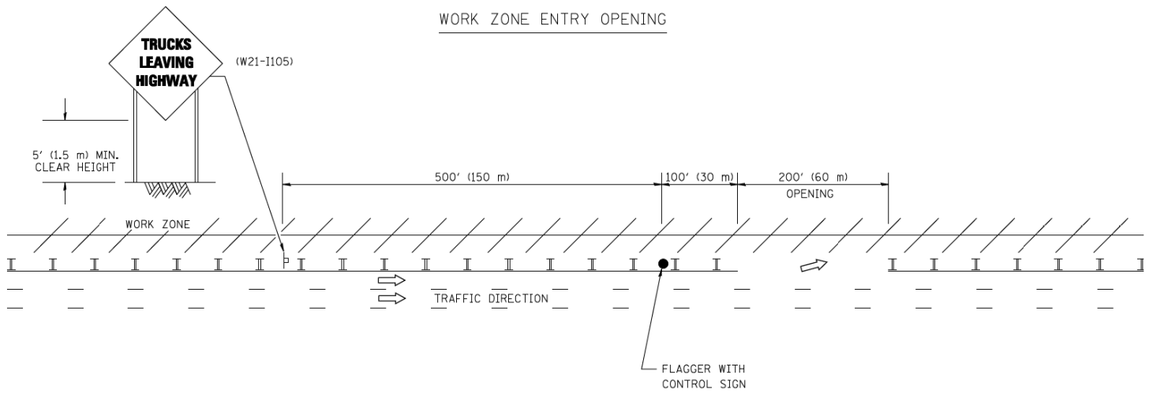
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	598
	TC-17	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS

WORK ZONE EXIT OPENING



WORK ZONE ENTRY OPENING



NOTES:

1. THE ARROWBOARD, THE FLAGGER AHEAD SIGN AND THE TRUCKS LEAVING HIGHWAY SIGN SHALL BE REMOVED OR TURNED AWAY FROM TRAFFIC AND THE EXIT AND ENTRY OPENINGS SHALL BE CLOSED WHEN THE FLAGGING OPERATION CEASES. NON OPERATING EQUIPMENT SHALL COMPLY WITH ARTICLE 701.11
2. WORK ZONE EXIT OPENINGS SHOULD BE A MINIMUM OF ONE HALF MILE APART.
3. EXITING THE WORK ZONE AT ANY PLACE OTHER THAN AT A WORK ZONE EXIT OPENING WILL BE PROHIBITED.
4. ALL VEHICLES SHALL ENTER THE WORK ZONE AT ENTRY OPENINGS, USING THEIR TURN SIGNALS TO WARN MOTORISTS

ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN

FILE NAME = W:\diststd\22x34\tc18.dgn	USER NAME = leyse	DESIGNED -	REVISED - J.A.F. 04-03	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SIGNING FOR FLAGGING OPERATIONS AT WORK ZONE OPENINGS
		DRAWN -	REVISED - J.A.F. 02-06		
	PLOT SCALE = 50.000 ' / IN.	CHECKED -	REVISED - S.P.B. 01-07		SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.
	PLOT DATE = 1/26/2010	DATE -	REVISED - S.P.B. 12-09		

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	599
	TC-18	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

ROUTE MARKERS

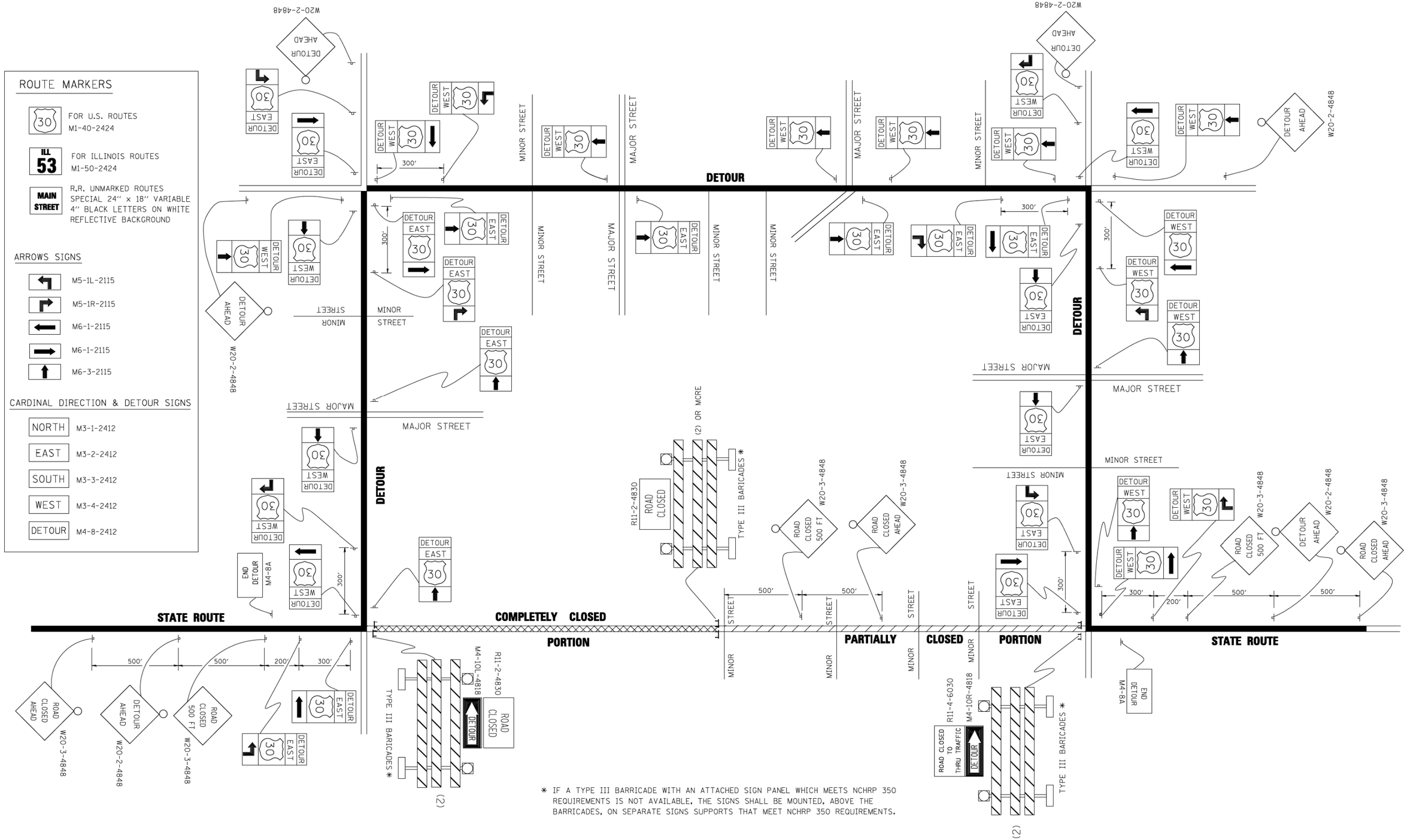
- 30 — FOR U.S. ROUTES M1-40-2424
- ILL 53 — FOR ILLINOIS ROUTES M1-50-2424
- MAIN STREET — R.R. UNMARKED ROUTES SPECIAL 24" x 18" VARIABLE 4" BLACK LETTERS ON WHITE REFLECTIVE BACKGROUND

ARROWS SIGNS

- M5-1L-2115
- M5-1R-2115
- M6-1-2115
- M6-1-2115
- M6-3-2115

CARDINAL DIRECTION & DETOUR SIGNS

- NORTH M3-1-2412
- EAST M3-2-2412
- SOUTH M3-3-2412
- WEST M3-4-2412
- DETOUR M4-8-2412



* IF A TYPE III BARRICADE WITH AN ATTACHED SIGN PANEL WHICH MEETS NCHRP 350 REQUIREMENTS IS NOT AVAILABLE, THE SIGNS SHALL BE MOUNTED, ABOVE THE BARRICADES, ON SEPARATE SIGNS SUPPORTS THAT MEET NCHRP 350 REQUIREMENTS.

FILE NAME = c:\pw_work\PWIDOT\DRIVAKOSGN\d0108315\tc21.dgn	USER NAME = drivakosgn	DESIGNED -	REVISED - 10-18-02
		DRAWN -	REVISED - R. BORO 09-14-09
	PLOT SCALE = 49.9999 ' / IN.	CHECKED -	REVISED -
	PLOT DATE = 9/14/2009	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETOUR SIGNING FOR CLOSING STATE HIGHWAYS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	2012-059-BR	COOK	631	600
	TC-21	CONTRACT NO. 60J12		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		